

APPENDIX D
CURRENT BORING LOGS AND CPT RESULTS

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Project: Peralta College Geotechnical Assessment
Project Location: Laney College, Oakland, California
Project Number: 0034.001.001

Log of Boring B-1
Sheet 1 of 1

Date(s) Drilled 03/16/2012	Logged By J. Raines	Checked By J. Raines
Drilling Method Direct Push	Drill Bit Size/Type 1.72 inch OD	Total Depth of Borehole 21 feet bgs
Drill Rig Type Ram-Set	Drilling Contractor Gregg Drilling & Testing Inc	Approximate Surface Elevation
Groundwater Level and Date Measured N/A	Sampling Method(s) Tubes 1.25 x 6 inches at 0.065 wall thickness	Hammer Data N/A
Borehole Backfill Cement grout	Location Women's Locker Room, Laney College	

Depth (feet)	Sample Type Sample Number	USCS Symbol	Graphic Log	Munsell Soil-Color	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
0		Concrete			Concrete	
0-5		Fill			Fill, light brown and medium sand with bricks and concrete debris, damp	
5-10		SM			Silty sand, gray	
10-11	10-11	SM-SC			Brown Silty, Clayey SAND to Grayish Brown Silty SAND, 10-11 Liquid Limit = 29, Plastic Limit = 21, 11-12 non plastic	
11-12	11-12					
15-20		CH			Fat Clay, Liquid Limit = 70, Plastic Limit = 29	
20-21	20-21					

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Key to Log of Boring
Sheet 1 of 1

Depth (feet)	Sample Type	Sample Number	USCS Symbol	Graphic Log	Munsell Soil-Color	MATERIAL DESCRIPTION	REMARKS AND OTHER TESTS
1	2	3	4	5	6	7	8






COLUMN DESCRIPTIONS

- | | |
|---|--|
| <p>1 Depth (feet): Depth in feet below the ground surface.</p> <p>2 Sample Type: Type of soil sample collected at the depth interval shown.</p> <p>3 Sample Number: Sample identification number.</p> <p>4 USCS Symbol: USCS symbol of the subsurface material.</p> | <p>5 Graphic Log: Graphic depiction of the subsurface material encountered.</p> <p>6 Munsell Soil-Color: Color of subsurface material according to Munsell soil-color charts.</p> <p>7 MATERIAL DESCRIPTION: Description of material encountered. May include consistency, moisture, color, and other descriptive text.</p> <p>8 REMARKS AND OTHER TESTS: Comments and observations regarding drilling or sampling made by driller or field personnel.</p> |
|---|--|













FIELD AND LABORATORY TEST ABBREVIATIONS

- | | |
|---|--|
| <p>CHEM: Chemical tests to assess corrosivity</p> <p>COMP: Compaction test</p> <p>CONS: One-dimensional consolidation test</p> <p>LL: Liquid Limit, percent</p> | <p>PI: Plasticity Index, percent</p> <p>SA: Sieve analysis (percent passing No. 200 Sieve)</p> <p>UC: Unconfined compressive strength test, Qu, in ksf</p> <p>WA: Wash sieve (percent passing No. 200 Sieve)</p> |
|---|--|






MATERIAL GRAPHIC SYMBOLS

- | | |
|--|---|
|  Lean CLAY, CLAY w/SAND, SANDY CLAY (CL) |  Silty SAND (SM) |
|  Portland Cement Concrete | |
|  AF | |
|  Fat Clay (CH) and other highly organic soils | |

TYPICAL SAMPLER GRAPHIC SYMBOLS

- | | | |
|---|---|---|
|  Shelby Tube (Thin-walled, fixed head) |  3-inch-OD California w/ brass rings |  Pitcher Sample |
|  Direct push acetate liner |  CME Sampler |  Soil Sample for Lab Analysis |
|  Auger sampler |  Grab Sample |  2-inch-OD unlined split spoon (SPT) |
|  Bulk Sample |  2.5-inch-OD Modified California w/ brass liners |  Shelby Tube (Thin-walled, fixed head) |

OTHER GRAPHIC SYMBOLS

- | |
|--|
|  Water level (at time of drilling, ATD) |
|  Water level (after waiting) |
|  Minor change in material properties within a stratum |
|  Inferred/gradational contact between strata |
|  Queried contact between strata |

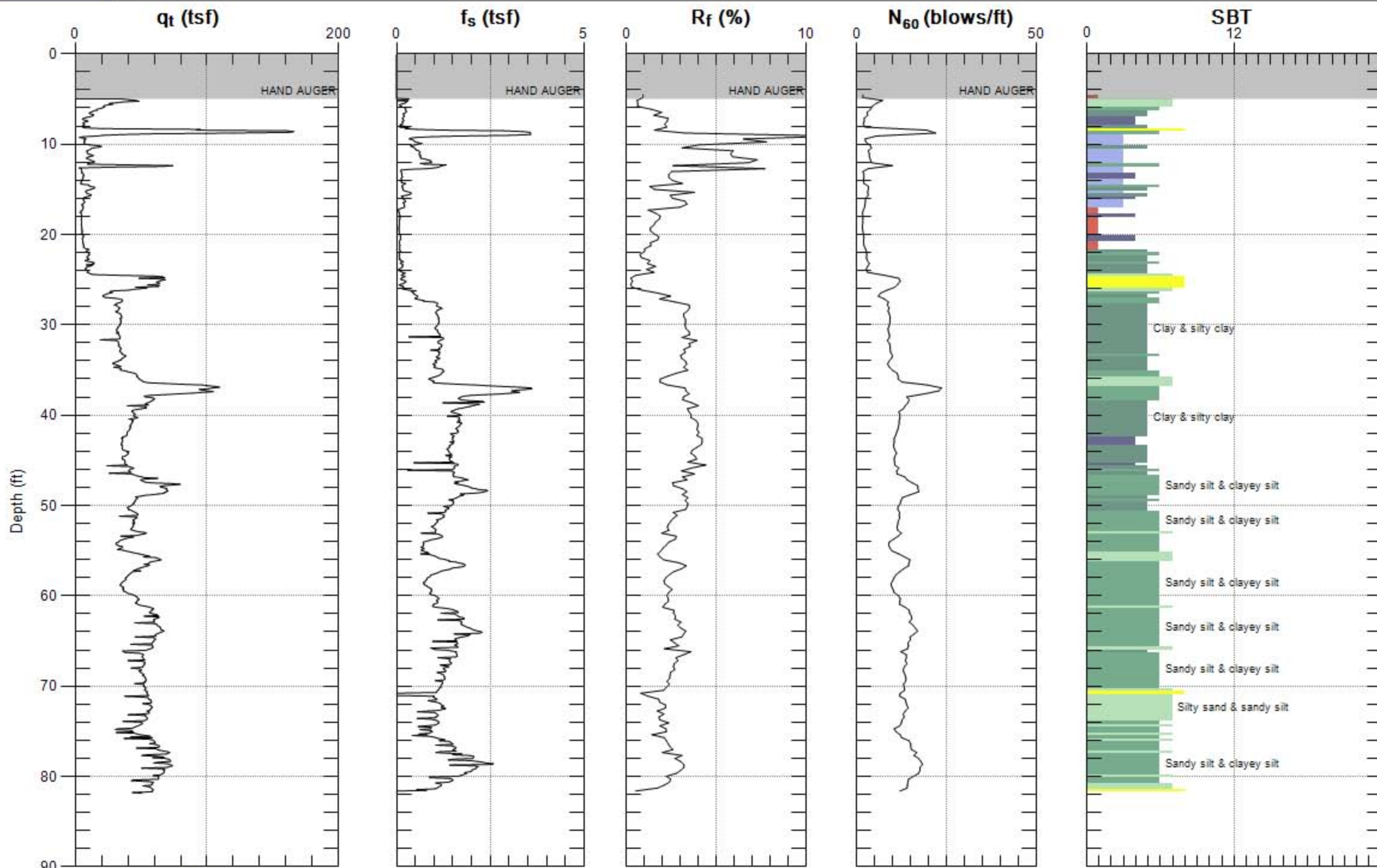
GENERAL NOTES

- Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
- Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.

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Figure B-1

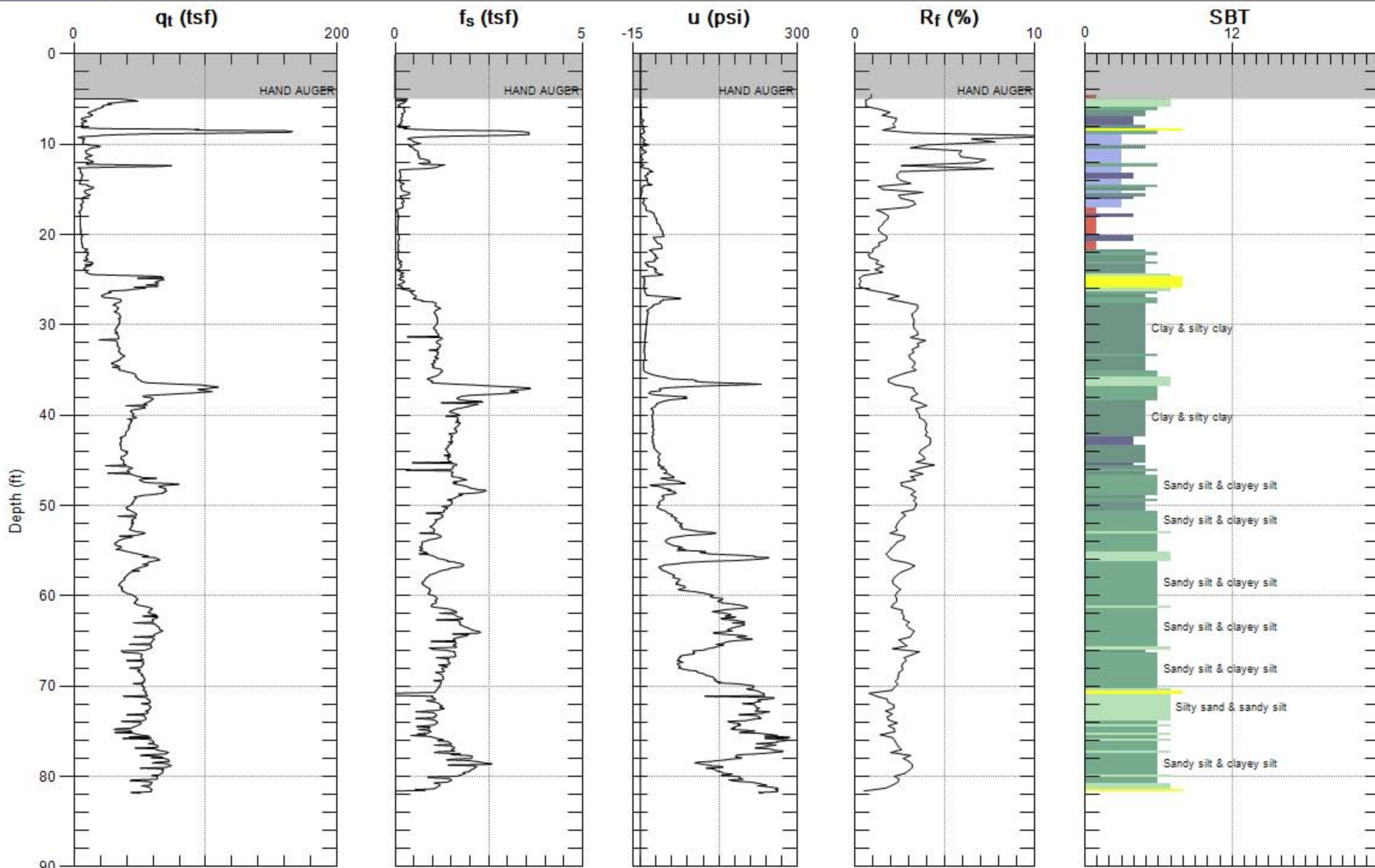
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Max. Depth: 81.857 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

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Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

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CONE PENETRATION TEST DATA

Client: TERRAPHASE	Units: Imperial
Site: LANEY COLLEGE	Data averaging interval: 0.100 meters
Engineer: J.RAINES	Assumed depth of water: 16.004 feet
	Net area ratio of cone: 0.80
	Unit weight of water: 62.4 lb/ft ³
	Relative density constant, CDR: 350
Sounding: B-2	Young's modulus for sands, a: 4
Date: 3/16/2012	Small strain shear modulus number, SG (sands): 180
Time: 1:08 PM	Small strain shear modulus number, CG (clays): 50
	Nkt for clays: 15
	OCR number, kocr: 0.3

Interpretation based on Lunne, Robertson and Powell, 1997

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i		
Depth (m)	Depth (ft)	qc (tsf)	fs (tsf)	u (psi)	Other	qt (tsf)	Rf (%)	SBT	Unit Weight, γ (pcf)	Total Overburden Stress, σ _v (tsf)	Insitu pore pressure, u _o (tsf)	Effective overburden stress, σ' _v (tsf)	Normalized cone resistance, Q _{tn}	Normalized Friction ratio, Fr	Normalized pore pressure ratio, B _q	Soil Behavior Type (normalized) SBTn	SBTn Index, I _c	Normalized Cone resistance, Q _{tn}	Estimated permeability, k _{SBT} (ft/sec)	SPT N60 (blows/ft)	SPT (N1)60 (blows/ft)	Relative Density, Dr (%)	Friction Angle, φ' (degrees)	Young's modulus, E _s (tsf)	Small strain shear modulus, G _o (tsf)	Undrained shear strength, s _u (tsf)	Undrained strength ratio, s _u /σ' _v	Over consolidation ratio, OCR		
0.075	0.246	0.000	0.000	0.000							0.000																			
0.175	0.574	0.000	0.000	0.000							0.000																			
0.275	0.902	0.000	0.000	0.000							0.000																			
0.375	1.230	0.000	0.000	0.000							0.000																			
0.475	1.558	0.000	0.000	0.000							0.000																			
0.575	1.886	0.000	0.000	0.000							0.000																			
0.675	2.215	0.000	0.000	0.000							0.000																			
0.775	2.543	0.000	0.000	0.000							0.000																			
0.875	2.871	0.000	0.000	0.000							0.000																			
0.975	3.199	0.000	0.000	0.000							0.000																			
1.075	3.527	0.000	0.000	0.000							0.000																			
1.175	3.855	0.000	0.000	0.000							0.000																			
1.275	4.183	0.000	0.000	0.000							0.000																			
1.375	4.511	0.000	0.000	0.000							0.000																			
1.475	4.839	7.176	0.065	0.074		7.18	0.91	1	111	0.270	0.000	0.270	25.63	0.94	0.00	5	2.38	17.54	3.00E-6	1.7	3.3	22	33	29	229					
1.575	5.167	41.354	0.240	0.231		41.36	0.58	7	118	0.289	0.000	0.289	142.17	0.58	0.00	6	1.85	74.45	3.00E-4	7.2	13.7	46	42	165	419					
1.675	5.495	29.368	0.183	0.253		29.37	0.62	7	118	0.308	0.000	0.308	94.30	0.63	0.00	6	1.81	54.19	3.00E-4	5.4	10.0	39	40	117	382					
1.775	5.823	22.260	0.136	0.402		22.27	0.61	7	118	0.328	0.000	0.328	66.98	0.62	0.00	6	1.93	41.28	3.00E-4	4.3	7.7	34	38	89	356					
1.875	6.152	17.285	0.240	0.639		17.29	1.39	6	115	0.346	0.000	0.346	48.94	1.41	0.00	5	2.25	34.31	3.00E-6	3.8	6.6	31	37	69	333					
1.975	6.480	12.134	0.236	1.315		12.15	1.94	5	115	0.365	0.000	0.365	32.29	2.00	0.01	5	2.48	24.82	3.00E-6	2.9	5.0	27	34	49	301					
2.075	6.808	12.684	0.193	1.204		12.70	1.52	5	115	0.384	0.000	0.384	32.09	1.57	0.01	5	2.42	24.50	3.00E-6	3.0	4.9	26	34	51	311					
2.175	7.136	7.562	0.174	1.472		7.58	2.30	4	115	0.403	0.000	0.403	17.83	2.43	0.01	4	2.74	15.12	3.00E-8	2.1	3.4				379	0.48	1.19	5.3		
2.275	7.464	7.624	0.173	3.857		7.48	2.26	4	115	0.421	0.000	0.421	17.22	2.39	0.04	4	2.75	14.75	3.00E-8	2.1	3.3				384	0.48	1.15	5.2		
2.375	7.792	6.359	0.135	3.151		6.40	2.11	4	115	0.440	0.000	0.440	13.55	2.27	0.04	4	2.82	11.92	3.00E-8	1.8	2.8				320	0.40	0.90	4.1		
2.475	8.120	8.906	0.200	4.808		8.98	2.23	5	115	0.459	0.000	0.459	18.55	2.35	0.04	4	2.72	16.00	3.00E-8	2.4	3.7				449	0.57	1.24	5.6		
2.575	8.448	106.789	1.650	6.056		106.88	1.54	8	121	0.479	0.000	0.479	222.16	1.55	0.00	6	1.80	155.38	3.00E-4	19.5	29.0	67	45	428	681					
2.675	8.776	108.281	3.528	4.689		108.35	3.26	6	115	0.498	0.000	0.498	216.69	3.27	0.00	8	2.07	163.90	3.00E-6	21.9	31.9	68	44	433						
2.775	9.104	16.416	1.928	1.018		16.43	11.73	3	111	0.516	0.000	0.516	30.84	12.11	0.00	3	3.04	29.11	1.00E-9	5.4	7.7				822	1.06	2.06	9.3		
2.875	9.432	6.364	0.419	5.871		6.45	6.49	3	111	0.534	0.000	0.534	11.07	7.08	0.07	3	3.19	10.81	1.00E-9	2.3	3.2				322	0.39	0.74	3.3		
2.975	9.760	6.847	0.541	6.473		6.94	7.79	3	111	0.553	0.000	0.553	11.56	8.47	0.07	3	3.23	11.38	1.00E-9	2.5	3.5				347	0.43	0.77	3.5		
3.075	10.089	12.372	0.502	9.490		12.51	4.01	3	111	0.571	0.000	0.571	20.91	4.21	0.06	3	2.83	19.15	1.00E-9	3.6	4.9				625	0.80	1.39	6.3		
3.175	10.417	15.044	0.464	2.965		15.09	3.08	5	115	0.590	0.000	0.590	24.59	3.20	0.01	4	2.70	22.11	3.00E-8	4.1	5.4				754	0.97	1.64	7.4		
3.275	10.745	9.643	0.578	7.498		9.75	5.93	3	111	0.608	0.000	0.608	15.04	6.32	0.06	3	3.06	14.43	1.00E-9	3.2	4.2				488	0.61	1.00	4.5		
3.375	11.073	10.631	0.619	5.142		10.70	5.78	3	111	0.626	0.000	0.626	16.10	6.14	0.04	3	3.03	15.40	1.00E-9	3.5	4.5				535	0.67	1.07	4.8		
3.475	11.401	10.858	0.641	1.739		10.88	5.89	3	111	0.644	0.000	0.644	15.89	6.26	0.01	3	3.04	15.26	1.00E-9	3.5	4.5				544	0.68	1.06	4.8		
3.575	11.729	11.022	0.803	2.742		11.06	7.26	3	111	0.663	0.000	0.663	15.69	7.72	0.02	3	3.10	15.24	1.00E-9	3.8	4.8				553	0.69	1.05	4.7		
3.675	12.057	12.281	0.832	0.186		12.28	6.77	3	111	0.681	0.000	0.681	17.04	7.17	0.00	3	3.05	16.48	1.00E-9	4.1	5.1				614	0.77	1.14	5.1		
3.775	12.385	43.407	1.119	2.816		43.45	2.58	6	115	0.700	0.000	0.700	61.09	2.62	0.00	5	2.35	54.25	3.00E-6	9.9	12.1	39	38	174	572					
3.875	12.713	8.662	0.679	11.281		8.82	7.69	3	111	0.718	0.000	0.718	11.29	8.37	0.10	3	3.23	11.19	1.00E-9	3.2	3.9				441	0.54	0.75	3.4		
3.975	13.041	4.697	0.124	18.199		4.96	2.51	3	111	0.736	0.000	0.736	5.73	2.95	0.31	3	3.19	5.66	1.00E-9	1.7	2.0				248	0.28	0.38	1.7		
4.075	13.369	5.843	0.141	11.934		6.01	2.34	4	115	0.755	0.000	0.755	6.96	2.67	0.16	3	3.10	6.82	1.00E-9	2.0	2.4				301	0.35	0.46	2.1		
4.175	13.698	5.786	0.140	10.656		5.94	2.35	4	115	0.774	0.000	0.774	6.67	2.71	0.15	3	3.12	6.56	1.00E-9	2.0	2.3				297	0.34	0.44	2.0		
4.275	14.026	4.822	0.128	13.034		5.01	2.55	3	111	0.792	0.000	0.792	5.32	3.03	0.22	3	3.23	5.29	1.00E-9	1.8	2.1				250	0.28	0.35	1.6		
4.375	14.354	5.412	0.175	16.594		5.65	3.10	3	111	0.810	0.000	0.810	5.97	3.62	0.25	3	3.23	5.93	1.00E-9	2.0	2.3				283	0.32	0.40	1.8		
4.475	14.682	12.242	0.159	8.107		12.36	1.28	6	115	0.829	0.000	0.829	13.90	1.38	0.05	4	2.69	13.29	3.00E-8	3.3	3.7				618	0.77	0.93	4.2		
4.575	15.010	11.544	0.178	2.645		11.58	1.54	5	115	0.848	0.000	0.848	12.66	1.66	0.02	4	2.77	12.21	3.00E-8	3.2	3.6				579	0.72	0.84	3.8		
4.675	15.338	8.543	0.324	2.385		8.58	3.78	3	111	0.866	0.000	0.866	8.90	4.20	0.02	3	3.12	8.80	1.00E-9	3.0	3.3				429	0.51	0.59	2.7		
4.775	15.666	10.534	0.255	0.743		10.54	2.42	5	115	0.885	0.000	0.885	10.91	2.64	0.01	3	2.93	10.70	1.00E-9	3.2	3.5				527	0.64	0.73	3.3		
4.875	15.994	6.790	0.174	2.876		6.83	2.55	4	115	0.904	0.000	0.904	6.56	2.94	0.03	3	3.15	6.51	1.00E-9	2.4	2.6				342	0.40	0.44	2.0		

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth (m)	Depth (ft)	qc (tsf)	fs (tsf)	u (psi)	Other	qt (tsf)	Rf (%)	SBT	Unit Weight, γ (pcf)	Total Overburden Stress, σ_v (tsf)	Insitu pore pressure, u_0 (tsf)	Effective overburden stress, σ'_v (tsf)	Normalized cone resistance, Q_{tl}	Normalized Friction ratio, F_r	Normalized pore pressure ratio, B_q	Soil Behavior Type (normalized) SBTn	SBTn Index, I_c	Normalized Cone resistance, Q_{tn}	Estimated permeability, k_{SBT} (ft/sec)	SPT N60 (blows/ft)	SPT (N1)60 (blows/ft)	Relative Density, D_r (%)	Friction Angle, ϕ' (degrees)	Young's modulus, E_s (tsf)	Small strain shear modulus, G_0 (tsf)	Undrained shear strength, s_u (tsf)	Undrained strength ratio, s_u/σ'_v	Over consolidation ratio, OCR
7.075	23.212	12.321	0.144	11.838		12.49	1.15	6	115	1.310	0.225	1.085	10.30	1.29	0.06	4	2.79	10.34	3.00E-8	3.5	3.4				625	0.75	0.69	3.1
7.175	23.540	9.275	0.154	18.816		9.55	1.61	5	115	1.329	0.235	1.094	7.51	1.87	0.14	3	2.99	7.54	1.00E-9	3.0	2.9				477	0.55	0.50	2.3
7.275	23.868	8.157	0.095	28.922		8.57	1.11	5	115	1.348	0.245	1.102	6.55	1.31	0.25	3	2.97	6.58	1.00E-9	2.6	2.5				429	0.48	0.44	2.0
7.375	24.196	9.615	0.154	30.913		10.06	1.53	5	115	1.367	0.256	1.111	7.83	1.77	0.23	3	2.96	7.86	1.00E-9	3.0	2.9				503	0.58	0.52	2.3
7.475	24.524	36.878	0.182	26.247		37.26	0.49	7	118	1.386	0.266	1.120	32.03	0.51	0.05	5	2.17	32.65	3.00E-6	7.8	7.5	31	34	149	636			
7.575	24.852	63.427	0.149	6.316		63.52	0.23	8	121	1.406	0.276	1.130	54.98	0.24	0.00	6	1.83	56.60	3.00E-4	11.7	11.3	40	37	254	762			
7.675	25.180	64.312	0.212	7.610		64.42	0.33	8	121	1.426	0.286	1.139	55.30	0.34	0.00	6	1.88	57.07	3.00E-4	12.1	11.7	40	37	258	768			
7.775	25.509	61.566	0.140	7.268		61.67	0.23	8	121	1.445	0.297	1.149	52.42	0.23	0.00	6	1.85	54.35	3.00E-4	11.4	11.0	39	37	247	759			
7.875	25.837	65.184	0.158	6.978		65.28	0.29	8	121	1.465	0.307	1.158	46.46	0.29	0.00	6	1.93	48.23	3.00E-4	10.6	10.1	37	36	221	734			
7.975	26.165	37.695	0.327	8.040		37.81	0.87	7	118	1.485	0.317	1.168	31.11	0.90	0.01	5	2.30	32.05	3.00E-6	8.4	8.0	30	34	151	648			
8.075	26.493	25.488	0.446	10.047		25.63	1.74	6	115	1.503	0.327	1.176	20.52	1.85	0.02	4	2.62	20.97	3.00E-8	6.6	6.2				1282	1.61	1.37	6.2
8.175	26.821	21.500	0.539	33.329		21.98	2.45	5	115	1.522	0.337	1.185	17.27	2.63	0.10	4	2.77	17.58	3.00E-8	6.0	5.7				1099	1.36	1.15	5.2
8.275	27.149	30.905	0.580	59.790		31.77	1.83	6	115	1.541	0.348	1.193	25.33	1.92	0.13	4	2.66	26.03	3.00E-8	7.7	7.3				1588	2.01	1.69	7.6
8.375	27.477	33.702	0.927	38.500		34.26	2.71	6	115	1.560	0.358	1.202	27.21	2.84	0.07	4	2.63	27.91	3.00E-8	8.8	8.2				1713	2.18	1.81	8.2
8.475	27.805	30.814	1.084	27.331		31.21	3.47	5	115	1.579	0.368	1.210	24.48	3.66	0.05	4	2.74	25.04	3.00E-8	8.5	7.9				1560	1.98	1.63	7.3
8.575	28.133	32.822	1.159	19.239		33.10	3.50	5	115	1.597	0.378	1.219	25.84	3.68	0.03	4	2.72	26.49	3.00E-8	9.0	8.3				1655	2.10	1.72	7.8
8.675	28.461	31.858	1.083	13.800		32.06	3.38	5	115	1.616	0.389	1.227	24.80	3.56	0.02	4	2.73	25.45	3.00E-8	8.7	8.1				1603	2.03	1.65	7.4
8.775	28.789	33.537	1.068	14.089		33.74	3.17	5	115	1.635	0.399	1.236	25.97	3.33	0.02	4	2.69	26.73	3.00E-8	9.0	8.3				1687	2.14	1.73	7.8
8.875	29.117	34.728	1.110	13.235		34.92	3.18	5	115	1.654	0.409	1.245	26.73	3.34	0.02	4	2.69	27.55	3.00E-8	9.3	8.6				1746	2.22	1.78	8.0
8.975	29.446	34.235	1.129	11.427		34.41	3.28	5	115	1.673	0.419	1.253	26.13	3.45	0.01	4	2.70	26.94	3.00E-8	9.2	8.5				1721	2.18	1.74	7.8
9.075	29.774	34.246	1.124	11.860		34.42	3.27	5	115	1.691	0.430	1.262	25.94	3.44	0.01	4	2.70	26.78	3.00E-8	9.2	8.5				1721	2.18	1.73	7.8
9.175	30.102	33.177	1.080	11.191		33.28	3.25	5	115	1.710	0.440	1.270	24.85	3.42	0.01	4	2.72	25.67	3.00E-8	9.0	8.2				1664	2.10	1.66	7.5
9.275	30.430	31.727	1.051	10.619		31.88	3.30	5	115	1.729	0.450	1.279	23.58	3.49	0.01	4	2.74	24.35	3.00E-8	8.7	7.9				1594	2.01	1.57	7.1
9.375	30.758	31.727	1.105	10.017		31.87	3.47	5	115	1.748	0.460	1.287	23.40	3.67	0.01	4	2.76	24.17	3.00E-8	8.8	8.0				1594	2.01	1.56	7.0
9.475	31.086	32.794	1.153	9.609		32.93	3.50	5	115	1.767	0.471	1.296	24.05	3.70	0.01	4	2.75	24.88	3.00E-8	9.1	8.2				1647	2.08	1.60	7.2
9.575	31.414	33.815	1.046	9.252		33.95	3.08	5	115	1.785	0.481	1.305	24.65	3.25	0.01	4	2.71	25.60	3.00E-8	9.1	8.2				1697	2.14	1.64	7.4
9.675	31.742	29.634	1.164	8.360		29.75	3.91	5	115	1.804	0.491	1.313	21.29	4.16	0.00	3	2.82	21.96	1.00E-9	8.5	7.7				1488	1.86	1.42	6.4
9.775	32.070	32.890	1.147	8.457		33.01	3.47	5	115	1.823	0.501	1.322	23.60	3.68	0.00	4	2.75	24.48	3.00E-8	9.1	8.2				1651	2.08	1.57	7.1
9.875	32.398	33.475	1.189	7.743		33.59	3.54	5	115	1.842	0.511	1.330	23.86	3.75	0.00	4	2.76	24.78	3.00E-8	9.3	8.3				1679	2.12	1.59	7.2
9.975	32.726	34.280	1.091	7.394		34.39	3.17	5	115	1.861	0.522	1.339	24.30	3.36	0.00	4	2.72	25.32	3.00E-8	9.3	8.3				1719	2.17	1.62	7.3
10.075	33.054	34.604	1.135	7.334		34.71	3.27	5	115	1.879	0.532	1.347	24.37	3.46	0.00	4	2.73	25.41	3.00E-8	9.4	8.4				1735	2.19	1.62	7.3
10.175	33.383	36.997	1.112	8.442		37.12	3.00	6	115	1.898	0.542	1.356	25.98	3.16	0.00	4	2.68	27.22	3.00E-8	9.9	8.7				1856	2.35	1.73	7.8
10.275	33.711	35.880	1.102	8.308		36.00	3.06	5	115	1.917	0.552	1.364	24.98	3.23	0.00	4	2.70	26.16	3.00E-8	9.7	8.5				1800	2.27	1.67	7.5
10.375	34.039	32.056	1.053	6.859		32.16	3.28	5	115	1.936	0.563	1.373	22.01	3.49	0.00	4	2.76	22.97	3.00E-8	8.9	7.8				1608	2.01	1.47	6.6
10.475	34.367	30.247	1.014	6.027		30.33	3.34	5	115	1.954	0.573	1.382	20.54	3.57	0.00	4	2.79	21.40	3.00E-8	8.6	7.5				1517	1.89	1.37	6.2
10.575	34.695	33.032	1.050	6.123		33.12	3.17	5	115	1.973	0.583	1.390	22.41	3.37	0.00	4	2.75	23.46	3.00E-8	9.1	8.0				1656	2.08	1.49	6.7
10.675	35.023	36.135	1.231	6.762		36.23	3.40	5	115	1.992	0.593	1.399	24.48	3.60	0.00	4	2.74	25.68	3.00E-8	9.9	8.6				1812	2.28	1.63	7.3
10.775	35.351	43.509	1.210	15.301		43.73	2.77	6	115	2.011	0.604	1.407	29.65	2.90	0.01	4	2.61	31.46	3.00E-8	11.2	9.7				2186	2.78	1.98	8.9
10.875	35.679	46.482	1.078	35.610		46.99	2.29	6	115	2.030	0.614	1.416	31.76	2.40	0.04	4	2.54	33.97	3.00E-8	11.5	10.0				2350	3.00	2.12	9.5
10.975	36.007	47.889	0.914	74.622		48.96	1.87	7	118	2.049	0.624	1.425	32.92	1.95	0.10	5	2.47	35.49	3.00E-6	11.5	9.9	32	34	196	755			
11.075	36.335	53.607	1.031	136.292		55.57	1.85	7	118	2.068	0.634	1.434	37.31	1.93	0.17	5	2.42	40.44	3.00E-6	12.6	10.8	34	35	222	789			
11.175	36.663	87.762	2.044	171.642		90.23	2.27	7	118	2.088	0.645	1.443	61.08	2.32	0.13	5	2.31	67.00	3.00E-6	19.6	16.8	44	38	361	930			
11.275	36.991	102.392	3.351	58.468		103.23	3.25	6	115	2.106	0.655	1.452	69.67	3.31	0.04	5	2.38	76.05	3.00E-6	23.6	20.2	47	39	413	974			
11.375	37.320	97.979	3.234	30.572		98.42	3.29	6	115	2.125	0.665	1.460	65.95	3.36	0.02	5	2.40	71.96	3.00E-6	22.8	19.4	45	38	394	961			
11.475	37.648	77.228	2.699	23.438		77.57	3.48	6	115	2.144	0.675	1.469	51.35	3.58	0.01	4	2.50	55.60	3.00E-8	18.8	16.0				3878	5.03	3.42	15.4
11.575	37.976	54.974	1.770	72.586		56.02	3.16	6	115	2.163	0.686	1.477	36.46	3.29	0.08	4	2.58	39.21	3.00E-8	13.9	11.8				2801	3.59	2.43	10.9
11.675	3																											

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth (m)	Depth (ft)	qc (tsf)	fs (tsf)	u (psi)	Other	qt (tsf)	Rf (%)	SBT	Unit Weight, γ (pcf)	Total Overburden Stress, σv (tsf)	Insitu pore pressure, uo (tsf)	Effective overburden stress, σ'v (tsf)	Normalized cone resistance, Q _{nl}	Normalized Friction ratio, Fr	Normalized pore pressure ratio, Bq	Soil Behavior Type (normalized) SBTn	SBTn Index, Ic	Normalized Cone resistance, Q _{tn}	Estimated permeability, kS _{BT} (ft/sec)	SPT N60 (blows/ft)	SPT (N1)60 (blows/ft)	Relative Density, Dr (%)	Friction Angle, φ' (degrees)	Young's modulus, Es (tsf)	Small strain shear modulus, Go (tsf)	Undrained shear strength, su (tsf)	Undrained strength ratio, su/σ'v	Over consolidation ratio, OCR
15.975	52.411	42.313	0.981	77.743		43.43	2.26	6	115	2.990	1.136	1.854	21.81	2.43	0.11	4	2.67	24.29	3.00E-8	11.2	8.5			2172	2.70	1.45	6.5	
16.075	52.740	42.914	1.040	96.782		44.31	2.35	6	115	3.009	1.146	1.863	22.17	2.52	0.14	4	2.67	24.69	3.00E-8	11.4	8.6			2215	2.75	1.48	6.7	
16.175	53.068	49.318	0.999	128.899		51.17	1.95	7	118	3.028	1.156	1.872	25.72	2.07	0.17	4	2.57	29.18	3.00E-8	12.4	9.3			2559	3.21	1.71	7.7	
16.275	53.396	42.103	1.195	81.972		43.28	2.76	6	115	3.047	1.167	1.880	21.40	2.97	0.12	4	2.73	23.64	3.00E-8	11.5	8.6			2164	2.68	1.43	6.4	
16.375	53.724	36.668	1.020	52.812		37.43	2.72	6	115	3.066	1.177	1.889	18.19	2.97	0.08	4	2.78	19.93	3.00E-8	10.3	7.7			1871	2.29	1.21	5.5	
16.475	54.052	31.738	0.760	50.152		32.46	2.34	6	115	3.084	1.187	1.897	15.48	2.59	0.08	4	2.80	16.91	3.00E-8	9.0	6.8			1623	1.96	1.03	4.6	
16.575	54.380	31.529	0.717	61.685		32.42	2.21	6	115	3.103	1.197	1.906	15.38	2.45	0.11	4	2.79	16.84	3.00E-8	8.9	6.6			1621	1.95	1.03	4.6	
16.675	54.708	33.310	0.697	77.060		34.42	2.02	6	115	3.122	1.208	1.914	16.35	2.23	0.14	4	2.75	18.06	3.00E-8	9.2	6.8			1721	2.09	1.09	4.9	
16.775	55.036	36.770	0.725	100.750		38.22	1.90	6	115	3.141	1.218	1.923	18.24	2.07	0.17	4	2.69	20.37	3.00E-8	9.8	7.3			1911	2.34	1.22	5.5	
16.875	55.364	46.448	0.840	146.510		48.56	1.73	7	118	3.160	1.228	1.932	23.50	1.85	0.21	4	2.57	26.83	3.00E-8	11.7	8.7			2428	3.03	1.57	7.0	
16.975	55.692	53.919	1.062	224.105		57.15	1.86	7	118	3.179	1.238	1.941	27.80	1.97	0.28	5	2.53	32.03	3.00E-6	13.3	9.8	30	33	229	881			
17.075	56.020	60.012	1.302	196.477		62.84	2.07	7	118	3.199	1.249	1.950	30.58	2.18	0.22	4	2.52	35.31	3.00E-8	14.8	10.9			3142	3.98	2.04	9.2	
17.175	56.348	54.855	1.640	89.670		56.15	2.92	6	115	3.218	1.259	1.959	27.02	3.10	0.10	4	2.66	30.44	3.00E-8	14.5	10.6			2807	3.53	1.80	8.1	
17.275	56.677	53.012	1.782	44.646		53.65	3.32	6	115	3.236	1.269	1.967	25.63	3.53	0.04	4	2.72	28.61	3.00E-8	14.4	10.6			2683	3.36	1.71	7.7	
17.375	57.005	47.237	1.457	38.508		47.79	3.05	6	115	3.255	1.279	1.976	22.54	3.27	0.03	4	2.74	25.08	3.00E-8	13.0	9.5			2390	2.97	1.50	6.8	
17.475	57.333	43.872	1.169	48.904		44.58	2.62	6	115	3.274	1.289	1.984	20.81	2.83	0.05	4	2.72	23.23	3.00E-8	12.0	8.7			2229	2.75	1.39	6.2	
17.575	57.661	39.936	0.966	61.254		40.82	2.37	6	115	3.293	1.300	1.993	18.83	2.57	0.08	4	2.73	20.99	3.00E-8	10.9	8.0			2041	2.50	1.26	5.6	
17.675	57.989	37.831	0.849	66.686		38.79	2.19	6	115	3.312	1.310	2.002	17.73	2.39	0.10	4	2.74	19.77	3.00E-8	10.4	7.6			1940	2.37	1.18	5.3	
17.775	58.317	36.322	0.776	72.995		37.37	2.08	6	115	3.330	1.320	2.010	16.94	2.28	0.12	4	2.74	18.88	3.00E-8	10.0	7.2			1869	2.27	1.13	5.1	
17.875	58.645	33.872	0.736	70.409		34.89	2.11	6	115	3.349	1.330	2.019	15.62	2.33	0.12	4	2.78	17.32	3.00E-8	9.5	6.9			1744	2.10	1.04	4.7	
17.975	58.973	34.291	0.824	82.299		35.48	2.32	6	115	3.368	1.341	2.027	15.84	2.57	0.14	4	2.79	17.50	3.00E-8	9.7	7.0			1774	2.14	1.06	4.8	
18.075	59.301	35.330	0.922	80.656		36.49	2.53	6	115	3.387	1.351	2.036	16.26	2.78	0.13	4	2.81	17.94	3.00E-8	10.1	7.3			1825	2.21	1.08	4.9	
18.175	59.629	37.428	0.912	111.005		39.03	2.34	6	115	3.406	1.361	2.044	17.42	2.56	0.19	4	2.76	19.41	3.00E-8	10.4	7.5			1951	2.37	1.16	5.2	
18.275	59.957	42.744	0.996	133.952		44.67	2.23	6	115	3.424	1.371	2.053	20.09	2.41	0.20	4	2.70	22.69	3.00E-8	11.5	8.2			2234	2.75	1.34	6.0	
18.375	60.285	45.478	1.102	148.420		47.62	2.31	6	115	3.443	1.382	2.062	21.43	2.49	0.21	4	2.68	24.28	3.00E-8	12.1	8.7			2381	2.94	1.43	6.4	
18.475	60.614	44.735	1.087	152.990		46.94	2.32	6	115	3.462	1.392	2.070	21.00	2.50	0.22	4	2.69	23.78	3.00E-8	12.0	8.6			2347	2.90	1.40	6.3	
18.575	60.942	45.280	1.013	177.461		47.84	2.12	6	115	3.481	1.402	2.079	21.34	2.28	0.26	4	2.66	24.32	3.00E-8	11.9	8.5			2392	2.96	1.42	6.4	
18.675	61.270	53.193	1.128	197.376		56.04	2.01	7	118	3.500	1.412	2.088	25.16	2.15	0.24	4	2.59	29.14	3.00E-8	13.5	9.6			2802	3.50	1.68	7.5	
18.775	61.598	55.950	1.534	157.219		58.21	2.63	6	115	3.519	1.423	2.096	26.09	2.80	0.18	4	2.65	29.88	3.00E-8	14.6	10.4			2911	3.65	1.74	7.8	
18.875	61.926	56.029	1.524	157.583		58.30	2.61	6	115	3.538	1.433	2.105	26.02	2.78	0.18	4	2.64	29.83	3.00E-8	14.7	10.4			2915	3.65	1.73	7.8	
18.975	62.254	58.350	1.658	172.794		60.84	2.72	6	115	3.556	1.443	2.113	27.10	2.89	0.19	4	2.64	31.12	3.00E-8	15.2	10.8			3042	3.82	1.81	8.1	
19.075	62.582	58.571	1.632	168.900		61.00	2.68	6	115	3.575	1.453	2.122	27.06	2.84	0.19	4	2.64	31.13	3.00E-8	15.3	10.8			3050	3.83	1.80	8.1	
19.175	62.910	54.350	1.722	190.316		57.09	3.02	6	115	3.594	1.463	2.131	25.11	3.22	0.23	4	2.70	28.54	3.00E-8	14.6	10.3			2855	3.57	1.67	7.5	
19.275	63.238	59.433	1.770	194.827		62.24	2.84	6	115	3.613	1.474	2.139	27.41	3.02	0.21	4	2.65	31.49	3.00E-8	15.6	11.0			3112	3.91	1.83	8.2	
19.375	63.566	62.054	1.942	176.019		64.59	3.01	6	115	3.632	1.484	2.148	28.38	3.19	0.18	4	2.65	32.61	3.00E-8	16.3	11.4			3229	4.06	1.89	8.5	
19.475	63.894	63.603	2.167	162.584		65.94	3.29	6	115	3.650	1.494	2.156	28.89	3.48	0.16	4	2.67	33.08	3.00E-8	16.9	11.8			3297	4.15	1.93	8.7	
19.575	64.222	60.034	1.980	160.102		62.34	3.18	6	115	3.669	1.504	2.165	27.10	3.37	0.17	4	2.68	30.98	3.00E-8	16.0	11.2			3117	3.91	1.81	8.1	
19.675	64.551	54.691	1.760	194.626		57.49	3.06	6	115	3.688	1.515	2.173	24.76	3.27	0.23	4	2.71	28.19	3.00E-8	14.8	10.3			2875	3.59	1.65	7.4	
19.775	64.879	57.345	1.460	194.180		60.14	2.43	6	115	3.707	1.525	2.182	25.86	2.59	0.22	4	2.63	29.98	3.00E-8	14.9	10.3			3007	3.76	1.72	7.8	
19.875	65.207	53.097	1.482	159.188		55.39	2.67	6	115	3.726	1.535	2.190	23.59	2.87	0.19	4	2.69	27.01	3.00E-8	14.2	9.9			2769	3.44	1.57	7.1	
19.975	65.535	53.250	1.600	149.230		55.40	2.89	6	115	3.744	1.545	2.199	23.49	3.10	0.18	4	2.71	26.79	3.00E-8	14.4	10.0			2770	3.44	1.57	7.0	
20.075	65.863	54.861	1.185	129.508		56.73	2.09	7	118	3.764	1.556	2.208	23.99	2.24	0.15	4	2.61	27.95	3.00E-8	14.1	9.8			2836	3.53	1.60	7.2	
20.175	66.191	41.070	1.523	104.808		42.58	3.58	5	115	3.782	1.566	2.217	17.50	3.93	0.15	3	2.87	19.27	1.00E-9	12.2	8.4			2129	2.59	1.17	5.3	
20.275	66.519	49.506	1.609	90.161		50.80	3.17	6	115	3.801	1.576	2.225	21.12	3.42	0.10	4	2.77	23.80	3.00E-8	13.8	9.5			2540	3.13	1.41	6.3	
20.375	66.847	50.306	1.410	74.853		51.38	2.74	6	115	3.820	1.586	2.234	21.29	2.96	0.08	4	2.73	24.23	3.00E-8	13.8	9.5			2569	3.17	1.42	6.4	
20.475	67.175	48.779	1.422	74.860		49.86	2.85	6	115	3.839	1.597	2.242	20.52	3.09	0.08	4	2.75	23.25	3.00E-8	13.5	9.3							

Col 1i	Col 2i	Col 3i	Col 4i	Col 5i	Col 6i	Col 7i	Col 8i	Col 9i	Col 10i	Col 11i	Col 12i	Col 13i	Col 14i	Col 15i	Col 16i	Col 17i	Col 18i	Col 19i	Col 20i	Col 21i	Col 22i	Col 23i	Col 24i	Col 25i	Col 26i	Col 27i	Col 28i	Col 29i
Depth (m)	Depth (ft)	qc (tsf)	fs (tsf)	u (psi)	Other	qt (tsf)	Rf (%)	SBT	Unit Weight, γ (pcf)	Total Overburden Stress, σ_v (tsf)	Insitu pore pressure, u_o (tsf)	Effective overburden stress, σ'_v (tsf)	Normalized cone resistance, Q_{tl}	Normalized Friction ratio, F_r	Normalized pore pressure ratio, B_q	Soil Behavior Type (normalized) SBTn	SBTn Index, I_c	Normalized Cone resistance, Q_{tn}	Estimated permeability, k_{SBT} (ft/sec)	SPT N60 (blows/ft)	SPT (N1)60 (blows/ft)	Relative Density, D_r (%)	Friction Angle, ϕ' (degrees)	Young's modulus, E_s (tsf)	Small strain shear modulus, G_o (tsf)	Undrained shear strength, s_u (tsf)	Undrained strength ratio, s_u/σ'_v	Over consolidation ratio, OCR
24.875	81.611	51.962	0.274	253.495		55.61	0.49	8	121	4.677	2.047	2.630	19.37	0.54	0.32	5	2.38	24.94	3.00E-6	12.0	7.6	27	31	222	966			