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Exhibit AA.
Germania Site
Preliminary Geotechnical Engineering Report

Germania Site Preliminary Geotechnical Engineering Report

March 29, 2021

Russell Richardson
Baton Rouge Area Chamber
564 Laurel St, Baton Rouge, LA 70801

RE: Report for Preliminary Geotechnical Engineering Study – Site Review for Germania Industrial Site, Ascension Parish, Louisiana

Dear Mr. Richardson,

Gulf Holdings, LLC. is pleased to submit our report for a Preliminary Geotechnical Investigation to develop General Geotechnical Characterizations for the Germania site located in Ascension Parish, Louisiana for the purposes of supporting Louisiana Economic Development (LED) site certification operations.

We and our subcontractors appreciate the opportunity to help in the site certification process and look forward to working with LED and CSRS on future projects. If there are any further questions as pertaining to this project, do not hesitate to reach out to our office.

Respectfully,

Simon Grigoryan, VP
Gulf Holdings, LLC.

William Pagano, PE, PG
Gulf Holdings, LLC.
FL License Number: PE68680

Project Description

The purpose of this report is to give a preliminary geotechnical characterization of the subsurface conditions at the proposed Germania Industrial Site in Ascension Parish, LA, for the purposed of certification of the site for LED. The proposed site is located on a 395-acre plot of land in Donaldsonville, LA near the southwestern bank of the Mississippi River, on the southern side of Louisiana state route 405. The site is currently largely covered by farmland, with agricultural fields covering the majority of the landscape. The site also contains minor wooded areas.

The intent of this preliminary study is to provide information regarding the compatibility of this site for industrial development. The investigation was intended to study suitability of soils for building foundations and on-site roadways, calculate the load bearing capacity of a 14" concrete pile to given depths, determine requirements of soil augmentation for construction of a typical 100,000 square foot industrial manufacturing building, and find the depth of the free groundwater table.

Project Scope of Services

To determine the suitability of the site for industrial development, Gulf Holdings developed an investigation plan to study the subsurface conditions.

To do so, Gulf Holdings performed the following:

- One SPT boring to 100 feet BGS
- Two SPT borings to 50 feet BGS
- Two SPT borings to 30 feet BGS
- Three Atterberg Limit Analyses
- Preliminary Geotechnical Report

Gulf Holdings used the acquired data to calculate the load bearing capacity of 14" concrete piles to given depths, determine the requirements for soil augmentation for construction of a typical 100,000 square foot industrial manufacturing building, classify the underlying soil conditions, and find the depth of the free groundwater table.

The services performed by Gulf Holdings were a preliminary geotechnical study that does not constitute a final pre-construction study. Due to the limited nature of the investigation and variation of ground conditions at different locations throughout the site, further investigations will be required in order to ensure the suitability of ground conditions at the exact construction locations.

The provided Standard Penetration Test services were performed in accordance with ASTM 1586, and can only characterize the zones investigated. The conclusions generated in this report are not to be used for any construction designs, and Gulf Holdings is not liable for any such use.

Site Geology—Desktop Study

Based on a preliminary desktop study performed by Gulf Holdings, the geologic conditions on site were classified as alluvial sediments belonging to the natural levee complex of Mississippi River meander-belt No. 1, which is described as silty to sandy overbank deposits that compose the low natural levees flanking the Mississippi River meander-belt No. 1.Closer to the current river path, the soils were determined to belong to the Mississippi River meander-belt No. 1 facies, which are point-bar channel deposits and abandoned channels associated with the modern course of the Mississippi River. Gulf Holdings' engineers, having performed a preliminary desktop study, have made key findings about the geologic conditions on site, based on the USDA Web Soils Survey data, Louisiana Geological Survey data, existing nearby well log data, and satellite image observations:

- The soils in the area of interest are not well drained
- Primary facies are silty lean clays and clayey silts, with occasional sandy deposits
- A relatively resistant layer possibly lies on the southwestern edge of the site

Site Geology—Field Exploration

To characterize the subsurface conditions of the proposed site, Gulf Holdings oversaw the drillings five SPT borings along the site boundary; B-1 was drilled to 50 feet BGS, B-2 was drilled to 30 feet BGS, B-3 was drilled for 30 feet BGS, B-4 was drilled to 50 feet BGS, and B-5 was drilled to 100 feet BGS. Boring locations are shown in the attached Boring Location Plan. The exploration was performed by a track mounted rig. The standard penetration value (N) is defined as the number of blows of a 140-pound hammer, falling 30 inches, required to advance the split-barrel sampler two feet into the soil. Blow counts for the two middle 6" intervals are added to generate the N value. Samples of granular soils were obtained utilizing a two (2) inch O.D. split-barrel sampler in general accordance with procedures for "Penetration Test and Split-Barrel Sampling of Soils" (ASTM D1586). Split spoon samples were continuously taken to 20 feet BGS in 24 inch long spoon samplers, after which samples were taken at a five foot offset. All borings were later backfilled after investigation and water level readings were taken. Below is a generalized soil profile, based on the five borings:

Depth (approximate)	Description
0'- 40'	SILTY LEAN CLAY (CL)
40' - 60'	CLAYEY SILT (ML)
60'- 100'	SILTY FAT CLAY (CH)

The above subsurface description is generalized in nature to highlight the major subsurface stratification features and material characteristics at each exploration location. Boring logs for each of the five borings are attached in the appendix. However, the generalized soil profile matches the expected soil profile given by the desktop study. The primary facies that was encountered in both explorations from a shallow depth to a terminal depth of 100 feet BGS was the soft Silty Clay facies. This facies is the primary construction concern for which to account when constructing in the site area. These construction concerns will be discussed in the construction analysis section. As this facies has been encountered in all borings throughout the investigation area and in almost all strata, it is expected that any further investigations will not only encounter this facies in almost all areas, but also have to investigate the feasibility of safe industrial development on this site with any foundational footing.

Groundwater Information

The free groundwater information was encountered at 4’ below ground surface in boring B-1, 5’ below ground surface in boring B-2, 5’ below ground surface in boring B-3, 5’ below ground surface in boring B-4, and 4’ below ground surface in boring B-5. These readings are all relatively consistent due to the relative flatness of the site. Slight changes in the readings can be accounted for due to changes in groundwater levels (time after rain) and slight changes in elevation. For purposes of construction, a groundwater level of 4.5’ below grade can be estimated. It should be noted that groundwater level fluctuations at this site may occur due to seasonal and climatic variations, as well as due to changes in land use and drainage patterns.

Laboratory Data

For the purposes of this project, soil samples from split spoon samplers were used to determine moisture content, grain size, as well as shrinkage limit, plastic limit, and liquid limit. Three Atterberg Limit tests were performed to help determine the specific qualities of the soils investigated.

The laboratory results largely confirmed field observations and reinforced the initial data indicating the abundant presence of very soft lean clays throughout the site area. Laboratory results are attached in the appendix.

Pile Design Analysis

The axial load bearing capacity of the pile was calculated using the N-value correlation method. This method was used and applied to both SPT borings. A factor of safety of three was used to generate a total allowable axial loading capacity. The pile design, given by the client as a square, 14” diameter concrete cast pile, was used to generate the maximum allowable load results for the pile. Below are the results from the load bearing calculations, calculated to the depths of the end of borings:

B-1

Depth	Cum Depth	S.P.T. Value	Corrected S.P.T. Value, N-(N-15)/2	Average S.P.T.	Surface Area in Pile (sft)	Allowable Skin Friction, Qa = 0.02N/F.S. (Tsf)	Total Allowable Skin Friction, (Ton)	Cum Skin Friction, (Ton)	Allowable End Bearing Capacity, Qa = 4N/F.S.	Allowable working Load (Ton)
0	0	0	0	0	0	0.000	0.00	0.00	0.00	**0**
4	4	4	4	2	196	0.013	2.61	2.61	5.70	**6**
2	6	4	4	4	196	0.027	5.23	7.84	5.70	**10**
2	8	0	0	2	196	0.013	2.61	10.45	0.00	**8**
2	10	4	4	2	196	0.013	2.61	13.07	5.70	**14**
5	15	3	3	3.5	196	0.023	4.57	17.64	4.28	**16**
5	20	2	2	2.5	196	0.017	3.27	20.91	2.85	**18**
5	25	0	0	1	196	0.007	1.31	22.21	0.00	**17**
5	30	10	0	0	196	0.000	0.00	22.21	0.00	**17**
5	35	15	0	0	196	0.000	0.00	22.21	0.00	**17**
5	40	8	0	0	196	0.000	0.00	22.21	0.00	**17**
5	45	16	0	0	196	0.000	0.00	22.21	0.00	**17**
5	50	8	0	0	196	0.000	0.00	22.21	0.00	**17**

B-2

Depth	Cum Depth	S.P.T. Value	Corrected S.P.T. Value, N-(N-15)/2	Average S.P.T.	Surface Area in Pile (sft)	Allowable Skin Friction, Qa = 0.02N/F.S. (Tsf)	Total Allowable Skin Friction, (Ton)	Cum Skin Friction, (Ton)	Allowable End Bearing Capacity, Qa = 4N/F.S.	Allowable working Load (Ton)
0	0	0	0	0	0	0.000	0.00	0.00	0.00	**0**
2	2	6	6	3	196	0.020	3.92	3.92	8.55	**9**
2	4	2	2	4	196	0.027	5.23	9.15	2.85	**9**
2	6	2	2	2	196	0.013	2.61	11.76	2.85	**11**
4	10	3	3	2.5	196	0.017	3.27	15.03	4.28	**14**
5	15	0	0	1.5	196	0.010	1.96	16.99	0.00	**13**
5	20	0	0	0	196	0.000	0.00	16.99	0.00	**13**
5	25	0	0	0	196	0.000	0.00	16.99	0.00	**13**
5	30	2	2	1	196	0.007	1.31	18.29	2.85	**16**

B-3

Depth	Cum Depth	S.P.T. Value	Corrected S.P.T. Value, N-(N-15)/2	Average S.P.T.	Surface Area in Pile (sft)	Allowable Skin Friction, Qa = 0.02N/F.S. (Tsf)	Total Allowable Skin Friction, (Ton)	Cum Skin Friction, (Ton)	Allowable End Bearing Capacity, Qa = 4N/F.S.	Allowable working Load (Ton)
0	0	0	0	0	0	0.000	0.00	0.00	0.00	**0**
2	2	3	3	1.5	196	0.010	1.96	1.96	4.28	**5**
2	4	0	0	1.5	196	0.010	1.96	3.92	0.00	**3**
2	6	3	3	1.5	196	0.010	1.96	5.88	4.28	**8**
2	8	2	2	2.5	196	0.017	3.27	9.15	2.85	**9**
2	10	4	4	3	196	0.020	3.92	13.07	5.70	**14**
5	15	4	4	4	196	0.027	5.23	18.29	5.70	**18**
5	20	0	0	2	196	0.013	2.61	20.91	0.00	**16**
5	25	0	0	0	196	0.000	0.00	20.91	0.00	**16**
5	30	0	0	0	196	0.000	0.00	20.91	0.00	**16**

B-4

Depth	Cum Depth	S.P.T. Value	Corrected S.P.T. Value, N-(N-15)/2	Average S.P.T.	Surface Area in Pile (sft)	Allowable Skin Friction, Qa = 0.02N/F.S. (Tsf)	Total Allowable Skin Friction, (Ton)	Cum Skin Friction, (Ton)	Allowable End Bearing Capacity, Qa = 4N/F.S.	Allowable working Load (Ton)
0	0	0	0	0	0	0.000	0.00	0.00	0.00	**0**
2	2	3	3	1.5	196	0.010	1.96	1.96	4.28	**5**
2	4	1	1	2	196	0.013	2.61	4.57	1.43	**4**
2	6	1	1	1	196	0.007	1.31	5.88	1.43	**5**
4	10	0	0	0.5	196	0.003	0.65	6.53	0.00	**5**
2	12	0	0	0	196	0.000	0.00	6.53	0.00	**5**
2	14	0	0	0	196	0.000	0.00	6.53	0.00	**5**
2	16	0	0	0	196	0.000	0.00	6.53	0.00	**5**
2	18	0	0	0	196	0.000	0.00	6.53	0.00	**5**
2	20	0	0	0	196	0.000	0.00	6.53	0.00	**5**
5	25	0	0	0	196	0.000	0.00	6.53	0.00	**5**
5	30	1	1	0.5	196	0.003	0.65	7.19	1.43	**6**
5	35	3	3	2	196	0.013	2.61	9.80	4.28	**11**
5	40	9	9	6	196	0.040	7.84	17.64	12.83	**23**
5	45	7	7	8	196	0.053	10.45	28.09	9.98	**29**
5	50	7	7	7	196	0.047	9.15	37.24	9.98	**35**

B-5

Depth	Cum Depth	S.P.T. Value	Corrected S.P.T. Value, N-(N-15)/2	Average S.P.T.	Surface Area in Pile (sft)	Allowable Skin Friction, Qa = 0.02N/F.S. (Tsf)	Total Allowable Skin Friction, (Ton)	Cum Skin Friction, (Ton)	Allowable End Bearing Capacity, Qa = 4N/F.S.	Allowable working Load (Ton)
0	0	0	0	0	0	0.000	0.00	0.00	0.00	**0**
5	5	5	5	2.5	196	0.017	3.27	3.27	7.13	**8**
5	10	4	4	4.5	196	0.030	5.88	9.15	5.70	**11**
5	15	3	3	3.5	196	0.023	4.57	13.72	4.28	**13**
5	20	2	2	2.5	196	0.017	3.27	16.99	2.85	**15**
5	25	0	0	1	196	0.007	1.31	18.29	0.00	**14**
5	30	1	1	0.5	196	0.003	0.65	18.95	1.43	**15**
5	35	4	4	2.5	196	0.017	3.27	22.21	5.70	**21**
5	40	7	7	5.5	196	0.037	7.19	29.40	9.98	**30**
5	45	3	3	5	196	0.033	6.53	35.93	4.28	**30**
5	50	0	0	1.5	196	0.010	1.96	37.89	0.00	**28**
5	55	0	0	0	196	0.000	0.00	37.89	0.00	**28**
5	60	0	0	0	196	0.000	0.00	37.89	0.00	**28**
5	65	2	2	1	196	0.007	1.31	39.20	2.85	**32**
5	70	0	0	1	196	0.007	1.31	40.51	0.00	**30**
5	75	0	0	0	196	0.000	0.00	40.51	0.00	**30**
5	80	0	0	0	196	0.000	0.00	40.51	0.00	**30**
5	85	11	11	5.5	196	0.037	7.19	47.69	15.68	**48**
5	90	2	2	6.5	196	0.043	8.49	56.19	2.85	**44**
5	95	0	0	1	196	0.007	1.31	57.49	0.00	**43**
5	100	2	2	1	196	0.007	1.31	58.80	2.85	**46**

Industrial Structure Suitability Analysis

For a typical 100,000 square foot industrial facility and associated roadways, the following assumptions about the structure, using preconstructed facility specifications, were made:

- Single story warehouse facility
- 4 truck loading docks and equipment with 9' x 10' overhead doors at each
- 2 ground-level 12' x 14' overhead doors
- 10-ton crane system (300 lineal feet)
- 8,000-square-foot office area
- Structural column loads ~100 kips
- Wall loads 5 kips/foot
- Average Daily Traffic of 200 trucks

Site preparations for such a facility's construction would include but not be limited to clearing of the site of vegetation, levelling existing grades, removal of organics and other deleterious materials, dewatering and drainage operations (prevention of seepage, etc.), and removal of all soft material in construction zones. Based on the soil boring data, almost all encountered soils in the site area were classified as soft to very soft soils.

Due to the overwhelming presence of the soft to very soft silty clay facies throughout the scope of the investigation, any major industrial development on the site would require major earthwork, fill operations, and ground reinforcement. Throughout the investigation, apart from a narrow fat clay layer at ~38' BGS and somewhat sandier upper layers near the surface, the soil was found to be very soft and unsupportive. In its current state, the silty clay and clayey silt soils are not conducive to any major construction or industrial development.

Construction on such soft soils presents numerous construction challenges to any major industrial projects, such as poor drainage, excessive post-construction settlement (excessive or differential), or low axial bearing capacities. For one, due to the excessive softness of the materials encountered, is their inability to support any significant loads without structural failure. Another major issue is settlement, when changes in groundwater levels occur. Soft clays matrices tend to drastically change in volume when experiencing changes in moisture content. These changes in volume will cause serious settlement issues for any structures that bear on the clays. Any industrial development upon such soils is not feasible until the soils are either removed, replaced, or densified, in addition to providing proper structural improvements for foundations.

According to the axial pile bearing capacity calculations performed, neither shallow foundations nor deep foundations (to any economical depth) on their own would be sufficient to support any major industrial development. When determining foundation types, weight, cost, and other factors must also be taken into consideration. Based on the available soil data, the existing soils would either have to be removed and replaced with engineered fill to a great depth, or competent

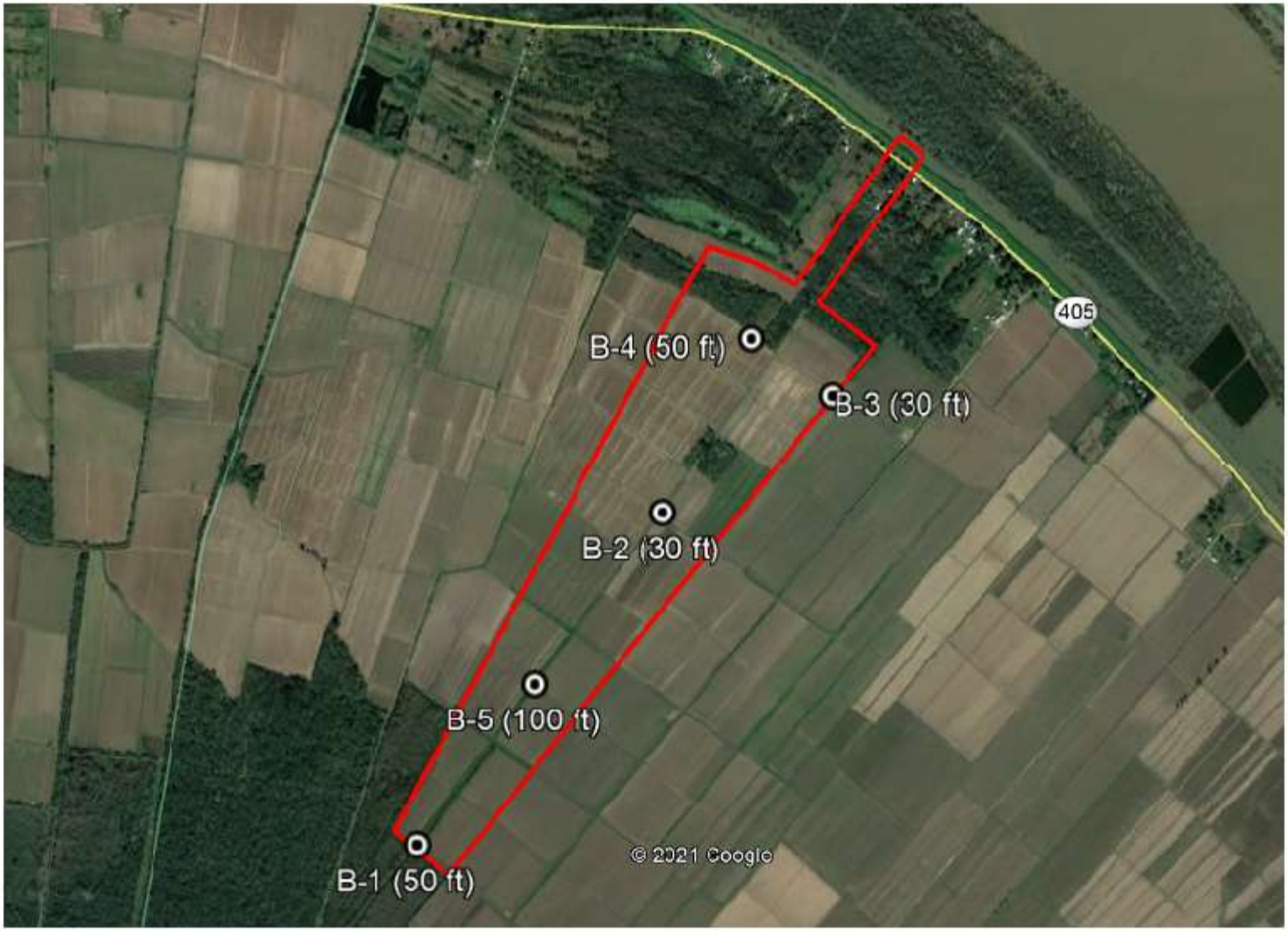
flat slab or slab-beam foundations would need to be constructed. For most industrial structures listed above, flat slab or slab-beam foundations would be most suitable for the described industrial structures in the project location, although based on the specificities of the construction requirements for the specific design, other foundations such as shallow foundations upon compacted structural granular fill may be suitable, or even wide strip footing for smaller building and wall structures. Flat slab or slab-beam foundations would most be suitable for a major industrial structure when major loads, such as typical fuel storage tanks (20 kips) or cranes (10 kips), are expected. The above pile analysis demonstrates the predicted load bearing capacities of concrete cast 14" diameter piles axially loaded. A hypothetical 100,000 square foot structure, as described above, would likely be adept in distributing loads with a flat slab or slab-beam foundation structures. Assuming such a foundation, the Germania industrial site would likely be suitable for such industrial development, pending a more detailed and localized geotechnical investigation.

For parking lot, ramp, and roadway construction, grading and or slab on grade construction is likely to be used. Like the nearby LA 405 Highway, approximately two to three feet of structural granular fill replacing the existing moisture-sensitive soils, topped by a limestone road base, would be needed for roadway construction. Based on the field data for near-surface soils and typically associated values, the estimated California Bearing Ratios (CBRs) for the existing subgrade are estimated to be to the order of 5 or less, with corresponding Modulus of Subgrade Reaction (k-value) of about 50 pci. Specific requirements for the roadway and slab design are to be determined in accordance with proper engineering practice. With proper fill use and proper engineering oversight, the ground conditions on the Germania site will be suitable for roadway and slab on grade construction.

Report Limitations

This report is only a preliminary geotechnical report based on five SPT boring analyses and associated laboratory data. The assumptions and conclusions within this report are generalized and cannot be used for preconstruction analysis and engineering. Gulf Holdings cannot be held responsible for this report's use in the design of a specific structure without performing a localized investigation. Once specific development and construction plans are made, a qualified geotechnical engineer must be retained for further investigation.

Appendix



Gulf Holdings

Germania Industrial Site
Boring Location Plan
Donaldsonville, LA

Preliminary Geotechnical Engineering Report

Gulf Holdings, LLC.
03/29/2021

Gulf Holdings	Project: Germania, LA Site Certification	Client: CSRS	Boring No. B-1
		Drilling Contractor: APS	Drill Rig Type: Track
	Date: Started: 3/11/21	Bit Type: Diamond	Diameter: 2"
	Date: Completed: 3/12/21	Hammer Type: Auto	Address, City, State: Donalsonville, LA
Logged By: S. Grigoryan	Date: Backfilled: 3/12/21	Hammer Weight: 140 lbs	Hammer Drop: 30"
Drill Crew:	Groundwater Depth: 4 ft	Elevation: 10 ft	Total Depth of Boring: 50'

Depth (feet)	Sample Type	Sample Number	Blow Counts (blows/6")	Graphic Log	Lithology **Soil Group Name:** density/consistency, color, modifier, moisture, grain size, other descriptors	Recovery (in)	Recovery (%)	Additional Test
		1	1;2 2;2		Soft, olive gray, ORGANIC LEAN CLAY WITH Silt, wet (OL)	12	50	
		2	N/A		Soft, olive gray, SILTY ORGANIC LEAN CLAY, trace Sand, wet (OL)	24	100	
5		3	1;2 2;3		Medium dense, olive gray, SILTY ORGANIC LEAN CLAY, trace Sand, wet (OL)	11	45.8	
		4	WOH; WOH WOH; 2		Very soft, olive gray,LEAN CLAY WITH SILT, wet (CL) TOP 4" red Gravelly FINE SAND lense	11	45.8	
		5	WOH;2 2;2		Soft, olive gray, LEAN CLAY WITH SILT, trace Organic Matter, wet (CL)	21	87.5	
10								
		6	WOH;1 2;3		Soft, olive gray, LEAN CLAY WITH SILT, trace Organic Matter, wet (CL)	24	100	
15								
		7	WOH;WOH 2;4		Very soft, olive gray, LEAN CLAY WITH SILT, trace Organic Matter, wet (CL)	24	100	
20								
		8	WOH;WOH WOH;WOH		Very soft, olive gray, LEAN CLAY WITH SILT, trace Organic Matter, wet (CL)	24	100	
25								
		9	WOH;WOH WOH;5		A: 0"-20": Very soft, olive gray, LEAN CLAY WITH SILT, trace Organic Matter, wet (CL) B: 20"-24": Dense, olive gray, CLAYEY SILT, trace Sand, trace Organic Matter, wet	24	100	

Gulf Holdings	Project: Germania, LA Site Certification	Client: CSRS	Boring No. B-1
		Drilling Contractor: APS	Drill Rig Type: Track
	Date: Started: 3/11/21	Bit Type: Diamond	Diameter: 2"
	Date: Completed: 3/12/21	Hammer Type: Auto	Address, City, State: Donalsonville, LA
Logged By: S. Grigoryan	Date: Backfilled: 3/12/21	Hammer Weight: 140 lbs	Hammer Drop: 30"
Drill Crew:	Groundwater Depth: 4 ft	Elevation: 10 ft	Total Depth of Boring: 50'

Depth (feet)	Sample Type	Sample Number	Blow Counts (blows/6")	Graphic Log	Lithology **Soil Group Name:** density/consistency, color, modifier, moisture, grain size, other descriptors	Recovery (in)	Recovery (%)	Additional Test
35		10			Very soft, olive gray, CLAYEY SILT, trace Organic Matter, wet (ML) Bottom 6" Organic Matter lense	19	79.2	
40		11			Very soft, olive gray, CLAYEY SILT, trace gravel, trace Organic Matter, occasional Silt lenses, wet (ML)	24	100	
45		12			Very soft, olive gray, CLAYEY SILT, trace Organic Matter, wet (ML)	12	50	
50		13			Very soft, olive gray, LEAN CLAY WITH SILT, trace Organic Matter, wet (CL)	24	100	
					END OF BORING @ 50' BGS			

Gulf Holdings	Project: Germania, LA Site Certification	Client: CSRS	Boring No. B-2
		Drilling Contractor: APS	Drill Rig Type: Track
	Date: Started: 3/12/21	Bit Type: Diamond	Diameter: 2"
	Date: Completed: 3/12/21	Hammer Type: Auto	Address, City, State: Donalsonville, LA
Logged By: S. Grigoryan	Date: Backfilled: 3/12/21	Hammer Weight: 140 lbs	Hammer Drop: 30"
Drill Crew:	Groundwater Depth: 5 ft	Elevation: 16 ft	Total Depth of Boring: 30'

Depth (feet)	Sample Type	Sample Number	Blow Counts (blows/6")	Graphic Log	Lithology **Soil Group Name:** density/consistency, color, modifier, moisture, grain size, other descriptors	Recovery (in)	Recovery (%)	Additional Test
		1	3;3 3;4		Medium dense, gray, LEAN CLAY, some Silt, trace Sand, trace Gravel, wet (CL)	24	100	
		2	WOH;1 1;1		Very soft, olive gray, LEAN CLAY, some Silt, trace Sand, wet (CL)	24	100	
5		3	WOH;WOH 2;2		Very soft, olive gray,LEAN CLAY WITH SILT, trace Sand, trace Gravel, wet (CL)	22	91.7	
		4	WOH;WOH 3;3		Soft, olive gray,LEAN CLAY WITH SILT, trace Sand, wet (CL)	22	91.7	
		5	N/A		Soft, olive gray,LEAN CLAY WITH SILT, little Sand, trace Gravel, wet (CL)	24	100	
10								
		6	WOH;WOH WOH;1		Very soft, olive gray, SILTY LEAN CLAY, wet (CL)	20	83.3	
15								
		7	WOH;WOH WOH;3		Very soft, gray, SILTY LEAN CLAY, wet (CL)	24	100	
20								
		8	WOH;WOH WOH;WOH		Very soft, gray, CLAYEY SILT, trace Organic Matter,wet (ML)	24	100	
25								
		9	WOH;WOH 2;2		Very soft, olive gray, LEAN CLAY WITH SILT, trace Organic Matter, wet (CL)	24	100	

END OF BORING 30' BGS

Gulf Holdings	Project: Germania, LA Site Certification	Client: CSRS	Boring No. B-3
		Drilling Contractor: APS	Drill Rig Type: Track
	Date: Started: 3/12/21	Bit Type: Diamond	Diameter: 2"
	Date: Completed: 3/12/21	Hammer Type: Auto	Address, City, State: Donalsonville, LA
Logged By: S. Grigoryan	Date: Backfilled: 3/12/21	Hammer Weight: 140 lbs	Hammer Drop: 30"
Drill Crew:	Groundwater Depth: 5 ft	Elevation: 23 ft	Total Depth of Boring: 30'

Depth (feet)	Sample Type	Sample Number	Blow Counts (blows/6")	Graphic Log	Lithology **Soil Group Name:** density/consistency, color, modifier, moisture, grain size, other descriptors	Recovery (in)	Recovery (%)	Additional Test
		1	WOH;WOH 3;3		Soft, yellow-brown, CLAYEY SILT, some Sand, trace Organic Matter, wet (ML)	20	83.3	
		2	WOH;WOH WOH;1		Very soft, yellow-brown, CLAYEY SILT, trace Sand, trace Organic Matter, wet (ML)	18	75	
5		3	WOH;2 1;3		Soft, yellow-brown, CLAYEY SILT, trace Sand, trace Organic Matter, wet (ML)	18	75	
		4	1;1 1;WOH		Very soft, yellow-brown, SILTY LEAN CLAY, trace Sand, wet (CL)	24	100	
		5	WOH;2 2;3		Soft, gray-brown, SILTY LEAN CLAY, wet (CL)	18	75	
10								
		6	WOH;2 2;3		Soft, gray, CLAYEY SILT, occasional Fat Clay lenses, wet (ML)	24	100	
15								
		7	WOH;WOH WOH;WOH		Very soft, gray, CLAYEY SILT, wet (ML)	24	100	
20								
		8	WOH;WOH WOH;WOH		Very soft, gray, SILTY CLAY, wet (CL)	24	100	
25								
		9	WOH;WOH WOH;1		Very soft, gray, SILTY CLAY, wet (CL)	16	66.7	

END OF BORING 30' BGS

Gulf Holdings	Project: Germania, LA Site Certification	Client: CSRS	Boring No. B-4
		Drilling Contractor: APS	Drill Rig Type: Track
	Date: Started: 3/10/21	Bit Type: Diamond	Diameter: 2"
	Date: Completed: 3/10/21	Hammer Type: Auto	Address, City, State: Donalsonville, LA
Logged By: S. Grigoryan	Date: Backfilled: 3/10/21	Hammer Weight: 140 lbs	Hammer Drop: 30"
Drill Crew:	Groundwater Depth: 5 ft	Elevation: 23 ft	Total Depth of Boring: 50'

Depth (feet)	Sample Type	Sample Number	Blow Counts (blows/6")	Graphic Log	Lithology **Soil Group Name:** density/consistency, color, modifier, moisture, grain size, other descriptors	Recovery (in)	Recovery (%)	Additional Test
		1	1;1 2;3		Soft, yellow-brown, SILTY LEAN CLAY, some Sand, wet (CL)	16	66.7	
		2	1;WOH 1;2		Very soft, yellow-brown, SILTY LEAN CLAY, some Sand, wet (CL)	24	100	
5		3	WOH;WOH 1;2		Very soft, yellow-brown, SILTY LEAN CLAY, little Sand, wet (CL)	21	87.5	
		4	N/A		Very soft, yellow-brown, SILTY LEAN CLAY, trace Sand, wet (CL)	24	100	
		5	WOH;WOH WOH;WOH		Very soft, gray, SILTY LEAN CLAY, trace Sand, trace Organic Matter, wet (CL)	16	66.7	
10		6	WOH;WOH WOH;WOH		Very soft, gray, SILTY LEAN CLAY, trace Sand, wet (CL)	24	100	
		7	WOH;WOH WOH;WOH		Very soft, gray, LEAN CLAY WITH SILT, trace Sand, wet (CL)	22	91.7	
15		8	WOH;WOH WOH;WOH		Very soft, gray, LEAN CLAY WITH SILT, trace Sand, wet (CL)	20	83.3	
		9	WOH;WOH WOH;WOH		Very soft, gray, LEAN CLAY, some Silt, trace Shell Fragments, wet (CL)	24	100	
		10	WOH;WOH WOH;WOH		Very soft, gray, LEAN CLAY, some Silt, trace Shell Fragments, wet (CL)	4	16.7	
20								
		11	WOH;WOH WOH;1		Very soft, dark gray, SILTY LEAN CLAY, trace Shell Fragments, wet (CL)	24	100	
25								
		12	1;1 WOH;1		Very soft, dark gray, SILTY LEAN CLAY, trace Shell Fragments, wet (CL)	24	100	

Gulf Holdings	Project: Germania, LA Site Certification	Client: CSRS	Boring No. B-4
		Drilling Contractor: APS	Drill Rig Type: Track
	Date: Started: 3/10/21	Bit Type: Diamond	Diameter: 2"
	Date: Completed: 3/10/21	Hammer Type: Auto	Address, City, State: Donalsonville, LA
Logged By: S. Grigoryan	Date: Backfilled: 3/10/21	Hammer Weight: 140 lbs	Hammer Drop: 30"
Drill Crew:	Groundwater Depth: 5 ft	Elevation: 23 ft	Total Depth of Boring: 50'

Depth (feet)	Sample Type	Sample Number	Blow Counts (blows/6")	Graphic Log	Lithology **Soil Group Name:** density/consistency, color, modifier, moisture, grain size, other descriptors	Recovery (in)	Recovery (%)	Additional Test
35		13		1;1 2;1	Soft, dark gray, SILTY LEAN CLAY, little Sand, trace Shell Fragments, wet (CL)	24	100	
40		14		2;3 6;6	Stiff, green-gray, FAT CLAY WITH SILT, trace Sand, wet (CH)	24	100	
45		15		3;3 4;4	Medium stiff, green-gray, SILTY FAT CLAY, trace Sand, trace Shell Fragments,wet (CH)	24	100	
50		16		4;3 4;6	Medium stiff, green-gray, SILTY LEAN CLAY, trace Sand,wet (CL) END OF BORING @ 50' BGS	24	100	

Gulf Holdings	Project: Germania, LA Site Certification	Client: CSRS	Boring No. B-5
		Drilling Contractor: APS	Drill Rig Type: Track
	Date: Started: 3/10/21	Bit Type: Diamond	Diameter: 2"
	Date: Completed: 3/10/21	Hammer Type: Auto	Address, City, State: Donalsonville, LA
Logged By: S. Grigoryan	Date: Backfilled: 3/10/21	Hammer Weight: 140 lbs	Hammer Drop: 30"
Drill Crew:	Groundwater Depth: 5 ft	Elevation: 13 ft	Total Depth of Boring: 100'

Depth (feet)	Sample Type	Sample Number	Blow Counts (blows/6")	Graphic Log	Lithology **Soil Group Name:** density/consistency, color, modifier, moisture, grain size, other descriptors	Recovery (in)	Recovery (%)	Additional Test
		1	3;2 3;3		Medium stiff, gray, LEAN CLAY WITH SILT, trace Sand, wet (CL)	15	62.5	
		2	2;2 2;3		Soft, reddish-brown, LEAN CLAY WITH SILT, some Sand, wet (CL)	24	100	
5		3	1;2 2;3		Soft, reddish-brown, LEAN CLAY WITH SILT, some Gravel, wet (CL)	24	100	
		4	1;1 1;1		Very soft, reddish-brown, LEAN CLAY WITH SILT, some Organic Matter, wet (CL)	11	45.8	
		5	2;2 3;3		Medium stiff, gray to reddish-brown, LEAN CLAY WITH SILT, wet (CL)	24	100	
10		6	2;2 2;3		Soft, gray to reddish-brown, LEAN CLAY WITH SILT, wet (CL)	21	87.5	
		7	WOH;1 2;2		Soft, gray to reddish-brown, LEAN CLAY WITH SILT, trace Sand, wet (CL)	24	100	
15		8	1;1 2;2		Soft, gray to reddish-brown, LEAN CLAY WITH SILT, trace Organic Matter with Shells, wet (CL)	21	87.5	
		9	WOH;WOH 2;1		Very soft, gray to brown, LEAN CLAY WITH SILT, trace Organic Matter, wet (CL)	24	100	
		10	N/A		Very soft, gray to brown, LEAN CLAY WITH SILT, trace Organic Matter, wet (CL)	24	100	
20								
		11	WOH;WOH WOH;1		Very soft, gray, LEAN CLAY WITH SILT, trace Organic Matter, wet (CL)	24	100	
25								
		12	1;1 WOH;1		Very soft, gray, LEAN CLAY WITH SILT, trace Sand, trace Organic Matter, wet (CL)	24	100	

Gulf Holdings	Project: Germania, LA Site Certification	Client: CSRS	Boring No. B-5
		Drilling Contractor: APS	Drill Rig Type: Track
	Date: Started: 3/10/21	Bit Type: Diamond	Diameter: 2"
	Date: Completed: 3/10/21	Hammer Type: Auto	Address, City, State: Donalsonville, LA
Logged By: S. Grigoryan	Date: Backfilled: 3/10/21	Hammer Weight: 140 lbs	Hammer Drop: 30"
Drill Crew:	Groundwater Depth: 5 ft	Elevation: 13 ft	Total Depth of Boring: 100'

Depth (feet)	Sample Type	Sample Number	Blow Counts (blows/6")	Graphic Log	Lithology **Soil Group Name:** density/consistency, color, modifier, moisture, grain size, other descriptors	Recovery (in)	Recovery (%)	Additional Test
35		13	WOH;2 2;2		Soft, gray, CLAYEY SILT, trace Sand, trace Organic Matter, wet (ML)	17	70.8	
40		14	WOH;3 4;3		Medium stiff, gray, CLAYEY SILT, some fine Sand, some Organic Matter, wet (ML) TOP 3": Organic Topsoil	18	75	
45		15	1;1 2;1		Soft, gray, CLAYEY SILT, trace Sand, trace Shell Fragments, wet (ML)	15	62.5	
50		16	WOH;WOH WOH;WOH		Very soft, gray, SILTY LEAN CLAY, trace Sand, trace Shell Fragments, wet (CL)	24	100	
55		17	WOH;WOH WOH;2		Very soft, gray, LEAN CLAY WITH SILT, some Organic Matter, wet (CL)	24	100	
		18	WOH;WOH WOH;2		Very soft, gray, LEAN CLAY WITH SILT, some Organic Matter, wet (CL)	24	100	

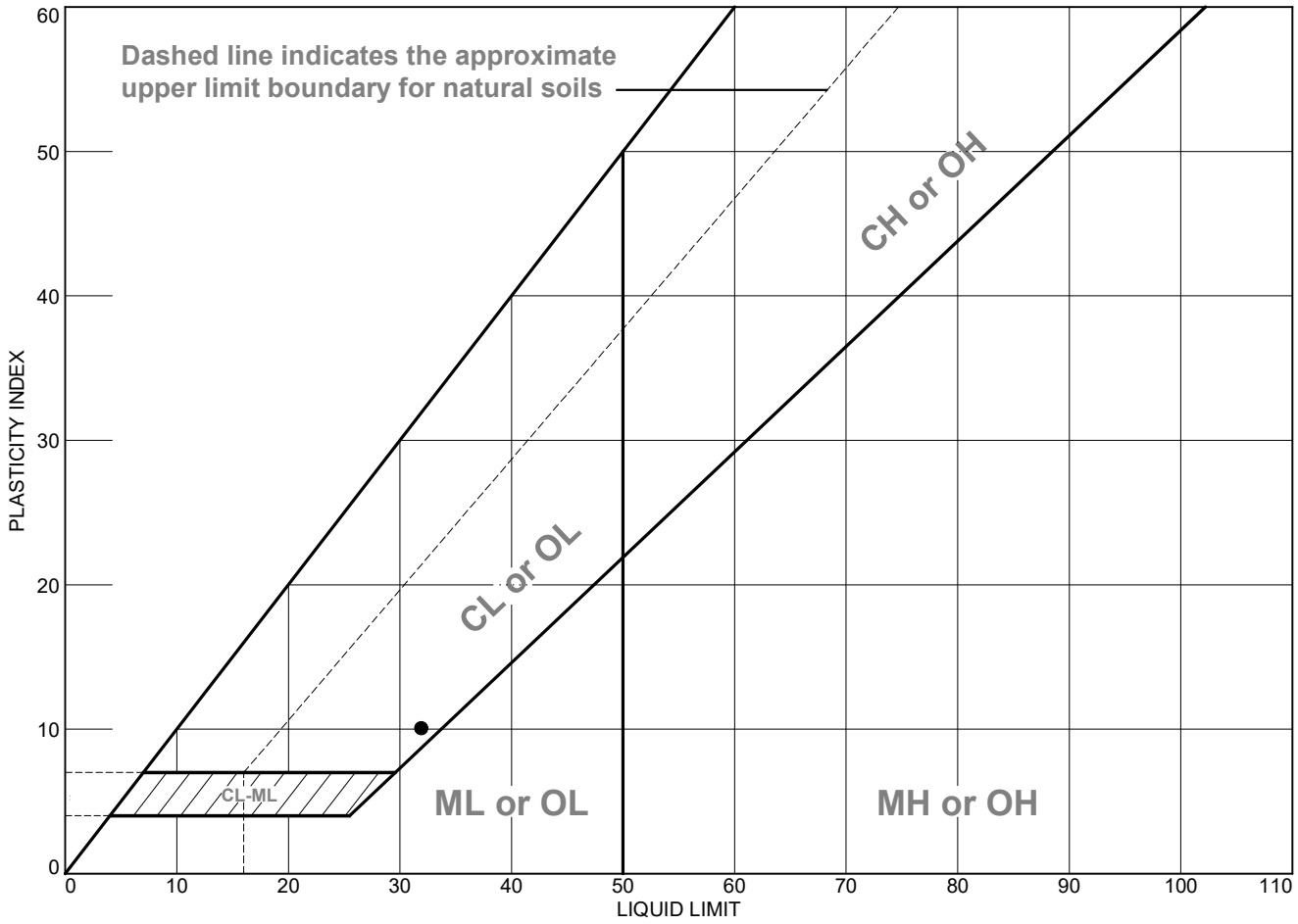
Gulf Holdings	Project: Germania, LA Site Certification		Client: CSRS	Boring No. B-5
			Drilling Contractor: APS	Drill Rig Type: Track
	Date	Started: 3/10/21	Bit Type: Diamond	Diameter: 2"
		Completed: 3/10/21	Hammer Type: Auto	Address, City, State: Donalsonville, LA
Logged By: S. Grigoryan		Backfilled: 3/10/21	Hammer Weight: 140 lbs	Hammer Drop: 30"
Drill Crew:	Groundwater Depth: 5 ft		Elevation: 13 ft	Total Depth of Boring: 100'

Depth (feet)	Sample Type	Sample Number	Blow Counts (blows/6")	Graphic Log	Lithology **Soil Group Name:** density/consistency, color, modifier, moisture, grain size, other descriptors	Recovery (in)	Recovery (%)	Additional Test
65		19	WOH;WOH 2;5		Soft, gray, FAT CLAY, some Silt, wet (CH)	24	100	
70		20	WOH;WOH WOH;WOH		Very soft, gray, SILTY FAT CLAY, wet (CH)	24	100	
75		21	WOH;WOH WOH;WOH		Very soft, gray, FAT CLAY WITH SILT, trace Organic Matter, wet (CH)	24	100	
80		22	WOH;WOH WOH;3		Very soft, gray, FAT CLAY WITH SILT, trace Organic Matter, wet (CH)	24	100	
85		23	4;6 5;7		Dense, gray, FAT CLAY WITH SILT, trace Organic Matter, wet (CH)	24	100	
		24	WOH;1 2;5		Soft, gray, FAT CLAY WITH SILT, trace Shell Fragments, wet (CH)	24	100	

Gulf Holdings	Project: Germania, LA Site Certification	Client: CSRS	Boring No. B-5
		Drilling Contractor: APS	Drill Rig Type: Track
	Date: Started: 3/10/21	Bit Type: Diamond	Diameter: 2"
	Date: Completed: 3/10/21	Hammer Type: Auto	Address, City, State: Donalsonville, LA
Logged By: S. Grigoryan	Date: Backfilled: 3/10/21	Hammer Weight: 140 lbs	Hammer Drop: 30"
Drill Crew:	Groundwater Depth: 5 ft	Elevation: 13 ft	Total Depth of Boring: 100'

Depth (feet)	Sample Type	Sample Number	Blow Counts (blows/6")	Graphic Log	Lithology **Soil Group Name:** density/consistency, color, modifier, moisture, grain size, other descriptors	Recovery (in)	Recovery (%)	Additional Test
95		25	WOH;WOH WOH;WOH		Very soft, gray, SILTY FAT CLAY, wet (CH)	24	100	
		26	WOH;WOH 2;4		Soft, gray, SILTY FAT CLAY, trace Organic Matter with Shell Fragments, wet (CH)	24	100	
100					END OF BORING @ 100' BGS			

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Gray Lean Clay (CL) - with Fine Sand	32	22	10	100	90	CL

Project No. 2103-G018 **Client:** Gulf South Holding

Project: APS2103-G018 Gulf South Holding

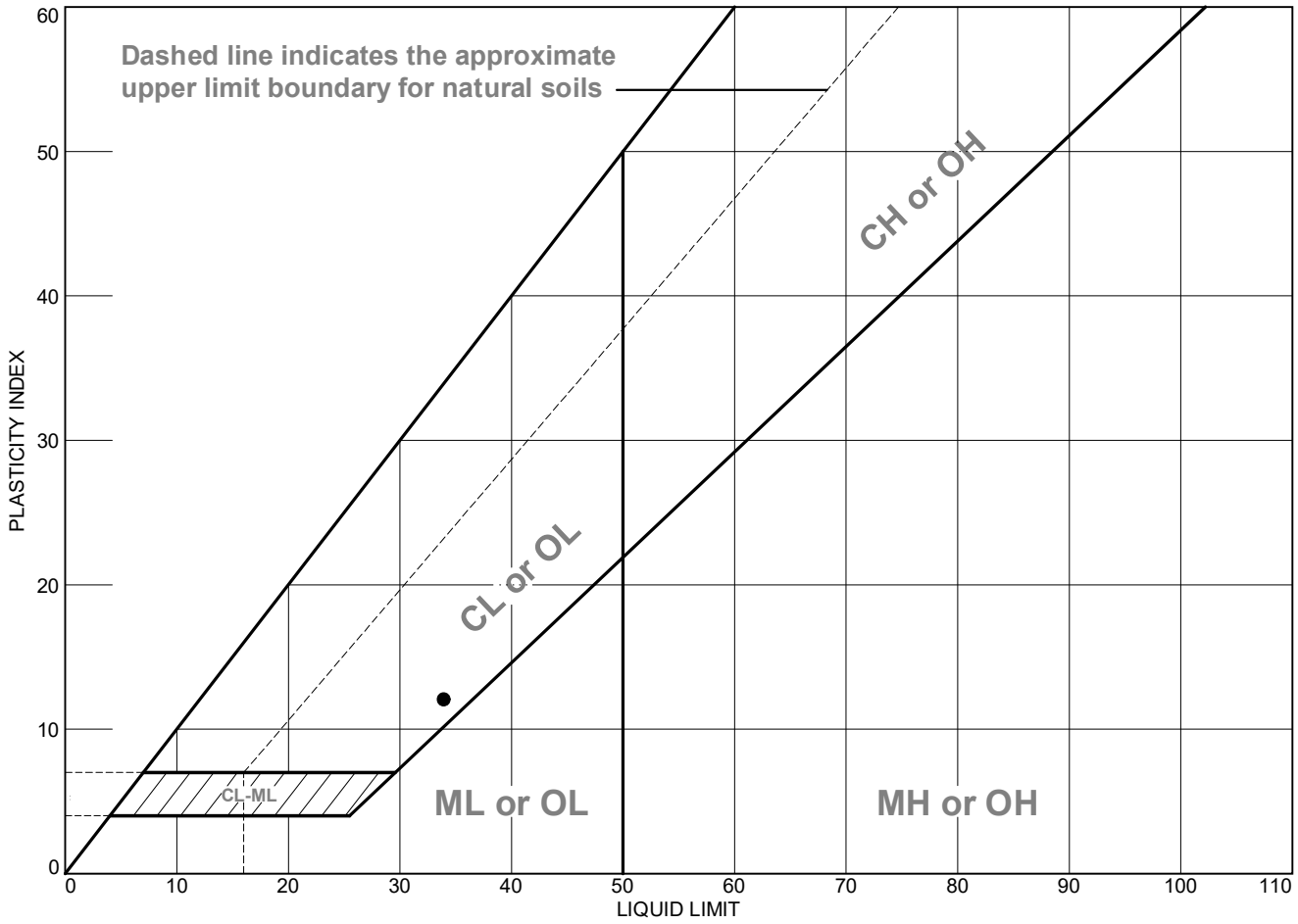
●**Source of Sample:** B-3 **Sample Number:** S-7

Remarks:

APS Engineering and Testing

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Gray Lean Clay (CL) -with Fine Sand	34	22	12	100	90	CL

Project No. 2103-G018 **Client:** Gulf South Holding

Project: APS2103-G018 Gulf South Holding

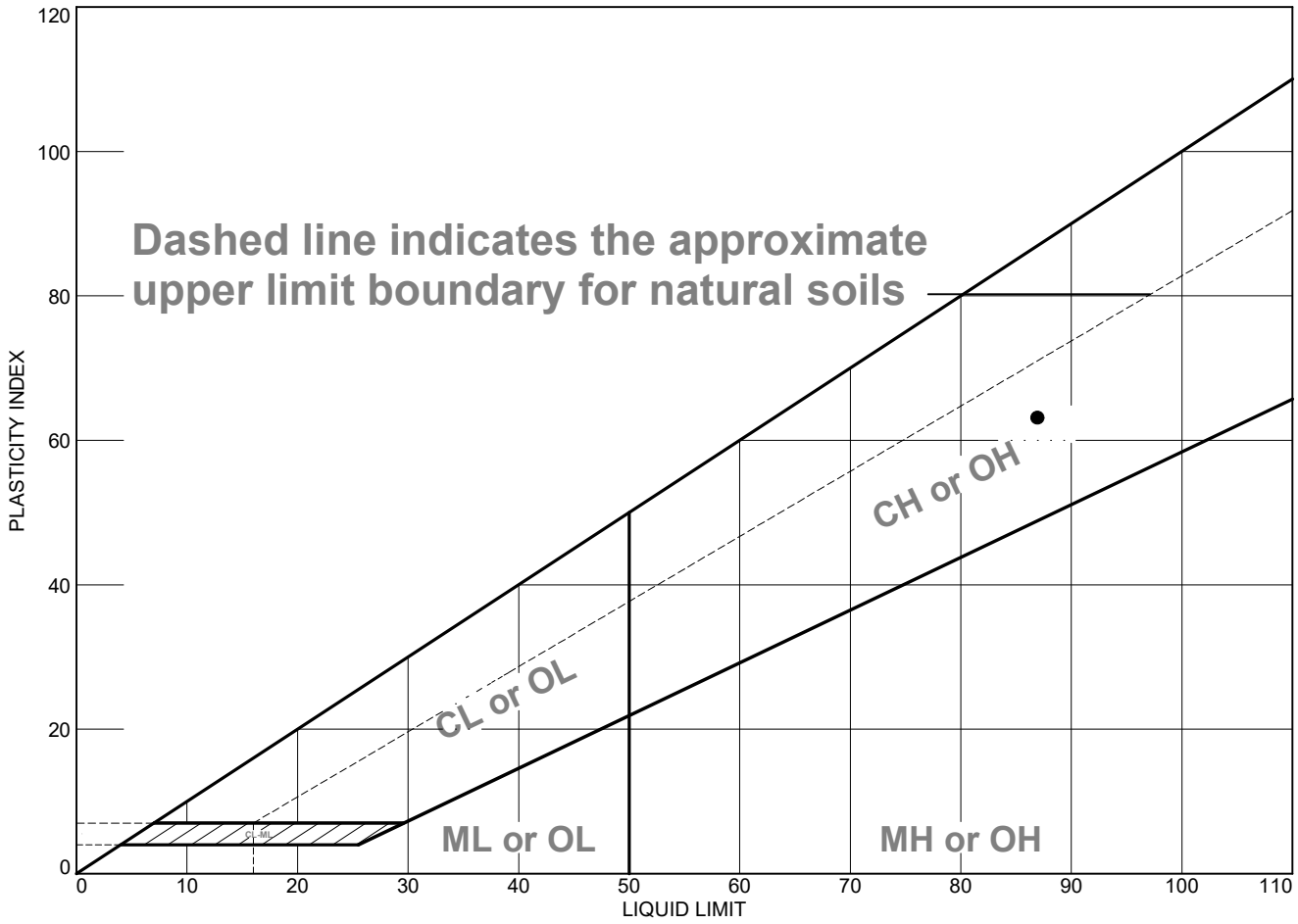
●**Source of Sample:** B-4 **Sample Number:** S-5

Remarks:

APS Engineering and Testing

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Gray Fat Clay (CH)	87	24	63	100	98	CH

Project No. 2103-G018 **Client:** Gulf South Holding

Project: APS2103-G018 Gulf South Holding

●**Source of Sample:** B-5 **Sample Number:** S-21

Remarks:

APS Engineering and Testing

Figure