

**CITY OF MAGNOLIA
45 +/- ACRE
PROJECT SITE**

**DELINEATION PROJECT SITE
MONGTOMERY COUNTY, TEXAS**

**WETLANDS & JURISDICTIONAL WATERS OF
THE UNITED STATES ASSESSMENT**



PREPARED BY
SMC CONSULTING, INC.
ENVIRONMENTAL ENGINEERING
PEARLAND, TEXAS
(281) 997-7911

Tuesday, October 12, 2021

SMC CONSULTING, INC. PROJECT 21104
AEI PROJECT NUMBER 211009.40

PRELIMINARY- NON USACE VERIFIED REPORT

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Pearland, Texas

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EXECUTIVE SUMMARY

This study is a Jurisdictional Waters of the United States and Wetland Determination and Delineation Study for the approximate 45 acre project site for the City of Magnolia located along the western edge of Highway 149 and south of FM 1488 in the City of Magnolia in northern Montgomery County, Texas

Portions of the site have been altered in the somewhat recent past (between 2012 and 2016) with timber harvesting, pipeline, roadway, utility and drainage construction evident. The noted alterations on the site have clearly disturbed the natural site condition and the drainage. The result is a unique drainage system which appears to only be moderately effective in draining portions of the site. The site is largely covered in dense tree and shrub vegetation. The site contains one small dry pond area and two somewhat effective drainage pathways.

The site has been altered and has a mix of well defined, dug drainage channels on the site, erosional incised drains, and ill-defined overland flow drainage pathways. The drainage runs along the northeastern portion of the site, then turns southwest and becomes overland – almost sheet flow – in the southwestern portion of the site. *While not currently wetlands – it is evident that portions of the site are converting toward a more wetland condition due to the ineffective nature of the drainage system.*

No wetlands were found on the subject site. Portions of the subject site met two of the three necessary technical criteria to be wetlands – however, the soils on the subject site were not hydric. The lack of hydric soils is almost certainly the result of somewhat recent alteration of the site, and the permeable nature of the site. *Left alone – the development of wetlands on the site is virtually assured.*

The site is not mapped as being within the 100 year floodplain of any drainage feature.

It is our Professional Opinion that the subject site contains 0.00 acres of Jurisdictional Wetlands. We additionally find that the subject site contains 0.44 acres and 2827 linear feet of Jurisdictional Tributaries.

The remainder of the subject site was found to be “Non-Wetland or Non-Jurisdictional Waters of the US” and thus not subject to the provisions of the Clean Water Act and associated USACE Permitting Program.

This report includes all the necessary evaluation forms as defined by the USACE to determine the Jurisdictional Nature of the water features on site. In order for the report to be considered “final”, the client will need to deliver this report to the USACE and request an Approved Jurisdictional Determination. *Until approval by the USACE, this document is considered draft and preliminary.*

Attached to this report are aerial and site photographs which depict the project site conditions.

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**JURISDICTIONAL WATERS OF THE UNITED STATES
AND WETLANDS ASSESSMENT
DETERMINATION AND DELINEATION**

*

FOR THE

CITY OF MAGNOLIA
APPROX.
45 ACRE TRACT
IN
MONTGOMERY COUNTY, TEXAS

INTRODUCTION

This study is a Jurisdictional Waters of the United States and Wetland Determination and Delineation Study for City of Magnolia approximate 45 acre project. The site is located to the west of Highway 149, and to the south of FM 1488 in Magnolia, Montgomery County, Texas. The site is generally rectangular shaped parcel of somewhat improved but undeveloped land. The attached maps provide site location information.

The site is currently and has historically been vacant unimproved land. The site is covered in a mix of native and invasive plants.

SITE LOCATION

The site is to the west of Highway 149 Jackson Road, and approximately 1/3 mile south of FM 1488 in the City of Magnolia, in northern Montgomery County, Texas.

The site is largely native and unimproved. The site has been altered in the somewhat recent past (between 2012 and 2016) with timber harvesting, pipeline, roadway, utility and drainage construction evident. The noted alterations on the site have disturbed the natural condition and the drainage on the site is unique. The site is largely covered in dense tree and shrub vegetation. The site contains one small dry pond area and two somewhat effective drainage pathways.

The project site is depicted more specifically in the site maps located in the appendices of this report.

WETLANDS CRITERIA

Many ponds and streams are Waters of the United States. Areas that are permanently inundated at mean annual water depths of greater than (>) 6.6 feet or are permanently inundated areas (<) 6.6 feet that do not support rooted emergent or woody plant species are generally classified as deep-water habitats. Areas that are inundated or saturated by surface water or groundwater and that do support rooted emergent or woody

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plant species are generally considered wetlands. Wetlands are a “subset” of the Waters of the United States. It should be noted that not all Waters of the United States are Wetlands.

Jurisdictional determination of wetlands regulated under Section 404 of the Clean Water Act is made using the United States Army Corps of Engineers Wetlands Delineation Manual (1987). The Manual specifies three technical criteria which must all be met before an area is determined to be a wetland. The three criteria are, (1) hydrophilic vegetation (wetland plants), (2) hydric soils, and (3) wetland hydrology.

- (1) Hydrophilic vegetation consists of plant life which grows in water, soil, or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content. The US Fish & Wildlife Service has published a list of plants that commonly occur in wetlands. This plant list separates the plants into five basic groups. A plant is placed in one of these five basic groups dependent on the plant species frequency of occurrence in wetlands. These basic groups are:
 - (a) Obligate wetland plants (OBL)
 - (b) Facultative wetland plants (FACW)
 - (c) Facultative plants (FAC)
 - (d) Facultative Upland plants (FACU)
 - (e) Obligate Upland plants (UPL)

Generally, an area is considered to satisfy the criterion for hydrophilic vegetation when more than 50 percent of the dominant species are obligate wetland, facultative wetland, or facultative species. These three noted groups are those most commonly found in wetland areas.

- (2) Hydric soils are soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in upper layers. An area has hydric soils when the National Technical Committee for Hydric Soils (NTCHS) criteria for hydric soils is met. While a listing of hydric soils and mapping of those soils is often available, site sampling and testing is required to verify the presence or absence of the hydric soils.
- (3) Wetland hydrology exists whenever ponding or frequent flooding persists during the growing season. The 1987 USACE Manual specifies the use of certain field indicators to assist in the determination of the fulfillment of the hydric soils and wetland hydrology criteria. These criteria include the water source, topography, and impoundments present at a project site.

SCOPE OF WORK

The objective of this Jurisdictional Waters and Wetland Determination and Delineation was to evaluate the project site for jurisdictional waters and jurisdictional wetlands in accordance with Section 404 of the Clean Water Act. Particular attention was paid to the presence of Wetlands and other Jurisdictional Waters of the United States in accordance with the United States Army Corps of Engineers (USACE) 1987 Wetlands Delineation Manual. The following evaluations were performed for this project:

1. ***Vegetation Indicators:*** Evaluate the presence or absence of hydrophilic vegetation (water plants) that is typically adapted to wetlands and determine the vegetative patterns that are prevalent within the site, or specific areas within the site.

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2. ***Soil Indicators:*** Determine the presence or absence of soils which would be classified as Hydric.
3. ***Hydrology Indicators:*** Evaluate the hydrological features of the site with respect to water accumulation and wetland development.
4. ***Historical Characteristics:*** Evaluate historical information to determine the existence and development of wetland features over extended periods of time.

METHODOLOGY/INVESTIGATIVE WORK

Wetland Analysis and Delineation work consisted of a site visit and current condition assessment. Additionally, the following items were utilized: The following activities were undertaken to perform the assessment: 1) review county soil maps; 2) review Federal Emergency Management Agency (FEMA) flood plain maps; 3) review United States Geological Service (USGS) topographic maps; and 4) perform site reconnaissance to evaluate and document soil, hydrology, and vegetation indicators.

1. Soil Survey Evaluation:

Prior to site reconnaissance activities, the Soil Survey of Montgomery County, Texas was reviewed to determine the types of soils that would most likely be present on the project site. The soil delineation indicated that the dominant soils on the site were of the Montgomery Geologic Formation and the Conroe Association. Specifically, these soils were identified as the Conroe loamy fine sand 0-5% slopes, the Splendora fine sandy loam 0-2% slopes, and the Conroe soils.

Given the criteria and techniques employed by the Natural Resource Conservation Service (NRCS), formerly known as the Soil Conservation Service, for the survey process, it was considered probable that the boundaries depicted on the survey could contain certain inaccuracies. The minimum mapping area for any given soil in the NRCS survey is ten (10) acres, with the probability of imprecise boundary delineation being relatively high. Therefore, as part of site reconnaissance activities, on-site soil evaluations were performed to describe, classify, and document the hydric, or non-hydric, characteristics of the property's soils.

2. Flood Plain Evaluation:

To assess the hydrological characteristics of the site, flood data from the FEMA was evaluated to determine if the property lies within, or adjacent to, a known flood plain. Due to the low topographic grades found on the Gulf Coast, periodic floods along rivers, creeks, and bayous are common. These floods, along with rainfall, are the primary hydrology drivers for wetlands located inland immediate coastal areas.

In addition to FEMA map reviews, on-site hydrology evaluations were made to assess probable flow patterns on the project site, and to evaluate inundation and/or saturation periods for respective wetland areas, if any.

3. Topography Evaluation:

Investigative activities also included observations of the property's general topography and the location of landscape features such as depressions, ridges, and levees. These features could determine wetland patterns

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and their associated hydrological functions. Topography was evaluated by reviewing: 1) topographical information published by the USGS; 2) aerial photography; and 3) on-site observations.

4. Aerial Photography:

Wetlands generally occur as historical features on the landscape and usually maintain their basic configurations and appearances over a long period of time. However, vegetation communities naturally progress through several stages of predominance as wetlands age and become more mature. Additionally, topographical, and hydrological characteristics may be changed by natural processes or by man-induced alterations in or near wetland areas. While field verification remains essential to wetland identification and delineation, historical aerial photography can play a vital role in the evaluation of wetland features and the variations which may occur over extended periods of time.

1. **Black & White Photography:** Black & white photographs contain features which may outline the subtle changes in shading and contrast where wetland vegetation or soil may occur. Anaerobic soils are often of a different hue due to hydrous conditions and vegetation patterns associated with such soils. Due to the hydro period and vegetation variation, these areas can be distinguished from surrounding uplands. Black & white photography becomes a primary method for interpretive delineation since wetland areas may often be very distinctive.
2. **Methodology of Interpretation:** Photographic information was gathered from 2004, 2006, 2009, 2010, and 2018 for the project site. The historical aerial photograph indicates the project site much as it appears today.

5. Site Reconnaissance:

The primary method of wetland identification and delineation was site reconnaissance activity that would identify and document the conditions that existed on the project site as related to jurisdictional wetlands. The site visits were performed to target the following specific areas: 1) soil surveys and geology; 2) topography and hydrology; and 3) vegetation.

The site was visited on Thursday September 30th, 2021 by personnel from SMC Consulting, Inc. using the criteria set forth in the 1987 USACE Wetland Delineation Manual as modified by the Regional Conditions for hydrology, soils, and hydrophilic vegetation. The site was evaluated for the presence and absence of conditions that would indicate the presence of wetlands and/or Waters of the United States.

The soils of the site were evaluated to document their hydric (or non hydric) characteristics and to accurately describe and map any wetland areas. Six (6) sample locations at the site were documented and fully described according to NRCS staff criteria and were classified taxonomically as either hydric or non-hydric. Numerous additional undocumented observations were made to define established trends (from documented descriptions) or to verify aerial photo interpretation and/or NRCS mappings.

FINDINGS

1. Geology and Soils:

The soil delineation indicated that the dominant soils on the site were of the Montgomery Geologic Formation and the Conroe Association. Specifically, these soils were identified as the Conroe loamy fine

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sand 0-5% slopes, the Splendora fine sandy loam 0-2% slopes, and the Conroe soils. These soils are sandy and intermixed with gravel strata. The soils are mainly used for native and improved pasture and for pine tree production. The soils are well drained to moderately well drained.

The NRCS soil survey was accurate in identifying the basic types of soils found on the property and depicting significant areas of hydric soils. Documentation of soil descriptions and classifications from each of the sample areas are presented in the Data Forms contained in the appendix of this report.

2. Topography and Hydrology:

USGS maps indicate a well sloped landscape in the area with flow generally being directed to the southeast. One dry manmade impoundment area was noted in the southwestern portion of the site. The site has been altered and has a mix of well defined, dug drainage channels on the site, erosional incised drains, and ill-defined overland flow drainage pathways. The drainage runs along the northeastern portion of the site, then turns southwest and becomes overland – almost sheet flow – in the southwestern portion of the site.

No wetlands were found on the subject site. Portions of the subject site met two of the three necessary technical criteria to be wetlands – however, the soils on the subject site were not hydric. The lack of hydric soils is almost certainly the result of somewhat recent alteration of the site, and the permeable nature of the site.

The site is not mapped as being within the 100 year floodplain of any drainage feature.

3. Vegetation:

Attempts were made to comprehensively observe and document plant communities and species for all areas of the property, with special focus on those plants that would be considered hydrophytes associated with wetlands. Other sites within the general area were also recorded to define the boundaries of wetland and non-wetland areas. Representative samples were collected as necessary for specific sites and were identified.

The vast majority of the subject site was found to be uplands. The upland areas were covered in a mix of pasture covered in Bahia grass, flat sedge, bluestem, and Dog fennel, and in the wooded areas in a mix of Loblolly pine, Cedar elm, Southern red oak, Yaupon, and American beautyberry.

Wetland vegetation was identified in portions of the subject site – including Black willow, Chinese tallow, Sweet gum, Stinging nettle, Smartweed and Chinese privet.

The site contained a mix of open water, and non-vegetated drainage pathways and impoundment areas. Some of these features have obviously been improved and altered.

The attached datasheets fully document the specific vegetation at each sample location, including scientific names, wetland status, dominance, and coordinates.

As with the methods employed during soil survey activities, specific documentation was made in order to identify representative vegetation patterns within certain areas. Documentation of plant descriptions and classifications from each of the sample areas are presented in the Data Forms contained in the Appendix of this report.

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TABLE 1: WETLANDS DELINEATED DURING SITE INVESTIGATION

AREA	DESCRIPTION	SIZE (ACRES)
	NO WETLANDS WERE IDENTIFIED ON THE SITE	N/A

Total Wetland Areas Identified on site 0.00 acres.
TOTAL LIKELY JURISDICTONAL WETLAND ON SITE 0.00 ACRES

TABLE 2: POTENTIAL WATERS OF THE US

AREA	DESCRIPTION	SIZE (ACRES)
<i>1</i>	<i>EPHEMERAL TRIBUTARY 1 – 0.01 AC & 191 LF ***</i>	<i>0.01 AC & 191 LF</i>
<i>2</i>	<i>EPHEMERAL TRIBUTARY 2 – 0.03 AC & 395 LF</i>	<i>0.03 AC & 395 LF</i>
<i>3</i>	<i>EPHEMERAL TRIBUTARY 3 – 0.05 AC & 718 LF</i>	<i>0.05 AC & 718 LF</i>
<i>4</i>	<i>INTERMITTENT TRIBUTARY 4 – 0.01 AC & 50 LF</i>	<i>0.01 AC & 50 LF</i>
<i>5</i>	<i>EPHEMERAL TRIBUTARY 5 – 0.01 AC & 191 LF</i>	<i>0.01 AC & 191 LF</i>
<i>6</i>	<i>INTERMITTENT TRIBUTARY 6 – 0.19 AC & 975 LF</i>	<i>0.19 AC & 975 LF</i>
ADJ. POND /DITCH	NESTED ADJ. POND/ DITCH WITHIN TRIBUTARY AREA 0.14 AC & 307 LF – PART OF / ADJ. TO TRIB. 5	0.14 AC & 307 LF

Total Potential Waters of the US on site 0.44 AC. / 2827 LF
POTENTIAL JURISDICTONAL WATERS ON SITE 0.44 AC. / 2827 LF

***EPHEMERAL TRIBUTARY 1 BEGINS AND ENDS ON THE SUBJECT SITE BEGINNING AT THE SOUTH SIDE OF THE ROADWAY, THEN PLAYING OUT AND BECOMING SHEET FLOW BEFORE TYING INTO ANY OTHER RECEIVING WATER BODY. IT IS POSSIBLE THAT THIS FEATURE WOULD BE DETERMINED TO BE NON-JURISDICTIONAL BY THE USACE.

Since the implementation of the US Supreme Court Rapanos Decision by the USACE and EPA, *only* the USACE and EPA can make the final determination of the Jurisdictional Status of Water Features.

CONCLUSIONS

This study is a Jurisdictional Waters of the United States and Wetland Determination and Delineation Study for the approximate 45 acre project site for the City of Magnolia located along the western edge of Highway 149 and south of FM 1488 in the City of Magnolia in northern Montgomery County, Texas

Portions of the site have been altered in the somewhat recent past (between 2012 and 2016) with timber harvesting, pipeline, roadway, utility and drainage construction evident. The noted alterations on the site have clearly disturbed the natural site condition and the drainage. The result is a unique drainage system which appears to only be moderately effective in draining portions of the site. The site is largely covered in dense tree and shrub vegetation. The site contains one small dry pond area and two somewhat effective drainage pathways.

The site has been altered and has a mix of well defined, dug drainage channels on the site, erosional incised drains, and ill-defined overland flow drainage pathways. The drainage runs along the northeastern portion of the site, then turns southwest and becomes overland – almost sheet flow – in the southwestern portion of the site. While not currently wetlands – it is evident that portions of the site are converting toward a more wetland condition due to the ineffective nature of the drainage system.

No wetlands were found on the subject site. Portions of the subject site met two of the three necessary technical criteria to be wetlands – however, the soils on the subject site were not hydric. The lack of hydric soils is almost certainly the result of somewhat recent alteration of the site, and the permeable nature of the site. Left alone – the development of wetlands on the site is virtually assured.

The site is not mapped as being within the 100 year floodplain of any drainage feature.

It is our professional opinion that the subject site contains 0.00 acres of Jurisdictional Wetlands. We additionally find that the subject site contains 0.44 acres and 2827 linear feet of Jurisdictional Tributaries.

The remainder of the subject site was found to be “Non-Wetland or Non-Jurisdictional Waters of the US” and thus not subject to the provisions of the Clean Water Act and associated USACE Permitting Program.

This report includes all the necessary evaluation forms as defined by the USACE to determine the Jurisdictional Nature of the water features on site. In order for the report to be considered “final”, the client will need to deliver this report to the USACE and request an Approved Jurisdictional Determination. *Until approval by the USACE, this document is considered draft and preliminary.*

Attached to this report are aerial and site photographs which depict the project site conditions.

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President
SMC Consulting, Inc.

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City of Magnolia - 44 Acre Tract

FM 149

Magnolia, TX 77354

Inquiry Number: 6680305.5

September 28, 2021

The EDR Aerial Photo Decade Package



6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

09/28/21

Site Name:

City of Magnolia - 44 Acre Trac
FM 149
Magnolia, TX 77354
EDR Inquiry # 6680305.5

Client Name:

SMC Consulting, Inc
3418 Pickering Lane
Pearland, TX 77584
Contact: Steve Mcelyea



Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

<u>Year</u>	<u>Scale</u>	<u>Details</u>	<u>Source</u>
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
1995	1"=500'	Acquisition Date: January 14, 1995	USGS/DOQQ
1983	1"=500'	Flight Date: January 29, 1983	USDA
1979	1"=500'	Flight Date: March 05, 1979	USDA
1968	1"=500'	Flight Date: December 15, 1968	USDA
1952	1"=500'	Flight Date: October 11, 1952	USDA
1940	1"=500'	Flight Date: October 19, 1940	USDA
1938	1"=500'	Flight Date: April 12, 1938	USDA

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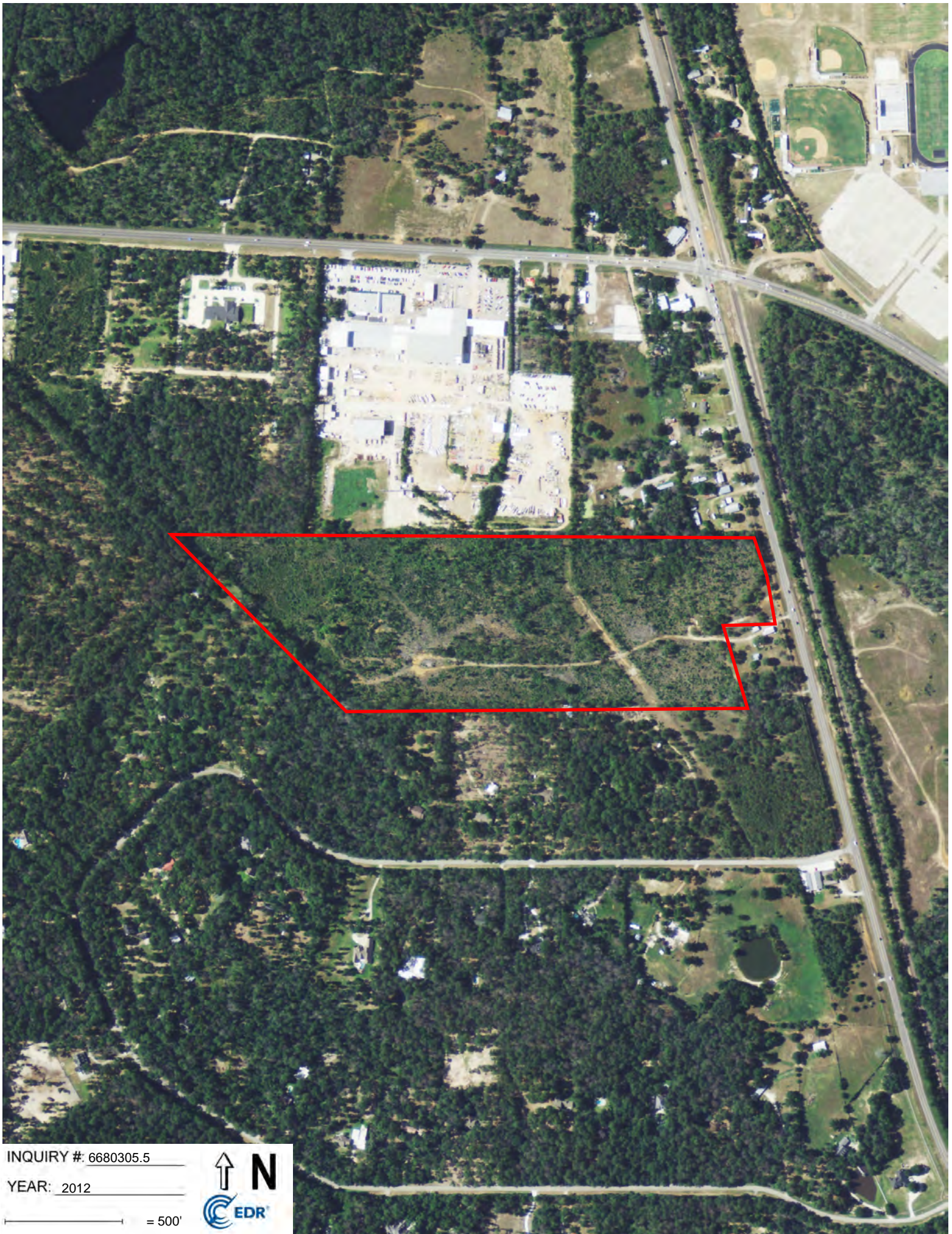


INQUIRY #: 6680305.5

YEAR: 2016

— = 500'





INQUIRY #: 6680305.5

YEAR: 2012

— = 500'





INQUIRY #: 6680305.5

YEAR: 2006

— = 500'





INQUIRY #: 6680305.5

YEAR: 1995

— = 500'





INQUIRY #: 6680305.5

YEAR: 1983

— = 500'





INQUIRY #: 6680305.5

YEAR: 1979

— = 500'





INQUIRY #: 6680305.5

YEAR: 1968

— = 500'



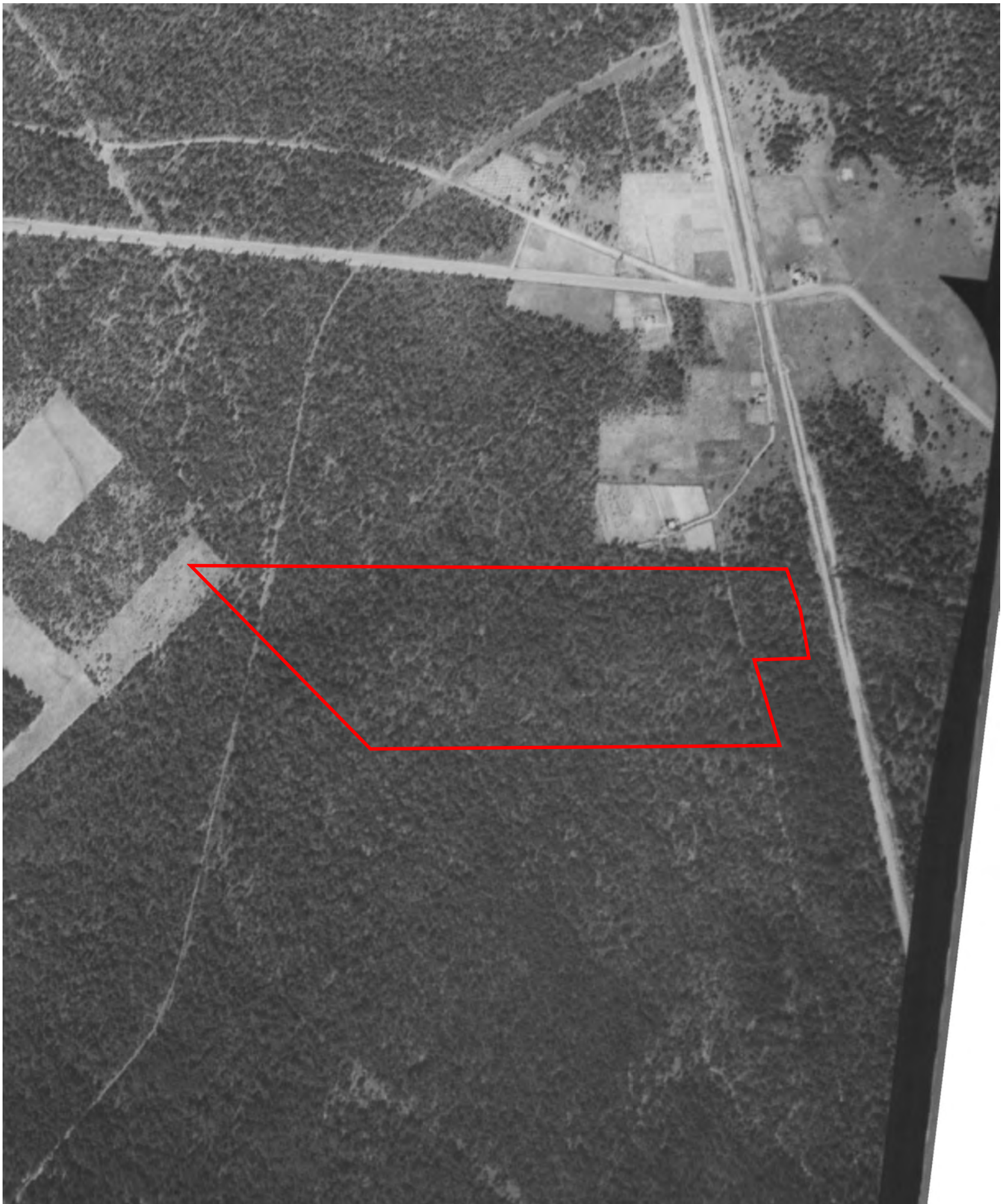


INQUIRY #: 6680305.5

YEAR: 1952

— = 500'





INQUIRY #: 6680305.5
YEAR: 1940

↑ N
CEDR

— = 500'



INQUIRY #: 6680305.5

YEAR: 1938

— = 500'




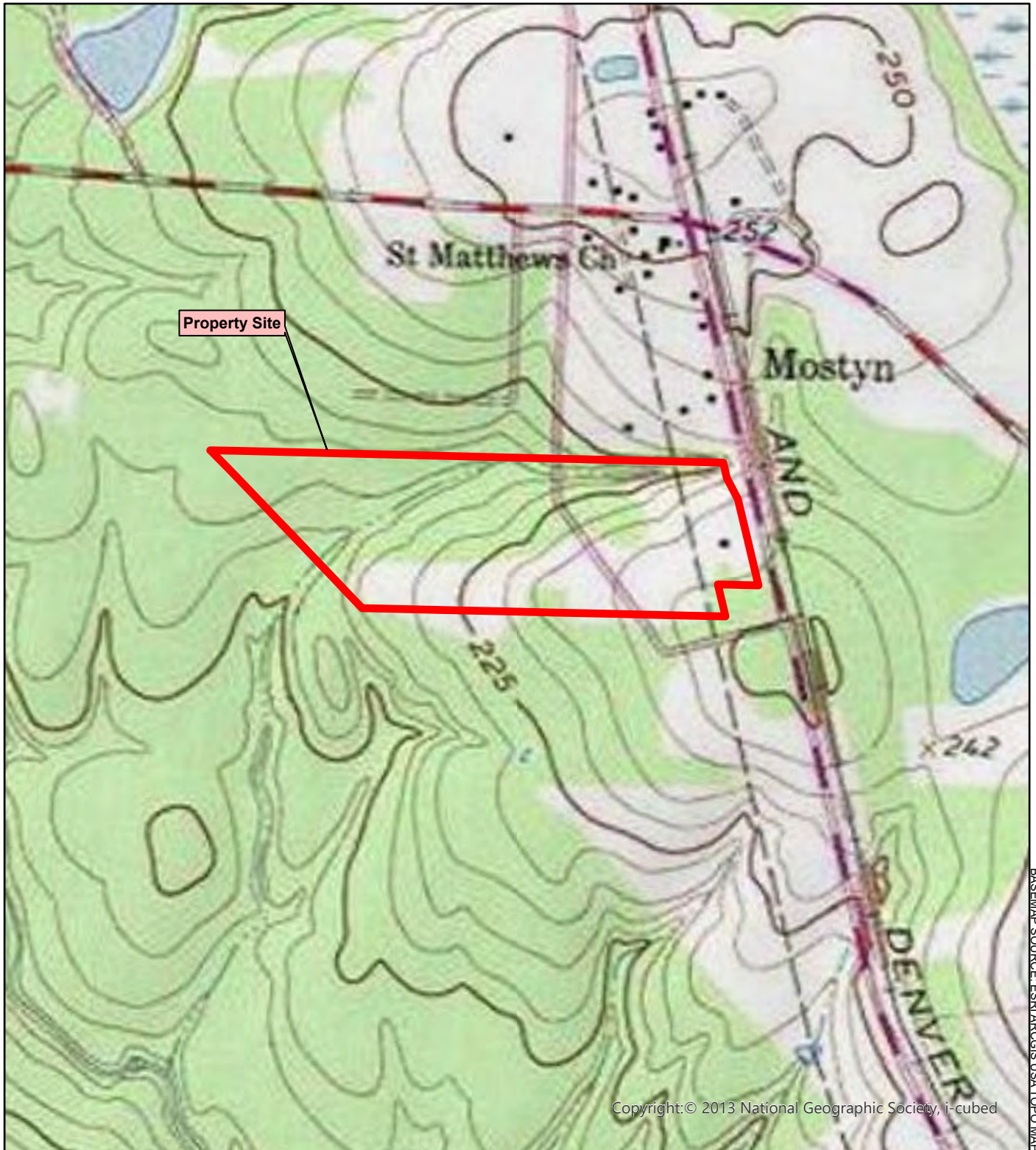


BASEMAP SOURCE: ESRI ARCGIS ONLINE WORLD STREET MAP

★ Property Site



	<p>FIGURE 1</p>	<p>SMC 21104 City of Magnolia 45 ac. Magnolia, Montgomery County, Texas Delineation of Waters of the U.S.</p>	
	<p>VICINITY MAP</p>	<p>Map Revised: 9/28/2021</p>	<p>Project No.: SMC 21104</p>



BASEMAP SOURCE: ESRI ARCGIS USA TOPO MAP

 Project Boundary

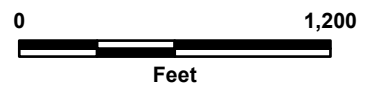


FIGURE 2

USGS TOPOGRAPHIC MAP

**SMC 21104 City of Magnolia 45 ac.
Magnolia, Montgomery County, Texas
Delineation of Waters of the U.S.**

Map Revised: 9/28/2021 | Project No.: SMC 21104 | GIS Analyst: TRF

Total Acreages
Wetlands - 0 ac
Streams - 0.284 ac
Man-made Ditches - 0.14 ac



BASEMAP SOURCE: ESRI/ARCIS ONLINE WORLD STREET MAP

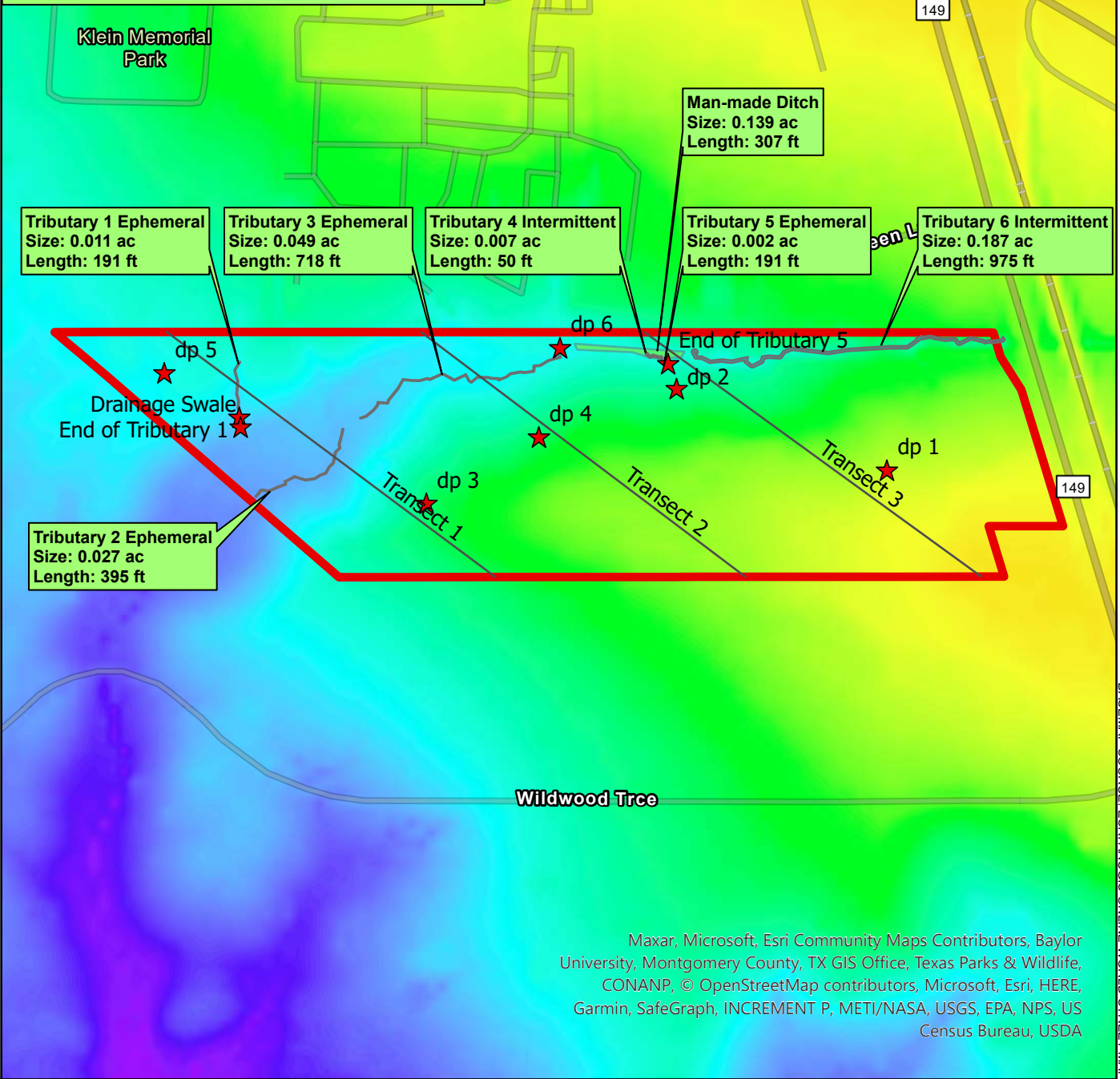
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- Approximate Project Boundary
- ★ Datapoints
- Man-made Ditch
- Streams
- Transects



	FIGURE 3	SMC 21104 City of Magnolia 45 ac.	
	DELINEATION MAP	Magnolia, Montgomery County, Texas	
		Delineation of Waters of the U.S.	
		Map Revised: 10/1/2021	Project No.: SMC 21104
		GIS Analyst: TRF	

Total Acreages
Wetlands - 0 ac
Streams - 0.284 ac
Man-made Ditches - 0.14 ac



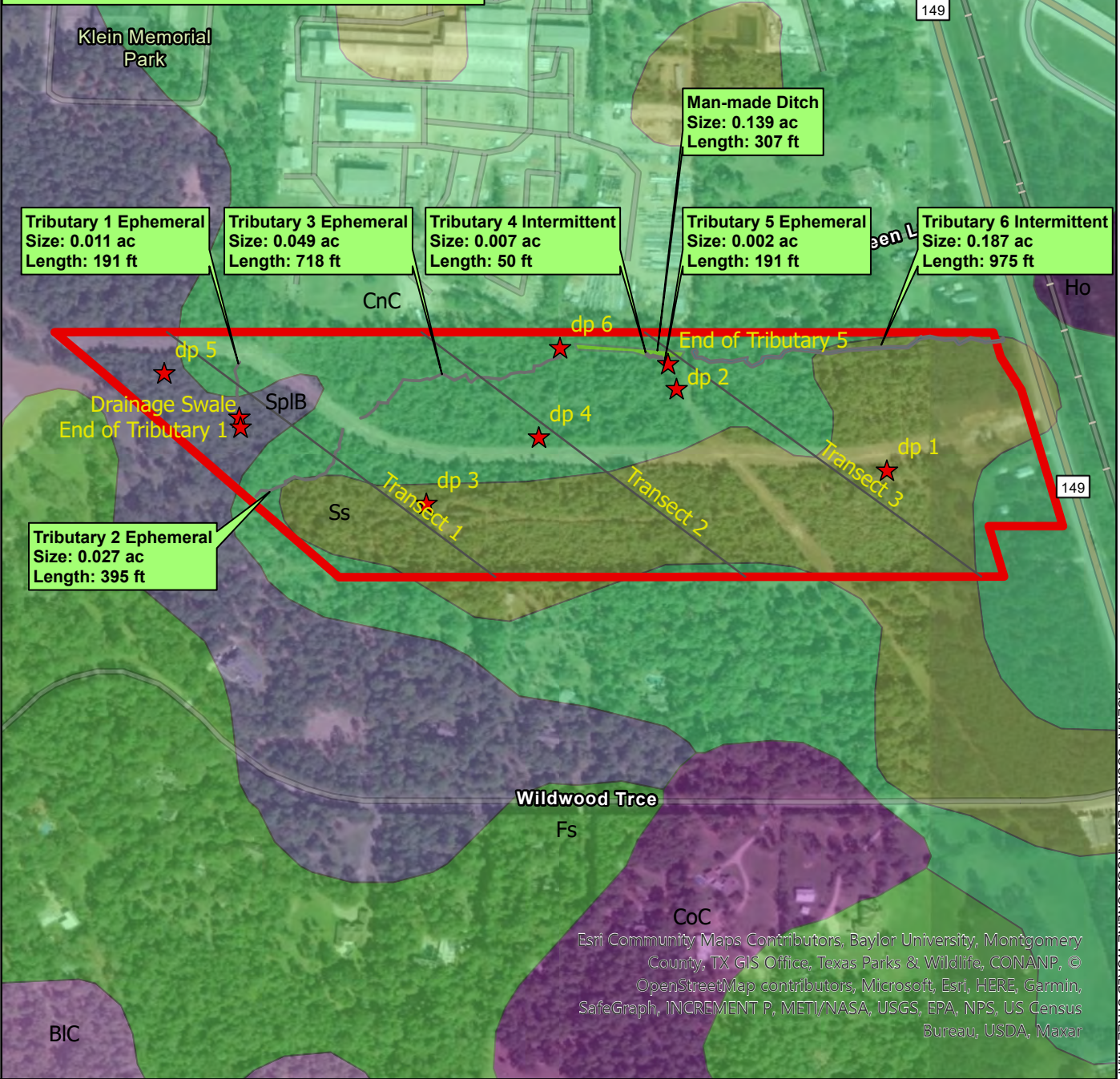
BASEMAP SOURCE: ESRI/ARCIS ONLINE WORLD STREET MAP

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USGS LiDAR DEM Data Elevation (ft) 	Approximate Project Boundary Datapoints Man-made Ditch	Streams Transects	

	FIGURE 4	SMC 21104 City of Magnolia 45 ac. Magnolia, Montgomery County, Texas Delineation of Waters of the U.S.	
	LIDAR DEM MAP	Map Revised: 10/1/2021	Project No.: SMC 21104

Total Acreages
Wetlands - 0 ac
Streams - 0.284 ac
Man-made Ditches - 0.14 ac



BASEMAP SOURCE: ESRI/ARCIS ONLINE WORLD STREET MAP

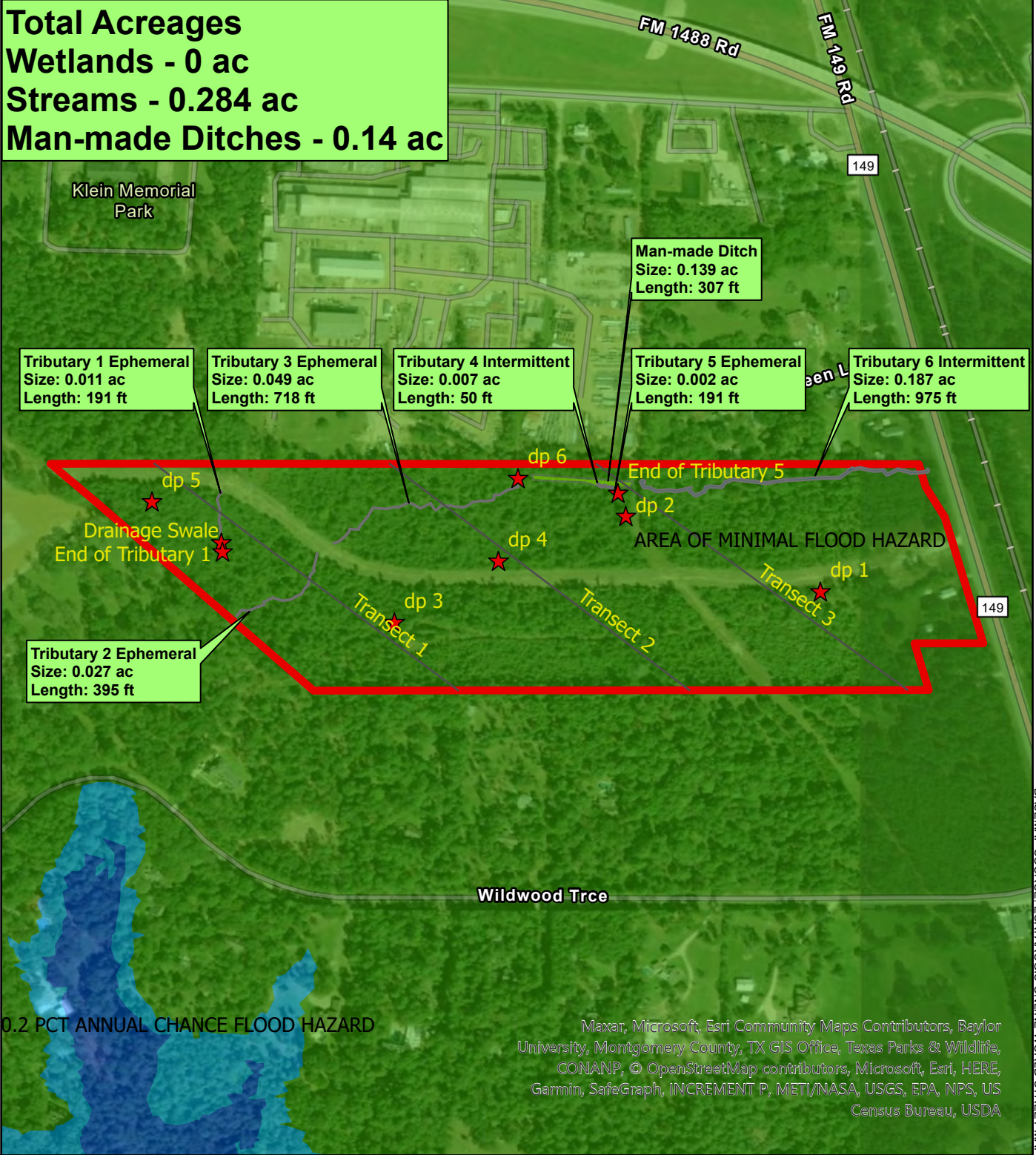
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- | | | |
|-----------|------------------------------|----------------|
| Soil Type | Ho | Man-made Ditch |
| BIC | SplB | Streams |
| CnC | Ss | Transects |
| CoC | Approximate Project Boundary | |
| Fs | Datapoints | |



	FIGURE 5 NRCS SOILS MAP	SMC 21104 City of Magnolia 45 ac. Magnolia, Montgomery County, Texas Delineation of Waters of the U.S.	
		Map Revised: 10/1/2021	Project No.: SMC 21104

Total Acreages
Wetlands - 0 ac
Streams - 0.284 ac
Man-made Ditches - 0.14 ac



BASEMAP SOURCE: ESRI/ARCIS ONLINE WORLD STREET MAP

- Flood Hazard Zone
- 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- AREA OF MINIMAL FLOOD HAZARD
- FLOODWAY
- Approximate Project Boundary

- ★ Datapoints
- Man-made Ditch
- Streams
- Transects



	FIGURE 6	SMC 21104 City of Magnolia 45 ac.	
	FEMA FLOOD MAP	Magnolia, Montgomery County, Texas	
		Delineation of Waters of the U.S.	
		Map Revised: 10/1/2021	Project No.: SMC 21104
		GIS Analyst: TRF	

Total Acreages
Wetlands - 0 ac
Streams - 0.284 ac
Man-made Ditches - 0.14 ac



BASEMAP SOURCE: ESRI/ARC GIS ONLINE WORLD STREET MAP

NWI Features	Man-made Ditch	
Approximate Project Boundary	Streams	
Datapoints	Transects	0 1,300 Feet

	FIGURE 7 NATIONAL WETLANDS INVENTORY MAP	SMC 21104 City of Magnolia 45 ac. Magnolia, Montgomery County, Texas Delineation of Waters of the U.S.	
		Map Revised: 10/1/2021	Project No.: SMC 21104



1 : ROADWAY/UTILITY
CLEARING ON SITE



2 : EAST EDGE OF SITE
LOOK. NORTH



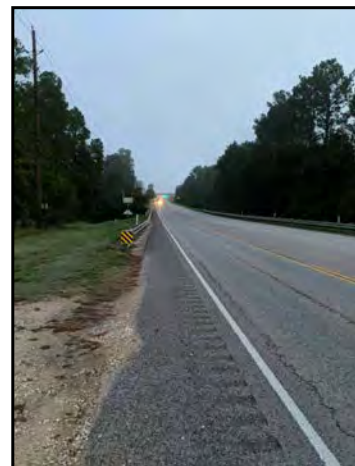
3 : EAST EDGE OF SITE
LOOK. WEST



4 : EAST EDGE OF SITE
LOOK. SW



5 : LOOK. SOUTH
ALONG EAST EDGE OF SITE



6 : LOOKING NORTH
ALONG EAST EDGE OF SITE



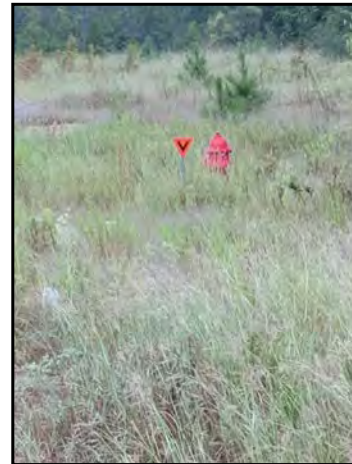
7 : LOOKING EAST FROM
EAST EDGE OF SITE -
HIGHWAY 149



8 : HOUSE IN SE CORNER
OF SITE



9 : TYP. VEG. EAST PART
OF SITE



10 : FIRE HYDRANT ON
SITE



11 : WATER LINE MARKER
- EAST EDGE OF SITE



12 : LEFT OVER PIPE ON
SITE



13 : TYP. VEG. EAST PART OF SITE



14 : MANHOLE - EAST PART OF SITE



15 : HOUSEHOLD TRASH ON SITE



16 : TIRES ON SITE



17 : TYP. SOIL SAMPLE



18 : TYPICAL SOIL SAMPLE



19 : PIPELINE STATION ON SITE



20 : PIPELINE ON SITE



21 : LOOKING ACROSS PIPELINE ON SITE



22 : LOOK. NORTH ALONG PIPELINE ON SITE



23 : SITE VEG.



24 : TYP. SITE VEG.



25 : LOOKING DOWN
ROAD/UTILITY CLEARING ON
SITE



26 : DENSE SITE
VEGETATION



27 : TYP. SOIL SAMPLING



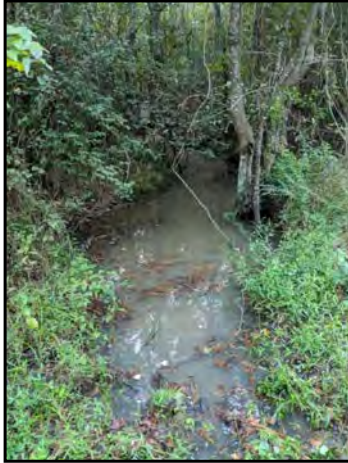
28 : TYP. UPLAND SOIL



29 : MISC. VEG. NORTH
PART OF SITE



30 : CREEK - NORTHEAST
PART OF SITE



31 : CREEK NORTH EDGE
OF SITE



32 : LOOK. NORTH FROM
NORTH PROP./PIPELINE
BOUNDARY



33 : DENSE VEG. NORTH
PART OF SITE



34 : LOOK. SOUTH ALONG
PIPELINE FROM NORTH
EDGE OF SITE



35 : LOOK. EAST ALONG
CREEK FROM PIPELINE -
NORTH EDGE OF SITE



36 : SITE VEGETATION -
SOUTH PORTION



37 : DENSE SITE VEG.
SOUTH PORTIO



38 : DEER STAND ON SITE
- SOUTH PORTIO



39 : LOOK. EAST FROM
DEER STAND AREA



40 : TYP. VEG. NEAR DEER
STAND



41 : SOIL SAMPLE NEAR
DEER STAND AREA



42 : PINE TREE VEG. NEAR
DEER STAND AREA - SOUTH
PART OF SITE



43 : SOIL SAMPLE



44 : DRAINAGE PATHWAY
ON SITE



45 : LOOK. WEST ALONG
ROADWAY/UTILITY CLEARING
- CENTER OF SITE



46 : LOOK. EAST ALONG
ROADWAY/UTILITY
CLEARING - CENTER OF
SITE



47 : ROADWAY/UTILITY
CLEARING - WEST PART OF
SITE



48 : AUDUBON
DEVELOPMENT - WEST OF
NW EDGE OF SIE



49 : LOOK. NORTH FROM
ROADWAY/UTILITY CLEARING
- NW PART OF SITE



50 : TYP. VEG. IN
DRAINAGE PATHWAY ON
SITE



51 : DRAINAGE TRIBUTARY
ON SITE



52 : DRAINAGE TRIBUTARY
- SOUTH PART OF SITE



53 : SOIL SAMPLING -
NEAR DRAINAGE TRIBUTARY
- SOUTH PART OF SITE



54 : DRAINAGE PATHWAY -
SOUTH EDGE OF SITE



55 : DRAINAGE PATHWAY -
NORTH PART OF SITE



56 : PONDED WATER -
NORTH CENTRAL DRAINAGE
PATHWAY



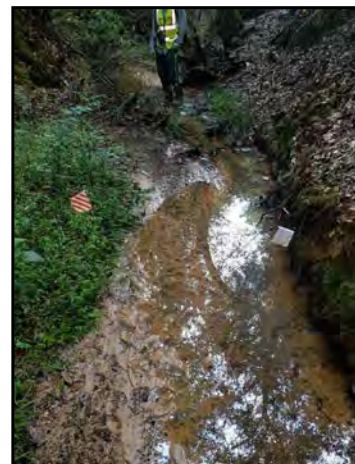
57 : PONDED WATER -
NORTH CENTRAL DRAINAGE
PATHWAY



58 : LOOK. ACROSS
DRAINAGE PATHWAY



59 : NORTH EDGE OF SITE
- DISCHARGE FROM ADJ.
PROPERTY



60 : DRAINAGE CHANNEL -
NORTH CENTRAL PART OF
SITE



61 : NORTHERN TRIBUTARY



62 : METAL/JUNK ALONG
CREEK - NE PART OF SITE



63 : WOOD/METAL IN
CHANNEL - NORTH EDGE
OF SITE



64 : OLD METAL
REFRIGERATORS / TRASH IN
CREEK - NORTH EDGE OF
SITE



65 : GLASS/CANS/TRASH IN
CREEK - NORTH EDGE OF
SITE



66 : CREEK - NORTHEAST
PART OF SITE



67 : HOUSING - NORTH OF
NE CORNER OF SITE



68 : HOUSING - NORTH OF
NE PART OF SITE - LOOK
SOUTH



69 : HOUSING NORTH OF
SITE



70 : OFFICE BUILDING
NORTH OF SITE, SOUTH OF
FM 1488



71 : FUNERAL HOME -
NORTH OF SITE, SOUTH OF
FM 1488



72 : FUNERAL HOME
ALONG FM 1488 - NORTH
OF SITE



73 : FUNERAL HOME -
NORTH OF SITE, SOUTH OF
FM 1488



74 : CEMETERY NORTH OF
SITE



75 : CANRIG - DRILLING
EQUIPMENT COMPANY -
NORTH OF SITE



76 : PARKING LOT FOR
CANRIG - NORTH OF SITE



77 : TYP. BUILDINGS IN
CANRIG COMPLEX - NORTH
OF SITE



78 : PARKING
LOT/BUILDINGS - CANRIG
FACILITY, NORTH OF SITE

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: City of Magnolia 45 ac. County: Montgomery Sampling Date: September 30, 2021
 Applicant/Owner: City of Magnolia State: TX Sample Point: dp 1
 Investigator(s): T. Freiday and S. McElyea Section, Township, Range: Magnolia
 Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): Flat Slope (%): 0-5%
 Subregion (LRR or MLRA): P Lat: 30.223200 Long: -95.692101 Datum: WGS 1984
 Soil Map Unit Name: Conroe soils NWI Classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) Yes (if no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation No, Soil No, or Hydrology No 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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	

Remarks:
 This point was determined not to be within a wetland due to the lack of hydric soils and wetland hydrology.
 The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:		<u>Secondary Indicators (minimum of two required)</u>
<u>Primary Indicators (minimum of one is required; check all that apply)</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) (LRR U)	<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> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </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) (LRR T, U)

Field Observations:				Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Surface Water Present?	Yes <u> </u> No <u>X</u>	Depth (inches):	<u>N/A</u>	
Water Table Present?	Yes <u> </u> No <u>X</u>	Depth (inches):	<u>>20</u>	
Saturation Present? (includes capillary fringe)	Yes <u> </u> No <u>X</u>	Depth (inches):	<u>>20</u>	

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

Remarks:
 No positive indication of wetland hydrology was observed.

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

Sampling Point: dp 1

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. <i>Loblolly Pine (Pinus taeda)</i>	20	Yes	FAC
2. <i>Sweet Gum (Liquidambar styraciflua)</i>	10	Yes	FAC
3. <i>Southern Red Oak (Quercus falcata)</i>	5	No	FACU
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
	35 = Total Cover		
	50% of total cover: 17.5	20% of total cover: 7	
Sapling Stratum (Plot size: 30 ft.)			
1. <i>None Observed</i>	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
	_____ = Total Cover		
	50% of total cover: _____	20% of total cover: _____	
Shrub Stratum (Plot size: 30 ft.)			
1. <i>Yaupon (Ilex vomitoria)</i>	20	Yes	FAC
2. <i>Water Oak (Quercus nigra)</i>	5	Yes	FAC
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
	25 = Total Cover		
	50% of total cover: 12.5	20% of total cover: 5	
Herb Stratum (Plot size: 30 ft.)			
1. <i>Windmill Grass (Chloris cucullata)</i>	15	Yes	UPL
2. <i>Silverleaf Nightshade (Solanum elaeagnifolium)</i>	10	No	UPL
3. <i>Crabgrass (Digitaria sanguinalis)</i>	20	Yes	FACU
4. <i>Soft Goldaster (Bradburia pilosa)</i>	10	No	UPL
5. <i>Round-pod St. John's Wort (Hypericum cistifolium)</i>	15	Yes	FACW
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
	70 = Total Cover		
	50% of total cover: 35	20% of total cover: 14	
Woody Vine Stratum (Plot size: 30 ft.)			
1. <i>None Observed</i>	_____	_____	_____
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: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71% (A/B)

Prevalence Index Worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>15</u>	x 2 = <u>30</u>
FAC species <u>55</u>	x 3 = <u>165</u>
FACU species <u>25</u>	x 4 = <u>100</u>
UPL species <u>35</u>	x 5 = <u>175</u>
Column Totals: <u>130</u> (A)	<u>470</u> (B)

Prevalence Index = B/A = 3.62

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤ 3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

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

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

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

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes No

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	7.5 YR 3/3	100	None	—	—	—	Sandy Loam	
2-18	7.5 YR 5/6	90	5 YR 4/6	10	C	M	Sandy Loam	

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

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 153B)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soil Present? Yes _____ No X _____</p>
--	---

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: City of Magnolia 45 ac. County: Montgomery Sampling Date: September 30, 2021
 Applicant/Owner: City of Magnolia State: TX Sample Point: dp 2
 Investigator(s): T. Freiday and S. McElyea Section, Township, Range: Magnolia
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 0-5%
 Subregion (LRR or MLRA): P Lat: 30.224001 Long: -95.694000 Datum: WGS 1984
 Soil Map Unit Name: Conroe gravelly loamy fine sand, 0 to 5 percent slopes NWI Classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) Yes (if no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation No, Soil No, or Hydrology No 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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:	Secondary Indicators (minimum of two required)
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<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> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots(C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations:

Surface Water Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u>N/A</u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Water Table Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u>>20</u>	
Saturation Present? Yes <u> </u> No <u>X</u> (includes capillary fringe)	Depth (inches): <u>>20</u>	

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

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: dp 2

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. <u>Water Oak (Quercus nigra)</u>	30	Yes	FAC
2. <u>Loblolly Pine (Pinus taeda)</u>	30	Yes	FAC
3. <u>Sweet Gum (Liquidambar styraciflua)</u>	15	No	FAC
4. <u>Chinese Tallow (Triadica sebifera)</u>	5	No	FAC
5. _____	_____	_____	_____
6. _____	_____	_____	_____
	80 = Total Cover		
50% of total cover:	40	20% of total cover:	16
Sapling Stratum (Plot size: 30 ft.)			
1. <u>None Observed</u>	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
	_____ = Total Cover		
50% of total cover:	_____	20% of total cover:	_____
Shrub Stratum (Plot size: 30 ft.)			
1. <u>Yaupon (Ilex vomitoria)</u>	60	Yes	FAC
2. <u>American Beautyberry (Callicarpa americana)</u>	15	Yes	FACU
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
	75 = Total Cover		
50% of total cover:	37.5	20% of total cover:	15
Herb Stratum (Plot size: 30 ft.)			
1. <u>Southern Dewberry (Rubus trivialis)</u>	5	Yes	FACU
2. <u>Japanese Honeysuckle (Lonicera japonica)</u>	5	Yes	FACU
3. <u>Slender Wood Oats (Chasmanthium sessilifl)</u>	5	Yes	FACU
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
	15 = Total Cover		
50% of total cover:	7.5	20% of total cover:	3
Woody Vine Stratum (Plot size: 30 ft.)			
1. <u>Round-leaf Greenbriar (Smilax rotundifolia)</u>	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: 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 <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>145</u>	x 3 = <u>435</u>
FACU species <u>30</u>	x 4 = <u>120</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>175</u> (A)	<u>555</u> (B)

Prevalence Index = B/A = 3.17

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤ 3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

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

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

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

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes No X

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC- or drier).

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	7.5 YR 4/4	100	None	—	—	—	Sandy Loam	
6-18	7.5 YR 6/4	95	7.5 YR 5/6	5	C	M	Sandy Loam	

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

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 153B)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soil Present? Yes _____ No X _____</p>
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Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: City of Magnolia 45 ac. County: Montgomery Sampling Date: September 30, 2021
 Applicant/Owner: City of Magnolia State: TX Sample Point: dp 3
 Investigator(s): T. Freiday and S. McElyea Section, Township, Range: Magnolia
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 0-5%
 Subregion (LRR or MLRA): P Lat: 30.222900 Long: -95.696297 Datum: WGS 1984
 Soil Map Unit Name: Conroe soils NWI Classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) Yes (if no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation No, Soil No, or Hydrology No 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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	

Remarks:

This point was determined not to be within a wetland due to the lack of hydric soils and wetland hydrology.

HYDROLOGY

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

Field Observations:

Surface Water Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u>N/A</u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Water Table Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u>>20</u>	
Saturation Present? Yes <u> </u> No <u>X</u> (includes capillary fringe)	Depth (inches): <u>>20</u>	

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

Remarks:

No positive indication of wetland hydrology was observed.

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1	7.5 YR 4/3	100	None	—	—	—	Sandy Clay Loam	
1-18	7.5 YR 4/4	70					Sandy Clay Loam	Dual Matrix
	7.5 YR 5/8	25	7.5 YR 7/3	5	C	M	Sandy Clay Loam	

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

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 153B)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soil Present? Yes _____ No X _____</p>
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Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: City of Magnolia 45 ac. County: Montgomery Sampling Date: September 30, 2021
 Applicant/Owner: City of Magnolia State: TX Sample Point: dp 4
 Investigator(s): T. Freiday and S. McElyea Section, Township, Range: Magnolia
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 0-5%
 Subregion (LRR or MLRA): P Lat: 30.223499 Long: -95.695297 Datum: WGS 1984
 Soil Map Unit Name: Conroe gravelly loamy fine sand, 0 to 5 percent slopes NWI Classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) Yes (if no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation No, Soil No, or Hydrology No 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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	

Remarks:
 This point was determined not to be within a wetland due to the lack of hydric soils and wetland hydrology.

HYDROLOGY

Wetland hydrology Indicators:	Secondary Indicators (minimum of two required)
<u> </u> Surface Water (A1)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<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> Aquatic Fauna (B13)	<u> </u> Sphagnum moss (D8) (LRR T, U)
<u> </u> Marl Deposits (B15) (LRR U)	
<u> </u> Hydrogen Sulfide Odor (C1)	
<u> </u> Oxidized Rhizospheres on Living Roots(C3)	
<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Recent Iron Reduction in Tilled Soils (C6)	
<u> </u> Thin Muck Surface (C7)	
<u> </u> Other (Explain in Remarks)	

Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>N/A</u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>>20</u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>>20</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 No positive indication of wetland hydrology was observed.

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. <i>Water Oak (Quercus nigra)</i>	50	Yes	FAC
2. <i>Sweet Gum (Liquidambar styraciflua)</i>	30	Yes	FAC
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
	80 = Total Cover		
	50% of total cover: 40		20% of total cover: 16
Sapling Stratum (Plot size: 30 ft.)			
1. <i>None Observed</i>	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
	_____ = Total Cover		
	50% of total cover: _____		20% of total cover: _____
Shrub Stratum (Plot size: 30 ft.)			
1. <i>Yaupon (Ilex vomitoria)</i>	75	Yes	FAC
2. <i>American Beautyberry (Callicarpa americana)</i>	5	No	ACU
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
	80 = Total Cover		
	50% of total cover: 40		20% of total cover: 16
Herb Stratum (Plot size: 30 ft.)			
1. <i>Slender Wood Oats (Chasmanthium sessilifl)</i>	10	Yes	FAC
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
	10 = Total Cover		
	50% of total cover: 5		20% of total cover: 2
Woody Vine Stratum (Plot size: 30 ft.)			
1. <i>None Observed</i>	_____	_____	_____
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 <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>165</u>	x 3 = <u>495</u>
FACU species <u>5</u>	x 4 = <u>20</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>170</u> (A)	<u>515</u> (B)

Prevalence Index = B/A = 3.03

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤ 3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

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

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

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

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes No

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	7.5 YR 4/4	100	None	—	—	—	Sandy Loam	
12-18	7.5 YR 4/4	40					Silt Loam	Dual matrix
	7.5 YR 5/6	60					Silt Loam	

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

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 153B)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soil Present? Yes _____ No X _____</p>
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Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: City of Magnolia 45 ac. County: Montgomery Sampling Date: September 30, 2021
 Applicant/Owner: City of Magnolia State: TX Sample Point: dp 5
 Investigator(s): T. Freiday and S. McElyea Section, Township, Range: Magnolia
 Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 0-5%
 Subregion (LRR or MLRA): P Lat: 30.224100 Long: -95.698700 Datum: WGS 1984
 Soil Map Unit Name: Splendora fine sandy loam, 0 to 2 percent slopes NWI Classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) Yes (if no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation No, Soil No, or Hydrology No 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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	

Remarks:

This point was determined not to be within a wetland due to the lack of hydric soils and wetland hydrology.

HYDROLOGY

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

Field Observations:

Surface Water Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u>N/A</u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Water Table Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u>>20</u>	
Saturation Present? (includes capillary fringe) Yes <u> </u> No <u>X</u>	Depth (inches): <u>>20</u>	

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

Remarks:

No positive indication of wetland hydrology was observed.

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. <u>Water Oak (Quercus nigra)</u>	30	Yes	FAC
2. <u>Loblolly Pine (Pinus taeda)</u>	30	Yes	FAC
3. <u>Sweet Gum (Liquidambar styraciflua)</u>	15	No	FAC
4. <u>Chinese Tallow (Triadica sebifera)</u>	5	No	FAC
5. _____	_____	_____	_____
6. _____	_____	_____	_____
80 = Total Cover			
50% of total cover: 40		20% of total cover: 16	
Sapling Stratum (Plot size: 30 ft.)			
1. <u>None Observed</u>	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____		20% of total cover: _____	
Shrub Stratum (Plot size: 30 ft.)			
1. <u>Ilex vomitoria</u>	60	Yes	FAC
2. <u>Callicarpa americana</u>	15	Yes	FACU
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
75 = Total Cover			
50% of total cover: 37.5		20% of total cover: 15	
Herb Stratum (Plot size: 30 ft.)			
1. <u>Southern Dewberry (Rubus trivialis)</u>	5	Yes	FACU
2. <u>Japanese Honeysuckle (Lonicera japonica)</u>	5	Yes	FACU
3. <u>Slender Wood Oats (Chasmanthium sessiliflorum)</u>	5	Yes	FAC
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
15 = Total Cover			
50% of total cover: 7.5		20% of total cover: 3	
Woody Vine Stratum (Plot size: 30 ft.)			
1. <u>Round-leaved Greenbriar (Smilax rotundifolia)</u>	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: 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 <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>150</u>	x 3 = <u>450</u>
FACU species <u>25</u>	x 4 = <u>100</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>175</u> (A)	<u>550</u> (B)

Prevalence Index = B/A = 3.14

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

 3 - Prevalence Index is ≤ 3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

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

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

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

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes No

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	7.5 YR 4/4	100	None	—	—	—	Sandy Loam	
6-18	7.5 YR 6/4	95	7.5 YR 5/6	5	C	M	Sandy Loam	

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

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 153B)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

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

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soil Present? Yes _____ No X _____</p>
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Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: City of Magnolia 45 ac. County: Montgomery Sampling Date: September 30, 2021
 Applicant/Owner: City of Magnolia State: TX Sample Point: dp 6
 Investigator(s): T. Freiday and S. McElyea Section, Township, Range: Magnolia
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-5%
 Subregion (LRR or MLRA): P Lat: 30.224400 Long: -95.695099 Datum: WGS 1984
 Soil Map Unit Name: Conroe gravelly loamy fine sand, 0 to 5 percent slopes NWI Classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) Yes (if no, explain in Remarks.)
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation No, Soil No, or Hydrology No 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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks:

This point was determined not to be within a wetland due to the lack of hydric soils.

HYDROLOGY

Wetland hydrology Indicators:	Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<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) (LRR T, U)

Field Observations:

Surface Water Present? Yes <u>X</u> No <u> </u>	Depth (inches): <u>2</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Water Table Present? Yes <u>X</u> No <u> </u>	Depth (inches): <u>0</u>	
Saturation Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u>>20</u>	

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

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. <i>Black Willow (Salix nigra)</i>	60	Yes	OBL
2. <i>Chinese Tallow (Triadica sebifera)</i>	30	Yes	FAC
3. <i>Sweet Gum (Liquidambar styraciflua)</i>	5	No	FAC
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
			95 = Total Cover
50% of total cover:		47.5	20% of total cover: 19
Sapling Stratum (Plot size: 30 ft.)			
1. <i>None Observed</i>	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
			= Total Cover
50% of total cover:		_____	20% of total cover: _____
Shrub Stratum (Plot size: 30 ft.)			
1. <i>Chinese Privet (Ligustrum sinense)</i>	10	Yes	FAC
2. <i>Chinese Tallow (Triadica sebifera)</i>	10	Yes	FAC
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
			20 = Total Cover
50% of total cover:		10	20% of total cover: 4
Herb Stratum (Plot size: 30 ft.)			
1. <i>Maidencane (Panicum hemitomon)</i>	70	Yes	OBL
2. <i>Stinging Nettle (Urtica chamaedryoides)</i>	10	No	FAC
3. <i>Water Smartweed (Persicaria hydropiperoides)</i>	10	No	OBL
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
			90 = Total Cover
50% of total cover:		45	20% of total cover: 18
Woody Vine Stratum (Plot size: 30 ft.)			
1. <i>None Observed</i>	_____	_____	_____
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 <u>140</u>	x 1 = <u>140</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>65</u>	x 3 = <u>195</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>205</u> (A)	<u>335</u> (B)

Prevalence Index = B/A = 1.63

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤ 3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

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

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

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

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes No

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

