



Quaternary Resource Investigations, LLC
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BORING NUMBER 13-B111

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CLIENT _____ PROJECT NAME Peggy Lake Placement Area

PROJECT NUMBER W912HY-13-D-0001; Task Order 0002 PROJECT LOCATION La Porte, Texas

DATE STARTED 4/9/2013 8:17:00 AM COMPLETED 4/9/2013 6:10:00 PM GROUND ELEVATION 18.7718 ft HOLE SIZE 8.25 inches

DRILLING CONTRACTOR Quaternary Resource Investigations, LLC NORTHING 13835743.55 ft EASTING 3216015.583 ft

DRILLING METHOD Hollow Stem Auger DRILLING RIG MAKE/MODEL Mobile B57 on Gemco Articulated Platform

LOGGED BY Terri Russin TOTAL DEPTH 60 ft GROUND WATER LEVEL _____

WEATHER cloudy, 70s, windy ☒ AT TIME OF DRILLING 8.00 ft / Elev 10.77 ft 4/9/2013 9:14:00 AM

COPY OF PEGG = GEOTECH BH - PEGGY LAKE TEMPLATE GDT - 10/2/13 10:39 - C:\DOCUMENTS AND SETTINGS\TRL - KTOPIEGGY LAKE PLACEMENT AREA 3 - 9-27-13.GPJ

GRAPHIC LOG	USCS SYMBOL	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE	RECOVERY (in)	SPT BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	FIELD TORVANE (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	MINUS #200 SIEVE CONTENT (%)	COMPRESSION STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)
	CL	Silty CLAY, light brown, slightly moist, medium plasticity, with grass roots and pebbles	0	ST	6		1.8										
	CH	CLAY, light brown to yellow orange, moist, medium to high plasticity, with roots and caliche		ST	17		0.5/2.75			37							
	CH	light brown, high plasticity	5	ST	15		1.7/2.25		101	23	67	19	48	79	1.64	5.6	2.1
				ST	13		1.0		98	27							
	SP	SAND, yellow orange (grading to olive gray with depth), medium grained (grain size decreasing with depth), wet, with shell fragments, no plasticity	10	SS	21	11-11-8 (19)	0	0		13				12			
	SP	laminations present		SS	14	4-16-13 (29)	0	0		15							
	SP	laminations present	15	SS	20	4-15-40 (55)	0.5			16				7			
			20														
	CL	Silty CLAY, yellow orange to light gray, very moist to moist (moisture decreasing with depth), medium to high plasticity, with caliche and iron/manganese oxide nodules	25	ST	20		1.25			26				95			
	CL	light brown		ST	13		0.75		90	34	73	23	50	29	1.13	4.1	0
	CH	CLAY, dark gray to black, very moist, high plasticity, strong hydrocarbon odor		ST	16		0	2.5		60							
	CH	CLAY, yellow orange and light gray, moist, medium to high plasticity, with caliche	30	ST	17		1.15		91	31	80	25	55	92	0.9	2.4	0
	CH	CLAY, olive gray and black, very moist, high plasticity, strong hydrocarbon odor		ST	23		0	2.2		78							
				ST	21		0	3.1		73							
	CL		35														

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KTOPIEGGY LAKE PLACEMENT AREA 3. 9-27-13.GPJ

GEOTECH BH - PEGGY LAKE TEMPLATE GDT - 10/2/13 10:39 - C:\DOCUMENTS AND SETTINGS\RL

COPY OF PEGG

GRAPHIC LOG	USCS SYMBOL	MATERIAL DESCRIPTION	DEPTH (ft)	SAMPLE TYPE	RECOVERY (in)	SPT BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	FIELD TORVANE (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			MINUS #200 SIEVE CONTENT (%)	COMPRESSIVE STRENGTH (tsf)	FAILURE STRAIN (%)	CONFINING PRESSURE (psi)				
											LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX								
	CL	Silty CLAY, light gray to greenish gray, grading to light brown, moist, medium to high plasticity (continued) with caliche, slightly moist, light brown with some light gray areas yellow orange and light gray, silt in cracks, cracks easily, with caliche	35	ST	23		0.2/0.7	1.7/-	92	32	61	18	43	80							
				ST	20		1.3			34											
				ST	17		1.4		27												
	ML	Clayey SILT, light gray (with some yellow orange spots), very moist to wet, low to medium plasticity, with caliche, cracks easily due to high silt content very moist moist slightly moist		ST	19		2.5/0.75	101	24												
				ST	18		0.3		22												
			45	ST	20		0.4/1.75		22												
				ST	18		3.3/2.0	110	19					88				0.72	1.7	11.3	
				ST	21		>4.5/2.25		19												
			50	ST	21		2.0/3.4		18												
				ST	21																
	CL	Silty CLAY, yellow orange (some light gray at top), slightly moist, medium to high plasticity, with caliche dense, somewhat dry, blocky, crumbly, black crumbly areas, and bleached dry areas, plasticity seems less		ST	7		3.5/2.5		26												
			55	ST	9		4.0/>4.5														
			ST	11	3.75/3.75		21														
			ST	13	3.2/2.75																
60			ST	13	2.75/>4.5																

Bottom of borehole at 60.0 feet.