

Exhibit Y. Bratton Family Farms Preliminary Geotechnical Engineering Report





Professional Service Industries, Inc.
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February 14, 2018

One Acadiana
804 East St. Mary Blvd.
Lafayette, LA 70503

Bratton Family Farms Preliminary Geotechnical Engineering Report

Attn: Mr. Zach Hager
Phone: (337) 408-3669
Email: zach@oneacadiana.org

Re: Preliminary Geotechnical Site Characterization Report
Bratton Family Farms Site
Crowley, Louisiana
PSI Project No. 02591350

Dear Mr. Hager:

Professional Service Industries, Inc. (PSI) is pleased to submit our Preliminary Geotechnical Site Characterization Study for the above-referenced site. This report presents the results of our field exploration and laboratory testing, as well as information regarding the compatibility of the subject site with industrial development, suitability of the soils for building foundations and on-site roadways, requirements for soil augmentation for construction of a typical 100,000 square foot industrial manufacturing building, and depth of groundwater.

We appreciate the opportunity to perform this Preliminary Geotechnical Site Characterization Study. If you have any questions pertaining to this report, please contact our office at (225) 293-8378. We look forward to working with you and your organization on this and future projects.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

David F. Loyless
Project Manager

Reda M. Bakeer, PhD, PE
Chief Engineer

Name: Reda M. Bakeer, PhD, PE
Date: February 14, 2018
License No.: 27123
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ISSUANCE OF A PERMIT.





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PROJECT INFORMATION

PROJECT AUTHORIZATION

Professional Service Industries, Inc. (PSI) has completed a Preliminary Geotechnical Site Characterization Study for the Bratton Family Farms Site located in Crowley, Louisiana. Our services were performed in general accordance with PSI Proposal No. 224416, dated October 4, 2017. Authorization was provided by Mr. Zach Hager of One Acadiana by signing PSI's proposal on November 16, 2017.

PROJECT DESCRIPTION

The primary objectives for this preliminary report are to provide general information regarding the general compatibility of the approximately 18-acre subject site with an industrial type development, suitability of the soils for building foundations and on-site roadways, requirements for subsoil augmentation for construction of a typical 100,000 square foot industrial manufacturing building, and the depth of groundwater at the time of the investigation. This general geotechnical site characterization report provides an initial baseline of the site subsurface conditions that will likely be encountered during future site development. However, as with any geotechnical investigation – and particularly in this case given the size of the subject site, differences in grades across the site, and the limited number of exploration locations – variations in the subsurface conditions may exist and should be expected between and away from the exploration locations. Additionally, there remains a distinct possibility that other conditions may exist within the boundaries of the site that were not encountered during the field exploration.

PSI was provided with Google Earth location files and site maps depicting the boundaries of the subject site. It is understood that the site could be developed as a petrochemical plant, and that it may include structures such as tanks, pipe racks, warehouses, and manufacturing buildings. However, no site or project specific data with regard to the proposed development or structures was available at the time of this preliminary report. It was requested that PSI perform a limited, preliminary assessment of the site, as the specific sizes, locations, and structural loads of future facilities, equipment, and other features have not been determined at this time. It was further requested that PSI provide the approximate load bearing capacity of a single vertical 14-inch square concrete pile, 14-inch diameter steel pipe pile, or other similar commonly-used geotechnical support system typically used for this type of construction.

Detailed loading information was not provided to PSI prior to the preparation of this report. Based on topographical information provided by the Client, as well as the approximate elevation data obtained from Google Earth, it appears that the present ground surface elevation is relatively flat across the site. Therefore, it is not anticipated that substantial new cut or fill operations will be required to reach design grades.

The preliminary geotechnical discussion presented in this report is based on the available project information and the subsurface materials described herein. The opinions and information presented in this report are preliminary in nature, are based on a limited geotechnical exploration, and should not be used for design or construction. If any of the information noted above is incorrect, please inform PSI in writing so that we may amend the comments and discussion presented in this report if appropriate and if desired by the Client.



PURPOSE AND SCOPE OF SERVICES

The purpose of this preliminary study was to explore the subsurface conditions at the site and prepare a geotechnical discussion for use in evaluation of the general suitability of the subject property for support of conventional spread footings and deep foundations elements. PSI's contracted scope of services included conducting one soil boring and one Cone Penetrometer Test (CPT) sounding, performing select laboratory testing on the samples obtained from the boring, and preparing this Preliminary Geotechnical Site Characterization Study Report. This report briefly outlines the laboratory testing procedures, presents available project information, describes the site and subsurface conditions, and offers preliminary geotechnical discussions and commentary. It should be noted that results of the analyses included in this report are based on the limited number of borings and CPT soundings performed at random and accessible locations within the approximately 18-acre property and that these values may not be representative of the entire site. They are intended to be used only for feasibility studies, planning, and cost estimating purposes and should not be used in any formal designs unless they are confirmed with a more comprehensive and project-specific geotechnical investigation.

It should be noted that a limited number of borings and soundings were conducted to evaluate the general subsoil conditions within the subject property. In view of this, and considering the size of the project site, some variations in subsoil conditions likely exist between and away from the boring/sounding locations. The geotechnical discussion provided in this preliminary report is based on the limited number of borings and soundings performed and may not apply to all parts of the site or to a particular structure. Additional borings should be performed within the footprint of each structure prior to design and construction in order to verify the subsoil conditions and develop specific geotechnical recommendations.

The scope of services did not include an environmental assessment for determining the presence or absence of wetland, or hazardous or toxic materials in the soil, surface water, groundwater, or air on, below, or around this site. Any statements in this report or on the boring logs regarding odors, colors, and unusual or suspicious items or conditions are strictly for informational purposes. Additionally, PSI's scope of services did not include environmental sampling or performing analytical testing of soil or groundwater samples.

PSI did not provide any service to investigate or detect the presence of moisture, mold, or other biological contaminants within the project area, or any service that was designed or intended to prevent or lower the risk of the occurrence or amplification of the same. The Client should be aware that mold is ubiquitous to the environment, with mold amplification occurring when building materials are impacted by moisture. The Client should also be aware that site conditions are outside of PSI's control, and that mold amplification will likely occur or continue to occur in the presence of moisture. As such, PSI cannot and shall not be held responsible for the occurrence or recurrence of mold amplification.

FIELD AND LABORATORY PROCEDURES

PSI's contracted scope of services included drilling one traditional rotary boring to a depth of approximately 25 feet and performing one CPT sounding to a depth of about 50 feet at random representative locations within the project site. The Boring/Sounding Location Plan, which is included in the Appendix and based on the latest Google Earth aerial imagery (dated January 2017), should be consulted for the approximate relative locations of the boring and sounding.



The boring and sounding locations and depths were selected by PSI and were located in the field by PSI personnel using a furnished site plan and handheld GPS equipment. The boring and sounding were performed using a Geoprobe 7822DT ATV drilling rig. Hollow-stem auger drilling techniques were used to advance the borehole. Samples were generally obtained continuously from the ground surface to a depth of about 10 feet, and at maximum intervals of five feet thereafter.

The soil boring was sampled using the Standard Penetration Test (ASTM D1586) and Shelby Tube samplers (ASTM D1587). The samples were identified according to boring number and depth, placed in polyethylene plastic wrapping to reduce moisture loss, and transported to PSI's laboratory in Baton Rouge, Louisiana. The CPT sounding was performed in general accordance with ASTM D5778.

All samples obtained during the field exploration were visually classified and evaluated by experienced geotechnical personnel upon arrival at the laboratory. Selected samples were tested in the laboratory to determine material properties for our evaluation. The geotechnical laboratory testing program included moisture content, Atterberg limits, percent passing the US Standard No. 200 sieve, and unconfined compressive strength testing. Additional estimates of unconfined compressive strength were obtained through the use of a hand penetrometer.

The geotechnical laboratory testing was conducted in general accordance with applicable ASTM procedures. The results of the laboratory tests are presented in the boring log in the Appendix. The samples which were not altered by laboratory testing will be retained for 60 days from the date of this report and will then be discarded.

SITE AND SUBSURFACE CONDITIONS

SITE LOCATION AND DESCRIPTION

The approximately 18-acre site is located on the north side of Interstate 10, approximately halfway between Tower Road (LA Highway 1111) and North Cherokee Drive in Crowley, Louisiana. The Latitude and Longitude near the center of the site are approximately N 30.23958° and W 92.37190°, respectively. At the time of PSI's field exploration, the property was covered with light vegetation and sparse trees. The property is generally bounded by Lisa Drive to the north, a private road (possibly an extension of Rues Lane) to the south, and undeveloped land to the east and west.

SITE GEOLOGY

The United States Geological Survey (USGS) maps the site as located within the Prairie Terraces Formation. This formation is generally characterized by clays and silts with some sands and gravel. It should be noted that due to the size of the site, variations in geological formations, and limited exploration locations, all of the characteristics of the Prairie Terraces Formation may not be reflected in the soil boring and CPT sounding performed as part of our limited investigation.

SUBSURFACE CONDITIONS

Based on the field observations and the results of the limited laboratory testing, the soils were classified and the boring log and CPT summary data report were developed. The boring log and CPT summary data report are included in the Appendix along with a key to the terms and symbols used on the log.



The soil boring (SB-1) generally encountered firm to stiff fat clay from the existing ground surface to a depth of approximately 13 feet, underlain by stiff lean clay to about 18 feet. Below this, firm fat clay extended to the termination of the boring at a depth of approximately 25 feet below the existing ground surface at the boring location. The CPT sounding (CPT-1) generally encountered soft to firm clays and/or silty clays within the upper four feet, followed by firm to stiff clays and/or silty clays to the maximum explored depth of about 50 feet below the existing ground surface at the sounding location.

The exploration indicates that the near-surface fat clay soils have a moderate to high shrink/swell potential which should be accounted for in the design of any shallow foundations. Otherwise, these soils are generally fair in bearing quality and suitable for support of lightly to moderately loaded structures.

The above subsurface description is of a generalized nature to highlight the major subsurface stratification features and material characteristics at the presently accessible exploration locations. The boring log and CPT summary data report included in the Appendix should be reviewed for specific information at the individual exploration locations. These records include soil descriptions, stratifications, penetration resistances, and locations of the samples and laboratory test data. The stratification shown on the log represents the conditions only at the actual exploration locations. Variations may occur and should be expected between and away from the exploration locations. The stratifications represent the approximate boundary between subsurface materials, but the actual transition may be more gradual.

WATER LEVEL MEASUREMENTS

Free groundwater was measured at a depth of approximately 10 feet below the existing ground surface at the location of Boring SB-1 upon completion of drilling. Pore pressure data at the location of Sounding CPT-1 was inconclusive, but indicates that groundwater could be present as shallow as about eight feet. However, it should be noted that the groundwater information presented in this report is based on site conditions that were present at the time of our relatively short field activities. Groundwater can fluctuate based on variations in rainfall, evaporation, surface runoff, and other hydro-geologic factors. Considering the size of the site and the limited number of exploration locations, it is likely that the depth and/or elevation of groundwater could vary across the site. PSI recommends that the Contractor determine the actual groundwater depth at the time of construction activities.

GEOTECHNICAL RECOMMENDATIONS

The types and bearing depth of foundations suitable for a given structure depend primarily on several factors including the subsurface conditions, developmental history of the site, the function of the structure, the loads it may carry, the cost of the foundation, and the criteria set by the Design Engineer with respect to vertical and differential movements which the structure can withstand without damage.

Based on the limited field exploration and the field and laboratory test results, the proposed site is generally considered compatible for industrial development, depending on the type, function, and anticipated loads of the proposed structure(s). In addition, the soils at the boring/sounding locations indicate that they are suitable for building foundations and/or construction of on-site roadways or railways. However, as stated previously, the information presented in this preliminary report is provided for planning purposes only; it is based on a very limited geotechnical exploration and is not intended for use in final design and construction. A detailed geotechnical investigation will be necessary prior to design of any proposed structures.



The choice of the type of foundation to be used for support of a specific structure should be based on the tolerance criteria for the performance of the structure and economics of construction. Ground-supported shallow foundations or surface improvements will likely be governed by the anticipated loads and settlement tolerances. For heavier loads or structures that cannot tolerate settlements, consideration could be given to the use of a deep foundation system for support.

POTENTIAL VERTICAL RISE

The estimated amount of vertical movement of a foundation or floor slab constructed on swelling clays is referred to as Potential Vertical Rise (PVR). The PVR is affected by the physical characteristics of the foundation soils and their moisture contents. The near-surface fat clay soils identified in Boring SB-1 have moderate moisture contents that are close to their plastic limits, making them susceptible to shrink/swell cycles should the moisture content vary over time. Therefore, if shallow foundations are considered in the design, consideration should be given to the proximity of the foundations to the fat clay stratum, as remediation of the subgrade may be required in order to minimize the detrimental effects of the expansive clays.

SITE PREPARATION

Prior to construction, positive drainage and collection of surface water should be established throughout the site and maintained throughout the duration of the construction period. Site preparation requirements will vary throughout the relatively large property and will depend on the structure type, foundation system, etc., and should be established once a specific project's features have been identified.

As previously discussed, at the time of PSI's field exploration, the site had some sparse mature trees. It should be noted that the moisture demands of trees depend on their species and maturity, as well as the lateral and vertical extents of their root systems. Cutting existing trees in the vicinity of a foundation system could trigger volumetric changes in the surrounding soils within the influence zones of the tree root systems. In view of this, development plans should consider the impact of the trees on the long-term performance of any planned structures and their foundation systems. Mature trees which are to be removed should be cut as far in advance of construction as practical to allow for the groundwater at the site to stabilize prior to proceeding with construction of the foundations.

SHALLOW FOUNDATIONS

Provided the site is properly prepared, it is believed that shallow foundation systems using spread and/or continuous footings bearing at least 24 inches below final grade could be designed for a minimum net allowable soil bearing capacity of approximately 1,600 psf. This assumes that the footings are supported on naturally occurring firm to stiff clay or compacted structural fill, provided that PVR has been sufficiently mitigated. However, as previously discussed, this value is based on the near-surface soils encountered at the boring location, and a detailed geotechnical investigation should be performed prior to the design or construction of any specific structure(s). If encountered, very soft or loose near-surface soils may require remediation or replacement prior to construction of shallow foundations. As previously discussed, Sounding CPT-1 indicated the presence of some soft near-surface soils. These soft soils will need to be excavated and replaced with good quality compacted fill material if detected at the location of a given structure.



DEEP FOUNDATIONS

PSI has provided capacity recommendations in Table 1 for 14-inch square precast prestressed concrete piles for use in feasibility studies, planning, and cost estimating purposes. Consideration could also be given to using timber piles at this site, depending on the structural loads imposed by a given structure. The allowable capacity estimates in Table 1 are based on the results of our limited field and laboratory testing and assume proper design and installation. The allowable axial capacity in compression is the summation of the allowable friction resistance and the allowable toe resistance. The allowable axial capacity in tension (uplift) is the allowable frictional resistance and the effective weight of the pile, neglecting the toe resistance component. The allowable capacities were estimated using factors of safety of 2.0 for compression and 3.0 for tension, which assumes that a static load test will be performed. If a field load test is not performed, PSI recommends using a factor of safety of 3.0 for compression to determine the allowable capacities.

**TABLE 1: Estimated Allowable Capacities for
 Precast Prestressed Concrete Piles**

Embedment Depth (feet)*	14-inch Square PPC (tons)	
	Compression	Tension
40	25	15
45	30	20
50	35	23

* Embedment depth is based on the existing grade at the time of the field exploration.

As previously discussed, detailed structural loads are not known at this time since no specific project or structure is being considered for construction. Based on topographical information provided by the Client, as well as elevation data obtained from Google Earth, it is not anticipated that significant cut or fill will be required to achieve design grades. However, it should be noted that when fill is placed on a site, any underlying compressible soils consolidate, resulting in areal settlement. As these compressible soils consolidate, downdrag (or “negative skin friction”) loads may be imposed on the drilled shafts or ACIP piles, effectively increasing the total downward load. Therefore, if significant fill is to be placed on the site, additional provisions should be provided to account for downdrag loads, settlement, group effect, lateral loads, dynamic excitation, etc.

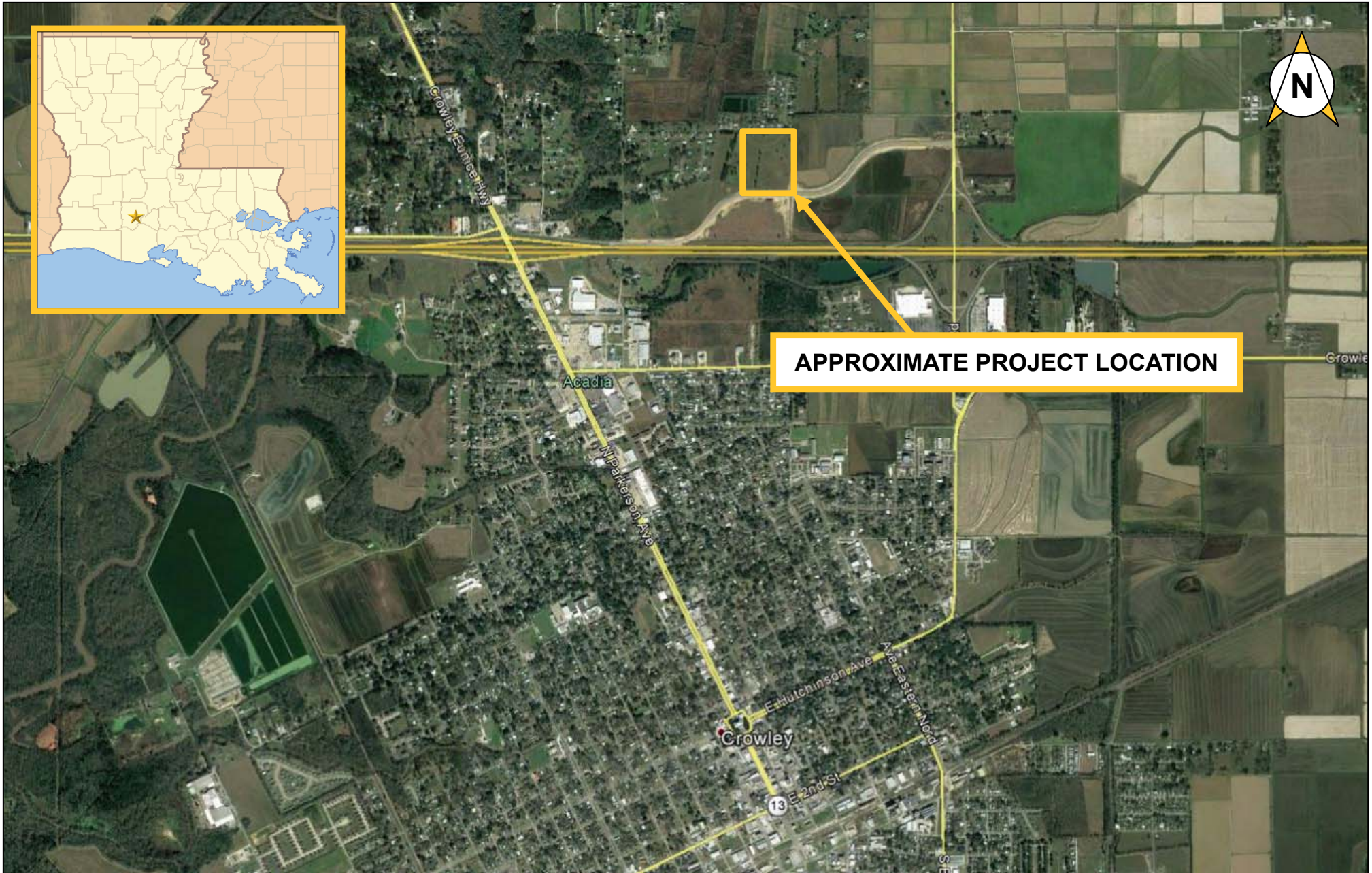
REPORT LIMITATIONS

The information and preliminary recommendations presented in this report are based on the available project information and the subsurface materials encountered at the specific exploration locations described in this report. The geotechnical investigation conducted for this report is preliminary in nature and is not to be used for construction. It is not intended to provide any opinions on the geotechnical performance of any specific structure or equipment, as such opinions would require further investigation and specific analyses. The actual conditions in specific areas of the site may vary from those encountered in the borings performed as part of this report. This preliminary report has been prepared for the exclusive use of CSRS and One Acadiana for the proposed Bratton Farms site in Crowley, Acadia Parish, Louisiana.



Project No: 02591350
Bratton Family Farms Site
Crowley, Louisiana
February 14, 2018

APPENDIX



PRELIMINARY GEOTECHNICAL SITE
CHARACTERIZATION REPORT
BRATTON FAMILY FARMS SITE
CROWLEY, LOUISIANA

SITE VICINITY MAP
PSI PROJECT NO.: 02591350
GOOGLE EARTH IMAGERY DATE: 1/23/2017





PRELIMINARY GEOTECHNICAL SITE
CHARACTERIZATION REPORT
BRATTON FAMILY FARMS SITE
CROWLY, LOUISIANA

BORING/SOUNDING LOCATION PLAN

PSI PROJECT NO.: 02591350
GOOGLE EARTH IMAGERY DATE: 1/23/2017



LOG OF BORING SB-1

Bratton Family Farms
Crowley, Louisiana

TYPE OF BORING: Hollow Stem Auger

LOCATION: See Boring/Sounding Location Plan

PSI Project No.: 02591350

DEPTH, FT.	SOIL TYPE	USCS SYMBOL	SAMPLES	SOIL DESCRIPTION	N-BLOWS/FT.	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	% PASSING No. 200 SIEVE	SHEAR STRENGTH (tsf)				UNIT DRY WEIGHT (pcf)	
											HP	UC	TV	UU		HAND PEN (tsf)
0.0 - 2.5	CH			Firm to Stiff Brown and Red FAT CLAY - Tan and Gray with Ferrous Stains and Shell Pieces below 2 feet		31					0.50					
2.5 - 5.0						22	55	20	35		0.75	0.59				105
5.0 - 7.5						19					0.75					
7.5 - 10.0						25	61	17	44		0.75					
10.0 - 12.5						26					0.50	0.34				106
12.5 - 15.0	CL			Stiff Brown LEAN CLAY with ferrous nodules		25	39	22	17		0.50					
15.0 - 17.5																
17.5 - 20.0	CH			Firm Tan and Gray FAT CLAY with Ferrous Stains		35					0.50	0.27				85
20.0 - 22.5																
22.5 - 25.0						39					0.50					
				Boring Terminated at 25 feet												

DEPTH OF BORING: 25 FEET

DATE DRILLED: 1/23/18

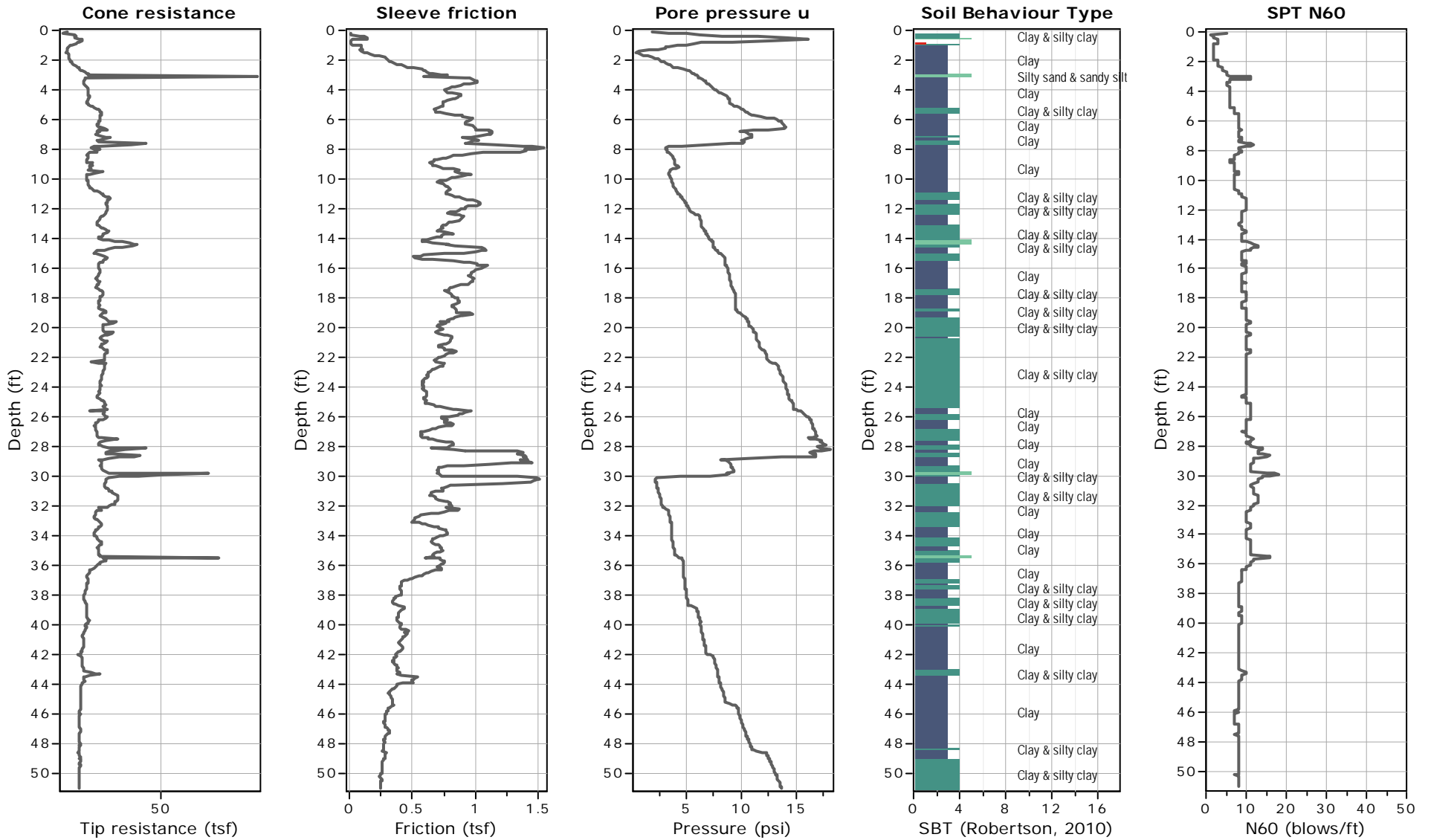
NOTE:

- ▽ GROUNDWATER DURING DRILLING: Not Measured
- ▼ GROUNDWATER UPON COMPLETION: 10 feet
- ▽ DELAYED GROUNDWATER: N / A

BORING LOG - BATON ROUGE - PSIHOUSTON.GDT - 2/13/18 16:33 - 0254

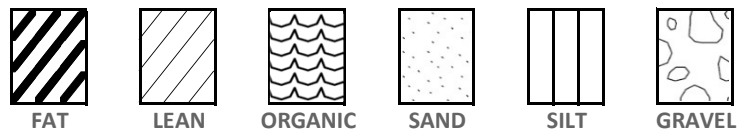


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KEY TO TERMS AND SYMBOLS USED ON LOGS

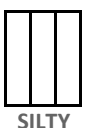
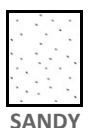
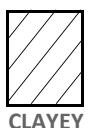
SOIL TYPE



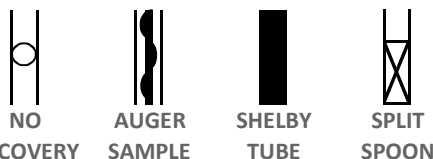
SOIL TYPE



MODIFIERS



SAMPLER TYPE



UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D 2487 (1980)

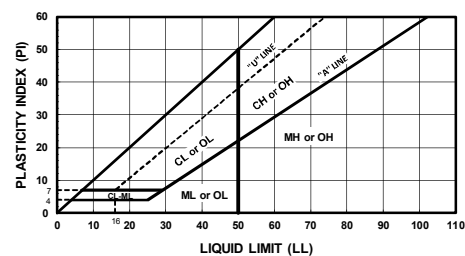
MAJOR DIVISIONS		LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE-GRAINED SOILS LESS THAN 50% PASSING NO. 200 SIEVE	GRAVEL & GRAVELLY SOILS LESS THAN 50% PASSING NO. 4 SIEVE	GW	WELL-GRADED GRAVEL, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
		GP	POORLY GRADED GRAVEL, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
	SANDS MORE THAN 50% PASSING NO. 4 SIEVE	GM	SILTY GRAVEL, GRAVEL-SAND-SILT MIXTURES
		GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
		SW	WELL-GRADED SAND
		SP	POORLY-GRADED SANDS
FINE-GRAINED SOILS MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT < 50	SM	SILTY SANDS
		SC	CLAYEY SANDS
		ML	INORGANIC SILTS & VERY FINE SANDS, CLAYEY SILT W/ LOW PLASTICITY INDEX
	SILTS AND CLAYS LIQUID LIMIT ≥ 50	CL	INORGANIC LEAN CLAYS GRAVELLY, SANDY, OR SILTY LEAN CLAYS
		OL	ORGANIC SILTS & ORGANIC SILTY CLAYS W/LOW PLASTICITY INDEX
		MH	INORGANIC SILTS W/ HIGH PLASTICITY INDEX, ELASTIC SILTS
	CH	INORGANIC FAT CLAYS GRAVELLY, SANDY, OR SILTY FAT CLAYS	
	OH	ORGANIC CLAYS OF MED TO HIGH PLASTICITY, ORGANIC SILTS	
HIGHLY ORGANIC SOIL		PT	PEAT AND OTHER HIGHLY ORGANIC SOILS
UNCLASSIFIED FILL MATERIALS			ARTIFICIALLY DEPOSITED AND OTHER UNCLASSIFIED SOILS AND MAN-MADE SOIL MIXTURES

CONSISTENCY - COHESIVE SOILS

CONSISTENCY	SHEAR STRENGTH IN TONS/FT ²
VERY SOFT	0 TO 0.125
SOFT	0.125 TO 0.25
FIRM	0.25 TO .50
STIFF	0.50 TO 1.00
VERY STIFF	1.00 TO 2.00
HARD	> 2.00 OR 2.00+

RELATIVE DENSITY - GRANULAR SOILS

DENSITY	N-VALUE (BLOWS/FT)
VERY LOOSE	0-4
LOOSE	4-9
MEDIUM DENSE	10-29
DENSE	30-49
VERY DENSE	> 50 OR 50+



ABBREVIATIONS

- HP - HAND PENETROMETER
- TV - MINIATURE TORVANE
- UC - UNCONFINED COMPRESSION TEST
- UU - UNCONSOLIDATED UNDRAINED TRIAXIAL

NOTE: BORING LOGS INDICATE SHEAR STRENGTH AS OBTAINED BY ABOVE TESTS

CLASSIFICATION OF GRANULAR SOILS

U.S. STANDARD SIEVE SIZE(S)								
12"	3"	3/4"	4	10	40	200		
BOULDERS	COBBLES	GRAVEL		SAND			SILT OR CLAY	CLAY
		COARSE	FINE	COARSE	MEDIUM	FINE		
300	75	19	4.75	2.0	0.42	0.075		0.005
GRAIN SIZE IN MM								