Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCAIR	2.0	4.0	909	114	7.974	0.492	0.004	0.035
SLCAIR	4.0	6.0	1695	114	14.87	0.498	0.002	0.035
SLCAIR	6.0	10.0	1695	154	11.01	0.496	0.005	0.052
SLCAIR	10.0	26.0	1695	259	6.544	0.488	0.019	0.124
SLCAIR	26.0	57.0	1695	317	5.347	0.482	0.037	0.196
SLCAVH	0.0	4.0	339	187	1.813	0.281	0.024	0.043
SLCAVH	4.0	6.0	339	236	1.436	0.030	0.012	0.017
SLCAVH	6.0	16.0	596	236	2.525	0.407	0.034	0.085
SLCAVH	16.0	30.0	596	324	1.840	0.290	0.047	0.086
SLCAVH	30.0	36.0	757	324	2.336	0.388	0.016	0.037
SLCAVH	36.0	46.0	757	476	1.590	0.173	0.026	0.042
SLCAVH	46.0	52.0	757	322	2.351	0.390	0.016	0.037
SLCAVH	56.0	58.0	1000	489	2.045	0.343	0.004	0.008
SLCAVH	52.0	56.0	757	489	1.548	0.142	0.011	0.016
SLCBAT	2.0	4.0	588	225	2.613	0.414	0.007	0.018
SLCBAT	4.0	16.0	1300	225	5.778	0.485	0.018	0.107
SLCBAT	16.0	19.0	1300	379	3.430	0.454	0.005	0.016
SLCBAT	19.0	26.0	2092	379	5.520	0.483	0.007	0.037
SLCBAT	32.0	58.0	1926	517	3.725	0.461	0.027	0.101
SLCBAT	26.0	32.0	1200	379	3.166	0.445	0.010	0.032
SLCBEN	2.0	14.0	2756	248	0.000	0.461	0.000	0.097
SLCBEN	14.0	18.0	1858	454	4.093	0.468	0.004	0.018
SLCBEN	18.0	58.0	1858	454	4.093	0.468	0.043	0.176
SLCBON	2.0	10.0	683	241	2.834	0.429	0.023	0.066
SLCBON	10.0	14.0	683	309	2.210	0.371	0.012	0.026
SLCBON	14.0	18.0	2000	309	6.472	0.488	0.004	0.026
SLCBON	18.0	22.0	939	309	3.039	0.439	0.009	0.026
SLCBON	22.0	32.0	939	696	1.349	-.110	0.021	0.029
SLCBON	32.0	36.0	1687	696	2.424	0.397	0.005	0.011
SLCBON	36.0	46.0	1687	750	2.249	0.377	0.012	0.027
SLCBON	46.0	48.0	1687	843	2.001	0.334	0.002	0.005
SLCBON	48.0	55.0	1055	843	1.251	-.383	0.013	0.017
SLCBON	55.0	58.0	2500	843	2.966	0.436	0.002	0.007
SLCCAM	3.0	5.0	447	149	3.000	0.438	0.009	0.027
SLCCAM	5.0	12.0	1229	149	8.248	0.493	0.011	0.094
SLCCAM	12.0	24.0	1229	175	7.023	0.490	0.020	0.137
SLCCAM	24.0	36.0	2100	292	7.192	0.490	0.011	0.082

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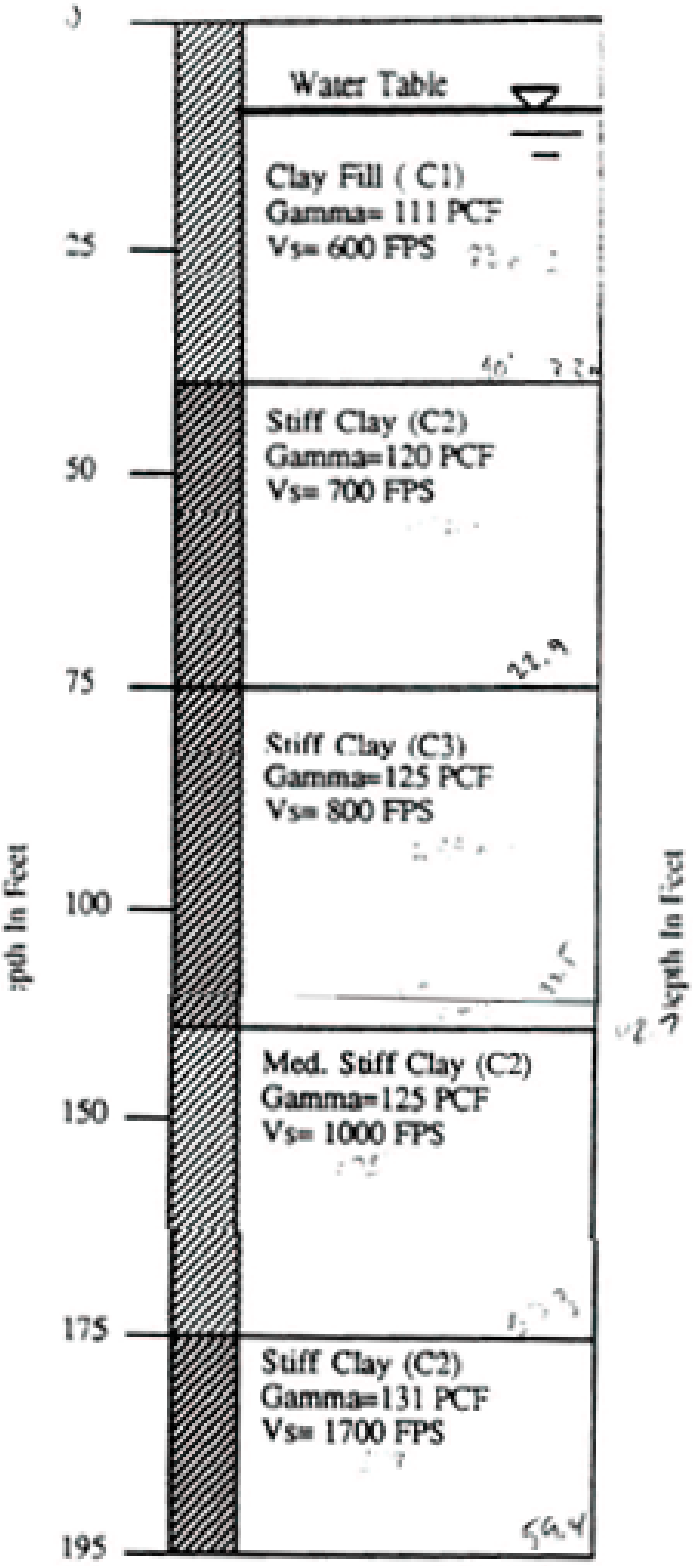
SLCLAI	42.0	46.0	1996	1634	1.222	-.516	0.004	0.005	
SLCLAI	46.0	54.0	1996	634	3.148	0.444	0.008	0.025	
SLCLAI	54.0	56.0	3989	634	6.292	0.487	0.001	0.006	
SLCLAI	56.0	59.0	3989	1750	2.279	0.381	0.002	0.003	
SLCMAG	2.0	9.0	1688	124	13.61	0.497	0.008	0.113	
SLCMAG	9.0	38.0	1688	306	5.516	0.483	0.034	0.190	
SLCMAG	38.0	48.0	1688	480	3.517	0.456	0.012	0.042	258
SLCMAG	48.0	52.0	2511	480	5.231	0.481	0.003	0.017	
SLCMAG	52.0	58.0	2511	1195	2.101	0.354	0.005	0.010	
SLCRIV	2.5	15.0	1793	170	10.55	0.495	0.014	0.147	256
SLCRIV	15.0	53.0	1793	319	5.621	0.484	0.042	0.238	
SLCROO	2.5	5.0	656	164	4.000	0.467	0.008	0.030	
SLCROO	5.0	10.0	656	387	1.695	0.233	0.015	0.026	
SLCROO	10.0	15.0	1740	387	4.496	0.474	0.006	0.026	285
SLCROO	15.0	27.5	1740	262	6.641	0.488	0.014	0.095	
SLCROO	27.5	44.0	1740	329	5.289	0.481	0.019	0.100	
SLCROS	2.0	4.0	645	224	2.879	0.431	0.006	0.018	
SLCROS	4.0	12.0	1020	224	4.554	0.475	0.016	0.071	
SLCROS	12.0	14.0	1020	645	1.581	0.167	0.004	0.006	
SLCROS	14.0	20.0	1020	645	1.581	0.167	0.012	0.019	436
SLCROS	20.0	28.0	2174	645	3.371	0.452	0.007	0.025	
SLCROS	28.0	36.0	1200	469	2.559	0.410	0.013	0.034	
SLCROS	38.0	47.0	1827	1510	1.210	-.578	0.010	0.012	
SLCROS	36.0	38.0	1200	313	3.834	0.463	0.003	0.013	
SLCSUN	2.0	4.0	455	136	3.346	0.451	0.009	0.029	
SLCSUN	4.0	8.0	455	434	1.048	-4.54	0.018	0.018	
SLCSUN	8.0	24.0	888	434	2.046	0.343	0.036	0.074	
SLCSUN	24.0	26.0	888	646	1.375	-.062	0.005	0.006	470
SLCSUN	26.0	34.0	1408	646	2.180	0.367	0.011	0.025	
SLCSUN	34.0	37.5	2663	646	4.122	0.469	0.003	0.011	
SLCSUN	37.5	50.0	2663	1250	2.130	0.359	0.009	0.020	
SLCTMP	2.0	4.0	426	263	1.620	0.192	0.009	0.015	
SLCTMP	4.0	6.0	1157	263	4.399	0.473	0.003	0.015	
SLCTMP	6.0	16.0	1157	731	1.583	0.168	0.017	0.027	
SLCTMP	16.0	18.0	1157	280	4.132	0.469	0.003	0.014	
SLCTMP	18.0	31.0	1674	280	5.979	0.486	0.016	0.093	446
SLCTMP	31.0	44.0	1674	721	2.322	0.386	0.016	0.036	
SLCTMP	44.0	46.0	1674	330	5.073	0.480	0.002	0.012	
SLCTMP	46.0	48.0	2167	330	6.567	0.488	0.002	0.012	
SLCTMP	48.0	58.0	2167	1024	2.116	0.356	0.009	0.020	
SLCUGM	2.0	4.0	519	206	2.519	0.406	0.008	0.019	
SLCUGM	4.0	10.0	519	320	1.622	0.193	0.023	0.037	
SLCUGM	10.0	12.0	1035	320	3.234	0.447	0.004	0.013	504
SLCUGM	12.0	34.0	1035	593	1.745	0.256	0.043	0.074	
SLCUGM	34.0	40.0	1035	713	1.452	0.048	0.012	0.017	
SLCUGM	40.0	58.0	2201	713	3.087	0.441	0.016	0.050	

Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

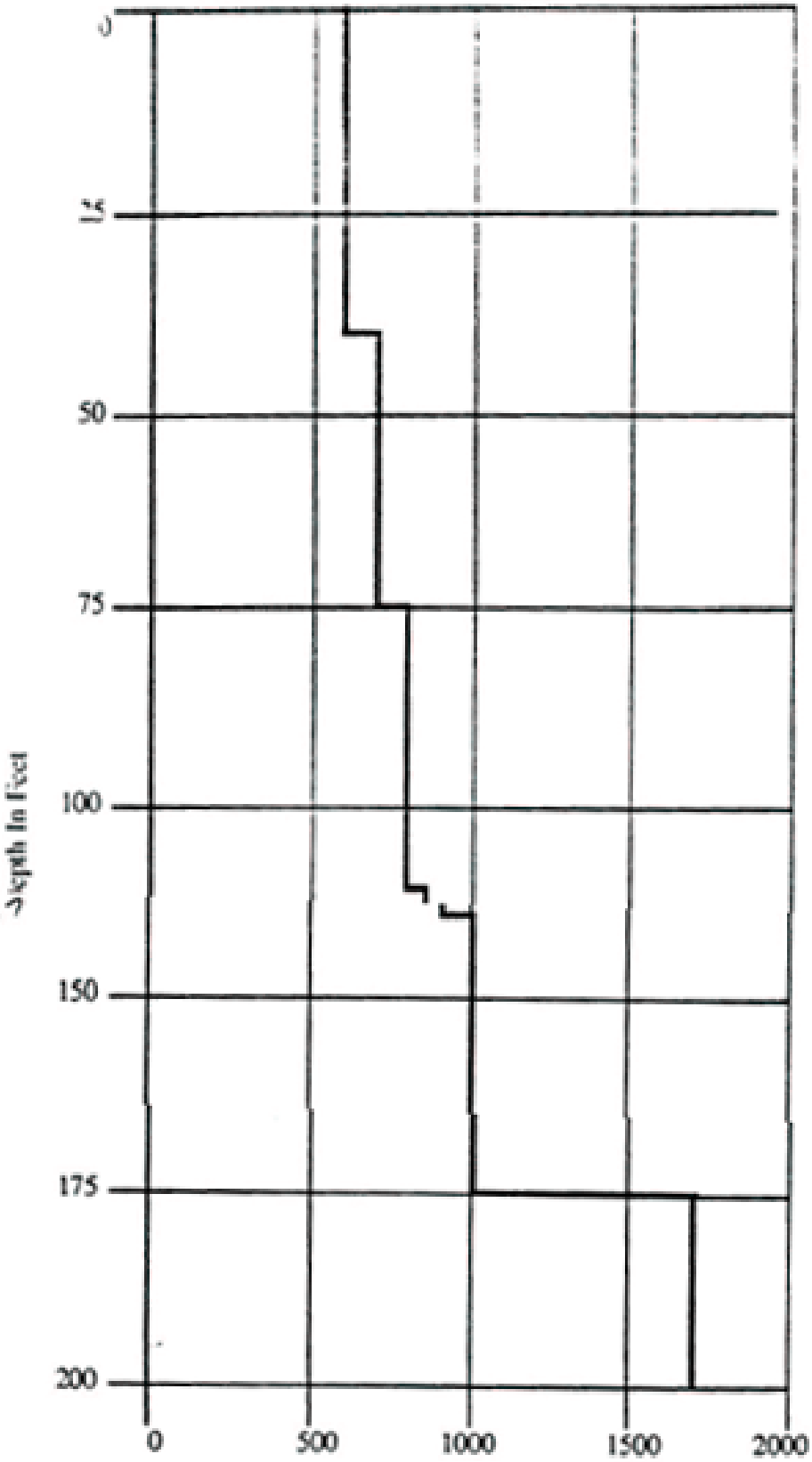
STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCAVH	0.0	4.0	339	187	1.813	0.281	0.024	0.043
SLCAVH	4.0	6.0	339	236	1.436	0.030	0.012	0.017
SLCAVH	6.0	16.0	596	236	2.525	0.407	0.034	0.085
SLCAVH	16.0	30.0	596	324	1.840	0.290	0.047	0.086
SLCAVH	30.0	36.0	757	324	2.336	0.388	0.016	0.037
SLCAVH	36.0	46.0	757	476	1.590	0.173	0.026	0.042
SLCAVH	46.0	52.0	757	322	2.351	0.390	0.016	0.037
SLCAVH	56.0	58.0	1000	489	2.045	0.343	0.004	0.008
SLCAVH	52.0	56.0	757	489	1.548	0.142	0.011	0.016

Idealized Soil and Shear Wave Velocity Profiles

Salt Lake City East Airport #17



Idealized Soil Profile



Shear Wave Velocity Ft./Sec.

Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCAIR	2.0	4.0	909	114	7.974	0.492	0.004	0.035
SLCAIR	4.0	6.0	1695	114	14.87	0.498	0.002	0.035
SLCAIR	6.0	10.0	1695	154	11.01	0.496	0.005	0.052
SLCAIR	10.0	26.0	1695	259	6.544	0.488	0.019	0.124
SLCAIR	26.0	57.0	1695	317	5.347	0.482	0.037	0.196

Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCWAP	2.0	4.0	800	159	5.031	0.479	0.005	0.025
SLCWAP	4.0	14.0	1687	159	10.61	0.496	0.012	0.126
SLCWAP	14.0	18.0	1687	222	7.599	0.491	0.005	0.036
SLCWAP	18.0	38.0	1687	264	6.390	0.487	0.024	0.152
SLCWAP	38.0	50.0	1687	333	5.066	0.480	0.014	0.072
SLCWAP	50.0	59.0	1687	400	4.218	0.470	0.011	0.045

Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCBAT	2.0	4.0	588	225	2.613	0.414	0.007	0.018
SLCBAT	4.0	16.0	1300	225	5.778	0.485	0.018	0.107
SLCBAT	16.0	19.0	1300	379	3.430	0.454	0.005	0.016
SLCBAT	19.0	26.0	2092	379	5.520	0.483	0.007	0.037
SLCBAT	32.0	58.0	1926	517	3.725	0.461	0.027	0.101
SLCBAT	26.0	32.0	1200	379	3.166	0.445	0.010	0.032

Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCCAM	3.0	5.0	447	149	3.000	0.438	0.009	0.027
SLCCAM	5.0	12.0	1229	149	8.248	0.493	0.011	0.094
SLCCAM	12.0	24.0	1229	175	7.023	0.490	0.020	0.137
SLCCAM	24.0	36.0	2100	292	7.192	0.490	0.011	0.082
SLCCAM	36.0	46.0	2006	292	6.870	0.489	0.010	0.068
SLCCAM	46.0	65.0	2006	351	5.715	0.484	0.019	0.108

Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCRIV	2.5	15.0	1793	170	10.55	0.495	0.014	0.147
SLCRIV	15.0	53.0	1793	319	5.621	0.484	0.042	0.238

Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCSUN	2.0	4.0	455	136	3.346	0.451	0.009	0.029
SLCSUN	4.0	8.0	455	434	1.048	-4.54	0.018	0.018
SLCSUN	8.0	24.0	888	434	2.046	0.343	0.036	0.074
SLCSUN	24.0	26.0	888	646	1.375	-.062	0.005	0.006
SLCSUN	26.0	34.0	1408	646	2.180	0.367	0.011	0.025
SLCSUN	34.0	37.5	2663	646	4.122	0.469	0.003	0.011
SLCSUN	37.5	50.0	2663	1250	2.130	0.359	0.009	0.020

Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCBON	2.0	10.0	683	241	2.834	0.429	0.023	0.066
SLCBON	10.0	14.0	683	309	2.210	0.371	0.012	0.026
SLCBON	14.0	18.0	2000	309	6.472	0.488	0.004	0.026
SLCBON	18.0	22.0	939	309	3.039	0.439	0.009	0.026
SLCBON	22.0	32.0	939	696	1.349	-.110	0.021	0.029
SLCBON	32.0	36.0	1687	696	2.424	0.397	0.005	0.011
SLCBON	36.0	46.0	1687	750	2.249	0.377	0.012	0.027
SLCBON	46.0	48.0	1687	843	2.001	0.334	0.002	0.005
SLCBON	48.0	55.0	1055	843	1.251	-.383	0.013	0.017
SLCBON	55.0	58.0	2500	843	2.966	0.436	0.002	0.007

Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCLAI	2.0	6.0	600	336	1.786	0.272	0.013	0.024
SLCLAI	6.0	8.0	973	336	2.896	0.432	0.004	0.012
SLCLAI	8.0	18.0	973	944	1.031	-7.51	0.021	0.021
SLCLAI	18.0	24.0	1872	536	3.493	0.455	0.006	0.022
SLCLAI	24.0	28.0	1872	992	1.887	0.305	0.004	0.008
SLCLAI	28.0	30.0	1872	1634	1.146	-1.10	0.002	0.002
SLCLAI	30.0	32.0	3003	1634	1.838	0.290	0.001	0.002
SLCLAI	32.0	38.0	3003	1634	1.838	0.290	0.004	0.007
SLCLAI	38.0	42.0	2500	1634	1.530	0.127	0.003	0.005
SLCLAI	42.0	46.0	1996	1634	1.222	-.516	0.004	0.005
SLCLAI	46.0	54.0	1996	634	3.148	0.444	0.008	0.025
SLCLAI	54.0	56.0	3989	634	6.292	0.487	0.001	0.006
SLCLAI	56.0	59.0	3989	1750	2.279	0.381	0.002	0.003

Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCWES	2.0	4.0	833	171	4.871	0.478	0.005	0.023
SLCWES	4.0	6.0	1696	171	9.918	0.495	0.002	0.023
SLCWES	6.0	10.0	1696	270	6.281	0.487	0.005	0.030
SLCWES	43.0	57.0	2316	1334	1.736	0.252	0.012	0.021
SLCWES	10.0	43.0	1696	384	4.417	0.473	0.039	0.172

Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCROO	2.5	5.0	656	164	4.000	0.467	0.008	0.030
SLCROO	5.0	10.0	656	387	1.695	0.233	0.015	0.026
SLCROO	10.0	15.0	1740	387	4.496	0.474	0.006	0.026
SLCROO	15.0	27.5	1740	262	6.641	0.488	0.014	0.095
SLCROO	27.5	44.0	1740	329	5.289	0.481	0.019	0.100

Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCROS	2.0	4.0	645	224	2.879	0.431	0.006	0.018
SLCROS	4.0	12.0	1020	224	4.554	0.475	0.016	0.071
SLCROS	12.0	14.0	1020	645	1.581	0.167	0.004	0.006
SLCROS	14.0	20.0	1020	645	1.581	0.167	0.012	0.019
SLCROS	20.0	28.0	2174	645	3.371	0.452	0.007	0.025
SLCROS	28.0	36.0	1200	469	2.559	0.410	0.013	0.034
SLCROS	38.0	47.0	1827	1510	1.210	-.578	0.010	0.012
SLCROS	36.0	38.0	1200	313	3.834	0.463	0.003	0.013

Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCWAS	2.0	4.0	930	174	5.345	0.482	0.004	0.023
SLCWAS	4.0	8.0	930	275	3.382	0.452	0.009	0.029
SLCWAS	8.0	16.0	647	275	2.353	0.390	0.025	0.058
SLCWAS	18.0	26.0	892	479	1.862	0.297	0.018	0.033
SLCWAS	16.0	18.0	892	275	3.244	0.447	0.004	0.015
SLCWAS	26.0	32.0	1183	479	2.470	0.402	0.010	0.025
SLCWAS	32.0	50.0	1183	606	1.952	0.322	0.030	0.059
SLCWAS	54.0	57.0	1818	778	2.337	0.388	0.003	0.008

Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCFOR	2.0	8.0	1538	234	6.573	0.488	0.008	0.051
SLCFOR	8.0	18.0	2036	373	5.458	0.483	0.010	0.054
SLCFOR	18.0	22.0	2036	252	8.079	0.492	0.004	0.032
SLCFOR	22.0	26.0	1750	252	6.944	0.489	0.005	0.032
SLCFOR	26.0	32.0	1750	500	3.500	0.456	0.007	0.024
SLCFOR	32.0	34.0	1750	784	2.232	0.374	0.002	0.005
SLCFOR	34.0	36.0	2196	784	2.801	0.427	0.002	0.005
SLCFOR	36.0	42.0	2196	351	6.256	0.487	0.005	0.034
SLCFOR	42.0	48.0	2196	1000	2.196	0.369	0.005	0.012
SLCFOR	48.0	56.0	1538	350	4.394	0.473	0.010	0.046
SLCFOR	56.0	59.0	2642	350	7.549	0.491	0.002	0.017

Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCMAG	2.0	9.0	1688	124	13.61	0.497	0.008	0.113
SLCMAG	9.0	38.0	1688	306	5.516	0.483	0.034	0.190
SLCMAG	38.0	48.0	1688	480	3.517	0.456	0.012	0.042
SLCMAG	48.0	52.0	2511	480	5.231	0.481	0.003	0.017
SLCMAG	52.0	58.0	2511	1195	2.101	0.354	0.005	0.010

Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCTMP	2.0	4.0	426	263	1.620	0.192	0.009	0.015
SLCTMP	4.0	6.0	1157	263	4.399	0.473	0.003	0.015
SLCTMP	6.0	16.0	1157	731	1.583	0.168	0.017	0.027
SLCTMP	16.0	18.0	1157	280	4.132	0.469	0.003	0.014
SLCTMP	18.0	31.0	1674	280	5.979	0.486	0.016	0.093
SLCTMP	31.0	44.0	1674	721	2.322	0.386	0.016	0.036
SLCTMP	44.0	46.0	1674	330	5.073	0.480	0.002	0.012
SLCTMP	46.0	48.0	2167	330	6.567	0.488	0.002	0.012
SLCTMP	48.0	58.0	2167	1024	2.116	0.356	0.009	0.020

Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCDUC	0.0	6.0	1081	106	10.20	0.495	0.011	0.113
SLCDUC	6.0	10.0	1757	160	10.98	0.496	0.005	0.050
SLCDUC	10.0	12.0	1757	160	10.98	0.496	0.002	0.025
SLCDUC	12.0	38.0	1757	262	6.706	0.489	0.030	0.198
SLCDUC	38.0	86.0	1757	394	4.459	0.474	0.055	0.244

Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCKSL	1.0	4.0	840	90	9.333	0.494	0.007	0.067
SLCKSL	4.0	6.0	840	180	4.667	0.476	0.005	0.022
SLCKSL	6.0	12.0	1664	180	9.244	0.494	0.007	0.067
SLCKSL	12.0	30.0	1664	253	6.577	0.488	0.022	0.142
SLCKSL	30.0	36.0	1664	298	5.584	0.483	0.007	0.040
SLCKSL	36.0	42.0	2164	518	4.178	0.470	0.006	0.023
SLCKSL	42.0	46.0	1332	518	2.571	0.411	0.006	0.015
SLCKSL	51.0	64.0	1696	400	4.240	0.471	0.015	0.065
SLCKSL	46.0	51.0	1997	400	4.992	0.479	0.005	0.025
SLCKSL	64.0	65.0	1696	400	4.240	0.471	0.001	0.005

Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCCCH	0.0	2.0	1940	242	8.016	0.211	0.010	0.017
SLCCCH	2.0	14.0	1465	242	6.054	0.486	0.016	0.099
SLCCCH	28.0	56.0	1729	384	4.503	0.474	0.032	0.146
SLCCCH	14.0	28.0	1729	242	7.145	0.490	0.016	0.116
SLCCCH	56.0	68.0	1780	384	4.635	0.476	0.013	0.062

Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCEAP	2.0	8.0	1141	129	8.845	0.494	0.011	0.093
SLCEAP	8.0	14.0	1141	175	6.520	0.488	0.011	0.069
SLCEAP	14.0	22.0	930	223	4.170	0.469	0.017	0.072
SLCEAP	22.0	34.0	1721	223	7.717	0.491	0.014	0.108
SLCEAP	34.0	52.0	1721	304	5.661	0.484	0.021	0.118
SLCEAP	52.0	58.0	1721	571	3.014	0.438	0.007	0.021

Table 2. Down-hole velocity data for Salt Lake Valley; limits of intervals correspond to depths at which velocity changes occur in the subsurface. Z1 and Z2, depth to top and bottom of interval (m); Vp, compressional wave velocity (m/sec); Vs, shear-wave velocity, (m/sec); Vp/Vs, ratio of P-wave velocity to S-wave velocity; Sigma, Poisson's Ratio computed from Vp and Vs data; TWTTP, two-way travel time for Vp phase; TWTTS, two-way travel-time for Vs phase. Negative values reported for occasional Poisson's ratios are believed to reflect difficulties with field measurements of Vs or Vp.

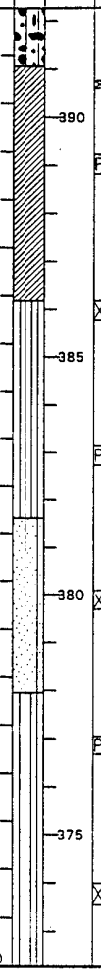
STATION	Z1	Z2	Vp	Vs	Vp/Vs	SIGMA	TWTTP	TWTTS
SLCBEN	2.0	14.0	2756	248	0.000	0.461	0.000	0.097
SLCBEN	14.0	18.0	1858	454	4.093	0.468	0.004	0.018
SLCBEN	18.0	58.0	1858	454	4.093	0.468	0.043	0.176

Boring: PB-01
Sheet 1 of 5

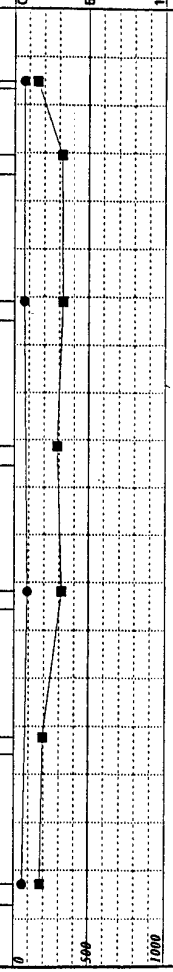
SAMPLE DESCRIPTION
(ASTM D-2488)

Sample Description	Depth (ft)	Depth (m)	Elev. (m)	Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	Vane Shear Su (kPa)	Vs (m/sec)
Encountered concrete.										
SANDY GRAVEL (GM) silty, brown and grey, moist, medium density, (Fill).										
CLAY (CL), light grey, very moist, medium stiffness, with silt.	5		390	SS	1	50	22-4-3	CL		157
CLAY (CL), light grey, very moist, medium stiffness, with silt.	10			P	2	324		CL		320
	15	5								
SILT (ML).	20		385	SS	3	361	4-3-4	ML		324
	25									
SILT (ML).	30	10		P	4	361		ML		287
	35									
SILTY SAND (SM), dark grey, wet, loose to medum density, fine.	40		380	SS	5	316	8-3-6	SM		318
	45									
SILT (ML), light grey, wet, medium stiffness.	50	15		P	6	278		ML		194
	55		375							
SILT (ML), grey, wet, medium stiffness, clayey silt with interlayered silty sand.	60			SS	7	407	2-3-3	ML		179
	65	20								

Graphic Log



● = SPT "N"-Value
■ = S-Wave Velocity "Vs" (m/sec)
(Blows/0.3m)



Test Results *
Field Tests
Lab Tests

UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis
DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG

Geotechnical Exploration Program

Boring: **PB-01 (600 North)**

Sheet 1 of 5

Logged by: Travis Nguyen
Date Start: 4/15/96
Date Finish: 4/16/96
Weather:
Station: 600 North
Offset:
Coordinates (m): N 25,200.0 E 250.0
Elevation (m): 392.3
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 91.7
Drill Contractor: CBC
Driller: J.Hulse, Dave W., Milo A.
Rig Type: 6164
Drilling Method: Mud Rotary
Hole Diameter: 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1938 (NAVD '88)

Coordinates are NAD '83

▽ = Groundwater depth

Blows = number of blows required to drive split spoon sampler 150mm or distance shown

USCS = Unified Soil Classification System

>> = N-value data greater than 100 blows/0.3m

* = See Key to Soil Logs for list of abbreviations and descriptions of tests

SAMPLE TYPE

SS = Standard Penetration Test, 38mm ID and 50.8mm OD split spoon sampler

DM = Dames & Moore type U sampler

US = Undisturbed Shelby Tube, 76.2mm OD, pushed

P = Dames & Moore Piston Sampler

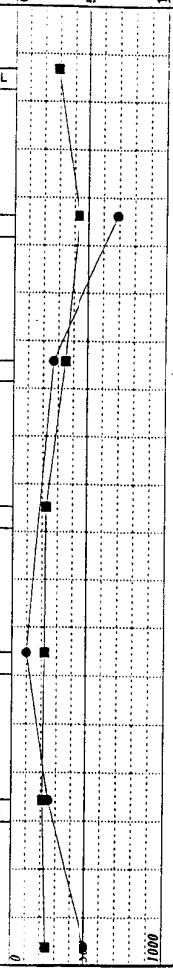
Boring: PB-01
Sheet 2 of 5

SAMPLE DESCRIPTION (ASTM D-2488)	Depth (ft-m)	Elev. (m)	Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	Vane Shear S_u (kPa)	Vs (m/sec)
SILT CLAY (CL-ML), mottled brown and grey, wet, medium stiffness, silty clay to clayey silt.	70	370	P	P	8	407	CL-ML		290
SILT SAND GRAVEL (GM), grey, saturated, very dense.	80		SS	9	457	8-19-50	GM		435
CLAY (CL), mottled grey and brown, very moist, very stiff, silty clay with fragments of seashells and layers of silty fine sand.	90	365	SS	10	407	10-12-15	CL		348
CLAY (CL).	100		P	P	11	457	CL		226
CLAY (CL), mottled dark grey and olive grey, very moist, stiff, silty clay.	110	360	SS	12	457	6-4-6	CL		222
CLAY (CL), mottled grey and brown-dark brown, very moist, very stiff, silty clay and organic silt, with layer of wood fiber.	120	355	SS	13	457	6-10-15	CL-OL		214
no recovery.	130		SS	14		50/4"	GM		239

Graphic Log: 20, 25, 30, 35, 40

Test Results *: Field Tests; Lab Tests

● = SPT "N"-Value
■ = S-Wave Velocity "Vs" (m/sec)
(Blows/0.3m)



UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis

DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG

Geotechnical Exploration Program

Boring: **PB-01 (600 North)**

Sheet 2 of 5

Logged by: Travis Nguyen
Date Start: 4/15/96
Date Finish: 4/16/96
Weather:
Station: 600 North
Offset:
Coordinates (m.: N 25,200.0 E 250.0
Elevation (m): 392.3
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 91.7
Drill Contractor: CBC
Driller: J.Hulse, Dave W., Milo A.
Rig Type: 6164
Drilling Method: Mud Rotary
Hole Diameter: 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1988 (NAVD '88)

Coordinates are NAD '83

▽ = Groundwater depth

Blows = number of blows required to drive split spoon sampler 150mm or distance shown

USCS = Unified Soil Classification System

>> = N-value data greater than 100 blows/0.3m

* = See Key to Soil Logs for list of abbreviations and descriptions of tests

SAMPLE TYPE

SS = Standard Penetration Test, 38mm ID and 50.8mm OD split spoon sampler

DM = Dames & Moore type U sampler

US = Undisturbed Shelby Tube, 76.2mm OD, pushed

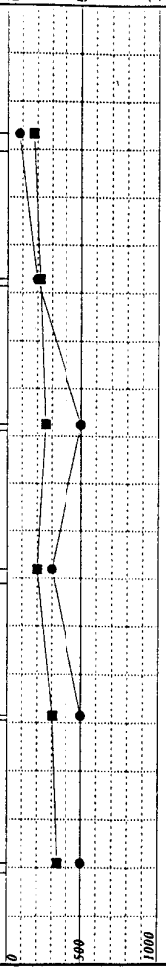
P = Dames & Moore Piston Sampler

Boring: PB-01
Sheet 3 of 5

SAMPLE DESCRIPTION (ASTM D-2488)	Depth (ft-m)	Elev. (m)	Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	Vane Shear Su (kPa)	Vs (m/sec)
SAND GRAVEL (GM), grey, saturated, very dense, with silt.	40								
SANDY SILT (ML), grey, wet, medium stiff to stiff, very fine sands.	135, 140	350	SS	15	316	4-2-6	ML		179
SILT (ML), becomes very stiff.	145, 45, 150		SS	16	50	6-8-12	ML		222
SILT SAND GRAVEL (GM), grey, saturated, very dense, subangular gravel with sand and silt.	155, 345, 160, 50, 165		SS	17	72	20-50/3"	GM		259
SILTY SAND (ML-SM), grey, saturated, stiff, medium density, silty fine sand to fine sandy silt.	170, 340, 175		SS	18	204	6-12-18	ML-SM		203
SILTY SAND (SM-ML), grey, saturated, very dense, very fine sand to very fine sandy silt.	180, 55, 185, 335		SS	19	67	50/6"	SM-ML		305
CLAYEY SILTY GRAVEL (GC), silty clay and wood fiber and gravel.	190, 195, 60		SS	20	137	50/6"	GC		339

Graphic Log

● = SPT "N"-Value
■ = S-Wave Velocity "Vs" (m/sec)
(Blows/0.3m)



Test Results *
Field Tests
Lab Tests

UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis
DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG

Geotechnical Exploration Program

Boring: **PB-01 (600 North)**

Sheet 3 of 5

Logged by: Travis Nguyen
Date Start: 4/15/96
Date Finish: 4/16/96
Weather:
Station: 600 North
Offset:
Coordinates (m): N 25,200.0 E 250.0
Elevation (m): 392.3
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 91.7
Drill Contractor: CBC
Driller: J.Hulse, Dave W., Milo A.
Rig Type: 6164
Drilling Method: Mud Rotary
Hole Diameter: 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1988 (NAVD '88)

Coordinates are NAD '83

▽ = Groundwater depth

Blows = number of blows required to drive split spoon sampler 150mm or distance shown

USCS = Unified Soil Classification System

>> = N-value data greater than 100 blows/0.3m

* = See Key to Soil Logs for list of abbreviations and descriptions of tests

SAMPLE TYPE

SS = Standard Penetration Test, 38mm ID and 50.8mm OD split spoon sampler

DM = Dames & Moore type U sampler

US = Undisturbed Shelby Tube, 76.2mm OD, pushed

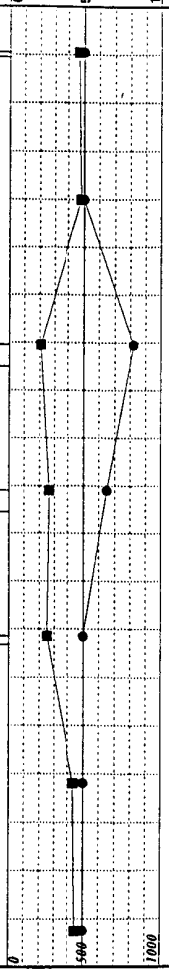
P = Dames & Moore Piston Sampler

Boring: PB-01
Sheet 4 of 5

SAMPLE DESCRIPTION (ASTM D-2488)	Depth (ft-m)	Elev. (m)	Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	Vane Shear Su (kPa)	Vs (m/sec)
CLAYEY SILTY GRAVEL (GC), light grey to brown clayey subargular gravel (granitic), with sand, saturated, very dense.	200		SS	21	101	50/4"	GC		469
	205	330							
no recovery. CLAYEY SILTY GRAVEL (GC).	210		SS	22		19-50/4"	GC		484
	215								
SILT (ML), mottled green to light grey, very moist, very stiff to hard, clayey silt with fine sand.	220	325	SS	23	457	30-42-40	ML		210
	225								
SILT (ML), mottled green to light grey, very moist, very stiff to hard, clayey silt with fine sand and scattered gravels.	230		SS	24	457	18-20-45	ML		265
	235	320							
SILTY SANDY GRAVEL (GM), dark grey to light grey, saturated, very dense, sandy, subangular gravel with silt.	240		SS	25	124	25-50/4"	GM		254
	245								
no recovery.	250		SS	26		50/6"	GM?		436
	255	315							
no recovery.	260		SS	27		50/3.5	GM?		449

Graphic Log: 60, 65, 70, 75, 80

● = SPT "N"-Value
■ = S-Wave Velocity "Vs" (m/sec)
(Blows/0.3m)



Test Results *
Field Tests
Lab Tests

UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis
DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG

Geotechnical Exploration Program

Boring: **PB-01 (600 North)**

Sheet 4 of 5

Logged by: Travis Nguyen
Date Start: 4/15/96
Date Finish: 4/16/96
Weather:
Station: 600 North
Offset:
Coordinates (m): N 25,200.0 E 250.0
Elevation (m): 392.3
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 91.7
Drill Contractor: CBC
Driller: J.Hulse, Dave W., Milo A.
Rig Type: 6154
Drilling Method: Mud Rotary
Hole Diameter: 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1988 (NAVD '88)

Coordinates are NAD '83

▽ = Groundwater depth

Blows = number of blows required to drive split spoon sampler 150mm or distance shown

USCS = Unified Soil Classification System

>> = N-value data greater than 100 blows/0.3m

* = See Key to Soil Logs for list of abbreviations and descriptions of tests

SAMPLE TYPE

SS = Standard Penetration Test, 38mm ID and 50.8mm OD split spoon sampler

DM = Dames & Moore type U sampler

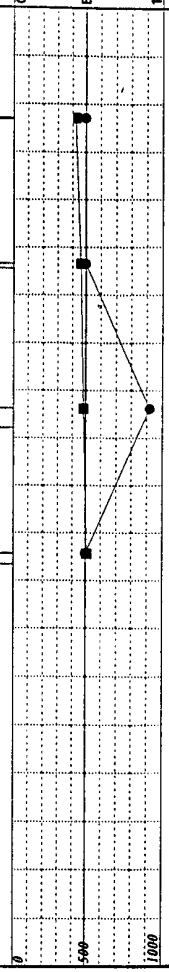
US = Undisturbed Shelby Tube, 76.2mm OD, pushed

P = Dames & Moore Piston Sampler

Boring: PB-01
Sheet 5 of 5

SAMPLE DESCRIPTION (ASTM D-2488)	Depth (ft-m)	Elev. (m)	Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	Vane Shear Su (kPa)	Vs (m/sec)
reddish brown, fresh rock (boulder).	265–270 (80–85)	310	SS	28	12	50/2"	GM		436
CLAYEY GRAVEL (GM).	275–280 (85–90)	305	SS	29	73	28-50/5.5"	GM		469
CLAY (CL), mottled grey to brown, wet, very stiff to hard, clayey silt, with lenses of fine sand.	285–295 (90–95)	300	SS	30	405	40-42-50/4"	CL		488
SILTY SAND (SM). .M=SM	300–310 (95–100)	295	SS	31	229	48-50/3"	SM		508

● = SPT "N"-Value
■ = S-Wave Velocity "V_s" (m/sec)
(Blows/0.3m)



Test Results *
Field Tests
Lab Tests

UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis
DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG

Geotechnical Exploration Program

Boring: **PB-01 (600 North)**

Sheet 5 of 5

Logged by: Travis Nguyen
Date Start: 4/15/96
Date Finish: 4/16/96
Weather:
Station: 600 North
Offset:
Coordinates (m): N 25,200.0 E 250.0
Elevation (m): 392.3
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 91.7
Drill Contractor: CBC
Driller: J.Halse, Dave W., Milo A.
Rig Type: 6164
Drilling Method: Mud Rotary
Hole Diameter: 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1988 (NAVD '88)

Coordinates are NAD '83

▽ = Groundwater depth

Blows = number of blows required to drive split spoon sampler 150mm or distance shown

USCS = Unified Soil Classification System

>> = N-value data greater than 100 blows/0.3m

* = See Key to Soil Logs for list of abbreviations and descriptions of tests

SAMPLE TYPE

SS = Standard Penetration Test, 38mm ID and 50.8mm OD split spoon sampler

DM = Dames & Moore type U sampler

US = Undisturbed Shelby Tube, 76.2mm OD, pushed

P = Dames & Moore Piston Sampler

15A SEISMIC DATA		
Depth	Vs (ft./sec.)	Vs (m./sec.)
5	425	129.5
10	497	151.5
20	580	176.8
30	483	147.2
40	408	124.4
50	667	203.3
60	702	214.0
70	630	192.0
80	656	199.9
90	898	273.7
100	808	246.3
110	747	227.7
120	852	259.7
130	942	287.1
140	987	300.8
150	842	256.6
160	987	300.8
170	816	248.7
180	762	232.3
190	980	298.7

Form R-3

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 11-8-94
Date Completed 12-6-94
Hole Diameter 4" - 3"
Hole No. 15 A
Sheet 1 of 10
Total Depth 200'
Project No. SP-15-7(111)296
Project Name I-15 Corridor G.D.P., 10800 So to 500 No. Salt Lake Co
B.Y.U. Civil Engineering Study
Equation Project Line Sta. / Other Line Sta.
Type of Structure
Sta. of Structure
Hole Sta. Adjacent to DH 15 Rt. Ft., Lt. Ft., of ℄
Collar Elevation 4223'
Reference
Method Used
Field Party Powell, Norwood & Winters
Rig B-61 HDX

Ground Water Table					
Depth in Ft.	7.4' WC	2.2' WC			
Time	0930	0930			
Date	11-9-94	11-10-94			

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
				0				Grassy ground surface
RB								Brown sandy silt with trace gravel
				1				Drove 4" casing to 7'
				2				Dk brown sand and gravel with silt and some clay
				3				
				4				
				5				Clayey silt with sand
				6				
				7				Drilled 3" casing to 30'
				8				
				9				
				10				Gray silty sand with some to a trace organic material
				11				
				12				
				13				
				14				Dk gray silty clay
				15				
				16				Bluish gray silty clay
				17				
				18				
				19				
				20				

* 0' to 102' was drilled and logged by J. Ryan Nov 22 thru 23 1993. New Shelby's samples were attempted at 30' on 11-8-94 and 60' on 11-9-94

Form R-3

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 11-8-94
Date Completed 12-6-94
Hole Diameter
Project No. SP-15-7(111)296
Project Name I-15 Corridor G.D.P., 10800 So to 500 No
B.Y.U. Civil Engineering Study
Type of Structure
Sta. of Structure
Collar Elevation
Field Party Powell, Worwood & Winters

Hole No. 15A
Sheet 2 of 10
Total Depth 200'

Equation Project Line Sta. / Other Line Sta.
Hole Sta. Adjacent to DH #15 Rt. Ft. Lt. Ft. of ℄
Reference
Method Used
Rig B-61 HDX

Ground Water Table

Depth in Ft.					
Time					
Date					

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
DB				20				Blue silty clay
				1				
				2				
				3				Some lenses tan silty clay
				4				
				25				
				6				Blue silty clay
				7				
				8				Bluish black silty clay
				9				
Shelby				30				
"				1				Gray to grayish dk tan silty clay with some dk gray streaks and a few very thin lenses gray to dk gray sandy silt. Some specks of black carboniferous material
"			15A-32	2				
DB								11-8-94
								11-9-94
				3				Drilled 3" casing to 60'
				4				Clayey silt with sand
				35				
				6				Dk gray silty clay with some thin lenses sandy silt
				7				
				8				
				9				Gray clayey silt with fine sand
				40				

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 11-8-94
Date Completed 12-6-94
Hole Diameter
Project No. SP-15-7(111) 296
Project Name I-15 Corridor, G.D.P. 10800 So to 500 So
BYU Civil Engineering Study
Equation Project Line Sta. / Other Line Sta.
Type of Structure
Sta. of Structure
Hole Sta. Adjacent to DH #5 Rt. Ft., Lt. Ft., of ℄
Collar Elevation
Reference
Method Used
Field Party Powell, Warwood & Winters
Rig B-61 HDX

Hole No. 15A
Sheet 3 of 10
Total Depth 200'

Ground Water Table

Depth in Ft.					
Time					
Date					

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
DB				40				Gray clayey silt with fine sand
				1				
				2				
				3				Gray to black silty clay
				4				
				45				Gray clayey silt with sand
				6				
				7				Gray silty clay with some lenses clayey silt with sand
				8				
				9				Gray silty clay with thin lenses sandy silt with some clay
				50				
				1				
				2				
				3				
				4				
				55				
				6				
				7				Gray silty sand
				8				
				9				Gray clayey silt with sand
				60				Gray silty clay

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 11-3-94
Date Completed 12-6-94
Hole Diameter
Project No. SP-15-7(111) 296
Project Name I-15 Corridor G.D.P. 10800 So to 500 No
B.Y.U. Civil Engineering Study
Equation Project Line Sta. / Other Line Sta.
Type of Structure
Sta. of Structure
Hole Sta. Adjacent to DH #15 Rt. Ft. Lt. Ft. of ℄
Collar Elevation
Reference
Method Used
Field Party Powell, Warwood & Winters
Rig B-61 HDX

Hole No. 15A
Sheet 4 of 10
Total Depth 200'

Ground Water Table					
Depth in Ft.					
Time					
Date					

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
Shelby				60				
"				1				Gray silty clay with a very thin lense sandy silt every 1/8"1 - 2"
"			15A-62	2				
DB								Drilled casing to 100'
				3				
				4				
				65				Silty clay with some thin lenses sandy silt
				6				
				7				
				8				
				9				
				70				
				1				
				2				Gray clayey silt with sand
				3				Gray silty sand
				4				
				75				Dk gray silty clay
				6				
				7				
				8				
				9				Gray clayey silt with sand grading to sand with some silt
				80				

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 11-8-94
Date Completed 12-6-94
Hole Diameter
Project No. SP-15-7(111)296
Project Name I-15 Corridor, G. D. P., 10800 So to 500 No
B.Y.U. Civil Engineering Study
Equation Project Line Sta. / Other Line Sta.
Type of Structure
Sta. of Structure
Hole Sta. Adjacent to DH 15 Rt. Ft., Lt. Ft., of ℄
Collar Elevation
Reference
Method Used
Field Party Powell, Norwood & Winters
Rig B-61 HDX

Hole No. 15A
Sheet 5 of 10
Total Depth 200'

Ground Water Table					
Depth in Ft.					
Time					
Date					

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
DB				80				
				1				Gray silty sand
				2				
				3				
				4				
				85				
				6				
				7				Gray silty clay with a few to some thin lenses sandy silt
				8				Gray silty sand
				9				Gray silty clay with some thin lenses sandy silt
				90				Gray sand with silt and some clay
				1				
				2				Gray silty clay with some thin lenses sandy silt
				3				
				4				
				95				
				6				Gray silty sand
				7				
				8				
				9				
				100				

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 11-8-94
Date Completed 12-6-94
Hole Diameter
Project No. SP-15-7(111)296
Project Name I-15 Corridor, G.D.P., 10800 So to 500 No
E.V.U. Civil Engineering Study
Equation Project Line Sta. / Other Line Sta.
Type of Structure
Sta. of Structure
Hole Sta. Adjacent to DH 15 Rt. Ft. Lt. Ft. of ℄
Collar Elevation
Reference
Method Used
Field Party Powell, Worwood & Winters
Rig B-61 HDX

Hole No. 15A
Sheet 6 of 10
Total Depth 200'

Ground Water Table: Depth in Ft. / Time / Date

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
DB				100				Gray silty sand with some organic material
				1				
				2				Gray silty clay
				3				Gray to grayish dk tan silty clay with some thin lenses sandy silt
				4				
				105				Drilled 3" casing to 105'
				6				Grayish dk tan fine sand with some silt and fine organic material
				7				Grayish dk tan sandy silt with a few 1"-2" lenses fine sand with some silt
				8				
				9				Brown clayey silt with peat and some sand
				110				Grayish dk tan to brown clayey silt with sand
								Drilled 3" casing to 110'
				1				Grayish dk tan sandy silt with a few thin lenses clayey silt
				2				
				3				
				4				Brown clayey silt with some peat and sand
				115				Gray sand with some silt and trace fine gravel
Pen				A				6/6 2/6 31/6 19/6 —Very Dense—
"		52		B				Grayish dk tan fine sand with some silt
"				C				Grayish dk tan fine sand with some silt and thin lenses clayey s.
"		15A-11		D				Grayish dk tan fine to med sand with some silt
DB				7				Grayish dk tan sand and silt to sandy silt
				8				Grayish dk tan fine to med sand with some silt
				9				
				120				Grayish dk tan sand and silt to sandy silt
								Drilled 3" casing to 120'

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 11-9-94
Date Completed 12-6-94
Hole Diameter
Project No. SP-15-7(111)296
Project Name I-15 Corridor, G.D.P., 10800 So to 500 No
B.Y.U. Civil Engineering Study
Equation Project Line Sta. / Other Line Sta.
Type of Structure
Sta. of Structure
Hole Sta. Adjacent to DH #15 Rt. Ft., Lt. Ft., of ℄
Collar Elevation
Reference
Method Used
Field Party Powell, Worwood & Winters
Rig B-61 HDX

Hole No. 15A
Sheet 7 of 10
Total Depth 200'

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION
DR				120				Grayish dk tan fine sand and silt
				1				Grayish dk tan fine to med sand with some silt. An occasional 1/2" lense silty clay
				2				
				3				
				4				Grayish dk tan sand with some silt and trace fine gravel
				125				Drilled 3" casing to 125'
				6				Grayish dk tan sand with some silt
				7				Grayish dk tan clayey silt with sand
				8				Grayish dk tan, dk tan silty clay with some thin lenses sandy silt
				9				
				130				Gray sand with some silt
Pen		47		A				20/6 27/6 54/6 (Ref) — Dense to Very Dense —
"				B				Grayish dk tan to dk tan sandy silt with 1/2" lense clayey silt at bottom of sample
"		Ref 15A-131.5		1				Dk gray sand with silt and trace black organic material. Sand flowed up into casing to a depth 115' 11-9-94
DB				2				Drilled casing to 130' 11-10-94
				3				Grayish dk tan fine sand with some silt
				4				Grayish dk tan fine sand with some silt and thin lenses clayey silt
				135				Grayish dk tan fine to med sand with some silt with pieces of rotted wood at 135'
								Drilled 3" casing to 135'
				6				Grayish dk tan silty clay with some thin lenses sandy silt and a 2" lenses sand with some silt and rotted pieces of wood
				7				Grayish dk tan fine sand with some silt
				8				Grayish dk tan fine sand with pieces rotted wood and some silt
				9				Grayish dk tan to gray silt clay with some thin lenses sandy silt
				140				

Ground Water Table

Depth in Ft.					
Time					
Date					

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 11-8-94
Date Completed 12-6-94
Hole Diameter
Project No. SP-15-7(111)296
Project Name I-15 Corridor, G.D.P., 10800 So to 500 No
B.Y.U. Civil Engineering Study
Equation Project Line Sta. / Other Line Sta.
Type of Structure
Sta. of Structure
Hole Sta. Adjacent to DH #15 Rt. Ft., Lt. Ft., of ℄
Collar Elevation
Reference
Method Used
Field Party Powell, Warwood & Winters
Rig B-61 HDX

Hole No. 15A
Sheet 8 of 10
Total Depth 200'

Ground Water Table

Depth in Ft.					
Time					
Date					

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
DB				140				Grayish dk tan to gray silty clay with some thin lenses sandy silt
				1				
				2				Lenses grayish dk tan clayey silt and sandy silt
								Some small pieces rotted wood
				3				Dk tan sand with some silt
				4				Dk gray fine sand with pieces rotted wood and some silt
								Grayish dk tan, gray to dk gray silty clay with some thin lenses sandy silt
				145				Drilled casing to 145'
elby								Grayish dk tan, gray to dk gray silty clay with some thin lenses sandy silt
"				6				
"								
"			15A-147	7				Grayish tan clayey silt with sand to sandy silt with clay
DB								11-10-94
				8				Grayish dk tan fine sand with some silt 11-22-94
				9				
				150				Grayish dk tan clayey silt with fine sand
								Drilled casing to 150'
				1				Grayish dk tan fine to med sand with some silt
				2				
				3				Some coarse sand
				4				
				155				Grayish dk tan very fine sand with some silt
								Drilled casing to 155'
				6				
				7				Grayish dk tan fine to medium sand with some silt and slight trace coarse sand
				8				
				9				Grayish dk tan fine and med sand with silt. Some coarse sand and trace fine gravel
				160				Sand flowed up inside casing to approx 150'. Pulled casing up to 150' and then drilled casing down to 160'

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 11-8-94
Date Completed 12-6-94
Hole Diameter
Project No. SP-15-7(111)296
Project Name I-15 Corridor, G. D. P., 10800 So to 500 No.
B.Y.U. Civil Engineering Study
Equation Project Line Sta. / Other Line Sta.
Type of Structure
Sta. of Structure
Hole Sta. Adjacent to DH #15 Rt. Ft., Lt. Ft., of ℄
Collar Elevation
Reference
Method Used
Field Party Powell, Warwood & Winters
Rig B-61 HDX

Hole No. 15A
Sheet 9 of 10
Total Depth 200'

Ground Water Table

Depth in Ft.					
Time					
Date					

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
DB				160				Could not take sample - Sand flowed up into casing to approx 145'
				1				Grayish dk tan fine to med sand with some silt
				2				
				3				Grayish dk tan fine to coarse sand with some silt
				4				Grayish dk tan fine sand with some silt
								Grayish dk tan sand with some fine gravel and silt
				165				Grayish dk tan fine sand with some silt 11-22-94
				6				Tried to drill casing to 165' but couldn't, sand flowed 11-23-94 up into casing to a depth of 150'. Pulled casing up to 150' and drilled out sand in casing. Drilled casing to 170'
				7				
				8				
				9				Grayish tan clayey silt with fine sand
								Grayish dk tan silty clay with thin lenses sandy silt
				170				Grayish dk tan sandy silt with some clay
Pen				Scale				7/6 9/6 13/6 5/6 — Very Stiff —
"	22							Grayish dk tan clayey silt with sand
"			15A-172					
DB				2				Dk gray fine sand with some silt
								Fine sand flowed up into the casing to a depth of 160'
				3				Grayish dk tan fine to med sand with some silt
				4				Grayish dk tan fine to coarse sand with some silt and trace fine grave
				175				Grayish dk tan fine sand with some silt
								Drilled casing to 175'
				6				
				7				Grayish dk tan fine to med sand with some silt
								Grayish dk tan sand with some gravel and silt
				8				Grayish dk tan clayey silt with fine sand
				9				Grayish dk tan fine sand with some silt
								Grayish dk tan clayey silt with fine sand
				180				Drilled casing to 180'

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 11-8-94
Date Completed 12-6-94
Hole Diameter
Project No. SP-15-7(111)296
Project Name I-15 Corridor, G. D. P., 10800 So to 500 No
B.Y.U. Civil Engineering Study
Equation Project Line Sta. / Other Line Sta.
Type of Structure
Sta. of Structure
Hole Sta. Adjacent to DH #15 Rt. Ft., Lt. Ft., of ℄
Collar Elevation
Reference
Method Used
Field Party Powell, Warwood & Winters
Rig B-61 HDX

Hole No. 15A
Sheet 10 of 10
Total Depth 200'

Ground Water Table					
Depth in Ft.					
Time					
Date					

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
DB				18				Grayish dk tan fine to med sand with some silt
				1				
				2				
				3				Grayish dk tan fine to med sand with some coarse sand, fine gravel and silt
				4				Grayish dk tan fine sand with some silt
								Washed Sampler down to 185' a depth of 176'
								Drilled casing to 185. Sand flowed up inside casing to 11-23-9
				18 5				33/6 35/6 50/5 (Ref) —Very Dense— 12-5-9
in		68		A				Lightly cemented sandy silt with trace coarse sand
"		Ref	15A-19	B 6 C 4				Lightly cemented sand (some coarse) and some very fine grave and silt
RB				7				
				8				Tan sandy silt with some clay
								Grayish dk tan clayey silt with some fine sand
				9				Grayish dk tan silty clay with some thin lenses sandy silt
				190				Drilled casing to 190' 12-5-94 12-6-94
Shelby								
"				1				Grayish dk tan silty clay with a few to some thin lenses sandy silt
"								
"			15A-192	2				
DB								
				3				
				4				
				19 5				
				6				Dk tan sandy silt with a few thin lenses silty clay
				7				
				8				Dk tan silty clay with a few to some thin lenses sandy silt
				9				
				200				Drilled casing to 200' T.D. 200' 12-6-94

Lowered 200' of 2" Sch. 40 plastic pipe into drill hole. Grouted pipe in place with cement, 12-8-94. Used 20 bags cement

7A SEISMIC DATA		
Depth	Vs (ft./sec.)	Vs (m./sec.)
5	502	153.0
10	684	208.5
20	491	149.7
30	546	166.4
40	578	176.2
50	513	156.4
55	549	167.3
65	562	171.3
75	774	235.9
85	855	260.6
95	893	272.2
105	870	265.2
115	991	302.1
125	869	264.9
135	800	243.8
140	769	234.4
150	800	243.8
155	752	229.2
165	971	296.0
175	869	264.9
185	990	301.8
195	980	298.7
205	893	272.2

PB Keck 11/20/95 AJe

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 10-24-94
Date Completed 10-28-94
Hole Diameter 3"
Hole No. 7A
Sheet 1 of 10
Total Depth 21.21

Project No. SP-15-7(111)296
Project Name I-15 Corridor G.D.P. 10800 So. to 500 No. Salt Lake Co.
Civil Engineering Study
Equation Project Line Sta. / Other Line Sta.
Type of Structure
Sta. of Structure
Hole Sta. adjacent to DH #7 Rt. Ft., Lt. Ft., of ℄ I-15
Collar Elevation 4231
Reference
Method Used
Field Party Powell, Norwood & Winters
Rig B-61 HDX

	DH 7W	DH-7A Ground Water Table			DH-7W
Depth in Ft.	3.0'	16.5' WC	15.3' WC	11.9' WC	3.0'
Time	1000	0930	0930	0930	1030
Date	10-24-94	10-25-94	10-26-94	10-28-94	11-3-94

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
								Grassy ground surface
RB				0				Grayish dk brown sandy silt with gravel and Trace cla
								Drove 4" casing to 6"
				1				
				2				Dk gray sandy silt with trace to some clay
				3				
				4				
V				5				Lt brown to tan sandy silt with trace clay
								Drilled 3" casing to 40'
				6				Tan to dk tan clayey silt with sand and some partially cemented nodules of dk tan sandy silt (Coarse sand to fine gravel-sized)
				7				
				8				Dk tan silty sand.
				9				Grayish dk tan to gray clayey silt with fine sand and a few thin lenses sandy silt from 8' to 9'
				10				Tan fine sand with silt
				1				
				2				Tan clayey silt with sand and some rusty iron oxide spots
				3				
				4				Grayish dk tan to gray silty clay with some thin lenses sandy silt
				15				
				6				
				7				Grayish dk tan sandy silt with trace clay
				8				Grayish dk tan to gray silty clay with some thin lenses sandy silt. A few rusty iron oxide spots
				9				
				20				

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 10-24-94
Date Completed 10-28-94
Hole Diameter
Project No. SP-15-7(111)296
Project Name I-15 Corridor G.D.P. 10800 So. to 500 No.
R.V.U. Civil Engineering Study
Type of Structure
Sta. of Structure
Collar Elevation
Field Party Powell Worwood & Winter

Hole No. 7A
Sheet 2 of 10
Total Depth 212'

Equation Project Line Sta. / Other Line Sta.
Hole Sta. Adjacent to DH #7 Rt. Ft., Lt. Ft., of ℄ I-15
Reference
Method Used
Rig 3-61 4DX

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION
RB				2.0				Grayish dk tan silty clay with some thin lenses sandy silt
				1				
				2				
				3				Gray, dk gray to black silty clay with some very thin to thin lenses sandy silt
				4				
				2.5				
				6				A few thin black carbonaceous sandy silt lenses
				7				
				8				
				9				
				3.0				
				1				Gray sand with silt and trace organic material
				2				1/8"-1/2" Lenses dk gray clayey silt and rusty brown sandy silt
				3				
				4				Grayish dk tan silty clay with some thin to very thin lenses sandy silt. A few 1"-3" lenses sand with some silt
				3.5				
				6				
				7				
				8				1"-3" Lenses gray silty sand and silty clay with thin lenses sandy silt
				9				Grayish dk tan silty clay with some thin lenses sandy silt
				4.0				

Ground Water Table

Depth in Ft.					
Time					
Date					

Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 10-24-94
Date Completed 10-28-94
Hole Diameter
Project No. SP-15-7(111)296
Project Name I-15 Corridor G.D.R. 10800 So. to 500 No. Civil Engineering Study
Type of Structure
Sta. of Structure
Collar Elevation
Field Party Lowell Worwood + Winters

Hole No. 7A
Sheet 3 of 10
Total Depth 212'

Equation Project Line Sta. / Other Line Sta.
Hole Sta. Adjacent to Dist 7 Rt. Ft., Lt. Ft., of ℄ I-15
Reference
Method Used
Rig B-61 HDX

Ground Water Table

Depth in Ft.					
Time					
Date					

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
RB				40				Grayish dk tan silty clay with some thin to very thin lenses sandy silt
				1				
				2				Gray to dk gray silty clay with a few to some thin to very thin lenses sandy silt. An occasional thin lense carboniferous sandy silt or sand with silt
Shelby								
"				3				
"								
"			NR					Olive dk gray silty clay with some thin lenses sandy silt
RB				4				Drilled casing to 57.5'
				45				Gray to dk gray silty clay with some thin lenses sandy silt
				6				
				7				
				8				Grayish dk tan fine to very fine sand with some silt and trace organic material. An occasional thin lense clayey silt
				9				
				50				
				1				Gray silty clay with 1/8"-1/4" lenses sandy silt
				2				
				3				Gray fine to very fine sand with some silt and trace organic material
				4				
				55				Dk gray sandy silt
				6				Gray to dk gray silty clay with thin lenses sandy silt
								Gray silty clay with a few thin lenses sandy silt
				7				Gray to dk gray silty clay with thin lenses sandy silt
				8				
Shelby								
				9				Gray to dk gray silty clay with some thin lenses sandy silt
"			NR					Gray sandy silt
				60				Drilled casing to 57.5'

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 10-24-94
Date Completed 10-28-94
Hole Diameter
Project No. SP-15-7(111)296
Project Name I-15 Corridor (T.D.P. 10800 So to 500 No
B.Y.U. Civil Engineering Study
Type of Structure
Equation Project Line Sta. / Other Line Sta.
Sta. of Structure
Hole Sta. Adjacent to DH#7 Rt. Ft., Lt. Ft., of ℄
Collar Elevation
Reference
Method Used
Field Party Powell Worwood & Winters
Rig B-61 4DX

Hole No. 7A
Sheet 4 of 14
Total Depth 212'

Ground Water Table: Depth in Ft. / Time / Date

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
RB				60				Gray sandy silt
				2				Gray silty sand to fine sand with some silt. A few thin lenses clayey silt. A trace organic material
				3				
				4				High context of organic material (partially rotted wood twigs, etc.
				65				
				6				Gray silty sand
				7				
				8				Trace organic material (partially rotted pieces of wood)
				9				
				70				
				1				Grayish dk tan fine sand with some silt
								Gray course sand with silt
				2				Grayish dk tan sandy silt
								Grayish dk tan sand with some silt
				3				Tan clayey silt with sand
								Grayish dk tan sand with some silt
				4				Dk gray sandy silt
								Gray to dk gray silty clay with some thin lenses sandy silt
Pen				75				5/6 7/6 13/6 12/6 - Very Stiff -
"	20			A				Grayish dk tan silty clay with a few thin lenses sandy silt
"				6				Grayish dk tan clayey silt with sand and thin lenses sandy silt
"		7A-77		C				
RB				7				Grayish dk tan sandy silt with some clay grading to sandy silt
				8				
				9				Grayish dk tan fine to very fine sand with silt to some silt
				80				Drilled casing to 75'

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 10-24-94
Date Completed 10-28-94
Hole Diameter
Project No. SP-15-7(111)296
Project Name I-15 Corridor G.D.P. 10800 So to 500 No
Sy.L. Civil Engineering Study
Type of Structure
Equation Project Line Sta. / Other Line Sta.
Sta. of Structure
Hole Sta. Adjacent to DH#7 Rt. Ft., Lt. Ft., of ℄
Collar Elevation
Reference
Method Used
Field Party Powell, Werwood & Winter
Rig B-61 HDX

Hole No. 7A
Sheet 5 of 10
Total Depth 212'

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
								Ground Water Table: Depth in Ft. / Time / Date
Pen				0				Grayish dk tan fine sand with silt
"				A				5/6 8/6 12/6 14/6 — Medium —
"		20		B				
"				C				Gray sand (fine to med) with some silt
"			7A-82	D				Grayish dk tan clayey silt with sand
RB				E 2				1/4" - 1/2" Lenses grayish dk tan sandy silt and fine sand
				3				with silt A few 1/8" lenses clayey silt
								Gray silty clay with some thin lenses sandy silt
				4				Gray silty fine sand
				5				Drilled casing to 80'
n								5/6 5/6 9/6 12/6 — Very Stiff —
"		14		6				1/8" - 1/2" Lenses grayish dk tan silty clay and sandy silt
"			7A-87					A few 1" - 1.5" lenses fine sand with silt to some silt
RB				7				
				8				Grayish dk tan sandy silt with thin lenses clayey silt
				9				Drilled casing to 90'
								Gray fine to medium sand with some silt
Pen				9				8/6 21/6 24/6 25/6 — Hard to Very Dense —
"		45		A				Grayish dk tan sandy silt with 1/8" - 1/4" lenses clayey silt
"				B				Grayish dk tan clayey silt with sand
"			7A-92	C				Grayish dk tan fine sand with silt
RB				D				Grayish dk tan fine to med sand with some silt 10-24-94 10-25-94
				E 2				1/8" - 1/2" Lenses dk tan sandy silt, clayey silt and sand with
				3				some silt
								Grayish dk tan fine sand with some silt
				4				Thin lenses gray silty clay and grayish dk tan sandy silt
								Grayish dk tan sand with some silt
Pen				9				7/6 8/6 9/6 10/6
"		17		A				Grayish dk tan sandy silt with some clay
"				B				Grayish dk tan clayey silt with sand
"			7A-97	C				Grayish dk tan silty clay with to some thin lenses sandy silt
RB				D				Drilled casing to 100'
				E 7				Grayish dk tan sandy silt with trace to some clay
				8				
								Grayish dk tan fine sand with some silt
				9				Grayish dk tan sandy silt with some clay
								Grayish dk tan to grayish brown silty clay
				10				

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 10-24-94
Date Completed 10-28-94
Hole Diameter
Project No. SP-15-7(111)296

Hole No. 7A
Sheet 5 of 10
Total Depth 212'

ect Name T-15 Corridor, G.D.P. 10800 So to 500 No
B.Y.U. Civil Engineering Study
Equation Project Line Sta. / Other Line Sta.
Type of Structure
Sta. of Structure
Hole Sta. Adjacent to B#27 Rt. Ft., Lt. Ft., of ℄
Collar Elevation
Reference
Method Used
Field Party Powell, Worwood & Winters
Rig B-61 HDX

Ground Water Table

Depth in Ft.					
Time					
Date					

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
Pen				100				3/6 2/6 3/6 4/6 — Medium —
"		5		1				Grayish dk tan to grayish brown silty clay with some to a few thin to very thin lenses sandy silt
"								
"			7A-102	2				
RB				3				
				4				
				105				Gray fine sand with some silt
5 7/6y				6				
"			7A-107	7				Grayish dk tan sandy silt with a few thin lenses clayey silt
RB				8				Grayish brown silty clay with some thin lenses sandy silt
				9				Thin lenses grayish brown silty clay and sandy silt
								Grayish dk tan sandy silt
				110				Drilled casing to 110'
				1				Grayish brown silty clay with some thin lenses sandy silt
				2				
				3				
				4				Grayish dk tan fine sand with silt
								4"-6" lenses grayish tan silty clay and fine sand with some silt to fine sand with silt
				115				Drilled casing to 115
				6				
				7				
				8				Grayish dk tan silty clay with a few to some thin to very thin lenses sandy silt
				9				
				120				Pushed casing to 120'

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UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 10-24-94
Date Completed 10-24-94
Hole Diameter
Project No. SP-15-7(111)296
Project Name I-15 Corridor G.D.R. 10800 So to 500 No
Equation Project Line Sta. / Other Line Sta.
Type of Structure
Sta. of Structure
Hole Sta. Adjacent to DH #7 Rt. Ft., Lt. Ft., of ℄
Collar Elevation
Reference
Method Used
Field Party Powell, Worwood & Winters
Rig B-61 MDX

Hole No. 7A
Sheet 7 of 10
Total Depth 212'

Ground Water Table

Depth in Ft.					
Time					
Date					

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
Shelby				120				Gray silty clay with some thin lenses sandy silt. A possible 2" lense sandy silt at 120.7'
"								
"								
"			7A-122	2				
DB								
				3				
				4				Greenish lt gray silty clay with some thin lenses sandy silt
				125				
				6				
				7				
				8				Thin lenses tan to gray clayey silt and sandy silt
				9				Grayish brown silty clay with some thin lenses sandy silt
				130				
				1				
				2				Grayish brown to grayish dk tan silty clay with some thin lenses sandy silt
				3				
				4				2" lenses gravel with some sand and silt
				135				Drilled casing to 135'
Shelby								Shelby tube squeezed in to form oval shape. Probably by the gravel from 133.7'
"				6				Grayish dk tan sandy silt
"			NR					Trace fine organic material
DB				7				
				8				Grayish dk tan sandy silt with some thin lenses silty clay. Trace fine organic material
				9				
				140				

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 10-24-94
Date Completed 10-28-94
Hole Diameter
Project No. SP-15-7(111)296
Project Name I-15 Corridor G.D.P. 10800 So. 500 No.
B.Y.U. Civil Engineering Study
Equation Project Line Sta. / Other Line Sta.
Type of Structure
Sta. of Structure
Hole Sta. Adjacent to DH#7 Rt. Ft., Lt. Ft., of ℄
Collar Elevation
Reference
Method Used
Field Party Powell, Marwood & Winters
Rig B-61 HDX

Hole No. 7A
Sheet 8 of 11
Total Depth 212'

Ground Water Table

Depth in Ft.					
Time					
Date					

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
DB				140				Grayish dk tan sandy silt with some thin lenses clayey silt. Trace fine organic material
				1				
				2				
				3				Thin lenses grayish dk tan silty clay or clayey silt and sandy silt
				4				
				145				
				6				
				7				
				8				
				9				Gray fine to medium sand with some silt. Slight trace fine gravel from 149.5' to 150'
				150				Drilled casing to 150'
Pen								19/6 32/6 35/6 40/6 — Very Dense —
"		67		1				Grayish dk tan fine to medium sand with some silt. Two 1" lenses sandy silt with trace gravel from 150' to 150.4'
"			7A-152	2				10-25-94 10-26-94
DB								
				3				
				4				Grayish dk tan fine to coarse sand with some silt. A trace fine gravel. An occasional 1" lense sandy silt
				155				Drilled casing to 155'
				6				
				7				Lt gray clayey silt with sand
				8				Grayish dk tan silty clay with to some thin lenses sandy silt
				9				
				160				Drilled casing to 160'

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 10-24-94
Date Completed 10-28-94
Hole Diameter
Project No. SP-15-7(111) 296
Project Name I-15 Corridor G.D.P. 10800 So to 500 No.
B.V.U. Civil Engineering Study
Type of Structure
Sta. of Structure
Collar Elevation
Field Party Powell, Worwood & Winters

Hole No. 7A
Sheet 9 of 11
Total Depth 212'

Equation Project Line Sta. / Other Line Sta.
Hole Sta. Adjacent to DH #7 Rt. Ft., Lt. Ft., of ℄
Reference
Method Used
Rig B-61 HDX

Ground Water Table					
Depth in Ft.					
Time					
Date					

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
DB				160				Grayish dk tan silty clay with some thin lenses sandy silt
				1				
				2				
				3				Thin lenses dk tan clayey silt and sandy silt An occasional 1"-2" lense sand with some silt
				4				
				165				Grayish dk tan fine sand with some silt
2n					A			14/6 15/6 25/6 47/6 - Dense -
"		40		6	B			Grayish dk tan sandy silt
"					C			Grayish dk tan clayey silt with thin lenses sandy silt
"			7A-167	7	D			Grayish dk tan sandy silt to sandy silt with trace clay
DB					E			
				8				Gray to dk gray silty sand
				9				Grayish dk tan clayey silt with sand
				170				Grayish dk tan silty clay with some thin lenses sandy silt
								Drilled casing to 170'
				1				Grayish dk tan sand with some silt
				2				Grayish dk tan to grayish brown silty clay with some thin lenses sandy silt
				3				
				4				
				175				
				6				Grayish dk tan fine sand with silt to some silt
								Grayish dk tan clayey silt with thin lenses sandy silt
				7				Grayish dk tan fine sand with some silt
				8				
				9				
				180				Ggrayish dk tan silty clay with some thin lenses sandy silt
								Drilled casing to 180'

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 10-24-94
Date Completed 10-28-94
Hole Diameter
Project No. SP-15-7(111)296
Project Name I-15 Corridor, G.D.P. 10800 So to 500 No
BYU Civil Engineering Study
Type of Structure
Equation Project Line Sta. / Other Line Sta.
Sta. of Structure
Hole Sta. Adjacent to DH #7 Rt. Ft. Lt. Ft. of ℄
Collar Elevation
Reference
Method Used
Field Party Lowell, Warwood & Winters
Rig R-61 HDX

Hole No. 7A
Sheet 10 of 11
Total Depth 212'

Ground Water Table

Depth in Ft					
Time					
Date					

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
Pen				180				9/6 11/6 15/6 15/6 — Medium to Very Stiff
"				A				Grayish dk tan sand with some silt.
"		26		1				
"				C				
"			7A-182	D				
DB				2				Grayish dk tan clayey silt with very thin lenses sandy silt
								Grayish dk tan sandy silt with trace clay
				3				Sand from 180'-181' washed up inside casing to 175'
								Thin lenses grayish dk tan silty clay and sandy silt
				4				Grayish dk tan to dk tan silty clay with some thin lenses sandy
				185				Drilled casing to 185'
				6				Grayish dk tan sand with some silt
								Thin lenses dk tan clayey silt and sandy silt
				7				Grayish dk tan sand with some silt
				8				Dk tan to grayish dk tan silty clay with some thin sandy silt. Some 1"-2" lenses sand with some silt
				9				
				190				Drilled casing to 190' 10-26-94 10-27-94
				1				Grayish dk tan fine to very fine sand with silt to some silt
				2				
				3				
				4				Thin lenses clayey silt and sandy silt
				195				Drilled casing to 190'
Pen				A				9/6 10/6 11/6 12/6 Very Stiff
"		21		3				Grayish dk tan sandy silt with trace clay
"				6				Grayish dk tan clayey silt with very thin lenses sandy silt
"			7A197	C				Grayish dk tan silty clay with some sand and very thin lenses sandy silt
DB				D				Grayish dk tan silty clay with some sand and a few very thin lenses sandy silt
				7				
				8				
				9				A 3"-4" lense grayish dk tan sandy silt or sand with silt
				200				Dk tan silty clay with some thin lenses sandy silt
								Drilled casing to 200'

Date Begun 10-24-94
Date Completed 10-28-94
Hole Diameter
Project No. SP-15-7(111)296

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Form R-333

Hole No. 74
Sheet 11 of 11
Total Depth 212'

Project Name I-15 Corridor G.D.P. 10800 So. to 500 No.
B.Y.U. Civil Engineering Study
Type of Structure
Equation Project Line Sta. / Other Line Sta.
Sta. of Structure
Hole Sta. Rt. Ft., Lt. Ft., of ℄
Collar Elevation
Reference
Method Used
Field Party Powell, Worwood & Winters
Rig R-61 HDX

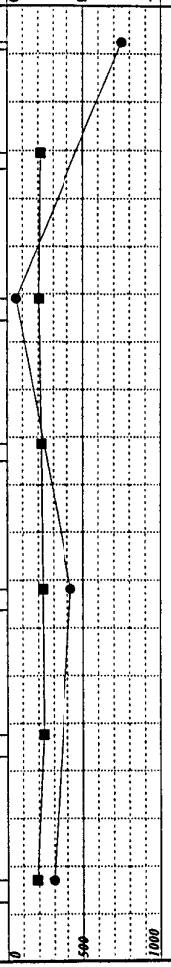
Ground Water Table					
Depth in Ft.					
Time					
Date					

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
DR				20				Grayish dk tan sand with some silt
				1				Grayish dk tan silty clay with some thin lenses sandy silt
				2				Gray silty clay with thin lenses sandy silt
				3				Grayish dk tan sand with some silt
				4				Tan silty clay with fine sand and a few thin lenses sandy silt
				20				Drilled casing to 205'
				A				4/6 27/6 54/6 (Ref) — Very Dense —
		81		B				Grayish dk tan clayey silt with sand
			7A-206.5	C				Grayish dk tan sandy silt
KB				D				Grayish dk tan clayey silt and fine sand
				7				Grayish dk tan sandy silt
				8				
				9				Grayish dk tan fine sand with some silt grading to fine to coarse sand with some silt. Trace fine gravel from 209' to 210'
				21				Drilled casing to 210' 10-27-94
Pen				A				18/6 12/6 15/6 16/6 10-28-94 — Very Stiff —
"		27		B				Grayish lt brown clayey silt with sand
"				C				Grayish lt brown sandy silt with trace to some clay
"				D				Grayish lt brown silty clay with some fine sand.
				2				T.D. 212 10-28-94
				3				
				4				
				5				Inserted a 2" dia. plastic pipe to a depth of 212', 10-28-94
				6				Grouted plastic pipe in place with a mixture of cement and water. 24 Bags of cement were used. Oct 31 and Nov 3, 1994
				7				
				8				
				9				
				0				

Boring: PB-02
Sheet 1 of 5

SAMPLE DESCRIPTION (ASTM D-2488)	Depth (ft)	Depth (m)	Elev. (m)	Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	Vane Shear Su (kPa)	Vs (m/sec)
SILT (ML), brown clayey silt, with fine sand and scattered gravel (Fill).	0	0								
SILTY SANDY GRAVEL (GM), light brown, moist, very dense (Fill).				SS	1	108	38-50-25	GM		
SILT (ML) clayey, dark grey, moist, soft to medium stiffness, with organics. Original ground level.	5									
SILT (ML) clayey, light brown, very moist, medium stiff to stiff, with fine sand. The s-tube deformed at bottom 9 inches. Drilling stopped so CBC could install 8 inch PVC casing.	10			P	2	237		ML		219
	15	5	390							
CLAY (CL), mottled light grey, with reddish brown and brown silty clay, with interlayered silty fine sand, very moist, medium stiffness. 8-9 hours filled with water. Light grey water return at 25 ft.	20			SS	3	457	2-2-4	CL		207
	25									
SILT (ML), dark grey-black, wet, medium stiff to stiff, fine sand and silts, with organics.	30			P	4	278		ML		224
		10	385							
	35									
SILTY SAND (SM-ML), light grey, wet, very stiff and dense, interlayered fine sandy silt to silty fine sand.	40			SS	5	407	18-28-14	SM-ML		231
	45									
		15	380							
CLAY (CL), mottled light grey-dark grey, very wet, soft to medium stiffness, clayey silt, with fine sand layer. pp = .25	50			P	6	457		CL		238
	55									
SILTY CLAY (CL-SM), light grey to dark grey, wet, stiff, medium density, interlayered silty clay and silty fine sand.	60			SS	7	457	4-10-20	CL-SM		191
	65	20	375							

Graphic Log



Test Results *
Field Tests
Lab Tests

UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis
DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG

Geotechnical Exploration Program

Boring: **PB-02 (3300 South)**

Sheet 1 of 5

Logged by: Travis Nguyen
Date Start: 4/18/96
Date Finish: 4/22/96
Weather:
Station: 3300 South
Offset:
Coordinates (m): N 17,400.0 E 900.0
Elevation (m): 394.7
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 91.5
Drill Contractor: CBC
Driller: J. Hulse, Dave W., Milo A.
Rig Type: 6164
Drilling Method: Mud Rotary w/ casing
Hole Diameter: 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1988 (NAVD '88)

Coordinates are NAD '83

▽ = Groundwater depth

Blows = number of blows required to drive split spoon sampler 150mm or distance shown

USCS = Unified Soil Classification System

>> = N-value data greater than 100 blows/0.3m

* = See Key to Soil Logs for list of abbreviations and descriptions of tests

SAMPLE TYPE

SS = Standard Penetration Test, 38mm ID and 50.8mm OD split spoon sampler

DM = Dames & Moore type U sampler

US = Undisturbed Shelby Tube, 76.2mm OD, pushed

P = Dames & Moore Piston Sampler

Boring: PB-02
Sheet 2 of 5

SAMPLE DESCRIPTION (ASTM D-2488)	Depth (ft-m)	Elev. (m)	Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	Vane Shear S_u (kPa)	Vs (m/sec)
SILT (ML), light grey, wet, stiff to very stiff, fine sandy silt with sand layers. pp=3.0	70		P P	8	407		ML		197
SILT (ML), brown, wet, very stiff, clayey silt, with trace sand.	80	370	SS	9	457	9-11-20	ML		210
SILTY SAND (SP-SM), grey and white, wet, very dense, fine to coarse grained sand with silt.	90		SS	10	220	14-50/5.5"	SP-SM		234
SILTY SAND (SP-SM), very dense.	100	365	SS	11	316	28-30-18	SP-SM		508
CLAY (CH-OH), dark grey to black, wet, stiff, clay and organic clay.	110	360	SS	12	457	5-6-9	CH-OH		277
SILT (ML), light grey, very moist, stiff to very stiff, clayey silt. pp=2.5	120		P P	13	457		ML		244
SILT (ML), grey, wet, very stiff to hard, very fine sand silt.	130	355	SS	14	457	5-18-40	ML		290

Graphic Log: 20, 25, 30, 35, 40

● = SPT "N"-Value
■ = S-Wave Velocity "Vs" (m/sec)
(Blows/0.3m)
0 50 100
0 500 1000

Test Results *
Field Tests
Lab Tests

UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis
DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG

Geotechnical Exploration Program

Boring: **PB-02 (3300 South)**

Sheet 2 of 5

Logged by: Travis Nguyen
Date Start: 4/18/96
Date Finish: 4/22/96
Weather:
Station: 3300 South
Offset:
Coordinates (m): N 17,400.0 E 900.0
Elevation (m): 394.7
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 91.5
Drill Contractor: CBC
Driller: J. Hulse, Dave W., Milo A.
Rig Type: 6164
Drilling Method: Mud Rotary w/ casing
Hole Diameter: 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1988 (NAVD '88)

Coordinates are NAD '83

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Blows = number of blows required to drive split spoon sampler 150mm or distance shown

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SAMPLE TYPE

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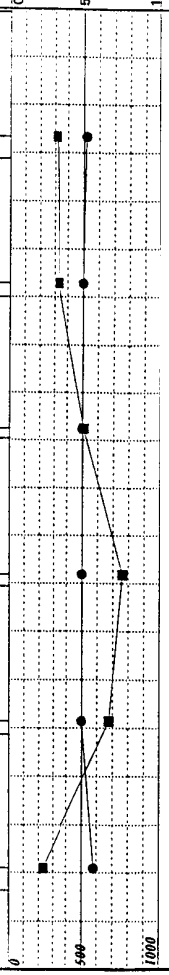
P = Dames & Moore Piston Sampler

Boring: PB-02
Sheet 3 of 5

SAMPLE DESCRIPTION (ASTM D-2488)	Depth (ft-m)	Graphic Log	Elev. (m)	Sample Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	Test Results * Field Tests: Vane Shear Su (kPa)	Vs (m/sec)	Lab Tests
SILT (ML), grey-dark grey, wet, stiff, clayey silt interlayered with silty sand.	40			SS	15	457	17-40-12	ML		321	
SILT SAND (SM), grey, wet, dense to very dense, silty fine sand interlayerd with fine sandy silt.	45		350								
SILTY SAND (SM), grades into fine sandy silt layer.	50			SS	16	258	38-50/6"	SM		339	
SILTY SAND (SM), becomes very dense with scattered gravels.	60		345	SS	17	163	44-50/4"	SM		508	
SILTY SAND (SM), with seashell fragments and silt layers.	70			SS	18	210	24-50/6"	SM		762	
SILTY SAND (SM), becomes reddish brown.	80		340	SS	19	258	30-50/6"	SM		677	
SILT (ML), mottled green and grey, wet, very stiff to hard, grey clayey silt, with layers of fine sandy silt. Artesian water at 190 ft.	90		335	SS	20	457	22-28-30	ML		234	

● = SPT "N"-Value
■ = S-Wave Velocity "Vs" (m/sec)
(Blows/0.3m)



UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis
DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG

Geotechnical Exploration Program

Boring: **PB-02 (3300 South)**

Sheet 3 of 5

Logged by: Travis Nguyen
Date Start: 4/18/96
Date Finish: 4/22/96
Weather:
Station: 3300 South
Offset:
Coordinates (m): N 17,400.0 E 900.0
Elevation (m): 394.7
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 91.5
Drill Contractor: CBC
Driller: J. Hulse, Dave W., Milo A.
Rig Type: 6164
Drilling Method: Mud Rotary w/ casing
Hole Diameter: 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1988 (NAVD '88)

Coordinates are NAD '83

▽ = Groundwater depth

Blows = number of blows required to drive split spoon sampler 150mm or distance shown

USCS = Unified Soil Classification System

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SAMPLE TYPE

SS = Standard Penetration Test, 38mm ID and 50.8mm OD split spoon sampler

DM = Dames & Moore type U sampler

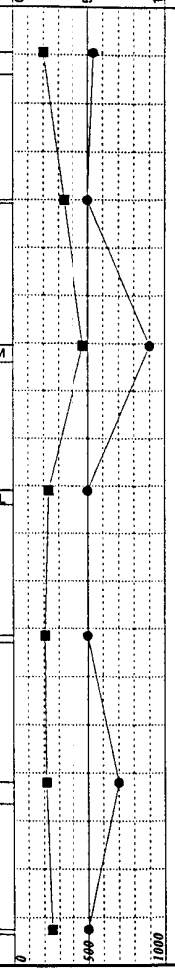
US = Undsturbed Shelby Tube, 76.2mm OD, pushed

P = Dames & Moore Piston Sampler

Boring: PB-02
Sheet 4 of 5

SAMPLE DESCRIPTION (ASTM D-2488)	Depth (ft)	Depth (m)	Elev. (m)	Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	Vane Shear S_u (kPa)	Vs (m/sec)
SILT (ML), grades into fine silty lenses.	200	60		SS	21	457	15-19-25	ML		203
	205									
GRAVEL SAND SILT (GM), white-grey-brown, wet, very dense, sandy subangular gravel.	210	65	330	SS	22	76	50/3"	GM		339
	215									
SILT (ML), grey, wet, very stiff, fine sandy silt.	220			SS	23	314	22-40-50/4"	ML-SM		469
SILTY SAND (SM-ML), interlayered reddish brown and grey, moist, very dense, silty fine sand to fine sandy silt.	225									
SILTY SAND (SM-ML).	230	70	325	SS	24	305	34-50/6"	SM-ML		234
	235									
SILTY SAND (SM), white-grey, wet, very dense, gravelly sand with silt.	240			SS	25	102	24-50/3"	SM		210
	245	75	320							
SILT (ML), mottled brown and light grey, wet, hard, clayey silt, with fine silty sand lenses.	250			SS	26	457	21-30-40	ML		218
	255									
CLAY (CL), mottled reddish brown and grey, wet, hard, gravelly clay with sand.	260	80	315	SS	27	101	50/4	CL		254

Graphic Log



Test Results *
Field Tests
Lab Tests

UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis
DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG

Geotechnical Exploration Program

Boring: **PB-02 (3300 South)**

Sheet 4 of 5

Logged by: Travis Nguyen
Date Start: 4/18/96
Date Finish: 4/22/96
Weather:
Station: 3300 South
Offset:
Coordinates (m): N 17,400.0 E 900.0
Elevation (m): 394.7
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 91.5
Drill Contractor: CBC
Driller: J. Hulse, Dave W., Milo A.
Rig Type: 6164
Drilling Method: Mud Rotary w/ casing
Hole Diameter: 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1988 (NAVD '88)

Coordinates are NAD '83

▽ = Groundwater depth

Blows = number of blows required to drive split spoon sampler 150mm or distance shown

USCS = Unified Soil Classification System

>> = N-value data greater than 100 blows/0.3m

* = See Key to Soil Logs for list of abbreviations and descriptions of tests

SAMPLE TYPE

SS = Standard Penetration Test, 38mm ID and 50.8mm OD split spoon sampler

DM = Dames & Moore type U sampler

US = Undisturbed Shelby Tube, 76.2mm OD, pushed

P = Dames & Moore Piston Sampler

Boring: PB-02
Sheet 5 of 5

SAMPLE DESCRIPTION (ASTM D-2488)	Depth (ft-m)	Graphic Log	Elev. (m)	Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	Vane Shear Su (kPa)	Vs (m/sec)	Lab Tests
CLAY (CL), mottled grey and greenish grey, wet, hard, silty clay, with scattered gravel.	265, 270			SS	28	361	9-23-24	CL		218	
CLAY (CL), becomes dark grey to black.	275, 280		310	SS	29	457	5-30-23	CL		244	
No recovery. Recovered 2 pieces of gravel, probably cutting.	285, 290			SS	30	152	55/6"			244	
SILTY SAND (SM), grey, wet, very dense, silty fine sand with seashell frag	295, 300		305	SS	31	101	50/4"	SM		339	
	305, 310, 315, 320, 325		300, 295								

● = SPT "N"-Value
■ = S-Wave Velocity "Vs" (m/sec)
(Blows/0.3m)

Depth (m): 80, 85, 90, 95, 100

Test Results *: Field Tests (Vane Shear Su (kPa), Vs (m/sec)); Lab Tests

UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis

DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG

Geotechnical Exploration Program

Boring: **PB-02 (3300 South)**

Sheet 5 of 5

Logged by: Travis Nguyen
Date Start: 4/18/96
Date Finish: 4/22/96
Weather:
Station: 3300 South
Offset:
Coordinates (m): N 17,400.0 E 900.0
Elevation (m): 394.7
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 91.5
Drill Contractor: CBC
Driller: J. Hulse, Dave W., Milo A.
Rig Type: 6164
Drilling Method: Mud Rotary w/ casing
Hole Diameter: 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1988 (NAVD '88)

Coordinates are NAD '83

▽ = Groundwater depth

Blows = number of blows required to drive split spoon sampler 150mm or distance shown

USCS = Unified Soil Classification System

>> = N-value data greater than 100 blows/0.3m

* = See Key to Soil Logs for list of abbreviations and descriptions of tests

SAMPLE TYPE

SS = Standard Penetration Test, 38mm ID and 50.8mm OD split spoon sampler

DM = Dames & Moore type U sampler

US = Undisturbed Shelby Tube, 76.2mm OD, pushed

P = Dames & Moore Piston Sampler

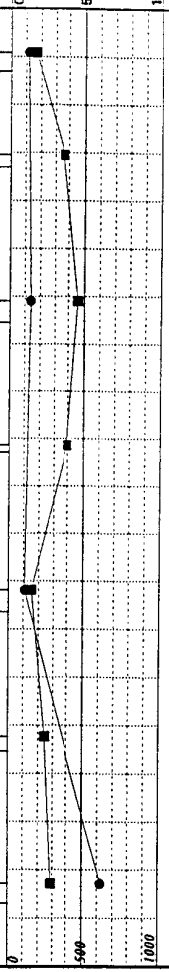
Boring: PB-03
Sheet 1 of 4

SAMPLE DESCRIPTION (ASTM D-2488)	Depth (ft-m)	Elev. (m)	Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	Vane Shear Su (kPa)	Vs (m/sec)
SILT (ML), dark brown, moist, stiff, with little clay, silt, scattered gravel and organics. (Fill)									
SILT (ML), dark brown, moist, stiff, with fine sandy silt.		400	SS	1	361	3-5-7	ML		170
SILT (ML), mottled brown-greenish grey, wet, stiff, with interlayered clayey silt and fine sandy silt.			P	2	142		ML		364
SILT (ML), mottled brown-greenish grey, wet, stiff, with interlayered clayey silt and fine sandy silt.		395	SS	3	457	4-7-7	ML		462
SILT SAND (SM), mottled reddish brown and greenish grey, wet, medium density, silty sand with clayey silt lenses.			P	4	50		SM		391
CLAY SILT (CL-OL), dark grey-grey, wet, stiff, silty clay and organic clay.		390	SS	5	457	3-4-7	CL-OL		154
CLAY SILT (CL-OL), dark grey-grey, wet, stiff, silty clay and organic clay.		385	P	6	204		CL-OL		246
SILTY SAND (SM), grey-white, wet, very dense, silty fine sand.			SS	7	361	13-42-40	SM		287

Graphic Log: 0, 5, 10, 15, 20

Depth (m): 0, 5, 10, 15, 20

Elev. (m): 400, 395, 390, 385



Test Results *: Field Tests; Lab Tests

UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis
DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG

Geotechnical Exploration Program

Boring: **PB-03 (5300 South)**

Sheet 1 of 4

Logged by: Travis Nguyen
Date Start: 4/24/96
Date Finish: 4/25/96
Weather:
Station: 5300 South
Offset:
Coordinates (m): N 13,400.0 E 960.0
Elevation (m): 400.8
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 61.0
Drill Contractor: CBC
Driller: J. Hulse, Milo A., Dave W.
Rig Type: 6164
Drilling Method: Mud Rotary
Hole Diameter: 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1988 (NAVD '88)

Coordinates are NAD '83

▽ = Groundwater depth

Blows = number of blows required to drive split spoon sampler 150mm or distance shown

USCS = Unified Soil Classification System

>> = N-value data greater than 100 blows/0.3m

* = See Key to Soil Logs for list of abbreviations and descriptions of tests

SAMPLE TYPE

SS = Standard Penetration Test, 38mm ID and 50.8mm OD split spoon sampler

DM = Dames & Moore type U sampler

US = Undisturbed Shelby Tube, 76.2mm OD, pushed

P = Dames & Moore Piston Sampler

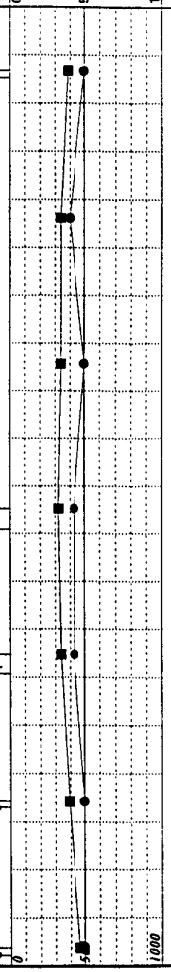
Boring: PB-03
Sheet 2 of 4

SAMPLE DESCRIPTION (ASTM D-2488)	Depth (ft-m)	Graphic Log	Elev. (m)	Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	Vane Shear Su (kPa)	Vs (m/sec)
SILT SAND GRAVEL (GM), grey-brown, wet, very dense, fine to medium grained sandy gravel with silt.	70		380	SS	8	78	40-50	GM		337
No recovery.	80			SS	9		12-17-23	GM		339
	85		375							
No recovery.	90			SS	10		50/3"	GM		339
SILT (ML), grey, wet, hard, clayey silt with trace sand.	100		370	SS	11	407	22-16-27	ML		321
SILTY SAND (SM), grey, wet, very dense, silty fine sand.	110			SS	12	361	33-25-18	SM-ML		339
SILT (ML), grey, wet, hard, clayey silt.										
SILTY SAND GRAVEL (SM-SP), grey-white, wet, very dense, silty fine to medium grained sand with gravel.	120		365	SS	13	106	50/6"	SM-SP		393
SAND (SM-SP) silty, layer of reddish brown fine sand.	130			SS	14	152	50/6"	SM-SP		459

Depth (m): 20, 25, 30, 35, 40

Test Results *: Field Tests — Vane Shear Su (kPa); Vs (m/sec); Lab Tests

● = SPT "N"-Value
■ = S-Wave Velocity "Vs" (m/sec)
(Blows/0.3m)



UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis
DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG

Geotechnical Exploration Program

Boring: **PB-03 (5300 South)**

Sheet 2 of 4

Logged by: Travis Nguyen
Date Start: 4/24/96
Date Finish: 4/25/96
Weather:
Station: 5300 South
Offset:
Coordinates (m): N 13,400.0 E 960.0
Elevation (m): 400.8
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 61.0
Drill Contractor: CBC
Driller: J. Hulse, Milo A., Dave W.
Rig Type: 6164
Drilling Method: Mud Rotary
Hole Diameter: 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1988 (NAVD '88)

Coordinates are NAD '83

▽ = Groundwater depth

Blows = number of blows required to drive split spoon sampler 150mm or distance shown

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SAMPLE TYPE

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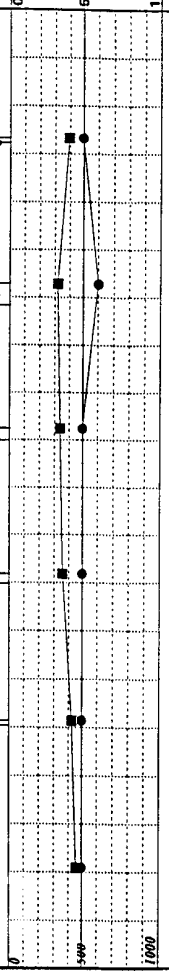
Boring: PB-03
Sheet 3 of 4

SAMPLE DESCRIPTION (ASTM D-2488)	Depth (ft-m)	Elev. (m)	Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	Vane Shear Su (kPa)	Vs (m/sec)
SAND (SM-SP) silty, layer of reddish brown fine sand.	40–45	360–355	SS	15	101	50/4"	SM-SP		393
CLAY (CL), brownish yellow, wet, hard, silty clay.	50–55	355–350	SS	16	457	13-18-42	CL-ML		321
SILT (ML), mottled grey-brownish yellow, wet, hard, fine sandy silt.	60–65	350–345	SS	17	230	22-50/5"	ML		339
SILTY SAND (SM), white-yellow-grey, wet, very dense, silty fine sand, with silty layers.	70–75		SS	18	182	36-50/3"	SM		358
SILTY SANDY GRAVEL (GM), yellowish-brown-grey, wet, very dense, fine sandy gravel.	80–85		SS	19	101	50/4"	GM		420
No recovery.	90–95		SS	20		10-50/5"	GM		451

Graphic Log

● = SPT "N"-Value
■ = S-Wave Velocity "Vs" (m/sec)
(Blows/0.3m)



Test Results *
Field Tests
Lab Tests

UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis
DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG

Geotechnical Exploration Program

Boring: PB-03 (5300 South)

Sheet 3 of 4

Logged by: Travis Nguyen
Date Start: 4/24/96
Date Finish: 4/25/96
Weather:
Station: 5300 South
Offset:
Coordinates (m.: N 13,400.0 E 960.0
Elevation (m): 400.8
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 61.0
Drill Contractor: CBC
Driller: J. Hulse, Milo A., Dave W.
Rig Type: 6164
Drilling Method: Mud Rotary
Hole Diameter: 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1988 (NAVD '88)

Coordinates are NAD '83

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Blows = number of blows required to drive split spoon sampler 150mm or distance shown

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>> = N-value data greater than 100 blows/0.3m

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P = Dames & Moore Piston Sampler

Boring: PB-03
Sheet 4 of 4

SAMPLE DESCRIPTION (ASTM D-2488)	Depth (ft)	Depth (m)	Graphic Log	Elev. (m)	Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	● = SPT "N"-Value ■ = S-Wave Velocity "Vs" (m/sec) (Blows/0.3m) 0 50 100	Vane Shear Su (kPa)	Vs (m/sec)	Lab Tests
		60											
No recovery.	200			340	SS	21		50/4"	GM			508	
	205												
	210												
		65											
	215			335									
	220												
	225												
	230	70		330									
	235												
	240												
	245	75		325									
	250												
	255												
	260	80								0 500 1000			

Test Results *: Field Tests (Vane Shear Su (kPa), Vs (m/sec)); Lab Tests

UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis
DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG

Geotechnical Exploration Program

Boring: **PB-03 (5300 South)**

Sheet 4 of 4

Logged by: Travis Nguyen
Date Start: 4/24/96
Date Finish: 4/25/96
Weather:
Station: 5300 South
Offset:
Coordinates (m): N 13,400.0 E 960.0
Elevation (m): 400.8
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 61.0
Drill Contractor: CBC
Driller: J. Hulse, Milo A., Dave W.
Rig Type: 6154
Drilling Method: Mud Rotary
Hole Diameter 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1988 (NAVD '88)

Coordinates are NAD '83

▽ = Groundwater depth

Blows = number of blows required to drive split spoon sampler 150mm or distance shown

USCS = Unified Soil Classification System

>> = N-value data greater than 100 blows/0.3m

* = See Key to Soil Logs for list of abbreviations and descriptions of tests

SAMPLE TYPE

SS = Standard Penetration Test, 38mm ID and 50.8mm OD split spoon sampler

DM = Dames & Moore type U sampler

US = Undisturbed Shelby Tube, 76.2mm OD, pushed

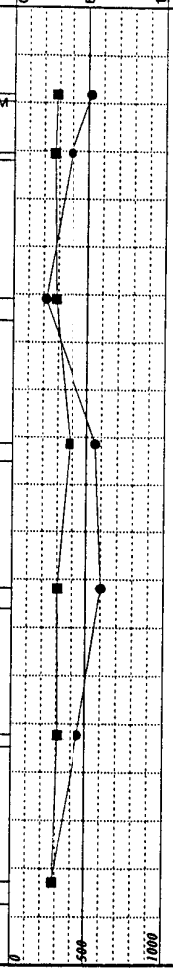
P = Dames & Moore Piston Sampler

Boring: PB-04
Sheet 1 of 4

SAMPLE DESCRIPTION (ASTM D-2488)	Depth (ft-m)	Elev. (m)	Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	Vane Shear Su (kPa)	Vs (m/sec)
SILT GRAVEL (ML-GM), grey-brown, moist, very dense, clayey silt, with pieces of asphalt, concrete, wood, and organics. (Fill)	5	400	SS	1	50	23-22-30	ML-GM		285
SILTY SAND (SM), brown-grey, moist, medium density, silty fine sand with gravel.	10, 15		SS	2	50	4-21-18	SM		273
CLAY (CL), reddish-brown, wet, medium stiffness, silty clay with scattered gravel.	20	395	SS	3	101	10-17-5	CL		287
SILTY SAND (SM-ML), grey, wet, medium density, silty fine sand to fine sandy silt.	25, 30		SS	4	316	11-26-30	SM		387
SILTY SAND (SM), grey-white to reddish brown, wet, dense, silty fine to medium grained sand.	35	390							
SILTY SAND (SM), grey-white to reddish brown, wet, very dense, silty fine to medium grained sand, with silty fine sand layer.	40, 45		SS	5	407	16-20-40	SM		305
SILT SAND GRAVEL (GM), brown-grey-white, wet, very dense, fine to medium sandy gravel with silt.	50, 55	385	SS	6	210	30-45/6"	GM		311
SILT (ML), brown, wet, very stiff, fine sandy silt.	60, 65		SS	7	457	4-14-14	ML		282

Graphic Log: 0, 5, 10, 15, 20

● = SPT "N"-Value
■ = S-Wave Velocity "Vs" (m/sec)
(Blows/0.3m)



Test Results *
Field Tests
Lab Tests

UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis

DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG

Geotechnical Exploration Program

Boring: PB-04 (6600 South)

Sheet 1 of 4

Logged by: Travis Nguyen
Date Start: 4/30/96
Date Finish: 5/2/96
Weather:
Station:
Offset: 6600 South
Coordinates (m): N 11,200.0 E 600.0
Elevation (m): 400.8
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 61.0
Drill Contractor: CBC
Driller: J. Hulse, Milo A., Dave W.
Rig Type: 6164
Drilling Method: Mud Rotary
Hole Diameter: 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1988 (NAVD '88)

Coordinates are NAD '83

▽ = Groundwater depth

Blows = number of blows required to drive split spoon sampler 150mm or distance shown

USCS = Unified Soil Classification System

>> = N-value data greater than 100 blows/0.3m

* = See Key to Soil Logs for list of abbreviations and descriptions of tests

SAMPLE TYPE

SS = Standard Penetration Test, 38mm ID and 50.8mm OD split spoon sampler

DM = Dames & Moore type U sampler

US = Undisturbed Shelby Tube, 76.2mm OD, pushed

P = Dames & Moore Piston Sampler

Boring: PB-04
Sheet 2 of 4

SAMPLE DESCRIPTION (ASTM D-2488)	Depth (ft-m)	Elev. (m)	Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	Vane Shear Su (kPa)	Vs (m/sec)
SILTY SAND (SP-SM) gravelly, brown-white, wet, very dense, fine to medium grained sand with silt.	70–75 (20)	380	SS	8	152	50/6"	SP-SM		372
SAND GRAVEL (GP-GM) silty, brown-grey-white, wet, very dense, fine to medium grained sandy gravel with silt.	80–85 (25)	375	SS	9	128	50/6"	GP-GM		423
SAND GRAVEL (GP-GM) silty, brown-grey-white, wet, very dense, fine to medium grained sandy gravel with silt.	90–95 (30)		SS	10	57	50/4"	GP-GM		358
SAND GRAVEL (GP-GM) silty, brown-grey-white, wet, very dense, fine to medium grained sandy gravel with silt.	100–105	370	SS	11	57	50/4"	GP-GM		358
SAND GRAVEL (GP-GM) silty, brown-grey-white, wet, very dense, fine to medium grained sandy gravel with silt.	110–115 (35)		SS	12	106	50/6"	GP-GM		381
SILTY SAND (SM), mottled reddish brown-grey, wet, very dense, silty fine sand.	120–125	365	SS	13	131	40-20/1"	SM		436
SAND GRAVEL (GP-GM) silty, brown-grey-white, wet, very dense, fine to	130 (40)		SS	14	52	50/2"	GP-GM		469

● = SPT "N"-Value
■ = S-Wave Velocity "Vs" (m/sec)
(Blows/0.3m)
0 50 100 1000

Test Results *
Field Tests
Lab Tests

UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis
DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG

Geotechnical Exploration Program

Boring: **PB-04 (6600 South)**

Sheet 2 of 4

Logged by: Travis Nguyen
Date Start: 4/30/96
Date Finish: 5/2/96
Weather:
Station:
Offset: 6600 South
Coordinates (m: N 11,200.0 E 600.0
Elevation (m): 400.8
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 61.0
Drill Contractor: CBC
Driller: J. Hulse, Milo A., Dave W.
Rig Type: 6164
Drilling Method: Mud Rotary
Hole Diameter: 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1988 (NAVD '88)

Coordinates are NAD '83

▽ = Groundwater depth

Blows = number of blows required to drive split spoon sampler 150mm or distance shown

USCS = Unified Soil Classification System

>> = N-value data greater than 100 blows/0.3m

* = See Key to Soil Logs for list of abbreviations and descriptions of tests

SAMPLE TYPE

SS = Standard Penetration Test, 38mm ID and 50.8mm OD split spoon sampler

DM = Dames & Moore type U sampler

US = Undisturbed Shelby Tube, 76.2mm OD, pushed

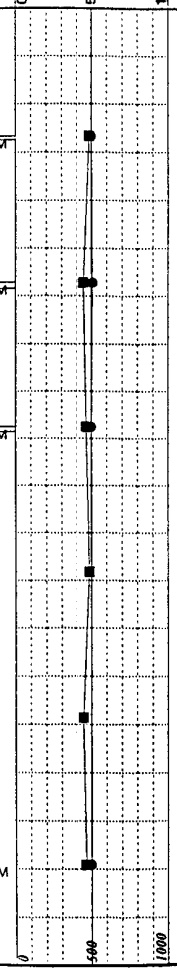
P = Dames & Moore Piston Sampler

Boring: PB-04
Sheet 3 of 4

SAMPLE DESCRIPTION (ASTM D-2488)	Depth (ft-m)	Elev. (m)	Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	Vane Shear Su (kPa)	Vs (m/sec)
medium grained sandy gravel.	40	360							
SAND GRAVEL (GP-GM) silty, brown-grey-white, wet, very dense, fine to medium grained sandy gravel with silt.	35, 40		SS	15	76	50/3"	GP-GM		488
SAND GRAVEL (GP-GM) silty, brown-grey-white, wet, very dense, fine to medium grained sandy gravel with silt.	45, 50	355	SS	16	128	51/5"	GP-GM		451
SAND GRAVEL (GP-GM) silty, brown-grey-white, wet, very dense, fine sand with gravel and silt.	55, 60		SS	17	101	50/4"	GP-GM		469
no sample.	50, 65, 70	350		18					488
no sample.	75, 80			19					451
no recovery.	55, 85, 90	345	SS	20		50/3"	GP-GM		468
	95, 60								

Graphic Log

● = SFT "N"-Value
■ = S-Wave Velocity "Vs" (m/sec)
(Blows/0.3m)



Test Results *
Field Tests
Lab Tests

UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis
DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG

Geotechnical Exploration Program

Boring: **PB-04 (6600 South)**

Sheet 3 of 4

Logged by: Travis Nguyen
Date Start: 4/30/96
Date Finish: 5/2/96
Weather:
Station:
Offset: 6600 South
Coordinates (m): N 11,200.0 E 600.0
Elevation (m): 400.8
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 61.0
Drill Contractor: CBC
Driller: J. Hulse, Milo A., Dave W.
Rig Type: 6164
Drilling Method: Mud Rotary
Hole Diameter: 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1988 (NAVD '88)

Coordinates are NAD '83

▽ = Groundwater depth

Blows = number of blows required to drive split spoon sampler 150mm or distance shown

USCS = Unified Soil Classification System

>> = N-value data greater than 100 blows/0.3m

* = See Key to Soil Logs for list of abbreviations and descriptions of tests

SAMPLE TYPE

SS = Standard Penetration Test, 38mm ID and 50.8mm OD split spoon sampler

DM = Dames & Moore type U sampler

US = Undisturbed Shelby Tube, 76.2mm OD, pushed

P = Dames & Moore Piston Sampler

Boring: PB-04
Sheet 4 of 4

SAMPLE DESCRIPTION (ASTM D-2488)	Depth (ft)	Depth (m)	Graphic Log	Elev. (m)	Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	● = SPT "N"-Value ■ = S-Wave Velocity "Vs" (m/sec) (Blows/0.3m) 0 50 100	Vane Shear Su (kPa)	Vs (m/sec)	Lab Tests
		60											
no recovery.	200			340	SS	21		50/1"	GP-GM	■		508	
	205												
	210												
		65											
	215			335									
	220												
	225												
	230	70		330									
	235												
	240												
	245	75											
	250			325									
	255												
	260												
		80											

Test Results *: Field Tests (Vane Shear Su (kPa), Vs (m/sec)); Lab Tests

UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis
DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG

Geotechnical Exploration Program

Boring: **PB-04 (6600 South)**

Sheet 4 of 4

Logged by: Travis Nguyen
Date Start: 4/30/96
Date Finish: 5/2/96
Weather:
Station:
Offset: 6600 South
Coordinates (m): N 11,200.0 E 600.0
Elevation (m): 400.8
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 61.0
Drill Contractor: CBC
Driller: J. Hulse, Milo A., Dave W.
Rig Type: 6164
Drilling Method: Mud Rotary
Hole Diameter: 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1988 (NAVD '88)

Coordinates are NAD '83

▽ = Groundwater depth

Blows = number of blows required to drive split spoon sampler 150mm or distance shown

USCS = Unified Soil Classification System

>> = N-value data greater than 100 blows/0.3m

* = See Key to Soil Logs for list of abbreviations and descriptions of tests

SAMPLE TYPE

SS = Standard Penetration Test, 38mm ID and 50.8mm OD split spoon sampler

DM = Dames & Moore type U sampler

US = Undisturbed Shelby Tube, 76.2mm OD, pushed

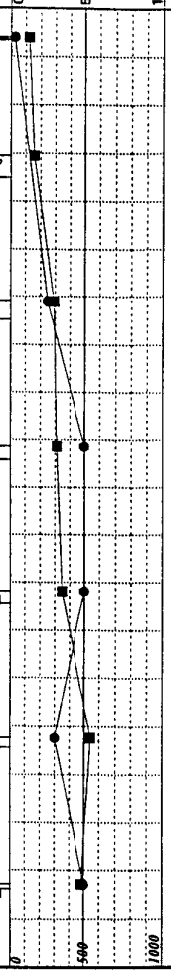
P = Dames & Moore Piston Sampler

Boring: PB-05
Sheet 1 of 4

SAMPLE DESCRIPTION
(ASTM D-2488)

Sample Description	Depth (ft)	Depth (m)	Elev. (m)	Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	Vane Shear Su (kPa)	Vs (m/sec)
SILT (ML-OL), dark brown, moist, soft, clayey silt with organics. (Topsoil).	0	0								
SILT (ML), brown, moist, medium stiffness, clayey silt. (Fill)	5			SS	1	6	2-3-3	ML		124
SILTY SAND (SM), mottled brown-grey, moist, medium dense to dense, silty fine sand.	10			P	P	2		SM-SP		159
SILT (SP-SM), grey-white, moist, medium density, fine sand with silt.	15	5	400							
SILT (ML), brownish yellow, wet, very stiff, fine sandy silt, with silty fine sand layers.	20			SS	3	316	13-13-12	ML		293
no recovery with tube sampler. SILT (ML), brownish yellow, wet, very stiff, fine sandy silt, with silty fine sand layers.	30	10	395	SS	4	258	22-50	ML		311
SILTY SAND (SP-SM) gravelly, grey-white-brown, wet, very dense, fine sand with silt. Reddish brown silt layer from 39 to 39.5 feet.	40			SS	5	230	20-50/5"	SP-SM		350
SILTY SAND (SP-SM) gravelly, grey-white-brown, wet, very dense, fine sand with silt, with gravel layers.	50	15	390	SS	6	204	35-30/2"	SP-SM		544
SILT SAND GRAVEL (GP-GM), grey-white-brown, wet, very dense, fine sandy subangular gravel with silt.	60	20	385	SS	7	101	50/4"	GP-GM		484
	65									

● = SPT "N"-Value
■ = S-Wave Velocity "Vs" (m/sec)
(Blows/0.3m)



Test Results *
Field Tests
Lab Tests

UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis
DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG
Geotechnical Exploration Program
Boring: **PB-05 (7200 South)**
Sheet 1 of 4

Logged by: Travis Nguyen
Date Start: 4/26/96
Date Finish: 4/30/96
Weather:
Station:
Offset:
Coordinates (m): N 9,600.0 E 600.0
Elevation (m): 403.9
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 61.0
Drill Contractor: CBC
Driller: J. Hulse, Milo A., Dave W.
Rig Type: 6414
Drilling Method: Mud Rotary
Hole Diameter: 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1988 (NAVD '88)
Coordinates are NAD '83
▽ = Groundwater depth
Blows = number of blows required to drive split spoon sampler 150mm or distance shown
USCS = Unified Soil Classification System
>> = N-value data greater than 100 blows/0.3m
* = See Key to Soil Logs for list of abbreviations and descriptions of tests

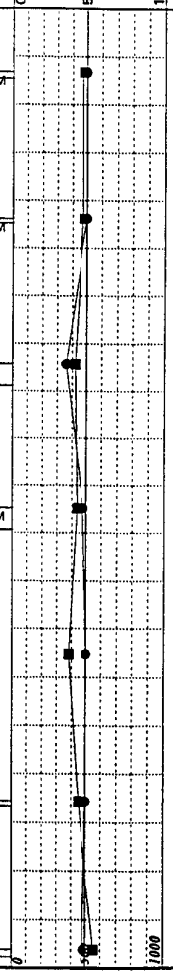
SAMPLE TYPE

SS = Standard Penetration Test, 38mm ID and 50.8mm OD split spoon sampler
DM = Dames & Moore type U sampler
US = Undisturbed Shelby Tube, 76.2mm OD, pushed
P = Dames & Moore Piston Sampler

Boring: PB-05
Sheet 2 of 4

SAMPLE DESCRIPTION (ASTM D-2488)	Depth (ft)	Depth (m)	Elev. (m)	Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	Vane Shear Su (kPa)	Vs (m/sec)
SILT SAND GRAVEL (GP-GM), grey-white-brown, wet, very dense, fine sandy subangular gravel with silt.	70	20		SS	8	106	50/6"	GP-GM		476
	75		380							
SILT SAND GRAVEL (GP-GM), grey-white-brown, wet, very dense, fine sandy subangular gravel with silt. Silty sand to sandy silt layer at 76 to 77 feet.	80	25		SS	9	101	50/4"	GP-GM		476
	85									
SILTY SAND (SM), brown, wet, dense, wilty fine sand.	90			SS	10	457	15-16-20	SM		420
	95		375							
SILT SAND (ML-SM), brown, wet, dense to very dense, sandy silt to silty fine sand.	100	30		SS	11	457	21-19-29	ML-SM		436
	105									
no recovery.	110		370	SS	12		50/3"	GM?		381
	115	35								
SILT SAND GRAVEL (GM), white-brown, wet, very dense, fine to coarse sandy gravel with silt.	120			SS	13	101	50/4"	GM		451
	125		365							
SILTY SAND (SM), grey-white, wet, very dense, silty fine sand.	130	40		SS	14	152	48/6"	SM		554

Graphic Log



● = SPT "N"-Value
■ = S-Wave Velocity "Vs" (m/sec)
(Blows/0.3m)

Test Results *
Field Tests
Lab Tests

UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis
DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG

Geotechnical Exploration Program

Boring: PB-05 (7200 South)

Sheet 2 of 4

Logged by: Travis Nguyen
Date Start: 4/26/96
Date Finish: 4/30/96
Weather:
Station:
Offset:
Coordinates (m): N 9,600.0 E 600.0
Elevation (m): 403.9
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 61.0
Drill Contractor: CBC
Driller: J. Hulse, Milo A., Dave W.
Rig Type: 6414
Drilling Method: Mud Rotary
Hole Diameter: 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1988 (NAVD '88)

Coordinates are NAD '83

▽ = Groundwater depth

Blows = number of blows required to drive split spoon sampler 150mm or distance shown

JSCS = Unified Soil Classification System

>> = N-value data greater than 100 blows/0.3m

* = See Key to Soil Logs for list of abbreviations and descriptions of tests

SAMPLE TYPE

SS = Standard Penetration Test, 38mm ID and 50.8mm OD split spoon sampler

DM = Dames & Moore type U sampler

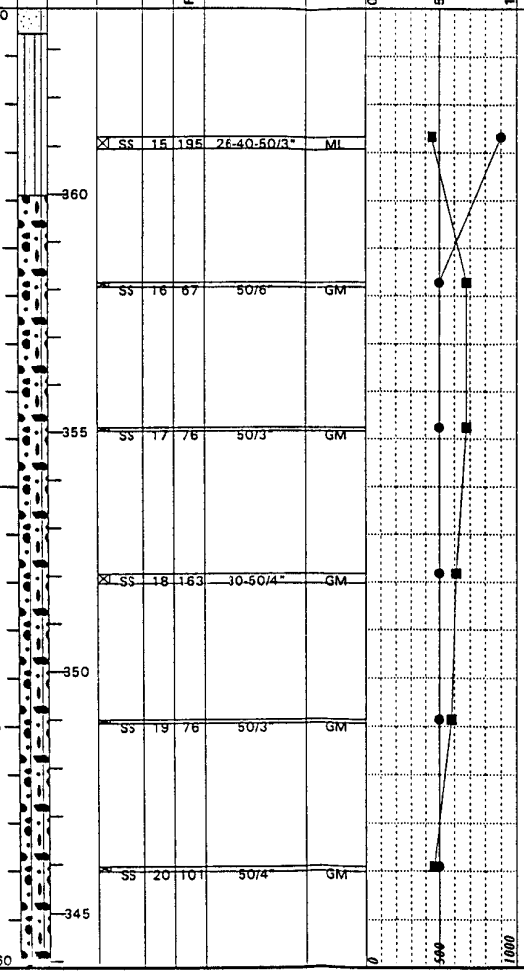
US = Undisturbed Shelby Tube, 76.2mm OD, pushed

P = Dames & Moore Piston Sampler

Boring: PB-05
Sheet 3 of 4

SAMPLE DESCRIPTION (ASTM D-2488)	Depth (ft)	Depth (m)	Elev. (m)	Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	Vane Shear Su (kPa)	Vs (m/sec)
SILT (ML), brown, wet, hard, interlayered clayey silt and fine sandy silt.	40	12	360	SS	15	195	26-40-50/3"	ML		451
SILT SAND GRAVEL (GM), white-brown-grey, wet, very dense, fine to coarse sandy gravel with silt.	50	15	355	SS	16	67	50/6"	GM		677
SILT SAND GRAVEL (GM), white-brown-grey, wet, very dense, fine to coarse sandy gravel with silt.	60	18	350	SS	17	76	50/3"	GM		677
SILT SAND GRAVEL (GM), white-brown-grey, wet, very dense, fine to coarse sandy gravel with silt.	70	21	345	SS	18	163	30-50/4"	GM		610
SILT SAND GRAVEL (GM), white-brown-grey, wet, very dense, fine to coarse sandy gravel with silt.	80	24		SS	19	76	50/3"	GM		581
SILT SAND GRAVEL (GM), white-brown-grey, wet, very dense, fine to coarse sandy gravel with silt.	90	27		SS	20	101	50/4"	GM		469

Graphic Log



Test Results *
Field Tests
Lab Tests

UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis
DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG

Geotechnical Exploration Program

Boring: **PB-05 (7200 South)**

Sheet 3 of 4

Logged by: Travis Nguyen
Date Start: 4/26/96
Date Finish: 4/30/96
Weather:
Station:
Offset:
Coordinates (m): N 9,600.0 E 600.0
Elevation (m): 403.9
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 61.0
Drill Contractor: CBC
Driller: J. Hulse, Milo A., Dave W.
Rig Type: 6414
Drilling Method: Mud Rotary
Hole Diameter: 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1988 (NAVD '88)

Coordinates are NAD '83

▽ = Groundwater depth

Blows = number of blows required to drive split spoon sampler 150mm or distance shown

USCS = Unified Soil Classification System

>> = N-value data greater than 100 blows/0.3m

* = See Key to Soil Logs for list of abbreviations and descriptions of tests

SAMPLE TYPE

SS = Standard Penetration Test, 38mm ID and 50.8mm OD split spoon sampler

DM = Dames & Moore type U sampler

US = Undisturbed Shelby Tube, 76.2mm OD, pushed

P = Dames & Moore Piston Sampler

Boring: PB-05
Sheet 4 of 4

SAMPLE DESCRIPTION (ASTM D-2488)	Depth (ft-m)	Graphic Log	Elev. (m)	SAMPLE Type	No.	Rec (mm)	Blows/0.15m	USCS (AASHTO)	● = SPT "N"-Value ■ = S-Wave Velocity "Vs" (m/sec) (Blows/0.3m) 0 50 100	Test Results * Field Tests: Vane Shear Su (kPa)	Vs (m/sec)	Lab Tests
no recovery.	200			SS	21		50/2"	GM?	■		508	
	205											
	210		340									
	215											
	220											
	225		335									
	230											
	235											
	240		330									
	245											
	250											
	255											
	260		325									

Depth (m): 60, 65, 70, 75, 80

0 500 1000

UDOT/PARSONS-BRINCKERHOFF
Stage 1 I-15 Seismic Hazard Analysis
DAMES & MOORE
Geosciences/Geotechnical Salt Lake City, UT

FIELD TEST BORING LOG

Geotechnical Exploration Program

Boring: PB-05 (7200 South)

Sheet 4 of 4

Logged by: Travis Nguyen
Date Start: 4/26/96
Date Finish: 4/30/96
Weather:
Station:
Offset:
Coordinates (m): N 9,600.0 E 600.0
Elevation (m): 403.9
Groundwater Depth (m):
Depth to Bedrock (m): N/A
Total Depth Drilled (m): 61.0
Drill Contractor: CBC
Driller: J. Huise, Milo A., Dave W.
Rig Type: 6414
Drilling Method: Mud Rotary
Hole Diameter: 4.5"

LEGEND/NOTES

Elevations based upon North American Vertical Datum of 1988 (NAVD '88)

Coordinates are NAD '83

▽ = Groundwater depth

Blows = number of blows required to drive split spoon sampler 150mm or distance shown

USCS = Unified Soil Classification System

>> = N-value data greater than 100 blows/0.3m

* = See Key to Soil Logs for list of abbreviations and descriptions of tests

SAMPLE TYPE

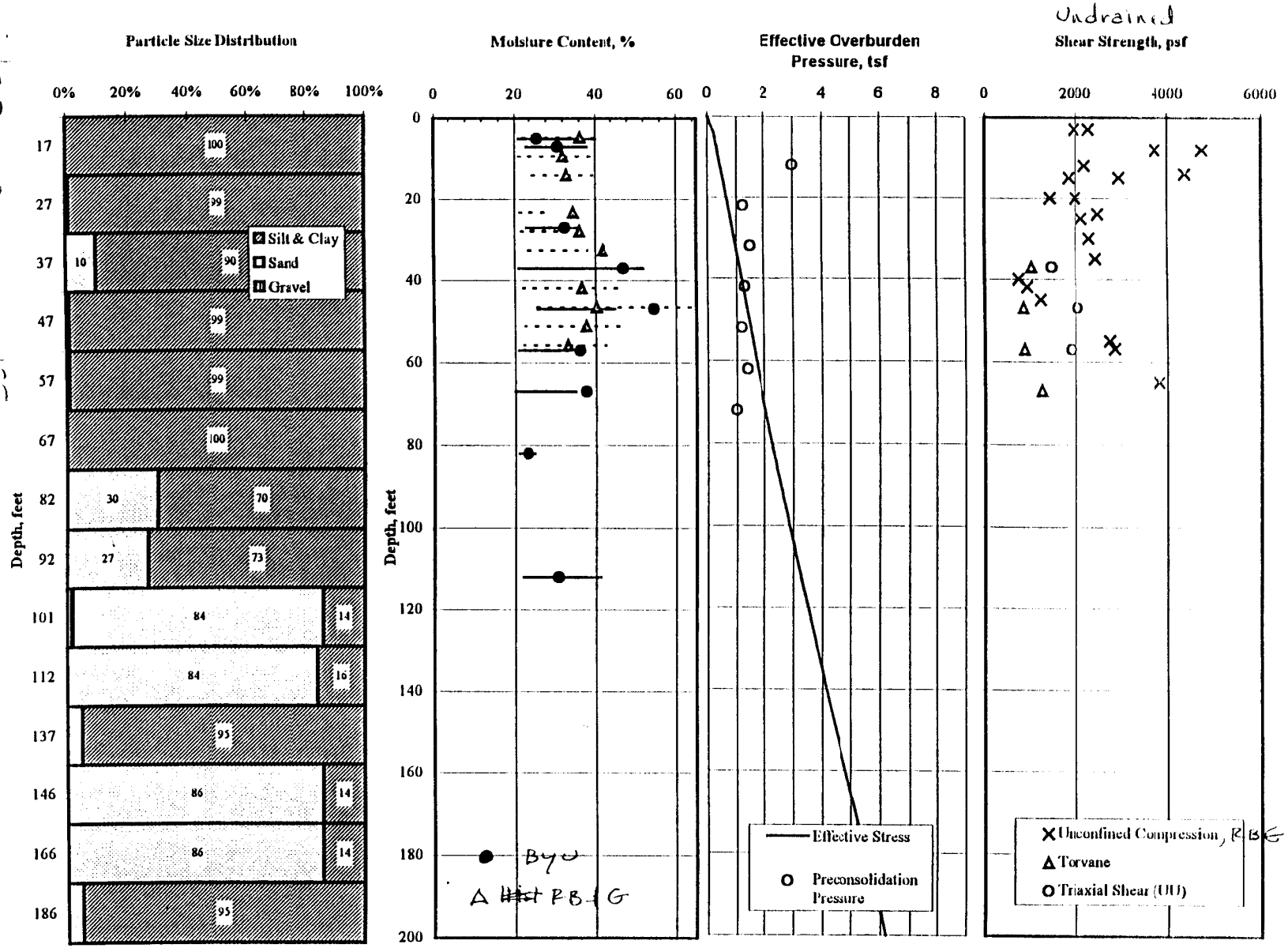
SS = Standard Penetration Test, 38mm ID and 50.8mm OD split spoon sampler

DM = Dames & Moore type U sampler

US = Undisturbed Shelby Tube, 76.2mm OD, pushed

P = Dames & Moore Piston Sampler

9000 SOUTH -- SUMMARY OF LABORATORY TESTING



16A SEISMIC DATA		
Depth	Vs (ft./sec.)	Vs (m./sec.)
5	682	207.9
10	802	244.4
20	741	225.9
30	833	253.9
40	869	264.9
50	735	224.0
60	851	259.4
70	909	277.1
80	1053	321.0
90	1276	388.9
100	1333	406.3
110	1081	329.5
120	1081	329.5
130	1333	406.3
140	1290	393.2
150	1379	420.3
160	1600	487.7
170	1379	420.3
180	1429	435.6
190	1481	451.4

Date Begun 4-27-95
Date Completed 5-3-95
Hole Diameter 3"
Project No. SP-15-7(111)296
Project Name I-15 Corridor - G.D.P. 10800 So. to 500 North S.L. County
Seismic Study PIN 851
Type of Structure —
Equation Project Line Sta. / Other Line Sta. CD 750601
Sta. of Structure
Hole Sta. 9000 S. 300 W. Rt. Ft. Lt. Ft. of ℄
Collar Elevation 4367'
Reference P.E.P.
Method Used
Field Party Sizemore Winrwood Shasted
Rig B-61 HDX

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Form R-353

Hole No. 16A
Sheet 1 of 10
Total Depth 200'

Ground Water Table				
Depth in Ft.	28.0' WC	66.5' WC	62.2' WC	62.5' WC
Time	13:00	09:25	09:20	09:35
Date	4-28-95	5-1-95	5-2-95	5-3-95

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
RB				0				Asphalt
				1				tan silty sand with some gravel - fill
				2				grey silt with fine sand
				3				grey silty coarse sand with fine gravel and some lenses of grey clayey silt
				4				casing to 5'
				5				
				6				grey clayey silt to silty clay
				7				
				8				tan silty clay
				9				casing to 10'
Shelby				10				tan silty clay
"				11				
"			16A-12	12				
RB				13				a few thin lenses of tan clayey silt
				14				
				15				casing to 15'
				16				
				17				tan silty clay with some lenses of tan clayey silt
				18				a thin lense of silty sand at 18'
				19				
				20				casing to 20'

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun: 4-27-95
Date Completed: 5-3-95
Hole Diameter: 3"
Project No.: SP-15-7(111)296
Project Name: I-15 Corridor Study - G.D.P. 10800 So. to 500 N. S.L. County Seismic Study PIN 851
Type of Structure:
Sta. of Structure:
Collar Elevation: 4367
Field Party: SIZEMORE, WORWOOD, SHOSTEA

Hole No.: 16A
Sheet: 2 of 10
Total Depth: 200'

Equation: Project Line Sta. / Other Line Sta. CID 750601
Hole Sta.: 9000 S. 300 W. Rt. ___ Ft., Lt. ___ Ft., of ℄ ___
Reference: P&P
Method Used:
Rig: B-61HDX

Ground Water Table

Depth in Ft.					
Time					
Date					

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
Shelby				20				TAN silty clay
"				21				
"			16A-21.00					TAN silty SAND
RB				22				
				23				
				24				CASING to 25'
				25				TAN silty clay with some lenses of tan clayey silt - A few thin lenses of silty sand
				26				
				27				CASING to 30'
				28				
				29				
Shelby				30				
"				31				
"			16A-32					
RB				32				grey with some tan clayey silt with fine sand
				33				
				34				A few lenses of grey silty clay
								CASING to 35'
				35				
				36				
				37				
				38				
								CASING to 40'
				39				dk. grey silty clay
				40				

Date Begun 4-27-95
Date Completed 5-3-95
Hole Diameter 3"
Project No. SP-15-7(111)296

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Form R-353

Hole No. 16A
Sheet 3 of 10
Total Depth 200'

Project Name I-15 Corridor G.D.P. 10800 So to 500 N. S.L. County
Seismic Study Gin 35
Equation Project Line Sta. C.P. 750601
Other Line Sta.
Type of Structure
Sta. of Structure
Hole Sta. 9000 S. 300 W. Rt. Ft., Lt. Ft., of ℄
Collar Elevation 4367'
Reference P. & P.
Method Used
Field Party Sizemore Worwood Shosted
Rig B-61HDX

Ground Water Table					
Depth in Ft					
Time					
Date					

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
Shelby				40				Dk. grey silty clay with some thin lenses of clayey silt
"				41				
"			16A-42	42				
RB				43				
				44				Casing to 45'
				45				
				46				
				47				
				48				
				49				Casing to 50'
Shelby				50				dk. grey silty clay with thin lenses of clayey silt
"				51				
"			16A-52	52				
RB				53				
				54				Casing to 55'
				55				
				56				
				57				
				58				
				59				
				60				Casing to 60'

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 4-27-95
Date Completed 5-3-95
Hole Diameter 3"
Project No. SP-15-7(111)296
Project Name I-15 Corridor - G.D.F. 10400 So. to 500 No. S.L. County
Structure Name Sec 651 Equation Project Line Sta. / Other Line Sta. CID 750601
Type of Structure
Sta. of Structure Hole Sta. 9000 S. 300 W. Rt. Ft., Lt. Ft., of ℄
Collar Elevation 4367 Reference P.S.P. Method Used
Field Party Sizemore Warwick Shepard Rig B-61 HDX

Hole No. 16 A
Sheet 4 of 10
Total Depth 200'

Ground Water Table

Depth in Ft					
Time					
Date					

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
Shelby				60				dk. grey silty clay with thin lenses of clayey silt
"				61				
"			16A-62	62				
RB				63				
				64				CASING to 65'
				65				
				66				
				67				
				68				
				69				CASING to 70'
Shelby				70				
"				71				
"			16A-72	72				grey sandy silt with some clay 4-27-95 4-28-95
RB				73				
				74				CASING to 75'
				75				
				76				
				77				
				78				grey silty sand with lenses of grey silty clay
				79				CASING to 80'
				80				

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 4-27-95
Date Completed 5-3-95
Hole Diameter 2"
Project No. SP-15-7(111)2 F.A.
Project Name I-15 CORRIDOR - G.D.P. 10800 So. To 500 No. S.L. COUNTY
SEISMIC STUDY PW 95
Equation Project Line Sta. / Other Line Sta. C.D. TE 1201
Type of Structure
Sta. of Structure
Hole Sta. 3400 S. 300 W. Rt. Ft., Lt. Ft., of ℄
Collar Elevation 4367'
Reference R & P.
Method Used
Field Party SIZEMORE, WARDWELL, SHASTED
Rig B-61 HDX

Hole No. 16A
Sheet 5 of 10
Total Depth 200'

Ground Water Table

Depth in Ft				
Time				
Date				

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
PEN				80				10/6" 13/6" 13/6" 16/6" - medium - grey sandy silt with some clay a few thin lenses of silty clay
"		26		81				
"			16A-82	82				
RB				83				grey silty sand and fine to med. gravel
				84				CASING to 85'
				85				
				86				a few thin lenses of silty clay
				87				
				88				CASING to 90'
				89				
PEN		Ref	NR	90				50/4" Refusal - NO RECOVERY -
RB				91				
				92				tan silty sand and gravel with a few lenses of grey silty clay our tan silty clay
				93				CASING to 95
				94				heavy loss of circulation 91'-98'
				95				
				96				grey sandy silt
				97				grey silty coarse sand
				98				
				99				grey lenses of sandy silt and silty clay
				100				CASING to 100'

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun: 4-27-95
Date Completed: 5-3-95
Hole Diameter: 3"
Project No.: SP-15-7(111)296
Project Name: I-15 CORRIDOR - G.D.P. 10+900 So TO 500 No. S.L. County
Seismic Study PIN 251
Type of Structure:
Sta. of Structure:
Collar Elevation: 4367'
Field Party: SIZEMORE WORLWOOD SHOSTED

Hole No.: 16A
Sheet: 6 of 10
Total Depth: 200'

Equation: Project Line Sta. / Other Line Sta.: CID 750601
Hole Sta.: 9000 S. 300 W. Rt. ___ Ft., Lt. ___ Ft., of ℄
Reference: P.E.P.
Method Used:
Rig: B-61HDX

Ground Water Table					
Depth in Ft.	28.0'	66.5'			
Time	13:00	09:25			
Date	4-28-95	5-1-95			

Drilling Method | Casing Depth | Blows per Foot | Sample Number | Depth in Feet | Sampling | Sample Recovery | Soil Graph

DESCRIPTION

Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.

PEN
" 82
" 16A-102
RB

36/6" 44/6" 38/6" 47/6" - VERY DENSE - GREY silty SAND with A TRACE OF clay

CASING to 105'

A FEW LENSES OF GREY AND TAN clayey silt AND silty clay

GREY clayey silt with SAND

CASING to 110'

PEN
" 62
" 16A-112
RB

31/6" 31/6" 31/6" 35/6" - VERY DENSE - GREY silty SAND with A FEW thin LENSES OF clayey silt

CASING to 115'

GREY silty SAND AND GRAVEL

CASING to 120'
4-28-95
5-1-95

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun: 4-27-95
Date Completed: 5-3-95
Hole Diameter: 3"
Project No.: SP-15-7(111)296
Project Name: I-15 Corridor - G.D.P. 10800 So to 500 No. S.L. County
Seismic Stud. PIN 251
Equation: Project Line Sta. / Other Line Sta. CID 750601
Type of Structure:
Sta. of Structure:
Hole Sta.: 9400 S. 300 W. Rt. ___ Ft., Lt. ___ Ft., of ℄
Collar Elevation: 4367'
Reference: P&P
Method Used:
Field Party: Sizemore Workman Shostea
Rig: B-61HDX

Hole No.: 16 A
Sheet: 7 of 10
Total Depth: 200'

Ground Water Table

Depth in Ft.					
Time					
Date					

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
PEN				120				15/6" 29/6" 33/6" 31/6" - VERY DENSE -
"				121				GREY SANDY SILT WITH SOME CLAY AND LENSES
"		62						OF CLAYEY SILT WITH FINE SAND
"			16A-122	122				
RB								
				123				
				124				
				125				CASING to 125'
				126				
				127				
				128				
				129				CASING to 130'
				130				32/6" 41/6" 50/5" - REFUSAL
PEN								GREY SILTY SAND WITH A TRACE OF CLAY AND
"		Ref.		131				FINE GRAVEL
"			16A-131.4					
RB				132				
				133				GREY SANDY SILT WITH LENSES OF SILTY SAND
				134				
				135				CASING to 135'
				136				
				137				
				138				
				139				
				140				CASING to 140'

Date Begun 4-27-95
Date Completed 5-3-95
Hole Diameter 3"
Project No. SP-15-7(111)296
Project Name I-15 Corridor - G.D.P., 10800 So. to 500 No. S.L. County
Seismic Study PIN 851
Type of Structure
Sta. of Structure
Collar Elevation 4367'
Field Party Sizemore Warnock Shasted

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Form R-353

Hole No. 16 A
Sheet 8 of 10
Total Depth 200'

Equation Project Line Sta. CID 750601
Other Line Sta.
Hole Sta. 9000 S. 200 W. Rt. Ft., Lt. Ft., of ℄
Reference P.F.P. Method Used
Rig B-61 HDX

Ground Water Table

Depth in Ft.	62.2'			
Time	09:20			
Date	5-2-95			

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
PEN				140				31/6" 41/6" 39/6" 52/5.5" -VERY DENSE-
"								grey silty sand with a trace of clay
"		80		141				
"		16A-142						
RB				142				
								some gravel and a few lenses of
				143				sandy silt
				144				
				145				CASING to 145'
				146				
				147				tan sandy silt with clay
				148				tan clayey silt with sand
				149				CASING to 150'
PEN				150				20/6" 30/6" 31/6" 50/5" -VERY DENSE-
"								No RECOVERY
"		61		151				
"			NR					grey silty sand with lenses of tan clayey silt -
RB				152				a few lenses of tan sandy silt 5-1-95
								5-2-95
				153				
				154				CASING to 155'
				155				
				156				
				157				
				158				
				159				
				160				CASING to 160'

Date Begun 4-27-95
Date Completed 5-3-95
Hole Diameter 3"
Project No. SP-15-7 (111) 296

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Form R-333

Hole No. 116 A
Sheet 9 of 10
Total Depth 200'

Project Name I-15 Corridor - G.D.O. 10800 So. to 500 No. S.L. County
Seismic Study ZN 251
Equation Project Line Sta. / Other Line Sta. CID 750601
Type of Structure
Sta. of Structure
Hole Sta. 9000 S. 300 W. Rt. Ft., Lt. Ft., of ℄
Collar Elevation 4367
Reference P&P
Method Used
Field Party Sizemore Workman Shaffer
Rig B-61HDX

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth, in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION
PEN		Ref.		160				42/6" 50/4" - Refusal -
"			NR					NO RECOVERY
RB				161				grey silty sand and fine to medium gravel
				162				A few thin lenses to tan clayey silt
								- hard drilling - must be very dense -
				163				
				164				
				165				CASING to 165'
				166				
				167				
				168				
				169				CASING to 170'
				170				
				171				
				172				
				173				Some lenses of tan clayey silt
				174				
				175				CASING to 175'
				176				
				177				tan clayey silt with some thin lenses of silty sand
				178				and silty clay
				179				
				180				CASING to 180'

Ground Water Table

Depth in Ft.					
Time					
Date					

Date Begun 4-27-95
Date Completed 5-3-95
Hole Diameter 3"
Project No. SP-15-7(111)296
Project Name I-15 Corridor - G.D.P., 10800 So. to 500 No. S.L. County
Seismic Study PIN 251
Type of Structure
Sta. of Structure
Collar Elevation 4367'
Field Party Sizemore Worwood Shasted

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Form R-353

Hole No. 16A
Sheet 10 of 10
Total Depth 200'

Equation Project Line Sta. / Other Line Sta. CID 750601
Hole Sta. 2000 S. 300 W. Rt. ____ Ft., Lt. ____ Ft., of ℄ ____
Reference R.&P.
Method Used
Rig B-61 HDX

Ground Water Table

Depth in Ft.	62.5 WC				
Time	09:35				
Date	5-3-95				

Drilling Method	Casing Depth	Blows per Foot	Sample Number	Depth in Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
PEN		Ref.		180				37/6" 50/2" Refusal
"		16A-180.7		181				grey silty sand with a few thin lenses of sandy silt 5-2-95
RB				182				5-3-95 grey silty sand with fine gravel and a few lenses of sandy silt and clayey silt
				183				
				184				
				185				
				186				
				187				
				188				
				189				
				190				
				191				some medium gravel
				192				
				193				
				194				
				195				
				196				
				197				
				198				some lenses of tan clayey silt
				199				
				200				T.D. 200 ft. 5-3-95

Inserted plastic pipe to 200 ft 5-4-95
grouted plastic pipe 5-7-95

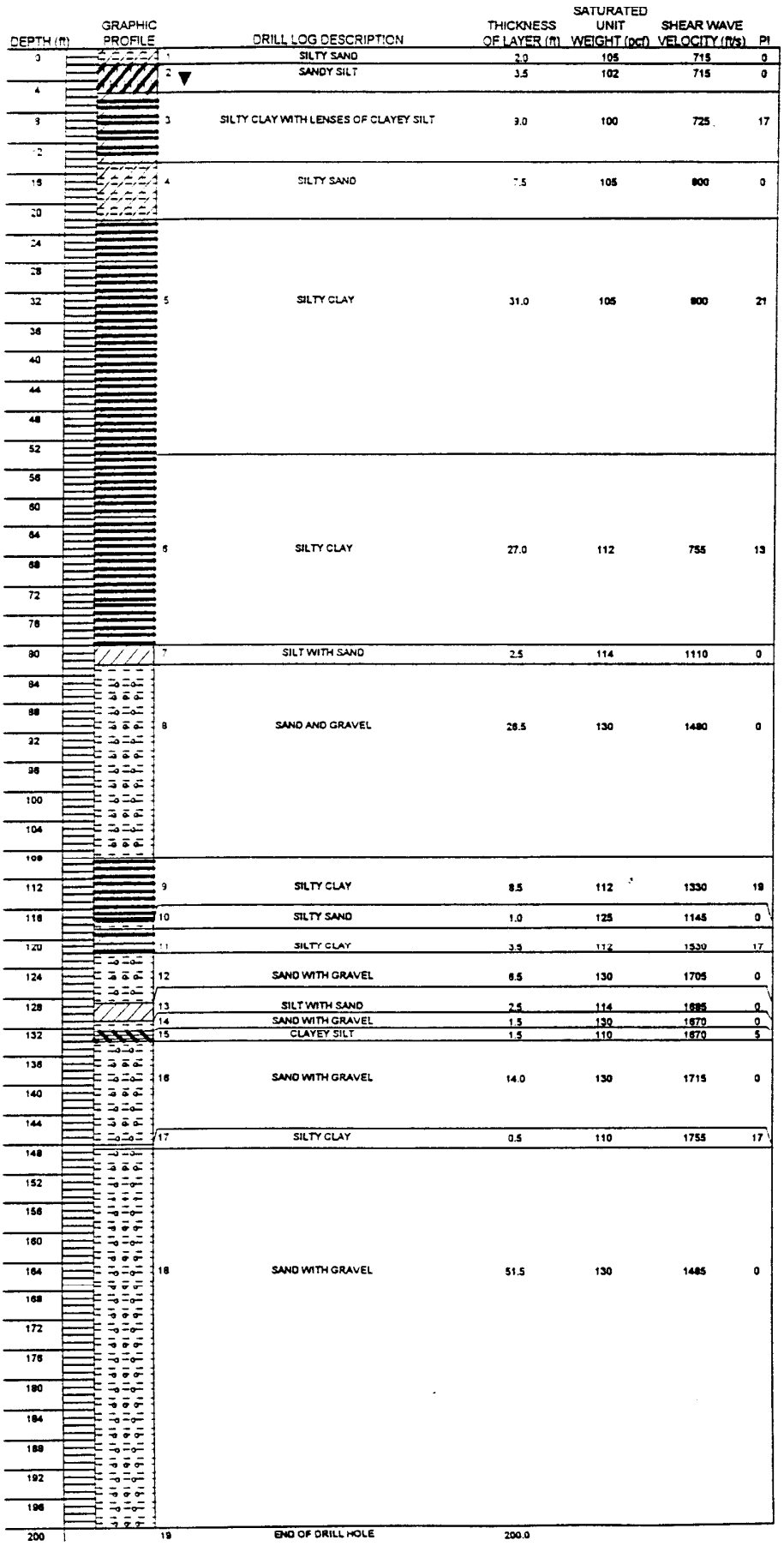


Figure 4.11: *Idealized soil profile for 9000 South*

COMPOSITE BOR[illegible]G 9000 SOUTH

DEPTH (ft)	HOLE	GRAPHIC PROFILE	SAMPLE (Shelby or Blows)	CLASSIFICATION AASHTO	CLASSIFICATION USCS	DRILL LOG DESCRIPTION	GRADING (%) Gr	GRADING (%) cS	GRADING (%) fS	GRADING (%) SICl	Su, UNDRAINED SHEAR STRENGTH(tsf)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT(%)	LL	PL	PI
0																
1																
2					(SM)	SILTY SAND										
3																
4																
5																
6																
7																
8																
9						SILTY CLAY WITH A FEW LENSES OF CLAYEY SILT										
10	16A		S													
	16A		S													
11	16A		S													
	16A		S		CL		0.0	0.0	0.0	100.0	0.460 UU - BYU	87.7	34.0	35	20	15
12																
13																
14																
15																
16																
17																
18																
19											0.758 UU - BYU					
20	16A		S								0.450					
	16A		S		CL	SILTY CLAY	0.0	0.0	1.0	99.0	TORVANE	86.5	31.2	38	19	19
21	16A		S													
	16A		S													
22					(SM)	SILTY SAND										
23																
24																

COMPOSITE BOREHOLE LOG 9000 SOUTH

DEPTH (ft)	HOLE	GRAPHIC PROFILE	SAMPLE (Shelby or Blows)	CLASSIFICATION AASHTO	CLASSIFICATION USCS	DRILL LOG DESCRIPTION	GRADING (%) Gr	GRADING (%) cS	GRADING (%) fS	GRADING (%) SiCl	Su, UNDRAINED SHEAR STRENGTH(tsf)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT(%)	LL	PL	PI
25																
26																
27																
28																
29																
30	16A		S													
	16A		S													
31	16A		S								0.450					
	16A		S		CL-ML		0.0	0.0	10.0	90.0	TORVANE	79.1	35.8	27	21	6
32																
33																
34																
35																
36																
37						SILTY CLAY WITH SOME LENSES OF CLAYEY SILT AND SILTY SAND										
38																
39																
40	16A		S								0.865 UU - BYU					
	16A		S													
41	16A		S								0.570					
	16A		S		CL		0.0	0.0	1.0	99.0	TORVANE	77.7	35.9	32	22	10
42																
43																
44																
45																
46																
47																
48																
49																

COMPOSITE BO[illegible]G 9000 SOUTH

DEPTH (ft)	HOLE	GRAPHIC PROFILE	SAMPLE (Shelby or Blows)	CLASSIFICATION AASHTO	CLASSIFICATION USCS	DRILL LOG DESCRIPTION	GRADING (%) Gr	GRADING (%) cS	GRADING (%) fS	GRADING (%) SICI	Su, UNDRAINED SHEAR STRENGTH(tsf)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT(%)	LL	PL	PI
50	16A		S								0.875					
	16A		S								UU - BYU					
51	16A		S			SILTY CLAY					0.650					
	16A		S		CL	WITH SOME LENSES	0.0	0.0	1.0	99.0	TORVANE	83.2	40.4	43	23	20
52						OF CLAYEY SILT										
						AND SILTY SAND										
53																
54																
55																
56																
57																
58																
59																
60	16A		S								0.860					
	16A		S								UU - BYU					
61	16A		S								0.500					
	16A		S		CH		0.0	0.0	0.0	100.0	TORVANE	88.2	35.5	53	22	31
62																
63						SILTY CLAY										
						WITH SOME LENSES										
64						OF CLAYEY SILT										
						AND SILTY SAND										
65																
66																
67																
68																
69																
70	16A		S													
	16A		S													
71	16A		S								2.253					
	16A		S		ML		0.0	0.0	30.0	70.0	UU - BYU	86.1	25.9	N/A		NP
72																
73																
74						SANDY SILT										
						WITH SOME CLAY										

COMPOSITE BO 9000 SOUTH

DEPTH (ft)	HOLE	GRAPHIC PROFILE	SAMPLE (Shelby or Blows)	CLASSIFICATION AASHTO	CLASSIFICATION USCS	DRILL LOG DESCRIPTION	GRADING (%) Gr	GRADING (%) cS	GRADING (%) fS	GRADING (%) SiCl	Su, UNDRAINED SHEAR STRENGTH(tsf)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT(%)	LL	PL	PI
75																
76																
77																
78																
79																
80	16A		10													
	16A		13													
81	16A		13			SANDY SILT WITH SOME CLAY	0.0	0.0	27.0	73.0				26	21	5
	16A		16		CL-ML											
82																
83																
84					(SM)	SILTY SAND AND GRAVEL										
85																
86																
87																
88																
89																
90	16A		50 / 4"													
	16A		R													
91	16A		R													
	16A		R													
92						HEAVY LOSS OF CIRCULATION (91' - 98')										
93																
94																
95																
96																
97					(ML)	SANDY SILT										
98																
99																

COMPOSITE BOR[illegible] 9000 SOUTH

DEPTH (ft)	HOLE	GRAPHIC PROFILE	SAMPLE (Shelby or Blows)	CLASSIFICATION AASHTO	CLASSIFICATION USCS	DRILL LOG DESCRIPTION	GRADING (%) Gr	GRADING (%) cS	GRADING (%) fS	GRADING (%) SICI	Su, UNDRAINED SHEAR STRENGTH(tsf)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT(%)	LL	PL	PI
100	16A		36													
	16A		44													
101	16A		38													
	16A		47		SM		2.0	34.0	50.0	14.0						
102																
103																
104						SILTY SAND WITH THIN LENSES OF CLAYEY SILT										
105																
106																
107																
108																
109																
110	16A		31													
	16A		31													
111	16A		31													
	16A		35		SM		0.0	12.0	72.0	16.0						
112																
113																
114																
115																
116																
117					(SM)	SILTY SAND AND GRAVEL										
118																
119																
120	16A		15													
	16A		29													
121	16A		33													
	16A		31		ML		0.0	0.0	5.0	95.0				N/A		NP
122						SANDY SILT										
123																
124																

COMPOSITE BO[illegible] 9000 SOUTH

DEPTH (ft)	HOLE	GRAPHIC PROFILE	SAMPLE (Shelby or Blows)	CLASSIFICATION AASHTO	CLASSIFICATION USCS	DRILL LOG DESCRIPTION	GRADING (%) Gr	GRADING (%) cS	GRADING (%) fS	GRADING (%) SiCl	Su, UNDRAINED SHEAR STRENGTH(tsf)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT(%)	LL	PL	PI
125																
126																
127																
128																
129																
130	16A		32			SILTY SAND										
	16A		41													
131	16A		50													
	16A		R		SM		0.0	31.0	55.0	14.0						
132																
133																
134					(ML)	SANDY SILT										
135																
136																
137																
138																
139																
140	16A		31													
	16A		41													
141	16A		39													
	16A		52		SM		0.0	33.0	53.0	14.0						
142																
143						SILTY SAND WITH SOME GRAVEL										
144																
145																
146																
147																
148					(ML)	CLAYEY SILT WITH SAND										
149																

COMPOSITE BORING 9000 SOUTH

DEPTH (ft)	HOLE	GRAPHIC PROFILE	SAMPLE (Shelby or Blows)	CLASSIFICATION AASHTO	CLASSIFICATION USCS	DRILL LOG DESCRIPTION	GRADING (%) Gr	GRADING (%) cS	GRADING (%) fS	GRADING (%) SiCl	Su, UNDRAINED SHEAR STRENGTH(tsf)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT(%)	LL	PL	PI
150	16A		20													
	16A		30													
151	16A		31													
	16A		50 - NR													
152																
153					(SM)	SILTY SAND WITH LENSES OF CLAYEY SILT										
154																
155																
156																
157																
158																
159																
160	16A		42													
	16A		50 / 4"													
161	16A		R													
	16A		R - NR													
162																
163																
164					(SM)	SILTY SAND AND GRAVEL										
165																
166																
167																
168																
169																
170																
171																
172																
173																
174																

COMPOSITE BOR[illegible] 9000 SOUTH

DEPTH (ft)	HOLE	GRAPHIC PROFILE	SAMPLE (Shelby or Blows)	CLASSIFICATION AASHTO	CLASSIFICATION USCS	DRILL LOG DESCRIPTION	GRADING (%) Gr	GRADING (%) cS	GRADING (%) fS	GRADING (%) SiCl	Su, UNDRAINED SHEAR STRENGTH(tsf)	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT(%)	LL	PL	PI
175																
176																
177					(ML)	CLAYEY SILT										
178																
179																
180	16A		37		SM		5.0	41.0	35.0	19.0						
	16A		50 / 2"													
181	16A		R													
	16A		R													
182																
183						SILTY SAND WITH FINE AND SOME MEDIUM GRAVEL										
184																
185																
186																
187																
188																
189																
190																
191																
192																
193																
194																
195																
196																
197																
198																
199																
200				( )-assumed classification		END OF DRILL HOLE										

17A SEISMIC DATA		
Depth	Vs (ft./sec.)	Vs (m./sec.)
5	716	218.2
15	735	224.0
25	971	296.0
35	736	224.3
45	699	213.1
55	752	229.2
65	714	217.6
75	800	243.8
85	1111	338.6
95	1667	508.1
105	1587	483.7
115	1299	395.9
125	1704	519.4
135	1667	508.1
145	1754	534.6
155	1379	420.3
165	1667	508.1
175	1492	454.8
185	1428	435.3

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun: 19-Oct-95
Date Completed: 26-Oct-95
Hole Diameter: 75mm
Project No.: SP-15-7(111)296
Project Name: I-15 Corridor - G.D.P. 10800 So. to 500 No. S.L. County
Seismic Study
Type of Structure:
Sta. of Structure:
Collar Elevation: ≈1335 m
Field Party: Sizemore, Hepoler, Worwood, Graham

Hole No.: 17A
Sheet: 1 of 10
Total Depth: 61.0 m (200 ft)

Equation: Project Line Sta. / Other Line Sta.
C10 07506010
PIN 851

Hole Sta.: 10600 S. and I-15 Rt. ___ Ft., Lt. ___ Ft., of ℄
Reference: PEP
Method Used:
Rig: B-61HDX

Ground Water Table

Depth in Ft.	9.9 ft WC	51.0 ft WC	41.8 ft WC	53.0 ft WC	53.0 ft WC
Time	9:01 am	12:55 am	9:25 am	9:30 am	9:35 am
Date	10-20-95	10-23-95	10-24-95	10-25-95	10-26-95

Drilling Method	Casing Depth	Blows per 300mm	Sample Number	Depth in Meter / Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
RB				0				dk br. silty sand w/ a trace fine gravel
								CASING to 5'
				1m				dk. br. sandy silt with clay and a trace of fine gravel and a few thin lenses of silty clay
								1/150mm 2/150 3/150 7/150 -medium-
PEN								
"	5							grey silty clay
"			17A-7	2m				
RB								
								some lenses of sandy silt with clay and fine gravel and some lenses of grey clayey silt
				3m				CASING to 10'
				4m				CASING to 15'
								5/150mm 9/150 9/150 9/150 - medium -
PEN								grey w/s br. silty fine to med. w/s coarse sand
"	18							
"			17A-17	5m				
RB								
				6m				CASING to 20'

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 19-Oct-95
Date Completed 26-Oct-95
Hole Diameter 75m
Project No. SP-15-7(111)296

Hole No. 17A
Sheet 2 of 10
Total Depth 61.0 m (200ft)

Project Name I-15 Corridor - G.O.P. 10800 So. to 500 No. S.L. County
Seismic Study
Equation Project Line Sta. CID 0750601D
Other Line Sta. PIN 851
Type of Structure
Sta. of Structure
Hole Sta. 10600 S. and I-15 Rt. Ft., Lt. Ft., of ℄
Collar Elevation ≈ 1235 m
Reference P & P
Method Used
Field Party SIZEMORE, HEDDIER, WORWOOD, GRAHAM
Rig B-61HDX

Ground Water Table

Depth in Ft					
Time					
Date					

Drilling Method	Casing Depth	Blows per 300 mm	Sample Number	Depth in METER / FEET	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
RB				20				grey & brown silty sand
				21				
				22				grey & brown silty sand and gravel
				7m 23				grey with some brown silty clay
				24				casing to 25'
				25				7/150mm 3/150 6/150 6/150
N		9						grey silty sand
				8m 26				grey silty clay
								grey & br. silty fine to med. sand
"			17A-27	27				
RB								grey & br. silty clay with thin lenses of silty fine sand and clayey silt with sand
				28				
				29				
				9m 30				casing to 30'
				31				
				32				grey silty sand
				10m 33				
				34				
								casing to 35'
Shelby				35				dk. grey silty clay
"				11m 36				
"			17A-37	37				
RB								
				38				
				39				
				12m 40				
								casing to 40'

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun: 19-Oct-95
Date Completed: 26-Oct-95
Hole Diameter: 75mm
Project No.: SP-15-7(111)296
Project Name: I-15 Corridor - G.D.P. 10800 So. to 500 No. S.L. County
SEismic Study
Equation: Project Line Sta. / Other Line Sta.
C.D 0750601D
PIN 851
Type of Structure:
Sta. of Structure: Hole Sta. 10600 S. and I-15 Rt. Ft., Lt. Ft., of ℄
Collar Elevation: ≈1335 m Reference: P&P Method Used:
Field Party: Heppler, Worwood, Graham, Sizemore Rig: B-61 HDX

Hole No. 17A
Sheet 3 of 10
Total Depth 61.0 m (200ft)

Ground Water Table

Depth in Ft.					
Time					
Date					

Drilling Method	Casing Depth	Blows per 300 MM	Sample Number	Depth in Meter / Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
RB				40				dk. grey silty clay
				41				
				42				
				13m 43				
				44				CASING to 45'
				45				
Elby				14m 46				dk. grey with some grey silty clay
"								
"			17A-47	47				
RB				48				
				49				
				15m				CASING to 50'
				50				SOME thin LENSES of grey clayey silt and TRACES of SAND
				51				
				52				
				16m 53				
				54				CASING to 55'
				55				
Shelby				17m 56				dk. grey to grey silty clay with A TRACE to SOME FINE SAND (ONE piece of LARGE GRAVEL in top of tube) and A FEW thin LENSES of clayey silt!
"								
"			17A-57	57				
RB				58				
				18m 59				
				60				CASING to 60'

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 19-Oct-95
Date Completed 26-Oct-95
Hole Diameter 75m
Project No. SP-15-7(111)296
Project Name I-15 Corridor - G.D.P. 10800 So. to 500 No. S.L. County
Seismic Study
Equation Project Line Sta. / Other Line Sta. CID 07506010 Pin 851
Type of Structure
Sta. of Structure
Hole Sta. 10600 So. and I-15 Rt. Ft., Lt. Ft., of ℄
Collar Elevation ≈1335 m
Reference P&P
Method Used
Field Party HEDDIER, Workmd, Graham, Sizemore
Rig B-61HDX

Hole No. 17A
Sheet 4 of 10
Total Depth 61.0 m (200 ft)

Drilling Method	Casing Depth	Blows per 300 mm	Sample Number	Depth in METER / FEET	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
RB				60				
				61				dk. grey to grey silty clay
				62				
				19m				
				63				
				64				
								casing to 65'
				65				
Shelby				20m				
"				66				dk. grey to grey silty clay with a trace of fine sand
"			17A-67					10-19-95
"				67				10-20-95
RB								
				68				dk to med grey silty clay
				21m 69				
				70				med to dk grey silty clay
				71				
				22m 72				
				73				
				74				
								casing to 75'
Shelby				75				
"			NR	23m				
RB				76				hit a hard layer at 76' 0% recovery
				77				med to dk grey silty clay w/ organics - med brn wood.
				78				
				24m 79				
				80				casing to 80'

Ground Water Table

Depth in Ft.					
Time					
Date					

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 19-Oct-95
Date Completed 26-Oct-95
Hole Diameter 75mm
Project No. SP-15-7(111)296
Project Name I-15 Corridor Study - G.D.P., 10800 So. to 500 No. S.L. County
Seismic Study
Equation Project Line Sta. C/D 0750601D
Other Line Sta. PIN 851
Type of Structure
Sta. of Structure
Hole Sta. 10600 S. and I-15 Rt. Ft., Lt. Ft., of ℄
Collar Elevation 1335 m
Reference P&P
Method Used
Field Party Heppler, Worwood, Graham
Rig B-61 HDX

Hole No. 17A
Sheet 5 of 10
Total Depth 61.0 m (200ft)

Drilling Method	Casing Depth	Blows per 300mm	Sample Number	Depth in meters / Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
Ground Water Table: Depth in Ft. / Time / Date								
elhy				80				med grey clayey silt with a minor of sand
"				81				
"			17A-92	25 m 82				
B				83				lt to med silt w/ minor sand and trace gravel transitional contact with gravels below
				84				
				85				
				26m 86				multi colored sands and gravels - lt gray fine grained sand.
				87				
				88				
				27m 89				casing to 90'
				90				33/150 mm 31/150 mm 33/150 mm 28/150 mm - very dense -
EN								lt to med grey sands and gravels - coarse sands and fine to coarse gravels.
"		64	17A-92	91				
"				28m 92				
B								lt grey medium to coarse sand, moderate gravel, trace silt
				93				
				94				
				29m 95				lt grey to lt brn fine to coarse sand, minor gravel, trace silt.
				96				
				97				
				98				
				30m 99				
				100				casing to 100'

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 19-Oct-95
Date Completed 26-Oct-95
Hole Diameter 75 mm
Project No. SP-15-7(111) 296
Project Name I-15 CORRIDOR - G.D.P 10800 So. to 500 No. S.L. COUNTY
SEISMIC STUDY
Type of Structure
Sta. of Structure
Collar Elevation 1335 m
Field Party HEDLEY, WURWOOD GRAHAM

Hole No. 17A
Sheet 6 of 10
Total Depth 61.0 m (200 ft)

Equation Project Line Sta. / Other Line Sta. CID 0750601D / DIN 351
Hole Sta. 10600S. and I-15 Rt. Ft., Lt. Ft., of ℄
Reference P&P
Method Used
Rig B-61 HDX

Drilling Method	Casing Depth	Blows per 300 mm	Sample Number	Depth in Meters / Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION
PEN		REF.		100				42/150 mm 52/150mm - REFUSAL - 30 mm very dense
"			MA-101	101				lt brn to lt grey fine to coarse sand w/ minor gravel
RB				31m 102				lt brn fine to coarse sand w/ minor gravel + tr. silt
				103				
				104				
				32m 105				lt brn fine to coarse sand w/ minor gravel + tr. silt
				106				
				107				
				33m 108				lt grey silty clay approx 28 mm wide unit.
				109				
								Set Casing 110'
PEN				110				17/150mm 43/150 mm 36/150 mm 25/150mm - very dense -
"		79						lt grey silty fine sand
"				111				
"			MA-112	34m 112				lt grey silty clay
RB								
				113				lt grey silty clay with tr. sand & trace fine gravel
				114				
				35m 115				
				116				
				117				
				118				lt grey fine sand with minor silt
				36m 119				lt brn silty clay
				120				

Ground Water Table

Depth in Ft.					
Time					
Date					

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 19-Oct-95
Date Completed 26-Oct-95
Hole Diameter 75 mm
Project No. SP-15-7 (111)296
Project Name I-15 Corridor - G.D.P., 10600 So to 500 No, SL County
SEISMIC STUDY
Equation Project Line Sta. C/D 07506010
Other Line Sta. PIN 851
Type of Structure
Sta. of Structure
Hole Sta. 10600S and I-15 Rt. Ft. Lt. Ft. of ℄
Collar Elevation ≈1335 m
Reference P&P
Method Used
Field Party HEPLER, WORWOOD, GRAHAM
Rig B-61 HDX

Hole No. 17A
Sheet 7 of 10
Total Depth 61.0 m (200 ft)

Ground Water Table

Depth in Ft					
Time					
Date					

Drilling Method	Casing Depth	Blows per 300 mm	Sample Number	Depth in Meters / Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
Shelby				120	S			0% Recovery
"				121				10-20-95 10-23-95
RB				37m				lt brown silty clay
				122				lt brown fine to coarse sand w/ tr. gravel & tr. silt.
				123				
				124				casing to 125
				38m				50/110 REFUSAL
		REF	17A-126	125	S			lt brown fine to coarse sand w/ minor gravel and tr. silt
N				126				
B				127				
				39m 128				lt brown to lt grey clayey silt with trace sand
				129				
				130				
				131				lt brown fine to coarse sand w/ trace gravel and tr. silt
				40m				
				132				
				133				lt brown clayey silt with trace fine to coarse sand
								casing set to 135'
				134				
				41m				29/150mm 33/150mm 39/150mm 33/150mm - Very dense
PEN				135				lt brown to lt grey fine to coarse sand with minor gravel
"				136				
"		72						
"			17A-137	137				
RB								lt brown to lt grey fine to coarse sand with trace gravel and tr. silt
				42m 138				
				139				
				140				

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun: 19-Oct-95
Date Completed: 26-Oct-95
Hole Diameter: 75 mm
Project No.: SP-15-7(111) 296
Project Name: I-15 Corridor - G.B.P., 10800 So to 500 No SL County
SEISMIC STUDY
Equation: Project Line Sta. CID 0750601 D; Other Line Sta. P/N 951
Type of Structure:
Sta. of Structure: Hole Sta. 10600S and I-15 Rt. ____ Ft., Lt. ____ Ft., of ℄
Collar Elevation: ≈ 1335 m Reference: Method Used:
Field Party: HEPPLER, WORWOOD, GRAHAM Rig: B-61 HDX

Hole No. 17A
Sheet 8 of 10
Total Depth 61.0 m (200 ft)

Ground Water Table

Depth in Ft.					
Time					
Date					

Drilling Method	Casing Depth	Blows per 300 mm	Sample Number	Depth in Meters / Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
RB				140				lt brown to lt gray fine to coarse sand with trace fine gravel and trace silt.
				43m 141				
				142				
				143				
				144				casing to 145
				44m				
				145				50/133 mm REFUSAL -VERY DENSE- 10-23-95
N		REF	A-146					lt brown fine to coarse sand with moderate fine gravel and trace silt 10-24-95
B				146				
				147				
				45m 148				lt brn silty clay
				149				lt brown fine to coarse sand with minor fine gravel and trace silt
				150				
				46m 151				
				152				
				153				
				47m 154				
PEN		REF	A-156	155				50/92 mm REFUSAL-VERY DENSE-
RB				156				lt brown fine to coarse sand with minor fine gravel and trace silt
				157				
				48m 158				158-159.5 localized medium gravel
				159				
				160				

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 19-Oct-95
Date Completed 26-Oct-95
Hole Diameter 75 mm
Project No. SP-15-7 (111) 296
Project Name I-15 Corridor - G.D.P., 10800 So to 500 N SL County
SEISMIC STUDY
Type of Structure
Sta. of Structure
Collar Elevation ≈1335 m
Field Party HEPPLER, WORWOOD, GRAHAM

Hole No. 17A
Sheet 9 of 10
Total Depth 61.0 m (200 ft)

Equation: Project Line Sta. CID 0750601 D; Other Line Sta. DIN 057
Hole Sta. 10600 S. AT I-15 Rt. ____ Ft., Lt. ____ Ft., of ℄
Reference PEP
Method Used
Rig B-61 HDX

Ground Water Table

Depth in Ft.					
Time					
Date					

Drilling Method	Casing Depth	Blows per 300 mm	Sample Number	Depth in Meters / Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
RB				160				lt brown fine to coarse sand with minor fine gravel, tr. silt and tr. medium gravel.
				49m 161				
				162				
				163				
				50m 164				
				165	S			set casing to 165' 43/150 mm 50/106mm REFUSAL - VERY DENSE lt brown fine to coarse sand with minor fine gravel, tr. silt and tr. medium gravel
DEN								
"			17A-166	166				
RB				167				
				51m				
				168				
				169				
				170				
				52m				lt brown fine to coarse sand with moderate fine gravel, trace silt and minor medium gravel
				171				
				172				
				173				
				53m 174				
								Cobble
				175	S			set casing to 175 50/101 mm REFUSAL - VERY DENSE most sample wiped away - residual sample fine to coarse gravel (sand and silt not in sample)
PEN		REF	17A-176					
RB				176				
				177				lt brown fine to coarse sand with moderate fine gravel, trace silt and trace clay
				54m				
				178				
				179				
				180				

Form R-353

UTAH DEPARTMENT OF TRANSPORTATION
MATERIALS AND TESTS SECTION
DRILLING LOG

Date Begun 19-Oct-95
Date Completed 26-Oct-95
Hole Diameter 75 mm
Project No. SP-15-7 (111) 296
Project Name I-15 Corridor - G.D.P., 10600 So to 500N SL County
SEISMIC STUDY
Equation Project Line Sta. CID 0750601D / Other Line Sta. DIN 957
Type of Structure
Sta. of Structure
Hole Sta. 10600 S. at I-15 Rt. Ft. Lt. Ft. of ℄
Collar Elevation ≈1335 m Reference P & P Method Used
Field Party HEPOLER, WORWOOD, GRAHAM Rig B-61 HDX

Hole No. 17A
Sheet 10 of 10
Total Depth 61.0 m (200 ft)

Ground Water Table

Depth in Ft.					
Time					
Date					

Drilling Method	Casing Depth	Blows per 300 mm	Sample Number	Depth in Meter / Feet	Sampling	Sample Recovery	Soil Graph	DESCRIPTION (Soil type, color, texture, consistency, sampler driving notes, blows per foot on casing, depths circulation lost, observed fluctuations in water level, notes on drilling ease, bits used, etc.)
RB				180				It brown fine to coarse sand with minor fine to coarse gravel and trace silt.
				55m 181				
				182				
				183				
				60m 184				casing to 185
								87/150 mm REFUSAL - VERY DENSE
DEN RB		REF 17A-186		185				It brown fine to coarse sand with fine to coarse gravel and trace silt
				186				
				65m 187				cobble
				188				
				189				
				70m 190				It brown fine to coarse sand with fine to coarse gravel and minor silt
				191				
				192				
				193				
				75m 194				casing to 195' 10-25-95
								50/48 mm REFUSAL - VERY DENSE
DEN RB		REF 17A-196		195				It brown fine to coarse sand with fine to coarse gravel and minor silt 10-26-95
				196				
				80m 197				
				198				
				199				
				200 / 60m				T.D = 61.0 m (200 ft) 10-26-95

PVC Casing set to 60.5 m (198 ft)

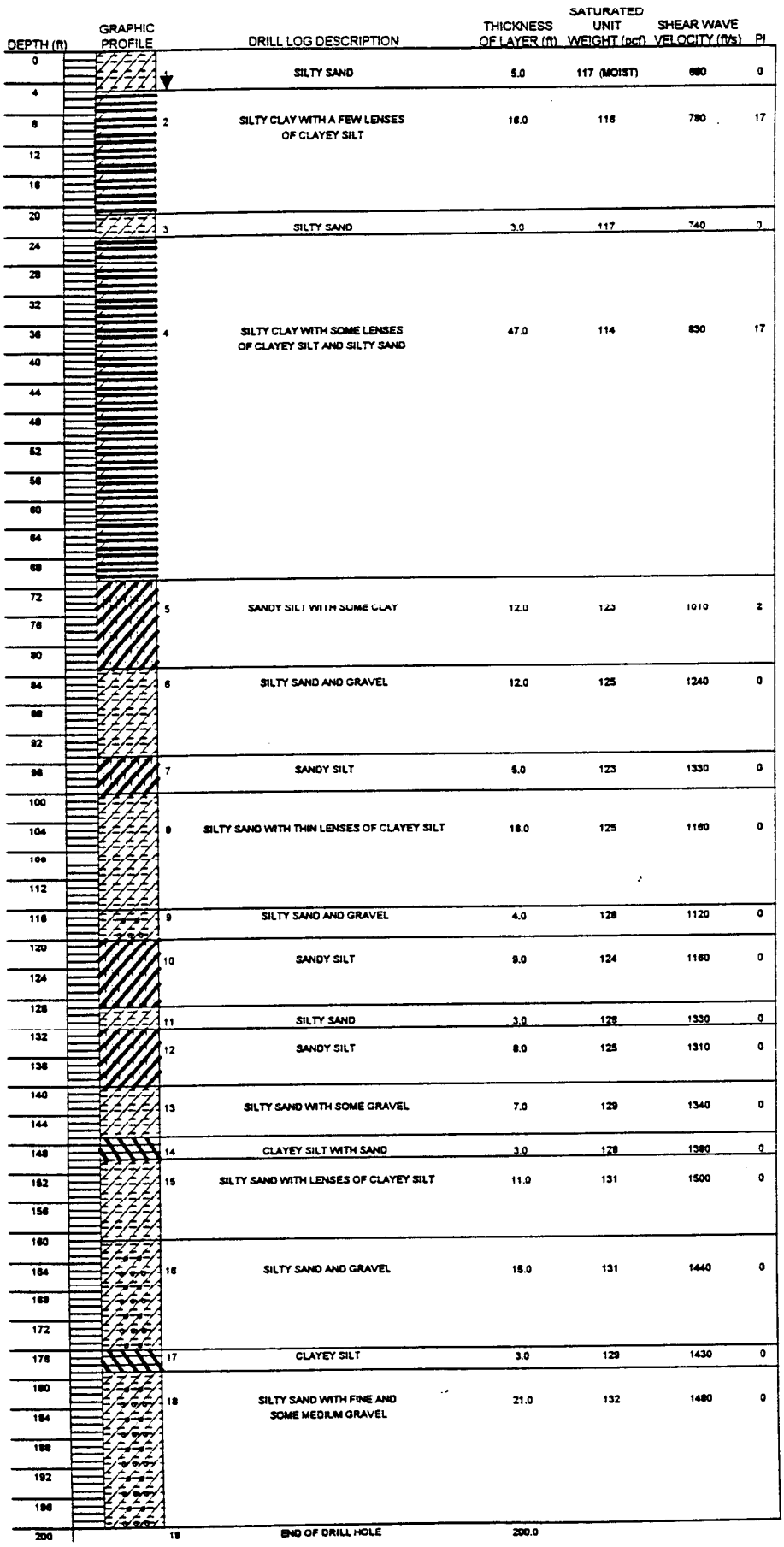
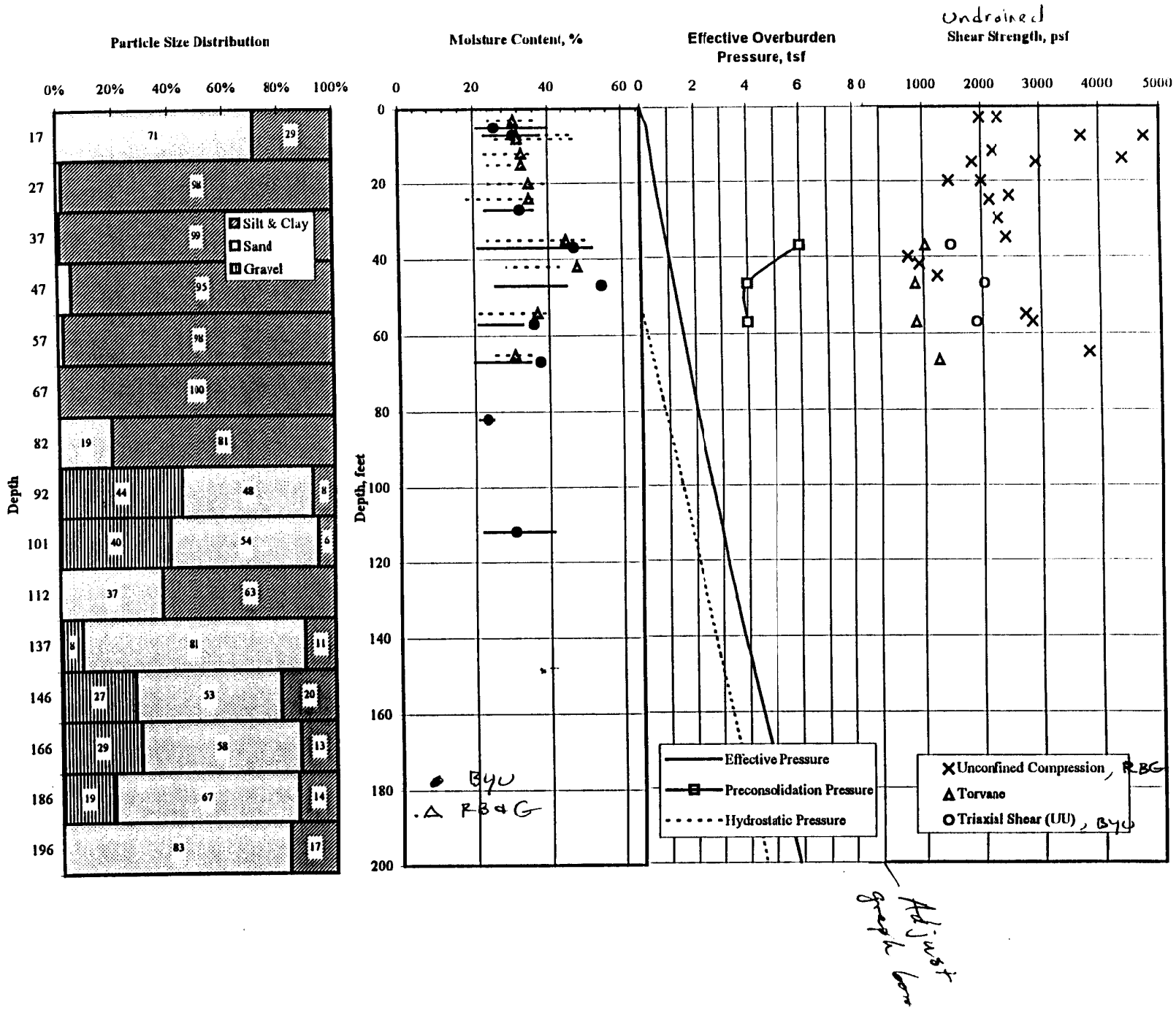


Figure 4.12: *Idealized soil profile for 10600 South*

10600 SOUTH -- SUMMARY OF LABORATORY TESTING



ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.06

Run No: 96-1104-0929-2277
Job No: 96-306.2
Client: KLEINFELDER
Project: BANGERTER HWY.
Site: B77
Location: BANGERTER
Cone: 20 TON A 045
CPT Date: 96/29/10
CPT Time: 13:14
CPT File: 306B77.COR

Water Table (m): 3.00 (ft): 9.8
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

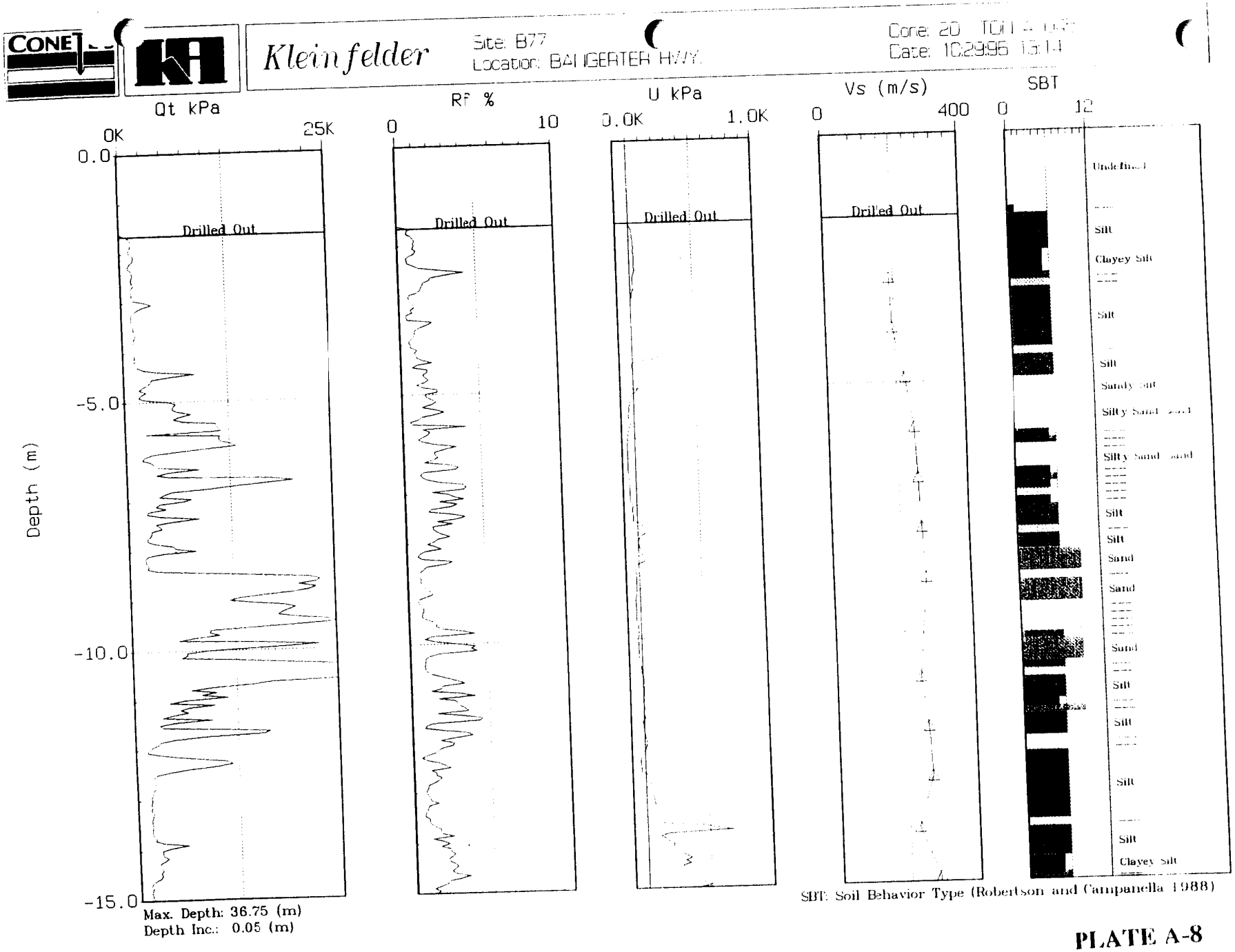
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
1.23	0.38	0.0	0.0	0.0	7.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
2.05	0.62	0.0	0.0	0.0	12.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
2.87	0.88	0.0	0.0	0.0	17.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
3.69	1.12	0.0	0.0	0.0	21.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
4.51	1.38	0.0	0.0	0.0	26.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
5.33	1.62	602.5	3.6	0.6	30.8	0.0	3.0	5.3	45.7	0.0	0.0	6.0
6.15	1.88	1145.3	11.1	1.0	34.6	0.0	4.6	7.6	88.9	30.0	36.0	6.0
6.97	2.12	1323.5	11.5	0.9	39.1	0.0	5.3	8.3	102.8	30.0	36.0	6.0
7.79	2.38	1227.5	15.1	1.2	43.6	0.0	4.9	7.3	94.7	30.0	36.0	6.0
8.61	2.62	1252.2	31.3	2.5	48.1	0.0	6.3	8.8	96.3	0.0	0.0	6.0
9.43	2.88	1479.3	16.1	1.1	52.6	0.0	5.9	8.0	114.1	30.0	36.0	6.0
10.25	3.12	2067.5	14.4	0.7	55.9	1.2	8.3	10.8	160.8	30.4	38.0	6.0
11.07	3.38	1144.0	6.1	0.5	57.9	3.7	4.6	5.9	86.6	30.0	32.0	6.0
11.89	3.62	1388.0	18.8	1.4	60.0	6.1	5.6	7.0	105.8	30.0	34.0	6.0
12.71	3.88	1283.6	8.7	0.7	62.0	8.6	5.1	6.4	97.0	30.0	32.0	6.0
13.53	4.12	1383.5	12.2	0.9	64.1	11.0	5.5	6.8	104.7	30.0	34.0	6.0
14.35	4.38	4453.6	51.0	1.1	66.2	13.5	14.8	17.9	0.0	50.0	40.0	1.0
15.17	4.62	2639.9	39.3	1.5	68.3	15.9	10.6	12.5	204.5	34.6	38.0	6.0
15.99	4.88	2748.1	42.0	1.5	70.4	18.4	11.0	12.8	212.7	35.3	38.0	6.0
16.81	5.12	6331.3	104.8	1.7	72.5	20.8	21.1	24.3	0.0	58.8	42.0	1.0
17.63	5.38	8268.9	132.8	1.6	74.6	23.3	27.6	31.2	0.0	66.0	42.0	1.0
18.45	5.62	9514.4	108.3	1.1	76.9	25.8	23.8	26.6	0.0	69.6	42.0	1.0
19.27	5.88	10666.4	138.4	1.3	79.2	28.2	26.7	29.3	0.0	72.5	44.0	1.0
20.09	6.12	2659.7	64.6	2.4	81.3	30.7	10.6	11.5	203.8	32.3	36.0	6.0
20.92	6.38	5207.0	120.2	2.3	83.4	33.1	20.8	22.3	407.2	51.2	40.0	10.0
21.74	6.62	15563.1	200.6	1.3	85.6	35.6	38.9	41.2	0.0	82.2	44.0	1.0
22.56	6.88	5536.3	162.0	2.9	87.7	38.0	22.1	23.1	432.8	52.2	40.0	10.0
23.38	7.12	3226.0	95.0	2.9	89.8	40.5	16.1	16.7	247.7	0.0	0.0	6.0
24.20	7.38	4954.3	116.8	2.4	91.8	42.9	19.8	20.2	385.6	48.4	40.0	10.0
25.02	7.62	2784.7	56.6	2.0	93.9	45.4	11.1	11.3	211.6	31.5	36.0	6.0
25.84	7.88	4829.2	87.5	1.8	96.0	47.8	16.1	16.1	0.0	47.0	38.0	1.0
26.66	8.12	2374.0	32.7	1.4	98.1	50.3	9.5	9.4	178.1	30.0	34.0	6.0
27.48	8.38	6621.3	87.7	1.3	100.2	52.7	22.1	21.6	0.0	55.4	40.0	1.0
28.30	8.62	22081.3	166.5	0.8	102.5	55.2	44.2	42.7	0.0	89.6	46.0	1.0
29.12	8.88	16672.9	185.2	1.1	104.9	57.6	41.7	39.8	0.0	81.2	44.0	1.0
29.94	9.12	18296.7	136.9	0.7	107.2	60.1	36.6	34.6	0.0	83.6	44.0	1.0
30.76	9.38	21710.2	191.7	0.9	109.6	62.5	43.4	40.6	0.0	88.2	46.0	1.0
31.58	9.62	10338.4	204.6	2.0	111.9	65.0	34.5	31.9	0.0	66.6	42.0	1.0
32.40	9.88	14197.7	241.0	1.7	114.2	67.4	35.5	32.5	0.0	75.4	42.0	1.0
33.22	10.12	9887.3	244.2	2.5	116.4	69.9	33.0	29.9	0.0	64.8	42.0	1.0
34.04	10.38	30122.1	269.9	0.9	118.7	72.3	60.2	54.1	0.0	95.0	46.0	1.0
34.86	10.62	19614.6	308.5	1.6	121.1	74.8	49.0	43.6	0.0	83.8	44.0	1.0
35.68	10.88	8467.1	182.4	2.2	123.3	77.3	28.2	24.9	0.0	59.5	40.0	1.0
36.50	11.12	6469.9	173.9	2.7	125.4	79.7	25.9	22.6	501.2	51.5	38.0	6.0
37.32	11.38	4943.9	139.9	2.8	127.5	82.2	19.8	17.1	378.7	43.6	38.0	6.0
38.14	11.62	11035.6	141.6	1.3	129.6	84.6	27.6	23.7	0.0	66.4	42.0	1.0
38.96	11.88	2710.2	83.8	3.1	131.8	87.1	13.6	11.6	199.3	0.0	0.0	6.0
39.78	12.12	5694.8	74.7	1.3	133.9	89.5	19.0	16.1	0.0	47.0	38.0	1.0
40.60	12.38	6858.0	74.3	1.1	136.2	92.0	17.1	14.4	0.0	52.0	38.0	1.0
41.42	12.62	2167.1	31.2	1.4	138.3	94.4	8.7	7.2	154.7	30.0	32.0	6.0
42.24	12.88	1784.7	15.8	0.9	140.4	96.9	7.1	5.9	123.8	30.0	30.0	3.0

ConeTec Inc. - CPT Interpretation
Run No: 96-1104-0929-2277
CPT File: 306B77.COR

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	1637.4	16.7	1.0	142.4	99.3	6.5	5.4	111.7	30.0	30.0	3.0
43.88	13.38	1659.5	12.0	0.7	144.5	101.8	6.6	5.4	113.1	30.0	30.0	3.0
44.70	13.62	1721.6	21.6	1.3	146.5	104.2	6.9	5.6	117.7	30.0	30.0	3.0
45.52	13.88	3504.1	58.1	1.7	148.6	106.7	14.0	11.3	259.9	31.5	34.0	6.0
46.34	14.12	2866.0	61.4	2.1	150.6	109.1	11.5	9.1	208.5	30.0	32.0	6.0
47.16	14.38	2542.6	58.8	2.3	152.7	111.6	10.2	8.1	182.3	30.0	32.0	6.0
47.98	14.62	1683.7	42.7	2.5	154.7	114.0	8.4	6.6	113.2	0.0	0.0	3.0
48.80	14.88	1399.4	19.9	1.4	156.8	116.5	5.6	4.4	90.1	30.0	30.0	3.0
49.62	15.12	1416.8	14.5	1.0	158.8	118.9	5.7	4.4	91.1	30.0	30.0	3.0
50.44	15.38	1421.8	10.0	0.7	160.9	121.4	5.7	4.4	91.2	30.0	30.0	3.0
51.26	15.62	1841.8	18.3	1.0	162.9	123.9	7.4	5.6	124.4	30.0	30.0	3.0
52.08	15.88	2231.3	23.4	1.0	164.9	126.3	8.9	6.8	155.2	30.0	30.0	3.0
52.90	16.12	3535.3	46.6	1.3	167.1	128.8	11.8	8.9	0.0	30.1	34.0	1.0
53.72	16.38	3367.2	41.5	1.2	169.2	131.2	11.2	8.4	0.0	30.0	32.0	1.0
54.54	16.62	6782.0	100.5	1.5	171.4	133.7	22.6	16.9	0.0	48.4	38.0	1.0
55.36	16.88	2712.6	41.0	1.5	173.5	136.1	10.9	8.1	192.2	30.0	32.0	6.0
56.18	17.12	3203.7	46.1	1.4	175.6	138.6	12.8	9.5	231.2	30.0	32.0	6.0
57.00	17.38	2406.4	27.6	1.1	177.6	141.0	9.6	7.1	167.0	30.0	30.0	3.0
57.82	17.62	1752.2	26.4	1.5	179.7	143.5	7.0	5.1	114.3	30.0	30.0	3.0
58.64	17.88	1492.0	11.0	0.7	181.7	145.9	6.0	4.3	93.1	30.0	30.0	3.0
59.46	18.12	1488.2	9.6	0.6	183.7	148.4	6.0	4.3	92.5	30.0	30.0	3.0
60.28	18.38	1486.3	8.8	0.6	185.8	150.8	5.9	4.3	92.0	30.0	30.0	1.5
61.10	18.62	1577.1	10.0	0.6	187.8	153.3	6.3	4.5	98.9	30.0	30.0	3.0
61.93	18.88	1657.3	11.2	0.7	189.9	155.7	6.6	4.7	104.9	30.0	30.0	3.0
62.75	19.12	1597.7	9.9	0.6	191.9	158.2	6.4	4.5	99.8	30.0	30.0	3.0
63.57	19.38	1536.6	9.0	0.6	194.0	160.6	6.1	4.3	94.6	30.0	30.0	1.5
64.39	19.62	1585.4	9.2	0.6	196.0	163.1	6.3	4.4	98.1	30.0	30.0	3.0
65.21	19.88	1641.8	9.6	0.6	198.1	165.5	6.6	4.6	102.3	30.0	30.0	3.0
66.03	20.12	1716.7	10.2	0.6	200.1	168.0	6.9	4.8	107.9	30.0	30.0	3.0
66.85	20.38	1707.3	10.1	0.6	202.2	170.4	6.8	4.7	106.8	30.0	30.0	3.0
67.67	20.62	1766.5	11.3	0.6	204.2	172.9	7.1	4.8	111.1	30.0	30.0	3.0
68.49	20.88	1809.6	11.2	0.6	206.3	175.4	7.2	4.9	114.2	30.0	30.0	3.0
69.31	21.12	2036.7	12.9	0.6	208.3	177.8	8.1	5.5	132.0	30.0	30.0	3.0
70.13	21.38	2048.3	13.3	0.7	210.4	180.3	8.2	5.5	132.6	30.0	30.0	3.0
70.95	21.62	2187.3	17.2	0.8	212.4	182.7	8.7	5.9	143.4	30.0	30.0	3.0
71.77	21.88	2112.9	15.9	0.8	214.5	185.2	8.5	5.6	137.1	30.0	30.0	3.0
72.59	22.12	2269.1	16.7	0.7	216.6	187.6	7.6	5.0	0.0	30.0	30.0	1.0
73.41	22.38	2053.0	15.0	0.7	218.7	190.1	8.2	5.4	131.5	30.0	30.0	3.0
74.23	22.62	2073.8	15.6	0.8	220.7	192.5	8.3	5.5	132.8	30.0	30.0	3.0
75.05	22.88	2040.5	12.5	0.6	222.8	195.0	6.8	4.5	0.0	30.0	30.0	1.0
75.87	23.12	2067.0	14.8	0.7	224.9	197.4	8.3	5.4	131.6	30.0	30.0	3.0
76.69	23.38	2123.2	17.5	0.8	227.0	199.9	8.5	5.5	135.7	30.0	30.0	3.0
77.51	23.62	2040.4	12.3	0.6	229.1	202.3	6.8	4.4	0.0	30.0	30.0	1.0
78.33	23.88	2097.8	14.2	0.7	231.2	204.8	8.4	5.4	132.9	30.0	30.0	3.0
79.15	24.12	2080.3	13.5	0.6	233.3	207.2	6.9	4.4	0.0	30.0	30.0	1.0
79.97	24.38	2169.4	15.9	0.7	235.4	209.7	8.7	5.5	137.9	30.0	30.0	3.0
80.79	24.62	2357.8	19.1	0.8	237.5	212.1	7.9	5.0	0.0	30.0	30.0	1.0
81.61	24.88	2624.3	21.4	0.8	239.7	214.6	8.7	5.5	0.0	30.0	30.0	1.0
82.43	25.12	2538.6	19.8	0.8	241.9	217.0	8.5	5.3	0.0	30.0	30.0	1.0
83.25	25.38	2547.9	19.9	0.8	244.1	219.5	8.5	5.3	0.0	30.0	30.0	1.0
84.07	25.62	2387.7	18.1	0.8	246.2	222.0	8.0	5.0	0.0	30.0	30.0	1.0
84.89	25.88	2638.1	24.5	0.9	248.4	224.4	8.8	5.5	0.0	30.0	30.0	1.0
85.71	26.12	2563.5	18.7	0.7	250.6	226.9	8.5	5.3	0.0	30.0	30.0	1.0
86.53	26.38	2331.2	14.5	0.6	252.8	229.3	7.8	4.8	0.0	30.0	30.0	1.0
87.35	26.62	2353.6	18.8	0.8	254.9	231.8	7.8	4.8	0.0	30.0	30.0	1.0
88.17	26.88	2250.5	14.9	0.7	257.1	234.2	7.5	4.6	0.0	30.0	30.0	1.0
88.99	27.12	2317.0	15.9	0.7	259.3	236.7	7.7	4.7	0.0	30.0	30.0	1.0
89.81	27.38	2334.1	14.9	0.6	261.4	239.1	7.8	4.7	0.0	30.0	30.0	1.0
90.63	27.62	2296.5	15.7	0.7	263.6	241.6	7.7	4.6	0.0	30.0	30.0	1.0
91.45	27.88	2326.7	16.5	0.7	265.8	244.0	7.8	4.7	0.0	30.0	30.0	1.0
92.27	28.12	2336.2	17.1	0.7	268.0	246.5	7.8	4.7	0.0	30.0	30.0	1.0
93.09	28.38	2466.0	25.9	1.0	270.1	248.9	9.9	5.9	155.8	30.0	30.0	3.0
93.91	28.62	2479.2	24.3	1.0	272.1	251.4	9.9	5.9	156.5	30.0	30.0	3.0
94.73	28.88	2428.7	26.4	1.1	274.2	253.8	9.7	5.7	152.1	30.0	30.0	3.0
95.55	29.12	2489.4	27.6	1.1	276.2	256.3	10.0	5.9	156.5	30.0	30.0	3.0
96.37	29.38	2499.8	28.6	1.1	278.3	258.7	10.0	5.9	157.0	30.0	30.0	3.0
97.19	29.62	2565.4	29.8	1.2	280.3	261.2	10.3	6.0	161.9	30.0	30.0	3.0
98.01	29.88	2709.2	30.6	1.1	282.4	263.6	10.8	6.3	173.1	30.0	30.0	3.0
98.83	30.12	2870.8	37.4	1.3	284.4	266.1	11.5	6.7	185.6	30.0	30.0	3.0

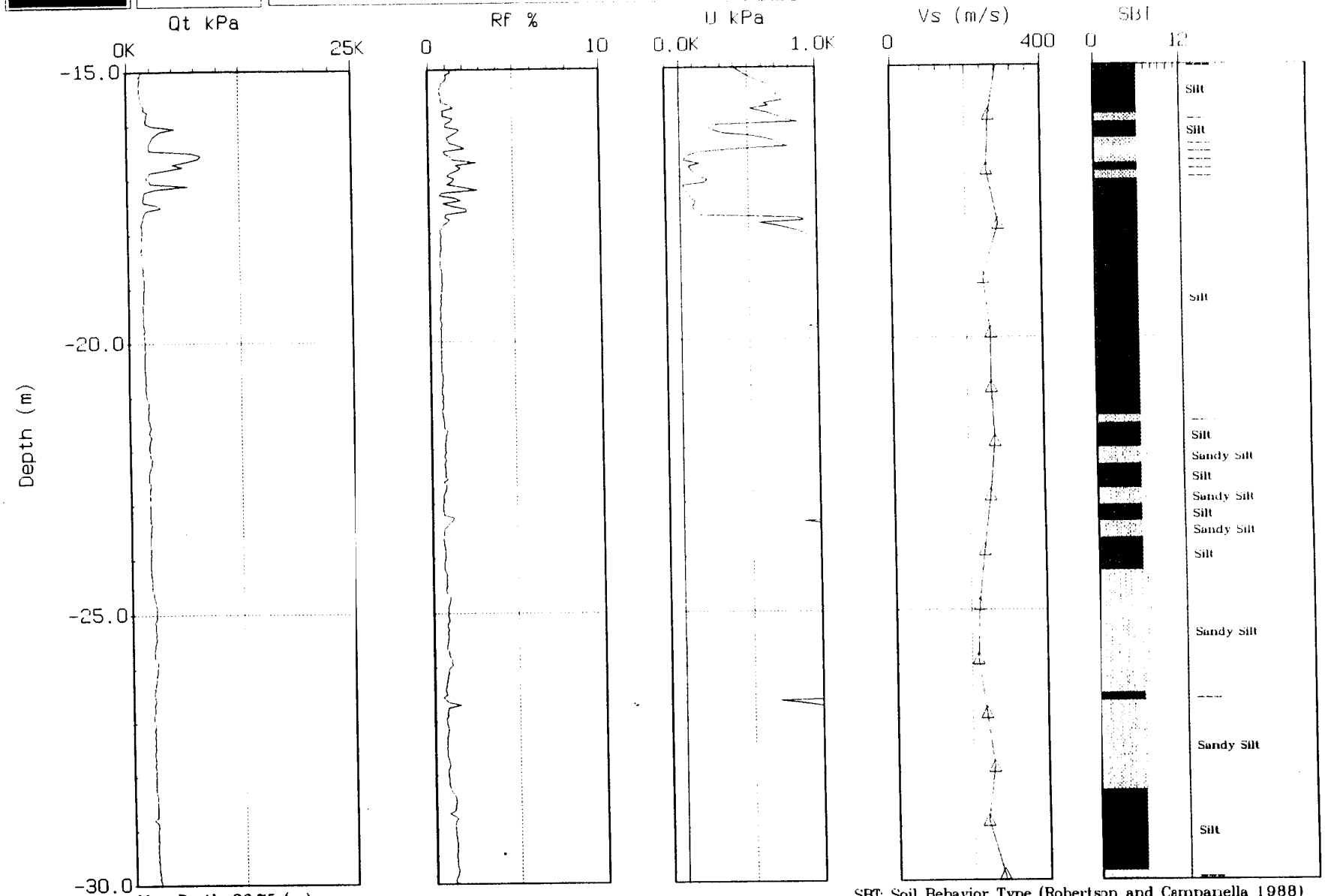
ConeTec Inc. - CPT Interpretation
Run No: 96-1104-0929-2277
CPT File: 306B77.COR

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	2751.3	33.3	1.2	286.5	268.5	11.0	6.4	175.7	30.0	30.0	3.0
100.47	30.62	4413.6	104.3	2.4	288.5	271.0	17.7	10.2	308.3	30.0	32.0	6.0
101.29	30.88	4097.3	74.8	1.8	290.6	273.5	13.7	7.8	0.0	30.0	30.0	1.0
102.11	31.12	3418.0	51.7	1.5	292.8	275.9	11.4	6.5	0.0	30.0	30.0	1.0
102.94	31.38	3767.3	47.2	1.3	295.0	278.4	12.6	7.2	0.0	30.0	30.0	1.0
103.76	31.62	2847.7	28.2	1.0	297.1	280.8	9.5	5.4	0.0	30.0	30.0	1.0
104.58	31.88	2814.5	34.1	1.2	299.2	283.3	11.3	6.4	178.6	30.0	30.0	3.0
105.40	32.12	2841.9	33.2	1.2	301.3	285.7	9.5	5.3	0.0	30.0	30.0	1.0
106.22	32.38	3182.1	38.6	1.2	303.5	288.2	10.6	6.0	0.0	30.0	30.0	1.0
107.04	32.62	3436.5	70.2	2.0	305.6	290.6	13.7	7.7	227.2	30.0	30.0	3.0
107.86	32.88	3971.2	59.6	1.5	307.7	293.1	13.2	7.4	0.0	30.0	30.0	1.0
108.68	33.12	4742.8	83.8	1.8	309.9	295.5	15.8	8.8	0.0	30.0	32.0	1.0
109.50	33.38	4045.8	55.2	1.4	312.1	298.0	13.5	7.5	0.0	30.0	30.0	1.0
110.32	33.62	5654.5	154.2	2.7	314.2	300.4	22.6	12.5	403.2	34.5	32.0	6.0
111.14	33.88	4829.4	97.9	2.0	316.2	302.9	19.3	10.6	336.8	30.0	32.0	6.0
111.96	34.12	3906.9	45.9	1.2	318.4	305.3	13.0	7.1	0.0	30.0	30.0	1.0
112.78	34.38	4275.9	58.0	1.4	320.5	307.8	14.3	7.8	0.0	30.0	30.0	1.0
113.60	34.62	4860.1	124.4	2.6	322.6	310.2	19.4	10.6	338.2	30.0	32.0	6.0
114.42	34.88	6197.5	161.3	2.6	324.7	312.7	24.8	13.5	444.8	36.7	32.0	6.0
115.24	35.12	7780.6	190.3	2.4	326.7	315.1	31.1	16.9	571.1	43.1	34.0	6.0
116.06	35.38	4989.5	91.7	1.8	328.8	317.6	16.6	9.0	0.0	30.3	32.0	1.0
116.88	35.62	5771.2	161.2	2.8	330.9	320.1	23.1	12.4	409.6	34.4	32.0	6.0
117.70	35.88	5661.7	173.4	3.1	333.0	322.5	22.6	12.1	400.5	33.7	32.0	6.0
118.52	36.12	8692.4	259.7	3.0	335.0	325.0	34.8	18.6	642.6	45.9	34.0	6.0
119.34	36.38	4165.7	80.0	1.9	337.1	327.4	16.7	8.9	280.1	30.0	30.0	3.0



SBT: Soil Behavior Type (Robertson and Campanella 1988)

PLATE A-8



Max. Depth: 36.75 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

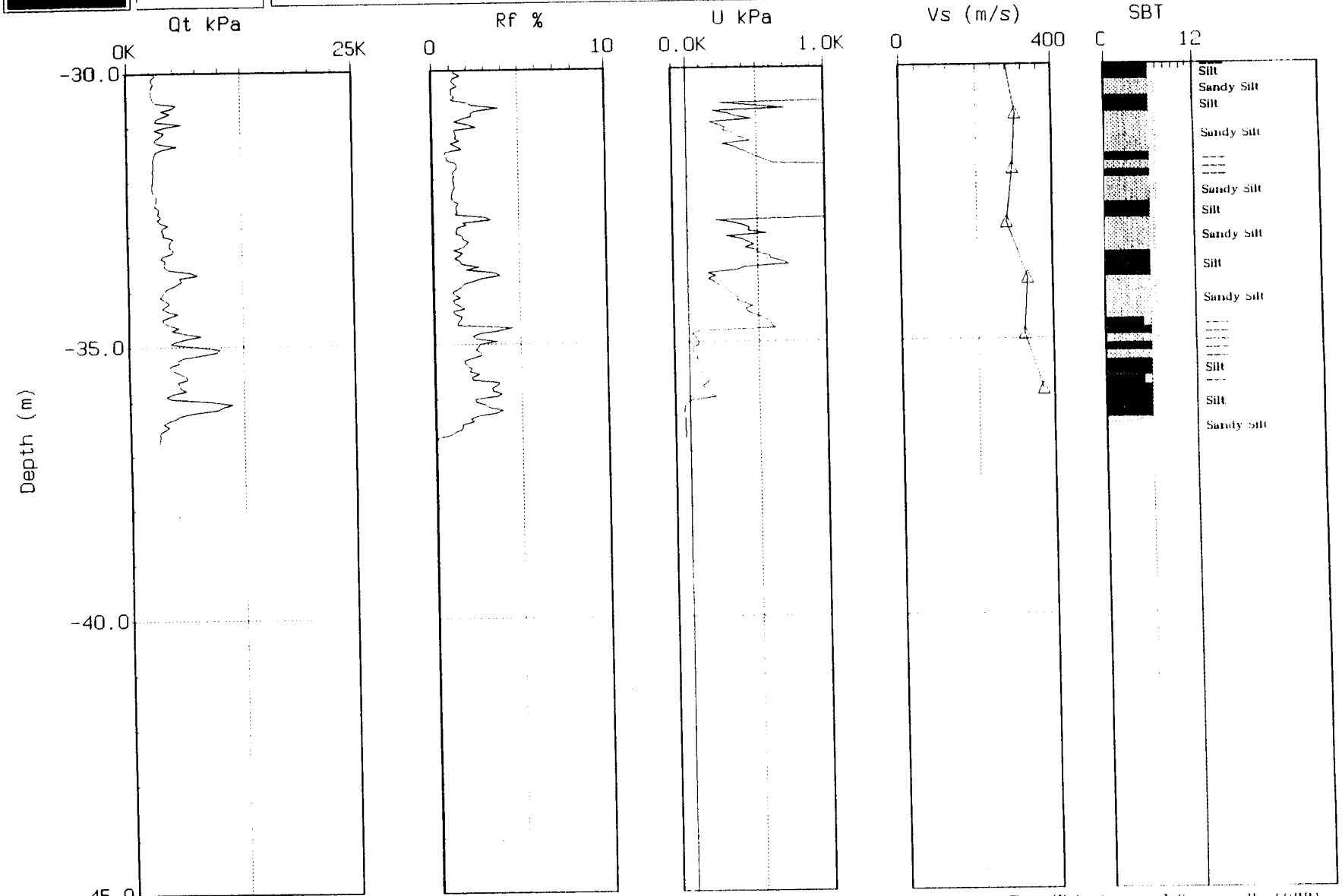
PLATE A-9

CONE

Kleinfelder

Site: 677
Location: B41GERTER HWY.

Cone: 20 TOH A 045
Date: 10:29:96 13:14



Max. Depth: 36.75 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

PLATE A-10

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *B77*
Date: *29-Oct-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 045 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
2.40	2.46					
3.40	3.45	5.2	189	619	2.4 - 3.4	7.9 - 11.2
4.40	4.44	5.1	194	637	3.4 - 4.4	11.2 - 14.4
5.40	5.43	4.4	226	741	4.4 - 5.4	14.4 - 17.7
6.40	6.42	4.0	249	817	5.4 - 6.4	17.7 - 21.0
7.40	7.42	3.9	256	838	6.4 - 7.4	21.0 - 24.3
8.40	8.42	3.8	262	861	7.4 - 8.4	24.3 - 27.6
9.40	9.42	3.7	270	885	8.4 - 9.4	27.6 - 30.8
10.40	10.42	4.1	244	799	9.4 - 10.4	30.8 - 34.1
11.40	11.41	3.8	263	862	10.4 - 11.4	34.1 - 37.4
12.40	12.41	3.7	270	886	11.4 - 12.4	37.4 - 40.7
13.40	13.41	4.4	227	745	12.4 - 13.4	40.7 - 44.0
14.40	14.41	3.5	285	937	13.4 - 14.4	44.0 - 47.2
15.40	15.41	3.8	263	863	14.4 - 15.4	47.2 - 50.5
16.40	16.41	3.9	256	841	15.4 - 16.4	50.5 - 53.8
17.40	17.41	3.5	286	937	16.4 - 17.4	53.8 - 57.1
18.40	18.41	4.1	244	800	17.4 - 18.4	57.1 - 60.4
19.40	19.41	4.1	244	800	18.4 - 19.4	60.4 - 63.6
20.40	20.41	3.8	263	863	19.4 - 20.4	63.6 - 66.9
21.40	21.41	3.8	263	863	20.4 - 21.4	66.9 - 70.2
22.40	22.41	3.7	270	886	21.4 - 22.4	70.2 - 73.5
23.40	23.41	3.9	256	841	22.4 - 23.4	73.5 - 76.8
24.40	24.41	4.2	238	781	23.4 - 24.4	76.8 - 80.1
25.40	25.41	4.5	222	729	24.4 - 25.4	80.1 - 83.3
26.40	26.41	4.6	217	713	25.4 - 26.4	83.3 - 86.6
27.40	27.41	4.2	238	781	26.4 - 27.4	86.6 - 89.9
28.40	28.41	3.9	256	841	27.4 - 28.4	89.9 - 93.2
29.40	29.41	4.2	238	781	28.4 - 29.4	93.2 - 96.5
30.40	30.41	3.6	278	911	29.4 - 30.4	96.5 - 99.7
31.40	31.40	3.3	303	994	30.4 - 31.4	99.7 - 103.0
32.40	32.40	3.4	294	965	31.4 - 32.4	103.0 - 106.3
33.40	33.40	3.6	278	911	32.4 - 33.4	106.3 - 109.6
34.40	34.40	3.0	333	1093	33.4 - 34.4	109.6 - 112.9
35.40	35.40	3.1	323	1058	34.4 - 35.4	112.9 - 116.1
36.40	36.40	2.7	370	1215	35.4 - 36.4	116.1 - 119.4

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0805-1047-4593
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 8 - 3300 S
Site: I15, S8: I15 Median, 33-SC-34
Location: 3300 S Structure
Cone: 20 TON A 040
CPT Date: 96/19/06
CPT Time: 19:48
CPT File: KA33S034.COR

Water Table (m): 10.00 (ft): 32.8
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	1.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
1.23	0.38	1.0	0.0	0.0	7.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
2.05	0.62	1.0	0.0	0.0	12.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
2.87	0.88	1.0	0.0	0.0	17.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
3.69	1.12	1.0	0.0	0.0	21.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
4.51	1.38	1.0	0.0	0.0	26.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
5.33	1.62	1.0	0.0	0.0	31.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
6.15	1.88	1.0	0.0	0.0	36.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0
6.97	2.12	1.0	0.0	0.0	41.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
7.79	2.38	1.0	0.0	0.0	46.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
8.61	2.62	1.0	0.0	0.0	51.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
9.43	2.88	1.0	0.0	0.0	56.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
10.25	3.12	1.0	0.0	0.0	60.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
11.07	3.38	1.0	0.0	0.0	65.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
11.89	3.62	1.0	0.0	0.0	70.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
12.71	3.88	1.0	0.0	0.0	75.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0
13.53	4.12	1.0	0.0	0.0	80.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
14.35	4.38	1.0	0.0	0.0	85.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
15.17	4.62	1.0	0.0	0.0	90.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
15.99	4.88	1.0	0.0	0.0	95.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
16.81	5.12	1.0	0.0	0.0	99.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
17.63	5.38	1.0	0.0	0.0	104.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
18.45	5.62	1.0	0.0	0.0	109.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
19.27	5.88	1.0	0.0	0.0	114.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0
20.09	6.12	1.0	0.0	0.0	119.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
20.92	6.38	1.0	0.0	0.0	124.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
21.74	6.62	1.0	0.0	0.0	129.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
22.56	6.88	1.0	0.0	0.0	134.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
23.38	7.12	1.0	0.0	0.0	138.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
24.20	7.38	1.0	0.0	0.0	143.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
25.02	7.62	1.0	0.0	0.0	148.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
25.84	7.88	1.0	0.0	0.0	153.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0
26.66	8.12	1.0	0.0	0.0	158.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
27.48	8.38	1.0	0.0	0.0	163.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
28.30	8.62	1.0	0.0	0.0	168.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
29.12	8.88	1.0	0.0	0.0	173.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
29.94	9.12	1.0	0.0	0.0	177.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
30.76	9.38	1.0	0.0	0.0	182.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
31.58	9.62	1.0	0.0	0.0	187.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
32.40	9.88	1.0	0.0	0.0	192.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0
33.22	10.12	1581.2	36.9	2.3	196.0	1.2	7.9	5.5	110.7	0.0	0.0	3.0
34.04	10.38	1763.4	27.4	1.6	198.1	3.7	7.1	4.9	124.9	30.0	30.0	3.0
34.86	10.62	1510.1	19.9	1.3	200.1	6.1	6.0	4.2	104.3	30.0	30.0	3.0
35.68	10.88	1693.9	53.1	3.1	202.2	8.6	8.5	5.8	118.6	0.0	0.0	3.0
36.50	11.12	1670.1	41.6	2.5	204.2	11.0	8.4	5.7	116.4	0.0	0.0	3.0
37.32	11.38	1097.5	36.0	3.3	206.3	13.5	7.3	5.0	70.2	0.0	0.0	1.5
38.14	11.62	1196.4	19.9	1.7	208.3	15.9	6.0	4.1	77.8	0.0	0.0	1.5
38.96	11.88	1332.5	20.2	1.5	210.4	18.4	5.3	3.6	88.3	30.0	30.0	1.5
39.78	12.12	1342.9	15.7	1.2	212.4	20.8	5.4	3.6	88.8	30.0	30.0	1.5
40.60	12.38	1505.2	27.2	1.8	214.5	23.3	6.0	4.0	101.4	30.0	30.0	1.5
41.42	12.62	1436.7	19.5	1.4	216.5	25.8	5.7	3.8	95.6	30.0	30.0	1.5
42.24	12.88	1281.3	11.5	0.9	218.5	28.2	5.1	3.4	82.8	30.0	30.0	1.5

ConeTec Inc. - CPT Interpretation
Run No: 96-0805-1047-4593
CPT File: KA33S034.COR

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	1393.8	13.1	0.9	220.6	30.7	5.6	3.7	91.4	30.0	30.0	1.5
43.88	13.38	1245.9	12.7	1.0	222.6	33.1	5.0	3.3	79.2	30.0	30.0	1.5
44.70	13.62	1571.4	13.4	0.9	224.7	35.6	6.3	4.1	104.9	30.0	30.0	1.5
45.52	13.88	1789.7	26.5	1.5	226.7	38.0	7.2	4.7	122.0	30.0	30.0	3.0
46.34	14.12	1177.0	9.9	0.8	228.8	40.5	4.7	3.0	72.6	30.0	30.0	1.5
47.16	14.38	1358.5	6.3	0.5	230.8	42.9	5.4	3.5	86.8	30.0	30.0	1.5
47.98	14.62	1937.8	49.7	2.6	232.9	45.4	9.7	6.2	132.8	0.0	0.0	3.0
48.80	14.88	2848.0	68.6	2.4	234.9	47.8	11.4	7.3	205.2	30.0	30.0	3.0
49.62	15.12	2814.8	51.8	1.8	237.0	50.3	11.3	7.2	202.2	30.0	30.0	3.0
50.44	15.38	3736.6	86.4	2.3	239.0	52.7	14.9	9.5	275.6	30.0	32.0	6.0
51.26	15.62	4779.3	93.8	2.0	241.1	55.2	15.9	10.0	0.0	33.5	32.0	1.0
52.08	15.88	3578.6	76.9	2.1	243.2	57.6	14.3	9.0	262.2	30.0	32.0	6.0
52.90	16.12	2157.8	56.8	2.6	245.3	60.1	10.8	6.7	148.2	0.0	0.0	3.0
53.72	16.38	2330.0	62.8	2.7	247.3	62.5	11.7	7.2	161.6	0.0	0.0	3.0
54.54	16.62	4673.9	121.0	2.6	249.4	65.0	18.7	11.6	348.8	32.4	32.0	6.0
55.36	16.88	2482.3	73.3	3.0	251.4	67.4	12.4	7.7	173.1	0.0	0.0	3.0
56.18	17.12	1538.0	27.6	1.8	253.5	69.9	6.2	3.8	97.2	30.0	30.0	1.5
57.00	17.38	1344.5	8.7	0.6	255.5	72.3	5.4	3.3	81.3	30.0	30.0	1.5
57.82	17.62	1203.5	6.0	0.5	257.6	74.8	4.8	2.9	69.7	30.0	30.0	1.5
58.64	17.88	1449.7	8.1	0.6	259.6	77.3	5.8	3.5	89.0	30.0	30.0	1.5
59.46	18.12	1340.7	8.4	0.6	261.7	79.7	5.4	3.2	79.9	30.0	30.0	1.5
60.28	18.38	1391.3	6.2	0.4	263.7	82.2	5.6	3.4	83.6	30.0	30.0	1.5
61.10	18.62	1394.7	5.5	0.4	265.8	84.6	5.6	3.3	83.5	30.0	30.0	1.5
61.93	18.88	2005.2	19.8	1.0	267.8	87.1	8.0	4.8	132.0	30.0	30.0	1.5
62.75	19.12	2287.5	32.3	1.4	269.9	89.5	9.1	5.5	154.2	30.0	30.0	3.0
63.57	19.38	3569.2	37.5	1.1	272.0	92.0	11.9	7.1	0.0	30.0	30.0	1.0
64.39	19.62	2733.2	58.6	2.1	274.1	94.4	10.9	6.5	189.2	30.0	30.0	3.0
65.21	19.88	1512.5	23.1	1.5	276.1	96.9	6.0	3.6	91.2	30.0	30.0	1.5
66.03	20.12	4960.0	80.3	1.6	278.2	99.3	16.5	9.7	0.0	32.5	32.0	1.0
66.85	20.38	6503.5	131.1	2.0	280.4	101.8	21.7	12.7	0.0	40.2	34.0	1.0
67.67	20.62	1197.9	13.8	1.2	282.5	104.2	4.8	2.8	64.9	30.0	30.0	1.0
68.49	20.88	1201.5	5.6	0.5	284.6	106.7	4.8	2.8	64.8	30.0	30.0	1.0
69.31	21.12	2395.8	11.0	0.5	286.7	109.1	8.0	4.6	0.0	30.0	30.0	1.0
70.13	21.38	3884.7	55.1	1.4	288.8	111.6	12.9	7.5	0.0	30.0	30.0	1.0
70.95	21.62	1469.9	13.9	0.9	291.0	114.0	5.9	3.4	85.2	30.0	30.0	1.5
71.77	21.88	1441.6	14.6	1.0	293.0	116.5	5.8	3.3	82.6	30.0	30.0	1.5
72.59	22.12	1598.2	11.8	0.7	295.1	118.9	6.4	3.6	94.7	30.0	30.0	1.5
73.41	22.38	1582.0	13.1	0.8	297.1	121.4	6.3	3.6	93.1	30.0	30.0	1.5
74.23	22.62	1432.0	8.1	0.6	299.1	123.9	5.7	3.2	80.7	30.0	30.0	1.5
75.05	22.88	3367.1	23.0	0.7	301.3	126.3	11.2	6.3	0.0	30.0	30.0	1.0
75.87	23.12	7641.4	182.3	2.4	303.4	128.8	25.5	14.3	0.0	43.7	34.0	1.0
76.69	23.38	18854.9	245.5	1.3	305.7	131.2	47.1	26.4	0.0	69.4	40.0	1.0
77.51	23.62	21514.0	313.5	1.5	308.0	133.7	53.8	30.0	0.0	73.1	40.0	1.0
78.33	23.88	23288.1	322.3	1.4	310.3	136.1	58.2	32.3	0.0	75.3	40.0	1.0
79.15	24.12	13972.5	207.2	1.5	312.6	138.6	34.9	19.3	0.0	60.5	38.0	1.0
79.97	24.38	8461.9	170.0	2.0	314.8	141.0	28.2	15.6	0.0	46.1	34.0	1.0
80.79	24.62	5896.7	135.3	2.3	316.9	143.5	23.6	13.0	434.9	35.6	32.0	6.0
81.61	24.88	2206.3	47.3	2.1	319.0	145.9	8.8	4.8	139.3	30.0	30.0	1.5
82.43	25.12	3777.3	93.0	2.5	321.0	148.4	15.1	8.3	264.6	30.0	30.0	3.0
83.25	25.38	8754.2	162.1	1.9	323.1	150.8	29.2	15.9	0.0	46.7	34.0	1.0
84.07	25.62	5990.8	156.6	2.6	325.2	153.3	24.0	13.0	441.0	35.7	32.0	6.0
84.89	25.88	2671.3	56.7	2.1	327.3	155.7	10.7	5.8	175.1	30.0	30.0	3.0
85.71	26.12	2075.4	42.8	2.1	329.3	158.2	8.3	4.5	127.0	30.0	30.0	1.5
86.53	26.38	1965.4	26.3	1.3	331.4	160.6	7.9	4.2	117.9	30.0	30.0	1.5
87.35	26.62	5423.9	64.4	1.2	333.5	163.1	18.1	9.7	0.0	32.5	32.0	1.0
88.17	26.88	7187.3	194.3	2.7	335.6	165.5	28.7	15.4	534.9	40.5	34.0	6.0
88.99	27.12	2742.8	92.2	3.4	337.6	168.0	13.7	7.3	179.0	0.0	0.0	3.0
89.81	27.38	1899.8	37.7	2.0	339.7	170.4	7.6	4.0	111.2	30.0	30.0	1.5
90.63	27.62	2254.4	38.1	1.7	341.7	172.9	9.0	4.8	139.2	30.0	30.0	1.5
91.45	27.88	7485.3	151.4	2.0	343.8	175.4	25.0	13.2	0.0	41.3	34.0	1.0
92.27	28.12	6810.4	162.3	2.4	345.9	177.8	27.2	14.3	502.9	38.5	32.0	6.0
93.09	28.38	5732.5	156.0	2.7	348.0	180.3	22.9	12.0	416.3	33.5	32.0	6.0
93.91	28.62	13420.6	341.3	2.5	350.1	182.7	44.7	23.4	0.0	57.7	38.0	1.0
94.73	28.88	22101.8	318.7	1.4	352.3	185.2	55.3	28.8	0.0	72.0	40.0	1.0
95.55	29.12	5933.5	156.5	2.6	354.5	187.6	23.7	12.3	431.3	34.2	32.0	6.0
96.37	29.38	2490.1	25.7	1.0	356.6	190.1	10.0	5.2	155.5	30.0	30.0	1.5
97.19	29.62	3717.9	48.0	1.3	358.7	192.5	12.4	6.4	0.0	30.0	30.0	1.0
98.01	29.88	2881.1	37.8	1.3	360.8	195.0	11.5	5.9	186.0	30.0	30.0	3.0
98.83	30.12	1937.6	21.9	1.1	362.8	197.4	7.8	4.0	110.2	30.0	30.0	1.5

ConeTec Inc. - CPT Interpretation
Run No: 96-0805-1047-4593
CPT File: KA33S034.COR

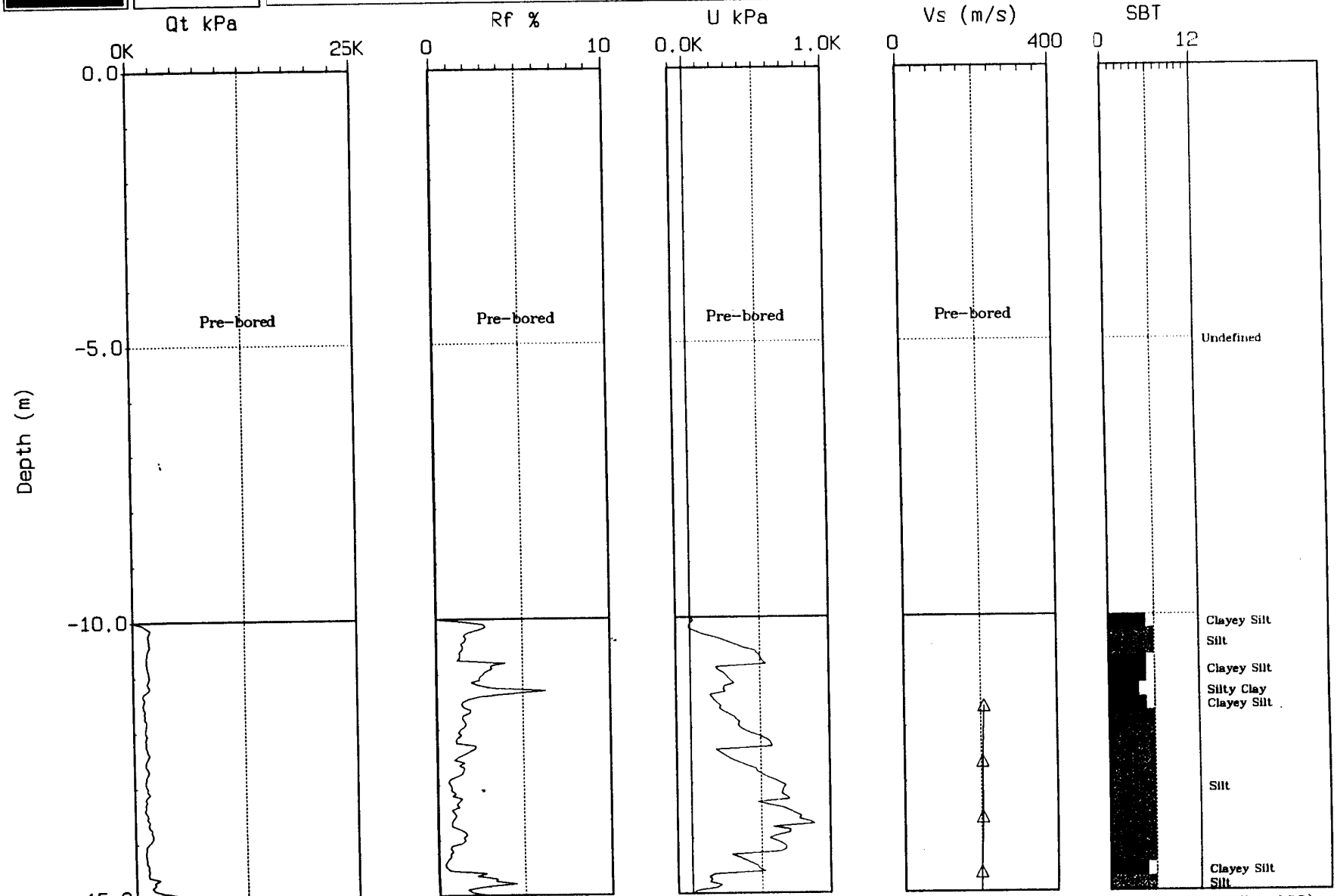
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60 (blows/ft)	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	2202.6	17.9	0.8	364.9	199.9	8.8	4.5	131.0	30.0	30.0	1.5
100.47	30.62	3655.5	78.1	2.1	366.9	202.3	14.6	7.5	246.9	30.0	30.0	3.0
101.29	30.88	6988.7	96.3	1.4	369.0	204.8	23.3	11.9	0.0	38.3	32.0	1.0
102.11	31.12	2161.1	44.4	2.1	371.1	207.2	8.6	4.4	126.6	30.0	30.0	1.5
102.94	31.38	5196.0	98.5	1.9	373.2	209.7	17.3	8.8	0.0	30.0	30.0	1.0
103.76	31.62	5590.7	106.7	1.9	375.4	212.1	18.6	9.4	0.0	31.6	32.0	1.0
104.58	31.88	2001.8	21.9	1.1	377.5	214.6	8.0	4.0	112.8	30.0	30.0	1.5
105.40	32.12	2008.7	50.7	2.5	379.6	217.0	10.0	5.0	113.0	0.0	0.0	1.5
106.22	32.38	2935.1	71.1	2.4	381.6	219.5	11.7	5.9	186.7	30.0	30.0	1.5
107.04	32.62	9633.1	245.5	2.5	383.7	222.0	32.1	16.1	0.0	46.9	34.0	1.0
107.86	32.88	39243.0	408.0	1.0	386.0	224.4	78.5	39.2	0.0	87.1	42.0	1.0
108.68	33.12	46712.8	340.5	0.7	388.5	226.9	77.9	38.9	0.0	92.0	42.0	1.0
109.50	33.38	40927.3	223.4	0.5	391.1	229.3	68.2	34.1	0.0	88.1	42.0	1.0
110.32	33.62	38891.8	266.3	0.7	393.6	231.8	64.8	32.4	0.0	86.6	42.0	1.0
111.14	33.88	42560.7	283.7	0.7	396.2	234.2	70.9	35.5	0.0	89.1	42.0	1.0
111.96	34.12	43937.9	244.7	0.6	398.7	236.7	73.2	36.6	0.0	89.9	42.0	1.0
112.78	34.38	42073.2	175.2	0.4	401.3	239.1	70.1	35.1	0.0	88.5	42.0	1.0

CONETEC

Kleinfelder

Site: I15, SB: I15 Median, 33-SC-34
Locaton: 3300 S Structure

Cone: 20 TON A 040
Date: 06:19:96 19:48



Max. Depth: 34.60 (m)
Depth Inc.: 0.05 (m)

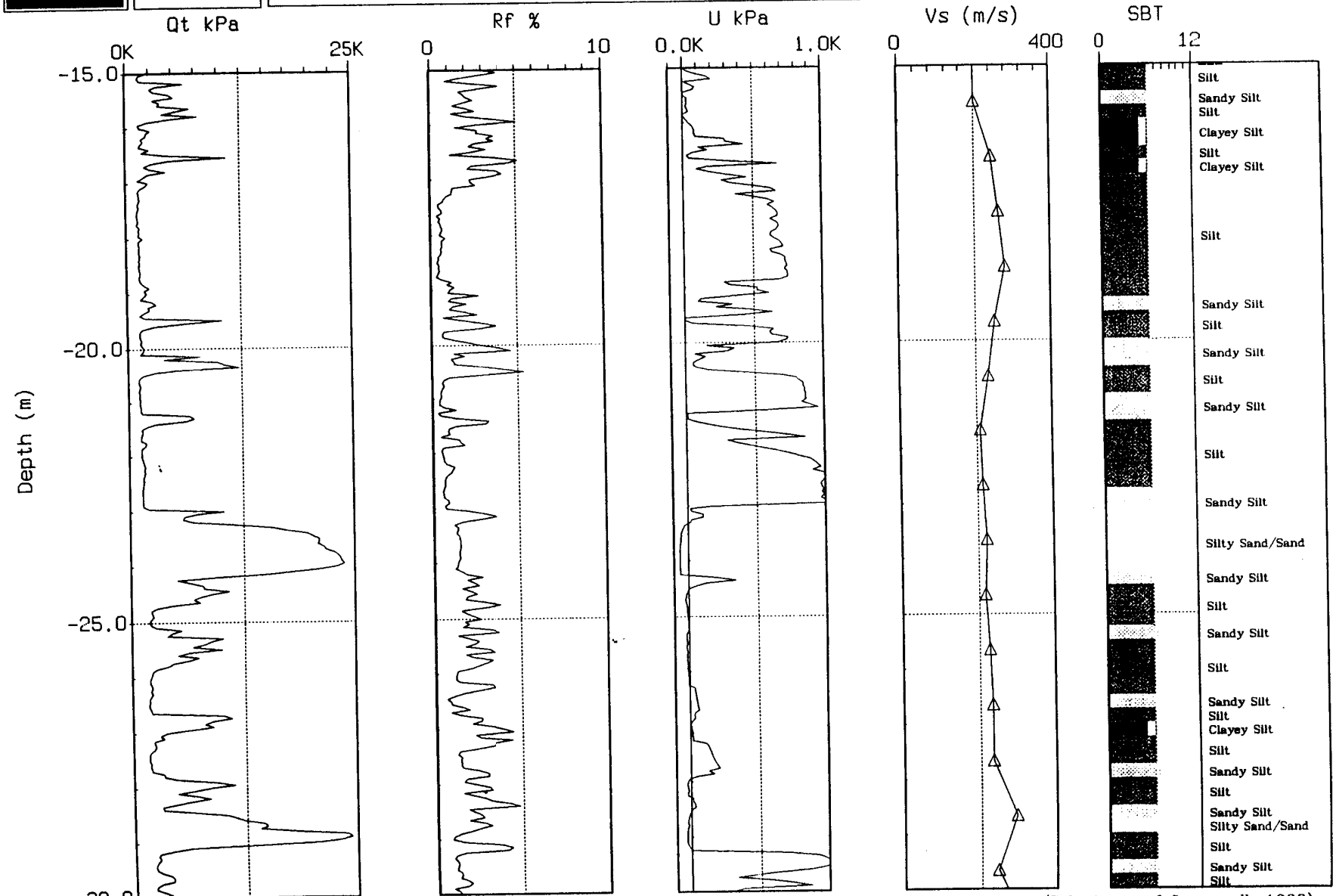
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, SB: I15 Median, 33-SC-34
Location: 3300 S Structure

Cone: 20 TCN A 040
Date: 06:19:96 19:48



Max. Depth: 34.60 (m)
Depth Inc.: 0.05 (m)

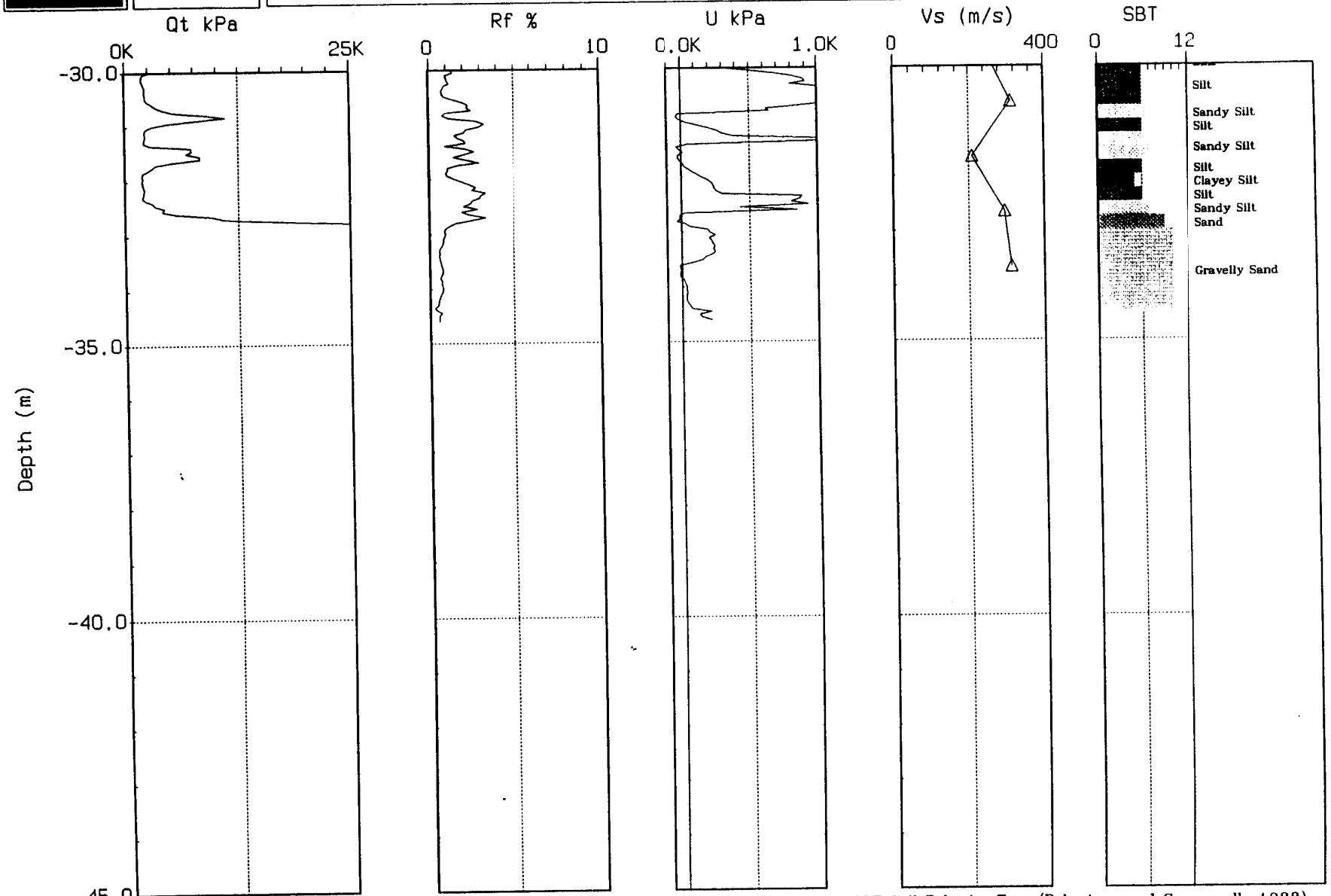
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15 SB: I15 Median, 33-SC-34
Location: 3300 S Structure

Cone: 20 TON A 040
Date: 06:19:96 19:48



Max. Depth: 34.60 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *33-SC-34*
Date: *19-Jun-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 040 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
11.15	11.16					
12.15	12.16	4.8	208	683	11.2 - 12.2	36.6 - 39.9
13.15	13.16	4.9	204	669	12.2 - 13.2	39.9 - 43.1
14.15	14.16	4.9	204	669	13.2 - 14.2	43.1 - 46.4
15.15	15.16	5.0	* 200	656	14.2 - 15.2	46.4 - 49.7
16.15	16.16	5.0	200	656	15.2 - 16.2	49.7 - 53.0
17.15	17.16	4.1	244	800	16.2 - 17.2	53.0 - 56.3
18.15	18.16	3.8	263	863	17.2 - 18.2	56.3 - 59.5
19.15	19.16	3.6	278	911	18.2 - 19.2	59.5 - 62.8
20.15	20.16	4.0	* 250	820	19.2 - 20.2	62.8 - 66.1
21.15	21.16	4.3	232	763	20.2 - 21.2	66.1 - 69.4
22.15	22.16	4.8	208	683	21.2 - 22.2	69.4 - 72.7
23.15	23.16	4.7	213	698	22.2 - 23.2	72.7 - 76.0
24.15	24.16	4.5	222	729	23.2 - 24.2	76.0 - 79.2
25.15	25.16	4.6	* 217	713	24.2 - 25.2	79.2 - 82.5
26.15	26.16	4.4	227	745	25.2 - 26.2	82.5 - 85.8
27.15	27.16	4.3	233	763	26.2 - 27.2	85.8 - 89.1
28.15	28.16	4.3	233	763	27.2 - 28.2	89.1 - 92.4
29.15	29.16	3.4	294	965	28.2 - 29.2	92.4 - 95.6
30.15	30.16	4.1	* 244	800	29.2 - 30.2	95.6 - 98.9
31.15	31.16	3.2	312	1025	30.2 - 31.2	98.9 - 102.
32.15	32.15	4.8	208	683	31.2 - 32.2	102.2 - 105.
33.15	33.15	3.4	294	965	32.2 - 33.2	105.5 - 108.
34.15	34.15	3.2	312	1025	33.2 - 34.2	108.8 - 112.

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0805-1048-5536
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 8 - 3300 S
Site: I15, S8: I15 Median, 33-SC-38
Location: 3300 S Structure
Cone: 20 TON A 040
CPT Date: 96/19/06
CPT Time: 00:33
CPT File: KA33S038.COR

Water Table (m): 10.00 (ft): 32.8
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	1.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
1.23	0.38	1.0	0.0	0.0	7.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
2.05	0.62	1.0	0.0	0.0	12.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
2.87	0.88	1.0	0.0	0.0	17.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
3.69	1.12	1.0	0.0	0.0	21.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
4.51	1.38	1.0	0.0	0.0	26.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
5.33	1.62	1.0	0.0	0.0	31.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
6.15	1.88	1.0	0.0	0.0	36.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0
6.97	2.12	1.0	0.0	0.0	41.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
7.79	2.38	1.0	0.0	0.0	46.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
8.61	2.62	1.0	0.0	0.0	51.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
9.43	2.88	1.0	0.0	0.0	56.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
10.25	3.12	1.0	0.0	0.0	60.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
11.07	3.38	1.0	0.0	0.0	65.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
11.89	3.62	1.0	0.0	0.0	70.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
12.71	3.88	1.0	0.0	0.0	75.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0
13.53	4.12	1.0	0.0	0.0	80.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
14.35	4.38	1.0	0.0	0.0	85.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
15.17	4.62	1.0	0.0	0.0	90.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
15.99	4.88	1.0	0.0	0.0	95.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
16.81	5.12	1.0	0.0	0.0	99.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
17.63	5.38	1.0	0.0	0.0	104.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
18.45	5.62	1.0	0.0	0.0	109.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
19.27	5.88	1.0	0.0	0.0	114.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0
20.09	6.12	1.0	0.0	0.0	119.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
20.92	6.38	1.0	0.0	0.0	124.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
21.74	6.62	1.0	0.0	0.0	129.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
22.56	6.88	1.0	0.0	0.0	134.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
23.38	7.12	1.0	0.0	0.0	138.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
24.20	7.38	1.0	0.0	0.0	143.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
25.02	7.62	1.0	0.0	0.0	148.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
25.84	7.88	1.0	0.0	0.0	153.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0
26.66	8.12	1.0	0.0	0.0	158.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
27.48	8.38	1.0	0.0	0.0	163.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
28.30	8.62	1.0	0.0	0.0	168.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
29.12	8.88	1.0	0.0	0.0	173.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
29.94	9.12	1.0	0.0	0.0	177.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
30.76	9.38	1.0	0.0	0.0	182.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
31.58	9.62	1.0	0.0	0.0	187.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
32.40	9.88	279.7	4.8	1.7	191.7	0.0	1.4	1.0	7.0	0.0	0.0	0.8
33.22	10.12	1364.9	28.8	2.1	194.3	1.2	6.8	4.8	93.6	0.0	0.0	1.5
34.04	10.38	1596.5	32.8	2.1	196.3	3.7	8.0	5.6	111.7	0.0	0.0	3.0
34.86	10.62	1380.8	21.0	1.5	198.4	6.1	5.5	3.8	94.1	30.0	30.0	1.5
35.68	10.88	1421.8	25.6	1.8	200.4	8.6	7.1	4.9	97.0	0.0	0.0	1.5
36.50	11.12	1350.5	16.0	1.2	202.5	11.0	5.4	3.7	91.0	30.0	30.0	1.5
37.32	11.38	1603.6	32.3	2.0	204.5	13.5	8.0	5.5	110.8	0.0	0.0	3.0
38.14	11.62	1345.5	15.5	1.2	206.6	15.9	5.4	3.7	89.8	30.0	30.0	1.5
38.96	11.88	1141.6	12.5	1.1	208.6	18.4	4.6	3.1	73.2	30.0	30.0	1.5
39.78	12.12	1729.8	30.6	1.8	210.7	20.8	[illegible]	4.7	119.9	30.0	30.0	3.0
40.60	12.38	1725.5	30.1	1.7	212.7	23.3	[illegible]	4.6	119.2	30.0	30.0	3.0
41.42	12.62	1289.9	10.2	0.8	214.7	25.8	[illegible]	3.4	84.0	30.0	30.0	1.5
42.24	12.88	1469.9	12.9	0.9	216.8	28.2	5.9	3.9	98.0	30.0	30.0	1.5

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	1527.5	11.8	0.8	218.8	30.7	6.1	4.0	102.2	30.0	30.0	1.5
43.88	13.38	1622.7	17.5	1.1	220.9	33.1	6.5	4.3	109.5	30.0	30.0	1.5
44.70	13.62	1587.0	20.9	1.3	222.9	35.6	6.3	4.2	106.3	30.0	30.0	1.5
45.52	13.88	1788.5	24.0	1.3	225.0	38.0	7.2	4.7	122.0	30.0	30.0	3.0
46.34	14.12	3277.0	66.1	2.0	227.0	40.5	13.1	8.5	240.8	30.0	32.0	6.0
47.16	14.38	2496.9	58.1	2.3	229.1	42.9	10.0	6.5	178.0	30.0	30.0	3.0
47.98	14.62	2721.1	59.8	2.2	231.1	45.4	10.9	7.0	195.6	30.0	30.0	3.0
48.80	14.88	3762.4	97.2	2.6	233.2	47.8	15.0	9.6	278.5	30.0	32.0	6.0
49.62	15.12	3096.2	79.4	2.6	235.2	50.3	12.4	7.9	224.9	30.0	30.0	3.0
50.44	15.38	2195.0	80.3	3.7	237.3	52.7	14.6	9.3	152.4	0.0	0.0	3.0
51.26	15.62	5982.8	114.2	1.9	239.4	55.2	19.9	12.6	0.0	40.0	34.0	1.0
52.08	15.88	4796.5	143.2	3.0	241.5	57.6	19.2	12.1	359.8	33.6	32.0	6.0
52.90	16.12	2000.5	63.0	3.1	243.5	60.1	10.0	6.3	135.7	0.0	0.0	3.0
53.72	16.38	1452.8	23.9	1.6	245.6	62.5	5.8	3.6	91.6	30.0	30.0	1.5
54.54	16.62	1395.4	18.6	1.3	247.6	65.0	5.6	3.5	86.6	30.0	30.0	1.5
55.36	16.88	1421.6	10.4	0.7	249.7	67.4	5.7	3.5	88.4	30.0	30.0	1.5
56.18	17.12	1555.4	8.7	0.6	251.7	69.9	6.2	3.8	98.7	30.0	30.0	1.5
57.00	17.38	2062.0	23.8	1.2	253.8	72.3	8.2	5.1	138.9	30.0	30.0	3.0
57.82	17.62	3393.5	55.1	1.6	255.8	74.8	13.6	8.3	245.0	30.0	30.0	3.0
58.64	17.88	4728.6	77.3	1.6	257.9	77.3	15.8	9.6	0.0	32.2	32.0	1.0
59.46	18.12	2496.5	52.4	2.1	260.0	79.7	10.0	6.1	172.5	30.0	30.0	3.0
60.28	18.38	2049.9	31.9	1.6	262.1	82.2	8.2	5.0	136.5	30.0	30.0	3.0
61.10	18.62	6354.0	114.2	1.8	264.2	84.6	21.2	12.8	0.0	40.4	34.0	1.0
61.93	18.88	4125.3	49.9	1.2	266.4	87.1	13.8	8.2	0.0	30.0	32.0	1.0
62.75	19.12	2575.3	63.4	2.5	268.5	89.5	10.3	6.2	177.4	30.0	30.0	3.0
63.57	19.38	11345.5	165.6	1.5	270.7	92.0	28.4	16.9	0.0	56.6	38.0	1.0
64.39	19.62	26060.0	262.2	1.0	273.0	94.4	52.1	30.9	0.0	80.3	42.0	1.0
65.21	19.88	5775.5	173.9	3.0	275.3	96.9	23.1	13.6	432.3	37.0	34.0	6.0
66.03	20.12	1387.1	9.2	0.7	277.3	99.3	5.5	3.3	80.8	30.0	30.0	1.5
66.85	20.38	1371.0	10.2	0.7	279.3	101.8	5.5	3.2	79.2	30.0	30.0	1.5
67.67	20.62	3482.7	43.0	1.2	281.5	104.2	11.6	6.8	0.0	30.0	30.0	1.0
68.49	20.88	1667.5	24.7	1.5	283.6	106.7	6.7	3.9	102.2	30.0	30.0	1.5
69.31	21.12	1503.1	19.0	1.3	285.6	109.1	6.0	3.5	88.7	30.0	30.0	1.5
70.13	21.38	1721.6	21.8	1.3	287.7	111.6	6.9	4.0	105.8	30.0	30.0	1.5
70.95	21.62	1617.6	15.0	0.9	289.7	114.0	6.5	3.7	97.1	30.0	30.0	1.5
71.77	21.88	1422.8	10.6	0.7	291.8	116.5	5.7	3.3	81.2	30.0	30.0	1.5
72.59	22.12	2015.7	39.9	2.0	293.8	118.9	8.1	4.6	128.2	30.0	30.0	1.5
73.41	22.38	14593.6	182.3	1.2	296.0	121.4	36.5	20.8	0.0	62.6	38.0	1.0
74.23	22.62	12496.9	254.1	2.0	298.2	123.9	41.7	23.6	0.0	58.0	38.0	1.0
75.05	22.88	20267.7	299.4	1.5	300.4	126.3	50.7	28.6	0.0	71.8	40.0	1.0
75.87	23.12	18011.1	259.6	1.4	302.7	128.8	45.0	25.3	0.0	68.3	40.0	1.0
76.69	23.38	15257.3	171.6	1.1	305.0	131.2	38.1	21.4	0.0	63.4	38.0	1.0
77.51	23.62	10118.1	164.6	1.6	307.3	133.7	33.7	18.8	0.0	51.5	36.0	1.0
78.33	23.88	3413.4	91.8	2.7	309.4	136.1	13.7	7.6	237.4	30.0	30.0	3.0
79.15	24.12	2183.4	52.1	2.4	311.4	138.6	8.7	4.8	138.7	30.0	30.0	1.5
79.97	24.38	4146.3	107.5	2.6	313.5	141.0	16.6	9.2	295.3	30.0	30.0	3.0
80.79	24.62	9177.9	119.6	1.3	315.7	143.5	22.9	12.6	0.0	48.3	36.0	1.0
81.61	24.88	6920.7	184.1	2.7	317.8	145.9	27.7	15.2	516.6	40.2	34.0	6.0
82.43	25.12	2955.3	112.2	3.8	319.9	148.4	14.8	8.1	199.0	0.0	0.0	3.0
83.25	25.38	2104.8	52.9	2.5	321.9	150.8	10.5	5.7	130.6	0.0	0.0	1.5
84.07	25.62	1847.3	27.0	1.5	324.0	153.3	7.4	4.0	109.6	30.0	30.0	1.5
84.89	25.88	2491.5	47.4	1.9	326.0	155.7	10.0	5.4	160.8	30.0	30.0	1.5
85.71	26.12	5891.1	129.8	2.2	328.1	158.2	23.6	12.7	432.4	35.1	32.0	6.0
86.53	26.38	2050.9	47.3	2.3	330.1	160.6	8.2	4.4	124.8	30.0	30.0	1.5
87.35	26.62	1978.6	32.0	1.6	332.2	163.1	7.9	4.2	118.7	30.0	30.0	1.5
88.17	26.88	2143.5	45.6	2.1	334.2	165.5	8.6	4.6	131.5	30.0	30.0	1.5
88.99	27.12	9571.8	138.0	1.4	336.4	168.0	23.9	12.8	0.0	48.6	36.0	1.0
89.81	27.38	5416.1	184.6	3.4	338.6	170.4	27.1	14.4	392.6	0.0	0.0	6.0
90.63	27.62	5574.1	117.9	2.1	340.7	172.9	18.6	9.9	0.0	33.0	32.0	1.0
91.45	27.88	6869.1	99.8	1.5	342.8	175.4	22.9	12.1	0.0	38.9	32.0	1.0
92.27	28.12	3230.0	79.6	2.5	344.9	177.8	12.9	6.8	216.6	30.0	30.0	3.0
93.09	28.38	2470.4	63.6	2.6	347.0	180.3	9.9	5.2	155.4	30.0	30.0	1.5
93.91	28.62	2914.2	85.5	2.9	349.0	182.7	14.6	7.6	190.6	0.0	0.0	3.0
94.73	28.88	20790.9	236.5	1.1	351.3	185.2	41.6	21.7	0.0	70.2	40.0	1.0
95.55	29.12	32646.3	230.1	0.7	353.7	187.6	65.3	34.0	0.0	83.1	42.0	1.0
96.37	29.38	33140.8	186.8	0.6	356.2	190.1	55.2	28.6	0.0	83.4	42.0	1.0
97.19	29.62	32397.0	169.6	0.5	358.7	192.5	54.0	27.9	0.0	82.7	42.0	1.0
98.01	29.88	22812.2	137.1	0.6	361.2	195.0	45.6	23.5	0.0	72.5	40.0	1.0
98.83	30.12	3537.0	104.7	3.0	363.4	197.4	17.7	9.1	238.1	0.0	0.0	3.0

ConeTec Inc. - CPT Interpretation
Run No: 96-0805-1048-5536
CPT File: KA33S038.COR

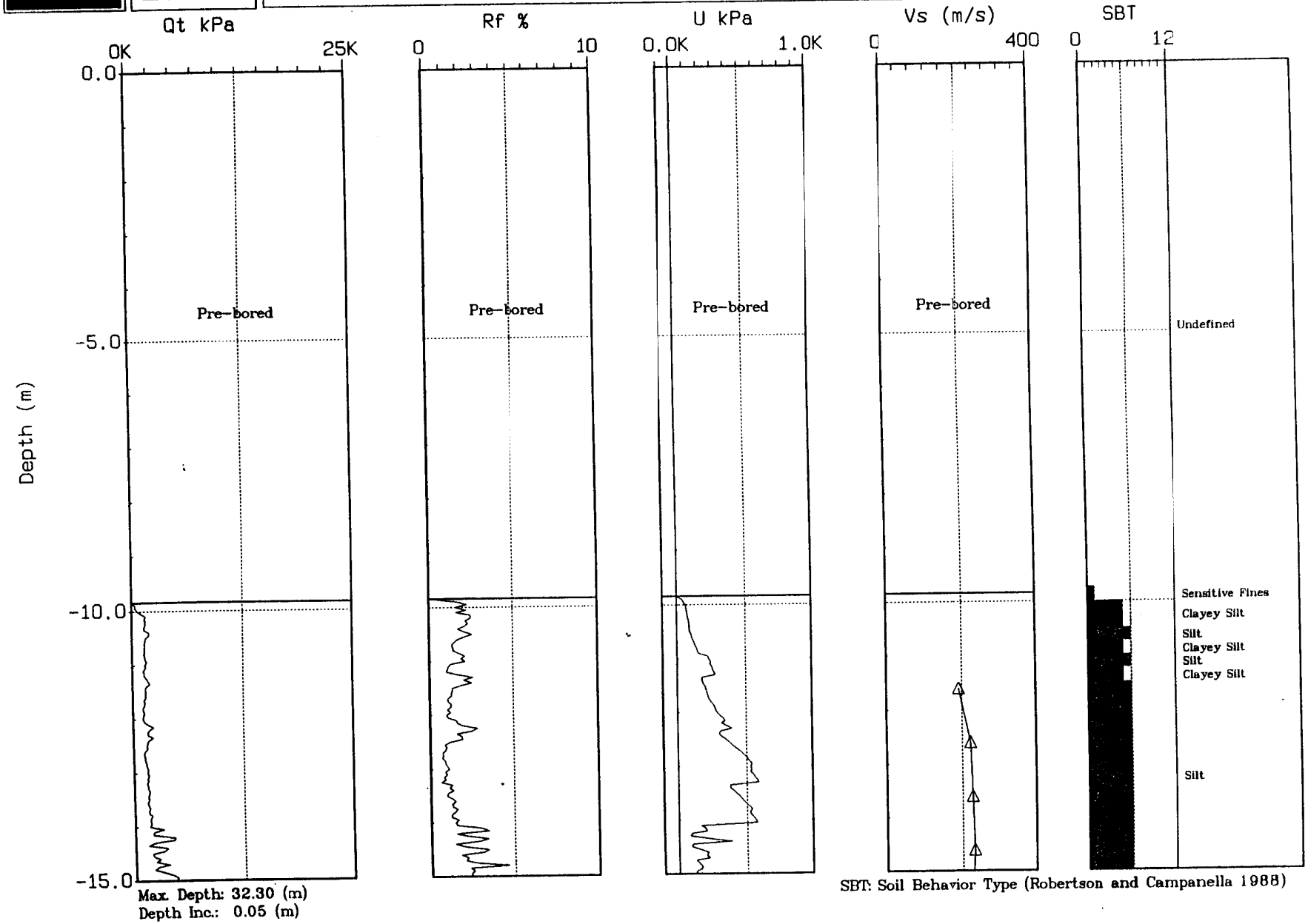
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60 (blows/ft)	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	2910.2	62.5	2.1	365.5	199.9	11.6	6.0	187.6	30.0	30.0	3.0
100.47	30.62	4440.2	122.4	2.8	367.5	202.3	17.8	9.1	309.6	30.0	30.0	3.0
101.29	30.88	3926.4	92.9	2.4	369.6	204.8	15.7	8.0	268.2	30.0	30.0	3.0
102.11	31.12	5896.2	160.4	2.7	371.6	207.2	23.6	12.0	425.4	33.3	32.0	6.0
102.94	31.38	12284.8	377.7	3.1	373.7	209.7	49.1	24.9	936.1	54.3	36.0	6.0
103.76	31.62	16179.4	302.2	1.9	375.9	212.1	40.4	20.4	0.0	62.1	38.0	1.0
104.58	31.88	40018.1	291.3	0.7	378.3	214.6	66.7	33.6	0.0	88.0	42.0	1.0
105.40	32.12	43972.2	321.2	0.7	380.8	217.0	73.3	36.8	0.0	90.6	42.0	1.0

CONETEC

Kleinfelder

Site: I15, SB: I15 Median, 33-SC-38
Location: 3300 S Structure

Cone: 20 TON A 040
Date: 06:19:96 00:33



Max. Depth: 32.30 (m)
Depth Inc.: 0.05 (m)

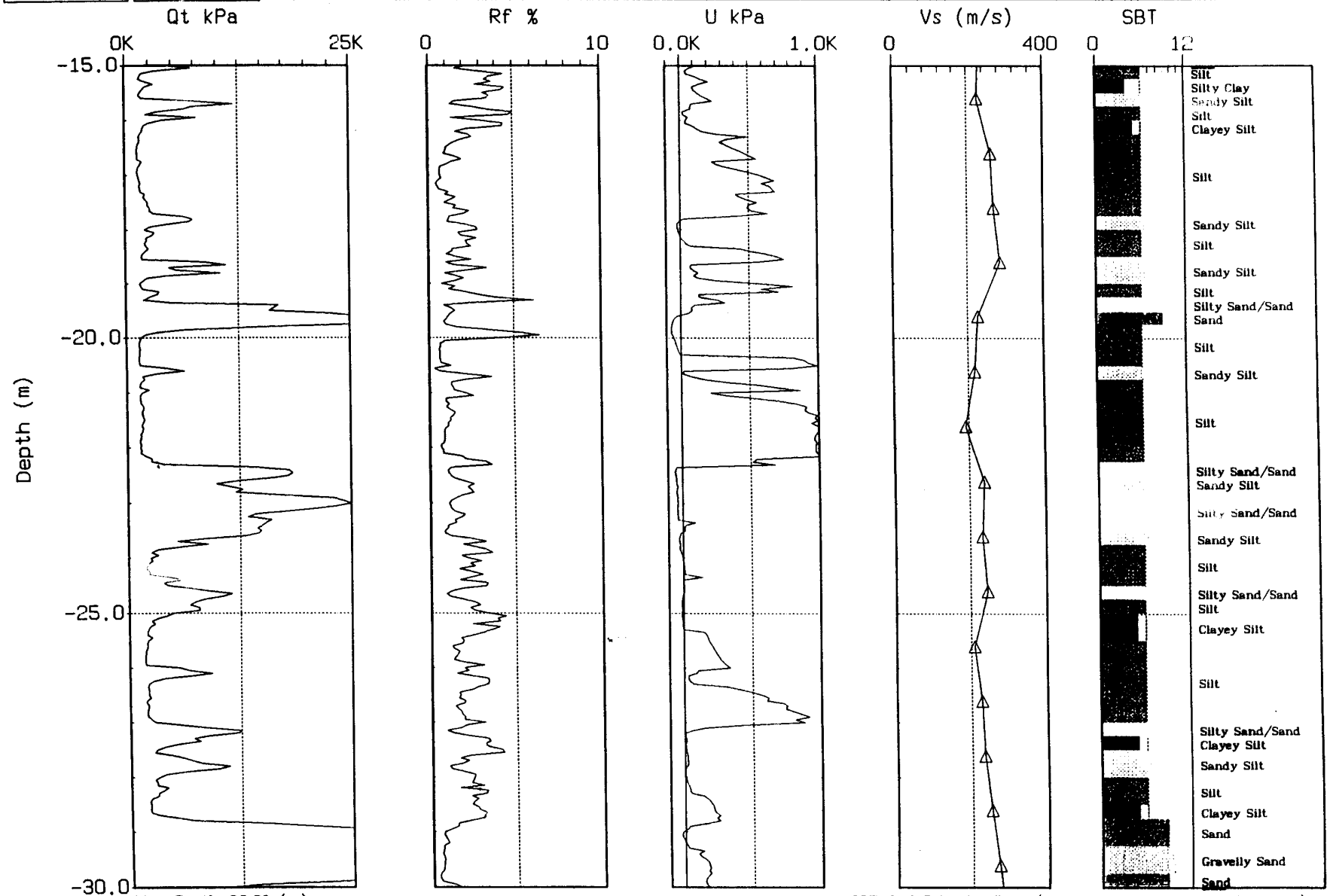
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S8: I15 Median, 33-SC-38
Location: 3300 S Structure

Cone: 20 TON A 040
Date: 06:19:96 00:33



Max. Depth: 32.30 (m)
Depth Inc.: 0.05 (m)

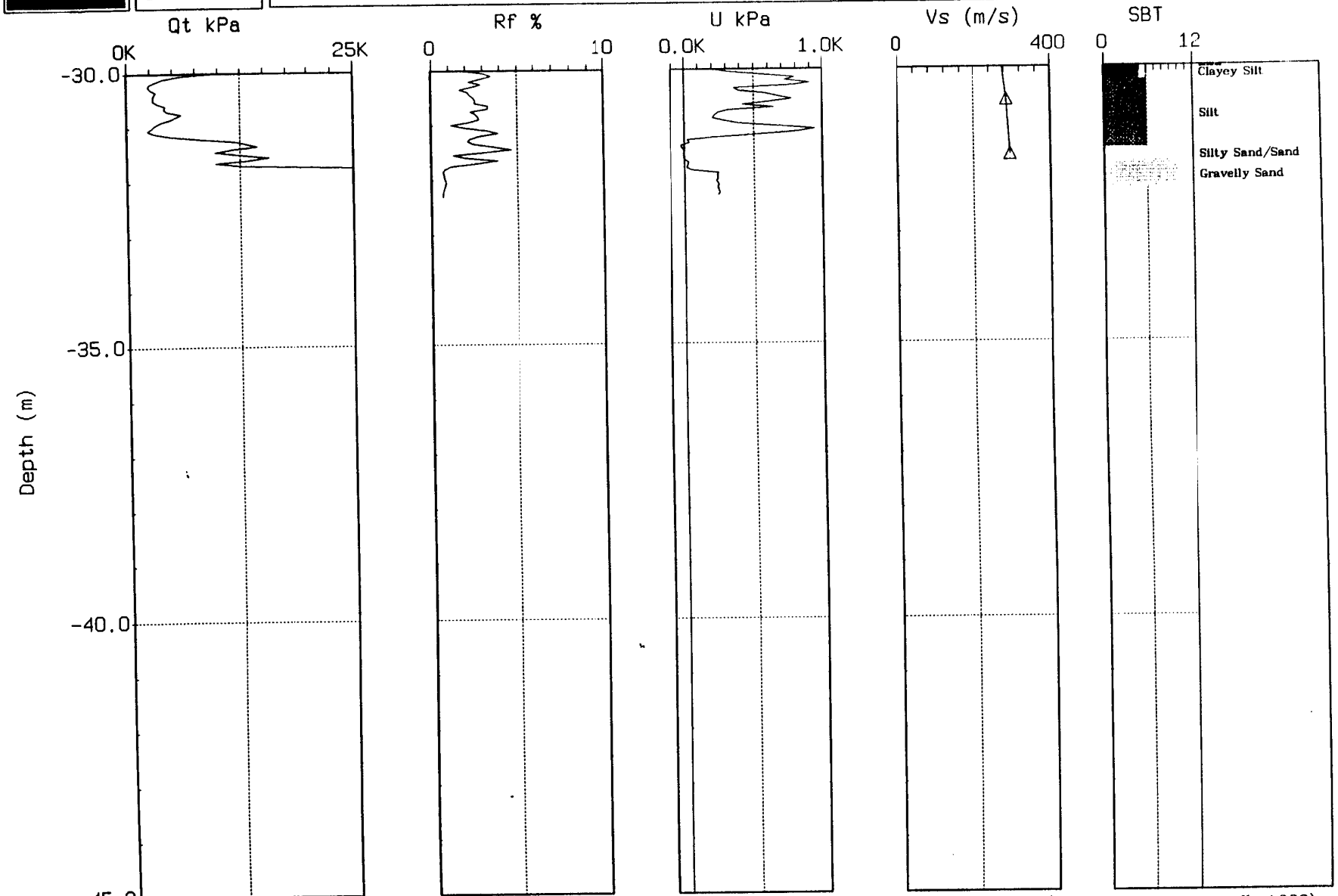
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S8: I15 Median, 33-SC-38
Location: 3300 S Structure

Cone: 20 TON A 040
Date: 06:19:96 00:33



Max. Depth: 32.30 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *33-SC-38*
Date: *19-Jun-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 040 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
11.10	11.11					
12.10	12.11	5.2	192	630	11.1 - 12.1	36.4 - 39.7
13.10	13.11	4.5	222	728	12.1 - 13.1	39.7 - 43.0
14.10	14.11	4.4	227	745	13.1 - 14.1	43.0 - 46.3
15.10	15.11	4.3	* 232	762	14.1 - 15.1	46.3 - 49.5
16.10	16.11	4.4	227	745	15.1 - 16.1	49.5 - 52.8
17.10	17.11	3.8	263	863	16.1 - 17.1	52.8 - 56.1
18.10	18.11	3.7	270	886	17.1 - 18.1	56.1 - 59.4
19.10	19.11	3.5	286	937	18.1 - 19.1	59.4 - 62.7
20.10	20.11	4.4	* 227	745	19.1 - 20.1	62.7 - 65.9
21.10	21.11	4.6	217	713	20.1 - 21.1	65.9 - 69.2
22.10	22.11	5.2	192	631	21.1 - 22.1	69.2 - 72.5
23.10	23.11	4.2	238	781	22.1 - 23.1	72.5 - 75.8
24.10	24.11	4.3	232	763	23.1 - 24.1	75.8 - 79.1
25.10	25.11	4.1	* 244	800	24.1 - 25.1	79.1 - 82.3
26.10	26.11	4.8	208	683	25.1 - 26.1	82.3 - 85.6
27.10	27.11	4.4	227	745	26.1 - 27.1	85.6 - 88.9
28.10	28.11	4.3	233	763	27.1 - 28.1	88.9 - 92.2
29.10	29.11	4.0	250	820	28.1 - 29.1	92.2 - 95.5
30.10	30.11	3.7	* 270	887	29.1 - 30.1	95.5 - 98.8
31.10	31.11	3.5	286	937	30.1 - 31.1	98.8 - 102.0
32.10	32.10	3.4	294	965	31.1 - 32.1	102.0 - 105.3

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0913-0858-2140
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 10
Site: I15,S10:S.R.201,09-SC-4
Location: Jordan R.Struct
Cone: 20 TON A AD041
CPT Date: 96/07/08
CPT Time: 15:07
CPT File: KA09S04.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	16553.4	56.6	0.3	2.4	0.0	33.1	66.2	0.0	95.0	50.0	1.0
1.23	0.38	13205.2	115.4	0.9	7.3	0.0	26.4	52.8	0.0	95.0	50.0	1.0
2.05	0.62	6370.0	73.2	1.1	12.1	0.0	21.2	42.5	0.0	84.7	48.0	1.0
2.87	0.88	3419.7	33.0	1.0	16.7	0.0	11.4	22.8	0.0	62.2	46.0	1.0
3.69	1.12	5118.4	132.7	2.6	21.2	0.0	20.5	40.9	407.8	70.3	46.0	10.0
4.51	1.38	2805.3	83.2	3.0	25.8	0.0	14.0	27.1	222.4	0.0	0.0	10.0
5.33	1.62	3164.7	100.2	3.2	30.2	0.0	15.8	28.2	250.8	0.0	0.0	10.0
6.15	1.88	3722.8	128.9	3.5	34.8	0.0	18.6	30.9	295.0	0.0	0.0	10.0
6.97	2.12	2784.2	82.8	3.0	38.0	1.2	13.9	22.1	219.6	0.0	0.0	10.0
7.79	2.38	2134.5	64.9	3.0	40.1	3.7	10.7	16.5	167.3	0.0	0.0	10.0
8.61	2.62	1780.0	45.0	2.5	42.1	6.1	8.9	13.4	138.5	0.0	0.0	6.0
9.43	2.88	1853.9	57.5	3.1	44.2	8.6	9.3	13.7	144.1	0.0	0.0	6.0
10.25	3.12	1660.5	35.1	2.1	46.2	11.0	8.3	12.0	128.3	0.0	0.0	6.0
11.07	3.38	1318.2	39.4	3.0	48.3	13.5	6.6	9.3	100.5	0.0	0.0	6.0
11.89	3.62	6021.2	42.1	0.7	50.4	15.9	15.1	20.7	0.0	62.5	42.0	1.0
12.71	3.88	11437.3	52.8	0.5	52.8	18.4	22.9	30.8	0.0	80.3	46.0	1.0
13.53	4.12	7561.7	70.9	0.9	55.2	20.8	18.9	24.9	0.0	67.8	44.0	1.0
14.35	4.38	6867.5	65.0	0.9	57.5	23.3	17.2	22.2	0.0	64.4	42.0	1.0
15.17	4.62	4658.5	52.8	1.1	59.7	25.8	15.5	19.7	0.0	52.8	40.0	1.0
15.99	4.88	7849.0	42.8	0.5	61.9	28.2	19.6	24.4	0.0	67.2	44.0	1.0
16.81	5.12	7759.4	85.7	1.1	64.2	30.7	19.4	23.7	0.0	66.4	42.0	1.0
17.63	5.38	10335.1	136.3	1.3	66.5	33.1	25.8	31.0	0.0	74.1	44.0	1.0
18.45	5.62	13521.5	47.6	0.4	68.9	35.6	27.0	31.9	0.0	81.3	44.0	1.0
19.27	5.88	11253.4	32.1	0.3	71.3	38.0	22.5	26.1	0.0	75.5	44.0	1.0
20.09	6.12	11149.8	17.3	0.2	73.7	40.5	22.3	25.4	0.0	74.8	44.0	1.0
20.92	6.38	11715.5	12.0	0.1	76.1	42.9	23.4	26.3	0.0	75.7	44.0	1.0
21.74	6.62	7750.2	16.2	0.2	78.5	45.4	19.4	21.4	0.0	63.4	42.0	1.0
22.56	6.88	5987.0	14.4	0.2	80.8	47.8	15.0	16.3	0.0	55.6	40.0	1.0
23.38	7.12	7445.1	17.6	0.2	83.1	50.3	18.6	20.0	0.0	61.5	42.0	1.0
24.20	7.38	10090.8	87.9	0.9	85.4	52.7	25.2	26.7	0.0	69.8	42.0	1.0
25.02	7.62	11755.7	145.5	1.2	87.7	55.2	29.4	30.7	0.0	73.8	44.0	1.0
25.84	7.88	14712.6	194.0	1.3	90.0	57.6	36.8	37.9	0.0	79.9	44.0	1.0
26.66	8.12	11924.9	176.8	1.5	92.3	60.1	29.8	30.4	0.0	73.5	44.0	1.0
27.48	8.38	11854.9	109.5	0.9	94.6	62.5	29.6	29.8	0.0	73.0	42.0	1.0
28.30	8.62	19849.7	210.4	1.1	96.9	65.0	39.7	39.5	0.0	87.4	46.0	1.0
29.12	8.88	23571.4	260.0	1.1	99.4	67.4	47.1	46.3	0.0	91.9	46.0	1.0
29.94	9.12	23090.7	253.3	1.1	101.8	69.9	46.2	44.8	0.0	91.0	46.0	1.0
30.76	9.38	21093.7	253.7	1.2	104.2	72.3	42.2	40.4	0.0	88.1	46.0	1.0
31.58	9.62	20115.1	243.4	1.2	106.6	74.8	50.3	47.7	0.0	86.4	44.0	1.0
32.40	9.88	18310.0	170.3	0.9	108.9	77.3	36.6	34.3	0.0	83.4	44.0	1.0
33.22	10.12	8819.5	96.0	1.1	111.3	79.7	22.0	20.5	0.0	62.1	42.0	1.0
34.04	10.38	850.7	21.1	2.5	113.5	82.2	5.7	5.2	52.4	0.0	0.0	1.5
34.86	10.62	574.8	2.1	0.4	114.8	84.6	2.9	2.6	30.0	0.0	0.0	1.5
35.68	10.88	517.9	2.0	0.4	115.5	87.1	2.6	2.4	25.2	0.0	0.0	1.0
36.50	11.12	564.9	2.1	0.4	116.2	89.5	2.8	2.6	28.7	0.0	0.0	1.0
37.32	11.38	587.2	2.0	0.3	116.8	92.0	2.9	2.7	30.3	0.0	0.0	1.5
38.14	11.62	537.7	2.1	0.4	117.5	94.4	2.7	2.4	26.1	0.0	0.0	1.0
38.96	11.88	971.9	11.4	1.2	118.9	96.9	4.9	4.4	60.5	0.0	0.0	3.0
39.78	12.12	2097.0	28.7	1.4	120.9	99.3	8.4	7.5	150.1	30.0	32.0	6.0
40.60	12.38	2429.9	28.8	1.2	123.0	101.8	9.7	8.6	176.4	30.0	32.0	6.0
41.42	12.62	2498.7	45.1	1.8	125.0	104.2	10.0	8.7	181.6	30.0	32.0	6.0
42.24	12.88	1621.7	48.6	3.0	127.1	106.7	8.1	7.0	111.0	0.0	0.0	3.0

ConeTec Inc. - CPT Interpretation
Run No: 96-0913-0858-2140
CPT File: KA09S04.COR

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	4830.6	87.6	1.8	129.2	109.1	16.1	13.9	0.0	42.8	38.0	1.0
43.88	13.38	3269.3	60.5	1.9	131.3	111.6	13.1	11.2	242.1	31.3	34.0	6.0
44.70	13.62	3373.1	62.3	1.8	133.3	114.0	13.5	11.4	250.1	32.0	34.0	6.0
45.52	13.88	2421.9	47.4	2.0	135.4	116.5	9.7	8.1	173.6	30.0	32.0	6.0
46.34	14.12	1677.4	28.4	1.7	137.4	118.9	6.7	5.6	113.7	30.0	30.0	3.0
47.16	14.38	3641.8	72.0	2.0	139.5	121.4	14.6	12.1	270.5	33.6	34.0	6.0
47.98	14.62	1902.6	54.8	2.9	141.5	123.9	9.5	7.8	131.0	0.0	0.0	3.0
48.80	14.88	4817.5	82.8	1.7	143.6	126.3	16.1	13.1	0.0	41.2	36.0	1.0
49.62	15.12	20604.9	339.7	1.6	145.9	128.8	51.5	41.7	0.0	82.6	44.0	1.0
50.44	15.38	23040.1	416.7	1.8	148.2	131.2	57.6	46.3	0.0	85.6	44.0	1.0
51.26	15.62	17244.6	220.7	1.3	150.5	133.7	43.1	34.4	0.0	77.0	42.0	1.0
52.08	15.88	3257.9	87.0	2.7	152.6	136.1	13.0	10.3	237.5	30.0	34.0	6.0
52.90	16.12	3931.9	46.8	1.2	154.7	138.6	13.1	10.3	0.0	34.3	34.0	1.0
53.72	16.38	2811.4	47.3	1.7	156.9	141.0	11.2	8.8	201.1	30.0	32.0	6.0
54.54	16.62	5629.9	81.3	1.4	159.0	143.5	18.8	14.6	0.0	44.2	36.0	1.0
55.36	16.88	8625.6	132.2	1.5	161.1	145.9	28.8	22.2	0.0	56.2	38.0	1.0
56.18	17.12	2417.5	20.2	0.8	163.3	148.4	8.1	6.2	0.0	30.0	32.0	1.0
57.00	17.38	3941.4	39.1	1.0	165.5	150.8	13.1	10.0	0.0	33.4	34.0	1.0
57.82	17.62	12322.7	115.9	0.9	167.7	153.3	30.8	23.3	0.0	65.9	40.0	1.0
58.64	17.88	18151.9	178.7	1.0	170.1	155.7	36.3	27.2	0.0	76.8	42.0	1.0
59.46	18.12	8893.9	162.4	1.8	172.4	158.2	29.6	22.1	0.0	56.1	38.0	1.0
60.28	18.38	6624.6	177.3	2.7	174.5	160.6	26.5	19.6	503.2	47.5	38.0	6.0
61.10	18.62	18007.4	177.3	1.0	176.7	163.1	36.0	26.5	0.0	76.0	42.0	1.0
61.93	18.88	2592.6	54.3	2.1	179.0	165.5	10.4	7.6	179.8	30.0	32.0	6.0
62.75	19.12	1996.5	39.2	2.0	181.0	168.0	8.0	5.8	131.8	30.0	30.0	3.0
63.57	19.38	1121.1	5.9	0.5	183.1	170.4	4.5	3.2	61.4	30.0	30.0	1.5
64.39	19.62	1316.8	8.9	0.7	185.1	172.9	5.3	3.8	76.7	30.0	30.0	1.5
65.21	19.88	1029.1	5.4	0.5	187.1	175.4	4.1	2.9	53.3	30.0	30.0	1.5
66.03	20.12	1065.3	8.5	0.8	189.2	177.8	4.3	3.0	55.9	30.0	30.0	1.5
66.85	20.38	1184.6	7.7	0.6	191.2	180.3	4.7	3.4	65.1	30.0	30.0	1.5
67.67	20.62	995.6	4.2	0.4	193.3	182.7	4.0	2.8	49.6	30.0	30.0	1.5
68.49	20.88	1134.6	7.9	0.7	195.3	185.2	4.5	3.2	60.3	30.0	30.0	1.5
69.31	21.12	1672.1	15.9	1.0	197.4	187.6	6.7	4.7	103.0	30.0	30.0	3.0
70.13	21.38	1440.2	9.1	0.6	199.4	190.1	5.8	4.0	84.1	30.0	30.0	1.5
70.95	21.62	1351.3	10.6	0.8	201.5	192.5	5.4	3.7	76.6	30.0	30.0	1.5
71.77	21.88	1340.3	14.5	1.1	203.5	195.0	5.4	3.7	75.3	30.0	30.0	1.5
72.59	22.12	1443.0	12.2	0.8	205.6	197.4	5.8	3.9	83.2	30.0	30.0	1.5
73.41	22.38	3307.6	51.4	1.6	207.6	199.9	13.2	9.0	232.0	30.0	32.0	6.0
74.23	22.62	1918.4	7.4	0.4	209.7	202.3	6.4	4.3	0.0	30.0	30.0	1.0
75.05	22.88	1656.0	10.8	0.7	211.8	204.8	6.6	4.5	99.2	30.0	30.0	1.5
75.87	23.12	1849.8	12.8	0.7	213.9	207.2	7.4	5.0	114.3	30.0	30.0	3.0
76.69	23.38	1885.9	22.6	1.2	215.9	209.7	7.5	5.0	116.8	30.0	30.0	3.0
77.51	23.62	2033.2	34.1	1.7	218.0	212.1	8.1	5.4	128.2	30.0	30.0	3.0
78.33	23.88	3220.0	64.8	2.0	220.0	214.6	12.9	8.5	222.8	30.0	32.0	6.0
79.15	24.12	2922.4	57.0	2.0	222.1	217.0	11.7	7.7	198.7	30.0	30.0	3.0
79.97	24.38	1687.8	17.8	1.1	224.1	219.5	6.8	4.4	99.5	30.0	30.0	1.5
80.79	24.62	2147.0	17.4	0.8	226.2	222.0	8.6	5.6	135.9	30.0	30.0	3.0
81.61	24.88	1457.4	12.6	0.9	228.2	224.4	5.8	3.8	80.4	30.0	30.0	1.5
82.43	25.12	2272.0	40.9	1.8	230.3	226.9	9.1	5.9	145.2	30.0	30.0	3.0
83.25	25.38	6061.8	127.0	2.1	232.4	229.3	20.2	13.0	0.0	40.8	34.0	1.0
84.07	25.62	13518.1	247.2	1.8	234.6	231.8	45.1	28.8	0.0	63.7	40.0	1.0
84.89	25.88	16682.0	168.4	1.0	236.8	234.2	33.4	21.2	0.0	69.6	40.0	1.0
85.71	26.12	8698.6	143.0	1.6	239.1	236.7	29.0	18.4	0.0	50.8	38.0	1.0
86.53	26.38	6714.6	122.2	1.8	241.3	239.1	22.4	14.1	0.0	43.2	36.0	1.0
87.35	26.62	17221.0	204.0	1.2	243.6	241.6	43.1	27.0	0.0	70.1	40.0	1.0
88.17	26.88	26529.4	120.1	0.5	246.0	244.0	44.2	27.6	0.0	82.3	42.0	1.0
88.99	27.12	24014.5	161.7	0.7	248.5	246.5	48.0	29.8	0.0	79.3	42.0	1.0
89.81	27.38	27240.5	183.3	0.7	250.9	248.9	54.5	33.7	0.0	82.8	42.0	1.0
90.63	27.62	30771.7	199.4	0.6	253.3	251.4	61.5	37.8	0.0	86.2	42.0	1.0
91.45	27.88	30209.4	215.6	0.7	255.7	253.8	60.4	37.0	0.0	85.5	42.0	1.0
92.27	28.12	27653.9	223.4	0.8	258.2	256.3	55.3	33.7	0.0	82.8	42.0	1.0
93.09	28.38	17888.8	202.7	1.1	260.6	258.7	35.8	21.7	0.0	70.2	40.0	1.0
93.91	28.62	3601.0	59.2	1.6	262.8	261.2	14.4	8.7	246.2	30.0	30.0	3.0
94.73	28.88	3015.1	23.6	0.8	264.9	263.6	10.1	6.0	0.0	30.0	30.0	1.0
95.55	29.12	2864.0	52.6	1.8	267.0	266.1	11.5	6.9	186.5	30.0	30.0	3.0
96.37	29.38	3454.3	75.9	2.2	269.1	268.5	13.8	8.2	233.3	30.0	30.0	3.0
97.19	29.62	16493.1	241.4	1.5	271.2	271.0	41.2	24.5	0.0	67.3	40.0	1.0
98.01	29.88	19493.6	294.0	1.5	273.5	273.5	48.7	28.8	0.0	72.0	40.0	1.0
98.83	30.12	26935.7	429.1	1.6	275.8	275.9	67.3	39.7	0.0	81.1	42.0	1.0

ConeTec Inc. - CPT Interpretation
Run No: 96-0913-0858-2140
CPT File: KA09S04.COR

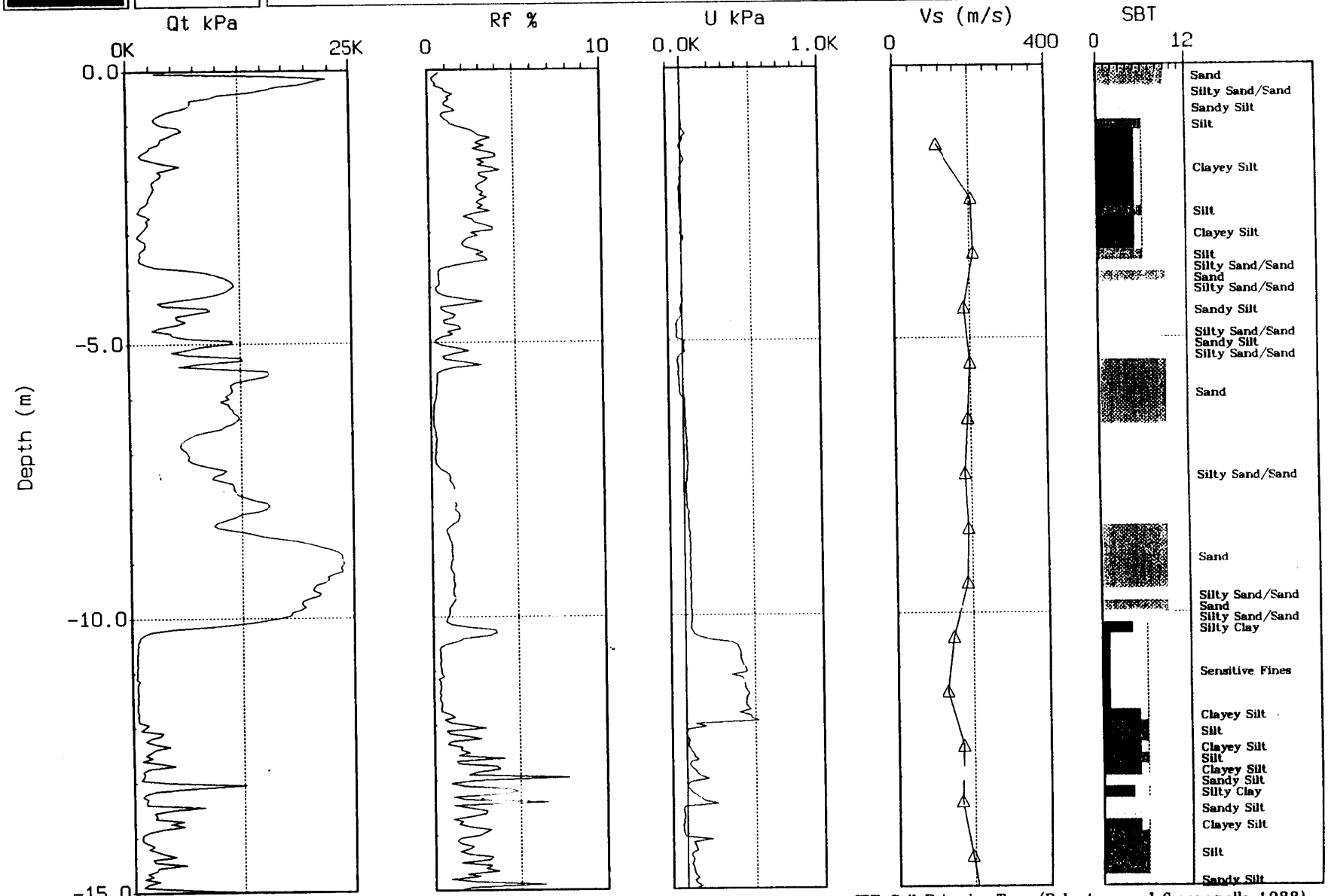
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60 (blows/ft)	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	27835.9	546.3	2.0	278.1	278.4	69.6	40.8	0.0	82.0	42.0	1.0

CONETEC

Kleinfelder

Site: I15, S109 R201, 09-SC-4
Location: JORDAN R.STRJCT.

Cone: 20 TON A AD041
Date: 08:07:96 15:07



Max. Depth: 30.55 (m)
Depth Inc.: 0.05 (m)

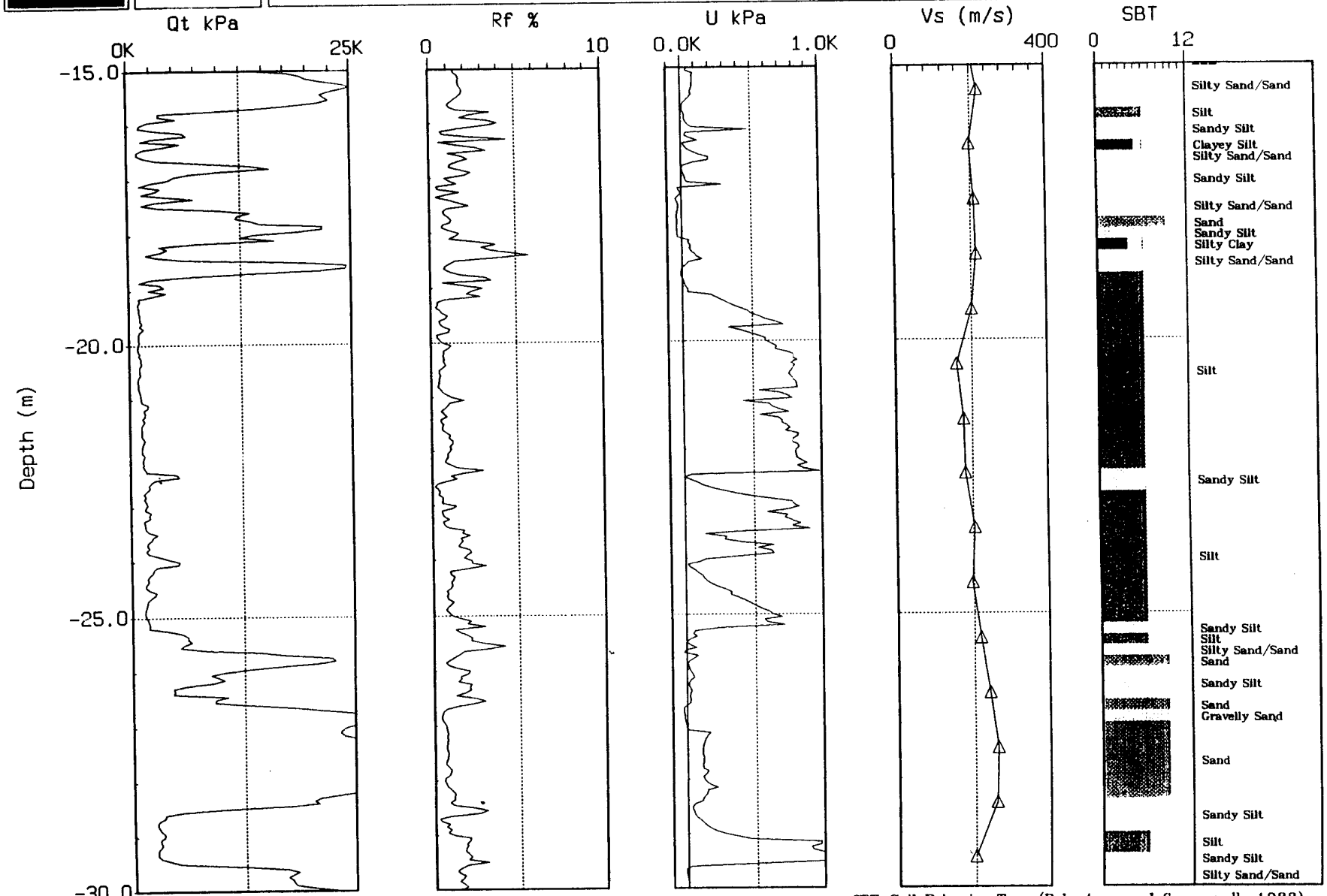
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S10.S.R.201, 09-SC-4
Location: JORDAN R.STRUCT.

Cone: 20 TON A AC041
Date: 08.07.96 15:07



Max. Depth: 30.55 (m)
Depth Inc.: 0.05 (m)

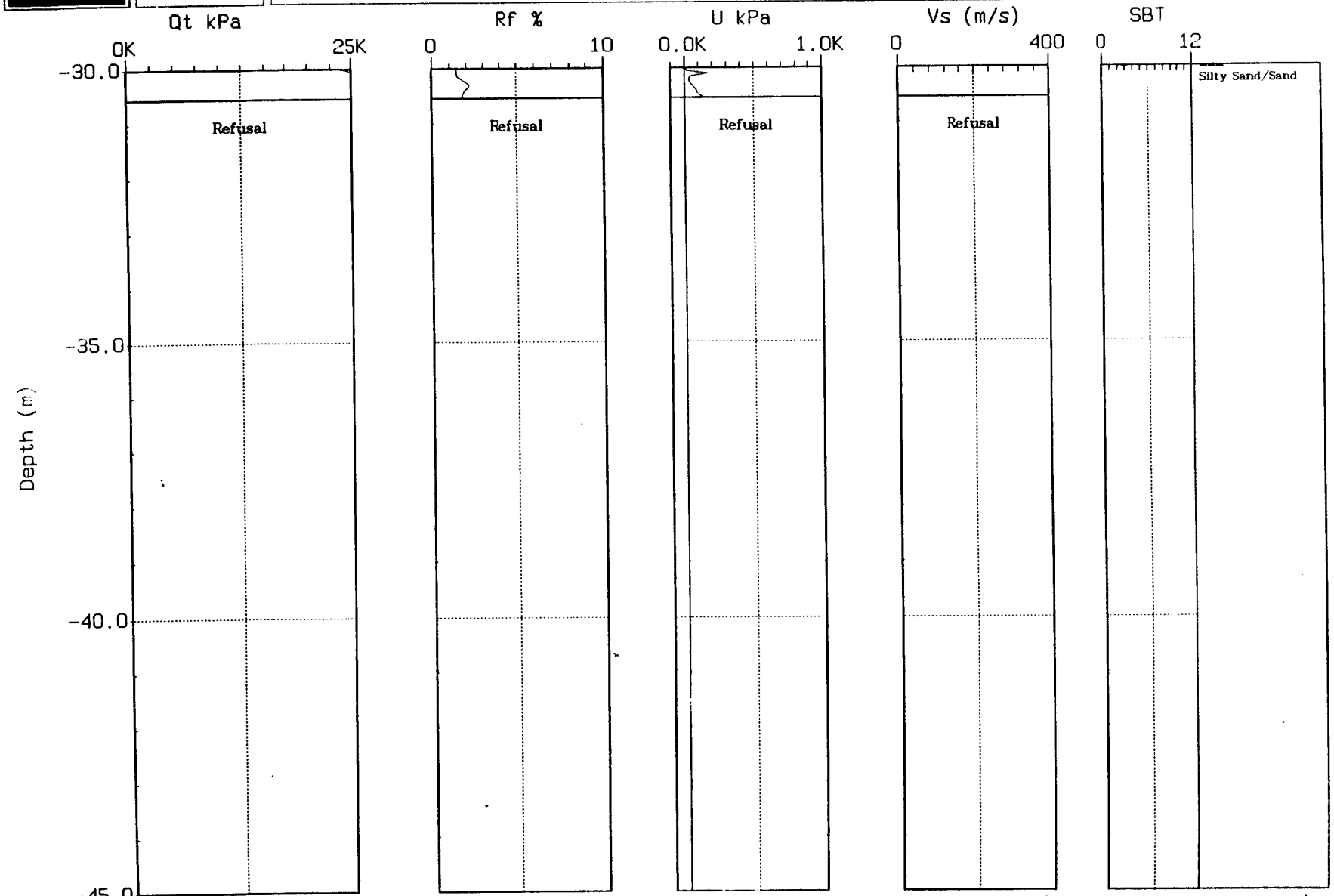
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S10:S.R.201, 09-SC-4
Location: JORDAN R.STRUCT.

Cone: 20 TON A AC041
Date: 08:07:96 15:07



Max. Depth: 30.55 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *09-SC-04*
Date: *7-Aug-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 041 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
0.95	1.10					
1.95	2.03	8.3	112	366	1.0 - 2.0	3.1 - 6.4
2.95	3.00	4.8	205	673	2.0 - 3.0	6.4 - 9.7
3.95	3.99	4.7	210	689	3.0 - 4.0	9.7 - 13.0
4.95	4.98	5.4	184	603	4.0 - 5.0	13.0 - 16.2
5.95	5.98	5.0	199	653	5.0 - 6.0	16.2 - 19.5
6.95	6.97	5.2	192	629	6.0 - 7.0	19.5 - 22.8
7.95	7.97	5.5	183	600	7.0 - 8.0	22.8 - 26.1
8.95	8.97	5.3	190	624	8.0 - 9.0	26.1 - 29.4
9.95	9.97	5.3	187	614	9.0 - 10.0	29.4 - 32.6
10.95	10.96	6.7	149	489	10.0 - 11.0	32.6 - 35.9
11.95	11.96	7.6	131	431	11.0 - 12.0	35.9 - 39.2
12.95	12.96	5.8	172	565	12.0 - 13.0	39.2 - 42.5
13.95	13.96	6.0	167	546	13.0 - 14.0	42.5 - 45.8
14.95	14.96	5.2	194	637	14.0 - 15.0	45.8 - 49.0
15.95	15.96	4.6	220	721	15.0 - 16.0	49.0 - 52.3
16.95	16.96	5.1	198	649	16.0 - 17.0	52.3 - 55.6
17.95	17.96	4.8	208	683	17.0 - 18.0	55.6 - 58.9
18.95	18.96	4.7	213	698	18.0 - 19.0	58.9 - 62.2
19.95	19.96	5.0	200	656	19.0 - 20.0	62.2 - 65.5
20.95	20.96	6.3	159	521	20.0 - 21.0	65.5 - 68.7
21.95	21.96	5.7	177	580	21.0 - 22.0	68.7 - 72.0
22.95	22.96	5.6	180	591	22.0 - 23.0	72.0 - 75.3
23.95	23.96	4.9	204	669	23.0 - 24.0	75.3 - 78.6
24.95	24.96	5.1	196	643	24.0 - 25.0	78.6 - 81.9
25.95	25.96	4.6	217	713	25.0 - 26.0	81.9 - 85.1
26.95	26.96	4.2	241	790	26.0 - 27.0	85.1 - 88.4
27.95	27.96	3.9	260	852	27.0 - 28.0	88.4 - 91.7
28.95	28.96	3.9	256	841	28.0 - 29.0	91.7 - 95.0
29.95	29.96	5.0	200	656	29.0 - 30.0	95.0 - 98.3

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0913-0913-1466
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 10
Site: I15,S10:S.R. 201,09-SC-23
Location: 900 W Structure
Cone: 20 TON A AD041
CPT Date: 96/06/08
CPT Time: 08:29
CPT File: KA09S23.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	15477.7	87.2	0.6	2.4	0.0	31.0	61.9	0.0	95.0	50.0	1.0
1.23	0.38	12591.0	219.8	1.7	7.2	0.0	42.0	83.9	0.0	95.0	50.0	1.0
2.05	0.62	4765.5	96.0	2.0	11.8	0.0	19.1	38.1	380.3	76.7	48.0	10.0
2.87	0.88	1820.3	31.3	1.7	16.2	0.0	7.3	14.6	144.3	44.5	42.0	10.0
3.69	1.12	590.9	4.6	0.8	20.1	0.0	3.0	5.9	45.7	0.0	0.0	6.0
4.51	1.38	370.1	2.0	0.5	23.2	0.0	1.9	3.7	27.8	0.0	0.0	6.0
5.33	1.62	488.4	2.0	0.4	26.3	0.0	2.4	4.7	37.0	0.0	0.0	6.0
6.15	1.88	2806.2	37.4	1.3	30.1	0.0	11.2	20.0	222.1	48.0	42.0	10.0
6.97	2.12	1446.5	43.5	3.0	33.4	1.2	7.2	12.2	112.9	0.0	0.0	6.0
7.79	2.38	3135.2	66.6	2.1	35.4	3.7	12.5	20.6	247.7	48.9	42.0	10.0
8.61	2.62	13996.7	331.2	2.4	37.6	6.1	46.7	74.5	0.0	90.9	48.0	1.0
9.43	2.88	6858.5	128.2	1.9	39.7	8.6	22.9	35.5	0.0	69.7	44.0	1.0
10.25	3.12	9969.5	46.3	0.5	42.0	11.0	19.9	30.1	0.0	79.6	46.0	1.0
11.07	3.38	9151.8	89.2	1.0	44.4	13.5	22.9	33.6	0.0	76.4	46.0	1.0
11.89	3.62	11179.5	131.1	1.2	46.7	15.9	27.9	40.0	0.0	81.4	46.0	1.0
12.71	3.88	15468.9	133.9	0.9	49.0	18.4	30.9	43.2	0.0	90.0	46.0	1.0
13.53	4.12	8575.0	167.9	2.0	51.3	20.8	28.6	39.0	0.0	72.4	44.0	1.0
14.35	4.38	4660.7	70.5	1.5	53.5	23.3	15.5	20.8	0.0	54.4	42.0	1.0
15.17	4.62	2137.6	53.7	2.5	55.6	25.8	10.7	14.0	164.5	0.0	0.0	6.0
15.99	4.88	4229.5	60.0	1.4	57.7	28.2	14.1	18.2	0.0	50.5	40.0	1.0
16.81	5.12	1144.9	22.3	2.0	59.8	30.7	5.7	7.2	84.4	0.0	0.0	6.0
17.63	5.38	600.3	2.0	0.3	61.2	33.1	3.0	3.8	40.5	0.0	0.0	3.0
18.45	5.62	667.0	2.0	0.3	61.9	35.6	3.3	4.1	45.6	0.0	0.0	3.0
19.27	5.88	910.0	2.0	0.2	63.2	38.0	3.6	4.5	64.7	30.0	32.0	6.0
20.09	6.12	1135.4	9.1	0.8	65.3	40.5	4.5	5.5	82.4	30.0	32.0	6.0
20.92	6.38	839.2	2.3	0.3	66.6	42.9	4.2	5.0	58.4	0.0	0.0	3.0
21.74	6.62	745.7	2.2	0.3	67.3	45.4	3.7	4.4	50.6	0.0	0.0	3.0
22.56	6.88	744.5	3.2	0.4	68.0	47.8	3.7	4.4	50.3	0.0	0.0	3.0
23.38	7.12	794.0	5.2	0.7	69.3	50.3	4.0	4.7	53.9	0.0	0.0	3.0
24.20	7.38	817.3	2.0	0.2	70.7	52.7	4.1	4.8	55.5	0.0	0.0	3.0
25.02	7.62	629.2	2.0	0.3	71.4	55.2	3.1	3.6	40.2	0.0	0.0	3.0
25.84	7.88	546.5	2.0	0.4	72.1	57.6	2.7	3.2	33.3	0.0	0.0	1.5
26.66	8.12	532.6	2.2	0.4	72.7	60.1	2.7	3.1	32.0	0.0	0.0	1.5
27.48	8.38	541.1	2.0	0.4	73.4	62.5	2.7	3.1	32.4	0.0	0.0	1.5
28.30	8.62	554.7	2.0	0.4	74.1	65.0	2.8	3.2	33.2	0.0	0.0	1.5
29.12	8.88	471.9	2.0	0.4	74.7	67.4	2.4	2.7	26.4	0.0	0.0	1.5
29.94	9.12	419.8	2.0	0.5	75.4	69.9	2.1	2.4	22.0	0.0	0.0	1.5
30.76	9.38	473.1	2.0	0.4	76.1	72.3	2.4	2.7	26.0	0.0	0.0	1.5
31.58	9.62	466.7	2.0	0.4	76.8	74.8	2.3	2.6	25.2	0.0	0.0	1.5
32.40	9.88	559.2	2.0	0.4	77.4	77.3	2.8	3.1	32.4	0.0	0.0	1.5
33.22	10.12	2980.2	26.4	0.9	78.9	79.7	9.9	10.9	0.0	36.0	38.0	1.0
34.04	10.38	2140.3	21.1	1.0	81.0	82.2	8.6	9.3	158.2	30.0	34.0	6.0
34.86	10.62	665.9	3.3	0.5	82.3	84.6	3.3	3.6	39.9	0.0	0.0	1.5
35.68	10.88	1568.7	9.9	0.6	83.7	87.1	6.3	6.7	111.8	30.0	32.0	6.0
36.50	11.12	2744.4	20.5	0.7	85.8	89.5	9.1	9.7	0.0	32.4	36.0	1.0
37.32	11.38	2691.5	49.6	1.8	87.9	92.0	10.8	11.2	200.9	31.5	36.0	6.0
38.14	11.62	1127.4	13.2	1.2	90.0	94.4	4.5	4.7	75.4	30.0	30.0	3.0
38.96	11.88	4424.4	73.7	1.7	92.1	96.9	14.7	15.0	0.0	45.1	38.0	1.0
39.78	12.12	2098.8	22.8	1.1	94.2	99.3	8.4	8.5	152.4	30.0	34.0	6.0
40.60	12.38	1036.4	5.4	0.5	96.2	101.8	4.1	4.1	67.1	30.0	30.0	3.0
41.42	12.62	1484.4	7.7	0.5	98.3	104.2	5.9	5.9	102.6	30.0	32.0	6.0
42.24	12.88	1366.4	22.2	1.6	100.3	106.7	5.5	5.3	92.7	30.0	30.0	3.0

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	730.5	3.4	0.5	101.7	109.1	3.7	3.5	41.6	0.0	0.0	1.5
43.88	13.38	11671.5	132.3	1.1	103.2	111.6	29.2	28.1	0.0	71.3	42.0	1.0
44.70	13.62	23719.0	336.8	1.4	105.5	114.0	59.3	56.5	0.0	91.3	46.0	1.0
45.52	13.88	6540.0	149.1	2.3	107.6	116.5	26.2	24.7	505.3	54.0	40.0	10.0
46.34	14.12	2445.4	30.2	1.2	109.7	118.9	9.8	9.1	177.3	30.0	34.0	6.0
47.16	14.38	1847.1	20.3	1.1	111.7	121.4	7.4	6.8	129.1	30.0	32.0	6.0
47.98	14.62	2751.8	63.7	2.3	113.8	123.9	11.0	10.1	201.1	30.0	34.0	6.0
48.80	14.88	21624.1	321.7	1.5	115.9	126.3	54.1	49.1	0.0	87.3	44.0	1.0
49.62	15.12	5319.9	69.6	1.3	118.2	128.8	17.7	16.0	0.0	46.8	38.0	1.0
50.44	15.38	14793.8	216.7	1.5	120.4	131.2	37.0	33.0	0.0	75.8	42.0	1.0
51.26	15.62	17013.8	249.8	1.5	122.7	133.7	42.5	37.6	0.0	79.6	44.0	1.0
52.08	15.88	9601.0	131.7	1.4	125.0	136.1	24.0	21.0	0.0	62.9	40.0	1.0
52.90	16.12	20992.5	383.8	1.8	127.3	138.6	52.5	45.5	0.0	85.1	44.0	1.0
53.72	16.38	9737.6	165.4	1.7	129.5	141.0	32.5	27.9	0.0	62.8	40.0	1.0
54.54	16.62	1232.0	4.3	0.3	131.7	143.5	4.9	4.2	76.5	30.0	30.0	3.0
55.36	16.88	1003.7	2.0	0.2	133.7	145.9	4.0	3.4	57.9	30.0	30.0	1.5
56.18	17.12	1668.5	18.3	1.1	135.7	148.4	6.7	5.6	110.8	30.0	30.0	3.0
57.00	17.38	999.5	7.8	0.8	137.8	150.8	4.0	3.3	56.9	30.0	30.0	1.5
57.82	17.62	808.5	2.0	0.2	139.2	153.3	4.0	3.4	41.3	0.0	0.0	1.5
58.64	17.88	932.2	2.0	0.2	140.5	155.7	3.7	3.1	50.9	30.0	30.0	1.5
59.46	18.12	896.5	2.0	0.2	141.9	158.2	4.5	3.7	47.7	0.0	0.0	1.5
60.28	18.38	804.4	2.0	0.2	142.5	160.6	4.0	3.3	40.1	0.0	0.0	1.5
61.10	18.62	968.3	6.8	0.7	143.9	163.1	3.9	3.2	52.9	30.0	30.0	1.5
61.93	18.88	1102.5	4.0	0.4	146.0	165.5	4.4	3.6	63.3	30.0	30.0	1.5
62.75	19.12	1616.0	19.0	1.2	148.0	168.0	6.5	5.2	104.0	30.0	30.0	3.0
63.57	19.38	1758.3	15.3	0.9	150.1	170.4	7.0	5.6	115.0	30.0	30.0	3.0
64.39	19.62	1054.3	3.6	0.3	152.1	172.9	4.2	3.3	58.3	30.0	30.0	1.5
65.21	19.88	1011.2	3.0	0.3	154.1	175.4	4.0	3.2	54.5	30.0	30.0	1.5
66.03	20.12	1079.0	3.9	0.4	156.2	177.8	4.3	3.4	59.6	30.0	30.0	1.5
66.85	20.38	1148.1	4.2	0.4	158.2	180.3	4.6	3.6	64.8	30.0	30.0	1.5
67.67	20.62	1235.6	5.8	0.5	160.3	182.7	4.9	3.8	71.4	30.0	30.0	1.5
68.49	20.88	1097.1	5.9	0.5	162.3	185.2	4.4	3.4	60.0	30.0	30.0	1.5
69.31	21.12	4318.3	58.6	1.4	164.4	187.6	14.4	11.0	0.0	36.1	34.0	1.0
70.13	21.38	2717.7	52.5	1.9	166.6	190.1	10.9	8.2	188.9	30.0	32.0	6.0
70.95	21.62	2640.3	35.1	1.3	168.6	192.5	10.6	8.0	182.3	30.0	32.0	6.0
71.77	21.88	1694.0	12.5	0.7	170.7	195.0	6.8	5.1	106.3	30.0	30.0	3.0
72.59	22.12	1625.1	22.6	1.4	172.7	197.4	6.5	4.8	100.4	30.0	30.0	3.0
73.41	22.38	3372.0	60.4	1.8	174.7	199.9	13.5	10.0	239.8	30.0	32.0	6.0
74.23	22.62	4374.4	75.0	1.7	176.9	202.3	14.6	10.7	0.0	35.4	34.0	1.0
75.05	22.88	17626.3	140.4	0.8	179.2	204.8	35.3	25.8	0.0	75.2	42.0	1.0
75.87	23.12	30030.1	111.6	0.4	181.6	207.2	50.1	36.3	0.0	90.2	44.0	1.0
76.69	23.38	9050.2	121.3	1.3	184.1	209.7	22.6	16.3	0.0	55.7	38.0	1.0
77.51	23.62	8621.6	93.5	1.1	186.4	212.1	21.6	15.5	0.0	54.1	38.0	1.0
78.33	23.88	3235.8	34.1	1.1	188.6	214.6	10.8	7.7	0.0	30.0	32.0	1.0
79.15	24.12	3418.1	16.8	0.5	190.8	217.0	11.4	8.1	0.0	30.0	32.0	1.0
79.97	24.38	3131.0	17.2	0.6	192.9	219.5	10.4	7.4	0.0	30.0	32.0	1.0
80.79	24.62	8029.6	97.7	1.2	195.2	222.0	20.1	14.1	0.0	51.4	38.0	1.0
81.61	24.88	14202.7	332.8	2.3	197.4	224.4	47.3	33.0	0.0	67.6	40.0	1.0
82.43	25.12	22670.4	374.2	1.7	199.6	226.9	56.7	39.3	0.0	80.8	42.0	1.0
83.25	25.38	16802.5	226.8	1.3	201.9	229.3	42.0	28.9	0.0	72.1	42.0	1.0
84.07	25.62	8923.0	142.8	1.6	204.2	231.8	29.7	20.4	0.0	53.8	38.0	1.0
84.89	25.88	5499.3	80.5	1.5	206.3	234.2	18.3	12.5	0.0	39.8	34.0	1.0
85.71	26.12	2619.9	39.7	1.5	208.5	236.7	10.5	7.1	174.0	30.0	30.0	3.0
86.53	26.38	2191.2	24.2	1.1	210.5	239.1	8.8	5.9	139.3	30.0	30.0	3.0
87.35	26.62	1772.0	12.1	0.7	212.6	241.6	7.1	4.8	105.4	30.0	30.0	1.5
88.17	26.88	1555.2	6.8	0.4	214.6	244.0	6.2	4.2	87.7	30.0	30.0	1.5
88.99	27.12	1320.1	2.0	0.2	216.6	246.5	5.3	3.5	68.6	30.0	30.0	1.5
89.81	27.38	1361.1	2.0	0.1	218.7	248.9	5.4	3.6	71.5	30.0	30.0	1.5
90.63	27.62	2948.6	15.7	0.5	220.8	251.4	9.8	6.5	0.0	30.0	30.0	1.0
91.45	27.88	9940.8	163.7	1.6	223.0	253.8	33.1	21.7	0.0	55.6	38.0	1.0
92.27	28.12	13033.7	246.6	1.9	225.2	256.3	43.4	28.3	0.0	63.2	40.0	1.0
93.09	28.38	13307.6	273.4	2.1	227.3	258.7	44.4	28.8	0.0	63.7	40.0	1.0
93.91	28.62	10987.0	317.1	2.9	229.4	261.2	43.9	28.4	839.7	58.1	38.0	6.0
94.73	28.88	13593.5	349.1	2.6	231.5	263.6	45.3	29.1	0.0	64.0	40.0	1.0
95.55	29.12	5787.9	178.2	3.1	233.7	266.1	23.2	14.8	423.0	39.4	34.0	6.0
96.37	29.38	1926.7	25.4	1.3	235.7	268.5	7.7	4.9	113.8	30.0	30.0	1.5
97.19	29.62	1778.2	12.2	0.7	237.7	271.0	7.1	4.5	101.6	30.0	30.0	1.5
98.01	29.88	3714.4	81.8	2.2	239.8	273.5	14.9	9.4	256.1	30.0	32.0	6.0
98.83	30.12	6914.9	169.2	2.4	241.8	275.9	27.7	17.4	511.8	44.0	36.0	6.0

ConeTec Inc. - CPT Interpretation
Run No: 96-0913-0913-1466
CPT File: KA09S23.COR

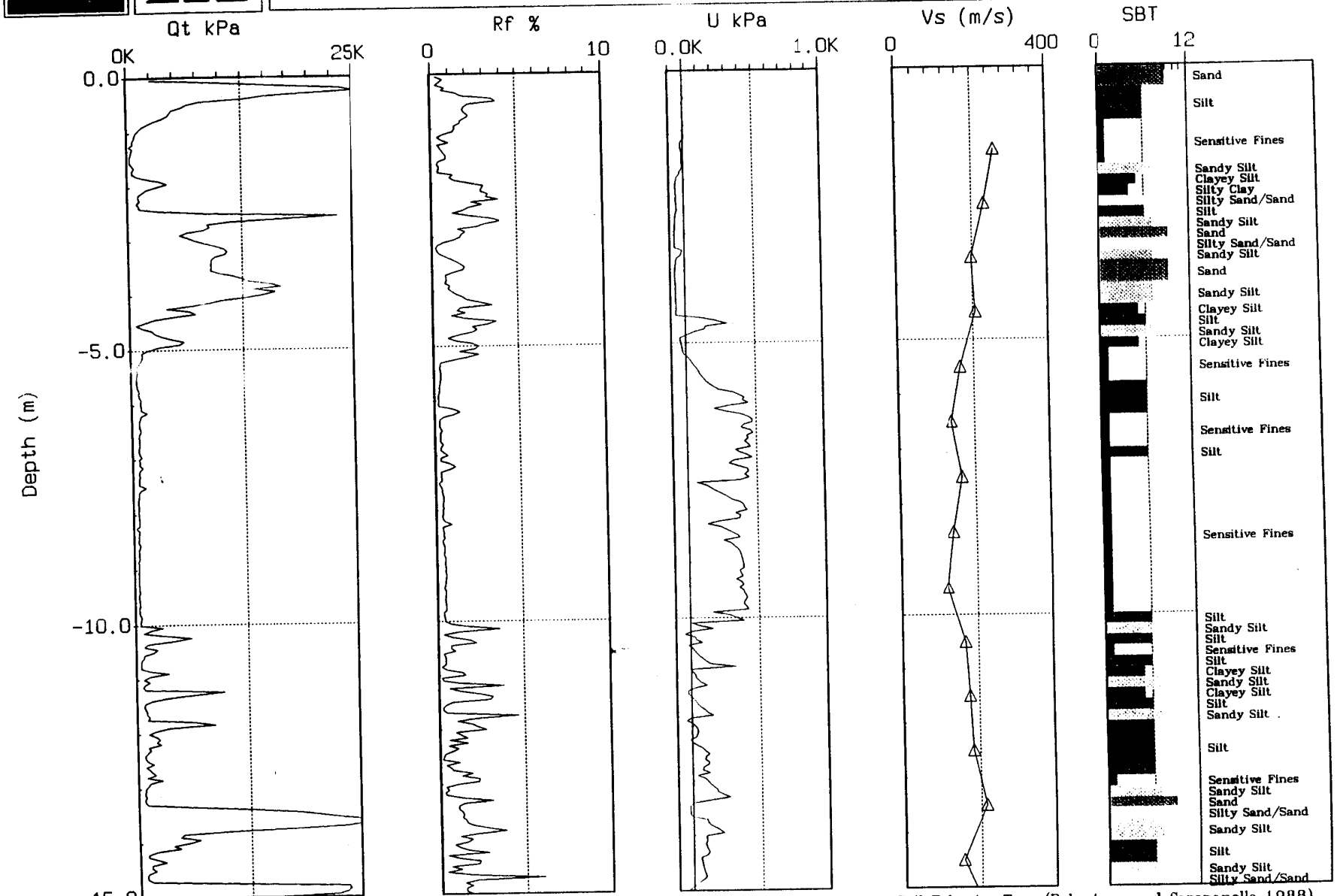
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	2776.4	62.6	2.3	243.9	278.4	11.1	7.0	180.3	30.0	30.0	3.0
100.47	30.62	6823.8	72.2	1.1	246.1	280.8	17.1	10.6	0.0	43.4	36.0	1.0
101.29	30.88	7857.3	153.9	2.0	248.3	283.3	26.2	16.3	0.0	47.3	36.0	1.0
102.11	31.12	12903.9	326.5	2.5	250.5	285.7	43.0	26.6	0.0	61.4	38.0	1.0
102.94	31.38	21917.9	325.4	1.5	252.7	288.2	54.8	33.7	0.0	76.5	42.0	1.0
103.76	31.62	23042.1	261.7	1.1	255.1	290.6	46.1	28.2	0.0	77.8	42.0	1.0
104.58	31.88	24921.9	329.7	1.3	257.4	293.1	62.3	38.0	0.0	79.9	42.0	1.0
105.40	32.12	19153.0	256.6	1.3	259.7	295.5	47.9	29.1	0.0	72.2	40.0	1.0
106.22	32.38	7946.4	201.2	2.5	261.9	298.0	31.8	19.2	590.9	46.9	36.0	6.0
107.04	32.62	4496.7	140.0	3.1	263.9	300.4	22.5	13.5	314.6	0.0	0.0	6.0
107.86	32.88	3992.3	103.9	2.6	266.0	302.9	16.0	9.6	273.9	30.0	32.0	6.0
108.68	33.12	4355.6	123.5	2.8	268.0	305.3	17.4	10.4	302.6	30.0	32.0	6.0
109.50	33.38	4663.6	132.5	2.8	270.1	307.8	18.7	11.1	326.9	31.2	32.0	6.0
110.32	33.62	5138.3	126.9	2.5	272.1	310.2	20.6	12.2	364.5	33.8	32.0	6.0
111.14	33.88	2405.3	34.9	1.5	274.2	312.7	9.6	5.7	145.5	30.0	30.0	3.0
111.96	34.12	2572.5	53.3	2.1	276.2	315.1	10.3	6.1	158.5	30.0	30.0	3.0
112.78	34.38	4759.8	136.5	2.9	278.3	317.6	19.0	11.2	333.1	31.3	32.0	6.0
113.60	34.62	2589.1	34.7	1.3	280.3	320.1	10.4	6.1	159.1	30.0	30.0	3.0
114.42	34.88	2105.6	16.4	0.8	282.4	322.5	8.4	4.9	120.1	30.0	30.0	1.5
115.24	35.12	1858.3	14.2	0.8	284.4	325.0	7.4	4.3	99.9	30.0	30.0	1.5
116.06	35.38	1798.2	12.9	0.7	286.5	327.4	7.2	4.2	94.7	30.0	30.0	1.5
116.88	35.62	1911.8	14.4	0.8	288.5	329.9	7.6	4.4	103.5	30.0	30.0	1.5
117.70	35.88	2180.9	18.0	0.8	290.6	332.3	8.7	5.0	124.6	30.0	30.0	1.5
118.52	36.12	1947.2	16.8	0.9	292.6	334.8	7.8	4.5	105.6	30.0	30.0	1.5
119.34	36.38	2966.5	26.7	0.9	294.7	337.2	9.9	5.6	0.0	30.0	30.0	1.0
120.16	36.62	3569.8	46.1	1.3	296.9	339.7	11.9	6.8	0.0	30.0	30.0	1.0
120.98	36.88	3068.0	30.6	1.0	299.1	342.1	10.2	5.8	0.0	30.0	30.0	1.0
121.80	37.12	4446.0	136.3	3.1	301.2	344.6	17.8	10.0	304.0	30.0	32.0	6.0
122.62	37.38	12945.1	229.8	1.8	303.3	347.0	43.2	24.2	0.0	58.8	38.0	1.0
123.44	37.62	8961.3	211.3	2.4	305.5	349.5	29.9	16.7	0.0	48.1	36.0	1.0
124.26	37.88	12476.7	320.1	2.6	307.6	351.9	41.6	23.2	0.0	57.5	38.0	1.0
125.08	38.12	6630.2	196.2	3.0	309.7	354.4	26.5	14.7	477.3	39.3	34.0	6.0
125.90	38.38	3327.9	55.0	1.7	311.8	356.8	13.3	7.4	212.7	30.0	30.0	3.0
126.72	38.62	3765.3	80.3	2.1	313.8	359.3	15.1	8.3	247.4	30.0	30.0	3.0
127.54	38.88	5198.3	148.1	2.8	315.9	361.7	20.8	11.5	361.7	32.0	32.0	6.0
128.36	39.12	6482.0	128.9	2.0	318.0	364.2	21.6	11.9	0.0	38.3	32.0	1.0
129.18	39.38	3637.1	61.6	1.7	320.1	366.6	14.5	8.0	236.0	30.0	30.0	3.0
130.00	39.62	4866.2	88.5	1.8	322.2	369.1	16.2	8.8	0.0	30.0	32.0	1.0
130.82	39.88	4429.2	102.3	2.3	324.3	371.6	17.7	9.6	298.7	30.0	30.0	3.0
131.64	40.12	2687.9	56.7	2.1	326.4	374.0	10.8	5.8	159.0	30.0	30.0	1.5
132.46	40.38	2934.0	81.3	2.8	328.4	376.5	14.7	7.9	178.3	0.0	0.0	3.0
133.28	40.62	3626.6	138.7	3.8	330.5	378.9	18.1	9.8	233.4	0.0	0.0	3.0
134.10	40.88	4509.6	88.9	2.0	332.5	381.4	18.0	9.7	303.7	30.0	30.0	3.0
134.92	41.12	8593.5	283.7	3.3	334.6	383.8	34.4	18.4	630.0	45.6	34.0	6.0
135.74	41.38	8508.9	251.6	3.0	336.6	386.3	34.0	18.2	622.9	45.3	34.0	6.0
136.56	41.62	2777.5	60.9	2.2	338.7	388.7	11.1	5.9	164.0	30.0	30.0	1.5
137.38	41.88	2687.0	67.4	2.5	340.7	391.2	10.7	5.7	156.4	30.0	30.0	1.5
138.20	42.12	2732.5	56.7	2.1	342.7	393.6	10.9	5.8	159.7	30.0	30.0	1.5
139.02	42.38	2289.3	44.5	1.9	344.8	396.1	9.2	4.8	123.9	30.0	30.0	1.5
139.84	42.62	3583.4	68.4	1.9	346.8	398.5	14.3	7.5	227.0	30.0	30.0	3.0
140.66	42.88	2623.1	24.1	0.9	349.0	401.0	8.7	4.6	0.0	30.0	30.0	1.0
141.48	43.12	3326.8	67.4	2.0	351.1	403.4	13.3	7.0	205.8	30.0	30.0	3.0
142.30	43.38	28032.2	391.3	1.4	353.2	405.9	70.1	36.5	0.0	78.7	42.0	1.0

CONETEC

Kleinfelder

Site: 15, S10: SR201, 09-SC-23
Location: 900 W Structure

Cone: 20 TON A AD041
Date: 08:06:96 08:29



Max. Depth: 43.60 (m)
Depth Inc.: 0.05 (m)

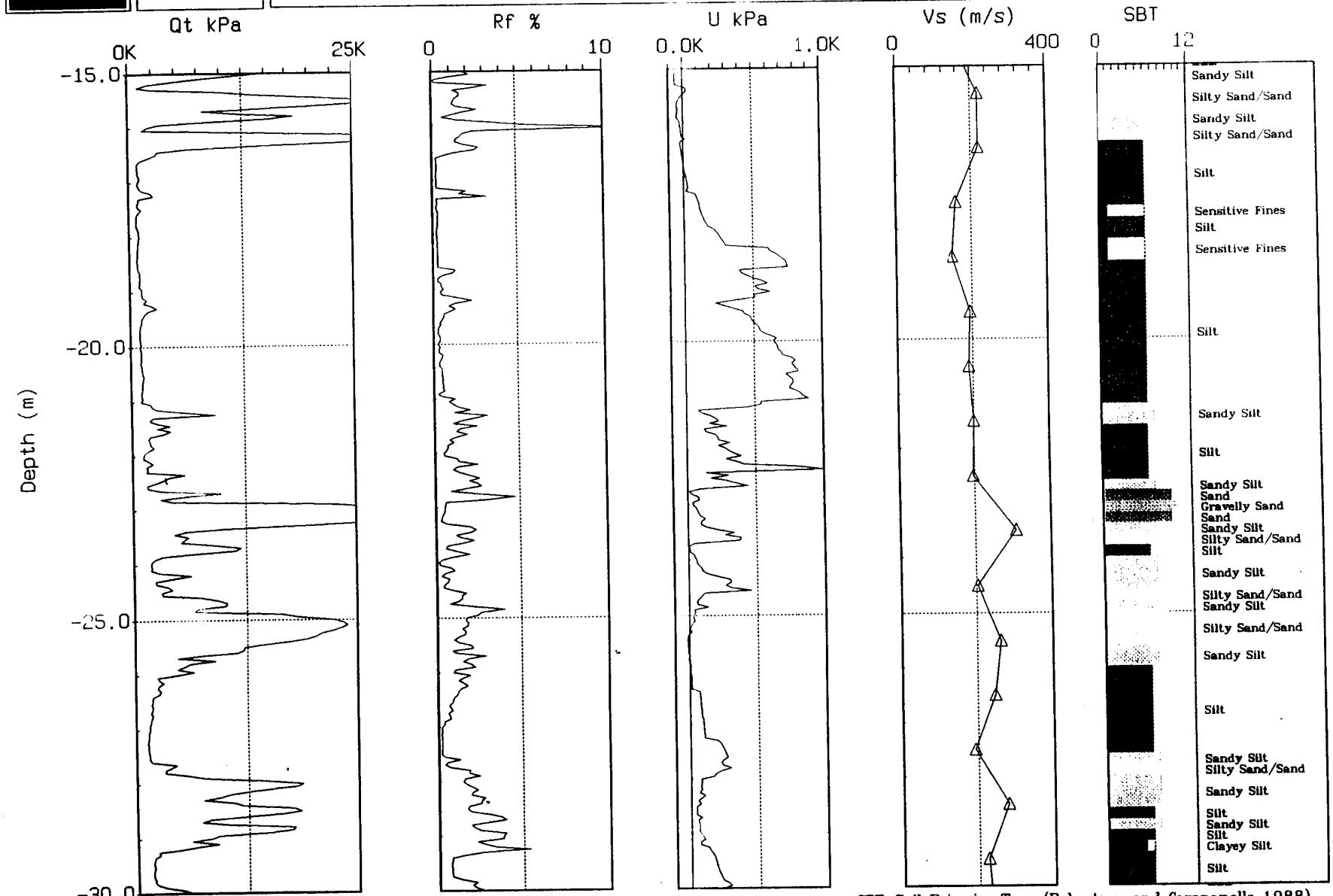
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: 15, S10: SR201, 09-SC-23
Location: 900 W Structure

Cone: 20 TON A AD041
Date: 08:06:96 08:29



Max. Depth: 43.60 (m)
Depth Inc.: 0.05 (m)

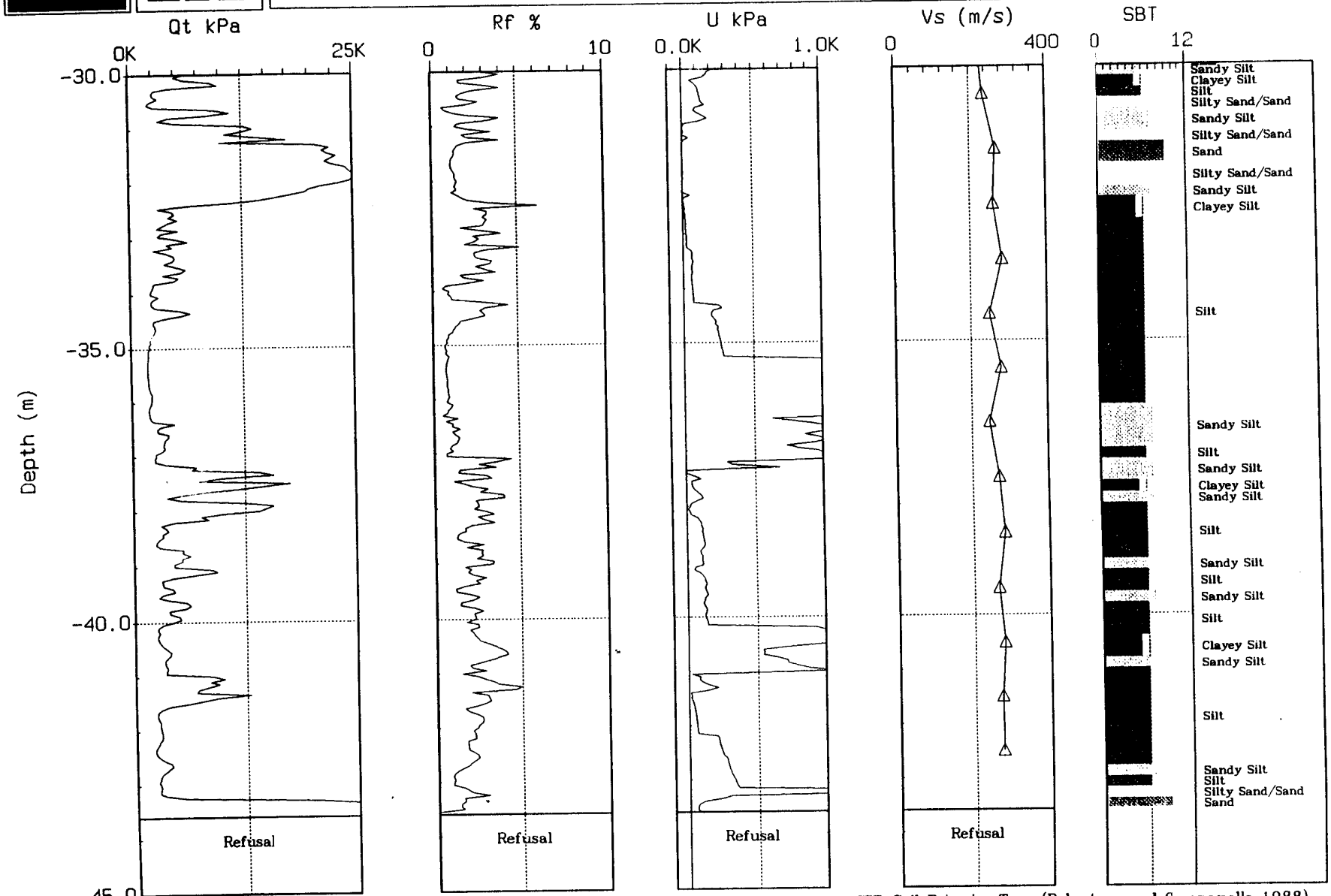
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: 15, S10: SR201, 09-SC-23
Location: 900 W Structure

Cone: 20 TON A AD041
Date: 08:06:96 08:29



Max. Depth: 43.60 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *09-SC-23*
Date: *6-Aug-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 041 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
1.00	1.15					
2.00	2.08	3.6	* 259	848	1.0 - 2.0	3.3 - 6.6
3.00	3.05	4.2	232	762	2.0 - 3.0	6.6 - 9.8
4.00	4.04	5.0	197	646	3.0 - 4.0	9.8 - 13.1
5.00	5.03	4.8	* 206	677	4.0 - 5.0	13.1 - 16.4
6.00	6.03	6.1	163	535	5.0 - 6.0	16.4 - 19.7
7.00	7.02	7.2	138	454	6.0 - 7.0	19.7 - 23.0
8.00	8.02	6.1	163	536	7.0 - 8.0	23.0 - 26.2
9.00	9.02	7.3	137	448	8.0 - 9.0	26.2 - 29.5
10.00	10.02	8.3	* 120	395	9.0 - 10.0	29.5 - 32.8
11.00	11.01	6.0	166	546	10.0 - 11.0	32.8 - 36.1
12.00	12.01	5.7	175	575	11.0 - 12.0	36.1 - 39.4
13.00	13.01	5.5	183	601	12.0 - 13.0	39.4 - 42.7
14.00	14.01	4.7	215	705	13.0 - 14.0	42.7 - 45.9
15.00	15.01	6.5	* 153	501	14.0 - 15.0	45.9 - 49.2
16.00	16.01	4.5	220	722	15.0 - 16.0	49.2 - 52.5
17.00	17.01	4.5	220	722	16.0 - 17.0	52.5 - 55.8
18.00	18.01	6.3	158	517	17.0 - 18.0	55.8 - 59.1
19.00	19.01	6.8	147	482	18.0 - 19.0	59.1 - 62.3
20.00	20.01	5.2	* 194	637	19.0 - 20.0	62.3 - 65.6
21.00	21.01	5.3	189	619	20.0 - 21.0	65.6 - 68.9
22.00	22.01	5.0	200	656	21.0 - 22.0	68.9 - 72.2
23.00	23.01	5.1	196	643	22.0 - 23.0	72.2 - 75.5
24.00	24.01	3.3	308	1009	23.0 - 24.0	75.5 - 78.7
25.00	25.01	4.9	* 204	669	24.0 - 25.0	78.7 - 82.0
26.00	26.01	3.8	263	863	25.0 - 26.0	82.0 - 85.3
27.00	27.01	4.1	247	810	26.0 - 27.0	85.3 - 88.6
28.00	28.01	5.2	192	631	27.0 - 28.0	88.6 - 91.9
29.00	29.01	3.6	278	911	28.0 - 29.0	91.9 - 95.1
30.00	30.01	4.5	* 225	737	29.0 - 30.0	95.1 - 98.4
31.00	31.01	4.3	235	772	30.0 - 31.0	98.4 - 101.7
32.00	32.00	3.8	267	875	31.0 - 32.0	101.7 - 105.0
33.00	33.00	3.8	261	856	32.0 - 33.0	105.0 - 108.3
34.00	34.00	3.5	283	929	33.0 - 34.0	108.3 - 111.5
35.00	35.00	4.0	* 249	818	34.0 - 35.0	111.5 - 114.8
36.00	36.00	3.6	278	911	35.0 - 36.0	114.8 - 118.1
37.00	37.00	4.0	247	812	36.0 - 37.0	118.1 - 121.4
38.00	38.00	3.7	270	887	37.0 - 38.0	121.4 - 124.7
39.00	39.00	3.6	282	924	38.0 - 39.0	124.7 - 128.0
40.00	40.00	3.8	* 265	868	39.0 - 40.0	128.0 - 131.2
41.00	41.00	3.6	279	914	40.0 - 41.0	131.2 - 134.5
42.00	42.00	3.7	271	889	41.0 - 42.0	134.5 - 137.8
43.00	43.00	3.7	272	894	42.0 - 43.0	137.8 - 141.1

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0805-1136-4609
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 10 - 900 W
Site: I15, S10: Rmp 900W-C, 09-RC-30
Location: 900W-C/900W-D
Cone: 20 TON A 040
CPT Date: 96/04/06
CPT Time: 12:08
CPT File: KA09R030.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	32413.1	147.2	0.5	2.5	0.0	54.0	108.0	0.0	95.0	50.0	1.0
1.23	0.38	21422.0	168.2	0.8	7.4	0.0	42.8	85.7	0.0	95.0	50.0	1.0
2.05	0.62	6458.0	189.0	2.9	12.1	0.0	25.8	51.7	515.7	85.0	48.0	10.0
2.87	0.88	2779.6	77.2	2.8	16.6	0.0	13.9	27.8	221.0	0.0	0.0	10.0
3.69	1.12	1243.4	39.8	3.2	21.1	0.0	8.3	16.6	97.8	0.0	0.0	10.0
4.51	1.38	925.2	27.8	3.0	25.6	0.0	6.2	11.9	72.0	0.0	0.0	6.0
5.33	1.62	1044.3	39.7	3.8	30.1	0.0	10.4	18.6	81.1	0.0	0.0	6.0
6.15	1.88	1131.7	46.4	4.1	34.4	0.0	11.3	18.9	87.8	0.0	0.0	6.0
6.97	2.12	965.0	40.2	4.2	37.6	1.2	9.7	15.4	74.1	0.0	0.0	6.0
7.79	2.38	4223.8	24.6	0.6	39.6	3.7	14.1	21.9	0.0	55.8	42.0	1.0
8.61	2.62	6578.2	18.3	0.3	41.9	6.1	16.4	24.9	0.0	67.7	44.0	1.0
9.43	2.88	8251.8	21.0	0.3	44.2	8.6	16.5	24.3	0.0	73.5	44.0	1.0
10.25	3.12	9215.7	29.0	0.3	46.7	11.0	18.4	26.4	0.0	75.9	46.0	1.0
11.07	3.38	12855.0	59.3	0.5	49.1	13.5	25.7	35.9	0.0	84.7	46.0	1.0
11.89	3.62	8823.5	49.9	0.6	51.4	15.9	22.1	30.1	0.0	73.2	44.0	1.0
12.71	3.88	2089.0	24.7	1.2	53.6	18.4	8.4	11.2	161.4	31.3	38.0	6.0
13.53	4.12	799.4	7.7	1.0	55.7	20.8	4.0	5.2	57.8	0.0	0.0	6.0
14.35	4.38	952.8	12.9	1.4	57.7	23.3	4.8	6.1	69.7	0.0	0.0	6.0
15.17	4.62	2265.9	32.7	1.4	59.7	25.8	9.1	11.5	174.4	32.1	38.0	6.0
15.99	4.88	2346.4	21.8	0.9	61.8	28.2	9.4	11.7	180.5	32.6	38.0	6.0
16.81	5.12	972.6	14.7	1.5	63.8	30.7	4.9	6.0	70.2	0.0	0.0	6.0
17.63	5.38	450.4	4.9	1.1	65.2	33.1	2.3	2.7	28.2	0.0	0.0	1.5
18.45	5.62	723.7	11.2	1.6	66.6	35.6	3.6	4.3	49.7	0.0	0.0	3.0
19.27	5.88	622.2	5.7	0.9	67.9	38.0	3.1	3.7	41.3	0.0	0.0	3.0
20.09	6.12	592.6	5.0	0.8	68.6	40.5	3.0	3.5	38.7	0.0	0.0	3.0
20.92	6.38	606.2	5.6	0.9	69.3	42.9	3.0	3.6	39.5	0.0	0.0	3.0
21.74	6.62	607.5	5.9	1.0	69.9	45.4	3.0	3.6	39.4	0.0	0.0	3.0
22.56	6.88	652.5	6.3	1.0	71.3	47.8	3.3	3.8	42.7	0.0	0.0	3.0
23.38	7.12	714.4	6.7	0.9	73.3	50.3	3.6	4.1	47.3	0.0	0.0	3.0
24.20	7.38	647.0	3.8	0.6	74.7	52.7	3.2	3.7	41.6	0.0	0.0	3.0
25.02	7.62	778.5	8.2	1.1	76.1	55.2	3.9	4.4	51.8	0.0	0.0	3.0
25.84	7.88	550.2	5.5	1.0	77.4	57.6	2.8	3.1	33.2	0.0	0.0	1.5
26.66	8.12	668.1	5.6	0.8	78.1	60.1	3.3	3.7	42.4	0.0	0.0	3.0
27.48	8.38	567.8	3.4	0.6	78.8	62.5	2.8	3.1	34.1	0.0	0.0	1.5
28.30	8.62	510.8	2.7	0.5	79.4	65.0	2.6	2.8	29.3	0.0	0.0	1.5
29.12	8.88	562.9	4.6	0.8	80.1	67.4	2.8	3.1	33.2	0.0	0.0	1.5
29.94	9.12	516.3	3.6	0.7	80.8	69.9	2.6	2.8	29.2	0.0	0.0	1.5
30.76	9.38	494.7	4.7	0.9	81.5	72.3	2.5	2.7	27.3	0.0	0.0	1.5
31.58	9.62	681.4	7.1	1.0	82.8	74.8	3.4	3.7	41.9	0.0	0.0	3.0
32.40	9.88	2262.3	30.7	1.4	84.9	77.3	9.0	9.6	168.0	30.0	34.0	6.0
33.22	10.12	2577.8	17.9	0.7	87.0	79.7	8.6	9.0	0.0	30.4	36.0	1.0
34.04	10.38	680.7	3.7	0.5	88.4	82.2	3.4	3.5	40.8	0.0	0.0	1.5
34.86	10.62	1065.2	10.9	1.0	89.8	84.6	4.3	4.4	71.3	30.0	30.0	3.0
35.68	10.88	3147.1	38.9	1.2	91.9	87.1	10.5	10.7	0.0	35.4	36.0	1.0
36.50	11.12	6008.8	82.4	1.4	94.0	89.5	20.0	20.2	0.0	53.6	40.0	1.0
37.32	11.38	1585.6	13.8	0.9	96.2	92.0	6.3	6.3	111.8	30.0	32.0	6.0
38.14	11.62	3827.2	59.9	1.6	98.3	94.4	12.8	12.6	0.0	40.0	38.0	1.0
38.96	11.88	2594.7	45.9	1.8	100.4	96.9	10.4	10.1	191.8	30.0	34.0	6.0
39.78	12.12	1409.3	16.5	1.2	102.4	99.3	5.6	5.5	96.6	30.0	30.0	3.0
40.60	12.38	1319.3	17.0	1.3	104.5	101.8	5.3	5.1	89.0	30.0	30.0	3.0
41.42	12.62	944.1	15.2	1.6	106.5	104.2	4.7	4.5	58.7	0.0	0.0	3.0
42.24	12.88	19249.2	116.0	0.6	108.8	106.7	38.5	36.1	0.0	84.8	44.0	1.0

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	22713.0	148.5	0.7	111.2	109.1	45.4	42.2	0.0	89.3	46.0	1.0
43.88	13.38	13913.3	75.6	0.5	113.6	111.6	27.8	25.6	0.0	74.9	42.0	1.0
44.70	13.62	2075.2	44.7	2.2	115.8	114.0	8.3	7.5	147.6	30.0	32.0	6.0
45.52	13.88	1390.1	27.2	2.0	117.9	116.5	7.0	6.3	92.5	0.0	0.0	3.0
46.34	14.12	10158.9	110.7	1.1	120.1	118.9	25.4	22.7	0.0	65.1	42.0	1.0
47.16	14.38	1131.9	14.7	1.3	122.2	121.4	5.7	5.0	71.1	0.0	0.0	3.0
47.98	14.62	1184.0	9.2	0.8	124.3	123.9	4.7	4.2	74.9	30.0	30.0	3.0
48.80	14.88	4795.8	17.9	0.4	126.4	126.3	12.0	10.4	0.0	42.8	38.0	1.0
49.62	15.12	8373.5	41.6	0.5	128.7	128.8	20.9	18.1	0.0	58.6	40.0	1.0
50.44	15.38	2708.5	23.9	0.9	131.0	131.2	9.0	7.7	0.0	30.0	32.0	1.0
51.26	15.62	8742.1	97.7	1.1	133.2	133.7	21.9	18.5	0.0	59.3	40.0	1.0
52.08	15.88	3560.5	37.9	1.1	135.4	136.1	11.9	10.0	0.0	33.3	34.0	1.0
52.90	16.12	1367.2	7.9	0.6	137.6	138.6	5.5	4.6	87.3	30.0	30.0	3.0
53.72	16.38	1115.6	9.4	0.8	139.6	141.0	4.5	3.7	66.8	30.0	30.0	1.5
54.54	16.62	1153.1	6.7	0.6	141.7	143.5	4.6	3.8	69.4	30.0	30.0	1.5
55.36	16.88	1054.6	6.4	0.6	143.7	145.9	4.2	3.4	61.2	30.0	30.0	1.5
56.18	17.12	1083.8	7.7	0.7	145.7	148.4	4.3	3.5	63.2	30.0	30.0	1.5
57.00	17.38	980.0	7.3	0.7	147.8	150.8	3.9	3.2	54.5	30.0	30.0	1.5
57.82	17.62	1182.0	9.3	0.8	149.8	153.3	4.7	3.8	70.3	30.0	30.0	1.5
58.64	17.88	1420.8	19.8	1.4	151.9	155.7	5.7	4.5	89.1	30.0	30.0	3.0
59.46	18.12	2971.2	23.5	0.8	154.0	158.2	9.9	7.8	0.0	30.0	32.0	1.0
60.28	18.38	2822.0	44.6	1.6	156.1	160.6	11.3	8.8	200.4	30.0	32.0	6.0
61.10	18.62	1266.7	15.2	1.2	158.2	163.1	5.1	3.9	75.6	30.0	30.0	1.5
61.93	18.88	1205.5	14.7	1.2	160.2	165.5	4.8	3.7	70.4	30.0	30.0	1.5
62.75	19.12	1331.8	14.9	1.1	162.3	168.0	5.3	4.1	80.1	30.0	30.0	1.5
63.57	19.38	1328.7	14.5	1.1	164.3	170.4	5.3	4.1	79.5	30.0	30.0	1.5
64.39	19.62	1870.7	23.4	1.3	166.3	172.9	7.5	5.7	122.5	30.0	30.0	3.0
65.21	19.88	1449.2	18.8	1.3	168.4	175.4	5.8	4.4	88.4	30.0	30.0	3.0
66.03	20.12	1781.3	22.7	1.3	170.4	177.8	7.1	5.3	114.6	30.0	30.0	3.0
66.85	20.38	1908.3	16.9	0.9	172.5	180.3	7.6	5.7	124.4	30.0	30.0	3.0
67.67	20.62	2790.1	37.2	1.3	174.5	182.7	11.2	8.3	194.6	30.0	32.0	6.0
68.49	20.88	1928.6	30.4	1.6	176.6	185.2	7.7	5.7	125.3	30.0	30.0	3.0
69.31	21.12	3682.9	34.0	0.9	178.7	187.6	12.3	9.0	0.0	30.3	32.0	1.0
70.13	21.38	2926.3	27.1	0.9	180.9	190.1	9.8	7.1	0.0	30.0	32.0	1.0
70.95	21.62	2369.7	25.2	1.1	183.0	192.5	9.5	6.9	159.5	30.0	30.0	3.0
71.77	21.88	5255.6	64.2	1.2	185.1	195.0	17.5	12.6	0.0	40.0	36.0	1.0
72.59	22.12	5728.1	32.3	0.6	187.3	197.4	14.3	10.2	0.0	42.3	36.0	1.0
73.41	22.38	1646.2	11.7	0.7	189.5	199.9	6.6	4.7	100.5	30.0	30.0	3.0
74.23	22.62	2339.9	42.1	1.8	191.5	202.3	9.4	6.6	155.7	30.0	30.0	3.0
75.05	22.88	3139.2	54.3	1.7	193.6	204.8	12.6	8.8	219.3	30.0	32.0	6.0
75.87	23.12	4577.6	52.2	1.1	195.7	207.2	15.3	10.7	0.0	35.3	34.0	1.0
76.69	23.38	2375.7	37.3	1.6	197.8	209.7	9.5	6.6	157.5	30.0	30.0	3.0
77.51	23.62	4814.2	55.9	1.2	199.9	212.1	16.0	11.1	0.0	36.4	34.0	1.0
78.33	23.88	3581.4	63.4	1.8	202.0	214.6	14.3	9.9	253.2	30.0	32.0	6.0
79.15	24.12	4928.4	72.2	1.5	204.1	217.0	16.4	11.3	0.0	36.8	34.0	1.0
79.97	24.38	6268.0	63.8	1.0	206.4	219.5	15.7	10.7	0.0	43.5	36.0	1.0
80.79	24.62	9842.1	128.2	1.3	208.7	222.0	24.6	16.7	0.0	56.3	38.0	1.0
81.61	24.88	12876.9	151.0	1.2	211.0	224.4	32.2	21.7	0.0	63.8	40.0	1.0
82.43	25.12	12193.9	179.6	1.5	213.3	226.9	30.5	20.4	0.0	62.1	40.0	1.0
83.25	25.38	24669.9	268.0	1.1	215.6	229.3	49.3	32.9	0.0	82.1	42.0	1.0
84.07	25.62	30932.7	213.6	0.7	218.1	231.8	61.9	41.0	0.0	88.5	44.0	1.0
84.89	25.88	33507.3	102.3	0.3	220.5	234.2	55.8	36.8	0.0	90.6	44.0	1.0
85.71	26.12	30551.4	74.6	0.2	223.1	236.7	50.9	33.4	0.0	87.8	44.0	1.0
86.53	26.38	21410.9	75.5	0.4	225.6	239.1	42.8	27.9	0.0	77.4	42.0	1.0
87.35	26.62	3528.5	70.5	2.0	227.8	241.6	14.1	9.2	244.7	30.0	32.0	6.0
88.17	26.88	2111.2	17.4	0.8	229.9	244.0	8.4	5.5	131.0	30.0	30.0	3.0
88.99	27.12	2340.0	23.2	1.0	231.9	246.5	9.4	6.0	148.9	30.0	30.0	3.0
89.81	27.38	10033.2	98.2	1.0	234.1	248.9	25.1	16.0	0.0	55.2	38.0	1.0
90.63	27.62	18315.3	145.3	0.8	236.4	251.4	36.6	23.3	0.0	72.3	40.0	1.0
91.45	27.88	15638.9	92.1	0.6	238.9	253.8	31.3	19.8	0.0	67.6	40.0	1.0
92.27	28.12	17737.1	123.2	0.7	241.3	256.3	35.5	22.4	0.0	71.1	40.0	1.0
93.09	28.38	15854.4	144.4	0.9	243.7	258.7	31.7	19.9	0.0	67.7	40.0	1.0
93.91	28.62	3599.1	65.6	1.8	245.9	261.2	14.4	9.0	247.4	30.0	32.0	6.0
94.73	28.88	2169.3	23.0	1.1	248.0	263.6	8.7	5.4	132.6	30.0	30.0	3.0
95.55	29.12	2121.0	22.8	1.1	250.0	266.1	8.5	5.3	128.4	30.0	30.0	3.0
96.37	29.38	2950.6	40.9	1.4	252.1	268.5	11.8	7.3	194.4	30.0	30.0	3.0
97.19	29.62	8420.4	123.8	1.5	254.2	271.0	28.1	17.2	0.0	49.0	36.0	1.0
98.01	29.88	5476.3	113.0	2.1	256.4	273.5	18.3	11.2	0.0	36.5	34.0	1.0
98.83	30.12	2685.2	29.0	1.1	258.5	275.9	9.0	5.4	0.0	30.0	30.0	1.0

ConeTec Inc. - CPT Interpretation
Run No: 96-0805-1136-4609
CPT File: KA09R030.COR

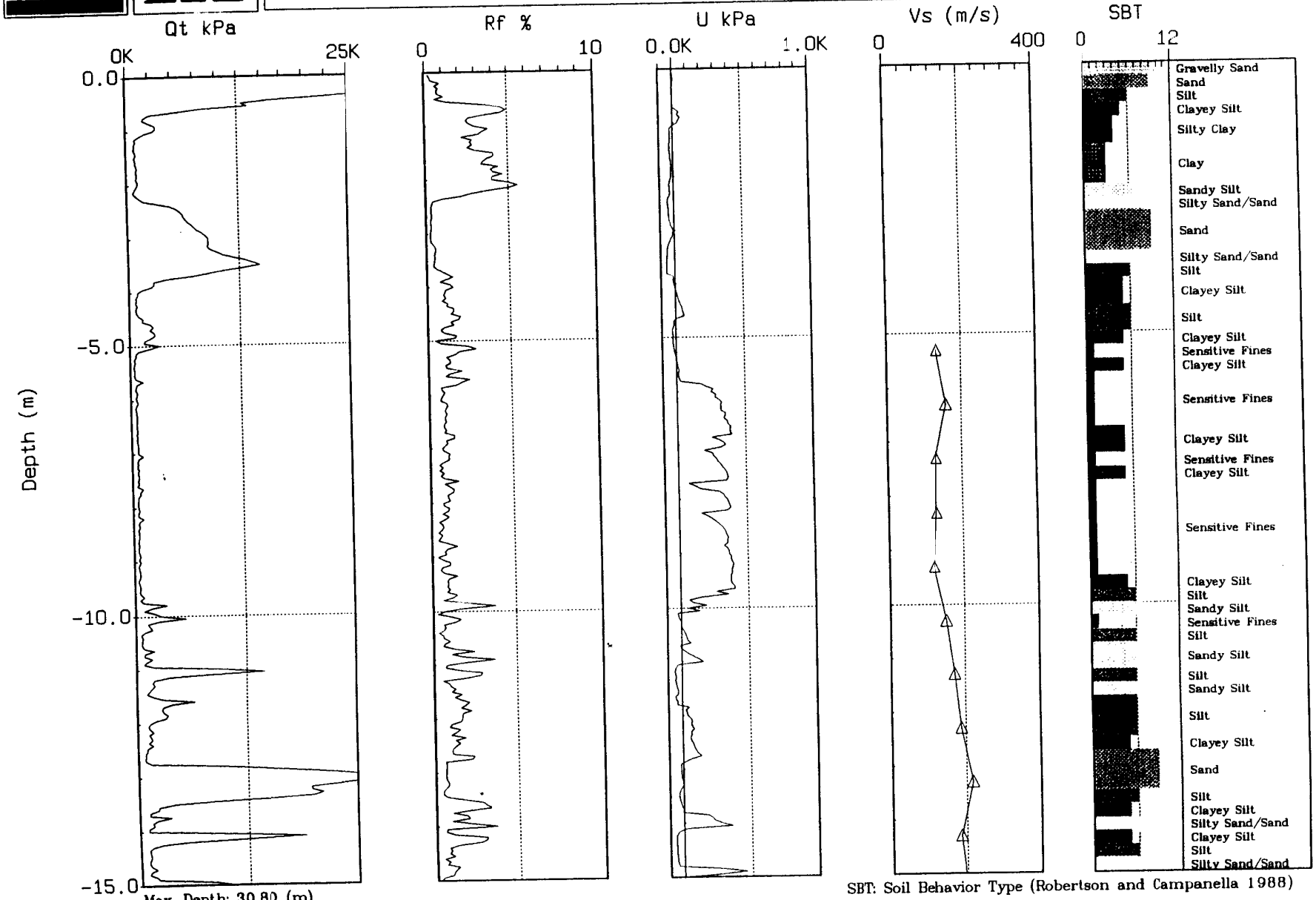
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60 (blows/ft)	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	3712.1	57.4	1.5	260.7	278.4	12.4	7.5	0.0	30.0	30.0	1.0
100.47	30.62	20666.4	115.5	0.6	263.0	280.8	41.3	24.9	0.0	74.2	40.0	1.0

CONETEC

Kleinfelder

Site: I15, S10: Rmp 900W-C, 09-RC-30
Location: 900W-C/900W-D

Cone: 20 TON A 040
Date: 06:04:96 12:08



Max. Depth: 30.80 (m)
Depth Inc.: 0.05 (m)

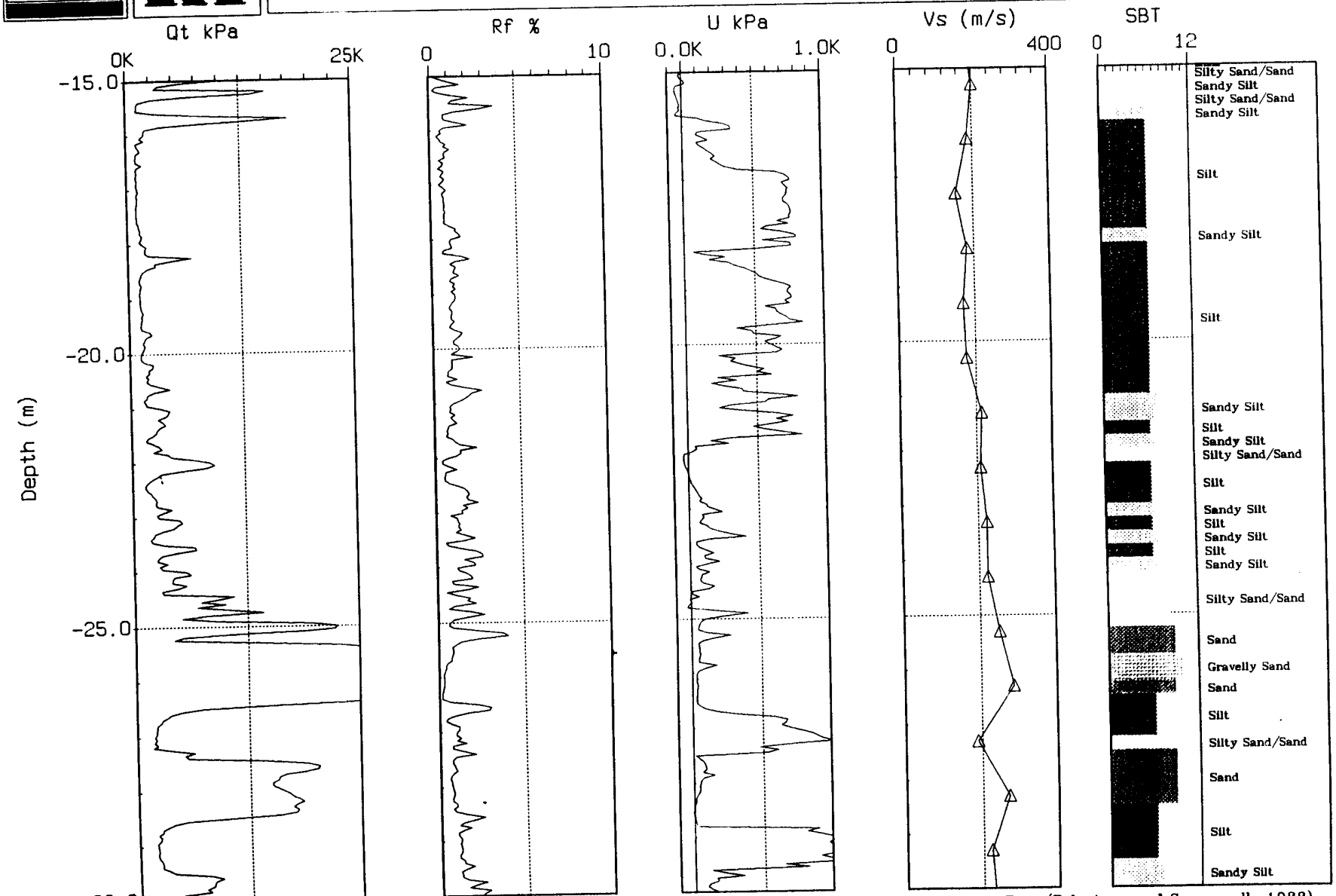
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S10 Amp 900W-C, 09-RC-30
Location: 900W-C/900W-D

Cone: 20 TCN A 040
Date: 06.04.96 12:08



Max. Depth: 30.80 (m)
Depth Inc.: 0.05 (m)

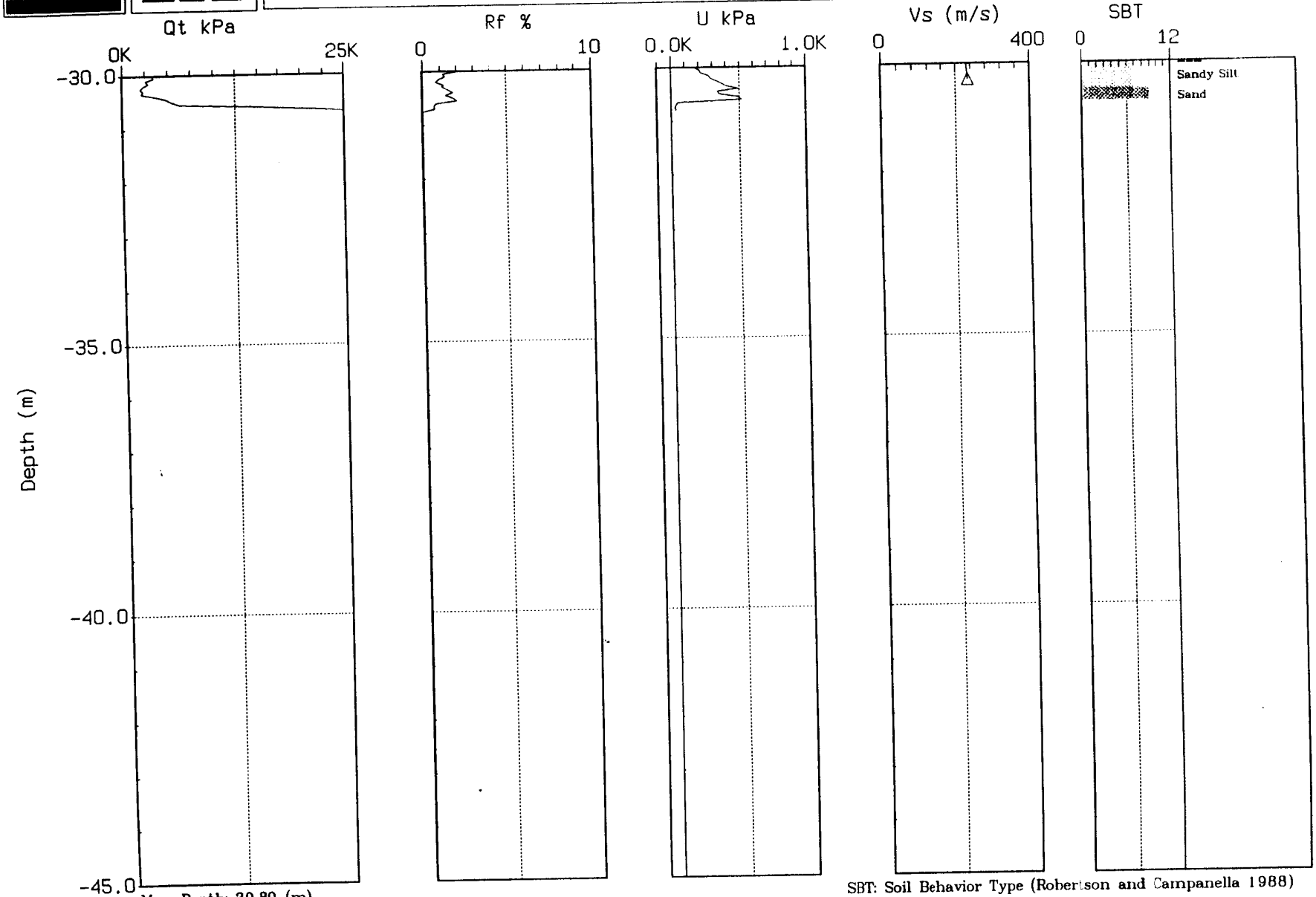
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S10 Ramp 900W-C, 09-RC-30
Location: 900W-C/900W-D

Cone: 20 TON A 040
Date: 06:04:96 12:08



Max. Depth: 30.80 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *09-RC-30*
Date: *4-Jun-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 040 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
4.80	4.83					
5.80	5.83	7.5	133	435	4.8 - 5.8	15.7 - 19.0
6.80	6.82	6.3	158	519	5.8 - 6.8	19.0 - 22.3
7.80	7.82	7.7	129	425	6.8 - 7.8	22.3 - 25.6
8.80	8.82	7.8	128	420	7.8 - 8.8	25.6 - 28.9
9.80	9.82	8.4	119	390	8.8 - 9.8	28.9 - 32.2
10.80	10.81	6.6	151	496	9.8 - 10.8	32.2 - 35.4
11.80	11.81	5.8	172	565	10.8 - 11.8	35.4 - 38.7
12.80	12.81	5.3	188	618	11.8 - 12.8	38.7 - 42.0
13.80	13.81	4.6	217	713	12.8 - 13.8	42.0 - 45.3
14.80	14.81	5.4	185	607	13.8 - 14.8	45.3 - 48.6
15.80	15.81	5.0	200	656	14.8 - 15.8	48.6 - 51.8
16.80	16.81	5.4	185	607	15.8 - 16.8	51.8 - 55.1
17.80	17.81	6.5	154	504	16.8 - 17.8	55.1 - 58.4
18.80	18.81	5.5	182	596	17.8 - 18.8	58.4 - 61.7
19.80	19.81	5.9	169	556	18.8 - 19.8	61.7 - 65.0
20.80	20.81	5.7	175	575	19.8 - 20.8	65.0 - 68.2
21.80	21.81	4.7	213	698	20.8 - 21.8	68.2 - 71.5
22.80	22.81	4.8	208	683	21.8 - 22.8	71.5 - 74.8
23.80	23.81	4.5	222	729	22.8 - 23.8	74.8 - 78.1
24.80	24.81	4.5	222	729	23.8 - 24.8	78.1 - 81.4
25.80	25.81	4.0	250	820	24.8 - 25.8	81.4 - 84.6
26.80	26.81	3.5	286	937	25.8 - 26.8	84.6 - 87.9
27.80	27.81	5.3	189	619	26.8 - 27.8	87.9 - 91.2
28.80	28.81	3.7	270	887	27.8 - 28.8	91.2 - 94.5
29.80	29.81	4.5	222	729	28.8 - 29.8	94.5 - 97.8
30.80	30.81	4.3	233	763	29.8 - 30.8	97.8 - 101.0

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0913-0906-4359
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 10
Site: 15,S10: RMP.EN.,09-SC-33
Location: Rmp. EN Struct
Cone: 20 TON A AD041
CPT Date: 96/05/08
CPT Time: 09:03
CPT File: KA09S33.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	25508.7	100.4	0.4	2.5	0.0	42.5	85.0	0.0	95.0	50.0	1.0
1.23	0.38	8204.4	191.5	2.3	7.3	0.0	27.3	54.7	0.0	95.0	50.0	1.0
2.05	0.62	17943.6	235.5	1.3	12.0	0.0	44.9	89.7	0.0	95.0	50.0	1.0
2.87	0.88	7542.4	107.2	1.4	16.7	0.0	25.1	50.3	0.0	84.9	48.0	1.0
3.69	1.12	959.5	40.4	4.2	21.2	0.0	9.6	19.2	75.1	0.0	0.0	6.0
4.51	1.38	613.1	12.7	2.1	25.6	0.0	4.1	7.9	47.0	0.0	0.0	6.0
5.33	1.62	1254.4	14.1	1.1	30.1	0.0	5.0	8.9	97.9	30.0	38.0	6.0
6.15	1.88	2313.1	14.9	0.6	34.7	0.0	7.7	12.8	0.0	40.5	40.0	1.0
6.97	2.12	5007.6	32.5	0.6	38.1	1.2	12.5	19.8	0.0	61.3	44.0	1.0
7.79	2.38	5209.1	61.3	1.2	40.4	3.7	17.4	26.7	0.0	61.6	44.0	1.0
8.61	2.62	4974.6	47.2	0.9	42.6	6.1	16.6	24.9	0.0	59.5	42.0	1.0
9.43	2.88	8297.3	67.0	0.8	44.8	8.6	20.7	30.3	0.0	73.4	44.0	1.0
10.25	3.12	11159.5	107.1	1.0	47.1	11.0	27.9	39.8	0.0	81.2	46.0	1.0
11.07	3.38	14676.6	109.2	0.7	49.4	13.5	29.4	40.9	0.0	88.4	46.0	1.0
11.89	3.62	15679.4	56.8	0.4	51.9	15.9	31.4	42.6	0.0	89.6	46.0	1.0
12.71	3.88	13175.6	22.0	0.2	54.3	18.4	26.4	35.0	0.0	83.9	46.0	1.0
13.53	4.12	12424.7	20.2	0.2	56.7	20.8	24.8	32.3	0.0	81.6	46.0	1.0
14.35	4.38	9983.1	11.3	0.1	59.1	23.3	20.0	25.4	0.0	74.8	44.0	1.0
15.17	4.62	4457.5	27.6	0.6	61.4	25.8	14.9	18.6	0.0	51.1	40.0	1.0
15.99	4.88	10396.2	59.1	0.6	63.7	28.2	20.8	25.5	0.0	74.8	44.0	1.0
16.81	5.12	5973.8	33.9	0.6	66.1	30.7	14.9	18.0	0.0	58.4	42.0	1.0
17.63	5.38	771.6	11.5	1.5	68.3	33.1	3.9	4.6	53.6	0.0	0.0	3.0
18.45	5.62	554.6	4.2	0.8	69.6	35.6	2.8	3.3	36.0	0.0	0.0	3.0
19.27	5.88	485.4	2.5	0.5	70.3	38.0	2.4	2.8	30.2	0.0	0.0	1.5
20.09	6.12	515.0	3.1	0.6	71.0	40.5	2.6	3.0	32.3	0.0	0.0	1.5
20.92	6.38	958.4	6.0	0.6	72.3	42.9	3.8	4.4	67.5	30.0	30.0	3.0
21.74	6.62	621.6	2.5	0.4	73.7	45.4	3.1	3.5	40.2	0.0	0.0	3.0
22.56	6.88	558.1	2.8	0.5	74.4	47.8	2.8	3.2	34.9	0.0	0.0	1.5
23.38	7.12	650.4	4.7	0.7	75.0	50.3	3.3	3.7	42.0	0.0	0.0	3.0
24.20	7.38	700.4	2.0	0.3	75.7	52.7	3.5	3.9	45.8	0.0	0.0	3.0
25.02	7.62	741.8	2.0	0.3	76.4	55.2	3.7	4.2	48.8	0.0	0.0	3.0
25.84	7.88	614.9	2.2	0.4	77.1	57.6	3.1	3.4	38.4	0.0	0.0	1.5
26.66	8.12	495.5	2.0	0.4	77.7	60.1	2.5	2.8	28.6	0.0	0.0	1.5
27.48	8.38	478.0	2.0	0.4	78.4	62.5	2.4	2.6	27.0	0.0	0.0	1.5
28.30	8.62	483.7	2.0	0.4	79.1	65.0	2.4	2.7	27.2	0.0	0.0	1.5
29.12	8.88	618.2	2.0	0.3	79.7	67.4	3.1	3.4	37.7	0.0	0.0	1.5
29.94	9.12	475.3	2.0	0.4	80.4	69.9	2.4	2.6	26.0	0.0	0.0	1.5
30.76	9.38	1030.2	2.2	0.2	81.8	72.3	4.1	4.5	70.1	30.0	30.0	3.0
31.58	9.62	2254.1	21.7	1.0	83.8	74.8	9.0	9.6	167.6	30.0	34.0	6.0
32.40	9.88	1872.8	19.4	1.0	85.9	77.3	7.5	7.9	136.8	30.0	34.0	6.0
33.22	10.12	810.8	2.9	0.4	87.2	79.7	4.1	4.2	51.5	0.0	0.0	3.0
34.04	10.38	1026.2	28.1	2.7	88.6	82.2	5.1	5.3	68.4	0.0	0.0	3.0
34.86	10.62	5449.9	74.8	1.4	90.7	84.6	18.2	18.7	0.0	51.3	40.0	1.0
35.68	10.88	1618.8	16.7	1.0	92.8	87.1	6.5	6.6	115.1	30.0	32.0	6.0
36.50	11.12	2828.1	28.2	1.0	94.9	89.5	9.4	9.5	0.0	31.8	36.0	1.0
37.32	11.38	1782.9	22.8	1.3	97.0	92.0	7.1	7.1	127.5	30.0	32.0	6.0
38.14	11.62	1413.2	12.6	0.9	99.1	94.4	5.7	5.6	97.6	30.0	30.0	3.0
38.96	11.88	1942.3	26.4	1.4	101.1	96.9	7.8	7.6	139.5	30.0	32.0	6.0
39.78	12.12	2343.4	22.5	1.0	103.2	99.3	9.4	9.0	171.3	30.0	34.0	6.0
40.60	12.38	12862.3	84.9	0.7	105.4	101.8	25.7	24.5	0.0	73.7	42.0	1.0
41.42	12.62	23171.8	299.6	1.3	107.8	104.2	57.9	54.6	0.0	90.3	46.0	1.0
42.24	12.88	9839.0	119.7	1.2	110.1	106.7	24.6	22.9	0.0	65.4	42.0	1.0

ConeTec Inc. - CPT Interpretation
Run No: 96-0913-0906-4359
CPT File: KA09S33.COR

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	1912.0	27.4	1.4	112.2	109.1	7.6	7.1	135.2	30.0	32.0	6.0
43.88	13.38	9080.1	119.2	1.3	114.4	111.6	22.7	20.8	0.0	62.6	42.0	1.0
44.70	13.62	25888.0	346.2	1.3	116.7	114.0	64.7	58.6	0.0	92.3	46.0	1.0
45.52	13.88	4035.9	47.5	1.2	118.9	116.5	13.5	12.1	0.0	38.8	36.0	1.0
46.34	14.12	1099.6	4.0	0.4	121.1	118.9	4.4	3.9	68.8	30.0	30.0	3.0
47.16	14.38	1228.7	10.2	0.8	123.1	121.4	4.9	4.3	78.7	30.0	30.0	3.0
47.98	14.62	3416.1	23.2	0.7	125.2	123.9	11.4	10.0	0.0	33.3	34.0	1.0
48.80	14.88	8148.2	70.1	0.9	127.4	126.3	20.4	17.7	0.0	57.9	40.0	1.0
49.62	15.12	9464.0	139.5	1.5	129.7	128.8	23.7	20.3	0.0	62.0	40.0	1.0
50.44	15.38	11790.0	170.5	1.4	132.0	131.2	29.5	25.1	0.0	68.0	42.0	1.0
51.26	15.62	3627.5	22.7	0.6	134.3	133.7	12.1	10.2	0.0	34.0	34.0	1.0
52.08	15.88	1314.4	4.7	0.4	136.4	136.1	5.3	4.4	83.4	30.0	30.0	3.0
52.90	16.12	1127.8	4.6	0.4	138.4	138.6	4.5	3.8	68.1	30.0	30.0	1.5
53.72	16.38	1058.7	5.0	0.5	140.5	141.0	4.2	3.5	62.2	30.0	30.0	1.5
54.54	16.62	879.4	2.1	0.2	141.8	143.5	4.4	3.6	47.5	0.0	0.0	1.5
55.36	16.88	1058.2	3.6	0.3	143.2	145.9	4.2	3.5	61.5	30.0	30.0	1.5
56.18	17.12	1081.5	10.9	1.0	145.2	148.4	4.3	3.5	63.0	30.0	30.0	1.5
57.00	17.38	1615.3	16.7	1.0	147.3	150.8	6.5	5.2	105.4	30.0	30.0	3.0
57.82	17.62	1963.9	31.2	1.6	149.3	153.3	7.9	6.3	132.9	30.0	30.0	3.0
58.64	17.88	1287.6	15.5	1.2	151.4	155.7	5.2	4.1	78.4	30.0	30.0	3.0
59.46	18.12	1285.1	15.2	1.2	153.4	158.2	5.1	4.1	77.9	30.0	30.0	3.0
60.28	18.38	1369.1	14.0	1.0	155.5	160.6	5.5	4.3	84.2	30.0	30.0	3.0
61.10	18.62	1379.5	16.1	1.2	157.5	163.1	5.5	4.3	84.7	30.0	30.0	3.0
61.93	18.88	1378.0	12.2	0.9	159.6	165.5	5.5	4.3	84.2	30.0	30.0	3.0
62.75	19.12	1435.7	12.6	0.9	161.6	168.0	5.7	4.4	88.5	30.0	30.0	3.0
63.57	19.38	3074.1	53.9	1.8	163.7	170.4	12.3	9.4	219.2	30.0	32.0	6.0
64.39	19.62	9440.8	154.2	1.6	165.8	172.9	31.5	23.9	0.0	58.4	40.0	1.0
65.21	19.88	2859.6	83.6	2.9	167.9	175.4	14.3	10.8	201.3	0.0	0.0	6.0
66.03	20.12	4506.1	64.3	1.4	170.0	177.8	15.0	11.3	0.0	36.8	34.0	1.0
66.85	20.38	1963.7	15.4	0.8	172.1	180.3	7.9	5.9	128.9	30.0	30.0	3.0
67.67	20.62	1473.4	3.7	0.2	174.2	182.7	5.9	4.4	89.3	30.0	30.0	3.0
68.49	20.88	2198.9	22.6	1.0	176.2	185.2	8.8	6.5	147.0	30.0	30.0	3.0
69.31	21.12	3033.1	59.4	2.0	178.3	187.6	12.1	8.9	213.4	30.0	32.0	6.0
70.13	21.38	7627.9	74.9	1.0	180.4	190.1	19.1	13.9	0.0	51.1	38.0	1.0
70.95	21.62	3670.1	45.3	1.2	182.7	192.5	12.2	8.9	0.0	30.0	32.0	1.0
71.77	21.88	2010.9	73.9	3.7	184.8	195.0	13.4	9.7	130.5	0.0	0.0	3.0
72.59	22.12	8830.1	84.9	1.0	186.9	197.4	22.1	15.8	0.0	54.7	38.0	1.0
73.41	22.38	4610.8	79.4	1.7	189.2	199.9	15.4	10.9	0.0	35.9	34.0	1.0
74.23	22.62	2641.3	72.8	2.8	191.3	202.3	13.2	9.3	179.8	0.0	0.0	3.0
75.05	22.88	8376.6	147.7	1.8	193.4	204.8	27.9	19.6	0.0	52.7	38.0	1.0
75.87	23.12	14678.0	221.9	1.5	195.6	207.2	36.7	25.7	0.0	68.7	40.0	1.0
76.69	23.38	23666.4	105.7	0.4	198.1	209.7	39.4	27.4	0.0	82.2	42.0	1.0
77.51	23.62	13498.4	86.3	0.6	200.5	212.1	27.0	18.7	0.0	65.9	40.0	1.0
78.33	23.88	12169.2	79.9	0.7	203.0	214.6	24.3	16.7	0.0	62.8	40.0	1.0
79.15	24.12	16765.9	62.7	0.4	205.4	217.0	33.5	22.9	0.0	71.8	42.0	1.0
79.97	24.38	12240.1	84.0	0.7	207.8	219.5	24.5	16.6	0.0	62.6	40.0	1.0
80.79	24.62	15200.8	136.9	0.9	210.2	222.0	30.4	20.5	0.0	68.6	40.0	1.0
81.61	24.88	14496.1	155.1	1.1	212.6	224.4	36.2	24.3	0.0	67.1	40.0	1.0
82.43	25.12	10489.1	137.8	1.3	214.9	226.9	26.2	17.5	0.0	57.7	38.0	1.0
83.25	25.38	13081.4	206.8	1.6	217.2	229.3	32.7	21.7	0.0	63.9	40.0	1.0
84.07	25.62	27888.2	158.7	0.6	219.6	231.8	46.5	30.7	0.0	85.4	44.0	1.0
84.89	25.88	26186.8	138.7	0.5	222.2	234.2	43.6	28.7	0.0	83.4	42.0	1.0
85.71	26.12	34003.9	215.5	0.6	224.7	236.7	56.7	37.0	0.0	90.8	44.0	1.0
86.53	26.38	31883.1	173.1	0.5	227.3	239.1	53.1	34.5	0.0	88.7	44.0	1.0
87.35	26.62	32126.8	258.4	0.8	229.7	241.6	64.3	41.5	0.0	88.8	44.0	1.0
88.17	26.88	29212.8	341.6	1.2	232.2	244.0	58.4	37.5	0.0	85.9	42.0	1.0
88.99	27.12	12259.5	206.6	1.7	234.5	246.5	30.6	19.6	0.0	60.9	38.0	1.0
89.81	27.38	4353.8	166.0	3.8	236.7	248.9	21.8	13.8	309.5	0.0	0.0	6.0
90.63	27.62	2077.4	55.7	2.7	238.7	251.4	10.4	6.6	127.0	0.0	0.0	3.0
91.45	27.88	1918.1	22.6	1.2	240.8	253.8	7.7	4.8	113.9	30.0	30.0	1.5
92.27	28.12	2517.9	67.6	2.7	242.8	256.3	12.6	7.9	161.5	0.0	0.0	3.0
93.09	28.38	7353.7	166.6	2.3	244.9	258.7	24.5	15.3	0.0	45.6	36.0	1.0
93.91	28.62	6484.9	161.3	2.5	247.1	261.2	25.9	16.2	478.1	41.9	34.0	6.0
94.73	28.88	6487.1	143.1	2.2	249.2	263.6	21.6	13.4	0.0	41.8	34.0	1.0
95.55	29.12	23930.6	271.5	1.1	251.5	266.1	47.9	29.5	0.0	79.1	42.0	1.0
96.37	29.38	26485.3	382.0	1.4	253.8	268.5	66.2	40.7	0.0	81.8	42.0	1.0
97.19	29.62	17594.2	199.3	1.1	256.1	271.0	44.0	26.9	0.0	70.0	40.0	1.0
98.01	29.88	19216.6	215.5	1.1	258.5	273.5	38.4	23.4	0.0	72.4	40.0	1.0
98.83	30.12	16727.2	239.1	1.4	260.8	275.9	41.8	25.3	0.0	68.3	40.0	1.0

ConeTec Inc. - CPT Interpretation
Run No: 96-0913-0906-4359
CPT File: KA09S33.COR

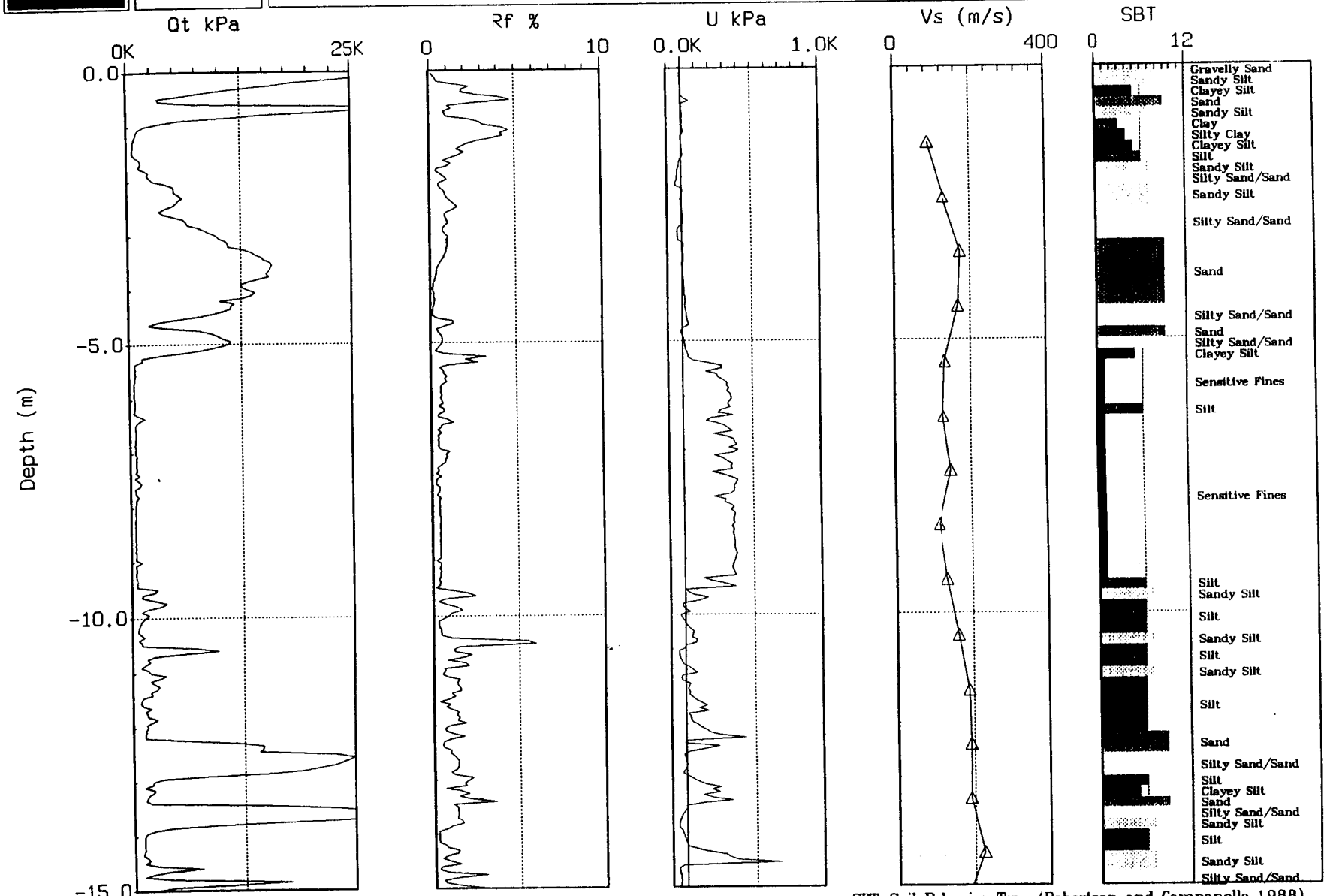
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	11911.0	276.4	2.3	263.1	278.4	39.7	24.0	0.0	58.4	38.0	1.0
100.47	30.62	8036.9	244.4	3.0	265.2	280.8	32.1	19.3	599.3	47.0	36.0	6.0
101.29	30.88	4678.4	167.9	3.6	267.2	283.3	23.4	14.0	330.2	0.0	0.0	6.0
102.11	31.12	5584.3	152.2	2.7	269.3	285.7	22.3	13.3	402.3	36.4	32.0	6.0
102.94	31.38	7047.1	224.0	3.2	271.3	288.2	28.2	16.7	519.0	42.9	34.0	6.0
103.76	31.62	3835.7	124.0	3.2	273.4	290.6	19.2	11.4	261.7	0.0	0.0	3.0
104.58	31.88	3273.4	77.9	2.4	275.4	293.1	13.1	7.7	216.4	30.0	30.0	3.0
105.40	32.12	2991.4	54.5	1.8	277.5	295.5	12.0	7.0	193.5	30.0	30.0	3.0
106.22	32.38	3646.4	68.0	1.9	279.5	298.0	14.6	8.5	245.5	30.0	30.0	3.0
107.04	32.62	2787.8	26.9	1.0	281.6	300.4	9.3	5.4	0.0	30.0	30.0	1.0
107.86	32.88	2675.8	20.1	0.8	283.8	302.9	8.9	5.2	0.0	30.0	30.0	1.0
108.68	33.12	2267.8	16.6	0.7	286.0	305.3	7.6	4.4	0.0	30.0	30.0	1.0
109.50	33.38	2029.6	16.0	0.8	288.1	307.8	8.1	4.7	114.7	30.0	30.0	1.5
110.32	33.62	1936.5	17.2	0.9	290.1	310.2	7.7	4.5	106.9	30.0	30.0	1.5
111.14	33.88	2179.3	25.6	1.2	292.2	312.7	8.7	5.0	126.0	30.0	30.0	1.5
111.96	34.12	2190.7	21.2	1.0	294.2	315.1	8.8	5.0	126.5	30.0	30.0	1.5
112.78	34.38	2068.5	14.9	0.7	296.3	317.6	8.3	4.7	116.4	30.0	30.0	1.5
113.60	34.62	2337.1	58.4	2.5	298.3	320.1	9.3	5.3	137.5	30.0	30.0	1.5
114.42	34.88	6215.0	111.6	1.8	300.4	322.5	20.7	11.7	0.0	37.9	32.0	1.0
115.24	35.12	11708.1	260.6	2.2	302.6	325.0	39.0	22.0	0.0	55.9	38.0	1.0
116.06	35.38	16159.9	210.1	1.3	304.8	327.4	40.4	22.6	0.0	65.1	38.0	1.0
116.88	35.62	3659.2	95.6	2.6	307.0	329.9	14.6	8.2	241.8	30.0	30.0	3.0
117.70	35.88	2744.0	59.8	2.2	309.1	332.3	11.0	6.1	168.2	30.0	30.0	3.0
118.52	36.12	6192.3	136.5	2.2	311.2	334.8	20.6	11.5	0.0	37.3	32.0	1.0
119.34	36.38	4615.0	101.9	2.2	313.3	337.2	18.5	10.2	317.2	30.0	32.0	6.0
120.16	36.62	2414.2	23.3	1.0	315.3	339.7	9.7	5.3	140.7	30.0	30.0	1.5
120.98	36.88	2476.3	29.9	1.2	317.4	342.1	9.9	5.4	145.3	30.0	30.0	1.5
121.80	37.12	10558.0	179.6	1.7	319.5	344.6	35.2	19.3	0.0	52.2	36.0	1.0
122.62	37.38	6429.7	167.8	2.6	321.6	347.0	25.7	14.0	460.9	37.9	32.0	6.0
123.44	37.62	3120.9	66.7	2.1	323.6	349.5	12.5	6.8	195.8	30.0	30.0	3.0
124.26	37.88	2215.4	25.0	1.1	325.7	351.9	8.9	4.8	123.0	30.0	30.0	1.5
125.08	38.12	2935.5	52.7	1.8	327.7	354.4	11.7	6.3	180.3	30.0	30.0	3.0
125.90	38.38	11604.5	216.2	1.9	329.8	356.8	38.7	20.8	0.0	54.4	36.0	1.0
126.72	38.62	12203.4	268.1	2.2	332.0	359.3	40.7	21.8	0.0	55.8	38.0	1.0
127.54	38.88	4812.6	131.7	2.7	334.1	361.7	19.3	10.3	329.3	30.0	32.0	3.0
128.36	39.12	2291.5	22.4	1.0	336.2	364.2	9.2	4.9	127.3	30.0	30.0	1.5
129.18	39.38	2716.8	36.2	1.3	338.2	366.6	10.9	5.8	161.0	30.0	30.0	1.5
130.00	39.62	3157.8	65.1	2.1	340.3	369.1	12.6	6.7	195.9	30.0	30.0	3.0
130.82	39.88	2861.0	78.0	2.7	342.3	371.6	14.3	7.6	171.8	0.0	0.0	3.0
131.64	40.12	2230.1	26.1	1.2	344.4	374.0	8.9	4.7	120.9	30.0	30.0	1.5
132.46	40.38	2457.2	25.4	1.0	346.4	376.5	9.8	5.2	138.7	30.0	30.0	1.5
133.28	40.62	11743.0	147.7	1.3	348.6	378.9	29.4	15.4	0.0	54.0	36.0	1.0

CONETEC

Kleinfelder

Site: I15, S10: [illegible]N., 09-SC-33
Location: RMP. [illegible] STRUCT.

Cone: 20 TON A AD041
Date: 08:05:96 09:03



Max. Depth: 40.90 (m)
Depth Inc.: 0.05 (m)

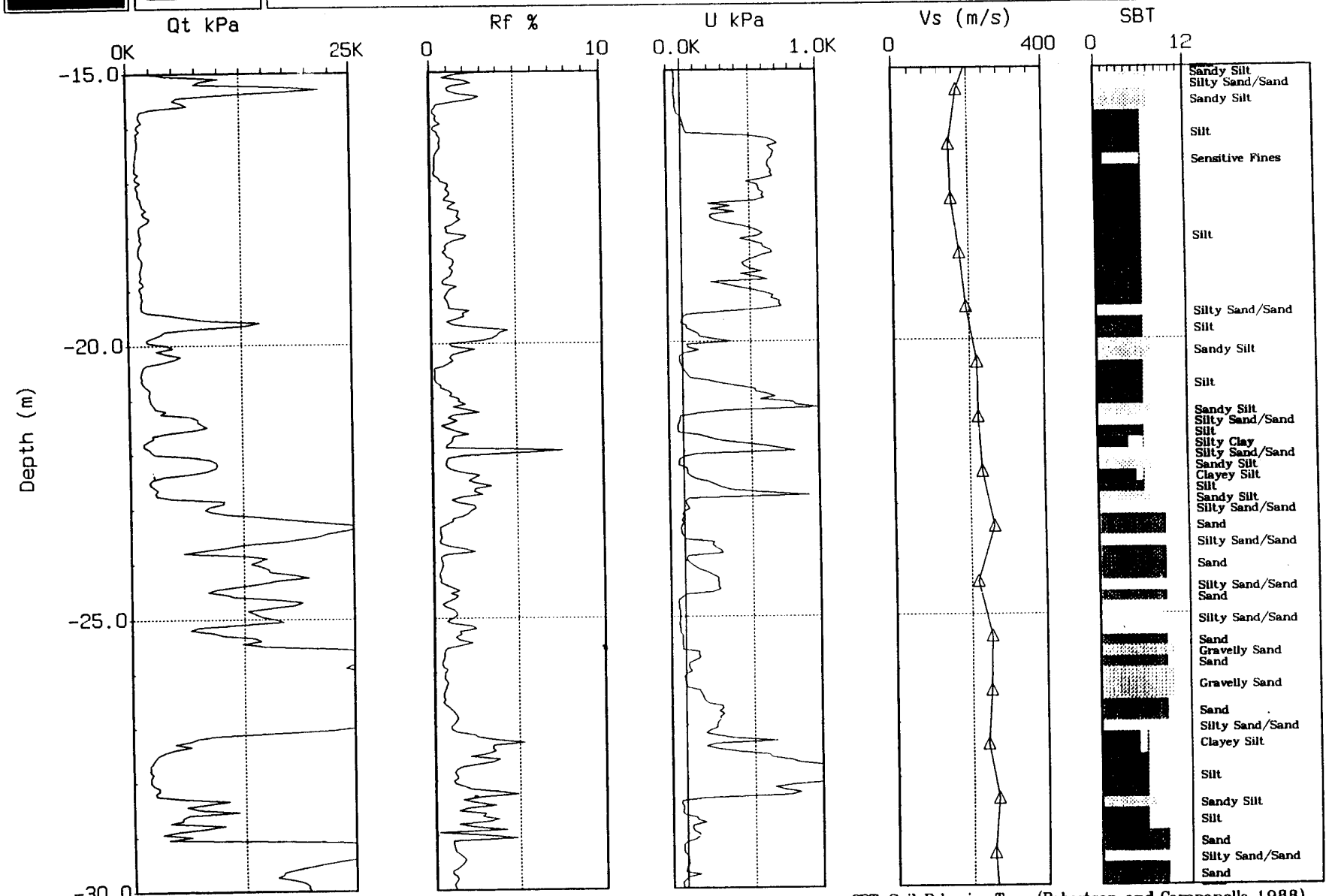
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S10: RMP.EN., 09-SC-33
Location: RMP. EN STRUCT.

Cone: 20 TON A A0041
Date: 08:05:96 09:03



Max. Depth: 40.90 (m)
Depth Inc.: 0.05 (m)

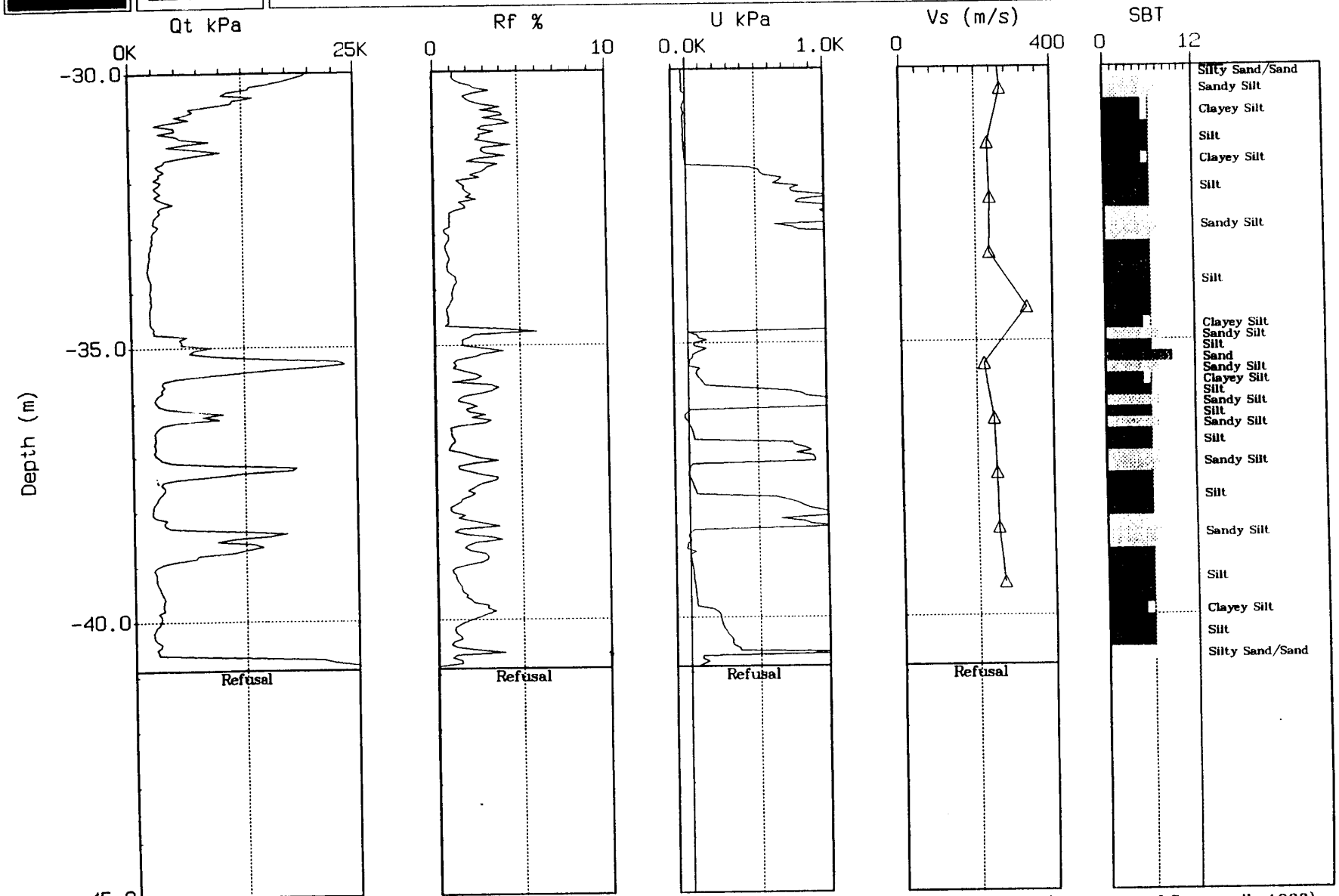
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S10: RMP.EN., 09-SC-33
Location: RMP. EN STRUCT.

Cone: 20 TON A A0041
Date: 08:05:96 09:03



Max. Depth: 40.90 (m)
Depth Inc.: 0.05 (m)

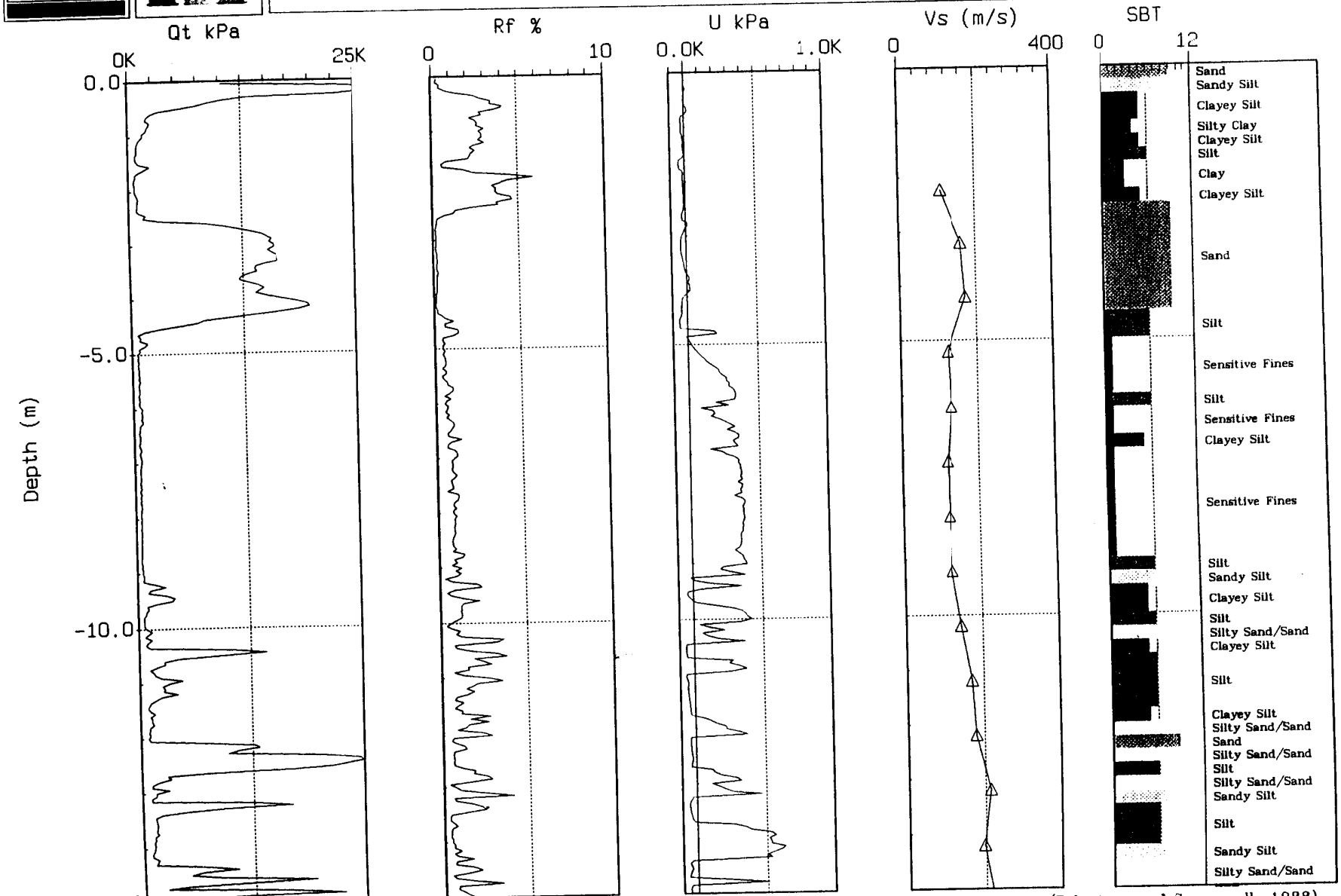
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S10: Amp EN, 09-SC-33
Location: Amp EN Structure

Cone: 20 TON A 040
Date: 06:04:96 16:18



Max. Depth: 21.70 (m)
Depth Inc.: 0.05 (m)

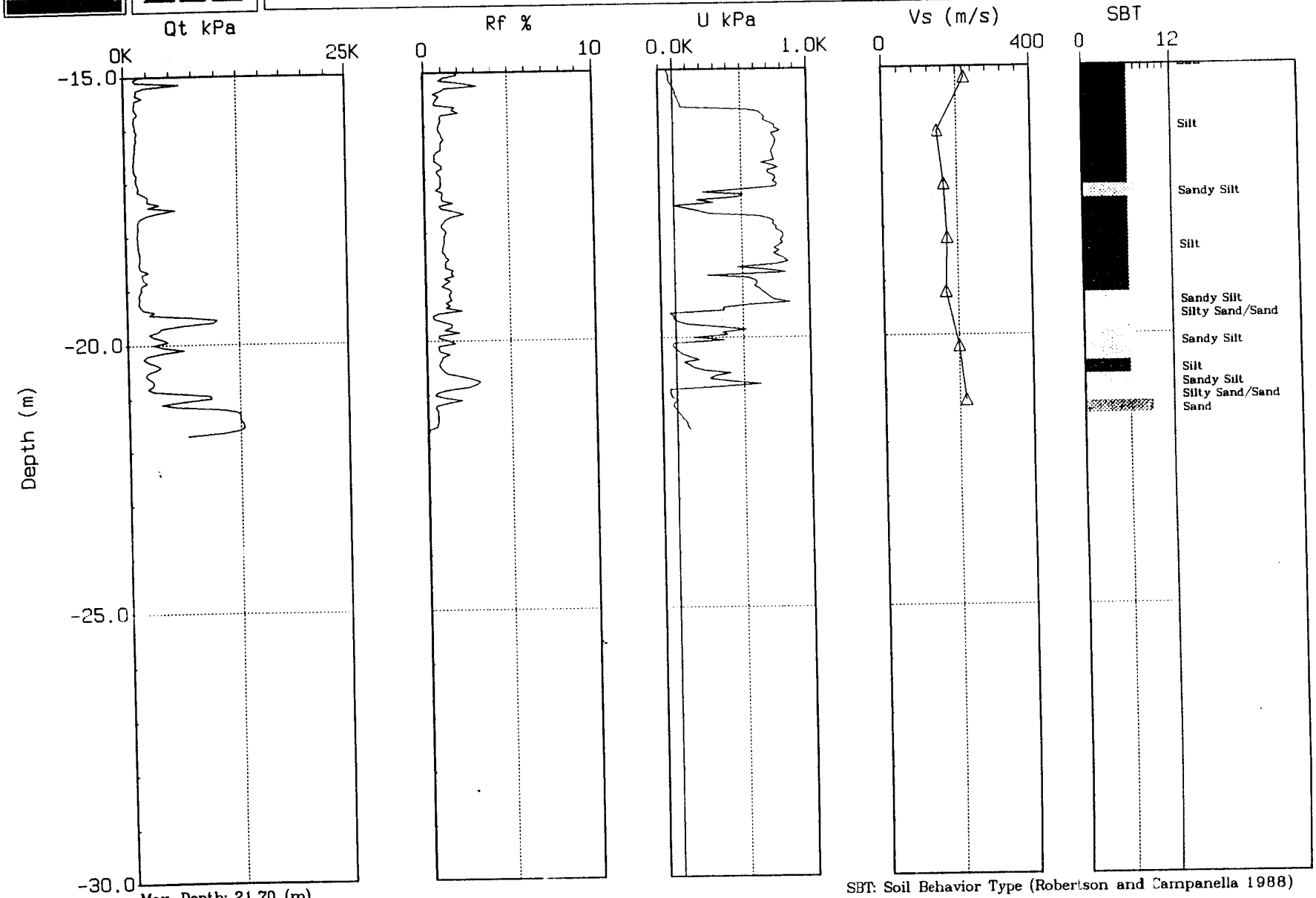
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S10 Ramp EN, 09-SC-33
Location: Ramp EN Structure

Cone: 20 TON A 040
Date: 06:04:96 16:18



Max. Depth: 21.70 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *09-SC-33*
Date: *5-Aug-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 041 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
0.90	1.06					
1.90	1.98	10.6	87	286	0.9 - 1.9	3.0 - 6.2
2.90	2.95	7.6	128	420	1.9 - 2.9	6.2 - 9.5
3.90	3.94	5.7	173	568	2.9 - 3.9	9.5 - 12.8
4.90	4.93	6.0	167	547	3.9 - 4.9	12.8 - 16.1
5.90	5.93	7.7	130	427	4.9 - 5.9	16.1 - 19.4
6.90	6.92	8.0	125	411	5.9 - 6.9	19.4 - 22.6
7.90	7.92	6.9	145	474	6.9 - 7.9	22.6 - 25.9
8.90	8.92	8.9	112	368	7.9 - 8.9	25.9 - 29.2
9.90	9.92	7.6	131	431	8.9 - 9.9	29.2 - 32.5
10.90	10.91	6.2	161	528	9.9 - 10.9	32.5 - 35.8
11.90	11.91	5.3	188	618	10.9 - 11.9	35.8 - 39.0
12.90	12.91	5.2	192	630	11.9 - 12.9	39.0 - 42.3
13.90	13.91	5.3	190	624	12.9 - 13.9	42.3 - 45.6
14.90	14.91	4.5	225	737	13.9 - 14.9	45.6 - 48.9
15.90	15.91	5.8	172	565	14.9 - 15.9	48.9 - 52.2
16.90	16.91	6.7	150	493	15.9 - 16.9	52.2 - 55.4
17.90	17.91	6.5	154	504	16.9 - 17.9	55.4 - 58.7
18.90	18.91	5.7	175	575	17.9 - 18.9	58.7 - 62.0
19.90	19.91	5.2	192	631	18.9 - 19.9	62.0 - 65.3
20.90	20.91	4.6	220	721	19.9 - 20.9	65.3 - 68.6
21.90	21.91	4.5	222	729	20.9 - 21.9	68.6 - 71.9
22.90	22.91	4.3	232	763	21.9 - 22.9	71.9 - 75.1
23.90	23.91	3.8	263	863	22.9 - 23.9	75.1 - 78.4
24.90	24.91	4.6	217	713	23.9 - 24.9	78.4 - 81.7
25.90	25.91	4.0	253	830	24.9 - 25.9	81.7 - 85.0
26.90	26.91	4.0	250	820	25.9 - 26.9	85.0 - 88.3
27.90	27.91	4.2	241	790	26.9 - 27.9	88.3 - 91.5
28.90	28.91	3.8	267	875	27.9 - 28.9	91.5 - 94.8
29.90	29.91	3.9	256	841	28.9 - 29.9	94.8 - 98.1
30.90	30.91	3.8	267	875	29.9 - 30.9	98.1 - 101.4
31.90	31.90	4.3	233	763	30.9 - 31.9	101.4 - 104.7
32.90	32.90	4.2	238	781	31.9 - 32.9	104.7 - 107.9
33.90	33.90	4.3	235	772	32.9 - 33.9	107.9 - 111.2
34.90	34.90	3.0	333	1093	33.9 - 34.9	111.2 - 114.5
35.90	35.90	4.6	220	721	34.9 - 35.9	114.5 - 117.8
36.90	36.90	4.1	244	800	35.9 - 36.9	117.8 - 121.1
37.90	37.90	4.0	250	820	36.9 - 37.9	121.1 - 124.3
38.90	38.90	4.0	253	831	37.9 - 38.9	124.3 - 127.6
39.90	39.90	3.8	267	875	38.9 - 39.9	127.6 - 130.9

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *SS-SC-17*
Date: *17-Jun-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 040 (20 tonne)*
Geophone: *0.20 m above tip*

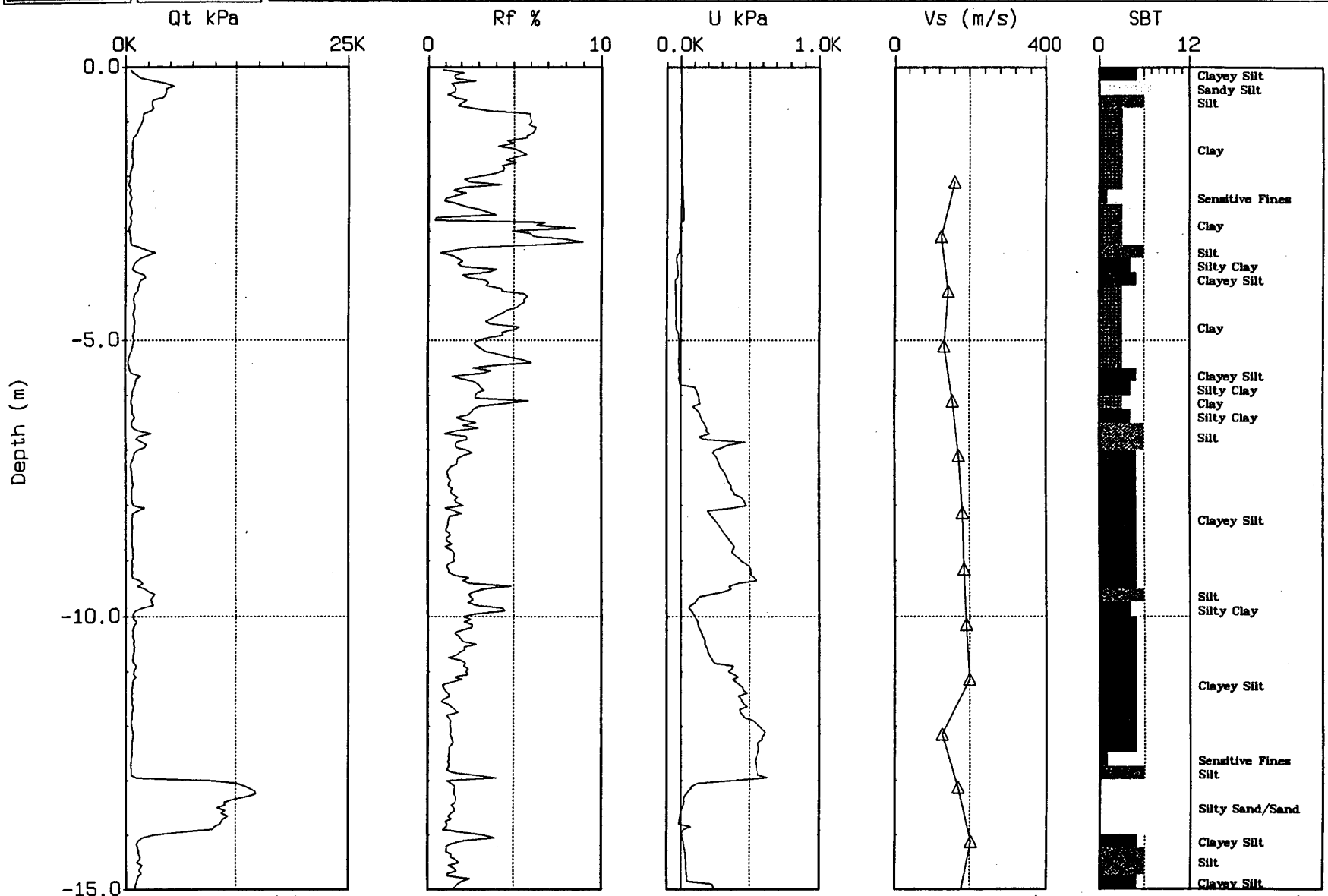
Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
1.60	1.70					
2.60	2.66	6.0	161	527	1.6 - 2.6	5.2 - 8.5
3.60	3.64	7.9	125	409	2.6 - 3.6	8.5 - 11.8
4.60	4.63	6.9	144	471	3.6 - 4.6	11.8 - 15.1
5.60	5.63	7.5	133	435	4.6 - 5.6	15.1 - 18.4
6.60	6.62	6.4	156	510	5.6 - 6.6	18.4 - 21.7
7.60	7.62	5.8	172	564	6.6 - 7.6	21.7 - 24.9
8.65	8.67	5.8	181	593	7.6 - 8.7	24.9 - 28.4
9.65	9.67	5.4	185	606	8.7 - 9.7	28.4 - 31.7
10.65	10.66	5.2	192	630	9.7 - 10.7	31.7 - 34.9
11.65	11.66	5.0	200	655	10.7 - 11.7	34.9 - 38.2
12.65	12.66	7.8	128	420	11.7 - 12.7	38.2 - 41.5
13.60	13.61	5.6	169	556	12.7 - 13.6	41.5 - 44.6
14.65	14.66	5.2	202	662	13.6 - 14.7	44.6 - 48.1
15.60	15.61	5.4	176	577	14.7 - 15.6	48.1 - 51.2
16.60	16.61	5.8	172	565	15.6 - 16.6	51.2 - 54.5
17.60	17.61	5.6	178	586	16.6 - 17.6	54.5 - 57.7
18.60	18.61	4.8	208	683	17.6 - 18.6	57.7 - 61.0
19.60	19.61	5.2	192	631	18.6 - 19.6	61.0 - 64.3
20.60	20.61	4.2	238	781	19.6 - 20.6	64.3 - 67.6
21.60	21.61	3.0	333	1093	20.6 - 21.6	67.6 - 70.9
22.60	22.61	5.2	192	631	21.6 - 22.6	70.9 - 74.1
23.60	23.61	5.4	185	607	22.6 - 23.6	74.1 - 77.4
24.60	24.61	5.4	185	607	23.6 - 24.6	77.4 - 80.7
25.60	25.61	4.6	217	713	24.6 - 25.6	80.7 - 84.0
26.60	26.61	4.6	217	713	25.6 - 26.6	84.0 - 87.3
27.65	27.66	3.4	309	1013	26.6 - 27.7	87.3 - 90.7
28.65	28.66	3.2	312	1025	27.7 - 28.7	90.7 - 94.0
29.65	29.66	4.6	217	713	28.7 - 29.7	94.0 - 97.3

CONETEC

Kleinfelder

Site: I15, S9: UTA R of W, SS-SC-17
Location: UTALR Structure

Cone: 20 TON A 040
Date: 06:17:96 12:37



Max. Depth: 30.00 (m)
Depth Inc.: 0.05 (m)

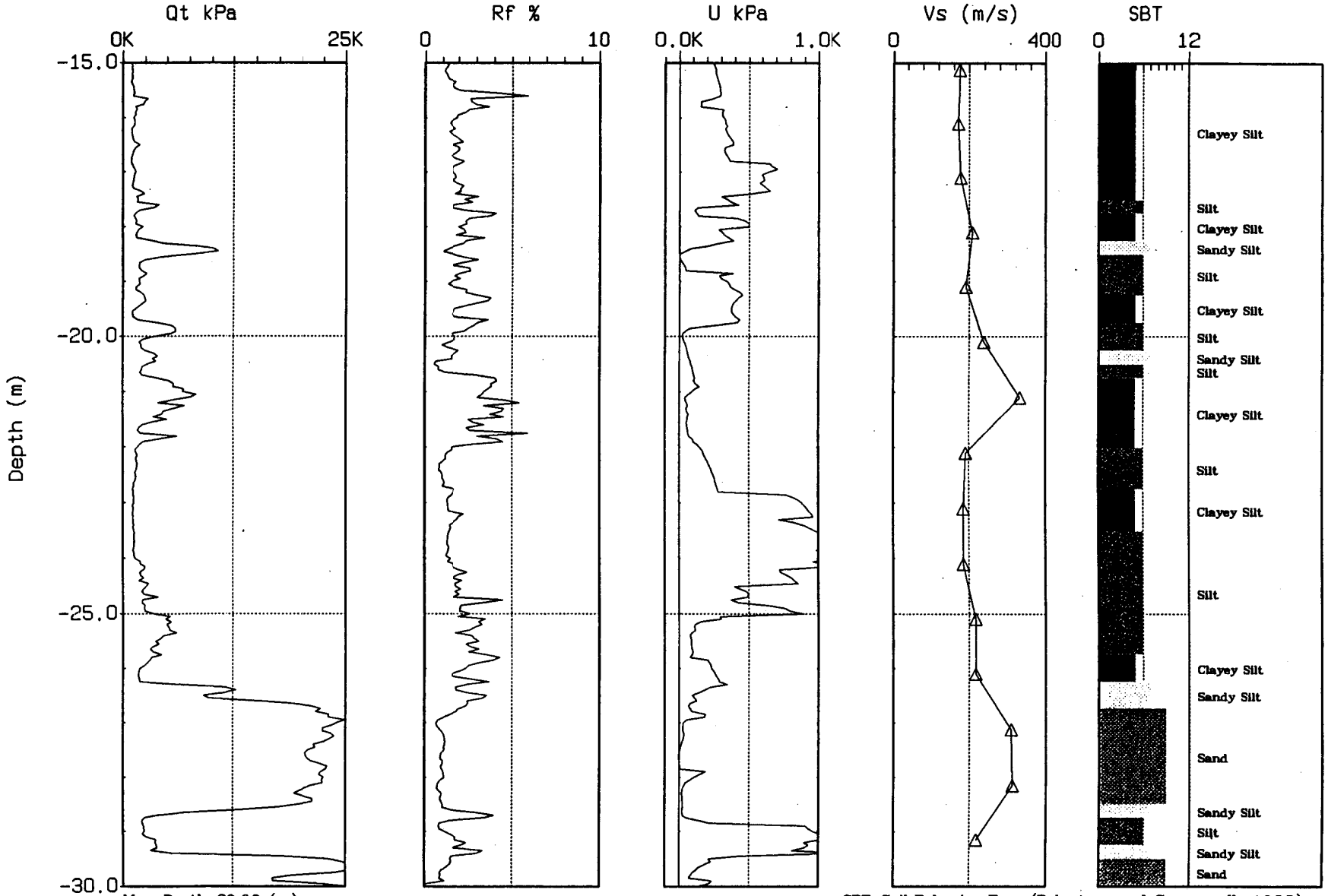
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S9: UTA R of W, SS-SC-17
Location: UTALR Structure

Cone: 20 TON A 040
Date: 06:17:96 12:37



Max. Depth: 30.00 (m)
Depth Inc.: 0.05 (m)

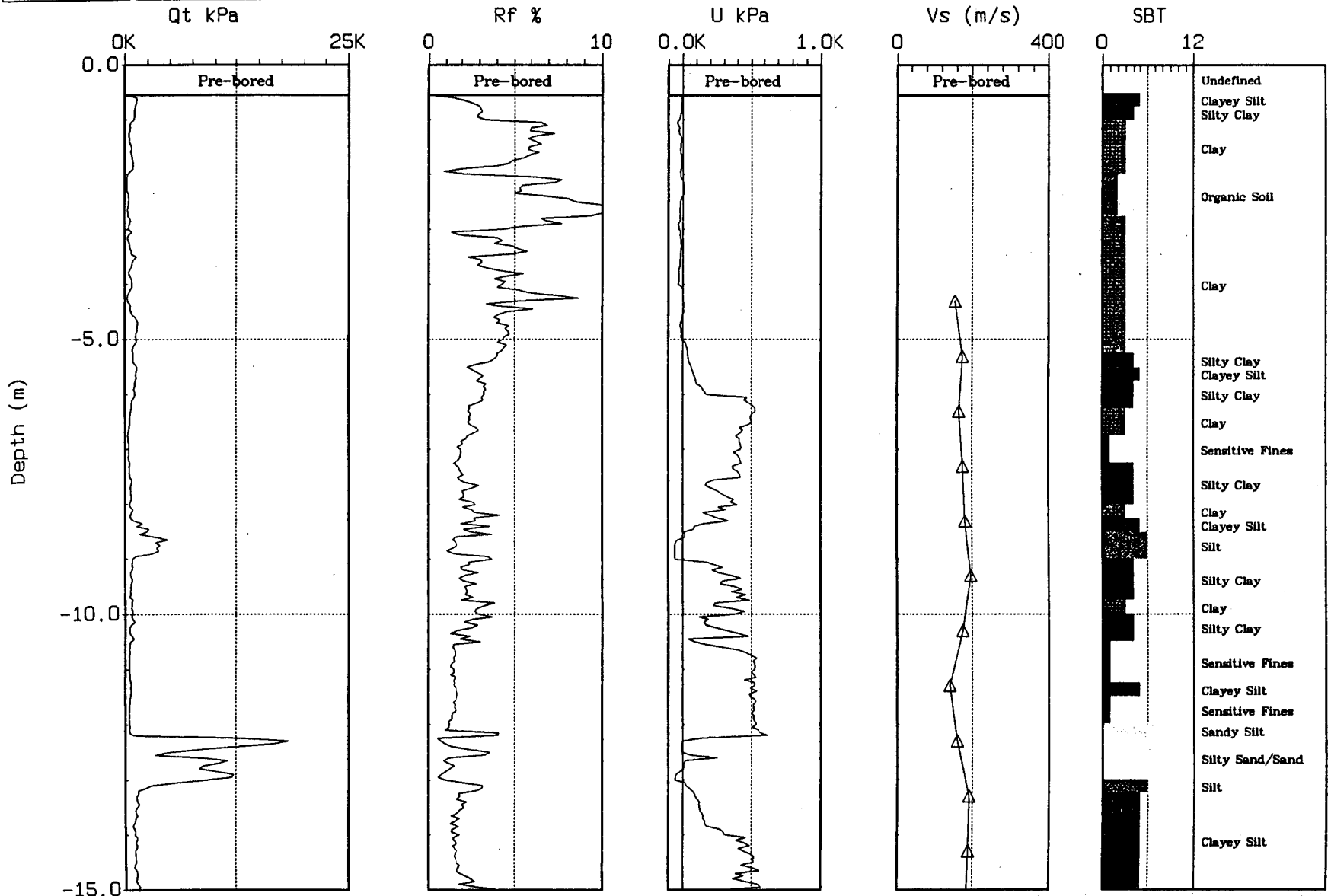
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S9: W Temple, SS-SC-34
Location: W Temple Struct.

Cone: 20 TON AD 025
Date: 05:21:96 18:48



Max. Depth: 30.70 (m)
Depth Inc.: 0.05 (m)

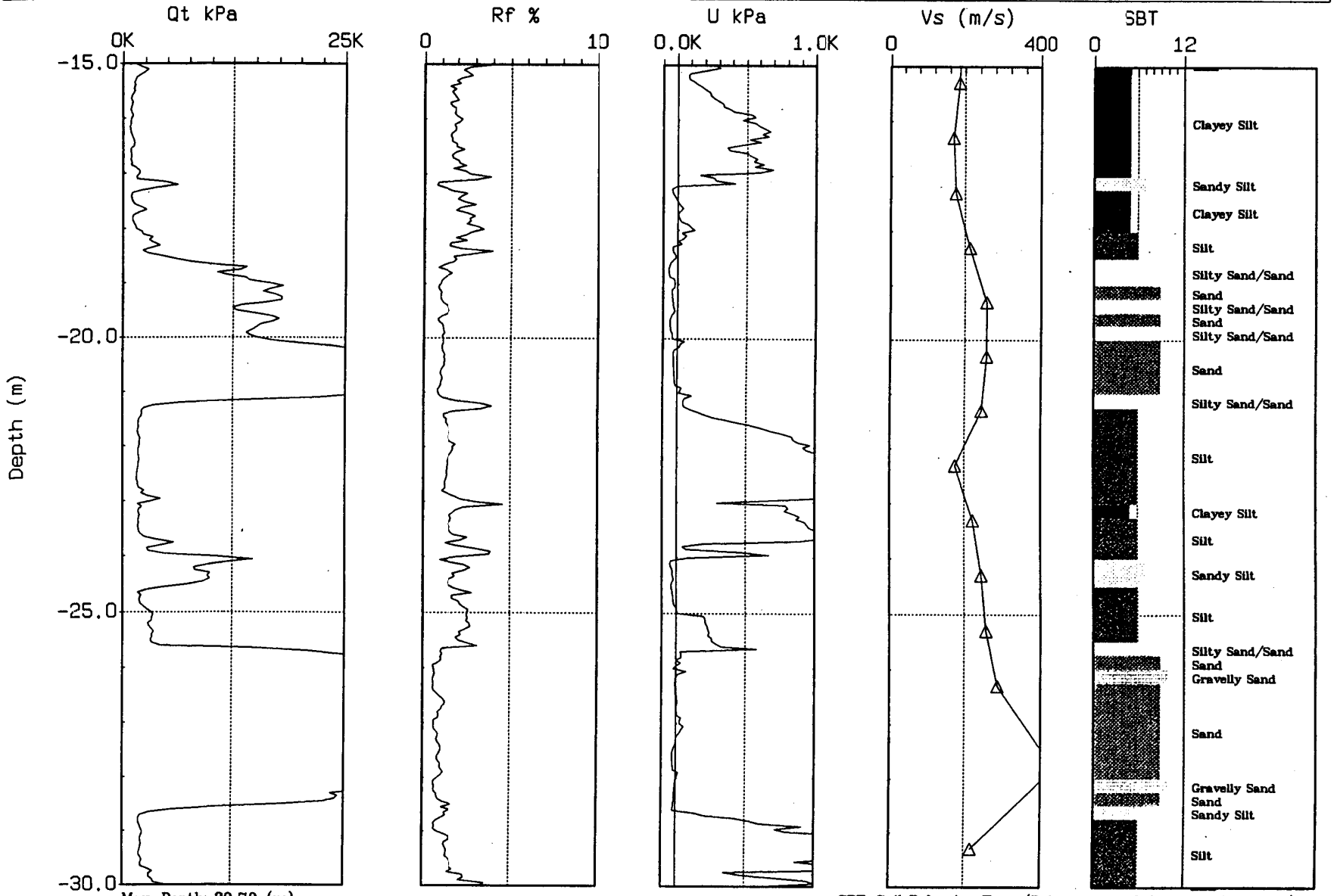
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S9: W Temple, SS-SC-34
Location: W Temple Struct.

Cone: 20 TON AD 025
Date: 05:21:96 18:48



Max. Depth: 30.70 (m)
Depth Inc.: 0.05 (m)

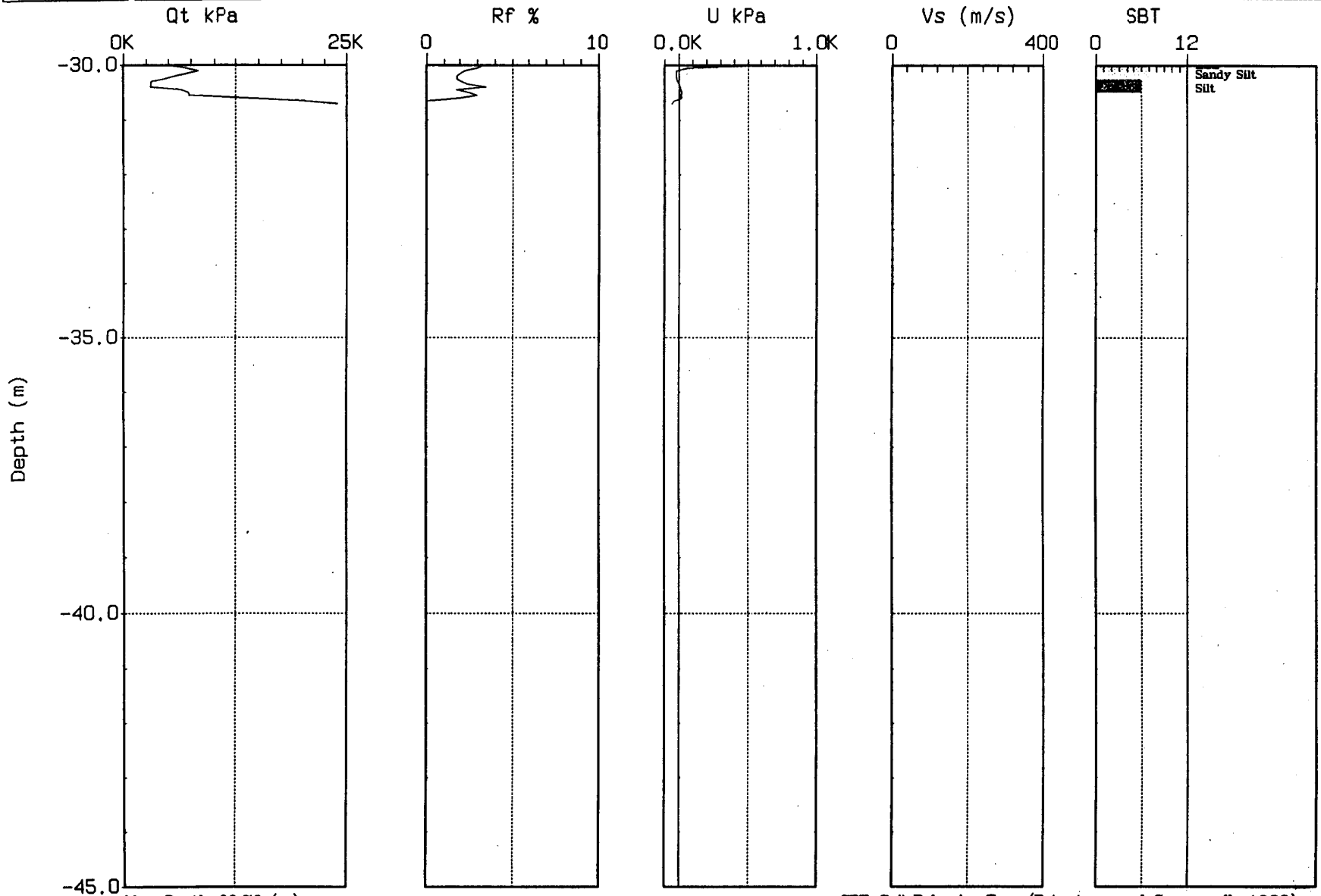
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S9: W Temple, SS-SC-34
Location: W Temple Struct.

Cone: 20 TON AD 025
Date: 0521:96 18:48



Max. Depth: 30.70 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *SS-SC-34*
Date: *21-May-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 025 (20 tonne)*
Geophone: *0.20 m above tip*

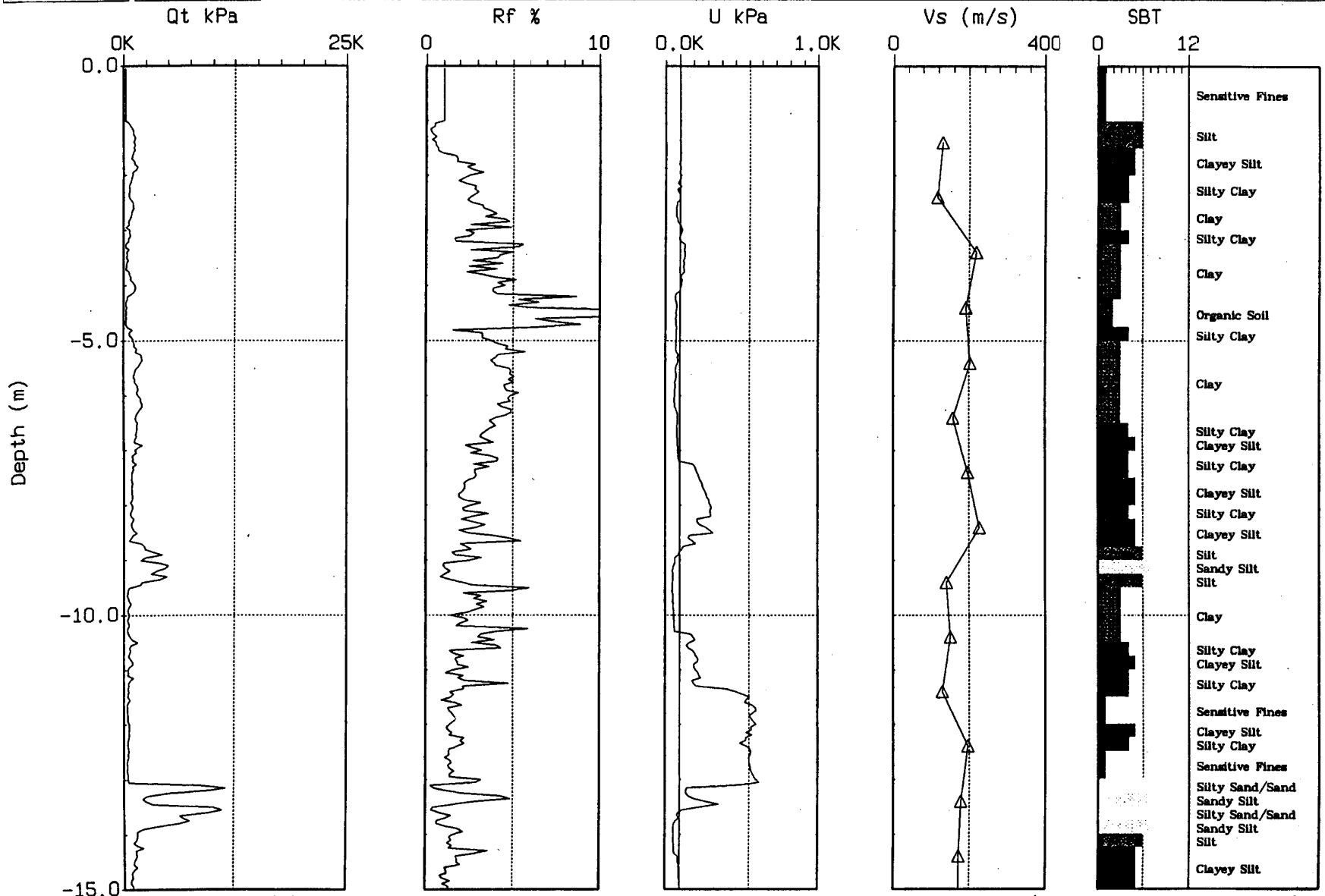
Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
3.80	3.84					
4.80	4.83	6.4	* 155	508	3.8 - 4.8	12.5 - 15.7
5.80	5.83	5.7	* 174	572	4.8 - 5.8 (5.3)	15.7 - 19.0
6.80	6.82	6.0	166	545	5.8 - 6.8	19.0 - 22.3
7.80	7.82	5.7	175	574	6.8 - 7.8	22.3 - 25.6
8.80	8.82	5.5	181	595	7.8 - 8.8	25.6 - 28.9
9.80	9.82	5.1	196	642	8.8 - 9.8	28.9 - 32.2
10.80	10.81	5.7	* 175	575	9.8 - 10.8	32.2 - 35.4
11.80	11.81	7.1	141	462	10.8 - 11.8	35.4 - 38.7
12.80	12.81	6.2	161	529	11.8 - 12.8	38.7 - 42.0
13.80	13.81	5.2	192	630	12.8 - 13.8	42.0 - 45.3
14.80	14.81	5.3	189	619	13.8 - 14.8	45.3 - 48.6
15.80	15.81	5.4	* 185	607	14.8 - 15.8	48.6 - 51.8
16.80	16.81	5.9	169	556	15.8 - 16.8	51.8 - 55.1
17.80	17.81	5.7	175	575	16.8 - 17.8	55.1 - 58.4
18.80	18.81	4.7	213	698	17.8 - 18.8	58.4 - 61.7
19.80	19.81	3.9	256	841	18.8 - 19.8	61.7 - 65.0
20.80	20.81	3.9	* 256	841	19.8 - 20.8	65.0 - 68.2
21.80	21.81	4.1	244	800	20.8 - 21.8	68.2 - 71.5
22.80	22.81	5.7	175	575	21.8 - 22.8	71.5 - 74.8
23.80	23.81	4.5	222	729	22.8 - 23.8	74.8 - 78.1
24.80	24.81	4.1	244	800	23.8 - 24.8	78.1 - 81.4
25.80	25.81	3.9	* 256	841	24.8 - 25.8	81.4 - 84.6
26.80	26.81	3.5	286	937	25.8 - 26.8	84.6 - 87.9
28.80	28.81	4.6	435	1426	26.8 - 28.8	87.9 - 94.5
29.80	29.81	4.6	217	713	28.8 - 29.8 (29.3)	94.5 - 97.8

CONETEC

Kleinfelder

Site: I15, S9: 2400 S, SS-SC-43
Location: Main St Struct.

Cone: 20 TON A 025
Date: 05:21:96 11:52



Max. Depth: 31.95 (m)
Depth Inc.: 0.05 (m)

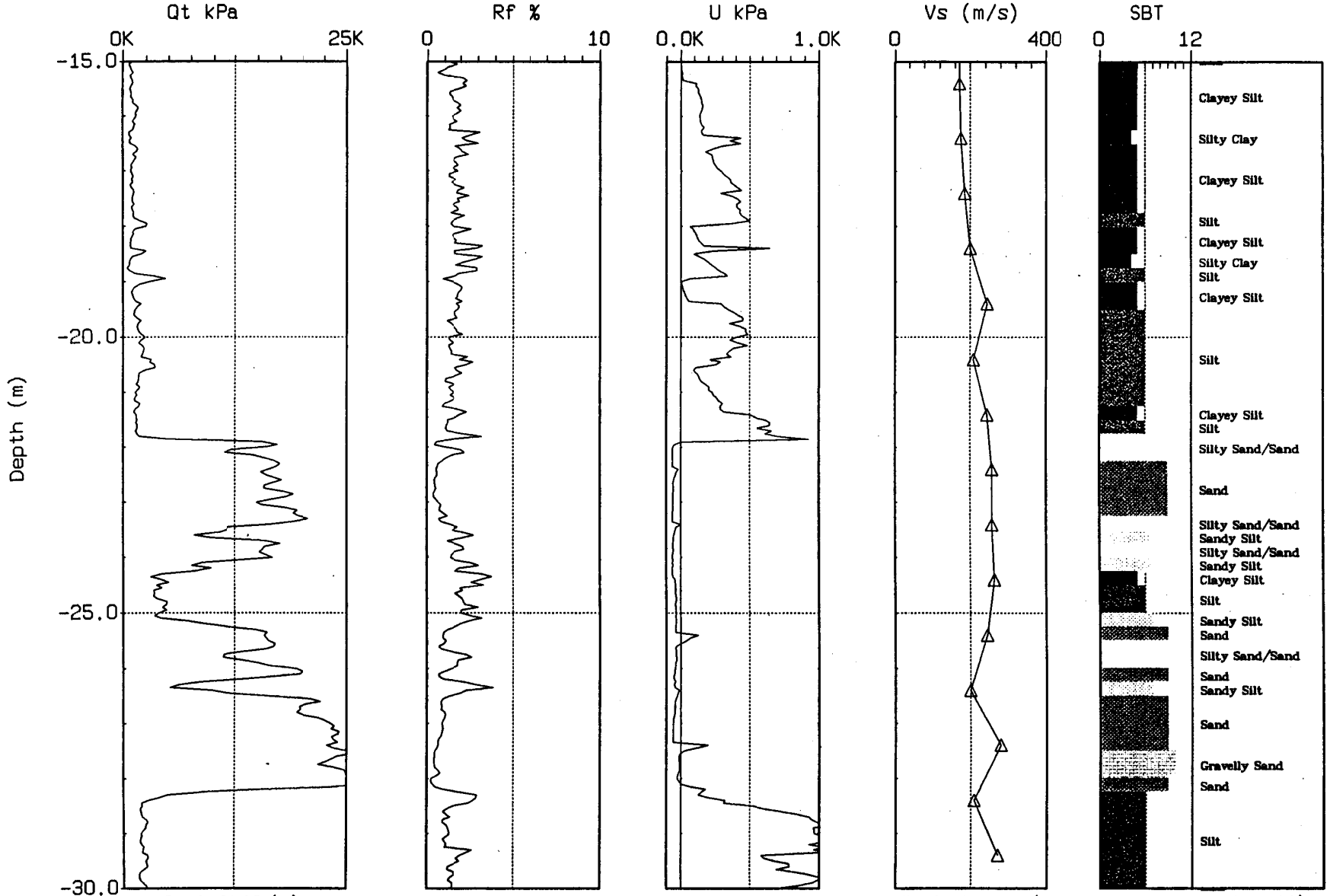
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S9: 2400 S, SS-SC-43
Location: Main St Struct.

Cone: 20 TON A 025
Date: 05:21:96 11:52



Max. Depth: 31.95 (m)
Depth Inc.: 0.05 (m)

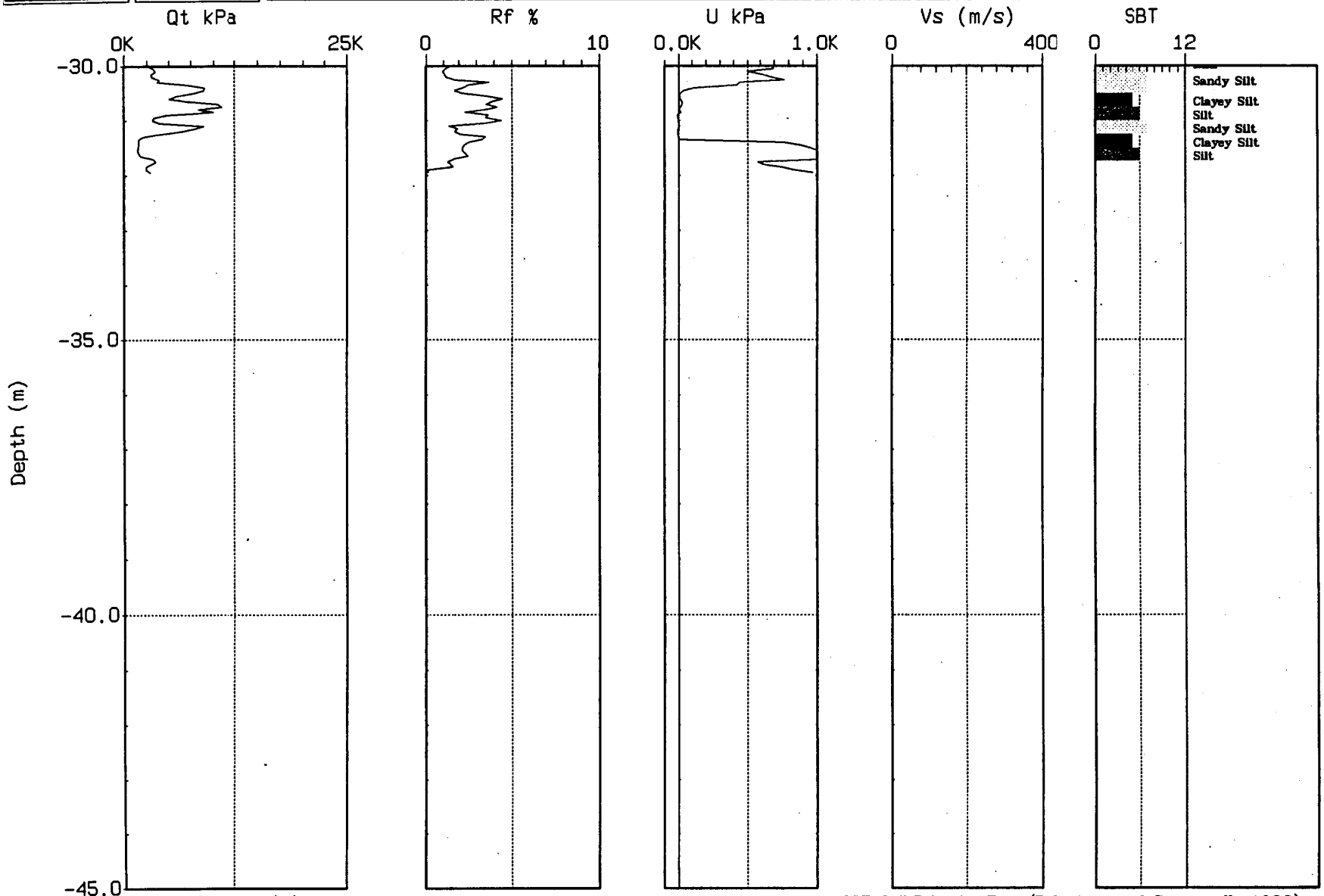
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Ste: I15, S9: 2400 S, SS-SC-43
Location: Main St Struct.

Cone: 20 TON A 025
Date: 05:21:96 11:52



Max. Depth: 31.95 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *SS-SC-43*
Date: *21-May-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 025 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
0.90	1.06					
1.90	1.98	7.1	130	425	0.9 - 1.9	3.0 - 6.2
2.90	2.95	8.3	117	385	1.9 - 2.9	6.2 - 9.5
3.90	3.94	4.5	219	719	2.9 - 3.9	9.5 - 12.8
4.90	4.93	5.2	191	626	3.9 - 4.9	12.8 - 16.1
5.90	5.93	4.9	203	666	4.9 - 5.9	16.1 - 19.4
6.90	6.92	6.3	158	519	5.9 - 6.9	19.4 - 22.6
7.90	7.92	5.1	196	641	6.9 - 7.9	22.6 - 25.9
8.90	8.92	4.4	227	744	7.9 - 8.9	25.9 - 29.2
9.90	9.92	7.1	141	461	8.9 - 9.9	29.2 - 32.5
10.90	10.91	6.6	151	496	9.9 - 10.9	32.5 - 35.8
11.90	11.91	7.7	130	426	10.9 - 11.9	35.8 - 39.0
12.90	12.91	5.1	196	643	11.9 - 12.9	39.0 - 42.3
13.90	13.91	5.6	178	585	12.9 - 13.9	42.3 - 45.6
14.90	14.91	5.8	172	565	13.9 - 14.9	45.6 - 48.9
15.90	15.91	5.8	172	565	14.9 - 15.9	48.9 - 52.2
16.90	16.91	5.7	175	575	15.9 - 16.9	52.2 - 55.4
17.90	17.91	5.4	185	607	16.9 - 17.9	55.4 - 58.7
18.90	18.91	5.0	200	656	17.9 - 18.9	58.7 - 62.0
19.90	19.91	4.1	244	800	18.9 - 19.9	62.0 - 65.3
20.90	20.91	4.8	208	683	19.9 - 20.9	65.3 - 68.6
21.90	21.91	4.1	244	800	20.9 - 21.9	68.6 - 71.9
22.90	22.91	3.9	256	841	21.9 - 22.9	71.9 - 75.1
23.90	23.91	3.9	256	841	22.9 - 23.9	75.1 - 78.4
24.90	24.91	3.8	263	863	23.9 - 24.9	78.4 - 81.7
25.90	25.91	4.1	244	800	24.9 - 25.9	81.7 - 85.0
26.90	26.91	5.0	200	656	25.9 - 26.9	85.0 - 88.3
27.90	27.91	3.6	278	911	26.9 - 27.9	88.3 - 91.5
28.90	28.91	4.8	208	683	27.9 - 28.9	91.5 - 94.8
29.90	29.91	3.7	270	887	28.9 - 29.9	94.8 - 98.1

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0913-0820-5775
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: 15,S4:I15,06-SC-35
Location: N Temple Struct
Cone: 20 TON A 041
CPT Date: 96/23/07
CPT Time: 08:24
CPT File: KA06S35.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	18570.8	71.6	0.4	2.4	0.0	37.1	74.3	0.0	95.0	50.0	1.0
1.23	0.38	5449.4	121.4	2.2	7.1	0.0	21.8	43.6	435.4	87.7	50.0	10.0
2.05	0.62	4629.6	112.6	2.4	11.6	0.0	18.5	37.0	369.4	76.0	48.0	10.0
2.87	0.88	2974.2	51.4	1.7	16.1	0.0	11.9	23.8	236.6	58.7	44.0	10.0
3.69	1.12	1155.0	18.1	1.6	20.6	0.0	5.8	11.6	90.8	0.0	0.0	10.0
4.51	1.38	991.1	15.2	1.5	25.1	0.0	5.0	9.7	77.3	0.0	0.0	6.0
5.33	1.62	966.9	20.9	2.2	29.6	0.0	4.8	8.7	75.0	0.0	0.0	6.0
6.15	1.88	777.4	21.3	2.7	34.1	0.0	5.2	8.7	59.5	0.0	0.0	6.0
6.97	2.12	924.2	26.3	2.8	37.4	1.2	6.2	9.9	70.8	0.0	0.0	6.0
7.79	2.38	828.7	14.4	1.7	39.4	3.7	4.1	6.5	62.8	0.0	0.0	6.0
8.61	2.62	854.4	18.7	2.2	41.5	6.1	4.3	6.5	64.5	0.0	0.0	6.0
9.43	2.88	853.8	17.2	2.0	43.5	8.6	4.3	6.3	64.1	0.0	0.0	6.0
10.25	3.12	995.0	16.1	1.6	45.6	11.0	5.0	7.2	75.1	0.0	0.0	6.0
11.07	3.38	1193.4	25.7	2.2	47.6	13.5	6.0	8.5	90.6	0.0	0.0	6.0
11.89	3.62	1268.6	16.8	1.3	49.7	15.9	5.1	7.0	96.2	30.0	34.0	6.0
12.71	3.88	1619.7	30.9	1.9	51.7	18.4	6.5	8.8	124.0	30.0	36.0	6.0
13.53	4.12	1613.8	24.1	1.5	53.8	20.8	6.5	8.6	123.1	30.0	36.0	6.0
14.35	4.38	1705.7	23.7	1.4	55.8	23.3	6.8	8.9	130.1	30.0	36.0	6.0
15.17	4.62	1700.7	28.5	1.7	57.9	25.8	6.8	8.8	129.4	30.0	36.0	6.0
15.99	4.88	1832.4	39.5	2.2	59.9	28.2	7.3	9.3	139.5	30.0	36.0	6.0
16.81	5.12	1687.7	35.2	2.1	62.0	30.7	8.4	10.5	127.6	0.0	0.0	6.0
17.63	5.38	2523.0	56.8	2.3	64.0	33.1	10.1	12.3	194.1	34.2	38.0	6.0
18.45	5.62	2615.4	68.5	2.6	66.1	35.6	10.5	12.6	201.1	34.8	38.0	6.0
19.27	5.88	1217.6	33.8	2.8	68.1	38.0	6.1	7.2	88.9	0.0	0.0	6.0
20.09	6.12	898.2	10.2	1.1	70.2	40.5	4.5	5.2	63.0	0.0	0.0	3.0
20.92	6.38	1019.0	12.8	1.3	72.2	42.9	5.1	5.9	72.3	0.0	0.0	6.0
21.74	6.62	2324.1	39.7	1.7	74.3	45.4	9.3	10.6	176.4	30.0	36.0	6.0
22.56	6.88	3404.1	43.1	1.3	76.4	47.8	11.3	12.7	0.0	40.3	38.0	1.0
23.38	7.12	937.5	15.0	1.6	78.5	50.3	4.7	5.2	64.7	0.0	0.0	3.0
24.20	7.38	615.1	2.1	0.3	79.8	52.7	3.1	3.4	38.6	0.0	0.0	1.5
25.02	7.62	603.8	2.3	0.4	80.5	55.2	3.0	3.3	37.5	0.0	0.0	1.5
25.84	7.88	573.6	2.7	0.5	81.2	57.6	2.9	3.1	34.8	0.0	0.0	1.5
26.66	8.12	588.5	2.9	0.5	81.9	60.1	2.9	3.2	35.7	0.0	0.0	1.5
27.48	8.38	664.1	3.5	0.5	82.5	62.5	3.3	3.6	41.5	0.0	0.0	3.0
28.30	8.62	724.6	8.1	1.1	83.9	65.0	3.6	3.9	46.1	0.0	0.0	3.0
29.12	8.88	878.1	28.3	3.2	85.9	67.4	5.9	6.2	58.0	0.0	0.0	3.0
29.94	9.12	813.4	11.2	1.4	88.0	69.9	4.1	4.2	52.4	0.0	0.0	3.0
30.76	9.38	707.9	5.1	0.7	90.0	72.3	3.5	3.7	43.6	0.0	0.0	1.5
31.58	9.62	658.2	5.4	0.8	91.4	74.8	3.3	3.4	39.4	0.0	0.0	1.5
32.40	9.88	656.5	6.2	0.9	92.7	77.3	3.3	3.3	38.9	0.0	0.0	1.5
33.22	10.12	609.5	4.9	0.8	94.1	79.7	3.0	3.1	34.9	0.0	0.0	1.5
34.04	10.38	582.2	4.6	0.8	94.8	82.2	2.9	2.9	32.4	0.0	0.0	1.5
34.86	10.62	605.0	5.6	0.9	95.5	84.6	3.0	3.0	34.0	0.0	0.0	1.5
35.68	10.88	599.3	4.9	0.8	96.1	87.1	3.0	3.0	33.3	0.0	0.0	1.5
36.50	11.12	611.3	5.3	0.9	96.8	89.5	3.1	3.0	34.0	0.0	0.0	1.5
37.32	11.38	622.3	5.7	0.9	97.5	92.0	3.1	3.1	34.6	0.0	0.0	1.5
38.14	11.62	629.4	6.9	1.1	98.8	94.4	3.1	3.1	34.9	0.0	0.0	1.5
38.96	11.88	1123.7	16.4	1.5	100.9	96.9	5.6	5.5	74.1	0.0	0.0	3.0
39.78	12.12	1620.1	17.8	1.1	102.9	99.3	6.5	6.3	113.4	30.0	32.0	6.0
40.60	12.38	1658.7	30.6	1.8	105.0	101.8	6.6	6.3	116.2	30.0	32.0	6.0
41.42	12.62	679.1	4.0	0.6	106.3	104.2	3.4	3.2	37.5	0.0	0.0	1.5
42.24	12.88	1033.6	18.8	1.8	107.7	106.7	5.2	4.9	65.5	0.0	0.0	3.0

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	1223.9	15.3	1.2	109.7	109.1	4.9	4.6	80.4	30.0	30.0	3.0
43.88	13.38	2076.9	31.3	1.5	111.8	111.6	8.3	7.7	148.3	30.0	32.0	6.0
44.70	13.62	1515.0	18.4	1.2	113.8	114.0	6.1	5.6	103.0	30.0	30.0	3.0
45.52	13.88	1316.3	17.0	1.3	115.9	116.5	5.3	4.8	86.7	30.0	30.0	3.0
46.34	14.12	1042.7	10.1	1.0	117.9	118.9	4.2	3.8	64.5	30.0	30.0	3.0
47.16	14.38	918.0	4.7	0.5	120.0	121.4	3.7	3.3	54.1	30.0	30.0	1.5
47.98	14.62	1352.8	13.3	1.0	122.0	123.9	5.4	4.8	88.6	30.0	30.0	3.0
48.80	14.88	2521.5	16.1	0.6	124.1	126.3	8.4	7.4	0.0	30.0	32.0	1.0
49.62	15.12	1903.0	29.1	1.5	126.2	128.8	7.6	6.6	131.8	30.0	32.0	6.0
50.44	15.38	1300.6	11.1	0.9	128.3	131.2	5.2	4.5	83.3	30.0	30.0	3.0
51.26	15.62	1189.2	12.6	1.1	130.3	133.7	4.8	4.1	74.0	30.0	30.0	3.0
52.08	15.88	1034.2	11.2	1.1	132.4	136.1	4.1	3.5	61.3	30.0	30.0	1.5
52.90	16.12	1088.6	9.7	0.9	134.4	138.6	4.4	3.7	65.2	30.0	30.0	1.5
53.72	16.38	1080.3	10.1	0.9	136.5	141.0	4.3	3.6	64.2	30.0	30.0	1.5
54.54	16.62	1230.9	16.9	1.4	138.5	143.5	4.9	4.1	75.9	30.0	30.0	3.0
55.36	16.88	1070.5	10.3	1.0	140.6	145.9	4.3	3.5	62.7	30.0	30.0	1.5
56.18	17.12	1317.0	10.3	0.8	142.6	148.4	5.3	4.3	82.1	30.0	30.0	3.0
57.00	17.38	1145.5	6.0	0.5	144.7	150.8	4.6	3.7	68.0	30.0	30.0	1.5
57.82	17.62	1170.8	9.6	0.8	146.7	153.3	4.7	3.8	69.7	30.0	30.0	1.5
58.64	17.88	1095.9	10.6	1.0	148.8	155.7	4.4	3.5	63.3	30.0	30.0	1.5
59.46	18.12	1298.9	13.9	1.1	150.8	158.2	5.2	4.1	79.2	30.0	30.0	3.0
60.28	18.38	1294.7	15.6	1.2	152.9	160.6	5.2	4.1	78.5	30.0	30.0	3.0
61.10	18.62	1236.7	14.1	1.1	154.9	163.1	4.9	3.9	73.5	30.0	30.0	1.5
61.93	18.88	1382.7	18.0	1.3	157.0	165.5	5.5	4.3	84.8	30.0	30.0	3.0
62.75	19.12	2085.8	25.2	1.2	159.0	168.0	8.3	6.5	140.7	30.0	30.0	3.0
63.57	19.38	1289.7	8.2	0.6	161.1	170.4	5.2	4.0	76.7	30.0	30.0	1.5
64.39	19.62	1330.5	10.5	0.8	163.1	172.9	5.3	4.1	79.6	30.0	30.0	1.5
65.21	19.88	1468.7	16.3	1.1	165.1	175.4	5.9	4.5	90.3	30.0	30.0	3.0
66.03	20.12	1968.9	22.0	1.1	167.2	177.8	7.9	6.0	129.9	30.0	30.0	3.0
66.85	20.38	3514.4	65.4	1.9	169.2	180.3	14.1	10.6	253.2	30.0	32.0	6.0
67.67	20.62	1990.6	35.0	1.8	171.3	182.7	8.0	6.0	130.9	30.0	30.0	3.0
68.49	20.88	3946.4	44.4	1.1	173.4	185.2	13.2	9.8	0.0	32.7	34.0	1.0
69.31	21.12	5209.3	73.4	1.4	175.6	187.6	17.4	12.8	0.0	40.5	36.0	1.0
70.13	21.38	6101.5	78.9	1.3	177.7	190.1	20.3	14.9	0.0	44.9	36.0	1.0
70.95	21.62	2330.6	36.7	1.6	179.9	192.5	9.3	6.8	156.7	30.0	30.0	3.0
71.77	21.88	1298.9	19.2	1.5	181.9	195.0	5.2	3.8	73.8	30.0	30.0	1.5
72.59	22.12	2209.9	39.7	1.8	183.9	197.4	8.8	6.4	146.3	30.0	30.0	3.0
73.41	22.38	3423.7	55.7	1.6	186.0	199.9	13.7	9.8	243.0	30.0	32.0	6.0
74.23	22.62	4468.6	78.4	1.8	188.1	202.3	14.9	10.6	0.0	35.1	34.0	1.0
75.05	22.88	10095.8	80.7	0.8	190.3	204.8	25.2	17.9	0.0	58.3	38.0	1.0
75.87	23.12	3502.5	65.6	1.9	192.5	207.2	14.0	9.9	248.2	30.0	32.0	6.0
76.69	23.38	2747.6	38.2	1.4	194.6	209.7	11.0	7.7	187.5	30.0	30.0	3.0
77.51	23.62	4227.4	65.5	1.5	196.7	212.1	14.1	9.8	0.0	32.9	34.0	1.0
78.33	23.88	4652.6	64.4	1.4	198.8	214.6	15.5	10.8	0.0	35.5	34.0	1.0
79.15	24.12	1938.3	17.3	0.9	201.0	217.0	7.8	5.4	121.6	30.0	30.0	3.0
79.97	24.38	1701.3	30.5	1.8	203.0	219.5	6.8	4.7	102.3	30.0	30.0	3.0
80.79	24.62	2170.2	52.6	2.4	205.0	222.0	8.7	5.9	139.5	30.0	30.0	3.0
81.61	24.88	2824.3	62.3	2.2	207.1	224.4	11.3	7.7	191.4	30.0	30.0	3.0
82.43	25.12	3729.9	61.3	1.6	209.2	226.9	12.4	8.4	0.0	30.0	32.0	1.0
83.25	25.38	13258.7	142.9	1.1	211.4	229.3	33.1	22.3	0.0	64.6	40.0	1.0
84.07	25.62	13216.6	234.1	1.8	213.7	231.8	44.1	29.5	0.0	64.4	40.0	1.0
84.89	25.88	18746.6	219.3	1.2	215.9	234.2	46.9	31.2	0.0	74.3	42.0	1.0
85.71	26.12	27106.2	215.4	0.8	218.3	236.7	54.2	35.9	0.0	84.7	42.0	1.0
86.53	26.38	27146.8	263.4	1.0	220.7	239.1	54.3	35.8	0.0	84.6	42.0	1.0
87.35	26.62	24769.6	239.4	1.0	223.1	241.6	49.5	32.5	0.0	81.8	42.0	1.0
88.17	26.88	24307.4	289.0	1.2	225.5	244.0	48.6	31.7	0.0	81.1	42.0	1.0
88.99	27.12	36583.2	221.4	0.6	228.0	246.5	61.0	39.5	0.0	92.6	44.0	1.0
89.81	27.38	35398.7	312.8	0.9	230.5	248.9	70.8	45.6	0.0	91.5	44.0	1.0
90.63	27.62	31702.6	308.1	1.0	232.9	251.4	63.4	40.7	0.0	88.2	44.0	1.0
91.45	27.88	32870.6	266.0	0.8	235.4	253.8	65.7	41.9	0.0	89.1	44.0	1.0
92.27	28.12	34187.0	309.9	0.9	237.8	256.3	68.4	43.4	0.0	90.1	44.0	1.0
93.09	28.38	35390.7	294.1	0.8	240.2	258.7	70.8	44.7	0.0	90.9	44.0	1.0
93.91	28.62	32933.1	273.2	0.8	242.6	261.2	65.9	41.4	0.0	88.7	44.0	1.0
94.73	28.88	15912.2	206.0	1.3	245.0	263.6	39.8	24.9	0.0	67.7	40.0	1.0
95.55	29.12	3611.1	50.1	1.4	247.2	266.1	12.0	7.5	0.0	30.0	32.0	1.0
96.37	29.38	3981.6	68.1	1.7	249.4	268.5	13.3	8.2	0.0	30.0	32.0	1.0
97.19	29.62	4863.5	96.8	2.0	251.6	271.0	16.2	10.0	0.0	33.4	32.0	1.0
98.01	29.88	2876.5	38.1	1.3	253.7	273.5	11.5	7.1	188.0	30.0	30.0	3.0
98.83	30.12	5637.9	79.4	1.4	255.8	275.9	18.8	11.5	0.0	37.4	34.0	1.0

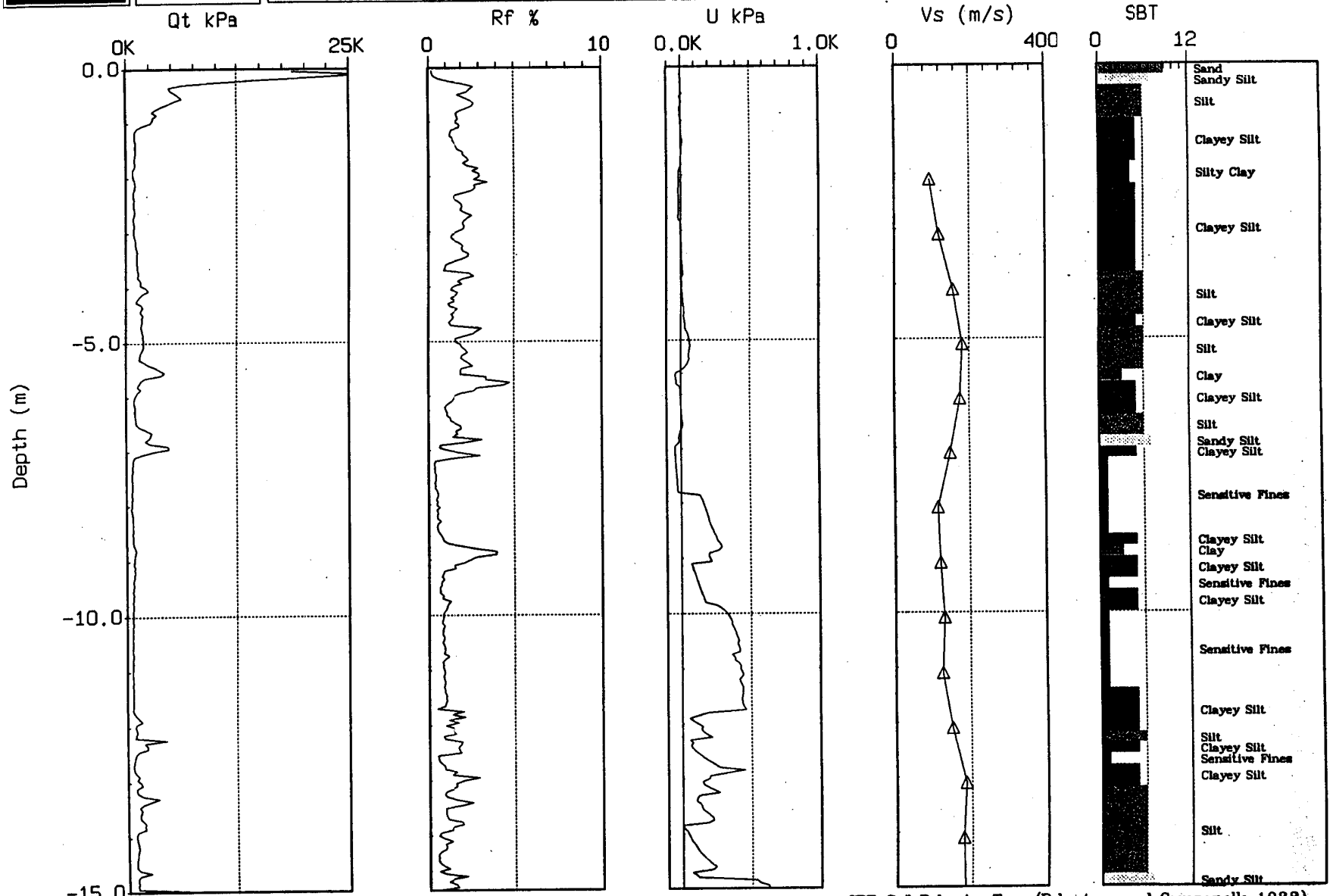
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60 (blows/ft)	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	17600.4	202.6	1.2	258.0	278.4	44.0	26.8	0.0	69.9	40.0	1.0
100.47	30.62	9256.8	262.2	2.8	260.2	280.8	37.0	22.5	697.3	51.4	36.0	6.0

CONETEC

Kleinfelder

Site: I15, S4:I15, 06-SC-35
Location: N Temple Struct

Cone: 20 TON A 041
Date: 07:23:96 08:24



Max. Depth: 30.90 (m)
Depth Inc.: 0.05 (m)

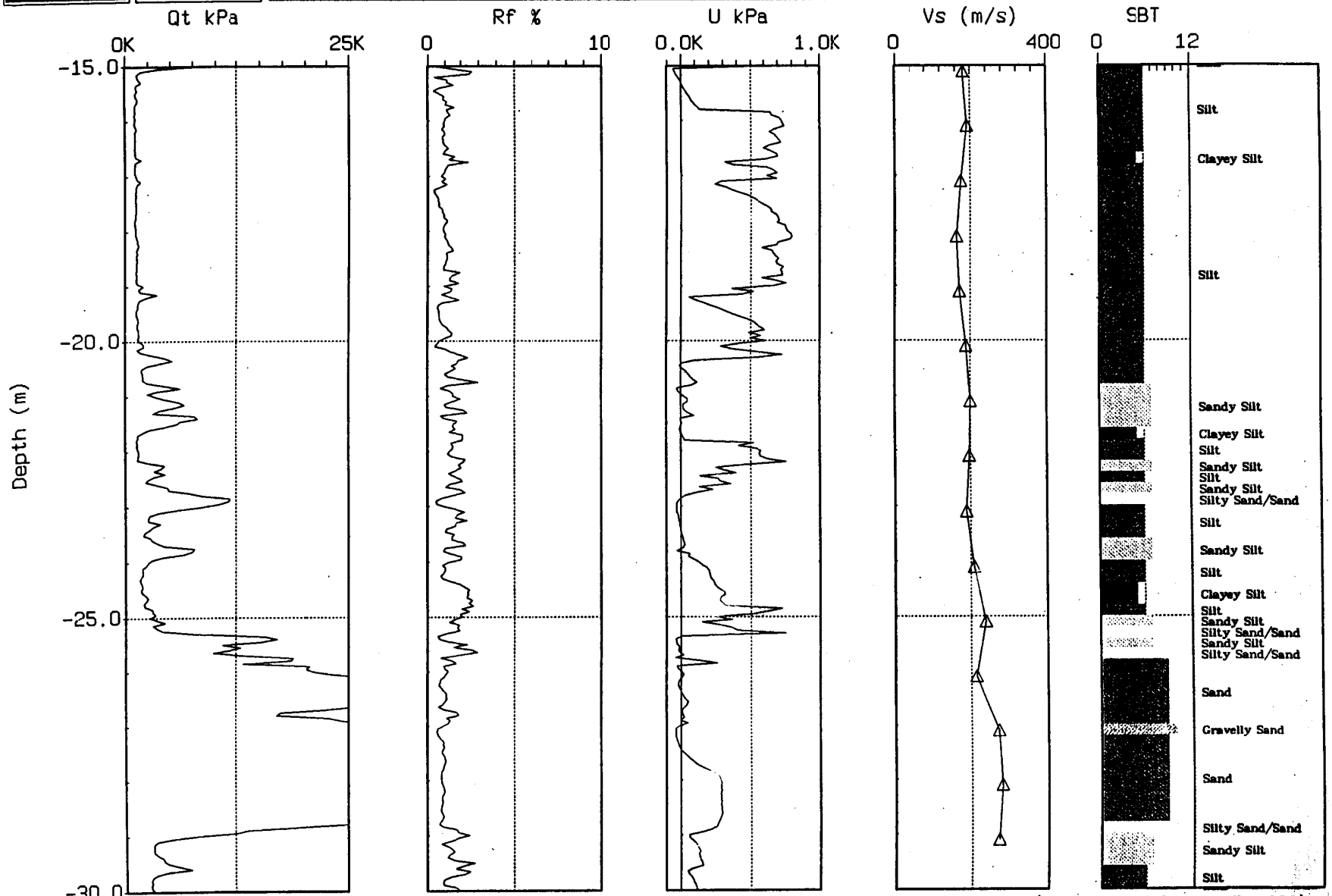
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4I15, 06-SC-35
Location: N Temple Struct

Cone: 20 TON A 041
Date: 07:23:96 08:24



Max. Depth: 30.90 (m)
Depth Inc.: 0.05 (m)

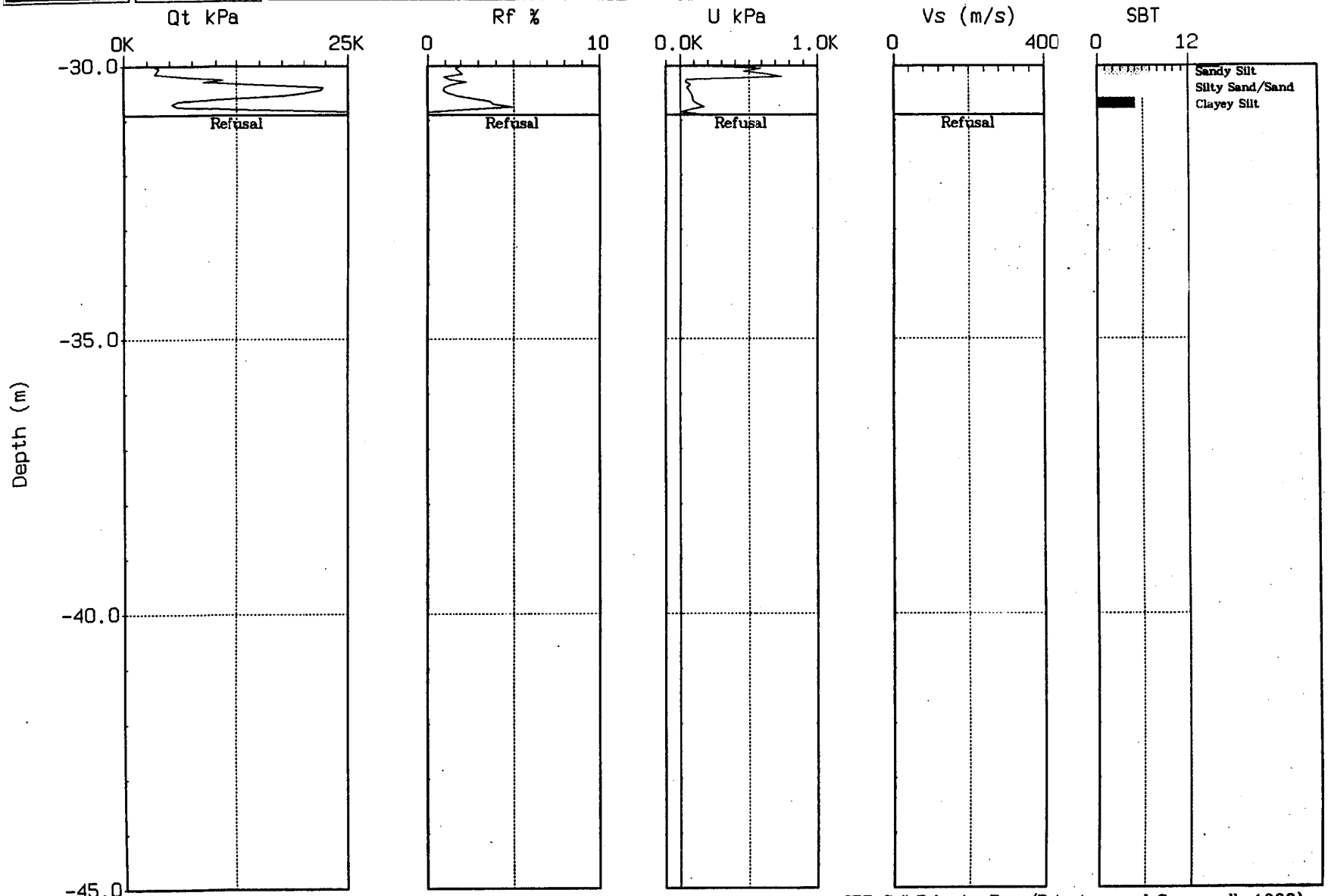
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4:I15, 06-SC-35
Location: N Temple Struct

Cone: 20 TON A 041
Date: 07:23:96 08:24



Max. Depth: 30.90 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988).

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-35*
Date: *23-Jul-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 041 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
1.60	1.70					
2.60	2.66	10.1	* 95	313	1.6 - 2.6	5.2 - 8.5
3.60	3.64	8.3	119	389	2.6 - 3.6	8.5 - 11.8
4.60	4.63	6.3	157	516	3.6 - 4.6	11.8 - 15.1
5.60	5.63	5.5	* 181	593	4.6 5.1 5.6	15.1 - 18.4
6.60	6.62	5.7	175	573	5.6 - 6.6	18.4 - 21.7
7.60	7.62	6.8	147	481	6.6 - 7.6	21.7 - 24.9
8.60	8.62	8.7	115	376	7.6 - 8.6	24.9 - 28.2
9.60	9.62	8.2	122	399	8.6 - 9.6	28.2 - 31.5
10.60	10.61	7.6	* 131	431	9.6 - 10.6	31.5 - 34.8
11.60	11.61	7.9	126	415	10.6 - 11.6	34.8 - 38.1
12.60	12.61	6.6	151	497	11.6 - 12.6	38.1 - 41.3
13.60	13.61	5.4	185	607	12.6 - 13.6	41.3 - 44.6
14.60	14.61	5.6	178	585	13.6 - 14.6	44.6 - 47.9
15.60	15.61	5.5	* 182	596	14.6 - 15.6	47.9 - 51.2
16.60	16.61	5.1	196	643	15.6 - 16.6	51.2 - 54.5
17.60	17.61	5.6	178	586	16.6 - 17.6	54.5 - 57.7
18.60	18.61	6.1	164	538	17.6 - 18.6	57.7 - 61.0
19.60	19.61	5.8	172	565	18.6 - 19.6	61.0 - 64.3
20.60	20.61	5.3	* 189	619	19.6 - 20.6	64.3 - 67.6
21.60	21.61	5.0	200	656	20.6 - 21.6	67.6 - 70.9
22.60	22.61	5.1	196	643	21.6 - 22.6	70.9 - 74.1
23.60	23.61	5.3	189	619	22.6 - 23.6	74.1 - 77.4
24.60	24.61	4.8	208	683	23.6 - 24.6	77.4 - 80.7
25.60	25.61	4.2	* 238	781	24.6 - 25.6	80.7 - 84.0
26.60	26.61	4.7	213	698	25.6 - 26.6	84.0 - 87.3
27.60	27.61	3.7	270	887	26.6 - 27.6	87.3 - 90.6
28.60	28.61	3.6	278	911	27.6 - 28.6	90.6 - 93.8
29.60	29.61	3.7	270	887	28.6 29.1 29.6	93.8 - 97.1

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0804-2150-5121
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15, S4: SPRR R of W, 06-SC-43
Location: 500 S Viaduct
Cone: 10 TON A 028
CPT Date: 96/18/07
CPT Time: 09:12
CPT File: KA06S043.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	9970.9	247.0	2.5	2.3	0.0	33.2	66.5	0.0	95.0	50.0	1.0
1.23	0.38	12449.4	166.2	1.3	7.0	0.0	31.1	62.2	0.0	95.0	50.0	1.0
2.05	0.62	13196.2	179.8	1.4	11.8	0.0	33.0	66.0	0.0	95.0	50.0	1.0
2.87	0.88	2803.9	109.9	3.9	16.4	0.0	18.7	37.4	223.0	0.0	0.0	10.0
3.69	1.12	4346.1	79.9	1.8	20.9	0.0	14.5	29.0	0.0	65.8	46.0	1.0
4.51	1.38	5375.0	62.7	1.2	25.6	0.0	17.9	34.7	0.0	69.0	46.0	1.0
5.33	1.62	2591.1	33.4	1.3	30.1	0.0	10.4	18.5	204.9	45.8	42.0	10.0
6.15	1.88	862.1	34.3	4.0	34.6	0.0	8.6	14.4	66.2	0.0	0.0	6.0
6.97	2.12	923.7	30.2	3.3	37.8	1.2	6.2	9.8	70.8	0.0	0.0	6.0
7.79	2.38	1115.1	14.8	1.3	39.8	3.7	5.6	8.6	85.7	0.0	0.0	6.0
8.61	2.62	2816.2	22.0	0.8	41.9	6.1	9.4	14.2	0.0	43.4	40.0	1.0
9.43	2.88	4618.9	22.6	0.5	44.2	8.6	11.5	17.0	0.0	56.8	42.0	1.0
10.25	3.12	1081.5	19.4	1.8	46.3	11.0	5.4	7.8	81.9	0.0	0.0	6.0
11.07	3.38	921.4	14.2	1.5	48.4	13.5	4.6	6.5	68.8	0.0	0.0	6.0
11.89	3.62	1828.1	19.1	1.0	50.4	15.9	7.3	10.1	140.9	30.0	38.0	6.0
12.71	3.88	7472.0	18.4	0.2	52.6	18.4	18.7	25.2	0.0	68.1	44.0	1.0
13.53	4.12	4714.7	26.5	0.6	54.9	20.8	11.8	15.6	0.0	54.3	42.0	1.0
14.35	4.38	11102.2	24.2	0.2	57.3	23.3	22.2	28.7	0.0	78.3	44.0	1.0
15.17	4.62	10261.7	20.5	0.2	59.7	25.8	20.5	26.0	0.0	75.4	44.0	1.0
15.99	4.88	8714.4	15.0	0.2	62.1	28.2	17.4	21.6	0.0	70.2	44.0	1.0
16.81	5.12	3127.9	37.2	1.2	64.4	30.7	10.4	12.7	0.0	40.3	38.0	1.0
17.63	5.38	656.5	13.1	2.0	66.5	33.1	4.4	5.3	44.6	0.0	0.0	3.0
18.45	5.62	563.9	17.2	3.0	68.5	35.6	5.6	6.7	36.8	0.0	0.0	3.0
19.27	5.88	400.0	16.2	4.1	70.4	38.0	4.0	4.7	23.3	0.0	0.0	1.5
20.09	6.12	572.7	12.8	2.2	72.4	40.5	3.8	4.4	36.8	0.0	0.0	3.0
20.92	6.38	593.3	13.3	2.2	74.5	42.9	4.0	4.5	38.1	0.0	0.0	3.0
21.74	6.62	312.6	5.7	1.8	75.8	45.4	1.6	1.8	15.3	0.0	0.0	1.0
22.56	6.88	844.4	10.2	1.2	77.2	47.8	4.2	4.7	57.5	0.0	0.0	3.0
23.38	7.12	2700.4	39.2	1.5	79.2	50.3	10.8	11.9	205.7	33.1	36.0	6.0
24.20	7.38	855.3	17.2	2.0	81.3	52.7	4.3	4.6	57.7	0.0	0.0	3.0
25.02	7.62	2154.5	32.4	1.5	83.3	55.2	8.6	9.2	161.3	30.0	34.0	6.0
25.84	7.88	706.8	21.3	3.0	85.4	57.6	4.7	5.0	45.1	0.0	0.0	3.0
26.66	8.12	3447.1	80.3	2.3	87.4	60.1	13.8	14.4	264.0	38.7	38.0	6.0
27.48	8.38	1271.5	37.5	3.0	89.5	62.5	6.4	6.6	89.6	0.0	0.0	6.0
28.30	8.62	862.9	12.0	1.4	91.5	65.0	4.3	4.4	56.5	0.0	0.0	3.0
29.12	8.88	1415.5	25.0	1.8	93.6	67.4	7.1	7.2	100.4	0.0	0.0	6.0
29.94	9.12	918.8	9.8	1.1	95.6	69.9	4.6	4.6	60.3	0.0	0.0	3.0
30.76	9.38	730.0	10.8	1.5	97.7	72.3	3.7	3.6	44.8	0.0	0.0	1.5
31.58	9.62	2139.7	43.1	2.0	99.7	74.8	8.6	8.4	157.2	30.0	34.0	6.0
32.40	9.88	912.9	24.8	2.7	101.7	77.3	6.1	5.9	58.7	0.0	0.0	3.0
33.22	10.12	694.5	13.4	1.9	103.8	79.7	3.5	3.3	40.9	0.0	0.0	1.5
34.04	10.38	1882.7	31.6	1.7	105.8	82.2	7.5	7.2	135.6	30.0	32.0	6.0
34.86	10.62	2424.2	34.0	1.4	107.9	84.6	9.7	9.1	178.5	30.0	34.0	6.0
35.68	10.88	3297.0	69.6	2.1	109.9	87.1	13.2	12.3	248.0	34.1	36.0	6.0
36.50	11.12	2919.8	81.8	2.8	112.0	89.5	14.6	13.5	217.5	0.0	0.0	6.0
37.32	11.38	1105.3	10.3	0.9	114.0	92.0	4.4	4.1	71.9	30.0	30.0	3.0
38.14	11.62	888.2	3.9	0.4	116.1	94.4	3.6	3.2	54.2	30.0	30.0	1.5
38.96	11.88	699.7	4.3	0.6	117.4	96.9	3.5	3.2	38.8	0.0	0.0	1.5
39.78	12.12	828.7	7.3	0.9	118.8	99.3	4.1	3.7	48.8	0.0	0.0	1.5
40.60	12.38	780.3	4.0	0.5	120.2	101.8	3.9	3.5	44.7	0.0	0.0	1.5
41.42	12.62	752.1	3.4	0.5	120.8	104.2	3.8	3.3	42.2	0.0	0.0	1.5
42.24	12.88	1139.9	8.5	0.7	122.2	106.7	4.6	4.0	72.9	30.0	30.0	3.0

ConeTec Inc. - CPT Interpretation
Run No: 96-0804-2150-5121
CPT File: KA06S043.COR

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	1167.4	8.9	0.8	124.2	109.1	4.7	4.1	74.7	30.0	30.0	3.0
43.88	13.38	982.9	6.8	0.7	126.3	111.6	3.9	3.4	59.6	30.0	30.0	1.5
44.70	13.62	866.5	8.0	0.9	128.3	114.0	4.3	3.7	49.9	0.0	0.0	1.5
45.52	13.88	872.1	8.7	1.0	130.4	116.5	4.4	3.7	50.0	0.0	0.0	1.5
46.34	14.12	880.7	11.8	1.3	132.4	118.9	4.4	3.7	50.3	0.0	0.0	1.5
47.16	14.38	770.3	10.1	1.3	134.5	121.4	3.9	3.3	41.2	0.0	0.0	1.5
47.98	14.62	814.9	10.9	1.3	136.5	123.9	4.1	3.4	44.4	0.0	0.0	1.5
48.80	14.88	847.7	11.8	1.4	138.6	126.3	4.2	3.5	46.6	0.0	0.0	1.5
49.62	15.12	881.5	16.2	1.8	140.6	128.8	4.4	3.6	49.0	0.0	0.0	1.5
50.44	15.38	1021.2	22.2	2.2	142.7	131.2	5.1	4.2	59.8	0.0	0.0	1.5
51.26	15.62	2004.3	37.0	1.8	144.7	133.7	8.0	6.5	138.1	30.0	30.0	3.0
52.08	15.88	2249.8	28.9	1.3	146.8	136.1	9.0	7.3	157.4	30.0	32.0	6.0
52.90	16.12	2793.5	33.6	1.2	148.8	138.6	11.2	9.0	200.5	30.0	32.0	6.0
53.72	16.38	2228.1	18.7	0.8	150.9	141.0	8.9	7.1	154.9	30.0	32.0	6.0
54.54	16.62	2157.6	24.2	1.1	152.9	143.5	8.6	6.8	148.9	30.0	30.0	3.0
55.36	16.88	1576.9	24.7	1.6	155.0	145.9	6.3	5.0	102.1	30.0	30.0	3.0
56.18	17.12	1603.6	22.0	1.4	157.0	148.4	6.4	5.0	103.9	30.0	30.0	3.0
57.00	17.38	2086.5	21.3	1.0	159.0	150.8	8.3	6.5	142.1	30.0	30.0	3.0
57.82	17.62	1622.4	23.3	1.4	161.1	153.3	6.5	5.0	104.6	30.0	30.0	3.0
58.64	17.88	6813.1	100.4	1.5	163.2	155.7	22.7	17.4	0.0	49.3	38.0	1.0
59.46	18.12	15872.2	260.9	1.6	165.4	158.2	39.7	30.2	0.0	73.3	42.0	1.0
60.28	18.38	10833.8	216.4	2.0	167.7	160.6	36.1	27.3	0.0	62.2	40.0	1.0
61.10	18.62	2564.0	54.8	2.1	169.8	163.1	10.3	7.7	178.5	30.0	32.0	6.0
61.93	18.88	1621.4	19.5	1.2	171.8	165.5	6.5	4.8	102.7	30.0	30.0	3.0
62.75	19.12	2492.9	18.2	0.7	173.9	168.0	8.3	6.2	0.0	30.0	32.0	1.0
63.57	19.38	2356.4	19.1	0.8	176.1	170.4	7.9	5.8	0.0	30.0	30.0	1.0
64.39	19.62	6416.5	153.5	2.4	178.2	172.9	25.7	18.8	485.2	46.3	38.0	6.0
65.21	19.88	15435.5	322.0	2.1	180.3	175.4	51.5	37.5	0.0	71.3	42.0	1.0
66.03	20.12	17377.8	332.4	1.9	182.6	177.8	43.4	31.5	0.0	74.5	42.0	1.0
66.85	20.38	24531.4	488.0	2.0	184.9	180.3	61.3	44.1	0.0	84.2	44.0	1.0
67.67	20.62	31678.2	675.7	2.1	187.2	182.7	79.2	56.7	0.0	91.3	44.0	1.0
68.49	20.88	30645.6	727.1	2.4	189.4	185.2	102.2	72.6	0.0	90.2	44.0	1.0
69.31	21.12	30914.4	767.0	2.5	191.6	187.6	103.0	72.9	0.0	90.3	44.0	1.0
70.13	21.38	25434.5	568.3	2.2	193.7	190.1	84.8	59.6	0.0	84.6	44.0	1.0
70.95	21.62	27236.0	437.2	1.6	196.0	192.5	68.1	47.6	0.0	86.4	44.0	1.0
71.77	21.88	25948.2	263.2	1.0	198.3	195.0	51.9	36.1	0.0	84.8	44.0	1.0
72.59	22.12	25389.4	346.6	1.4	200.7	197.4	63.5	43.9	0.0	84.0	44.0	1.0
73.41	22.38	23113.4	171.7	0.7	203.1	199.9	46.2	31.7	0.0	81.1	42.0	1.0
74.23	22.62	14698.9	90.0	0.6	205.5	202.3	29.4	20.1	0.0	68.0	40.0	1.0
75.05	22.88	2541.0	46.6	1.8	207.7	204.8	10.2	6.9	170.3	30.0	30.0	3.0
75.87	23.12	2374.3	16.6	0.7	209.8	207.2	7.9	5.3	0.0	30.0	30.0	1.0
76.69	23.38	1741.2	15.8	0.9	211.9	209.7	7.0	4.7	105.6	30.0	30.0	1.5
77.51	23.62	2731.8	54.4	2.0	214.0	212.1	10.9	7.3	184.5	30.0	30.0	3.0
78.33	23.88	2727.0	63.0	2.3	216.0	214.6	10.9	7.3	183.7	30.0	30.0	3.0
79.15	24.12	2747.1	57.3	2.1	218.1	217.0	11.0	7.3	185.0	30.0	30.0	3.0
79.97	24.38	2362.6	40.5	1.7	220.1	219.5	9.5	6.2	153.8	30.0	30.0	3.0
80.79	24.62	2233.2	27.9	1.2	222.2	222.0	8.9	5.9	143.1	30.0	30.0	3.0
81.61	24.88	3176.1	49.5	1.6	224.2	224.4	12.7	8.3	218.2	30.0	30.0	3.0
82.43	25.12	8374.2	273.7	3.3	226.3	226.9	33.5	21.8	633.7	50.5	38.0	6.0
83.25	25.38	26306.9	647.1	2.5	228.4	229.3	87.7	56.8	0.0	83.2	42.0	1.0
84.07	25.62	16324.3	332.9	2.0	230.6	231.8	54.4	35.1	0.0	69.4	40.0	1.0
84.89	25.88	2511.1	66.6	2.7	232.7	234.2	12.6	8.1	163.5	0.0	0.0	3.0
85.71	26.12	7042.9	164.0	2.3	234.8	236.7	23.5	15.0	0.0	45.0	36.0	1.0
86.53	26.38	3621.5	61.1	1.7	236.9	239.1	14.5	9.2	251.6	30.0	32.0	6.0
87.35	26.62	1636.6	26.8	1.6	238.9	241.6	6.5	4.1	92.5	30.0	30.0	1.5
88.17	26.88	2060.1	29.8	1.4	241.0	244.0	8.2	5.2	126.0	30.0	30.0	3.0
88.99	27.12	2168.0	24.8	1.1	243.0	246.5	8.7	5.4	134.3	30.0	30.0	3.0
89.81	27.38	2906.7	34.1	1.2	245.1	248.9	9.7	6.1	0.0	30.0	30.0	1.0
90.63	27.62	2980.6	69.3	2.3	247.2	251.4	11.9	7.4	198.6	30.0	30.0	3.0
91.45	27.88	2897.6	102.5	3.5	249.3	253.8	14.5	9.0	191.6	0.0	0.0	3.0
92.27	28.12	2242.4	63.3	2.8	251.3	256.3	11.2	6.9	138.8	0.0	0.0	3.0
93.09	28.38	2173.6	53.4	2.5	253.4	258.7	8.7	5.3	132.9	30.0	30.0	3.0
93.91	28.62	2177.2	47.4	2.2	255.4	261.2	8.7	5.3	132.8	30.0	30.0	3.0
94.73	28.88	2916.8	89.1	3.1	257.5	263.6	14.6	8.9	191.7	0.0	0.0	3.0
95.55	29.12	8637.9	185.1	2.1	259.6	266.1	28.8	17.5	0.0	49.4	36.0	1.0
96.37	29.38	3196.5	56.2	1.8	261.7	268.5	12.8	7.7	213.3	30.0	30.0	3.0
97.19	29.62	4081.9	67.3	1.6	263.8	271.0	13.6	8.2	0.0	30.0	32.0	1.0
98.01	29.88	2479.9	67.6	2.7	265.9	273.5	12.4	7.4	155.2	0.0	0.0	3.0
98.83	30.12	2404.3	45.0	1.9	268.0	275.9	9.6	5.7	148.8	30.0	30.0	3.0

ConeTec Inc. - CPT Interpretation
Run No: 96-0804-2150-5121
CPT File: KA06S043.COR

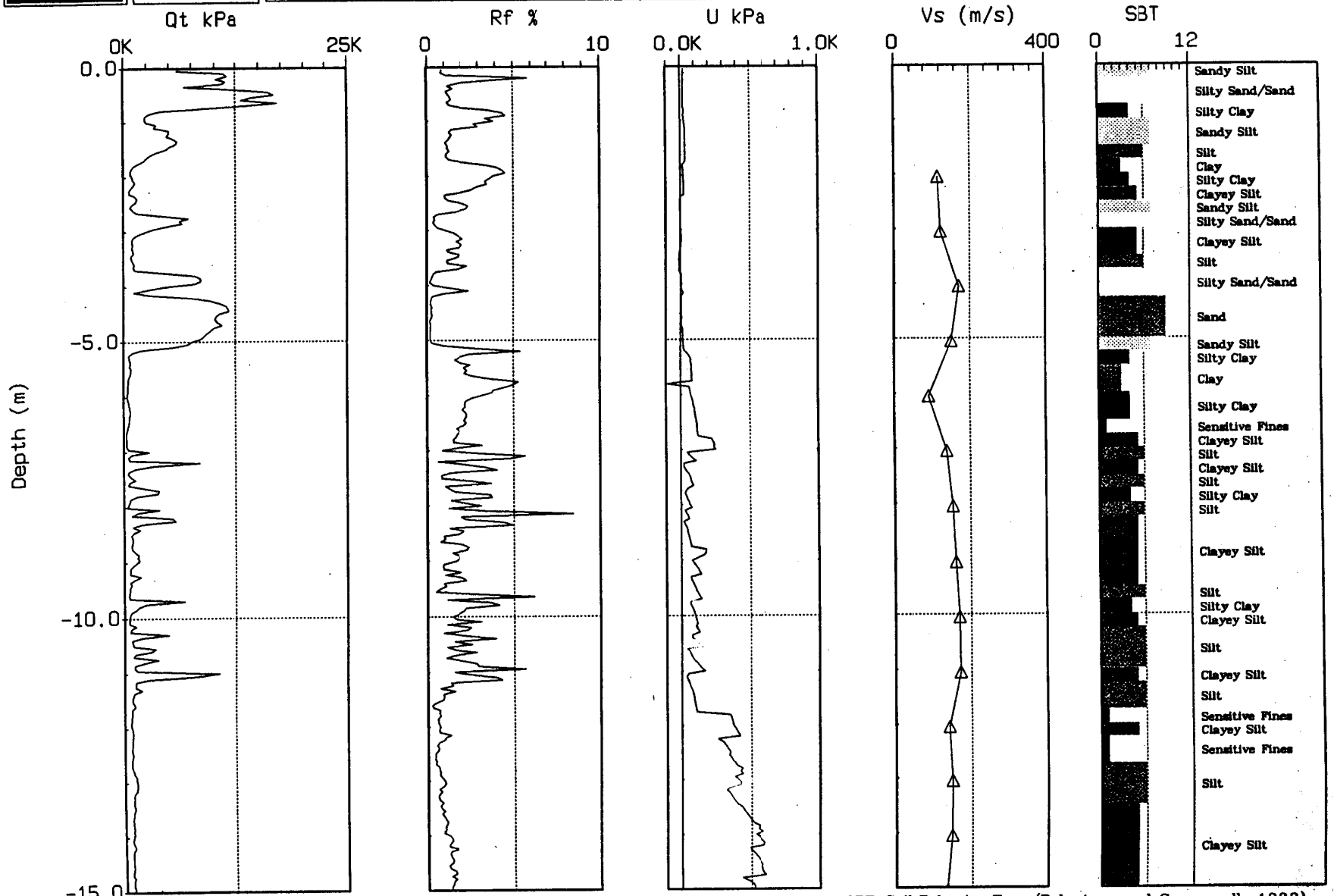
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	2845.6	42.0	1.5	270.0	278.4	11.4	6.8	183.8	30.0	30.0	3.0
100.47	30.62	3181.5	59.3	1.9	272.1	280.8	12.7	7.6	210.3	30.0	30.0	3.0
101.29	30.88	5523.0	142.1	2.6	274.1	283.3	22.1	13.1	397.3	35.8	32.0	6.0
102.11	31.12	6276.8	155.5	2.5	276.2	285.7	25.1	14.8	457.2	39.4	34.0	6.0
102.94	31.38	4226.4	102.3	2.4	278.2	288.2	16.9	9.9	292.8	30.0	32.0	6.0
103.76	31.62	13129.7	376.8	2.9	280.3	290.6	43.8	25.6	0.0	60.3	38.0	1.0
104.58	31.88	3807.7	134.9	3.5	282.4	293.1	19.0	11.1	258.6	0.0	0.0	3.0
105.40	32.12	1907.4	35.5	1.9	284.5	295.5	7.6	4.4	106.2	30.0	30.0	1.5
106.22	32.38	2086.6	49.8	2.4	286.5	298.0	8.3	4.8	120.2	30.0	30.0	1.5
107.04	32.62	4014.6	143.7	3.6	288.6	300.4	20.1	11.6	274.0	0.0	0.0	3.0
107.86	32.88	13291.5	381.2	2.9	290.7	302.9	44.3	25.4	0.0	60.1	38.0	1.0
108.68	33.12	14506.5	417.3	2.9	292.9	305.3	48.4	27.7	0.0	62.5	38.0	1.0
109.50	33.38	24211.2	543.1	2.2	295.0	307.8	80.7	46.0	0.0	77.1	42.0	1.0
110.32	33.62	28959.7	722.0	2.5	297.2	310.2	96.5	54.8	0.0	82.1	42.0	1.0
111.14	33.88	22835.9	543.4	2.4	299.4	312.7	76.1	43.1	0.0	75.2	40.0	1.0

CONETEC

Kleinfelder

Site: I15, S4: SPRR R of W, 06-SC-43
Location: 500 S Viaduct

Cone: 10 TON A 028
Date: 07:18:96 09:12



Max. Depth: 34.10 (m)
Depth Inc.: 0.05 (m)

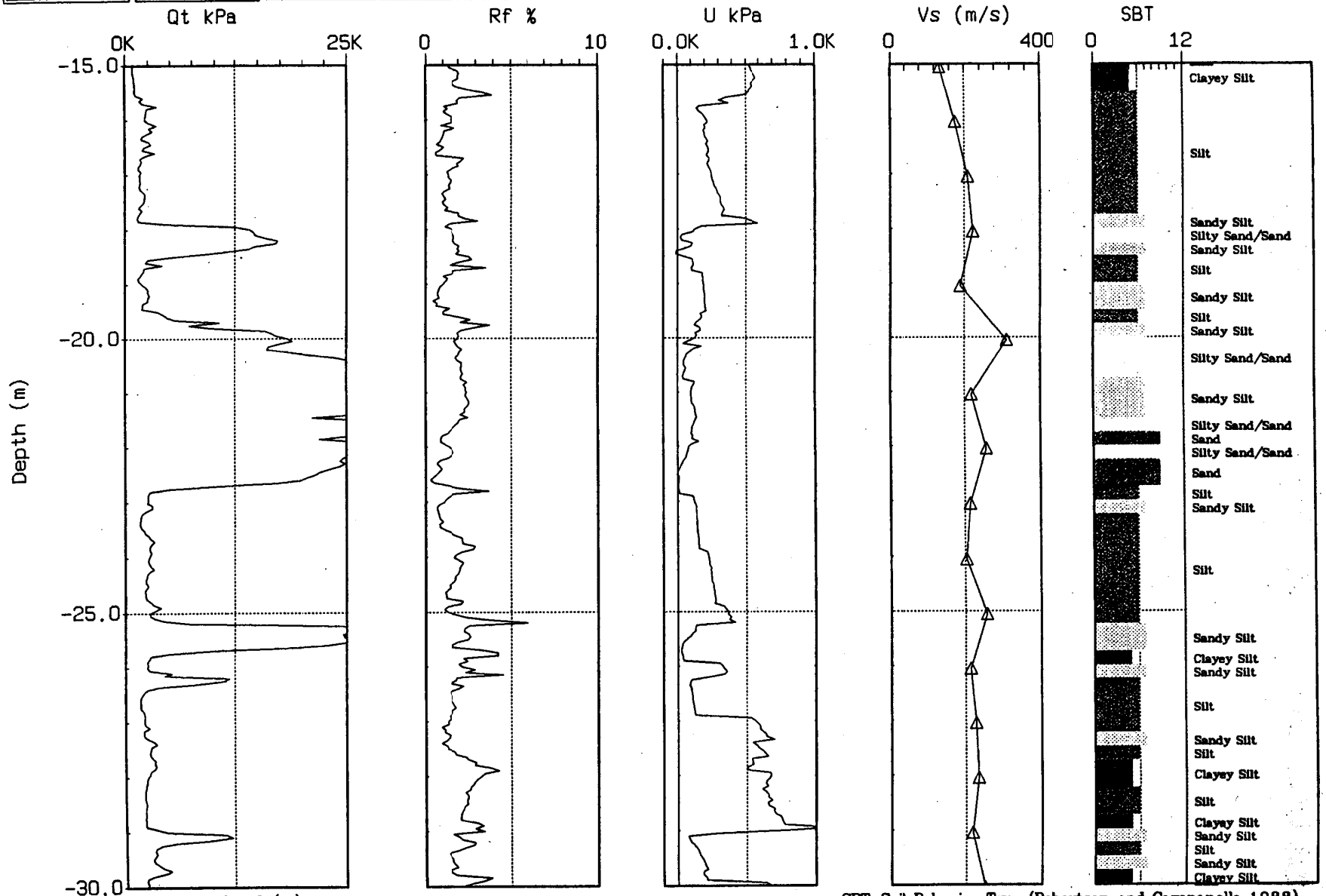
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: SPRR R of W, 06-SC-43
Location: 500 S Viaduct

Cone: 10 TON A 028
Date: 07:18:96 09:12



Max. Depth: 34.10 (m)
Depth Inc.: 0.05 (m)

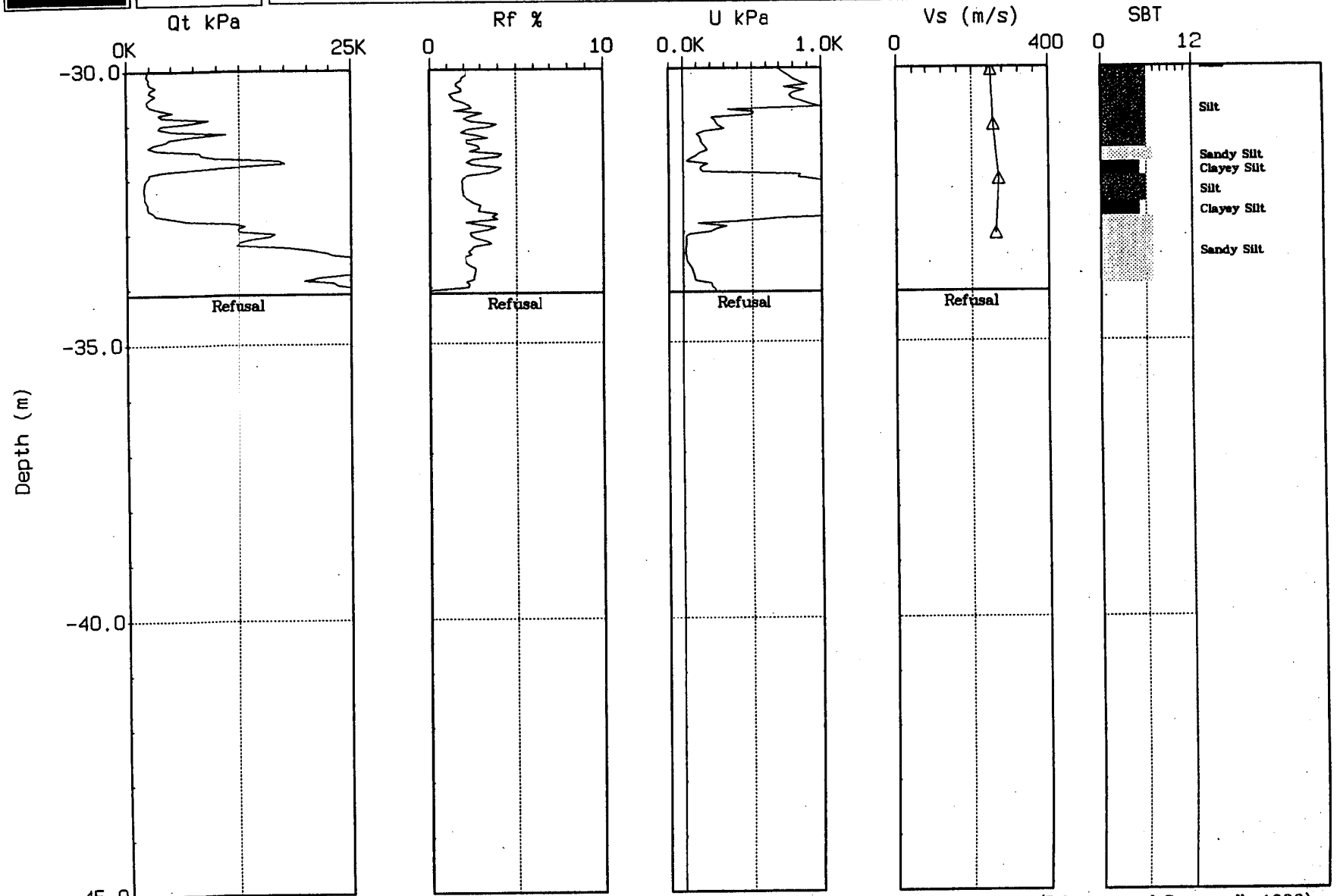
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: SPAR R of W, 06-SC-43
Location: 500 S Viaduct

Cone: 10 TON A 028
Date: 07:18:96 09:12



Max. Depth: 34.10 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-43*
Date: *18-Jul-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 028 (10 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
1.55	1.65					
2.55	2.61	8.4	* 115	376	1.6 - 2.6	5.1 - 8.4
3.55	3.59	8.0	123	403	2.6 - 3.6	8.4 - 11.6
4.55	4.58	5.8	171	560	3.6 - 4.6	11.6 - 14.9
5.55	5.58	6.6	* 151	494	4.6 - 5.6	14.9 - 18.2
6.55	6.57	11.0	91	297	5.6 - 6.6	18.2 - 21.5
7.55	7.57	7.3	137	448	6.6 - 7.6	21.5 - 24.8
8.55	8.57	6.5	153	504	7.6 - 8.6	24.8 - 28.1
9.55	9.57	6.2	161	528	8.6 - 9.6	28.1 - 31.3
10.55	10.56	5.9	* 169	555	9.6 - 10.6	31.3 - 34.6
11.55	11.56	5.8	172	565	10.6 - 11.6	34.6 - 37.9
12.55	12.56	7.1	141	462	11.6 - 12.6	37.9 - 41.2
13.55	13.56	6.7	149	489	12.6 - 13.6	41.2 - 44.5
14.55	14.56	6.8	147	482	13.6 - 14.6	44.5 - 47.7
15.55	15.56	7.4	* 135	443	14.6 - 15.6	47.7 - 51.0
16.55	16.56	5.7	175	575	15.6 - 16.6	51.0 - 54.3
17.55	17.56	4.8	208	683	16.6 - 17.6	54.3 - 57.6
18.55	18.56	4.5	222	729	17.6 - 18.6	57.6 - 60.9
19.55	19.56	5.3	377	1237	17.6 - 19.6	57.6 - 64.1
20.55	20.56	3.2	* 312	1025	19.6 - 20.6	64.1 - 67.4
21.55	21.56	4.6	217	713	20.6 - 21.6	67.4 - 70.7
22.55	22.56	3.9	256	841	21.6 - 22.6	70.7 - 74.0
23.55	23.56	4.7	213	698	22.6 - 23.6	74.0 - 77.3
24.55	24.56	4.9	204	669	23.6 - 24.6	77.3 - 80.5
25.55	25.56	3.9	* 256	841	24.6 - 25.6	80.5 - 83.8
26.55	26.56	4.7	213	698	25.6 - 26.6	83.8 - 87.1
27.55	27.56	4.4	227	745	26.6 - 27.6	87.1 - 90.4
28.55	28.56	4.3	233	763	27.6 - 28.6	90.4 - 93.7
29.55	29.56	4.6	217	713	28.6 - 29.6	93.7 - 96.9
30.55	30.56	4.0	* 250	820	29.6 - 30.6	96.9 - 100.2
31.55	31.55	3.9	256	841	30.6 - 31.6	100.2 - 103.5
32.55	32.55	3.7	270	887	31.6 - 32.6	103.5 - 106.8
33.55	33.55	3.8	263	863	32.6 - 33.6	106.8 - 110.1

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0804-2150-5500
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15, S4: SPRR R of W, 06-SC-46
Location: 500 S Viaduct
Cone: 10 TON A 028
CPT Date: 96/18/07
CPT Time: 16:22
CPT File: KA06S046.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	8465.2	152.6	1.8	2.3	0.0	28.2	56.4	0.0	95.0	50.0	1.0
1.23	0.38	14074.2	218.9	1.6	7.0	0.0	35.2	70.4	0.0	95.0	50.0	1.0
2.05	0.62	5801.3	203.9	3.5	11.6	0.0	29.0	58.0	463.2	0.0	0.0	10.0
2.87	0.88	2568.5	53.6	2.1	16.1	0.0	10.3	20.5	204.2	54.5	44.0	10.0
3.69	1.12	1067.5	38.7	3.6	20.6	0.0	10.7	21.3	83.8	0.0	0.0	10.0
4.51	1.38	1461.6	33.9	2.3	25.0	0.0	7.3	14.3	114.9	0.0	0.0	10.0
5.33	1.62	1636.1	25.7	1.6	29.5	0.0	6.5	11.8	128.5	32.9	40.0	10.0
6.15	1.88	1242.3	37.3	3.0	34.0	0.0	8.3	13.9	96.7	0.0	0.0	6.0
6.97	2.12	893.5	22.7	2.5	37.3	1.2	6.0	9.5	68.4	0.0	0.0	6.0
7.79	2.38	864.1	23.9	2.8	39.3	3.7	5.8	9.0	65.7	0.0	0.0	6.0
8.61	2.62	938.2	18.2	1.9	41.4	6.1	4.7	7.1	71.3	0.0	0.0	6.0
9.43	2.88	1785.8	44.8	2.5	43.4	8.6	8.9	13.3	138.7	0.0	0.0	6.0
10.25	3.12	1338.3	22.8	1.7	45.5	11.0	6.7	9.7	102.5	0.0	0.0	6.0
11.07	3.38	1141.6	17.8	1.6	47.5	13.5	5.7	8.1	86.4	0.0	0.0	6.0
11.89	3.62	2272.5	31.6	1.4	49.6	15.9	9.1	12.6	176.6	34.9	38.0	6.0
12.71	3.88	6521.8	72.8	1.1	51.7	18.4	16.3	22.2	0.0	64.5	44.0	1.0
13.53	4.12	12250.8	181.0	1.5	54.0	20.8	30.6	40.8	0.0	81.9	46.0	1.0
14.35	4.38	13483.1	184.8	1.4	56.3	23.3	33.7	44.0	0.0	84.1	46.0	1.0
15.17	4.62	8561.4	107.8	1.3	58.6	25.8	21.4	27.4	0.0	70.5	44.0	1.0
15.99	4.88	905.6	27.2	3.0	60.8	28.2	6.0	7.6	65.3	0.0	0.0	6.0
16.81	5.12	789.0	7.3	0.9	62.8	30.7	3.9	4.9	55.6	0.0	0.0	3.0
17.63	5.38	829.3	7.0	0.8	64.9	33.1	4.1	5.0	58.5	0.0	0.0	3.0
18.45	5.62	1201.5	11.5	1.0	66.9	35.6	4.8	5.7	87.9	30.0	32.0	6.0
19.27	5.88	1189.7	22.0	1.9	69.0	38.0	5.9	7.0	86.6	0.0	0.0	6.0
20.09	6.12	1042.5	24.7	2.4	71.0	40.5	5.2	6.1	74.5	0.0	0.0	6.0
20.92	6.38	1018.0	22.4	2.2	73.1	42.9	5.1	5.8	72.2	0.0	0.0	3.0
21.74	6.62	993.5	16.8	1.7	75.1	45.4	5.0	5.6	69.8	0.0	0.0	3.0
22.56	6.88	827.2	7.2	0.9	77.2	47.8	4.1	4.6	56.2	0.0	0.0	3.0
23.38	7.12	657.2	3.2	0.5	78.5	50.3	3.3	3.6	42.3	0.0	0.0	3.0
24.20	7.38	1355.4	21.5	1.6	79.9	52.7	5.4	5.9	97.8	30.0	32.0	6.0
25.02	7.62	3017.7	64.2	2.1	81.9	55.2	12.1	13.1	230.4	35.8	38.0	6.0
25.84	7.88	1356.0	30.1	2.2	84.0	57.6	6.8	7.2	97.1	0.0	0.0	6.0
26.66	8.12	2903.6	31.9	1.1	86.1	60.1	9.7	10.2	0.0	34.0	36.0	1.0
27.48	8.38	840.4	7.5	0.9	88.2	62.5	4.2	4.4	55.2	0.0	0.0	3.0
28.30	8.62	2022.7	48.8	2.4	90.3	65.0	10.1	10.4	149.4	0.0	0.0	6.0
29.12	8.88	1358.8	25.4	1.9	92.3	67.4	6.8	6.9	95.9	0.0	0.0	6.0
29.94	9.12	1320.5	8.9	0.7	94.4	69.9	5.3	5.3	92.5	30.0	30.0	3.0
30.76	9.38	1773.8	27.5	1.5	96.4	72.3	7.1	7.1	128.4	30.0	32.0	6.0
31.58	9.62	1070.7	4.8	0.4	98.4	74.8	4.3	4.2	71.8	30.0	30.0	3.0
32.40	9.88	1165.2	16.8	1.4	100.5	77.3	5.8	5.7	79.0	0.0	0.0	3.0
33.22	10.12	955.7	5.4	0.6	102.5	79.7	3.8	3.7	61.9	30.0	30.0	3.0
34.04	10.38	2980.3	87.1	2.9	104.6	82.2	14.9	14.3	223.5	0.0	0.0	6.0
34.86	10.62	969.2	8.5	0.9	106.6	84.6	3.9	3.7	62.2	30.0	30.0	3.0
35.68	10.88	3073.5	49.2	1.6	108.7	87.1	12.3	11.5	230.2	32.3	36.0	6.0
36.50	11.12	1751.5	40.4	2.3	110.7	89.5	8.8	8.1	124.1	0.0	0.0	6.0
37.32	11.38	2242.8	31.4	1.4	112.8	92.0	9.0	8.3	163.0	30.0	32.0	6.0
38.14	11.62	3712.8	119.0	3.2	114.8	94.4	18.6	17.0	280.3	0.0	0.0	6.0
38.96	11.88	3833.7	83.3	2.2	116.9	96.9	15.3	13.9	289.6	37.6	36.0	6.0
39.78	12.12	1294.9	12.8	1.0	118.9	99.3	5.2	4.6	86.1	30.0	30.0	3.0
40.60	12.38	1075.2	6.9	0.6	121.0	101.8	4.3	3.8	68.2	30.0	30.0	3.0
41.42	12.62	1020.5	5.6	0.6	123.0	104.2	4.1	3.6	63.5	30.0	30.0	3.0
42.24	12.88	1110.2	7.6	0.7	125.1	106.7	4.4	3.9	70.3	30.0	30.0	3.0

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	1118.7	7.6	0.7	127.1	109.1	4.5	3.9	70.6	30.0	30.0	3.0
43.88	13.38	1105.8	7.2	0.6	129.2	111.6	4.4	3.8	69.2	30.0	30.0	3.0
44.70	13.62	1160.2	11.4	1.0	131.2	114.0	4.6	4.0	73.2	30.0	30.0	3.0
45.52	13.88	1332.5	12.7	1.0	133.3	116.5	5.3	4.5	86.6	30.0	30.0	3.0
46.34	14.12	1108.8	6.1	0.6	135.3	118.9	4.4	3.7	68.4	30.0	30.0	3.0
47.16	14.38	1118.6	6.9	0.6	137.4	121.4	4.5	3.7	68.8	30.0	30.0	3.0
47.98	14.62	1188.2	9.0	0.8	139.4	123.9	4.8	3.9	74.0	30.0	30.0	3.0
48.80	14.88	1313.5	12.1	0.9	141.4	126.3	5.3	4.3	83.7	30.0	30.0	3.0
49.62	15.12	1280.4	6.7	0.5	143.5	128.8	5.1	4.2	80.7	30.0	30.0	3.0
50.44	15.38	1288.8	8.3	0.6	145.5	131.2	5.2	4.2	81.0	30.0	30.0	3.0
51.26	15.62	1552.2	14.5	0.9	147.6	133.7	6.2	5.0	101.7	30.0	30.0	3.0
52.08	15.88	1316.2	13.1	1.0	149.6	136.1	5.3	4.2	82.4	30.0	30.0	3.0
52.90	16.12	1309.8	18.5	1.4	151.7	138.6	5.2	4.2	81.6	30.0	30.0	3.0
53.72	16.38	3802.9	66.2	1.7	153.7	141.0	15.2	12.0	280.7	33.4	34.0	6.0
54.54	16.62	3425.8	50.8	1.5	155.8	143.5	11.4	9.0	0.0	30.2	34.0	1.0
55.36	16.88	5287.8	144.1	2.7	158.0	145.9	21.2	16.5	398.7	42.5	36.0	6.0
56.18	17.12	3118.5	45.2	1.4	160.0	148.4	12.5	9.7	224.8	30.0	32.0	6.0
57.00	17.38	6297.6	152.0	2.4	162.0	150.8	25.2	19.4	478.8	47.1	38.0	6.0
57.82	17.62	3930.3	65.0	1.7	164.2	153.3	13.1	10.0	0.0	33.4	34.0	1.0
58.64	17.88	2116.0	35.7	1.7	166.3	155.7	8.5	6.4	143.5	30.0	30.0	3.0
59.46	18.12	1585.3	18.2	1.1	168.3	158.2	6.3	4.8	100.7	30.0	30.0	3.0
60.28	18.38	3040.5	34.6	1.1	170.4	160.6	10.1	7.6	0.0	30.0	32.0	1.0
61.10	18.62	3742.5	72.2	1.9	172.5	163.1	15.0	11.2	272.5	31.3	34.0	6.0
61.93	18.88	6179.6	177.9	2.9	174.6	165.5	24.7	18.3	467.2	45.5	36.0	6.0
62.75	19.12	5212.6	138.9	2.7	176.6	168.0	20.9	15.4	389.4	40.4	36.0	6.0
63.57	19.38	5934.7	114.8	1.9	178.7	170.4	19.8	14.5	0.0	44.0	36.0	1.0
64.39	19.62	1579.8	13.6	0.9	180.8	172.9	6.3	4.6	98.1	30.0	30.0	3.0
65.21	19.88	1667.6	15.4	0.9	182.9	175.4	6.7	4.8	104.7	30.0	30.0	3.0
66.03	20.12	2028.6	29.8	1.5	184.9	177.8	8.1	5.8	133.3	30.0	30.0	3.0
66.85	20.38	9702.8	225.4	2.3	187.1	180.3	32.3	23.1	0.0	57.4	38.0	1.0
67.67	20.62	20579.3	511.1	2.5	189.2	182.7	68.6	48.8	0.0	78.8	42.0	1.0
68.49	20.88	21417.8	486.6	2.3	191.4	185.2	71.4	50.5	0.0	79.8	42.0	1.0
69.31	21.12	21058.5	495.6	2.4	193.6	187.6	70.2	49.4	0.0	79.2	42.0	1.0
70.13	21.38	20616.2	482.4	2.3	195.7	190.1	68.7	48.1	0.0	78.4	42.0	1.0
70.95	21.62	13950.0	551.8	4.0	198.0	192.5	69.8	48.5	0.0	67.0	40.0	1.0
71.77	21.88	26826.4	442.4	1.6	200.3	195.0	67.1	46.4	0.0	85.6	44.0	1.0
72.59	22.12	26169.2	456.0	1.7	202.6	197.4	65.4	45.0	0.0	84.7	44.0	1.0
73.41	22.38	24929.7	473.0	1.9	204.9	199.9	62.3	42.6	0.0	83.2	42.0	1.0
74.23	22.62	20774.9	347.5	1.7	207.2	202.3	51.9	35.3	0.0	77.8	42.0	1.0
75.05	22.88	12269.3	316.3	2.6	209.4	204.8	40.9	27.7	0.0	62.5	40.0	1.0
75.87	23.12	19909.1	338.0	1.7	211.6	207.2	49.8	33.5	0.0	76.3	42.0	1.0
76.69	23.38	19291.8	245.8	1.3	213.9	209.7	48.2	32.3	0.0	75.2	42.0	1.0
77.51	23.62	5335.4	180.3	3.4	216.1	212.1	26.7	17.8	392.6	0.0	0.0	6.0
78.33	23.88	2146.9	23.3	1.1	218.2	214.6	8.6	5.7	137.1	30.0	30.0	3.0
79.15	24.12	2015.0	9.9	0.5	220.3	217.0	6.7	4.4	0.0	30.0	30.0	1.0
79.97	24.38	2007.2	14.7	0.7	222.4	219.5	8.0	5.3	125.2	30.0	30.0	3.0
80.79	24.62	2258.1	18.0	0.8	224.5	222.0	7.5	4.9	0.0	30.0	30.0	1.0
81.61	24.88	2177.1	16.6	0.8	226.6	224.4	8.7	5.7	138.1	30.0	30.0	3.0
82.43	25.12	1788.1	7.2	0.4	228.6	226.9	7.2	4.6	106.6	30.0	30.0	1.5
83.25	25.38	1824.2	8.0	0.4	230.7	229.3	7.3	4.7	109.1	30.0	30.0	1.5
84.07	25.62	2159.1	11.3	0.5	232.8	231.8	7.2	4.6	0.0	30.0	30.0	1.0
84.89	25.88	3029.0	42.3	1.4	234.9	234.2	12.1	7.7	204.8	30.0	30.0	3.0
85.71	26.12	7486.9	257.5	3.4	237.0	236.7	29.9	19.0	561.1	46.6	36.0	6.0
86.53	26.38	11493.8	411.8	3.6	239.0	239.1	46.0	29.1	881.3	58.8	38.0	6.0
87.35	26.62	18605.8	512.5	2.8	241.1	241.6	62.0	39.1	0.0	72.5	40.0	1.0
88.17	26.88	3541.6	129.0	3.6	243.2	244.0	17.7	11.1	244.3	0.0	0.0	6.0
88.99	27.12	3517.7	61.3	1.7	245.3	246.5	14.1	8.8	242.1	30.0	32.0	3.0
89.81	27.38	2514.1	32.5	1.3	247.3	248.9	10.1	6.3	161.4	30.0	30.0	3.0
90.63	27.62	2186.3	20.1	0.9	249.4	251.4	8.7	5.4	134.8	30.0	30.0	3.0
91.45	27.88	2053.9	39.4	1.9	251.4	253.8	8.2	5.1	123.9	30.0	30.0	1.5
92.27	28.12	4036.7	107.9	2.7	253.5	256.3	16.1	9.9	282.2	30.0	32.0	6.0
93.09	28.38	2477.8	48.5	2.0	255.5	258.7	9.9	6.1	157.1	30.0	30.0	3.0
93.91	28.62	2206.9	32.6	1.5	257.6	261.2	8.8	5.4	135.1	30.0	30.0	3.0
94.73	28.88	1876.4	34.6	1.8	259.6	263.6	7.5	4.6	108.3	30.0	30.0	1.5
95.55	29.12	1820.4	27.3	1.5	261.7	266.1	7.3	4.4	103.4	30.0	30.0	1.5
96.37	29.38	1767.6	25.1	1.4	263.7	268.5	7.1	4.3	98.8	30.0	30.0	1.5
97.19	29.62	1835.1	28.0	1.5	265.7	271.0	7.3	4.4	103.9	30.0	30.0	1.5
98.01	29.88	4342.1	120.0	2.8	267.8	273.5	17.4	10.4	304.1	30.0	32.0	6.0
98.83	30.12	3393.8	59.0	1.7	269.8	275.9	13.6	8.1	227.8	30.0	30.0	3.0

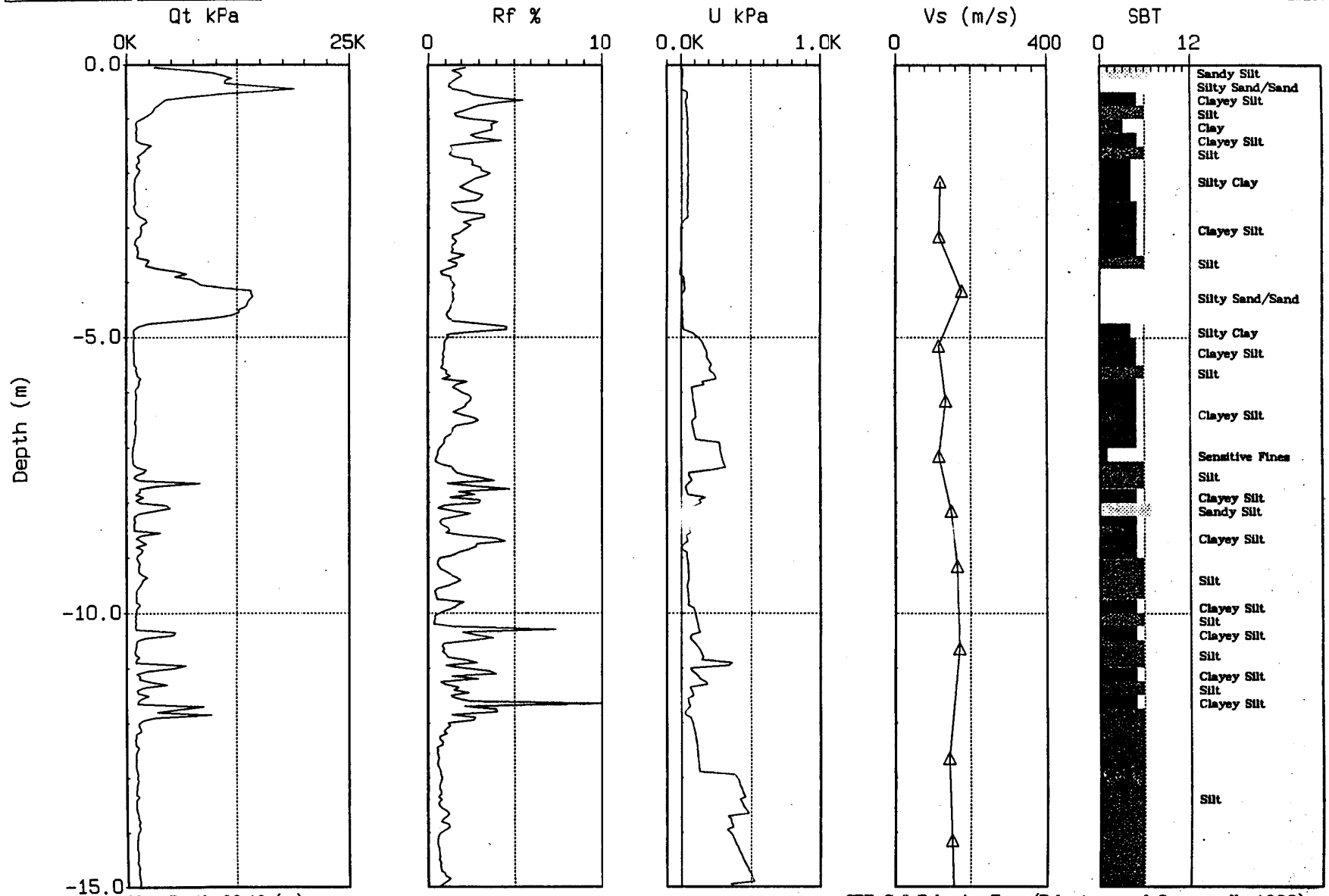
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	2266.9	17.4	0.8	272.0	278.4	7.6	4.5	0.0	30.0	30.0	1.0
100.47	30.62	2335.4	24.8	1.1	274.1	280.8	9.3	5.5	142.4	30.0	30.0	3.0
101.29	30.88	2382.2	47.5	2.0	276.1	283.3	9.5	5.6	145.8	30.0	30.0	3.0
102.11	31.12	2683.5	40.5	1.5	278.2	285.7	10.7	6.3	169.6	30.0	30.0	3.0
102.94	31.38	2679.9	33.4	1.2	280.2	288.2	10.7	6.3	168.9	30.0	30.0	3.0
103.76	31.62	4946.7	120.4	2.4	282.3	290.6	19.8	11.5	349.9	32.2	32.0	6.0
104.58	31.88	5084.2	154.8	3.0	284.3	293.1	20.3	11.8	360.5	32.9	32.0	6.0
105.40	32.12	14447.6	358.1	2.5	286.4	295.5	48.2	27.9	0.0	62.7	38.0	1.0
106.22	32.38	23307.2	440.8	1.9	288.6	298.0	58.3	33.6	0.0	76.3	42.0	1.0
107.04	32.62	16084.4	425.2	2.6	290.9	300.4	53.6	30.8	0.0	65.6	40.0	1.0
107.86	32.88	9340.2	267.7	2.9	293.0	302.9	37.4	21.4	699.5	49.9	36.0	6.0
108.68	33.12	2508.5	39.8	1.6	295.0	305.3	10.0	5.7	152.7	30.0	30.0	3.0
109.50	33.38	2164.7	30.9	1.4	297.1	307.8	8.7	4.9	124.8	30.0	30.0	1.5
110.32	33.62	2915.9	70.2	2.4	299.1	310.2	11.7	6.6	184.5	30.0	30.0	3.0
111.14	33.88	3099.9	80.7	2.6	301.2	312.7	12.4	7.0	198.9	30.0	30.0	3.0
111.96	34.12	3156.3	67.0	2.1	303.2	315.1	12.6	7.1	203.0	30.0	30.0	3.0
112.78	34.38	3587.7	78.0	2.2	305.3	317.6	14.4	8.0	237.2	30.0	30.0	3.0
113.60	34.62	4108.8	104.6	2.5	307.3	320.1	16.4	9.2	278.5	30.0	30.0	3.0
114.42	34.88	25641.3	884.4	3.4	309.5	322.5	128.2	71.3	0.0	78.1	42.0	1.0
115.24	35.12	31024.0	1106.5	3.6	311.8	325.0	155.1	86.0	0.0	83.4	42.0	1.0
116.06	35.38	32756.7	777.6	2.4	314.0	327.4	109.2	60.3	0.0	84.9	42.0	1.0
116.88	35.62	28972.2	786.0	2.7	316.2	329.9	96.6	53.2	0.0	81.3	42.0	1.0
117.70	35.88	24583.6	747.5	3.0	318.4	332.3	122.9	67.4	0.0	76.5	40.0	1.0
118.52	36.12	23033.0	663.2	2.9	320.7	334.8	76.8	42.0	0.0	74.5	40.0	1.0

CONETEC

Klein Felder

Site: I15, S4: SPRR R of W, 06-SC-46
Location: 500 S Viaduct

Cone: 10 TON A 028
Date: 07.18.96 16:22



Max. Depth: 36.40 (m)
Depth Inc.: 0.05 (m)

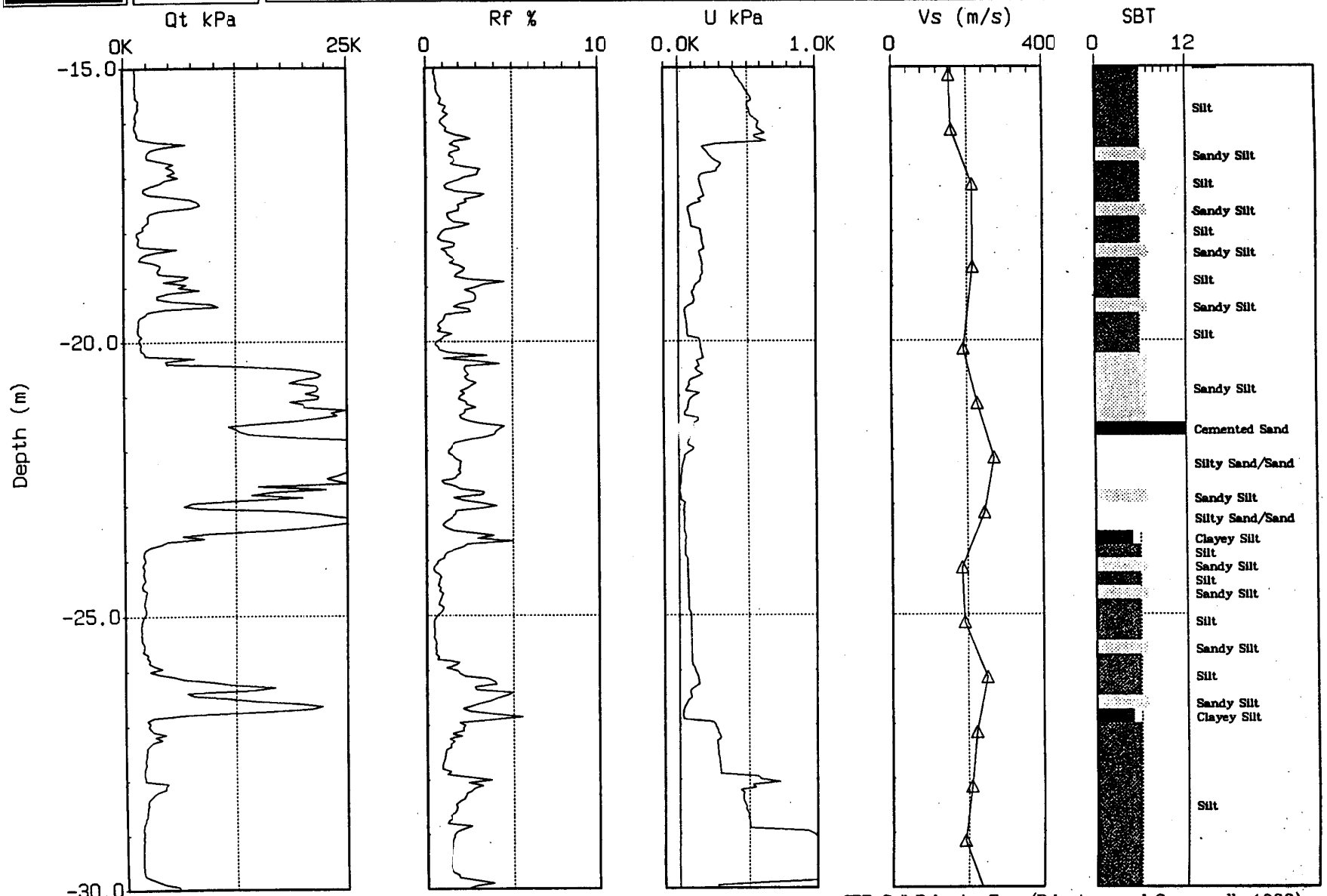
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: SPRR R of W, 06-SC-46
Location: 500 S Viaduct

Cone: 10 TON A 028
Date: 07:18:96 16:22



Max. Depth: 36.40 (m)
Depth Inc.: 0.05 (m)

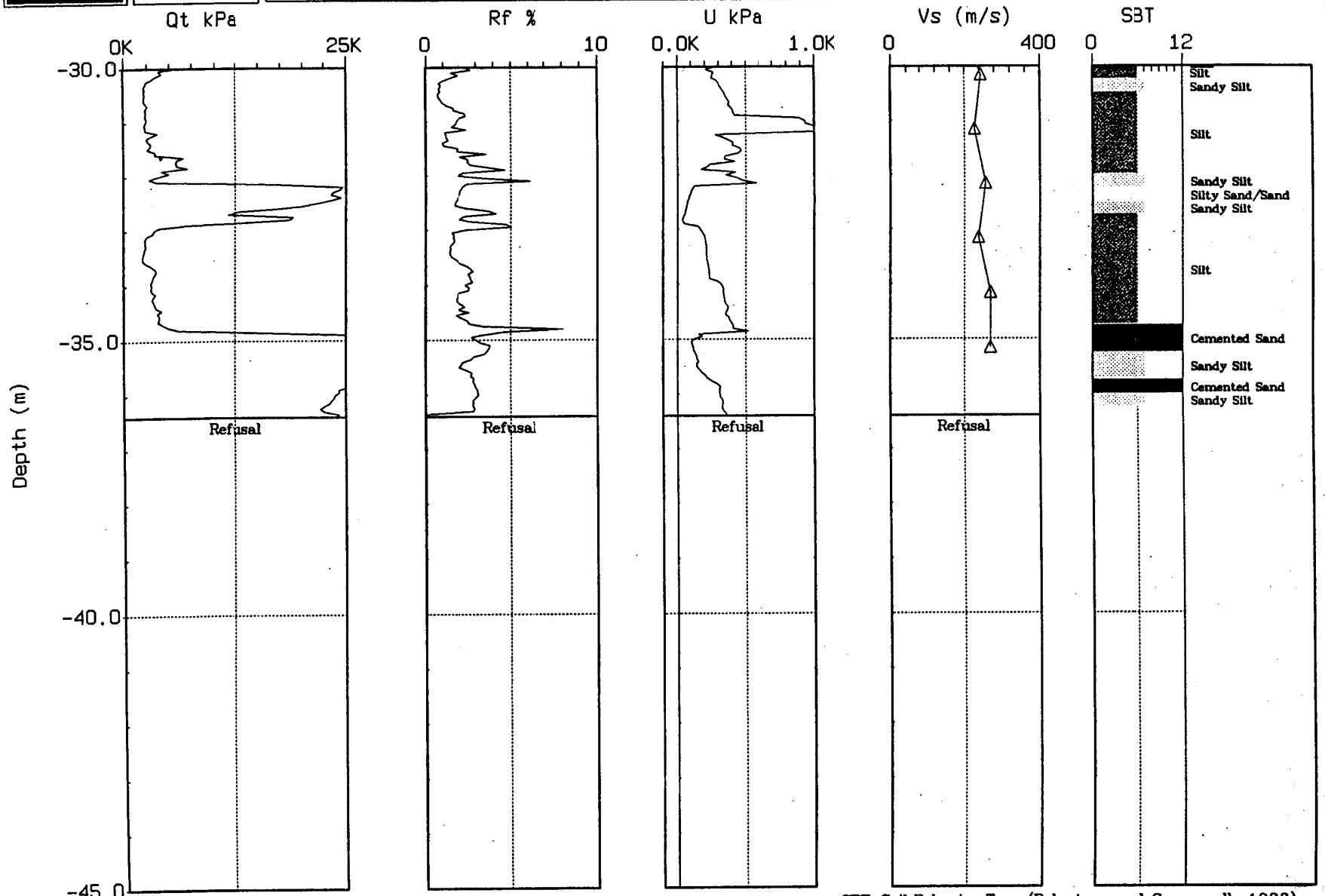
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: SPRR R of W, 06-SC-46
Location: 500 S Viaduct

Cone: 10 TON A 028
Date: 07:18:96 1622



Max. Depth: 38.40 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-46*
Date: *17-Jul-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 028 (10 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
1.65	1.74					
2.65	2.71	8.1	* 119	391	1.7 - 2.7	5.4 - 8.7
3.65	3.69	8.4	117	384	2.7 - 3.7	8.7 - 12.0
4.65	4.68	5.6	177	581	3.7 - 4.7	12.0 - 15.3
5.65	5.68	8.6	* 116	379	4.7 - 5.7	15.3 - 18.5
6.65	6.67	7.4	135	442	5.7 - 6.7	18.5 - 21.8
7.65	7.67	8.6	116	380	6.7 - 7.7	21.8 - 25.1
8.65	8.67	6.7	149	489	7.7 - 8.7	25.1 - 28.4
9.65	9.67	6.1	164	537	8.7 - 9.7	28.4 - 31.7
11.65	11.66	11.7	* 171	560	9.7 - 11.7	31.7 - 38.2
13.65	13.66	13.9	144	472	11.7 - 13.7	38.2 - 44.8
14.65	14.66	6.6	151	497	13.7 - 14.7	44.8 - 48.1
15.65	15.66	6.5	* 154	504	14.7 - 15.7	48.1 - 51.3
16.65	16.66	6.3	159	520	15.7 - 16.7	51.3 - 54.6
17.65	17.66	4.7	213	698	16.7 - 17.7	54.6 - 57.9
19.65	19.66	9.3	215	705	17.7 - 19.7	57.9 - 64.5
20.65	20.66	5.2	* 192	631	19.7 - 20.7	64.5 - 67.7
21.65	21.66	4.4	227	745	20.7 - 21.7	67.7 - 71.0
22.65	22.66	3.7	270	886	21.7 - 22.7	71.0 - 74.3
23.65	23.66	4.1	244	800	22.7 - 23.7	74.3 - 77.6
24.65	24.66	5.4	185	607	23.7 - 24.7	77.6 - 80.9
25.65	25.66	5.2	* 192	631	24.7 - 25.7	80.9 - 84.2
26.65	26.66	4.0	250	820	25.7 - 26.7	84.2 - 87.4
27.65	27.66	4.5	222	729	26.7 - 27.7	87.4 - 90.7
28.65	28.66	4.8	208	683	27.7 - 28.7	90.7 - 94.0
29.65	29.66	5.2	192	631	28.7 - 29.7	94.0 - 97.3
30.65	30.66	4.1	* 244	800	29.7 - 30.7	97.3 - 100.6
31.65	31.65	4.4	227	746	30.7 - 31.7	100.6 - 103.8
32.65	32.65	3.9	256	841	31.7 - 32.7	103.8 - 107.1
33.65	33.65	4.2	238	781	32.7 - 33.7	107.1 - 110.4
34.65	34.65	3.7	270	887	33.7 - 34.7	110.4 - 113.7
35.65	35.65	3.7	* 270	887	34.7 - 35.7	113.7 - 117.0

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0913-0822-3129
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15,S4:I15,06-SC-55
Location: 500 S Viaduct
Cone: 20 TON A 041
CPT Date: 96/02/08
CPT Time: 11:55
CPT File: KA06S055.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	23153.2	74.4	0.3	2.5	0.0	38.6	77.2	0.0	95.0	50.0	1.0
1.23	0.38	10932.0	147.2	1.3	7.4	0.0	27.3	54.7	0.0	95.0	50.0	1.0
2.05	0.62	3832.8	98.6	2.6	12.0	0.0	15.3	30.7	305.7	70.2	46.0	10.0
2.87	0.88	761.2	15.2	2.0	16.5	0.0	3.8	7.6	59.6	0.0	0.0	6.0
3.69	1.12	783.6	10.2	1.3	21.0	0.0	3.9	7.8	61.0	0.0	0.0	6.0
4.51	1.38	479.4	3.8	0.8	24.8	0.0	2.4	4.7	36.4	0.0	0.0	6.0
5.33	1.62	703.9	12.0	1.7	28.6	0.0	3.5	6.4	54.0	0.0	0.0	6.0
6.15	1.88	792.8	12.2	1.5	33.1	0.0	4.0	6.7	60.8	0.0	0.0	6.0
6.97	2.12	1043.7	12.9	1.2	36.4	1.2	5.2	8.5	80.5	0.0	0.0	6.0
7.79	2.38	2988.2	30.4	1.0	38.5	3.7	10.0	15.7	0.0	46.3	40.0	1.0
8.61	2.62	3015.6	40.7	1.3	40.6	6.1	12.1	18.5	237.5	45.8	40.0	10.0
9.43	2.88	3412.8	86.2	2.5	42.7	8.6	13.7	20.5	268.9	48.7	42.0	10.0
10.25	3.12	3738.0	75.3	2.0	44.7	11.0	15.0	21.9	294.6	50.6	42.0	10.0
11.07	3.38	3160.5	83.0	2.6	46.8	13.5	12.6	18.1	248.0	45.2	40.0	10.0
11.89	3.62	6389.1	91.6	1.4	48.9	15.9	21.3	29.8	0.0	64.7	44.0	1.0
12.71	3.88	7152.1	136.4	1.9	51.0	18.4	23.8	32.7	0.0	67.3	44.0	1.0
13.53	4.12	9014.1	85.0	0.9	53.3	20.8	22.5	30.2	0.0	73.3	44.0	1.0
14.35	4.38	6252.1	85.7	1.4	55.5	23.3	20.8	27.4	0.0	62.2	42.0	1.0
15.17	4.62	4667.5	62.1	1.3	57.7	25.8	15.6	20.0	0.0	53.3	42.0	1.0
15.99	4.88	12159.0	85.6	0.7	60.0	28.2	24.3	30.7	0.0	80.2	46.0	1.0
16.81	5.12	7197.5	81.8	1.1	62.3	30.7	18.0	22.3	0.0	64.6	42.0	1.0
17.63	5.38	709.6	8.4	1.2	64.5	33.1	3.5	4.3	49.0	0.0	0.0	3.0
18.45	5.62	633.4	2.0	0.3	65.9	35.6	3.2	3.8	42.6	0.0	0.0	3.0
19.27	5.88	640.4	2.0	0.3	66.5	38.0	3.2	3.8	42.9	0.0	0.0	3.0
20.09	6.12	617.1	2.3	0.4	67.2	40.5	3.1	3.7	40.8	0.0	0.0	3.0
20.92	6.38	1874.2	25.6	1.4	68.6	42.9	7.5	8.9	141.0	30.0	34.0	6.0
21.74	6.62	1262.1	13.2	1.0	70.6	45.4	5.0	5.9	91.7	30.0	32.0	6.0
22.56	6.88	692.7	4.8	0.7	72.0	47.8	3.5	4.0	45.8	0.0	0.0	3.0
23.38	7.12	686.9	12.4	1.8	73.3	50.3	3.4	3.9	45.1	0.0	0.0	3.0
24.20	7.38	931.8	21.5	2.3	75.4	52.7	4.7	5.3	64.3	0.0	0.0	3.0
25.02	7.62	812.6	11.8	1.5	77.4	55.2	4.1	4.5	54.4	0.0	0.0	3.0
25.84	7.88	695.7	5.8	0.8	79.5	57.6	3.5	3.8	44.7	0.0	0.0	3.0
26.66	8.12	889.2	20.8	2.3	81.5	60.1	4.4	4.8	59.8	0.0	0.0	3.0
27.48	8.38	2757.5	47.3	1.7	83.6	62.5	11.0	11.8	208.9	32.9	36.0	6.0
28.30	8.62	2802.8	43.6	1.6	85.6	65.0	11.2	11.9	212.2	33.0	36.0	6.0
29.12	8.88	968.8	23.3	2.4	87.7	67.4	4.8	5.1	65.1	0.0	0.0	3.0
29.94	9.12	1767.4	13.1	0.7	89.7	69.9	7.1	7.3	128.6	30.0	32.0	6.0
30.76	9.38	1313.8	33.4	2.5	91.8	72.3	6.6	6.7	92.0	0.0	0.0	6.0
31.58	9.62	1541.0	21.8	1.4	93.8	74.8	6.2	6.2	109.8	30.0	32.0	6.0
32.40	9.88	918.9	4.6	0.5	95.9	77.3	3.7	3.7	59.7	30.0	30.0	3.0
33.22	10.12	1648.5	23.3	1.4	97.9	79.7	6.6	6.5	117.7	30.0	32.0	6.0
34.04	10.38	948.1	7.7	0.8	100.0	82.2	3.8	3.7	61.3	30.0	30.0	3.0
34.86	10.62	840.7	6.5	0.8	102.0	84.6	4.2	4.1	52.3	0.0	0.0	3.0
35.68	10.88	760.7	2.7	0.4	103.4	87.1	3.8	3.7	45.6	0.0	0.0	1.5
36.50	11.12	757.2	4.4	0.6	104.7	89.5	3.8	3.6	45.0	0.0	0.0	1.5
37.32	11.38	1098.5	14.4	1.3	106.8	92.0	5.5	5.2	72.0	0.0	0.0	3.0
38.14	11.62	1225.8	17.6	1.4	108.8	94.4	4.9	4.6	81.8	30.0	30.0	3.0
38.96	11.88	704.7	2.8	0.4	110.2	96.9	3.5	3.3	39.8	0.0	0.0	1.5
39.78	12.12	681.8	2.0	0.3	110.9	99.3	3.4	3.2	37.7	0.0	0.0	1.5
40.60	12.38	800.6	2.1	0.3	111.5	101.8	4.0	3.7	47.0	0.0	0.0	1.5
41.42	12.62	904.0	3.4	0.4	112.9	104.2	3.6	3.3	54.9	30.0	30.0	1.5
42.24	12.88	761.6	2.7	0.3	114.3	106.7	3.8	3.5	43.3	0.0	0.0	1.5

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	778.2	3.3	0.4	114.9	109.1	3.9	3.6	44.3	0.0	0.0	1.5
43.88	13.38	698.1	2.8	0.4	115.6	111.6	3.5	3.2	37.7	0.0	0.0	1.5
44.70	13.62	647.8	2.0	0.3	116.3	114.0	3.2	2.9	33.4	0.0	0.0	1.5
45.52	13.88	659.3	2.6	0.4	116.9	116.5	3.3	3.0	34.1	0.0	0.0	1.5
46.34	14.12	843.8	4.8	0.6	118.3	118.9	3.4	3.0	48.5	30.0	30.0	1.5
47.16	14.38	793.8	2.6	0.3	119.7	121.4	4.0	3.6	44.2	0.0	0.0	1.5
47.98	14.62	834.5	2.5	0.3	120.3	123.9	4.2	3.7	47.2	0.0	0.0	1.5
48.80	14.88	899.0	4.0	0.4	121.7	126.3	3.6	3.2	52.1	30.0	30.0	1.5
49.62	15.12	1306.9	12.6	1.0	123.7	128.8	5.2	4.6	84.4	30.0	30.0	3.0
50.44	15.38	1051.7	6.2	0.6	125.8	131.2	4.2	3.7	63.6	30.0	30.0	3.0
51.26	15.62	872.5	3.0	0.3	127.8	133.7	3.5	3.0	48.9	30.0	30.0	1.5
52.08	15.88	929.2	3.5	0.4	129.9	136.1	3.7	3.2	53.1	30.0	30.0	1.5
52.90	16.12	968.3	5.3	0.6	131.9	138.6	3.9	3.3	55.8	30.0	30.0	1.5
53.72	16.38	893.4	4.3	0.5	134.0	141.0	3.6	3.0	49.5	30.0	30.0	1.5
54.54	16.62	966.6	6.1	0.6	136.0	143.5	3.9	3.2	55.0	30.0	30.0	1.5
55.36	16.88	827.7	4.2	0.5	138.1	145.9	3.3	2.8	43.5	30.0	30.0	1.5
56.18	17.12	817.6	4.9	0.6	140.1	148.4	3.3	2.7	42.3	30.0	30.0	1.5
57.00	17.38	827.5	4.8	0.6	142.2	150.8	3.3	2.7	42.8	30.0	30.0	1.5
57.82	17.62	936.5	9.0	1.0	144.2	153.3	4.7	3.8	51.1	0.0	0.0	1.5
58.64	17.88	7237.7	90.1	1.2	146.4	155.7	18.1	14.6	0.0	52.5	38.0	1.0
59.46	18.12	3332.3	83.4	2.5	148.6	158.2	13.3	10.7	242.0	30.1	34.0	6.0
60.28	18.38	3927.1	62.1	1.6	150.7	160.6	13.1	10.4	0.0	34.6	34.0	1.0
61.10	18.62	9508.4	103.5	1.1	152.9	163.1	23.8	18.8	0.0	59.7	40.0	1.0
61.93	18.88	4198.5	63.3	1.5	155.1	165.5	14.0	11.0	0.0	36.1	34.0	1.0
62.75	19.12	5010.2	119.0	2.4	157.3	168.0	20.0	15.6	374.8	41.0	36.0	6.0
63.57	19.38	2995.1	39.5	1.3	159.3	170.4	12.0	9.3	213.2	30.0	32.0	6.0
64.39	19.62	1464.7	5.1	0.3	161.3	172.9	5.9	4.5	90.4	30.0	30.0	3.0
65.21	19.88	1442.4	6.9	0.5	163.4	175.4	5.8	4.4	88.3	30.0	30.0	3.0
66.03	20.12	2484.5	33.8	1.4	165.4	177.8	9.9	7.6	171.3	30.0	32.0	6.0
66.85	20.38	3423.2	52.3	1.5	167.6	180.3	11.4	8.6	0.0	30.0	32.0	1.0
67.67	20.62	7037.6	120.2	1.7	169.7	182.7	23.5	17.6	0.0	49.6	38.0	1.0
68.49	20.88	2070.4	38.6	1.9	171.8	185.2	8.3	6.2	137.1	30.0	30.0	3.0
69.31	21.12	3804.4	35.5	0.9	173.9	187.6	12.7	9.4	0.0	31.6	34.0	1.0
70.13	21.38	2119.0	13.0	0.6	176.1	190.1	7.1	5.2	0.0	30.0	30.0	1.0
70.95	21.62	3296.9	46.9	1.4	178.3	192.5	11.0	8.1	0.0	30.0	32.0	1.0
71.77	21.88	1995.5	11.2	0.6	180.5	195.0	6.7	4.8	0.0	30.0	30.0	1.0
72.59	22.12	1691.5	15.7	0.9	182.6	197.4	6.8	4.9	104.9	30.0	30.0	3.0
73.41	22.38	2032.3	30.4	1.5	184.6	199.9	8.1	5.9	131.8	30.0	30.0	3.0
74.23	22.62	1604.9	2.3	0.1	186.7	202.3	5.3	3.8	0.0	30.0	30.0	1.0
75.05	22.88	1562.8	2.0	0.1	188.9	204.8	5.2	3.7	0.0	30.0	30.0	1.0
75.87	23.12	1612.7	7.8	0.5	191.0	207.2	6.5	4.6	97.2	30.0	30.0	3.0
76.69	23.38	1437.9	9.3	0.6	193.1	209.7	5.8	4.1	82.8	30.0	30.0	1.5
77.51	23.62	1234.0	2.0	0.2	195.1	212.1	4.9	3.5	66.1	30.0	30.0	1.5
78.33	23.88	1258.9	2.0	0.2	197.2	214.6	5.0	3.5	67.8	30.0	30.0	1.5
79.15	24.12	1511.2	5.5	0.4	199.2	217.0	6.0	4.2	87.6	30.0	30.0	1.5
79.97	24.38	1506.1	3.2	0.2	201.3	219.5	6.0	4.2	86.8	30.0	30.0	1.5
80.79	24.62	2552.2	21.7	0.9	203.4	222.0	8.5	5.8	0.0	30.0	30.0	1.0
81.61	24.88	2281.1	15.4	0.7	205.5	224.4	7.6	5.2	0.0	30.0	30.0	1.0
82.43	25.12	1622.2	22.2	1.4	207.6	226.9	6.5	4.4	95.0	30.0	30.0	1.5
83.25	25.38	1503.4	10.7	0.7	209.7	229.3	6.0	4.1	85.2	30.0	30.0	1.5
84.07	25.62	1636.0	4.2	0.3	211.7	231.8	6.5	4.4	95.4	30.0	30.0	1.5
84.89	25.88	1580.7	3.5	0.2	213.8	234.2	6.3	4.2	90.6	30.0	30.0	1.5
85.71	26.12	1460.8	3.0	0.2	215.8	236.7	5.8	3.9	80.7	30.0	30.0	1.5
86.53	26.38	1639.6	7.4	0.5	217.9	239.1	6.6	4.3	94.6	30.0	30.0	1.5
87.35	26.62	2236.4	11.2	0.5	220.0	241.6	7.5	4.9	0.0	30.0	30.0	1.0
88.17	26.88	1371.5	2.0	0.1	222.1	244.0	5.5	3.6	72.4	30.0	30.0	1.5
88.99	27.12	1273.7	2.4	0.2	224.1	246.5	5.1	3.3	64.2	30.0	30.0	1.5
89.81	27.38	1372.0	2.7	0.2	226.2	248.9	5.5	3.6	71.8	30.0	30.0	1.5
90.63	27.62	1795.9	5.9	0.3	228.3	251.4	6.0	3.9	0.0	30.0	30.0	1.0
91.45	27.88	4929.5	78.0	1.6	230.5	253.8	16.4	10.6	0.0	35.0	34.0	1.0
92.27	28.12	2152.4	20.4	0.9	232.6	256.3	8.6	5.5	133.1	30.0	30.0	3.0
93.09	28.38	1293.6	3.3	0.3	234.6	258.7	5.2	3.3	64.0	30.0	30.0	1.5
93.91	28.62	1770.9	8.3	0.5	236.7	261.2	7.1	4.5	101.8	30.0	30.0	1.5
94.73	28.88	1436.1	2.0	0.1	238.7	263.6	5.7	3.6	74.7	30.0	30.0	1.5
95.55	29.12	1561.0	17.6	1.1	240.8	266.1	6.2	3.9	84.3	30.0	30.0	1.5
96.37	29.38	8304.4	372.5	4.5	243.1	268.5	23.7	14.9	0.0	49.2	36.0	1.0
97.19	29.62	7186.9	281.3	3.9	245.5	271.0	35.9	22.4	533.6	0.0	0.0	6.0
98.01	29.88	6739.9	227.4	3.4	247.5	273.5	27.0	16.8	497.5	43.0	34.0	6.0
98.83	30.12	3096.9	84.5	2.7	249.6	275.9	12.4	7.7	205.7	30.0	30.0	3.0

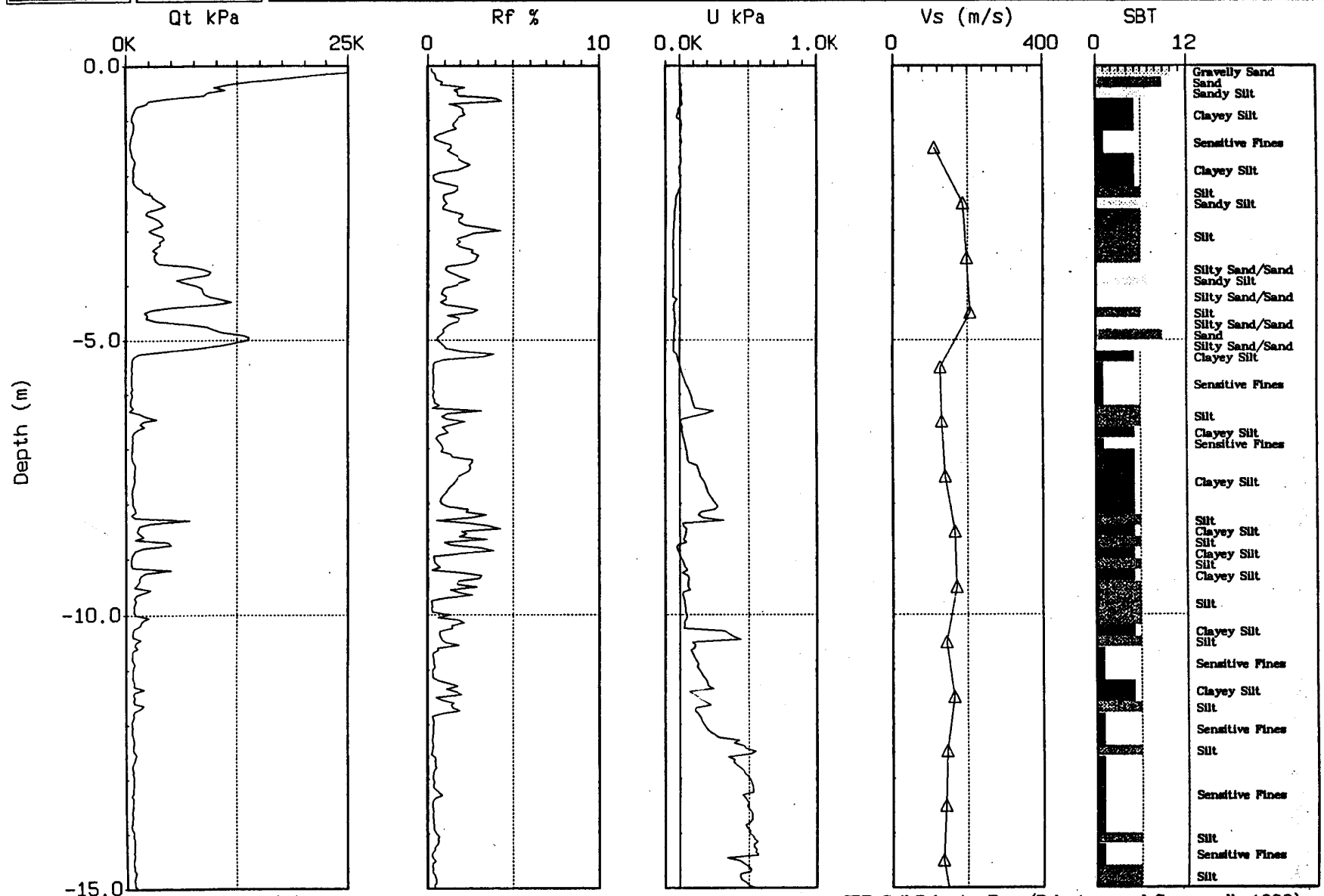
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	1614.9	11.8	0.7	251.6	278.4	6.5	4.0	86.8	30.0	30.0	1.5
100.47	30.62	1574.1	6.8	0.4	253.7	280.8	6.3	3.9	83.2	30.0	30.0	1.5
101.29	30.88	1619.2	8.9	0.6	255.7	283.3	6.5	4.0	86.4	30.0	30.0	1.5
102.11	31.12	1460.7	7.4	0.5	257.8	285.7	5.8	3.6	73.4	30.0	30.0	1.5
102.94	31.38	1499.9	11.6	0.8	259.8	288.2	6.0	3.6	76.2	30.0	30.0	1.5
103.76	31.62	1531.8	10.4	0.7	261.9	290.6	6.1	3.7	78.3	30.0	30.0	1.5
104.58	31.88	1986.7	13.4	0.7	263.9	293.1	7.9	4.8	114.4	30.0	30.0	1.5
105.40	32.12	2323.0	23.1	1.0	266.0	295.5	9.3	5.6	140.9	30.0	30.0	3.0
106.22	32.38	2263.3	25.9	1.1	268.0	298.0	9.1	5.4	135.8	30.0	30.0	3.0
107.04	32.62	2568.3	40.7	1.6	270.1	300.4	10.3	6.1	159.8	30.0	30.0	3.0
107.86	32.88	2208.6	33.8	1.5	272.1	302.9	8.8	5.2	130.7	30.0	30.0	1.5
108.68	33.12	2037.0	26.7	1.3	274.2	305.3	8.1	4.8	116.6	30.0	30.0	1.5
109.50	33.38	2354.2	27.2	1.2	276.2	307.8	9.4	5.5	141.6	30.0	30.0	3.0
110.32	33.62	2774.0	39.0	1.4	278.3	310.2	11.1	6.5	174.8	30.0	30.0	3.0

CONETEC

Kleinfelder

Site: I15, S4: I15, 06-SC-55
Location: 500S VIADUCT

Cone: 20 TON A 041
Date: 08:02:96 11:55



Max. Depth: 33.80 (m)
Depth Inc.: 0.05 (m)

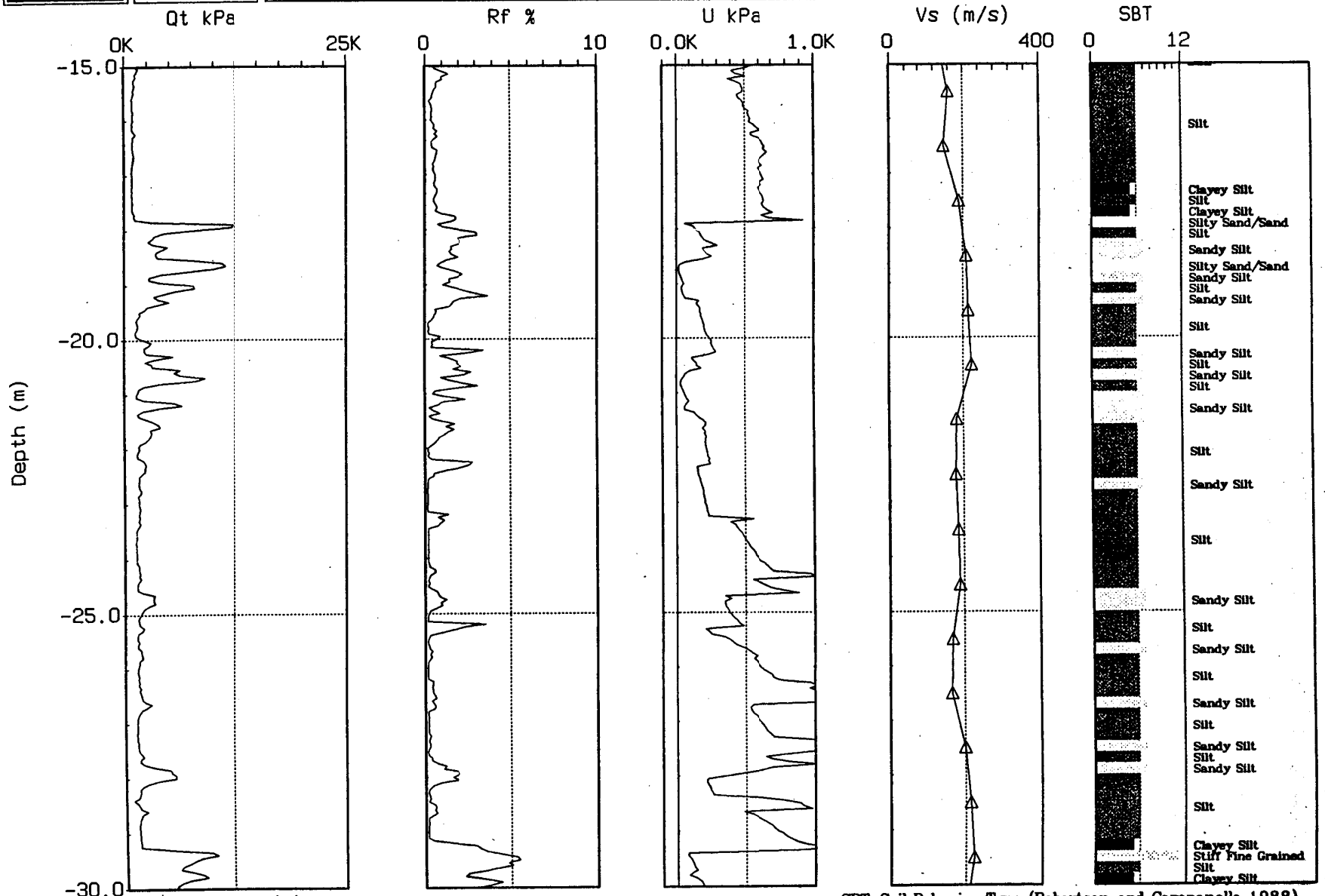
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15, 06-SC-55
Location: 500S VIADUCT

Cone: 20 TON A 041
Date: 08:02:96 11:55



Max. Depth: 33.80 (m)
Depth Inc.: 0.05 (m)

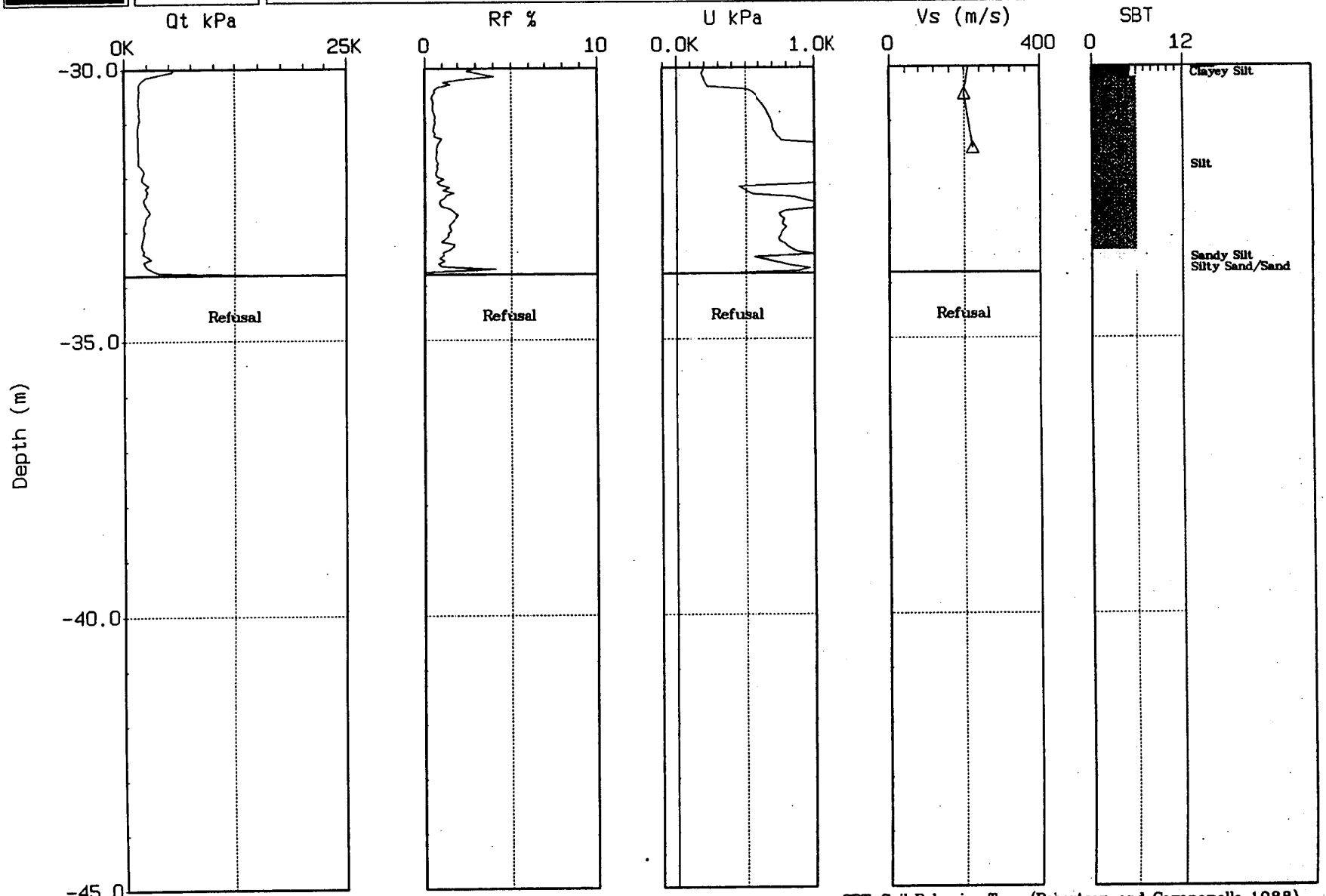
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15, 06-SC-55
Location: 500S VIADUCT

Cone: 20 TON A 041
Date: 08:02:96 11:55



Max. Depth: 33.80 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-55*
Date: *2-Aug-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 041 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
1.00	1.15					
2.00	2.08	8.4	* 111	366	1.0 - 2.0	3.3 - 6.6
3.00	3.05	5.2	187	615	2.0 - 3.0	6.6 - 9.8
4.00	4.04	5.0	197	648	3.0 - 4.0	9.8 - 13.1
5.00	5.03	4.8	* 207	678	4.0 15 5.0	13.1 - 16.4
6.00	6.03	7.9	126	413	5.0 - 6.0	16.4 - 19.7
7.00	7.02	7.6	131	430	6.0 - 7.0	19.7 - 23.0
8.00	8.02	7.1	140	461	7.0 - 8.0	23.0 - 26.2
9.00	9.02	6.0	166	546	8.0 - 9.0	26.2 - 29.5
10.00	10.02	5.8	* 171	561	9.0 - 10.0	29.5 - 32.8
11.00	11.01	7.0	143	468	10.0 - 11.0	32.8 - 36.1
12.00	12.01	6.1	164	537	11.0 - 12.0	36.1 - 39.4
13.00	13.01	6.9	145	475	12.0 - 13.0	39.4 - 42.7
14.00	14.01	7.1	141	462	13.0 - 14.0	42.7 - 45.9
15.00	15.01	7.4	* 135	443	14.0 - 15.0	45.9 - 49.2
16.00	16.01	6.2	161	529	15.0 - 16.0	49.2 - 52.5
17.00	17.01	6.7	149	489	16.0 - 17.0	52.5 - 55.8
18.00	18.01	5.3	189	619	17.0 - 18.0	55.8 - 59.1
19.00	19.01	4.8	208	683	18.0 - 19.0	59.1 - 62.3
20.00	20.01	4.7	* 213	698	19.0 - 20.0	62.3 - 65.6
21.00	21.01	4.5	222	729	20.0 - 21.0	65.6 - 68.9
22.00	22.01	5.5	182	596	21.0 - 22.0	68.9 - 72.2
23.00	23.01	5.6	179	586	22.0 - 23.0	72.2 - 75.5
24.00	24.01	5.4	185	607	23.0 - 24.0	75.5 - 78.7
25.00	25.01	5.3	* 189	619	24.0 - 25.0	78.7 - 82.0
26.00	26.01	5.9	169	556	25.0 - 26.0	82.0 - 85.3
27.00	27.01	6.0	167	547	26.0 - 27.0	85.3 - 88.6
28.00	28.01	5.0	200	656	27.0 - 28.0	88.6 - 91.9
29.00	29.01	4.7	213	698	28.0 - 29.0	91.9 - 95.1
30.00	30.01	4.5	* 222	729	29.0 - 30.0	95.1 - 98.4
31.00	31.01	5.0	200	656	30.0 - 31.0	98.4 - 101.7
32.00	32.00	4.5	222	729	31.0 - 32.0	101.7 - 105.0

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0804-2148-5268
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15, S4: 500 S, 06-SC-60
Location: 500 S Viaduct
Cone: 20 TON A 080
CPT Date: 96/24/04
CPT Time: 12:40
CPT File: KA06S060.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	346.6	2.4	0.7	1.6	0.0	1.7	3.5	27.6	0.0	0.0	10.0
1.23	0.38	449.2	4.9	1.1	4.7	0.0	2.2	4.5	35.6	0.0	0.0	10.0
2.05	0.62	1120.5	24.3	2.2	8.5	0.0	5.6	11.2	89.0	0.0	0.0	10.0
2.87	0.88	537.4	20.7	3.8	12.9	0.0	5.4	10.7	42.0	0.0	0.0	6.0
3.69	1.12	783.7	15.0	1.9	17.4	0.0	3.9	7.8	61.3	0.0	0.0	6.0
4.51	1.38	529.2	15.6	2.9	21.8	0.0	5.3	10.6	40.6	0.0	0.0	6.0
5.33	1.62	410.2	18.5	4.5	26.2	0.0	4.1	7.8	30.7	0.0	0.0	6.0
6.15	1.88	337.8	15.3	4.5	30.6	0.0	3.4	6.0	24.6	0.0	0.0	3.0
6.97	2.12	217.5	15.9	7.3	33.7	1.2	2.2	3.7	14.6	0.0	0.0	1.5
7.79	2.38	1733.8	15.1	0.9	35.7	3.7	6.9	11.4	135.6	31.8	38.0	6.0
8.61	2.62	726.8	19.0	2.6	37.7	6.1	4.8	7.7	54.6	0.0	0.0	6.0
9.43	2.88	627.0	31.7	5.1	39.7	8.6	6.3	9.7	46.3	0.0	0.0	6.0
10.25	3.12	589.6	24.7	4.2	41.7	11.0	5.9	8.9	43.0	0.0	0.0	6.0
11.07	3.38	480.2	20.5	4.3	43.6	13.5	4.8	7.1	33.9	0.0	0.0	3.0
11.89	3.62	563.2	26.3	4.7	45.5	15.9	5.6	8.2	40.1	0.0	0.0	3.0
12.71	3.88	1882.8	27.6	1.5	47.5	18.4	7.5	10.7	145.4	30.1	38.0	6.0
13.53	4.12	1539.0	44.4	2.9	49.5	20.8	7.7	10.7	117.5	0.0	0.0	6.0
14.35	4.38	2256.4	70.6	3.1	51.6	23.3	11.3	15.4	174.5	0.0	0.0	6.0
15.17	4.62	1509.5	84.7	5.6	53.6	25.8	15.1	20.2	114.4	0.0	0.0	6.0
15.99	4.88	4814.1	102.2	2.1	55.5	28.2	19.3	25.3	378.4	54.7	42.0	10.0
16.81	5.12	3682.3	99.3	2.7	57.6	30.7	14.7	19.0	287.5	46.5	40.0	10.0
17.63	5.38	2384.1	89.5	3.8	59.6	33.1	15.9	20.1	183.3	0.0	0.0	6.0
18.45	5.62	4359.6	51.2	1.2	61.8	35.6	14.5	18.1	0.0	50.4	40.0	1.0
19.27	5.88	2981.7	50.6	1.7	63.9	38.0	11.9	14.6	230.4	39.0	38.0	6.0
20.09	6.12	1231.4	25.9	2.1	65.9	40.5	6.2	7.4	90.0	0.0	0.0	6.0
20.92	6.38	1434.4	29.9	2.1	68.0	42.9	7.2	8.5	105.9	0.0	0.0	6.0
21.74	6.62	1255.1	32.9	2.6	70.0	45.4	6.3	7.3	91.2	0.0	0.0	6.0
22.56	6.88	808.5	27.8	3.4	72.0	47.8	8.1	9.3	55.1	0.0	0.0	3.0
23.38	7.12	1142.1	47.5	4.2	73.9	50.3	11.4	13.0	81.4	0.0	0.0	6.0
24.20	7.38	1244.3	52.2	4.2	75.8	52.7	12.4	14.0	89.3	0.0	0.0	6.0
25.02	7.62	945.3	39.8	4.2	77.8	55.2	9.5	10.5	65.0	0.0	0.0	3.0
25.84	7.88	1813.0	64.8	3.6	79.7	57.6	12.1	13.2	134.1	0.0	0.0	6.0
26.66	8.12	1208.7	37.4	3.1	81.8	60.1	8.1	8.7	85.3	0.0	0.0	6.0
27.48	8.38	1626.7	36.9	2.3	83.8	62.5	8.1	8.7	118.4	0.0	0.0	6.0
28.30	8.62	648.4	10.9	1.7	85.9	65.0	3.2	3.4	39.8	0.0	0.0	1.5
29.12	8.88	1092.4	22.4	2.0	87.9	67.4	5.5	5.7	75.0	0.0	0.0	3.0
29.94	9.12	1066.9	22.1	2.1	90.0	69.9	5.3	5.5	72.6	0.0	0.0	3.0
30.76	9.38	943.3	18.7	2.0	92.0	72.3	4.7	4.8	62.3	0.0	0.0	3.0
31.58	9.62	1682.8	39.5	2.3	94.1	74.8	8.4	8.5	121.1	0.0	0.0	6.0
32.40	9.88	631.9	13.0	2.1	96.1	77.3	4.2	4.2	36.7	0.0	0.0	1.5
33.22	10.12	699.2	12.9	1.8	98.2	79.7	3.5	3.5	41.7	0.0	0.0	1.5
34.04	10.38	599.0	8.1	1.4	100.2	82.2	3.0	2.9	33.3	0.0	0.0	1.5
34.86	10.62	599.6	9.1	1.5	102.3	84.6	3.0	2.9	33.0	0.0	0.0	1.5
35.68	10.88	731.4	14.0	1.9	104.3	87.1	3.7	3.5	43.2	0.0	0.0	1.5
36.50	11.12	635.9	13.4	2.1	106.4	89.5	4.2	4.0	35.2	0.0	0.0	1.5
37.32	11.38	1551.7	28.7	1.8	108.4	92.0	6.2	5.8	108.1	30.0	32.0	3.0
38.14	11.62	547.5	8.3	1.5	110.5	94.4	3.6	3.4	27.4	0.0	0.0	1.0
38.96	11.88	692.8	11.2	1.6	112.5	96.9	3.5	3.2	38.7	0.0	0.0	1.5
39.78	12.12	756.8	10.8	1.4	114.5	99.3	3.8	3.5	43.4	0.0	0.0	1.5
40.60	12.38	619.3	5.8	0.9	115.9	101.8	3.1	2.8	32.1	0.0	0.0	1.5
41.42	12.62	644.2	6.8	1.1	117.3	104.2	3.2	2.9	33.8	0.0	0.0	1.5
42.24	12.88	655.5	7.9	1.2	119.3	106.7	3.3	2.9	34.4	0.0	0.0	1.5

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	639.9	7.2	1.1	121.4	109.1	3.2	2.8	32.8	0.0	0.0	1.5
43.88	13.38	633.0	6.1	1.0	123.4	111.6	3.2	2.8	31.8	0.0	0.0	1.5
44.70	13.62	723.2	8.9	1.2	125.5	114.0	3.6	3.2	38.7	0.0	0.0	1.5
45.52	13.88	830.0	10.5	1.3	127.5	116.5	4.2	3.6	46.9	0.0	0.0	1.5
46.34	14.12	870.9	9.1	1.0	129.6	118.9	4.4	3.7	49.8	0.0	0.0	1.5
47.16	14.38	753.8	7.0	0.9	131.6	121.4	3.8	3.2	40.1	0.0	0.0	1.5
47.98	14.62	915.2	16.8	1.8	133.6	123.9	4.6	3.9	52.6	0.0	0.0	1.5
48.80	14.88	1055.2	16.8	1.6	135.7	126.3	5.3	4.4	63.5	0.0	0.0	1.5
49.62	15.12	1009.2	13.6	1.4	137.7	128.8	5.0	4.2	59.4	0.0	0.0	1.5
50.44	15.38	1009.6	9.8	1.0	139.8	131.2	4.0	3.3	59.1	30.0	30.0	1.5
51.26	15.62	828.0	11.1	1.3	141.8	133.7	4.1	3.4	44.2	0.0	0.0	1.5
52.08	15.88	1101.9	20.1	1.8	143.9	136.1	5.5	4.5	65.8	0.0	0.0	1.5
52.90	16.12	1035.3	14.3	1.4	145.9	138.6	5.2	4.2	60.1	0.0	0.0	1.5
53.72	16.38	871.6	11.0	1.3	148.0	141.0	4.4	3.5	46.6	0.0	0.0	1.5
54.54	16.62	829.4	10.9	1.3	150.0	143.5	4.1	3.3	42.9	0.0	0.0	1.5
55.36	16.88	878.2	10.7	1.2	152.1	145.9	4.4	3.5	46.4	0.0	0.0	1.5
56.18	17.12	907.9	12.1	1.3	154.1	148.4	4.5	3.6	48.4	0.0	0.0	1.5
57.00	17.38	856.6	11.6	1.4	156.2	150.8	4.3	3.4	44.0	0.0	0.0	1.5
57.82	17.62	851.2	14.6	1.7	158.2	153.3	4.3	3.3	43.2	0.0	0.0	1.5
58.64	17.88	1453.9	47.7	3.3	160.3	155.7	9.7	7.5	91.0	0.0	0.0	3.0
59.46	18.12	1811.0	65.4	3.6	162.3	158.2	12.1	9.3	119.2	0.0	0.0	3.0
60.28	18.38	6288.7	186.1	3.0	164.4	160.6	25.2	19.2	477.1	46.9	38.0	6.0
61.10	18.62	16380.8	355.5	2.2	166.5	163.1	54.6	41.4	0.0	74.1	42.0	1.0
61.93	18.88	18608.1	458.2	2.5	168.6	165.5	62.0	46.7	0.0	77.6	42.0	1.0
62.75	19.12	17531.6	428.5	2.4	170.8	168.0	58.4	43.8	0.0	75.7	42.0	1.0
63.57	19.38	18085.8	391.3	2.2	173.0	170.4	60.3	44.9	0.0	76.4	42.0	1.0
64.39	19.62	19503.4	384.3	2.0	175.2	172.9	48.8	36.0	0.0	78.4	42.0	1.0
65.21	19.88	12296.7	247.7	2.0	177.5	175.4	41.0	30.1	0.0	65.0	40.0	1.0
66.03	20.12	8593.2	184.4	2.1	179.6	177.8	28.6	20.9	0.0	54.5	38.0	1.0
66.85	20.38	19269.7	255.2	1.3	181.9	180.3	48.2	35.0	0.0	77.5	42.0	1.0
67.67	20.62	21977.6	190.6	0.9	184.2	182.7	44.0	31.7	0.0	81.1	42.0	1.0
68.49	20.88	23394.2	279.3	1.2	186.6	185.2	46.8	33.5	0.0	82.7	42.0	1.0
69.31	21.12	18824.7	318.2	1.7	189.0	187.6	47.1	33.5	0.0	76.3	42.0	1.0
70.13	21.38	21636.7	407.8	1.9	191.3	190.1	54.1	38.3	0.0	80.1	42.0	1.0
70.95	21.62	16159.9	292.0	1.8	193.6	192.5	40.4	28.4	0.0	71.6	42.0	1.0
71.77	21.88	3264.5	109.7	3.4	195.8	195.0	16.3	11.4	229.9	0.0	0.0	6.0
72.59	22.12	1549.4	15.4	1.0	197.8	197.4	6.2	4.3	92.3	30.0	30.0	1.5
73.41	22.38	1498.6	16.0	1.1	199.9	199.9	6.0	4.1	87.9	30.0	30.0	1.5
74.23	22.62	1632.8	37.6	2.3	201.9	202.3	8.2	5.6	98.3	0.0	0.0	1.5
75.05	22.88	1270.5	18.2	1.4	204.0	204.8	5.1	3.5	68.9	30.0	30.0	1.5
75.87	23.12	1201.5	13.1	1.1	206.0	207.2	4.8	3.3	63.1	30.0	30.0	1.5
76.69	23.38	1153.2	12.3	1.1	208.1	209.7	4.6	3.1	58.8	30.0	30.0	1.5
77.51	23.62	1170.3	18.0	1.5	210.1	212.1	5.9	4.0	59.8	0.0	0.0	1.5
78.33	23.88	1497.3	21.2	1.4	212.2	214.6	6.0	4.0	85.6	30.0	30.0	1.5
79.15	24.12	1295.6	20.6	1.6	214.2	217.0	6.5	4.3	69.2	0.0	0.0	1.5
79.97	24.38	2191.4	41.2	1.9	216.3	219.5	8.8	5.8	140.5	30.0	30.0	3.0
80.79	24.62	1689.5	61.0	3.6	218.3	222.0	11.3	7.5	99.9	0.0	0.0	1.5
81.61	24.88	1432.6	30.2	2.1	220.3	224.4	7.2	4.7	79.0	0.0	0.0	1.5
82.43	25.12	1177.2	12.7	1.1	222.4	226.9	4.7	3.1	58.2	30.0	30.0	1.5
83.25	25.38	1523.0	19.2	1.3	224.4	229.3	6.1	4.0	85.5	30.0	30.0	1.5
84.07	25.62	1335.1	22.1	1.7	226.5	231.8	6.7	4.3	70.1	0.0	0.0	1.5
84.89	25.88	1323.7	17.7	1.3	228.5	234.2	5.3	3.4	68.9	30.0	30.0	1.5
85.71	26.12	1396.9	18.6	1.3	230.6	236.7	5.6	3.6	74.4	30.0	30.0	1.5
86.53	26.38	1499.4	20.0	1.3	232.6	239.1	6.0	3.8	82.2	30.0	30.0	1.5
87.35	26.62	1152.6	17.4	1.5	234.7	241.6	5.8	3.7	54.1	0.0	0.0	1.0
88.17	26.88	1418.6	20.6	1.5	236.7	244.0	5.7	3.6	75.0	30.0	30.0	1.5
88.99	27.12	1455.8	20.6	1.4	238.8	246.5	5.8	3.7	77.6	30.0	30.0	1.5
89.81	27.38	1587.7	39.9	2.5	240.8	248.9	7.9	5.0	87.8	0.0	0.0	1.5
90.63	27.62	1303.1	27.8	2.1	242.9	251.4	6.5	4.1	64.7	0.0	0.0	1.5
91.45	27.88	1677.2	47.5	2.8	244.9	253.8	8.4	5.2	94.3	0.0	0.0	1.5
92.27	28.12	1451.8	36.2	2.5	247.0	256.3	7.3	4.5	75.9	0.0	0.0	1.5
93.09	28.38	1803.3	56.1	3.1	249.0	258.7	9.0	5.6	103.6	0.0	0.0	1.5
93.91	28.62	1575.7	46.7	3.0	251.1	261.2	7.9	4.9	85.1	0.0	0.0	1.5
94.73	28.88	1479.1	29.7	2.0	253.1	263.6	7.4	4.5	77.0	0.0	0.0	1.5
95.55	29.12	1545.2	23.9	1.5	255.2	266.1	6.2	3.8	81.9	30.0	30.0	1.5
96.37	29.38	2510.9	52.5	2.1	257.2	268.5	10.0	6.1	158.8	30.0	30.0	3.0
97.19	29.62	9199.5	331.4	3.6	259.2	271.0	36.8	22.4	693.5	51.2	36.0	6.0
98.01	29.88	7191.0	304.4	4.2	261.3	273.5	36.0	21.8	532.5	0.0	0.0	6.0
98.83	30.12	2189.4	97.4	4.4	263.3	275.9	21.9	13.2	132.0	0.0	0.0	3.0

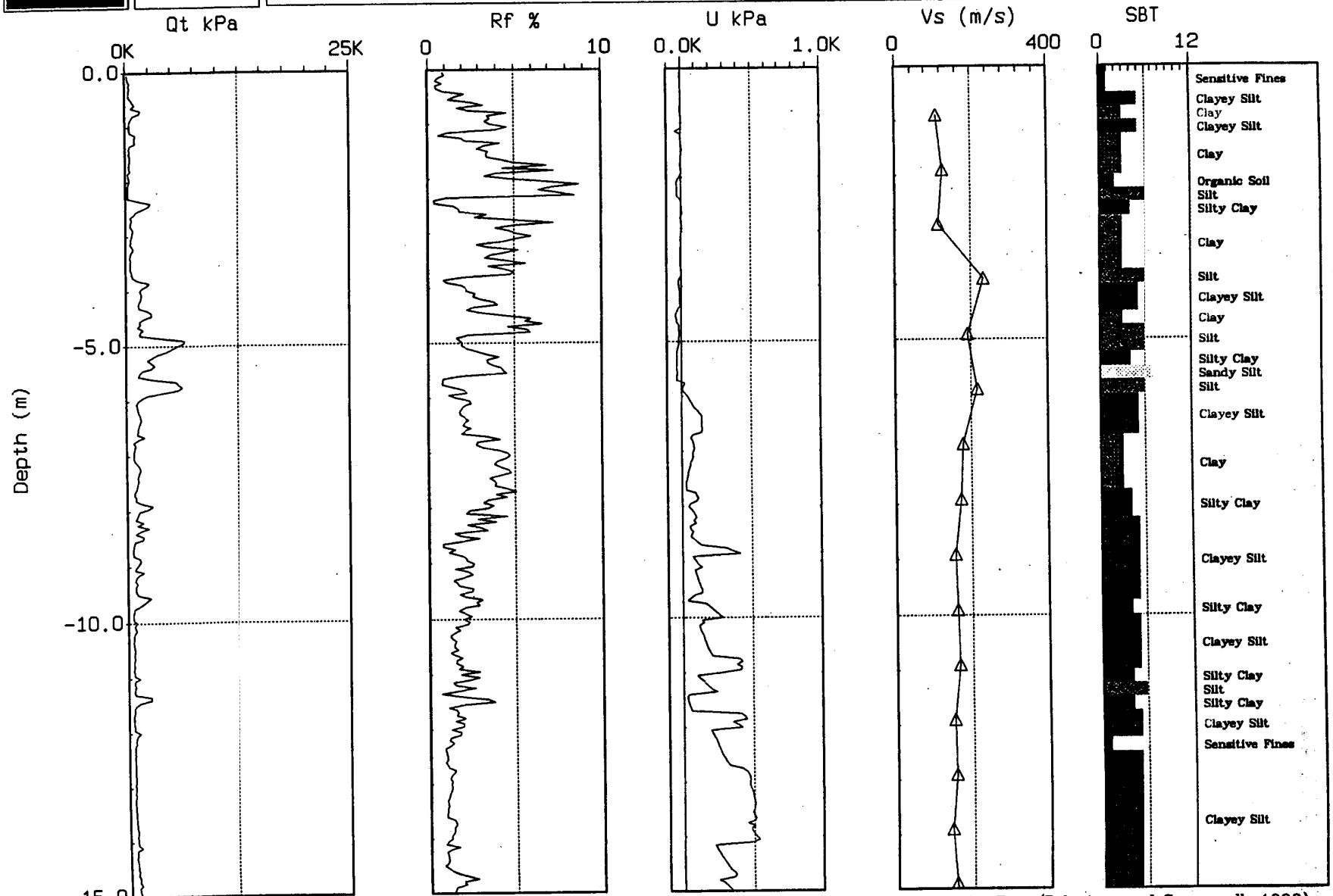
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	1760.0	51.7	2.9	265.3	278.4	8.8	5.3	97.3	0.0	0.0	1.5

CONETEC

Kleinfelder

Site: I15, S4: 500 S, 06-SC-60
Location: 500 S Viaduct

Cone: 20 TON A 080
Date: 04:24:96 12:40



Max. Depth: 30.70 (m)
Depth Inc.: 0.05 (m)

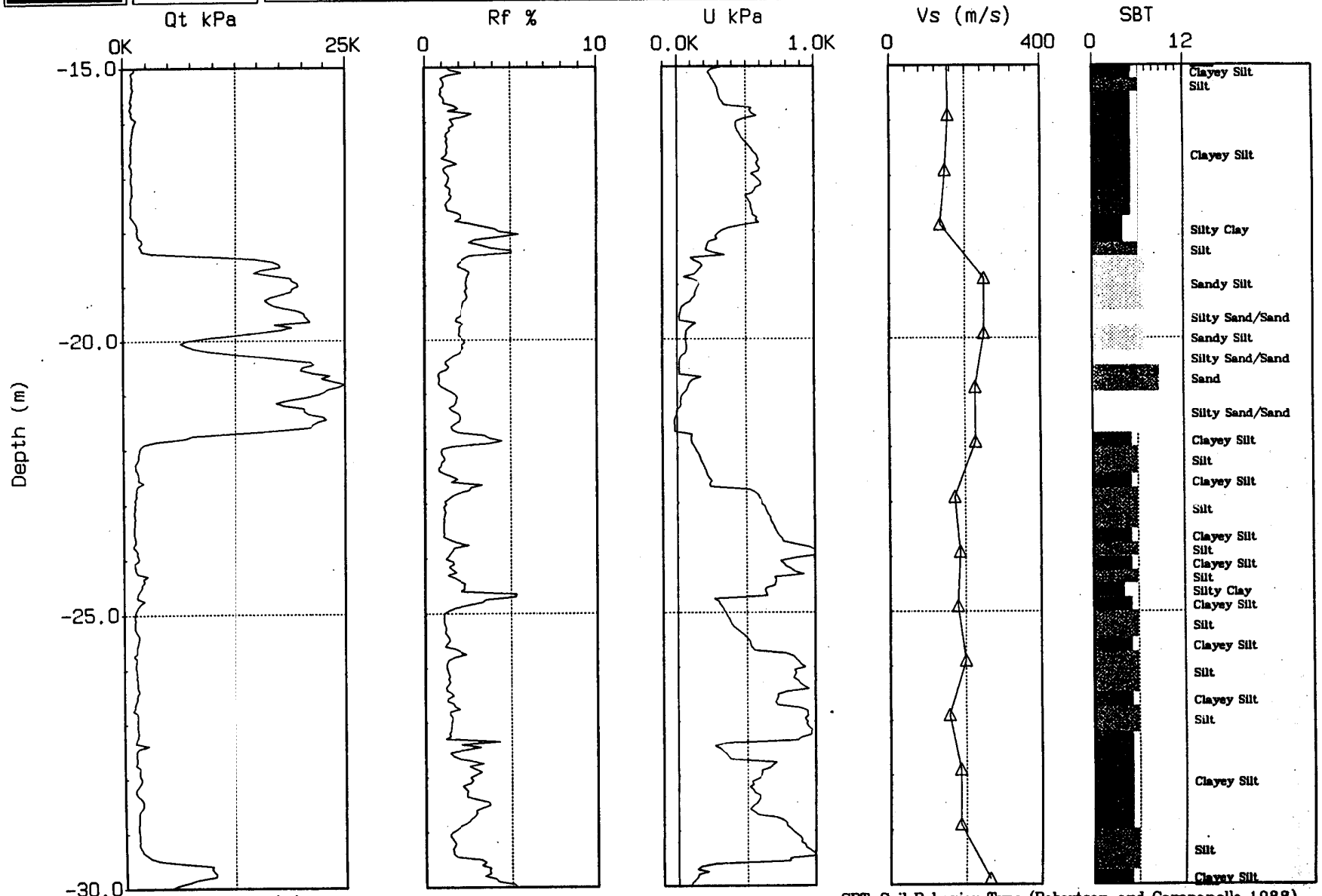
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: 500 S, 06-SC-60
Location: 500 S Viaduct

Cone: 20 TON A 080
Date: 04:24:96 12:40



Max. Depth: 30.70 (m)
Depth Inc.: 0.05 (m)

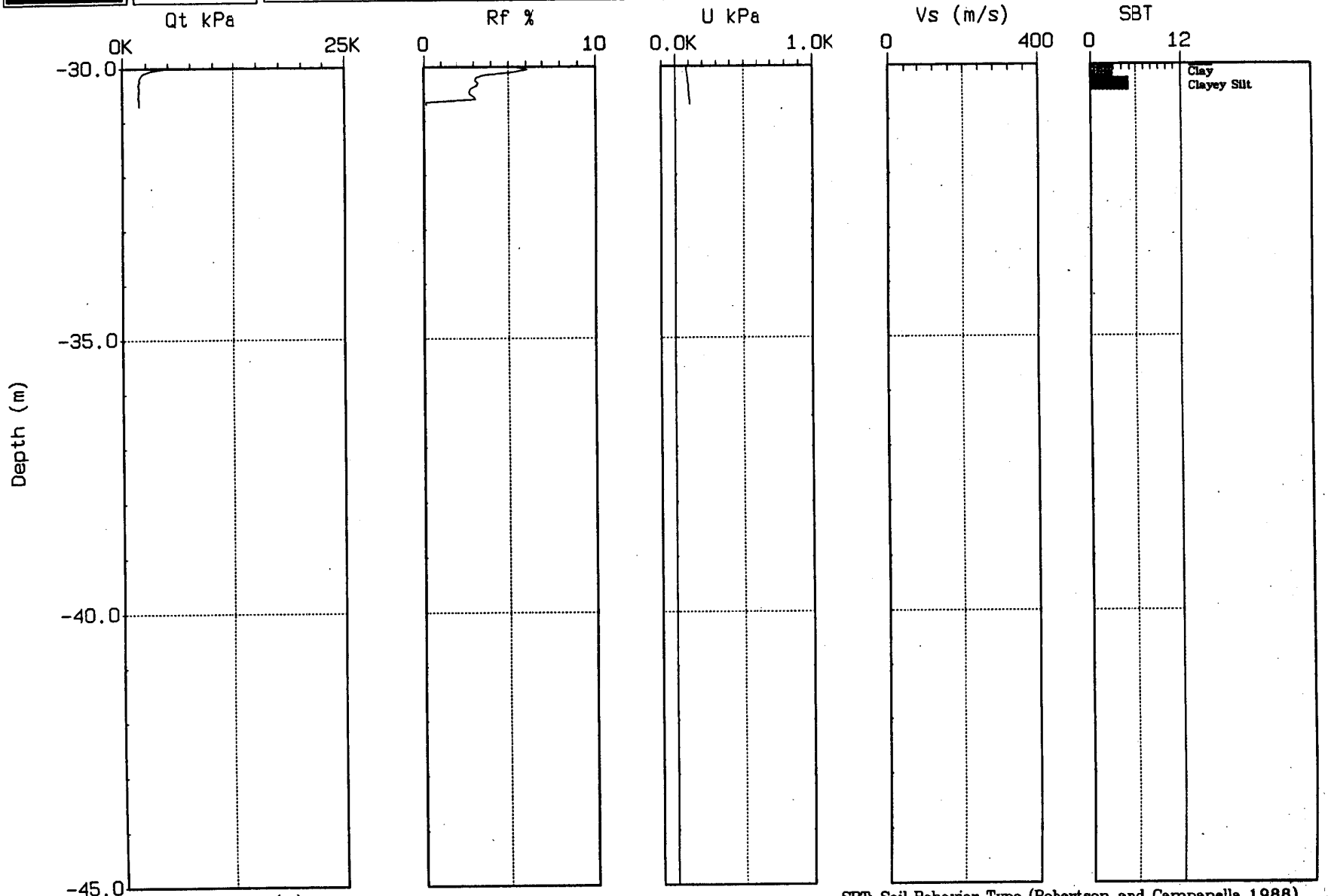
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: 500 S, 06-SC-60
Location: 500 S Viaduct

Cone: 20 TON A 080
Date: 04:24:96 12:40



Max. Depth: 30.70 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-60*
Date: *24-Apr-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 080 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
0.40	0.69					
1.40	1.51	7.4	* 111	363	0.4 - 1.4	1.3 - 4.6
2.40	2.46	7.6	126	413	1.4 - 2.4	4.6 - 7.9
3.40	3.45	8.6	115	377	2.4 - 3.4	7.9 - 11.2
4.40	4.44	4.3	233	764	3.4 - 4.4	11.2 - 14.4
5.40	5.43	5.2	* 191	627	4.4 - 5.4	14.4 - 17.7
6.40	6.42	4.6	216	710	5.4 - 6.4	17.7 - 21.0
7.40	7.42	5.6	178	584	6.4 - 7.4	21.0 - 24.3
8.40	8.42	5.8	172	564	7.4 - 8.4	24.3 - 27.6
9.40	9.42	6.4	156	512	8.4 - 9.4	27.6 - 30.8
10.40	10.42	6.2	* 161	528	9.4 - 10.4	30.8 - 34.1
11.40	11.41	6.0	166	546	10.4 - 11.4	34.1 - 37.4
12.40	12.41	6.6	151	497	11.4 - 12.4	37.4 - 40.7
13.40	13.41	6.5	154	504	12.4 - 13.4	40.7 - 44.0
14.40	14.41	7.0	143	468	13.4 - 14.4	44.0 - 47.2
15.40	15.41	6.5	* 154	504	14.4 - 15.4	47.2 - 50.5
16.40	16.41	6.4	156	512	15.4 - 16.4	50.5 - 53.8
17.40	17.41	6.8	147	482	16.4 - 17.4	53.8 - 57.1
18.40	18.41	7.4	135	443	17.4 - 18.4	57.1 - 60.4
19.40	19.41	4.0	250	820	18.4 - 19.4	60.4 - 63.6
20.40	20.41	4.0	* 250	820	19.4 - 20.4	63.6 - 66.9
21.40	21.41	4.4	227	745	20.4 - 21.4	66.9 - 70.2
22.40	22.41	4.4	227	745	21.4 - 22.4	70.2 - 73.5
23.40	23.41	5.8	172	565	22.4 - 23.4	73.5 - 76.8
24.40	24.41	5.4	185	607	23.4 - 24.4	76.8 - 80.1
25.40	25.41	5.6	* 179	586	24.4 - 25.4	80.1 - 83.3
26.40	26.41	5.0	200	656	25.4 - 26.4	83.3 - 86.6
27.40	27.41	6.4	156	513	26.4 - 27.4	86.6 - 89.9
28.40	28.41	5.4	185	607	27.4 - 28.4	89.9 - 93.2
29.40	29.41	5.4	185	607	28.4 - 29.4	93.2 - 96.5
30.40	30.41	3.8	* 263	863	29.4 - 30.4	96.5 - 99.7

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0804-2150-5709
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15, S4: SPRR R of W, 06-SC-64
Location: 400 S Viaduct
Cone: 10 TON A 028
CPT Date: 96/17/07
CPT Time: 11:10
CPT File: KA06S064.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	1835.4	26.7	1.5	2.2	0.0	7.3	14.7	146.7	73.1	50.0	10.0
1.23	0.38	1955.8	21.9	1.1	6.8	0.0	7.8	15.6	155.9	59.1	46.0	10.0
2.05	0.62	3540.9	38.6	1.1	11.3	0.0	11.8	23.6	0.0	68.7	46.0	1.0
2.87	0.88	4634.6	67.7	1.5	15.9	0.0	15.4	30.9	0.0	71.6	46.0	1.0
3.69	1.12	2327.3	71.5	3.1	20.5	0.0	11.6	23.3	184.5	0.0	0.0	10.0
4.51	1.38	1737.8	54.1	3.1	25.0	0.0	8.7	17.0	137.0	0.0	0.0	10.0
5.33	1.62	1641.3	49.7	3.0	29.5	0.0	8.2	14.8	128.9	0.0	0.0	10.0
6.15	1.88	1888.2	45.2	2.4	34.0	0.0	9.4	15.8	148.3	0.0	0.0	10.0
6.97	2.12	1438.9	29.2	2.0	37.3	1.2	7.2	11.5	112.0	0.0	0.0	6.0
7.79	2.38	4898.5	50.2	1.0	39.4	3.7	16.3	25.5	0.0	60.2	42.0	1.0
8.61	2.62	2717.3	52.3	1.9	41.5	6.1	10.9	16.5	213.6	42.5	40.0	10.0
9.43	2.88	1613.7	37.4	2.3	43.5	8.6	8.1	12.0	124.9	0.0	0.0	6.0
10.25	3.12	5182.6	63.9	1.2	45.7	11.0	17.3	25.0	0.0	59.7	42.0	1.0
11.07	3.38	9076.5	80.2	0.9	47.9	13.5	22.7	32.1	0.0	75.1	44.0	1.0
11.89	3.62	3133.1	65.4	2.1	50.1	15.9	12.5	17.3	245.4	43.9	40.0	10.0
12.71	3.88	1947.9	49.4	2.5	52.1	18.4	9.7	13.2	150.2	0.0	0.0	6.0
13.53	4.12	3081.4	55.0	1.8	54.2	20.8	12.3	16.4	240.5	42.3	40.0	10.0
14.35	4.38	4422.7	55.5	1.3	56.3	23.3	14.7	19.2	0.0	52.1	40.0	1.0
15.17	4.62	11628.7	123.5	1.1	58.5	25.8	29.1	37.2	0.0	79.3	46.0	1.0
15.99	4.88	7671.4	102.5	1.3	60.8	28.2	19.2	24.1	0.0	66.8	44.0	1.0
16.81	5.12	856.1	28.7	3.4	62.9	30.7	8.6	10.6	61.0	0.0	0.0	3.0
17.63	5.38	239.7	2.5	1.1	64.2	33.1	1.2	1.5	11.4	0.0	0.0	1.0
18.45	5.62	291.2	3.2	1.1	64.9	35.6	1.5	1.8	15.3	0.0	0.0	1.0
19.27	5.88	287.4	3.4	1.2	65.5	38.0	1.4	1.7	14.7	0.0	0.0	1.0
20.09	6.12	324.1	3.3	1.0	66.2	40.5	1.6	1.9	17.4	0.0	0.0	1.5
20.92	6.38	363.9	7.5	2.1	67.5	42.9	3.6	4.3	20.3	0.0	0.0	1.5
21.74	6.62	1196.9	30.1	2.5	69.5	45.4	6.0	7.0	86.6	0.0	0.0	6.0
22.56	6.88	743.2	20.1	2.7	71.6	47.8	5.0	5.7	49.9	0.0	0.0	3.0
23.38	7.12	688.6	23.7	3.4	73.5	50.3	6.9	7.9	45.2	0.0	0.0	3.0
24.20	7.38	640.7	17.0	2.7	75.5	52.7	4.3	4.8	41.0	0.0	0.0	3.0
25.02	7.62	648.5	18.2	2.8	77.6	55.2	4.3	4.8	41.3	0.0	0.0	3.0
25.84	7.88	479.5	14.4	3.0	79.6	57.6	4.8	5.3	27.4	0.0	0.0	1.5
26.66	8.12	396.7	5.3	1.3	80.9	60.1	2.0	2.2	20.5	0.0	0.0	1.5
27.48	8.38	1127.8	27.2	2.4	82.2	62.5	5.6	6.1	78.6	0.0	0.0	3.0
28.30	8.62	1355.5	29.3	2.2	84.3	65.0	6.8	7.2	96.5	0.0	0.0	6.0
29.12	8.88	2814.3	43.0	1.5	86.3	67.4	11.3	11.9	212.8	33.0	36.0	6.0
29.94	9.12	766.5	15.3	2.0	88.4	69.9	3.8	4.0	48.7	0.0	0.0	3.0
30.76	9.38	1083.1	19.4	1.8	90.4	72.3	5.4	5.6	73.6	0.0	0.0	3.0
31.58	9.62	2830.6	102.6	3.6	92.4	74.8	14.2	14.4	213.1	0.0	0.0	6.0
32.40	9.88	1385.5	36.0	2.6	94.5	77.3	6.9	7.0	97.1	0.0	0.0	6.0
33.22	10.12	707.3	5.0	0.7	95.9	79.7	3.5	3.5	42.5	0.0	0.0	1.5
34.04	10.38	987.1	12.1	1.2	97.2	82.2	4.9	4.9	64.6	0.0	0.0	3.0
34.86	10.62	932.1	14.5	1.6	99.3	84.6	4.7	4.6	59.9	0.0	0.0	3.0
35.68	10.88	687.5	13.4	2.0	101.3	87.1	3.4	3.3	39.9	0.0	0.0	1.5
36.50	11.12	720.1	12.4	1.7	103.4	89.5	3.6	3.5	42.2	0.0	0.0	1.5
37.32	11.38	1505.1	34.0	2.3	105.4	92.0	7.5	7.2	104.6	0.0	0.0	3.0
38.14	11.62	624.5	11.3	1.8	107.5	94.4	4.2	3.9	33.8	0.0	0.0	1.5
38.96	11.88	2745.1	62.1	2.3	109.5	96.9	11.0	10.3	203.1	30.0	34.0	6.0
39.78	12.12	1395.3	24.5	1.8	111.5	99.3	7.0	6.5	94.8	0.0	0.0	3.0
40.60	12.38	976.4	17.6	1.8	113.6	101.8	4.9	4.5	60.9	0.0	0.0	3.0
41.42	12.62	2861.6	90.2	3.2	115.6	104.2	14.3	13.0	211.3	0.0	0.0	6.0
42.24	12.88	1001.9	17.2	1.7	117.7	106.7	5.0	4.5	62.2	0.0	0.0	3.0

ConeTec Inc. - CPT Interpretation
Run No: 96-0804-2150-5709
CPT File: KA06S064.COR

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	685.7	5.3	0.8	119.1	109.1	3.4	3.1	36.6	0.0	0.0	1.5
43.88	13.38	830.4	8.5	1.0	120.4	111.6	4.2	3.7	47.9	0.0	0.0	1.5
44.70	13.62	715.4	8.0	1.1	122.5	114.0	3.6	3.2	38.3	0.0	0.0	1.5
45.52	13.88	801.5	11.0	1.4	124.5	116.5	4.0	3.5	44.8	0.0	0.0	1.5
46.34	14.12	821.4	11.7	1.4	126.6	118.9	4.1	3.6	46.1	0.0	0.0	1.5
47.16	14.38	766.1	9.8	1.3	128.6	121.4	3.8	3.3	41.3	0.0	0.0	1.5
47.98	14.62	815.8	10.8	1.3	130.6	123.9	4.1	3.5	44.9	0.0	0.0	1.5
48.80	14.88	798.3	11.9	1.5	132.7	126.3	4.0	3.4	43.1	0.0	0.0	1.5
49.62	15.12	827.6	16.6	2.0	134.7	128.8	4.1	3.5	45.1	0.0	0.0	1.5
50.44	15.38	736.8	8.7	1.2	136.8	131.2	3.7	3.1	37.5	0.0	0.0	1.5
51.26	15.62	744.4	9.8	1.3	138.8	133.7	3.7	3.1	37.8	0.0	0.0	1.5
52.08	15.88	770.4	11.2	1.4	140.9	136.1	3.9	3.2	39.5	0.0	0.0	1.5
52.90	16.12	759.7	11.1	1.5	142.9	138.6	3.8	3.1	38.3	0.0	0.0	1.5
53.72	16.38	810.7	14.1	1.7	145.0	141.0	4.1	3.3	42.0	0.0	0.0	1.5
54.54	16.62	823.4	9.6	1.2	147.0	143.5	4.1	3.3	42.6	0.0	0.0	1.5
55.36	16.88	768.0	12.8	1.7	149.1	145.9	3.8	3.1	37.8	0.0	0.0	1.5
56.18	17.12	1293.7	25.6	2.0	151.1	148.4	6.5	5.1	79.5	0.0	0.0	3.0
57.00	17.38	3964.9	66.0	1.7	153.2	150.8	13.2	10.4	0.0	34.6	34.0	1.0
57.82	17.62	2802.7	48.3	1.7	155.3	153.3	11.2	8.8	199.5	30.0	32.0	6.0
58.64	17.88	3362.3	57.9	1.7	157.4	155.7	13.4	10.5	243.9	30.0	34.0	6.0
59.46	18.12	2069.6	31.1	1.5	159.4	158.2	8.3	6.4	140.2	30.0	30.0	3.0
60.28	18.38	3105.1	36.4	1.2	161.5	160.6	10.4	8.0	0.0	30.0	32.0	1.0
61.10	18.62	1582.8	25.4	1.6	163.7	163.1	6.3	4.8	100.5	30.0	30.0	3.0
61.93	18.88	2693.0	45.8	1.7	165.7	165.5	10.8	8.2	188.9	30.0	32.0	6.0
62.75	19.12	1669.1	18.5	1.1	167.8	168.0	6.7	5.0	106.7	30.0	30.0	3.0
63.57	19.38	2873.1	64.8	2.3	169.8	170.4	11.5	8.6	202.6	30.0	32.0	6.0
64.39	19.62	7412.4	157.8	2.1	171.9	172.9	24.7	18.4	0.0	50.9	38.0	1.0
65.21	19.88	6866.6	166.7	2.4	174.0	175.4	27.5	20.4	521.4	48.6	38.0	6.0
66.03	20.12	7877.0	136.7	1.7	176.1	177.8	26.3	19.4	0.0	52.3	38.0	1.0
66.85	20.38	1341.7	8.6	0.6	178.2	180.3	5.4	3.9	78.7	30.0	30.0	1.5
67.67	20.62	1509.3	22.4	1.5	180.3	182.7	6.0	4.4	91.7	30.0	30.0	3.0
68.49	20.88	4155.2	59.9	1.4	182.4	185.2	13.9	10.0	0.0	33.5	34.0	1.0
69.31	21.12	10615.2	222.1	2.1	184.6	187.6	35.4	25.5	0.0	60.2	40.0	1.0
70.13	21.38	15687.1	355.7	2.3	186.7	190.1	52.3	37.4	0.0	71.2	42.0	1.0
70.95	21.62	23970.1	511.3	2.1	189.0	192.5	59.9	42.7	0.0	83.2	44.0	1.0
71.77	21.88	20211.9	519.7	2.6	191.2	195.0	67.4	47.7	0.0	78.2	42.0	1.0
72.59	22.12	27744.1	571.4	2.1	193.4	197.4	69.4	48.8	0.0	87.1	44.0	1.0
73.41	22.38	25643.1	288.5	1.1	195.8	199.9	51.3	35.9	0.0	84.6	44.0	1.0
74.23	22.62	12188.4	142.2	1.2	198.2	202.3	30.5	21.2	0.0	63.1	40.0	1.0
75.05	22.88	1543.7	15.1	1.0	200.3	204.8	6.2	4.3	91.1	30.0	30.0	1.5
75.87	23.12	1330.1	13.2	1.0	202.4	207.2	5.3	3.7	73.6	30.0	30.0	1.5
76.69	23.38	1353.9	15.2	1.1	204.4	209.7	5.4	3.7	75.2	30.0	30.0	1.5
77.51	23.62	1462.1	16.6	1.1	206.5	212.1	5.8	4.0	83.5	30.0	30.0	1.5
78.33	23.88	2720.1	29.6	1.1	208.6	214.6	9.1	6.1	0.0	30.0	30.0	1.0
79.15	24.12	2305.9	40.5	1.8	210.7	217.0	9.2	6.2	150.3	30.0	30.0	3.0
79.97	24.38	1700.5	20.1	1.2	212.8	219.5	6.8	4.6	101.5	30.0	30.0	1.5
80.79	24.62	1445.4	22.8	1.6	214.8	222.0	5.8	3.9	80.7	30.0	30.0	1.5
81.61	24.88	1663.4	25.4	1.5	216.8	224.4	6.7	4.4	97.8	30.0	30.0	1.5
82.43	25.12	1440.8	18.1	1.3	218.9	226.9	5.8	3.8	79.6	30.0	30.0	1.5
83.25	25.38	1870.3	27.7	1.5	220.9	229.3	7.5	4.9	113.6	30.0	30.0	3.0
84.07	25.62	2064.9	33.0	1.6	223.0	231.8	8.3	5.4	128.8	30.0	30.0	3.0
84.89	25.88	1842.2	33.6	1.8	225.0	234.2	7.4	4.8	110.6	30.0	30.0	1.5
85.71	26.12	1741.9	22.8	1.3	227.1	236.7	7.0	4.5	102.3	30.0	30.0	1.5
86.53	26.38	1903.1	24.3	1.3	229.1	239.1	7.6	4.9	114.8	30.0	30.0	3.0
87.35	26.62	1461.2	18.7	1.3	231.2	241.6	5.8	3.8	79.1	30.0	30.0	1.5
88.17	26.88	3394.8	47.2	1.4	233.3	244.0	11.3	7.3	0.0	30.0	32.0	1.0
88.99	27.12	7704.4	245.1	3.2	235.4	246.5	30.8	19.7	577.8	47.5	36.0	6.0
89.81	27.38	12312.2	402.8	3.3	237.4	248.9	49.2	31.3	946.1	60.8	38.0	6.0
90.63	27.62	11207.0	338.4	3.0	239.5	251.4	44.8	28.3	857.3	58.0	38.0	6.0
91.45	27.88	2116.8	47.8	2.3	241.5	253.8	8.5	5.3	129.7	30.0	30.0	3.0
92.27	28.12	2003.0	29.5	1.5	243.6	256.3	8.0	5.0	120.3	30.0	30.0	1.5
93.09	28.38	1859.1	26.4	1.4	245.6	258.7	7.4	4.6	108.4	30.0	30.0	1.5
93.91	28.62	1903.6	28.5	1.5	247.7	261.2	7.6	4.7	111.6	30.0	30.0	1.5
94.73	28.88	1737.0	30.0	1.7	249.7	263.6	6.9	4.3	97.9	30.0	30.0	1.5
95.55	29.12	2296.7	35.0	1.5	251.8	266.1	9.2	5.7	142.3	30.0	30.0	3.0
96.37	29.38	6938.4	153.7	2.2	253.9	268.5	23.1	14.2	0.0	43.4	34.0	1.0
97.19	29.62	3650.9	70.4	1.9	256.0	271.0	14.6	8.9	249.9	30.0	30.0	3.0
98.01	29.88	2614.9	55.1	2.1	258.0	273.5	10.5	6.4	166.7	30.0	30.0	3.0
98.83	30.12	2600.9	47.2	1.8	260.1	275.9	10.4	6.3	165.2	30.0	30.0	3.0

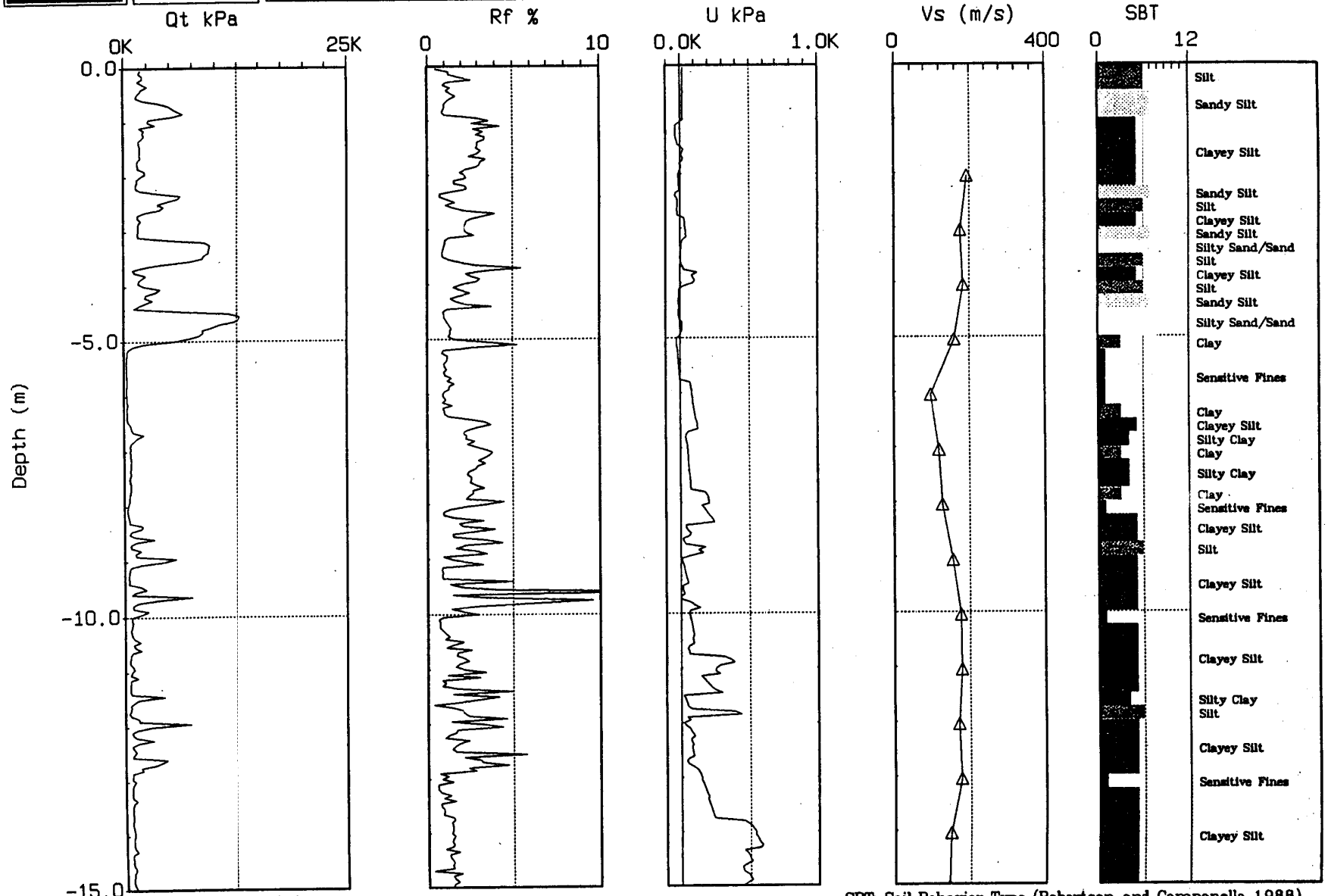
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	2555.2	46.3	1.8	262.1	278.4	10.2	6.2	161.2	30.0	30.0	3.0
100.47	30.62	2574.3	51.9	2.0	264.2	280.8	10.3	6.2	162.3	30.0	30.0	3.0
101.29	30.88	2741.7	67.8	2.5	266.2	283.3	11.0	6.6	175.4	30.0	30.0	3.0
102.11	31.12	4681.3	54.8	1.2	268.3	285.7	15.6	9.3	0.0	31.4	32.0	1.0
102.94	31.38	13659.4	430.7	3.2	270.5	288.2	54.6	32.5	1048.1	62.0	38.0	6.0
103.76	31.62	12276.4	355.4	2.9	272.5	290.6	49.1	29.1	937.1	58.8	38.0	6.0
104.58	31.88	2268.0	69.7	3.1	274.6	293.1	11.3	6.7	136.0	0.0	0.0	1.5
105.40	32.12	2271.4	41.7	1.8	276.6	295.5	9.1	5.3	135.9	30.0	30.0	1.5
106.22	32.38	2337.7	37.0	1.6	278.6	298.0	9.4	5.5	140.9	30.0	30.0	3.0
107.04	32.62	3500.9	68.1	1.9	280.7	300.4	14.0	8.2	233.6	30.0	30.0	3.0
107.86	32.88	7559.6	282.6	3.7	282.7	302.9	37.8	22.0	557.9	0.0	0.0	6.0
108.68	33.12	21787.7	470.8	2.2	284.9	305.3	72.6	42.1	0.0	74.6	40.0	1.0
109.50	33.38	6309.6	144.0	2.3	287.0	307.8	25.2	14.6	457.2	39.0	34.0	6.0
110.32	33.62	3359.3	76.3	2.3	289.0	310.2	13.4	7.7	220.8	30.0	30.0	3.0
111.14	33.88	8416.2	279.6	3.3	291.1	312.7	33.7	19.3	625.0	47.0	36.0	6.0
111.96	34.12	15159.9	495.8	3.3	293.1	315.1	60.6	34.7	1164.1	63.8	38.0	6.0
112.78	34.38	17912.1	634.3	3.5	295.3	317.6	89.6	51.0	0.0	68.5	40.0	1.0
113.60	34.62	14300.8	603.4	4.2	297.8	320.1	40.9	23.2	0.0	61.9	38.0	1.0
114.42	34.88	5078.8	192.6	3.8	300.1	322.5	25.4	14.3	356.5	0.0	0.0	6.0
115.24	35.12	2409.3	68.7	2.9	302.2	325.0	12.0	6.8	142.6	0.0	0.0	1.5
116.06	35.38	4616.5	144.6	3.1	304.2	327.4	23.1	13.0	318.8	0.0	0.0	6.0
116.88	35.62	2801.1	48.9	1.7	306.3	329.9	11.2	6.3	173.2	30.0	30.0	3.0
117.70	35.88	4879.8	152.2	3.1	308.3	332.3	19.5	10.9	339.1	30.6	32.0	6.0
118.52	36.12	11064.3	253.8	2.3	310.4	334.8	36.9	20.5	0.0	53.9	36.0	1.0
119.34	36.38	12292.2	410.2	3.3	312.5	337.2	49.2	27.2	931.4	56.9	38.0	6.0
120.16	36.62	21882.8	609.8	2.8	314.6	339.7	72.9	40.2	0.0	73.3	40.0	1.0
120.98	36.88	24251.1	646.3	2.7	316.8	342.1	80.8	44.4	0.0	76.1	40.0	1.0
121.80	37.12	29772.0	642.2	2.2	319.0	344.6	74.4	40.8	0.0	81.9	42.0	1.0

CONETEC

Kleinfelder

Site: I15, S4: SPRR R of W, 06-SC-64
Location: 400 S Viaduct

Cone: 10 TON A 028
Date: 07:17:96 11:10



Max. Depth: 37.30 (m)
Depth Inc.: 0.05 (m)

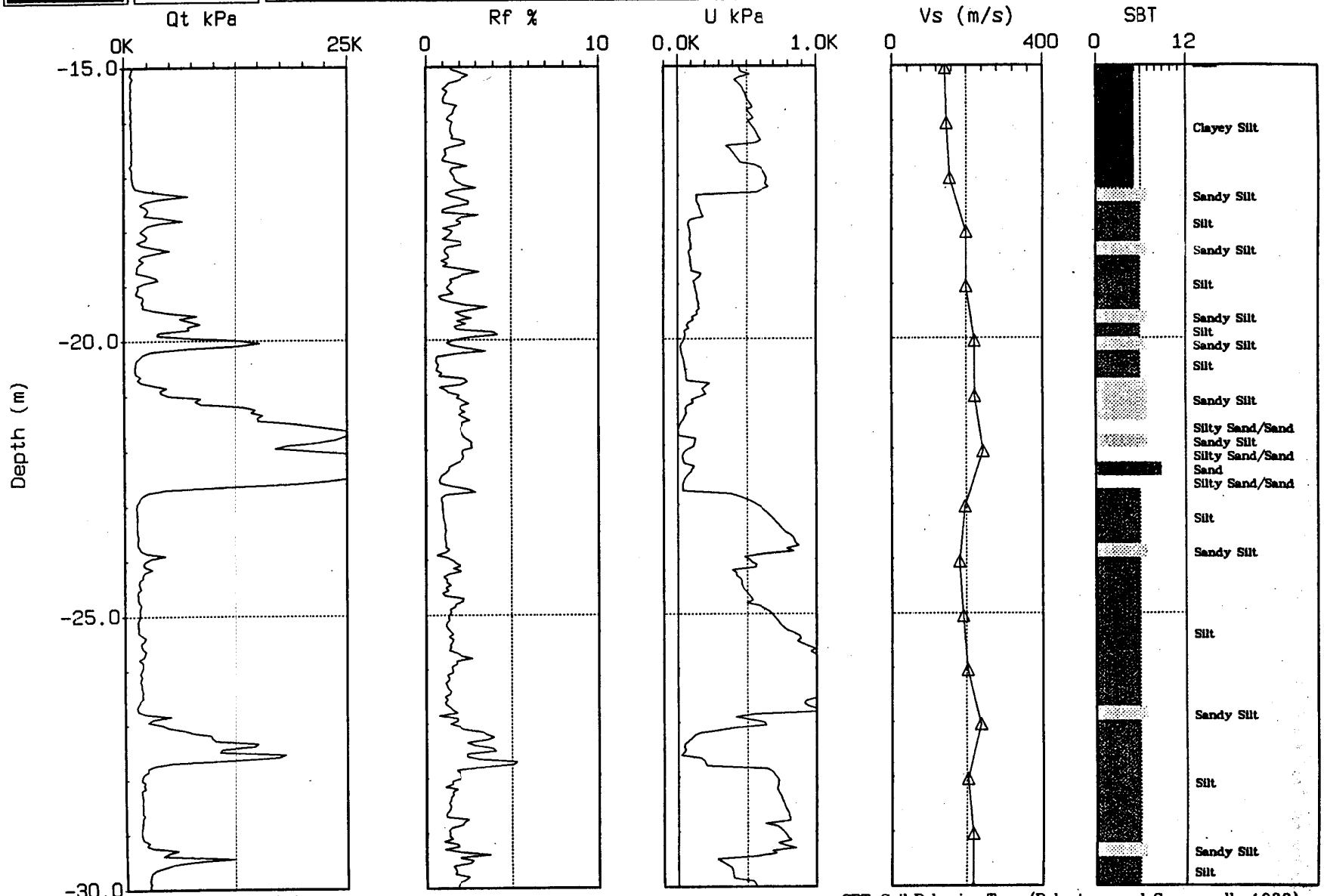
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: SPRR R of W, 06-SC-64
Location: 400 S Viaduct

Cone: 10 TON A 028
Date: 07:17:96 11:10



Max. Depth: 37.30 (m)
Depth Inc.: 0.05 (m)

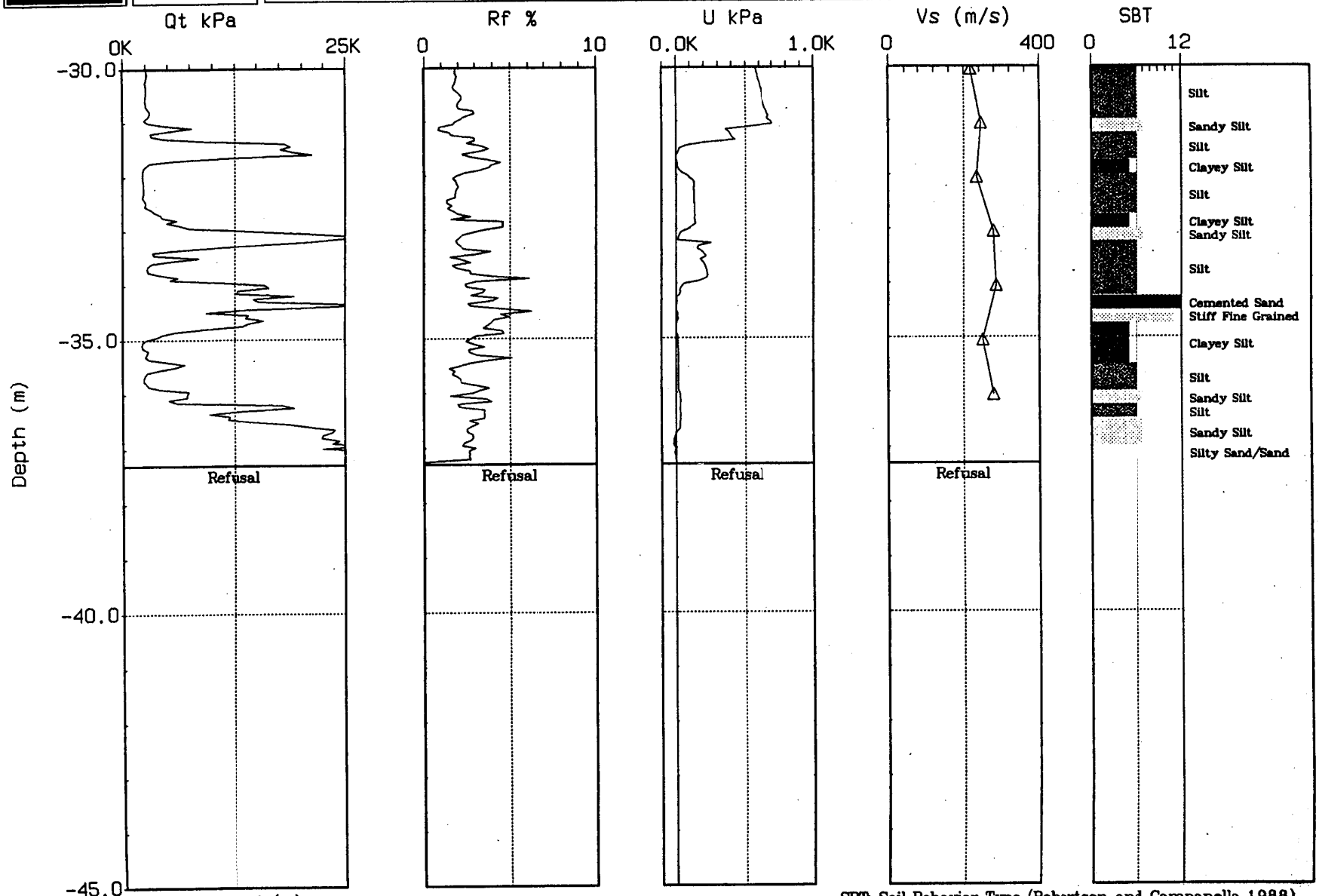
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: SPRR R of W, 06-SC-64
Location: 400 S Viaduct

Cone: 10 TON A 028
Date: 07:17:96 11:10



Max. Depth: 37.30 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-64*
Date: *17-Jul-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 028 (10 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
1.55	1.65					
2.55	2.61	5.0	* 193	632	1.6 - 2.6	5.1 - 8.4
3.55	3.59	5.6	176	576	2.6 - 3.6	8.4 - 11.6
4.55	4.58	5.4	183	602	3.6 - 4.6	11.6 - 14.9
5.55	5.58	6.2	* 160	526	4.6 - 5.6	14.9 - 18.2
6.55	6.57	10.2	98	320	5.6 - 6.6	18.2 - 21.5
7.55	7.57	8.4	119	389	6.6 - 7.6	21.5 - 24.8
8.55	8.57	7.8	128	420	7.6 - 8.6	24.8 - 28.1
9.55	9.57	6.5	154	504	8.6 - 9.6	28.1 - 31.3
10.55	10.56	5.7	* 175	575	9.6 - 10.6	31.3 - 34.6
11.55	11.56	5.6	178	585	10.6 - 11.6	34.6 - 37.9
12.55	12.56	5.9	169	555	11.6 - 12.6	37.9 - 41.2
13.55	13.56	5.7	175	575	12.6 - 13.6	41.2 - 44.5
14.55	14.56	6.8	147	482	13.6 - 14.6	44.5 - 47.7
15.55	15.56	7.0	* 143	468	14.6 - 15.6	47.7 - 51.0
16.55	16.56	6.8	147	482	15.6 - 16.6	51.0 - 54.3
17.55	17.56	6.4	156	512	16.6 - 17.6	54.3 - 57.6
18.55	18.56	5.0	200	656	17.6 - 18.6	57.6 - 60.9
19.55	19.56	5.0	200	656	18.6 - 19.6	60.9 - 64.1
20.55	20.56	4.5	* 222	729	19.6 - 20.6	64.1 - 67.4
21.55	21.56	4.5	222	729	20.6 - 21.6	67.4 - 70.7
22.55	22.56	4.1	244	800	21.6 - 22.6	70.7 - 74.0
23.55	23.56	5.1	196	643	22.6 - 23.6	74.0 - 77.3
24.55	24.56	5.5	182	596	23.6 - 24.6	77.3 - 80.5
25.55	25.56	5.2	* 192	631	24.6 - 25.6	80.5 - 83.8
26.55	26.56	4.9	204	669	25.6 - 26.6	83.8 - 87.1
27.55	27.56	4.2	238	781	26.6 - 27.6	87.1 - 90.4
28.55	28.56	4.9	204	669	27.6 - 28.6	90.4 - 93.7
29.55	29.56	4.6	217	713	28.6 - 29.6	93.7 - 96.9
30.55	30.56	4.6	* 217	713	29.6 - 30.6	96.9 - 100.2
31.55	31.55	4.1	244	800	30.6 - 31.6	100.2 - 103.5
32.55	32.55	4.3	233	763	31.6 - 32.6	103.5 - 106.8
33.55	33.55	3.6	278	911	32.6 - 33.6	106.8 - 110.1
34.55	34.55	3.5	286	937	33.6 - 34.6	110.1 - 113.4
35.55	35.55	4.0	* 250	820	34.6 - 35.6	113.4 - 116.6
36.55	36.55	3.6	278	911	35.6 - 36.6	116.6 - 119.9

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0913-0824-4146
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15,S4: I15,06-SC-66
Location: 400 S. Viaduct
Cone: 20 TON A 041
CPT Date: 96/30/07
CPT Time: 11:57
CPT File: KA06S066.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	18263.2	61.8	0.3	2.4	0.0	36.5	73.1	0.0	95.0	50.0	1.0
1.23	0.38	2743.1	77.1	2.8	7.1	0.0	13.7	27.4	218.9	0.0	0.0	10.0
2.05	0.62	858.4	21.8	2.5	11.6	0.0	5.7	11.4	67.7	0.0	0.0	10.0
2.87	0.88	898.0	16.0	1.8	16.1	0.0	4.5	9.0	70.5	0.0	0.0	10.0
3.69	1.12	1271.2	22.1	1.7	20.6	0.0	6.4	12.7	100.0	0.0	0.0	10.0
4.51	1.38	1334.0	28.1	2.1	25.1	0.0	6.7	13.0	104.7	0.0	0.0	10.0
5.33	1.62	1399.4	28.4	2.0	29.6	0.0	7.0	12.6	109.6	0.0	0.0	6.0
6.15	1.88	1678.7	35.9	2.1	34.1	0.0	8.4	14.1	131.6	0.0	0.0	6.0
6.97	2.12	1733.4	42.9	2.5	37.4	1.2	8.7	13.9	135.6	0.0	0.0	6.0
7.79	2.38	3933.2	46.8	1.2	39.5	3.7	13.1	20.4	0.0	53.8	42.0	1.0
8.61	2.62	3605.6	57.0	1.6	41.7	6.1	12.0	18.2	0.0	50.6	42.0	1.0
9.43	2.88	1651.5	29.9	1.8	43.8	8.6	6.6	9.8	127.9	30.0	38.0	6.0
10.25	3.12	2889.1	39.5	1.4	45.8	11.0	11.6	16.7	226.6	42.9	40.0	10.0
11.07	3.38	5711.5	32.5	0.6	48.0	13.5	14.3	20.2	0.0	61.7	42.0	1.0
11.89	3.62	7374.4	48.7	0.7	50.3	15.9	18.4	25.4	0.0	68.4	44.0	1.0
12.71	3.88	3020.7	54.0	1.8	52.5	18.4	12.1	16.3	236.0	42.2	40.0	10.0
13.53	4.12	1018.6	17.1	1.7	54.5	20.8	5.1	6.7	75.5	0.0	0.0	6.0
14.35	4.38	2539.9	23.8	0.9	56.6	23.3	8.5	11.0	0.0	36.1	38.0	1.0
15.17	4.62	6266.2	39.2	0.6	58.9	25.8	15.7	20.0	0.0	61.5	42.0	1.0
15.99	4.88	1852.4	37.7	2.0	61.0	28.2	7.4	9.3	141.1	30.0	36.0	6.0
16.81	5.12	572.8	7.8	1.4	63.1	30.7	2.9	3.5	38.3	0.0	0.0	3.0
17.63	5.38	463.1	4.9	1.1	64.5	33.1	2.3	2.8	29.2	0.0	0.0	1.5
18.45	5.62	432.7	5.2	1.2	65.1	35.6	2.2	2.6	26.6	0.0	0.0	1.5
19.27	5.88	471.5	4.1	0.9	65.8	38.0	2.4	2.8	29.4	0.0	0.0	1.5
20.09	6.12	432.4	3.1	0.7	66.5	40.5	2.2	2.6	26.0	0.0	0.0	1.5
20.92	6.38	914.8	6.5	0.7	67.8	42.9	3.7	4.3	64.3	30.0	30.0	3.0
21.74	6.62	996.7	11.9	1.2	69.9	45.4	5.0	5.8	70.5	0.0	0.0	6.0
22.56	6.88	768.4	22.9	3.0	71.9	47.8	5.1	5.9	51.9	0.0	0.0	3.0
23.38	7.12	812.3	26.5	3.3	73.9	50.3	8.1	9.2	55.0	0.0	0.0	3.0
24.20	7.38	745.2	17.7	2.4	75.9	52.7	5.0	5.6	49.3	0.0	0.0	3.0
25.02	7.62	696.2	12.8	1.8	77.9	55.2	3.5	3.9	45.0	0.0	0.0	3.0
25.84	7.88	532.8	8.0	1.5	80.0	57.6	3.6	3.9	31.6	0.0	0.0	1.5
26.66	8.12	851.5	11.0	1.3	82.0	60.1	4.3	4.6	56.7	0.0	0.0	3.0
27.48	8.38	1601.9	20.0	1.3	84.1	62.5	6.4	6.8	116.4	30.0	32.0	6.0
28.30	8.62	1239.4	18.3	1.5	86.1	65.0	6.2	6.5	87.1	0.0	0.0	6.0
29.12	8.88	2420.6	32.3	1.3	88.2	67.4	9.7	10.1	181.2	30.0	36.0	6.0
29.94	9.12	692.7	2.8	0.4	89.5	69.9	3.5	3.6	42.7	0.0	0.0	1.5
30.76	9.38	1470.2	17.6	1.2	90.9	72.3	5.9	6.0	104.6	30.0	32.0	6.0
31.58	9.62	2250.9	39.1	1.7	92.9	74.8	9.0	9.1	166.7	30.0	34.0	6.0
32.40	9.88	1851.3	31.8	1.7	95.0	77.3	7.4	7.4	134.3	30.0	32.0	6.0
33.22	10.12	789.0	3.7	0.5	96.4	79.7	3.9	3.9	49.0	0.0	0.0	3.0
34.04	10.38	1806.1	22.9	1.3	97.7	82.2	7.2	7.2	130.1	30.0	32.0	6.0
34.86	10.62	937.0	7.9	0.8	99.8	84.6	3.7	3.7	60.2	30.0	30.0	3.0
35.68	10.88	919.5	10.6	1.2	101.8	87.1	4.6	4.5	58.4	0.0	0.0	3.0
36.50	11.12	871.1	5.7	0.7	103.9	89.5	3.5	3.3	54.2	30.0	30.0	3.0
37.32	11.38	1935.3	32.8	1.7	105.9	92.0	7.7	7.4	139.0	30.0	32.0	6.0
38.14	11.62	877.4	7.5	0.9	108.0	94.4	4.4	4.1	54.0	0.0	0.0	3.0
38.96	11.88	2012.4	40.7	2.0	110.0	96.9	8.0	7.5	144.4	30.0	32.0	6.0
39.78	12.12	1586.3	17.8	1.1	112.0	99.3	6.3	5.9	110.0	30.0	30.0	3.0
40.60	12.38	1038.5	14.0	1.3	114.1	101.8	5.2	4.8	65.8	0.0	0.0	3.0
41.42	12.62	2974.5	55.1	1.9	116.1	104.2	11.9	10.8	220.3	30.4	34.0	6.0
42.24	12.88	1224.6	20.3	1.7	118.2	106.7	6.1	5.5	80.0	0.0	0.0	3.0

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	811.5	3.8	0.5	120.2	109.1	3.2	2.9	46.6	30.0	30.0	1.5
43.88	13.38	815.5	4.7	0.6	122.3	111.6	3.3	2.9	46.5	30.0	30.0	1.5
44.70	13.62	769.1	2.1	0.3	123.6	114.0	3.8	3.4	42.5	0.0	0.0	1.5
45.52	13.88	882.0	4.4	0.5	125.0	116.5	3.5	3.1	51.2	30.0	30.0	1.5
46.34	14.12	829.5	4.0	0.5	127.1	118.9	3.3	2.9	46.7	30.0	30.0	1.5
47.16	14.38	941.9	5.4	0.6	129.1	121.4	3.8	3.2	55.3	30.0	30.0	1.5
47.98	14.62	849.8	2.2	0.3	130.5	123.9	4.2	3.6	47.6	0.0	0.0	1.5
48.80	14.88	877.1	6.8	0.8	131.8	126.3	3.5	3.0	49.5	30.0	30.0	1.5
49.62	15.12	900.0	4.4	0.5	133.9	128.8	3.6	3.0	51.0	30.0	30.0	1.5
50.44	15.38	1051.1	4.0	0.4	135.9	131.2	4.2	3.5	62.7	30.0	30.0	1.5
51.26	15.62	994.8	3.6	0.4	138.0	133.7	4.0	3.3	57.9	30.0	30.0	1.5
52.08	15.88	1012.4	5.0	0.5	140.0	136.1	4.0	3.3	58.9	30.0	30.0	1.5
52.90	16.12	938.3	4.7	0.5	142.1	138.6	3.8	3.1	52.6	30.0	30.0	1.5
53.72	16.38	935.2	5.6	0.6	144.1	141.0	3.7	3.0	52.0	30.0	30.0	1.5
54.54	16.62	994.6	6.3	0.6	146.2	143.5	4.0	3.2	56.4	30.0	30.0	1.5
55.36	16.88	1016.8	7.3	0.7	148.2	145.9	4.1	3.3	57.8	30.0	30.0	1.5
56.18	17.12	958.0	6.7	0.7	150.2	148.4	3.8	3.1	52.7	30.0	30.0	1.5
57.00	17.38	1174.3	14.5	1.2	152.3	150.8	4.7	3.7	69.7	30.0	30.0	1.5
57.82	17.62	2127.7	30.4	1.4	154.3	153.3	8.5	6.7	145.6	30.0	30.0	3.0
58.64	17.88	1891.6	38.1	2.0	156.4	155.7	7.6	5.9	126.4	30.0	30.0	3.0
59.46	18.12	1502.9	18.6	1.2	158.4	158.2	6.0	4.7	94.9	30.0	30.0	3.0
60.28	18.38	1277.0	6.8	0.5	160.5	160.6	5.1	3.9	76.5	30.0	30.0	1.5
61.10	18.62	2552.6	30.7	1.2	162.5	163.1	10.2	7.8	178.2	30.0	32.0	6.0
61.93	18.88	4322.2	47.8	1.1	164.6	165.5	14.4	11.0	0.0	36.1	34.0	1.0
62.75	19.12	1532.1	18.6	1.2	166.8	168.0	6.1	4.6	95.8	30.0	30.0	3.0
63.57	19.38	1518.5	12.2	0.8	168.8	170.4	6.1	4.6	94.3	30.0	30.0	3.0
64.39	19.62	1557.6	12.5	0.8	170.8	172.9	6.2	4.7	97.1	30.0	30.0	3.0
65.21	19.88	2784.9	18.2	0.7	173.0	175.4	9.3	6.9	0.0	30.0	32.0	1.0
66.03	20.12	3560.4	58.2	1.6	175.1	177.8	14.2	10.5	256.6	30.0	32.0	6.0
66.85	20.38	3979.4	64.0	1.6	177.2	180.3	13.3	9.8	0.0	32.7	34.0	1.0
67.67	20.62	1316.6	18.8	1.4	179.3	182.7	5.3	3.8	76.4	30.0	30.0	1.5
68.49	20.88	2035.4	16.2	0.8	181.3	185.2	8.1	5.9	133.5	30.0	30.0	3.0
69.31	21.12	2173.0	26.0	1.2	183.4	187.6	8.7	6.3	144.2	30.0	30.0	3.0
70.13	21.38	3590.2	61.5	1.7	185.4	190.1	14.4	10.3	257.2	30.0	32.0	6.0
70.95	21.62	3347.4	27.1	0.8	187.5	192.5	11.2	8.0	0.0	30.0	32.0	1.0
71.77	21.88	1901.2	6.1	0.3	189.7	195.0	6.3	4.5	0.0	30.0	30.0	1.0
72.59	22.12	1206.2	2.1	0.2	191.8	197.4	4.8	3.4	65.4	30.0	30.0	1.5
73.41	22.38	1013.0	2.0	0.2	193.9	199.9	4.1	2.8	49.5	30.0	30.0	1.5
74.23	22.62	622.8	2.0	0.3	195.2	202.3	3.1	2.2	18.0	0.0	0.0	0.8
75.05	22.88	1267.0	6.6	0.5	196.6	204.8	5.1	3.5	69.2	30.0	30.0	1.5
75.87	23.12	1237.7	6.7	0.5	198.6	207.2	5.0	3.4	66.5	30.0	30.0	1.5
76.69	23.38	1090.5	4.6	0.4	200.7	209.7	4.4	3.0	54.4	30.0	30.0	1.5
77.51	23.62	1132.3	4.1	0.4	202.7	212.1	4.5	3.1	57.4	30.0	30.0	1.5
78.33	23.88	1111.5	5.1	0.5	204.8	214.6	4.4	3.0	55.4	30.0	30.0	1.5
79.15	24.12	1126.4	13.2	1.2	206.8	217.0	4.5	3.1	56.2	30.0	30.0	1.5
79.97	24.38	1572.2	26.6	1.7	208.9	219.5	6.3	4.3	91.5	30.0	30.0	1.5
80.79	24.62	1503.7	24.2	1.6	210.9	222.0	6.0	4.1	85.7	30.0	30.0	1.5
81.61	24.88	620.8	27.4	4.4	212.9	224.4	6.2	4.2	14.7	0.0	0.0	0.8
82.43	25.12	633.1	35.0	5.5	214.8	226.9	6.3	4.2	15.3	0.0	0.0	0.8
83.25	25.38	432.4	25.4	5.9	216.8	229.3	4.3	2.9	0.1	0.0	0.0	0.8
84.07	25.62	480.2	5.2	1.1	218.1	231.8	2.4	1.6	2.4	0.0	0.0	0.8
84.89	25.88	563.8	2.9	0.5	218.7	234.2	2.8	1.9	8.9	0.0	0.0	0.8
85.71	26.12	374.9	3.1	0.8	219.4	236.7	1.9	1.2	0.1	0.0	0.0	0.8
86.53	26.38	423.1	5.6	1.3	220.1	239.1	2.1	1.4	0.1	0.0	0.0	0.8
87.35	26.62	507.5	7.9	1.6	221.4	241.6	3.4	2.2	3.6	0.0	0.0	0.8
88.17	26.88	787.2	12.0	1.5	223.5	244.0	3.9	2.6	25.6	0.0	0.0	1.0
88.99	27.12	1504.2	11.9	0.8	225.5	246.5	6.0	3.9	82.6	30.0	30.0	1.5
89.81	27.38	2204.2	9.4	0.4	227.6	248.9	7.3	4.8	0.0	30.0	30.0	1.0
90.63	27.62	2054.0	23.1	1.1	229.7	251.4	8.2	5.3	125.8	30.0	30.0	3.0
91.45	27.88	3430.6	20.9	0.6	231.9	253.8	11.4	7.4	0.0	30.0	32.0	1.0
92.27	28.12	2019.8	29.3	1.5	234.0	256.3	8.1	5.2	122.4	30.0	30.0	3.0
93.09	28.38	1875.5	26.5	1.4	236.0	258.7	7.5	4.8	110.5	30.0	30.0	1.5
93.91	28.62	1452.0	10.9	0.7	238.1	261.2	5.8	3.7	76.2	30.0	30.0	1.5
94.73	28.88	1509.5	10.6	0.7	240.1	263.6	6.0	3.8	80.5	30.0	30.0	1.5
95.55	29.12	1948.0	16.4	0.8	242.2	266.1	7.8	4.9	115.2	30.0	30.0	1.5
96.37	29.38	3224.7	29.3	0.9	244.3	268.5	10.7	6.7	0.0	30.0	30.0	1.0
97.19	29.62	4372.4	60.4	1.4	246.4	271.0	14.6	9.1	0.0	30.6	32.0	1.0
98.01	29.88	8790.0	143.5	1.6	248.6	273.5	29.3	18.2	0.0	50.5	36.0	1.0
98.83	30.12	2396.4	55.1	2.3	250.7	275.9	9.6	5.9	149.6	30.0	30.0	3.0

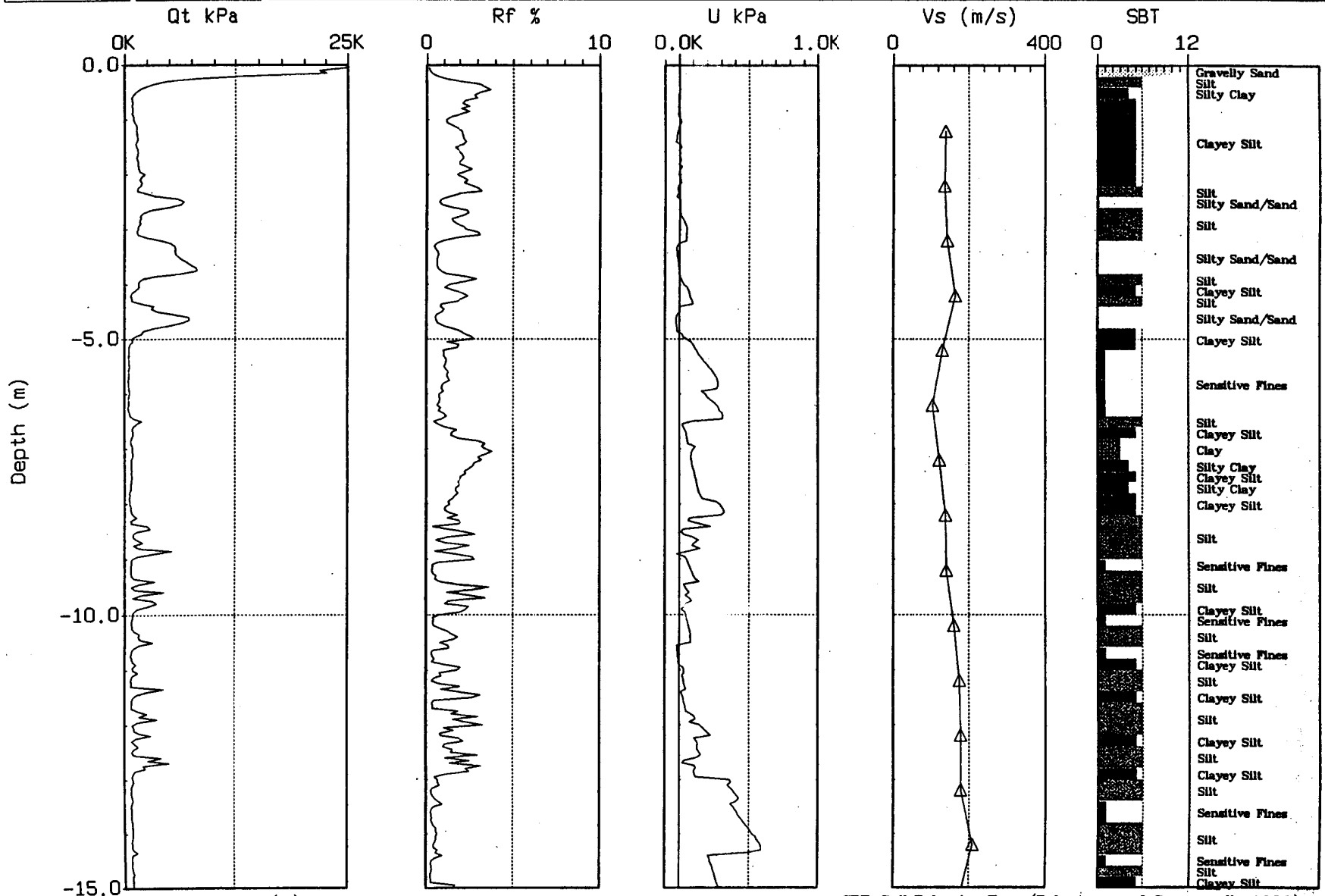
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60 (blows/ft)	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	1846.1	23.7	1.3	252.8	278.4	7.4	4.5	105.2	30.0	30.0	1.5
100.47	30.62	4040.2	80.1	2.0	254.8	280.8	16.2	9.9	280.4	30.0	32.0	6.0
101.29	30.88	3945.0	69.6	1.8	256.9	283.3	13.2	8.0	0.0	30.0	32.0	1.0
102.11	31.12	3938.2	121.8	3.1	259.0	285.7	19.7	12.0	271.5	0.0	0.0	6.0
102.94	31.38	2969.2	46.6	1.6	261.1	288.2	11.9	7.2	193.6	30.0	30.0	3.0
103.76	31.62	2652.7	28.7	1.1	263.2	290.6	8.8	5.3	0.0	30.0	30.0	1.0
104.58	31.88	5664.6	86.2	1.5	265.4	293.1	18.9	11.3	0.0	37.0	34.0	1.0
105.40	32.12	3121.2	62.6	2.0	267.5	295.5	12.5	7.5	204.7	30.0	30.0	3.0
106.22	32.38	7410.8	138.0	1.9	269.6	298.0	24.7	14.7	0.0	44.5	36.0	1.0
107.04	32.62	3761.4	88.1	2.3	271.7	300.4	15.0	8.9	255.1	30.0	30.0	3.0
107.86	32.88	2280.3	36.2	1.6	273.7	302.9	9.1	5.4	136.3	30.0	30.0	1.5

CONETEC

Kleinfelder

Site: I15, S4: I15, 06-SC-66
Location: 400 S. VIADUCT

Cone: 20 TON A 041
Date: 07:30:96 11:57



Max. Depth: 33.20 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15, 06-SC-66
Location: 400 S. VIADUCT

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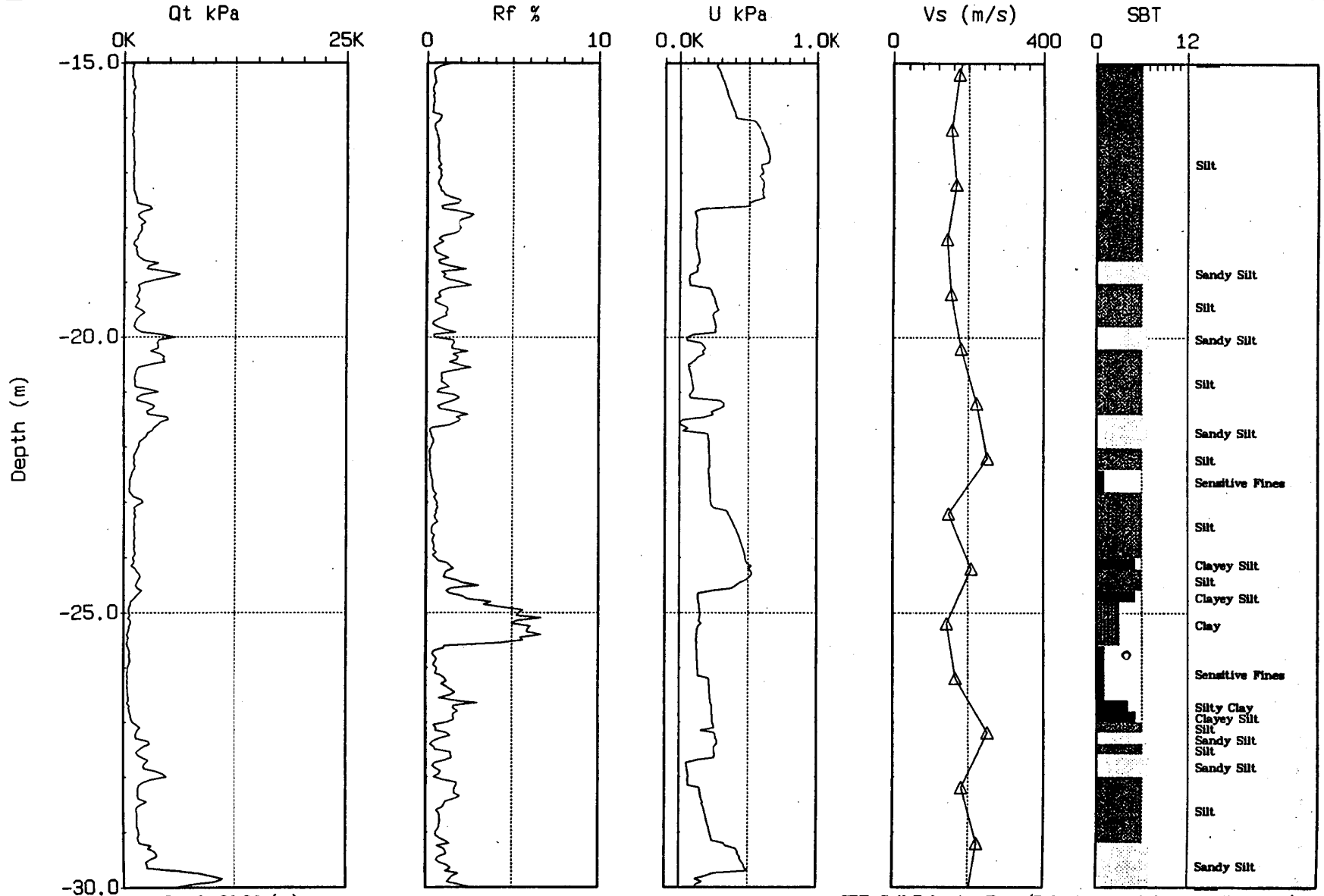

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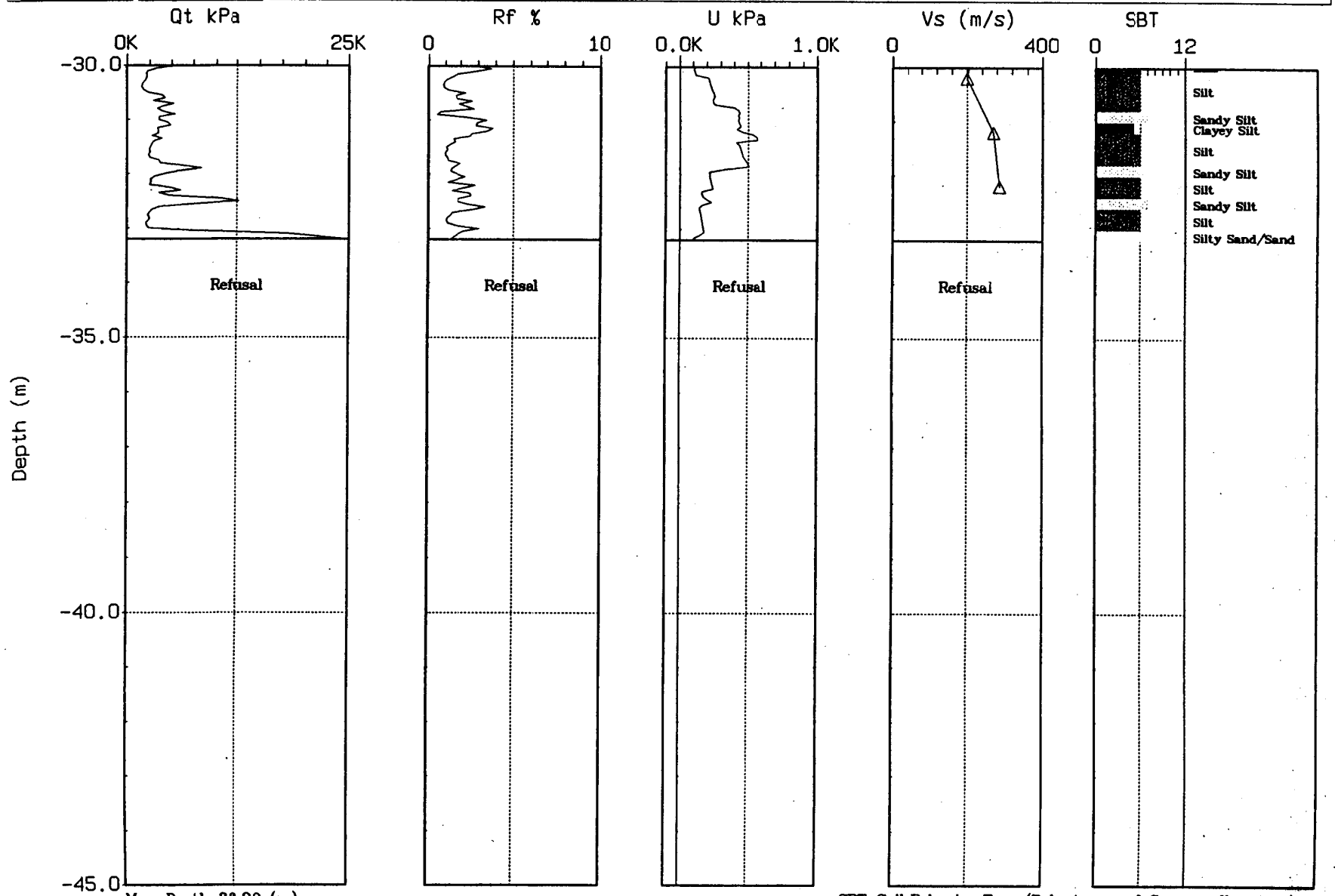


Max. Depth: 33.20 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-66*
Date: *30-Jul-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 041 (20 tonne)*
Geophone: *0.20 m above tip*

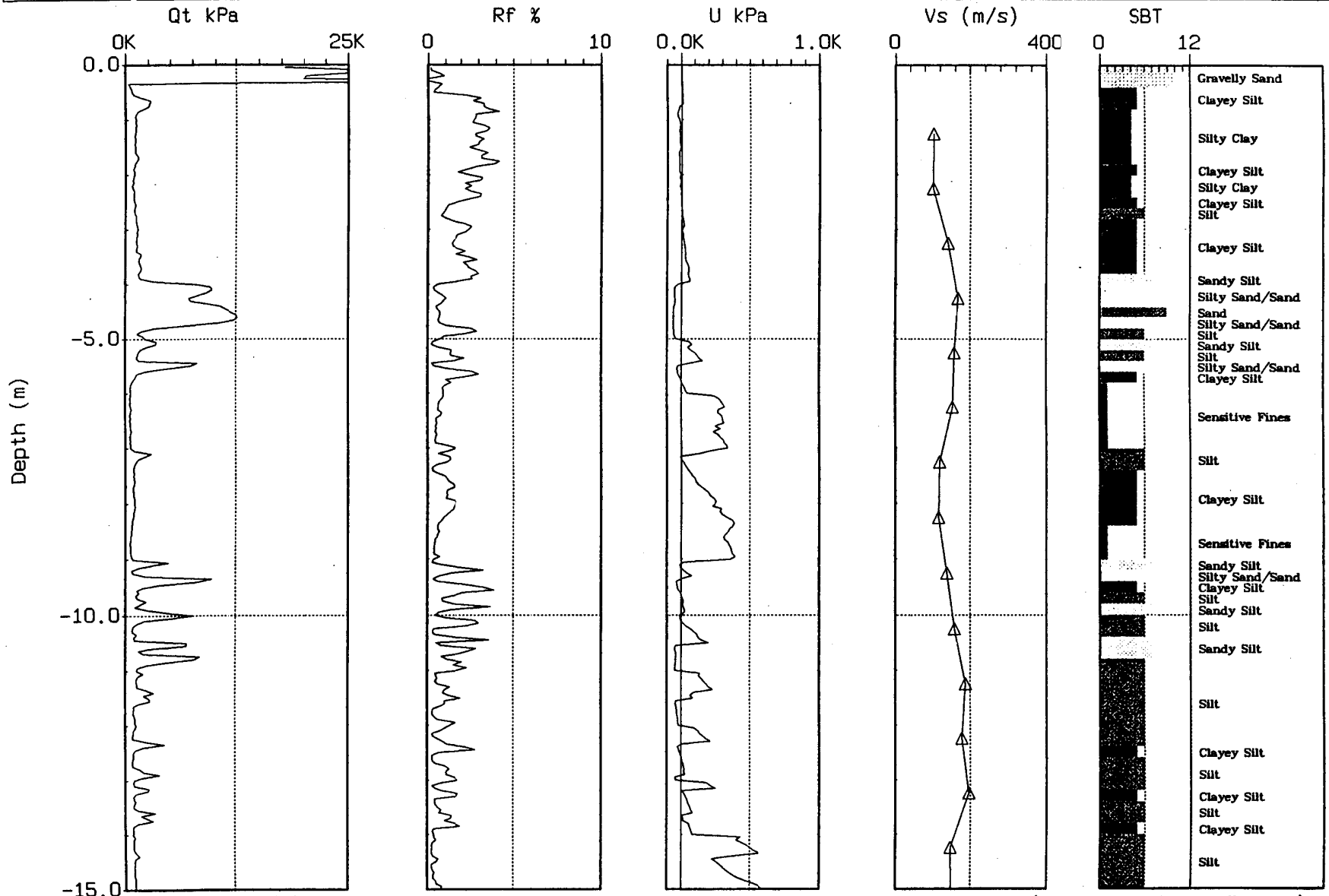
Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	(m)	(ms)	(m/s)	(ft/s)	(m)	(ft)
0.70	0.90					
1.70	1.79	6.5	139	454	0.7 - 1.7	2.3 - 5.6
2.70	2.76	7.1	136	447	1.7 - 2.7	5.6 - 8.9
3.70	3.74	6.9	143	468	2.7 - 3.7	8.9 - 12.1
4.70	4.73	6.0	165	542	3.7 - 4.7	12.1 - 15.4
5.70	5.73	7.6	131	429	4.7 - 5.7	15.4 - 18.7
6.70	6.72	9.4	106	348	5.7 - 6.7	18.7 - 22.0
7.70	7.72	8.1	123	404	6.7 - 7.7	22.0 - 25.3
8.70	8.72	7.2	139	455	7.7 - 8.7	25.3 - 28.5
9.70	9.72	7.1	141	461	8.7 - 9.7	28.5 - 31.8
10.70	10.71	6.2	161	528	9.7 - 10.7	31.8 - 35.1
11.70	11.71	5.7	175	575	10.7 - 11.7	35.1 - 38.4
12.70	12.71	5.6	178	585	11.7 - 12.7	38.4 - 41.7
13.70	13.71	5.6	178	585	12.7 - 13.7	41.7 - 44.9
14.70	14.71	4.8	208	683	13.7 - 14.7	44.9 - 48.2
15.70	15.71	5.7	175	575	14.7 - 15.7	48.2 - 51.5
16.70	16.71	6.5	154	504	15.7 - 16.7	51.5 - 54.8
17.70	17.71	6.0	167	547	16.7 - 17.7	54.8 - 58.1
18.70	18.71	7.0	143	468	17.7 - 18.7	58.1 - 61.4
19.70	19.71	6.5	154	505	18.7 - 19.7	61.4 - 64.6
20.70	20.71	5.5	182	596	19.7 - 20.7	64.6 - 67.9
21.70	21.71	4.5	222	729	20.7 - 21.7	67.9 - 71.2
22.70	22.71	4.0	250	820	21.7 - 22.7	71.2 - 74.5
23.70	23.71	6.7	149	490	22.7 - 23.7	74.5 - 77.8
24.70	24.71	4.8	208	683	23.7 - 24.7	77.8 - 81.0
25.70	25.71	7.0	143	469	24.7 - 25.7	81.0 - 84.3
26.70	26.71	6.0	167	547	25.7 - 26.7	84.3 - 87.6
27.70	27.71	4.0	250	820	26.7 - 27.7	87.6 - 90.9
28.70	28.71	5.5	182	596	27.7 - 28.7	90.9 - 94.2
29.70	29.71	4.5	222	729	28.7 - 29.7	94.2 - 97.4
30.70	30.71	5.0	200	656	29.7 - 30.7	97.4 - 100.7
31.70	31.70	3.7	270	887	30.7 - 31.7	100.7 - 104.0
32.70	32.70	3.5	286	937	31.7 - 32.7	104.0 - 107.3
33.70	33.70	4.0	250	820	32.7 - 33.7	107.3 - 110.6
34.70	34.70	4.1	244	800	33.7 - 34.7	110.6 - 113.8

CONETEC

Kleinfelder

Site: I15, S4: I15, 06-SC-69
Location: 400 S. VIADUCT

Cone: 20 TON A 041
Date: 07:30:96 08:59



Max. Depth: 33.60 (m)
Depth Inc.: 0.05 (m)

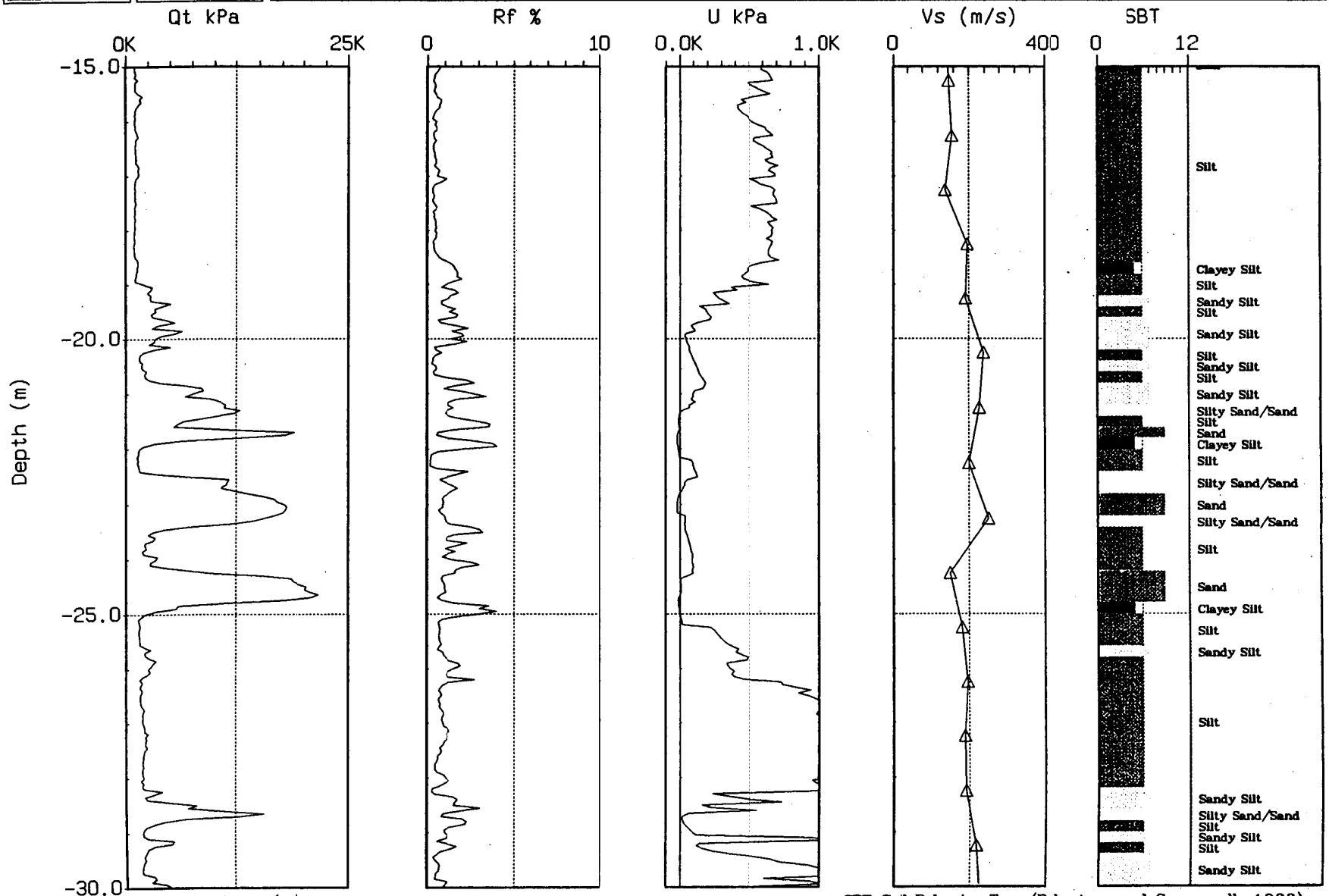
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15, 06-SC-69
Location: 400 S. VIADUCT

Cone: 20 TON A 041
Date: 07:30:96 08:59



Max. Depth: 33.60 (m)
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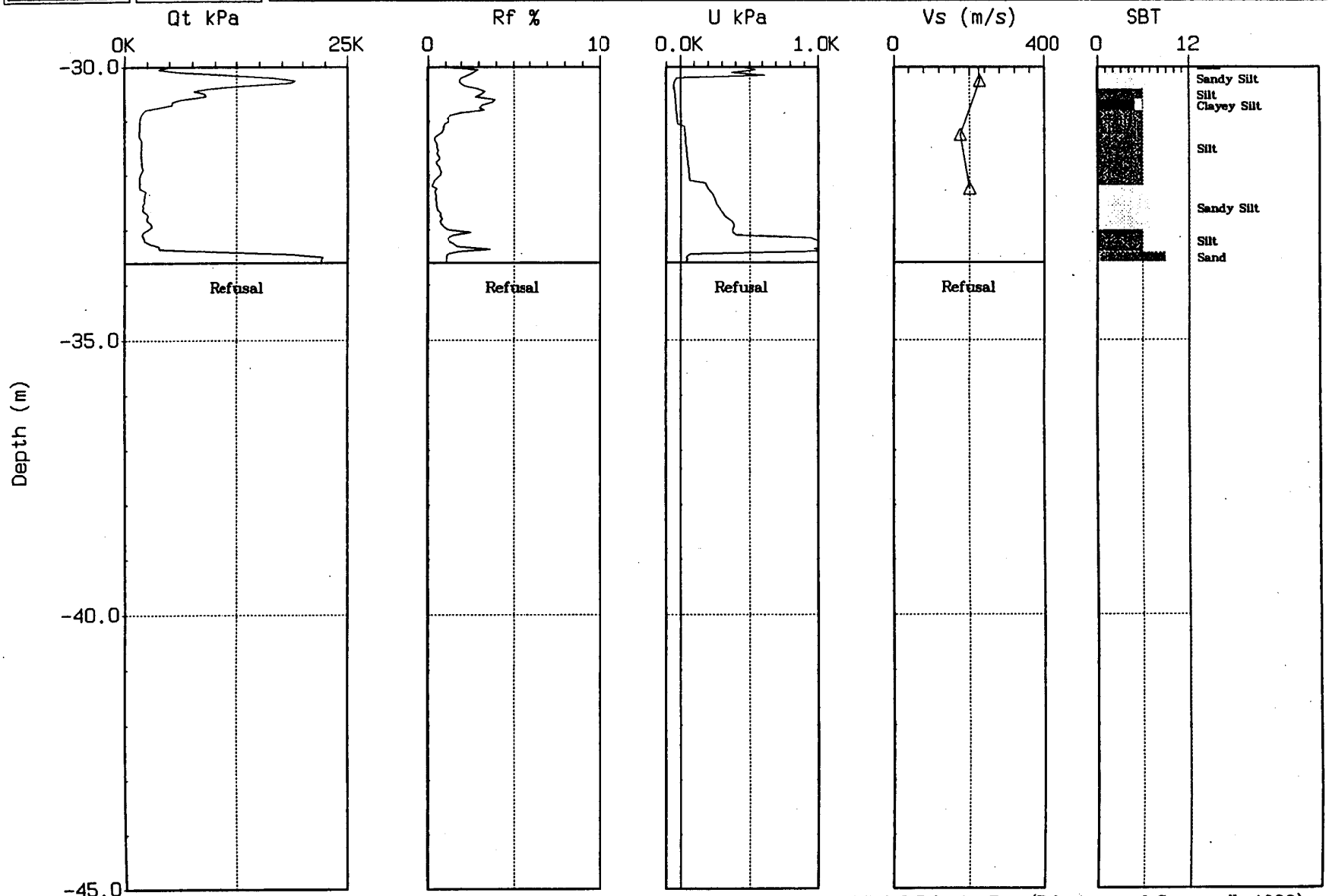
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15, 06-SC-69
Location: 400 S. VIADUCT

Cone: 20 TON A 041
Date: 07.30.96 08:59



Max. Depth: 33.60 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-69*
Date: *30-Jul-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 041 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
0.75	0.94					
1.75	1.84	8.9	102	334	0.8 - 1.8	2.5 - 5.7
2.75	2.81	9.6	101	331	1.8 - 2.8	5.7 - 9.0
3.75	3.79	7.0	141	462	2.8 - 3.8	9.0 - 12.3
4.75	4.78	5.9	168	551	3.8 - 4.8	12.3 - 15.6
5.75	5.78	6.3	158	518	4.8 5.3 - 5.8	15.6 - 18.9
6.75	6.77	6.5	153	503	5.8 - 6.8	18.9 - 22.1
7.75	7.77	8.4	119	389	6.8 - 7.8	22.1 - 25.4
8.75	8.77	8.5	117	385	7.8 - 8.8	25.4 - 28.7
9.75	9.77	7.2	139	455	8.8 - 9.8	28.7 - 32.0
10.75	10.76	6.3	158	520	9.8 - 10.8	32.0 - 35.3
11.75	11.76	5.3	188	618	10.8 - 11.8	35.3 - 38.5
12.75	12.76	5.6	178	585	11.8 - 12.8	38.5 - 41.8
13.75	13.76	5.1	196	643	12.8 - 13.8	41.8 - 45.1
14.75	14.76	6.8	147	482	13.8 - 14.8	45.1 - 48.4
15.75	15.76	6.7	149	489	14.8 - 15.8	48.4 - 51.7
16.75	16.76	6.4	156	512	15.8 - 16.8	51.7 - 55.0
17.75	17.76	7.2	139	455	16.8 - 17.8	55.0 - 58.2
18.75	18.76	5.1	196	643	17.8 - 18.8	58.2 - 61.5
19.75	19.76	5.2	192	631	18.8 - 19.8	61.5 - 64.8
20.75	20.76	4.2	238	781	19.8 - 20.8	64.8 - 68.1
21.75	21.76	4.4	227	745	20.8 - 21.8	68.1 - 71.4
22.75	22.76	5.0	200	656	21.8 - 22.8	71.4 - 74.6
23.75	23.76	4.0	250	820	22.8 - 23.8	74.6 - 77.9
24.75	24.76	6.6	151	497	23.8 - 24.8	77.9 - 81.2
25.75	25.76	5.5	182	596	24.8 - 25.8	81.2 - 84.5
26.75	26.76	5.1	196	643	25.8 - 26.8	84.5 - 87.8
27.75	27.76	5.3	189	619	26.8 - 27.8	87.8 - 91.0
28.75	28.76	5.2	192	631	27.8 - 28.8	91.0 - 94.3
29.75	29.76	4.6	217	713	28.8 - 29.8	94.3 - 97.6
30.75	30.76	4.4	227	746	29.8 - 30.8	97.6 - 100.9
31.75	31.75	5.7	175	575	30.8 - 31.8	100.9 - 104.2
32.75	32.75	5.0	200	656	31.8 - 32.8	104.2 - 107.4

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07

Run No: 96-0913-0828-1413
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15,S4:I15,06-SC-77
Location: 400 S Viaduct
Cone: 20 TON A 041
CPT Date: 96/29/07
CPT Time: 16:11
CPT File: KA06S077.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	22147.6	21.7	0.1	2.5	0.0	36.9	73.8	0.0	95.0	50.0	1.0
1.23	0.38	3541.0	3.0	0.1	7.4	0.0	8.9	17.7	0.0	74.9	48.0	1.0
2.05	0.62	2304.3	2.1	0.1	12.1	0.0	7.7	15.4	0.0	55.5	44.0	1.0
2.87	0.88	399.0	3.9	1.0	15.9	0.0	2.0	4.0	30.6	0.0	0.0	6.0
3.69	1.12	1228.7	29.3	2.4	19.8	0.0	6.1	12.3	96.7	0.0	0.0	10.0
4.51	1.38	7100.1	54.0	0.8	24.4	0.0	17.8	35.2	0.0	77.7	46.0	1.0
5.33	1.62	1408.4	35.3	2.5	29.0	0.0	7.0	12.8	110.3	0.0	0.0	6.0
6.15	1.88	779.6	16.4	2.1	33.5	0.0	3.9	6.6	59.7	0.0	0.0	6.0
6.97	2.12	649.0	10.5	1.6	36.8	1.2	3.2	5.2	48.9	0.0	0.0	6.0
7.79	2.38	633.6	9.9	1.6	38.8	3.7	3.2	5.0	47.3	0.0	0.0	6.0
8.61	2.62	516.8	5.0	1.0	40.2	6.1	2.6	4.0	37.6	0.0	0.0	3.0
9.43	2.88	499.9	4.0	0.8	40.9	8.6	2.5	3.8	36.0	0.0	0.0	3.0
10.25	3.12	564.3	9.6	1.7	42.2	11.0	3.8	5.7	40.9	0.0	0.0	3.0
11.07	3.38	608.1	8.0	1.3	44.3	13.5	3.0	4.5	44.0	0.0	0.0	3.0
11.89	3.62	653.5	10.5	1.6	46.3	15.9	3.3	4.7	47.3	0.0	0.0	6.0
12.71	3.88	652.0	13.7	2.1	48.4	18.4	4.3	6.1	46.8	0.0	0.0	3.0
13.53	4.12	769.8	10.9	1.4	50.4	20.8	3.8	5.3	55.9	0.0	0.0	6.0
14.35	4.38	600.9	6.4	1.1	52.5	23.3	3.0	4.1	42.0	0.0	0.0	3.0
15.17	4.62	602.9	9.7	1.6	54.5	25.8	3.0	4.0	41.8	0.0	0.0	3.0
15.99	4.88	2324.8	33.7	1.4	56.5	28.2	9.3	12.1	179.2	33.6	38.0	6.0
16.81	5.12	1577.0	34.2	2.2	58.6	30.7	7.9	10.1	119.0	0.0	0.0	6.0
17.63	5.38	1418.8	24.2	1.7	60.6	33.1	5.7	7.1	106.0	30.0	34.0	6.0
18.45	5.62	4166.3	70.8	1.7	62.8	35.6	13.9	17.2	0.0	48.9	40.0	1.0
19.27	5.88	4278.6	96.1	2.2	64.9	38.0	17.1	20.8	334.1	49.1	40.0	10.0
20.09	6.12	2723.5	89.5	3.3	66.9	40.5	13.6	16.3	209.3	0.0	0.0	6.0
20.92	6.38	3232.4	31.6	1.0	69.0	42.9	10.8	12.7	0.0	40.2	38.0	1.0
21.74	6.62	3223.8	20.8	0.6	71.2	45.4	10.7	12.5	0.0	39.7	38.0	1.0
22.56	6.88	1331.9	14.4	1.1	73.3	47.8	5.3	6.1	96.9	30.0	32.0	6.0
23.38	7.12	2077.1	28.1	1.4	75.3	50.3	8.3	9.4	156.1	30.0	36.0	6.0
24.20	7.38	995.0	11.3	1.1	77.4	52.7	5.0	5.5	69.2	0.0	0.0	3.0
25.02	7.62	1007.5	19.6	1.9	79.4	55.2	5.0	5.5	69.8	0.0	0.0	3.0
25.84	7.88	1859.7	26.2	1.4	81.5	57.6	7.4	8.1	137.6	30.0	34.0	6.0
26.66	8.12	2533.7	37.8	1.5	83.5	60.1	10.1	10.9	191.2	30.5	36.0	6.0
27.48	8.38	1158.5	20.3	1.7	85.6	62.5	5.8	6.1	80.8	0.0	0.0	3.0
28.30	8.62	970.2	25.2	2.6	87.6	65.0	4.9	5.1	65.4	0.0	0.0	3.0
29.12	8.88	1102.1	30.4	2.8	89.7	67.4	5.5	5.7	75.6	0.0	0.0	3.0
29.94	9.12	1303.1	24.7	1.9	91.7	69.9	6.5	6.7	91.3	0.0	0.0	3.0
30.76	9.38	4364.8	18.4	0.4	93.9	72.3	10.9	11.0	0.0	44.4	38.0	1.0
31.58	9.62	11706.3	91.1	0.8	96.3	74.8	23.4	23.4	0.0	72.3	42.0	1.0
32.40	9.88	8171.4	75.9	0.9	98.6	77.3	20.4	20.1	0.0	61.7	42.0	1.0
33.22	10.12	8384.2	80.2	1.0	100.9	79.7	21.0	20.4	0.0	62.1	42.0	1.0
34.04	10.38	2196.6	12.0	0.5	103.2	82.2	7.3	7.1	0.0	30.0	34.0	1.0
34.86	10.62	1415.1	9.7	0.7	105.3	84.6	5.7	5.4	98.0	30.0	30.0	3.0
35.68	10.88	1923.2	46.2	2.4	107.3	87.1	9.6	9.1	138.3	0.0	0.0	6.0
36.50	11.12	6131.3	95.5	1.6	109.4	89.5	20.4	19.1	0.0	52.0	40.0	1.0
37.32	11.38	2199.3	50.8	2.3	111.5	92.0	8.8	8.2	159.7	30.0	32.0	6.0
38.14	11.62	1364.2	15.9	1.2	113.6	94.4	5.5	5.0	92.5	30.0	30.0	3.0
38.96	11.88	2791.7	35.4	1.3	115.6	96.9	11.2	10.2	206.3	30.0	34.0	6.0
39.78	12.12	1094.5	16.1	1.5	117.7	99.3	5.5	4.9	70.2	0.0	0.0	3.0
40.60	12.38	1166.7	14.1	1.2	119.7	101.8	4.7	4.2	75.6	30.0	30.0	3.0
41.42	12.62	838.7	2.5	0.3	121.1	104.2	4.2	3.7	49.1	0.0	0.0	1.5
42.24	12.88	835.0	2.0	0.2	121.8	106.7	4.2	3.7	48.5	0.0	0.0	1.5

ConeTec Inc. - CPT Interpretation
Run No: 96-0913-0828-1413
CPT File: KA06S077.COR

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	877.0	9.6	1.1	123.1	109.1	4.4	3.9	51.6	0.0	0.0	1.5
43.88	13.38	1050.8	9.8	0.9	125.2	111.6	4.2	3.7	65.1	30.0	30.0	3.0
44.70	13.62	1684.7	18.3	1.1	127.2	114.0	6.7	5.8	115.5	30.0	30.0	3.0
45.52	13.88	832.9	3.3	0.4	129.3	116.5	3.3	2.9	47.0	30.0	30.0	1.5
46.34	14.12	782.1	3.8	0.5	130.6	118.9	3.9	3.3	42.6	0.0	0.0	1.5
47.16	14.38	963.5	7.6	0.8	132.0	121.4	3.9	3.3	56.8	30.0	30.0	1.5
47.98	14.62	843.2	2.2	0.3	133.3	123.9	4.2	3.6	46.9	0.0	0.0	1.5
48.80	14.88	864.0	3.0	0.3	134.7	126.3	3.5	2.9	48.2	30.0	30.0	1.5
49.62	15.12	822.0	4.2	0.5	136.7	128.8	3.3	2.8	44.5	30.0	30.0	1.5
50.44	15.38	885.1	3.5	0.4	138.8	131.2	3.5	2.9	49.2	30.0	30.0	1.5
51.26	15.62	810.3	3.5	0.4	140.2	133.7	4.1	3.3	42.9	0.0	0.0	1.5
52.08	15.88	1021.9	5.4	0.5	141.5	136.1	4.1	3.4	59.5	30.0	30.0	1.5
52.90	16.12	1018.9	6.5	0.6	143.6	138.6	4.1	3.3	58.9	30.0	30.0	1.5
53.72	16.38	1171.5	10.0	0.9	145.6	141.0	4.7	3.8	70.8	30.0	30.0	1.5
54.54	16.62	950.0	2.2	0.2	147.7	143.5	3.8	3.1	52.7	30.0	30.0	1.5
55.36	16.88	1152.4	3.8	0.3	149.7	145.9	4.6	3.7	68.5	30.0	30.0	1.5
56.18	17.12	1076.7	9.9	0.9	151.7	148.4	4.3	3.4	62.1	30.0	30.0	1.5
57.00	17.38	1053.2	5.0	0.5	153.8	150.8	4.2	3.3	59.9	30.0	30.0	1.5
57.82	17.62	1102.1	5.4	0.5	155.8	153.3	4.4	3.5	63.4	30.0	30.0	1.5
58.64	17.88	1012.4	4.5	0.4	157.9	155.7	4.0	3.2	55.9	30.0	30.0	1.5
59.46	18.12	979.4	5.5	0.6	159.9	158.2	3.9	3.0	52.9	30.0	30.0	1.5
60.28	18.38	1293.1	9.8	0.8	162.0	160.6	5.2	4.0	77.6	30.0	30.0	1.5
61.10	18.62	1189.8	7.1	0.6	164.0	163.1	4.8	3.6	69.0	30.0	30.0	1.5
61.93	18.88	1075.6	5.7	0.5	166.1	165.5	4.3	3.3	59.5	30.0	30.0	1.5
62.75	19.12	1014.9	6.6	0.6	168.1	168.0	4.1	3.1	54.3	30.0	30.0	1.5
63.57	19.38	1116.7	7.5	0.7	170.2	170.4	4.5	3.4	62.1	30.0	30.0	1.5
64.39	19.62	1123.7	7.8	0.7	172.2	172.9	4.5	3.4	62.3	30.0	30.0	1.5
65.21	19.88	1120.8	8.3	0.7	174.3	175.4	4.5	3.3	61.7	30.0	30.0	1.5
66.03	20.12	1121.7	8.6	0.8	176.3	177.8	4.5	3.3	61.4	30.0	30.0	1.5
66.85	20.38	1517.6	29.1	1.9	178.4	180.3	7.6	5.6	92.7	0.0	0.0	3.0
67.67	20.62	2491.7	116.6	4.7	180.4	182.7	24.9	18.2	170.3	0.0	0.0	3.0
68.49	20.88	9367.6	129.8	1.4	182.5	185.2	23.4	17.0	0.0	56.8	38.0	1.0
69.31	21.12	9515.8	139.3	1.5	184.8	187.6	23.8	17.1	0.0	57.1	38.0	1.0
70.13	21.38	3182.7	67.8	2.1	186.9	190.1	12.7	9.1	224.5	30.0	32.0	6.0
70.95	21.62	7721.6	132.4	1.7	189.0	192.5	25.7	18.3	0.0	50.7	38.0	1.0
71.77	21.88	15211.4	207.2	1.4	191.3	195.0	38.0	26.9	0.0	70.0	42.0	1.0
72.59	22.12	18509.3	82.3	0.4	193.6	197.4	37.0	26.0	0.0	75.5	42.0	1.0
73.41	22.38	17278.1	115.5	0.7	196.1	199.9	34.6	24.2	0.0	73.3	42.0	1.0
74.23	22.62	26582.4	112.2	0.4	198.5	202.3	44.3	30.8	0.0	85.5	44.0	1.0
75.05	22.88	35852.8	111.6	0.3	201.1	204.8	59.8	41.2	0.0	93.9	44.0	1.0
75.87	23.12	15086.7	86.1	0.6	203.6	207.2	30.2	20.7	0.0	68.9	40.0	1.0
76.69	23.38	4796.1	58.0	1.2	205.9	209.7	16.0	10.9	0.0	35.9	34.0	1.0
77.51	23.62	8479.8	129.6	1.5	208.0	212.1	28.3	19.2	0.0	52.0	38.0	1.0
78.33	23.88	2231.7	24.3	1.1	210.2	214.6	8.9	6.0	144.6	30.0	30.0	3.0
79.15	24.12	1701.7	2.5	0.1	212.3	217.0	5.7	3.8	0.0	30.0	30.0	1.0
79.97	24.38	2811.0	12.4	0.4	214.4	219.5	9.4	6.3	0.0	30.0	30.0	1.0
80.79	24.62	2658.6	21.7	0.8	216.6	222.0	8.9	5.9	0.0	30.0	30.0	1.0
81.61	24.88	2312.2	16.7	0.7	218.8	224.4	7.7	5.1	0.0	30.0	30.0	1.0
82.43	25.12	2708.5	37.2	1.4	220.9	226.9	10.8	7.1	180.9	30.0	30.0	3.0
83.25	25.38	2290.8	63.3	2.8	222.9	229.3	11.5	7.5	147.1	0.0	0.0	3.0
84.07	25.62	2655.2	51.4	1.9	225.0	231.8	10.6	6.9	175.9	30.0	30.0	3.0
84.89	25.88	2161.6	24.8	1.1	227.0	234.2	8.6	5.6	136.0	30.0	30.0	3.0
85.71	26.12	2085.5	25.3	1.2	229.1	236.7	8.3	5.4	129.6	30.0	30.0	3.0
86.53	26.38	1869.9	22.9	1.2	231.1	239.1	7.5	4.8	112.0	30.0	30.0	1.5
87.35	26.62	1797.0	9.5	0.5	233.2	241.6	7.2	4.6	105.8	30.0	30.0	1.5
88.17	26.88	1705.1	7.3	0.4	235.2	244.0	6.8	4.4	98.1	30.0	30.0	1.5
88.99	27.12	2375.4	18.3	0.8	237.3	246.5	7.9	5.0	0.0	30.0	30.0	1.0
89.81	27.38	3471.8	55.0	1.6	239.4	248.9	13.9	8.8	238.7	30.0	32.0	3.0
90.63	27.62	3233.3	26.8	0.8	241.6	251.4	10.8	6.8	0.0	30.0	30.0	1.0
91.45	27.88	2454.2	22.7	0.9	243.7	253.8	8.2	5.1	0.0	30.0	30.0	1.0
92.27	28.12	2024.1	5.0	0.2	245.9	256.3	6.7	4.2	0.0	30.0	30.0	1.0
93.09	28.38	1836.6	16.5	0.9	248.0	258.7	7.3	4.6	106.4	30.0	30.0	1.5
93.91	28.62	1800.6	6.4	0.4	250.1	261.2	6.0	3.7	0.0	30.0	30.0	1.0
94.73	28.88	1802.2	4.0	0.2	252.3	263.6	6.0	3.7	0.0	30.0	30.0	1.0
95.55	29.12	2215.3	10.4	0.5	254.5	266.1	7.4	4.5	0.0	30.0	30.0	1.0
96.37	29.38	2131.7	13.9	0.7	256.6	268.5	7.1	4.3	0.0	30.0	30.0	1.0
97.19	29.62	1779.8	5.6	0.3	258.8	271.0	5.9	3.6	0.0	30.0	30.0	1.0
98.01	29.88	1606.6	4.5	0.3	260.9	273.5	6.4	3.9	85.8	30.0	30.0	1.5
98.83	30.12	1665.9	5.8	0.3	263.0	275.9	6.7	4.0	90.2	30.0	30.0	1.5

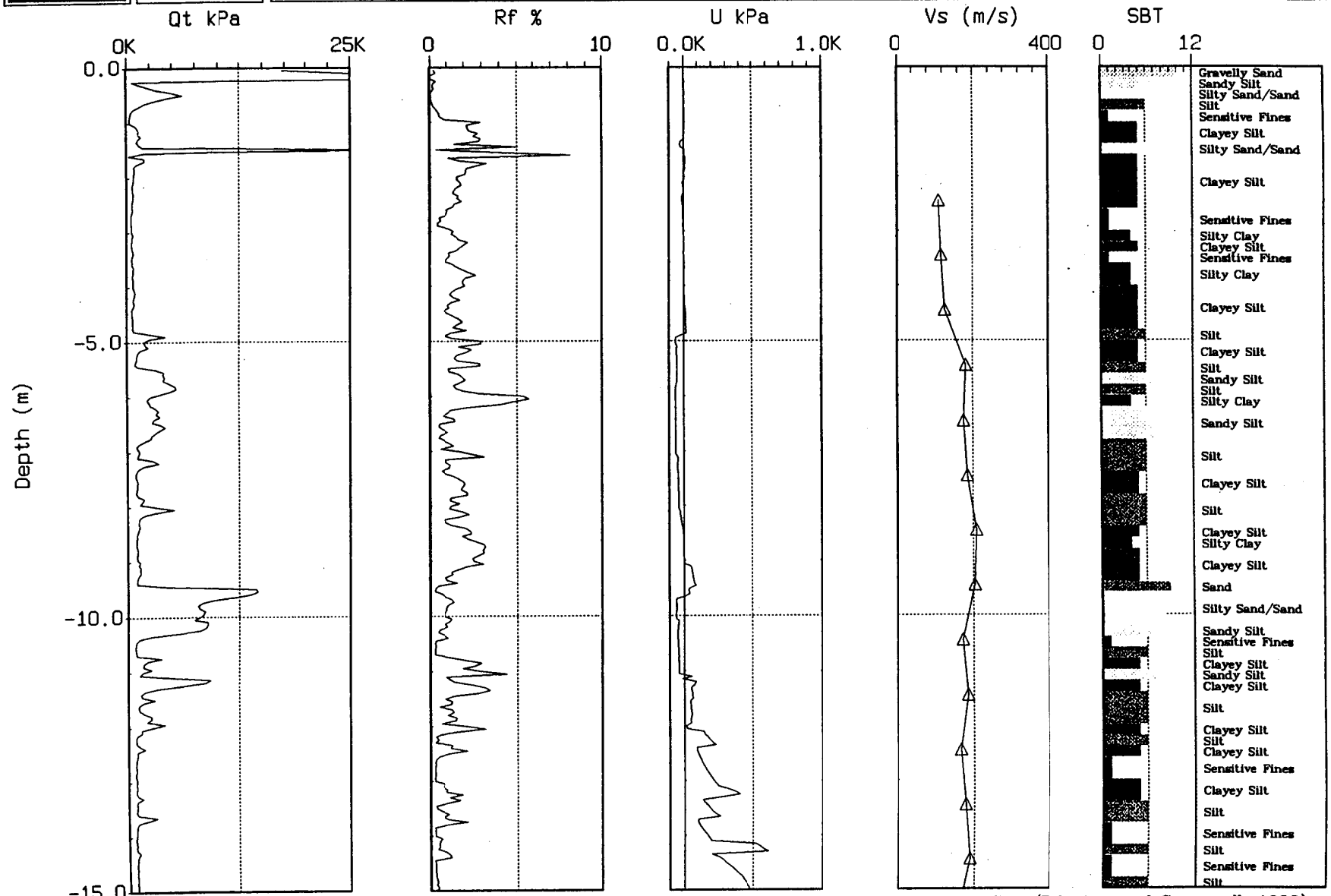
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	1816.2	13.8	0.8	265.0	278.4	7.3	4.4	101.8	30.0	30.0	1.5
100.47	30.62	2271.3	23.9	1.1	267.1	280.8	9.1	5.4	137.9	30.0	30.0	3.0
101.29	30.88	2877.5	49.4	1.7	269.1	283.3	11.5	6.9	186.0	30.0	30.0	3.0
102.11	31.12	6115.4	72.1	1.2	271.2	285.7	20.4	12.1	0.0	38.9	34.0	1.0
102.94	31.38	2438.4	37.5	1.5	273.3	288.2	9.8	5.8	150.2	30.0	30.0	3.0
103.76	31.62	5761.8	52.2	0.9	275.5	290.6	14.4	8.5	0.0	36.9	34.0	1.0
104.58	31.88	6384.8	113.6	1.8	277.7	293.1	21.3	12.5	0.0	39.8	34.0	1.0
105.40	32.12	13567.3	271.9	2.0	279.9	295.5	45.2	26.5	0.0	61.3	38.0	1.0
106.22	32.38	14485.9	177.1	1.2	282.1	298.0	36.2	21.1	0.0	63.0	38.0	1.0
107.04	32.62	5024.3	107.9	2.1	284.3	300.4	20.1	11.7	355.2	32.6	32.0	6.0
107.86	32.88	2195.2	14.2	0.6	286.4	302.9	7.3	4.2	0.0	30.0	30.0	1.0
108.68	33.12	2144.9	13.4	0.6	288.6	305.3	7.1	4.1	0.0	30.0	30.0	1.0
109.50	33.38	1918.6	9.9	0.5	290.7	307.8	7.7	4.4	105.6	30.0	30.0	1.5
110.32	33.62	1900.8	5.2	0.3	292.8	310.2	6.3	3.6	0.0	30.0	30.0	1.0
111.14	33.88	1769.0	2.7	0.2	295.0	312.7	5.9	3.4	0.0	30.0	30.0	1.0
111.96	34.12	1797.0	2.3	0.1	297.2	315.1	6.0	3.4	0.0	30.0	30.0	1.0
112.78	34.38	1842.1	2.1	0.1	299.3	317.6	6.1	3.5	0.0	30.0	30.0	1.0
113.60	34.62	2163.6	15.7	0.7	301.4	320.1	8.7	4.9	123.4	30.0	30.0	1.5
114.42	34.88	2443.9	15.7	0.6	303.6	322.5	8.1	4.6	0.0	30.0	30.0	1.0
115.24	35.12	2285.8	16.0	0.7	305.7	325.0	7.6	4.3	0.0	30.0	30.0	1.0
116.06	35.38	2223.3	28.5	1.3	307.8	327.4	8.9	5.0	127.0	30.0	30.0	1.5
116.88	35.62	2328.8	40.4	1.7	309.9	329.9	9.3	5.2	135.1	30.0	30.0	1.5
117.70	35.88	2302.2	28.5	1.2	311.9	332.3	9.2	5.1	132.6	30.0	30.0	1.5
118.52	36.12	2973.6	41.7	1.4	314.0	334.8	11.9	6.6	186.0	30.0	30.0	3.0
119.34	36.38	4341.2	84.2	1.9	316.0	337.2	17.4	9.6	295.0	30.0	30.0	3.0
120.16	36.62	3645.1	88.3	2.4	318.1	339.7	14.6	8.0	239.0	30.0	30.0	3.0
120.98	36.88	2903.2	53.4	1.8	320.1	342.1	11.6	6.4	179.3	30.0	30.0	3.0
121.80	37.12	3632.9	80.5	2.2	322.2	344.6	14.5	7.9	237.3	30.0	30.0	3.0
122.62	37.38	5773.2	173.8	3.0	324.2	347.0	23.1	12.6	408.2	34.7	32.0	6.0

CONETEC

Kleinfelder

Site: I15, S4: I15, 06-SC-77
Location: 400 S. VIADUCT

Cone: 20 TON A 041
Date: 07:29:96 16:11



Max. Depth: 37.60 (m)
Depth Inc.: 0.05 (m)

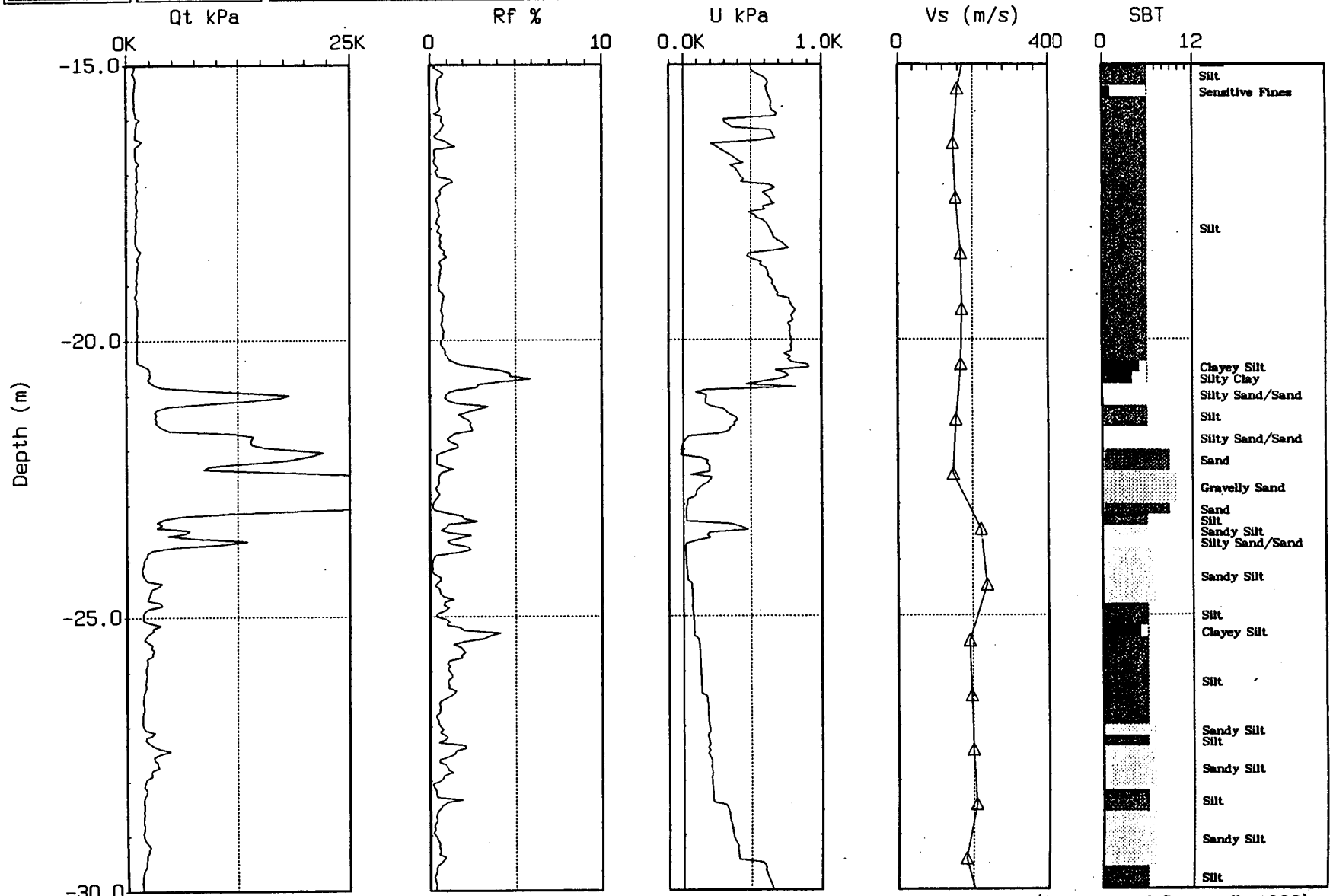
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15, 06-SC-77
Location: 400 S. VIADUCT

Cone: 20 TON A 041
Date: 07:29:96 16:11



Max. Depth: 37.60 (m)
Depth Inc.: 0.05 (m)

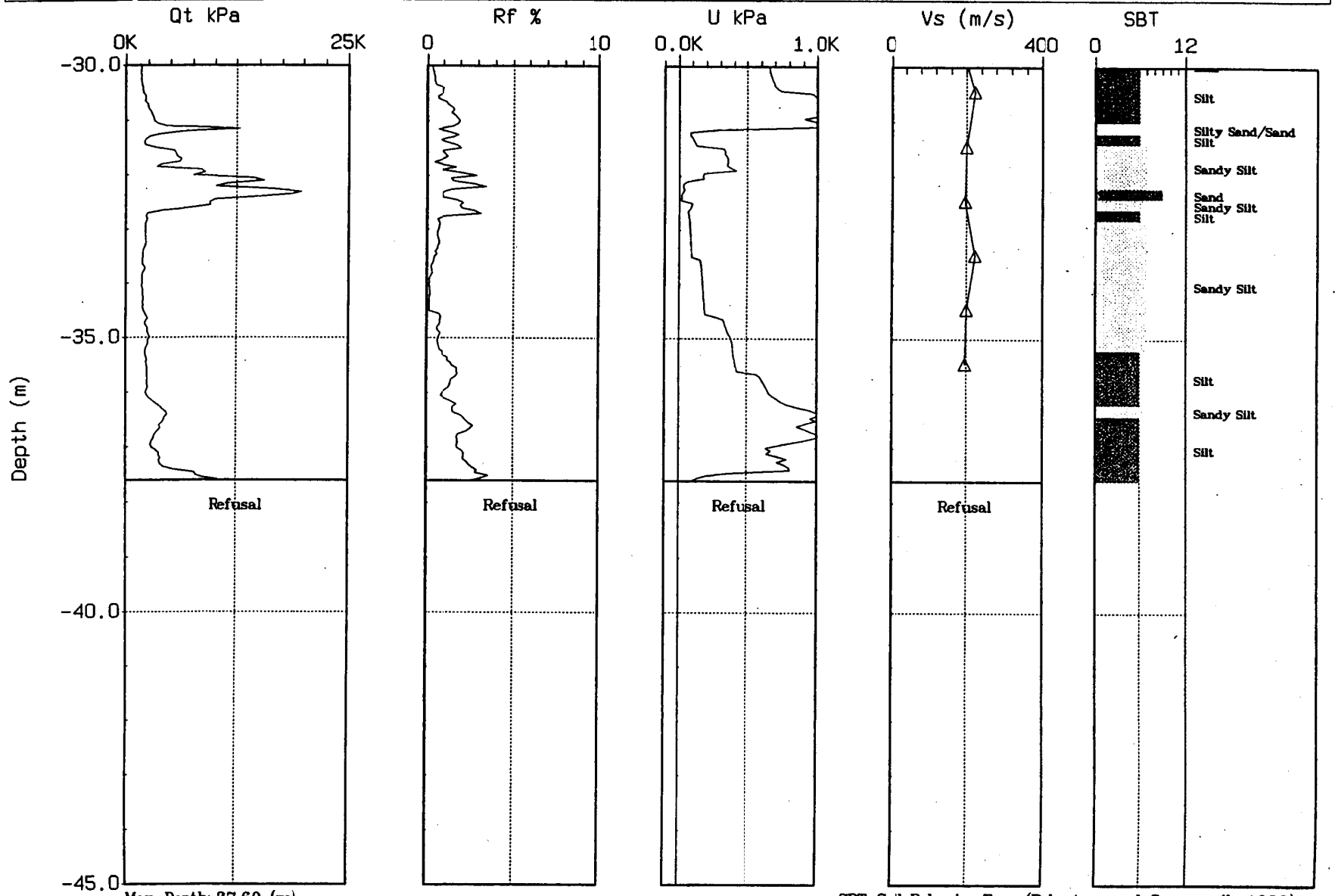
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15, 06-SC-77
Location: 400 S. VIADUCT

Cone: 20 TON A 041
Date: 07:29:96 16:11



Max. Depth: 37.60 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-77*
Date: *29-Jul-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 041 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	(m)	(ms)	(m/s)	(ft/s)	(m)	(ft)
1.95	2.03					
2.95	3.00	8.8	111	363	2.0 - 3.0	6.4 - 9.7
3.95	3.99	8.4	117	385	3.0 - 4.0	9.7 - 13.0
4.95	4.98	7.9	126	412	4.0 - 5.0	13.0 - 16.2
5.95	5.98	5.5	181	593	5.0 - 6.0	16.2 - 19.5
6.95	6.97	5.7	175	573	6.0 - 7.0	19.5 - 22.8
7.95	7.97	5.4	185	606	7.0 - 8.0	22.8 - 26.1
8.95	8.97	4.8	208	682	8.0 - 9.0	26.1 - 29.4
9.95	9.97	4.9	204	668	9.0 - 10.0	29.4 - 32.6
10.95	10.96	5.8	172	565	10.0 - 11.0	32.6 - 35.9
11.95	11.96	5.4	185	607	11.0 - 12.0	35.9 - 39.2
12.95	12.96	6.0	166	546	12.0 - 13.0	39.2 - 42.5
13.95	13.96	5.6	178	585	13.0 - 14.0	42.5 - 45.8
14.95	14.96	5.3	189	619	14.0 - 15.0	45.8 - 49.0
15.95	15.96	6.3	159	520	15.0 - 16.0	49.0 - 52.3
16.95	16.96	6.7	149	489	16.0 - 17.0	52.3 - 55.6
17.95	17.96	6.4	156	512	17.0 - 18.0	55.6 - 58.9
18.95	18.96	5.9	169	556	18.0 - 19.0	58.9 - 62.2
19.95	19.96	5.8	172	565	19.0 - 20.0	62.2 - 65.5
20.95	20.96	5.9	169	556	20.0 - 21.0	65.5 - 68.7
21.95	21.96	6.4	156	512	21.0 - 22.0	68.7 - 72.0
22.95	22.96	6.7	149	490	22.0 - 23.0	72.0 - 75.3
23.95	23.96	4.5	222	729	23.0 - 24.0	75.3 - 78.6
24.95	24.96	4.2	238	781	24.0 - 25.0	78.6 - 81.9
25.95	25.96	5.2	192	631	25.0 - 26.0	81.9 - 85.1
26.95	26.96	5.1	196	643	26.0 - 27.0	85.1 - 88.4
27.95	27.96	5.0	200	656	27.0 - 28.0	88.4 - 91.7
28.95	28.96	4.8	208	683	28.0 - 29.0	91.7 - 95.0
29.95	29.96	5.5	182	596	29.0 - 30.0	95.0 - 98.3
30.95	30.96	4.5	222	729	30.0 - 31.0	98.3 - 101.5
31.95	31.95	5.0	200	656	31.0 - 32.0	101.5 - 104.8
32.95	32.95	5.1	196	643	32.0 - 33.0	104.8 - 108.1
33.95	33.95	4.5	222	729	33.0 - 34.0	108.1 - 111.4
34.95	34.95	5.0	200	656	34.0 - 35.0	111.4 - 114.7
35.95	35.95	5.1	196	643	35.0 - 36.0	114.7 - 117.9

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07

Run No: 96-0804-2149-1059
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15, S4: 200 S, 06-SC-104
Location: WB I80 On Rmp
Cone: 20 TON A AD 081
CPT Date: 96/06/05
CPT Time: 15:18
CPT File: KA06S104.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	2154.5	14.8	0.7	2.3	0.0	7.2	14.4	0.0	77.3	50.0	1.0
1.23	0.38	4494.3	33.5	0.7	6.9	0.0	15.0	30.0	0.0	82.6	50.0	1.0
2.05	0.62	6194.4	101.7	1.6	11.6	0.0	20.6	41.3	0.0	84.5	48.0	1.0
2.87	0.88	2371.7	78.6	3.3	16.1	0.0	11.9	23.7	188.4	0.0	0.0	10.0
3.69	1.12	1077.0	38.9	3.6	20.6	0.0	10.8	21.5	84.5	0.0	0.0	10.0
4.51	1.38	385.0	9.0	2.3	24.9	0.0	3.9	7.5	28.8	0.0	0.0	6.0
5.33	1.62	747.3	2.0	0.3	28.7	0.0	3.7	6.8	57.5	0.0	0.0	6.0
6.15	1.88	1116.6	2.2	0.2	32.5	0.0	4.5	7.7	86.7	30.0	36.0	6.0
6.97	2.12	2309.3	7.4	0.3	35.8	1.2	7.7	12.6	0.0	40.0	40.0	1.0
7.79	2.38	3550.3	30.9	0.9	38.0	3.7	11.8	18.8	0.0	51.5	42.0	1.0
8.61	2.62	3622.8	38.7	1.1	40.2	6.1	12.1	18.6	0.0	51.2	42.0	1.0
9.43	2.88	3398.0	27.3	0.8	42.4	8.6	11.3	17.0	0.0	48.6	42.0	1.0
10.25	3.12	7623.6	51.0	0.7	44.6	11.0	19.1	27.9	0.0	71.1	44.0	1.0
11.07	3.38	9939.1	57.5	0.6	46.9	13.5	24.8	35.5	0.0	78.0	46.0	1.0
11.89	3.62	10914.5	58.3	0.5	49.2	15.9	21.8	30.4	0.0	79.9	46.0	1.0
12.71	3.88	10455.8	50.5	0.5	51.7	18.4	20.9	28.5	0.0	78.0	46.0	1.0
13.53	4.12	8327.0	34.5	0.4	54.0	20.8	20.8	27.7	0.0	70.9	44.0	1.0
14.35	4.38	11410.9	57.4	0.5	56.4	23.3	22.8	29.7	0.0	79.3	46.0	1.0
15.17	4.62	13889.1	131.2	0.9	58.8	25.8	27.8	35.5	0.0	84.3	46.0	1.0
15.99	4.88	16370.4	120.7	0.7	61.2	28.2	32.7	40.9	0.0	88.4	46.0	1.0
16.81	5.12	20405.0	157.9	0.8	63.7	30.7	40.8	50.1	0.0	94.2	46.0	1.0
17.63	5.38	19595.1	118.3	0.6	66.1	33.1	39.2	47.2	0.0	92.5	46.0	1.0
18.45	5.62	16358.2	157.3	1.0	68.5	35.6	32.7	38.7	0.0	86.8	46.0	1.0
19.27	5.88	11761.7	115.2	1.0	70.9	38.0	29.4	34.2	0.0	76.9	44.0	1.0
20.09	6.12	16266.0	130.3	0.8	73.2	40.5	32.5	37.2	0.0	85.7	46.0	1.0
20.92	6.38	16494.2	133.2	0.8	75.6	42.9	33.0	37.1	0.0	85.6	46.0	1.0
21.74	6.62	15671.0	147.5	0.9	78.1	45.4	31.3	34.7	0.0	83.7	46.0	1.0
22.56	6.88	13647.3	152.3	1.1	80.4	47.8	34.1	37.2	0.0	79.3	44.0	1.0
23.38	7.12	9780.5	117.1	1.2	82.7	50.3	24.5	26.3	0.0	69.4	42.0	1.0
24.20	7.38	3746.0	78.0	2.1	84.9	52.7	15.0	15.9	288.7	41.5	38.0	6.0
25.02	7.62	216.6	15.2	7.0	86.9	55.2	2.2	2.3	6.0	0.0	0.0	0.8
25.84	7.88	240.4	8.8	3.6	88.8	57.6	2.4	2.5	7.5	0.0	0.0	0.8
26.66	8.12	244.4	9.3	3.8	90.7	60.1	2.4	2.5	7.5	0.0	0.0	0.8
27.48	8.38	715.6	22.8	3.2	92.6	62.5	7.2	7.3	44.8	0.0	0.0	1.5
28.30	8.62	806.3	25.4	3.1	94.6	65.0	5.4	5.4	51.7	0.0	0.0	3.0
29.12	8.88	1456.5	34.8	2.4	96.7	67.4	7.3	7.2	103.4	0.0	0.0	6.0
29.94	9.12	862.6	15.1	1.8	98.7	69.9	4.3	4.2	55.5	0.0	0.0	3.0
30.76	9.38	914.6	41.0	4.5	100.7	72.3	9.1	8.9	59.3	0.0	0.0	3.0
31.58	9.62	1694.5	44.9	2.6	102.7	74.8	8.5	8.2	121.4	0.0	0.0	6.0
32.40	9.88	475.0	9.5	2.0	104.7	77.3	3.2	3.0	23.4	0.0	0.0	1.0
33.22	10.12	716.3	18.1	2.5	106.8	79.7	4.8	4.5	42.4	0.0	0.0	1.5
34.04	10.38	651.6	23.4	3.6	108.8	82.2	6.5	6.1	36.9	0.0	0.0	1.5
34.86	10.62	440.7	17.4	3.9	110.7	84.6	4.4	4.1	19.6	0.0	0.0	1.0
35.68	10.88	535.8	21.6	4.0	112.6	87.1	5.4	4.9	26.9	0.0	0.0	1.0
36.50	11.12	3971.4	104.1	2.6	114.6	89.5	15.9	14.5	301.4	38.9	36.0	6.0
37.32	11.38	755.0	43.9	5.8	116.6	92.0	7.5	6.8	43.7	0.0	0.0	1.5
38.14	11.62	909.1	32.3	3.6	118.5	94.4	9.1	8.2	55.7	0.0	0.0	1.5
38.96	11.88	700.3	18.0	2.6	120.5	96.9	4.7	4.2	38.6	0.0	0.0	1.5
39.78	12.12	2106.1	60.3	2.9	122.5	99.3	10.5	9.3	150.7	0.0	0.0	6.0
40.60	12.38	1316.5	39.6	3.0	124.6	101.8	6.6	5.8	87.2	0.0	0.0	3.0
41.42	12.62	2159.2	60.5	2.8	126.6	104.2	10.8	9.4	154.3	0.0	0.0	6.0
42.24	12.88	1269.1	51.7	4.1	128.6	106.7	12.7	11.0	82.7	0.0	0.0	3.0

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	337.5	11.9	3.5	130.6	109.1	3.4	2.9	7.8	0.0	0.0	0.8
43.88	13.38	332.1	11.7	3.5	132.5	111.6	3.3	2.8	7.0	0.0	0.0	0.8
44.70	13.62	500.4	13.7	2.7	134.4	114.0	5.0	4.2	20.2	0.0	0.0	1.0
45.52	13.88	453.3	13.2	2.9	136.3	116.5	4.5	3.8	16.0	0.0	0.0	1.0
46.34	14.12	418.5	12.1	2.9	138.2	118.9	4.2	3.5	12.9	0.0	0.0	0.8
47.16	14.38	440.7	17.1	3.9	140.2	121.4	4.4	3.6	14.3	0.0	0.0	1.0
47.98	14.62	442.2	13.6	3.1	142.1	123.9	4.4	3.6	14.1	0.0	0.0	0.8
48.80	14.88	453.2	12.9	2.8	144.0	126.3	4.5	3.7	14.6	0.0	0.0	1.0
49.62	15.12	454.4	12.0	2.7	145.9	128.8	4.5	3.7	14.4	0.0	0.0	0.8
50.44	15.38	500.3	17.9	3.6	147.9	131.2	5.0	4.0	17.7	0.0	0.0	1.0
51.26	15.62	469.1	14.3	3.0	149.8	133.7	4.7	3.8	14.9	0.0	0.0	0.8
52.08	15.88	516.4	13.9	2.7	151.7	136.1	5.2	4.1	18.3	0.0	0.0	1.0
52.90	16.12	628.4	16.4	2.6	153.7	138.6	4.2	3.3	26.9	0.0	0.0	1.0
53.72	16.38	801.6	23.2	2.9	155.7	141.0	5.3	4.2	40.4	0.0	0.0	1.5
54.54	16.62	2623.1	68.0	2.6	157.8	143.5	10.5	8.2	185.7	30.0	32.0	6.0
55.36	16.88	8811.0	194.7	2.2	159.9	145.9	29.4	22.7	0.0	56.9	40.0	1.0
56.18	17.12	7084.0	197.4	2.8	162.0	148.4	28.3	21.8	541.9	50.5	38.0	6.0
57.00	17.38	2907.2	106.4	3.7	164.0	150.8	14.5	11.1	207.4	0.0	0.0	6.0
57.82	17.62	3427.1	113.7	3.3	166.1	153.3	17.1	13.0	248.6	0.0	0.0	6.0
58.64	17.88	2321.6	70.3	3.0	168.1	155.7	11.6	8.8	159.8	0.0	0.0	3.0
59.46	18.12	3407.0	84.1	2.5	170.2	158.2	13.6	10.2	246.3	30.0	32.0	6.0
60.28	18.38	3699.2	143.7	3.9	172.2	160.6	18.5	13.8	269.3	0.0	0.0	6.0
61.10	18.62	11026.2	268.2	2.4	174.3	163.1	36.8	27.2	0.0	62.1	40.0	1.0
61.93	18.88	3986.7	142.9	3.6	176.5	165.5	19.9	14.7	291.6	0.0	0.0	6.0
62.75	19.12	5748.4	165.6	2.9	178.5	168.0	23.0	16.8	432.2	43.1	36.0	6.0
63.57	19.38	14832.0	352.5	2.4	180.6	170.4	49.4	36.0	0.0	70.1	42.0	1.0
64.39	19.62	6173.2	213.1	3.5	182.7	172.9	30.9	22.3	465.4	0.0	0.0	6.0
65.21	19.88	1300.7	47.5	3.7	184.8	175.4	8.7	6.2	75.2	0.0	0.0	1.5
66.03	20.12	1095.3	33.9	3.1	186.8	177.8	7.3	5.2	58.5	0.0	0.0	1.5
66.85	20.38	1403.9	52.0	3.7	188.9	180.3	9.4	6.7	82.8	0.0	0.0	1.5
67.67	20.62	5870.5	163.6	2.8	190.9	182.7	23.5	16.6	439.8	42.7	36.0	6.0
68.49	20.88	11640.6	279.2	2.4	193.0	185.2	38.8	27.3	0.0	62.2	40.0	1.0
69.31	21.12	6861.7	191.8	2.8	195.1	187.6	27.4	19.2	518.3	46.9	36.0	6.0
70.13	21.38	3240.6	131.7	4.1	197.2	190.1	21.6	15.1	228.3	0.0	0.0	6.0
70.95	21.62	1984.5	51.3	2.6	199.2	192.5	9.9	6.9	127.4	0.0	0.0	3.0
71.77	21.88	1248.7	28.3	2.3	201.3	195.0	6.2	4.3	68.2	0.0	0.0	1.5
72.59	22.12	1272.1	32.9	2.6	203.3	197.4	6.4	4.4	69.7	0.0	0.0	1.5
73.41	22.38	1335.7	33.4	2.5	205.4	199.9	6.7	4.6	74.4	0.0	0.0	1.5
74.23	22.62	1233.2	31.1	2.5	207.4	202.3	6.2	4.2	65.9	0.0	0.0	1.5
75.05	22.88	1140.0	24.9	2.2	209.5	204.8	5.7	3.9	58.1	0.0	0.0	1.5
75.87	23.12	1045.2	21.6	2.1	211.5	207.2	5.2	3.5	50.1	0.0	0.0	1.0
76.69	23.38	1316.5	29.9	2.3	213.6	209.7	6.6	4.4	71.5	0.0	0.0	1.5
77.51	23.62	1328.3	37.0	2.8	215.6	212.1	6.6	4.4	72.0	0.0	0.0	1.5
78.33	23.88	1792.9	43.7	2.4	217.7	214.6	9.0	5.9	108.9	0.0	0.0	3.0
79.15	24.12	1734.5	32.8	1.9	219.7	217.0	6.9	4.6	103.8	30.0	30.0	1.5
79.97	24.38	1809.9	45.5	2.5	221.8	219.5	9.0	5.9	109.5	0.0	0.0	1.5
80.79	24.62	8527.4	206.5	2.4	223.9	222.0	28.4	18.6	0.0	51.2	38.0	1.0
81.61	24.88	5607.8	119.5	2.1	226.0	224.4	18.7	12.2	0.0	39.0	34.0	1.0
82.43	25.12	6458.5	151.3	2.3	228.1	226.9	25.8	16.7	480.3	42.9	36.0	6.0
83.25	25.38	4256.1	137.6	3.2	230.2	229.3	21.3	13.7	303.7	0.0	0.0	6.0
84.07	25.62	14828.9	354.8	2.4	232.3	231.8	49.4	31.7	0.0	66.5	40.0	1.0
84.89	25.88	13994.0	302.0	2.2	234.5	234.2	46.6	29.8	0.0	64.7	40.0	1.0
85.71	26.12	8012.4	184.0	2.3	236.6	236.7	26.7	17.0	0.0	48.6	36.0	1.0
86.53	26.38	2706.9	58.2	2.2	238.8	239.1	10.8	6.9	178.3	30.0	30.0	3.0
87.35	26.62	5259.2	209.2	4.0	240.8	241.6	26.3	16.6	382.1	0.0	0.0	6.0
88.17	26.88	4764.8	172.5	3.6	242.9	244.0	23.8	15.0	342.2	0.0	0.0	6.0
88.99	27.12	4754.8	183.4	3.9	244.9	246.5	23.8	14.9	341.1	0.0	0.0	6.0
89.81	27.38	6853.8	213.1	3.1	246.9	248.9	27.4	17.1	508.6	43.5	36.0	6.0
90.63	27.62	5477.8	192.2	3.5	249.0	251.4	27.4	17.0	398.2	0.0	0.0	6.0
91.45	27.88	2116.3	70.0	3.3	251.0	253.8	10.6	6.5	128.9	0.0	0.0	3.0
92.27	28.12	1598.4	29.3	1.8	253.1	256.3	6.4	3.9	87.1	30.0	30.0	1.5
93.09	28.38	2004.6	42.3	2.1	255.1	258.7	8.0	4.9	119.3	30.0	30.0	1.5
93.91	28.62	1773.1	60.7	3.4	257.2	261.2	11.8	7.2	100.4	0.0	0.0	1.5
94.73	28.88	2045.4	73.6	3.6	259.2	263.6	13.6	8.3	121.8	0.0	0.0	1.5
95.55	29.12	3243.0	124.0	3.8	261.3	266.1	16.2	9.8	217.3	0.0	0.0	3.0
96.37	29.38	1889.1	77.1	4.1	263.3	268.5	18.9	11.4	108.6	0.0	0.0	1.5
97.19	29.62	1819.7	70.3	3.9	265.2	271.0	12.1	7.3	102.7	0.0	0.0	1.5
98.01	29.88	1545.9	48.7	3.1	267.3	273.5	7.7	4.6	80.4	0.0	0.0	1.5
98.83	30.12	1949.4	58.6	3.0	269.3	275.9	9.7	5.8	112.3	0.0	0.0	1.5

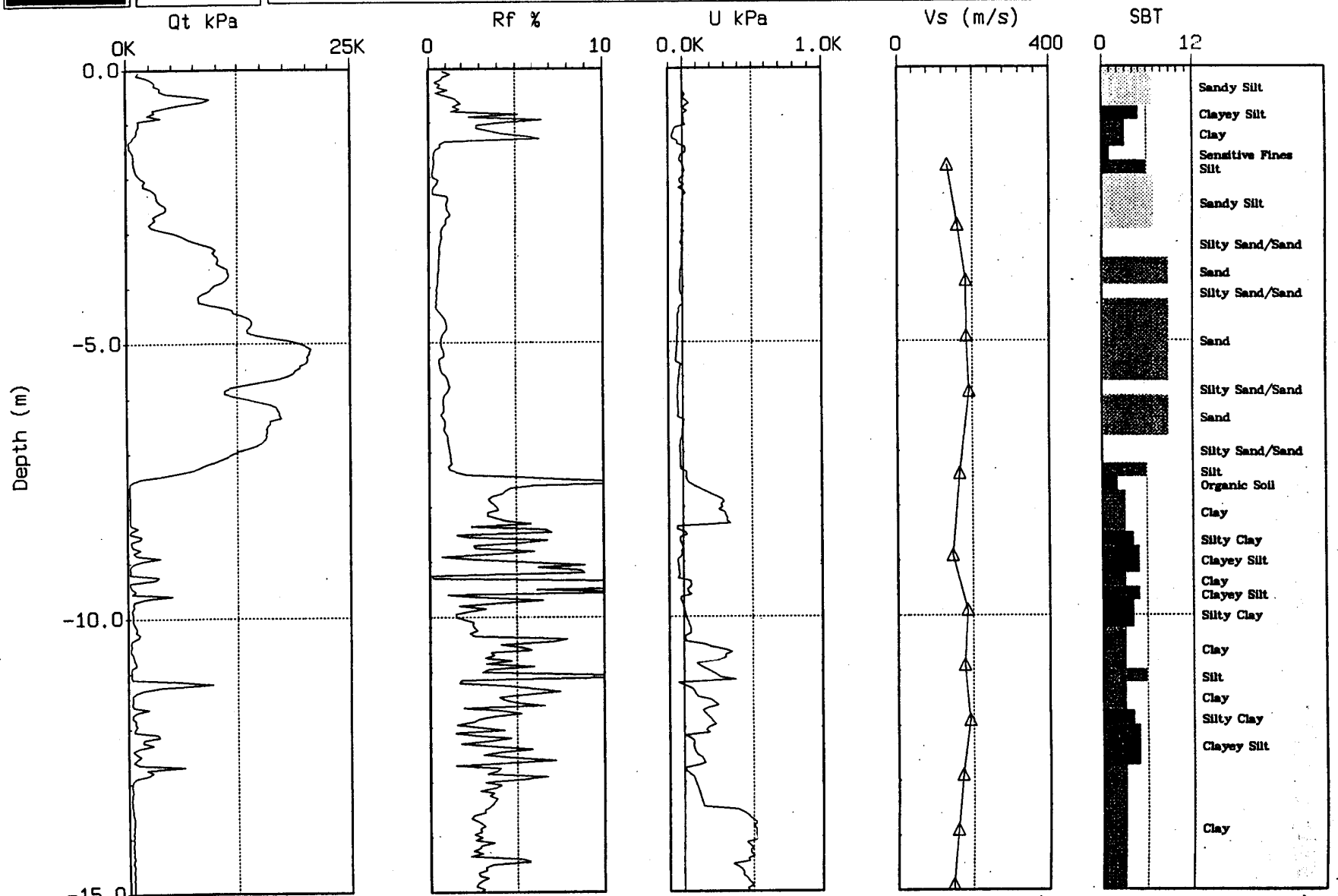
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60 (blows/ft)	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	3818.6	138.3	3.6	271.4	278.4	19.1	11.3	261.5	0.0	0.0	3.0

CONETEC

Kleinfelder

Ste: I15, S4: 200 S, 06-SC-104
Location: WB I80 On Rmp

Cone: 20 TON A AD 081
Date: 05:06:96 15:18



Max. Depth: 30.60 (m)
Depth Inc.: 0.05 (m)

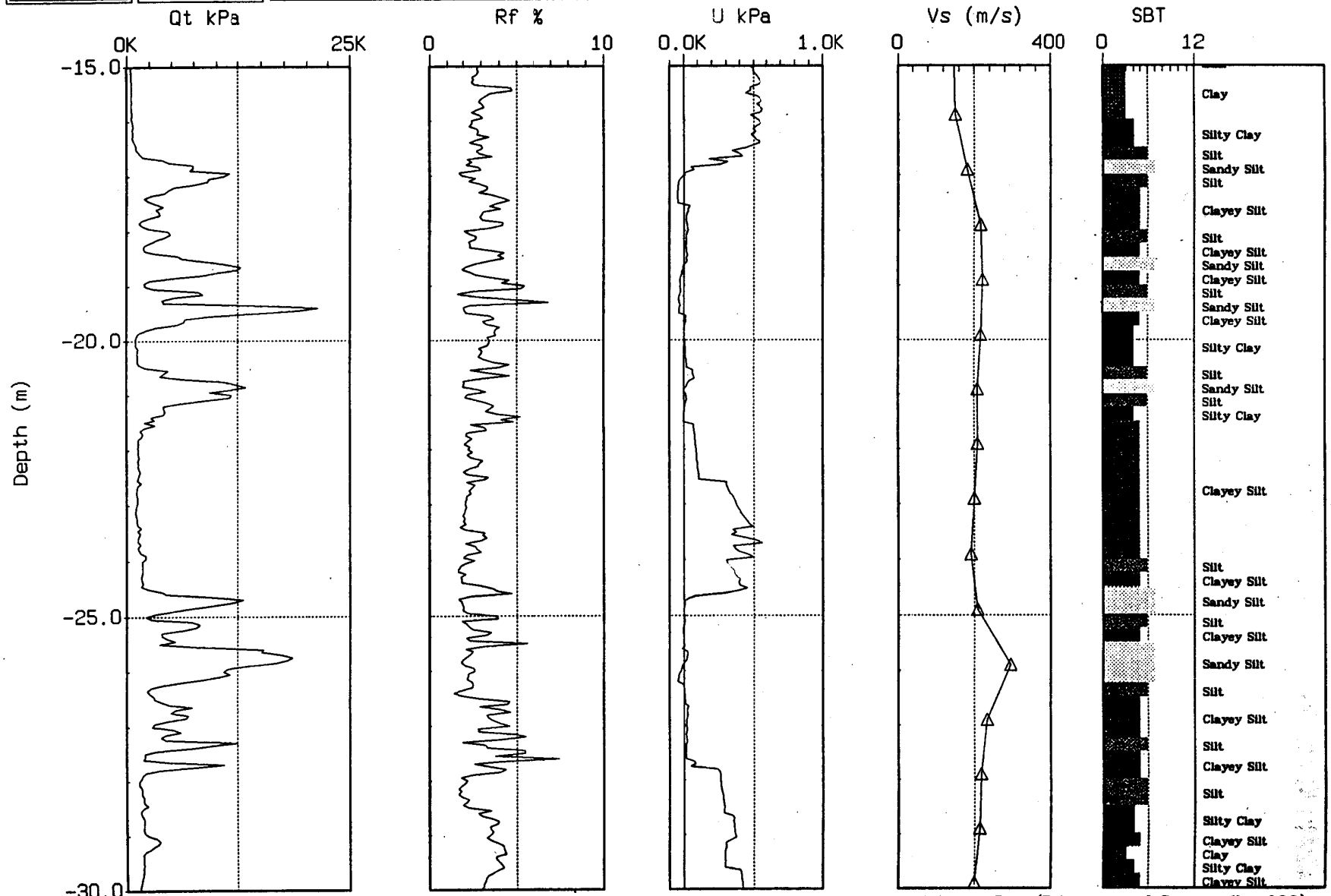
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: 200 S, 06-SC-104
Location: WB I80 On Ramp

Cone: 20 TON A AD 081
Date: 05:06:96 15:18



Max. Depth: 30.60 (m)
Depth Inc.: 0.05 (m)

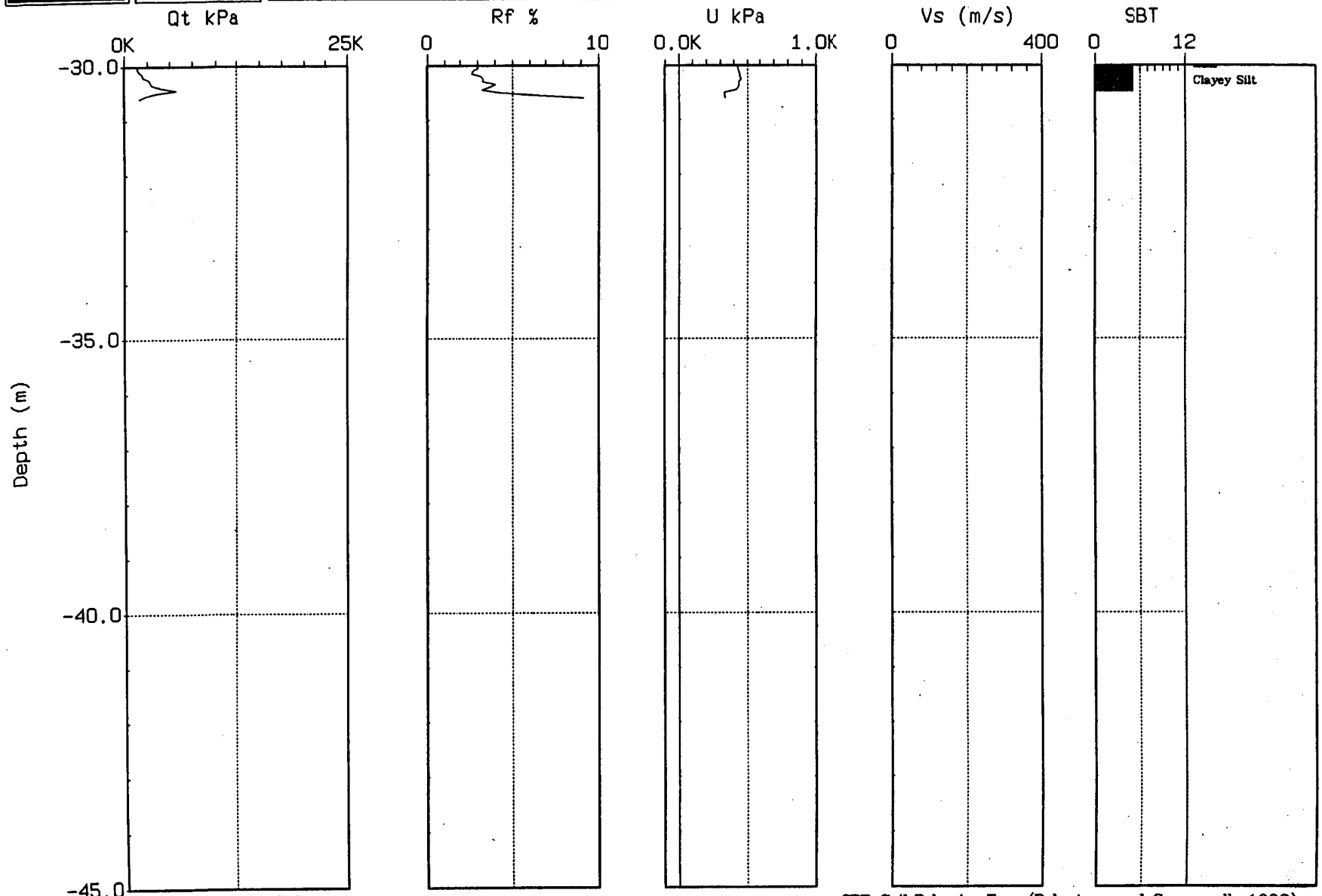
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: 200 S, 06-SC-104
Location: WB I80 On Rmp

Cone: 20 TON A AD 081
Date: 05:06:96 15:18



Max. Depth: 30.60 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-104*
Date: *6-May-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 081 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
1.20	1.32					
2.40	2.46	8.5	134	440	1.2 - 2.4	3.9 - 7.9
3.40	3.45	6.1	161	528	2.4 - 3.4	7.9 - 11.2
4.40	4.44	5.4	183	601	3.4 - 4.4	11.2 - 14.4
5.40	5.43	5.4	184	604	4.4 - 5.4	14.4 - 17.7
6.40	6.42	5.2	191	628	5.4 - 6.4	17.7 - 21.0
8.40	8.42	12.0	166	545	6.4 - 8.4	21.0 - 27.6
9.40	9.42	6.8	147	482	8.4 - 9.4	27.6 - 30.8
10.40	10.42	5.4	185	607	9.4 - 10.4	30.8 - 34.1
11.40	11.41	5.6	178	585	10.4 - 11.4	34.1 - 37.4
12.40	12.41	5.2	192	630	11.4 - 12.4	37.4 - 40.7
13.40	13.41	5.8	172	565	12.4 - 13.4	40.7 - 44.0
14.40	14.41	6.3	159	520	13.4 - 14.4	44.0 - 47.2
15.40	15.41	6.7	149	489	14.4 - 15.4	47.2 - 50.5
16.40	16.41	6.6	151	497	15.4 - 16.4	50.5 - 53.8
17.40	17.41	5.5	182	596	16.4 - 17.4	53.8 - 57.1
18.40	18.41	4.6	217	713	17.4 - 18.4	57.1 - 60.4
19.40	19.41	4.5	222	729	18.4 - 19.4	60.4 - 63.6
20.40	20.41	4.6	217	713	19.4 - 20.4	63.6 - 66.9
21.40	21.41	4.8	208	683	20.4 - 21.4	66.9 - 70.2
22.40	22.41	4.8	208	683	21.4 - 22.4	70.2 - 73.5
23.40	23.41	5.0	200	656	22.4 - 23.4	73.5 - 76.8
24.40	24.41	5.2	192	631	23.4 - 24.4	76.8 - 80.1
25.40	25.41	4.8	208	683	24.4 - 25.4	80.1 - 83.3
26.40	26.41	3.4	294	965	25.4 - 26.4	83.3 - 86.6
27.40	27.41	4.3	233	763	26.4 - 27.4	86.6 - 89.9
28.40	28.41	4.6	217	713	27.4 - 28.4	89.9 - 93.2
29.40	29.41	4.7	213	698	28.4 - 29.4	93.2 - 96.5
30.40	30.41	5.0	200	656	29.4 - 30.4	96.5 - 99.7

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0913-0831-3115
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15,S4:I15,06-SC-106
Location: 500 S Viaduct
Cone: 20 TON A 041
CPT Date: 96/29/07
CPT Time: 08:16
CPT File: KA06S106.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	26766.9	265.4	1.0	2.4	0.0	53.5	107.1	0.0	95.0	50.0	1.0
1.23	0.38	10139.3	165.5	1.6	7.2	0.0	33.8	67.6	0.0	95.0	50.0	1.0
2.05	0.62	1704.6	22.2	1.3	11.8	0.0	6.8	13.6	135.4	47.3	44.0	10.0
2.87	0.88	1369.3	5.5	0.4	16.2	0.0	5.5	11.0	108.2	36.3	42.0	10.0
3.69	1.12	1107.9	6.7	0.6	20.8	0.0	4.4	8.9	87.0	30.0	38.0	10.0
4.51	1.38	2206.3	7.3	0.3	25.3	0.0	7.4	14.3	0.0	43.6	42.0	1.0
5.33	1.62	2974.1	3.8	0.1	29.9	0.0	9.9	17.7	0.0	49.8	42.0	1.0
6.15	1.88	3390.7	3.4	0.1	34.6	0.0	8.5	14.1	0.0	51.5	42.0	1.0
6.97	2.12	4684.7	18.9	0.4	38.1	1.2	11.7	18.6	0.0	59.4	42.0	1.0
7.79	2.38	5046.3	17.2	0.3	40.4	3.7	12.6	19.4	0.0	60.6	42.0	1.0
8.61	2.62	5867.8	25.7	0.4	42.7	6.1	14.7	22.0	0.0	64.2	44.0	1.0
9.43	2.88	10386.9	40.5	0.4	45.1	8.6	20.8	30.3	0.0	79.8	46.0	1.0
10.25	3.12	10573.6	48.2	0.5	47.5	11.0	21.1	30.0	0.0	79.5	46.0	1.0
11.07	3.38	12268.0	49.2	0.4	49.9	13.5	24.5	34.0	0.0	83.1	46.0	1.0
11.89	3.62	9254.4	21.1	0.2	52.4	15.9	18.5	25.0	0.0	74.3	44.0	1.0
12.71	3.88	2856.3	10.9	0.4	54.7	18.4	9.5	12.6	0.0	40.0	38.0	1.0
13.53	4.12	688.2	3.2	0.5	56.1	20.8	3.4	4.5	48.9	0.0	0.0	3.0
14.35	4.38	2261.5	11.1	0.5	57.5	23.3	7.5	9.7	0.0	32.6	38.0	1.0
15.17	4.62	700.8	6.4	0.9	59.6	25.8	3.5	4.4	49.2	0.0	0.0	3.0
15.99	4.88	575.1	2.0	0.3	61.0	28.2	2.9	3.6	38.9	0.0	0.0	3.0
16.81	5.12	446.6	2.0	0.4	61.7	30.7	2.2	2.8	28.3	0.0	0.0	1.5
17.63	5.38	949.8	2.7	0.3	63.0	33.1	3.8	4.7	68.3	30.0	32.0	6.0
18.45	5.62	1036.9	3.9	0.4	65.1	35.6	4.1	5.0	74.9	30.0	32.0	6.0
19.27	5.88	2682.2	3.1	0.1	67.2	38.0	8.9	10.7	0.0	35.3	38.0	1.0
20.09	6.12	849.9	2.0	0.2	68.6	40.5	4.2	5.0	59.3	0.0	0.0	3.0
20.92	6.38	502.6	2.0	0.4	69.3	42.9	2.5	3.0	31.2	0.0	0.0	1.5
21.74	6.62	618.2	2.0	0.3	69.9	45.4	3.1	3.6	40.2	0.0	0.0	3.0
22.56	6.88	536.7	2.0	0.4	70.6	47.8	2.7	3.1	33.5	0.0	0.0	1.5
23.38	7.12	926.6	4.3	0.5	72.0	50.3	3.7	4.3	64.3	30.0	30.0	3.0
24.20	7.38	733.6	2.8	0.4	73.3	52.7	3.7	4.2	48.6	0.0	0.0	3.0
25.02	7.62	856.1	2.0	0.2	74.0	55.2	4.3	4.9	58.2	0.0	0.0	3.0
25.84	7.88	459.0	2.5	0.6	74.7	57.6	2.3	2.6	26.1	0.0	0.0	1.5
26.66	8.12	2301.7	28.0	1.2	76.0	60.1	9.2	10.3	173.2	30.0	36.0	6.0
27.48	8.38	603.0	2.0	0.3	77.4	62.5	3.0	3.4	37.0	0.0	0.0	1.5
28.30	8.62	2047.2	5.4	0.3	78.8	65.0	6.8	7.5	0.0	30.0	34.0	1.0
29.12	8.88	1145.3	6.5	0.6	80.9	67.4	4.6	5.0	79.8	30.0	30.0	3.0
29.94	9.12	949.3	3.4	0.4	83.0	69.9	3.8	4.1	63.7	30.0	30.0	3.0
30.76	9.38	714.9	2.3	0.3	84.3	72.3	3.6	3.8	44.7	0.0	0.0	3.0
31.58	9.62	587.5	2.0	0.3	85.0	74.8	2.9	3.1	34.2	0.0	0.0	1.5
32.40	9.88	608.7	2.0	0.3	85.7	77.3	3.0	3.2	35.7	0.0	0.0	1.5
33.22	10.12	725.3	2.0	0.3	86.4	79.7	3.6	3.8	44.7	0.0	0.0	3.0
34.04	10.38	647.9	2.0	0.3	87.0	82.2	3.2	3.4	38.3	0.0	0.0	1.5
34.86	10.62	622.5	2.0	0.3	87.7	84.6	3.1	3.3	36.0	0.0	0.0	1.5
35.68	10.88	641.9	2.0	0.3	88.4	87.1	3.2	3.3	37.3	0.0	0.0	1.5
36.50	11.12	641.6	2.0	0.3	89.0	89.5	3.2	3.3	37.0	0.0	0.0	1.5
37.32	11.38	654.7	2.0	0.3	89.7	92.0	3.3	3.4	37.8	0.0	0.0	1.5
38.14	11.62	648.8	2.0	0.3	90.4	94.4	3.2	3.3	37.1	0.0	0.0	1.5
38.96	11.88	606.7	2.0	0.3	91.1	96.9	3.0	3.1	33.5	0.0	0.0	1.5
39.78	12.12	640.4	2.0	0.3	91.7	99.3	3.2	3.3	35.9	0.0	0.0	1.5
40.60	12.38	636.5	2.0	0.3	92.4	101.8	3.2	3.2	35.4	0.0	0.0	1.5
41.42	12.62	702.5	2.0	0.3	93.1	104.2	3.5	3.6	40.4	0.0	0.0	1.5
42.24	12.88	696.6	2.0	0.3	93.8	106.7	3.5	3.5	39.7	0.0	0.0	1.5

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	1254.0	2.4	0.2	95.1	109.1	5.0	5.0	84.0	30.0	30.0	3.0
43.88	13.38	2009.3	15.1	0.8	97.2	111.6	8.0	8.0	144.0	30.0	32.0	6.0
44.70	13.62	4541.1	11.4	0.3	99.3	114.0	11.4	11.1	0.0	44.7	38.0	1.0
45.52	13.88	1616.6	2.0	0.1	101.6	116.5	5.4	5.2	0.0	30.0	32.0	1.0
46.34	14.12	1117.6	2.0	0.2	103.7	118.9	4.5	4.3	71.6	30.0	30.0	3.0
47.16	14.38	1157.0	2.0	0.2	105.7	121.4	4.6	4.4	74.4	30.0	30.0	3.0
47.98	14.62	1236.2	2.0	0.2	107.8	123.9	4.9	4.7	80.4	30.0	30.0	3.0
48.80	14.88	1614.7	2.0	0.1	109.9	126.3	5.4	5.0	0.0	30.0	32.0	1.0
49.62	15.12	3715.6	4.6	0.1	112.1	128.8	9.3	8.6	0.0	37.3	36.0	1.0
50.44	15.38	8046.2	22.6	0.3	114.4	131.2	20.1	18.4	0.0	59.1	40.0	1.0
51.26	15.62	1574.9	17.8	1.1	116.6	133.7	6.3	5.7	106.0	30.0	30.0	3.0
52.08	15.88	988.3	2.0	0.2	118.6	136.1	4.0	3.6	58.7	30.0	30.0	1.5
52.90	16.12	1601.8	3.0	0.2	120.7	138.6	6.4	5.7	107.4	30.0	30.0	3.0
53.72	16.38	4145.4	25.6	0.6	122.8	141.0	13.8	12.2	0.0	39.1	36.0	1.0
54.54	16.62	9295.2	79.8	0.9	125.0	143.5	23.2	20.3	0.0	62.0	40.0	1.0
55.36	16.88	13021.9	97.8	0.8	127.4	145.9	26.0	22.6	0.0	71.4	42.0	1.0
56.18	17.12	13084.8	84.0	0.6	129.8	148.4	26.2	22.5	0.0	71.2	42.0	1.0
57.00	17.38	4581.0	51.9	1.1	132.1	150.8	15.3	13.0	0.0	40.9	36.0	1.0
57.82	17.62	1568.2	2.0	0.1	134.3	153.3	5.2	4.4	0.0	30.0	30.0	1.0
58.64	17.88	952.6	2.0	0.2	136.4	155.7	3.8	3.2	52.8	30.0	30.0	1.5
59.46	18.12	907.5	2.0	0.2	138.4	158.2	3.6	3.0	48.9	30.0	30.0	1.5
60.28	18.38	1018.4	2.0	0.2	140.5	160.6	4.1	3.4	57.4	30.0	30.0	1.5
61.10	18.62	970.9	2.0	0.2	142.5	163.1	3.9	3.2	53.2	30.0	30.0	1.5
61.93	18.88	1375.6	2.0	0.1	144.6	165.5	5.5	4.5	85.2	30.0	30.0	3.0
62.75	19.12	2376.3	5.5	0.2	146.7	168.0	7.9	6.4	0.0	30.0	32.0	1.0
63.57	19.38	1627.0	3.9	0.2	148.8	170.4	6.5	5.2	104.6	30.0	30.0	3.0
64.39	19.62	921.9	2.0	0.2	150.8	172.9	3.7	2.9	47.9	30.0	30.0	1.5
65.21	19.88	928.5	2.0	0.2	152.9	175.4	3.7	2.9	48.0	30.0	30.0	1.5
66.03	20.12	1201.6	2.0	0.2	154.9	177.8	4.8	3.8	69.5	30.0	30.0	1.5
66.85	20.38	1538.5	2.0	0.1	157.0	180.3	6.2	4.8	96.1	30.0	30.0	3.0
67.67	20.62	1631.7	2.4	0.1	159.1	182.7	5.4	4.2	0.0	30.0	30.0	1.0
68.49	20.88	1238.1	2.0	0.2	161.2	185.2	5.0	3.8	71.3	30.0	30.0	1.5
69.31	21.12	1225.9	2.0	0.2	163.3	187.6	4.9	3.8	70.0	30.0	30.0	1.5
70.13	21.38	2892.7	5.8	0.2	165.4	190.1	9.6	7.3	0.0	30.0	32.0	1.0
70.95	21.62	9351.5	71.3	0.8	167.6	192.5	23.4	17.7	0.0	58.0	40.0	1.0
71.77	21.88	7640.7	48.4	0.6	169.9	195.0	19.1	14.3	0.0	52.0	38.0	1.0
72.59	22.12	1476.4	4.7	0.3	172.1	197.4	5.9	4.4	88.5	30.0	30.0	3.0
73.41	22.38	5348.5	79.2	1.5	174.2	199.9	17.8	13.2	0.0	41.4	36.0	1.0
74.23	22.62	5490.7	62.3	1.1	176.4	202.3	18.3	13.5	0.0	42.0	36.0	1.0
75.05	22.88	1237.5	2.1	0.2	178.5	204.8	4.9	3.6	68.3	30.0	30.0	1.5
75.87	23.12	1257.2	2.0	0.2	180.5	207.2	5.0	3.7	69.6	30.0	30.0	1.5
76.69	23.38	1354.6	2.4	0.2	182.6	209.7	5.4	3.9	77.0	30.0	30.0	1.5
77.51	23.62	1513.1	2.7	0.2	184.6	212.1	6.1	4.4	89.3	30.0	30.0	1.5
78.33	23.88	5950.1	80.9	1.4	186.7	214.6	19.8	14.2	0.0	43.4	36.0	1.0
79.15	24.12	10242.4	153.0	1.5	189.0	217.0	25.6	18.2	0.0	58.8	40.0	1.0
79.97	24.38	13964.7	136.5	1.0	191.3	219.5	27.9	19.8	0.0	67.5	40.0	1.0
80.79	24.62	10709.0	61.4	0.6	193.7	222.0	21.4	15.1	0.0	59.8	40.0	1.0
81.61	24.88	2680.8	33.5	1.3	196.0	224.4	10.7	7.5	180.8	30.0	30.0	3.0
82.43	25.12	3542.4	22.8	0.6	198.1	226.9	11.8	8.2	0.0	30.0	32.0	1.0
83.25	25.38	1586.4	2.1	0.1	200.3	229.3	5.3	3.7	0.0	30.0	30.0	1.0
84.07	25.62	1473.5	2.0	0.1	202.4	231.8	5.9	4.1	83.1	30.0	30.0	1.5
84.89	25.88	1947.6	2.0	0.1	204.5	234.2	6.5	4.4	0.0	30.0	30.0	1.0
85.71	26.12	2320.4	3.4	0.1	206.6	236.7	7.7	5.3	0.0	30.0	30.0	1.0
86.53	26.38	1501.5	2.0	0.1	208.8	239.1	6.0	4.1	84.3	30.0	30.0	1.5
87.35	26.62	1973.7	37.1	1.9	210.8	241.6	7.9	5.3	121.7	30.0	30.0	3.0
88.17	26.88	1977.2	36.6	1.8	212.9	244.0	7.9	5.3	121.6	30.0	30.0	3.0
88.99	27.12	4709.7	107.2	2.3	214.9	246.5	18.8	12.6	339.9	34.7	34.0	6.0
89.81	27.38	4745.5	97.0	2.0	216.9	248.9	19.0	12.6	342.4	34.8	34.0	6.0
90.63	27.62	2589.0	45.4	1.8	219.0	251.4	10.4	6.8	169.5	30.0	30.0	3.0
91.45	27.88	2456.6	35.1	1.4	221.0	253.8	9.8	6.5	158.5	30.0	30.0	3.0
92.27	28.12	2022.3	8.2	0.4	223.2	256.3	6.7	4.4	0.0	30.0	30.0	1.0
93.09	28.38	1887.0	4.5	0.2	225.3	258.7	6.3	4.1	0.0	30.0	30.0	1.0
93.91	28.62	2072.0	9.9	0.5	227.5	261.2	6.9	4.5	0.0	30.0	30.0	1.0
94.73	28.88	2186.1	21.7	1.0	229.6	263.6	8.7	5.6	135.4	30.0	30.0	3.0
95.55	29.12	1809.4	10.6	0.6	231.7	266.1	7.2	4.7	104.9	30.0	30.0	1.5
96.37	29.38	1704.4	8.7	0.5	233.7	268.5	6.8	4.4	96.2	30.0	30.0	1.5
97.19	29.62	1891.1	15.3	0.8	235.7	271.0	7.6	4.8	110.8	30.0	30.0	1.5
98.01	29.88	4751.6	93.1	2.0	237.9	273.5	15.8	10.1	0.0	33.5	32.0	1.0
98.83	30.12	7002.0	128.6	1.8	240.0	275.9	23.3	14.7	0.0	44.5	36.0	1.0

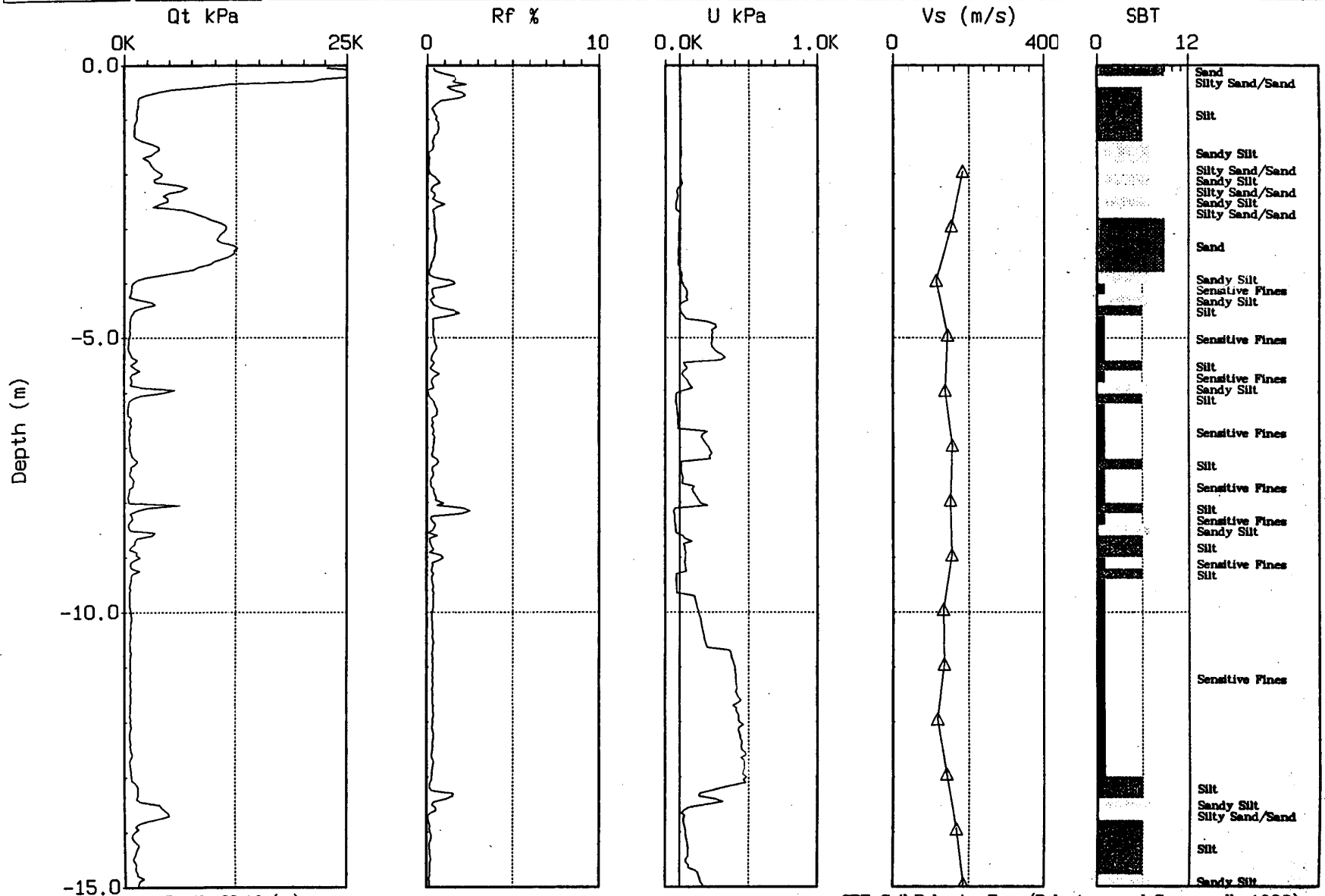
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60 (blows/ft)	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	9328.1	151.5	1.6	242.2	278.4	31.1	19.6	0.0	52.6	38.0	1.0
100.47	30.62	7248.5	188.2	2.6	244.3	280.8	29.0	18.2	537.9	45.2	36.0	6.0
101.29	30.88	4177.2	144.2	3.5	246.4	283.3	20.9	13.0	291.8	0.0	0.0	6.0
102.11	31.12	3258.6	92.1	2.8	248.4	285.7	16.3	10.1	218.0	0.0	0.0	3.0
102.94	31.38	16323.8	186.0	1.1	250.6	288.2	40.8	25.2	0.0	68.2	40.0	1.0
103.76	31.62	22219.6	238.8	1.1	252.9	290.6	44.4	27.3	0.0	76.9	42.0	1.0
104.58	31.88	27098.4	377.2	1.4	255.3	293.1	67.7	41.5	0.0	82.4	42.0	1.0
105.40	32.12	27398.2	454.3	1.7	257.6	295.5	68.5	41.8	0.0	82.6	42.0	1.0
106.22	32.38	24712.5	365.1	1.5	259.9	298.0	61.8	37.5	0.0	79.5	42.0	1.0
107.04	32.62	25635.7	243.7	1.0	262.3	300.4	51.3	31.0	0.0	80.4	42.0	1.0
107.86	32.88	26753.6	280.1	1.0	264.7	302.9	53.5	32.2	0.0	81.5	42.0	1.0

CONETEC

Kleinfelder

Site: I15, S4: I15, 06-SC-106
Location: 500 S VIADUCT

Cone: 20 TON A 041
Date: 07:29:96 08:16



Max. Depth: 33.10 (m)
Depth Inc.: 0.05 (m)

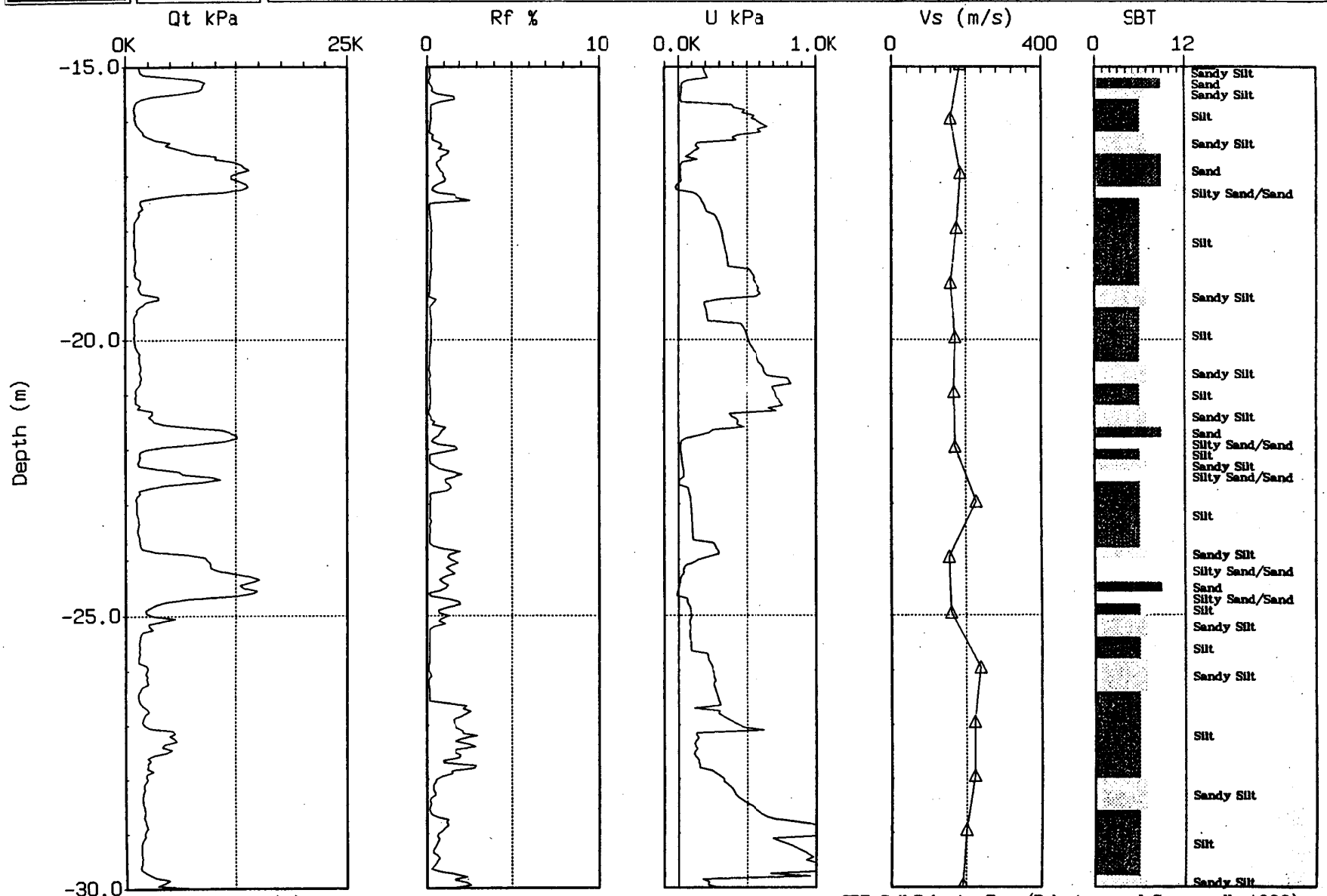
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15, 06-SC-106
Location: 500 S VIADUCT

Cone: 20 TON A 041
Date: 07:29:96 08:16



Max. Depth: 33.10 (m)
Depth Inc.: 0.05 (m)

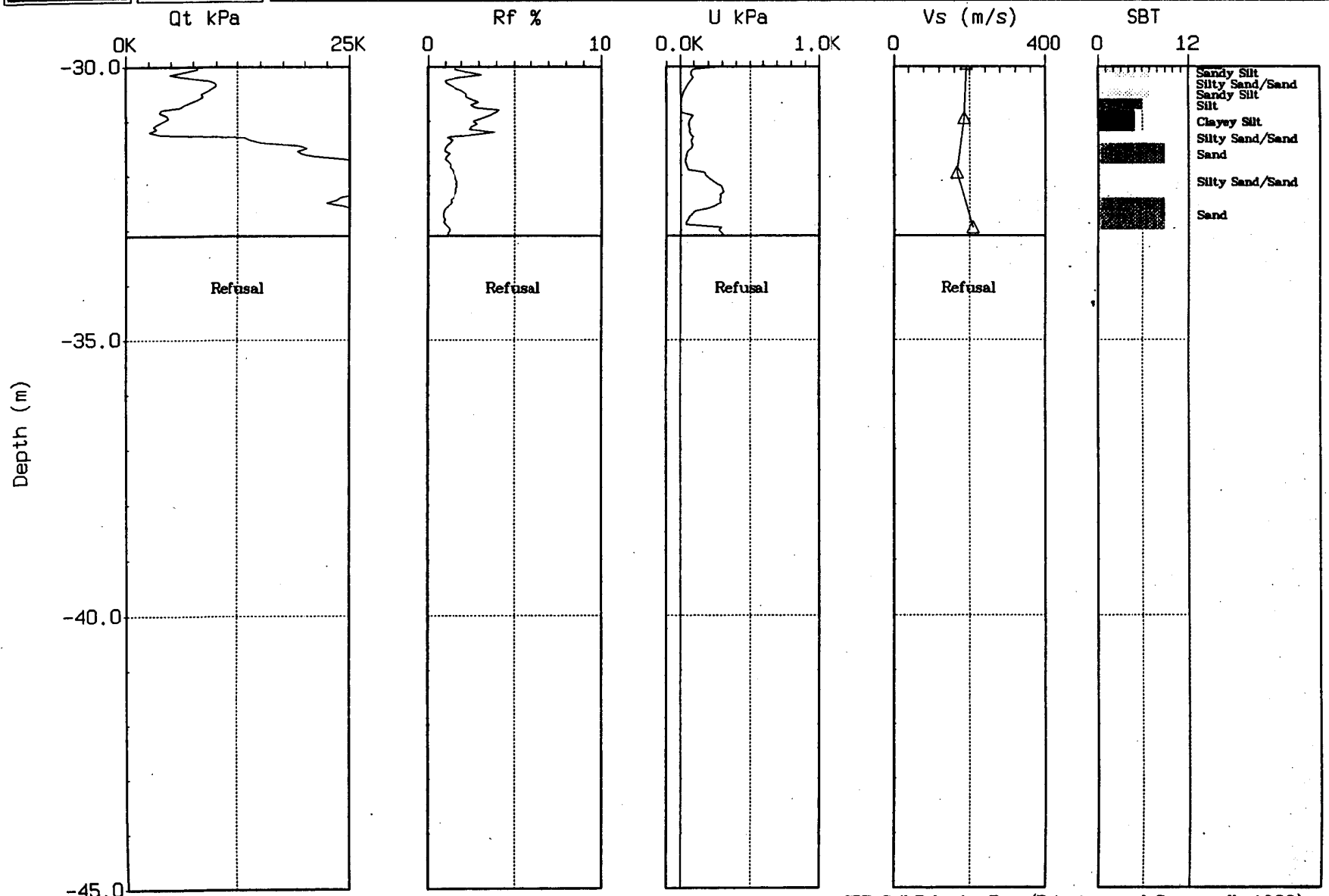
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15, 06-SC-106
Location: 500 S VIADUCT

Cone: 20 TON A 041
Date: 07:29:96 08:16



Max. Depth: 33.10 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-106*
Date: *29-Jul-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 041 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
1.45	1.55					
2.45	2.51	5.9	* 163	533	1.5 - 2.5	4.8 - 8.0
3.45	3.50	6.4	153	503	2.5 - 3.5	8.0 - 11.3
4.45	4.49	8.7	114	373	3.5 - 4.5	11.3 - 14.6
5.45	5.48	6.9	*144	472	4.5 - 5.5	14.6 - 17.9
6.45	6.47	7.2	138	454	5.5 - 6.5	17.9 - 21.2
7.45	7.47	6.4	156	511	6.5 - 7.5	21.2 - 24.4
8.45	8.47	6.6	151	496	7.5 - 8.5	24.4 - 27.7
9.45	9.47	6.5	154	504	8.5 - 9.5	27.7 - 31.0
10.45	10.46	7.5	* 133	437	9.5 - 10.5	31.0 - 34.3
11.45	11.46	7.4	135	443	10.5 - 11.5	34.3 - 37.6
12.45	12.46	8.5	118	386	11.5 - 12.5	37.6 - 40.8
13.45	13.46	7.1	141	462	12.5 - 13.5	40.8 - 44.1
14.45	14.46	6.0	167	546	13.5 - 14.5	44.1 - 47.4
15.45	15.46	5.4	* 185	607	14.5 - 15.5	47.4 - 50.7
16.45	16.46	6.3	159	520	15.5 - 16.5	50.7 - 54.0
17.45	17.46	5.4	185	607	16.5 - 17.5	54.0 - 57.3
18.45	18.46	5.7	175	575	17.5 - 18.5	57.3 - 60.5
19.45	19.46	6.3	159	521	18.5 - 19.5	60.5 - 63.8
20.45	20.46	5.8	* 172	565	19.5 - 20.5	63.8 - 67.1
21.45	21.46	5.9	169	556	20.5 - 21.5	67.1 - 70.4
22.45	22.46	5.8	172	565	21.5 - 22.5	70.4 - 73.7
23.45	23.46	4.4	227	745	22.5 - 23.5	73.7 - 76.9
24.45	24.46	6.4	156	512	23.5 - 24.5	76.9 - 80.2
25.45	25.46	6.2	* 161	529	24.5 - 25.5	80.2 - 83.5
26.45	26.46	4.2	238	781	25.5 - 26.5	83.5 - 86.8
27.45	27.46	4.5	222	729	26.5 - 27.5	86.8 - 90.1
28.45	28.46	4.5	222	729	27.5 - 28.5	90.1 - 93.3
29.45	29.46	5.0	200	656	28.5 - 29.5	93.3 - 96.6
30.45	30.46	5.2	* 192	631	29.5 - 30.5	96.6 - 99.9
31.45	31.45	5.4	185	607	30.5 - 31.5	99.9 - 103.2
32.45	32.45	6.0	167	547	31.5 - 32.5	103.2 - 106.5
33.45	33.45	4.8	208	683	32.5 - 33.5	106.5 - 109.7

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0804-2150-4594
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15, S4: 700 W, 06-SC-108
Location: 500 S On Rmp-S
Cone: 20 TON A 040
CPT Date: 96/07/06
CPT Time: 15:58
CPT File: KA06S108.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	1286.7	6.1	0.5	2.2	0.0	5.1	10.3	102.8	62.9	50.0	10.0
1.23	0.38	2084.9	11.6	0.6	6.8	0.0	6.9	13.9	0.0	60.8	46.0	1.0
2.05	0.62	1304.9	14.5	1.1	11.4	0.0	5.2	10.4	103.5	40.1	42.0	10.0
2.87	0.88	739.4	19.1	2.6	15.9	0.0	4.9	9.9	57.9	0.0	0.0	6.0
3.69	1.12	554.7	11.9	2.1	20.4	0.0	3.7	7.4	42.7	0.0	0.0	6.0
4.51	1.38	441.9	10.9	2.5	24.8	0.0	4.4	8.7	33.4	0.0	0.0	6.0
5.33	1.62	1317.2	15.3	1.2	29.2	0.0	5.3	9.5	103.0	30.0	38.0	6.0
6.15	1.88	1032.9	17.6	1.7	33.8	0.0	5.2	8.7	79.9	0.0	0.0	6.0
6.97	2.12	1669.9	13.6	0.8	37.0	1.2	6.7	10.7	130.5	30.2	38.0	6.0
7.79	2.38	1777.2	14.2	0.8	39.1	3.7	7.1	11.1	138.8	31.2	38.0	6.0
8.61	2.62	2337.6	16.8	0.7	41.2	6.1	7.8	11.9	0.0	38.3	40.0	1.0
9.43	2.88	2701.9	20.2	0.7	43.4	8.6	9.0	13.4	0.0	41.7	40.0	1.0
10.25	3.12	7419.2	44.7	0.6	45.6	11.0	18.5	26.9	0.0	70.0	44.0	1.0
11.07	3.38	10331.8	79.7	0.8	47.9	13.5	25.8	36.5	0.0	78.8	46.0	1.0
11.89	3.62	12566.3	78.2	0.6	50.2	15.9	25.1	34.7	0.0	83.7	46.0	1.0
12.71	3.88	5878.3	55.3	0.9	52.6	18.4	14.7	19.8	0.0	61.3	42.0	1.0
13.53	4.12	10617.4	25.0	0.2	55.0	20.8	21.2	28.0	0.0	77.6	44.0	1.0
14.35	4.38	10867.5	19.1	0.2	57.4	23.3	21.7	28.1	0.0	77.6	44.0	1.0
15.17	4.62	7332.3	22.5	0.3	59.7	25.8	18.3	23.2	0.0	65.8	42.0	1.0
15.99	4.88	3859.7	37.2	1.0	62.0	28.2	12.9	16.0	0.0	46.8	40.0	1.0
16.81	5.12	674.9	10.5	1.6	64.1	30.7	3.4	4.1	46.4	0.0	0.0	3.0
17.63	5.38	439.7	2.0	0.5	65.5	33.1	2.2	2.7	27.3	0.0	0.0	1.5
18.45	5.62	387.7	4.0	1.0	66.1	35.6	1.9	2.3	22.9	0.0	0.0	1.5
19.27	5.88	955.8	12.1	1.3	67.5	38.0	4.8	5.7	68.0	0.0	0.0	6.0
20.09	6.12	842.1	9.8	1.2	69.5	40.5	4.2	4.9	58.6	0.0	0.0	3.0
20.92	6.38	2085.1	27.8	1.3	71.6	42.9	8.3	9.6	157.7	30.0	36.0	6.0
21.74	6.62	397.8	2.2	0.6	72.9	45.4	2.0	2.3	22.4	0.0	0.0	1.5
22.56	6.88	2368.7	30.4	1.3	74.3	47.8	9.5	10.8	179.7	30.3	36.0	6.0
23.38	7.12	922.3	20.3	2.2	76.3	50.3	4.6	5.2	63.7	0.0	0.0	3.0
24.20	7.38	666.9	2.2	0.3	77.7	52.7	3.3	3.7	42.9	0.0	0.0	3.0
25.02	7.62	1204.3	17.9	1.5	79.1	55.2	6.0	6.6	85.6	0.0	0.0	6.0
25.84	7.88	594.2	9.7	1.6	81.1	57.6	3.0	3.2	36.4	0.0	0.0	1.5
26.66	8.12	935.3	13.3	1.4	83.2	60.1	4.7	5.0	63.4	0.0	0.0	3.0
27.48	8.38	1315.8	10.4	0.8	85.2	62.5	5.3	5.6	93.4	30.0	32.0	6.0
28.30	8.62	1870.0	52.8	2.8	87.3	65.0	9.3	9.8	137.4	0.0	0.0	6.0
29.12	8.88	907.2	23.4	2.6	89.3	67.4	6.0	6.3	60.0	0.0	0.0	3.0
29.94	9.12	5859.5	74.6	1.3	91.4	69.9	19.5	20.0	0.0	53.2	40.0	1.0
30.76	9.38	1055.1	24.0	2.3	93.5	72.3	5.3	5.3	71.1	0.0	0.0	3.0
31.58	9.62	1636.6	34.8	2.1	95.6	74.8	8.2	8.2	117.3	0.0	0.0	6.0
32.40	9.88	839.5	7.7	0.9	97.6	77.3	4.2	4.2	53.2	0.0	0.0	3.0
33.22	10.12	703.8	4.3	0.6	99.0	79.7	3.5	3.5	42.0	0.0	0.0	1.5
34.04	10.38	602.4	2.4	0.4	99.7	82.2	3.0	3.0	33.6	0.0	0.0	1.5
34.86	10.62	591.9	3.3	0.6	100.3	84.6	3.0	2.9	32.6	0.0	0.0	1.5
35.68	10.88	623.5	3.7	0.6	101.0	87.1	3.1	3.0	34.8	0.0	0.0	1.5
36.50	11.12	572.2	2.9	0.5	101.7	89.5	2.9	2.8	30.5	0.0	0.0	1.5
37.32	11.38	639.3	2.9	0.5	102.3	92.0	3.2	3.1	35.6	0.0	0.0	1.5
38.14	11.62	739.7	4.4	0.6	103.0	94.4	3.7	3.6	43.4	0.0	0.0	1.5
38.96	11.88	667.7	3.7	0.6	103.7	96.9	3.3	3.2	37.4	0.0	0.0	1.5
39.78	12.12	696.2	3.6	0.5	104.4	99.3	3.5	3.3	39.4	0.0	0.0	1.5
40.60	12.38	668.8	4.3	0.6	105.0	101.8	3.3	3.2	37.0	0.0	0.0	1.5
41.42	12.62	680.8	5.1	0.8	105.7	104.2	3.4	3.2	37.7	0.0	0.0	1.5
42.24	12.88	662.1	6.1	0.9	107.1	106.7	3.3	3.1	35.9	0.0	0.0	1.5

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	724.9	7.0	1.0	109.1	109.1	3.6	3.4	40.5	0.0	0.0	1.5
43.88	13.38	715.7	7.7	1.1	111.2	111.6	3.6	3.3	39.4	0.0	0.0	1.5
44.70	13.62	689.9	7.1	1.0	113.2	114.0	3.4	3.2	37.0	0.0	0.0	1.5
45.52	13.88	1235.9	14.1	1.1	115.3	116.5	4.9	4.5	80.3	30.0	30.0	3.0
46.34	14.12	5492.6	47.8	0.9	117.4	118.9	13.7	12.4	0.0	47.8	38.0	1.0
47.16	14.38	1672.2	31.5	1.9	119.6	121.4	6.7	6.0	114.5	30.0	30.0	3.0
47.98	14.62	3203.8	44.8	1.4	121.7	123.9	10.7	9.5	0.0	31.8	34.0	1.0
48.80	14.88	4720.0	78.9	1.7	123.9	126.3	15.7	13.8	0.0	42.7	38.0	1.0
49.62	15.12	3891.6	40.7	1.0	126.1	128.8	13.0	11.3	0.0	36.9	36.0	1.0
50.44	15.38	1852.5	14.0	0.8	128.2	131.2	7.4	6.4	127.5	30.0	32.0	3.0
51.26	15.62	2226.9	31.7	1.4	130.2	133.7	8.9	7.6	157.0	30.0	32.0	6.0
52.08	15.88	1486.2	15.8	1.1	132.3	136.1	5.9	5.1	97.4	30.0	30.0	3.0
52.90	16.12	3248.8	31.1	1.0	134.4	138.6	10.8	9.1	0.0	30.8	34.0	1.0
53.72	16.38	8392.3	103.1	1.2	136.6	141.0	21.0	17.6	0.0	57.8	40.0	1.0
54.54	16.62	18132.8	139.8	0.8	139.0	143.5	36.3	30.1	0.0	79.6	44.0	1.0
55.36	16.88	6280.7	101.4	1.6	141.3	145.9	20.9	17.2	0.0	49.0	38.0	1.0
56.18	17.12	1552.0	12.2	0.8	143.4	148.4	6.2	5.1	100.8	30.0	30.0	3.0
57.00	17.38	1728.8	10.2	0.6	145.4	150.8	6.9	5.6	114.6	30.0	30.0	3.0
57.82	17.62	7118.8	62.0	0.9	147.6	153.3	17.8	14.3	0.0	52.0	38.0	1.0
58.64	17.88	5754.9	131.0	2.3	149.8	155.7	23.0	18.4	436.0	45.6	38.0	6.0
59.46	18.12	9356.3	135.6	1.4	151.9	158.2	23.4	18.6	0.0	59.4	40.0	1.0
60.28	18.38	17348.9	180.5	1.0	154.3	160.6	34.7	27.3	0.0	76.9	42.0	1.0
61.10	18.62	14626.9	133.2	0.9	156.7	163.1	29.3	22.9	0.0	71.7	42.0	1.0
61.93	18.88	1550.0	17.9	1.2	159.0	165.5	6.2	4.8	98.0	30.0	30.0	3.0
62.75	19.12	1092.5	2.5	0.2	161.0	168.0	4.4	3.4	61.1	30.0	30.0	1.5
63.57	19.38	1049.3	2.7	0.3	163.1	170.4	4.2	3.2	57.3	30.0	30.0	1.5
64.39	19.62	1253.8	7.9	0.6	165.1	172.9	5.0	3.8	73.3	30.0	30.0	1.5
65.21	19.88	1094.0	9.1	0.8	167.1	175.4	4.4	3.3	60.1	30.0	30.0	1.5
66.03	20.12	1714.5	9.2	0.5	169.2	177.8	6.9	5.2	109.4	30.0	30.0	3.0
66.85	20.38	1612.0	13.4	0.8	171.2	180.3	6.4	4.8	100.8	30.0	30.0	3.0
67.67	20.62	1341.2	13.6	1.0	173.3	182.7	5.4	4.0	78.8	30.0	30.0	1.5
68.49	20.88	1132.6	8.7	0.8	175.3	185.2	4.5	3.3	61.8	30.0	30.0	1.5
69.31	21.12	1299.3	9.9	0.8	177.4	187.6	5.2	3.8	74.7	30.0	30.0	1.5
70.13	21.38	1688.3	21.6	1.3	179.4	190.1	6.8	4.9	105.5	30.0	30.0	3.0
70.95	21.62	1741.2	25.0	1.4	181.5	192.5	7.0	5.1	109.4	30.0	30.0	3.0
71.77	21.88	1498.9	15.5	1.0	183.5	195.0	6.0	4.3	89.6	30.0	30.0	1.5
72.59	22.12	1153.9	8.1	0.7	185.6	197.4	4.6	3.3	61.7	30.0	30.0	1.5
73.41	22.38	1182.0	9.6	0.8	187.6	199.9	4.7	3.4	63.6	30.0	30.0	1.5
74.23	22.62	3046.7	29.8	1.0	189.7	202.3	10.2	7.2	0.0	30.0	32.0	1.0
75.05	22.88	6525.1	75.5	1.2	191.9	204.8	21.8	15.4	0.0	45.7	36.0	1.0
75.87	23.12	7469.2	190.1	2.5	194.0	207.2	29.9	21.0	565.4	49.4	38.0	6.0
76.69	23.38	4208.0	39.4	0.9	196.1	209.7	14.0	9.8	0.0	32.8	34.0	1.0
77.51	23.62	2766.3	61.6	2.2	198.2	212.1	11.1	7.7	188.5	30.0	30.0	3.0
78.33	23.88	9504.5	149.8	1.6	200.3	214.6	31.7	21.9	0.0	55.9	38.0	1.0
79.15	24.12	1610.4	32.5	2.0	202.5	217.0	8.1	5.5	95.3	0.0	0.0	1.5
79.97	24.38	1492.6	5.6	0.4	204.5	219.5	6.0	4.1	85.5	30.0	30.0	1.5
80.79	24.62	1581.9	7.0	0.4	206.5	222.0	6.3	4.3	92.3	30.0	30.0	1.5
81.61	24.88	3551.4	61.9	1.7	208.6	224.4	14.2	9.6	249.5	30.0	32.0	6.0
82.43	25.12	2935.9	34.2	1.2	210.7	226.9	9.8	6.6	0.0	30.0	30.0	1.0
83.25	25.38	2349.5	33.1	1.4	212.8	229.3	9.4	6.3	152.6	30.0	30.0	3.0
84.07	25.62	4248.0	90.0	2.1	214.9	231.8	17.0	11.3	304.1	31.8	32.0	6.0
84.89	25.88	1859.3	30.1	1.6	216.9	234.2	7.4	4.9	112.7	30.0	30.0	3.0
85.71	26.12	2038.6	29.7	1.5	219.0	236.7	8.2	5.4	126.6	30.0	30.0	3.0
86.53	26.38	1734.6	18.5	1.1	221.0	239.1	6.9	4.6	102.0	30.0	30.0	1.5
87.35	26.62	4810.5	95.3	2.0	223.1	241.6	16.0	10.5	0.0	34.8	34.0	1.0
88.17	26.88	2911.4	30.1	1.0	225.3	244.0	9.7	6.3	0.0	30.0	30.0	1.0
88.99	27.12	2024.1	19.2	0.9	227.4	246.5	8.1	5.3	124.0	30.0	30.0	3.0
89.81	27.38	1976.8	18.6	0.9	229.4	248.9	7.9	5.1	119.9	30.0	30.0	3.0
90.63	27.62	2166.5	32.9	1.5	231.5	251.4	8.7	5.6	134.7	30.0	30.0	3.0
91.45	27.88	2227.7	19.7	0.9	233.5	253.8	8.9	5.7	139.2	30.0	30.0	3.0
92.27	28.12	2512.0	26.2	1.0	235.6	256.3	10.0	6.4	161.6	30.0	30.0	3.0
93.09	28.38	4296.0	52.4	1.2	237.7	258.7	14.3	9.1	0.0	30.6	32.0	1.0
93.91	28.62	8565.7	117.5	1.4	239.9	261.2	21.4	13.5	0.0	50.3	36.0	1.0
94.73	28.88	2856.6	66.5	2.3	242.1	263.6	11.4	7.2	188.1	30.0	30.0	3.0
95.55	29.12	6039.7	110.9	1.8	244.2	266.1	20.1	12.6	0.0	40.0	34.0	1.0
96.37	29.38	10293.2	148.2	1.4	246.5	268.5	25.7	16.0	0.0	55.2	38.0	1.0
97.19	29.62	2811.2	13.1	0.5	248.7	271.0	9.4	5.8	0.0	30.0	30.0	1.0
98.01	29.88	2409.0	20.1	0.8	250.9	273.5	8.0	5.0	0.0	30.0	30.0	1.0
98.83	30.12	2108.5	24.8	1.2	253.0	275.9	8.4	5.2	126.4	30.0	30.0	1.5

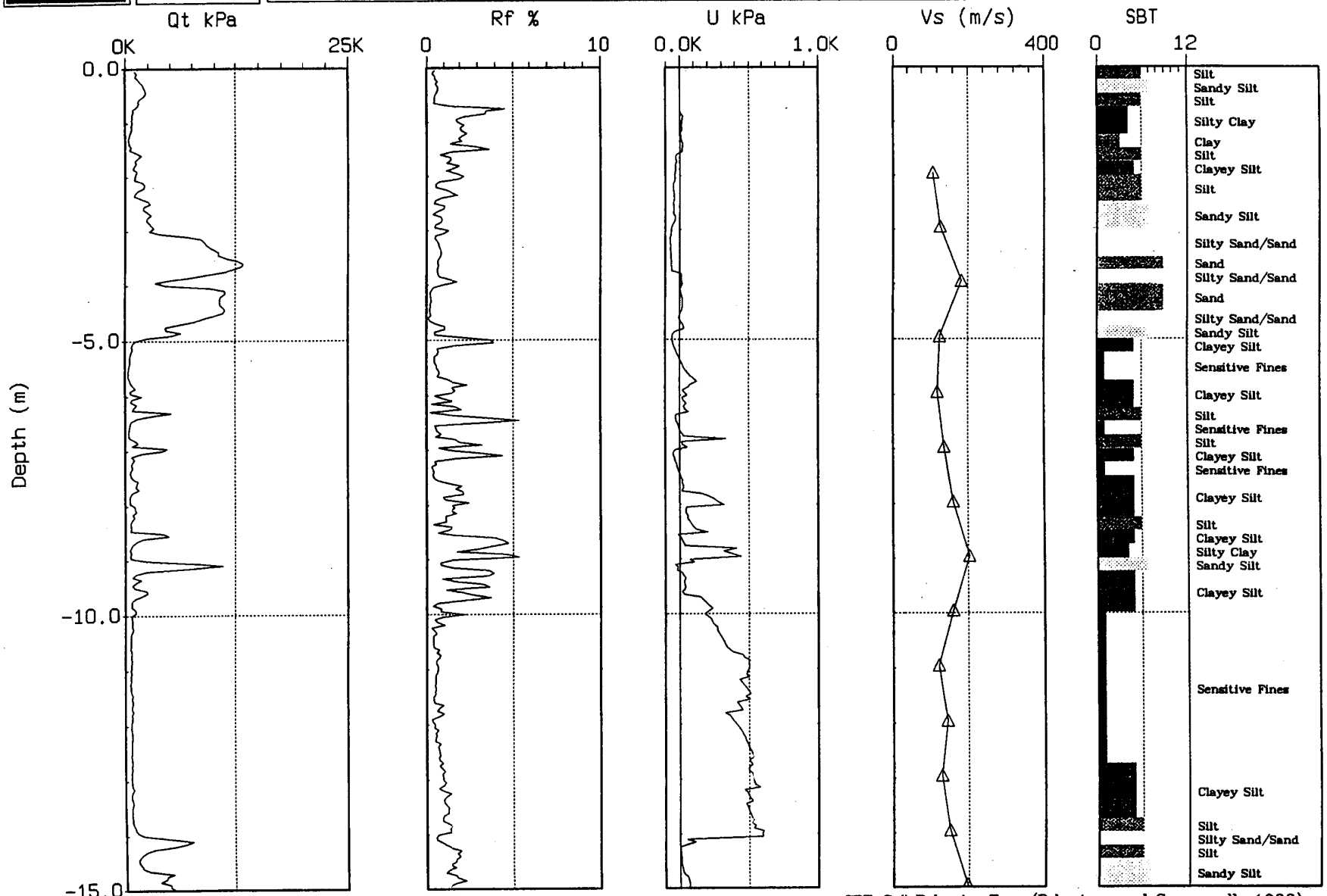
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60 (blows/ft)	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	10560.1	125.4	1.2	255.1	278.4	26.4	16.2	0.0	55.4	38.0	1.0
100.47	30.62	20845.3	219.0	1.1	257.5	280.8	41.7	25.4	0.0	74.8	42.0	1.0
101.29	30.88	21252.9	149.4	0.7	259.9	283.3	42.5	25.8	0.0	75.2	42.0	1.0
102.11	31.12	3407.9	41.4	1.2	262.2	285.7	11.4	6.9	0.0	30.0	30.0	1.0
102.94	31.38	3032.2	7.2	0.2	264.4	288.2	10.1	6.1	0.0	30.0	30.0	1.0
103.76	31.62	2907.5	11.8	0.4	266.6	290.6	9.7	5.8	0.0	30.0	30.0	1.0
104.58	31.88	2892.8	14.2	0.5	268.7	293.1	9.6	5.8	0.0	30.0	30.0	1.0
105.40	32.12	5881.1	59.6	1.0	270.9	295.5	19.6	11.7	0.0	37.8	34.0	1.0
106.22	32.38	21194.9	127.1	0.6	273.2	298.0	42.4	25.1	0.0	74.4	40.0	1.0
107.04	32.62	21579.5	123.9	0.6	275.6	300.4	43.2	25.4	0.0	74.8	40.0	1.0
107.86	32.88	12171.9	164.9	1.4	278.0	302.9	30.4	17.9	0.0	58.3	38.0	1.0
108.68	33.12	16497.8	155.4	0.9	280.4	305.3	33.0	19.3	0.0	66.9	40.0	1.0
109.50	33.38	24772.9	211.1	0.9	282.8	307.8	49.5	28.8	0.0	78.4	42.0	1.0
110.32	33.62	25808.4	366.2	1.4	285.1	310.2	64.5	37.4	0.0	79.4	42.0	1.0
111.14	33.88	31923.6	203.9	0.6	287.5	312.7	63.8	36.9	0.0	85.4	42.0	1.0
111.96	34.12	28048.2	154.6	0.6	290.0	315.1	46.7	26.9	0.0	81.6	42.0	1.0
112.78	34.38	25553.6	193.9	0.8	292.5	317.6	51.1	29.2	0.0	78.8	42.0	1.0

CONETEC

Kleinfelder

Site: I15, S4: 700 W, 06-SC-108
Location: 500 S On Ramp-S

Cone: 20 TON A 040
Date: 06/07/96 15:58



Max. Depth: 34.75 (m)
Depth Inc.: 0.05 (m)

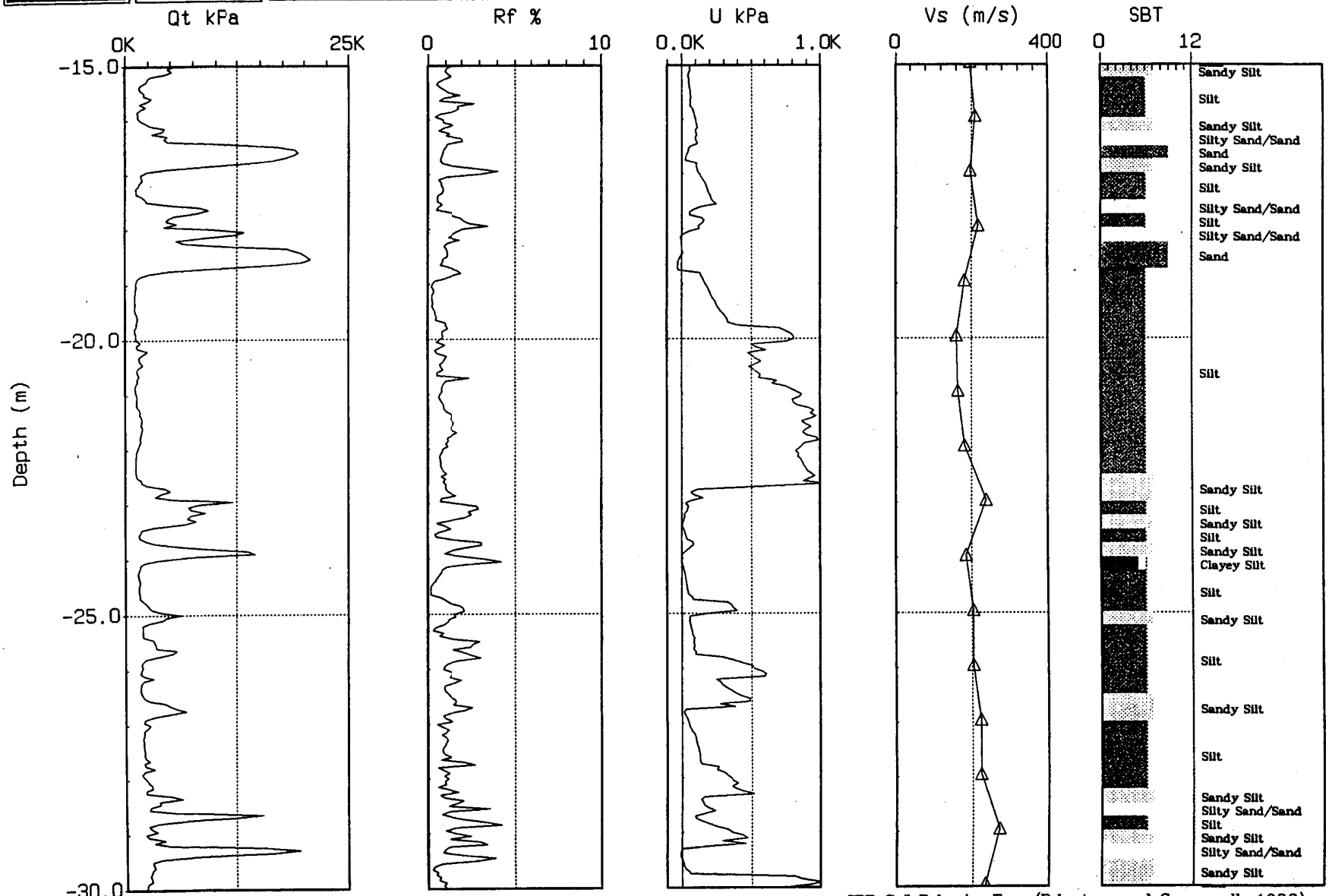
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: 700 W, 06-SC-108
Location: 500 S On Ramp-S

Cone: 20 TON A 040
Date: 06/07/96 15:58



Max. Depth: 34.75 (m)
Depth Inc.: 0.05 (m)

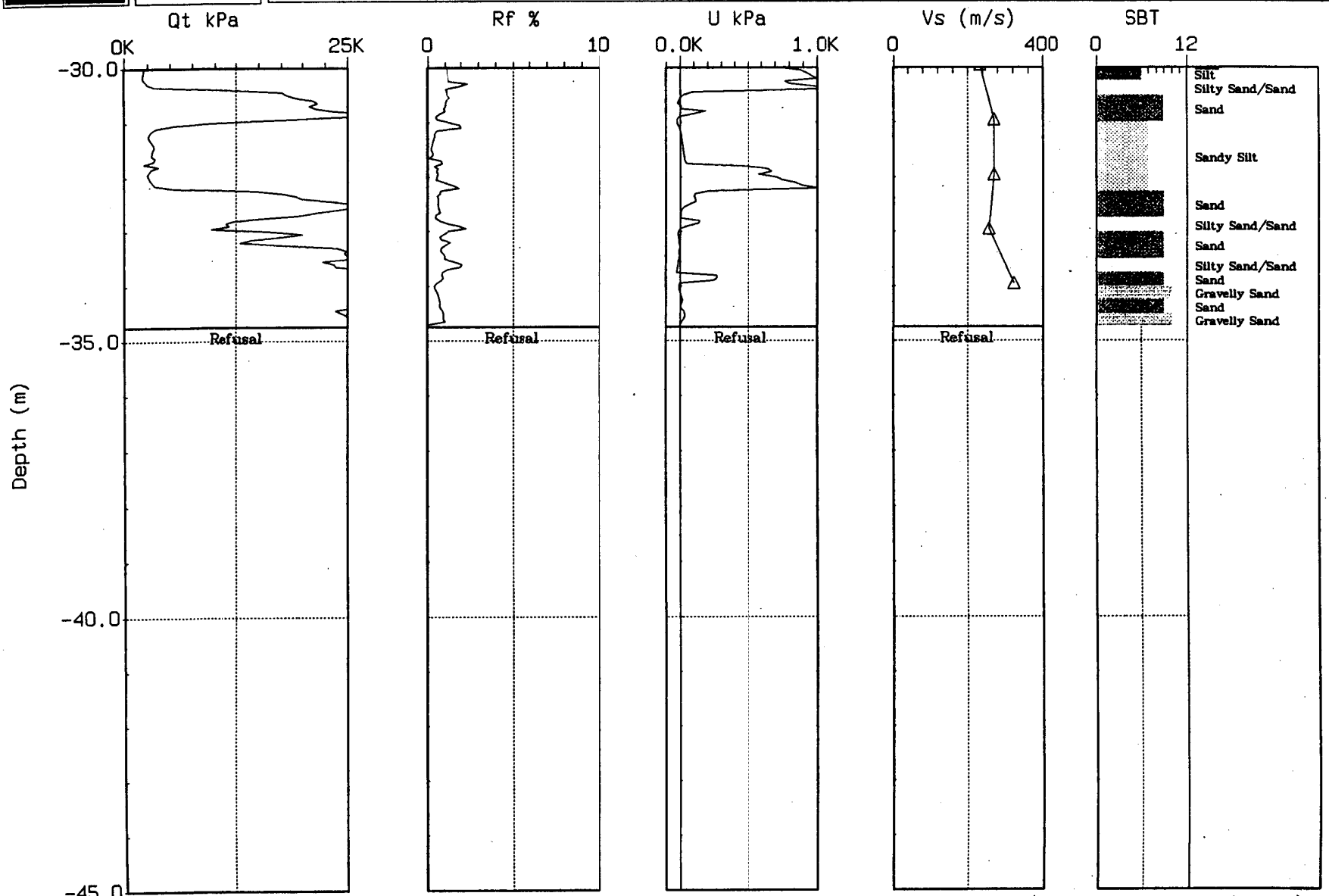
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: 700 W, 06-SC-108
Location: 500 S On Ramp-S

Cone: 20 TON A 040
Date: 06:07:96 15:58



Max. Depth: 34.75 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-108*
Date: *07-Jun-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 040 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
1.45	1.55					
2.45	2.51	8.9	108	353	1.5 - 2.5	4.8 - 8.0
3.45	3.50	7.7	128	418	2.5 - 3.5	8.0 - 11.3
4.45	4.49	5.4	183	601	3.5 - 4.5	11.3 - 14.6
5.45	5.48	7.9	126	413	4.5 - 5.5	14.6 - 17.9
6.45	6.47	8.3	120	394	5.5 - 6.5	17.9 - 21.2
7.45	7.47	7.2	138	454	6.5 - 7.5	21.2 - 24.4
8.45	8.47	6.2	161	528	7.5 - 8.5	24.4 - 27.7
9.45	9.47	4.9	204	668	8.5 - 9.5	27.7 - 31.0
10.45	10.46	6.2	161	528	9.5 - 10.5	31.0 - 34.3
11.45	11.46	8.1	123	405	10.5 - 11.5	34.3 - 37.6
12.45	12.46	6.9	145	475	11.5 - 12.5	37.6 - 40.8
13.45	13.46	7.7	130	426	12.5 - 13.5	40.8 - 44.1
14.45	14.46	6.6	151	497	13.5 - 14.5	44.1 - 47.4
15.45	15.46	5.1	196	643	14.5 - 15.5	47.4 - 50.7
16.45	16.46	4.8	208	683	15.5 - 16.5	50.7 - 54.0
17.45	17.46	5.1	196	643	16.5 - 17.5	54.0 - 57.3
18.45	18.46	4.6	217	713	17.5 - 18.5	57.3 - 60.5
19.45	19.46	5.5	182	596	18.5 - 19.5	60.5 - 63.8
20.45	20.46	6.2	161	529	19.5 - 20.5	63.8 - 67.1
21.45	21.46	6.1	164	538	20.5 - 21.5	67.1 - 70.4
22.45	22.46	5.5	182	596	21.5 - 22.5	70.4 - 73.7
23.45	23.46	4.2	238	781	22.5 - 23.5	73.7 - 76.9
24.45	24.46	5.4	185	607	23.5 - 24.5	76.9 - 80.2
25.45	25.46	4.9	204	669	24.5 - 25.5	80.2 - 83.5
26.45	26.46	4.9	204	669	25.5 - 26.5	83.5 - 86.8
27.45	27.46	4.5	222	729	26.5 - 27.5	86.8 - 90.1
28.45	28.46	4.5	222	729	27.5 - 28.5	90.1 - 93.3
29.45	29.46	3.7	270	887	28.5 - 29.5	93.3 - 96.6
30.45	30.46	4.3	233	763	29.5 - 30.5	96.6 - 99.9
31.45	31.45	3.7	270	887	30.5 - 31.5	99.9 - 103.2
32.45	32.45	3.7	270	887	31.5 - 32.5	103.2 - 106.5
33.45	33.45	3.9	256	841	32.5 - 33.5	106.5 - 109.7
34.45	34.45	3.1	323	1058	33.5 - 34.5	109.7 - 113.0

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0804-2149-1438
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15, S4: 500 S, 06-SC-111
Location: 500 S On Rmp-N
Cone: 20 TON A 040
CPT Date: 96/12/06
CPT Time: 07:44
CPT File: KA06S111.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	1.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
1.23	0.38	1.0	0.0	0.0	7.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
2.05	0.62	1003.2	16.2	1.6	12.0	0.0	5.0	10.0	79.3	0.0	0.0	10.0
2.87	0.88	1601.5	48.2	3.0	16.5	0.0	8.0	16.0	126.8	0.0	0.0	10.0
3.69	1.12	1413.5	38.8	2.7	21.0	0.0	7.1	14.1	111.4	0.0	0.0	10.0
4.51	1.38	5938.7	79.4	1.3	25.6	0.0	19.8	38.3	0.0	71.9	46.0	1.0
5.33	1.62	4924.9	33.4	0.7	30.2	0.0	12.3	21.9	0.0	64.1	44.0	1.0
6.15	1.88	3767.6	37.9	1.0	34.9	0.0	12.6	20.8	0.0	54.4	42.0	1.0
6.97	2.12	3397.1	31.8	0.9	38.3	1.2	11.3	17.9	0.0	50.1	42.0	1.0
7.79	2.38	2346.4	30.6	1.3	40.4	3.7	9.4	14.4	184.2	38.7	40.0	10.0
8.61	2.62	2312.5	26.1	1.1	42.5	6.1	9.2	13.9	181.1	37.6	40.0	10.0
9.43	2.88	2286.6	17.9	0.8	44.6	8.6	7.6	11.2	0.0	36.6	38.0	1.0
10.25	3.12	884.1	13.0	1.5	46.7	11.0	4.4	6.3	66.1	0.0	0.0	6.0
11.07	3.38	1113.7	17.7	1.6	48.8	13.5	5.6	7.8	84.1	0.0	0.0	6.0
11.89	3.62	3809.4	36.8	1.0	50.9	15.9	12.7	17.4	0.0	49.3	40.0	1.0
12.71	3.88	12986.2	70.6	0.5	53.2	18.4	26.0	34.9	0.0	83.8	46.0	1.0
13.53	4.12	15366.6	119.2	0.8	55.6	20.8	30.7	40.3	0.0	88.0	46.0	1.0
14.35	4.38	14672.6	107.4	0.7	58.0	23.3	29.3	37.7	0.0	86.1	46.0	1.0
15.17	4.62	5779.1	73.9	1.3	60.3	25.8	19.3	24.3	0.0	58.8	42.0	1.0
15.99	4.88	1335.0	16.8	1.3	62.4	28.2	5.3	6.6	99.6	30.0	34.0	6.0
16.81	5.12	1013.1	4.4	0.4	64.5	30.7	4.1	4.9	73.4	30.0	32.0	6.0
17.63	5.38	897.4	5.2	0.6	66.5	33.1	3.6	4.3	63.8	30.0	30.0	3.0
18.45	5.62	745.9	4.7	0.6	68.6	35.6	3.7	4.4	51.3	0.0	0.0	3.0
19.27	5.88	760.4	6.1	0.8	70.6	38.0	3.8	4.4	52.1	0.0	0.0	3.0
20.09	6.12	1188.3	12.1	1.0	72.7	40.5	4.8	5.5	86.0	30.0	32.0	6.0
20.92	6.38	1119.1	9.4	0.8	74.7	42.9	4.5	5.1	80.1	30.0	32.0	6.0
21.74	6.62	2098.2	29.0	1.4	76.8	45.4	8.4	9.4	158.1	30.0	34.0	6.0
22.56	6.88	591.6	8.9	1.5	78.8	47.8	3.0	3.3	37.2	0.0	0.0	1.5
23.38	7.12	1734.6	24.9	1.4	80.8	50.3	6.9	7.6	128.3	30.0	34.0	6.0
24.20	7.38	957.9	12.7	1.3	82.9	52.7	4.8	5.1	65.8	0.0	0.0	3.0
25.02	7.62	935.2	10.7	1.1	84.9	55.2	4.7	5.0	63.6	0.0	0.0	3.0
25.84	7.88	990.8	14.7	1.5	87.0	57.6	5.0	5.2	67.7	0.0	0.0	3.0
26.66	8.12	847.4	10.6	1.3	89.0	60.1	4.2	4.4	55.9	0.0	0.0	3.0
27.48	8.38	829.3	11.8	1.4	91.1	62.5	4.1	4.3	54.1	0.0	0.0	3.0
28.30	8.62	1199.6	15.4	1.3	93.1	65.0	4.8	4.9	83.3	30.0	30.0	3.0
29.12	8.88	1093.6	17.1	1.6	95.2	67.4	5.5	5.5	74.5	0.0	0.0	3.0
29.94	9.12	1795.7	24.1	1.3	97.2	69.9	7.2	7.1	130.3	30.0	32.0	6.0
30.76	9.38	2664.3	32.5	1.2	99.3	72.3	10.7	10.5	199.4	30.0	34.0	6.0
31.58	9.62	1200.6	28.8	2.4	101.3	74.8	6.0	5.8	82.0	0.0	0.0	3.0
32.40	9.88	3580.5	52.1	1.5	103.4	77.3	11.9	11.5	0.0	37.4	36.0	1.0
33.22	10.12	1475.0	15.3	1.0	105.5	79.7	5.9	5.6	103.2	30.0	30.0	3.0
34.04	10.38	1112.9	3.2	0.3	107.6	82.2	4.5	4.2	73.9	30.0	30.0	3.0
34.86	10.62	903.6	2.0	0.2	109.6	84.6	3.6	3.4	56.7	30.0	30.0	3.0
35.68	10.88	824.5	2.0	0.2	111.0	87.1	4.1	3.8	50.1	0.0	0.0	1.5
36.50	11.12	972.0	2.0	0.2	112.4	89.5	3.9	3.6	61.6	30.0	30.0	3.0
37.32	11.38	886.3	2.1	0.2	113.7	92.0	4.4	4.1	54.4	0.0	0.0	1.5
38.14	11.62	800.8	2.0	0.2	114.4	94.4	4.0	3.7	47.4	0.0	0.0	1.5
38.96	11.88	995.6	2.5	0.3	115.8	96.9	4.0	3.6	62.6	30.0	30.0	3.0
39.78	12.12	988.5	3.1	0.3	117.8	99.3	4.0	3.6	61.7	30.0	30.0	3.0
40.60	12.38	1066.3	4.1	0.4	119.8	101.8	4.3	3.8	67.6	30.0	30.0	3.0
41.42	12.62	1110.6	2.0	0.2	121.9	104.2	4.4	3.9	70.8	30.0	30.0	3.0
42.24	12.88	1178.9	2.4	0.2	123.9	106.7	4.7	4.1	75.9	30.0	30.0	3.0

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	1265.9	4.7	0.4	126.0	109.1	5.1	4.4	82.5	30.0	30.0	3.0
43.88	13.38	1088.5	4.3	0.4	128.0	111.6	4.4	3.8	67.9	30.0	30.0	3.0
44.70	13.62	940.7	4.0	0.4	130.1	114.0	3.8	3.2	55.7	30.0	30.0	1.5
45.52	13.88	1103.6	9.7	0.9	132.1	116.5	4.4	3.8	68.4	30.0	30.0	3.0
46.34	14.12	2329.3	20.5	0.9	134.2	118.9	9.3	7.9	166.1	30.0	32.0	6.0
47.16	14.38	2158.9	34.6	1.6	136.2	121.4	8.6	7.2	152.1	30.0	32.0	6.0
47.98	14.62	3010.5	42.1	1.4	138.3	123.9	12.0	10.0	219.9	30.0	34.0	6.0
48.80	14.88	5175.8	49.9	1.0	140.4	126.3	17.3	14.3	0.0	43.5	38.0	1.0
49.62	15.12	2926.9	30.7	1.0	142.6	128.8	9.8	8.0	0.0	30.0	32.0	1.0
50.44	15.38	1794.8	21.3	1.2	144.7	131.2	7.2	5.8	121.5	30.0	30.0	3.0
51.26	15.62	2727.0	33.1	1.2	146.7	133.7	10.9	8.8	195.7	30.0	32.0	6.0
52.08	15.88	2101.4	19.9	0.9	148.8	136.1	8.4	6.7	145.3	30.0	30.0	3.0
52.90	16.12	1694.1	16.7	1.0	150.8	138.6	6.8	5.4	112.4	30.0	30.0	3.0
53.72	16.38	2882.2	40.1	1.4	152.9	141.0	11.5	9.1	207.1	30.0	32.0	6.0
54.54	16.62	3757.1	50.4	1.3	155.0	143.5	12.5	9.8	0.0	32.9	34.0	1.0
55.36	16.88	9400.9	86.9	0.9	157.2	145.9	23.5	18.3	0.0	59.0	40.0	1.0
56.18	17.12	7245.3	64.3	0.9	159.5	148.4	18.1	14.0	0.0	51.3	38.0	1.0
57.00	17.38	1737.7	7.8	0.5	161.7	150.8	7.0	5.4	114.0	30.0	30.0	3.0
57.82	17.62	1395.5	5.7	0.4	163.7	153.3	5.6	4.3	86.3	30.0	30.0	3.0
58.64	17.88	1151.4	3.8	0.3	165.8	155.7	4.6	3.5	66.4	30.0	30.0	1.5
59.46	18.12	1525.2	5.7	0.4	167.8	158.2	6.1	4.6	95.9	30.0	30.0	3.0
60.28	18.38	3656.5	31.7	0.9	169.9	160.6	12.2	9.2	0.0	30.8	34.0	1.0
61.10	18.62	14982.2	107.1	0.7	172.2	163.1	30.0	22.3	0.0	71.1	42.0	1.0
61.93	18.88	17073.6	168.4	1.0	174.6	165.5	34.1	25.3	0.0	74.6	42.0	1.0
62.75	19.12	13420.6	194.3	1.4	177.0	168.0	33.6	24.7	0.0	67.5	40.0	1.0
63.57	19.38	17557.6	180.6	1.0	179.4	170.4	35.1	25.7	0.0	75.0	42.0	1.0
64.39	19.62	17492.7	170.1	1.0	181.8	172.9	35.0	25.4	0.0	74.7	42.0	1.0
65.21	19.88	19043.3	150.6	0.8	184.2	175.4	38.1	27.5	0.0	77.0	42.0	1.0
66.03	20.12	8518.5	119.6	1.4	186.6	177.8	21.3	15.3	0.0	53.7	38.0	1.0
66.85	20.38	3793.6	64.4	1.7	188.8	180.3	12.6	9.0	0.0	30.4	32.0	1.0
67.67	20.62	7380.7	108.6	1.5	191.0	182.7	24.6	17.4	0.0	49.3	38.0	1.0
68.49	20.88	15658.9	171.0	1.1	193.2	185.2	39.1	27.6	0.0	70.7	42.0	1.0
69.31	21.12	13025.6	188.4	1.4	195.5	187.6	32.6	22.8	0.0	65.2	40.0	1.0
70.13	21.38	20347.4	290.9	1.4	197.8	190.1	50.9	35.4	0.0	77.9	42.0	1.0
70.95	21.62	26602.9	141.3	0.5	200.2	192.5	44.3	30.7	0.0	85.4	44.0	1.0
71.77	21.88	18995.6	120.2	0.6	202.7	195.0	38.0	26.1	0.0	75.5	42.0	1.0
72.59	22.12	8837.1	100.4	1.1	205.1	197.4	22.1	15.1	0.0	53.4	38.0	1.0
73.41	22.38	2177.4	17.9	0.8	207.2	199.9	8.7	5.9	141.6	30.0	30.0	3.0
74.23	22.62	2240.6	16.7	0.7	209.4	202.3	7.5	5.1	0.0	30.0	30.0	1.0
75.05	22.88	4806.1	57.5	1.2	211.5	204.8	16.0	10.8	0.0	35.5	34.0	1.0
75.87	23.12	5094.7	84.4	1.7	213.7	207.2	17.0	11.4	0.0	37.1	34.0	1.0
76.69	23.38	8328.3	103.6	1.2	215.9	209.7	20.8	13.9	0.0	51.0	38.0	1.0
77.51	23.62	5757.9	117.0	2.0	218.2	212.1	19.2	12.7	0.0	40.3	34.0	1.0
78.33	23.88	4577.2	105.0	2.3	220.3	214.6	18.3	12.1	331.4	33.6	32.0	6.0
79.15	24.12	9040.7	163.1	1.8	222.4	217.0	30.1	19.8	0.0	52.9	38.0	1.0
79.97	24.38	2610.1	31.2	1.2	224.5	219.5	10.4	6.8	173.3	30.0	30.0	3.0
80.79	24.62	1647.0	15.1	0.9	226.5	222.0	6.6	4.3	95.9	30.0	30.0	1.5
81.61	24.88	1743.8	10.5	0.6	228.6	224.4	7.0	4.5	103.3	30.0	30.0	1.5
82.43	25.12	1824.8	18.4	1.0	230.6	226.9	7.3	4.7	109.4	30.0	30.0	1.5
83.25	25.38	2409.3	42.7	1.8	232.7	229.3	9.6	6.2	155.8	30.0	30.0	3.0
84.07	25.62	2349.0	48.1	2.0	234.7	231.8	9.4	6.0	150.6	30.0	30.0	3.0
84.89	25.88	2042.2	48.9	2.4	236.8	234.2	8.2	5.2	125.7	30.0	30.0	3.0
85.71	26.12	1985.0	46.8	2.4	238.8	236.7	7.9	5.0	120.8	30.0	30.0	3.0
86.53	26.38	1958.3	48.0	2.5	240.9	239.1	9.8	6.2	118.3	0.0	0.0	1.5
87.35	26.62	2159.5	42.0	1.9	242.9	241.6	8.6	5.4	134.0	30.0	30.0	3.0
88.17	26.88	3710.1	63.2	1.7	245.0	244.0	14.8	9.3	257.7	30.0	32.0	6.0
88.99	27.12	4025.5	86.0	2.1	247.0	246.5	16.1	10.0	282.6	30.0	32.0	6.0
89.81	27.38	4253.9	77.3	1.8	249.1	248.9	14.2	8.8	0.0	30.0	32.0	1.0
90.63	27.62	2136.3	41.5	1.9	251.2	251.4	8.5	5.3	130.7	30.0	30.0	3.0
91.45	27.88	3195.5	72.8	2.3	253.3	253.8	12.8	7.9	215.1	30.0	30.0	3.0
92.27	28.12	2316.1	29.4	1.3	255.3	256.3	9.3	5.7	144.4	30.0	30.0	3.0
93.09	28.38	5215.9	102.5	2.0	257.4	258.7	17.4	10.6	0.0	35.1	32.0	1.0
93.91	28.62	8361.2	148.8	1.8	259.6	261.2	27.9	16.9	0.0	48.5	36.0	1.0
94.73	28.88	4767.8	97.3	2.0	261.7	263.6	19.1	11.5	339.4	32.3	32.0	6.0
95.55	29.12	8505.1	118.6	1.4	263.9	266.1	21.3	12.8	0.0	48.7	36.0	1.0
96.37	29.38	8499.1	106.9	1.3	266.2	268.5	21.2	12.7	0.0	48.6	36.0	1.0
97.19	29.62	1989.7	20.9	1.1	268.4	271.0	8.0	4.8	116.0	30.0	30.0	1.5
98.01	29.88	2039.4	9.3	0.5	270.5	273.5	6.8	4.0	0.0	30.0	30.0	1.0
98.83	30.12	1905.1	7.6	0.4	272.7	275.9	6.4	3.8	0.0	30.0	30.0	1.0

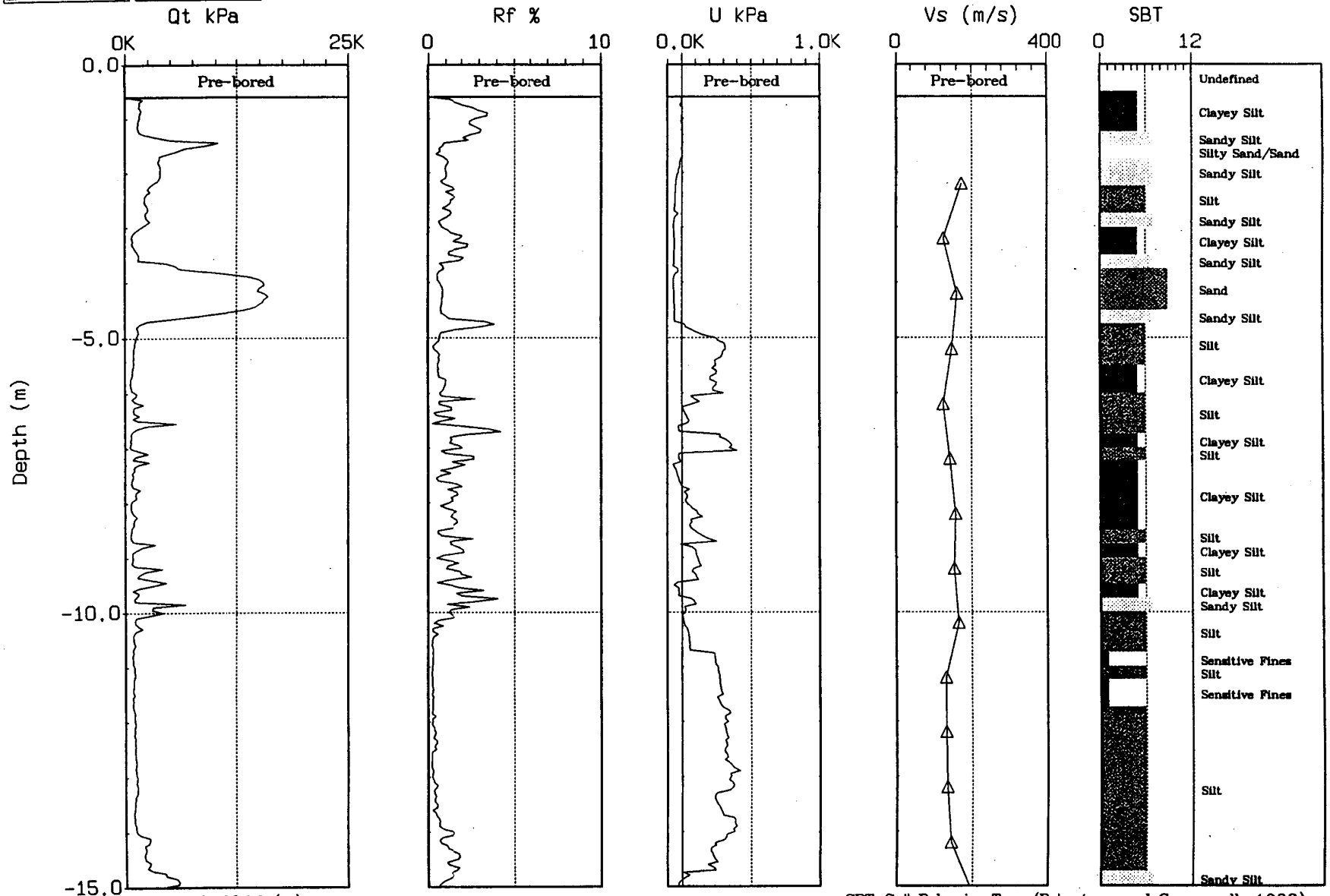
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	2863.1	42.7	1.5	274.8	278.4	11.5	6.8	184.8	30.0	30.0	3.0
100.47	30.62	11241.7	140.4	1.2	276.9	280.8	28.1	16.5	0.0	56.0	38.0	1.0
101.29	30.88	11133.9	170.7	1.5	279.2	283.3	27.8	16.3	0.0	55.6	38.0	1.0
102.11	31.12	9926.2	189.3	1.9	281.5	285.7	33.1	19.3	0.0	52.2	36.0	1.0
102.94	31.38	20359.2	151.8	0.7	283.8	288.2	40.7	23.7	0.0	72.7	40.0	1.0
103.76	31.62	19244.3	109.5	0.6	286.2	290.6	38.5	22.3	0.0	71.0	40.0	1.0
104.58	31.88	22347.2	175.3	0.8	288.6	293.1	44.7	25.7	0.0	75.1	40.0	1.0
105.40	32.12	19742.0	100.6	0.5	291.0	295.5	39.5	22.7	0.0	71.5	40.0	1.0
106.22	32.38	23306.1	145.8	0.6	293.5	298.0	46.6	26.6	0.0	76.1	42.0	1.0

CONETEC

Kleinfelder

Site: I15, S4: 500 S, 06-SC-111
Location: 500 S On Ramp-N

Cone: 20 TON A 040
Date: 06:12:96 07:44



Max. Depth: 32.70 (m)
Depth Inc.: 0.05 (m)

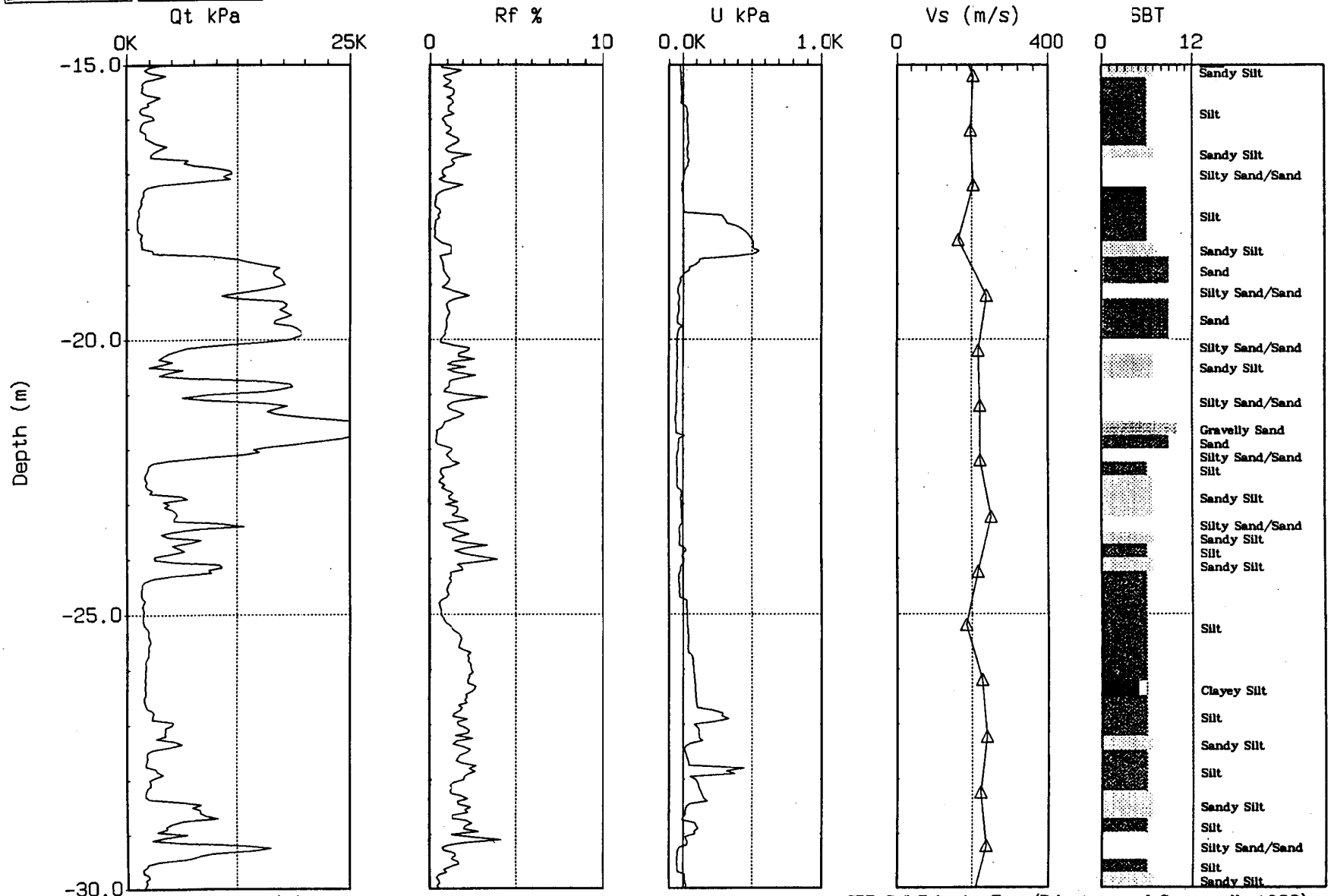
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: 500 S, 06-SC-111
Location: 500 S On Ramp-N

Cone: 20 TON A 040
Date: 06:12:96 07:44



Max. Depth: 32.70 (m)
Depth Inc.: 0.05 (m)

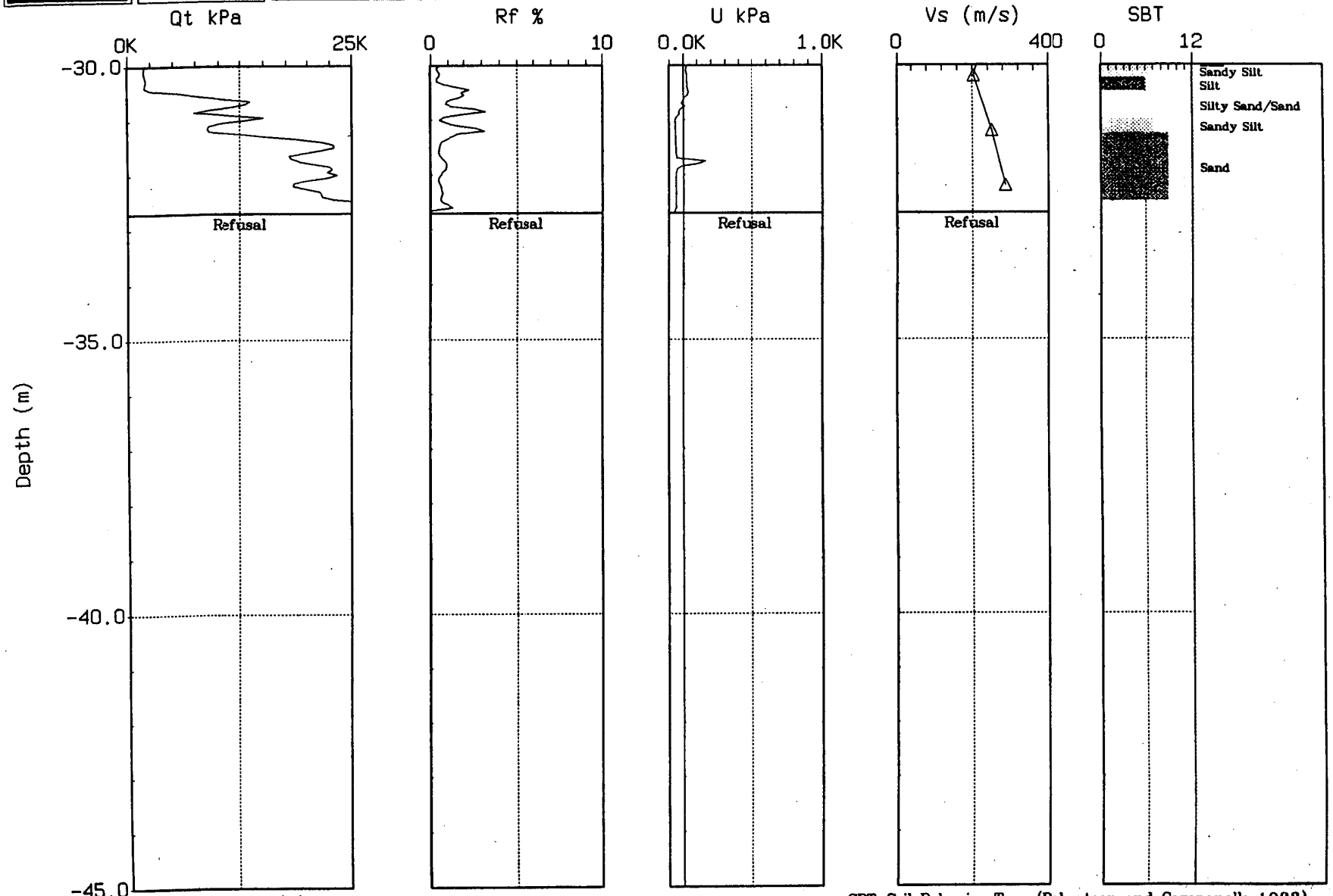
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: 500 S, 06-SC-111
Location: 500 S On Ramp-N

Cone: 20 TON A 040
Date: 06:12:96 07:44



Max. Depth: 32.70 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-111*
Date: *12-Jun-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 040 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
1.70	1.79					
2.70	2.76	5.6	* 173	567	1.7 - 2.7	5.6 - 8.9
3.70	3.74	7.8	126	414	2.7 - 3.7	8.9 - 12.1
4.70	4.73	6.1	162	533	3.7 - 4.7	12.1 - 15.4
5.70	5.73	6.7	* 148	487	4.7 - 5.7	15.4 - 18.7
6.70	6.72	7.9	126	414	5.7 - 6.7	18.7 - 22.0
7.70	7.72	6.9	144	474	6.7 - 7.7	22.0 - 25.3
8.70	8.72	6.3	158	520	7.7 - 8.7	25.3 - 28.5
9.70	9.72	6.5	154	504	8.7 - 9.7	28.5 - 31.8
10.70	10.71	6.0	* 166	546	9.7 - 10.7	31.8 - 35.1
11.70	11.71	7.5	133	437	10.7 - 11.7	35.1 - 38.4
12.70	12.71	7.5	133	437	11.7 - 12.7	38.4 - 41.7
13.70	13.71	7.4	135	443	12.7 - 13.7	41.7 - 44.9
14.70	14.71	6.9	145	475	13.7 - 14.7	44.9 - 48.2
15.70	15.71	4.9	* 204	669	14.7 - 15.7	48.2 - 51.5
16.70	16.71	5.1	196	643	15.7 - 16.7	51.5 - 54.8
17.70	17.71	4.9	204	669	16.7 - 17.7	54.8 - 58.1
18.70	18.71	6.1	164	538	17.7 - 18.7	58.1 - 61.4
19.70	19.71	4.2	238	781	18.7 - 19.7	61.4 - 64.6
20.70	20.71	4.6	* 217	713	19.7 - 20.7	64.6 - 67.9
21.70	21.71	4.5	222	729	20.7 - 21.7	67.9 - 71.2
22.70	22.71	4.5	222	729	21.7 - 22.7	71.2 - 74.5
23.75	23.76	4.2	250	820	22.7 - 23.8	74.5 - 77.9
24.70	24.71	4.4	216	708	23.8 - 24.7	77.9 - 81.0
25.70	25.71	5.4	* 185	607	24.7 - 25.7	81.0 - 84.3
26.70	26.71	4.4	227	745	25.7 - 26.7	84.3 - 87.6
27.75	27.76	4.4	239	783	26.7 - 27.8	87.6 - 91.0
28.75	28.76	4.5	222	729	27.8 - 28.8	91.0 - 94.3
29.70	29.71	4.0	237	779	28.8 - 29.7	94.3 - 97.4
30.70	30.71	4.9	* 204	669	29.7 - 30.7	97.4 - 100.7
31.70	31.70	4.0	250	820	30.7 - 31.7	100.7 - 104.0
32.70	32.70	3.5	286	937	31.7 - 32.7	104.0 - 107.3

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0804-2149-1625
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15, S4: I15 R of W, 06-SC-113
Location: EB I80 Off Rmp-N
Cone: 20 TON A 040
CPT Date: 96/10/06
CPT Time: 23:57
CPT File: KA06S113.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	8897.5	88.3	1.0	2.4	0.0	22.2	44.5	0.0	95.0	50.0	1.0
1.23	0.38	6308.5	113.2	1.8	7.1	0.0	21.0	42.1	0.0	92.1	50.0	1.0
2.05	0.62	4448.2	54.4	1.2	11.7	0.0	14.8	29.7	0.0	74.8	48.0	1.0
2.87	0.88	3114.1	28.0	0.9	16.3	0.0	10.4	20.8	0.0	59.8	44.0	1.0
3.69	1.12	2094.9	25.9	1.2	20.9	0.0	8.4	16.8	165.9	44.9	42.0	10.0
4.51	1.38	1699.2	35.2	2.1	25.4	0.0	6.8	13.2	133.9	36.1	40.0	10.0
5.33	1.62	2768.3	25.6	0.9	29.9	0.0	9.2	16.5	0.0	47.7	42.0	1.0
6.15	1.88	5317.1	43.2	0.8	34.6	0.0	13.3	22.1	0.0	64.4	44.0	1.0
6.97	2.12	6464.4	58.6	0.9	38.1	1.2	16.2	25.6	0.0	68.6	44.0	1.0
7.79	2.38	8934.7	73.5	0.8	40.4	3.7	22.3	34.4	0.0	77.0	46.0	1.0
8.61	2.62	14677.1	107.7	0.7	42.8	6.1	29.4	43.9	0.0	90.4	48.0	1.0
9.43	2.88	14902.0	110.2	0.7	45.2	8.6	29.8	43.4	0.0	90.1	48.0	1.0
10.25	3.12	16559.3	73.9	0.4	47.7	11.0	33.1	47.0	0.0	92.4	48.0	1.0
11.07	3.38	20040.5	85.7	0.4	50.1	13.5	40.1	55.4	0.0	95.0	48.0	1.0
11.89	3.62	18046.0	58.5	0.3	52.5	15.9	36.1	48.8	0.0	93.4	48.0	1.0
12.71	3.88	15444.6	13.9	0.1	54.9	18.4	30.9	40.8	0.0	88.3	46.0	1.0
13.53	4.12	12237.7	11.5	0.1	57.3	20.8	24.5	31.6	0.0	81.0	46.0	1.0
14.35	4.38	4375.3	27.8	0.6	59.6	23.3	14.6	18.5	0.0	51.0	40.0	1.0
15.17	4.62	1953.4	19.7	1.0	61.7	25.8	7.8	9.7	149.3	30.0	36.0	6.0
15.99	4.88	2512.1	42.7	1.7	63.8	28.2	10.0	12.3	193.6	34.1	38.0	6.0
16.81	5.12	1203.0	20.8	1.7	65.8	30.7	6.0	7.3	88.5	0.0	0.0	6.0
17.63	5.38	1104.5	17.3	1.6	67.9	33.1	5.5	6.6	80.3	0.0	0.0	6.0
18.45	5.62	923.1	10.1	1.1	69.9	35.6	4.6	5.4	65.4	0.0	0.0	3.0
19.27	5.88	740.3	5.8	0.8	72.0	38.0	3.7	4.3	50.4	0.0	0.0	3.0
20.09	6.12	629.1	4.8	0.8	73.3	40.5	3.1	3.6	41.2	0.0	0.0	3.0
20.92	6.38	528.5	2.3	0.4	74.0	42.9	2.6	3.0	32.9	0.0	0.0	1.5
21.74	6.62	458.6	2.1	0.5	74.7	45.4	2.3	2.6	27.1	0.0	0.0	1.5
22.56	6.88	455.6	2.3	0.5	75.4	47.8	2.3	2.6	26.6	0.0	0.0	1.5
23.38	7.12	425.6	2.9	0.7	76.0	50.3	2.1	2.4	23.9	0.0	0.0	1.5
24.20	7.38	949.2	5.9	0.6	77.4	52.7	3.8	4.2	65.5	30.0	30.0	3.0
25.02	7.62	1925.2	16.0	0.8	79.4	55.2	7.7	8.5	143.2	30.0	34.0	6.0
25.84	7.88	2758.9	29.4	1.1	81.6	57.6	9.2	10.0	0.0	33.3	36.0	1.0
26.66	8.12	641.5	2.4	0.4	83.0	60.1	3.2	3.4	39.9	0.0	0.0	1.5
27.48	8.38	3785.7	41.3	1.1	84.4	62.5	12.6	13.4	0.0	41.9	38.0	1.0
28.30	8.62	2256.7	42.6	1.9	86.5	65.0	9.0	9.5	168.4	30.0	34.0	6.0
29.12	8.88	905.9	2.4	0.3	88.6	67.4	3.6	3.8	60.0	30.0	30.0	3.0
29.94	9.12	1321.2	16.4	1.2	90.6	69.9	5.3	5.4	92.9	30.0	32.0	6.0
30.76	9.38	996.5	6.8	0.7	92.7	72.3	4.0	4.1	66.5	30.0	30.0	3.0
31.58	9.62	1088.7	9.0	0.8	94.7	74.8	4.4	4.4	73.5	30.0	30.0	3.0
32.40	9.88	3166.1	35.8	1.1	96.8	77.3	10.6	10.5	0.0	34.8	36.0	1.0
33.22	10.12	1352.7	38.8	2.9	98.9	79.7	6.8	6.7	93.9	0.0	0.0	3.0
34.04	10.38	1663.1	32.9	2.0	101.0	82.2	6.7	6.5	118.4	30.0	32.0	6.0
34.86	10.62	1183.1	3.8	0.3	103.0	84.6	4.7	4.6	79.6	30.0	30.0	3.0
35.68	10.88	1994.4	29.5	1.5	105.1	87.1	8.0	7.6	144.2	30.0	32.0	6.0
36.50	11.12	1491.7	10.8	0.7	107.1	89.5	6.0	5.6	103.6	30.0	30.0	3.0
37.32	11.38	3777.2	65.3	1.7	109.2	92.0	15.1	14.2	286.1	38.1	36.0	6.0
38.14	11.62	3454.9	81.1	2.3	111.2	94.4	13.8	12.8	259.9	35.3	36.0	6.0
38.96	11.88	1003.1	4.6	0.5	113.3	96.9	4.0	3.7	63.4	30.0	30.0	3.0
39.78	12.12	846.5	2.7	0.3	114.6	99.3	4.2	3.9	50.6	0.0	0.0	1.5
40.60	12.38	915.3	3.0	0.3	116.0	101.8	3.7	3.3	55.8	30.0	30.0	1.5
41.42	12.62	888.0	3.7	0.4	118.0	104.2	3.6	3.2	53.3	30.0	30.0	1.5
42.24	12.88	810.2	2.5	0.3	119.4	106.7	4.1	3.6	46.7	0.0	0.0	1.5

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	940.5	4.2	0.5	120.7	109.1	3.8	3.4	56.8	30.0	30.0	1.5
43.88	13.38	906.2	3.8	0.4	122.8	111.6	3.6	3.2	53.7	30.0	30.0	1.5
44.70	13.62	892.0	4.3	0.5	124.8	114.0	3.6	3.1	52.3	30.0	30.0	1.5
45.52	13.88	922.4	6.3	0.7	126.9	116.5	3.7	3.2	54.3	30.0	30.0	1.5
46.34	14.12	945.5	7.1	0.8	128.9	118.9	3.8	3.3	55.8	30.0	30.0	1.5
47.16	14.38	929.5	6.4	0.7	131.0	121.4	3.7	3.2	54.2	30.0	30.0	1.5
47.98	14.62	926.8	6.8	0.7	133.0	123.9	3.7	3.1	53.6	30.0	30.0	1.5
48.80	14.88	963.8	8.8	0.9	135.1	126.3	3.9	3.2	56.2	30.0	30.0	1.5
49.62	15.12	1631.9	31.4	1.9	137.1	128.8	6.5	5.5	109.3	30.0	30.0	3.0
50.44	15.38	3739.8	60.2	1.6	139.2	131.2	12.5	10.3	0.0	34.3	34.0	1.0
51.26	15.62	2693.2	29.4	1.1	141.4	133.7	9.0	7.4	0.0	30.0	32.0	1.0
52.08	15.88	3019.7	23.8	0.8	143.6	136.1	10.1	8.2	0.0	30.0	34.0	1.0
52.90	16.12	2431.0	28.6	1.2	145.7	138.6	9.7	7.9	171.7	30.0	32.0	6.0
53.72	16.38	11137.3	198.2	1.8	147.8	141.0	37.1	29.9	0.0	64.8	40.0	1.0
54.54	16.62	16641.6	428.6	2.6	150.0	143.5	55.5	44.3	0.0	76.1	42.0	1.0
55.36	16.88	9424.2	221.9	2.4	152.1	145.9	31.4	24.9	0.0	59.6	40.0	1.0
56.18	17.12	8153.9	170.4	2.1	154.3	148.4	27.2	21.4	0.0	55.2	38.0	1.0
57.00	17.38	8016.2	162.7	2.0	156.5	150.8	26.7	20.9	0.0	54.5	38.0	1.0
57.82	17.62	8568.1	160.2	1.9	158.7	153.3	28.6	22.2	0.0	56.2	40.0	1.0
58.64	17.88	8657.7	147.9	1.7	160.8	155.7	28.9	22.3	0.0	56.3	40.0	1.0
59.46	18.12	7232.7	194.1	2.7	162.9	158.2	28.9	22.2	552.9	51.0	38.0	6.0
60.28	18.38	6968.6	142.4	2.0	165.0	160.6	23.2	17.7	0.0	49.7	38.0	1.0
61.10	18.62	3674.0	49.2	1.3	167.2	163.1	12.2	9.3	0.0	31.2	34.0	1.0
61.93	18.88	4580.6	75.9	1.7	169.4	165.5	15.3	11.5	0.0	37.3	34.0	1.0
62.75	19.12	4103.7	96.6	2.4	171.5	168.0	16.4	12.3	301.1	34.0	34.0	6.0
63.57	19.38	4128.0	74.2	1.8	173.6	170.4	13.8	10.2	0.0	34.0	34.0	1.0
64.39	19.62	6516.8	127.5	2.0	175.8	172.9	21.7	16.0	0.0	46.9	38.0	1.0
65.21	19.88	8272.7	163.8	2.0	178.0	175.4	27.6	20.2	0.0	53.6	38.0	1.0
66.03	20.12	11712.8	299.5	2.6	180.1	177.8	39.0	28.5	0.0	63.4	40.0	1.0
66.85	20.38	15699.8	351.2	2.2	182.3	180.3	52.3	37.9	0.0	71.6	42.0	1.0
67.67	20.62	10039.7	217.1	2.2	184.5	182.7	33.5	24.1	0.0	58.6	40.0	1.0
68.49	20.88	8307.1	222.2	2.7	186.6	185.2	33.2	23.8	634.8	53.0	38.0	6.0
69.31	21.12	2319.1	30.5	1.3	188.6	187.6	9.3	6.6	155.4	30.0	30.0	3.0
70.13	21.38	1904.3	7.8	0.4	190.7	190.1	6.3	4.5	0.0	30.0	30.0	1.0
70.95	21.62	2978.4	26.9	0.9	192.9	192.5	9.9	7.0	0.0	30.0	32.0	1.0
71.77	21.88	6535.7	132.1	2.0	195.1	195.0	21.8	15.3	0.0	45.5	36.0	1.0
72.59	22.12	4316.2	89.4	2.1	197.2	197.4	17.3	12.0	313.7	33.5	34.0	6.0
73.41	22.38	2380.1	24.6	1.0	199.2	199.9	9.5	6.6	158.5	30.0	30.0	3.0
74.23	22.62	2151.0	22.2	1.0	201.3	202.3	8.6	5.9	139.8	30.0	30.0	3.0
75.05	22.88	1987.6	21.4	1.1	203.3	204.8	8.0	5.5	126.4	30.0	30.0	3.0
75.87	23.12	1709.0	15.6	0.9	205.4	207.2	6.8	4.7	103.7	30.0	30.0	3.0
76.69	23.38	1675.2	11.3	0.7	207.4	209.7	6.7	4.6	100.6	30.0	30.0	1.5
77.51	23.62	1576.5	8.5	0.5	209.5	212.1	6.3	4.3	92.4	30.0	30.0	1.5
78.33	23.88	3294.1	41.9	1.3	211.6	214.6	11.0	7.4	0.0	30.0	32.0	1.0
79.15	24.12	5355.2	191.7	3.6	213.7	217.0	26.8	17.9	394.0	0.0	0.0	6.0
79.97	24.38	21315.0	357.4	1.7	215.9	219.5	53.3	35.5	0.0	77.9	42.0	1.0
80.79	24.62	27723.6	356.9	1.3	218.2	222.0	55.4	36.7	0.0	85.3	44.0	1.0
81.61	24.88	28397.1	381.8	1.3	220.6	224.4	71.0	46.8	0.0	85.9	44.0	1.0
82.43	25.12	34641.5	417.5	1.2	223.0	226.9	69.3	45.4	0.0	91.4	44.0	1.0
83.25	25.38	31973.1	459.7	1.4	225.3	229.3	79.9	52.1	0.0	88.9	44.0	1.0
84.07	25.62	29736.4	372.6	1.3	227.7	231.8	59.5	38.6	0.0	86.7	44.0	1.0
84.89	25.88	31648.1	431.3	1.4	230.1	234.2	63.3	40.8	0.0	88.4	44.0	1.0
85.71	26.12	31936.0	493.8	1.5	232.5	236.7	79.8	51.3	0.0	88.5	44.0	1.0
86.53	26.38	27849.2	399.1	1.4	234.8	239.1	69.6	44.5	0.0	84.4	42.0	1.0
87.35	26.62	25565.7	264.6	1.0	237.1	241.6	51.1	32.5	0.0	81.8	42.0	1.0
88.17	26.88	8863.4	185.9	2.1	239.4	244.0	29.5	18.7	0.0	51.3	38.0	1.0
88.99	27.12	3065.4	56.4	1.8	241.5	246.5	12.3	7.7	206.2	30.0	30.0	3.0
89.81	27.38	2849.2	48.2	1.7	243.6	248.9	11.4	7.1	188.5	30.0	30.0	3.0
90.63	27.62	2630.8	45.7	1.7	245.6	251.4	10.5	6.6	170.7	30.0	30.0	3.0
91.45	27.88	2963.4	51.3	1.7	247.7	253.8	11.9	7.4	197.0	30.0	30.0	3.0
92.27	28.12	4097.5	113.5	2.8	249.7	256.3	16.4	10.2	287.3	30.0	32.0	6.0
93.09	28.38	4022.0	65.2	1.6	251.8	258.7	13.4	8.3	0.0	30.0	32.0	1.0
93.91	28.62	4360.5	103.0	2.4	253.9	261.2	17.4	10.7	307.6	30.1	32.0	6.0
94.73	28.88	2933.4	67.5	2.3	256.0	263.6	11.7	7.2	193.1	30.0	30.0	3.0
95.55	29.12	3374.6	88.6	2.6	258.0	266.1	13.5	8.2	228.0	30.0	30.0	3.0
96.37	29.38	4258.4	85.9	2.0	260.1	268.5	17.0	10.3	298.4	30.0	32.0	6.0
97.19	29.62	19951.7	325.2	1.6	262.2	271.0	49.9	30.1	0.0	73.3	40.0	1.0
98.01	29.88	22682.1	463.7	2.0	264.5	273.5	56.7	34.1	0.0	76.8	42.0	1.0
98.83	30.12	16186.8	197.6	1.2	266.8	275.9	40.5	24.2	0.0	67.0	40.0	1.0

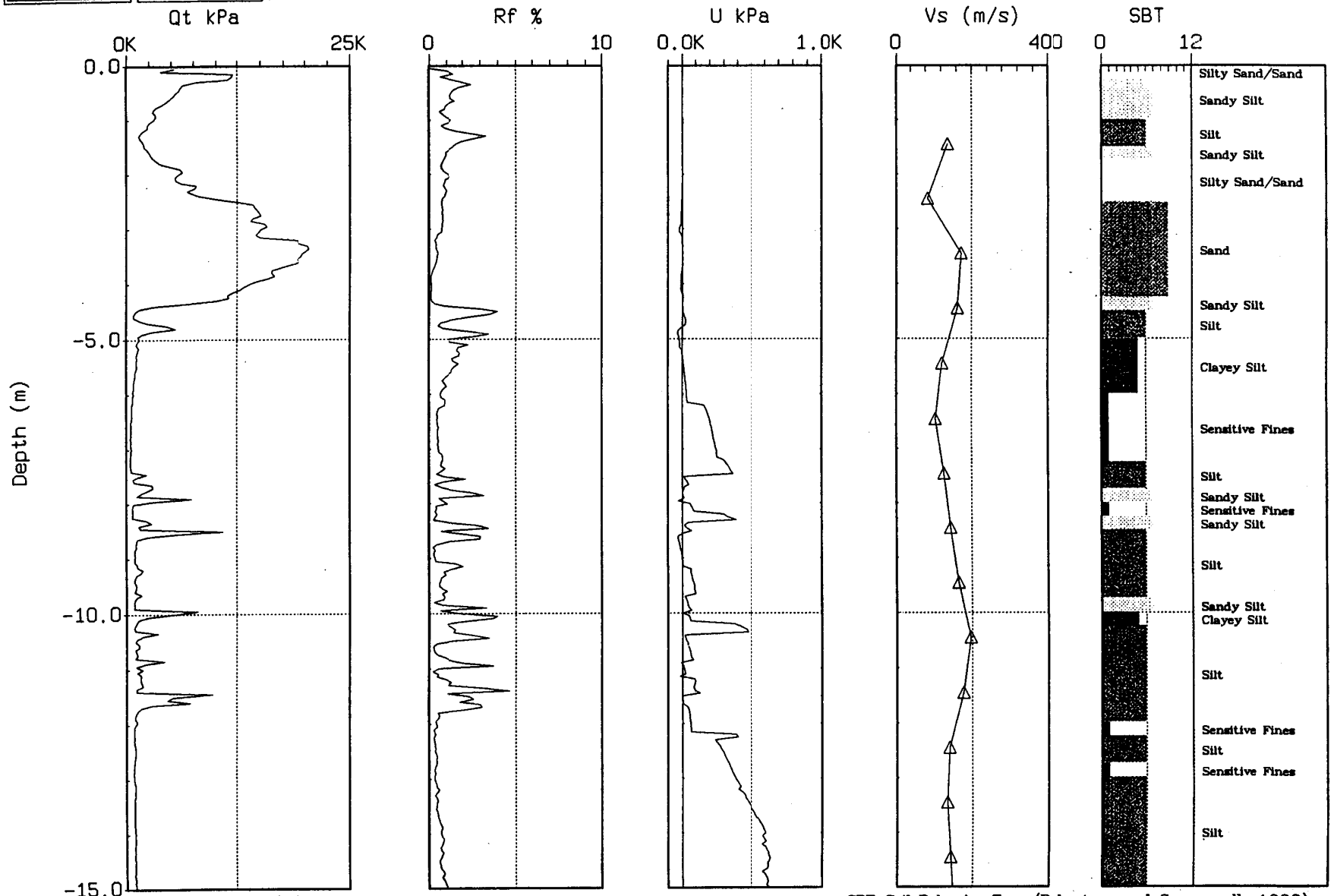
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60 (blows/ft)	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	6968.5	141.1	2.0	269.1	278.4	23.2	13.9	0.0	42.7	34.0	1.0
100.47	30.62	4491.7	95.1	2.1	271.2	280.8	18.0	10.7	315.2	30.0	32.0	6.0
101.29	30.88	4831.8	87.6	1.8	273.3	283.3	16.1	9.5	0.0	32.0	32.0	1.0
102.11	31.12	5159.1	165.1	3.2	275.4	285.7	20.6	12.2	367.8	33.8	32.0	6.0
102.94	31.38	5018.3	158.3	3.2	277.5	288.2	20.1	11.8	356.2	32.9	32.0	6.0
103.76	31.62	25473.7	282.7	1.1	279.7	290.6	50.9	29.8	0.0	79.3	42.0	1.0
104.58	31.88	31654.4	314.2	1.0	282.1	293.1	63.3	36.9	0.0	85.4	42.0	1.0
105.40	32.12	31907.9	288.5	0.9	284.5	295.5	63.8	37.0	0.0	85.5	42.0	1.0
106.22	32.38	33739.7	362.7	1.1	287.0	298.0	67.5	39.0	0.0	87.0	42.0	1.0
107.04	32.62	34681.2	385.9	1.1	289.4	300.4	69.4	39.9	0.0	87.7	42.0	1.0
107.86	32.88	32920.9	362.8	1.1	291.8	302.9	65.8	37.7	0.0	86.1	42.0	1.0
108.68	33.12	36234.8	415.9	1.1	294.2	305.3	72.5	41.3	0.0	88.7	42.0	1.0
109.50	33.38	29169.3	434.5	1.5	296.6	307.8	72.9	41.4	0.0	82.4	42.0	1.0
110.32	33.62	25180.2	449.1	1.8	298.9	310.2	63.0	35.6	0.0	78.1	42.0	1.0
111.14	33.88	29974.3	323.2	1.1	301.2	312.7	59.9	33.8	0.0	82.9	42.0	1.0
111.96	34.12	33940.9	365.0	1.1	303.7	315.1	67.9	38.1	0.0	86.4	42.0	1.0
112.78	34.38	27014.9	362.8	1.3	306.0	317.6	67.5	37.8	0.0	79.7	42.0	1.0
113.60	34.62	32065.3	231.3	0.7	308.4	320.1	64.1	35.7	0.0	84.5	42.0	1.0
114.42	34.88	16003.1	217.5	1.4	310.7	322.5	40.0	22.2	0.0	64.5	38.0	1.0

CONETEC

Kleinfelder

Site: I15, S4: I15 A of W, 06-SC-113
Location: EB 180 Off Ramp-N

Cone: 20 TON A 040
Date: 06:10:96 23:57



Max. Depth: 35.15 (m)
Depth Inc.: 0.05 (m)

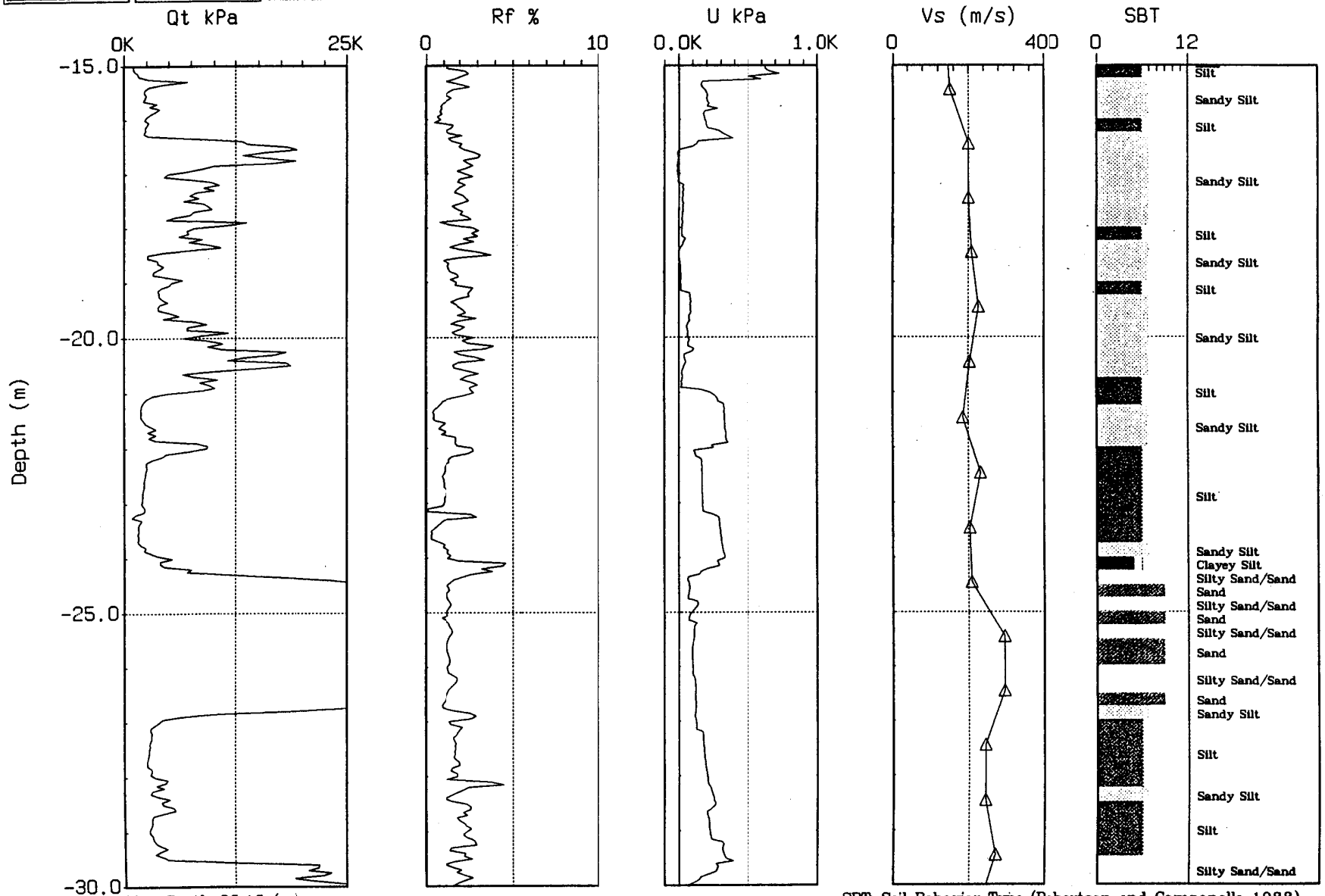
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15 R of W, 06-SC-113
Location: EB 180 Off Rmp-N

Cone: 20 TON A 040
Date: 06:10:96 23:57



Max. Depth: 35.15 (m)
Depth Inc.: 0.05 (m)

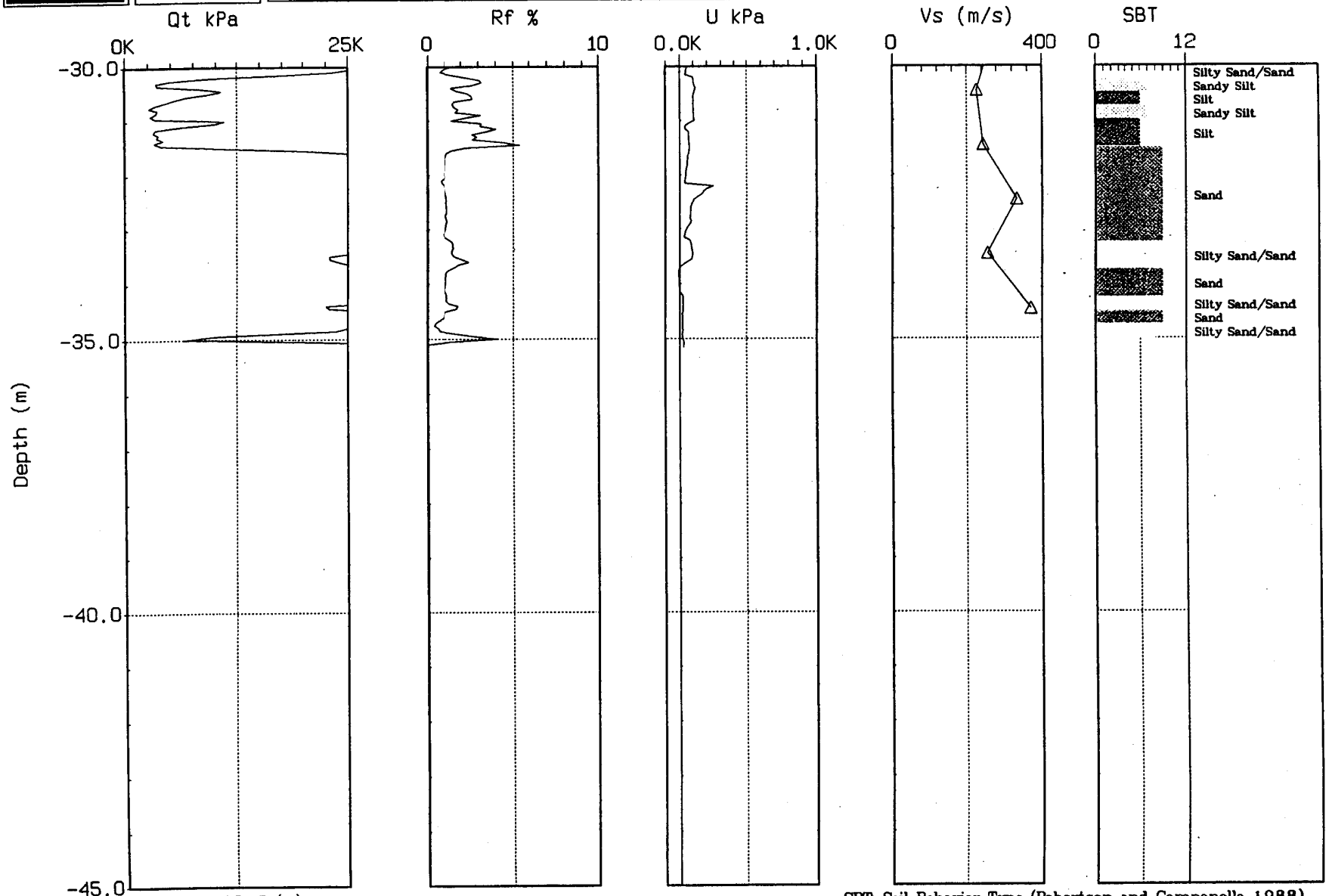
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15 R of W, 06-SC-113
Location: EB 180 Off Rmp-N

Cone: 20 TON A 040
Date: 06:10:96 23:57



Max. Depth: 35.15 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-113*
Date: *10-Jun-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 040 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
0.95	1.10					
1.95	2.03	6.7	* 138	453	1.0 - 2.0	3.1 - 6.4
2.95	3.00	11.4	85	280	2.0 - 3.0	6.4 - 9.7
3.95	3.99	5.7	173	568	3.0 - 4.0	9.7 - 13.0
4.95	4.98	6.1	* 163	534	4.0 - 5.0	13.0 - 16.2
5.95	5.98	8.1	123	403	5.0 - 6.0	16.2 - 19.5
6.95	6.97	9.4	106	348	6.0 - 7.0	19.5 - 22.8
7.95	7.97	7.8	128	419	7.0 - 8.0	22.8 - 26.1
8.95	8.97	6.9	145	474	8.0 - 9.0	26.1 - 29.4
9.95	9.97	6.0	* 166	546	9.0 - 10.0	29.4 - 32.6
10.95	10.96	5.1	196	642	10.0 - 11.0	32.6 - 35.9
11.95	11.96	5.6	178	585	11.0 - 12.0	35.9 - 39.2
12.95	12.96	7.1	141	462	12.0 - 13.0	39.2 - 42.5
13.95	13.96	7.4	135	443	13.0 - 14.0	42.5 - 45.8
14.95	14.96	7.0	* 143	468	14.0 - 15.0	45.8 - 49.0
15.95	15.96	6.6	151	497	15.0 - 16.0	49.0 - 52.3
16.95	16.96	5.0	200	656	16.0 - 17.0	52.3 - 55.6
17.95	17.96	5.0	200	656	17.0 - 18.0	55.6 - 58.9
18.95	18.96	4.8	208	683	18.0 - 19.0	58.9 - 62.2
19.95	19.96	4.4	* 227	745	19.0 - 20.0	62.2 - 65.5
20.95	20.96	4.9	204	669	20.0 - 21.0	65.5 - 68.7
21.95	21.96	5.4	185	607	21.0 - 22.0	68.7 - 72.0
22.95	22.96	4.3	232	763	22.0 - 23.0	72.0 - 75.3
23.95	23.96	4.9	204	669	23.0 - 24.0	75.3 - 78.6
24.95	24.96	4.8	* 208	683	24.0 - 25.0	78.6 - 81.9
25.95	25.96	3.4	294	965	25.0 - 26.0	81.9 - 85.1
26.95	26.96	3.4	294	965	26.0 - 27.0	85.1 - 88.4
27.95	27.96	4.1	244	800	27.0 - 28.0	88.4 - 91.7
28.95	28.96	4.1	244	800	28.0 - 29.0	91.7 - 95.0
29.95	29.96	3.7	* 270 ?	887	29.0 - 30.0	95.0 - 98.3
30.95	30.96	4.4	227	746	30.0 - 31.0	98.3 - 101.5
31.95	31.95	4.1	244	800	31.0 - 32.0	101.5 - 104.8
32.95	32.95	3.0	333	1093	32.0 - 33.0	104.8 - 108.1
33.95	33.95	3.9	256	841	33.0 - 34.0	108.1 - 111.4
34.95	34.95	2.7	* 370	1215	34.0 - 35.0	111.4 - 114.7

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0805-0943-5867
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15, S4: I15 R of W, 06-SC-115
Location: EB I80 Off Rmp-N
Cone: 20 TON A 040
CPT Date: 96/27/06
CPT Time: 08:45
CPT File: KA06S115.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	1.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
1.23	0.38	1.0	0.0	0.0	7.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
2.05	0.62	1.0	0.0	0.0	12.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
2.87	0.88	1.0	0.0	0.0	17.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
3.69	1.12	1.0	0.0	0.0	21.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
4.51	1.38	1.0	0.0	0.0	26.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
5.33	1.62	1.0	0.0	0.0	31.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
6.15	1.88	1.0	0.0	0.0	36.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0
6.97	2.12	1.0	0.0	0.0	40.2	1.2	0.0	0.0	0.0	0.0	0.0	1.0
7.79	2.38	1.0	0.0	0.0	42.6	3.7	0.0	0.0	0.0	0.0	0.0	1.0
8.61	2.62	1.0	0.0	0.0	45.1	6.1	0.0	0.0	0.0	0.0	0.0	1.0
9.43	2.88	1.0	0.0	0.0	47.5	8.6	0.0	0.0	0.0	0.0	0.0	1.0
10.25	3.12	1.0	0.0	0.0	49.9	11.0	0.0	0.0	0.0	0.0	0.0	1.0
11.07	3.38	1.0	0.0	0.0	52.3	13.5	0.0	0.0	0.0	0.0	0.0	1.0
11.89	3.62	1.0	0.0	0.0	54.7	15.9	0.0	0.0	0.0	0.0	0.0	1.0
12.71	3.88	1.0	0.0	0.0	57.2	18.4	0.0	0.0	0.0	0.0	0.0	1.0
13.53	4.12	1.0	0.0	0.0	59.6	20.8	0.0	0.0	0.0	0.0	0.0	1.0
14.35	4.38	1.0	0.0	0.0	62.0	23.3	0.0	0.0	0.0	0.0	0.0	1.0
15.17	4.62	1.0	0.0	0.0	64.4	25.8	0.0	0.0	0.0	0.0	0.0	1.0
15.99	4.88	1.0	0.0	0.0	66.9	28.2	0.0	0.0	0.0	0.0	0.0	1.0
16.81	5.12	1.0	0.0	0.0	69.3	30.7	0.0	0.0	0.0	0.0	0.0	1.0
17.63	5.38	1.0	0.0	0.0	71.7	33.1	0.0	0.0	0.0	0.0	0.0	1.0
18.45	5.62	1.0	0.0	0.0	74.1	35.6	0.0	0.0	0.0	0.0	0.0	1.0
19.27	5.88	991.3	20.8	2.1	76.4	38.0	5.0	5.6	70.2	0.0	0.0	3.0
20.09	6.12	2102.8	45.7	2.2	78.4	40.5	8.4	9.3	158.7	30.0	34.0	6.0
20.92	6.38	2911.4	81.6	2.8	80.5	42.9	14.6	15.9	223.0	0.0	0.0	6.0
21.74	6.62	2153.6	62.4	2.9	82.5	45.4	10.8	11.6	162.1	0.0	0.0	6.0
22.56	6.88	3768.8	93.7	2.5	84.6	47.8	15.1	16.0	290.9	41.7	38.0	6.0
23.38	7.12	4681.7	120.7	2.6	86.6	50.3	18.7	19.7	363.6	47.6	40.0	10.0
24.20	7.38	7889.6	128.4	1.6	88.7	52.7	26.3	27.3	0.0	62.2	42.0	1.0
25.02	7.62	7320.7	118.2	1.6	90.9	55.2	24.4	25.1	0.0	59.7	42.0	1.0
25.84	7.88	12725.4	118.1	0.9	93.2	57.6	25.5	25.8	0.0	75.2	44.0	1.0
26.66	8.12	13496.4	106.0	0.8	95.6	60.1	27.0	27.0	0.0	76.5	44.0	1.0
27.48	8.38	1689.5	13.4	0.8	97.8	62.5	6.8	6.7	122.3	30.0	32.0	6.0
28.30	8.62	675.0	15.2	2.3	99.9	65.0	4.5	4.4	40.8	0.0	0.0	1.5
29.12	8.88	665.6	14.8	2.2	101.9	67.4	4.4	4.3	39.7	0.0	0.0	1.5
29.94	9.12	703.3	12.5	1.8	104.0	69.9	3.5	3.4	42.4	0.0	0.0	1.5
30.76	9.38	632.7	10.9	1.7	106.0	72.3	3.2	3.0	36.3	0.0	0.0	1.5
31.58	9.62	973.4	19.5	2.0	108.1	74.8	4.9	4.6	63.2	0.0	0.0	3.0
32.40	9.88	2384.0	59.5	2.5	110.1	77.3	9.5	8.9	175.7	30.0	34.0	6.0
33.22	10.12	1515.2	57.3	3.8	112.2	79.7	10.1	9.3	105.9	0.0	0.0	3.0
34.04	10.38	1055.2	33.9	3.2	114.2	82.2	7.0	6.4	68.7	0.0	0.0	3.0
34.86	10.62	839.9	23.2	2.8	116.3	84.6	5.6	5.1	51.1	0.0	0.0	1.5
35.68	10.88	745.5	19.5	2.6	118.3	87.1	5.0	4.5	43.2	0.0	0.0	1.5
36.50	11.12	768.2	15.8	2.1	120.4	89.5	3.8	3.4	44.7	0.0	0.0	1.5
37.32	11.38	766.1	14.3	1.9	122.4	92.0	3.8	3.4	44.1	0.0	0.0	1.5
38.14	11.62	891.3	15.6	1.8	124.5	94.4	4.5	3.9	53.8	0.0	0.0	1.5
38.96	11.88	930.8	15.8	1.7	126.5	96.9	4.7	4.0	56.6	0.0	0.0	1.5
39.78	12.12	1622.3	35.4	2.2	128.5	99.3	8.1	7.0	111.6	0.0	0.0	3.0
40.60	12.38	2067.3	45.7	2.2	130.6	101.8	8.3	7.1	146.8	30.0	32.0	6.0
41.42	12.62	3110.5	63.2	2.0	132.6	104.2	12.4	10.6	229.9	30.0	34.0	6.0
42.24	12.88	1193.3	22.9	1.9	134.7	106.7	6.0	5.0	76.2	0.0	0.0	3.0

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	2608.9	38.7	1.5	136.7	109.1	10.4	8.7	189.0	30.0	32.0	6.0
43.88	13.38	2453.2	43.2	1.8	138.8	111.6	9.8	8.2	176.2	30.0	32.0	6.0
44.70	13.62	1249.4	14.0	1.1	140.8	114.0	5.0	4.1	79.6	30.0	30.0	3.0
45.52	13.88	1367.0	18.4	1.3	142.9	116.5	5.5	4.5	88.6	30.0	30.0	3.0
46.34	14.12	1614.6	41.5	2.6	144.9	118.9	8.1	6.6	108.1	0.0	0.0	3.0
47.16	14.38	1146.0	34.5	3.0	147.0	121.4	7.6	6.2	70.2	0.0	0.0	1.5
47.98	14.62	1019.6	24.6	2.4	149.0	123.9	5.1	4.1	59.7	0.0	0.0	1.5
48.80	14.88	1972.8	47.9	2.4	151.1	126.3	9.9	7.9	135.6	0.0	0.0	3.0
49.62	15.12	1022.4	27.0	2.6	153.1	128.8	5.1	4.0	59.2	0.0	0.0	1.5
50.44	15.38	1046.1	20.4	2.0	155.2	131.2	5.2	4.1	60.8	0.0	0.0	1.5
51.26	15.62	2379.0	31.8	1.3	157.2	133.7	9.5	7.4	167.1	30.0	32.0	6.0
52.08	15.88	2366.4	54.4	2.3	159.3	136.1	9.5	7.3	165.7	30.0	32.0	6.0
52.90	16.12	2474.3	79.0	3.2	161.3	138.6	12.4	9.5	174.0	0.0	0.0	6.0
53.72	16.38	1566.1	46.5	3.0	163.4	141.0	7.8	6.0	100.9	0.0	0.0	3.0
54.54	16.62	962.2	21.3	2.2	165.4	143.5	4.8	3.7	52.3	0.0	0.0	1.5
55.36	16.88	1143.8	20.5	1.8	167.5	145.9	5.7	4.3	66.4	0.0	0.0	1.5
56.18	17.12	1081.1	20.0	1.8	169.5	148.4	5.4	4.1	61.1	0.0	0.0	1.5
57.00	17.38	1139.7	19.5	1.7	171.5	150.8	5.7	4.3	65.4	0.0	0.0	1.5
57.82	17.62	1015.7	17.3	1.7	173.6	153.3	5.1	3.8	55.1	0.0	0.0	1.5
58.64	17.88	1042.2	17.6	1.7	175.6	155.7	5.2	3.8	56.9	0.0	0.0	1.5
59.46	18.12	1112.8	24.2	2.2	177.7	158.2	5.6	4.1	62.2	0.0	0.0	1.5
60.28	18.38	1075.9	22.4	2.1	179.7	160.6	5.4	3.9	58.8	0.0	0.0	1.5
61.10	18.62	1075.8	22.1	2.1	181.8	163.1	5.4	3.9	58.5	0.0	0.0	1.5
61.93	18.88	1204.1	23.1	1.9	183.8	165.5	6.0	4.3	68.4	0.0	0.0	1.5
62.75	19.12	1159.4	24.5	2.1	185.9	168.0	5.8	4.2	64.4	0.0	0.0	1.5
63.57	19.38	1222.0	23.1	1.9	187.9	170.4	6.1	4.4	69.1	0.0	0.0	1.5
64.39	19.62	1181.8	25.2	2.1	190.0	172.9	5.9	4.2	65.5	0.0	0.0	1.5
65.21	19.88	1202.8	24.7	2.1	192.0	175.4	6.0	4.2	66.8	0.0	0.0	1.5
66.03	20.12	1588.9	43.8	2.8	194.1	177.8	7.9	5.6	97.4	0.0	0.0	3.0
66.85	20.38	2113.2	79.1	3.7	196.1	180.3	14.1	9.8	138.9	0.0	0.0	3.0
67.67	20.62	2799.8	76.1	2.7	198.2	182.7	14.0	9.7	193.5	0.0	0.0	3.0
68.49	20.88	6216.2	102.7	1.7	200.3	185.2	20.7	14.3	0.0	43.7	36.0	1.0
69.31	21.12	2175.2	85.8	3.9	202.4	187.6	14.5	10.0	142.8	0.0	0.0	3.0
70.13	21.38	2937.9	75.0	2.6	204.4	190.1	11.8	8.0	203.5	30.0	32.0	3.0
70.95	21.62	8569.9	148.5	1.7	206.5	192.5	28.6	19.5	0.0	52.5	38.0	1.0
71.77	21.88	6503.6	121.7	1.9	208.7	195.0	21.7	14.7	0.0	44.4	36.0	1.0
72.59	22.12	2972.7	120.5	4.1	210.8	197.4	19.8	13.4	205.2	0.0	0.0	3.0
73.41	22.38	7931.3	141.1	1.8	212.9	199.9	26.4	17.7	0.0	49.8	38.0	1.0
74.23	22.62	2500.3	64.6	2.6	215.0	202.3	10.0	6.7	166.6	30.0	30.0	3.0
75.05	22.88	6114.2	159.2	2.6	217.1	204.8	24.5	16.2	455.4	42.1	36.0	6.0
75.87	23.12	11918.1	263.9	2.2	219.2	207.2	39.7	26.3	0.0	61.1	40.0	1.0
76.69	23.38	10711.9	317.3	3.0	221.3	209.7	42.8	28.2	822.5	57.9	38.0	6.0
77.51	23.62	14284.6	323.9	2.3	223.4	212.1	47.6	31.2	0.0	66.0	40.0	1.0
78.33	23.88	2051.1	88.1	4.3	225.5	214.6	20.5	13.4	128.9	0.0	0.0	3.0
79.15	24.12	2213.5	58.9	2.7	227.5	217.0	11.1	7.2	141.5	0.0	0.0	3.0
79.97	24.38	2834.4	81.1	2.9	229.5	219.5	14.2	9.2	190.8	0.0	0.0	3.0
80.79	24.62	3656.5	118.7	3.2	231.5	222.0	18.3	11.8	256.2	0.0	0.0	6.0
81.61	24.88	4197.1	98.8	2.4	233.6	224.4	16.8	10.8	299.1	30.2	32.0	6.0
82.43	25.12	4411.1	135.6	3.1	235.6	226.9	17.6	11.2	315.9	31.5	32.0	6.0
83.25	25.38	2466.4	86.6	3.5	237.7	229.3	12.3	7.8	159.9	0.0	0.0	3.0
84.07	25.62	1937.3	48.5	2.5	239.7	231.8	9.7	6.1	117.3	0.0	0.0	1.5
84.89	25.88	2336.2	67.1	2.9	241.8	234.2	11.7	7.4	148.8	0.0	0.0	3.0
85.71	26.12	2697.4	86.7	3.2	243.8	236.7	13.5	8.5	177.4	0.0	0.0	3.0
86.53	26.38	1585.9	35.1	2.2	245.9	239.1	7.9	4.9	88.1	0.0	0.0	1.5
87.35	26.62	1903.8	41.2	2.2	247.9	241.6	7.6	4.7	113.1	30.0	30.0	1.5
88.17	26.88	1543.1	31.7	2.1	250.0	244.0	7.7	4.8	83.9	0.0	0.0	1.5
88.99	27.12	1475.7	29.9	2.0	252.0	246.5	7.4	4.5	78.2	0.0	0.0	1.5
89.81	27.38	1505.0	27.4	1.8	254.1	248.9	6.0	3.7	80.2	30.0	30.0	1.5
90.63	27.62	2243.9	50.2	2.2	256.1	251.4	9.0	5.5	138.9	30.0	30.0	3.0
91.45	27.88	5303.7	114.2	2.2	258.2	253.8	21.2	12.9	383.3	35.5	32.0	6.0
92.27	28.12	4645.3	168.1	3.6	260.2	256.3	23.2	14.1	330.3	0.0	0.0	6.0
93.09	28.38	2550.2	74.4	2.9	262.3	258.7	12.8	7.7	162.3	0.0	0.0	3.0
93.91	28.62	1879.8	46.7	2.5	264.3	261.2	9.4	5.7	108.3	0.0	0.0	1.5
94.73	28.88	1663.0	39.5	2.4	266.4	263.6	8.3	5.0	90.6	0.0	0.0	1.5
95.55	29.12	1724.1	39.1	2.3	268.4	266.1	8.6	5.1	95.2	0.0	0.0	1.5
96.37	29.38	2061.8	44.4	2.2	270.5	268.5	8.2	4.9	121.8	30.0	30.0	1.5
97.19	29.62	1932.4	39.7	2.1	272.5	271.0	7.7	4.6	111.1	30.0	30.0	1.5
98.01	29.88	1870.3	34.8	1.9	274.5	273.5	7.5	4.4	105.8	30.0	30.0	1.5
98.83	30.12	1724.3	35.5	2.1	276.6	275.9	6.9	4.1	93.7	30.0	30.0	1.5

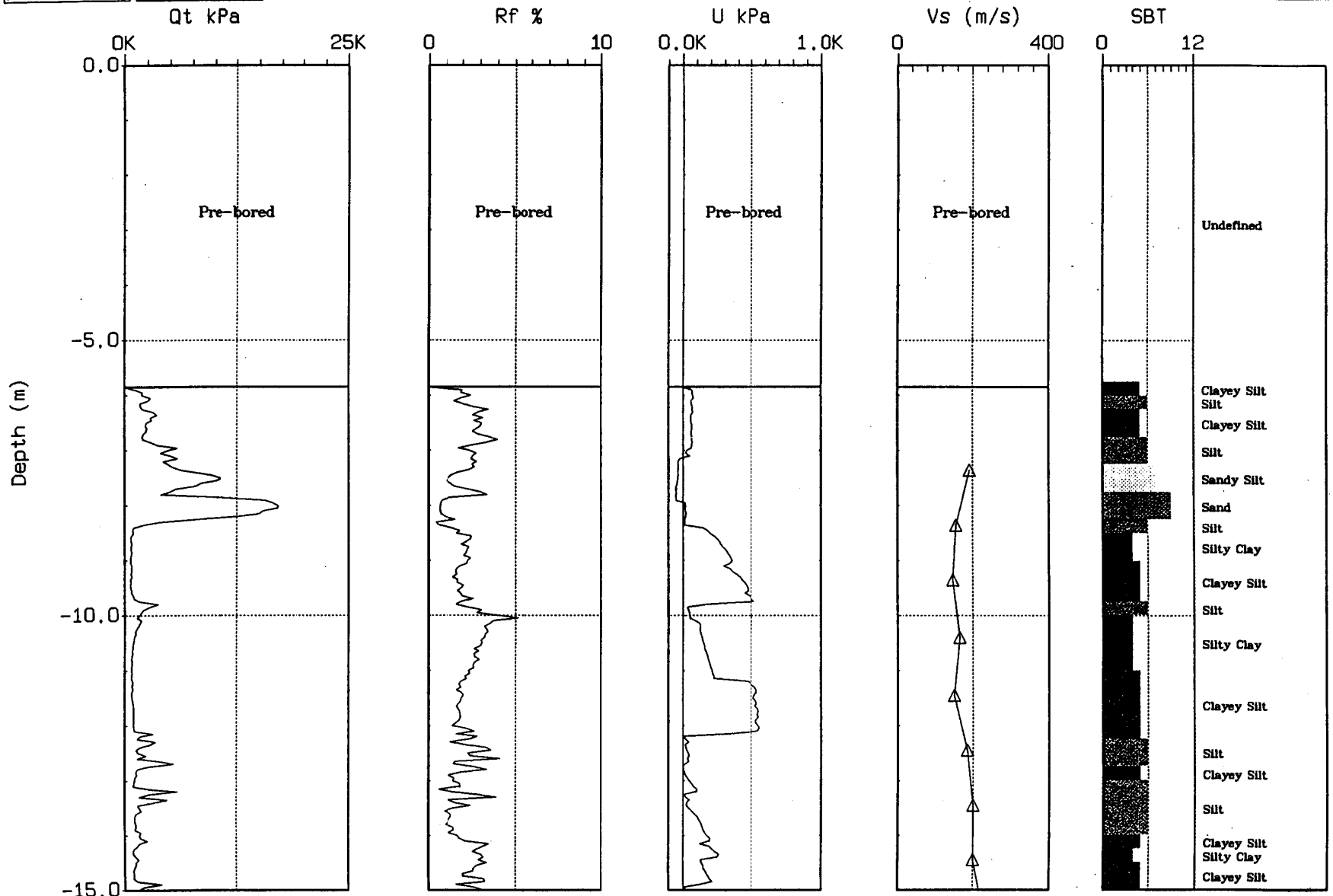
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	1769.8	33.1	1.9	278.6	278.4	7.1	4.2	97.0	30.0	30.0	1.5
100.47	30.62	2793.8	69.3	2.5	280.7	280.8	11.2	6.5	178.6	30.0	30.0	3.0
101.29	30.88	10031.6	312.7	3.1	282.7	283.3	40.1	23.4	757.2	52.5	36.0	6.0
102.11	31.12	15240.7	335.9	2.2	284.8	285.7	50.8	29.5	0.0	64.4	38.0	1.0
102.94	31.38	3861.1	180.9	4.7	287.0	288.2	25.7	14.9	262.9	0.0	0.0	3.0
103.76	31.62	6429.2	129.0	2.0	289.1	290.6	21.4	12.3	0.0	39.4	34.0	1.0
104.58	31.88	1691.7	33.3	2.0	291.2	293.1	6.8	3.9	88.6	30.0	30.0	1.5
105.40	32.12	1756.5	32.6	1.9	293.2	295.5	7.0	4.0	93.4	30.0	30.0	1.5
106.22	32.38	1663.7	34.7	2.1	295.3	298.0	8.3	4.7	85.6	0.0	0.0	1.5
107.04	32.62	1655.7	45.5	2.8	297.3	300.4	8.3	4.7	84.6	0.0	0.0	1.5
107.86	32.88	2576.1	84.4	3.3	299.4	302.9	12.9	7.3	157.9	0.0	0.0	3.0
108.68	33.12	3329.6	123.5	3.7	301.4	305.3	16.6	9.4	217.8	0.0	0.0	3.0
109.50	33.38	3437.3	165.4	4.8	303.4	307.8	34.4	19.3	226.1	0.0	0.0	3.0
110.32	33.62	2448.8	100.3	4.1	305.4	310.2	16.3	9.1	146.7	0.0	0.0	1.5
111.14	33.88	2234.7	72.3	3.2	307.4	312.7	11.2	6.2	129.2	0.0	0.0	1.5
111.96	34.12	2043.5	63.9	3.1	309.5	315.1	10.2	5.7	113.5	0.0	0.0	1.5
112.78	34.38	2300.1	64.2	2.8	311.5	317.6	11.5	6.4	133.7	0.0	0.0	1.5
113.60	34.62	3459.1	78.3	2.3	313.6	320.1	13.8	7.6	226.0	30.0	30.0	3.0
114.42	34.88	6252.6	177.8	2.8	315.6	322.5	25.0	13.8	449.2	37.3	32.0	6.0

CONETEC

Kleinfelder

Site: I15, S4: I15 R of W, 06-SC-115
Location: EB I80 Off Ramp-N

Cone: 20 TON A 040
Date: 06:27:96 08:45



Max. Depth: 35.15 (m)
Depth Inc.: 0.05 (m)

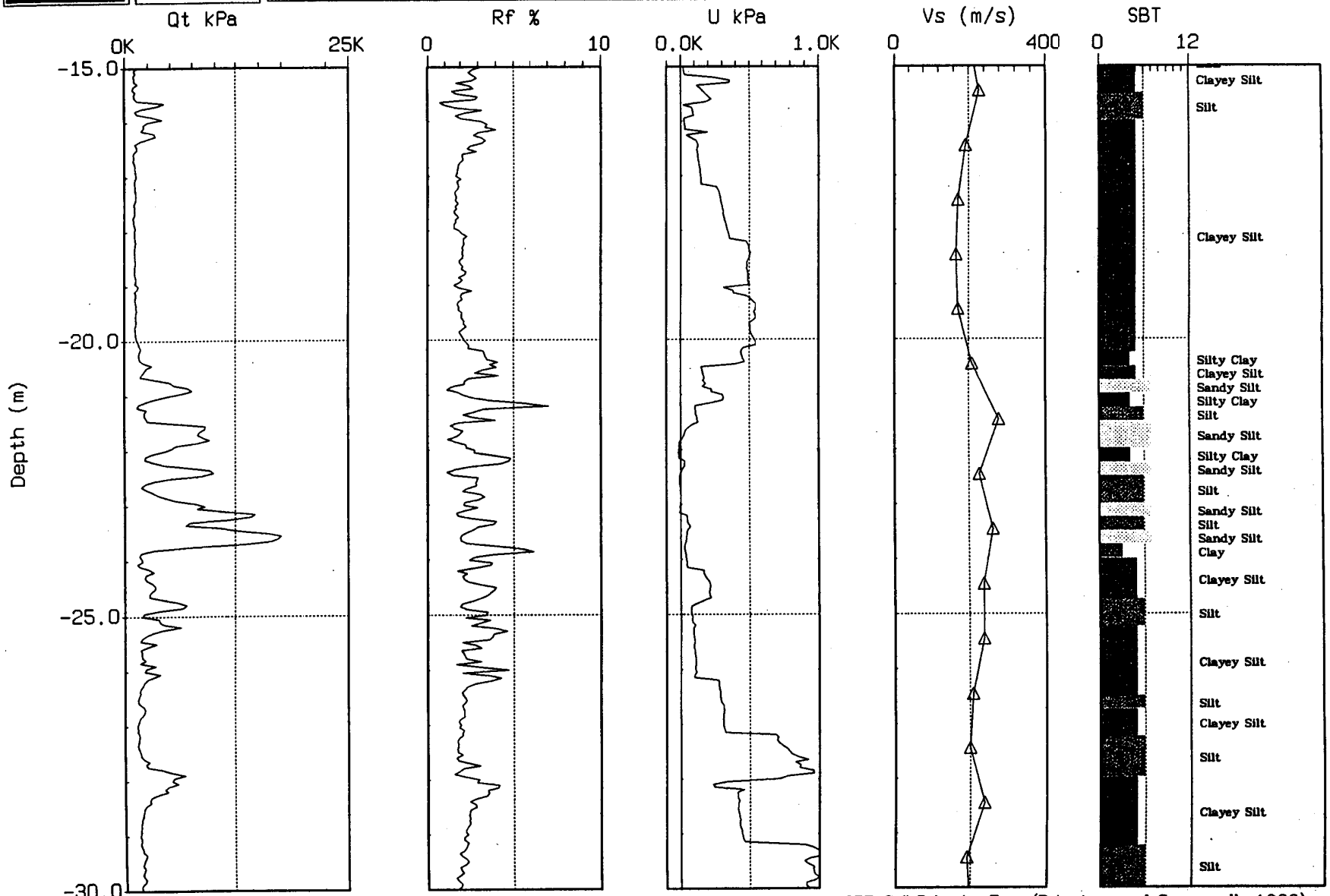
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15 R of W, 06-SC-115
Location: EB IBO Off Rmp-N

Cone: 20 TON A 040
Date: 06:27:96 08:45



Max. Depth: 35.15 (m)
Depth Inc.: 0.05 (m)

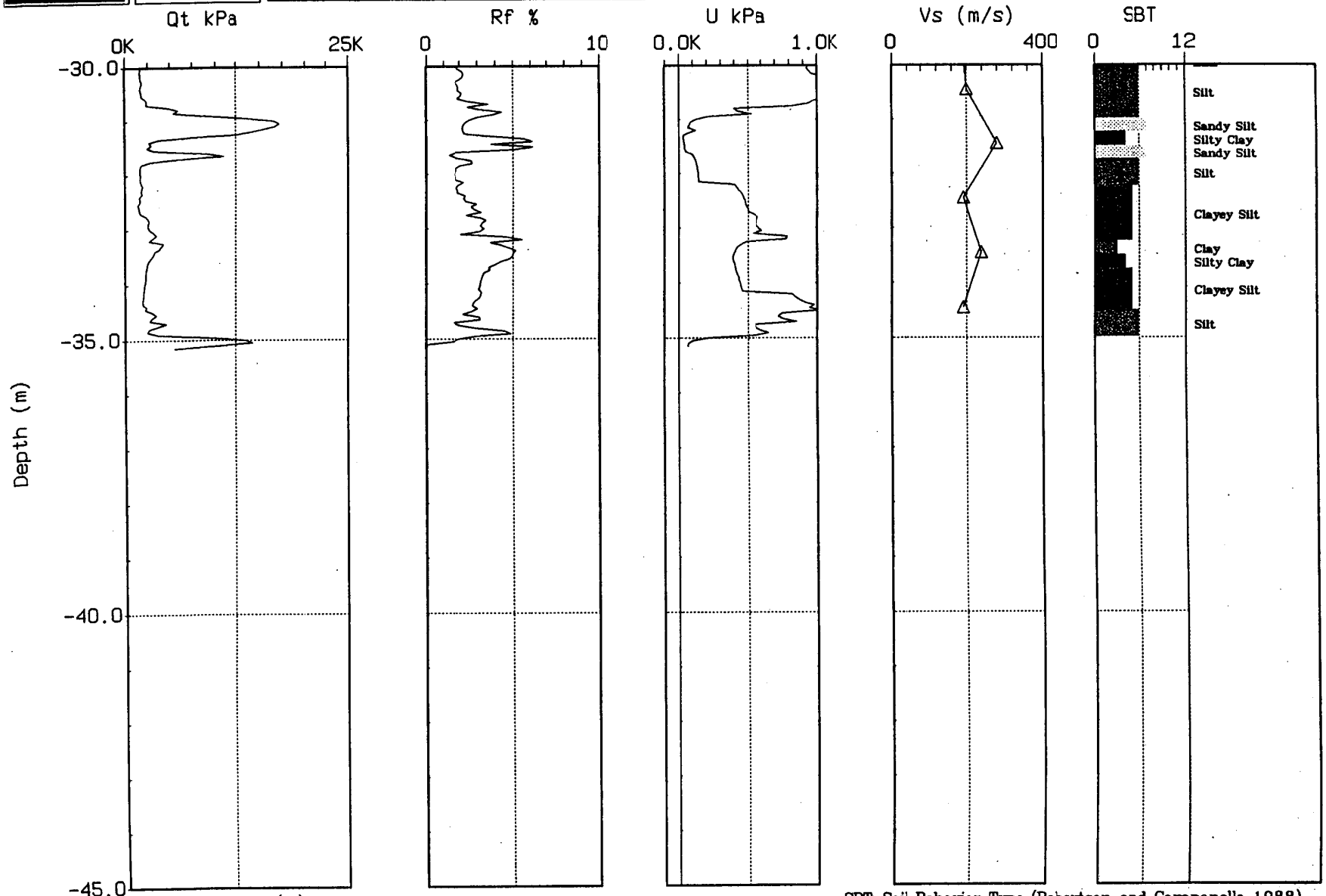
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15 R of W, 06-SC-115
Location: EB IBO Off Rmp-N

Cone: 20 TON A 040
Date: 06:27:96 08:45



Max. Depth: 35.15 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-115*
Date: *27-Jun-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 040 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
6.85	6.87					
7.85	7.87	5.2	192	629	6.9 - 7.9	22.5 - 25.8
8.85	8.87	6.4	156	511	7.9 - 8.9	25.8 - 29.0
9.85	9.87	6.8	147	482	8.9 - 9.9	29.0 - 32.3
10.95	10.96	6.6	166	546	9.9 - 11.0	32.3 - 35.9
11.95	11.96	6.6	151	497	11.0 - 12.0	35.9 - 39.2
12.95	12.96	5.4	185	607	12.0 - 13.0	39.2 - 42.5
13.95	13.96	5.0	200	656	13.0 - 14.0	42.5 - 45.8
14.95	14.96	5.0	200	656	14.0 - 15.0	45.8 - 49.0
15.95	15.96	4.4	227	745	15.0 - 16.0	49.0 - 52.3
16.95	16.96	5.2	192	631	16.0 - 17.0	52.3 - 55.6
17.95	17.96	5.8	172	565	17.0 - 18.0	55.6 - 58.9
18.95	18.96	6.0	167	547	18.0 - 19.0	58.9 - 62.2
19.95	19.96	5.8	172	565	19.0 - 20.0	62.2 - 65.5
20.95	20.96	4.8	208	683	20.0 - 21.0	65.5 - 68.7
21.95	21.96	3.6	278	911	21.0 - 22.0	68.7 - 72.0
22.95	22.96	4.4	227	745	22.0 - 23.0	72.0 - 75.3
23.95	23.96	3.8	263	863	23.0 - 24.0	75.3 - 78.6
24.95	24.96	4.2	238	781	24.0 - 25.0	78.6 - 81.9
25.95	25.96	4.2	238	781	25.0 - 26.0	81.9 - 85.1
26.95	26.96	4.8	208	683	26.0 - 27.0	85.1 - 88.4
27.95	27.96	5.0	200	656	27.0 - 28.0	88.4 - 91.7
28.95	28.96	4.2	238	781	28.0 - 29.0	91.7 - 95.0
29.95	29.96	5.2	192	631	29.0 - 30.0	95.0 - 98.3
30.95	30.96	5.0	200	656	30.0 - 31.0	98.3 - 101.5
31.95	31.95	3.6	278	911	31.0 - 32.0	101.5 - 104.8
32.95	32.95	5.2	192	631	32.0 - 33.0	104.8 - 108.1
33.95	33.95	4.2	238	781	33.0 - 34.0	108.1 - 111.4
34.95	34.95	5.2	192	631	34.0 - 35.0	111.4 - 114.7

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0804-2149-2234
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15, S4: I15 R of W, 06-SC-117
Location: EB I80 Structure
Cone: 20 TON A 040
CPT Date: 96/12/06
CPT Time: 11:46
CPT File: KA06S117.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	11844.2	71.8	0.6	2.4	0.0	23.7	47.4	0.0	95.0	50.0	1.0
1.23	0.38	17537.6	119.4	0.7	7.3	0.0	35.1	70.2	0.0	95.0	50.0	1.0
2.05	0.62	12167.6	74.6	0.6	12.2	0.0	24.3	48.7	0.0	95.0	50.0	1.0
2.87	0.88	5353.9	44.0	0.8	17.0	0.0	13.4	26.8	0.0	74.8	46.0	1.0
3.69	1.12	4687.6	66.3	1.4	21.7	0.0	15.6	31.3	0.0	67.5	46.0	1.0
4.51	1.38	2560.3	66.2	2.6	26.2	0.0	10.2	19.6	202.7	47.4	42.0	10.0
5.33	1.62	2128.8	43.3	2.0	30.8	0.0	8.5	15.0	167.8	39.8	40.0	10.0
6.15	1.88	1152.1	32.6	2.8	35.2	0.0	5.8	9.5	89.4	0.0	0.0	6.0
6.97	2.12	849.2	23.5	2.8	38.5	1.2	5.7	8.9	64.8	0.0	0.0	6.0
7.79	2.38	1147.2	28.0	2.4	40.6	3.7	5.7	8.8	88.2	0.0	0.0	6.0
8.61	2.62	947.1	24.5	2.6	42.6	6.1	4.7	7.1	71.9	0.0	0.0	6.0
9.43	2.88	1660.3	24.6	1.5	44.7	8.6	6.6	9.7	128.6	30.0	38.0	6.0
10.25	3.12	2388.4	34.3	1.4	46.7	11.0	9.6	13.7	186.5	37.1	38.0	6.0
11.07	3.38	4928.0	28.2	0.6	48.9	13.5	12.3	17.2	0.0	51.2	42.0	1.0
11.89	3.62	17149.6	30.1	0.2	51.2	15.9	34.3	46.9	0.0	91.3	48.0	1.0
12.71	3.88	15797.4	53.7	0.3	53.7	18.4	31.6	42.2	0.0	89.3	46.0	1.0
13.53	4.12	15516.2	55.8	0.4	56.1	20.8	31.0	40.6	0.0	88.2	46.0	1.0
14.35	4.38	9909.7	26.4	0.3	58.5	23.3	19.8	25.4	0.0	74.7	44.0	1.0
15.17	4.62	901.2	25.6	2.8	60.7	25.8	6.0	7.5	65.2	0.0	0.0	6.0
15.99	4.88	466.1	6.5	1.4	62.1	28.2	2.3	2.9	30.1	0.0	0.0	1.5
16.81	5.12	424.2	3.7	0.9	62.8	30.7	2.1	2.6	26.5	0.0	0.0	1.5
17.63	5.38	397.2	3.6	0.9	63.5	33.1	2.0	2.4	24.1	0.0	0.0	1.5
18.45	5.62	699.9	22.7	3.2	64.8	35.6	7.0	8.5	48.0	0.0	0.0	3.0
19.27	5.88	1228.5	24.5	2.0	66.7	38.0	6.1	7.4	89.9	0.0	0.0	6.0
20.09	6.12	995.4	23.5	2.4	68.8	40.5	5.0	5.9	70.9	0.0	0.0	6.0
20.92	6.38	820.1	19.2	2.3	70.8	42.9	5.5	6.4	56.5	0.0	0.0	3.0
21.74	6.62	732.8	14.5	2.0	72.9	45.4	3.7	4.2	49.2	0.0	0.0	3.0
22.56	6.88	601.4	9.8	1.6	74.9	47.8	3.0	3.4	38.3	0.0	0.0	3.0
23.38	7.12	510.9	10.3	2.0	77.0	50.3	3.4	3.8	30.7	0.0	0.0	1.5
24.20	7.38	464.2	5.7	1.2	78.3	52.7	2.3	2.6	26.6	0.0	0.0	1.5
25.02	7.62	485.9	6.3	1.3	79.0	55.2	2.4	2.7	28.1	0.0	0.0	1.5
25.84	7.88	800.0	15.5	1.9	80.4	57.6	4.0	4.4	53.0	0.0	0.0	3.0
26.66	8.12	1609.7	25.1	1.6	82.4	60.1	6.4	6.9	117.4	30.0	32.0	6.0
27.48	8.38	3966.8	51.0	1.3	84.5	62.5	13.2	14.1	0.0	43.2	38.0	1.0
28.30	8.62	2824.6	43.1	1.5	86.6	65.0	11.3	11.9	213.8	33.1	36.0	6.0
29.12	8.88	2407.3	17.8	0.7	88.7	67.4	8.0	8.3	0.0	30.0	34.0	1.0
29.94	9.12	2387.5	46.4	1.9	90.9	69.9	9.6	9.8	178.1	30.0	34.0	6.0
30.76	9.38	1094.8	5.5	0.5	92.9	72.3	4.4	4.4	74.4	30.0	30.0	3.0
31.58	9.62	1093.6	2.5	0.2	94.9	74.8	4.4	4.4	73.9	30.0	30.0	3.0
32.40	9.88	1335.4	7.3	0.5	97.0	77.3	5.3	5.3	92.9	30.0	30.0	3.0
33.22	10.12	1104.7	8.5	0.8	99.0	79.7	4.4	4.3	74.1	30.0	30.0	3.0
34.04	10.38	1015.9	15.1	1.5	101.1	82.2	5.1	4.9	66.6	0.0	0.0	3.0
34.86	10.62	1204.5	26.8	2.2	103.1	84.6	6.0	5.8	81.3	0.0	0.0	3.0
35.68	10.88	646.9	9.4	1.4	105.2	87.1	3.2	3.1	36.4	0.0	0.0	1.5
36.50	11.12	931.7	9.0	1.0	107.2	89.5	4.7	4.4	58.8	0.0	0.0	3.0
37.32	11.38	2672.5	42.9	1.6	109.3	92.0	10.7	10.0	197.7	30.0	34.0	6.0
38.14	11.62	3123.7	47.6	1.5	111.3	94.4	12.5	11.6	233.4	32.4	36.0	6.0
38.96	11.88	1335.7	25.0	1.9	113.4	96.9	6.7	6.1	90.0	0.0	0.0	3.0
39.78	12.12	966.9	17.3	1.8	115.4	99.3	4.8	4.4	60.2	0.0	0.0	3.0
40.60	12.38	789.8	8.2	1.0	117.5	101.8	3.9	3.6	45.6	0.0	0.0	1.5
41.42	12.62	818.9	7.1	0.9	119.5	104.2	4.1	3.7	47.6	0.0	0.0	1.5
42.24	12.88	838.7	8.6	1.0	121.6	106.7	4.2	3.7	48.8	0.0	0.0	1.5

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	901.4	8.6	1.0	123.6	109.1	4.5	4.0	53.5	0.0	0.0	1.5
43.88	13.38	832.8	7.6	0.9	125.7	111.6	4.2	3.6	47.6	0.0	0.0	1.5
44.70	13.62	1006.8	9.1	0.9	127.7	114.0	4.0	3.5	61.2	30.0	30.0	1.5
45.52	13.88	965.9	11.2	1.2	129.8	116.5	4.8	4.1	57.6	0.0	0.0	1.5
46.34	14.12	955.9	11.8	1.2	131.8	118.9	4.8	4.1	56.4	0.0	0.0	1.5
47.16	14.38	960.9	11.7	1.2	133.9	121.4	4.8	4.1	56.5	0.0	0.0	1.5
47.98	14.62	1028.5	11.0	1.1	135.9	123.9	4.1	3.5	61.5	30.0	30.0	1.5
48.80	14.88	1025.8	12.0	1.2	137.9	126.3	5.1	4.3	60.9	0.0	0.0	1.5
49.62	15.12	1068.5	12.5	1.2	140.0	128.8	5.3	4.4	64.0	0.0	0.0	1.5
50.44	15.38	992.1	13.9	1.4	142.0	131.2	5.0	4.1	57.5	0.0	0.0	1.5
51.26	15.62	993.6	14.9	1.5	144.1	133.7	5.0	4.1	57.3	0.0	0.0	1.5
52.08	15.88	2883.6	50.5	1.8	146.1	136.1	11.5	9.3	208.1	30.0	32.0	6.0
52.90	16.12	3815.3	35.1	0.9	148.2	138.6	12.7	10.2	0.0	34.0	34.0	1.0
53.72	16.38	1768.4	23.4	1.3	150.4	141.0	7.1	5.6	118.2	30.0	30.0	3.0
54.54	16.62	2628.8	39.9	1.5	152.4	143.5	10.5	8.3	186.6	30.0	32.0	6.0
55.36	16.88	7619.2	101.9	1.3	154.6	145.9	19.0	15.0	0.0	53.2	38.0	1.0
56.18	17.12	10915.2	105.3	1.0	156.9	148.4	27.3	21.3	0.0	63.3	40.0	1.0
57.00	17.38	2473.4	49.8	2.0	159.0	150.8	9.9	7.7	173.1	30.0	32.0	6.0
57.82	17.62	2376.3	30.7	1.3	161.1	153.3	9.5	7.3	165.0	30.0	32.0	6.0
58.64	17.88	3848.7	58.9	1.5	163.2	155.7	12.8	9.8	0.0	32.9	34.0	1.0
59.46	18.12	5776.6	88.0	1.5	165.4	158.2	19.3	14.7	0.0	44.3	36.0	1.0
60.28	18.38	10099.2	139.9	1.4	167.6	160.6	25.2	19.1	0.0	60.2	40.0	1.0
61.10	18.62	19566.8	224.4	1.1	170.0	163.1	39.1	29.4	0.0	78.9	42.0	1.0
61.93	18.88	32009.0	200.7	0.6	172.5	165.5	53.3	39.8	0.0	92.8	44.0	1.0
62.75	19.12	29176.3	143.6	0.5	175.0	168.0	48.6	36.0	0.0	89.9	44.0	1.0
63.57	19.38	9413.8	81.1	0.9	177.4	170.4	23.5	17.3	0.0	57.3	38.0	1.0
64.39	19.62	2931.4	33.4	1.1	179.7	172.9	9.8	7.1	0.0	30.0	32.0	1.0
65.21	19.88	15467.2	184.8	1.2	181.9	175.4	38.7	28.1	0.0	71.2	42.0	1.0
66.03	20.12	28996.8	330.7	1.1	184.3	177.8	58.0	41.8	0.0	89.0	44.0	1.0
66.85	20.38	28361.4	244.8	0.9	186.7	180.3	56.7	40.6	0.0	88.2	44.0	1.0
67.67	20.62	16230.4	151.8	0.9	189.1	182.7	32.5	23.1	0.0	72.0	42.0	1.0
68.49	20.88	3344.4	72.3	2.2	191.3	185.2	13.4	9.5	237.4	30.0	32.0	6.0
69.31	21.12	2194.2	30.5	1.4	193.4	187.6	8.8	6.2	145.1	30.0	30.0	3.0
70.13	21.38	1599.3	12.1	0.8	195.4	190.1	6.4	4.5	97.1	30.0	30.0	1.5
70.95	21.62	1329.8	8.1	0.6	197.5	192.5	5.3	3.7	75.2	30.0	30.0	1.5
71.77	21.88	1440.7	11.2	0.8	199.5	195.0	5.8	4.0	83.7	30.0	30.0	1.5
72.59	22.12	1443.5	10.5	0.7	201.6	197.4	5.8	4.0	83.6	30.0	30.0	1.5
73.41	22.38	1493.6	17.4	1.2	203.6	199.9	6.0	4.1	87.2	30.0	30.0	1.5
74.23	22.62	2132.2	19.8	0.9	205.7	202.3	8.5	5.8	137.9	30.0	30.0	3.0
75.05	22.88	2802.4	34.7	1.2	207.7	204.8	11.2	7.6	191.2	30.0	30.0	3.0
75.87	23.12	1692.0	23.4	1.4	209.8	207.2	6.8	4.6	102.0	30.0	30.0	1.5
76.69	23.38	2347.9	48.6	2.1	211.8	209.7	9.4	6.3	154.1	30.0	30.0	3.0
77.51	23.62	2608.1	48.5	1.9	213.9	212.1	10.4	7.0	174.6	30.0	30.0	3.0
78.33	23.88	2199.0	37.9	1.7	215.9	214.6	8.8	5.9	141.5	30.0	30.0	3.0
79.15	24.12	2185.2	35.0	1.6	218.0	217.0	8.7	5.8	140.0	30.0	30.0	3.0
79.97	24.38	2363.5	39.8	1.7	220.0	219.5	9.5	6.2	153.9	30.0	30.0	3.0
80.79	24.62	2556.9	40.7	1.6	222.0	222.0	10.2	6.7	169.0	30.0	30.0	3.0
81.61	24.88	2299.1	32.7	1.4	224.1	224.4	9.2	6.0	148.0	30.0	30.0	3.0
82.43	25.12	2254.8	21.8	1.0	226.1	226.9	9.0	5.9	144.1	30.0	30.0	3.0
83.25	25.38	3623.2	63.8	1.8	228.2	229.3	14.5	9.4	253.3	30.0	32.0	6.0
84.07	25.62	4949.0	76.1	1.5	230.3	231.8	16.5	10.6	0.0	35.2	34.0	1.0
84.89	25.88	4599.7	83.8	1.8	232.5	234.2	15.3	9.8	0.0	32.9	32.0	1.0
85.71	26.12	2605.8	37.2	1.4	234.6	236.7	10.4	6.7	170.8	30.0	30.0	3.0
86.53	26.38	3297.3	42.1	1.3	236.7	239.1	11.0	7.0	0.0	30.0	30.0	1.0
87.35	26.62	2926.9	39.3	1.3	238.8	241.6	11.7	7.4	195.7	30.0	30.0	3.0
88.17	26.88	1813.2	15.7	0.9	240.9	244.0	7.3	4.6	106.3	30.0	30.0	1.5
88.99	27.12	2124.6	16.0	0.8	242.9	246.5	8.5	5.3	130.8	30.0	30.0	3.0
89.81	27.38	1777.3	14.1	0.8	244.9	248.9	7.1	4.4	102.7	30.0	30.0	1.5
90.63	27.62	1474.6	11.8	0.8	247.0	251.4	5.9	3.7	78.1	30.0	30.0	1.5
91.45	27.88	1865.0	25.6	1.4	249.0	253.8	7.5	4.6	109.0	30.0	30.0	1.5
92.27	28.12	2213.3	38.8	1.8	251.1	256.3	8.9	5.5	136.5	30.0	30.0	3.0
93.09	28.38	2011.6	33.3	1.7	253.1	258.7	8.0	4.9	120.0	30.0	30.0	1.5
93.91	28.62	1990.7	33.2	1.7	255.2	261.2	8.0	4.9	117.9	30.0	30.0	1.5
94.73	28.88	2201.4	34.8	1.6	257.2	263.6	8.8	5.4	134.4	30.0	30.0	3.0
95.55	29.12	3683.7	52.1	1.4	259.3	266.1	12.3	7.5	0.0	30.0	30.0	1.0
96.37	29.38	4071.8	46.6	1.1	261.5	268.5	13.6	8.2	0.0	30.0	32.0	1.0
97.19	29.62	2293.8	25.3	1.1	263.6	271.0	9.2	5.5	140.7	30.0	30.0	3.0
98.01	29.88	2063.6	26.6	1.3	265.7	273.5	8.3	5.0	122.0	30.0	30.0	1.5
98.83	30.12	3030.5	40.0	1.3	267.8	275.9	10.1	6.0	0.0	30.0	30.0	1.0

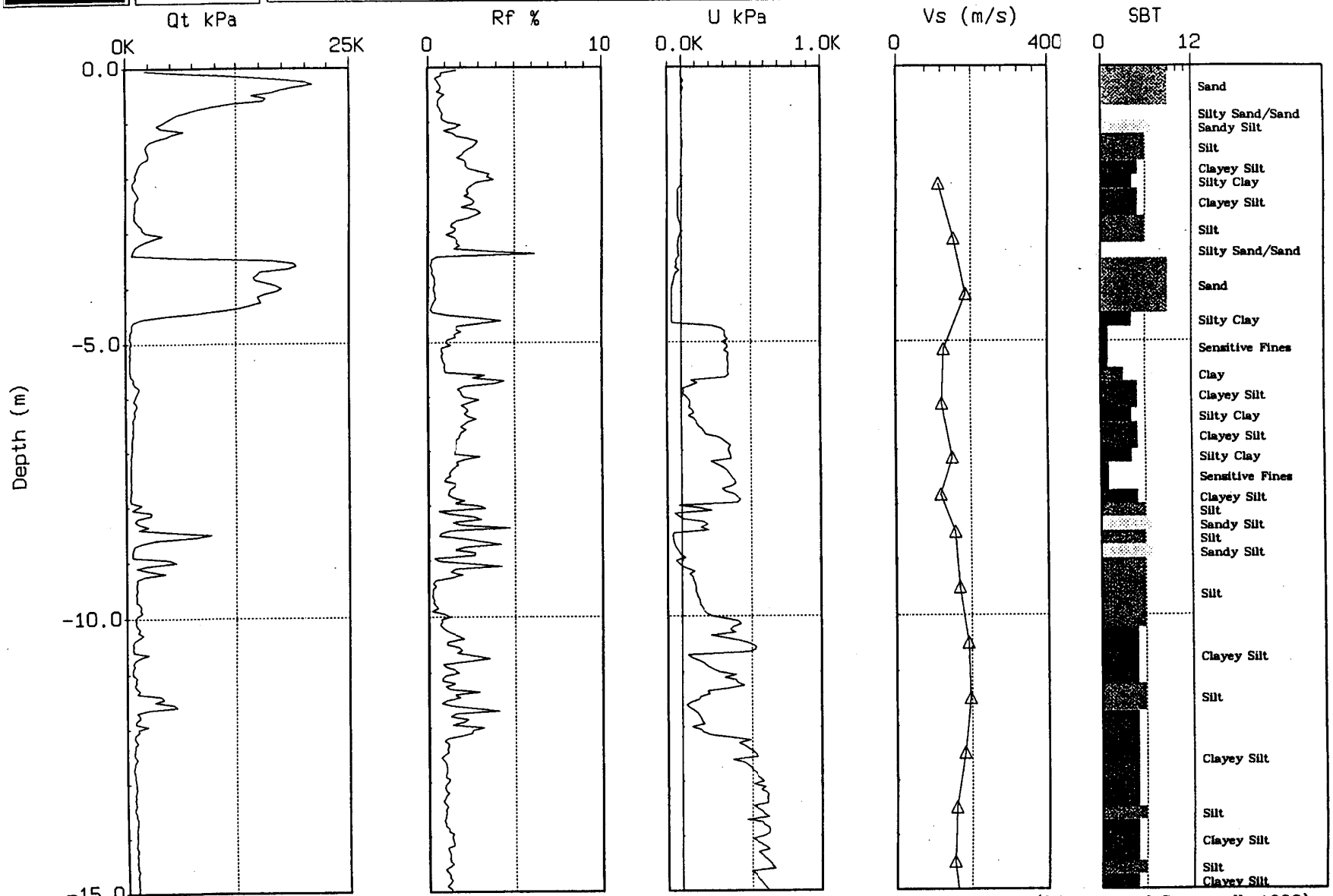
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	4436.1	66.1	1.5	270.0	278.4	14.8	8.8	0.0	30.0	32.0	1.0
100.47	30.62	10370.8	129.6	1.2	272.2	280.8	25.9	15.4	0.0	54.0	38.0	1.0
101.29	30.88	4588.6	131.8	2.9	274.4	283.3	18.4	10.8	322.5	30.5	32.0	6.0
102.11	31.12	10506.8	156.3	1.5	276.5	285.7	26.3	15.5	0.0	54.1	38.0	1.0
102.94	31.38	3493.6	62.6	1.8	278.7	288.2	14.0	8.2	234.1	30.0	30.0	3.0
103.76	31.62	5820.5	89.7	1.5	280.8	290.6	19.4	11.3	0.0	37.0	32.0	1.0
104.58	31.88	2213.7	33.4	1.5	282.9	293.1	8.9	5.2	131.0	30.0	30.0	1.5
105.40	32.12	1677.2	16.2	1.0	285.0	295.5	6.7	3.9	87.7	30.0	30.0	1.5
106.22	32.38	2194.4	46.0	2.1	287.0	298.0	8.8	5.1	128.8	30.0	30.0	1.5
107.04	32.62	3730.3	92.2	2.5	289.1	300.4	14.9	8.6	251.3	30.0	30.0	3.0
107.86	32.88	2951.7	48.2	1.6	291.1	302.9	11.8	6.8	188.6	30.0	30.0	3.0
108.68	33.12	3748.9	57.9	1.5	293.2	305.3	12.5	7.1	0.0	30.0	30.0	1.0
109.50	33.38	6440.8	131.6	2.0	295.4	307.8	21.5	12.2	0.0	39.1	34.0	1.0
110.32	33.62	14746.2	161.5	1.1	297.6	310.2	36.9	20.9	0.0	62.8	38.0	1.0

CONETEC

Kleinfelder

Ste: I15, S4: I15 R of W, 06-SC-117
Location: EB I80 Structure

Cone: 20 TON A 040
Date: 06:12:96 11:46



Max. Depth: 33.90 (m)
Depth Inc.: 0.05 (m)

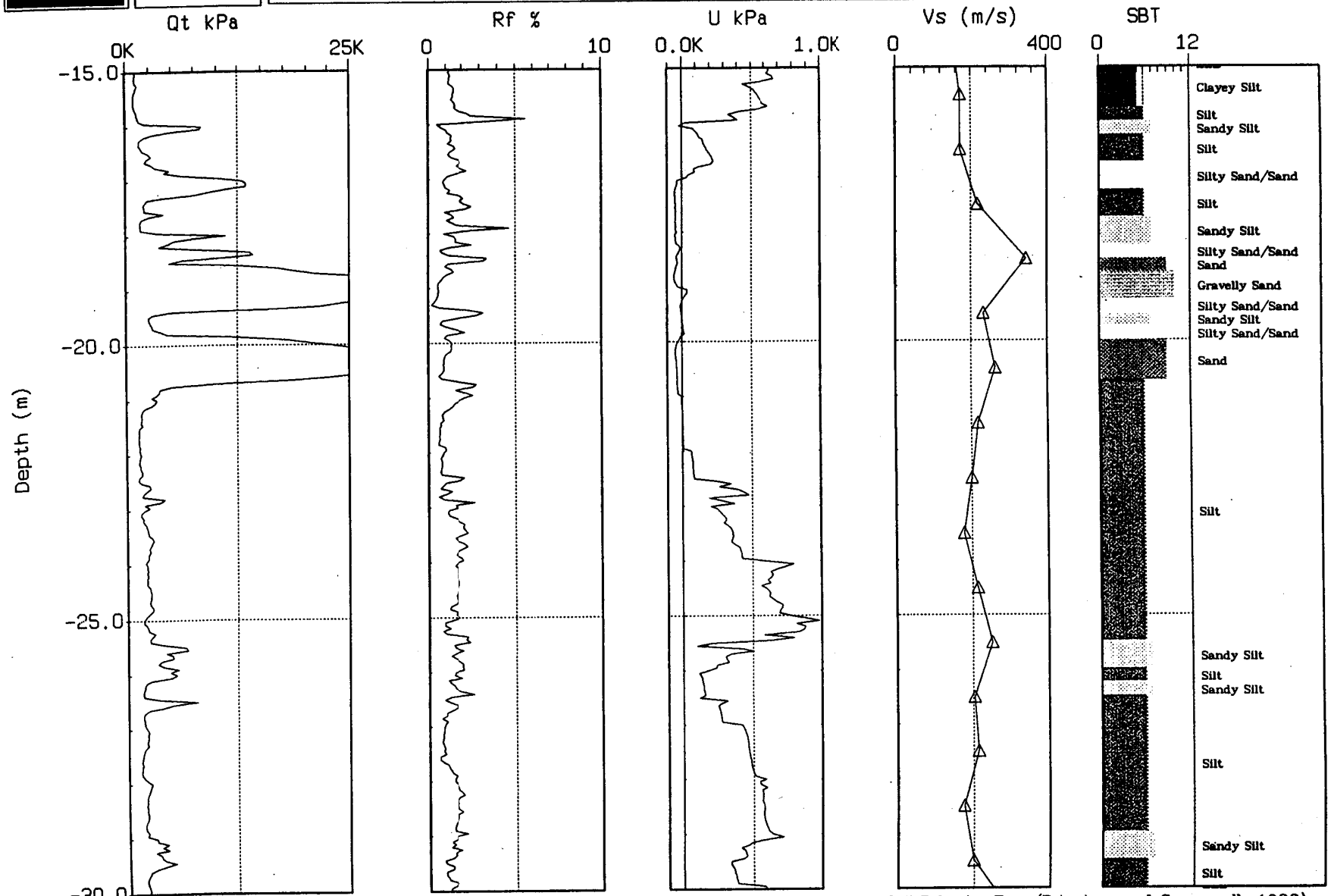
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15 R of W, 06-SC-117
Location: EB IBO Structure

Cone: 20 TON A 040
Date: 06:12:96 11:46



Max. Depth: 33.90 (m)
Depth Inc.: 0.05 (m)

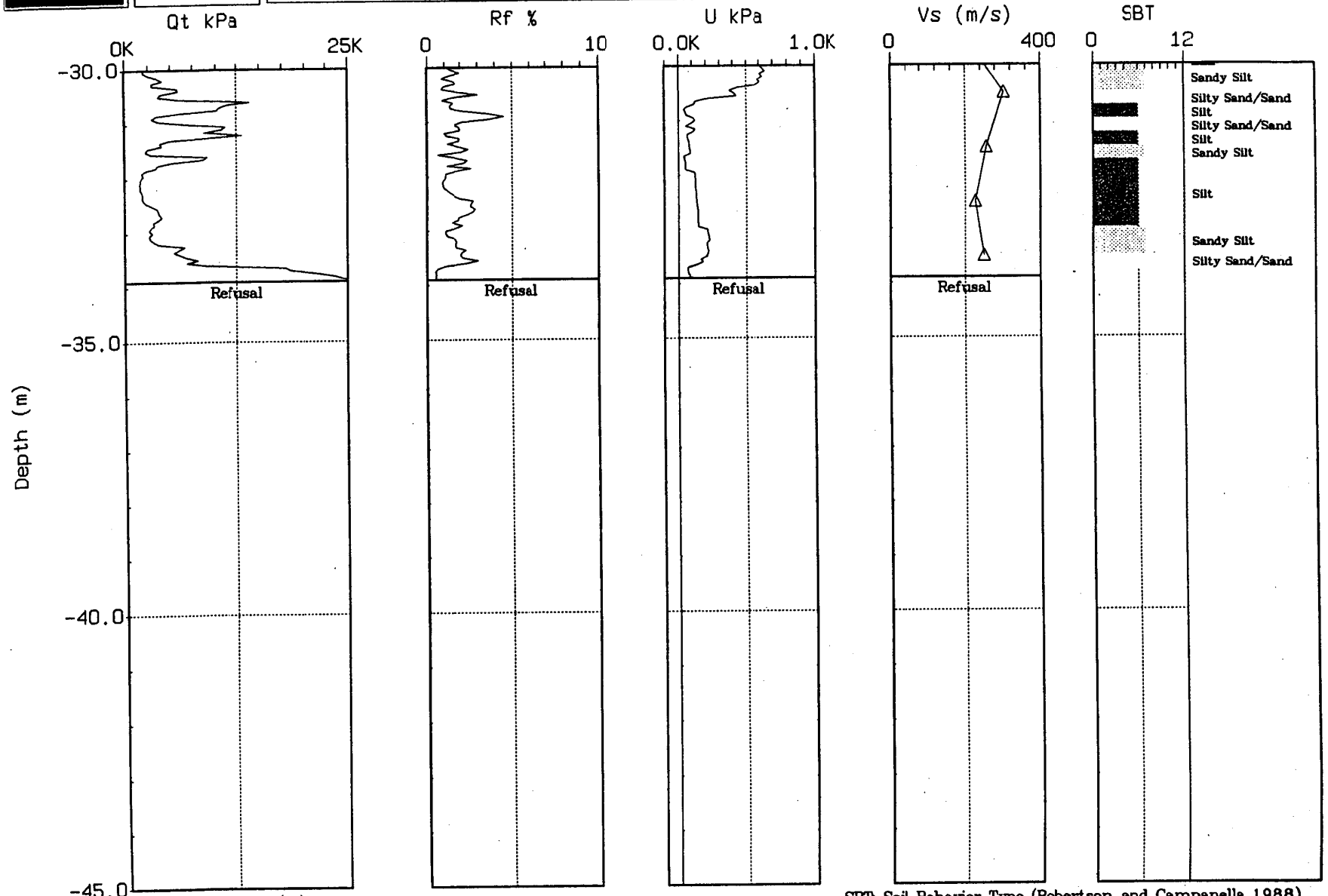
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15 R of W, 06-SC-117
Location: EB IBO Structure

Cone: 20 TON A 040
Date: 06:12:96 11:46



Max. Depth: 33.90 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-117*
Date: *12-Jun-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 040 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	(m)	(ms)	(m/s)	(ft/s)	(m)	(ft)
1.65	1.74					
2.65	2.71	8.5	114	373	1.7 - 2.7	5.4 - 8.7
3.65	3.69	6.4	154	505	2.7 - 3.7	8.7 - 12.0
4.65	4.68	5.3	187	613	3.7 - 4.7	12.0 - 15.3
5.65	5.68	7.7	129	424	4.7 - 5.7	15.3 - 18.5
6.65	6.67	8.0	124	408	5.7 - 6.7	18.5 - 21.8
7.65	7.67	6.6	151	496	6.7 - 7.7	21.8 - 25.1
8.00	8.02	2.9	120	395	7.7 - 8.0	25.1 - 26.2
9.00	9.02	6.3	158	520	8.0 - 9.0	26.2 - 29.5
10.00	10.02	5.9	169	555	9.0 - 10.0	29.5 - 32.8
11.00	11.01	5.2	192	630	10.0 - 11.0	32.8 - 36.1
12.00	1[illegible].01	5.1	196	643	11.0 - 12.[illegible]	36.1 - 39.4
13.00	13.01	5.5	182	596	12.0 - 13.0	39.4 - 42.7
14.00	14.01	6.3	159	520	13.0 - 14.0	42.7 - 45.9
15.00	15.01	6.4	156	512	14.0 - 15.0	45.9 - 49.2
16.00	16.01	5.8	172	565	15.0 - 16.0	49.2 - 52.5
17.00	17.01	5.8	172	565	16.0 - 17.0	52.5 - 55.8
18.00	18.01	4.6	217	713	17.0 - 18.0	55.8 - 59.1
19.00	19.01	2.9	345	1131	18.0 - 19.0	59.1 - 62.3
20.00	20.01	4.3	232	763	19.0 - 20.0	62.3 - 65.6
21.00	21.01	3.8	263	863	20.0 - 21.0	65.6 - 68.9
22.00	22.01	4.6	217	713	21.0 - 22.0	68.9 - 72.2
23.00	23.01	5.0	200	656	22.0 - 23.0	72.2 - 75.5
24.00	24.01	5.6	179	586	23.0 - 24.0	75.5 - 78.7
25.00	25.01	4.7	213	698	24.0 - 25.0	78.7 - 82.0
26.00	26.01	4.0	250	820	25.0 - 26.0	82.0 - 85.3
27.00	27.01	4.9	204	669	26.0 - 27.0	85.3 - 88.6
28.00	28.01	4.7	213	698	27.0 - 28.0	88.6 - 91.9
29.00	29.01	5.7	175	575	28.0 - 29.0	91.9 - 95.1
30.00	30.01	5.0	200	656	29.0 - 30.0	95.1 - 98.4
31.00	31.01	3.3	303	994	30.0 - 31.0	98.4 - ####
32.00	32.00	3.9	256	841	31.0 - 32.0	#### - ####
33.00	33.00	4.4	227	746	32.0 - 33.0	#### - ####
34.00	34.00	4.0	250	820	33.0 - 34.0	#### - ####

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0804-2149-3069
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15, S4: I15, 06-SC-124
Location: EB I80 Structure
Cone: 20 TON A 040
CPT Date: 96/13/06
CPT Time: 08:15
CPT File: KA06S124.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	12844.7	79.1	0.6	2.4	0.0	25.7	51.4	0.0	95.0	50.0	1.0
1.23	0.38	30668.6	216.2	0.7	7.3	0.0	61.3	122.7	0.0	95.0	50.0	1.0
2.05	0.62	6563.3	108.9	1.7	12.1	0.0	21.9	43.8	0.0	85.5	50.0	1.0
2.87	0.88	2599.9	67.4	2.6	16.6	0.0	10.4	20.8	206.7	54.4	44.0	10.0
3.69	1.12	891.8	43.1	4.8	21.1	0.0	8.9	17.8	69.7	0.0	0.0	6.0
4.51	1.38	963.2	37.9	3.9	25.4	0.0	9.6	18.7	75.0	0.0	0.0	6.0
5.33	1.62	925.5	44.9	4.9	29.8	0.0	9.3	16.6	71.7	0.0	0.0	6.0
6.15	1.88	1629.5	25.0	1.5	34.2	0.0	6.5	10.9	127.6	30.6	38.0	6.0
6.97	2.12	563.3	11.6	2.1	37.5	1.2	3.8	6.0	42.0	0.0	0.0	6.0
7.79	2.38	574.9	21.7	3.8	39.5	3.7	5.7	9.0	42.5	0.0	0.0	6.0
8.61	2.62	554.8	32.0	5.8	41.4	6.1	5.5	8.4	40.6	0.0	0.0	3.0
9.43	2.88	585.3	26.7	4.6	43.4	8.6	5.9	8.7	42.7	0.0	0.0	3.0
10.25	3.12	4669.1	24.2	0.5	45.5	11.0	11.7	16.9	0.0	56.7	42.0	1.0
11.07	3.38	7680.0	35.8	0.5	47.8	13.5	19.2	27.2	0.0	70.3	44.0	1.0
11.89	3.62	10763.8	38.4	0.4	50.1	15.9	21.5	29.8	0.0	79.3	46.0	1.0
12.71	3.88	12717.1	47.3	0.4	52.5	18.4	25.4	34.3	0.0	83.4	46.0	1.0
13.53	4.12	15471.9	50.7	0.3	55.0	20.8	30.9	40.8	0.0	88.4	46.0	1.0
14.35	4.38	13712.5	81.8	0.6	57.4	23.3	27.4	35.4	0.0	84.3	46.0	1.0
15.17	4.62	17331.7	39.9	0.2	59.8	25.8	34.7	43.9	0.0	90.4	46.0	1.0
15.99	4.88	16175.4	26.6	0.2	62.2	28.2	32.4	40.1	0.0	87.9	46.0	1.0
16.81	5.12	15200.4	36.4	0.2	64.7	30.7	30.4	37.0	0.0	85.5	46.0	1.0
17.63	5.38	18739.3	49.1	0.3	67.1	33.1	37.5	44.8	0.0	91.0	46.0	1.0
18.45	5.62	20620.5	42.5	0.2	69.6	35.6	34.4	40.3	0.0	93.2	46.0	1.0
19.27	5.88	23025.5	50.5	0.2	72.1	38.0	38.4	44.2	0.0	95.0	46.0	1.0
20.09	6.12	7821.9	78.6	1.0	74.5	40.5	19.6	22.2	0.0	64.4	42.0	1.0
20.92	6.38	1071.2	22.3	2.1	76.7	42.9	5.4	6.0	76.1	0.0	0.0	3.0
21.74	6.62	968.3	19.1	2.0	78.8	45.4	4.8	5.3	67.5	0.0	0.0	3.0
22.56	6.88	820.4	13.8	1.7	80.8	47.8	4.1	4.5	55.3	0.0	0.0	3.0
23.38	7.12	708.1	15.7	2.2	82.8	50.3	4.7	5.1	46.0	0.0	0.0	3.0
24.20	7.38	696.8	9.1	1.3	84.9	52.7	3.5	3.7	44.7	0.0	0.0	3.0
25.02	7.62	677.4	9.0	1.3	86.9	55.2	3.4	3.6	42.8	0.0	0.0	1.5
25.84	7.88	710.1	9.6	1.4	89.0	57.6	3.6	3.7	45.1	0.0	0.0	3.0
26.66	8.12	771.4	11.8	1.5	91.0	60.1	3.9	4.0	49.6	0.0	0.0	3.0
27.48	8.38	2145.6	30.7	1.4	93.1	62.5	8.6	8.7	159.2	30.0	34.0	6.0
28.30	8.62	2203.9	44.6	2.0	95.1	65.0	8.8	8.8	163.5	30.0	34.0	6.0
29.12	8.88	920.6	14.8	1.6	97.2	67.4	4.6	4.6	60.5	0.0	0.0	3.0
29.94	9.12	2031.8	38.5	1.9	99.2	69.9	8.1	8.0	149.0	30.0	32.0	6.0
30.76	9.38	1044.7	9.5	0.9	101.3	72.3	4.2	4.1	69.7	30.0	30.0	3.0
31.58	9.62	1152.9	13.1	1.1	103.3	74.8	4.6	4.4	78.0	30.0	30.0	3.0
32.40	9.88	1305.7	14.8	1.1	105.4	77.3	5.2	5.0	89.8	30.0	30.0	3.0
33.22	10.12	1040.1	10.1	1.0	107.4	79.7	4.2	3.9	68.2	30.0	30.0	3.0
34.04	10.38	1181.4	15.9	1.3	109.5	82.2	4.7	4.4	79.2	30.0	30.0	3.0
34.86	10.62	1846.7	39.8	2.2	111.5	84.6	7.4	6.8	132.0	30.0	32.0	6.0
35.68	10.88	1005.1	16.1	1.6	113.6	87.1	5.0	4.6	64.4	0.0	0.0	3.0
36.50	11.12	2555.8	51.5	2.0	115.6	89.5	10.2	9.3	188.1	30.0	34.0	6.0
37.32	11.38	772.4	9.8	1.3	117.7	92.0	3.9	3.5	45.0	0.0	0.0	1.5
38.14	11.62	1427.1	21.0	1.5	119.7	94.4	5.7	5.1	97.0	30.0	30.0	3.0
38.96	11.88	3670.8	75.8	2.1	121.8	96.9	14.7	13.0	276.2	35.7	36.0	6.0
39.78	12.12	1364.9	22.7	1.7	123.8	99.3	6.8	6.0	91.3	0.0	0.0	3.0
40.60	12.38	2546.6	50.3	2.0	125.8	101.8	10.2	8.9	185.5	30.0	32.0	6.0
41.42	12.62	1243.8	31.1	2.5	127.9	104.2	6.2	5.4	80.9	0.0	0.0	3.0
42.24	12.88	987.0	12.1	1.2	129.9	106.7	4.9	4.2	60.0	0.0	0.0	1.5

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	959.6	13.0	1.4	132.0	109.1	4.8	4.1	57.5	0.0	0.0	1.5
43.88	13.38	1109.8	13.1	1.2	134.0	111.6	4.4	3.8	69.1	30.0	30.0	3.0
44.70	13.62	1008.9	10.5	1.0	136.1	114.0	4.0	3.4	60.7	30.0	30.0	1.5
45.52	13.88	1011.5	9.0	0.9	138.1	116.5	4.0	3.4	60.6	30.0	30.0	1.5
46.34	14.12	1088.7	11.8	1.1	140.2	118.9	4.4	3.6	66.4	30.0	30.0	1.5
47.16	14.38	1044.1	14.6	1.4	142.2	121.4	5.2	4.3	62.4	0.0	0.0	1.5
47.98	14.62	1079.1	18.0	1.7	144.3	123.9	5.4	4.4	64.9	0.0	0.0	1.5
48.80	14.88	1079.6	13.6	1.3	146.3	126.3	5.4	4.4	64.6	0.0	0.0	1.5
49.62	15.12	1089.1	15.0	1.4	148.4	128.8	5.4	4.4	65.0	0.0	0.0	1.5
50.44	15.38	1105.6	16.9	1.5	150.4	131.2	5.5	4.4	65.9	0.0	0.0	1.5
51.26	15.62	1151.5	23.1	2.0	152.5	133.7	5.8	4.6	69.2	0.0	0.0	1.5
52.08	15.88	1170.1	21.1	1.8	154.5	136.1	5.9	4.6	70.4	0.0	0.0	1.5
52.90	16.12	1344.6	39.4	2.9	156.6	138.6	6.7	5.3	84.0	0.0	0.0	3.0
53.72	16.38	6157.2	74.2	1.2	158.7	141.0	20.5	15.9	0.0	46.8	38.0	1.0
54.54	16.62	3003.8	49.1	1.6	160.8	143.5	12.0	9.3	216.0	30.0	32.0	6.0
55.36	16.88	2372.1	23.9	1.0	162.8	145.9	9.5	7.3	165.1	30.0	32.0	6.0
56.18	17.12	2145.2	12.0	0.6	164.9	148.4	7.2	5.4	0.0	30.0	30.0	1.0
57.00	17.38	1631.5	13.7	0.8	167.0	150.8	6.5	4.9	105.1	30.0	30.0	3.0
57.82	17.62	3687.6	61.8	1.7	169.2	153.3	12.3	9.2	0.0	31.1	34.0	1.0
58.64	17.88	6709.5	108.8	1.6	171.3	155.7	22.4	16.7	0.0	48.1	38.0	1.0
59.46	18.12	7375.4	146.3	2.0	173.5	158.2	24.6	18.3	0.0	50.7	38.0	1.0
60.28	18.38	5863.8	116.3	2.0	175.7	160.6	19.5	14.4	0.0	43.9	36.0	1.0
61.10	18.62	2180.9	49.8	2.3	177.8	163.1	8.7	6.4	147.2	30.0	30.0	3.0
61.93	18.88	1331.6	17.2	1.3	179.8	165.5	5.3	3.9	78.9	30.0	30.0	1.5
62.75	19.12	1584.2	16.7	1.1	181.9	168.0	6.3	4.6	98.7	30.0	30.0	3.0
63.57	19.38	1510.7	20.5	1.4	183.9	170.4	6.0	4.4	92.5	30.0	30.0	3.0
64.39	19.62	6037.8	107.3	1.8	186.0	172.9	20.1	14.4	0.0	43.9	36.0	1.0
65.21	19.88	4272.4	122.5	2.9	188.1	175.4	17.1	12.2	312.7	33.8	34.0	6.0
66.03	20.12	11753.3	231.1	2.0	190.3	177.8	39.2	27.8	0.0	62.7	40.0	1.0
66.85	20.38	13008.0	183.8	1.4	192.5	180.3	32.5	22.9	0.0	65.4	40.0	1.0
67.67	20.62	3497.4	98.0	2.8	194.7	182.7	14.0	9.8	249.6	30.0	32.0	6.0
68.49	20.88	6052.9	133.3	2.2	196.8	185.2	20.2	14.1	0.0	43.2	36.0	1.0
69.31	21.12	3846.0	88.8	2.3	198.9	187.6	15.4	10.7	276.8	30.0	32.0	6.0
70.13	21.38	7083.9	132.7	1.9	201.0	190.1	23.6	16.3	0.0	47.4	36.0	1.0
70.95	21.62	16516.1	219.3	1.3	203.2	192.5	41.3	28.3	0.0	71.5	42.0	1.0
71.77	21.88	11913.0	279.1	2.3	205.5	195.0	39.7	27.1	0.0	62.0	40.0	1.0
72.59	22.12	6895.2	170.9	2.5	207.6	197.4	27.6	18.7	519.2	46.2	36.0	6.0
73.41	22.38	3362.7	83.3	2.5	209.6	199.9	13.5	9.1	236.3	30.0	32.0	6.0
74.23	22.62	1668.0	12.7	0.8	211.7	202.3	6.7	4.5	100.3	30.0	30.0	1.5
75.05	22.88	1906.4	15.5	0.8	213.7	204.8	7.6	5.1	119.0	30.0	30.0	3.0
75.87	23.12	2030.5	21.3	1.0	215.8	207.2	8.1	5.4	128.6	30.0	30.0	3.0
76.69	23.38	2347.1	32.4	1.4	217.8	209.7	9.4	6.2	153.6	30.0	30.0	3.0
77.51	23.62	3842.4	75.3	2.0	219.9	212.1	15.4	10.1	272.8	30.0	32.0	6.0
78.33	23.88	2443.2	41.7	1.7	221.9	214.6	9.8	6.4	160.5	30.0	30.0	3.0
79.15	24.12	2184.5	32.4	1.5	224.0	217.0	8.7	5.7	139.5	30.0	30.0	3.0
79.97	24.38	2034.0	29.9	1.5	226.0	219.5	8.1	5.3	127.1	30.0	30.0	3.0
80.79	24.62	2074.9	32.3	1.6	228.0	222.0	8.3	5.4	130.0	30.0	30.0	3.0
81.61	24.88	1783.3	19.6	1.1	230.1	224.4	7.1	4.6	106.3	30.0	30.0	1.5
82.43	25.12	1653.2	14.1	0.9	232.1	226.9	6.6	4.2	95.5	30.0	30.0	1.5
83.25	25.38	2050.4	22.0	1.1	234.2	229.3	8.2	5.2	127.0	30.0	30.0	3.0
84.07	25.62	3313.8	71.2	2.1	236.2	231.8	13.3	8.4	227.7	30.0	30.0	3.0
84.89	25.88	12939.4	323.0	2.5	238.3	234.2	43.1	27.3	0.0	62.2	40.0	1.0
85.71	26.12	6033.5	196.1	3.2	240.5	236.7	24.1	15.2	444.5	40.2	34.0	6.0
86.53	26.38	14836.7	367.0	2.5	242.6	239.1	49.5	31.1	0.0	65.9	40.0	1.0
87.35	26.62	2940.4	78.8	2.7	244.7	241.6	11.8	7.4	196.3	30.0	30.0	3.0
88.17	26.88	3546.6	69.2	2.0	246.7	244.0	14.2	8.8	244.5	30.0	32.0	3.0
88.99	27.12	2075.9	26.6	1.3	248.8	246.5	8.3	5.2	126.5	30.0	30.0	3.0
89.81	27.38	2291.1	34.2	1.5	250.8	248.9	9.2	5.7	143.3	30.0	30.0	3.0
90.63	27.62	1871.4	28.1	1.5	252.9	251.4	7.5	4.6	109.4	30.0	30.0	1.5
91.45	27.88	1991.8	29.3	1.5	254.9	253.8	8.0	4.9	118.6	30.0	30.0	1.5
92.27	28.12	2168.5	39.3	1.8	257.0	256.3	8.7	5.3	132.4	30.0	30.0	3.0
93.09	28.38	3087.5	73.9	2.4	259.0	258.7	12.3	7.5	205.6	30.0	30.0	3.0
93.91	28.62	2536.8	77.5	3.1	261.1	261.2	12.7	7.7	161.2	0.0	0.0	3.0
94.73	28.88	2346.4	58.0	2.5	263.1	263.6	9.4	5.7	145.6	30.0	30.0	3.0
95.55	29.12	2272.8	49.7	2.2	265.2	266.1	9.1	5.5	139.3	30.0	30.0	3.0
96.37	29.38	2818.7	48.1	1.7	267.2	268.5	11.3	6.8	182.6	30.0	30.0	3.0
97.19	29.62	5507.9	86.4	1.6	269.3	271.0	18.4	10.9	0.0	36.0	32.0	1.0
98.01	29.88	2310.7	27.1	1.2	271.4	273.5	9.2	5.5	141.3	30.0	30.0	3.0
98.83	30.12	2010.5	17.3	0.9	273.5	275.9	8.0	4.8	116.9	30.0	30.0	1.5

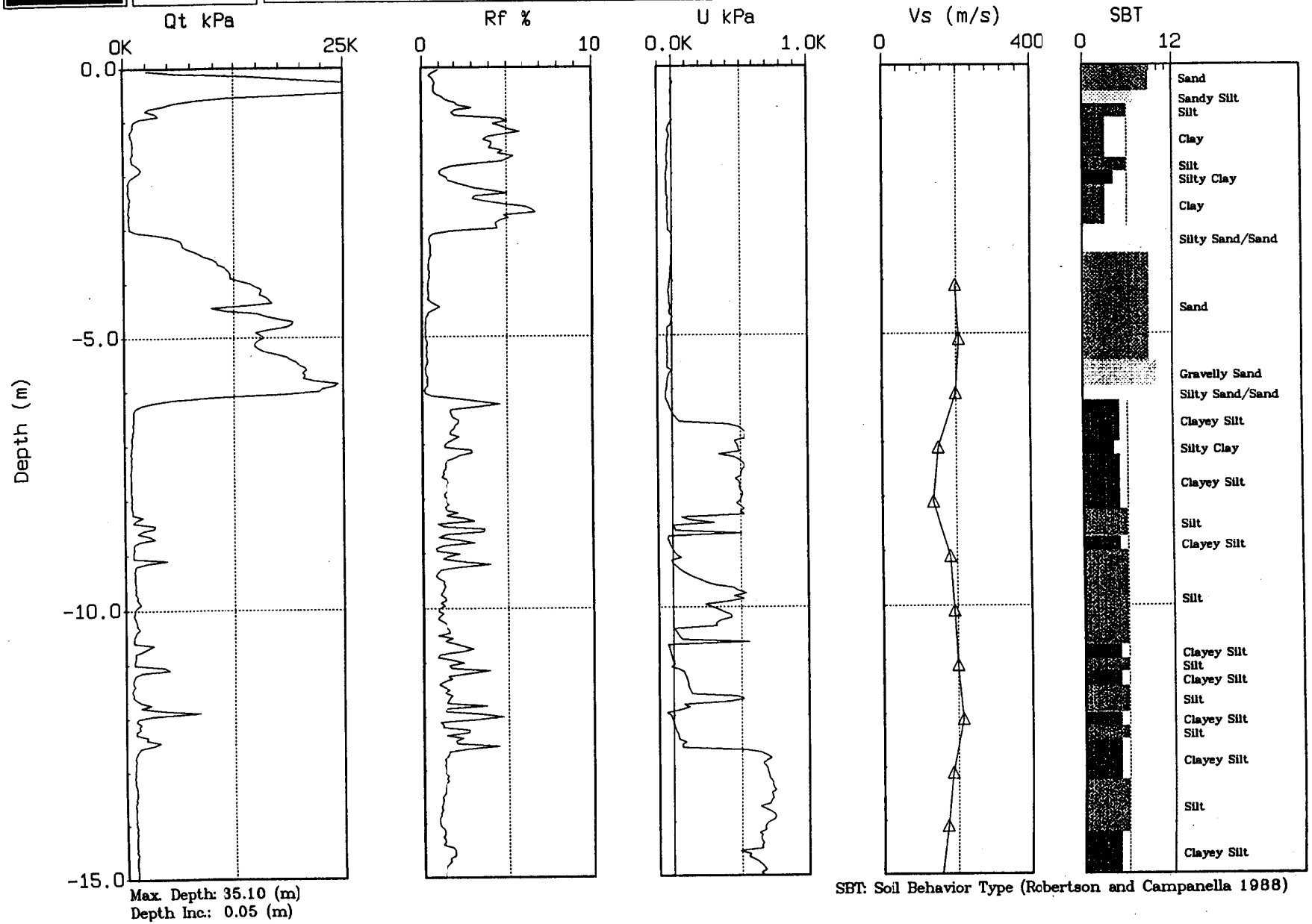
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	2333.9	26.6	1.1	275.5	278.4	9.3	5.5	142.4	30.0	30.0	3.0
100.47	30.62	4837.6	113.4	2.3	277.6	280.8	19.4	11.4	342.3	31.8	32.0	6.0
101.29	30.88	4604.4	105.6	2.3	279.6	283.3	18.4	10.8	323.3	30.3	32.0	6.0
102.11	31.12	7857.2	178.2	2.3	281.7	285.7	26.2	15.3	0.0	45.5	36.0	1.0
102.94	31.38	12013.8	243.0	2.0	283.9	288.2	40.0	23.3	0.0	57.6	38.0	1.0
103.76	31.62	4665.1	147.4	3.2	286.0	290.6	23.3	13.5	327.1	0.0	0.0	6.0
104.58	31.88	7315.4	143.7	2.0	288.1	293.1	24.4	14.1	0.0	43.1	34.0	1.0
105.40	32.12	2757.4	46.6	1.7	290.2	295.5	11.0	6.3	173.7	30.0	30.0	3.0
106.22	32.38	2009.6	27.7	1.4	292.3	298.0	8.0	4.6	113.6	30.0	30.0	1.5
107.04	32.62	2516.6	51.6	2.1	294.3	300.4	10.1	5.7	153.7	30.0	30.0	3.0
107.86	32.88	2690.9	67.7	2.5	296.4	302.9	10.8	6.1	167.3	30.0	30.0	3.0
108.68	33.12	2950.3	70.2	2.4	298.4	305.3	11.8	6.7	187.7	30.0	30.0	3.0
109.50	33.38	2748.1	37.0	1.3	300.5	307.8	11.0	6.2	171.2	30.0	30.0	3.0
110.32	33.62	2749.3	60.8	2.2	302.5	310.2	11.0	6.2	170.9	30.0	30.0	3.0
111.14	33.88	3034.2	82.6	2.7	304.6	312.7	12.1	6.8	193.4	30.0	30.0	3.0
111.96	34.12	3764.2	105.7	2.8	306.6	315.1	15.1	8.4	251.4	30.0	30.0	3.0
112.78	34.38	4232.6	92.2	2.2	308.7	317.6	16.9	9.4	288.5	30.0	30.0	3.0
113.60	34.62	4874.2	155.3	3.2	310.7	320.1	24.4	13.5	339.5	0.0	0.0	6.0
114.42	34.88	8481.0	197.4	2.3	312.8	322.5	28.3	15.6	0.0	46.2	34.0	1.0

CONETEC

Kleinfelder

Site: I15, S4: I15, 06-SC-124
Location: EB I80 Structure

Cone: 20 TON A 040
Date: 06:13:96 08:15



Max. Depth: 35.10 (m)
Depth Inc.: 0.05 (m)

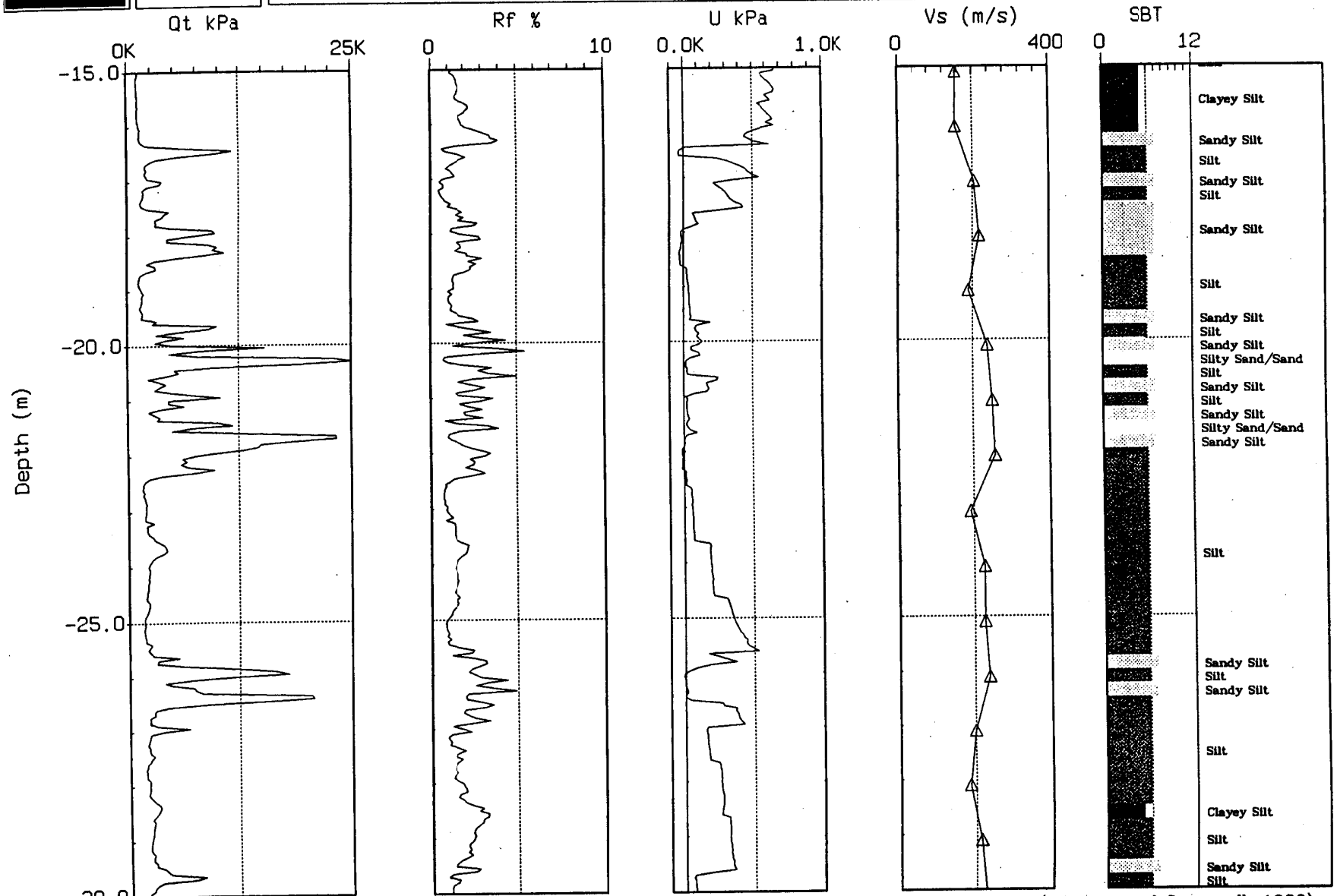
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15, 06-SC-124
Location: EB I80 Structure

Cone: 20 TON A 040
Date: 06:13:96 08:15



Max. Depth: 35.10 (m)
Depth Inc.: 0.05 (m)

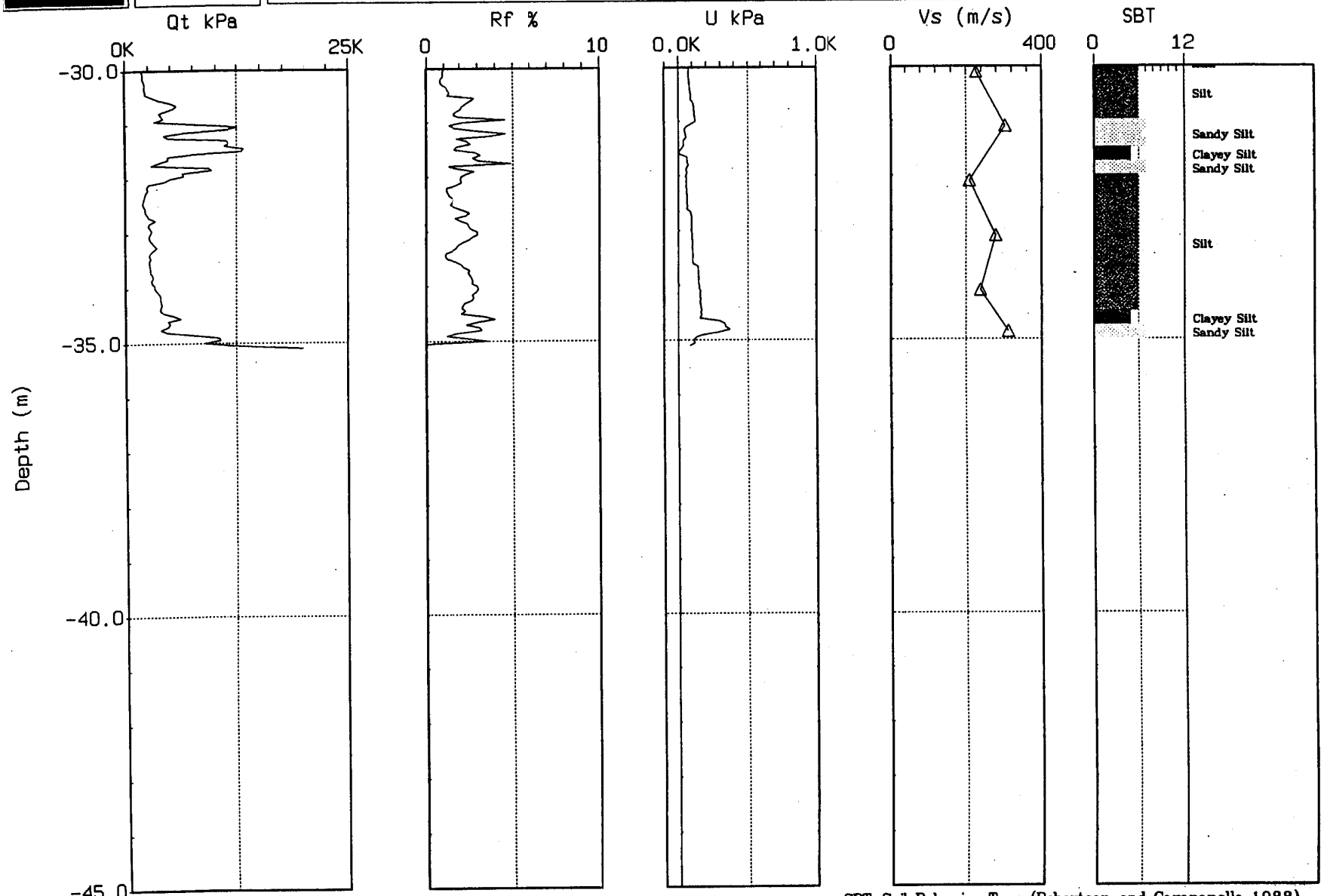
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15, 06-SC-124
Location: EB I80 Structure

Cone: 20 TON A 040
Date: 06:13:96 08:15



Max. Depth: 35.10 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-124*
Date: *13-Jun-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 040 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	(m)	(ms)	(m/s)	(ft/s)	(m)	(ft)
3.60	3.64					
4.60	4.63	5.0	198	650	3.6 - 4.6	11.8 - 15.1
5.60	5.63	4.8	* 207	679	4.6 - 5.6	15.1 - 18.4
6.60	6.62	5.0	199	653	5.6 - 6.6	18.4 - 21.7
7.60	7.62	6.6	151	496	6.6 - 7.6	21.7 - 24.9
8.60	8.62	7.3	137	448	7.6 - 8.6	24.9 - 28.2
9.60	9.62	5.5	181	595	8.6 - 9.6	28.2 - 31.5
10.60	10.61	5.2	* 192	630	9.6 - 10.6	31.5 - 34.8
11.60	11.61	5.0	200	655	10.6 - 11.6	34.8 - 38.1
12.60	12.61	4.7	213	697	11.6 - 12.6	38.1 - 41.3
13.60	13.61	5.4	185	607	12.6 - 13.6	41.3 - 44.6
14.60	14.61	5.8	172	565	13.6 - 14.6	44.6 - 47.9
15.60	15.61	6.4	* 156	512	14.6 - 15.6	47.9 - 51.2
16.60	16.61	6.5	154	504	15.6 - 16.6	51.2 - 54.5
17.60	17.61	4.9	204	669	16.6 - 17.6	54.5 - 57.7
18.60	18.61	4.6	217	713	17.6 - 18.6	57.7 - 61.0
19.60	19.61	5.3	189	619	18.6 - 19.6	61.0 - 64.3
20.60	20.61	4.2	* 238	781	19.6 - 20.6	64.3 - 67.6
21.60	21.61	4.0	250	820	20.6 - 21.6	67.6 - 70.9
22.60	22.61	3.9	256	841	21.6 - 22.6	70.9 - 74.1
23.60	23.61	5.2	192	631	22.6 - 23.6	74.1 - 77.4
24.60	24.61	4.4	227	745	23.6 - 24.6	77.4 - 80.7
25.60	25.61	4.4	* 227	745	24.6 - 25.6	80.7 - 84.0
26.60	26.61	4.2	238	781	25.6 - 26.6	84.0 - 87.3
27.60	27.61	5.0	200	656	26.6 - 27.6	87.3 - 90.6
28.60	28.61	5.4	185	607	27.6 - 28.6	90.6 - 93.8
29.60	29.61	4.7	213	698	28.6 - 29.6	93.8 - 97.1
30.60	30.61	4.4	* 227	746	29.6 - 30.6	97.1 - 100.4
31.60	31.60	3.3	303	994	30.6 - 31.6	100.4 - 103.7
32.60	32.60	4.8	208	683	31.6 - 32.6	103.7 - 107.0
33.60	33.60	3.6	278	911	32.6 - 33.6	107.0 - 110.2
34.60	34.60	4.2	238	781	33.6 - 34.6	110.2 - 113.5
35.10	35.10	1.6	* 312	1025	34.6 - 35.1	113.5 - 115.2
					3A.85	

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0804-2149-3273
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15, S4: UPRR R of W, 06-SC-126
Location: S Temple Struct.
Cone: 20 TON A 040
CPT Date: 96/21/06
CPT Time: 08:44
CPT File: KA06S126.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	6478.3	56.3	0.9	2.4	0.0	16.2	32.4	0.0	95.0	50.0	1.0
1.23	0.38	5818.7	60.4	1.0	7.1	0.0	19.4	38.8	0.0	89.7	50.0	1.0
2.05	0.62	2159.2	69.3	3.2	11.6	0.0	10.8	21.6	171.8	0.0	0.0	10.0
2.87	0.88	592.0	17.5	2.9	16.1	0.0	5.9	11.8	46.1	0.0	0.0	6.0
3.69	1.12	579.1	20.6	3.6	20.4	0.0	5.8	11.6	44.7	0.0	0.0	6.0
4.51	1.38	560.4	24.3	4.3	24.8	0.0	5.6	11.0	42.8	0.0	0.0	6.0
5.33	1.62	863.1	46.0	5.3	29.2	0.0	8.6	15.6	66.7	0.0	0.0	6.0
6.15	1.88	462.4	20.0	4.3	33.6	0.0	4.6	7.8	34.3	0.0	0.0	6.0
6.97	2.12	768.7	35.3	4.6	36.7	1.2	7.7	12.4	58.5	0.0	0.0	6.0
7.79	2.38	2947.5	21.4	0.7	38.8	3.7	9.8	15.4	0.0	45.8	40.0	1.0
8.61	2.62	5438.7	22.0	0.4	41.0	6.1	13.6	20.8	0.0	62.6	44.0	1.0
9.43	2.88	4778.6	42.4	0.9	43.2	8.6	15.9	23.7	0.0	58.1	42.0	1.0
10.25	3.12	2168.6	48.0	2.2	45.3	11.0	8.7	12.6	169.0	34.8	38.0	6.0
11.07	3.38	2545.1	37.8	1.5	47.4	13.5	10.2	14.5	198.7	38.8	38.0	10.0
11.89	3.62	1748.0	38.3	2.2	49.4	15.9	8.7	12.2	134.6	0.0	0.0	6.0
12.71	3.88	1877.3	45.3	2.4	51.5	18.4	9.4	12.8	144.6	0.0	0.0	6.0
13.53	4.12	3622.6	90.3	2.5	53.5	20.8	14.5	19.4	283.9	47.1	40.0	10.0
14.35	4.38	4530.0	81.5	1.8	55.6	23.3	15.1	19.8	0.0	53.0	42.0	1.0
15.17	4.62	2126.2	45.6	2.1	57.7	25.8	8.5	11.0	163.4	30.8	38.0	6.0
15.99	4.88	2357.4	62.0	2.6	59.8	28.2	11.8	14.9	181.6	0.0	0.0	6.0
16.81	5.12	3091.5	108.3	3.5	61.8	30.7	15.5	19.2	239.9	0.0	0.0	6.0
17.63	5.38	4250.9	105.1	2.5	63.9	33.1	17.0	20.8	332.3	49.2	40.0	10.0
18.45	5.62	5273.1	66.4	1.3	66.0	35.6	17.6	21.2	0.0	54.9	42.0	1.0
19.27	5.88	3884.4	60.2	1.5	68.2	38.0	12.9	15.3	0.0	45.7	40.0	1.0
20.09	6.12	4113.0	49.7	1.2	70.3	40.5	13.7	16.0	0.0	46.9	40.0	1.0
20.92	6.38	616.4	6.1	1.0	71.8	42.9	3.1	3.6	40.1	0.0	0.0	3.0
21.74	6.62	651.1	2.7	0.4	72.4	45.4	3.3	3.7	42.7	0.0	0.0	3.0
22.56	6.88	574.2	3.3	0.6	73.1	47.8	2.9	3.3	36.3	0.0	0.0	1.5
23.38	7.12	542.1	4.6	0.8	73.8	50.3	2.7	3.1	33.4	0.0	0.0	1.5
24.20	7.38	491.0	2.5	0.5	74.5	52.7	2.5	2.8	29.1	0.0	0.0	1.5
25.02	7.62	559.8	4.5	0.8	75.1	55.2	2.8	3.2	34.4	0.0	0.0	1.5
25.84	7.88	1024.1	12.2	1.2	76.5	57.6	5.1	5.7	71.2	0.0	0.0	3.0
26.66	8.12	995.4	19.1	1.9	78.5	60.1	5.0	5.5	68.5	0.0	0.0	3.0
27.48	8.38	709.2	9.3	1.3	80.6	62.5	3.5	3.9	45.3	0.0	0.0	3.0
28.30	8.62	636.0	9.0	1.4	82.6	65.0	3.2	3.4	39.1	0.0	0.0	1.5
29.12	8.88	559.7	8.2	1.5	84.7	67.4	2.8	3.0	32.6	0.0	0.0	1.5
29.94	9.12	572.0	6.1	1.1	86.0	69.9	2.9	3.0	33.3	0.0	0.0	1.5
30.76	9.38	575.2	4.6	0.8	86.7	72.3	2.9	3.0	33.3	0.0	0.0	1.5
31.58	9.62	538.1	3.8	0.7	87.4	74.8	2.7	2.8	30.1	0.0	0.0	1.5
32.40	9.88	547.9	3.8	0.7	88.1	77.3	2.7	2.9	30.6	0.0	0.0	1.5
33.22	10.12	548.5	5.2	1.0	88.7	79.7	2.7	2.8	30.4	0.0	0.0	1.5
34.04	10.38	583.6	4.9	0.8	89.4	82.2	2.9	3.0	33.0	0.0	0.0	1.5
34.86	10.62	595.6	4.6	0.8	90.1	84.6	3.0	3.1	33.7	0.0	0.0	1.5
35.68	10.88	1449.6	19.7	1.4	91.4	87.1	5.8	5.9	101.7	30.0	32.0	6.0
36.50	11.12	1005.8	24.6	2.4	93.5	89.5	5.0	5.1	65.8	0.0	0.0	3.0
37.32	11.38	2525.3	37.4	1.5	95.5	92.0	10.1	10.1	187.0	30.0	34.0	6.0
38.14	11.62	2058.6	49.4	2.4	97.6	94.4	8.2	8.2	149.3	30.0	34.0	6.0
38.96	11.88	717.1	6.7	0.9	99.6	96.9	3.6	3.5	41.6	0.0	0.0	1.5
39.78	12.12	997.8	17.4	1.7	101.7	99.3	5.0	4.8	63.7	0.0	0.0	3.0
40.60	12.38	2064.5	33.7	1.6	103.7	101.8	8.3	7.9	148.7	30.0	32.0	6.0
41.42	12.62	1415.4	18.3	1.3	105.8	104.2	5.7	5.4	96.4	30.0	30.0	3.0
42.24	12.88	1253.0	13.1	1.0	107.8	106.7	5.0	4.7	83.1	30.0	30.0	3.0

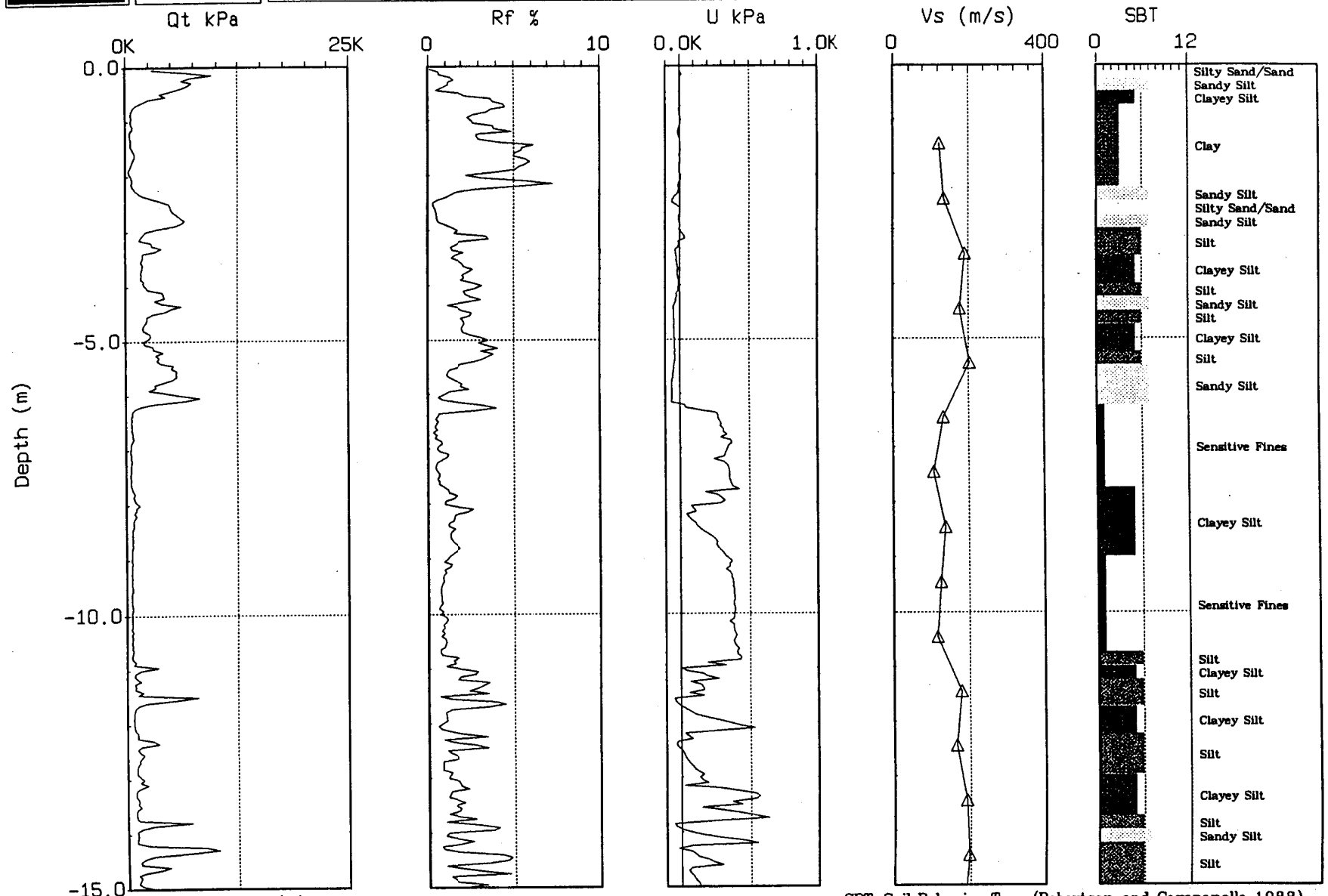
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	1395.3	25.8	1.8	109.9	109.1	7.0	6.5	94.1	0.0	0.0	3.0
43.88	13.38	1152.3	17.8	1.5	111.9	111.6	5.8	5.3	74.3	0.0	0.0	3.0
44.70	13.62	1012.8	19.6	1.9	114.0	114.0	5.1	4.6	62.8	0.0	0.0	3.0
45.52	13.88	2722.1	51.9	1.9	116.0	116.5	10.9	9.9	199.2	30.0	34.0	6.0
46.34	14.12	2848.9	31.9	1.1	118.1	118.9	9.5	8.6	0.0	30.0	34.0	1.0
47.16	14.38	4628.0	96.1	2.1	120.2	121.4	18.5	16.5	350.9	42.6	38.0	6.0
47.98	14.62	2512.8	55.9	2.2	122.3	123.9	10.1	8.9	181.3	30.0	32.0	6.0
48.80	14.88	1653.2	33.5	2.0	124.3	126.3	6.6	5.8	112.2	30.0	30.0	3.0
49.62	15.12	2458.6	56.6	2.3	126.4	128.8	9.8	8.6	176.3	30.0	32.0	6.0
50.44	15.38	947.9	12.2	1.3	128.4	131.2	4.7	4.1	55.1	0.0	0.0	1.5
51.26	15.62	1176.6	15.6	1.3	130.5	133.7	4.7	4.0	73.0	30.0	30.0	3.0
52.08	15.88	938.3	10.7	1.1	132.5	136.1	4.7	4.0	53.6	0.0	0.0	1.5
52.90	16.12	991.3	12.9	1.3	134.6	138.6	5.0	4.2	57.5	0.0	0.0	1.5
53.72	16.38	1010.3	13.1	1.3	136.6	141.0	5.1	4.2	58.6	0.0	0.0	1.5
54.54	16.62	922.9	9.3	1.0	138.7	143.5	4.6	3.8	51.3	0.0	0.0	1.5
55.36	16.88	1019.8	10.1	1.0	140.7	145.9	4.1	3.4	58.7	30.0	30.0	1.5
56.18	17.12	1062.7	15.8	1.5	142.7	148.4	5.3	4.4	61.7	0.0	0.0	1.5
57.00	17.38	1051.4	13.8	1.3	144.8	150.8	5.3	4.3	60.5	0.0	0.0	1.5
57.82	17.62	1613.2	29.8	1.8	146.8	153.3	6.5	5.2	105.0	30.0	30.0	3.0
58.64	17.88	1488.4	27.5	1.8	148.9	155.7	7.4	6.0	94.7	0.0	0.0	3.0
59.46	18.12	1311.9	26.7	2.0	150.9	158.2	6.6	5.2	80.2	0.0	0.0	3.0
60.28	18.38	1099.8	14.9	1.4	153.0	160.6	5.5	4.4	62.9	0.0	0.0	1.5
61.10	18.62	1133.0	22.7	2.0	155.0	163.1	5.7	4.5	65.2	0.0	0.0	1.5
61.93	18.88	1164.6	15.7	1.4	157.1	165.5	5.8	4.5	67.4	0.0	0.0	1.5
62.75	19.12	1182.0	18.5	1.6	159.1	168.0	5.9	4.6	68.4	0.0	0.0	1.5
63.57	19.38	1407.4	29.6	2.1	161.2	170.4	7.0	5.4	86.1	0.0	0.0	3.0
64.39	19.62	2330.8	78.3	3.4	163.2	172.9	11.7	8.9	159.6	0.0	0.0	3.0
65.21	19.88	2461.6	52.2	2.1	165.3	175.4	9.8	7.5	169.7	30.0	32.0	6.0
66.03	20.12	4640.8	61.1	1.3	167.4	177.8	15.5	11.7	0.0	37.9	36.0	1.0
66.85	20.38	4190.5	73.2	1.7	169.6	180.3	14.0	10.5	0.0	34.8	34.0	1.0
67.67	20.62	2667.6	56.4	2.1	171.7	182.7	10.7	8.0	185.1	30.0	32.0	6.0
68.49	20.88	2406.8	47.2	2.0	173.7	185.2	9.6	7.1	163.8	30.0	30.0	3.0
69.31	21.12	1819.8	43.2	2.4	175.8	187.6	9.1	6.7	116.5	0.0	0.0	3.0
70.13	21.38	6448.8	110.9	1.7	177.9	190.1	21.5	15.8	0.0	46.4	38.0	1.0
70.95	21.62	4959.3	124.2	2.5	180.0	192.5	19.8	14.5	366.9	38.8	36.0	6.0
71.77	21.88	14942.2	160.1	1.1	182.2	195.0	37.4	27.1	0.0	70.2	42.0	1.0
72.59	22.12	16044.7	142.3	0.9	184.5	197.4	32.1	23.1	0.0	72.0	42.0	1.0
73.41	22.38	3576.2	83.8	2.3	186.7	199.9	14.3	10.2	255.2	30.0	32.0	6.0
74.23	22.62	5617.0	69.7	1.2	188.9	202.3	18.7	13.3	0.0	41.6	36.0	1.0
75.05	22.88	4198.1	72.6	1.7	191.0	204.8	14.0	9.9	0.0	33.1	34.0	1.0
75.87	23.12	11156.0	151.6	1.4	193.3	207.2	27.9	19.6	0.0	61.0	40.0	1.0
76.69	23.38	15433.3	229.4	1.5	195.6	209.7	38.6	27.0	0.0	70.1	40.0	1.0
77.51	23.62	20121.8	375.0	1.9	197.9	212.1	50.3	35.0	0.0	77.5	42.0	1.0
78.33	23.88	21941.5	385.9	1.8	200.2	214.6	54.9	37.9	0.0	79.9	42.0	1.0
79.15	24.12	23267.1	440.0	1.9	202.5	217.0	58.2	40.0	0.0	81.4	42.0	1.0
79.97	24.38	33047.5	528.8	1.6	204.8	219.5	82.6	56.5	0.0	91.3	44.0	1.0
80.79	24.62	34533.6	565.3	1.6	207.0	222.0	86.3	58.7	0.0	92.4	44.0	1.0
81.61	24.88	36283.9	644.0	1.8	209.3	224.4	90.7	61.4	0.0	93.6	44.0	1.0
82.43	25.12	35582.8	625.7	1.8	211.6	226.9	89.0	59.8	0.0	92.9	44.0	1.0
83.25	25.38	34308.2	479.8	1.4	214.0	229.3	68.6	45.9	0.0	91.7	44.0	1.0
84.07	25.62	33610.4	143.9	0.4	216.5	231.8	56.0	37.3	0.0	91.0	44.0	1.0
84.89	25.88	13272.2	137.6	1.0	218.9	234.2	33.2	21.9	0.0	64.2	40.0	1.0
85.71	26.12	2570.3	40.3	1.6	221.1	236.7	10.3	6.8	169.0	30.0	30.0	3.0
86.53	26.38	2203.7	37.6	1.7	223.1	239.1	8.8	5.8	139.3	30.0	30.0	3.0
87.35	26.62	2082.2	30.4	1.5	225.2	241.6	8.3	5.4	129.2	30.0	30.0	3.0
88.17	26.88	1887.8	22.9	1.2	227.2	244.0	7.6	4.9	113.3	30.0	30.0	1.5
88.99	27.12	1865.6	34.9	1.9	229.3	246.5	7.5	4.8	111.2	30.0	30.0	1.5
89.81	27.38	2234.9	37.3	1.7	231.3	248.9	8.9	5.8	140.4	30.0	30.0	3.0
90.63	27.62	3314.7	50.0	1.5	233.4	251.4	13.3	8.5	226.4	30.0	30.0	3.0
91.45	27.88	8655.7	136.1	1.6	235.5	253.8	28.9	18.4	0.0	50.9	38.0	1.0
92.27	28.12	2700.7	78.0	2.9	237.6	256.3	13.5	8.6	176.5	0.0	0.0	3.0
93.09	28.38	2260.1	75.0	3.3	239.6	258.7	11.3	7.1	140.9	0.0	0.0	3.0
93.91	28.62	2502.2	58.5	2.3	241.7	261.2	10.0	6.3	159.9	30.0	30.0	3.0
94.73	28.88	2378.9	54.6	2.3	243.7	263.6	9.5	6.0	149.7	30.0	30.0	3.0
95.55	29.12	2344.7	55.0	2.3	245.8	266.1	9.4	5.9	146.6	30.0	30.0	3.0
96.37	29.38	2327.8	54.1	2.3	247.8	268.5	9.3	5.8	144.9	30.0	30.0	3.0
97.19	29.62	2175.2	37.0	1.7	249.9	271.0	8.7	5.4	132.3	30.0	30.0	3.0
98.01	29.88	2474.3	46.7	1.9	251.9	273.5	9.9	6.1	155.9	30.0	30.0	3.0
98.83	30.12	3939.3	128.3	3.3	254.0	275.9	19.7	12.1	272.8	0.0	0.0	6.0

CONETEC

Kleinfelder

Site: I15, S4: UPRR R of W, 06-SC-126
Location: S Temple Struct.

Cone: 20 TON A 040
Date: 06:21:96 08:44



Max. Depth: 30.30 (m)
Depth Inc.: 0.05 (m)

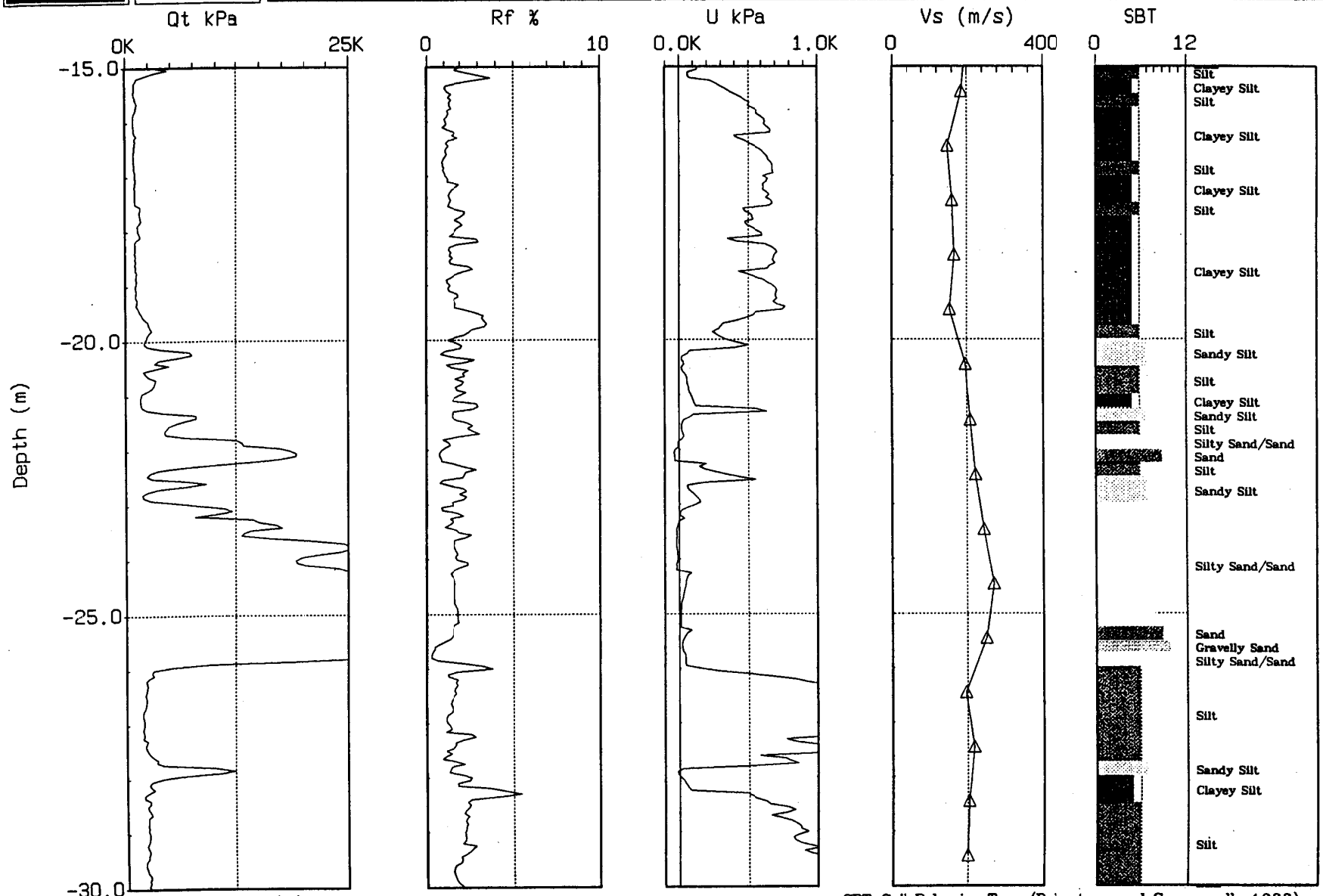
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: UPRR R of W, 06-SC-126
Location: S Temple Struct.

Cone: 20 TON A 040
Date: 06:21:96 08:44



Max. Depth: 30.30 (m)
Depth Inc.: 0.05 (m)

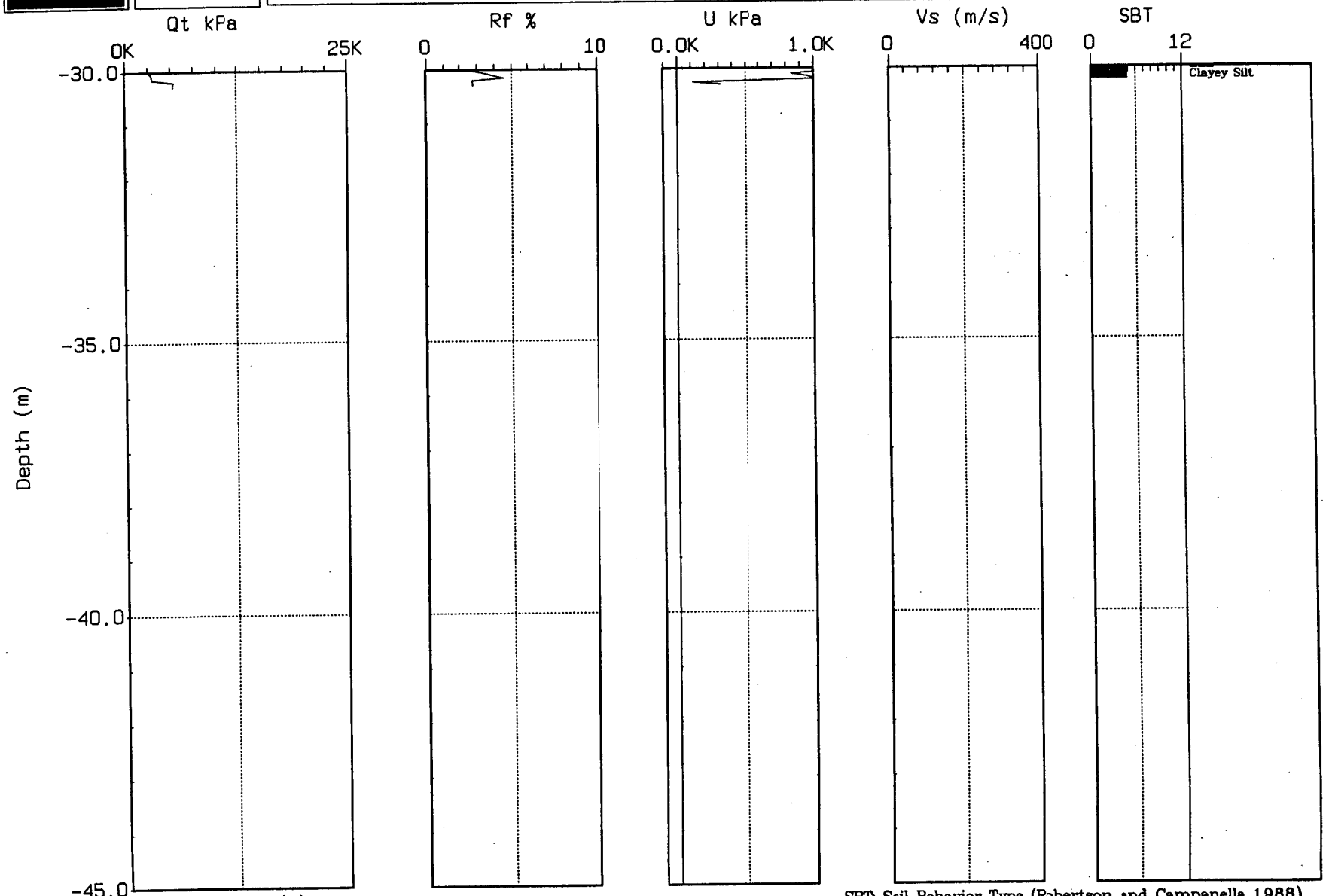
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: UPRR R of W, 06-SC-126
Location: S Temple Struct.

Cone: 20 TON A 040
Date: 06/21/96 08:44



Max. Depth: 30.30 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-126*
Date: *21-Jun-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 040 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
0.95	1.10					
1.95	2.03	7.5	* 123	405	1.0 - 2.0	3.1 - 6.4
2.95	3.00	7.2	135	444	2.0 - 3.0	6.4 - 9.7
3.95	3.99	5.2	190	623	3.0 - 4.0	9.7 - 13.0
4.95	4.98	5.6	* 177	581	4.0 - 5.0	13.0 - 16.2
5.95	5.98	4.9	203	666	5.0 - 6.0	16.2 - 19.5
6.95	6.97	7.5	133	436	6.0 - 7.0	19.5 - 22.8
7.95	7.97	9.3	107	352	7.0 - 8.0	22.8 - 26.1
8.95	8.97	7.3	137	448	8.0 - 9.0	26.1 - 29.4
9.95	9.97	8.0	* 125	409	9.0 - 10.0	29.4 - 32.6
10.95	10.96	8.6	115	379	10.0 - 11.0	32.6 - 35.9
11.95	11.96	5.6	178	585	11.0 - 12.0	35.9 - 39.2
12.95	12.96	6.1	165	542	12.0 - 13.0	39.2 - 42.5
13.95	13.96	5.3	190	624	13.0 - 14.0	42.5 - 45.8
14.95	14.96	5.1	* 196	643	14.0 - 15.0	45.8 - 49.0
15.95	15.96	5.4	185	607	15.0 - 16.0	49.0 - 52.3
16.95	16.96	6.7	149	489	16.0 - 17.0	52.3 - 55.6
17.95	17.96	6.2	161	529	17.0 - 18.0	55.6 - 58.9
18.95	18.96	6.0	167	547	18.0 - 19.0	58.9 - 62.2
19.95	19.96	6.5	* 154	505	19.0 - 20.0	62.2 - 65.5
20.95	20.96	5.1	196	643	20.0 - 21.0	65.5 - 68.7
21.95	21.96	4.8	208	683	21.0 - 22.0	68.7 - 72.0
22.95	22.96	4.5	222	729	22.0 - 23.0	72.0 - 75.3
23.95	23.96	4.1	244	800	23.0 - 24.0	75.3 - 78.6
24.95	24.96	3.7	* 270	886	24.0 - 25.0	78.6 - 81.9
25.95	25.96	4.0	250	820	25.0 - 26.0	81.9 - 85.1
26.95	26.96	5.1	196	643	26.0 - 27.0	85.1 - 88.4
27.95	27.96	4.6	217	713	27.0 - 28.0	88.4 - 91.7
28.95	28.96	4.9	204	669	28.0 - 29.0	91.7 - 95.0
29.95	29.96	5.0	* 200	656	29.0 - 30.0	95.0 - 98.3

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0804-2149-3597
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15, S4: S Temple, 06-SC-131
Location: S Temple Sturct.
Cone: 20 TON A 040
CPT Date: 96/20/06
CPT Time: 11:20
CPT File: KA06S131.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	6733.6	108.6	1.6	2.3	0.0	22.4	44.9	0.0	95.0	50.0	1.0
1.23	0.38	4688.0	48.7	1.0	6.9	0.0	15.6	31.3	0.0	83.8	50.0	1.0
2.05	0.62	3109.6	49.3	1.6	11.5	0.0	12.4	24.9	247.8	64.8	46.0	10.0
2.87	0.88	1430.1	52.0	3.6	16.0	0.0	9.5	19.1	113.1	0.0	0.0	10.0
3.69	1.12	1330.5	66.8	5.0	20.4	0.0	13.3	26.6	104.8	0.0	0.0	10.0
4.51	1.38	1022.6	50.8	5.0	24.8	0.0	10.2	20.1	79.8	0.0	0.0	6.0
5.33	1.62	1176.3	63.1	5.4	29.2	0.0	11.8	21.3	91.8	0.0	0.0	6.0
6.15	1.88	1269.1	68.1	5.4	33.6	0.0	12.7	21.4	98.8	0.0	0.0	6.0
6.97	2.12	747.0	30.4	4.1	36.7	1.2	7.5	12.1	56.7	0.0	0.0	6.0
7.79	2.38	1011.7	41.2	4.1	38.6	3.7	10.1	15.9	77.5	0.0	0.0	6.0
8.61	2.62	585.7	26.4	4.5	40.6	6.1	5.9	9.0	43.1	0.0	0.0	6.0
9.43	2.88	699.9	33.4	4.8	42.5	8.6	7.0	10.5	51.9	0.0	0.0	6.0
10.25	3.12	2037.0	33.9	1.7	44.5	11.0	8.1	12.0	158.5	33.3	38.0	6.0
11.07	3.38	6357.2	35.5	0.6	46.6	13.5	15.9	22.8	0.0	65.2	44.0	1.0
11.89	3.62	3078.0	36.8	1.2	48.9	15.9	10.3	14.4	0.0	43.8	40.0	1.0
12.71	3.88	1909.4	53.7	2.8	51.0	18.4	9.5	13.1	147.2	0.0	0.0	6.0
13.53	4.12	1299.6	31.0	2.4	53.0	20.8	6.5	8.7	98.1	0.0	0.0	6.0
14.35	4.38	1322.0	30.3	2.3	55.1	23.3	6.6	8.7	99.5	0.0	0.0	6.0
15.17	4.62	1180.8	28.9	2.4	57.1	25.8	5.9	7.6	87.8	0.0	0.0	6.0
15.99	4.88	1810.5	39.3	2.2	59.2	28.2	7.2	9.2	137.9	30.0	36.0	6.0
16.81	5.12	3128.8	35.3	1.1	61.3	30.7	10.4	13.0	0.0	41.0	38.0	1.0
17.63	5.38	2420.5	23.1	1.0	63.4	33.1	9.7	11.9	185.9	33.1	38.0	6.0
18.45	5.62	1700.9	17.2	1.0	65.4	35.6	6.8	8.2	128.0	30.0	34.0	6.0
19.27	5.88	2517.4	27.0	1.1	67.5	38.0	10.1	12.0	193.0	33.4	38.0	6.0
20.09	6.12	7829.0	77.3	1.0	69.7	40.5	19.6	23.0	0.0	65.4	42.0	1.0
20.92	6.38	9043.3	140.5	1.6	71.9	42.9	30.1	34.8	0.0	69.1	42.0	1.0
21.74	6.62	10598.5	140.6	1.3	74.1	45.4	26.5	30.1	0.0	73.2	44.0	1.0
22.56	6.88	11283.0	88.2	0.8	76.4	47.8	28.2	31.6	0.0	74.6	44.0	1.0
23.38	7.12	13181.9	87.0	0.7	78.8	50.3	26.4	29.1	0.0	78.6	44.0	1.0
24.20	7.38	4977.4	32.6	0.7	81.1	52.7	12.4	13.5	0.0	50.3	40.0	1.0
25.02	7.62	826.2	9.6	1.2	83.3	55.2	4.1	4.4	55.0	0.0	0.0	3.0
25.84	7.88	697.4	6.6	1.0	85.4	57.6	3.5	3.7	44.3	0.0	0.0	3.0
26.66	8.12	672.8	5.4	0.8	86.7	60.1	3.4	3.5	42.1	0.0	0.0	1.5
27.48	8.38	738.8	11.2	1.5	88.1	62.5	3.7	3.9	47.1	0.0	0.0	3.0
28.30	8.62	1027.1	33.2	3.2	90.1	65.0	6.8	7.1	69.8	0.0	0.0	3.0
29.12	8.88	795.4	15.8	2.0	92.2	67.4	4.0	4.1	50.9	0.0	0.0	3.0
29.94	9.12	702.8	8.6	1.2	94.2	69.9	3.5	3.5	43.1	0.0	0.0	1.5
30.76	9.38	669.5	7.2	1.1	96.3	72.3	3.3	3.3	40.1	0.0	0.0	1.5
31.58	9.62	577.4	7.5	1.3	98.3	74.8	2.9	2.8	32.3	0.0	0.0	1.5
32.40	9.88	629.7	9.1	1.4	100.4	77.3	3.1	3.1	36.2	0.0	0.0	1.5
33.22	10.12	619.4	8.5	1.4	102.4	79.7	3.1	3.0	35.0	0.0	0.0	1.5
34.04	10.38	647.7	8.9	1.4	104.5	82.2	3.2	3.1	36.9	0.0	0.0	1.5
34.86	10.62	643.7	8.7	1.4	106.5	84.6	3.2	3.1	36.2	0.0	0.0	1.5
35.68	10.88	656.6	8.6	1.3	108.6	87.1	3.3	3.1	36.9	0.0	0.0	1.5
36.50	11.12	641.7	8.6	1.3	110.6	89.5	3.2	3.0	35.3	0.0	0.0	1.5
37.32	11.38	603.1	8.6	1.4	112.7	92.0	3.0	2.8	31.9	0.0	0.0	1.5
38.14	11.62	2031.9	24.9	1.2	114.7	94.4	8.1	7.4	145.8	30.0	32.0	6.0
38.96	11.88	1196.8	31.5	2.6	116.8	96.9	6.0	5.4	78.7	0.0	0.0	3.0
39.78	12.12	1767.8	31.8	1.8	118.8	99.3	7.1	6.3	124.0	30.0	32.0	6.0
40.60	12.38	1953.7	25.7	1.3	120.8	101.8	7.8	7.0	138.5	30.0	32.0	6.0
41.42	12.62	758.6	6.7	0.9	122.9	104.2	3.8	3.3	42.5	0.0	0.0	1.5
42.24	12.88	1492.8	28.2	1.9	124.9	106.7	7.5	6.5	100.9	0.0	0.0	3.0

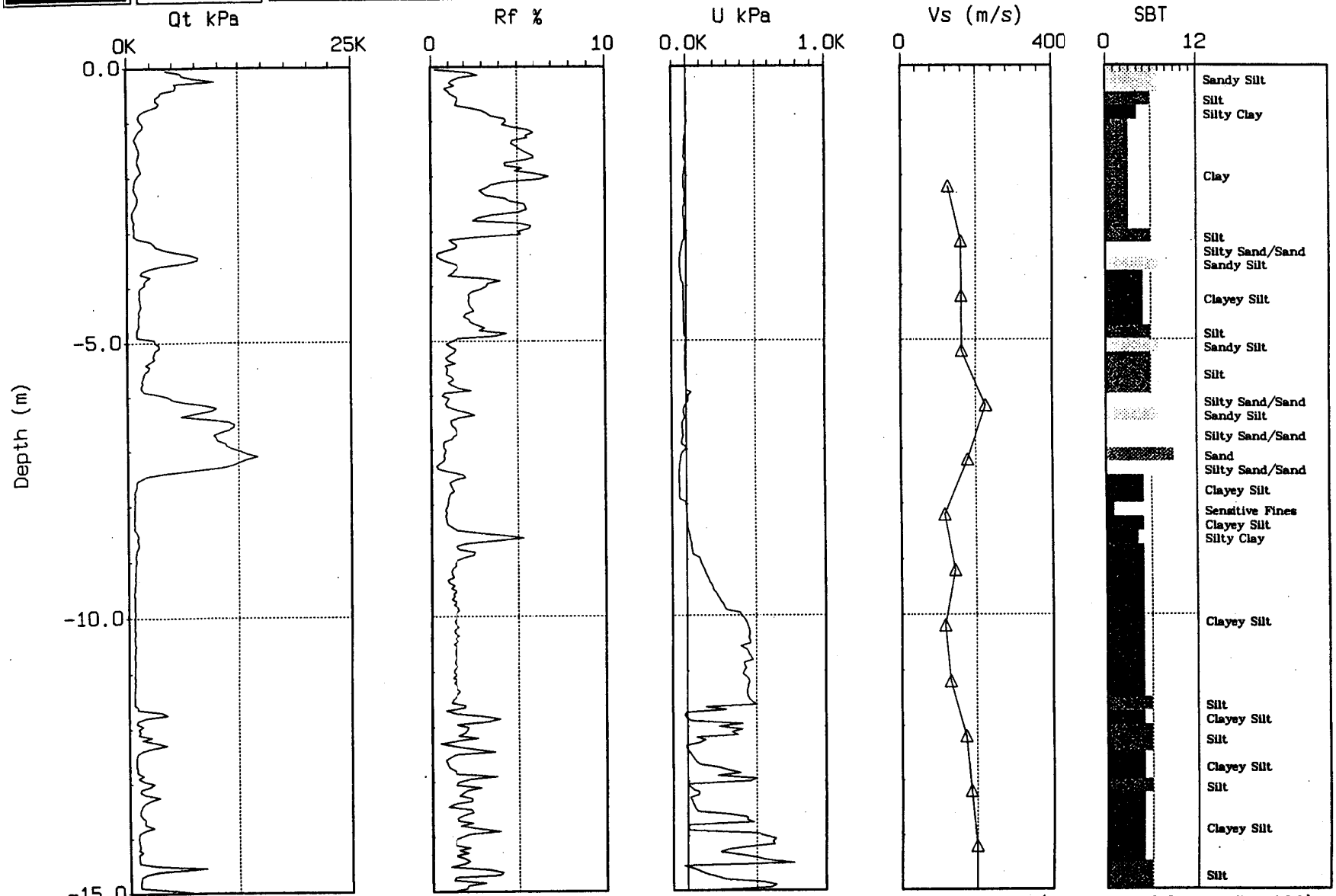
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	1893.8	33.9	1.8	127.0	109.1	7.6	6.6	132.6	30.0	32.0	6.0
43.88	13.38	1527.8	28.8	1.9	129.0	111.6	7.6	6.6	103.0	0.0	0.0	3.0
44.70	13.62	1491.1	28.4	1.9	131.1	114.0	7.5	6.4	99.7	0.0	0.0	3.0
45.52	13.88	1407.0	32.5	2.3	133.1	116.5	7.0	6.0	92.6	0.0	0.0	3.0
46.34	14.12	1047.0	16.2	1.5	135.2	118.9	5.2	4.4	63.4	0.0	0.0	1.5
47.16	14.38	1316.3	24.7	1.9	137.2	121.4	6.6	5.5	84.6	0.0	0.0	3.0
47.98	14.62	3186.3	65.4	2.1	139.3	123.9	12.7	10.6	233.9	30.0	34.0	6.0
48.80	14.88	3127.5	48.7	1.6	141.3	126.3	12.5	10.3	228.8	30.0	34.0	6.0
49.62	15.12	4648.4	94.3	2.0	143.4	128.8	18.6	15.2	350.1	40.2	36.0	6.0
50.44	15.38	3242.1	57.3	1.8	145.4	131.2	13.0	10.5	237.2	30.0	34.0	6.0
51.26	15.62	1390.9	30.4	2.2	147.5	133.7	7.0	5.6	88.8	0.0	0.0	3.0
52.08	15.88	2799.5	70.7	2.5	149.5	136.1	11.2	9.0	201.1	30.0	32.0	6.0
52.90	16.12	1534.2	27.1	1.8	151.6	138.6	6.1	4.9	99.5	30.0	30.0	3.0
53.72	16.38	1140.6	10.2	0.9	153.6	141.0	4.6	3.6	67.7	30.0	30.0	1.5
54.54	16.62	1349.6	16.4	1.2	155.7	143.5	5.4	4.2	84.0	30.0	30.0	3.0
55.36	16.88	1171.4	16.8	1.4	157.7	145.9	5.9	4.6	69.4	0.0	0.0	1.5
56.18	17.12	1083.7	14.6	1.3	159.7	148.4	5.4	4.2	62.0	0.0	0.0	1.5
57.00	17.38	979.9	12.0	1.2	161.8	150.8	4.9	3.8	53.4	0.0	0.0	1.5
57.82	17.62	1070.2	12.4	1.2	163.8	153.3	4.3	3.3	60.2	30.0	30.0	1.5
58.64	17.88	1223.1	19.7	1.6	165.9	155.7	6.1	4.6	72.1	0.0	0.0	1.5
59.46	18.12	1115.0	14.3	1.3	167.9	158.2	5.6	4.2	63.1	0.0	0.0	1.5
60.28	18.38	1226.1	14.8	1.2	170.0	160.6	4.9	3.7	71.6	30.0	30.0	1.5
61.10	18.62	1331.9	16.6	1.2	172.0	163.1	5.3	4.0	79.7	30.0	30.0	1.5
61.93	18.88	1349.8	19.6	1.5	174.1	165.5	5.4	4.0	80.8	30.0	30.0	1.5
62.75	19.12	1307.8	20.6	1.6	176.1	168.0	6.5	4.8	77.1	0.0	0.0	1.5
63.57	19.38	1267.1	19.8	1.6	178.2	170.4	6.3	4.6	73.5	0.0	0.0	1.5
64.39	19.62	1371.3	19.0	1.4	180.2	172.9	5.5	4.0	81.5	30.0	30.0	1.5
65.21	19.88	1386.0	26.0	1.9	182.3	175.4	6.9	5.0	82.3	0.0	0.0	1.5
66.03	20.12	1712.2	38.6	2.3	184.3	177.8	8.6	6.2	108.0	0.0	0.0	3.0
66.85	20.38	2550.9	64.5	2.5	186.4	180.3	10.2	7.3	174.7	30.0	30.0	3.0
67.67	20.62	1633.1	32.1	2.0	188.4	182.7	6.5	4.7	101.0	30.0	30.0	3.0
68.49	20.88	1624.4	41.9	2.6	190.5	185.2	8.1	5.8	99.9	0.0	0.0	3.0
69.31	21.12	2275.7	48.5	2.1	192.5	187.6	9.1	6.4	151.6	30.0	30.0	3.0
70.13	21.38	2524.7	27.3	1.1	194.6	190.1	10.1	7.1	171.2	30.0	30.0	3.0
70.95	21.62	1904.0	29.6	1.6	196.6	192.5	7.6	5.3	121.2	30.0	30.0	3.0
71.77	21.88	2283.6	38.1	1.7	198.7	195.0	9.1	6.3	151.2	30.0	30.0	3.0
72.59	22.12	2687.2	56.5	2.1	200.7	197.4	10.7	7.4	183.1	30.0	30.0	3.0
73.41	22.38	15670.3	205.9	1.3	202.9	199.9	39.2	26.9	0.0	70.0	40.0	1.0
74.23	22.62	23512.4	207.2	0.9	205.2	202.3	47.0	32.1	0.0	81.5	42.0	1.0
75.05	22.88	29978.6	126.9	0.4	207.7	204.8	50.0	33.9	0.0	88.3	44.0	1.0
75.87	23.12	23282.6	174.0	0.7	210.2	207.2	46.6	31.4	0.0	80.9	42.0	1.0
76.69	23.38	22009.3	180.9	0.8	212.6	209.7	44.0	29.5	0.0	79.1	42.0	1.0
77.51	23.62	25832.8	160.0	0.6	215.0	212.1	51.7	34.5	0.0	83.5	42.0	1.0
78.33	23.88	27642.3	130.4	0.5	217.5	214.6	46.1	30.6	0.0	85.3	44.0	1.0
79.15	24.12	16515.3	106.1	0.6	220.0	217.0	33.0	21.8	0.0	70.4	40.0	1.0
79.97	24.38	11170.5	271.5	2.4	222.3	219.5	37.2	24.4	0.0	59.0	38.0	1.0
80.79	24.62	16161.1	350.9	2.2	224.5	222.0	53.9	35.2	0.0	69.4	40.0	1.0
81.61	24.88	23761.1	208.4	0.9	226.8	224.4	47.5	30.9	0.0	80.3	42.0	1.0
82.43	25.12	10133.6	216.2	2.1	229.1	226.9	33.8	21.8	0.0	55.8	38.0	1.0
83.25	25.38	14874.5	248.1	1.7	231.3	229.3	37.2	23.9	0.0	66.6	40.0	1.0
84.07	25.62	23516.5	274.6	1.2	233.7	231.8	47.0	30.1	0.0	79.6	42.0	1.0
84.89	25.88	9109.5	284.4	3.1	235.9	234.2	36.4	23.2	691.2	52.3	38.0	6.0
85.71	26.12	27982.3	381.2	1.4	238.1	236.7	70.0	44.4	0.0	84.3	42.0	1.0
86.53	26.38	31917.1	450.7	1.4	240.4	239.1	79.8	50.4	0.0	88.0	44.0	1.0
87.35	26.62	35381.2	405.2	1.1	242.7	241.6	70.8	44.5	0.0	90.8	44.0	1.0
88.17	26.88	44191.9	325.5	0.7	245.2	244.0	73.7	46.0	0.0	95.0	44.0	1.0
88.99	27.12	45092.6	341.7	0.8	247.8	246.5	75.2	46.7	0.0	95.0	44.0	1.0
89.81	27.38	31842.1	298.3	0.9	250.3	248.9	63.7	39.4	0.0	87.3	44.0	1.0
90.63	27.62	39004.2	258.0	0.7	252.7	251.4	65.0	40.0	0.0	93.0	44.0	1.0
91.45	27.88	37933.0	351.8	0.9	255.2	253.8	75.9	46.5	0.0	92.1	44.0	1.0
92.27	28.12	40406.2	393.9	1.0	257.7	256.3	80.8	49.3	0.0	93.7	44.0	1.0
93.09	28.38	40770.3	372.9	0.9	260.1	258.7	81.5	49.5	0.0	93.9	44.0	1.0
93.91	28.62	37213.2	303.2	0.8	262.5	261.2	74.4	45.0	0.0	91.1	44.0	1.0
94.73	28.88	26986.5	304.1	1.1	264.9	263.6	54.0	32.5	0.0	81.8	42.0	1.0
95.55	29.12	9434.2	255.6	2.7	267.2	266.1	37.7	22.6	712.1	51.5	36.0	6.0
96.37	29.38	4462.8	83.8	1.9	269.3	268.5	14.9	8.9	0.0	30.0	32.0	1.0
97.19	29.62	4671.0	94.4	2.0	271.4	271.0	18.7	11.1	330.3	31.1	32.0	6.0

CONETEC

Kleinfelder

Site: I15, S4: S Temple, 06-SC-131
Location: S Temple Sturct.

Cone: 20 TON A 040
Date: 06:20:96 11:20



Max. Depth: 30.00 (m)
Depth Inc.: 0.05 (m)

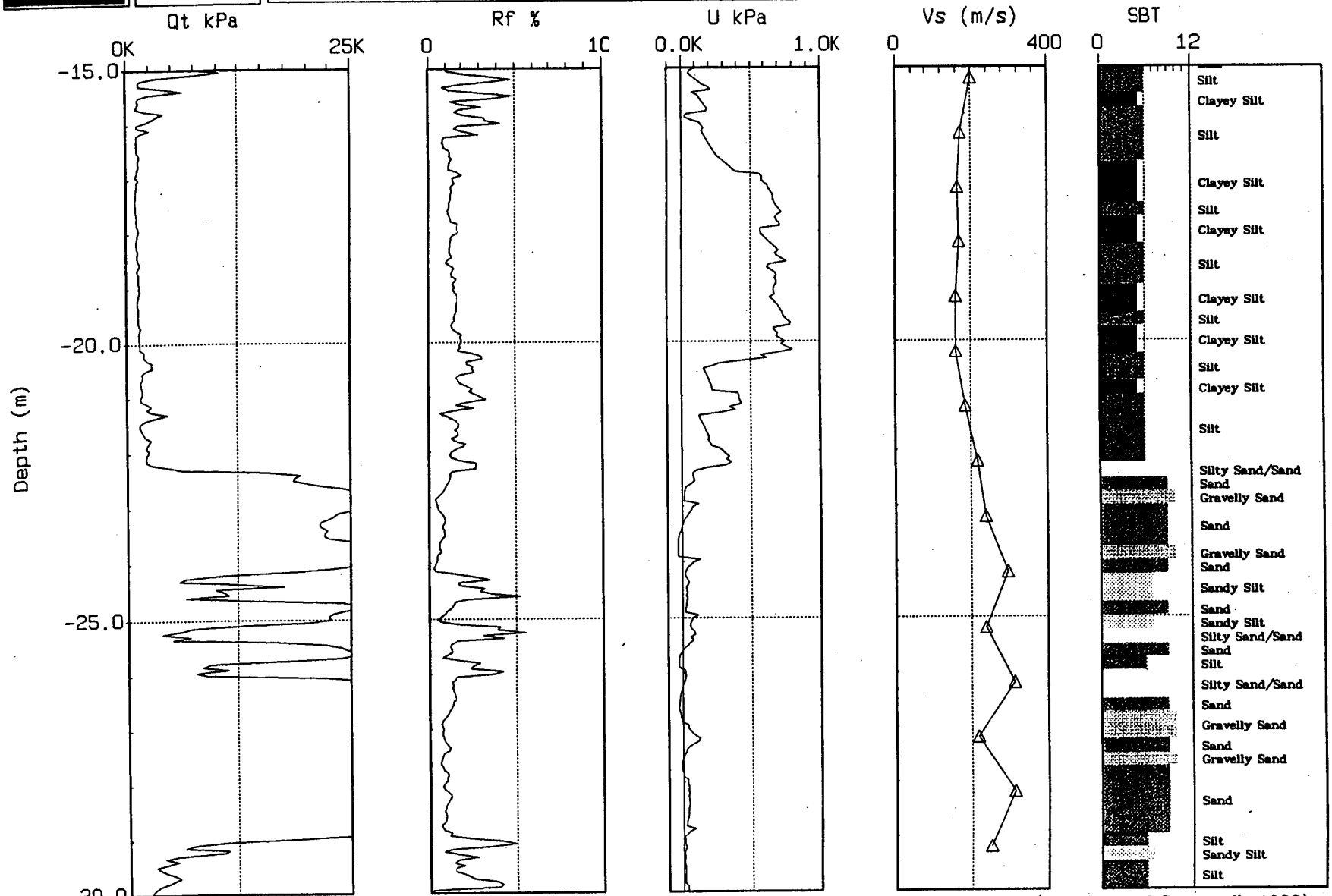
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: S Temple, 06-SC-131
Location: S Temple Sturct.

Cone: 20 TON A 040
Date: 06:20:96 11:20



Max. Depth: 30.00 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-131*
Date: *20-Jun-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 040 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
1.70	1.79					
2.70	2.76	7.7	* 126	412	1.7 - 2.7	5.6 - 8.9
3.70	3.74	6.1	161	530	2.7 - 3.7	8.9 - 12.1
4.70	4.73	6.1	162	533	3.7 - 4.7	12.1 - 15.4
5.70	5.73	6.1	* 163	535	4.7 - 5.7	15.4 - 18.7
6.70	6.72	4.4	226	743	5.7 - 6.7	18.7 - 22.0
7.70	7.72	5.6	178	584	6.7 - 7.7	22.0 - 25.3
8.70	8.72	8.5	117	385	7.7 - 8.7	25.3 - 28.5
9.70	9.72	7.0	143	468	8.7 - 9.7	28.5 - 31.8
10.70	10.71	8.6	* 116	381	9.7 - 10.7	31.8 - 35.1
11.70	11.71	7.6	131	431	10.7 - 11.7	35.1 - 38.4
12.70	12.71	5.8	172	565	11.7 - 12.7	38.4 - 41.7
13.70	13.71	5.4	185	607	12.7 - 13.7	41.7 - 44.9
14.70	14.71	5.0	200	656	13.7 - 14.7	44.9 - 48.2
15.70	15.71	5.0	* 200	656	14.7 - 15.7	48.2 - 51.5
16.70	16.71	5.8	172	565	15.7 - 16.7	51.5 - 54.8
17.70	17.71	6.1	164	538	16.7 - 17.7	54.8 - 58.1
18.70	18.71	5.9	169	556	17.7 - 18.7	58.1 - 61.4
19.70	19.71	6.2	161	529	18.7 - 19.7	61.4 - 64.6
20.70	20.71	6.2	* 161	529	19.7 - 20.7	64.6 - 67.9
21.70	21.71	5.4	185	607	20.7 - 21.7	67.9 - 71.2
22.70	22.71	4.6	217	713	21.7 - 22.7	71.2 - 74.5
23.70	23.71	4.2	238	781	22.7 - 23.7	74.5 - 77.8
24.70	24.71	3.4	294	965	23.7 - 24.7	77.8 - 81.0
25.70	25.71	4.2	* 238	781	24.7 - 25.7	81.0 - 84.3
26.70	26.71	3.2	312	1025	25.7 - 26.7	84.3 - 87.6
27.70	27.71	4.6	217	713	26.7 - 27.7	87.6 - 90.9
28.70	28.71	3.2	312	1025	27.7 - 28.7	90.9 - 94.2
29.70	29.71	4.0	250	820	28.7 - 29.7	94.2 - 97.4

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0913-0839-2730
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15, S4:I15,06-SC-138
Location: S Temple Struct
Cone: 20 TON A 041
CPT Date: 96/30/07
CPT Time: 16:05
CPT File: KA06S138.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	12688.0	60.4	0.5	2.4	0.0	25.4	50.8	0.0	95.0	50.0	1.0
1.23	0.38	3387.2	109.1	3.2	7.1	0.0	16.9	33.9	270.4	0.0	0.0	10.0
2.05	0.62	1514.3	45.4	3.0	11.6	0.0	7.6	15.1	120.2	0.0	0.0	10.0
2.87	0.88	958.8	21.3	2.2	16.1	0.0	4.8	9.6	75.4	0.0	0.0	10.0
3.69	1.12	928.2	34.2	3.7	20.6	0.0	9.3	18.6	72.6	0.0	0.0	6.0
4.51	1.38	1009.9	30.8	3.0	25.0	0.0	6.7	13.2	78.8	0.0	0.0	6.0
5.33	1.62	480.0	13.6	2.8	29.4	0.0	4.8	8.7	36.0	0.0	0.0	6.0
6.15	1.88	866.8	21.2	2.4	33.9	0.0	5.8	9.7	66.6	0.0	0.0	6.0
6.97	2.12	1018.8	25.8	2.5	37.1	1.2	5.1	8.2	78.4	0.0	0.0	6.0
7.79	2.38	1693.8	25.0	1.5	39.2	3.7	6.8	10.6	132.1	30.0	38.0	6.0
8.61	2.62	1974.5	16.0	0.8	41.2	6.1	7.9	12.0	154.2	33.5	38.0	6.0
9.43	2.88	1325.9	13.1	1.0	43.3	8.6	5.3	7.9	101.9	30.0	36.0	6.0
10.25	3.12	1788.7	29.7	1.7	45.3	11.0	7.2	10.4	138.6	30.0	38.0	6.0
11.07	3.38	1320.3	15.5	1.2	47.4	13.5	5.3	7.5	100.8	30.0	36.0	6.0
11.89	3.62	1208.9	14.2	1.2	49.4	15.9	4.8	6.7	91.5	30.0	34.0	6.0
12.71	3.88	1458.6	19.4	1.3	51.5	18.4	5.8	8.0	111.1	30.0	36.0	6.0
13.53	4.12	5306.8	68.5	1.3	53.6	20.8	17.7	23.6	0.0	58.1	42.0	1.0
14.35	4.38	1998.6	36.3	1.8	55.7	23.3	8.0	10.5	153.6	30.0	38.0	6.0
15.17	4.62	1817.4	27.0	1.5	57.7	25.8	7.3	9.4	138.7	30.0	36.0	6.0
15.99	4.88	1353.9	22.2	1.6	59.8	28.2	6.8	8.6	101.3	0.0	0.0	6.0
16.81	5.12	2451.6	65.7	2.7	61.8	30.7	12.3	15.3	188.7	0.0	0.0	6.0
17.63	5.38	4297.3	68.1	1.6	64.0	33.1	14.3	17.5	0.0	49.5	40.0	1.0
18.45	5.62	3995.7	40.5	1.0	66.1	35.6	13.3	16.0	0.0	46.9	40.0	1.0
19.27	5.88	4848.6	48.7	1.0	68.3	38.0	16.2	19.1	0.0	52.0	40.0	1.0
20.09	6.12	1209.1	26.2	2.2	70.4	40.5	6.0	7.1	87.9	0.0	0.0	6.0
20.92	6.38	468.7	3.4	0.7	71.8	42.9	2.3	2.7	28.3	0.0	0.0	1.5
21.74	6.62	495.1	3.8	0.8	72.4	45.4	2.5	2.8	30.2	0.0	0.0	1.5
22.56	6.88	437.7	3.7	0.8	73.1	47.8	2.2	2.5	25.3	0.0	0.0	1.5
23.38	7.12	369.3	2.6	0.7	73.8	50.3	1.8	2.1	19.6	0.0	0.0	1.5
24.20	7.38	390.6	3.2	0.8	74.5	52.7	2.0	2.2	21.1	0.0	0.0	1.5
25.02	7.62	487.2	11.0	2.3	75.8	55.2	3.2	3.7	28.5	0.0	0.0	1.5
25.84	7.88	1070.6	20.8	1.9	77.9	57.6	5.4	5.9	74.8	0.0	0.0	3.0
26.66	8.12	619.2	11.9	1.9	79.9	60.1	4.1	4.5	38.3	0.0	0.0	1.5
27.48	8.38	460.5	4.7	1.0	81.3	62.5	2.3	2.5	25.3	0.0	0.0	1.5
28.30	8.62	479.2	3.2	0.7	81.9	65.0	2.4	2.6	26.6	0.0	0.0	1.5
29.12	8.88	395.5	3.6	0.9	82.6	67.4	2.0	2.1	19.6	0.0	0.0	1.0
29.94	9.12	400.7	3.0	0.7	83.3	69.9	2.0	2.1	19.8	0.0	0.0	1.0
30.76	9.38	381.1	2.5	0.7	84.0	72.3	1.9	2.0	18.0	0.0	0.0	1.0
31.58	9.62	420.7	2.4	0.6	84.6	74.8	2.1	2.2	20.9	0.0	0.0	1.0
32.40	9.88	426.5	2.5	0.6	85.3	77.3	2.1	2.3	21.1	0.0	0.0	1.0
33.22	10.12	407.3	2.9	0.7	86.0	79.7	2.0	2.1	19.3	0.0	0.0	1.0
34.04	10.38	442.8	3.4	0.8	86.7	82.2	2.2	2.3	21.9	0.0	0.0	1.5
34.86	10.62	484.4	2.9	0.6	87.3	84.6	2.4	2.5	25.0	0.0	0.0	1.5
35.68	10.88	1822.3	23.3	1.3	88.7	87.1	7.3	7.6	131.7	30.0	32.0	6.0
36.50	11.12	1202.5	19.1	1.6	90.7	89.5	6.0	6.2	81.8	0.0	0.0	3.0
37.32	11.38	2802.7	33.2	1.2	92.8	92.0	9.3	9.5	0.0	31.9	36.0	1.0
38.14	11.62	1151.1	23.8	2.1	95.0	94.4	5.8	5.8	76.9	0.0	0.0	3.0
38.96	11.88	650.4	2.0	0.3	96.3	96.9	3.3	3.2	36.6	0.0	0.0	1.5
39.78	12.12	1938.2	15.8	0.8	97.7	99.3	7.8	7.7	139.3	30.0	32.0	6.0
40.60	12.38	2666.3	32.1	1.2	99.7	101.8	10.7	10.5	197.2	30.0	34.0	6.0
41.42	12.62	1334.4	15.6	1.2	101.8	104.2	5.3	5.2	90.3	30.0	30.0	3.0
42.24	12.88	1265.6	12.1	1.0	103.8	106.7	5.1	4.9	84.4	30.0	30.0	3.0

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	1299.8	17.2	1.3	105.9	109.1	5.2	4.9	86.8	30.0	30.0	3.0
43.88	13.38	887.9	12.1	1.4	107.9	111.6	4.4	4.2	53.5	0.0	0.0	1.5
44.70	13.62	937.4	9.6	1.0	110.0	114.0	4.7	4.4	57.1	0.0	0.0	3.0
45.52	13.88	5059.9	93.8	1.9	112.1	116.5	16.9	15.6	0.0	46.1	38.0	1.0
46.34	14.12	1060.4	19.1	1.8	114.2	118.9	5.3	4.9	66.2	0.0	0.0	3.0
47.16	14.38	6585.7	79.6	1.2	116.3	121.4	22.0	19.9	0.0	53.1	40.0	1.0
47.98	14.62	2474.2	49.3	2.0	118.4	123.9	9.9	8.9	178.6	30.0	34.0	6.0
48.80	14.88	1437.1	37.9	2.6	120.4	126.3	7.2	6.4	95.2	0.0	0.0	3.0
49.62	15.12	2342.9	25.5	1.1	122.5	128.8	9.4	8.3	167.3	30.0	32.0	6.0
50.44	15.38	1877.1	26.5	1.4	124.5	131.2	7.5	6.6	129.7	30.0	32.0	6.0
51.26	15.62	1771.6	33.3	1.9	126.6	133.7	7.1	6.2	120.9	30.0	30.0	3.0
52.08	15.88	1018.4	5.4	0.5	128.6	136.1	4.1	3.5	60.3	30.0	30.0	1.5
52.90	16.12	825.3	4.0	0.5	130.7	138.6	3.3	2.8	44.5	30.0	30.0	1.5
53.72	16.38	959.6	6.6	0.7	132.7	141.0	3.8	3.3	54.9	30.0	30.0	1.5
54.54	16.62	815.5	4.8	0.6	134.8	143.5	3.3	2.7	43.0	30.0	30.0	1.5
55.36	16.88	853.3	4.0	0.5	136.8	145.9	3.4	2.9	45.6	30.0	30.0	1.5
56.18	17.12	901.7	6.6	0.7	138.9	148.4	3.6	3.0	49.2	30.0	30.0	1.5
57.00	17.38	927.7	7.8	0.8	140.9	150.8	3.7	3.1	50.9	30.0	30.0	1.5
57.82	17.62	971.4	7.7	0.8	143.0	153.3	3.9	3.2	54.0	30.0	30.0	1.5
58.64	17.88	970.0	7.8	0.8	145.0	155.7	3.9	3.2	53.5	30.0	30.0	1.5
59.46	18.12	1054.7	15.5	1.5	147.1	158.2	5.3	4.3	60.0	0.0	0.0	1.5
60.28	18.38	1054.1	11.2	1.1	149.1	160.6	4.2	3.4	59.5	30.0	30.0	1.5
61.10	18.62	1006.0	7.0	0.7	151.2	163.1	4.0	3.2	55.3	30.0	30.0	1.5
61.93	18.88	1041.0	9.0	0.9	153.2	165.5	4.2	3.3	57.8	30.0	30.0	1.5
62.75	19.12	1124.3	14.2	1.3	155.3	168.0	4.5	3.5	64.1	30.0	30.0	1.5
63.57	19.38	1118.6	25.8	2.3	157.3	170.4	5.6	4.4	63.3	0.0	0.0	1.5
64.39	19.62	1979.1	69.7	3.5	159.3	172.9	13.2	10.2	131.8	0.0	0.0	3.0
65.21	19.88	2367.1	53.2	2.2	161.4	175.4	9.5	7.3	162.4	30.0	32.0	6.0
66.03	20.12	3337.2	51.9	1.6	163.4	177.8	13.3	10.2	239.7	30.0	32.0	6.0
66.85	20.38	8501.1	134.7	1.6	165.6	180.3	28.3	21.6	0.0	55.4	38.0	1.0
67.67	20.62	2312.6	56.6	2.4	167.7	182.7	9.3	7.0	157.0	30.0	30.0	3.0
68.49	20.88	2225.6	55.5	2.5	169.7	185.2	11.1	8.4	149.7	0.0	0.0	3.0
69.31	21.12	1620.0	27.4	1.7	171.8	187.6	6.5	4.8	100.9	30.0	30.0	3.0
70.13	21.38	5031.0	127.9	2.5	173.8	190.1	20.1	14.9	373.4	39.7	36.0	6.0
70.95	21.62	7114.4	158.0	2.2	175.9	192.5	23.7	17.5	0.0	49.4	38.0	1.0
71.77	21.88	5275.3	108.1	2.1	178.1	195.0	17.6	12.9	0.0	40.7	36.0	1.0
72.59	22.12	19441.4	176.1	0.9	180.4	197.4	38.9	28.3	0.0	77.9	42.0	1.0
73.41	22.38	11642.2	147.3	1.3	182.7	199.9	29.1	21.1	0.0	63.0	40.0	1.0
74.23	22.62	2257.9	51.6	2.3	184.9	202.3	9.0	6.5	149.7	30.0	30.0	3.0
75.05	22.88	1176.5	10.7	0.9	187.0	204.8	4.7	3.4	62.8	30.0	30.0	1.5
75.87	23.12	1453.8	17.4	1.2	189.0	207.2	5.8	4.1	84.6	30.0	30.0	1.5
76.69	23.38	1652.8	17.8	1.1	191.1	209.7	6.6	4.7	100.2	30.0	30.0	3.0
77.51	23.62	1876.1	31.7	1.7	193.1	212.1	7.5	5.3	117.7	30.0	30.0	3.0
78.33	23.88	2094.0	46.0	2.2	195.2	214.6	8.4	5.9	134.7	30.0	30.0	3.0
79.15	24.12	2062.1	42.1	2.0	197.2	217.0	8.2	5.7	131.8	30.0	30.0	3.0
79.97	24.38	2392.3	58.5	2.4	199.3	219.5	9.6	6.6	157.9	30.0	30.0	3.0
80.79	24.62	2109.6	38.3	1.8	201.3	222.0	8.4	5.8	134.9	30.0	30.0	3.0
81.61	24.88	3016.3	56.4	1.9	203.3	224.4	12.1	8.3	207.1	30.0	32.0	6.0
82.43	25.12	4773.7	102.9	2.2	205.4	226.9	19.1	13.0	347.3	35.8	34.0	6.0
83.25	25.38	11203.4	170.8	1.5	207.6	229.3	28.0	19.0	0.0	60.1	40.0	1.0
84.07	25.62	15985.1	84.2	0.5	209.9	231.8	32.0	21.6	0.0	70.1	40.0	1.0
84.89	25.88	2428.4	40.5	1.7	212.2	234.2	9.7	6.5	158.6	30.0	30.0	3.0
85.71	26.12	1516.4	8.3	0.5	214.2	236.7	6.1	4.1	85.2	30.0	30.0	1.5
86.53	26.38	1927.5	24.3	1.3	216.3	239.1	7.7	5.1	117.8	30.0	30.0	3.0
87.35	26.62	1636.8	16.8	1.0	218.3	241.6	6.5	4.3	94.2	30.0	30.0	1.5
88.17	26.88	1924.1	21.3	1.1	220.4	244.0	7.7	5.1	116.8	30.0	30.0	3.0
88.99	27.12	1993.4	22.1	1.1	222.4	246.5	8.0	5.2	122.0	30.0	30.0	3.0
89.81	27.38	1958.4	35.4	1.8	224.4	248.9	7.8	5.1	118.8	30.0	30.0	3.0
90.63	27.62	2427.5	44.2	1.8	226.5	251.4	9.7	6.3	156.0	30.0	30.0	3.0
91.45	27.88	3554.8	62.4	1.8	228.5	253.8	14.2	9.2	245.8	30.0	32.0	6.0
92.27	28.12	5543.4	90.5	1.6	230.7	256.3	18.5	11.9	0.0	38.4	34.0	1.0
93.09	28.38	2341.1	42.4	1.8	232.8	258.7	9.4	6.0	148.0	30.0	30.0	3.0
93.91	28.62	1881.1	30.2	1.6	234.8	261.2	7.5	4.8	110.8	30.0	30.0	1.5
94.73	28.88	2432.6	66.3	2.7	236.9	263.6	12.2	7.7	154.6	0.0	0.0	3.0
95.55	29.12	2630.3	70.5	2.7	238.9	266.1	13.2	8.3	170.0	0.0	0.0	3.0
96.37	29.38	2146.9	60.3	2.8	241.0	268.5	10.7	6.8	131.0	0.0	0.0	3.0
97.19	29.62	2191.0	43.5	2.0	243.0	271.0	8.8	5.5	134.2	30.0	30.0	3.0
98.01	29.88	2384.3	48.4	2.0	245.0	273.5	9.5	6.0	149.3	30.0	30.0	3.0
98.83	30.12	1827.0	33.5	1.8	247.1	275.9	7.3	4.5	104.3	30.0	30.0	1.5

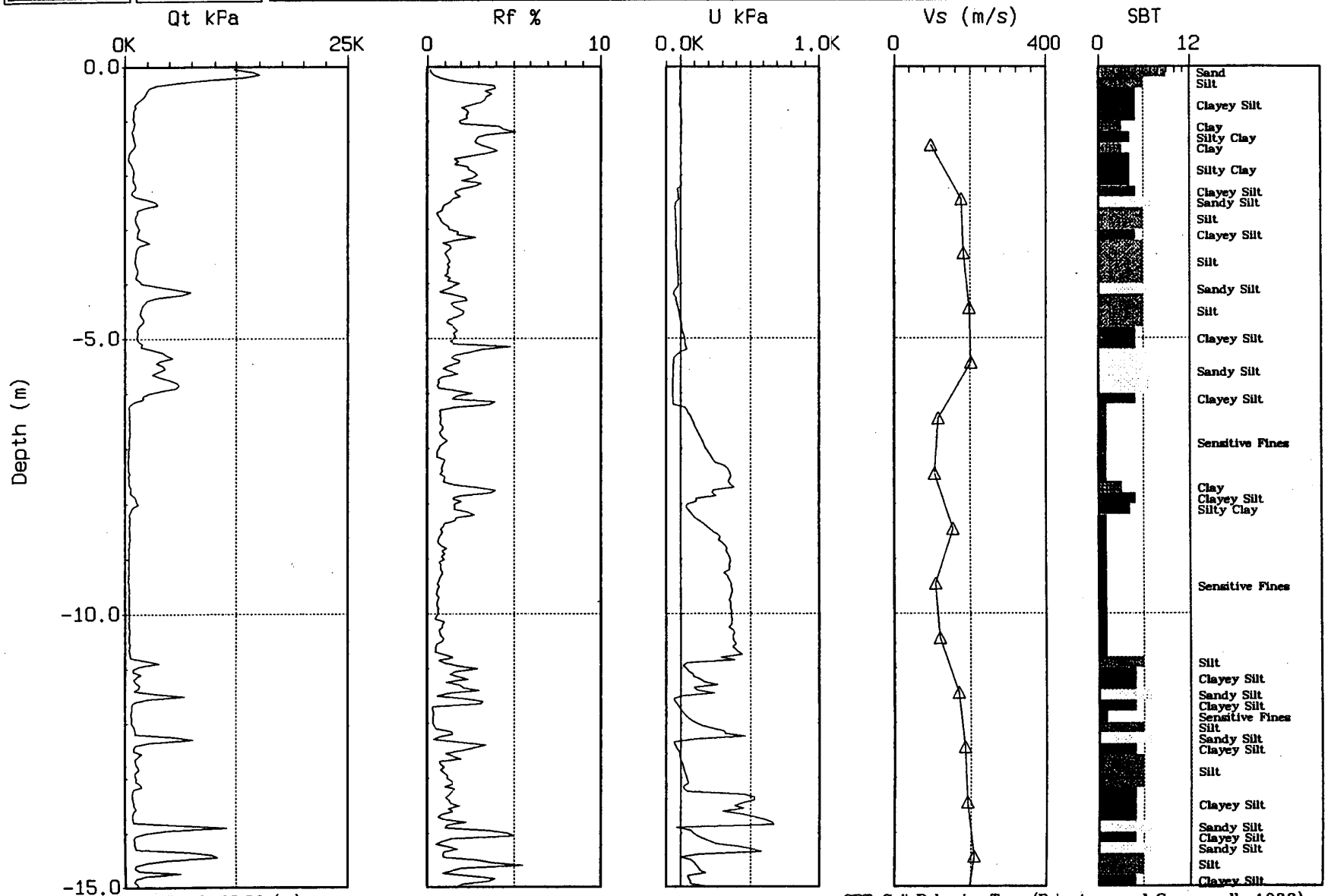
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	2292.1	64.2	2.8	249.1	278.4	11.5	7.1	141.2	0.0	0.0	3.0
100.47	30.62	3316.5	53.0	1.6	251.2	280.8	13.3	8.2	222.8	30.0	30.0	3.0
101.29	30.88	4179.0	72.9	1.7	253.3	283.3	13.9	8.6	0.0	30.0	32.0	1.0
102.11	31.12	15568.1	184.5	1.2	255.5	285.7	38.9	23.8	0.0	66.5	40.0	1.0
102.94	31.38	6687.5	156.4	2.3	257.7	288.2	26.7	16.3	491.3	42.2	34.0	6.0
103.76	31.62	3033.5	48.8	1.6	259.8	290.6	12.1	7.4	198.6	30.0	30.0	3.0
104.58	31.88	2509.3	29.7	1.2	261.8	293.1	10.0	6.1	156.4	30.0	30.0	3.0
105.40	32.12	2402.7	40.8	1.7	263.8	295.5	9.6	5.8	147.5	30.0	30.0	3.0

CONETEC

Kleinfelder

Site: I15, S4: I15, 06-SC-138
Location: S. TEMPLE STRUCT

Cone: 20 TON A 041
Date: 07:30:96 16:05



Max. Depth: 32.50 (m)
Depth Inc.: 0.05 (m)

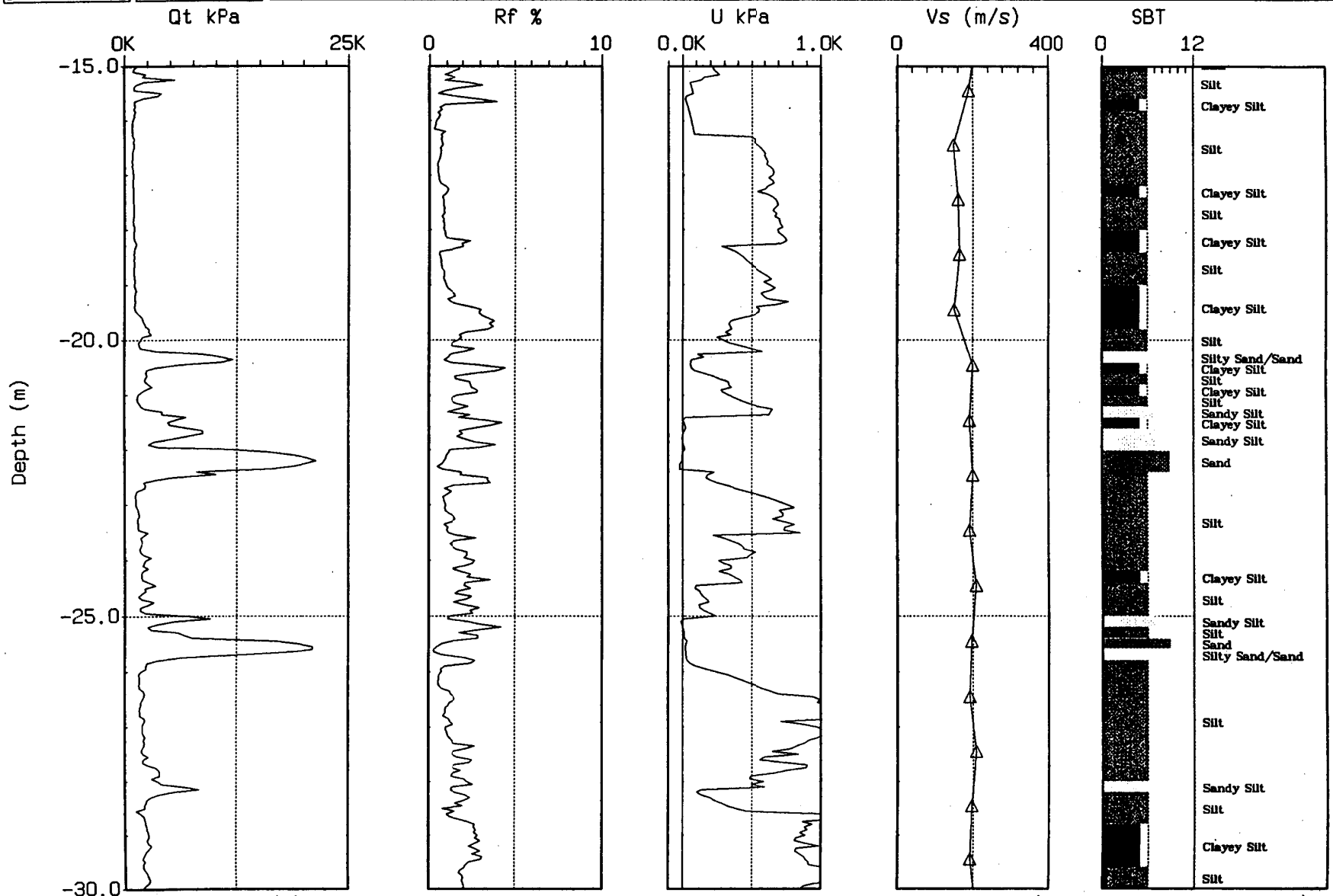
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15, 06-SC-138
Location: S. TEMPLE STRUCT

Cone: 20 TON A 041
Date: 07:30:96 16:05



Max. Depth: 32.50 (m)
Depth Inc.: 0.05 (m)

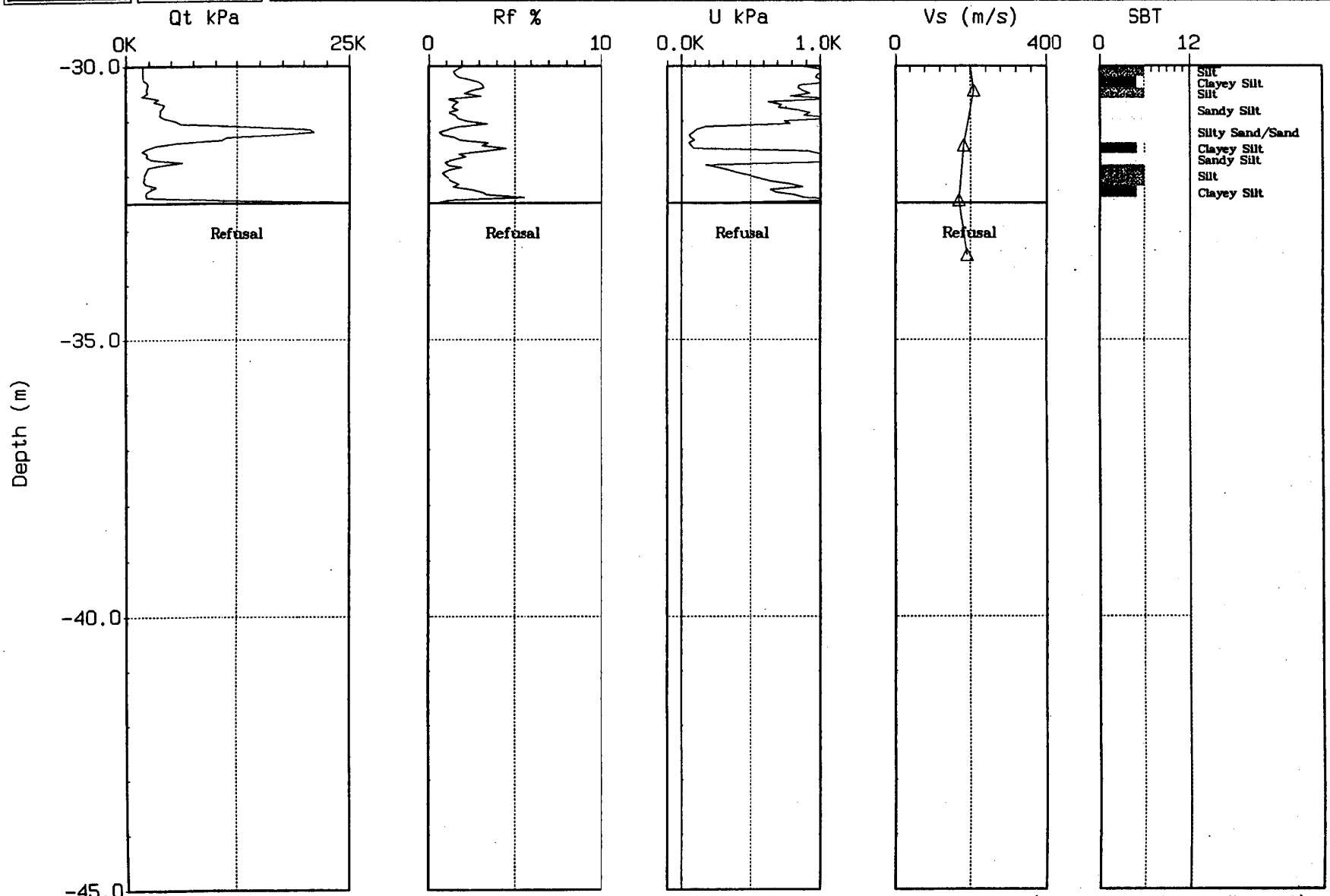
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15, 06-SC-138
Location: S. TEMPLE STRUCT

Cone: 20 TON A 041
Date: 07:30:96 16:05



Max. Depth: 32.50 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-138*
Date: *30-Jul-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 041 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
0.95	1.10					
1.95	2.03	9.5	* 97	320	1.0 - 2.0	3.1 - 6.4
2.95	3.00	5.5	177	581	2.0 - 3.0	6.4 - 9.7
3.95	3.99	5.4	183	600	3.0 - 4.0	9.7 - 13.0
4.95	4.98	5.0	* 198	651	4.0 - 5.0	13.0 - 16.2
5.95	5.98	4.9	203	666	5.0 - 6.0	16.2 - 19.5
6.95	6.97	8.5	117	385	6.0 - 7.0	19.5 - 22.8
7.95	7.97	9.3	107	352	7.0 - 8.0	22.8 - 26.1
8.95	8.97	6.5	154	504	8.0 - 9.0	26.1 - 29.4
9.95	9.97	9.2	* 109	356	9.0 - 10.0	29.4 - 32.6
10.95	10.96	8.3	120	395	10.0 - 11.0	32.6 - 35.9
11.95	11.96	5.9	169	555	11.0 - 12.0	35.9 - 39.2
12.95	12.96	5.4	185	607	12.0 - 13.0	39.2 - 42.5
13.95	13.96	5.2	192	630	13.0 - 14.0	42.5 - 45.8
14.95	14.96	4.8	* 208	683	14.0 - 15.0	45.8 - 49.0
15.95	15.96	5.3	189	619	15.0 - 16.0	49.0 - 52.3
16.95	16.96	6.7	149	489	16.0 - 17.0	52.3 - 55.6
17.95	17.96	6.2	161	529	17.0 - 18.0	55.6 - 58.9
18.95	18.96	6.1	164	538	18.0 - 19.0	58.9 - 62.2
19.95	19.96	6.6	* 151	497	19.0 - 20.0	62.2 - 65.5
20.95	20.96	5.0	200	656	20.0 - 21.0	65.5 - 68.7
21.95	21.96	5.2	192	631	21.0 - 22.0	68.7 - 72.0
22.95	22.96	5.0	200	656	22.0 - 23.0	72.0 - 75.3
23.95	23.96	5.2	192	631	23.0 - 24.0	75.3 - 78.6
24.95	24.96	4.8	* 208	683	24.0 - 25.0	78.6 - 81.9
25.95	25.96	5.1	196	643	25.0 - 26.0	81.9 - 85.1
26.95	26.96	5.2	192	631	26.0 - 27.0	85.1 - 88.4
27.95	27.96	4.8	208	683	27.0 - 28.0	88.4 - 91.7
28.95	28.96	5.1	196	643	28.0 - 29.0	91.7 - 95.0
29.95	29.96	5.2	* 192	631	29.0 - 30.0	95.0 - 98.3
30.95	30.96	4.8	208	683	30.0 - 31.0	98.3 - 101.5
31.95	31.95	5.5	182	596	31.0 - 32.0	101.5 - 104.8
32.95	32.95	5.9	169	556	32.0 - 33.0	104.8 - 108.1
33.95	33.95	5.2	192	631	33.0 - 34.0	108.1 - 111.4

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0804-2149-4316
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15, S4: S Temple, 06-SC-139
Location: S Temple Struct.
Cone: 20 TON A 040
CPT Date: 96/21/06
CPT Time: 16:10
CPT File: KA06S139.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	3813.4	35.7	0.9	2.3	0.0	12.7	25.4	0.0	93.6	50.0	1.0
1.23	0.38	2698.8	21.5	0.8	6.9	0.0	9.0	18.0	0.0	68.0	48.0	1.0
2.05	0.62	1262.0	13.6	1.1	11.5	0.0	5.0	10.1	100.0	38.9	42.0	10.0
2.87	0.88	1133.9	20.7	1.8	16.0	0.0	5.7	11.3	89.4	0.0	0.0	10.0
3.69	1.12	861.5	11.1	1.3	20.5	0.0	4.3	8.6	67.3	0.0	0.0	6.0
4.51	1.38	669.7	12.0	1.8	25.0	0.0	3.3	6.6	51.6	0.0	0.0	6.0
5.33	1.62	700.1	14.2	2.0	29.5	0.0	4.7	8.4	53.7	0.0	0.0	6.0
6.15	1.88	399.5	4.2	1.0	33.3	0.0	2.0	3.4	29.3	0.0	0.0	3.0
6.97	2.12	786.7	12.5	1.6	35.9	1.2	3.9	6.4	60.0	0.0	0.0	6.0
7.79	2.38	1926.7	13.1	0.7	37.9	3.7	7.7	12.2	150.8	34.0	38.0	6.0
8.61	2.62	3970.2	60.0	1.5	40.1	6.1	13.2	20.5	0.0	53.9	42.0	1.0
9.43	2.88	2158.6	41.8	1.9	42.2	8.6	8.6	13.0	168.6	35.7	38.0	6.0
10.25	3.12	2100.5	56.4	2.7	44.2	11.0	10.5	15.5	163.6	0.0	0.0	6.0
11.07	3.38	2371.6	57.4	2.4	46.3	13.5	9.5	13.7	184.9	37.1	38.0	6.0
11.89	3.62	1932.2	50.5	2.6	48.3	15.9	9.7	13.6	149.4	0.0	0.0	6.0
12.71	3.88	1762.7	51.9	2.9	50.4	18.4	8.8	12.2	135.5	0.0	0.0	6.0
13.53	4.12	4416.9	47.9	1.1	52.5	20.8	14.7	19.9	0.0	53.1	42.0	1.0
14.35	4.38	3501.5	67.5	1.9	54.6	23.3	14.0	18.6	273.9	45.9	40.0	10.0
15.17	4.62	2459.6	62.0	2.5	56.6	25.8	9.8	12.8	190.2	35.2	38.0	6.0
15.99	4.88	1494.5	39.5	2.6	58.7	28.2	7.5	9.5	112.6	0.0	0.0	6.0
16.81	5.12	1234.7	27.4	2.2	60.7	30.7	6.2	7.8	91.5	0.0	0.0	6.0
17.63	5.38	1830.5	37.8	2.1	62.8	33.1	7.3	9.0	138.8	30.0	36.0	6.0
18.45	5.62	3997.8	44.9	1.1	64.9	35.6	13.3	16.2	0.0	47.2	40.0	1.0
19.27	5.88	7058.1	60.1	0.9	67.1	38.0	17.6	21.1	0.0	63.0	42.0	1.0
20.09	6.12	5301.7	83.8	1.6	69.3	40.5	17.7	20.8	0.0	54.3	40.0	1.0
20.92	6.38	1158.6	26.0	2.2	71.5	42.9	5.8	6.7	83.5	0.0	0.0	6.0
21.74	6.62	1143.7	11.9	1.0	73.5	45.4	4.6	5.2	82.0	30.0	32.0	6.0
22.56	6.88	798.3	4.1	0.5	75.6	47.8	3.2	3.6	54.0	30.0	30.0	3.0
23.38	7.12	635.8	2.0	0.3	76.9	50.3	3.2	3.5	40.7	0.0	0.0	3.0
24.20	7.38	522.9	3.7	0.7	77.6	52.7	2.6	2.9	31.4	0.0	0.0	1.5
25.02	7.62	751.7	12.2	1.6	78.9	55.2	3.8	4.1	49.4	0.0	0.0	3.0
25.84	7.88	1188.5	15.3	1.3	81.0	57.6	4.8	5.2	84.0	30.0	32.0	6.0
26.66	8.12	808.6	4.1	0.5	83.0	60.1	3.2	3.5	53.2	30.0	30.0	3.0
27.48	8.38	647.4	2.0	0.3	84.4	62.5	3.2	3.4	40.0	0.0	0.0	1.5
28.30	8.62	530.4	2.0	0.4	85.1	65.0	2.7	2.8	30.4	0.0	0.0	1.5
29.12	8.88	465.5	2.0	0.4	85.7	67.4	2.3	2.5	25.0	0.0	0.0	1.5
29.94	9.12	463.5	2.0	0.4	86.4	69.9	2.3	2.4	24.6	0.0	0.0	1.5
30.76	9.38	429.7	2.0	0.5	87.1	72.3	2.1	2.3	21.6	0.0	0.0	1.0
31.58	9.62	441.4	2.0	0.5	87.8	74.8	2.2	2.3	22.3	0.0	0.0	1.5
32.40	9.88	465.8	2.0	0.4	88.4	77.3	2.3	2.4	24.0	0.0	0.0	1.5
33.22	10.12	462.2	2.0	0.4	89.1	79.7	2.3	2.4	23.5	0.0	0.0	1.5
34.04	10.38	464.1	2.0	0.4	89.8	82.2	2.3	2.4	23.4	0.0	0.0	1.5
34.86	10.62	529.3	2.7	0.5	90.5	84.6	2.6	2.7	28.3	0.0	0.0	1.5
35.68	10.88	2527.2	34.1	1.3	91.8	87.1	10.1	10.3	187.9	30.0	36.0	6.0
36.50	11.12	981.7	14.2	1.4	93.9	89.5	4.9	5.0	63.9	0.0	0.0	3.0
37.32	11.38	2770.2	26.1	0.9	96.0	92.0	9.2	9.2	0.0	31.1	36.0	1.0
38.14	11.62	952.1	12.4	1.3	98.1	94.4	4.8	4.7	60.8	0.0	0.0	3.0
38.96	11.88	641.6	2.4	0.4	99.4	96.9	3.2	3.1	35.6	0.0	0.0	1.5
39.78	12.12	2118.7	20.5	1.0	100.8	99.3	8.5	8.3	153.5	30.0	34.0	6.0
40.60	12.38	1232.6	16.6	1.3	102.8	101.8	4.9	4.8	82.2	30.0	30.0	3.0
41.42	12.62	1108.5	10.9	1.0	104.9	104.2	4.4	4.2	72.0	30.0	30.0	3.0
42.24	12.88	1193.9	12.3	1.0	106.9	106.7	4.8	4.5	78.4	30.0	30.0	3.0

ConeTec Inc. - CPT Interpretation
Run No: 96-0804-2149-4316
CPT File: KA06S139.COR

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	1150.9	8.5	0.7	109.0	109.1	4.6	4.3	74.6	30.0	30.0	3.0
43.88	13.38	751.1	2.7	0.4	110.3	111.6	3.8	3.5	42.3	0.0	0.0	1.5
44.70	13.62	942.3	6.3	0.7	111.7	114.0	3.8	3.5	57.3	30.0	30.0	3.0
45.52	13.88	3297.6	50.1	1.5	113.8	116.5	13.2	12.1	245.4	33.6	36.0	6.0
46.34	14.12	916.0	17.5	1.9	115.8	118.9	4.6	4.2	54.5	0.0	0.0	1.5
47.16	14.38	4385.6	68.4	1.6	117.9	121.4	14.6	13.2	0.0	41.3	38.0	1.0
47.98	14.62	3095.3	39.2	1.3	120.1	123.9	10.3	9.2	0.0	31.0	34.0	1.0
48.80	14.88	1396.4	31.2	2.2	122.2	126.3	7.0	6.2	91.8	0.0	0.0	3.0
49.62	15.12	2444.9	26.8	1.1	124.2	128.8	9.8	8.6	175.4	30.0	32.0	6.0
50.44	15.38	1301.7	15.6	1.2	126.3	131.2	5.2	4.5	83.5	30.0	30.0	3.0
51.26	15.62	1447.2	15.6	1.1	128.3	133.7	5.8	5.0	94.8	30.0	30.0	3.0
52.08	15.88	816.0	2.0	0.2	129.7	136.1	4.1	3.5	44.0	0.0	0.0	1.5
52.90	16.12	905.6	2.0	0.2	131.1	138.6	3.6	3.1	50.9	30.0	30.0	1.5
53.72	16.38	935.5	2.4	0.3	133.1	141.0	3.7	3.2	52.9	30.0	30.0	1.5
54.54	16.62	917.3	2.1	0.2	135.2	143.5	3.7	3.1	51.1	30.0	30.0	1.5
55.36	16.88	778.1	2.0	0.3	136.5	145.9	3.9	3.3	39.7	0.0	0.0	1.5
56.18	17.12	878.9	2.0	0.2	137.2	148.4	4.4	3.7	47.5	0.0	0.0	1.5
57.00	17.38	998.3	2.0	0.2	138.5	150.8	4.0	3.3	56.7	30.0	30.0	1.5
57.82	17.62	1017.7	2.0	0.2	140.6	153.3	4.1	3.4	57.9	30.0	30.0	1.5
58.64	17.88	1030.9	2.2	0.2	142.6	155.7	4.1	3.4	58.6	30.0	30.0	1.5
59.46	18.12	1061.6	2.0	0.2	144.7	158.2	4.2	3.5	60.7	30.0	30.0	1.5
60.28	18.38	1048.5	2.7	0.3	146.7	160.6	4.2	3.4	59.3	30.0	30.0	1.5
61.10	18.62	1046.4	2.1	0.2	148.8	163.1	4.2	3.4	58.8	30.0	30.0	1.5
61.93	18.88	1043.1	4.1	0.4	150.8	165.5	4.2	3.3	58.1	30.0	30.0	1.5
62.75	19.12	1282.4	10.8	0.8	152.9	168.0	5.1	4.1	76.9	30.0	30.0	3.0
63.57	19.38	1402.3	16.3	1.2	154.9	170.4	5.6	4.4	86.2	30.0	30.0	3.0
64.39	19.62	1801.1	36.1	2.0	157.0	172.9	7.2	5.6	117.7	30.0	30.0	3.0
65.21	19.88	1860.5	44.6	2.4	159.0	175.4	9.3	7.2	122.1	0.0	0.0	3.0
66.03	20.12	1858.3	27.8	1.5	161.1	177.8	7.4	5.7	121.6	30.0	30.0	3.0
66.85	20.38	2231.4	19.2	0.9	163.1	180.3	8.9	6.8	151.0	30.0	30.0	3.0
67.67	20.62	1342.5	3.7	0.3	165.2	182.7	5.4	4.1	79.6	30.0	30.0	1.5
68.49	20.88	1909.7	21.9	1.1	167.2	185.2	7.6	5.8	124.6	30.0	30.0	3.0
69.31	21.12	6822.2	61.1	0.9	169.4	187.6	17.1	12.8	0.0	48.8	38.0	1.0
70.13	21.38	6471.4	74.9	1.2	171.6	190.1	21.6	16.1	0.0	47.1	38.0	1.0
70.95	21.62	4755.7	65.0	1.4	173.8	192.5	15.9	11.8	0.0	38.1	34.0	1.0
71.77	21.88	11362.1	210.3	1.9	176.0	195.0	37.9	27.9	0.0	62.8	40.0	1.0
72.59	22.12	18638.9	191.9	1.0	178.3	197.4	37.3	27.3	0.0	76.8	42.0	1.0
73.41	22.38	17435.4	192.2	1.1	180.7	199.9	34.9	25.4	0.0	74.7	42.0	1.0
74.23	22.62	17547.8	302.1	1.7	183.0	202.3	43.9	31.7	0.0	74.7	42.0	1.0
75.05	22.88	22533.2	366.0	1.6	185.3	204.8	56.3	40.5	0.0	81.7	42.0	1.0
75.87	23.12	23143.6	264.6	1.1	187.7	207.2	46.3	33.1	0.0	82.3	42.0	1.0
76.69	23.38	15239.4	302.4	2.0	190.0	209.7	50.8	36.1	0.0	70.2	42.0	1.0
77.51	23.62	39469.3	170.4	0.4	192.4	212.1	65.8	46.4	0.0	95.0	46.0	1.0
78.33	23.88	44328.6	174.5	0.4	194.9	214.6	73.9	51.8	0.0	95.0	46.0	1.0
79.15	24.12	39975.7	180.6	0.5	197.5	217.0	66.6	46.4	0.0	95.0	46.0	1.0
79.97	24.38	36575.4	152.1	0.4	200.0	219.5	61.0	42.2	0.0	94.5	44.0	1.0
80.79	24.62	37868.8	217.7	0.6	202.5	222.0	63.1	43.4	0.0	95.0	44.0	1.0
81.61	24.88	36468.3	215.8	0.6	205.1	224.4	60.8	41.5	0.0	94.1	44.0	1.0
82.43	25.12	43743.5	177.1	0.4	207.6	226.9	72.9	49.5	0.0	95.0	46.0	1.0
83.25	25.38	42498.7	153.5	0.4	210.2	229.3	70.8	47.8	0.0	95.0	46.0	1.0
84.07	25.62	39473.0	254.3	0.6	212.7	231.8	65.8	44.1	0.0	95.0	44.0	1.0
84.89	25.88	39649.8	151.5	0.4	215.3	234.2	66.1	44.1	0.0	95.0	44.0	1.0
85.71	26.12	28265.0	83.9	0.3	217.8	236.7	47.1	31.2	0.0	85.9	44.0	1.0
86.53	26.38	4137.3	96.8	2.3	220.1	239.1	16.5	10.9	294.2	30.7	32.0	6.0
87.35	26.62	2053.1	7.7	0.4	222.2	241.6	6.8	4.5	0.0	30.0	30.0	1.0
88.17	26.88	1989.5	11.2	0.6	224.4	244.0	6.6	4.3	0.0	30.0	30.0	1.0
88.99	27.12	2123.8	20.2	1.0	226.5	246.5	8.5	5.5	132.1	30.0	30.0	3.0
89.81	27.38	2502.7	31.7	1.3	228.6	248.9	10.0	6.5	162.0	30.0	30.0	3.0
90.63	27.62	2210.2	21.6	1.0	230.6	251.4	8.8	5.7	138.3	30.0	30.0	3.0
91.45	27.88	2615.0	23.4	0.9	232.7	253.8	8.7	5.6	0.0	30.0	30.0	1.0
92.27	28.12	4320.0	123.5	2.9	234.8	256.3	17.3	11.0	306.3	31.0	32.0	6.0
93.09	28.38	4376.8	106.8	2.4	236.9	258.7	17.5	11.1	310.5	31.2	32.0	6.0
93.91	28.62	2367.7	41.9	1.8	238.9	261.2	9.5	6.0	149.4	30.0	30.0	3.0
94.73	28.88	2291.7	42.5	1.9	241.0	263.6	9.2	5.8	143.0	30.0	30.0	3.0
95.55	29.12	2166.4	57.1	2.6	243.0	266.1	10.8	6.8	132.6	0.0	0.0	3.0
96.37	29.38	2244.9	43.5	1.9	245.1	268.5	9.0	5.6	138.5	30.0	30.0	3.0
97.19	29.62	2230.2	34.7	1.6	247.1	271.0	8.9	5.6	137.0	30.0	30.0	3.0
98.01	29.88	2063.2	24.8	1.2	249.2	273.5	8.3	5.1	123.2	30.0	30.0	1.5
98.83	30.12	2473.7	48.3	2.0	251.2	275.9	9.9	6.1	155.7	30.0	30.0	3.0

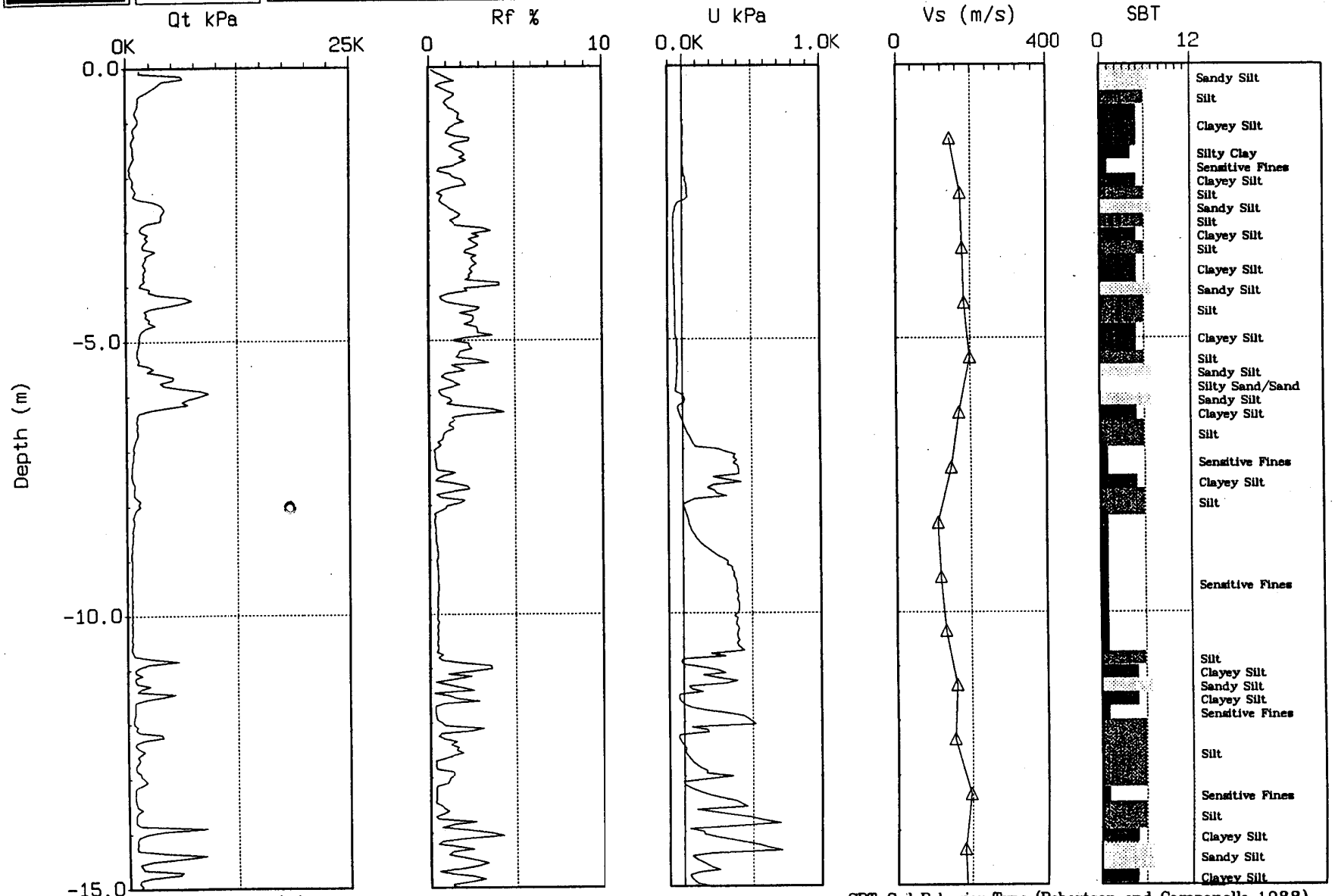
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60 (blows/ft)	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	2485.4	84.0	3.4	253.3	278.4	12.4	7.6	156.3	0.0	0.0	3.0

CONETEC

Kleinfelder

Site: I15, S4: S Temple, 06-SC-139
Location: S Temple Struct.

Cone: 20 TON A 040
Date: 06:21:96 16:10



Max. Depth: 30.75 (m)
Depth Inc.: 0.05 (m)

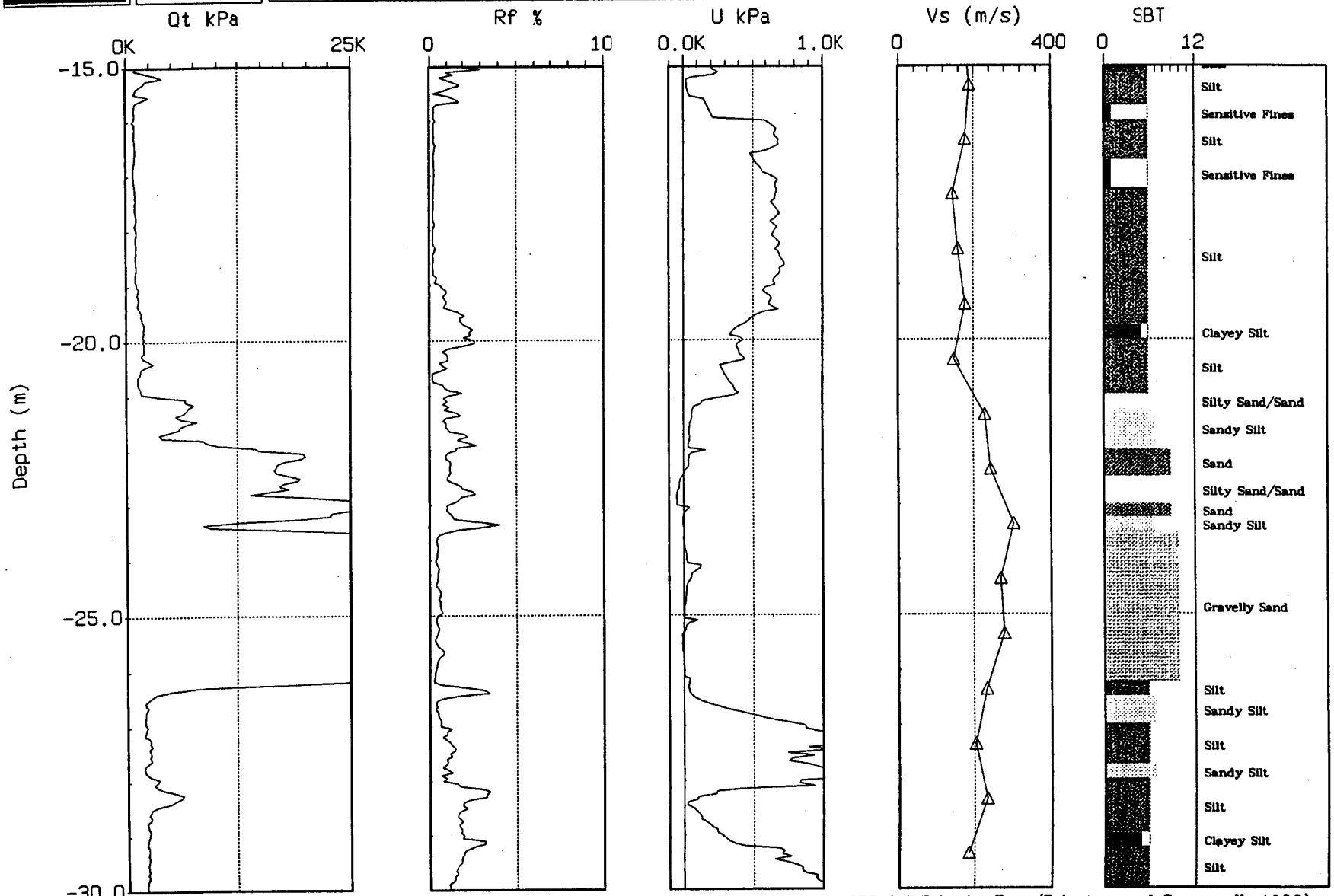
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: S Temple, 06-SC-139
Location: S Temple Struct.

Cone: 20 TON A 040
Date: 06:21:96 16:10



Max. Depth: 30.75 (m)
Depth Inc.: 0.05 (m)

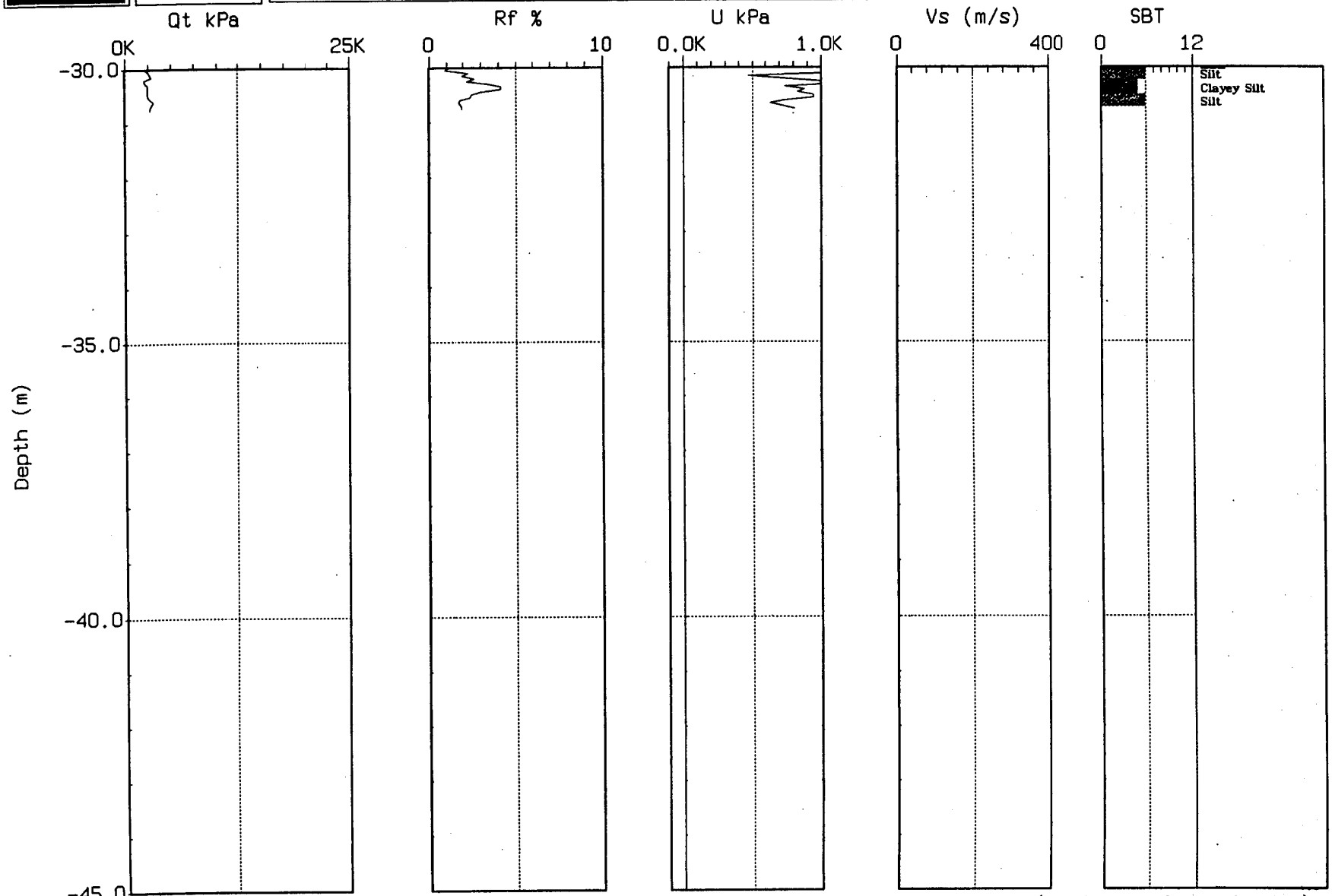
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: S Temple, 06-SC-139
Location: S Temple Struct.

Cone: 20 TON A 040
Date: 06:21:96 16:10



Max. Depth: 30.75 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-139*
Date: *21-Jun-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 040 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
0.85	1.02					
1.85	1.93	6.3	145	477	0.9 - 1.9	2.8 - 6.1
2.85	2.90	5.6	173	569	1.9 - 2.9	6.1 - 9.4
3.85	3.89	5.5	179	588	2.9 - 3.9	9.4 - 12.6
4.85	4.88	5.4	184	603	3.9 - 4.9	12.6 - 15.9
5.85	5.88	5.0	199	653	4.9 - 5.9	15.9 - 19.2
6.85	6.87	5.9	169	554	5.9 - 6.9	19.2 - 22.5
7.85	7.87	6.8	147	481	6.9 - 7.9	22.5 - 25.8
8.85	8.87	8.9	112	368	7.9 - 8.9	25.8 - 29.0
9.85	9.87	8.4	119	390	8.9 - 9.9	29.0 - 32.3
10.85	10.86	7.5	133	437	9.9 - 10.9	32.3 - 35.6
11.85	11.86	6.2	161	529	10.9 - 11.9	35.6 - 38.9
12.85	12.86	6.5	154	504	11.9 - 12.9	38.9 - 42.2
13.85	13.86	5.1	196	643	12.9 - 13.9	42.2 - 45.4
14.85	14.86	5.5	182	596	13.9 - 14.9	45.4 - 48.7
15.85	15.86	5.3	189	619	14.9 - 15.9	48.7 - 52.0
16.85	16.86	5.6	178	586	15.9 - 16.9	52.0 - 55.3
17.85	17.86	6.9	145	475	16.9 - 17.9	55.3 - 58.6
18.85	18.86	6.3	159	521	17.9 - 18.9	58.6 - 61.8
19.85	19.86	5.6	178	586	18.9 - 19.9	61.8 - 65.1
20.85	20.86	6.7	149	489	19.9 - 20.9	65.1 - 68.4
21.85	21.86	4.3	230	754	20.9 - 21.9	68.4 - 71.7
22.85	22.86	4.1	244	800	21.9 - 22.9	71.7 - 75.0
23.85	23.86	3.3	303	994	22.9 - 23.9	75.0 - 78.2
24.85	24.86	3.7	270	886	23.9 - 24.9	78.2 - 81.5
25.85	25.86	3.6	278	911	24.9 - 25.9	81.5 - 84.8
26.85	26.86	4.3	233	763	25.9 - 26.9	84.8 - 88.1
27.85	27.86	4.9	204	669	26.9 - 27.9	88.1 - 91.4
28.85	28.86	4.3	233	763	27.9 - 28.9	91.4 - 94.7
29.85	29.86	5.4	185	607	28.9 - 29.9	94.7 - 97.9

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0804-2150-0299
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15, S4: 1000 W, 06-SC-153
Location: 1000 W Structure
Cone: 20 TON A 040
CPT Date: 96/18/06
CPT Time: 15:30
CPT File: KA06S153.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	5193.6	83.2	1.6	2.3	0.0	17.3	34.6	0.0	95.0	50.0	1.0
1.23	0.38	4971.7	127.3	2.6	6.9	0.0	19.9	39.8	397.2	85.6	50.0	10.0
2.05	0.62	2232.3	92.7	4.2	11.4	0.0	14.9	29.8	177.7	0.0	0.0	10.0
2.87	0.88	1467.2	39.3	2.7	15.9	0.0	7.3	14.7	116.1	0.0	0.0	10.0
3.69	1.12	2037.4	73.2	3.6	20.4	0.0	13.6	27.2	161.4	0.0	0.0	10.0
4.51	1.38	2214.0	110.4	5.0	24.8	0.0	22.1	43.5	175.1	0.0	0.0	10.0
5.33	1.62	1586.5	95.5	6.0	29.2	0.0	15.9	28.7	124.6	0.0	0.0	10.0
6.15	1.88	1212.5	67.3	5.5	33.6	0.0	12.1	20.5	94.3	0.0	0.0	6.0
6.97	2.12	1165.0	45.7	3.9	36.7	1.2	11.7	18.8	90.2	0.0	0.0	6.0
7.79	2.38	1687.5	41.9	2.5	38.7	3.7	8.4	13.3	131.6	0.0	0.0	6.0
8.61	2.62	3734.1	61.1	1.6	40.8	6.1	12.4	19.1	0.0	51.9	42.0	1.0
9.43	2.88	10229.0	77.3	0.8	43.0	8.6	25.6	38.1	0.0	80.0	46.0	1.0
10.25	3.12	13744.5	94.7	0.7	45.4	11.0	27.5	39.9	0.0	87.7	46.0	1.0
11.07	3.38	16358.7	76.8	0.5	47.8	13.5	32.7	46.3	0.0	92.0	48.0	1.0
11.89	3.62	17591.9	63.1	0.4	50.2	15.9	35.2	48.6	0.0	93.3	48.0	1.0
12.71	3.88	18818.1	53.9	0.3	52.7	18.4	37.6	50.8	0.0	94.6	48.0	1.0
13.53	4.12	12414.9	33.6	0.3	55.1	20.8	24.8	32.7	0.0	82.0	46.0	1.0
14.35	4.38	1017.0	49.2	4.8	57.3	23.3	10.2	13.2	74.9	0.0	0.0	6.0
15.17	4.62	580.6	7.0	1.2	59.2	25.8	2.9	3.7	39.7	0.0	0.0	3.0
15.99	4.88	831.9	15.5	1.9	61.3	28.2	4.2	5.2	59.4	0.0	0.0	3.0
16.81	5.12	1615.1	16.2	1.0	63.3	30.7	6.5	7.9	121.7	30.0	34.0	6.0
17.63	5.38	1502.6	15.6	1.0	65.4	33.1	6.0	7.3	112.3	30.0	34.0	6.0
18.45	5.62	773.1	9.0	1.2	67.4	35.6	3.9	4.6	53.6	0.0	0.0	3.0
19.27	5.88	665.2	6.1	0.9	69.5	38.0	3.3	3.9	44.6	0.0	0.0	3.0
20.09	6.12	600.9	5.1	0.9	70.8	40.5	3.0	3.5	39.2	0.0	0.0	3.0
20.92	6.38	566.6	5.5	1.0	71.5	42.9	2.8	3.3	36.2	0.0	0.0	3.0
21.74	6.62	498.8	3.9	0.8	72.2	45.4	2.5	2.9	30.5	0.0	0.0	1.5
22.56	6.88	563.7	3.4	0.6	72.9	47.8	2.8	3.2	35.4	0.0	0.0	1.5
23.38	7.12	574.7	3.9	0.7	73.5	50.3	2.9	3.3	36.1	0.0	0.0	1.5
24.20	7.38	1297.3	8.2	0.6	74.9	52.7	5.2	5.9	93.6	30.0	32.0	6.0
25.02	7.62	1284.6	8.7	0.7	76.9	55.2	5.1	5.7	92.2	30.0	32.0	6.0
25.84	7.88	3991.3	25.0	0.6	79.1	57.6	13.3	14.6	0.0	44.3	38.0	1.0
26.66	8.12	1614.2	22.2	1.4	81.2	60.1	6.5	7.0	117.8	30.0	32.0	6.0
27.48	8.38	2118.4	21.6	1.0	83.2	62.5	8.5	9.1	157.8	30.0	34.0	6.0
28.30	8.62	1424.1	29.3	2.1	85.3	65.0	7.1	7.5	101.9	0.0	0.0	6.0
29.12	8.88	967.0	8.0	0.8	87.3	67.4	3.9	4.1	65.0	30.0	30.0	3.0
29.94	9.12	1227.5	13.1	1.1	89.4	69.9	4.9	5.1	85.5	30.0	30.0	3.0
30.76	9.38	802.9	4.1	0.5	91.4	72.3	3.2	3.3	51.1	30.0	30.0	3.0
31.58	9.62	865.6	24.0	2.8	93.4	74.8	5.8	5.8	55.8	0.0	0.0	3.0
32.40	9.88	763.4	8.3	1.1	95.5	77.3	3.8	3.8	47.3	0.0	0.0	1.5
33.22	10.12	3802.9	75.0	2.0	97.5	79.7	15.2	15.1	290.1	39.9	38.0	6.0
34.04	10.38	1398.7	11.9	0.9	99.6	82.2	5.6	5.5	97.4	30.0	30.0	3.0
34.86	10.62	5705.5	71.4	1.3	101.7	84.6	19.0	18.5	0.0	50.9	40.0	1.0
35.68	10.88	9340.9	150.2	1.6	103.9	87.1	31.1	29.9	0.0	64.8	42.0	1.0
36.50	11.12	1935.5	55.5	2.9	106.0	89.5	9.7	9.2	139.2	0.0	0.0	6.0
37.32	11.38	8251.3	130.3	1.6	108.1	92.0	27.5	25.9	0.0	60.7	40.0	1.0
38.14	11.62	1246.9	30.5	2.4	110.2	94.4	6.2	5.8	83.4	0.0	0.0	3.0
38.96	11.88	826.4	5.1	0.6	112.3	96.9	3.3	3.1	49.4	30.0	30.0	1.5
39.78	12.12	793.9	3.1	0.4	113.6	99.3	4.0	3.6	46.5	0.0	0.0	1.5
40.60	12.38	908.0	4.7	0.5	115.0	101.8	3.6	3.3	55.3	30.0	30.0	1.5
41.42	12.62	922.0	5.9	0.6	117.0	104.2	3.7	3.3	56.1	30.0	30.0	1.5
42.24	12.88	835.5	5.1	0.6	119.1	106.7	3.3	3.0	48.8	30.0	30.0	1.5

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60 (blows/ft)	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	876.3	5.6	0.6	121.1	109.1	3.5	3.1	51.7	30.0	30.0	1.5
43.88	13.38	865.4	6.5	0.7	123.2	111.6	3.5	3.1	50.5	30.0	30.0	1.5
44.70	13.62	919.5	7.0	0.8	125.2	114.0	3.7	3.2	54.4	30.0	30.0	1.5
45.52	13.88	983.9	7.8	0.8	127.3	116.5	3.9	3.4	59.2	30.0	30.0	1.5
46.34	14.12	936.2	10.5	1.1	129.3	118.9	4.7	4.0	55.0	0.0	0.0	1.5
47.16	14.38	1001.4	12.6	1.3	131.4	121.4	5.0	4.3	59.9	0.0	0.0	1.5
47.98	14.62	1429.8	23.5	1.6	133.4	123.9	5.7	4.8	93.8	30.0	30.0	3.0
48.80	14.88	2819.6	37.5	1.3	135.4	126.3	11.3	9.5	204.6	30.0	34.0	6.0
49.62	15.12	5641.6	62.1	1.1	137.6	128.8	18.8	15.7	0.0	46.3	38.0	1.0
50.44	15.38	2625.7	30.5	1.2	139.7	131.2	10.5	8.7	188.4	30.0	32.0	6.0
51.26	15.62	4655.9	72.1	1.5	141.8	133.7	15.5	12.8	0.0	40.4	36.0	1.0
52.08	15.88	3466.6	53.2	1.5	143.9	136.1	11.6	9.4	0.0	31.7	34.0	1.0
52.90	16.12	4010.3	41.7	1.0	146.1	138.6	13.4	10.8	0.0	35.6	36.0	1.0
53.72	16.38	5154.7	68.2	1.3	148.3	141.0	17.2	13.8	0.0	42.6	36.0	1.0
54.54	16.62	5240.6	103.3	2.0	150.5	143.5	17.5	13.9	0.0	42.9	36.0	1.0
55.36	16.88	3919.1	44.1	1.1	152.6	145.9	13.1	10.3	0.0	34.4	34.0	1.0
56.18	17.12	2420.7	24.0	1.0	154.7	148.4	9.7	7.6	169.4	30.0	32.0	6.0
57.00	17.38	1653.2	8.9	0.5	156.8	150.8	6.6	5.2	107.6	30.0	30.0	3.0
57.82	17.62	1774.5	31.5	1.8	158.8	153.3	7.1	5.5	117.0	30.0	30.0	3.0
58.64	17.88	2082.5	17.7	0.9	160.9	155.7	8.3	6.4	141.3	30.0	30.0	3.0
59.46	18.12	2351.9	19.6	0.8	163.0	158.2	7.8	6.0	0.0	30.0	32.0	1.0
60.28	18.38	4413.7	43.2	1.0	165.2	160.6	14.7	11.2	0.0	36.6	34.0	1.0
61.10	18.62	3059.7	57.1	1.9	167.3	163.1	12.2	9.3	218.3	30.0	32.0	6.0
61.93	18.88	6772.3	157.5	2.3	169.3	165.5	27.1	20.4	515.0	48.6	38.0	6.0
62.75	19.12	6156.4	116.0	1.9	171.4	168.0	20.5	15.3	0.0	45.6	38.0	1.0
63.57	19.38	5712.2	117.1	2.1	173.6	170.4	19.0	14.1	0.0	43.3	36.0	1.0
64.39	19.62	2999.7	78.5	2.6	175.7	172.9	12.0	8.9	212.1	30.0	32.0	6.0
65.21	19.88	1392.9	4.0	0.3	177.8	175.4	5.6	4.1	83.2	30.0	30.0	1.5
66.03	20.12	1419.5	2.9	0.2	179.8	177.8	5.7	4.1	84.9	30.0	30.0	1.5
66.85	20.38	1322.5	3.3	0.2	181.9	180.3	5.3	3.8	76.8	30.0	30.0	1.5
67.67	20.62	1414.4	3.0	0.2	183.9	182.7	5.7	4.1	83.8	30.0	30.0	1.5
68.49	20.88	1501.3	2.7	0.2	186.0	185.2	6.0	4.3	90.4	30.0	30.0	1.5
69.31	21.12	1576.3	4.2	0.3	188.0	187.6	6.3	4.5	96.1	30.0	30.0	3.0
70.13	21.38	3516.8	29.2	0.8	190.1	190.1	11.7	8.3	0.0	30.0	32.0	1.0
70.95	21.62	2344.1	36.7	1.6	192.2	192.5	9.4	6.6	156.7	30.0	30.0	3.0
71.77	21.88	1566.4	8.9	0.6	194.3	195.0	6.3	4.4	94.2	30.0	30.0	1.5
72.59	22.12	1383.5	7.6	0.5	196.3	197.4	5.5	3.9	79.2	30.0	30.0	1.5
73.41	22.38	1798.6	15.7	0.8	198.4	199.9	7.2	5.0	112.0	30.0	30.0	3.0
74.23	22.62	1729.2	13.1	0.8	200.4	202.3	6.9	4.8	106.1	30.0	30.0	3.0
75.05	22.88	1613.2	4.0	0.3	202.5	204.8	6.5	4.4	96.5	30.0	30.0	1.5
75.87	23.12	1735.4	9.5	0.5	204.5	207.2	6.9	4.8	105.9	30.0	30.0	3.0
76.69	23.38	3212.5	22.0	0.7	206.6	209.7	10.7	7.3	0.0	30.0	32.0	1.0
77.51	23.62	3606.1	58.4	1.6	208.8	212.1	12.0	8.1	0.0	30.0	32.0	1.0
78.33	23.88	2308.6	20.6	0.9	210.9	214.6	9.2	6.2	150.6	30.0	30.0	3.0
79.15	24.12	1702.9	10.6	0.6	213.0	217.0	6.8	4.6	101.8	30.0	30.0	1.5
79.97	24.38	1834.4	13.3	0.7	215.0	219.5	7.3	4.9	112.0	30.0	30.0	3.0
80.79	24.62	3063.1	50.1	1.6	217.0	222.0	12.3	8.1	209.9	30.0	30.0	3.0
81.61	24.88	2342.7	34.6	1.5	219.1	224.4	9.4	6.2	151.9	30.0	30.0	3.0
82.43	25.12	2166.2	12.6	0.6	221.2	226.9	7.2	4.8	0.0	30.0	30.0	1.0
83.25	25.38	1420.3	3.0	0.2	223.3	229.3	5.7	3.7	77.4	30.0	30.0	1.5
84.07	25.62	1394.9	6.3	0.5	225.4	231.8	5.6	3.6	75.0	30.0	30.0	1.5
84.89	25.88	3800.3	53.6	1.4	227.5	234.2	12.7	8.2	0.0	30.0	32.0	1.0
85.71	26.12	4391.5	85.9	2.0	229.6	236.7	17.6	11.3	314.0	31.8	32.0	6.0
86.53	26.38	2055.8	27.0	1.3	231.6	239.1	8.2	5.3	126.8	30.0	30.0	3.0
87.35	26.62	2114.0	28.2	1.3	233.7	241.6	8.5	5.4	131.1	30.0	30.0	3.0
88.17	26.88	2067.6	16.9	0.8	235.7	244.0	8.3	5.3	127.0	30.0	30.0	3.0
88.99	27.12	4292.5	62.4	1.5	237.8	246.5	14.3	9.1	0.0	30.6	32.0	1.0
89.81	27.38	5796.9	129.1	2.2	239.9	248.9	23.2	14.7	424.6	39.1	34.0	6.0
90.63	27.62	2503.3	61.9	2.5	242.0	251.4	10.0	6.3	160.8	30.0	30.0	3.0
91.45	27.88	2325.1	23.0	1.0	244.0	253.8	9.3	5.8	146.2	30.0	30.0	3.0
92.27	28.12	6112.3	53.8	0.9	246.2	256.3	15.3	9.5	0.0	40.3	34.0	1.0
93.09	28.38	3683.6	80.7	2.2	248.4	258.7	14.7	9.1	254.1	30.0	32.0	6.0
93.91	28.62	2793.9	54.2	1.9	250.4	261.2	11.2	6.9	182.6	30.0	30.0	3.0
94.73	28.88	4662.8	61.0	1.3	252.5	263.6	15.5	9.6	0.0	32.1	32.0	1.0
95.55	29.12	3036.6	33.9	1.1	254.7	266.1	10.1	6.2	0.0	30.0	30.0	1.0
96.37	29.38	4013.7	40.4	1.0	256.9	268.5	13.4	8.2	0.0	30.0	32.0	1.0
97.19	29.62	8101.4	186.9	2.3	259.1	271.0	27.0	16.4	0.0	47.6	36.0	1.0
98.01	29.88	8857.6	253.0	2.9	261.2	273.5	35.4	21.5	665.8	50.0	36.0	6.0
98.83	30.12	4691.1	111.5	2.4	263.2	275.9	18.8	11.3	332.2	31.7	32.0	6.0

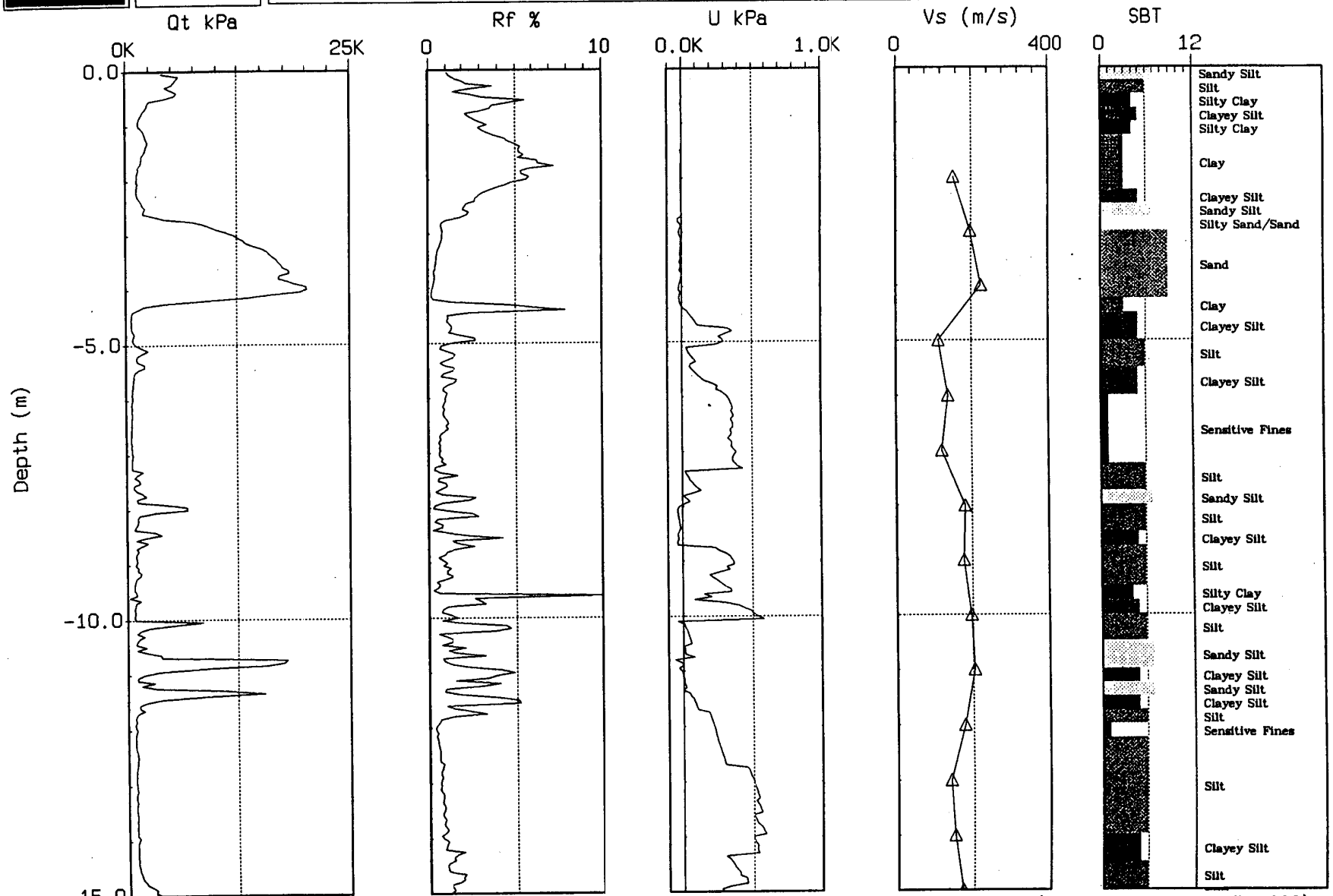
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	5788.0	102.0	1.8	265.3	278.4	19.3	11.6	0.0	37.6	34.0	1.0
100.47	30.62	4014.0	70.3	1.8	267.5	280.8	13.4	8.0	0.0	30.0	32.0	1.0
101.29	30.88	3247.8	41.2	1.3	269.7	283.3	10.8	6.5	0.0	30.0	30.0	1.0
102.11	31.12	3494.2	44.6	1.3	271.8	285.7	11.6	6.9	0.0	30.0	30.0	1.0
102.94	31.38	3265.5	32.9	1.0	274.0	288.2	10.9	6.4	0.0	30.0	30.0	1.0
103.76	31.62	3447.8	55.0	1.6	276.1	290.6	13.8	8.1	230.5	30.0	30.0	3.0
104.58	31.88	3051.7	46.1	1.5	278.2	293.1	12.2	7.2	198.4	30.0	30.0	3.0
105.40	32.12	3116.4	37.7	1.2	280.3	295.5	10.4	6.1	0.0	30.0	30.0	1.0
106.22	32.38	3035.2	55.0	1.8	282.4	298.0	12.1	7.1	196.4	30.0	30.0	3.0
107.04	32.62	8522.1	120.6	1.4	284.6	300.4	21.3	12.4	0.0	47.7	36.0	1.0
107.86	32.88	2840.1	49.9	1.8	286.7	302.9	11.4	6.6	180.0	30.0	30.0	3.0
108.68	33.12	2776.4	33.9	1.2	288.8	305.3	11.1	6.4	174.6	30.0	30.0	3.0
109.50	33.38	12821.5	223.7	1.7	290.9	307.8	42.7	24.5	0.0	59.1	38.0	1.0
110.32	33.62	24136.5	349.3	1.4	293.1	310.2	60.3	34.5	0.0	77.1	42.0	1.0
111.14	33.88	27327.6	274.5	1.0	295.5	312.7	54.7	31.1	0.0	80.6	42.0	1.0
111.96	34.12	22855.0	278.8	1.2	297.9	315.1	45.7	25.9	0.0	75.3	40.0	1.0
112.78	34.38	33423.3	292.4	0.9	300.3	317.6	66.8	37.8	0.0	86.1	42.0	1.0
113.60	34.62	26787.9	245.0	0.9	302.8	320.1	53.6	30.1	0.0	79.6	42.0	1.0

CONETEC

Kleinfelder

Site: I15, S4: 1000 W, 06-SC-153
Location: 1000 W Structure

Cone: 20 TON A 040
Date: 06:18:96 15:30



Max. Depth: 35.00 (m)
Depth Inc.: 0.05 (m)

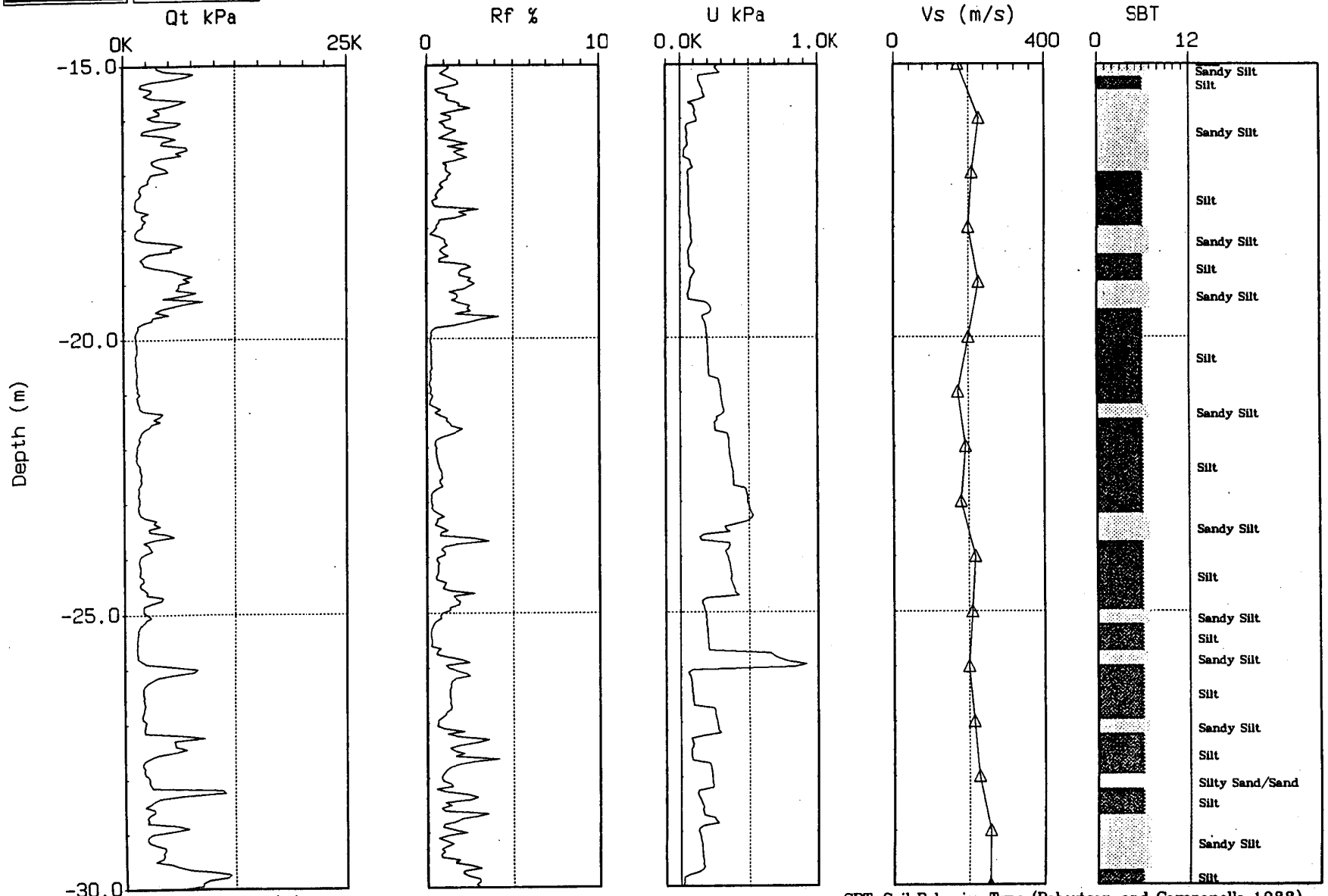
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: 1000 W, 06-SC-153
Location: 1000 W Structure

Cone: 20 TON A 040
Date: 06:18:96 15:30



Max. Depth: 35.00 (m)
Depth Inc.: 0.05 (m)

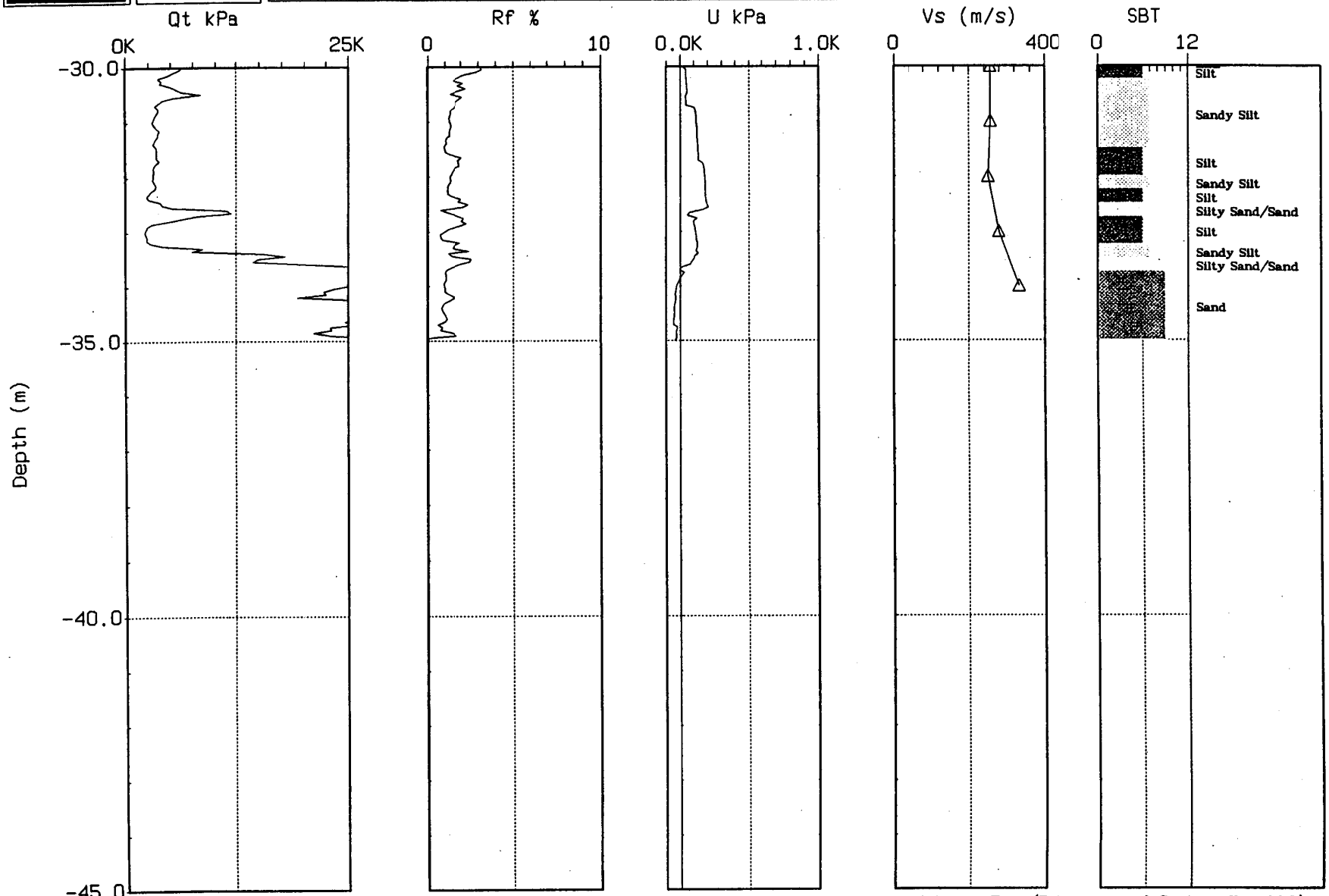
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Ste: I15, S4: 1000 W, 06-SC-153
Location: 1000 W Structure

Cone: 20 TON A 040
Date: 06:18:96 15:30



Max. Depth: 35.00 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-153*
Date: *18-Jun-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 040 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
1.50	1.60					
2.50	2.56	6.3	153	500	1.5 - 2.5	4.9 - 8.2
3.50	3.54	5.0	197	645	2.5 - 3.5	8.2 - 11.5
4.50	4.53	4.4	225	738	3.5 - 4.5	11.5 - 14.8
5.50	5.53	8.7	114	375	4.5 - 5.5	14.8 - 18.0
6.50	6.52	7.2	139	457	5.5 - 6.5	18.0 - 21.3
7.50	7.52	[illegible].2	122	401	6.5 - 7.5	21.3 - 24.6
8.50	8.52	[illegible].5	181	595	7.5 - 8.5	24.6 - 27.9
9.50	9.52	5.6	178	585	8.5 - 9.5	27.9 - 31.2
10.50	10.51	5.1	196	642	9.5 - 10.5	31.2 - 34.4
11.50	11.51	4.9	204	669	10.5 - 11.5	34.4 - 37.7
12.50	12.51	5.6	178	585	11.5 - 12.5	37.7 - 41.0
13.50	13.51	7.1	141	462	12.5 - 13.5	41.0 - 44.3
14.50	14.51	6.6	151	497	13.5 - 14.5	44.3 - 47.6
15.50	15.51	5.8	172	565	14.5 - 15.5	47.6 - 50.9
16.50	16.51	4.4	227	745	15.5 - 16.5	50.9 - 54.1
17.50	17.51	4.8	208	683	16.5 - 17.5	54.1 - 57.4
18.50	18.51	5.0	200	656	17.5 - 18.5	57.4 - 60.7
19.50	19.51	4.4	227	745	18.5 - 19.5	60.7 - 64.0
20.50	20.51	5.0	200	656	19.5 - 20.5	64.0 - 67.3
21.50	21.51	5.8	172	565	20.5 - 21.5	67.3 - 70.5
22.50	22.51	5.2	192	631	21.5 - 22.5	70.5 - 73.8
23.50	23.51	5.6	179	586	22.5 - 23.5	73.8 - 77.1
24.50	24.51	4.6	217	713	23.5 - 24.5	77.1 - 80.4
25.50	25.51	4.8	208	683	24.5 - 25.5	80.4 - 83.7
26.50	26.51	5.0	200	656	25.5 - 26.5	83.7 - 86.9
27.50	27.51	4.7	213	698	26.5 - 27.5	86.9 - 90.2
28.50	28.51	4.4	227	745	27.5 - 28.5	90.2 - 93.5
29.50	29.51	3.9	256	841	28.5 - 29.5	93.5 - 96.8
30.50	30.51	3.9	256	841	29.5 - 30.5	96.8 - 100.1
31.50	31.50	3.9	256	841	30.5 - 31.5	100.1 - 103.3
32.50	32.50	4.0	250	820	31.5 - 32.5	103.3 - 106.6
33.50	33.50	3.6	278	911	32.5 - 33.5	106.6 - 109.9
34.50	34.50	3.0	333	1093	33.5 - 34.5	109.9 - 113.2

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07

Run No: 96-0804-2150-0667
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15, S4: 400 S, 06-SC-157
Location: 400 S Structure
Cone: 20 TON A 040
CPT Date: 96/25/06
CPT Time: 20:14
CPT File: KA06S157.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	1675.7	2.0	0.1	2.3	0.0	5.6	11.2	0.0	70.1	50.0	1.0
1.23	0.38	1548.1	2.0	0.1	6.9	0.0	6.2	12.4	123.3	52.2	46.0	10.0
2.05	0.62	2204.9	4.8	0.2	11.4	0.0	7.3	14.7	0.0	55.0	44.0	1.0
2.87	0.88	1272.3	19.9	1.6	16.0	0.0	6.4	12.7	100.5	0.0	0.0	10.0
3.69	1.12	755.3	12.6	1.7	20.5	0.0	3.8	7.6	58.8	0.0	0.0	6.0
4.51	1.38	1500.6	19.0	1.3	25.0	0.0	6.0	11.7	118.0	32.8	40.0	10.0
5.33	1.62	1797.7	15.9	0.9	29.5	0.0	7.2	13.0	141.5	35.6	40.0	10.0
6.15	1.88	1506.5	14.9	1.0	34.0	0.0	6.0	10.1	117.8	30.0	38.0	6.0
6.97	2.12	1501.4	13.4	0.9	37.3	1.2	6.0	9.6	117.0	30.0	38.0	6.0
7.79	2.38	3584.3	27.4	0.8	39.4	3.7	11.9	18.6	0.0	51.2	42.0	1.0
8.61	2.62	10410.4	50.1	0.5	41.7	6.1	20.8	31.6	0.0	81.0	46.0	1.0
9.43	2.88	9637.6	55.8	0.6	44.0	8.6	24.1	35.5	0.0	78.0	46.0	1.0
10.25	3.12	10431.6	60.0	0.6	46.4	11.0	20.9	30.0	0.0	79.5	46.0	1.0
11.07	3.38	13562.4	63.4	0.5	48.8	13.5	27.1	38.0	0.0	86.3	46.0	1.0
11.89	3.62	13117.7	28.9	0.2	51.2	15.9	26.2	35.9	0.0	84.6	46.0	1.0
12.71	3.88	7090.4	7.9	0.1	53.6	18.4	17.7	23.7	0.0	66.4	44.0	1.0
13.53	4.12	1905.1	18.6	1.0	55.8	20.8	7.6	10.0	146.3	30.0	36.0	6.0
14.35	4.38	1343.5	24.0	1.8	57.8	23.3	6.7	8.6	101.0	0.0	0.0	6.0
15.17	4.62	1021.8	14.3	1.4	59.9	25.8	5.1	6.5	74.9	0.0	0.0	6.0
15.99	4.88	962.8	19.5	2.0	61.9	28.2	4.8	6.0	69.8	0.0	0.0	6.0
16.81	5.12	1078.4	29.0	2.7	64.0	30.7	5.4	6.6	78.7	0.0	0.0	6.0
17.63	5.38	972.0	28.0	2.9	66.0	33.1	6.5	7.8	69.8	0.0	0.0	6.0
18.45	5.62	874.3	17.4	2.0	68.1	35.6	4.4	5.2	61.7	0.0	0.0	3.0
19.27	5.88	727.8	8.5	1.2	70.1	38.0	3.6	4.3	49.6	0.0	0.0	3.0
20.09	6.12	455.8	4.1	0.9	71.5	40.5	2.3	2.6	27.5	0.0	0.0	1.5
20.92	6.38	599.3	6.0	1.0	72.1	42.9	3.0	3.5	38.7	0.0	0.0	3.0
21.74	6.62	1149.9	15.8	1.4	73.5	45.4	5.7	6.6	82.5	0.0	0.0	6.0
22.56	6.88	2933.6	19.2	0.7	75.6	47.8	9.8	11.0	0.0	36.1	38.0	1.0
23.38	7.12	1841.0	33.7	1.8	77.7	50.3	7.4	8.2	137.0	30.0	34.0	6.0
24.20	7.38	1633.5	28.5	1.7	79.8	52.7	6.5	7.2	120.1	30.0	32.0	6.0
25.02	7.62	3029.1	47.5	1.6	81.8	55.2	12.1	13.1	231.4	35.9	38.0	6.0
25.84	7.88	894.0	7.7	0.9	83.9	57.6	4.5	4.8	60.2	0.0	0.0	3.0
26.66	8.12	1302.7	14.9	1.1	85.9	60.1	5.2	5.5	92.5	30.0	32.0	6.0
27.48	8.38	1243.4	16.2	1.3	88.0	62.5	5.0	5.2	87.4	30.0	30.0	3.0
28.30	8.62	993.0	11.6	1.2	90.0	65.0	5.0	5.1	67.0	0.0	0.0	3.0
29.12	8.88	947.8	10.1	1.1	92.1	67.4	4.7	4.8	63.1	0.0	0.0	3.0
29.94	9.12	2091.0	34.8	1.7	94.1	69.9	8.4	8.4	154.2	30.0	34.0	6.0
30.76	9.38	906.8	11.3	1.2	96.2	72.3	4.5	4.5	59.1	0.0	0.0	3.0
31.58	9.62	2143.0	39.0	1.8	98.2	74.8	8.6	8.5	157.6	30.0	34.0	6.0
32.40	9.88	1999.0	38.4	1.9	100.2	77.3	8.0	7.8	145.7	30.0	32.0	6.0
33.22	10.12	1757.1	35.5	2.0	102.3	79.7	7.0	6.8	126.0	30.0	32.0	6.0
34.04	10.38	1028.5	19.6	1.9	104.3	82.2	5.1	4.9	67.4	0.0	0.0	3.0
34.86	10.62	923.4	6.5	0.7	106.4	84.6	3.7	3.5	58.6	30.0	30.0	3.0
35.68	10.88	931.8	2.6	0.3	108.4	87.1	3.7	3.5	58.9	30.0	30.0	3.0
36.50	11.12	751.5	3.1	0.4	109.8	89.5	3.8	3.5	44.2	0.0	0.0	1.5
37.32	11.38	811.7	8.5	1.1	111.2	92.0	4.1	3.8	48.7	0.0	0.0	1.5
38.14	11.62	889.3	6.4	0.7	113.2	94.4	3.6	3.3	54.5	30.0	30.0	1.5
38.96	11.88	1049.5	7.4	0.7	115.3	96.9	4.2	3.8	67.0	30.0	30.0	3.0
39.78	12.12	919.8	7.2	0.8	117.3	99.3	3.7	3.3	56.3	30.0	30.0	1.5
40.60	12.38	843.0	5.7	0.7	119.3	101.8	3.4	3.0	49.8	30.0	30.0	1.5
41.42	12.62	884.3	5.7	0.6	121.4	104.2	3.5	3.1	52.7	30.0	30.0	1.5
42.24	12.88	963.3	6.8	0.7	123.4	106.7	3.9	3.4	58.7	30.0	30.0	1.5

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	897.9	7.7	0.9	125.5	109.1	4.5	3.9	53.1	0.0	0.0	1.5
43.88	13.38	994.6	7.3	0.7	127.5	111.6	4.0	3.4	60.4	30.0	30.0	1.5
44.70	13.62	998.0	9.5	1.0	129.6	114.0	4.0	3.4	60.3	30.0	30.0	1.5
45.52	13.88	1052.1	10.4	1.0	131.6	116.5	4.2	3.6	64.3	30.0	30.0	1.5
46.34	14.12	2062.4	35.6	1.7	133.7	118.9	8.2	7.0	144.8	30.0	32.0	6.0
47.16	14.38	2897.4	44.5	1.5	135.7	121.4	11.6	9.7	211.2	30.0	34.0	6.0
47.98	14.62	2720.3	37.0	1.4	137.8	123.9	10.9	9.1	196.7	30.0	32.0	6.0
48.80	14.88	1719.0	22.9	1.3	139.8	126.3	6.9	5.7	116.2	30.0	30.0	3.0
49.62	15.12	4474.2	84.4	1.9	141.9	128.8	14.9	12.3	0.0	39.2	36.0	1.0
50.44	15.38	5099.8	113.6	2.2	144.0	131.2	20.4	16.6	386.0	42.7	36.0	6.0
51.26	15.62	6196.8	97.0	1.6	146.2	133.7	20.7	16.7	0.0	48.1	38.0	1.0
52.08	15.88	1847.5	30.6	1.7	148.3	136.1	7.4	5.9	125.0	30.0	30.0	3.0
52.90	16.12	10330.1	120.4	1.2	150.4	138.6	25.8	20.6	0.0	62.4	40.0	1.0
53.72	16.38	14625.3	202.2	1.4	152.7	141.0	36.6	29.0	0.0	72.1	42.0	1.0
54.54	16.62	19423.4	231.4	1.2	155.0	143.5	48.6	38.2	0.0	80.0	42.0	1.0
55.36	16.88	22839.7	443.8	1.9	157.3	145.9	57.1	44.6	0.0	84.5	44.0	1.0
56.18	17.12	27204.5	453.3	1.7	159.6	148.4	68.0	52.7	0.0	89.3	44.0	1.0
57.00	17.38	26875.4	494.3	1.8	161.9	150.8	67.2	51.7	0.0	88.7	44.0	1.0
57.82	17.62	22265.0	361.7	1.6	164.2	153.3	55.7	42.5	0.0	83.1	44.0	1.0
58.64	17.88	5825.8	144.4	2.5	166.4	155.7	23.3	17.7	440.3	44.5	36.0	6.0
59.46	18.12	5455.6	144.4	2.6	168.4	158.2	21.8	16.5	410.3	42.4	36.0	6.0
60.28	18.38	8847.3	190.7	2.2	170.5	160.6	29.5	22.1	0.0	56.1	38.0	1.0
61.10	18.62	11837.3	297.1	2.5	172.7	163.1	39.5	29.4	0.0	64.3	40.0	1.0
61.93	18.88	16366.2	367.9	2.2	174.9	165.5	54.6	40.4	0.0	73.4	42.0	1.0
62.75	19.12	17256.9	339.0	2.0	177.1	168.0	57.5	42.3	0.0	74.7	42.0	1.0
63.57	19.38	29378.3	318.5	1.1	179.4	170.4	58.8	42.9	0.0	89.8	44.0	1.0
64.39	19.62	31301.5	474.8	1.5	181.7	172.9	78.3	56.8	0.0	91.4	44.0	1.0
65.21	19.88	29960.6	588.1	2.0	184.0	175.4	74.9	54.0	0.0	90.0	44.0	1.0
66.03	20.12	22734.4	532.4	2.3	186.3	177.8	75.8	54.3	0.0	81.9	42.0	1.0
66.85	20.38	27330.0	462.3	1.7	188.5	180.3	68.3	48.7	0.0	87.0	44.0	1.0
67.67	20.62	22991.2	343.4	1.5	190.8	182.7	57.5	40.7	0.0	81.9	42.0	1.0
68.49	20.88	25836.4	299.1	1.2	193.1	185.2	51.7	36.4	0.0	85.0	44.0	1.0
69.31	21.12	23302.0	141.4	0.6	195.6	187.6	46.6	32.6	0.0	81.9	42.0	1.0
70.13	21.38	15258.2	54.0	0.4	198.0	190.1	30.5	21.2	0.0	69.6	40.0	1.0
70.95	21.62	9881.9	287.1	2.9	200.2	192.5	39.5	27.3	759.1	57.0	38.0	6.0
71.77	21.88	5266.6	134.5	2.6	202.3	195.0	21.1	14.5	389.6	38.8	34.0	6.0
72.59	22.12	2983.6	56.9	1.9	204.3	197.4	11.9	8.2	206.5	30.0	32.0	6.0
73.41	22.38	2653.4	41.2	1.6	206.4	199.9	10.6	7.2	179.8	30.0	30.0	3.0
74.23	22.62	10585.2	194.0	1.8	208.5	202.3	35.3	23.9	0.0	58.4	38.0	1.0
75.05	22.88	16857.9	230.7	1.4	210.7	204.8	42.1	28.4	0.0	71.6	42.0	1.0
75.87	23.12	13331.7	230.7	1.7	213.0	207.2	33.3	22.3	0.0	64.7	40.0	1.0
76.69	23.38	20069.6	326.2	1.6	215.3	209.7	50.2	33.5	0.0	76.3	42.0	1.0
77.51	23.62	18364.1	273.4	1.5	217.6	212.1	45.9	30.5	0.0	73.6	42.0	1.0
78.33	23.88	12179.0	356.2	2.9	219.8	214.6	48.7	32.2	939.6	61.6	40.0	10.0
79.15	24.12	13127.0	380.0	2.9	221.8	217.0	52.5	34.5	1015.0	63.7	40.0	10.0
79.97	24.38	5471.6	114.6	2.1	223.9	219.5	18.2	11.9	0.0	38.4	34.0	1.0
80.79	24.62	10204.3	292.1	2.9	226.0	222.0	40.8	26.6	780.5	56.2	38.0	6.0
81.61	24.88	1910.9	40.4	2.1	228.1	224.4	7.6	5.0	116.7	30.0	30.0	3.0
82.43	25.12	1987.2	17.3	0.9	230.1	226.9	7.9	5.1	122.4	30.0	30.0	3.0
83.25	25.38	1742.0	12.2	0.7	232.2	229.3	7.0	4.5	102.4	30.0	30.0	1.5
84.07	25.62	2080.4	18.5	0.9	234.2	231.8	8.3	5.3	129.2	30.0	30.0	3.0
84.89	25.88	2319.9	54.6	2.4	236.3	234.2	9.3	5.9	148.0	30.0	30.0	3.0
85.71	26.12	2472.7	79.2	3.2	238.3	236.7	12.4	7.8	159.8	0.0	0.0	3.0
86.53	26.38	2215.5	68.3	3.1	240.4	239.1	11.1	7.0	138.9	0.0	0.0	3.0
87.35	26.62	2081.3	52.6	2.5	242.4	241.6	10.4	6.5	127.8	0.0	0.0	3.0
88.17	26.88	2097.4	50.7	2.4	244.5	244.0	8.4	5.3	128.7	30.0	30.0	3.0
88.99	27.12	3973.7	123.3	3.1	246.5	246.5	19.9	12.4	278.5	0.0	0.0	6.0
89.81	27.38	7363.1	200.0	2.7	248.6	248.9	29.5	18.3	549.2	45.5	36.0	6.0
90.63	27.62	2217.8	49.1	2.2	250.6	251.4	8.9	5.5	137.3	30.0	30.0	3.0
91.45	27.88	2186.4	38.4	1.8	252.7	253.8	8.7	5.4	134.4	30.0	30.0	3.0
92.27	28.12	2974.1	88.5	3.0	254.7	256.3	14.9	9.1	197.0	0.0	0.0	3.0
93.09	28.38	10613.7	242.4	2.3	256.8	258.7	35.4	21.6	0.0	55.5	38.0	1.0
93.91	28.62	5293.4	164.6	3.1	258.9	261.2	21.2	12.9	381.9	35.4	32.0	6.0
94.73	28.88	5593.6	179.2	3.2	261.0	263.6	22.4	13.6	405.5	36.9	34.0	6.0
95.55	29.12	5758.5	216.9	3.8	263.0	266.1	28.8	17.4	418.4	0.0	0.0	6.0
96.37	29.38	3785.4	89.6	2.4	265.1	268.5	15.1	9.1	260.1	30.0	30.0	3.0
97.19	29.62	3326.7	93.9	2.8	267.1	271.0	13.3	8.0	223.1	30.0	30.0	3.0
98.01	29.88	6277.3	213.8	3.4	269.2	273.5	31.4	18.7	458.8	0.0	0.0	6.0
98.83	30.12	3743.2	137.9	3.7	271.2	275.9	18.7	11.1	255.7	0.0	0.0	3.0

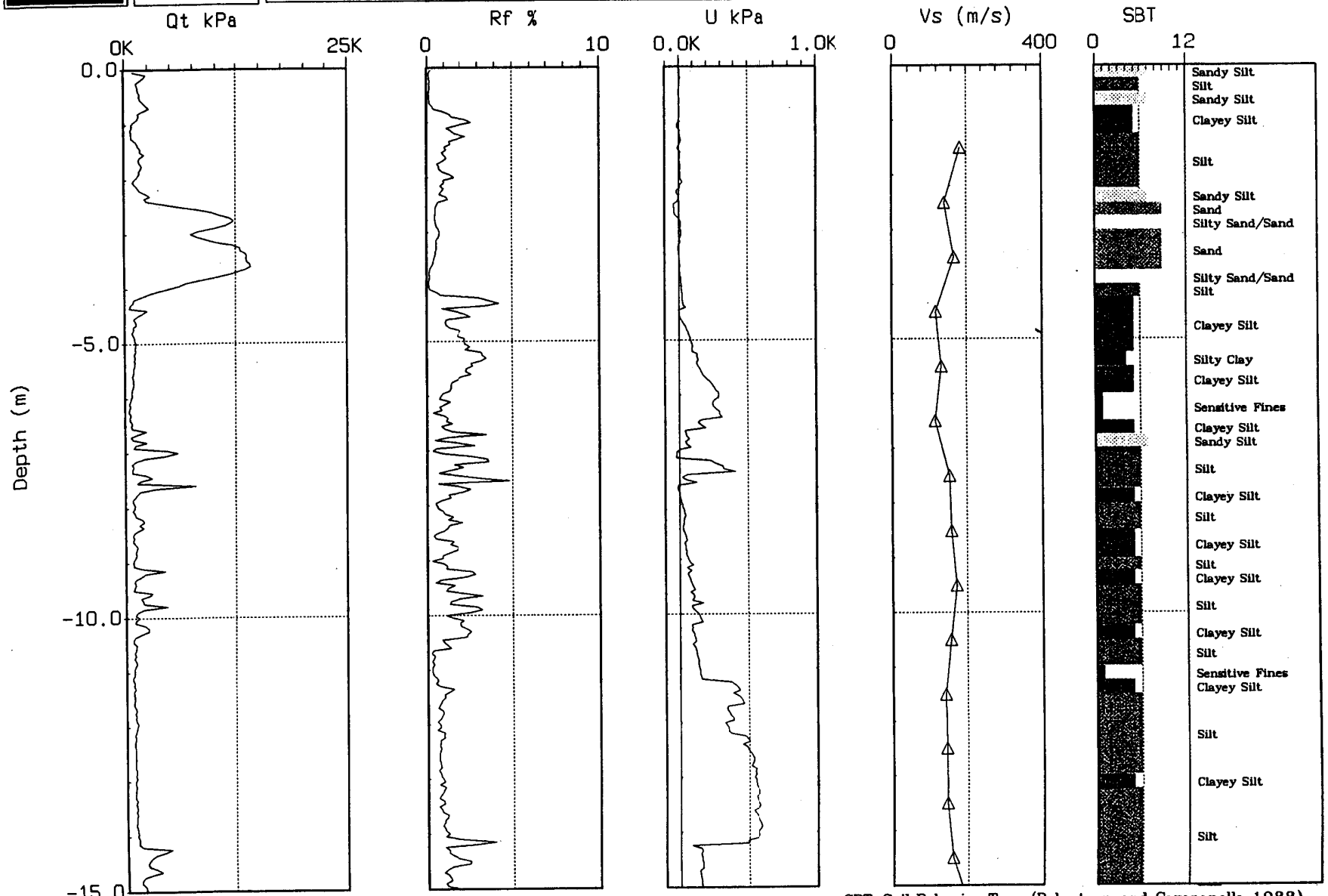
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	3080.3	78.2	2.5	273.3	278.4	12.3	7.3	202.3	30.0	30.0	3.0
100.47	30.62	2714.3	61.2	2.3	275.3	280.8	10.9	6.4	172.7	30.0	30.0	3.0
101.29	30.88	2952.4	51.7	1.7	277.4	283.3	11.8	6.9	191.3	30.0	30.0	3.0
102.11	31.12	2973.6	66.9	2.2	279.4	285.7	11.9	7.0	192.7	30.0	30.0	3.0
102.94	31.38	2497.4	49.6	2.0	281.5	288.2	10.0	5.8	154.2	30.0	30.0	3.0
103.76	31.62	2484.0	41.9	1.7	283.5	290.6	9.9	5.8	152.8	30.0	30.0	3.0
104.58	31.88	2424.4	35.8	1.5	285.6	293.1	9.7	5.6	147.7	30.0	30.0	3.0
105.40	32.12	2349.0	38.8	1.6	287.6	295.5	9.4	5.4	141.3	30.0	30.0	1.5
106.22	32.38	2436.6	39.2	1.6	289.6	298.0	9.7	5.6	147.9	30.0	30.0	3.0
107.04	32.62	3368.2	71.5	2.1	291.7	300.4	13.5	7.7	222.1	30.0	30.0	3.0
107.86	32.88	2428.4	48.8	2.0	293.7	302.9	9.7	5.5	146.5	30.0	30.0	1.5
108.68	33.12	3683.5	112.7	3.1	295.8	305.3	18.4	10.5	246.6	0.0	0.0	3.0
109.50	33.38	15065.3	250.4	1.7	298.0	307.8	37.7	21.4	0.0	63.4	38.0	1.0
110.32	33.62	11079.7	238.5	2.2	300.2	310.2	36.9	20.9	0.0	54.5	38.0	1.0
111.14	33.88	4672.1	120.6	2.6	302.3	312.7	18.7	10.5	324.6	30.0	32.0	6.0
111.96	34.12	5274.8	195.5	3.7	304.4	315.1	26.4	14.8	372.4	0.0	0.0	6.0
112.78	34.38	14723.8	375.2	2.5	306.5	317.6	49.1	27.4	0.0	62.3	38.0	1.0
113.60	34.62	20677.5	490.1	2.4	308.6	320.1	68.9	38.4	0.0	71.9	40.0	1.0
114.42	34.88	36508.9	765.8	2.1	310.9	322.5	91.3	50.7	0.0	88.1	42.0	1.0

CONETEC

Kleinfelder

Site: I15, S4: 400 S, 06-SC-157
Location: 400 S Structure

Cone: 20 TON A 040
Date: 06:25:96 2014



Max. Depth: 35.05 (m)
Depth Inc.: 0.05 (m)

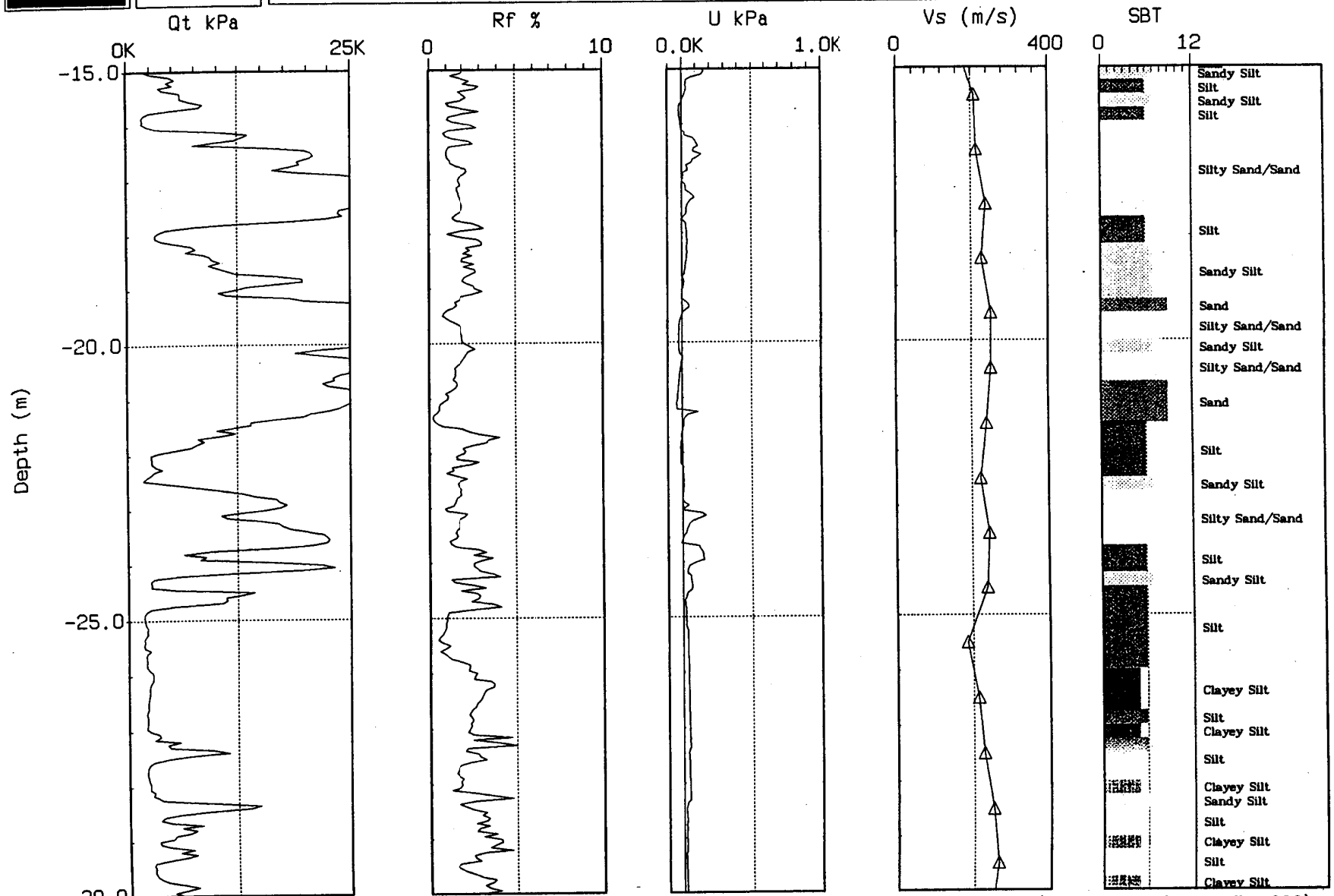
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: 400 S, 06-SC-157
Location: 400 S Structure

Cone: 20 TON A 040
Date: 06:25:96 20:14



Max. Depth: 35.05 (m)
Depth Inc.: 0.05 (m)

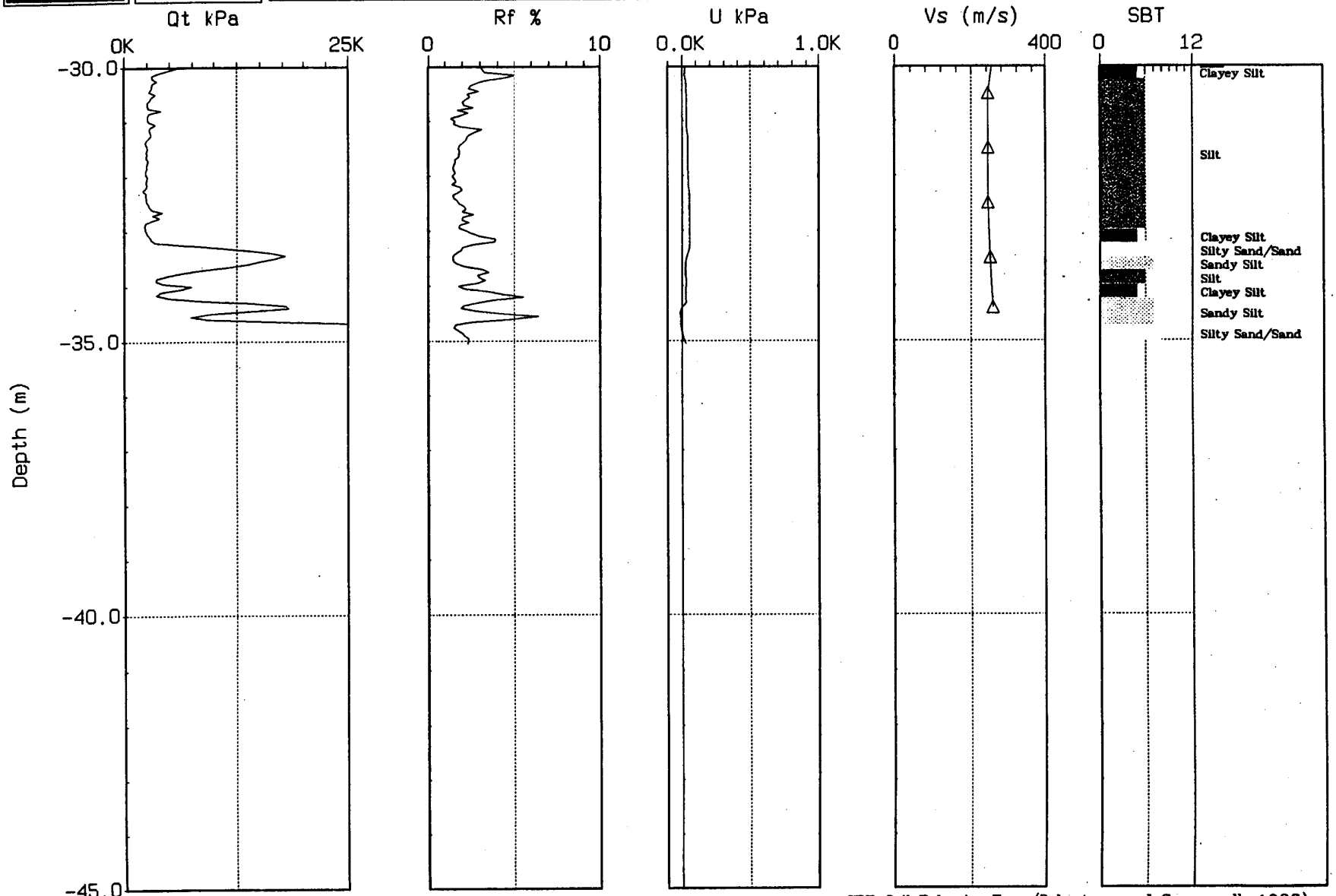
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: 400 S, 06-SC-157
Location: 400 S Structure

Cone: 20 TON A 040
Date: 06:25:96 20:14



Max. Depth: 35.05 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-157*
Date: *25-Jun-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 040 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	(m)	(ms)	(m/s)	(ft/s)	(m)	(ft)
1.00	1.15					
2.00	2.08	5.1	* 183	599	1.0 - 2.0	3.3 - 6.6
3.00	3.05	6.9	141	464	2.0 - 3.0	6.6 - 9.8
4.00	4.04	5.9	167	549	3.0 - 4.0	9.8 - 13.1
5.00	5.03	8.4	* 118	388	4.0 - 5.0	13.1 - 16.4
6.00	6.03	7.5	133	435	5.0 - 6.0	16.4 - 19.7
7.00	7.02	8.7	115	376	6.0 - 7.0	19.7 - 23.0
8.00	8.02	6.5	153	503	7.0 - 8.0	23.0 - 26.2
9.00	9.02	6.3	158	520	8.0 - 9.0	26.2 - 29.5
10.00	10.02	5.8	* 172	565	9.0 - 10.0	29.5 - 32.8
11.00	11.01	6.4	156	512	10.0 - 11.0	32.8 - 36.1
12.00	12.01	7.1	141	462	11.0 - 12.0	36.1 - 39.4
13.00	13.01	7.0	143	468	12.0 - 13.0	39.4 - 42.7
14.00	14.01	6.9	145	475	13.0 - 14.0	42.7 - 45.9
15.00	15.01	6.3	* 159	520	14.0 - 15.0	45.9 - 49.2
16.00	16.01	4.8	208	683	15.0 - 16.0	49.2 - 52.5
17.00	17.01	4.7	213	698	16.0 - 17.0	52.5 - 55.8
18.00	18.01	4.2	238	781	17.0 - 18.0	55.8 - 59.1
19.00	19.01	4.4	227	745	18.0 - 19.0	59.1 - 62.3
20.00	20.01	4.0	* 250	820	19.0 - 20.0	62.3 - 65.6
21.00	21.01	4.0	250	820	20.0 - 21.0	65.6 - 68.9
22.00	22.01	4.2	238	781	21.0 - 22.0	68.9 - 72.2
23.00	23.01	4.5	222	729	22.0 - 23.0	72.2 - 75.5
24.00	24.01	4.1	244	800	23.0 - 24.0	75.5 - 78.7
25.00	25.01	4.2	* 238	781	24.0 - 25.0	78.7 - 82.0
26.00	26.01	5.4	185	607	25.0 - 26.0	82.0 - 85.3
27.00	27.01	4.7	213	698	26.0 - 27.0	85.3 - 88.6
28.00	28.01	4.4	227	745	27.0 - 28.0	88.6 - 91.9
29.00	29.01	4.0	250	820	28.0 - 29.0	91.9 - 95.1
30.00	30.01	3.8	* 263	863	29.0 - 30.0	95.1 - 98.4
31.00	31.01	4.1	244	800	30.0 - 31.0	98.4 - 101.7
32.00	32.00	4.1	244	800	31.0 - 32.0	101.7 - 105.0
33.00	33.00	4.1	244	800	32.0 - 33.0	105.0 - 108.3
34.00	34.00	4.0	250	820	33.0 - 34.0	108.3 - 111.5
34.80	34.80	3.1	* 258	847	34.0 - 34.8	111.5 - 114.2

34.4
35

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0805-0947-5738
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15, S4: I15 SB, 06-SC-171
Location: 400 S Structure
Cone: 20 TON A 040
CPT Date: 96/01/07
CPT Time: 21:33
CPT File: KA06S171.COR

Water Table (m): 9.00 (ft): 29.5
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	1.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
1.23	0.38	1.0	0.0	0.0	7.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
2.05	0.62	1.0	0.0	0.0	12.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
2.87	0.88	1.0	0.0	0.0	17.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
3.69	1.12	1.0	0.0	0.0	21.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
4.51	1.38	1.0	0.0	0.0	26.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
5.33	1.62	1.0	0.0	0.0	31.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
6.15	1.88	1.0	0.0	0.0	36.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0
6.97	2.12	1.0	0.0	0.0	41.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
7.79	2.38	1.0	0.0	0.0	46.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
8.61	2.62	1.0	0.0	0.0	51.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
9.43	2.88	1.0	0.0	0.0	56.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
10.25	3.12	1.0	0.0	0.0	60.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
11.07	3.38	1.0	0.0	0.0	65.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
11.89	3.62	1.0	0.0	0.0	70.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
12.71	3.88	1.0	0.0	0.0	75.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0
13.53	4.12	1.0	0.0	0.0	80.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
14.35	4.38	1.0	0.0	0.0	85.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
15.17	4.62	1.0	0.0	0.0	90.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
15.99	4.88	1.0	0.0	0.0	95.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
16.81	5.12	1.0	0.0	0.0	99.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
17.63	5.38	1.0	0.0	0.0	104.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
18.45	5.62	1.0	0.0	0.0	109.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
19.27	5.88	1.0	0.0	0.0	114.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0
20.09	6.12	1.0	0.0	0.0	119.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
20.92	6.38	1.0	0.0	0.0	124.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
21.74	6.62	1.0	0.0	0.0	129.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
22.56	6.88	1.0	0.0	0.0	134.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
23.38	7.12	1.0	0.0	0.0	138.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
24.20	7.38	1.0	0.0	0.0	143.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
25.02	7.62	1.0	0.0	0.0	148.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
25.84	7.88	2083.4	6.9	0.3	153.4	0.0	6.9	5.5	0.0	30.0	30.0	1.0
26.66	8.12	7038.4	108.2	1.5	158.1	0.0	23.5	18.3	0.0	50.6	38.0	1.0
27.48	8.38	5148.9	86.5	1.7	162.7	0.0	17.2	13.2	0.0	41.3	36.0	1.0
28.30	8.62	5266.1	86.3	1.6	167.3	0.0	17.6	13.3	0.0	41.5	36.0	1.0
29.12	8.88	5276.4	69.0	1.3	171.9	0.0	17.6	13.1	0.0	41.2	36.0	1.0
29.94	9.12	6370.5	67.3	1.1	175.4	1.2	15.9	11.8	0.0	46.3	38.0	1.0
30.76	9.38	4328.3	80.5	1.9	177.6	3.7	14.4	10.6	0.0	35.0	34.0	1.0
31.58	9.62	1538.8	42.9	2.8	179.7	6.1	7.7	5.6	108.2	0.0	0.0	3.0
32.40	9.88	1383.0	29.0	2.1	181.8	8.6	6.9	5.0	95.4	0.0	0.0	3.0
33.22	10.12	4757.6	57.6	1.2	183.9	11.0	15.9	11.4	0.0	37.3	34.0	1.0
34.04	10.38	5078.2	72.7	1.4	186.1	13.5	16.9	12.1	0.0	39.0	34.0	1.0
34.86	10.62	7051.9	122.3	1.7	188.2	15.9	23.5	16.8	0.0	48.2	38.0	1.0
35.68	10.88	14339.2	192.2	1.3	190.5	18.4	35.8	25.4	0.0	68.4	40.0	1.0
36.50	11.12	16435.4	194.7	1.2	192.8	20.8	41.1	29.0	0.0	72.1	42.0	1.0
37.32	11.38	20295.5	258.3	1.3	195.1	23.3	50.7	35.6	0.0	78.0	42.0	1.0
38.14	11.62	18997.5	245.6	1.3	197.4	25.8	47.5	33.1	0.0	75.9	42.0	1.0
38.96	11.88	20082.8	63.7	0.3	199.7	28.2	40.2	27.8	0.0	77.3	42.0	1.0
39.78	12.12	13093.7	62.2	0.5	202.2	30.7	26.2	18.0	0.0	64.9	40.0	1.0
40.60	12.38	2037.5	35.7	1.8	204.4	33.1	8.2	5.6	144.0	30.0	30.0	3.0
41.42	12.62	1497.5	22.8	1.5	206.4	35.6	6.0	4.1	100.4	30.0	30.0	1.5
42.24	12.88	1338.9	23.3	1.7	208.5	38.0	6.7	4.5	87.4	0.0	0.0	1.5

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	1261.3	20.6	1.6	210.5	40.5	6.3	4.3	80.8	0.0	0.0	1.5
43.88	13.38	1210.9	20.3	1.7	212.6	42.9	6.1	4.1	76.4	0.0	0.0	1.5
44.70	13.62	1151.1	12.7	1.1	214.6	45.4	4.6	3.1	71.3	30.0	30.0	1.5
45.52	13.88	1122.6	10.3	0.9	216.7	47.8	4.5	3.0	68.7	30.0	30.0	1.5
46.34	14.12	1429.3	24.8	1.7	218.7	50.3	5.7	3.8	92.8	30.0	30.0	1.5
47.16	14.38	2819.7	75.2	2.7	220.8	52.7	11.3	7.4	203.7	30.0	30.0	3.0
47.98	14.62	1332.7	13.4	1.0	222.8	55.2	5.3	3.5	84.4	30.0	30.0	1.5
48.80	14.88	3327.9	80.2	2.4	224.9	57.6	13.3	8.7	243.6	30.0	32.0	6.0
49.62	15.12	1800.4	31.4	1.7	226.9	60.1	7.2	4.7	121.1	30.0	30.0	3.0
50.44	15.38	1533.5	13.8	0.9	229.0	62.5	6.1	4.0	99.4	30.0	30.0	1.5
51.26	15.62	1909.0	29.1	1.5	231.0	65.0	7.6	4.9	129.0	30.0	30.0	3.0
52.08	15.88	1606.0	34.7	2.2	233.1	67.4	8.0	5.1	104.4	0.0	0.0	1.5
52.90	16.12	1310.2	27.9	2.1	235.1	69.9	6.6	4.2	80.4	0.0	0.0	1.5
53.72	16.38	3846.2	109.2	2.8	237.2	72.3	15.4	9.8	282.9	30.0	32.0	6.0
54.54	16.62	2018.9	35.8	1.8	239.2	74.8	8.1	5.1	136.4	30.0	30.0	3.0
55.36	16.88	2706.3	63.7	2.4	241.2	77.3	10.8	6.8	191.0	30.0	30.0	3.0
56.18	17.12	7206.7	138.4	1.9	243.4	79.7	24.0	15.1	0.0	45.1	36.0	1.0
57.00	17.38	4300.5	147.7	3.4	245.5	82.2	21.5	13.4	317.8	0.0	0.0	6.0
57.82	17.62	2104.3	54.5	2.6	247.5	84.6	10.5	6.5	141.8	0.0	0.0	3.0
58.64	17.88	1395.1	25.7	1.8	249.6	87.1	7.0	4.3	84.7	0.0	0.0	1.5
59.46	18.12	1224.5	10.7	0.9	251.6	89.5	4.9	3.0	70.7	30.0	30.0	1.5
60.28	18.38	1303.5	12.7	1.0	253.7	92.0	5.2	3.2	76.6	30.0	30.0	1.5
61.10	18.62	1359.6	14.3	1.0	255.7	94.4	5.4	3.3	80.8	30.0	30.0	1.5
61.93	18.88	1295.6	13.2	1.0	257.8	96.9	5.2	3.2	75.3	30.0	30.0	1.5
62.75	19.12	1420.6	18.1	1.3	259.8	99.3	5.7	3.5	84.9	30.0	30.0	1.5
63.57	19.38	1266.1	13.9	1.1	261.8	101.8	5.1	3.1	72.2	30.0	30.0	1.5
64.39	19.62	1271.9	12.9	1.0	263.9	104.2	5.1	3.1	72.3	30.0	30.0	1.5
65.21	19.88	1290.5	12.3	1.0	265.9	106.7	5.2	3.1	73.4	30.0	30.0	1.5
66.03	20.12	1310.1	18.5	1.4	268.0	109.1	5.2	3.1	74.6	30.0	30.0	1.5
66.85	20.38	1339.5	14.4	1.1	270.0	111.6	5.4	3.2	76.6	30.0	30.0	1.5
67.67	20.62	1487.6	19.1	1.3	272.1	114.0	6.0	3.5	88.1	30.0	30.0	1.5
68.49	20.88	1686.4	28.4	1.7	274.1	116.5	6.7	4.0	103.7	30.0	30.0	1.5
69.31	21.12	2304.7	52.4	2.3	276.2	118.9	9.2	5.4	152.8	30.0	30.0	3.0
70.13	21.38	2301.6	44.1	1.9	278.2	121.4	9.2	5.4	152.2	30.0	30.0	3.0
70.95	21.62	3603.1	72.9	2.0	280.3	123.9	14.4	8.4	255.9	30.0	30.0	3.0
71.77	21.88	3845.0	80.2	2.1	282.3	126.3	15.4	9.0	274.9	30.0	30.0	3.0
72.59	22.12	3196.0	109.9	3.4	284.4	128.8	16.0	9.3	222.6	0.0	0.0	3.0
73.41	22.38	3319.2	69.8	2.1	286.4	131.2	13.3	7.7	232.1	30.0	30.0	3.0
74.23	22.62	1964.4	33.8	1.7	288.5	133.7	7.9	4.5	123.4	30.0	30.0	1.5
75.05	22.88	3178.9	58.8	1.8	290.5	136.1	12.7	7.3	220.2	30.0	30.0	3.0
75.87	23.12	5377.7	89.0	1.7	292.6	138.6	17.9	10.3	0.0	34.1	32.0	1.0
76.69	23.38	10738.5	230.1	2.1	294.8	141.0	35.8	20.4	0.0	53.8	38.0	1.0
77.51	23.62	16541.9	353.9	2.1	297.0	143.5	55.1	31.3	0.0	66.1	40.0	1.0
78.33	23.88	16421.3	307.0	1.9	299.2	145.9	41.1	23.2	0.0	65.8	40.0	1.0
79.15	24.12	4483.4	123.7	2.8	301.4	148.4	17.9	10.1	322.7	30.0	32.0	6.0
79.97	24.38	1644.6	25.7	1.6	303.4	150.8	6.6	3.7	95.2	30.0	30.0	1.5
80.79	24.62	2671.4	52.5	2.0	305.5	153.3	10.7	6.0	177.0	30.0	30.0	3.0
81.61	24.88	3842.9	50.9	1.3	307.6	155.7	12.8	7.1	0.0	30.0	30.0	1.0
82.43	25.12	4410.1	116.5	2.6	309.7	158.2	17.6	9.8	315.4	30.0	30.0	6.0
83.25	25.38	10787.5	283.5	2.6	311.8	160.6	36.0	19.9	0.0	53.2	36.0	1.0
84.07	25.62	13738.3	370.2	2.7	314.0	163.1	45.8	25.3	0.0	60.0	38.0	1.0
84.89	25.88	6470.7	230.5	3.6	316.1	165.5	32.4	17.8	479.1	0.0	0.0	6.0
85.71	26.12	3165.1	80.6	2.5	318.1	168.0	12.7	6.9	214.3	30.0	30.0	3.0
86.53	26.38	1906.7	18.0	0.9	320.2	170.4	7.6	4.2	113.3	30.0	30.0	1.5
87.35	26.62	1647.0	16.1	1.0	322.2	172.9	6.6	3.6	92.2	30.0	30.0	1.5
88.17	26.88	3080.7	43.8	1.4	324.3	175.4	12.3	6.7	206.5	30.0	30.0	3.0
88.99	27.12	3732.8	106.8	2.9	326.3	177.8	14.9	8.1	258.3	30.0	30.0	3.0
89.81	27.38	4700.6	100.4	2.1	328.4	180.3	18.8	10.2	335.4	30.0	32.0	6.0
90.63	27.62	18590.0	366.1	2.0	330.5	182.7	46.5	25.0	0.0	67.9	40.0	1.0
91.45	27.88	26747.8	407.5	1.5	332.8	185.2	66.9	35.9	0.0	78.2	42.0	1.0
92.27	28.12	19337.0	181.9	0.9	335.2	187.6	38.7	20.7	0.0	68.8	40.0	1.0
93.09	28.38	2976.7	77.8	2.6	337.4	190.1	11.9	6.3	195.9	30.0	30.0	3.0
93.91	28.62	2017.3	35.5	1.8	339.5	192.5	8.1	4.3	118.8	30.0	30.0	1.5
94.73	28.88	1854.2	35.2	1.9	341.5	195.0	7.4	3.9	105.4	30.0	30.0	1.5
95.55	29.12	1672.0	25.2	1.5	343.6	197.4	6.7	3.5	90.5	30.0	30.0	1.5
96.37	29.38	2032.8	31.0	1.5	345.6	199.9	8.1	4.3	119.0	30.0	30.0	1.5
97.19	29.62	3655.2	62.0	1.7	347.7	202.3	14.6	7.7	248.4	30.0	30.0	3.0
98.01	29.88	9161.8	294.1	3.2	349.7	204.8	36.6	19.2	688.6	46.8	34.0	6.0
98.83	30.12	10692.9	378.8	3.5	351.8	207.2	42.8	22.3	810.7	51.2	36.0	6.0

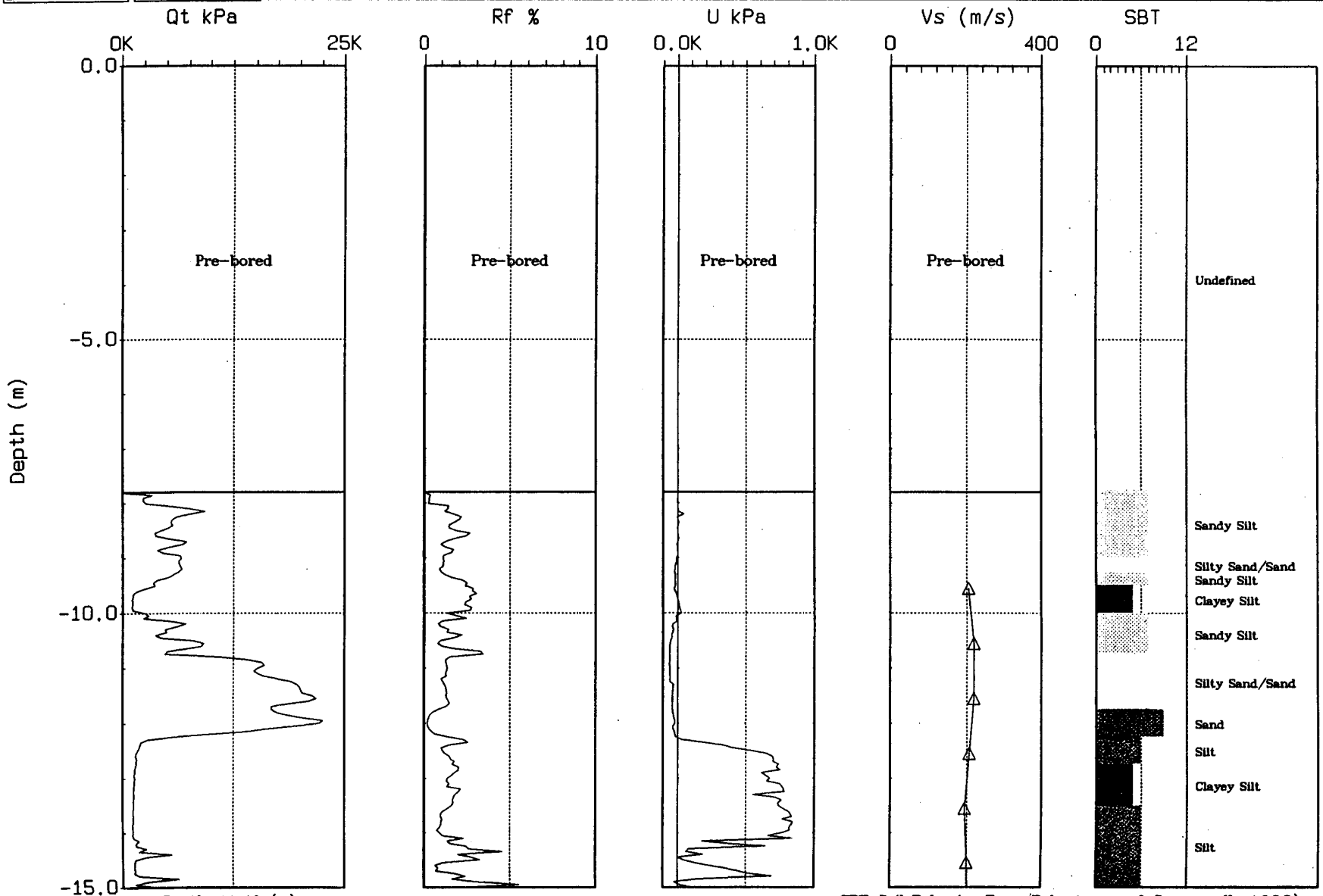
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	5949.6	195.2	3.3	353.8	209.7	23.8	12.4	430.9	34.3	32.0	6.0
100.47	30.62	1616.6	21.3	1.3	355.9	212.1	6.5	3.4	83.9	30.0	30.0	1.0
101.29	30.88	7411.6	198.5	2.7	357.9	214.6	29.6	15.3	547.1	40.4	32.0	6.0
102.11	31.12	2797.9	66.6	2.4	360.0	217.0	11.2	5.8	177.7	30.0	30.0	1.5
102.94	31.38	1698.0	21.0	1.2	362.0	219.5	6.8	3.5	89.3	30.0	30.0	1.0
103.76	31.62	1722.2	18.0	1.0	364.0	222.0	6.9	3.5	90.9	30.0	30.0	1.0
104.58	31.88	1695.8	18.8	1.1	366.1	224.4	6.8	3.5	88.4	30.0	30.0	1.0
105.40	32.12	1743.4	30.0	1.7	368.1	226.9	7.0	3.6	91.9	30.0	30.0	1.0
106.22	32.38	2462.3	73.1	3.0	370.2	229.3	12.3	6.3	149.0	0.0	0.0	1.5
107.04	32.62	1982.4	39.5	2.0	372.2	231.8	7.9	4.0	110.3	30.0	30.0	1.5
107.86	32.88	2175.0	54.1	2.5	374.3	234.2	10.9	5.5	125.3	0.0	0.0	1.5
108.68	33.12	2112.6	49.1	2.3	376.3	236.7	8.5	4.3	120.0	30.0	30.0	1.5
109.50	33.38	3308.8	71.7	2.2	378.4	239.1	13.2	6.7	215.3	30.0	30.0	3.0
110.32	33.62	9943.6	285.3	2.9	380.4	241.6	39.8	20.0	745.7	48.0	34.0	6.0
111.14	33.88	5648.6	153.0	2.7	382.5	244.0	22.6	11.3	401.8	31.7	32.0	6.0
111.96	34.12	2392.5	33.4	1.4	384.5	246.5	9.6	4.8	140.9	30.0	30.0	1.5
112.78	34.38	3060.8	50.6	1.7	386.6	248.9	12.2	6.1	194.0	30.0	30.0	3.0
113.60	34.62	2977.9	53.1	1.8	388.6	251.4	11.9	6.0	187.0	30.0	30.0	1.5
114.42	34.88	3388.5	88.3	2.6	390.7	253.8	13.6	6.8	219.5	30.0	30.0	3.0
115.24	35.12	6339.4	234.4	3.7	392.7	256.3	31.7	15.8	455.2	0.0	0.0	6.0
116.06	35.38	3593.3	147.0	4.1	394.8	258.7	18.0	9.0	235.2	0.0	0.0	3.0
116.88	35.62	2459.6	44.0	1.8	396.8	261.2	9.8	4.9	144.1	30.0	30.0	1.5
117.70	35.88	2534.8	57.4	2.3	398.9	263.6	10.1	5.1	149.8	30.0	30.0	1.5
118.52	36.12	9106.6	316.0	3.5	400.9	266.1	36.4	18.2	675.2	44.7	34.0	6.0
119.34	36.38	12087.6	398.9	3.3	403.0	268.5	48.4	24.2	913.3	52.7	36.0	6.0
120.16	36.62	4269.8	173.2	4.1	405.0	271.0	21.3	10.7	287.5	0.0	0.0	3.0
120.98	36.88	2184.6	44.5	2.0	407.0	273.5	8.7	4.4	120.3	30.0	30.0	1.5
121.80	37.12	2151.5	36.7	1.7	409.1	275.9	8.6	4.3	117.3	30.0	30.0	1.5
122.62	37.38	2603.5	67.1	2.6	411.1	278.4	10.4	5.2	153.1	30.0	30.0	1.5
123.44	37.62	2246.1	36.5	1.6	413.2	280.8	9.0	4.5	124.2	30.0	30.0	1.5
124.26	37.88	2064.7	29.2	1.4	415.2	283.3	8.3	4.1	109.3	30.0	30.0	1.5
125.08	38.12	2223.7	33.0	1.5	417.3	285.7	8.9	4.4	121.7	30.0	30.0	1.5
125.90	38.38	2054.7	32.1	1.6	419.3	288.2	8.2	4.1	107.8	30.0	30.0	1.5
126.72	38.62	1993.1	28.1	1.4	421.4	290.6	8.0	4.0	102.5	30.0	30.0	1.0
127.54	38.88	2170.7	33.8	1.6	423.4	293.1	8.7	4.3	116.3	30.0	30.0	1.5
128.36	39.12	2827.8	50.0	1.8	425.5	295.5	11.3	5.7	168.5	30.0	30.0	1.5
129.18	39.38	3142.7	71.7	2.3	427.5	298.0	12.6	6.3	193.4	30.0	30.0	1.5
130.00	39.62	2984.8	57.4	1.9	429.6	300.4	11.9	6.0	180.4	30.0	30.0	1.5
130.82	39.88	2340.3	35.9	1.5	431.6	302.9	9.4	4.7	128.5	30.0	30.0	1.5
131.64	40.12	2391.5	39.3	1.6	433.7	305.3	9.6	4.8	132.2	30.0	30.0	1.5
132.46	40.38	5395.3	148.5	2.8	435.7	307.8	21.6	10.8	372.1	30.0	30.0	3.0
133.28	40.62	7592.3	241.9	3.2	437.8	310.2	30.4	15.2	547.5	38.2	32.0	6.0
134.10	40.88	5629.8	197.5	3.5	439.8	312.7	28.1	14.1	390.2	0.0	0.0	3.0
134.92	41.12	25542.2	664.9	2.6	441.9	315.1	85.1	42.6	0.0	72.9	40.0	1.0

CONETEC

Kleinfelder

Site: I15, S4: I15 SB, 06-SC-171
Location: 400 S Structure

Cone: 20 TON A 040
Date: 07:01:96 21:33



Max. Depth: 41.40 (m)
Depth Inc.: 0.05 (m)

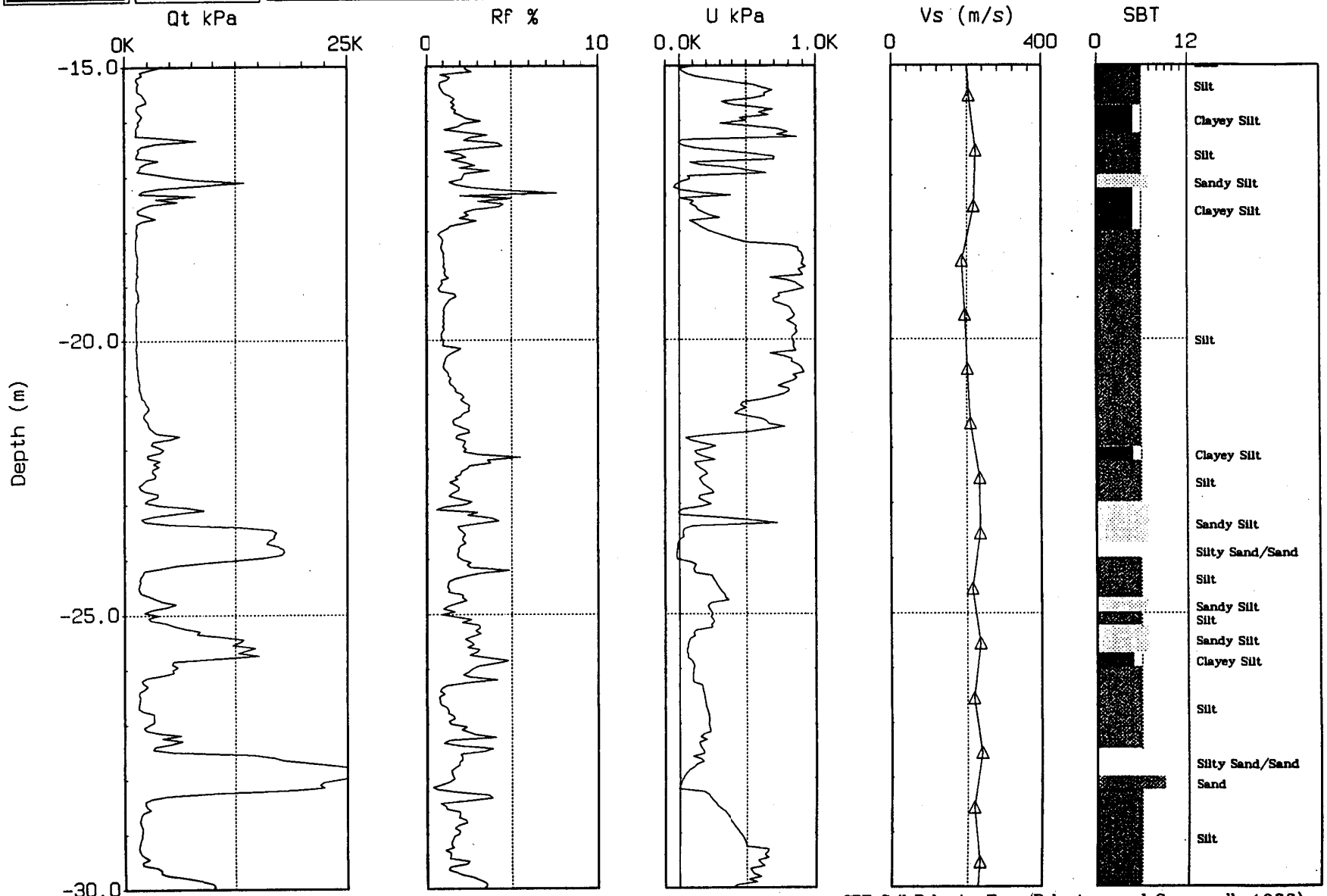
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15 SB, 06-SC-171
Location: 400 S Structure

Cone: 20 TON A 040
Date: 07:01:96 21:33



Max. Depth: 41.40 (m)
Depth Inc.: 0.05 (m)

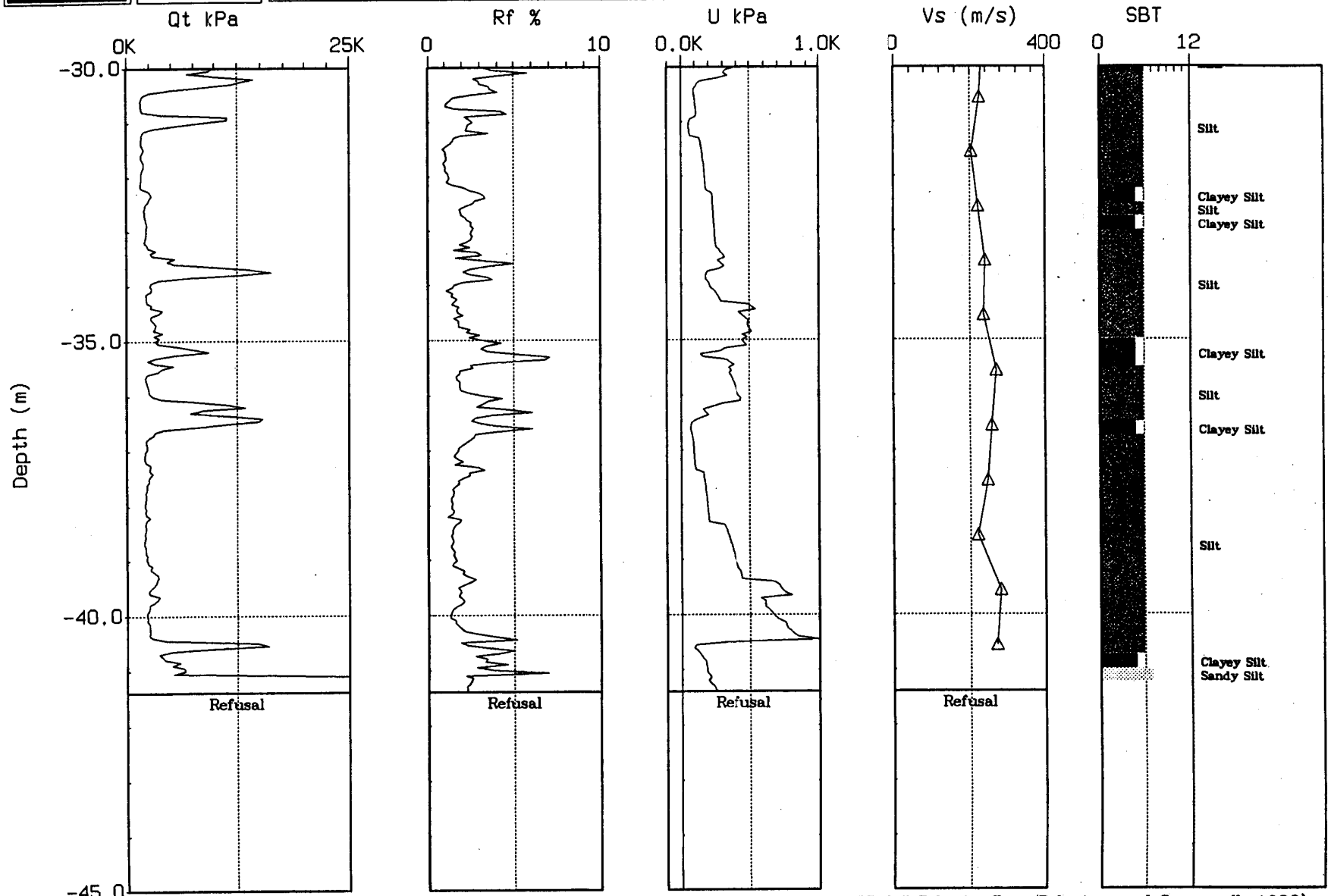
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15 SB, 06-SC-171
Location: 400 S Structure

Cone: 20 TON A 040
Date: 07:01:96 21:33



Max. Depth: 41.40 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-171*
Date: *01-Jul-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 040 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
9.05	9.07				9.6	
10.05	10.07	4.9	* 205	674	9.1 - 10.1	29.7 - 33.0
11.05	11.06	4.6	219	718	10.1 - 11.1	33.0 - 36.3
12.05	12.06	4.6	219	719	11.1 - 12.1	36.3 - 39.5
13.05	13.06	4.9	206	674	12.1 - 13.1	39.5 - 42.8
14.05	14.06	5.2	194	637	13.1 - 14.1	42.8 - 46.1
15.05	15.06	5.0	* 200	657	14.1 - 15.1	46.1 - 49.4
16.05	16.06	4.9	205	672	15.1 - 16.1	49.4 - 52.7
17.05	17.06	4.5	223	732	16.1 - 17.1	52.7 - 55.9
18.05	18.06	4.6	219	719	17.1 - 18.1	55.9 - 59.2
19.05	19.06	5.3	187	614	18.1 - 19.1	59.2 - 62.5
20.05	20.06	5.1	* 195	639	19.1 - 20.1	62.5 - 65.8
21.05	21.06	5.0	202	661	20.1 - 21.1	65.8 - 69.1
22.05	22.06	4.8	210	688	21.1 - 22.1	69.1 - 72.3
23.05	23.06	4.3	234	766	22.1 - 23.1	72.3 - 75.6
24.05	24.06	4.3	235	770	23.1 - 24.1	75.6 - 78.9
25.05	25.06	4.7	* 215	705	24.1 - 25.1	78.9 - 82.2
26.05	26.06	4.3	235	772	25.1 - 26.1	82.2 - 85.5
27.05	27.06	4.6	219	718	26.1 - 27.1	85.5 - 88.7
28.05	28.06	4.2	239	783	27.1 - 28.1	88.7 - 92.0
29.05	29.06	4.6	219	719	28.1 - 29.1	92.0 - 95.3
30.05	30.06	4.3	* 233	765	29.1 - 30.1	95.3 - 98.6
31.05	31.06	4.5	224	734	30.1 - 31.1	98.6 - 101.9
32.05	32.05	4.9	204	669	31.1 - 32.1	101.9 - 105.2
33.05	33.05	4.5	221	726	32.1 - 33.1	105.2 - 108.4
34.05	34.05	4.2	239	785	33.1 - 34.1	108.4 - 111.7
35.05	35.05	4.3	* 235	772	34.1 - 35.1	111.7 - 115.0
36.05	36.05	3.7	269	882	35.1 - 36.1	115.0 - 118.3
37.05	37.05	3.9	256	839	36.1 - 37.1	118.3 - 121.6
38.05	38.05	4.1	246	808	37.1 - 38.1	121.6 - 124.8
39.05	39.05	4.6	220	721	38.1 - 39.1	124.8 - 128.1
40.05	40.05	3.6	* 279	916	39.1 - 40.1	128.1 - 131.4
41.05	41.05	3.7	269	882	40.1 - 41.1	131.4 - 134.7

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0805-0948-3363
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15, S4: I15 NB, 06-SC-175
Location: 400 S Structure
Cone: 20 TON A 040
CPT Date: 96/02/07
CPT Time: 02:02
CPT File: KA06S175.COR

Water Table (m): 11.00 (ft): 36.1
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	1.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
1.23	0.38	1.0	0.0	0.0	7.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
2.05	0.62	1.0	0.0	0.0	12.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
2.87	0.88	1.0	0.0	0.0	17.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
3.69	1.12	1.0	0.0	0.0	21.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
4.51	1.38	1.0	0.0	0.0	26.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
5.33	1.62	1.0	0.0	0.0	31.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
6.15	1.88	1.0	0.0	0.0	36.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0
6.97	2.12	1.0	0.0	0.0	41.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
7.79	2.38	1.0	0.0	0.0	46.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
8.61	2.62	1.0	0.0	0.0	51.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
9.43	2.88	1.0	0.0	0.0	56.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
10.25	3.12	1.0	0.0	0.0	60.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
11.07	3.38	1.0	0.0	0.0	65.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
11.89	3.62	1.0	0.0	0.0	70.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
12.71	3.88	1.0	0.0	0.0	75.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0
13.53	4.12	1.0	0.0	0.0	80.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
14.35	4.38	1.0	0.0	0.0	85.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
15.17	4.62	1.0	0.0	0.0	90.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
15.99	4.88	1.0	0.0	0.0	95.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
16.81	5.12	1.0	0.0	0.0	99.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
17.63	5.38	1.0	0.0	0.0	104.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
18.45	5.62	1.0	0.0	0.0	109.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
19.27	5.88	1.0	0.0	0.0	114.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0
20.09	6.12	1.0	0.0	0.0	119.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
20.92	6.38	1.0	0.0	0.0	124.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
21.74	6.62	1.0	0.0	0.0	129.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
22.56	6.88	1.0	0.0	0.0	134.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
23.38	7.12	1.0	0.0	0.0	138.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
24.20	7.38	1.0	0.0	0.0	143.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
25.02	7.62	1.0	0.0	0.0	148.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
25.84	7.88	1.0	0.0	0.0	153.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0
26.66	8.12	1.0	0.0	0.0	158.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
27.48	8.38	1.0	0.0	0.0	163.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
28.30	8.62	1.0	0.0	0.0	168.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
29.12	8.88	1.0	0.0	0.0	173.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
29.94	9.12	1.0	0.0	0.0	177.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
30.76	9.38	1.0	0.0	0.0	182.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
31.58	9.62	1.0	0.0	0.0	187.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
32.40	9.88	1.0	0.0	0.0	192.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0
33.22	10.12	1.0	0.0	0.0	197.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
34.04	10.38	1.0	0.0	0.0	202.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
34.86	10.62	1.0	0.0	0.0	207.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
35.68	10.88	685.5	8.2	1.2	211.9	0.0	3.4	2.3	37.9	0.0	0.0	1.0
36.50	11.12	3594.8	28.7	0.8	215.2	1.2	12.0	8.0	0.0	30.0	32.0	1.0
37.32	11.38	1935.9	19.5	1.0	217.3	3.7	7.7	5.1	137.2	30.0	30.0	3.0
38.14	11.62	3289.0	43.8	1.3	219.4	6.1	11.0	7.2	0.0	30.0	32.0	1.0
38.96	11.88	3811.7	98.2	2.6	221.5	8.6	15.2	10.0	286.5	30.0	32.0	6.0
39.78	12.12	16233.7	220.7	1.4	223.7	11.0	40.6	26.6	0.0	69.6	40.0	1.0
40.60	12.38	19229.9	239.6	1.2	226.0	13.5	48.1	31.3	0.0	74.3	42.0	1.0
41.42	12.62	17700.3	204.4	1.2	228.3	15.9	44.3	28.7	0.0	71.8	40.0	1.0
42.24	12.88	17877.3	104.6	0.6	230.7	18.4	35.8	23.0	0.0	71.9	40.0	1.0

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60 (blows/ft)	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	13659.8	22.5	0.2	233.1	20.8	27.3	17.5	0.0	64.1	40.0	1.0
43.88	13.38	8921.0	107.2	1.2	235.5	23.3	22.3	14.2	0.0	51.7	38.0	1.0
44.70	13.62	1434.4	24.1	1.7	237.6	25.8	5.7	3.6	93.7	30.0	30.0	1.5
45.52	13.88	1789.3	22.0	1.2	239.7	28.2	7.2	4.5	121.7	30.0	30.0	3.0
46.34	14.12	2082.7	56.3	2.7	241.7	30.7	10.4	6.6	144.8	0.0	0.0	3.0
47.16	14.38	2478.9	89.0	3.6	243.8	33.1	12.4	7.8	176.2	0.0	0.0	3.0
47.98	14.62	1704.0	40.0	2.3	245.8	35.6	8.5	5.3	113.8	0.0	0.0	1.5
48.80	14.88	1539.1	20.9	1.4	247.9	38.0	6.2	3.8	100.3	30.0	30.0	1.5
49.62	15.12	1464.2	18.0	1.2	249.9	40.5	5.9	3.6	93.9	30.0	30.0	1.5
50.44	15.38	1444.8	12.3	0.9	252.0	42.9	5.8	3.6	92.0	30.0	30.0	1.5
51.26	15.62	1483.9	12.4	0.8	254.0	45.4	5.9	3.6	94.8	30.0	30.0	1.5
52.08	15.88	2307.0	41.4	1.8	256.1	47.8	9.2	5.6	160.3	30.0	30.0	3.0
52.90	16.12	2716.7	53.7	2.0	258.1	50.3	10.9	6.6	192.7	30.0	30.0	3.0
53.72	16.38	3431.0	98.3	2.9	260.1	52.7	17.2	10.4	249.4	0.0	0.0	3.0
54.54	16.62	1922.9	10.3	0.5	262.2	55.2	7.7	4.6	128.4	30.0	30.0	1.5
55.36	16.88	1996.2	22.9	1.1	264.2	57.6	8.0	4.8	133.9	30.0	30.0	3.0
56.18	17.12	2008.3	29.9	1.5	266.3	60.1	8.0	4.8	134.6	30.0	30.0	3.0
57.00	17.38	2777.9	60.9	2.2	268.3	62.5	11.1	6.6	195.8	30.0	30.0	3.0
57.82	17.62	1942.1	31.8	1.6	270.4	65.0	7.8	4.6	128.5	30.0	30.0	1.5
58.64	17.88	2235.6	51.7	2.3	272.4	67.4	8.9	5.3	151.7	30.0	30.0	3.0
59.46	18.12	2387.3	87.9	3.7	274.5	69.9	15.9	9.4	163.4	0.0	0.0	3.0
60.28	18.38	9434.4	303.4	3.2	276.5	72.3	37.7	22.2	726.8	51.0	36.0	6.0
61.10	18.62	2375.8	31.8	1.3	278.6	74.8	9.5	5.6	161.8	30.0	30.0	3.0
61.93	18.88	2391.3	26.0	1.1	280.6	77.3	9.6	5.6	162.7	30.0	30.0	3.0
62.75	19.12	2740.1	52.1	1.9	282.7	79.7	11.0	6.4	190.2	30.0	30.0	3.0
63.57	19.38	2891.7	69.3	2.4	284.7	82.2	11.6	6.7	202.0	30.0	30.0	3.0
64.39	19.62	2013.2	31.1	1.5	286.8	84.6	8.1	4.7	131.3	30.0	30.0	1.5
65.21	19.88	1910.1	15.3	0.8	288.8	87.1	7.6	4.4	122.7	30.0	30.0	1.5
66.03	20.12	1822.1	16.3	0.9	290.9	89.5	7.3	4.2	115.3	30.0	30.0	1.5
66.85	20.38	2204.7	36.4	1.7	292.9	92.0	8.8	5.0	145.6	30.0	30.0	1.5
67.67	20.62	3704.5	88.2	2.4	295.0	94.4	14.8	8.4	265.2	30.0	30.0	3.0
68.49	20.88	8175.6	180.1	2.2	297.1	96.9	27.3	15.5	0.0	45.9	36.0	1.0
69.31	21.12	10177.8	203.8	2.0	299.2	99.3	33.9	19.2	0.0	52.1	36.0	1.0
70.13	21.38	8012.0	186.0	2.3	301.4	101.8	26.7	15.1	0.0	45.1	34.0	1.0
70.95	21.62	2575.0	41.1	1.6	303.5	104.2	10.3	5.8	173.4	30.0	30.0	3.0
71.77	21.88	2135.2	15.6	0.7	305.6	106.7	8.5	4.8	137.8	30.0	30.0	1.5
72.59	22.12	1952.4	11.5	0.6	307.6	109.1	7.8	4.4	122.9	30.0	30.0	1.5
73.41	22.38	1772.5	9.5	0.5	309.7	111.6	7.1	3.9	108.1	30.0	30.0	1.5
74.23	22.62	1652.4	9.3	0.6	311.7	114.0	6.6	3.7	98.1	30.0	30.0	1.5
75.05	22.88	1765.9	16.1	0.9	313.8	116.5	7.1	3.9	106.9	30.0	30.0	1.5
75.87	23.12	2268.6	26.8	1.2	315.8	118.9	9.1	5.0	146.7	30.0	30.0	1.5
76.69	23.38	3232.9	83.1	2.6	317.9	121.4	12.9	7.1	223.5	30.0	30.0	3.0
77.51	23.62	7674.2	188.1	2.5	319.9	123.9	30.7	16.8	578.4	43.0	34.0	6.0
78.33	23.88	14198.7	354.0	2.5	322.0	126.3	47.3	25.8	0.0	60.6	38.0	1.0
79.15	24.12	3890.2	66.3	1.7	324.2	128.8	13.0	7.0	0.0	30.0	30.0	1.0
79.97	24.38	3150.5	62.8	2.0	326.3	131.2	12.6	6.8	215.4	30.0	30.0	3.0
80.79	24.62	8206.2	246.6	3.0	328.3	133.7	32.8	17.7	619.5	44.6	34.0	6.0
81.61	24.88	6810.4	236.3	3.5	330.4	136.1	34.1	18.3	507.5	0.0	0.0	6.0
82.43	25.12	3000.6	82.3	2.7	332.4	138.6	12.0	6.4	202.4	30.0	30.0	3.0
83.25	25.38	6865.5	156.9	2.3	334.5	141.0	22.9	12.2	0.0	39.2	32.0	1.0
84.07	25.62	9889.7	161.7	1.6	336.7	143.5	33.0	17.6	0.0	49.6	36.0	1.0
84.89	25.88	3974.1	108.4	2.7	338.8	145.9	15.9	8.5	279.1	30.0	30.0	3.0
85.71	26.12	2385.9	56.9	2.4	340.9	148.4	9.5	5.1	151.7	30.0	30.0	1.5
86.53	26.38	2319.3	44.8	1.9	342.9	150.8	9.3	4.9	146.0	30.0	30.0	1.5
87.35	26.62	1755.5	26.0	1.5	345.0	153.3	7.0	3.7	100.6	30.0	30.0	1.5
88.17	26.88	3672.3	66.6	1.8	347.0	155.7	14.7	7.7	253.6	30.0	30.0	3.0
88.99	27.12	6231.1	205.3	3.3	349.1	158.2	24.9	13.1	457.9	35.8	32.0	6.0
89.81	27.38	10594.8	338.8	3.2	351.1	160.6	42.4	22.1	806.6	50.9	36.0	6.0
90.63	27.62	21448.4	498.9	2.3	353.2	163.1	71.5	37.2	0.0	71.1	40.0	1.0
91.45	27.88	21400.0	457.4	2.1	355.4	165.5	71.3	37.0	0.0	70.9	40.0	1.0
92.27	28.12	21823.7	466.9	2.1	357.6	168.0	72.7	37.7	0.0	71.4	40.0	1.0
93.09	28.38	21088.3	488.0	2.3	359.7	170.4	70.3	36.3	0.0	70.3	40.0	1.0
93.91	28.62	19022.3	507.5	2.7	361.9	172.9	63.4	32.6	0.0	67.3	38.0	1.0
94.73	28.88	13521.6	386.9	2.9	364.1	175.4	45.1	23.1	0.0	57.4	38.0	1.0
95.55	29.12	14265.8	306.9	2.2	366.3	177.8	47.6	24.3	0.0	58.9	38.0	1.0
96.37	29.38	16084.7	415.9	2.6	368.4	180.3	53.6	27.3	0.0	62.2	38.0	1.0
97.19	29.62	18525.9	351.5	1.9	370.7	182.7	46.3	23.5	0.0	66.2	38.0	1.0
98.01	29.88	11254.5	264.2	2.3	372.9	185.2	37.5	19.0	0.0	51.8	36.0	1.0
98.83	30.12	2289.7	52.8	2.3	375.0	187.6	9.2	4.6	138.2	30.0	30.0	1.5

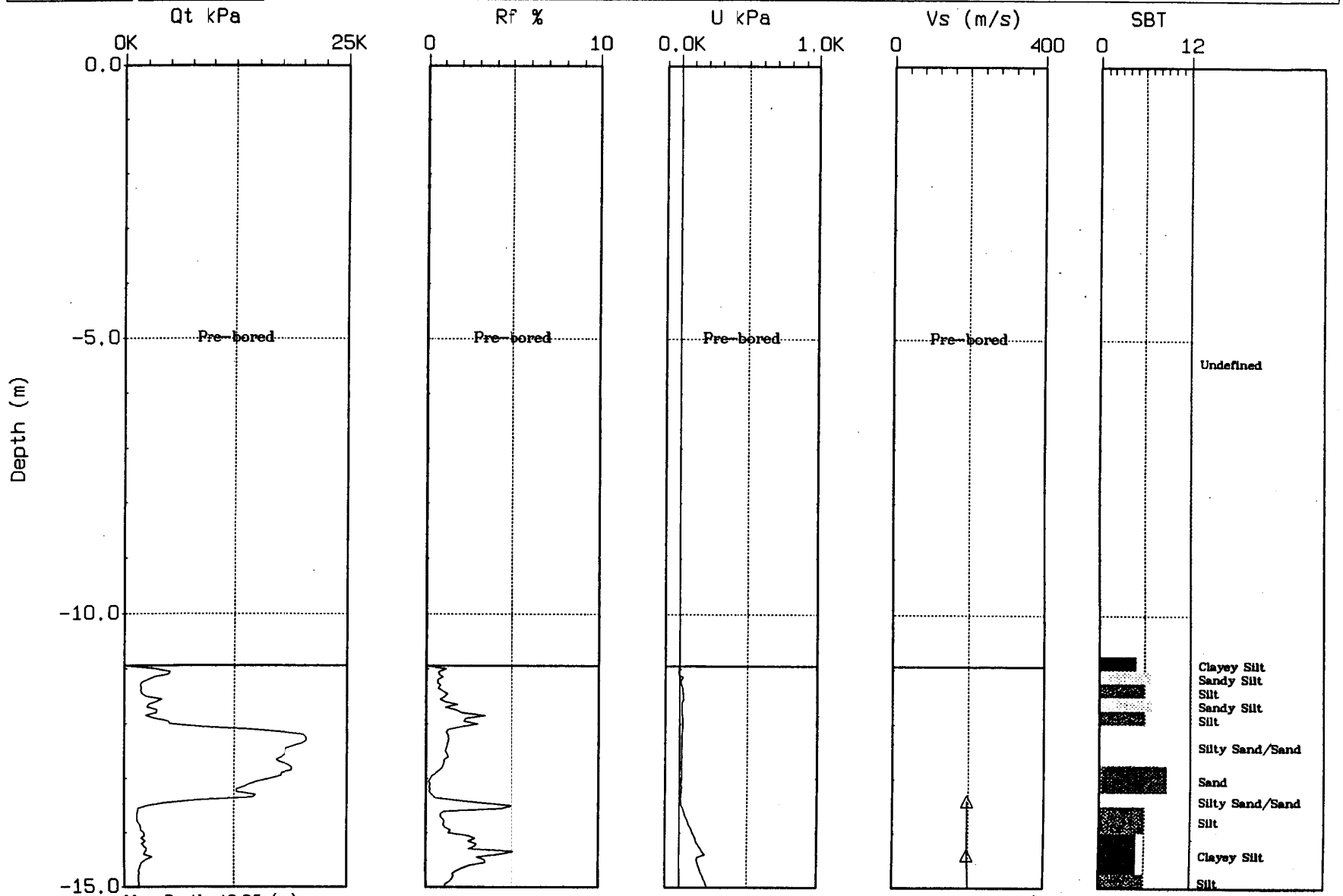
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	8117.2	203.2	2.5	377.1	190.1	32.5	16.4	604.0	42.3	34.0	6.0
100.47	30.62	20018.4	440.9	2.2	379.2	192.5	66.7	33.5	0.0	68.1	38.0	1.0
101.29	30.88	20242.1	385.2	1.9	381.4	195.0	50.6	25.4	0.0	68.3	38.0	1.0
102.11	31.12	18511.9	388.3	2.1	383.6	197.4	61.7	30.9	0.0	65.7	38.0	1.0
102.94	31.38	11600.2	425.1	3.7	385.7	199.9	46.4	23.2	881.2	52.2	36.0	6.0
103.76	31.62	4564.9	102.4	2.2	387.8	202.3	18.3	9.1	318.0	30.0	30.0	3.0
104.58	31.88	5260.7	100.4	1.9	389.9	204.8	17.5	8.8	0.0	30.0	30.0	1.0
105.40	32.12	6732.9	193.1	2.9	392.0	207.2	26.9	13.5	490.7	36.4	32.0	6.0
106.22	32.38	24839.5	293.4	1.2	394.2	209.7	49.7	24.8	0.0	73.7	40.0	1.0
107.04	32.62	12996.5	330.3	2.5	396.5	212.1	43.3	21.7	0.0	55.0	36.0	1.0
107.86	32.88	4821.4	101.0	2.1	398.7	214.6	19.3	9.6	336.7	30.0	30.0	3.0
108.68	33.12	2531.9	42.9	1.7	400.7	217.0	10.1	5.1	153.1	30.0	30.0	1.5
109.50	33.38	7136.1	119.3	1.7	402.8	219.5	23.8	11.9	0.0	37.6	32.0	1.0
110.32	33.62	4103.9	90.0	2.2	404.9	222.0	16.4	8.2	278.2	30.0	30.0	3.0
111.14	33.88	1958.3	18.4	0.9	407.0	224.4	7.8	3.9	106.2	30.0	30.0	1.5
111.96	34.12	2560.6	33.6	1.3	409.0	226.9	10.2	5.1	154.0	30.0	30.0	1.5
112.78	34.38	2035.4	20.6	1.0	411.1	229.3	8.1	4.1	111.6	30.0	30.0	1.5
113.60	34.62	2341.1	42.0	1.8	413.1	231.8	9.4	4.7	135.7	30.0	30.0	1.5
114.42	34.88	4061.6	99.2	2.4	415.2	234.2	16.2	8.1	273.0	30.0	30.0	3.0
115.24	35.12	2684.7	82.4	3.1	417.2	236.7	13.4	6.7	162.5	0.0	0.0	1.5
116.06	35.38	2134.9	47.7	2.2	419.3	239.1	8.5	4.3	118.1	30.0	30.0	1.5
116.88	35.62	2242.9	42.7	1.9	421.3	241.6	9.0	4.5	126.4	30.0	30.0	1.5
117.70	35.88	2796.4	62.0	2.2	423.4	244.0	11.2	5.6	170.3	30.0	30.0	1.5
118.52	36.12	3761.7	97.0	2.6	425.4	246.5	15.0	7.5	247.2	30.0	30.0	3.0
119.34	36.38	7224.7	184.9	2.6	427.4	248.9	28.9	14.4	523.9	37.1	32.0	6.0
120.16	36.62	2658.1	64.5	2.4	429.5	251.4	10.6	5.3	158.2	30.0	30.0	1.5
120.98	36.88	2573.4	41.0	1.6	431.5	253.8	10.3	5.1	151.0	30.0	30.0	1.5
121.80	37.12	2953.5	84.6	2.9	433.6	256.3	14.8	7.4	181.1	0.0	0.0	1.5
122.62	37.38	8353.9	273.8	3.3	435.6	258.7	33.4	16.7	612.8	41.0	32.0	6.0
123.44	37.62	5427.8	158.1	2.9	437.7	261.2	21.7	10.9	378.3	30.0	30.0	3.0
124.26	37.88	10950.2	320.1	2.9	439.7	263.6	43.8	21.9	819.7	48.7	34.0	6.0
125.08	38.12	12323.9	307.1	2.5	441.8	266.1	41.1	20.5	0.0	52.0	36.0	1.0
125.90	38.38	3366.2	105.3	3.1	444.0	268.5	16.8	8.4	212.3	0.0	0.0	1.5
126.72	38.62	3348.6	44.7	1.3	446.1	271.0	11.2	5.6	0.0	30.0	30.0	1.0
127.54	38.88	6158.1	157.2	2.6	448.2	273.5	24.6	12.3	434.9	31.9	30.0	3.0
128.36	39.12	11350.6	490.5	4.3	450.5	275.9	32.4	16.2	0.0	49.3	34.0	1.0
129.18	39.38	10029.9	271.5	2.7	452.9	278.4	40.1	20.1	743.9	45.7	34.0	6.0
130.00	39.62	3330.8	64.8	1.9	454.9	280.8	13.3	6.7	207.6	30.0	30.0	1.5
130.82	39.88	3033.7	36.1	1.2	457.0	283.3	10.1	5.1	0.0	30.0	30.0	1.0
131.64	40.12	2802.2	46.7	1.7	459.2	285.7	11.2	5.6	164.6	30.0	30.0	1.5
132.46	40.38	2805.4	57.3	2.0	461.2	288.2	11.2	5.6	164.5	30.0	30.0	1.5
133.28	40.62	2286.3	39.2	1.7	463.3	290.6	9.1	4.6	122.6	30.0	30.0	1.5
134.10	40.88	2388.3	36.9	1.5	465.3	293.1	9.6	4.8	130.4	30.0	30.0	1.5
134.92	41.12	2937.3	49.8	1.7	467.3	295.5	11.7	5.9	174.0	30.0	30.0	1.5
135.74	41.38	2721.3	40.4	1.5	469.4	298.0	10.9	5.4	156.3	30.0	30.0	1.5
136.56	41.62	2371.7	30.8	1.3	471.4	300.4	9.5	4.7	128.0	30.0	30.0	1.5
137.38	41.88	2815.6	41.1	1.5	473.5	302.9	11.3	5.6	163.1	30.0	30.0	1.5
138.20	42.12	3104.4	44.2	1.4	475.5	305.3	12.4	6.2	185.9	30.0	30.0	1.5
139.02	42.38	3259.3	48.3	1.5	477.6	307.8	13.0	6.5	197.9	30.0	30.0	1.5
139.84	42.62	2812.0	37.0	1.3	479.6	310.2	11.2	5.6	161.8	30.0	30.0	1.5
140.66	42.88	2128.2	19.9	0.9	481.7	312.7	8.5	4.3	106.7	30.0	30.0	1.0

CONETEC

Kleinfelder

Site: I15, S4: I15 NB, 06-SC-175
Location: 400 S Structure

Cone: 20 TON A 040
Date: 07:02:96 02:02



Max. Depth: 43.25 (m)
Depth Inc.: 0.05 (m)

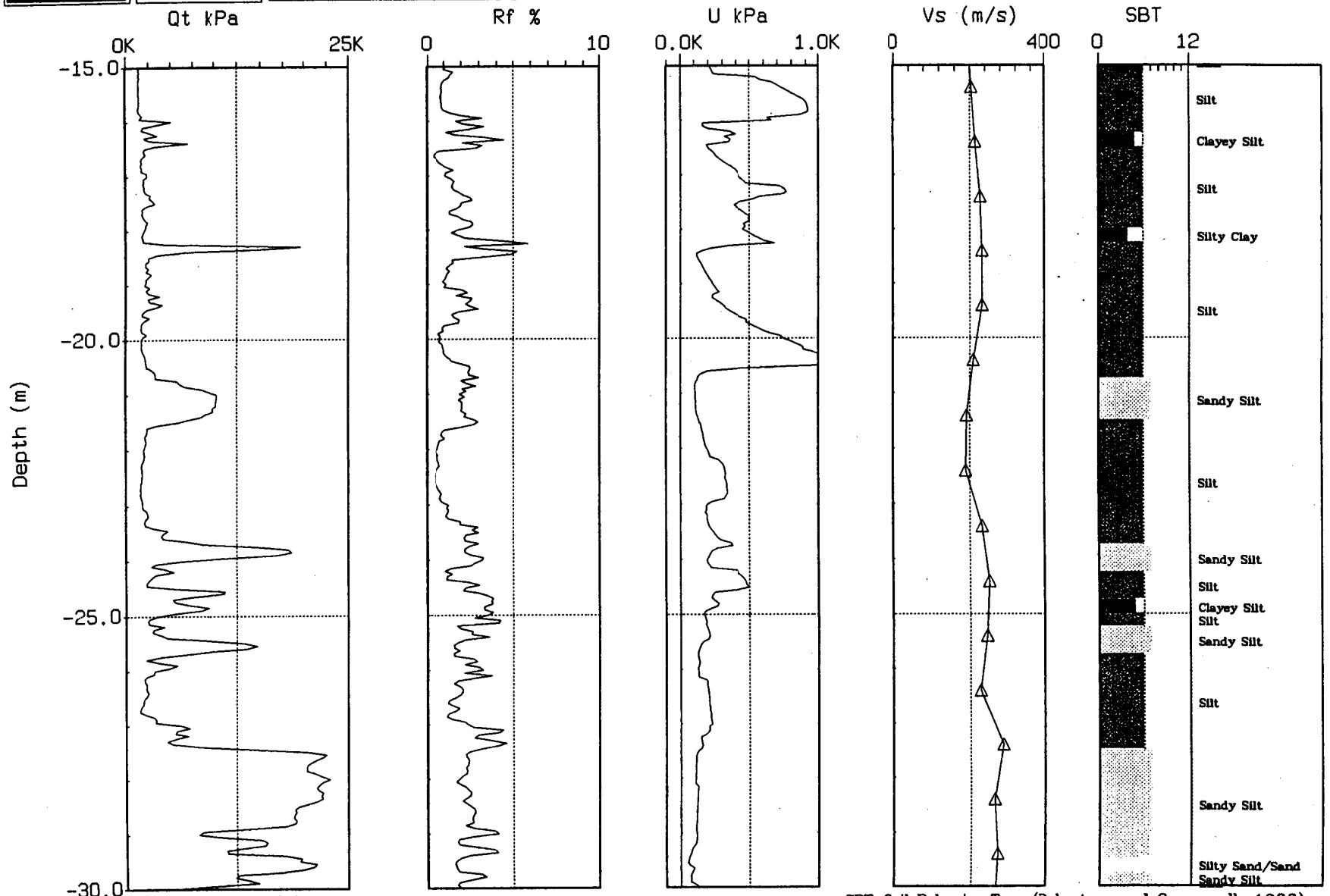
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15 NB, 06-SC-175
Location: 400 S Structure

Cone: 20 TON A 040
Date: 07:02:96 02:02



Max. Depth: 43.25 (m)
Depth Inc.: 0.05 (m)

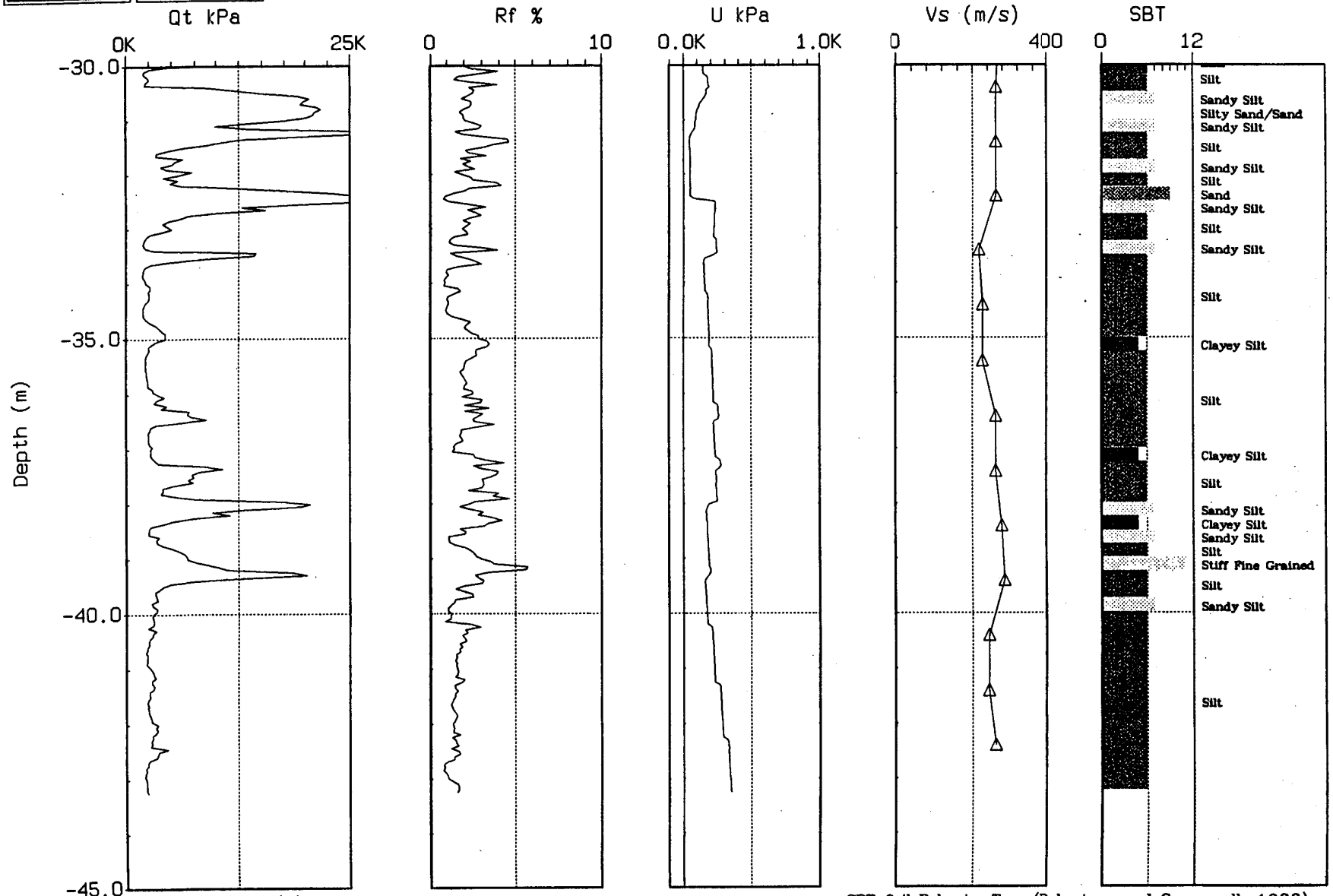
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: I15 NB, 06-SC-175
Location: 400 S Structure

Cone: 20 TON A 040
Date: 07:02:96 02:02



Max. Depth: 43.25 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-175*
Date: *01-Jul-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 040 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	(m)	(ms)	(m/s)	(ft/s)	(m)	(ft)
12.90	12.91					
13.90	13.91	5.1	196	643	12.9 - 13.9	42.3 - 45.6
14.90	14.91	5.1	196	643	13.9 - 14.9	45.6 - 48.9
15.90	15.91	4.9	* 204	669	14.9 - 15.9	48.9 - 52.2
16.90	16.91	4.7	213	698	15.9 - 16.9	52.2 - 55.4
17.90	17.91	4.4	227	745	16.9 - 17.9	55.4 - 58.7
18.90	18.91	4.3	232	763	17.9 - 18.9	58.7 - 62.0
19.90	19.91	4.3	232	763	18.9 - 19.9	62.0 - 65.3
20.90	20.91	4.8	* 208	683	19.9 - 20.9	65.3 - 68.6
21.90	21.91	5.2	192	631	20.9 - 21.9	68.6 - 71.9
22.90	22.91	5.3	189	619	21.9 - 22.9	71.9 - 75.1
23.90	23.91	4.3	232	763	22.9 - 23.9	75.1 - 78.4
24.90	24.91	4.0	250	820	23.9 - 24.9	78.4 - 81.7
25.90	25.91	4.1	* 244	800	24.9 - 25.9	81.7 - 85.0
26.90	26.91	4.4	227	745	25.9 - 26.9	85.0 - 88.3
27.90	27.91	3.5	286	937	26.9 - 27.9	88.3 - 91.5
28.90	28.91	3.8	263	863	27.9 - 28.9	91.5 - 94.8
29.90	29.91	3.7	270	887	28.9 - 29.9	94.8 - 98.1
30.90	30.91	3.8	* 263	863	29.9 - 30.9	98.1 - 101.4
31.90	31.90	3.8	263	863	30.9 - 31.9	101.4 - 104.7
32.90	32.90	3.8	263	863	31.9 - 32.9	104.7 - 107.9
33.90	33.90	4.6	217	713	32.9 - 33.9	107.9 - 111.2
34.90	34.90	4.4	227	746	33.9 - 34.9	111.2 - 114.5
35.90	35.90	4.4	* 227	746	34.9 - 35.9	114.5 - 117.8
36.90	36.90	3.8	263	863	35.9 - 36.9	117.8 - 121.1
37.90	37.90	3.8	263	863	36.9 - 37.9	121.1 - 124.3
38.90	38.90	3.6	278	911	37.9 - 38.9	124.3 - 127.6
39.90	39.90	3.5	286	937	38.9 - 39.9	127.6 - 130.9
40.90	40.90	4.1	* 244	800	39.9 - 40.9	130.9 - 134.2
41.90	41.90	4.1	244	800	40.9 - 41.9	134.2 - 137.5
42.90	42.90	3.8	263	863	41.9 - 42.9	137.5 - 140.7
					42.9	

ConeTec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.07
Run No: 96-0804-2150-3562
Job No: 96-309
Client: Kleinfelder
Project: I15 Section 4
Site: I15, S4: 900 W, 06-SC-183
Location: 900 W Structure
Cone: 20 TON A 040
CPT Date: 96/26/06
CPT Time: 08:39
CPT File: KA06S183.COR

Water Table (m): 2.00 (ft): 6.6
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	6296.1	70.5	1.1	2.3	0.0	21.0	42.0	0.0	95.0	50.0	1.0
1.23	0.38	5225.3	105.3	2.0	6.9	0.0	17.4	34.8	0.0	86.9	50.0	1.0
2.05	0.62	3149.1	72.1	2.3	11.5	0.0	12.6	25.2	251.0	65.2	46.0	10.0
2.87	0.88	2767.4	61.8	2.2	16.0	0.0	11.1	22.1	220.1	56.7	44.0	10.0
3.69	1.12	4211.0	58.1	1.4	20.6	0.0	14.0	28.1	0.0	65.2	46.0	1.0
4.51	1.38	3510.5	42.1	1.2	25.2	0.0	11.7	22.8	0.0	57.0	44.0	1.0
5.33	1.62	4793.4	46.7	1.0	29.8	0.0	16.0	28.6	0.0	63.5	44.0	1.0
6.15	1.88	5347.5	51.2	1.0	34.4	0.0	17.8	29.7	0.0	64.6	44.0	1.0
6.97	2.12	4118.3	46.5	1.1	37.8	1.2	13.7	21.8	0.0	55.8	42.0	1.0
7.79	2.38	2844.0	34.7	1.2	39.9	3.7	11.4	17.6	224.0	44.4	40.0	10.0
8.61	2.62	5952.9	39.0	0.7	42.1	6.1	14.9	22.4	0.0	64.8	44.0	1.0
9.43	2.88	10624.8	59.6	0.6	44.5	8.6	21.2	31.2	0.0	80.6	46.0	1.0
10.25	3.12	15432.9	67.2	0.4	46.9	11.0	30.9	44.1	0.0	90.6	48.0	1.0
11.07	3.38	17269.5	43.3	0.3	49.3	13.5	34.5	48.1	0.0	93.1	48.0	1.0
11.89	3.62	13737.4	14.6	0.1	51.7	15.9	27.5	37.4	0.0	85.8	46.0	1.0
12.71	3.88	3787.9	16.4	0.4	54.0	18.4	12.6	16.8	0.0	48.3	40.0	1.0
13.53	4.12	12327.2	17.1	0.1	56.3	20.8	24.7	32.1	0.0	81.5	46.0	1.0
14.35	4.38	14889.3	24.3	0.2	58.8	23.3	29.8	38.0	0.0	86.3	46.0	1.0
15.17	4.62	15561.6	12.2	0.1	61.2	25.8	31.1	38.9	0.0	87.0	46.0	1.0
15.99	4.88	6160.1	36.5	0.6	63.5	28.2	15.4	18.9	0.0	59.9	42.0	1.0
16.81	5.12	1374.0	23.2	1.7	65.7	30.7	6.9	8.3	102.2	0.0	0.0	6.0
17.63	5.38	1387.0	11.5	0.8	67.8	33.1	5.5	6.6	102.9	30.0	32.0	6.0
18.45	5.62	958.4	6.5	0.7	69.8	35.6	3.8	4.5	68.2	30.0	30.0	3.0
19.27	5.88	883.5	8.7	1.0	71.9	38.0	4.4	5.1	61.9	0.0	0.0	3.0
20.09	6.12	785.3	5.0	0.6	73.9	40.5	3.9	4.5	53.7	0.0	0.0	3.0
20.92	6.38	685.0	3.6	0.5	75.3	42.9	3.4	3.9	45.3	0.0	0.0	3.0
21.74	6.62	647.1	3.2	0.5	75.9	45.4	3.2	3.6	42.1	0.0	0.0	3.0
22.56	6.88	621.5	2.4	0.4	76.6	47.8	3.1	3.5	39.8	0.0	0.0	3.0
23.38	7.12	614.7	2.4	0.4	77.3	50.3	3.1	3.4	39.0	0.0	0.0	3.0
24.20	7.38	699.3	3.6	0.5	78.0	52.7	3.5	3.9	45.5	0.0	0.0	3.0
25.02	7.62	1158.1	12.5	1.1	79.3	55.2	4.6	5.1	81.9	30.0	32.0	6.0
25.84	7.88	1492.0	21.3	1.4	81.4	57.6	6.0	6.5	108.2	30.0	32.0	6.0
26.66	8.12	2677.2	34.5	1.3	83.4	60.1	10.7	11.5	202.7	32.1	36.0	6.0
27.48	8.38	902.3	4.6	0.5	85.5	62.5	3.6	3.8	60.3	30.0	30.0	3.0
28.30	8.62	2619.1	29.1	1.1	87.5	65.0	10.5	11.0	197.3	30.8	36.0	6.0
29.12	8.88	1501.7	25.2	1.7	89.6	67.4	6.0	6.2	107.6	30.0	32.0	6.0
29.94	9.12	874.0	4.5	0.5	91.6	69.9	3.5	3.6	57.0	30.0	30.0	3.0
30.76	9.38	1306.8	6.9	0.5	93.7	72.3	5.2	5.3	91.3	30.0	30.0	3.0
31.58	9.62	951.4	3.8	0.4	95.7	74.8	3.8	3.8	62.5	30.0	30.0	3.0
32.40	9.88	1211.7	18.8	1.6	97.7	77.3	6.1	6.0	82.9	0.0	0.0	3.0
33.22	10.12	2145.0	16.7	0.8	99.8	79.7	8.6	8.4	157.2	30.0	34.0	6.0
34.04	10.38	1618.2	39.0	2.4	101.8	82.2	8.1	7.8	114.7	0.0	0.0	6.0
34.86	10.62	1760.8	24.0	1.4	103.9	84.6	7.0	6.8	125.8	30.0	32.0	6.0
35.68	10.88	3627.3	51.7	1.4	106.0	87.1	12.1	11.5	0.0	37.4	36.0	1.0
36.50	11.12	1332.6	20.1	1.5	108.1	89.5	5.3	5.0	90.8	30.0	30.0	3.0
37.32	11.38	1615.4	29.4	1.8	110.2	92.0	6.5	6.0	113.1	30.0	32.0	6.0
38.14	11.62	3641.1	75.7	2.1	112.2	94.4	14.6	13.5	274.8	36.7	36.0	6.0
38.96	11.88	1007.1	5.4	0.5	114.3	96.9	4.0	3.7	63.7	30.0	30.0	3.0
39.78	12.12	928.7	3.7	0.4	116.3	99.3	3.7	3.4	57.0	30.0	30.0	1.5
40.60	12.38	936.8	3.6	0.4	118.3	101.8	3.7	3.4	57.3	30.0	30.0	1.5
41.42	12.62	1019.2	5.8	0.6	120.4	104.2	4.1	3.6	63.6	30.0	30.0	3.0
42.24	12.88	967.4	5.0	0.5	122.4	106.7	3.9	3.4	59.1	30.0	30.0	1.5

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	919.0	4.6	0.5	124.5	109.1	3.7	3.2	54.8	30.0	30.0	1.5
43.88	13.38	978.7	4.6	0.5	126.5	111.6	3.9	3.4	59.2	30.0	30.0	1.5
44.70	13.62	1020.4	5.0	0.5	128.6	114.0	4.1	3.5	62.2	30.0	30.0	1.5
45.52	13.88	1023.7	6.2	0.6	130.6	116.5	4.1	3.5	62.1	30.0	30.0	1.5
46.34	14.12	1052.3	5.8	0.5	132.7	118.9	4.2	3.6	64.1	30.0	30.0	1.5
47.16	14.38	1078.6	6.9	0.6	134.7	121.4	4.3	3.6	65.8	30.0	30.0	1.5
47.98	14.62	1068.2	7.7	0.7	136.8	123.9	4.3	3.6	64.6	30.0	30.0	1.5
48.80	14.88	1007.6	7.2	0.7	138.8	126.3	4.0	3.3	59.4	30.0	30.0	1.5
49.62	15.12	1093.8	14.2	1.3	140.9	128.8	5.5	4.5	65.9	0.0	0.0	1.5
50.44	15.38	3852.1	61.5	1.6	143.0	131.2	12.8	10.5	0.0	34.8	34.0	1.0
51.26	15.62	4049.2	44.5	1.1	145.2	133.7	13.5	11.0	0.0	36.0	36.0	1.0
52.08	15.88	1913.0	18.3	1.0	147.3	136.1	7.7	6.2	130.4	30.0	30.0	3.0
52.90	16.12	2870.2	31.0	1.1	149.4	138.6	9.6	7.7	0.0	30.0	32.0	1.0
53.72	16.38	3131.0	64.0	2.0	151.5	141.0	12.5	10.0	227.1	30.0	32.0	6.0
54.54	16.62	4442.9	76.0	1.7	153.6	143.5	14.8	11.7	0.0	37.9	36.0	1.0
55.36	16.88	4586.3	56.8	1.2	155.8	145.9	15.3	12.0	0.0	38.6	36.0	1.0
56.18	17.12	3438.6	52.6	1.5	157.9	148.4	11.5	8.9	0.0	30.1	34.0	1.0
57.00	17.38	4665.3	65.1	1.4	160.1	150.8	15.6	12.0	0.0	38.7	36.0	1.0
57.82	17.62	3208.6	54.5	1.7	162.2	153.3	12.8	9.9	231.4	30.0	32.0	6.0
58.64	17.88	8323.4	176.0	2.1	164.3	155.7	27.7	21.2	0.0	54.9	38.0	1.0
59.46	18.12	3279.6	78.1	2.4	166.4	158.2	13.1	10.0	236.4	30.0	32.0	6.0
60.28	18.38	1463.0	18.0	1.2	168.5	160.6	5.9	4.4	90.7	30.0	30.0	3.0
61.10	18.62	1360.0	14.1	1.0	170.5	163.1	5.4	4.1	82.1	30.0	30.0	1.5
61.93	18.88	1256.0	8.6	0.7	172.6	165.5	5.0	3.7	73.4	30.0	30.0	1.5
62.75	19.12	2139.5	19.3	0.9	174.6	168.0	8.6	6.3	143.8	30.0	30.0	3.0
63.57	19.38	2198.8	31.4	1.4	176.7	170.4	8.8	6.5	148.1	30.0	30.0	3.0
64.39	19.62	5776.9	74.0	1.3	178.8	172.9	19.3	14.1	0.0	43.2	36.0	1.0
65.21	19.88	10682.2	172.5	1.6	181.0	175.4	35.6	25.9	0.0	60.7	40.0	1.0
66.03	20.12	15727.5	259.1	1.6	183.2	177.8	39.3	28.4	0.0	71.6	42.0	1.0
66.85	20.38	17240.5	311.4	1.8	185.5	180.3	43.1	31.0	0.0	74.0	42.0	1.0
67.67	20.62	16227.7	259.1	1.6	187.8	182.7	40.6	29.0	0.0	72.1	42.0	1.0
68.49	20.88	10755.2	155.1	1.4	190.1	185.2	26.9	19.1	0.0	60.2	40.0	1.0
69.31	21.12	5470.0	124.1	2.3	192.3	187.6	21.9	15.4	407.2	40.6	36.0	6.0
70.13	21.38	13210.1	250.3	1.9	194.4	190.1	44.0	30.9	0.0	65.7	40.0	1.0
70.95	21.62	15362.3	320.9	2.1	196.5	192.5	51.2	35.7	0.0	69.9	40.0	1.0
71.77	21.88	18577.8	323.0	1.7	198.8	195.0	46.4	32.2	0.0	75.2	42.0	1.0
72.59	22.12	18329.4	343.2	1.9	201.1	197.4	45.8	31.6	0.0	74.6	42.0	1.0
73.41	22.38	8767.2	245.8	2.8	203.2	199.9	35.1	24.1	669.1	53.3	38.0	6.0
74.23	22.62	3022.1	75.1	2.5	205.3	202.3	12.1	8.3	209.2	30.0	32.0	6.0
75.05	22.88	1866.3	40.6	2.2	207.3	204.8	7.5	5.1	116.3	30.0	30.0	3.0
75.87	23.12	1591.5	21.0	1.3	209.4	207.2	6.4	4.3	94.0	30.0	30.0	1.5
76.69	23.38	1617.5	20.5	1.3	211.4	209.7	6.5	4.4	95.7	30.0	30.0	1.5
77.51	23.62	1984.4	29.5	1.5	213.5	212.1	7.9	5.3	124.7	30.0	30.0	3.0
78.33	23.88	2031.2	32.6	1.6	215.5	214.6	8.1	5.4	128.1	30.0	30.0	3.0
79.15	24.12	1718.2	19.7	1.1	217.6	217.0	6.9	4.6	102.7	30.0	30.0	1.5
79.97	24.38	1698.9	19.4	1.1	219.6	219.5	6.8	4.5	100.8	30.0	30.0	1.5
80.79	24.62	2080.3	29.0	1.4	221.7	222.0	8.3	5.5	130.9	30.0	30.0	3.0
81.61	24.88	3520.4	67.0	1.9	223.7	224.4	14.1	9.2	245.8	30.0	32.0	6.0
82.43	25.12	7062.7	172.7	2.4	225.8	226.9	28.3	18.4	528.8	45.6	36.0	6.0
83.25	25.38	8672.5	176.7	2.0	227.9	229.3	28.9	18.7	0.0	51.4	38.0	1.0
84.07	25.62	11612.8	336.3	2.9	230.0	231.8	46.5	30.0	892.1	59.6	38.0	6.0
84.89	25.88	19006.7	305.7	1.6	232.2	234.2	47.5	30.5	0.0	73.6	42.0	1.0
85.71	26.12	9612.2	265.9	2.8	234.3	236.7	38.4	24.6	731.3	53.9	38.0	6.0
86.53	26.38	13644.7	304.6	2.2	236.4	239.1	45.5	28.9	0.0	63.8	40.0	1.0
87.35	26.62	11285.5	130.9	1.2	238.7	241.6	28.2	17.9	0.0	58.3	38.0	1.0
88.17	26.88	2252.4	24.9	1.1	240.9	244.0	9.0	5.7	141.4	30.0	30.0	3.0
88.99	27.12	2491.3	25.1	1.0	242.9	246.5	10.0	6.3	160.2	30.0	30.0	3.0
89.81	27.38	2983.8	52.6	1.8	244.9	248.9	11.9	7.5	199.2	30.0	30.0	3.0
90.63	27.62	3405.7	70.6	2.1	247.0	251.4	13.6	8.5	232.6	30.0	30.0	3.0
91.45	27.88	2830.3	96.0	3.4	249.0	253.8	14.2	8.8	186.2	0.0	0.0	3.0
92.27	28.12	2332.5	58.5	2.5	251.1	256.3	9.3	5.8	146.0	30.0	30.0	3.0
93.09	28.38	2205.1	46.3	2.1	253.1	258.7	8.8	5.4	135.5	30.0	30.0	3.0
93.91	28.62	2312.0	36.7	1.6	255.2	261.2	9.2	5.7	143.6	30.0	30.0	3.0
94.73	28.88	5478.8	168.0	3.1	257.2	263.6	21.9	13.4	396.6	36.5	34.0	6.0
95.55	29.12	10321.8	262.0	2.5	259.3	266.1	34.4	20.9	0.0	54.5	38.0	1.0
96.37	29.38	2777.6	66.5	2.4	261.5	268.5	11.1	6.7	179.8	30.0	30.0	3.0
97.19	29.62	2335.6	49.1	2.1	263.5	271.0	9.3	5.6	144.1	30.0	30.0	3.0
98.01	29.88	2448.5	51.8	2.1	265.5	273.5	9.8	5.9	152.8	30.0	30.0	3.0
98.83	30.12	4640.2	101.2	2.2	267.6	275.9	18.6	11.1	327.7	31.2	32.0	6.0

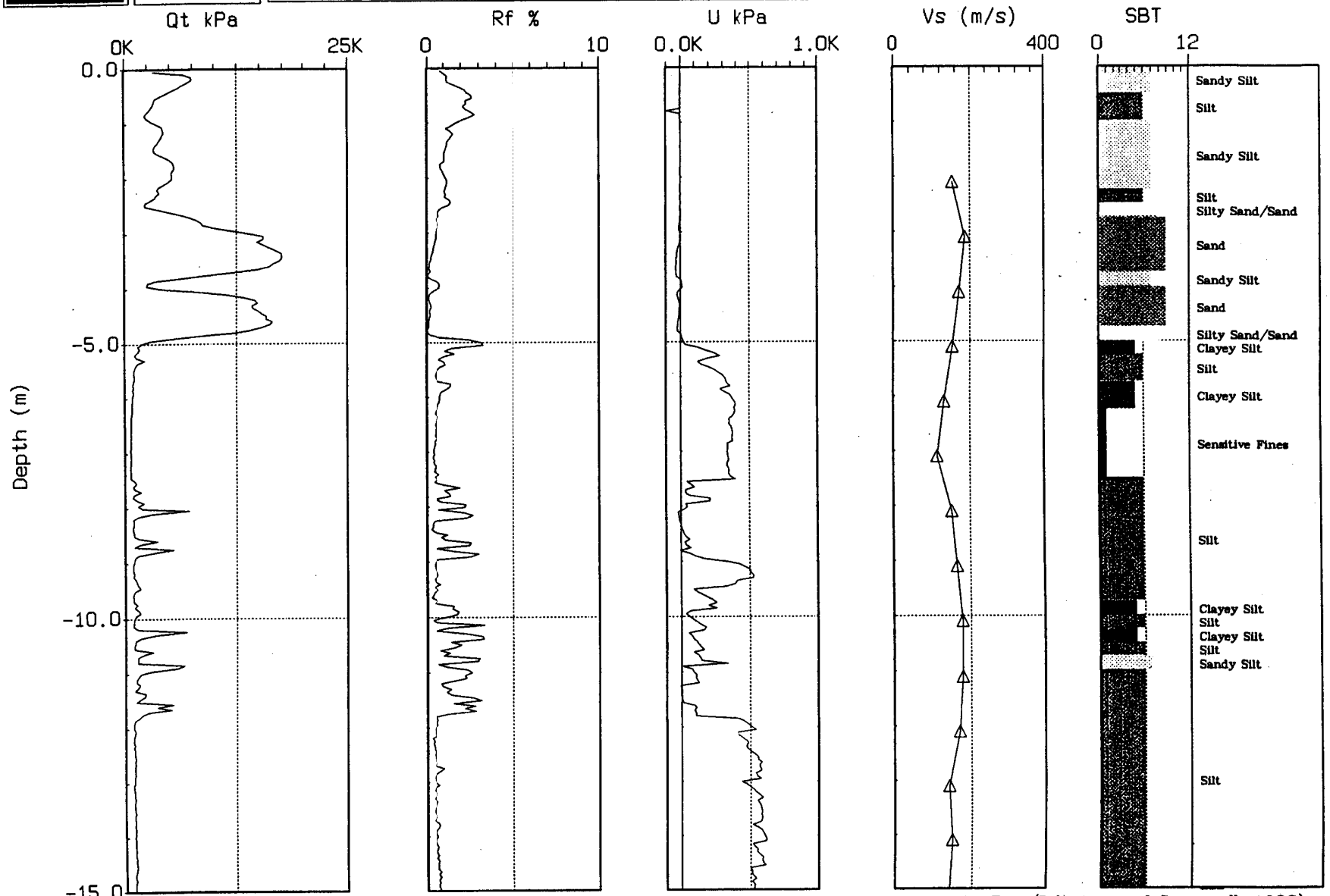
Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	3903.1	108.0	2.8	269.6	278.4	15.6	9.3	268.4	30.0	32.0	3.0
100.47	30.62	7415.1	211.4	2.9	271.7	280.8	29.7	17.6	549.0	44.4	34.0	6.0
101.29	30.88	13686.4	307.6	2.2	273.8	283.3	45.6	27.0	0.0	61.8	38.0	1.0
102.11	31.12	3433.3	94.3	2.7	275.9	285.7	13.7	8.1	229.7	30.0	30.0	3.0
102.94	31.38	2344.7	35.5	1.5	278.0	288.2	9.4	5.5	142.3	30.0	30.0	3.0
103.76	31.62	2033.6	26.1	1.3	280.0	290.6	8.1	4.8	117.0	30.0	30.0	1.5
104.58	31.88	2272.3	34.2	1.5	282.1	293.1	9.1	5.3	135.8	30.0	30.0	1.5
105.40	32.12	2355.0	62.5	2.7	284.1	295.5	11.8	6.8	142.0	0.0	0.0	1.5
106.22	32.38	11903.8	294.7	2.5	286.2	298.0	39.7	23.0	0.0	57.2	38.0	1.0
107.04	32.62	20633.4	511.5	2.5	288.4	300.4	68.8	39.6	0.0	72.9	40.0	1.0
107.86	32.88	24520.0	601.2	2.5	290.6	302.9	81.7	46.9	0.0	77.7	42.0	1.0
108.68	33.12	18557.2	415.6	2.2	292.7	305.3	61.9	35.4	0.0	69.6	40.0	1.0
109.50	33.38	8931.6	223.7	2.5	294.9	307.8	29.8	17.0	0.0	48.5	36.0	1.0
110.32	33.62	16375.0	317.3	1.9	297.1	310.2	54.6	31.0	0.0	65.8	40.0	1.0
111.14	33.88	17348.0	365.1	2.1	299.2	312.7	57.8	32.7	0.0	67.4	40.0	1.0
111.96	34.12	11520.1	373.7	3.2	301.4	315.1	46.1	26.0	872.3	55.5	38.0	6.0
112.78	34.38	13447.3	367.6	2.7	303.5	317.6	44.8	25.2	0.0	59.9	38.0	1.0
113.60	34.62	11474.0	436.0	3.8	305.6	320.1	45.9	25.7	867.9	55.2	38.0	6.0
114.42	34.88	28022.8	251.4	0.9	307.8	322.5	56.0	31.3	0.0	80.7	42.0	1.0

CONETEC

Kleinfelder

Site: I15, S4: 900 W, 06-SC-183
Location: 900 W Structure

Cone: 20 TON A 040
Date: 06:26:96 08:39



Max. Depth: 35.05 (m)
Depth Inc.: 0.05 (m)

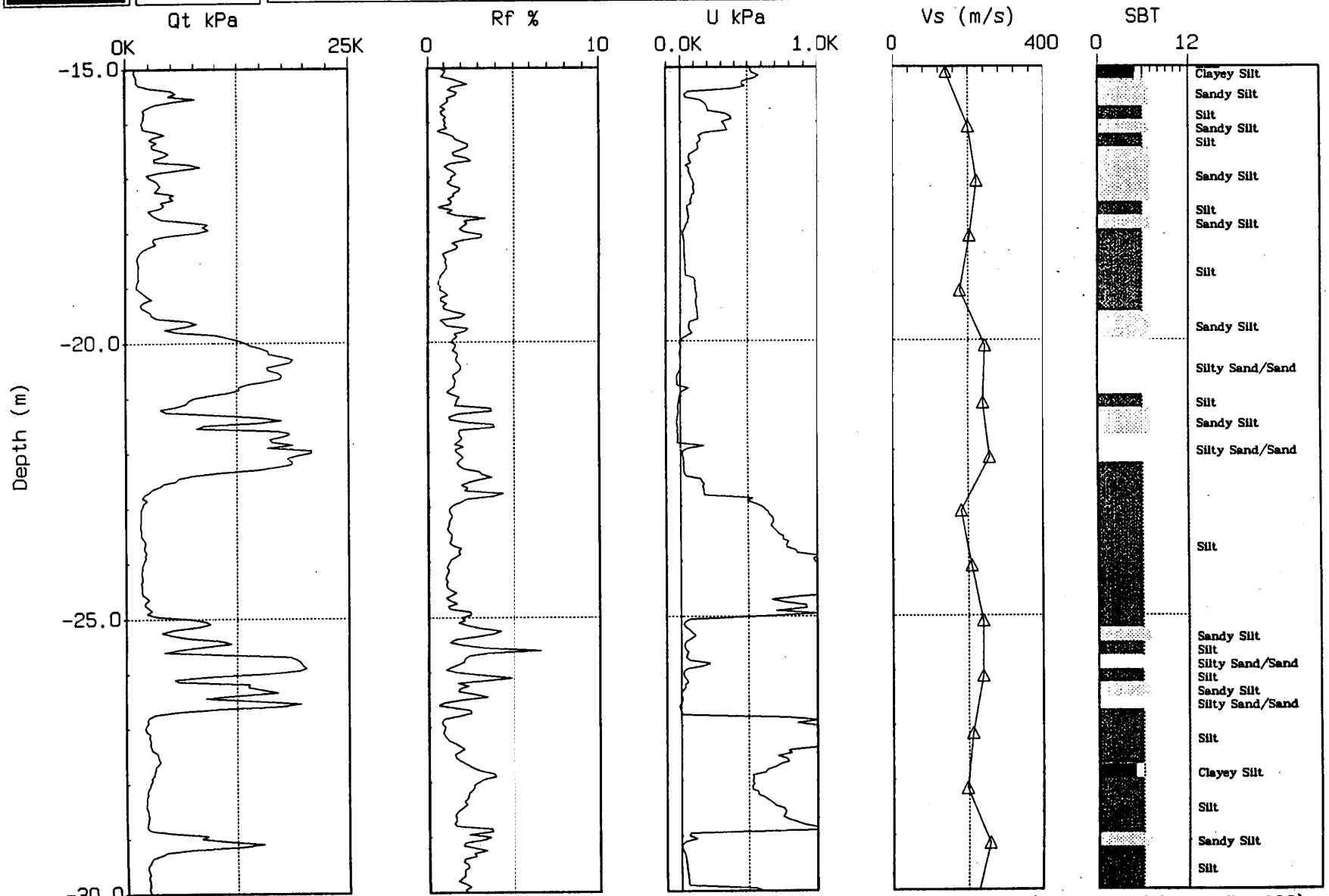
SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: 900 W, 06-SC-183
Location: 900 W Structure

Cone: 20 TON A 040
Date: 06:26:96 08:39



Max. Depth: 35.05 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

CONETEC

Kleinfelder

Site: I15, S4: 900 W, 06-SC-183
Location: 900 W Structure

Cone: 20 TON A 040
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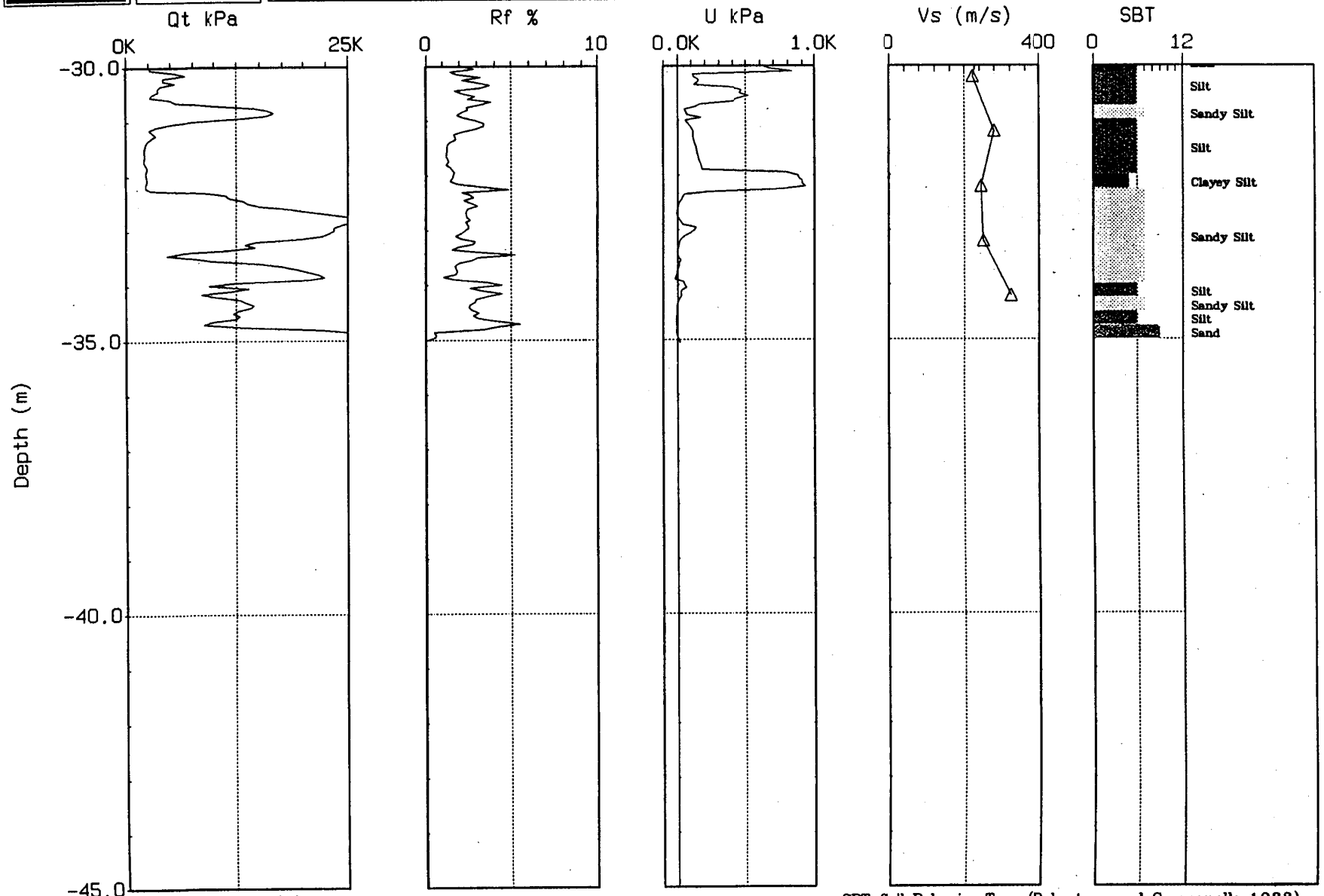

Max. Depth: 35.05 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

ConeTec Inc.

Client: *KLEINFELDER*
Sounding: *06-SC-183*
Date: *26-Jun-96*

Source: *Beam & Hammer*
Offset (m): *0.56*
Cone: *AD 040 (20 tonne)*
Geophone: *0.20 m above tip*

Geophone Depth	Distance	Last Time Interval For X-Over	Shear Wave Velocity		Corresponding Depth Increment	
(m)	*(m)*	*(ms)*	*(m/s)*	*(ft/s)*	*(m)*	*(ft)*
1.60	1.70					
2.60	2.66	6.3	* 153	502	1.6 - 2.6	5.2 - 8.5
3.60	3.64	5.3	186	609	2.6 - 3.6	8.5 - 11.8
4.60	4.63	5.8	171	560	3.6 - 4.6	11.8 - 15.1
5.60	5.63	6.5	* 153	502	4.6 - 5.6	15.1 - 18.4
6.60	6.62	7.6	131	430	5.6 - 6.6	18.4 - 21.7
7.60	7.62	8.8	113	372	6.6 - 7.6	21.7 - 24.9
8.60	8.62	6.6	151	496	7.6 - 8.6	24.9 - 28.2
9.60	9.62	6.1	164	537	8.6 - 9.6	28.2 - 31.5
10.60	10.61	5.6	* 178	585	9.6 - 10.6	31.5 - 34.8
11.60	11.61	5.6	178	585	10.6 - 11.6	34.8 - 38.1
12.60	12.61	5.9	169	555	11.6 - 12.6	38.1 - 41.3
13.60	13.61	7.1	141	462	12.6 - 13.6	41.3 - 44.6
14.60	14.61	6.7	149	489	13.6 - 14.6	44.6 - 47.9
15.60	15.61	7.1	* 141	462	14.6 - 15.6	47.9 - 51.2
16.60	16.61	5.0	200	656	15.6 - 16.6	51.2 - 54.5
17.60	17.61	4.5	222	729	16.6 - 17.6	54.5 - 57.7
18.60	18.61	4.9	204	669	17.6 - 18.6	57.7 - 61.0
19.60	19.61	5.6	178	586	18.6 - 19.6	61.0 - 64.3
20.60	20.61	4.1	* 244	800	19.6 - 20.6	64.3 - 67.6
21.65	21.66	4.4	239	783	20.6 - 21.7	67.6 - 71.0
22.60	22.61	3.7	257	842	21.7 - 22.6	71.0 - 74.1
23.60	23.61	5.5	182	596	22.6 - 23.6	74.1 - 77.4
24.60	24.61	4.8	208	683	23.6 - 24.6	77.4 - 80.7
25.60	25.61	4.2	* 238	781	24.6 - 25.6	80.7 - 84.0
26.60	26.61	4.2	238	781	25.6 - 26.6	84.0 - 87.3
27.70	27.71	5.2	211	694	26.6 - 27.7	87.3 - 90.9
28.60	28.61	4.6	196	642	27.7 - 28.6	90.9 - 93.8
29.70	29.71	4.3	256	839	28.6 - 29.7	93.8 - 97.4
30.70	30.71	4.5	* 222	729	29.7 - 30.7	97.4 - 100.7
31.70	31.70	3.6	278	911	30.7 - 31.7	100.7 - 104.0
32.70	32.70	4.1	244	800	31.7 - 32.7	104.0 - 107.3
33.70	33.70	4.0	250	820	32.7 - 33.7	107.3 - 110.6
34.70	34.70	3.1	323	1058	33.7 - 34.7	110.6 - 113.8

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TABLE I

DEPTH (ft.)	Vs (ft./sec.)		G (lb./ft.^{2})	E (lb./ft.^{2})	
0 - 5*	1096		5.033 X 10E6	14.093 X 10E6	ignored in $\bar{V}_s$ calc
5 - 10**	* 402	120 m/s	.602 "	1.686 "	
10 - 20	* 489	149	.891 "	2.495 "	
20 - 30	500		.932 "	2.608 "	
30 - 40	* 615	187	1.409 "	3.946 "	
40 - 50	* 741	226	2.046 "	5.729 "	
50 - 60	645		1.550 "	4.431 "	
60 - 70	* 808	246	2.433 "	6.812 "	
70 - 80	708		1.868 "	5.231 "	
80 - 90	* 816	249	2.481 "	6.948 "	
90 - 100	avg = 640 ft/s * 833	195 m/s 254	2.586 "	7.241 "	
100 - 110	899	274	3.012 "	8.433 "	
110 - 120	* 889	271	2.945 "	8.247 "	
120 - 130	909	277	3.079 "	8.622 "	
130 - 140	* 1000	305	3.727 "	10.434 "	
140 - 150	* 1096	334	4.477 "	12.534 "	
150 - 160	1053	321	4.132 "	11.570 "	
160 - 170	* 952	290	3.378 "	9.457 "	
170 - 180	952	290	3.378 "	9.457 "	
180 - 190	* 1111	339	4.600 "	12.880 "	
188 - 198	* 1250	381	5.823 "	16.304 "	

* granular fill material comprises most of the 0 to 5 ft. section; compressional wave velocity (Vp) = 2291 '/s; poissons' ratio = .35.

** zone above water table and below granular fill layer; Vp = 1953'/s; poissons' ratio = .48.

Vs = shear wave velocity
G = shear modulus
E = Young's modulus

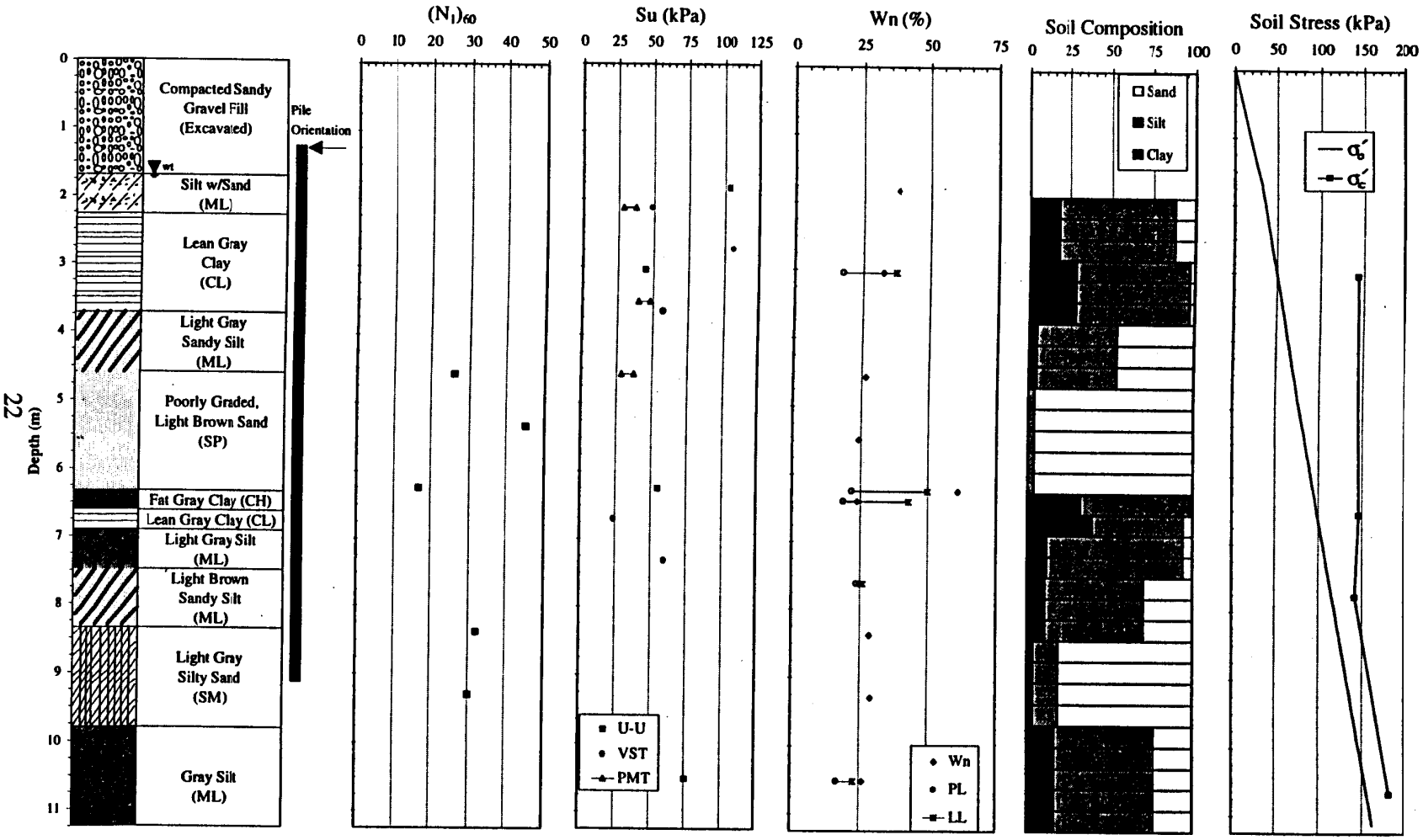
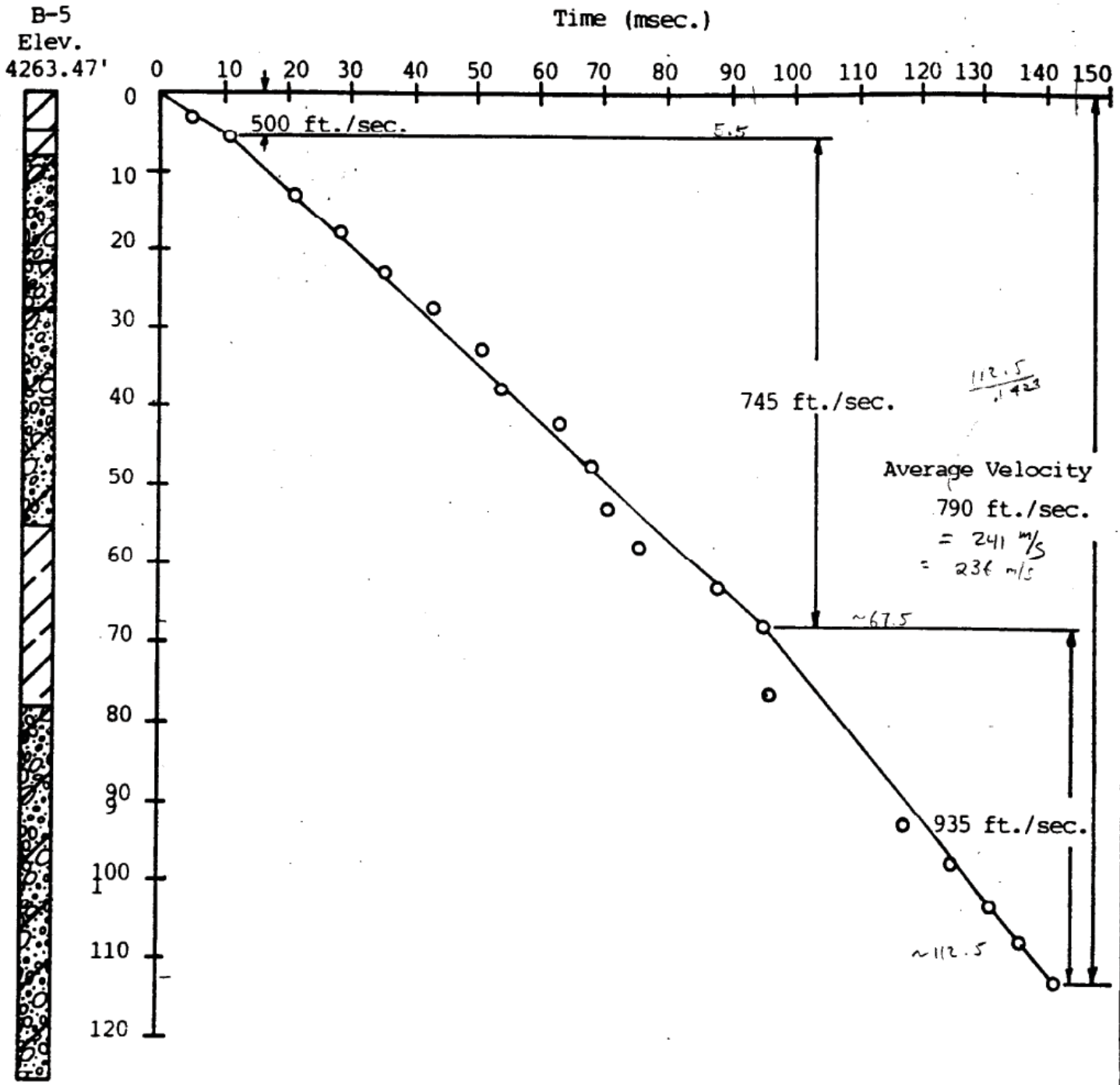


Figure 3.3 - Soil profile based on test hole DH-W.



See Figure 2 - A for Subsoil Description

#608U	chen and associates, inc.	Subsoil Profile and Shear Wave Velocity	Fig. 3 - A

TABLE I

RESULTS OF DOWNHOLE SHEAR WAVE SURVEY,
BORING B-11, INTERMOUNTAIN HEALTH CARE,
WEST VALLEY CITY, UTAH

DEPTH (ft.)	Vs (ft./sec.)	P	G (lb./ft.^{2})	E (lb./ft.^{2})	(pcf)
0- 5	480 *	.44	0.82 x 10E6	2.37 x 10E6	115
5-10	526	.45	0 .89 "	2.59 "	104
10-15	635	.45	1.30 "	3.78 "	104
15-20	870 *	.37	2.89 "	7.92 "	123
20-25	708	.37	1.91 "	5.25 "	123
25-30	952	.37	3.61 "	9.88 "	128
25-35	1290 *	.35	6.82 "	18.42 "	132
35-45	1181	.40	5.20 "	14.57 "	120
45-55	1143 *	.37	5.03 "	13.78 "	124
55-65	1250	.37	5.87 "	16.09 "	121
65-75	1404 *	.37	7.41 "	20.31 "	121
75-85	1634 *	.40	9.77 "	27.36 "	118
85-95	1667	.37	10.45 "	28.63 "	121
95-105	1538 *	.35	9.56 "	25.80 "	130
105-115	1458 *	.40	7.93 "	22.20 "	120
113-123	1429	.40	7.62 "	21.33 "	120

$\overline{V_s}$ =

Vp = compressional wave velocity
Vs = shear wave velocity
p = Poissons' ratio (assumed)

G = shear modulus
E = Young's modulus
= moist unit soil weight (based on lab test results and interpolated on untested segments)

PROJECT Intermountain Health Care
2800 South 4600 West, West Valley City, Utah

LOG OF TEST BORING NO. B-11

JOB NO. 7-817-000765 DATE 04-23-97

RIG TYPE CME 750
BORING TYPE 3-3/4" ID Hollow-Stem Augers
SURFACE ELEV.
DATUM

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/foot 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0								ML	moist	**CLAYEY SILT** with trace fine sand and major roots (topsoil) to 3"; brown
								ML/ SM/ CL	very moist loose, medium stiff	**ALTERNATING ZONES OF CLAYEY SILT, SILT, AND SILTY VERY FINE SAND**; grayish-brown
5										
∇									soft, loose	
10				D	3					
								SM/ ML/ CL	saturated medium dense, stiff	**ALTERNATING UP TO 2" LAYERS OF CLAYEY SILT, SILTY CLAY, AND SILTY FINE SAND**; gray
15										
20				D	20	98	26.2			
25										

GROUNDWATER

	DEPTH	HOUR	DATE
∇	8.2	10:00	04-23-97
▼			

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. thin-walled Shelby tube.
D - 3 1/4" O.D. 2.42" I.D. tube sample.
C - California Split Spoon Sample

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FIGURE 2

PROJECT Intermountain Health Care
2800 South 4600 West, West Valley City, Utah

LOG OF TEST BORING NO. B-11

JOB NO. 7-817-000765 DATE 04-23-97

RIG TYPE CME 750
BORING TYPE 3-3/4" ID Hollow-Stem Augers
SURFACE ELEV.
DATUM

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/foot 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
25										
								SP/ SC	saturated medium dense	**FINE TO MEDIUM SAND** with some clay and zones of clayey fine to medium sand; grayish-brown
30				D	17	110	19.9			
35										
								CL	saturated very stiff	**SILTY CLAY** with trace fine sand; light brown grades with occasional up to 1/4" layers of silty fine sand
40				D	47					
45										
								SM/ ML	saturated very dense	**SILTY VERY FINE SAND**; grayish-brown
50										

GROUNDWATER

	DEPTH	HOUR	DATE
▽	8.2	10:00	04-23-97
▼			

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. thin-walled Shelby tube.
D - 3 1/4" O.D. 2.42" I.D. tube sample.
C - California Split Spoon Sample

AGRA Earth & Environmental

FIGURE 2 (con't)

PROJECT Intermountain Health Care
2800 South 4600 West, West Valley City, Utah

LOG OF TEST BORING NO. B-11

JOB NO. 7-817-000765 DATE 04-23-97

RIG TYPE CME 750
BORING TYPE 3-3/4" ID Hollow-Stem Augers
SURFACE ELEV.
DATUM

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/foot 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
50				D	148	97	28.1			
55										
								ML/ CL/ SM	saturated very dense, hard	ALTERNATING UP TO 4" LAYERS OF SILT, SILTY CLAY, AND SILTY VERY FINE SAND; grayish-brown
60				D	134					
65								SM/ ML	saturated very dense	SILTY VERY FINE SAND; brown
70				D	132	93	30.3			
75										

GROUNDWATER

	DEPTH	HOUR	DATE
▽	8.2	10:00	04-23-97
▼			

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. thin-walled Shelby tube.
D - 3 1/4" O.D. 2.42" I.D. tube sample.
C - California Split Spoon Sample

AGRA Earth & Environmental

FIGURE 2 (con't)

PROJECT Intermountain Health Care
2800 South 4600 West, West Valley City, Utah

LOG OF TEST BORING NO. B-11

JOB NO. 7-817-000765 DATE 04-23-97

RIG TYPE CME 750
BORING TYPE 3-3/4" ID Hollow-Stem Augers
SURFACE ELEV.
DATUM

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/foot 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
75										
								CL	saturated very stiff	**SILTY CLAY** with trace fine sand; brown
80				D	35	86	35.2			
85								SM/ ML	saturated dense	**SILTY VERY FINE SAND**; brown grades with occasional 1/8" to 1/4" layers of silty clay occasional zone of clayey fine sand
90				D	78	94	29.1			
95										
								SP	saturated very dense	**FINE TO MEDIUM SAND** with trace silt; brown
100										

GROUNDWATER

	DEPTH	HOUR	DATE
▽	8.2	10:00	04-23-97
▼			

SAMPLE TYPE
A - Auger cuttings
S - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. thin-walled Shelby tube.
D - 3 1/4" O.D. 2.42" I.D. tube sample.
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AGRA Earth & Environmental

FIGURE 2 (con't)

PROJECT Intermountain Health Care
2800 South 4600 West, West Valley City, Utah

LOG OF TEST BORING NO. B-11

JOB NO. 7-817-000765 DATE 04-23-97

RIG TYPE CME 750
BORING TYPE 3-3/4" ID Hollow-Stem Augers
SURFACE ELEV.
DATUM

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/foot 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
100										
105										
								ML/ CL	saturated dense, hard	ALTERNATING UP TO 1/2" LAYERS OF SILT AND SILTY CLAY; brown and gray
110				D	98					
115										
120										grades gray in color
125				D	164/8"					

GROUNDWATER

DEPTH	HOUR	DATE
8.2	10:00	04-23-97

SAMPLE TYPE

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S - 2" O.D. 1.38" I.D. tube sample.
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FIGURE 2 (con't)

PROJECT Intermountain Health Care
2800 South 4600 West, West Valley City, Utah

LOG OF TEST BORING NO. B-11

JOB NO. 7-817-000765 DATE 04-23-97

RIG TYPE CME 750
BORING TYPE 3-3/4" ID Hollow-Stem Augers
SURFACE ELEV.
DATUM

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/foot 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
125										
										Stopped drilling at 124.5'.
										Stopped sampling at 125.25'.
										Installed 2" diameter flush couple PVC pipe to 125.00' packed in 10/20 sand.
130										
135										
140										The discussion in the text under the section titled, SUBSURFACE CONDITIONS, is necessary to a proper understanding of the nature of the subsurface materials.
145										
150										

GROUNDWATER

DEPTH	HOUR	DATE
8.2	10:00	04-23-97

SAMPLE TYPE

A - Auger cuttings
S - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. thin-walled Shelby tube.
D - 3 1/4" O.D. 2.42" I.D. tube sample.
C - California Split Spoon Sample

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FIGURE 2
(con't)

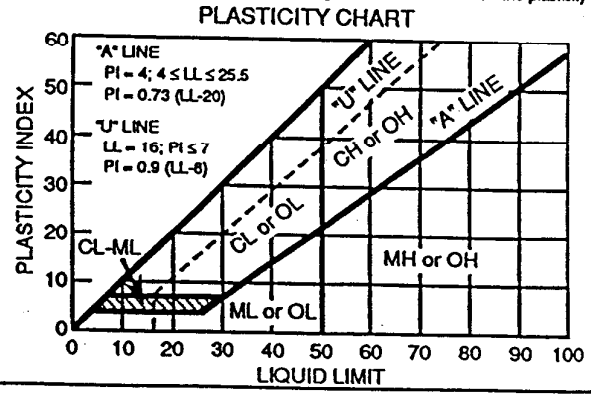
UNIFIED SOIL CLASSIFICATION SYSTEM

Soils are visually classified for engineering purposes by the Unified Soil Classification System. Grain-size analyses and Atterberg Limits tests often are performed on selected samples to aid in classification. The classification system is briefly outlined on this chart. Graphic symbols are used on boring logs presented in this report. For a more detailed description of the system, see "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)" ASTM Designation: 2488-84 and "Standard Test Method for Classification of Soils for Engineering Purposes" ASTM Designation: 2487-85.

MAJOR DIVISIONS				GRAPHIC SYMBOL	GROUP SYMBOL	TYPICAL NAMES
COARSE-GRAINED SOILS Less than 50% passes No. 200 sieve)	GRAVELS (50% or less of coarse fraction passes No. 4 sieve)	CLEAN GRAVELS (Less than 5% passes No. 200 sieve)			GW	Well graded gravels, gravel-sand mixtures, or sand-gravel-cobble mixtures
					GP	Poorly graded gravels, gravel-sand mixtures, or sand-gravel-cobble mixtures
		GRAVELS WITH FINES (More than 12% passes No. 200 sieve)	Limits plot below "A" line & hatched zone on plasticity chart		GM	Silty gravels, gravel-sand-silt mixtures
			Limits plot above "A" line & hatched zone on plasticity chart		GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS (50% or more of coarse fraction passes No. 4 sieve)	CLEAN SANDS (Less than 5% passes No. 200 sieve)			SW	Well graded sands, gravelly sands
					SP	Poorly graded sands, gravelly sands
		SANDS WITH FINES (More than 12% passes No. 200 sieve)	Limits plot below "A" line & hatched zone on plasticity chart		SM	Silty sands, sand-silt mixtures
			Limits plot above "A" line & hatched zone on plasticity chart		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more passes No. 200 sieve)	SILTS Limits plot below "A" line & hatched zone on plasticity chart	SILTS OF LOW PLASTICITY (Liquid Limit less than 50)			ML	Inorganic silts, clayey silts of low to medium plasticity
		SILTS OF HIGH PLASTICITY (Liquid Limit 50 or more)			MH	Inorganic silts, micaceous or diatomaceous silty soils, elastic silts
	CLAYS Limits plot above "A" line & hatched zone on plasticity chart	CLAYS OF LOW PLASTICITY (Liquid Limit less than 50)			CL	Inorganic clays of low to medium plasticity, gravelly, sandy, and silty clays
		CLAYS OF HIGH PLASTICITY (Liquid Limit 50 or more)			CH	Inorganic clays of high plasticity, fat clays, sandy clays of high plasticity
	ORGANIC SILTS AND CLAYS	ORGANIC SILTS AND CLAYS OF LOW PLASTICITY (Liquid Limit less than 50)			OL	Organic silts and clays of low to medium plasticity, sandy organic silts and clays
		ORGANIC SILTS AND CLAYS OF HIGH PLASTICITY (Liquid Limit 50 or more)			OH	Organic silts and clays of high plasticity, sandy organic silts and clays
ORGANIC SOILS		PRIMARILY ORGANIC MATTER (dark in color and organic odor)			PT	Peat

NOTE: Coarse-grained soils with between 5% and 12% passing the No. 200 sieve and fine-grained soils with limits plotting in the hatched zone on the plasticity chart have dual classifications.

PLASTICITY CHART



DEFINITION OF SOIL FRACTIONS

SOIL COMPONENT	PARTICLE SIZE RANGE
Boulders	Above 12 in.
Cobbles	12 in. to 3 in.
Gravel	3 in. to No. 4 sieve
Coarse gravel	3 in. to 3/4 in.
Fine gravel	3/4 in. to No. 4 sieve
Sand	No. 4 to No. 200 sieve
Coarse sand	No. 4 to No. 10 sieve
Medium sand	No. 10 to No. 40 sieve
Fine sand	No. 40 to No. 200 sieve
Fines (silt and clay)	Less than No. 200 sieve

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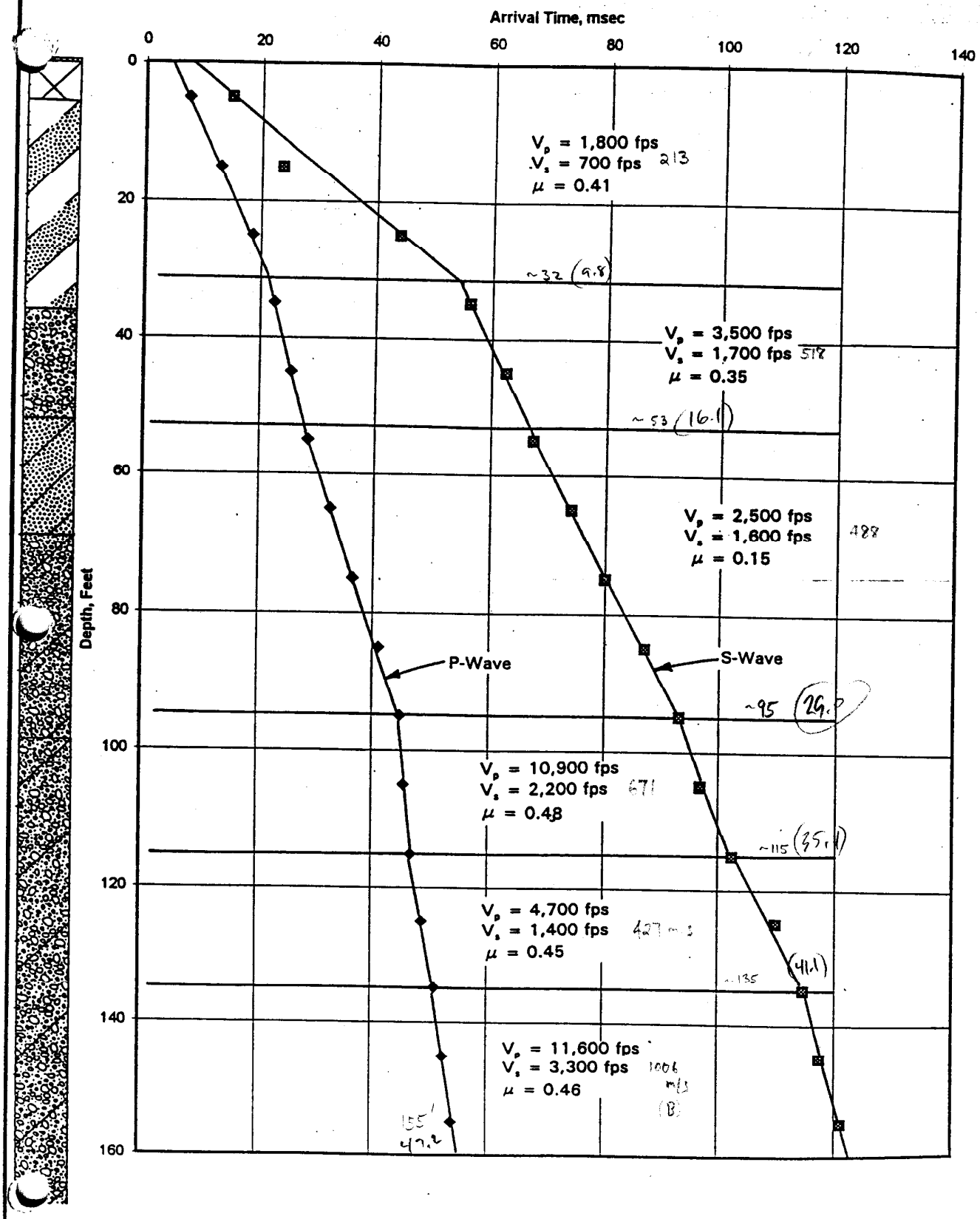
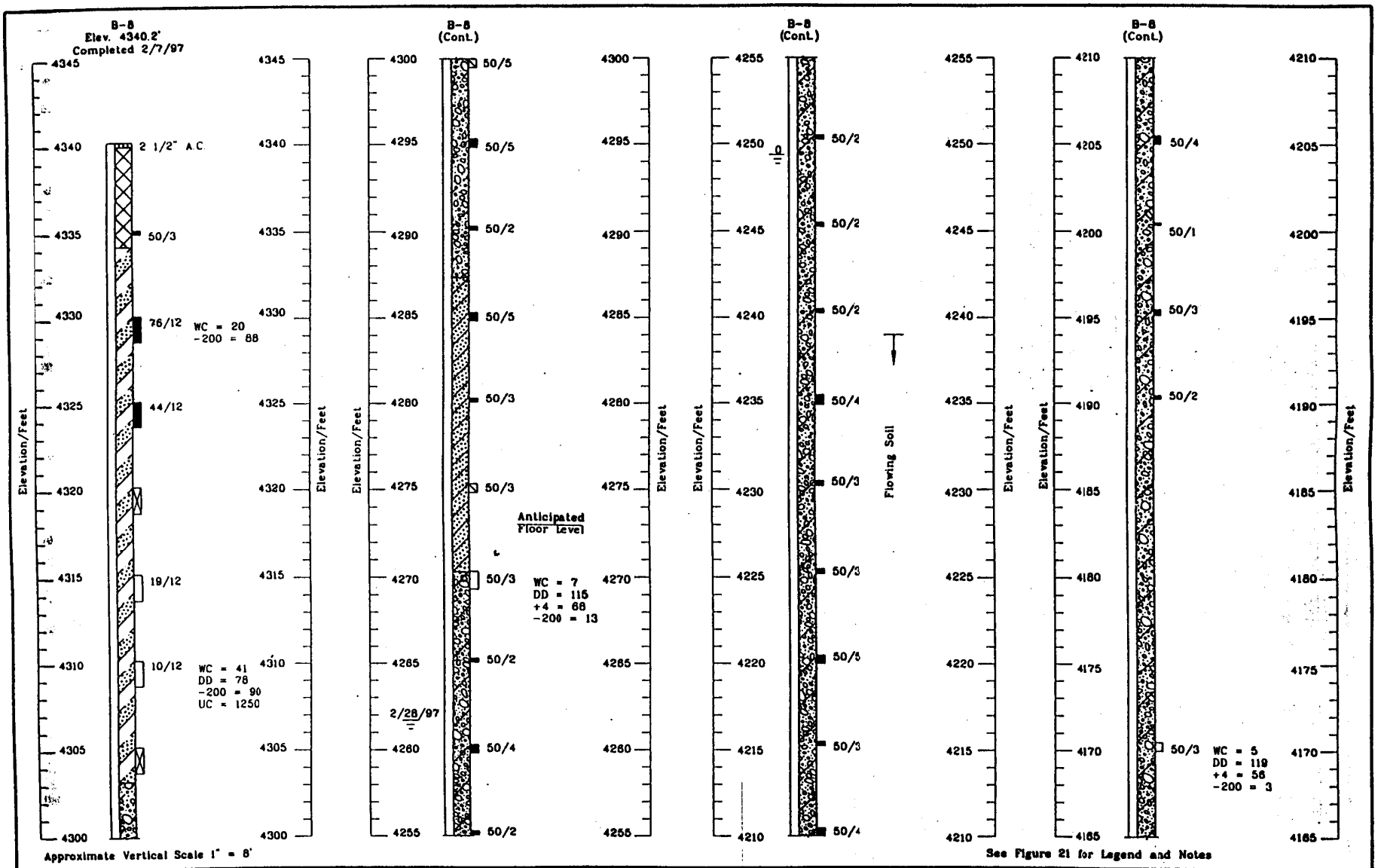
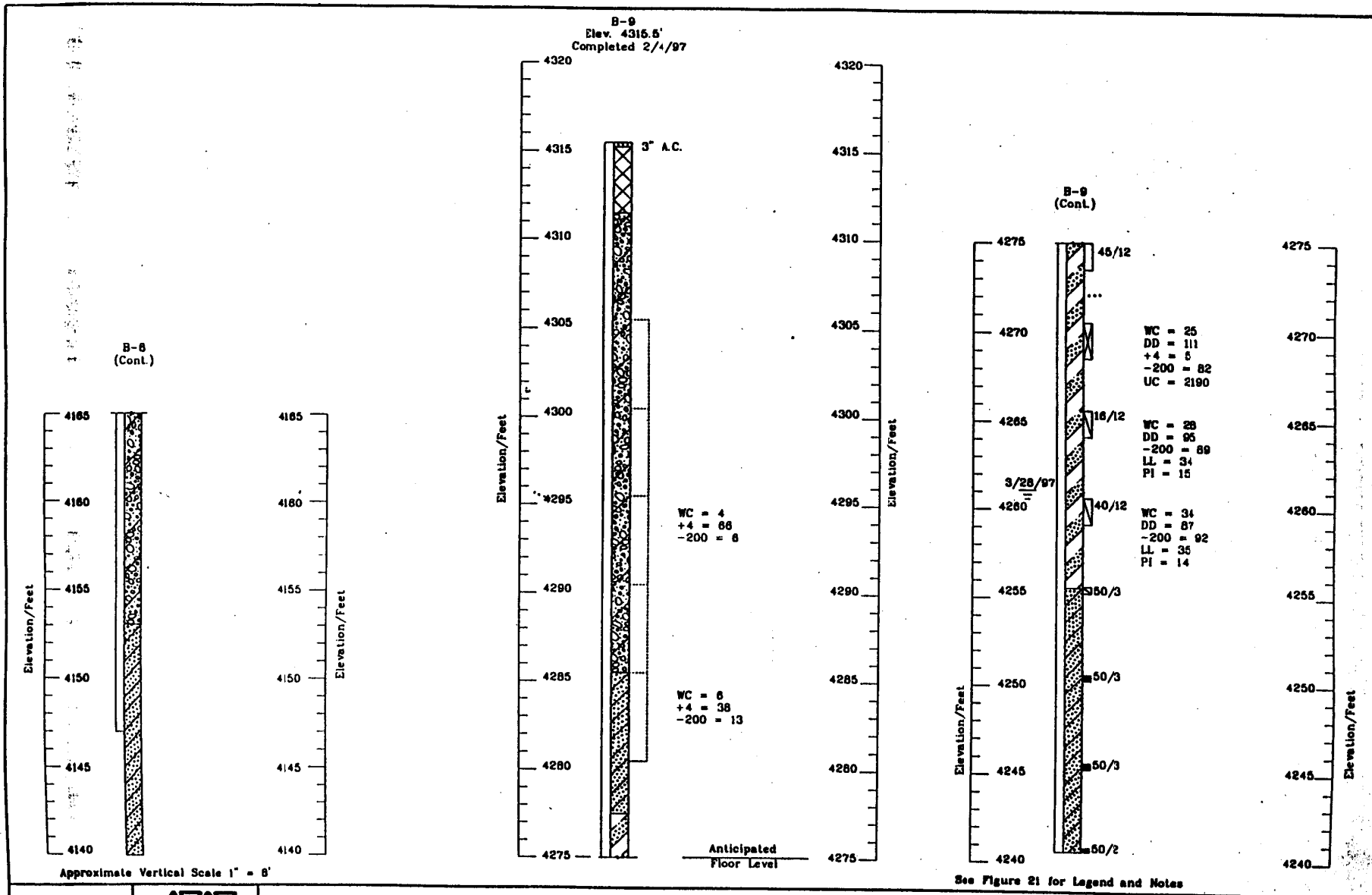
FIGURE 3



973042	AGRA	Seismic Wave Velocities - Boring B-8	Figure 22



973042 | AGEC | Logs of Exploratory Borings | Figure 17



Approximate Vertical Scale 1" = 8'

See Figure 21 for Legend and Notes

973042 | AGES | Logs of Exploratory Borings | Figure 18

LEGEND:

Asphaltic Concrete.

Base Course, Silty Sand and Gravel.

Fill; lean clay with sand, moist to very moist, dark brown, roots, organics.

Fill; clayey to silty gravel with silty sand and sandy lean clay, occasional cobbles, slightly moist to moist, brown to dark gray.

Silty to Lean Clay with Silt layers (CL/ML); occasional silty sand and gravel layers, medium stiff to hard, moist to wet, brown to yellowish brown to grayish brown, iron oxide staining.

Interlayered Lean Clay and Silty Sand (CL/SM); silt layers, occasional gravel lenses, stiff to very stiff, medium to very dense, moist to wet, brown to yellowish brown to grayish brown, iron oxide staining.

Silty Sand (SM); small to moderate amount of silt, gravels, occasional cobbles, medium to very dense, moist to wet, yellowish to grayish brown.

Poorly-graded Gravel with Clay and Sand (GP-GC); occasional silty zones, cobbles generally up to 10 inches in size, lenses of sand, silt and clay, medium to very dense, moist to wet, brown to gray to yellowish brown.

Poorly-graded Gravel with Silt and Sand (GP-GM); clayey zones, cobbles generally up to 10 inches in size, occasional boulders up to approximately 2 1/2 feet in size, the larger particles are typically at the lower depths, lenses of sand, silt and clay, medium to very dense, moist to wet, brown to gray to yellowish brown.

10/12 California Drive sample taken. The symbol 10/12 indicates that 10 blows from a 140 pound hammer falling 30 inches were required to drive the sampler 12 inches.

10/12 2 1/2 inch inside diameter drive sample taken. The symbol 10/12 indicates that 10 blows from a 140 pound hammer falling 30 inches were required to drive the sampler 12 inches.

10/12 Standard Drive Sample taken. The symbol 10/12 indicates that 10 blows from a 140 pound hammer falling 30 inches were required to drive the sampler 12 inches.

Shelby Tube Sample taken.

Indicates disturbed sample taken.

Indicates slotted PVC pipe installed in the boring to the depth shown.

0 Indicates the depth to free water and the number of days after drilling the measurement was taken. If date is shown, the date is when the measurement was obtained.

NOTES:

1. Borings B-1 through B-4 were drilled on April 19, 22, 24 and 25, 1996. Borings B-5 through B-12 were drilled on February 4, 5, 6, 7, 10, 12, 13, 14, 15, and 17, 1997 with 9-inch percussion hammer drilling equipment.
2. Locations of borings were measured approximately by pacing from features shown on the site plan provided.
3. Elevations of borings were measured by survey level and refer to the bench mark shown on Figure 1.
4. The boring locations and elevations should be considered accurate only to the degree implied by the method used.
5. The lines between the materials shown on the boring logs represent the approximate boundaries between material types and the transitions may be gradual.
6. Water level readings shown on the logs were made at the time and under the conditions indicated. Fluctuations in the water level may occur with time.
7. WC = Water Content (%);
   DD = Dry Density (pcf);
   +4 = Percent Retainied on No. 4 Sieve;
   -200 = Percent Passing No. 200 Sieve;
   LL = Liquid Limit (%);
   PI = Plasticity Index (%);
   NP = Non Plastic;
   UC = Unconfined Compressive Strength (psf);
   WSS = Water Soluble Sulfates (ppm);
   AC = Asphaltic Concrete Thickness (inches);
   BC = Base Course Thickness (inches).

24 Feb 1998

Degen:

Here is the info on the American Stores Office Tower V_s profile

Depth	Soil Type	V_s (ft/sec)
0 - 9 ft	Fill	400
9 - 36 ft	Sand + Gravel	1400 at top dropping to 1200 at base
36 - 59 ft	Silty Clay	825 at surface
59 - 79 ft	Layered Silt Clay and Sand	variations of ± 50 ft/sec
79 - 99 ft	Silty Clay	910 at base

See if this matches the boring logs that we have and then make your classification

Kyle Rollins

FIRM
LGS GEOPHYSICS

GIS ID #[redacted] 292 [redacted]

Location Northeast of 300 South & Main Street

Firm - Firm Job ID #

Borehole # 1 Total Depth = 99.0 ft

Depth			Shear Wave Velocity, V_s	S_u	Correlated SPT N value	Interval SPT N value
From	To	Interval				
0	9	9	400 122			0.0225
9	18	9	1400 427			0.0064
18	27	9	1300 397			0.0069
27	36	9	1200 366			0.0075
36	59	23	825 251			0.0279
59	64	5	775 236			0.0065
64	69	5	825 251			0.0061
69	74	5	775 236			0.0065
74	79	5	825 251			0.0061
79	99	20	910 277			0.0220

$\Sigma =$ 0.1182

Class D

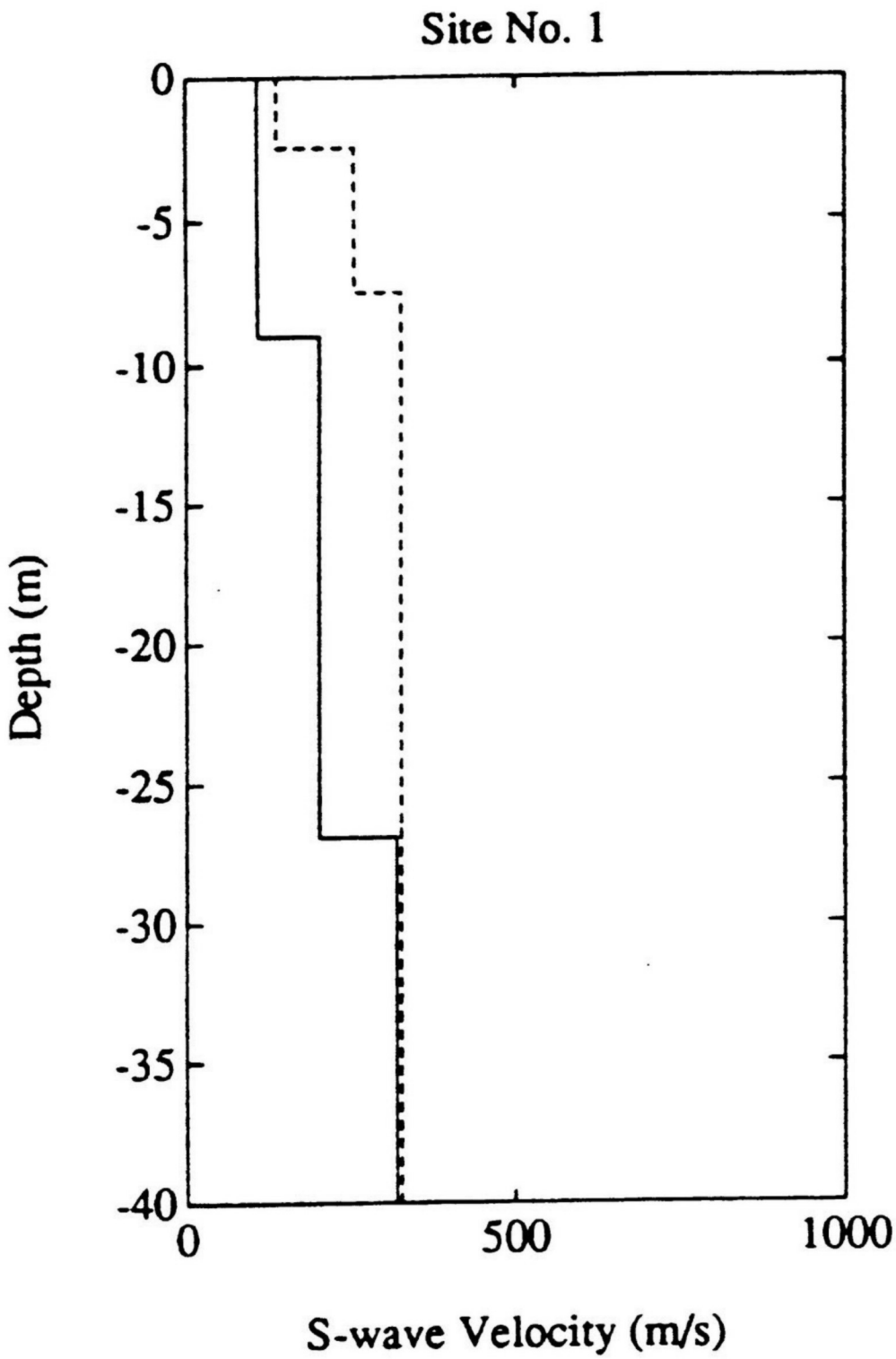
SPT average = 837.3

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

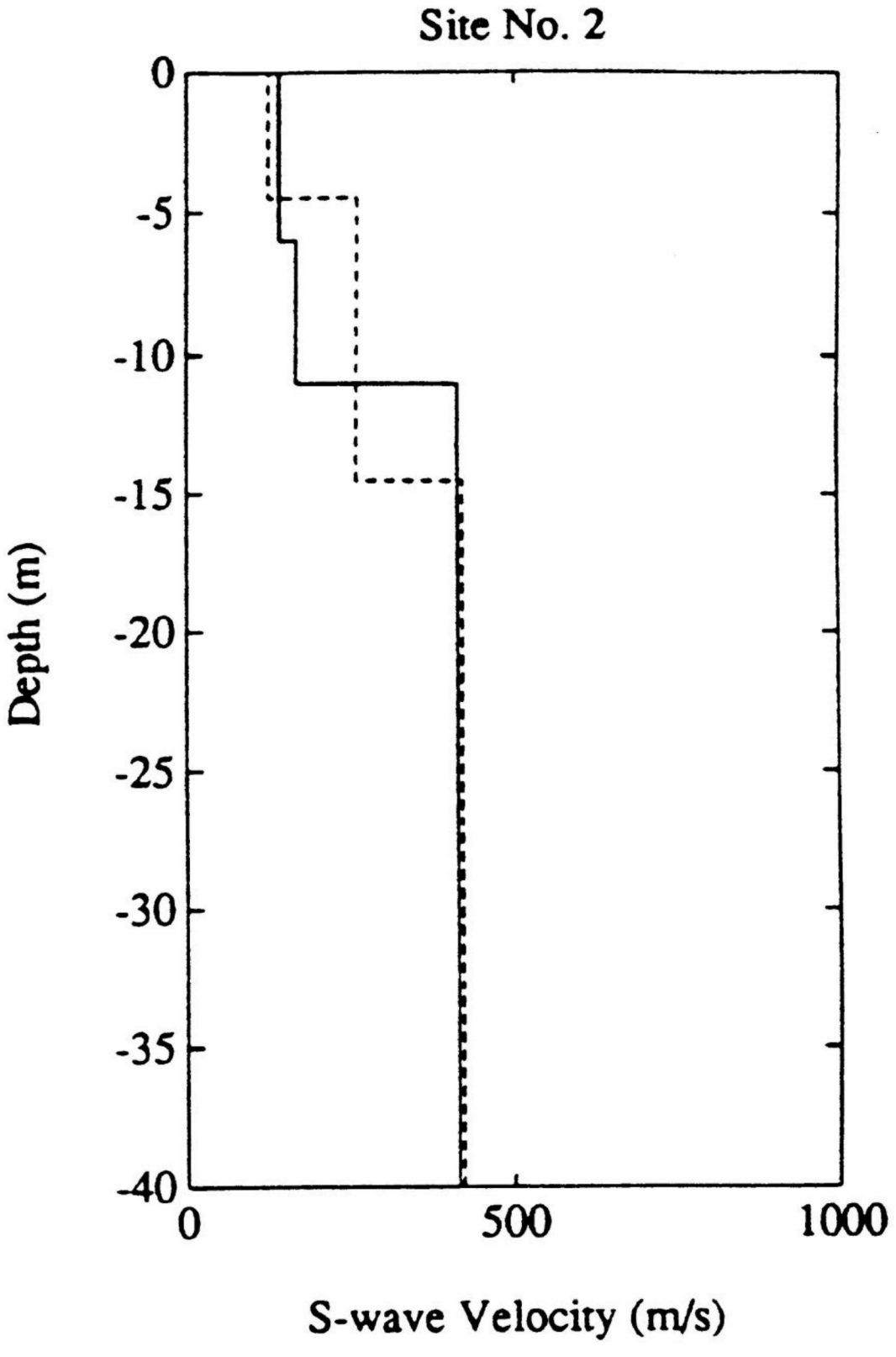

Site No. 1
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

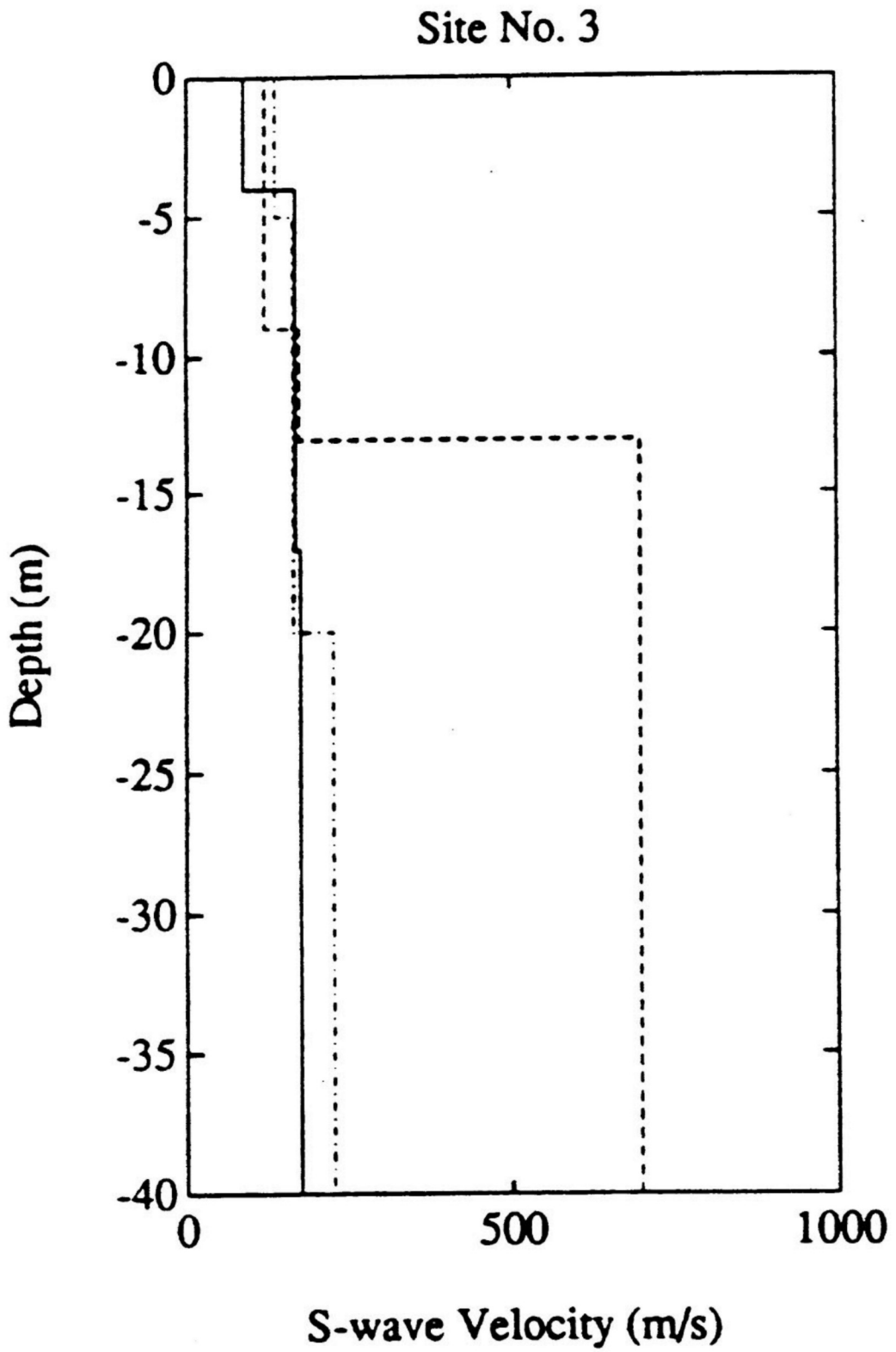

Site No. 2
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

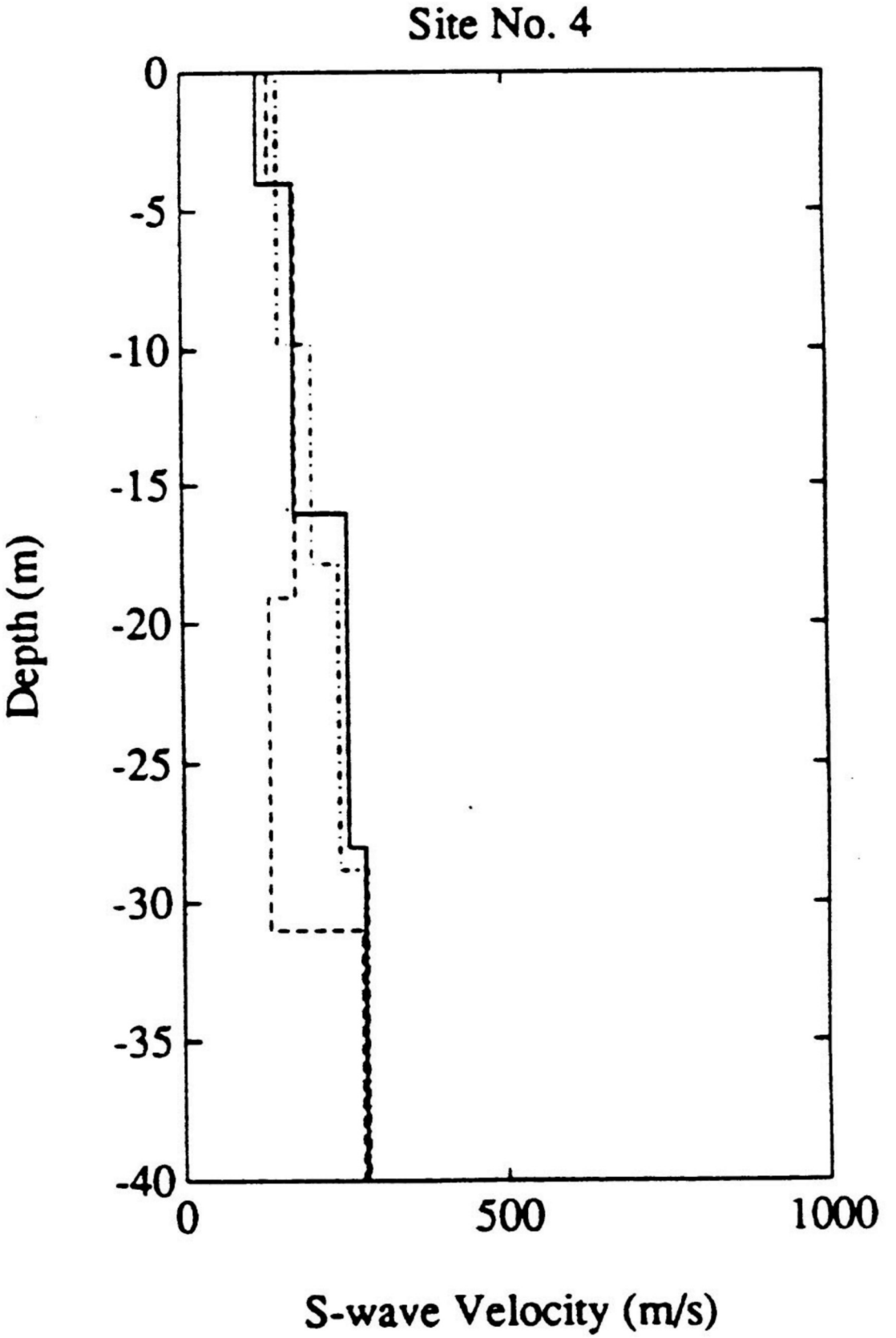

Site No. 3
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

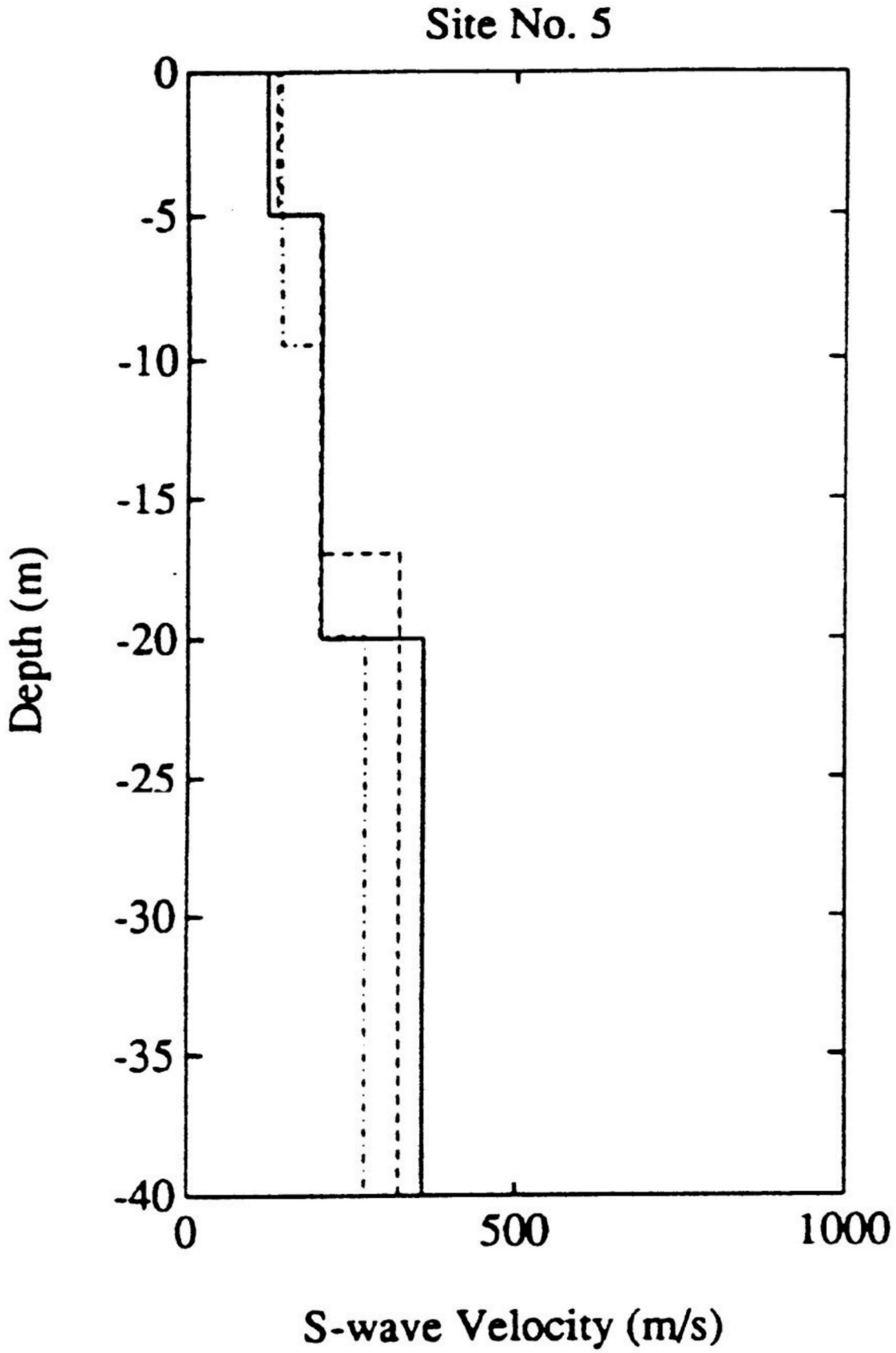

Site No. 4
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

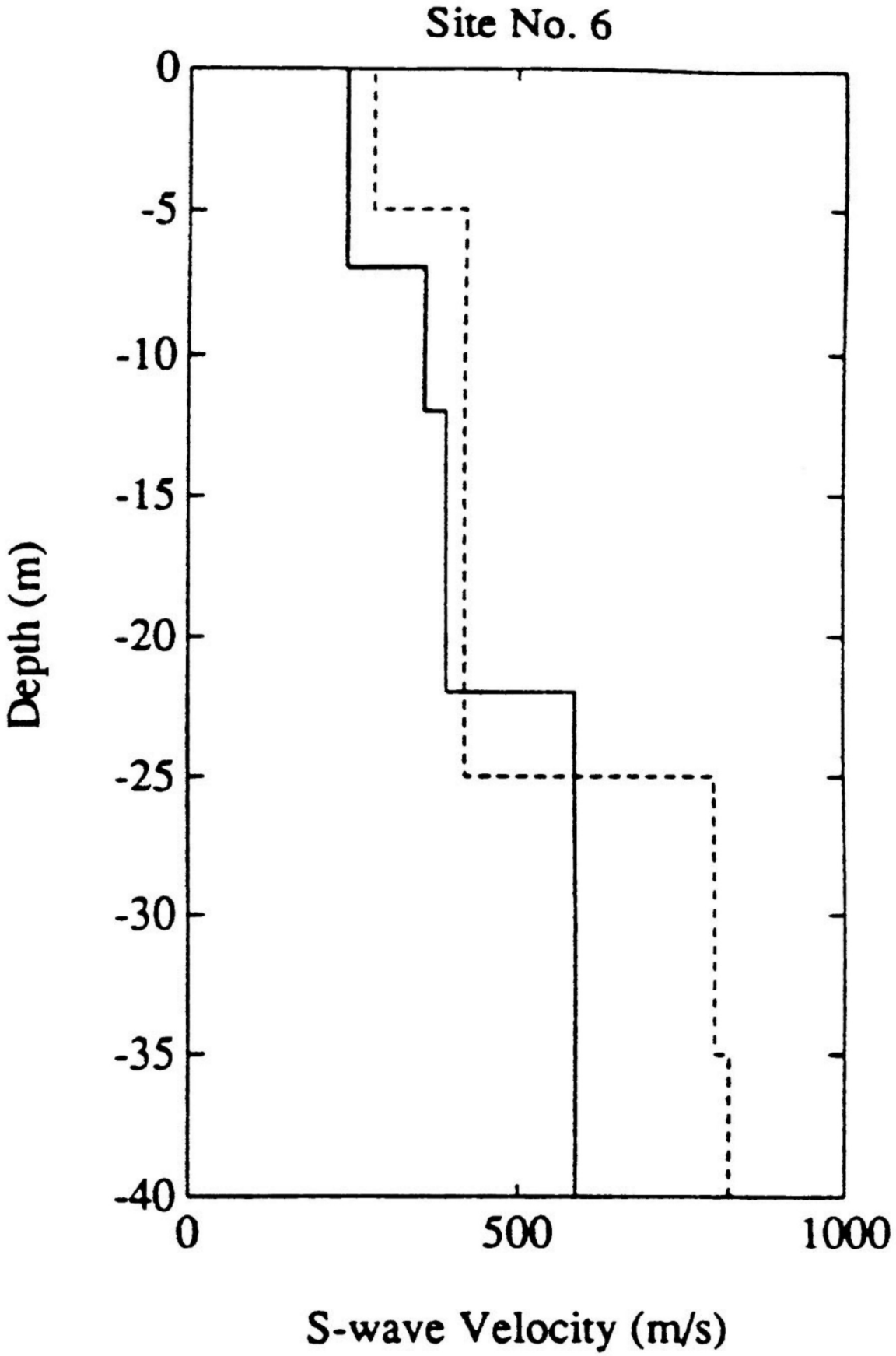

Site No. 5
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.


Site No. 6
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

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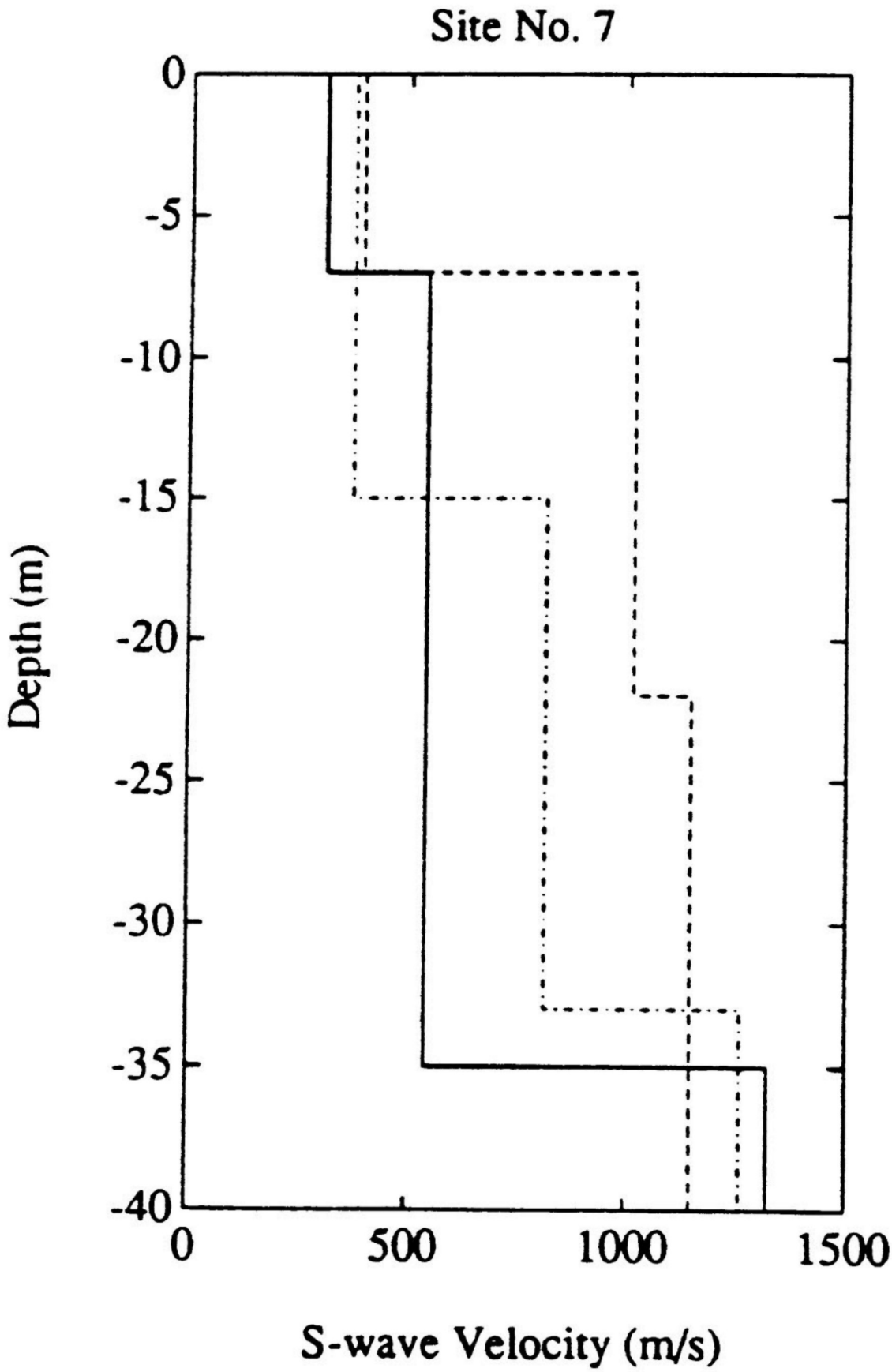
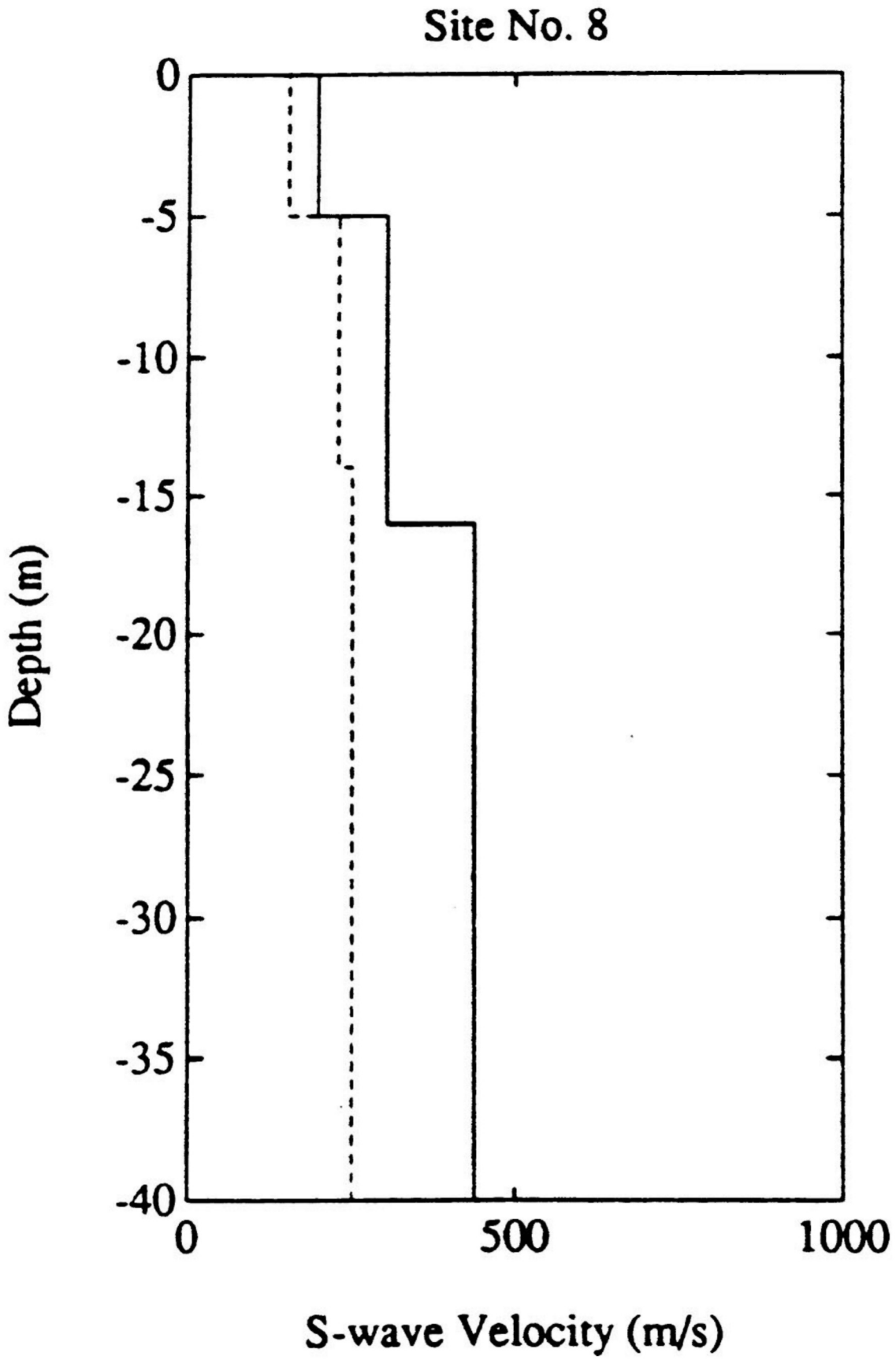

Site No. 7
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
1500
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

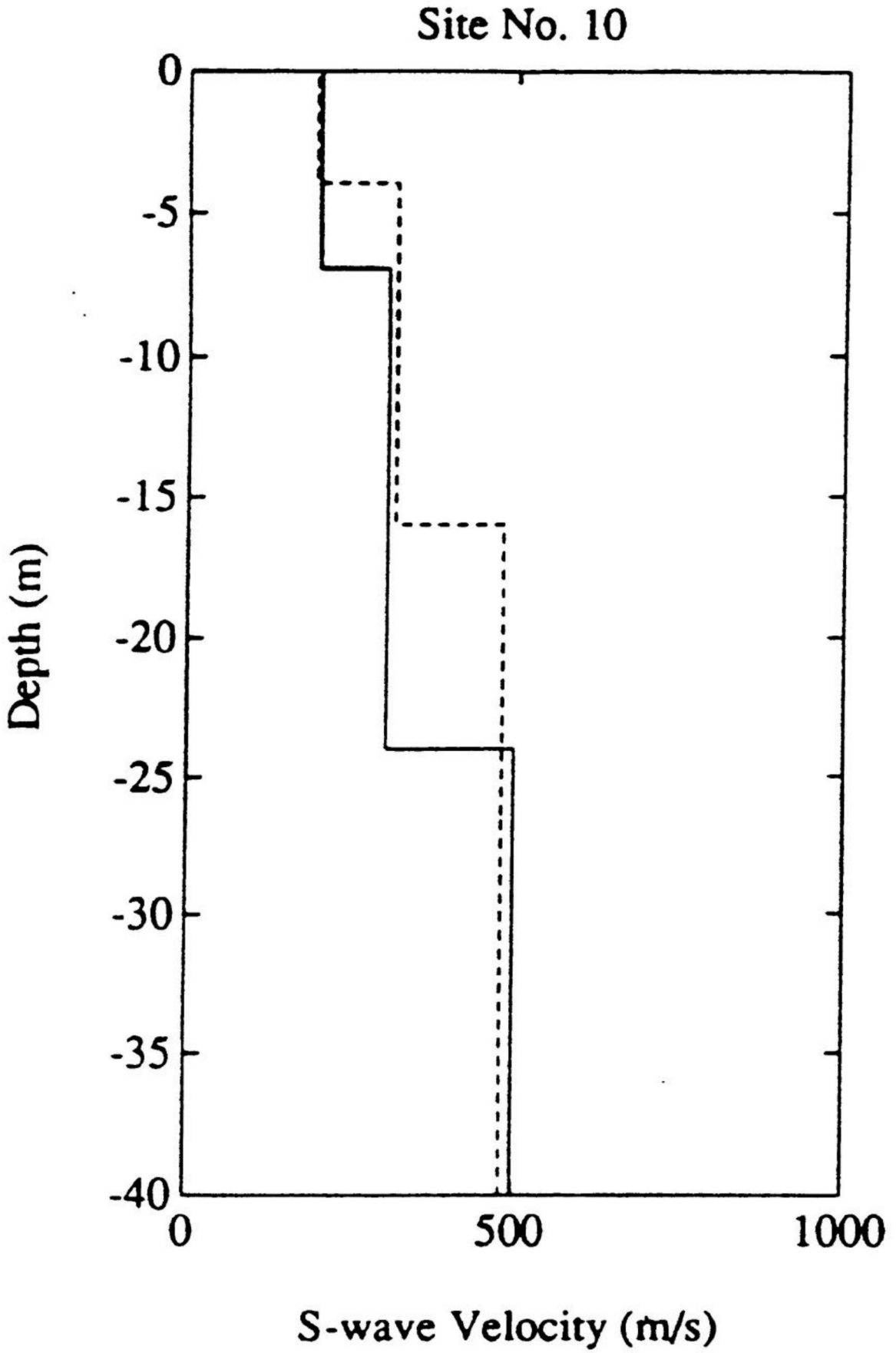

Site No. 8
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

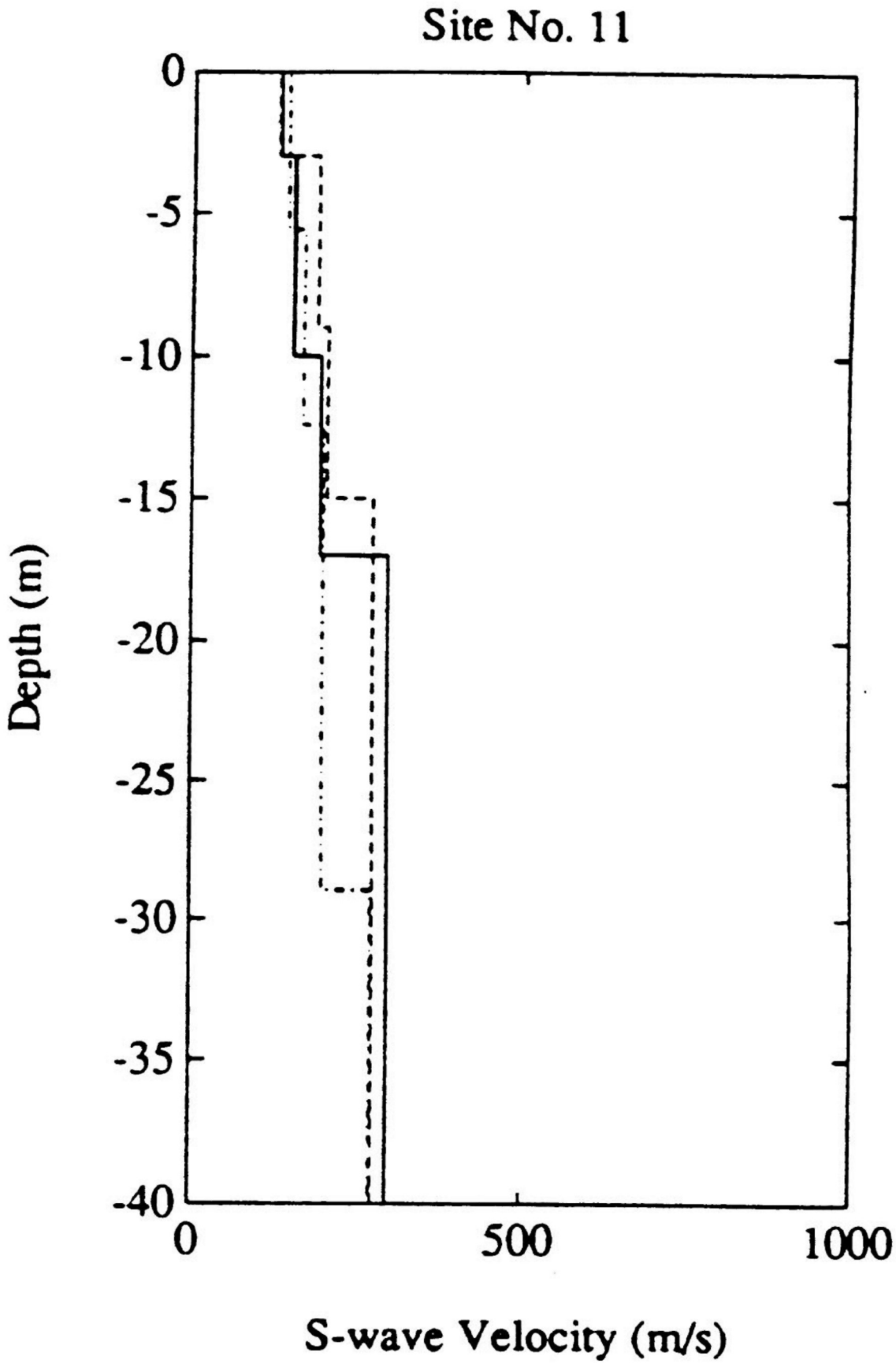

Site No. 10
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

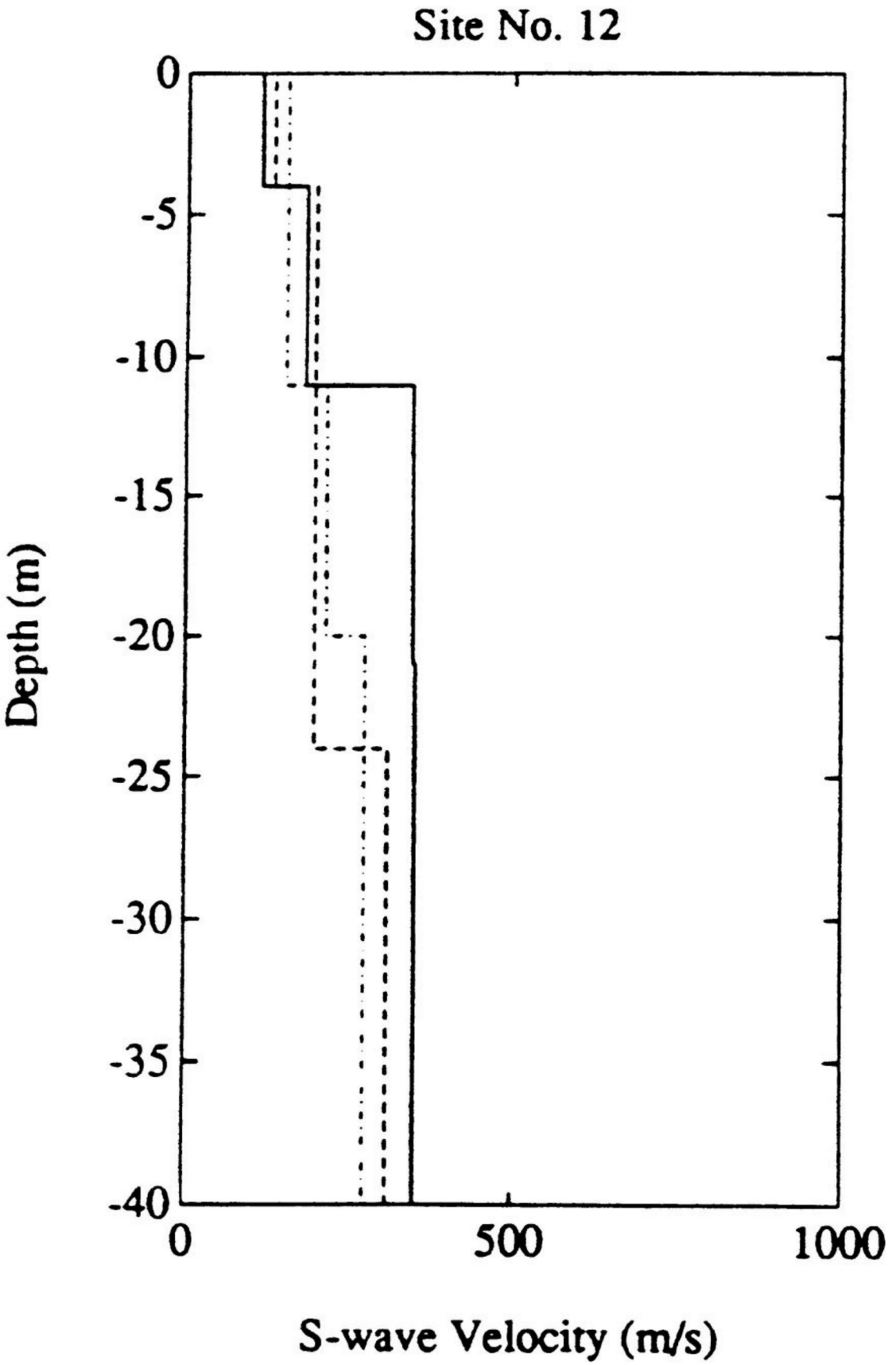

Site No. 11
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

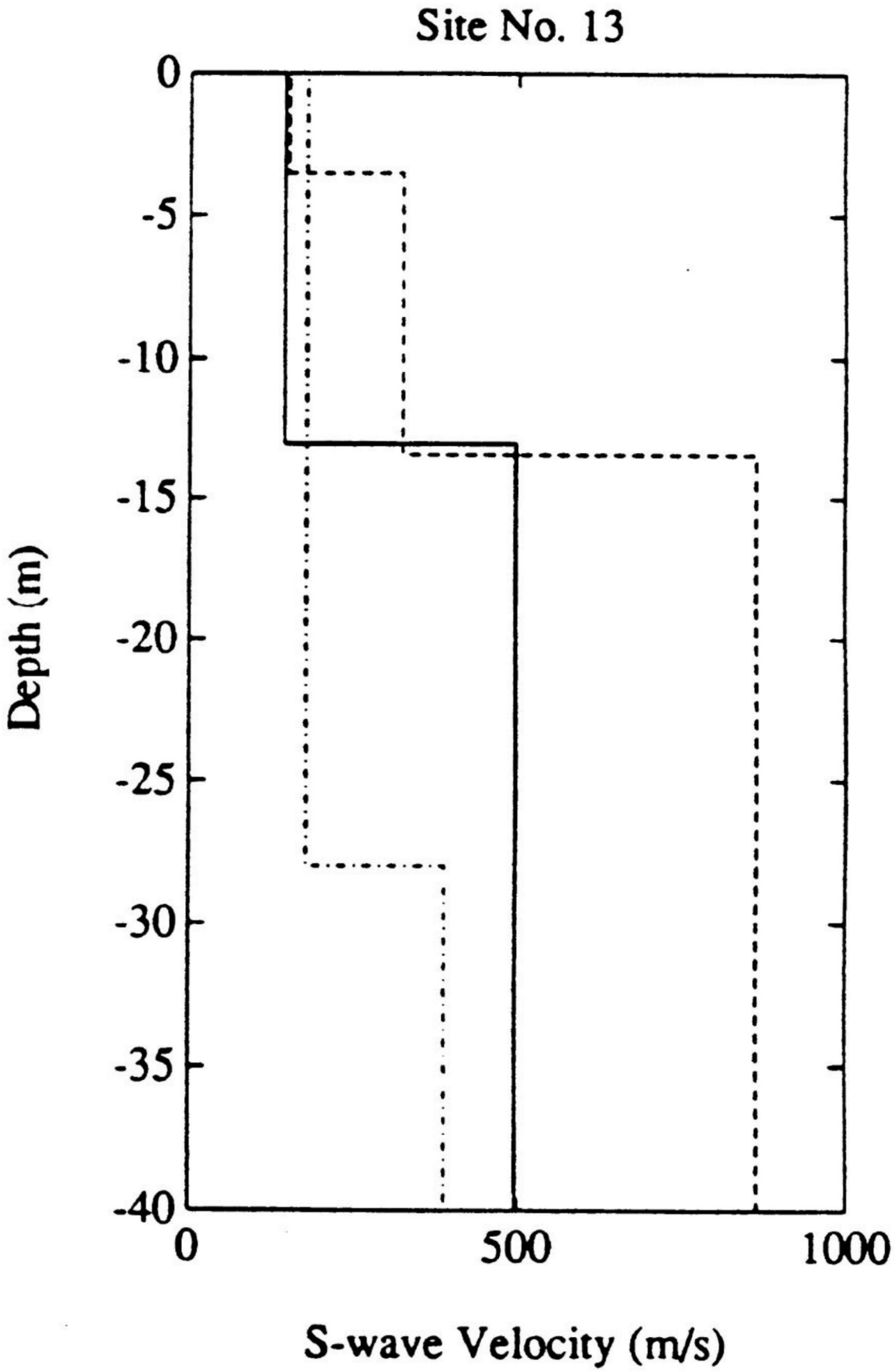

Site No. 12
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

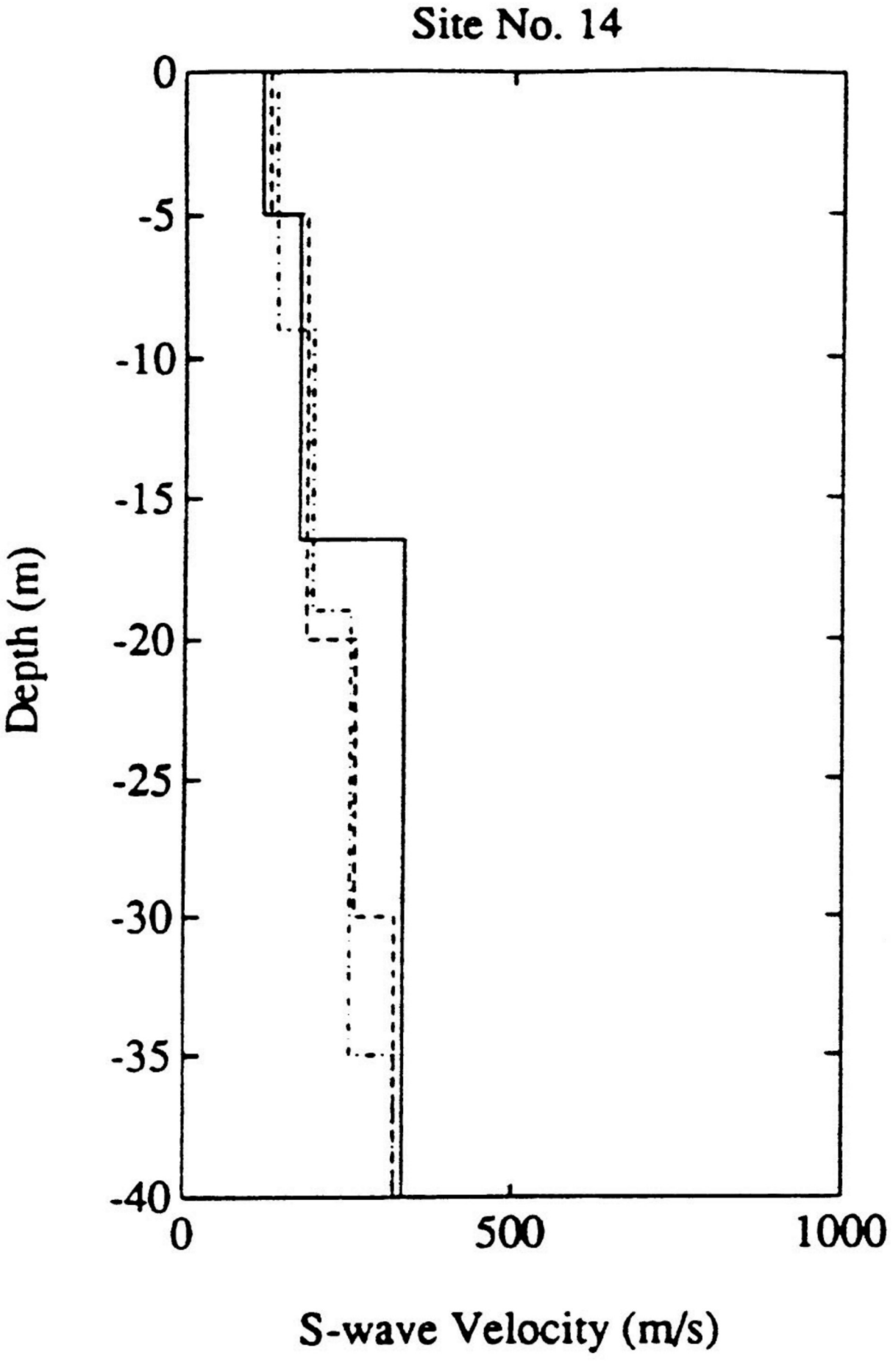

Site No. 13
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

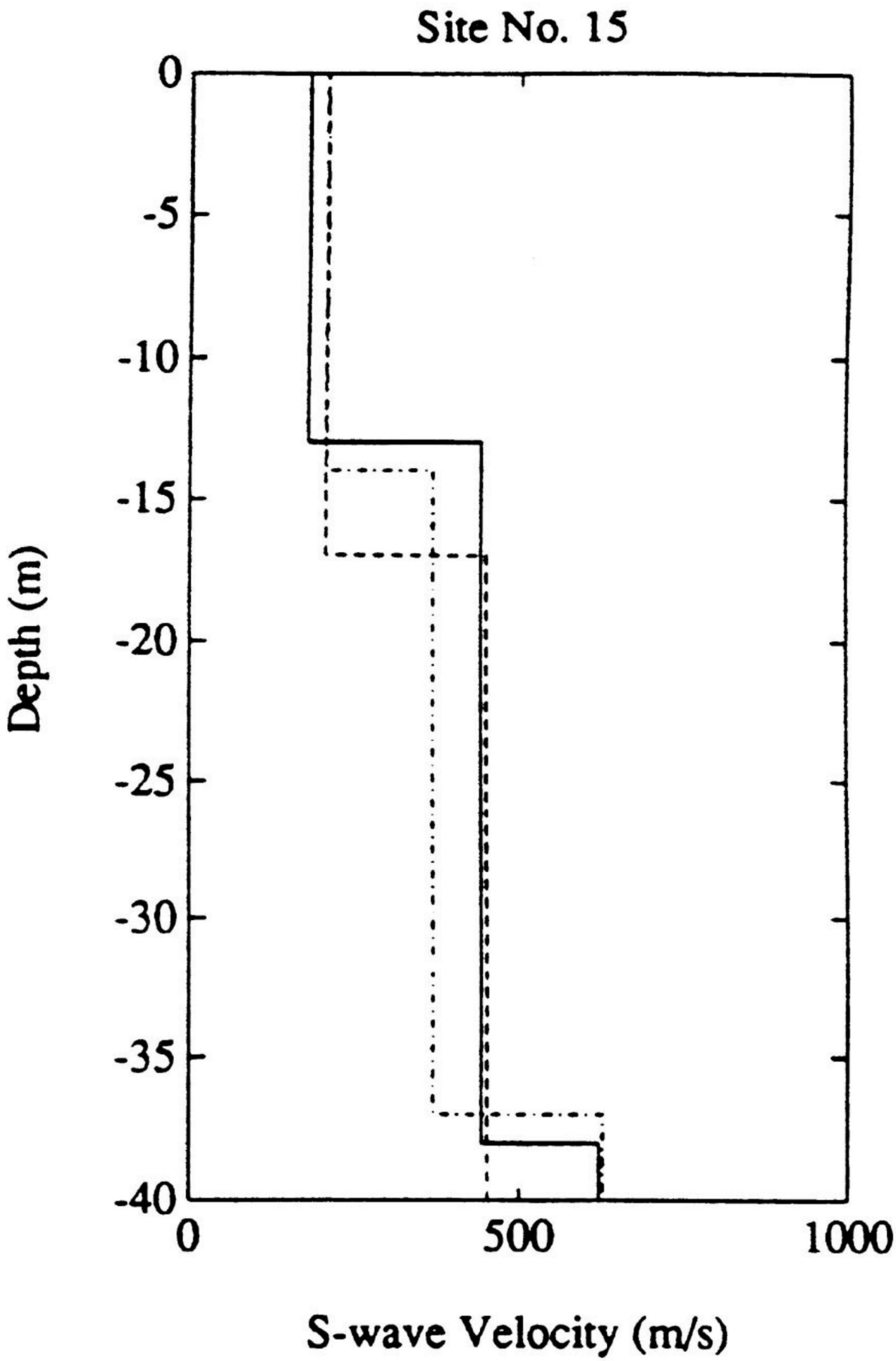

Site No. 14
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

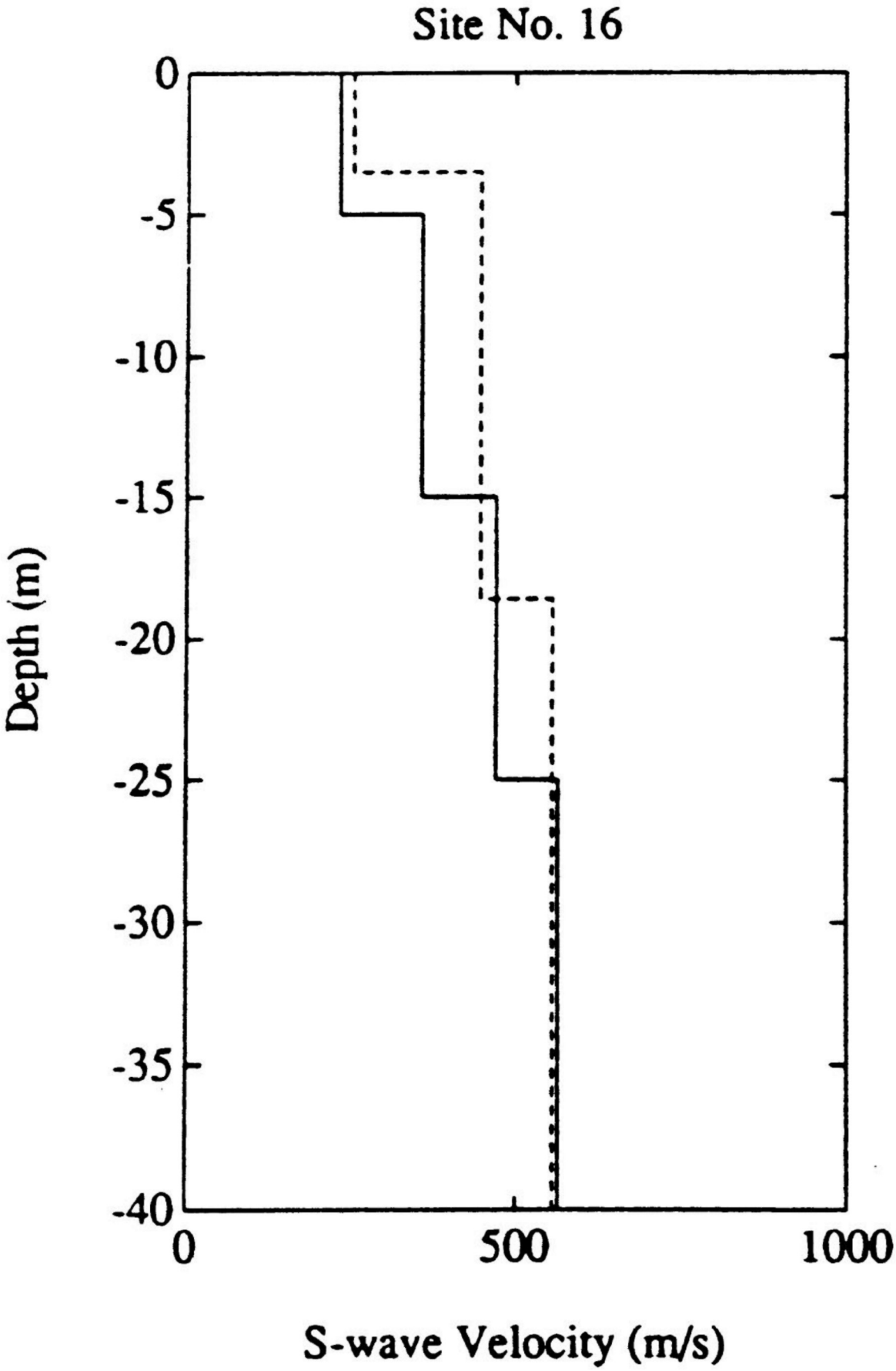

Site No. 15
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

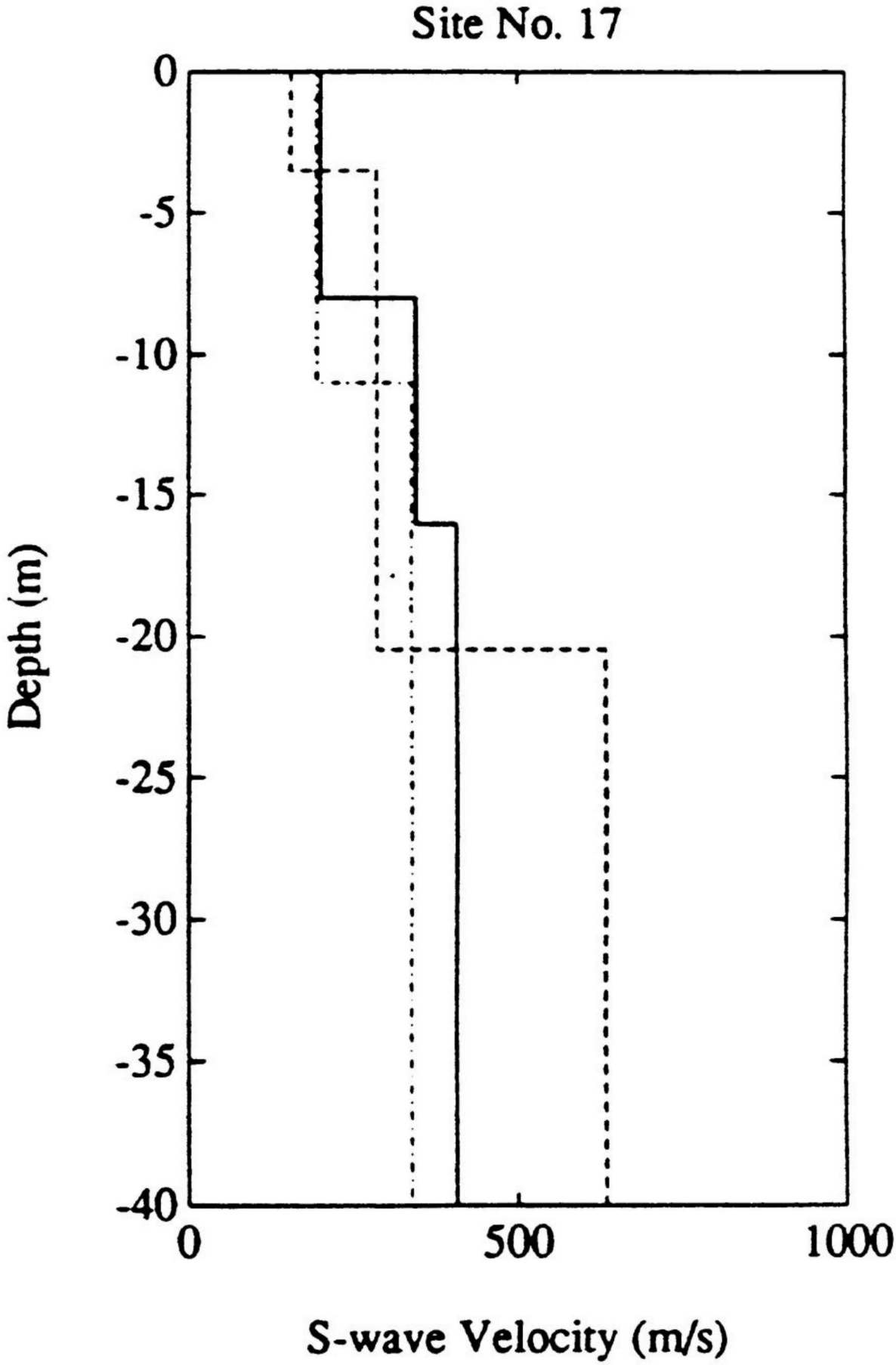

Site No. 16
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

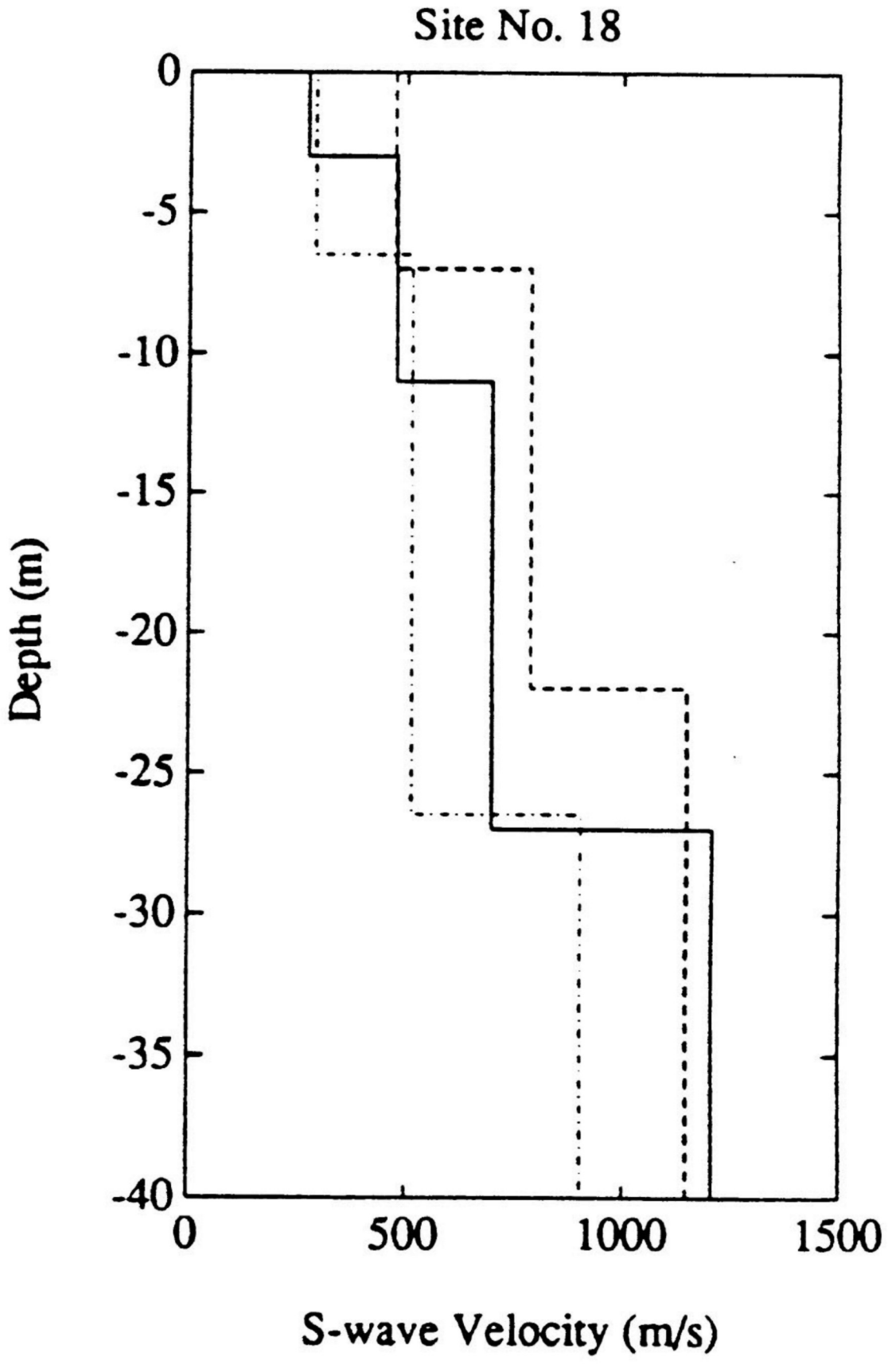

Site No. 17
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

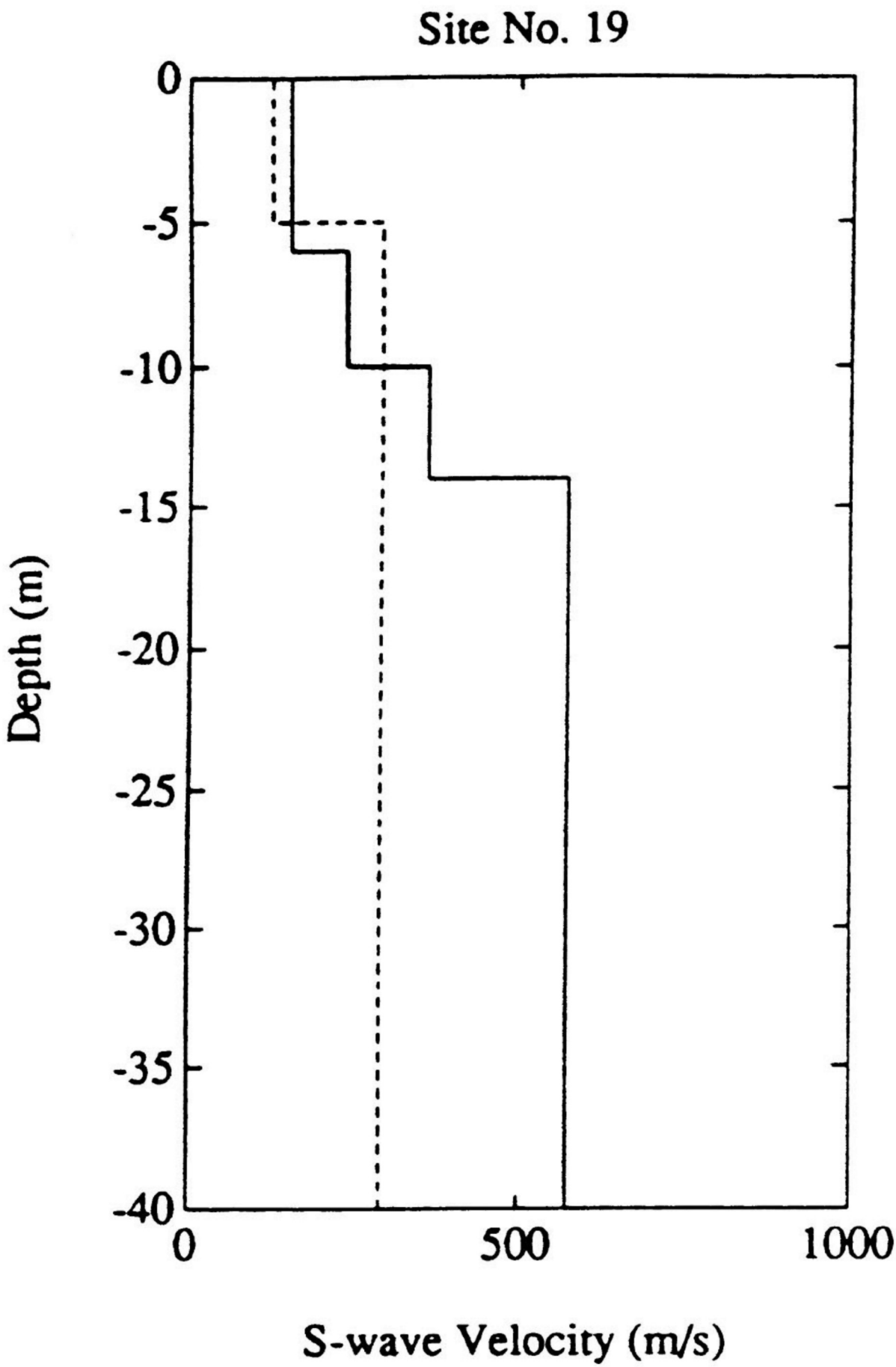

Site No. 18
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
1500
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

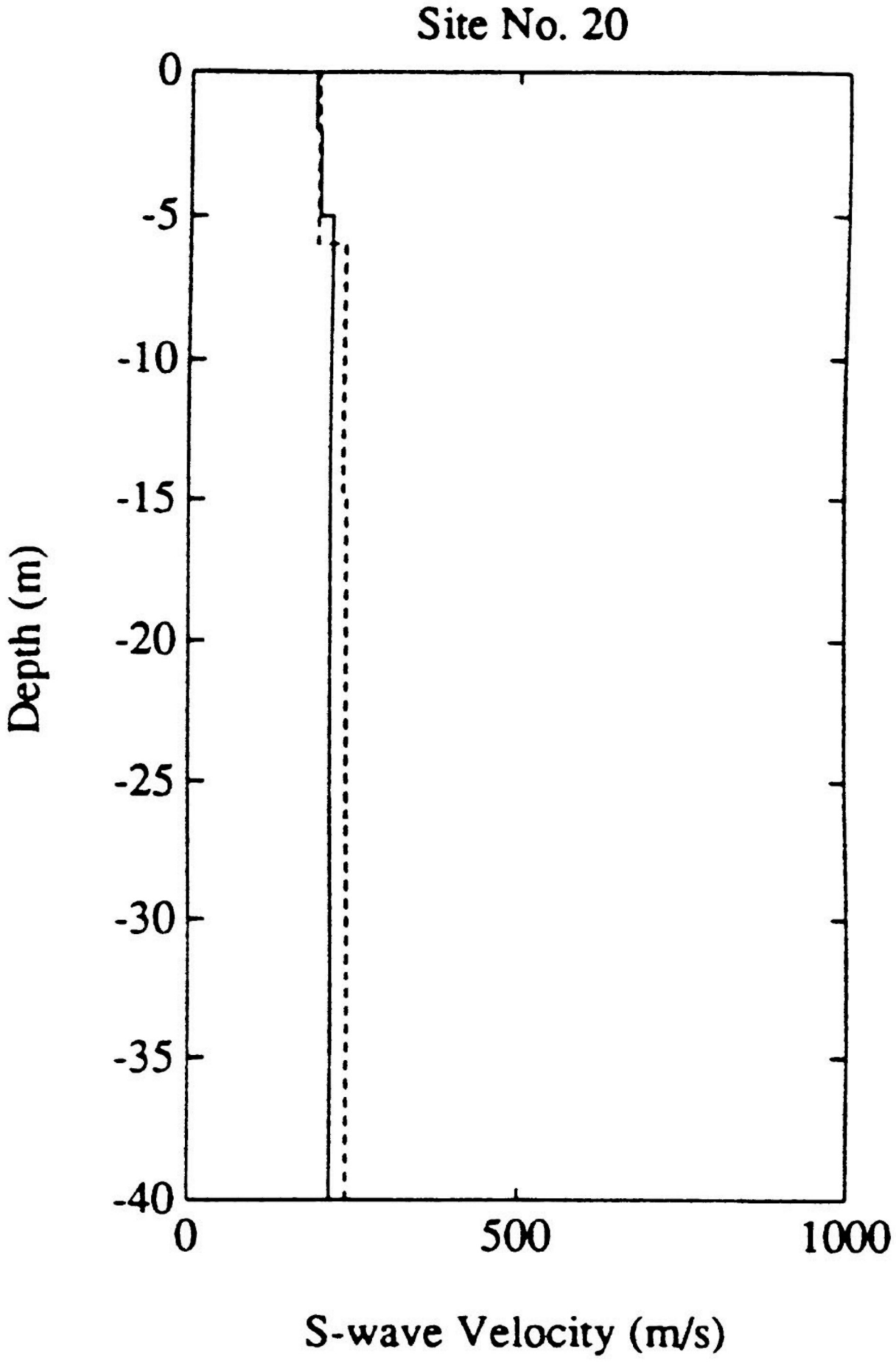

Site No. 19
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

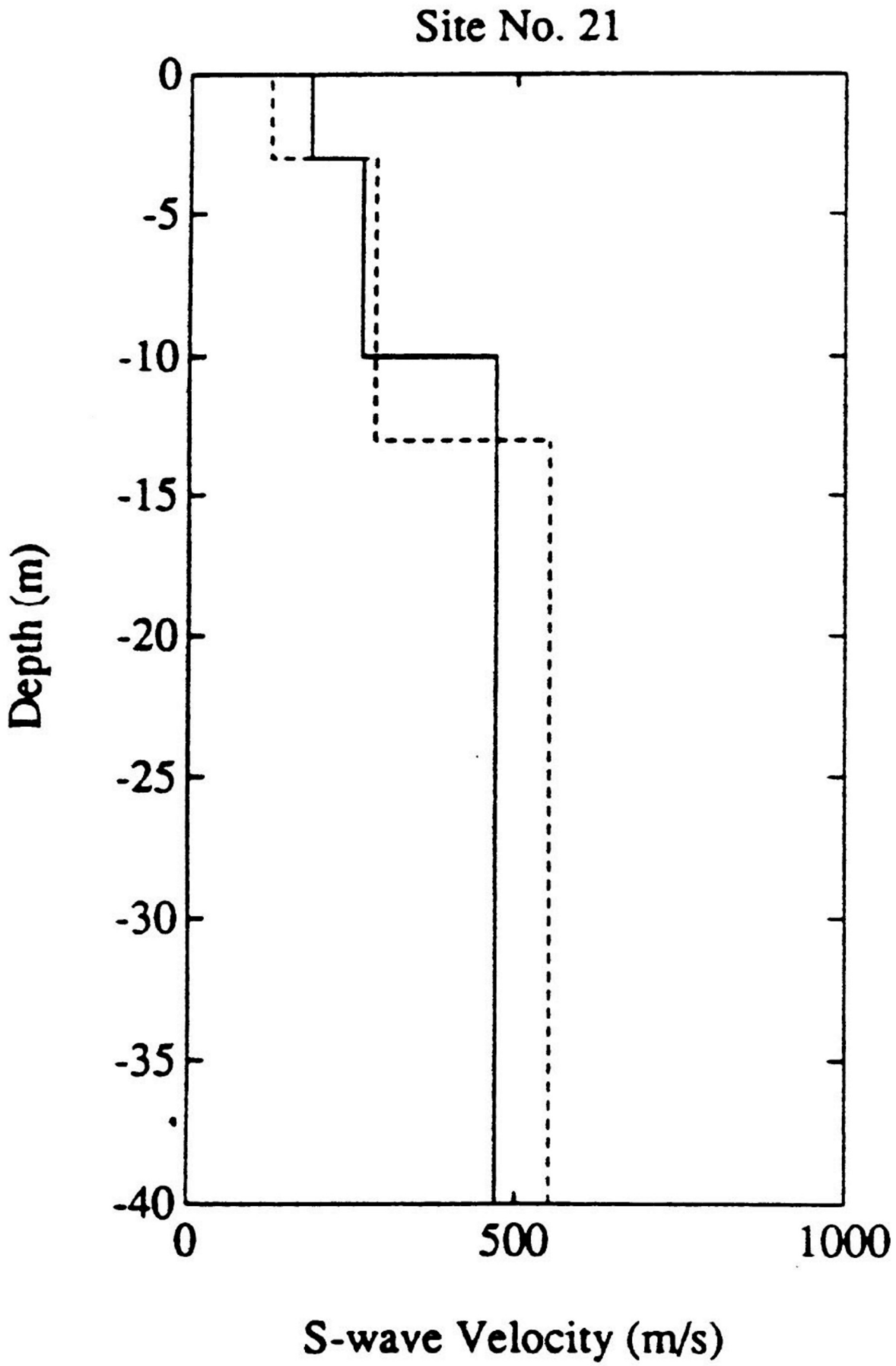

Site No. 20
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

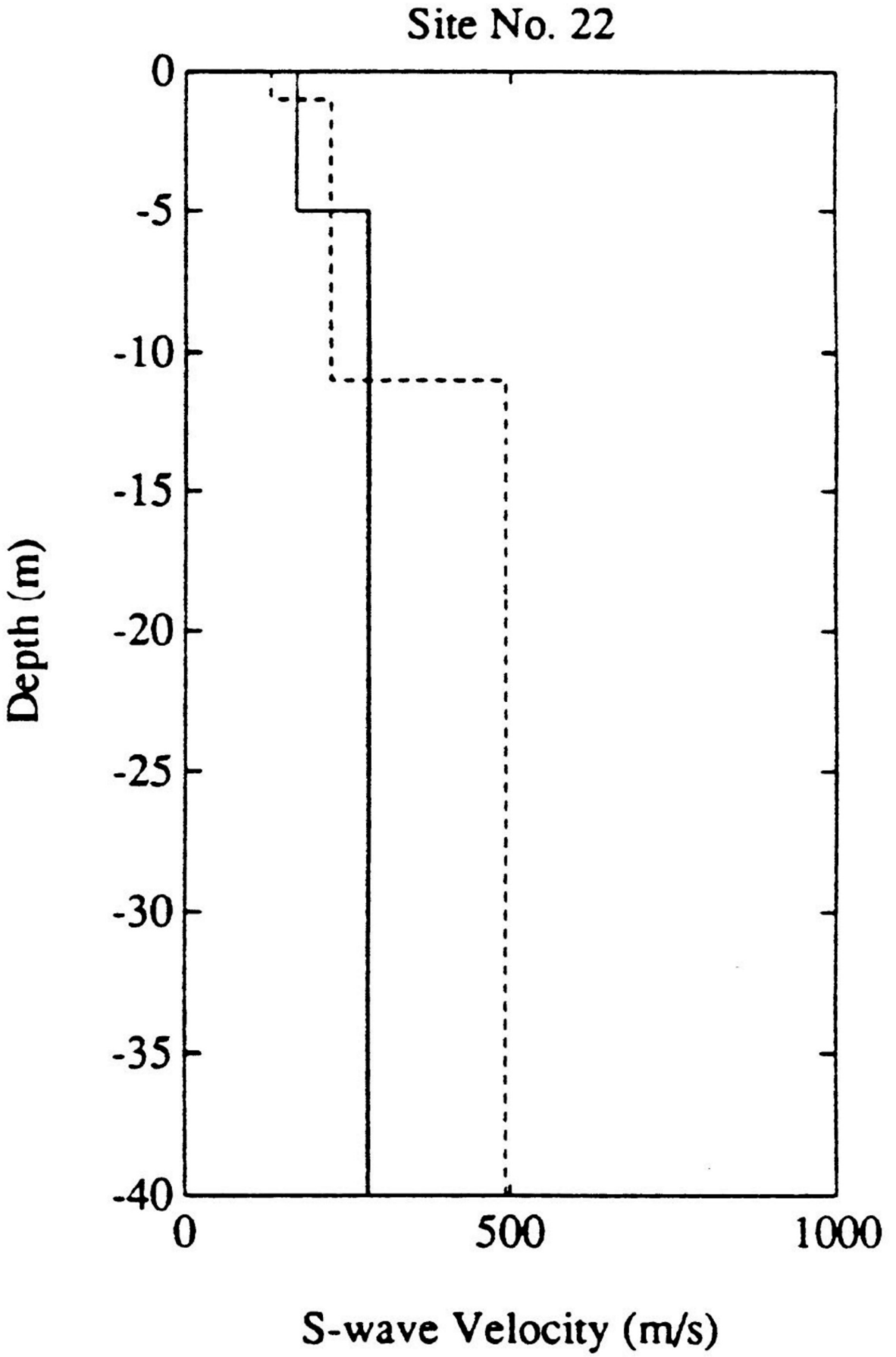

Site No. 21
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

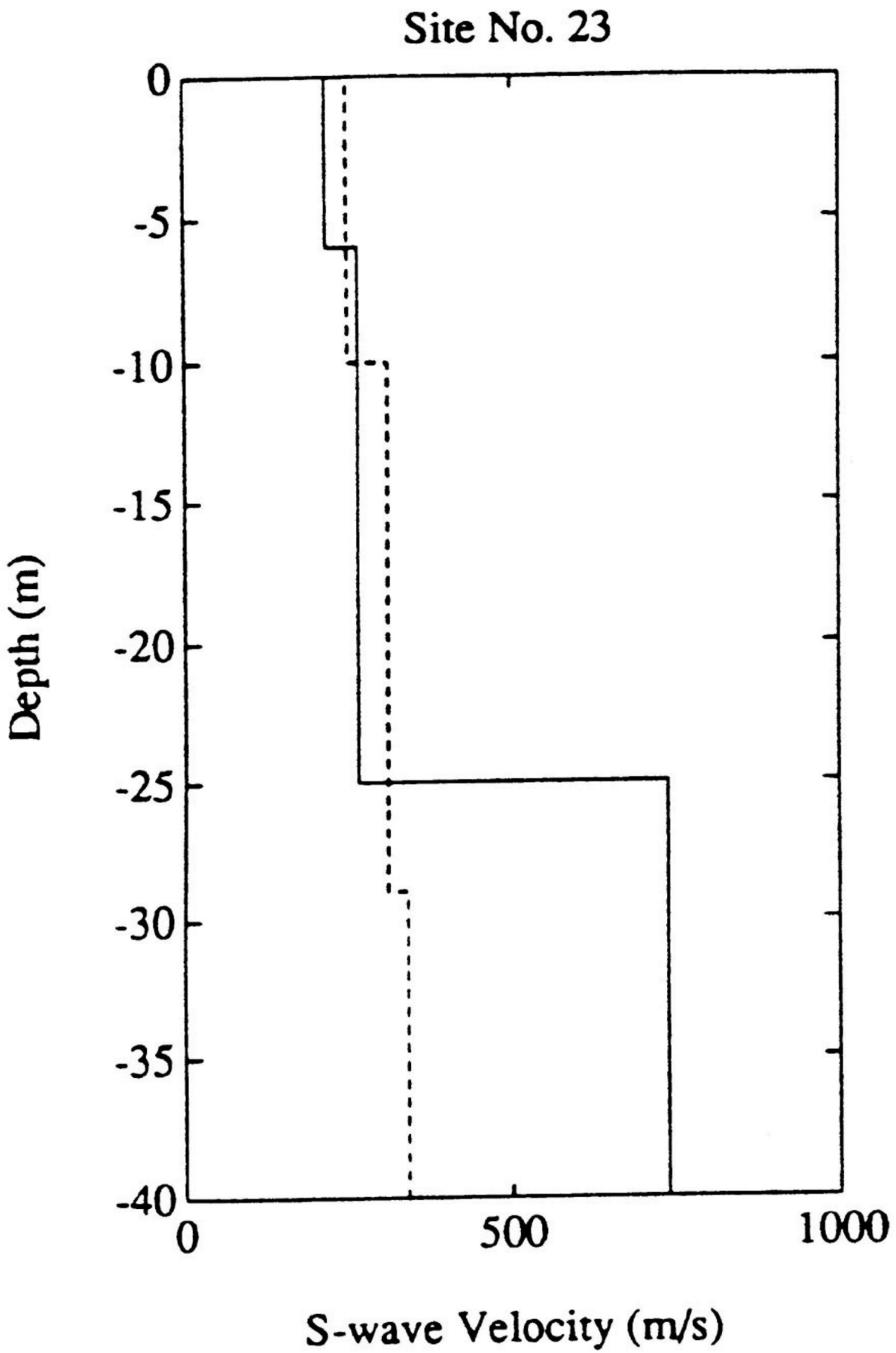

Site No. 22
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

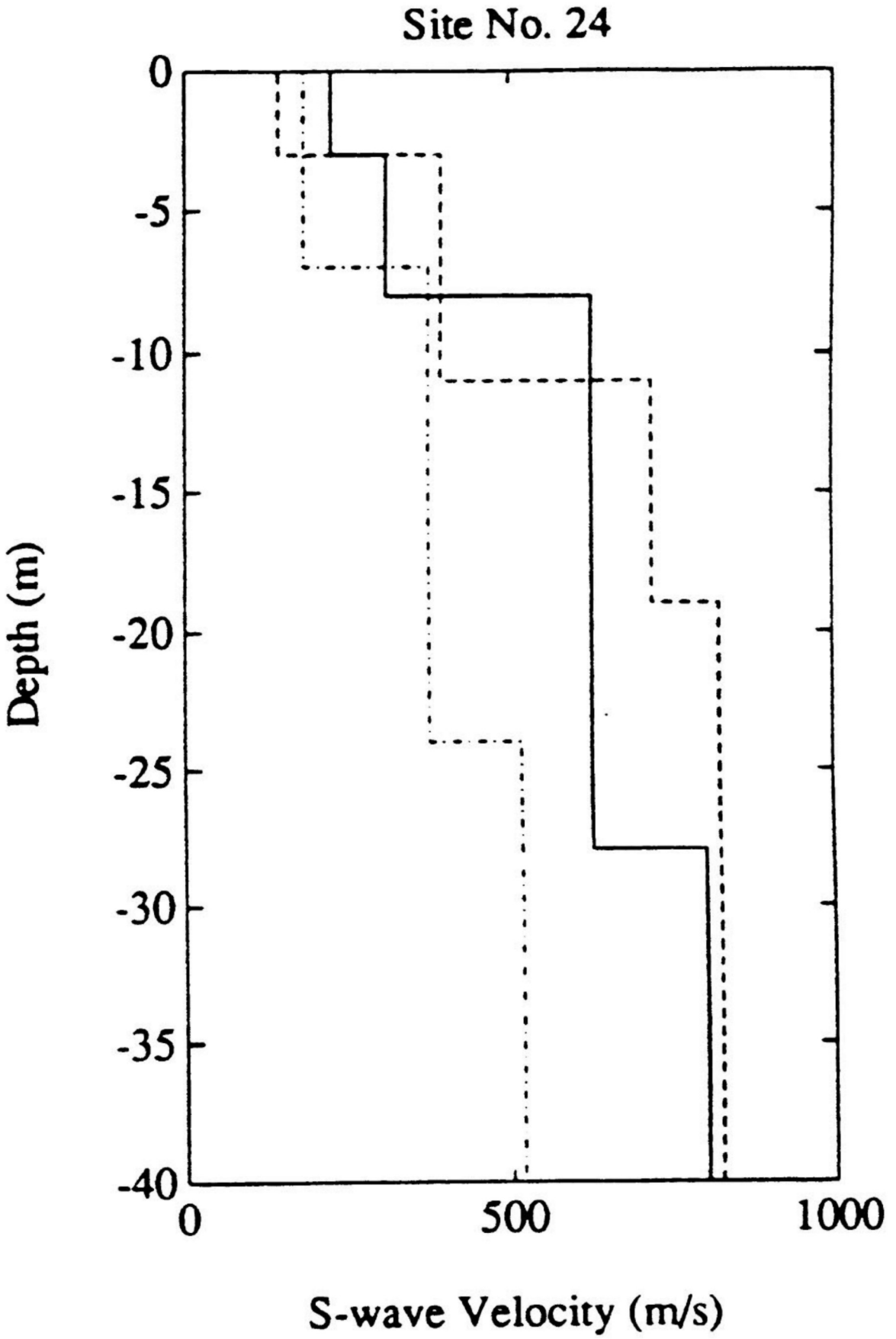

Site No. 23
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

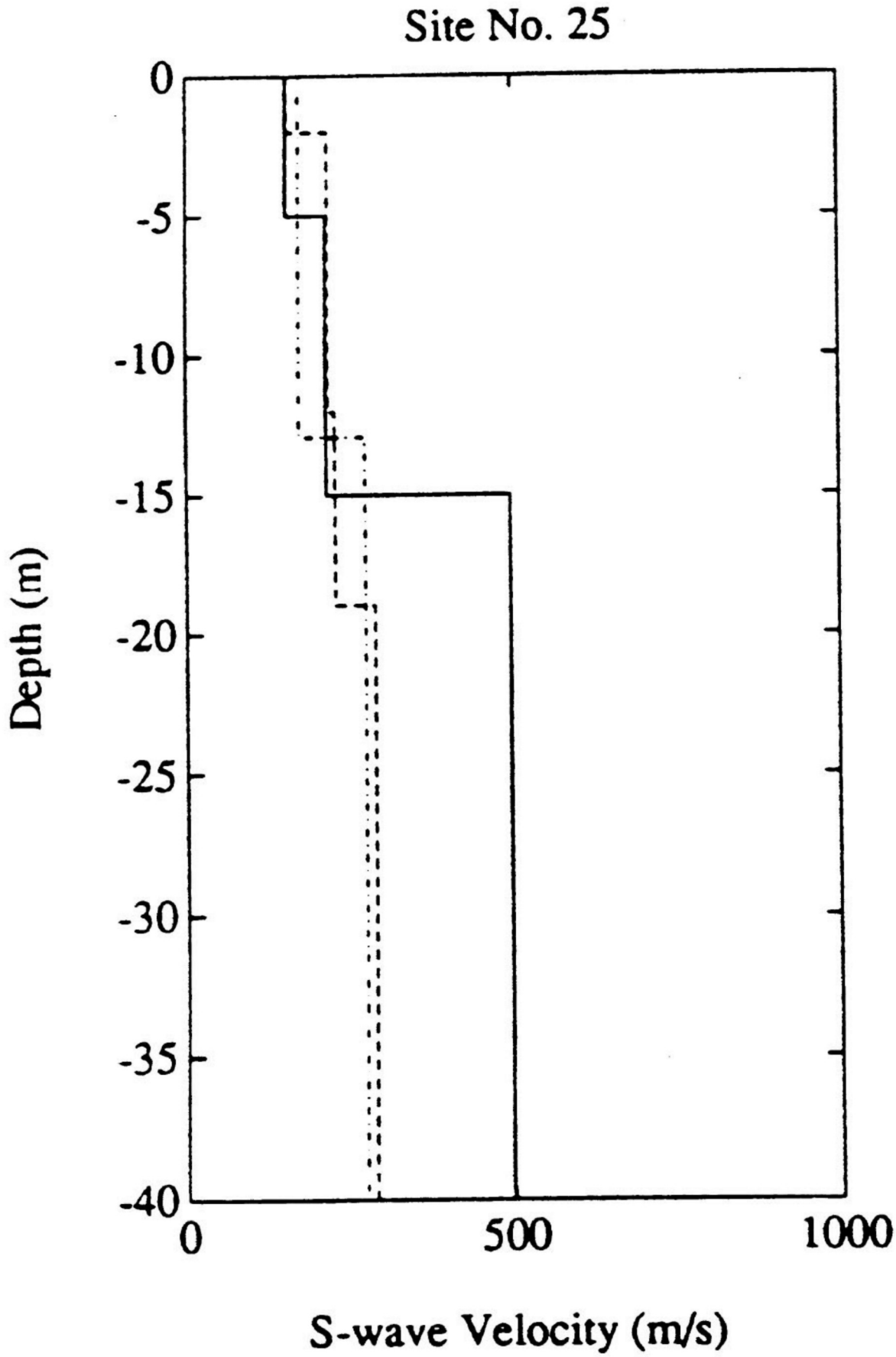

Site No. 24
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

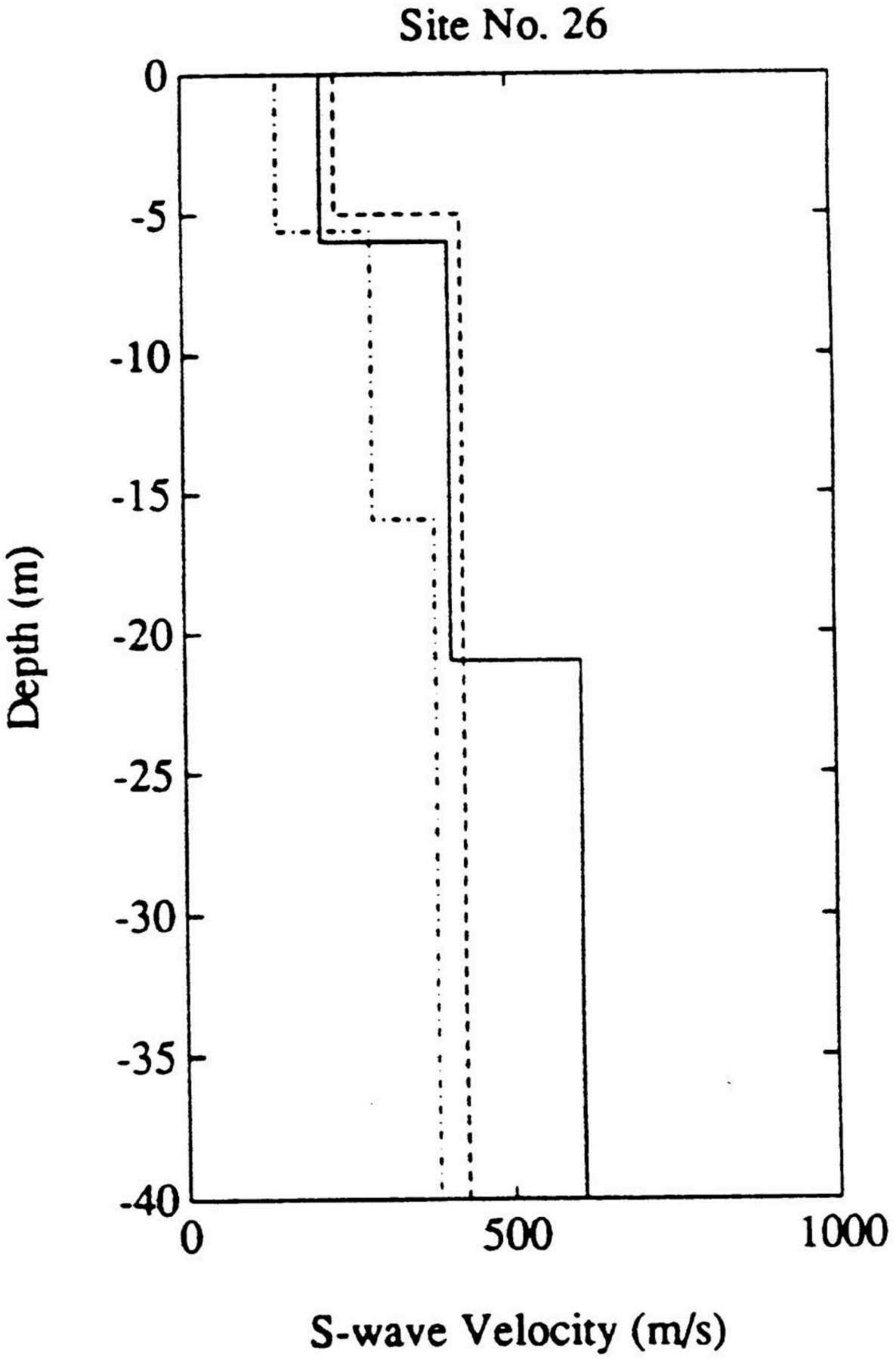

Site No. 25
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

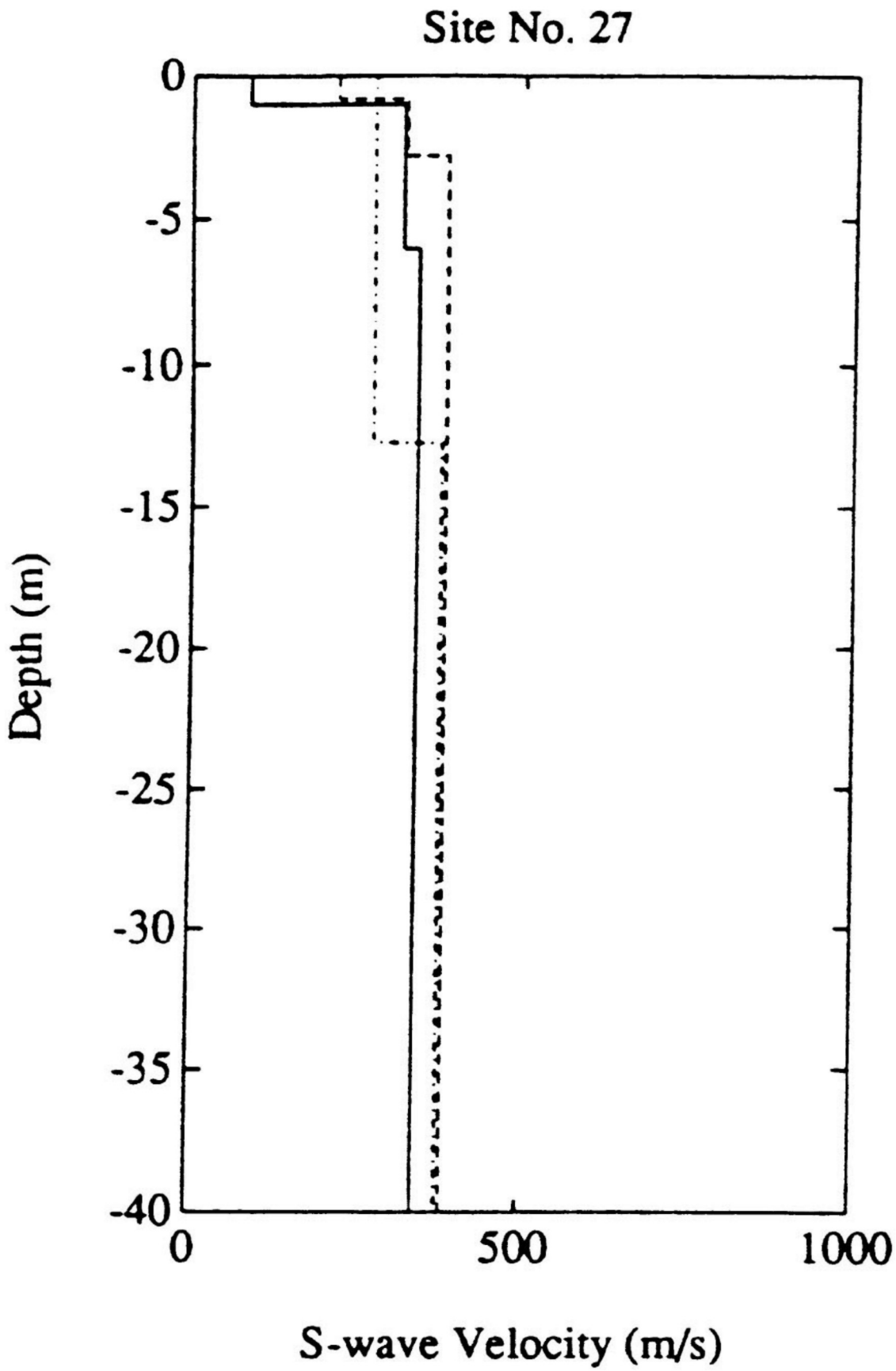

Site No. 26
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.

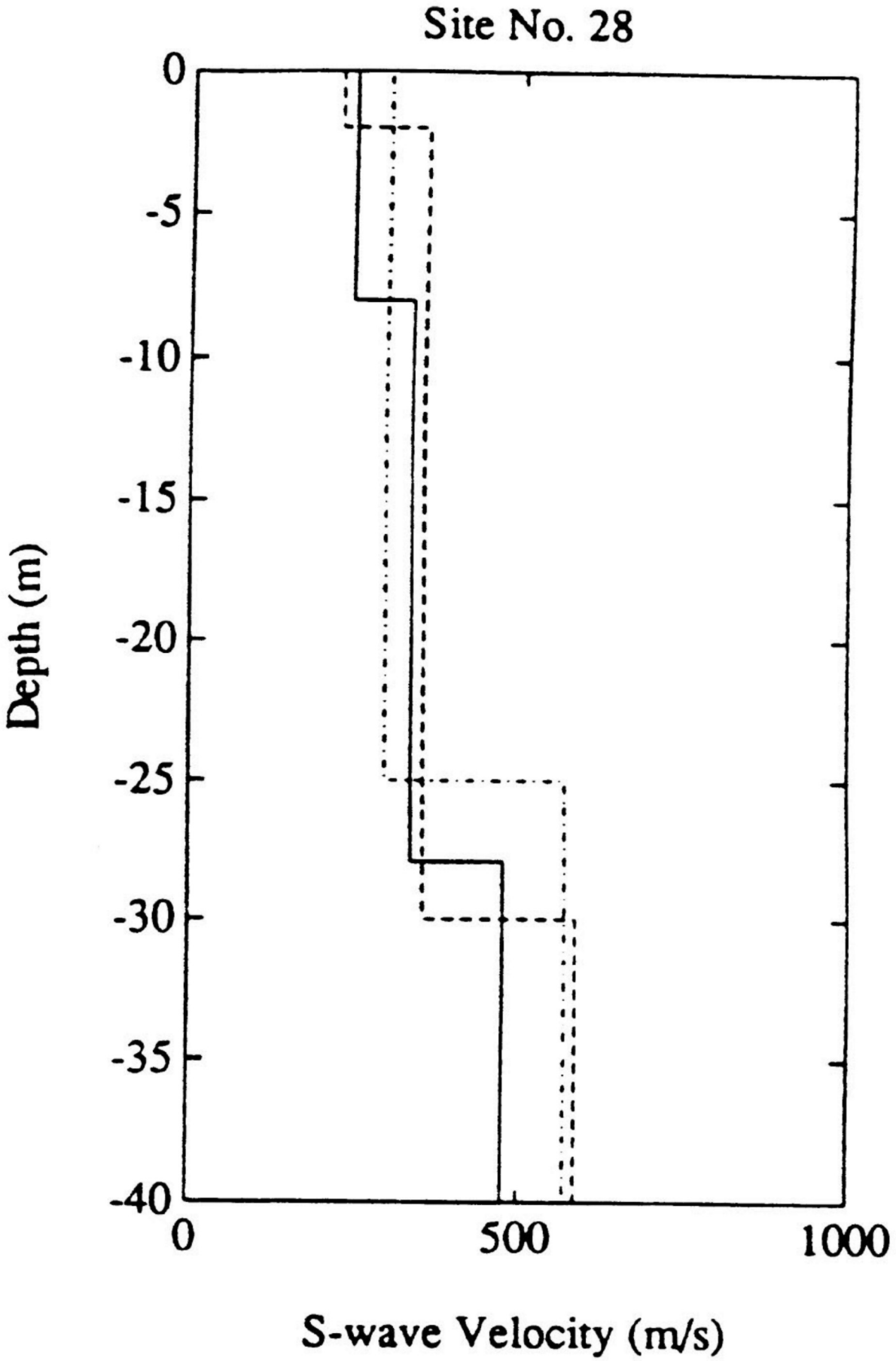

Site No. 27
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

C Shear Velocity Profiles: Plotted

This appendix provides the plots of shear velocity files obtained by inversion of the fundamental mode dispersion of Rayleigh waves (solid) and Love waves (dashed), and by refraction (dash-dotted lines). The site numbers are listed in Appendix A. A quality flag (1 for poor, 2 for fair, 3 for good) is assigned to each CSP gather of the 28 sites. The flags are listed in Table 1.

Site #	Name	SH FL	SV FL	β FL	CCR FL	Calc SR1	Nearby USGS Site	Calc SR2	SP SR	LP SR
1	rpgc	1	2	2	2	4.1				
2	rppk	1	2	3	1	5.0				
3	rvpk	1	1	1	1	3.4				
4	arpt	3	2	3	2	3.3	SLCWAP	3.3	11.0	8.0
5	soap	2	3	3	2	3.7				
6	uofu	1	2	3	3	3.1	SLCWAS	4.0	4.1	4.1
7	sspk	1	2	1	1	4.0	SLCUGM	3.4	2.5	2.8
8	lypk	2	2	1	1	3.0				
9	glen	3	2	3	1	3.1				
10	ftpk	1	1	2	1	3.3	SLCFOR	2.7	4.5	4.2
11	zcmi	2	2	3	3	3.2				
12	wvhy	2	3	3	3	4.4				
13	nowv	1	2	1	1	6.0	SLCMAG	10.1	5.5	6.2
14	dlpk	3	3	3	2	4.0				
15	cpwv	1	3	3	3	4.9				
16	sowv	2	3	3	1	3.0				
17	ecwv	1	2	2	1	3.3				
18	snrd	1	3	2	3	3.0				
19	cwrp	1	3	1	2	6.0				
20	mprt	2	2	3	2	2.0				
21	wvcp	1	2	3	2	3.0				
22	srpk	2	2	1	2	2.4				
23	krct	1	2	1	2	5.0				
24	airp	1	2	1	3	2.8				
25	nmid	1	1	1	2	4.5	SLCBAT	3.4	6.6	8.2
26	wjpk	2	3	2	3	3.2				
27	ssrd	1	2	3		2.0				
28	ddpk	1	1	3	2	2.7				

Table 1: Site quality flags and the calculated alluvium-to-bedrock maximum spectral amplification ratios for the 28 sites in the Salt Lake Valley. The entries SH FL, SV FL, β FL, and CCR FL indicates respectively if the SH CSP gather, SV CSP gather, consistency of the shear velocity profile obtained by refraction and (Love and Rayleigh) inversions, and the cross-correlation of the measured SV CSP gather with the computed Rayleigh wave CSP gather are poor (flag=1), fair (flag=2), or good (flag=3) for a site. The entries Calc SR1 and Calc SR2 are the maximum spectral ratios (in the range of 0-5 Hz) computed using the shear velocity profiles by the Rayleigh wave inversions and the USGS down-hole measurements respectively. The SP SR and LP SR are the spectral ratios computed from USGS's observed NTS seismic recordings. SP denotes a period band of 0.2-0.7 seconds; LP denotes a period band of 0.7-1.0 seconds. ratio computation.


Site No. 28
0
-5
-10
-15
-20
-25
-30
-35
-40
Depth (m)
0
500
1000
S-wave Velocity (m/s)

CONETEC

Seismic Wave Velocity Calculations

Job No.: 00-300
Client: Kleinfelder
Location Legacy Parkway
CPT Date: 5/1/00
CPT No.: SC-14-312

Geophone Offset (m): 0.20
Source Offset (m): 0.74

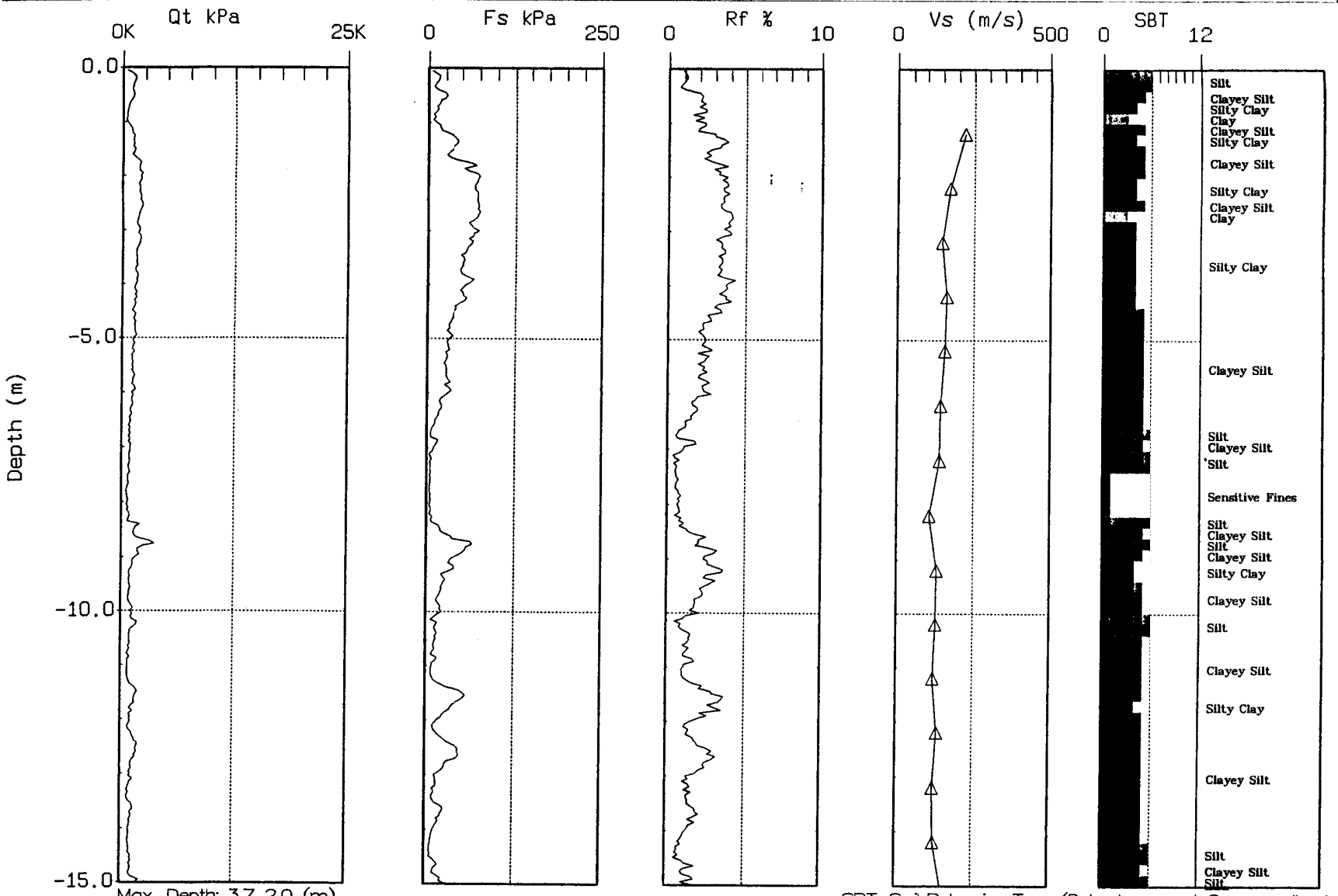
Test Depth (m)	Ray Path (m)	Incremental Distance (m)	Interval Depth (m)	Vs Interval Time (ms)	Vs Interval Velocity (m/s)
0.90	1.02				
1.90	1.85	0.84	1.20	3.81	219.3
2.90	2.80	0.95	2.20	5.50	171.9
3.90	3.77	0.97	3.20	6.62	147.1
4.90	4.76	0.98	4.20	6.06	162.5
5.90	5.75	0.99	5.20	6.35	155.9
6.90	6.74	0.99	6.20	6.91	143.7
7.90	7.74	0.99	7.20	7.04	141.3
8.90	8.73	1.00	8.20	9.17	108.6
9.90	9.73	1.00	9.20	7.47	133.4
10.90	10.73	1.00	10.20	7.66	130.2
11.90	11.72	1.00	11.20	8.15	122.4
12.90	12.72	1.00	12.20	7.35	135.8
13.90	13.72	1.00	13.20	7.99	125.0
14.90	14.72	1.00	14.20	7.83	127.5
15.90	15.72	1.00	15.20	6.39	156.3
16.90	16.72	1.00	16.20	6.87	145.4
17.90	17.72	1.00	17.20	4.15	240.7
18.90	18.71	1.00	18.20	4.63	215.8
19.90	19.71	1.00	19.20	4.00	249.8
20.90	20.71	1.00	20.20	4.05	246.7
21.90	21.71	1.00	21.20	4.64	215.4
22.90	22.71	1.00	22.20	5.50	181.7
23.90	23.71	1.00	23.20	5.01	199.5
24.90	24.71	1.00	24.20	5.01	199.5
25.90	25.71	1.00	25.20	4.03	248.0
26.90	26.71	1.00	26.20	3.91	255.7
27.90	27.71	1.00	27.20	3.79	263.8
28.90	28.71	1.00	28.20	4.03	248.1
29.90	29.71	1.00	29.20	3.79	263.8
30.90	30.71	1.00	30.20	4.29	233.0
31.90	31.71	1.00	31.20	4.06	246.2
32.90	32.71	1.00	32.20	4.29	233.0
33.90	33.71	1.00	33.20	4.17	239.7
34.90	34.71	1.00	34.20	3.05	327.8
35.90	35.71	1.00	35.20	3.49	286.5
36.90	36.71	1.00	36.20	3.50	285.7

CONETEC

Legacy Parkway

Site: SC-14-312
Location: STRUCTURE 14

Cone: 20 TON A 070
Date: 05:01:00 21:43



Max. Depth: 37.20 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 19

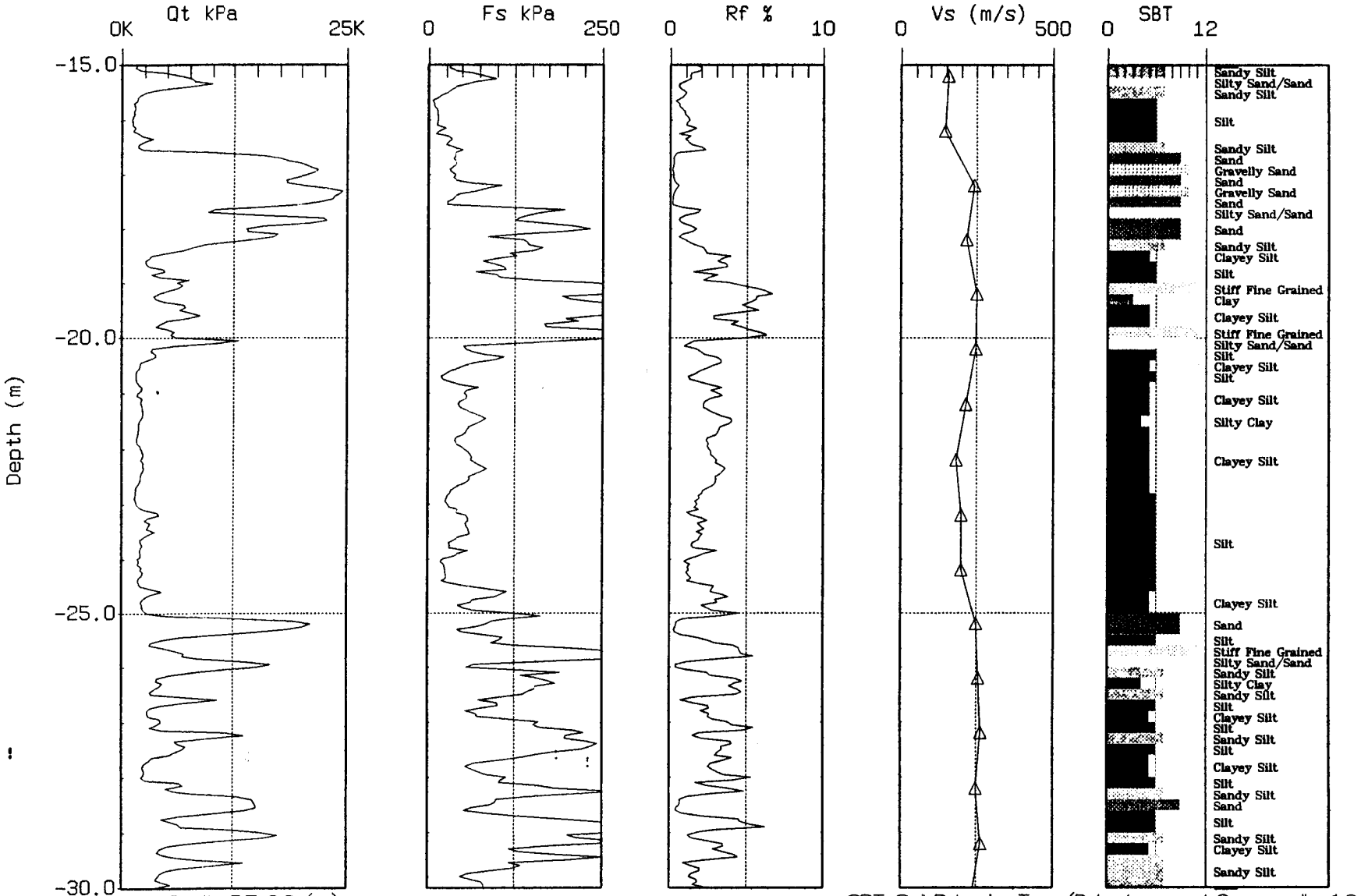
PLATE H-2

CONE TEC

Legacy Parkway

Site: SC-14-312
Location: STRUCTURE 14

Cone: 20 TON A 070
Date: 05:01:00 21:43



Max. Depth: 37.20 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 19

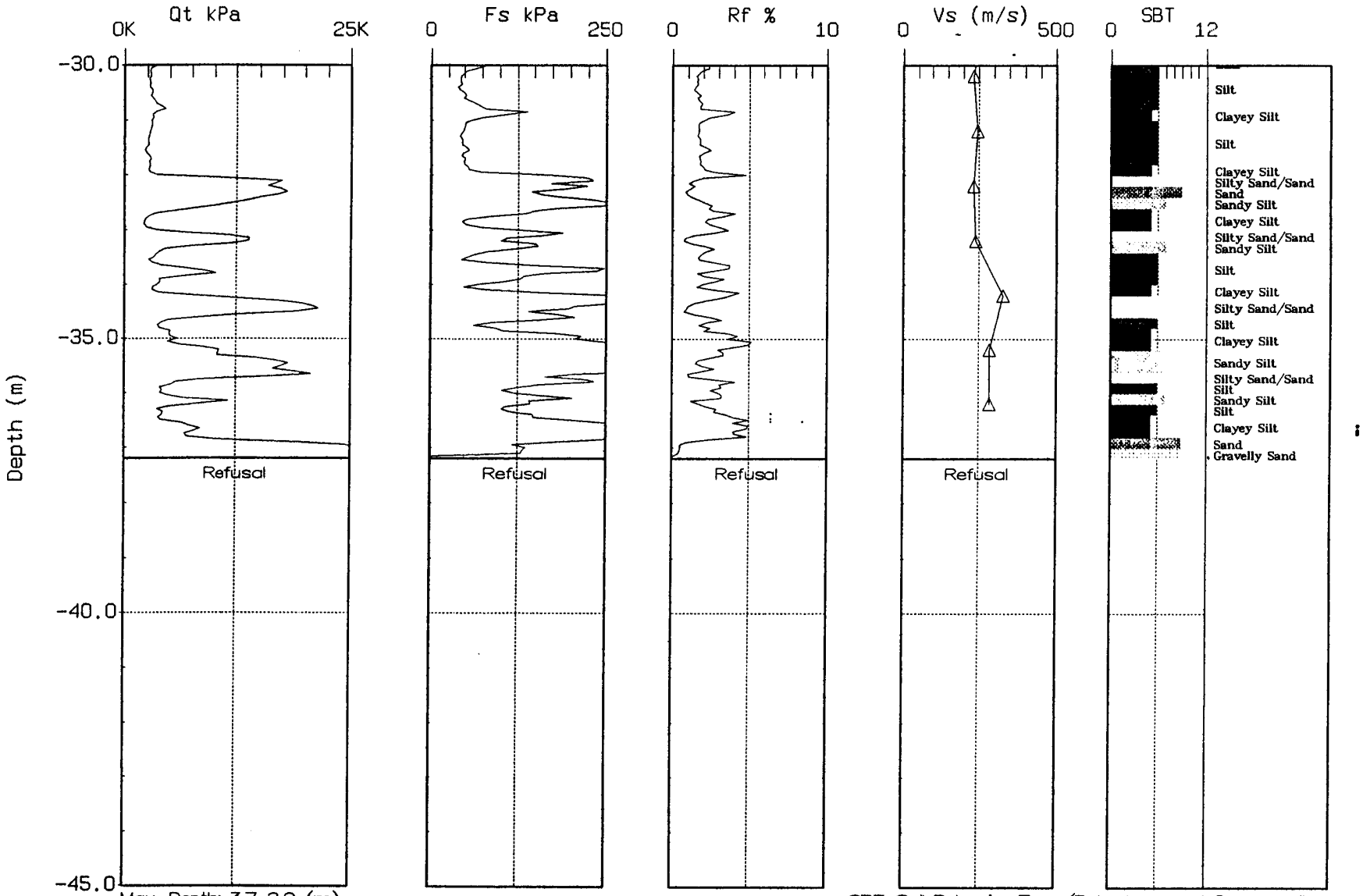
PLATE H-3

CONETEC

Legacy Parkway

Site: SC-14-312
Location: STRUCTURE 14

Cone: 20 TON A 070
Date: 05:01:00 21:43



Max. Depth: 37.20 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 19

PLATE H-4

CONETEC

Seismic Wave Velocity Calculations

Job No.: 00-300
Client: Kleinfelder
Location Legacy Parkway
CPT Date: 5/10/00
CPT No.: SC-15-361

Geophone Offset (m): 0.20
Source Offset (m): 0.61

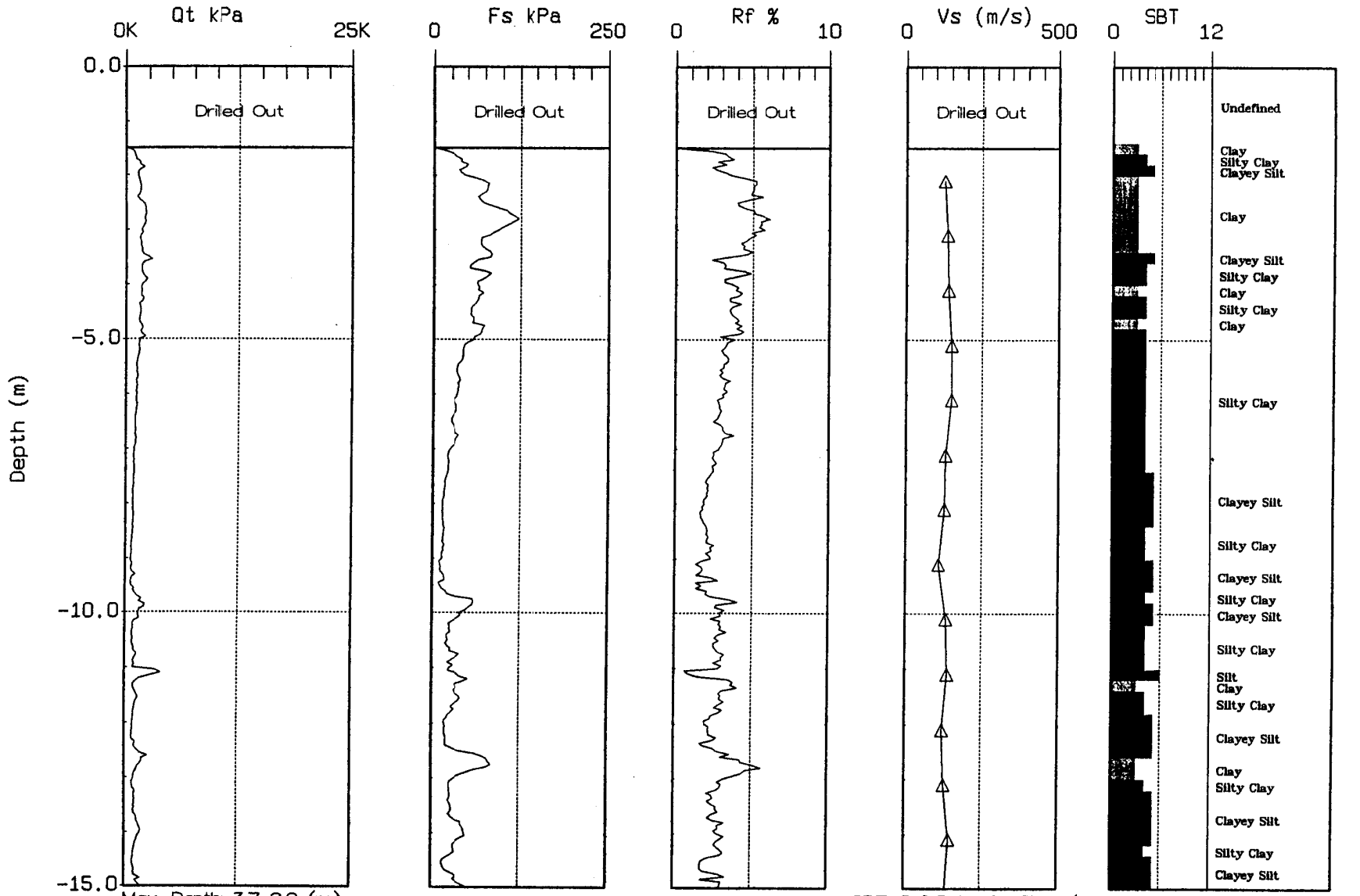
Test Depth (m)	Ray Path (m)	Incremental Distance (m)	Interval Depth (m)	Vs Interval Time (ms)	Vs Interval Velocity (m/s)
1.80	1.71				
2.80	2.67	0.96	2.10	7.52	127.4
3.80	3.65	0.98	3.10	7.14	137.4
4.80	4.64	0.99	4.10	7.14	138.5
5.80	5.63	0.99	5.10	6.58	150.9
6.80	6.63	1.00	6.10	6.58	151.2
7.80	7.62	1.00	7.10	7.52	132.5
8.80	8.62	1.00	8.10	7.71	129.3
9.80	9.62	1.00	9.10	9.02	110.6
10.80	10.62	1.00	10.10	7.42	134.5
11.80	11.62	1.00	11.10	7.19	138.9
12.80	12.61	1.00	12.10	8.04	124.2
13.80	13.61	1.00	13.10	7.61	131.3
14.80	14.61	1.00	14.10	6.77	147.6
15.80	15.61	1.00	15.10	7.33	136.3
16.80	16.61	1.00	16.10	7.19	139.0
17.80	17.61	1.00	17.10	6.63	150.7
18.80	18.61	1.00	18.10	6.90	144.8
19.80	19.61	1.00	19.10	4.80	208.2
20.80	20.61	1.00	20.10	4.73	211.3
21.80	21.61	1.00	21.10	4.16	240.3
22.80	22.61	1.00	22.10	3.91	255.7
23.80	23.61	1.00	23.10	4.40	227.2
24.80	24.61	1.00	24.10	5.62	177.9
25.80	25.61	1.00	25.10	5.98	167.2
26.80	26.61	1.00	26.10	4.89	204.4
27.80	27.61	1.00	27.10	4.64	215.5
28.80	28.61	1.00	28.10	4.04	247.5
29.80	29.61	1.00	29.10	3.42	292.3
30.80	30.61	1.00	30.10	3.73	268.0
31.80	31.61	1.00	31.10	4.13	242.1
32.80	32.61	1.00	32.10	3.76	265.9
33.80	33.61	1.00	33.10	3.76	265.9
34.80	34.61	1.00	34.10	4.21	237.5
35.80	35.61	1.00	35.10	4.14	241.5
36.80	36.61	1.00	36.10	3.31	302.1

CONETEC

Legacy Parkway

Site: SC-15-361
Location: STRUCTURE 15

Cone: 20 TON A 070
Date: 05:10:00 10:07



Max. Depth: 37.20 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 19

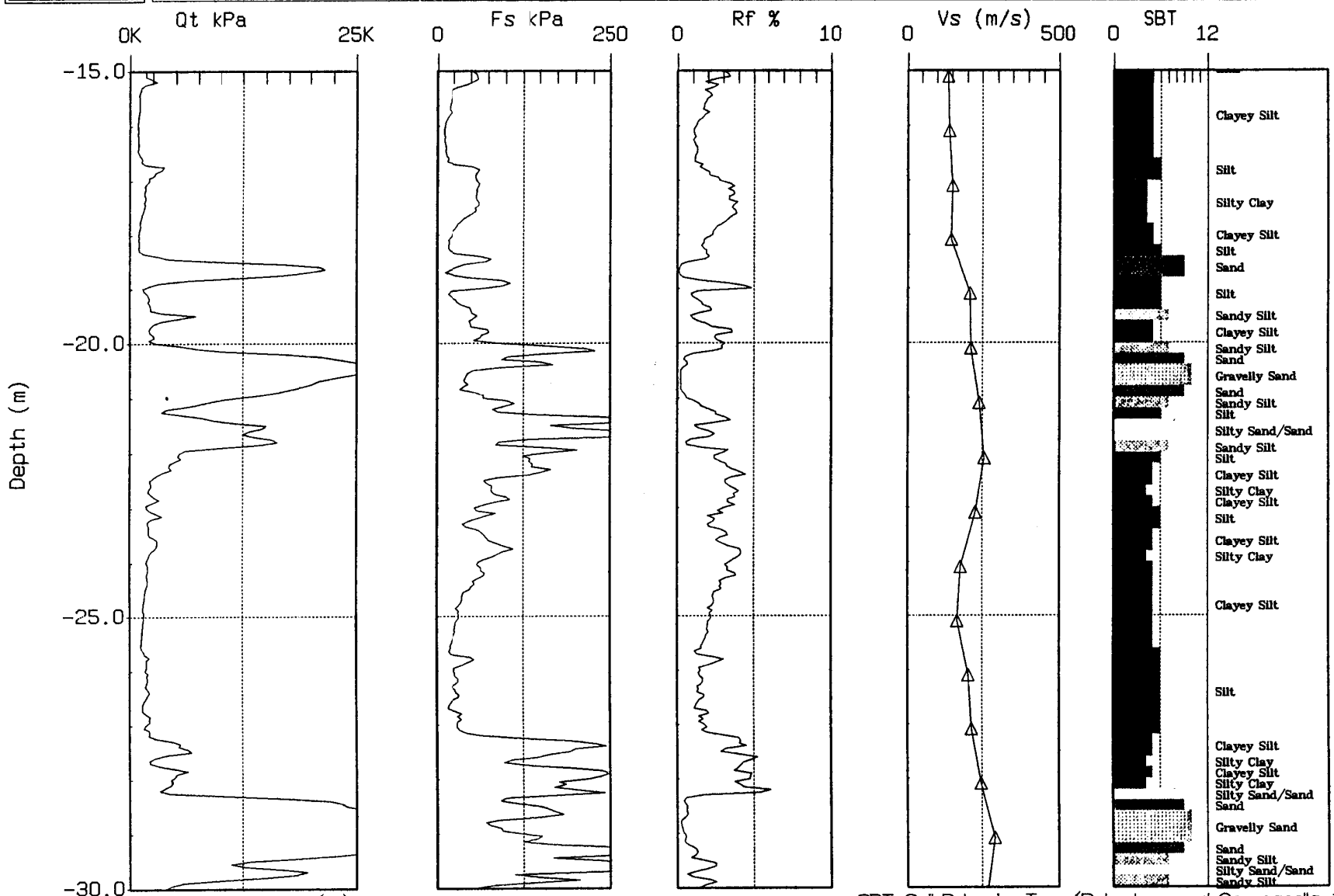
PLATE H-6

CONETEC

Legacy Parkway

Site: SC-15-361
Location: STRUCTURE 15

Cone: 20 TON A 070
Date: 05:10:00 10:07



Max. Depth: 37.20 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 19

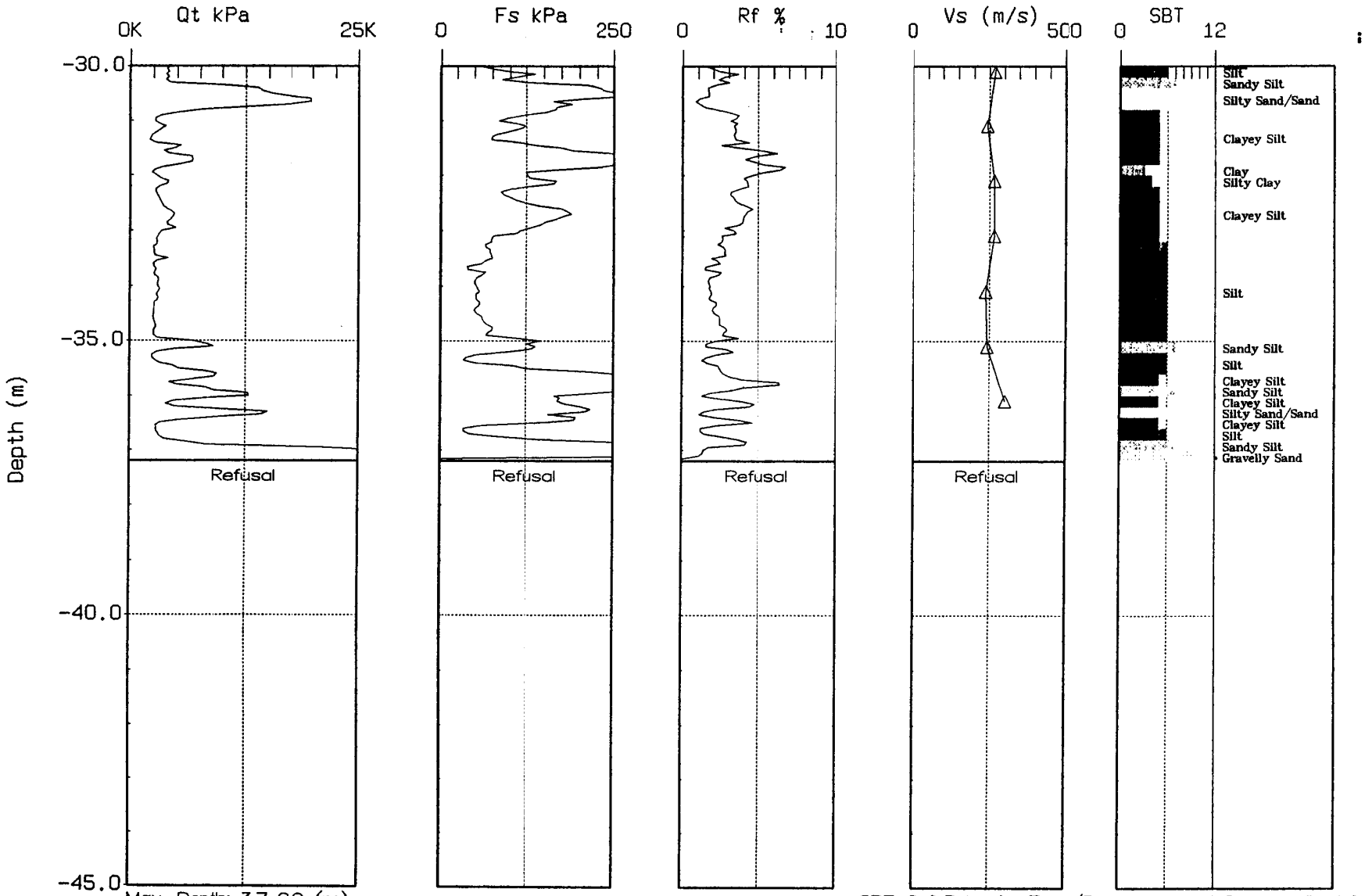
PLATE H-7

CONETEC

Legacy Parkway

Site: SC-15-361
Location: STRUCTURE 15

Cone: 20 TON A 070
Date: 05:10:00 10:07



Max. Depth: 37.20 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 19

PLATE H-8

CONETEC

Seismic Wave Velocity Calculations

Job No.: 00-300
Client: Kleinfelder
Location Legacy Parkway
CPT Date: 5/1/00
CPT No.: SC-33-358

Geophone Offset (m): 0.20
Source Offset (m): 0.56

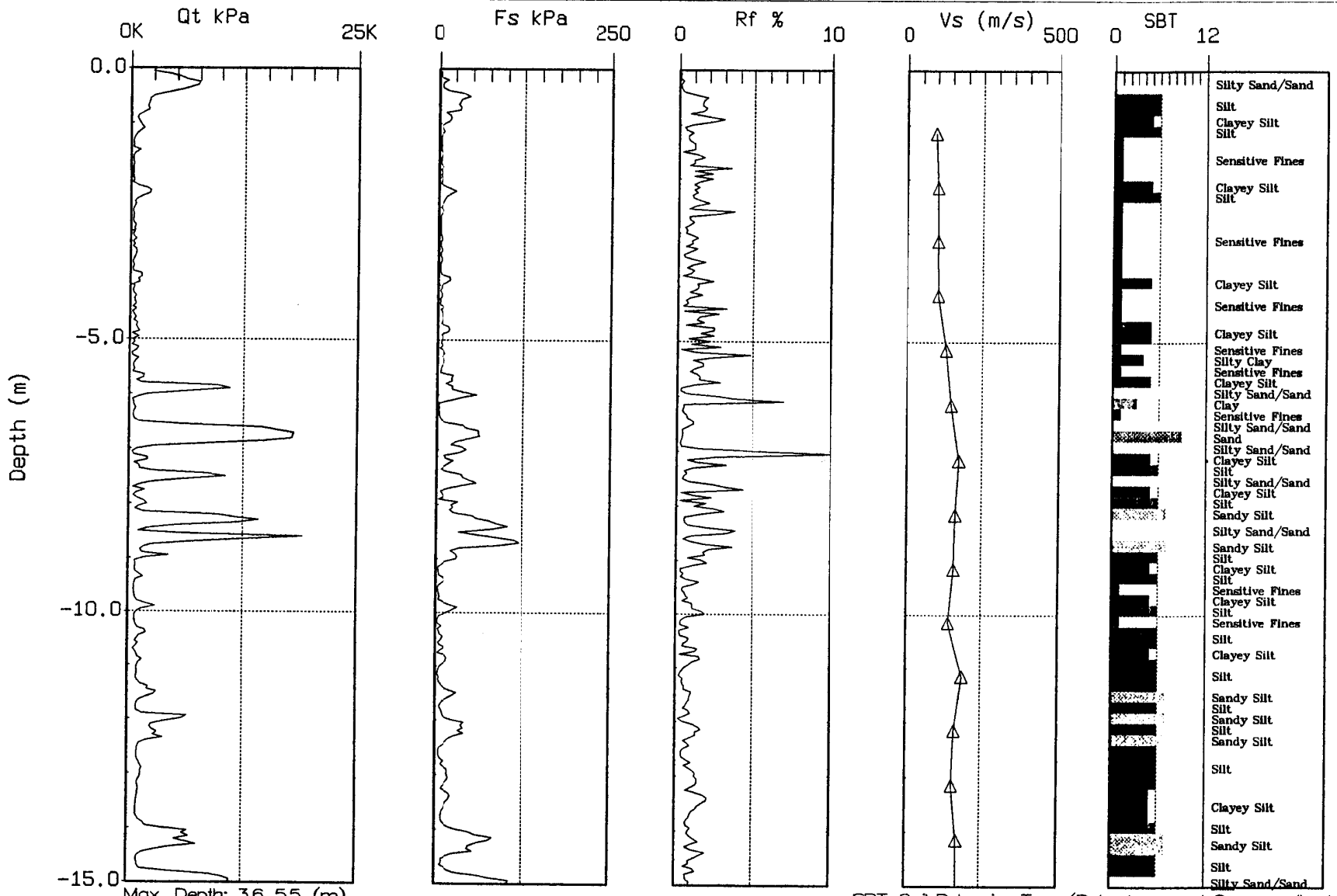
Test Depth (m)	Ray Path (m)	Incremental Distance (m)	Interval Depth (m)	Vs Interval Time (ms)	Vs Interval Velocity (m/s)
0.85	0.86				
1.85	1.74	0.88	1.15	9.40	94.1
2.85	2.71	0.97	2.15	9.59	100.7
3.85	3.69	0.98	3.15	9.58	102.7
4.85	4.68	0.99	4.15	9.40	105.4
5.85	5.68	0.99	5.15	7.52	132.2
6.85	6.67	1.00	6.15	6.58	151.3
7.85	7.67	1.00	7.15	5.64	176.8
8.85	8.67	1.00	8.15	6.01	166.0
9.85	9.67	1.00	9.15	6.21	160.7
10.85	10.66	1.00	10.15	6.91	144.5
11.85	11.66	1.00	11.15	5.27	189.5
12.85	12.66	1.00	12.15	6.01	166.2
13.85	13.66	1.00	13.15	6.32	158.1
14.85	14.66	1.00	14.15	5.71	175.0
15.85	15.66	1.00	15.15	5.72	174.7
16.85	16.66	1.00	16.15	6.16	162.2
17.85	17.66	1.00	17.15	5.57	179.4
18.85	18.66	1.00	18.15	5.86	170.6
19.85	19.66	1.00	19.15	6.62	151.0
20.85	20.66	1.00	20.15	5.03	198.7
21.85	21.66	1.00	21.15	4.37	228.8
22.85	22.66	1.00	22.15	5.07	197.2
23.85	23.66	1.00	23.15	4.37	228.8
24.85	24.66	1.00	24.15	4.65	215.0
25.85	25.66	1.00	25.15	4.94	202.4
26.85	26.66	1.00	26.15	4.93	202.8
27.85	27.66	1.00	27.15	3.67	272.4
28.85	28.66	1.00	28.15	3.66	273.2
29.85	29.66	1.00	29.15	4.09	244.5
30.85	30.66	1.00	30.15	3.71	269.5
31.85	31.65	1.00	31.15	3.67	272.4
32.85	32.65	1.00	32.15	4.04	247.5
33.85	33.65	1.00	33.15	3.85	259.7
34.85	34.65	1.00	34.15	4.14	241.5
35.85	35.65	1.00	35.15	3.38	295.8
36.55	36.35	0.70	36.00	2.35	297.8

CONETEC

Legacy Parkway

Site: SC-33-358
Location: STRUCTURE 33

Cone: 20 TON A 070
Date: 05:04:00 18:34



Max. Depth: 36.55 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 19

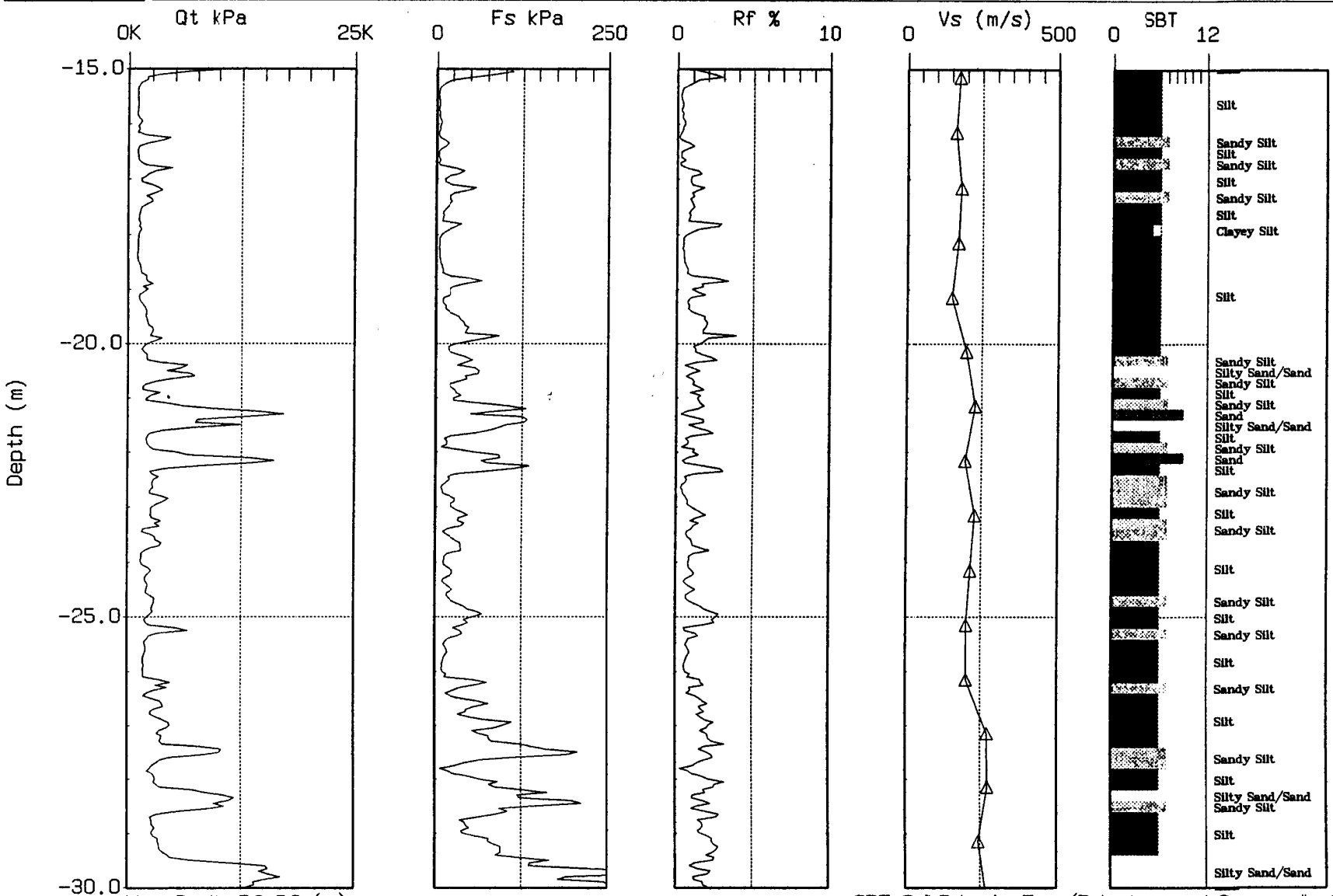
PLATE H-10

CONETEC

Legacy Parkway

Site: SC-33-358
Location: STRUCTURE 33

Cone: 20 TON A 070
Date: 05:04:00 18:34



Max. Depth: 36.55 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 19

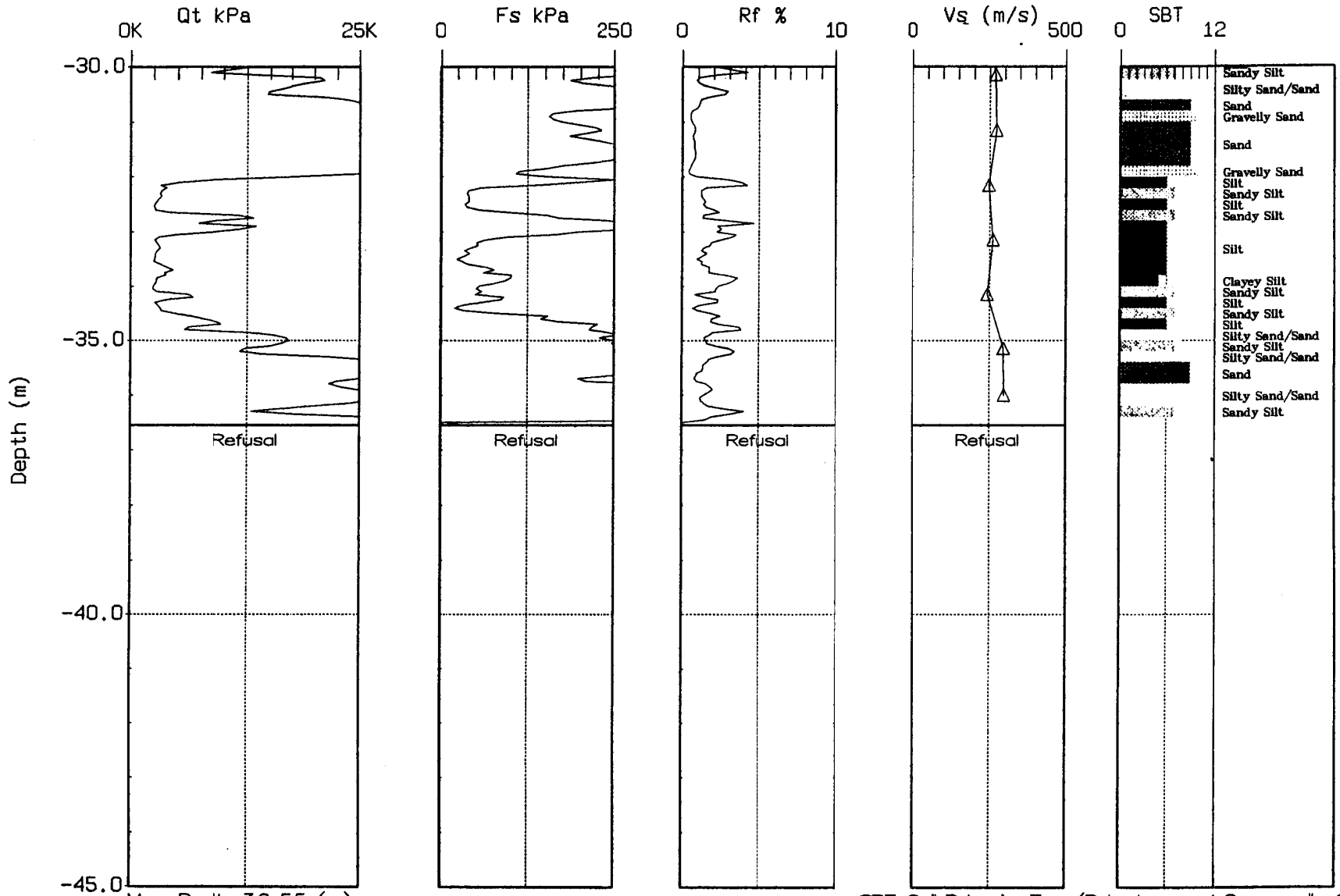
PLATE H-11

CONETEC

Legacy Parkway

Site: SC-33-358
Location: STRUCTURE 33

Cone: 20 TON A 070
Date: 05:04:00 18:34



Max. Depth: 36.55 (m)
Depth Inc.: 0.05 (m)

SBT: Soil Behavior Type (Robertson and Campanella 19

PLATE H-12

TABLE I

RESULTS OF DOWNHOLE SHEAR WAVE SURVEY, BORING B-2, OGDEN MUNICIPAL BUILDING, OGDEN, UTAH

DEPTH (ft.)	Vs (ft./sec.)	G (lb./ft.^{2})	E (lb./ft.^{2})
0- 5	861	2.77 x 10E6	7.76 x 10E6
5-10	666	1.65 "	4.62 "
10-15	1053	4.66 "	12.58 "
15-20	1053	4.66 "	12.58 "
20-25	870	2.82 "	7.90 "
25-30	800	2.39 "	6.70 "
30-35	714	1.90 "	5.32 "
35-40	833	2.56 "	7.17 "
40-45	870	2.82 "	7.90 "
45-50	714	1.92 "	5.34 "
50-55	909	3.08 "	8.62 "
55-60	952	3.38 "	9.46 "
60-65	833	2.56 "	7.17 "
65-70	869	2.82 "	7.90 "
70-75	833	2.56 "	7.17 "
75-80	869	2.82 "	7.90 "
80-85	833	2.56 "	7.17 "
85-90	741	2.05 "	5.74 "
90-95	770	2.21 "	6.19 "
93-98	817	2.49 "	6.97 "

Vp = compressional wave velocity
Vs = shear wave velocity

p = Poissons' ratio
G = shear modulus
E = Young's modulus

soil unit weights used:

0 - 10'	120 pcf
10- 20'	135 pcf
15-100'	120 pcf

Poissons' ratio assumed:

0 - 10'	.40
10- 20'	.35
20-100'	.40

PROJECT Ogden Municipal Building
2500 Washington Boulevard, Ogden, Utah

LOG OF TEST BORING NO. B-2

JOB NO. 7-817-000786 DATE 03-11-97

RIG TYPE CME 550
BORING TYPE 3-3/4" ID Hollow-Stem Auger
SURFACE ELEV.
DATUM

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/foot 140 lb. 30" free-fall drop hammer	Dry Density lbs per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
0								CL FILL	very moist soft	**SANDY CLAY** with major roots (topsoil) to 4"; fine to coarse sand; dark brown, FILL
								GM FILL	moist medium dense	**SANDY GRAVEL** with silt; fine to coarse sand; fine and coarse gravel; dark brown, FILL
5				D	12	82	34.9	CL	moist stiff	**SANDY CLAY**; fine sand; dark brown to black
										grades to brown
								GP/ GM	slightly moist medium dense to dense	**SANDY GRAVEL** with trace silt; fine to coarse sand; fine and subrounded to rounded coarse gravel and small cobbles; brown
10				D	60					
15				D	60				saturated dense	grades with some silt
20				D	37				saturated medium dense	
25										

GROUNDWATER

DEPTH	HOUR	DATE
13.6	14:47	03-10-97
13.6	12:00	04-17-97

SAMPLE TYPE

A - Auger cuttings
S - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. thin-walled Shelby tube.
D - 3 1/4" O.D. 2.42" I.D. tube sample.
C - California Split Spoon Sample

AGRA
Earth & Environmental

FIGURE 4B

PROJECT Ogden Municipal Building
2500 Washington Boulevard, Ogden, Utah

LOG OF TEST BORING NO. B-2

JOB NO. 7-817-000786 DATE 03-11-97

RIG TYPE CME 550
BORING TYPE 3-3/4" ID Hollow-Stem Auger
SURFACE ELEV.
DATUM

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/foot 140 lb. 30-inch free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
25				D	11					
								CL	saturated medium stiff to stiff	**SILTY CLAY TO CLAY** with occasional thin seams of silt and fine sand; seams to 1/8"; brown
30				D	11	94	29.5			
35				D	10	85	35.5			
40				D	10	86	32.4			occasional silt and fine silty sand seams
45				D	13	105	22.2		stiff	grades with more silt and fine sand seams
50										

GROUNDWATER

	DEPTH	HOUR	DATE
▽	13.6	14:47	03-10-97
▼	13.6	12:00	04-17-97

SAMPLE TYPE

A - Auger cuttings
S - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. thin-walled Shelby tube.
D - 3 1/4" O.D. 2.42" I.D. tube sample.
C - California Split Spoon Sample

AGRA Earth & Environmental

FIGURE 4B (con't)

PROJECT Ogden Municipal Building
2500 Washington Boulevard, Ogden, Utah

LOG OF TEST BORING NO. B-2

JOB NO. 7-817-000786 DATE 03-11-97

RIG TYPE CME 550
BORING TYPE 3-3/4" ID Hollow-Stem Auger
SURFACE ELEV.
DATUM

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/foot 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
50				D	17	106	22.0	CL	saturated stiff	CLAY with occasional fine sandy silt seams; seams to 1/4"; brown with some gray
										possible gravel in drilling at 53.5'
55										
60				D	14	101	24.7			
65										
70				D	14					
75										

GROUNDWATER

	DEPTH	HOUR	DATE
▽	13.6	14:47	03-10-97
▼	13.6	12:00	04-17-97

SAMPLE TYPE

A - Auger cuttings
S - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. thin-walled Shelby tube.
D - 3 1/4" O.D. 2.42" I.D. tube sample.
C - California Split Spoon Sample

AGRA Earth & Environmental

FIGURE 4B (con't)

PROJECT Ogden Municipal Building
2500 Washington Boulevard, Ogden, Utah

LOG OF TEST BORING NO. B-2

JOB NO. 7-817-000786 DATE 03-11-97

RIG TYPE CME 550
BORING TYPE 3-3/4" ID Hollow-Stem Auger
SURFACE ELEV.
DATUM

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/foot 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
75										
80				D	19					thin silt/sand seams exhibit inclined bedding
85										
90				D	17	103	23.6			grades with less silt layers
										possible gravel layer 93.5' to 94.5'
95										
									very stiff	
100										

GROUNDWATER

	DEPTH	HOUR	DATE
▽	13.6	14:47	03-10-97
▼	13.6	12:00	04-17-97

SAMPLE TYPE

A - Auger cuttings
S - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. thin-walled Shelby tube.
D - 3 1/4" O.D. 2.42" I.D. tube sample.
C - California Split Spoon Sample

AGRA Earth & Environmental

FIGURE 4B (con't)

PROJECT Ogden Municipal Building
2500 Washington Boulevard, Ogden, Utah

LOG OF TEST BORING NO. B-2

JOB NO. 7-817-000786 DATE 03-11-97

RIG TYPE CME 550
BORING TYPE 3-3/4" ID Hollow-Stem Auger
SURFACE ELEV.
DATUM

Depth in Feet	Continuous Penetration Resistance	Graphical Log	Sample	Sample Type	Blows/foot 140 lb. 30" free-fall drop hammer	Dry Density lbs. per cubic foot	Moisture Content Percent of Dry Weight	Unified Soil Classification	REMARKS	VISUAL CLASSIFICATION
100				D	41					
105										
110										
115										
120										
125										

Stopped drilling at 100.0'.

Stopped sampling at 101.5'.

Installed 2" blank flush coupled PVC pipe to 101.5'.

Backfilled angular space with 3/4" minus sand, sloughing during drilling at 56.0' to 60.0', and 15.0' to 25.0'.

Backfilled from 3.0' to 7.5' consisted of 3/8" minus bentonite clay chips.

The discussion in the text under the section titled, SUBSURFACE CONDITIONS, is necessary to a proper understanding of the nature of the subsurface materials.

GROUNDWATER

	DEPTH	HOUR	DATE
▽	13.6	14:47	03-10-97
▼	13.6	12:00	04-17-97

SAMPLE TYPE

A - Auger cuttings
S - 2" O.D. 1.38" I.D. tube sample.
U - 3" O.D. 2.42" I.D. tube sample.
T - 3" O.D. thin-walled Shelby tube.
D - 3 1/4" O.D. 2.42" I.D. tube sample.
C - California Split Spoon Sample

AGRA Earth & Environmental

FIGURE 4B (con't)

CONETEC

Shear Wave Velocity Calculations

Job No.: 01-352
Client: Earthtec
CPT No.: CPT-1
Location Morinda AF
Date: 12/18/01

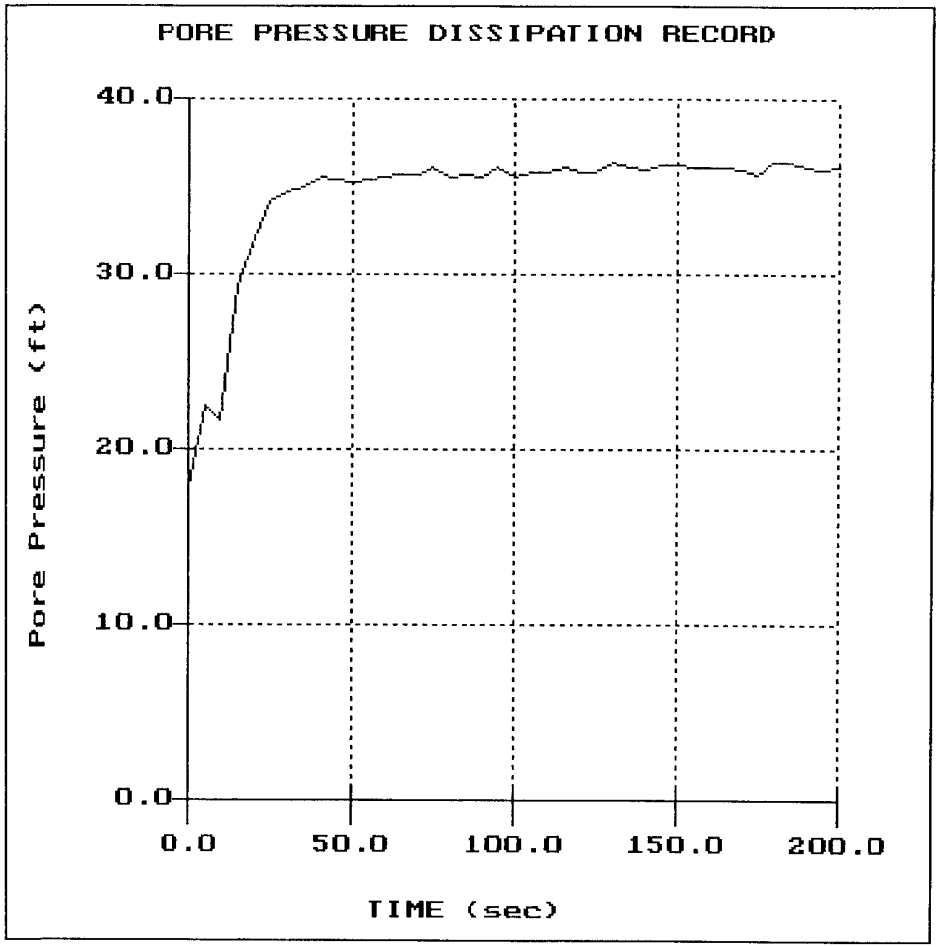
Geophone Offset (m): 0.20
Source Offset (2') (m): 0.61

Test Depth (m)	Geophone Depth (m)	Ray Path (m)	Incremental Distance (m)	Time Interval (ms)	Interval Velocity (m/s)	Interval Depth (m)	Interval Velocity (ft/s)	Interval Depth (ft)
0.75	0.55	0.82						
1.75	1.55	1.67	0.84	8.46	99.8	1.05	327.4	3.4
2.75	2.55	2.62	0.96	7.19	133.0	2.05	436.2	6.7
3.75	3.55	3.60	0.98	8.32	117.8	3.05	386.4	10.0
4.75	4.55	4.59	0.99	6.63	149.1	4.05	489.1	13.3
5.75	5.55	5.58	0.99	7.19	138.1	5.05	452.9	16.6
6.75	6.55	6.58	0.99	8.45	117.7	6.05	386.2	19.8
7.75	7.55	7.57	1.00	7.05	141.3	7.05	463.5	23.1
8.75	8.55	8.57	1.00	5.92	168.4	8.05	552.5	26.4
9.75	9.55	9.57	1.00	5.36	186.1	9.05	610.6	29.7
10.75	10.55	10.57	1.00	5.02	198.8	10.05	652.2	33.0
11.75	11.55	11.57	1.00	4.93	202.5	11.05	664.3	36.2
12.75	12.55	12.56	1.00	5.64	177.1	12.05	580.8	39.5
13.75	13.55	13.56	1.00	5.08	196.6	13.05	645.0	42.8
14.75	14.55	14.56	1.00	5.07	197.1	14.05	646.3	46.1
15.75	15.55	15.56	1.00	5.08	196.7	15.05	645.1	49.4
16.75	16.55	16.56	1.00	4.23	236.2	16.05	774.9	52.6
17.75	17.55	17.56	1.00	4.23	236.3	17.05	774.9	55.9
18.75	18.55	18.56	1.00	4.93	202.7	18.05	664.9	59.2
19.75	19.55	19.56	1.00	4.94	202.3	19.05	663.6	62.5
20.75	20.55	20.56	1.00	4.60	217.3	20.05	712.7	65.8
21.75	21.55	21.56	1.00	4.79	208.7	21.05	684.5	69.0
22.75	22.55	22.56	1.00	5.08	196.8	22.05	645.4	72.3
23.75	23.55	23.56	1.00	5.50	181.8	23.05	596.2	75.6
24.75	24.55	24.56	1.00	5.35	186.9	24.05	612.9	78.9
25.75	25.55	25.56	1.00	4.52	221.2	25.05	725.4	82.2
26.75	26.55	26.56	1.00	4.23	236.3	26.05	775.2	85.4
27.75	27.55	27.56	1.00	4.65	215.0	27.05	705.2	88.7
28.75	28.55	28.56	1.00	3.66	273.2	28.05	896.0	92.0
29.75	29.55	29.56	1.00	4.09	244.4	29.05	801.8	95.3
30.75	30.55	30.56	1.00	3.81	262.4	30.05	860.7	98.6

Earthtec

Hole No.:CPT-1
Location:MORINDA AF

Cone: 20 TON A 098
Date:12:18:01 09:51



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(ft): 37.89
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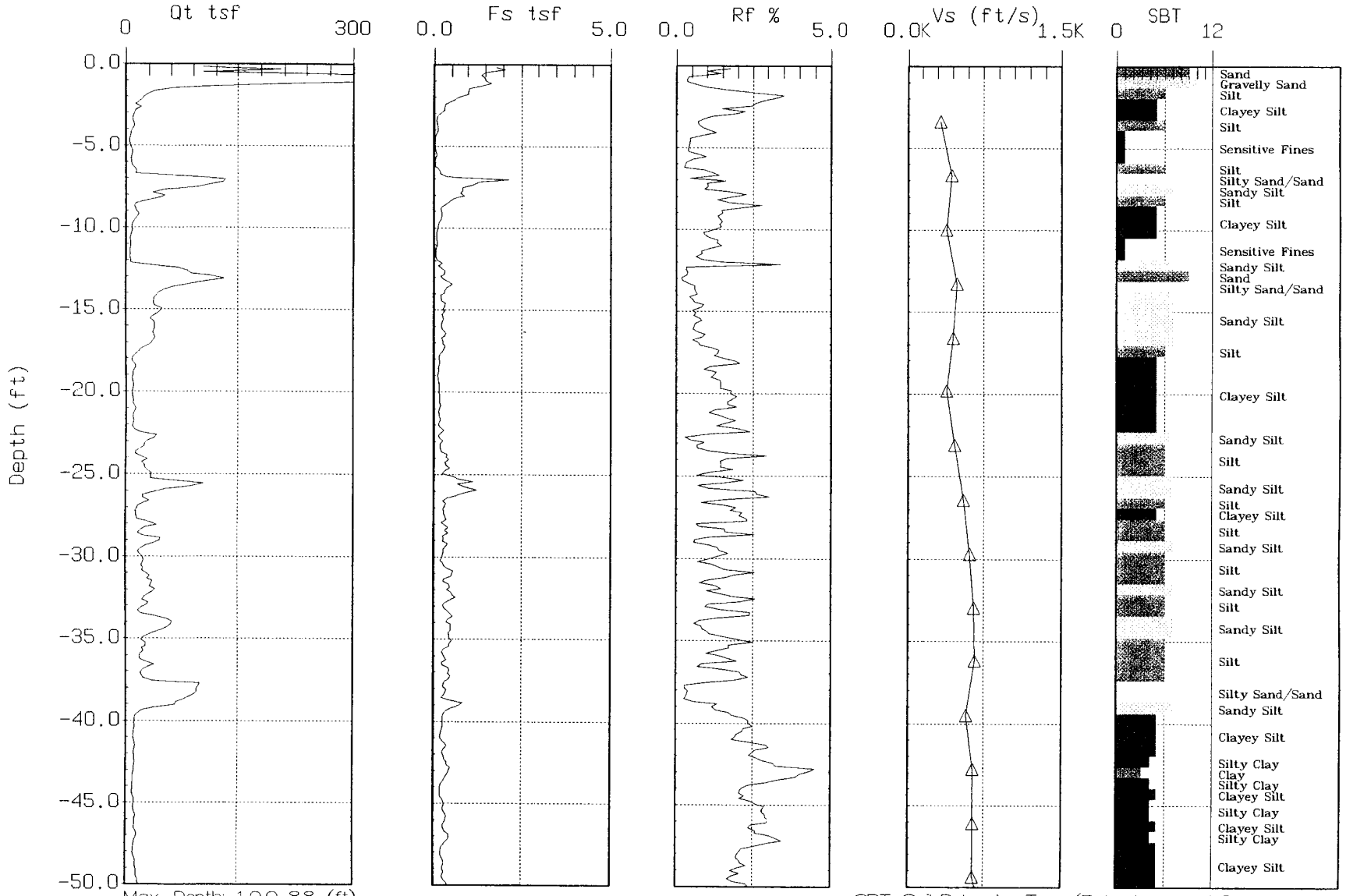
CONETEC

Earthtec

Hole No.: CPT-1
Location: MORINDA AF

Cone: 20 TON A 098
Date: 12:18:01 09:51



Max. Depth: 100.88 (ft)
Depth Inc.: 0.164 (ft)

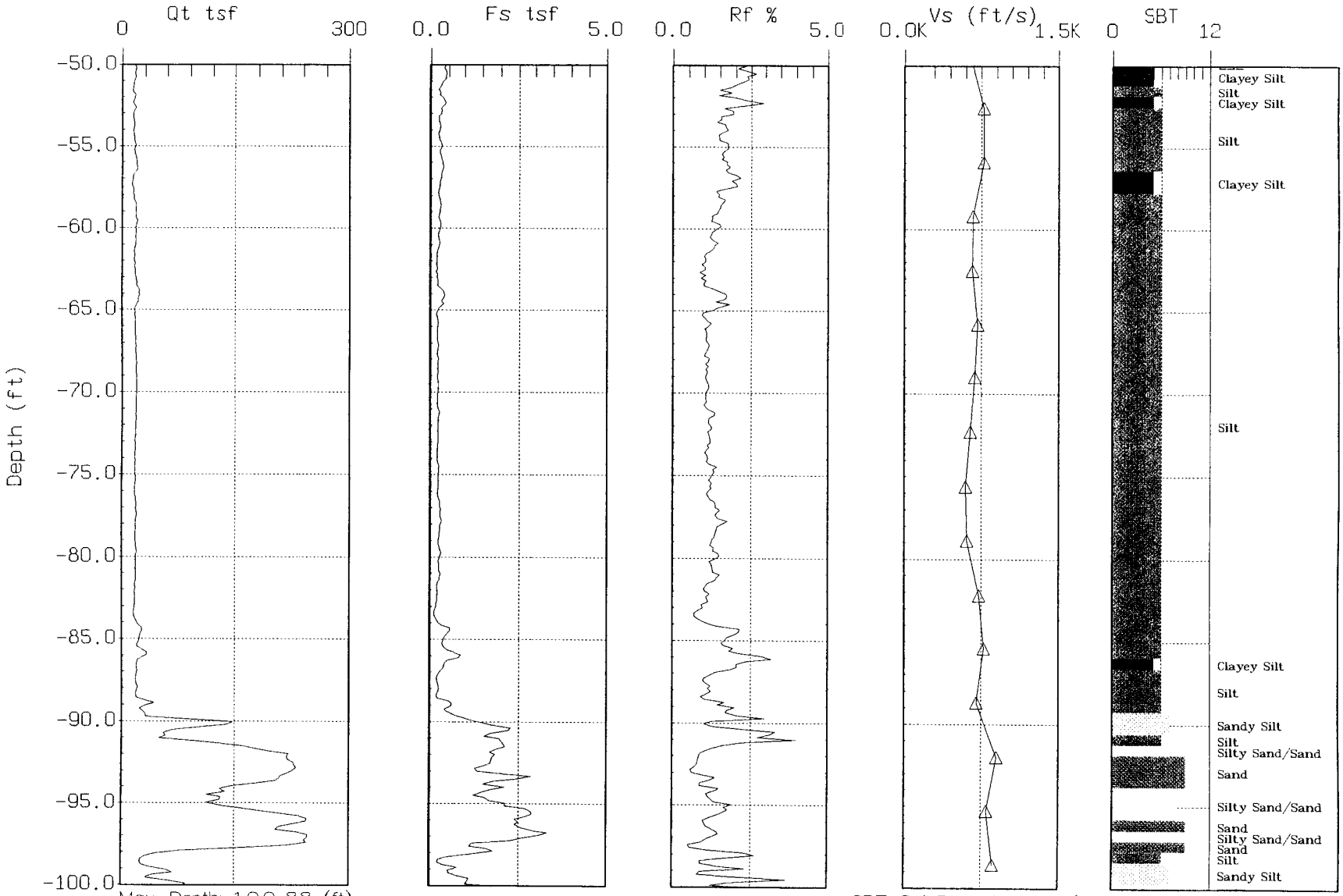
SBT: Soil Behavior Type (Robertson and Campanella 19

CONETEC

Earthtec

Hole No.: CPT—1
Location: MORINDA AF

Cone: 20 TON A 098
Date: 12:18:01 09:51



Max. Depth: 100.88 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 19

CONETEC

Shear Wave Velocity Calculations

Job No.: 02-360
Client: Earthtec Testing & Engineering
CPT No.: CPT-1
Location Tank Center
Date: 9/7/02

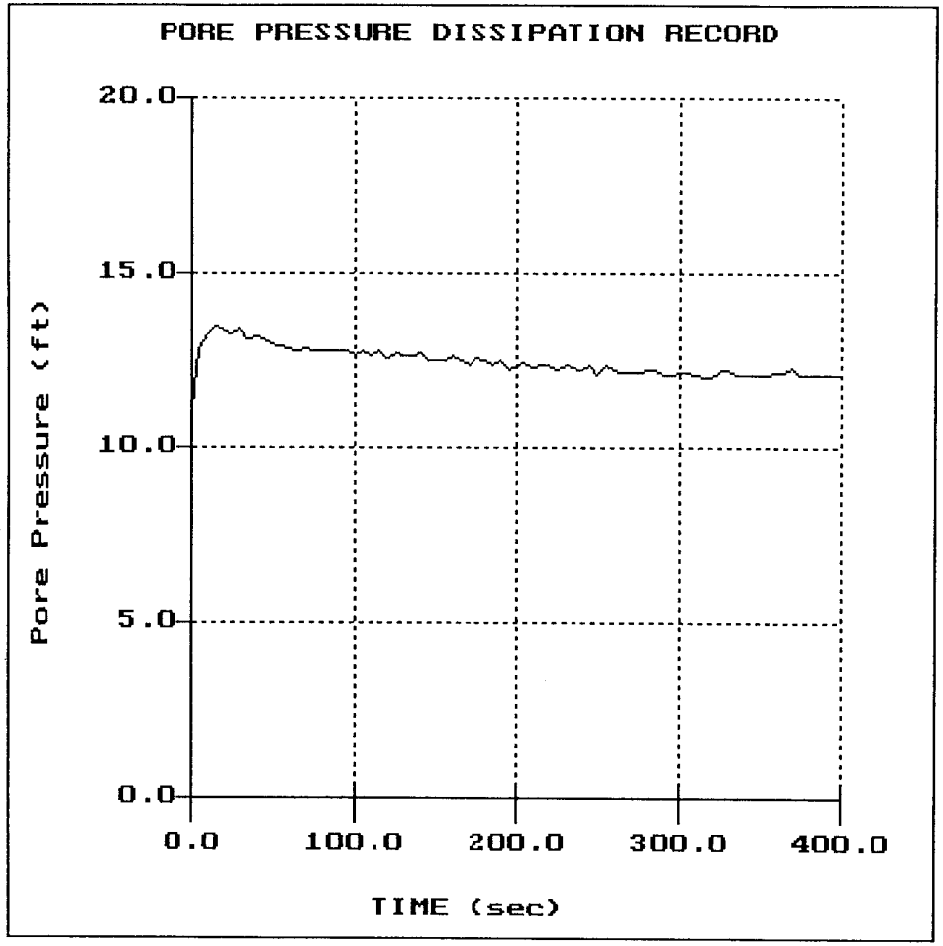
Geophone Offset (m): 0.20
Source Offset (2') (m): 0.61

Test Depth (m)	Geophone Depth (m)	Ray Path (m)	Incremental Distance (m)	Time Interval (ms)	Interval Velocity (m/s)	Interval Depth (m)	Interval Velocity (ft/s)	Interval Depth (ft)
0.80	0.60	0.86						
1.80	1.60	1.71	0.86	8.60	99.6	1.10	326.7	3.6
2.80	2.60	2.67	0.96	6.63	144.5	2.10	474.1	6.9
3.80	3.60	3.65	0.98	6.62	148.1	3.10	485.9	10.2
4.80	4.60	4.64	0.99	6.49	152.4	4.10	499.8	13.4
5.80	5.60	5.63	0.99	6.20	160.1	5.10	525.3	16.7
6.80	6.60	6.63	1.00	6.35	156.7	6.10	514.0	20.0
7.80	7.60	7.62	1.00	6.48	153.8	7.10	504.3	23.3
8.80	8.60	8.62	1.00	7.33	136.0	8.10	446.2	26.6
9.80	9.60	9.62	1.00	7.19	138.8	9.10	455.2	29.8
10.80	10.60	10.62	1.00	6.89	144.9	10.10	475.2	33.1
11.80	11.60	11.62	1.00	7.07	141.2	11.10	463.2	36.4
12.80	12.60	12.61	1.00	6.92	144.3	12.10	473.4	39.7
13.80	13.60	13.61	1.00	6.31	158.3	13.10	519.2	43.0
14.80	14.60	14.61	1.00	5.57	179.4	14.10	588.3	46.2
15.80	15.60	15.61	1.00	4.96	201.4	15.10	660.8	49.5
16.80	16.60	16.61	1.00	4.96	201.5	16.10	660.8	52.8
17.80	17.60	17.61	1.00	4.81	207.8	17.10	681.5	56.1
18.80	18.60	18.61	1.00	5.27	189.6	18.10	622.0	59.4
19.80	19.60	19.61	1.00	5.26	190.0	19.10	623.3	62.6
20.80	20.60	20.61	1.00	5.71	175.1	20.10	574.2	65.9
21.80	21.60	21.61	1.00	5.42	184.4	21.10	604.9	69.2
22.80	22.60	22.61	1.00	5.71	175.1	22.10	574.2	72.5
23.80	23.60	23.61	1.00	6.32	158.2	23.10	518.8	75.8
24.80	24.60	24.61	1.00	6.16	162.3	24.10	532.3	79.0
25.80	25.60	25.61	1.00	6.02	166.1	25.10	544.7	82.3
26.80	26.60	26.61	1.00	6.16	162.3	26.10	532.3	85.6
27.80	27.60	27.61	1.00	5.72	174.8	27.10	573.3	88.9
28.80	28.60	28.61	1.00	5.71	175.1	28.10	574.3	92.2
29.80	29.60	29.61	1.00	5.57	179.5	29.10	588.7	95.4
30.80	30.60	30.61	1.00	4.51	221.7	30.10	727.1	98.7

Earthtec

Hole No.:CPT-1
Location:TANK CENTER

Cone: 20 TON A 122
Date:09:07:02 09:39



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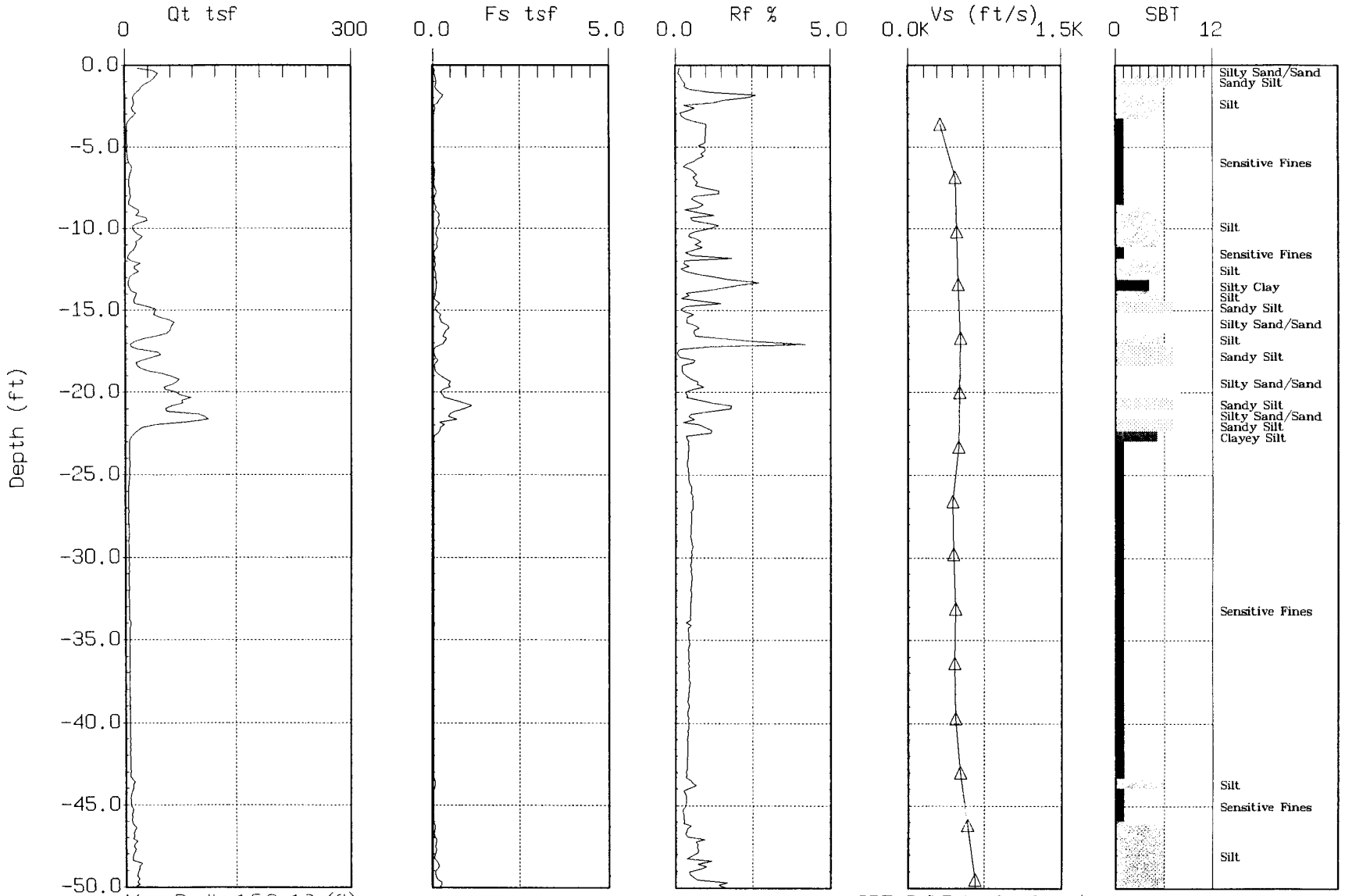
CONETEC

Earthtec

Hole No.: CPT-1
Location: TANK CENTER

Cone: 20 TON A 122
Date: 09:07:02 09:39



Max. Depth: 150.10 (ft)
Depth Inc.: 0.164 (ft)

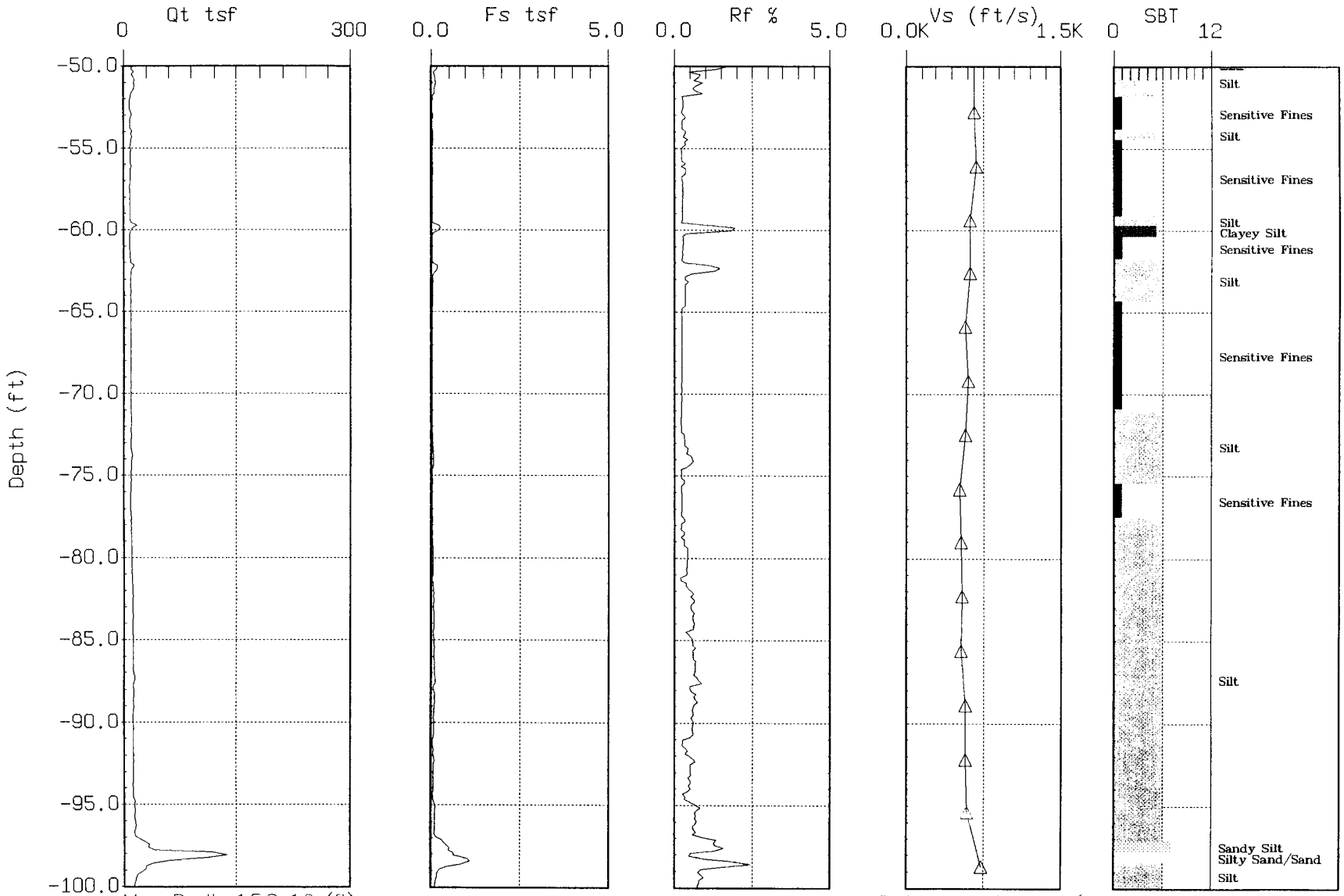
SBT: Soil Behavior Type (Robertson and Campanella 19

CONETEC

Earthtec

Hole No.: CPT-1
Location: TANK CENTER

Cone: 20 TON A 122
Date: 09:07:02 09:39



Max. Depth: 150.10 (ft)
Depth Inc.: 0.164 (ft)

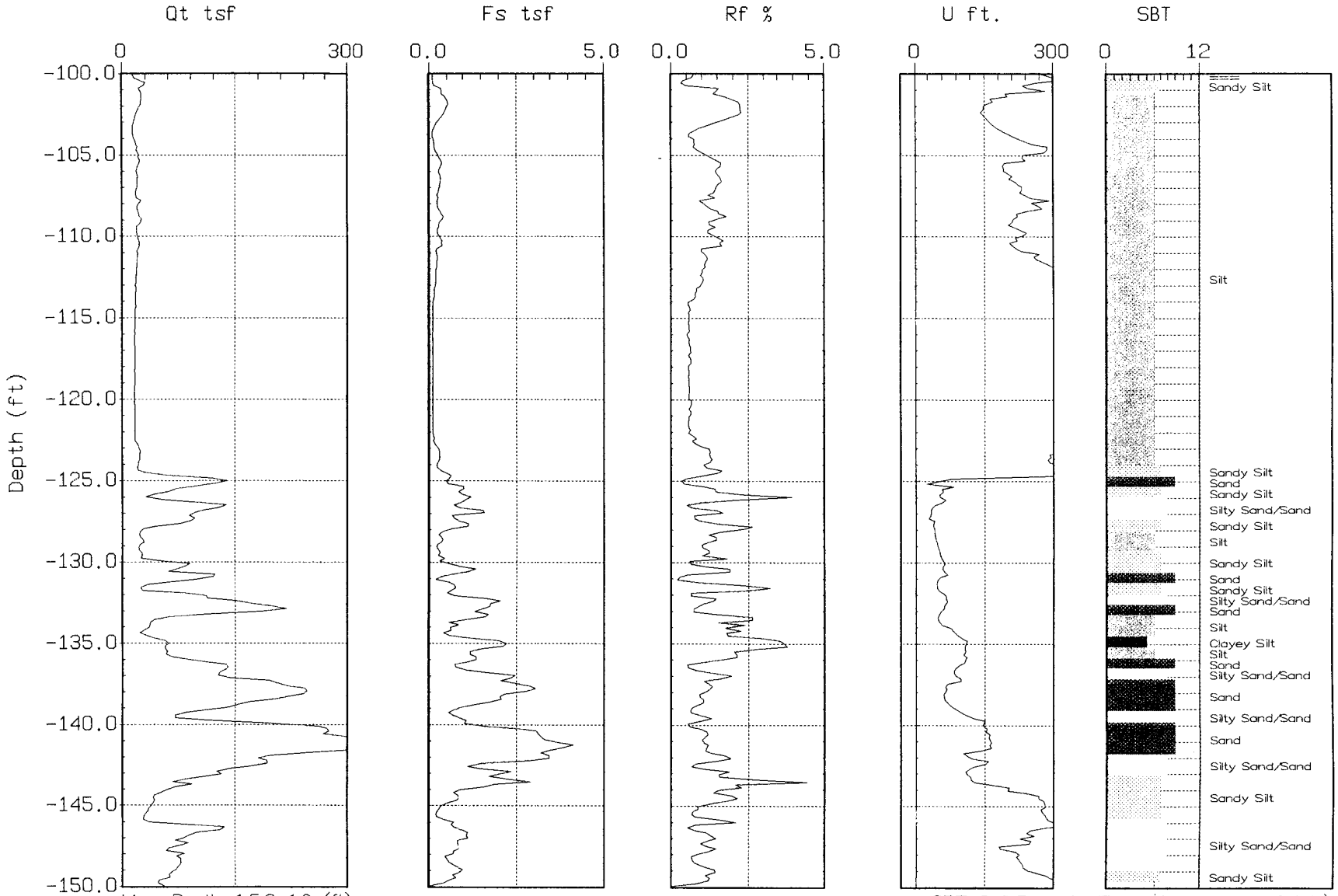
SBT: Soil Behavior Type (Robertson and Campanella 19

CONETEC

Earthtec

Hole No.: CPT-1
Location: TANK CENTER

Cone: 20 TON A 122
Date: 09:07:02 09:39



Max. Depth: 150.10 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

● Equilibrium Pore Pressure from Dissipation

SASW Testing at the Metropolitan Water District, Little Cottonwood Canyon Water Treatment Plant Salt Lake City, Utah

Dr. James A. Bay,
Jeffrey Gilbert, and
Intuorn Sasanakul

Department of Civil and Environmental Engineering
Utah State University
Logan, Utah 84322-4110

Prepared for

URS Corporation
500 12th Street
Suite 200
Oakland, CA 94607-4014

April 18, 2003

Introduction

On 17 February 2003, Spectral-Analysis-of-Surface-Wave (SASW) tests were performed at nine locations at the Metropolitan Water District, Water Treatment Plant at the mouth of Little Cottonwood Canyon, in Salt Lake City, Utah. The test were conducted by Dr. James A. Bay, Inthuorn, Sasanakul, Jeffery Gilbert, and Kenneth D. Jewkes from Utah State University. The purpose of the testing was to determine the shear wave velocity profiles across the facility.

The SASW Method

General Theory The SASW method is a nonintrusive seismic technique used to determine the shear wave velocity profile of a site using wave sources and receivers on the ground surface (1-4). Unlike other surface seismic methods, such as refraction, the SASW method can be used to detect and measure the properties of softer layers located beneath stiffer layers.

The SASW method is used to measure the propagation velocity of Rayleigh-type surface waves. These surface waves propagate along the ground surface, and exhibit wave motion that attenuates with depth into the earth. Practically all wave motion occurs at depths within one wavelength of ground surface. The velocity of Rayleigh-type surface waves is largely controlled by the shear modulus of the material through which the waves are propagating, with the Rayleigh wave velocity about 10% less than the shear wave velocity of that material.

When surface waves propagate through a uniform material with a constant shear modulus, waves with various wavelengths will all propagate with the same velocity. This condition is shown in Fig. 1. If the velocity varies with depth, different wavelengths will propagate at different velocities. This is known as dispersion and plots that show the variation in wave velocity with either wavelength or frequency are called dispersion curves. For example, a dispersion curve for a system with two layers (a soft layer over a stiffer layer) is shown in Fig. 2. Wavelengths that are less than the thickness of the surface layer only disturb the surface layer and propagate with a velocity that is only influenced by the softer, surface layer. As the wavelengths become longer than the thickness of the surface layer, the waves disturb the stiffer layer and exhibit velocities that are influenced by the stiffer layer. As the wavelengths become longer, the stiffer layer exerts more influence until the wavelengths become long relative to thickness of the surface layer, and the wave velocity is only influenced by the stiffer layer. More complicated layered systems result in more complicated dispersion curves.

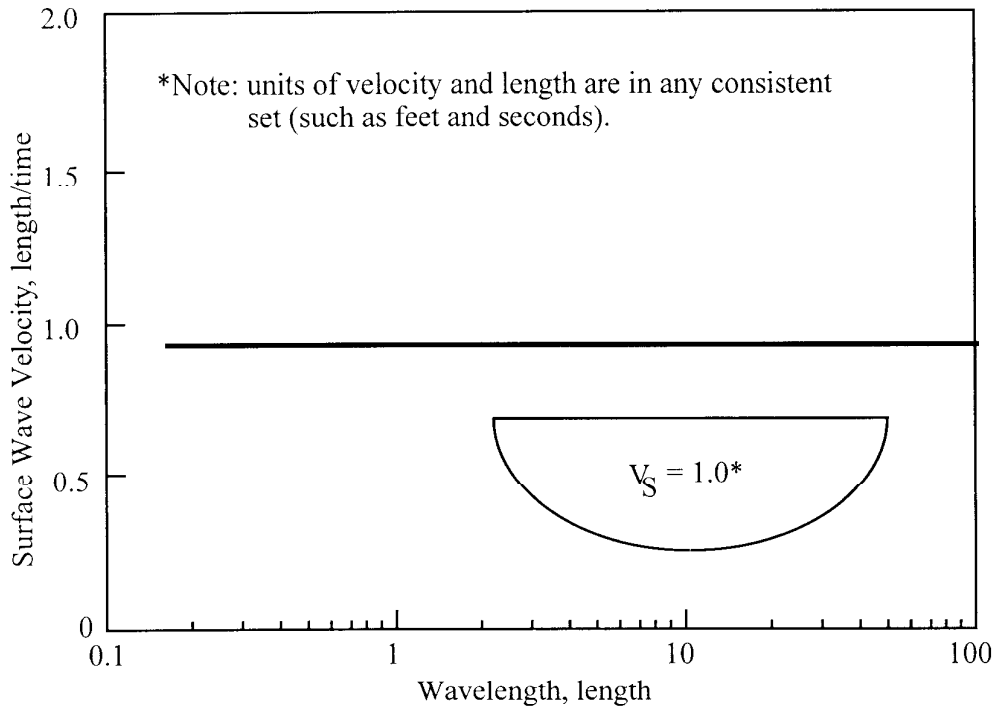


Fig. 1 Surface Wave Dispersion for a Single, Uniform Layer

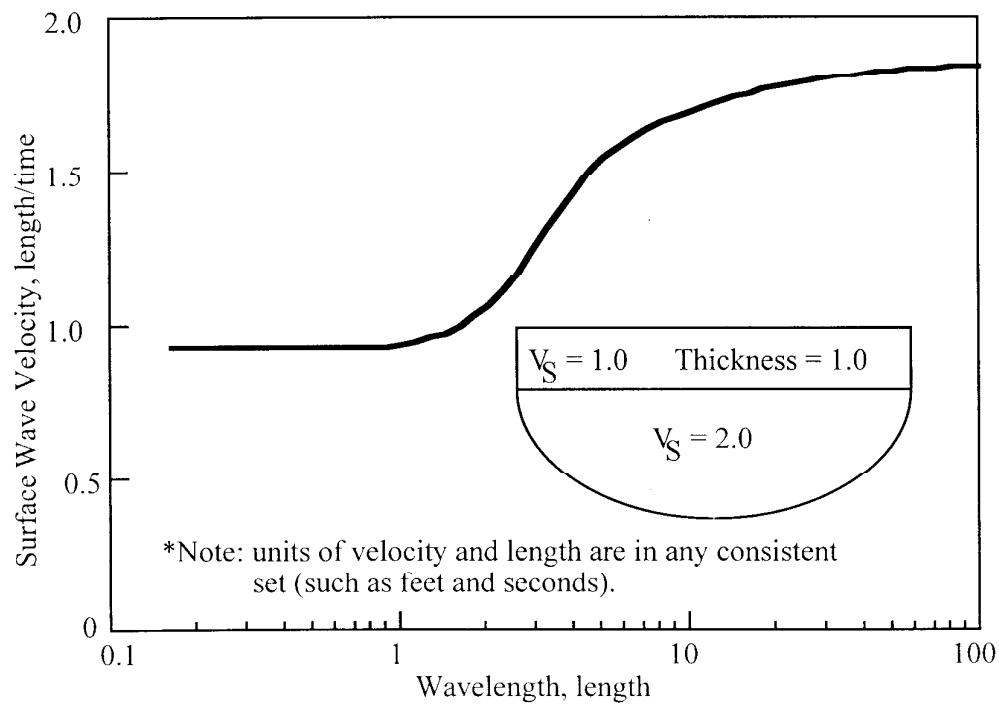


Fig. 2 Surface Wave Dispersion for a Two-Layer System

Testing Procedure The SASW method requires two or more receivers, capable of measuring the vertical motion of the ground surface, a source or sources capable of generating a wide range of frequencies, and a recording instrument capable of separating the waveforms from the receivers into their various frequency components. The general testing configuration used for the testing at the water treatment plant is shown in Fig. 3. The receivers and the source are positioned along a line with the distance between the source and the first receiver the same as the distance between the first receiver and the second receiver. The distance between the second and third receiver is equal to the distance from the source to the second receiver. Measurements are made simultaneously between receivers 1 and 2, and receivers 2 and 3. For a given spacing, wavelengths from 0.5 time the spacing between receivers, to 2 times the spacing between receivers can usually be measured. Testing typically begins with a short spacing and then the spacing is increased in subsequent tests to measure longer wavelengths. An 8-lb instrumented hammer was used as a wave sources to generate high frequencies (short wavelengths) at receiver spacings of 6 and 12 ft. At longer receiver spacings, a 4500-lb drop weight was employed to generate lower frequencies (longer wavelengths). Site geometry limited the longest receiver spacing at each site, with maximum spacings ranging from 170 to 300 ft. Tests at each receiver spacing are usually repeated by reversing the direction of wave propagation to average out any receiver-coupling effects and any effects of lateral variability at the site. The waveforms are recorded and spectral analyses performed on a Fast-Fourier-Transform (FFT) dynamic signal analyzer.

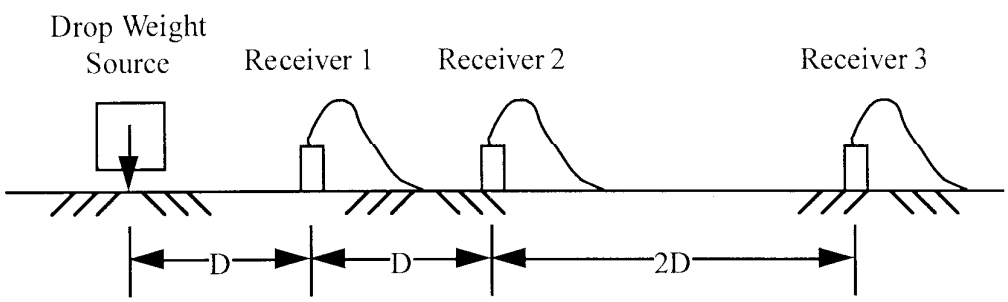


Fig. 3 SASW Testing Configuration

Forward Modeling Procedure The dispersion curve for a site is measured using the procedures described above. An iterative forward modeling process is then used to determine the shear wave velocity profile of the site from the measured dispersion curve. This involves making an initial estimate of the shear wave velocity profile and assuming values of mass density and either Poisson's ratio or confined compression wave (P-wave) velocity. Forward modeling is then performed with a computer to determine the theoretical dispersion curve for the estimated profile. The theoretical dispersion curve is then compared to the measured dispersion curve and the estimated profile is modified accordingly. This procedure is repeated until the measured and theoretical dispersion curves match each other very closely, at which point the estimated profile will closely represent the actual velocity profile at the site A program developed by Professor Jose M. Roesset of the University of Texas is used to perform the forward modeling (5).

Testing at Little Cottonwood Canyon Water Treatment Plant

Locations of nine SASW test locations are shown on the aerial photograph in Fig. 4. The lines indicate the alignment of receiver arrays with the approximate centerline of the array marked with a circular target.

Outer Access Gate The experimental dispersion curve measured at the outer access gate is shown in Fig. 5. The comparison between the experimental and theoretical dispersion curves determined from forward modeling is shown in Fig. 6. A plot of the shear wave velocity profile is shown in Fig. 7. Tabulated values of the parameters used in forward modeling are presented in Table 1.

Southwest of Aeration Basin The experimental dispersion curve measured southwest of the aeration basin is shown in Fig. 8. The comparison between the experimental and theoretical dispersion curves determined from forward modeling is shown in Fig. 9. A plot of the shear wave velocity profile is shown in Fig. 10. Tabulated values of the parameters used in forward modeling are presented in Table 2.

South of Old Chemical Building The experimental dispersion curve measured south of the old chemical building is shown in Fig. 11. The comparison between the experimental and theoretical dispersion curves determined from forward modeling is shown in Fig. 12. A plot of the shear wave velocity profile is shown in Fig. 13. Tabulated values of the parameters used in forward modeling are presented in Table 3.

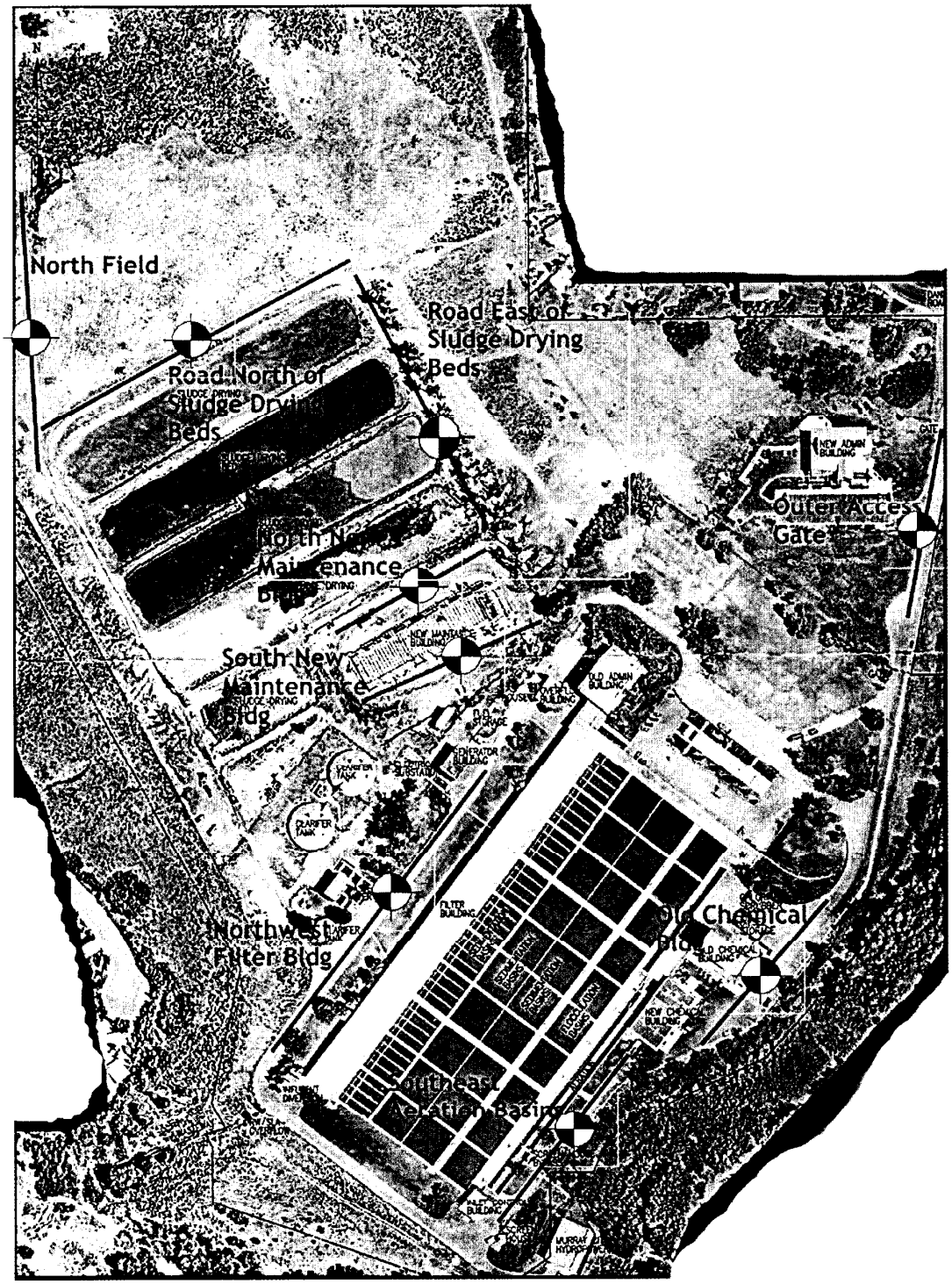


Fig. 4 Aerial Photograph Showing the SASW Test Locations at the Little Cottonwood Canyon Water Treatment Plant.

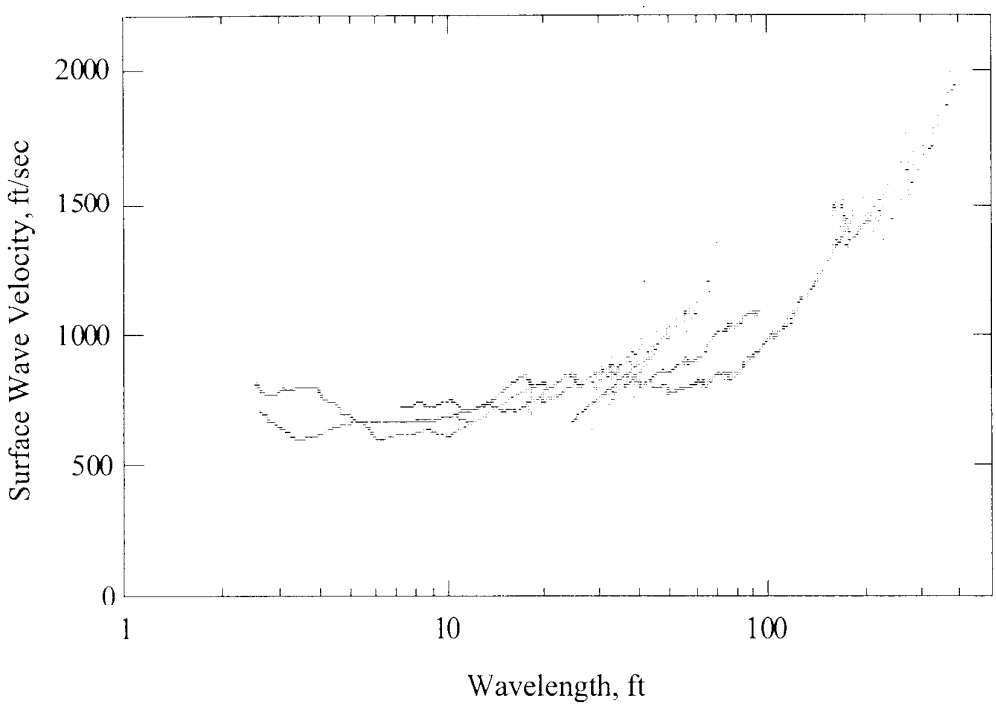


Fig. 5 Experimental Dispersion Curve Measured at the Outer Access Gate, Little Cottonwood Canyon Water Treatment Plant.

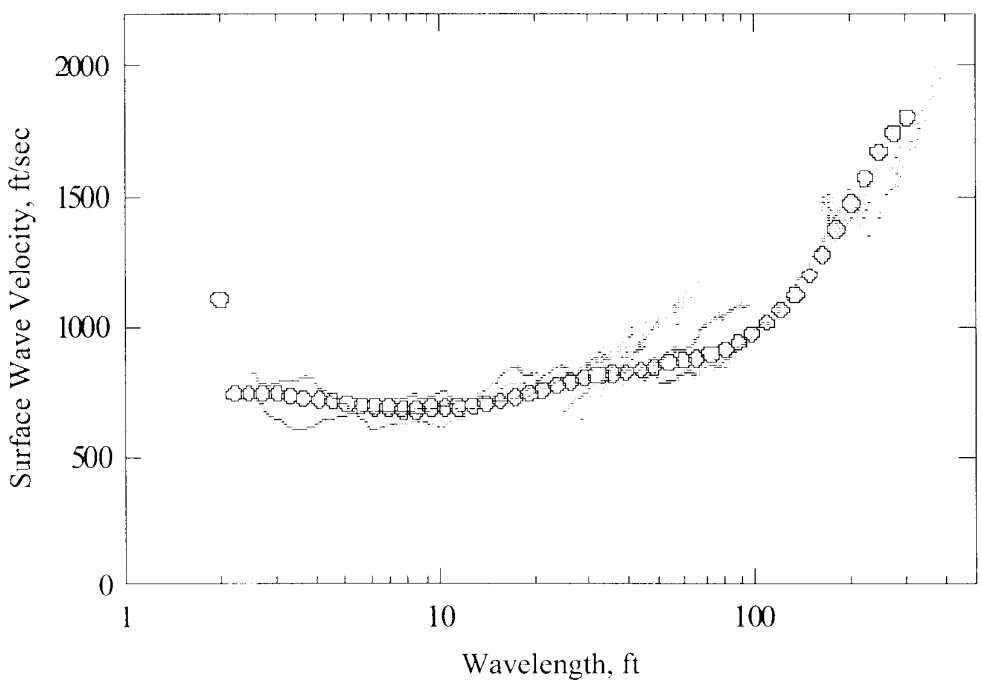


Fig. 6 Comparison between Experimental and Theoretical Dispersion Curves from Outer Access Gate, Little Cottonwood Canyon Water Treatment Plant.

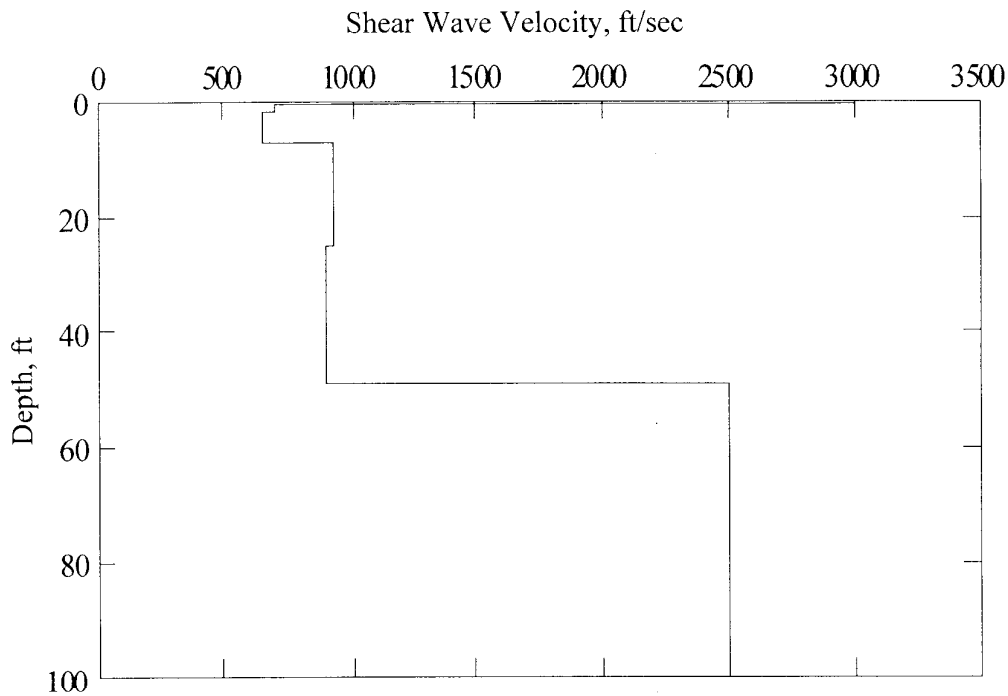


Fig. 7 Shear Wave Velocity Profile Determined from SASW Test at Outer Access Gate, Little Cottonwood Canyon Water Treatment Plant.

Table1 Soil Profile from SASW Test at Outer Access Gate, Little Cottonwood Canyon Water Treatment Plant.

Layer No.	Layer Thickness (ft)	Shear Wave Velocity (ft/sec)	Assumed P-Wave Velocity (ft/sec)	Assumed Unit Weight (lb/ft^3)
1	0.25	3000	5610	120
2	1.75	700	1350	120
3	5.0	650	1220	120
4	18.0	935	1750	120
5	24.0	900	1680	120
6	51.0*	2500	4680	135

* Half-space in model

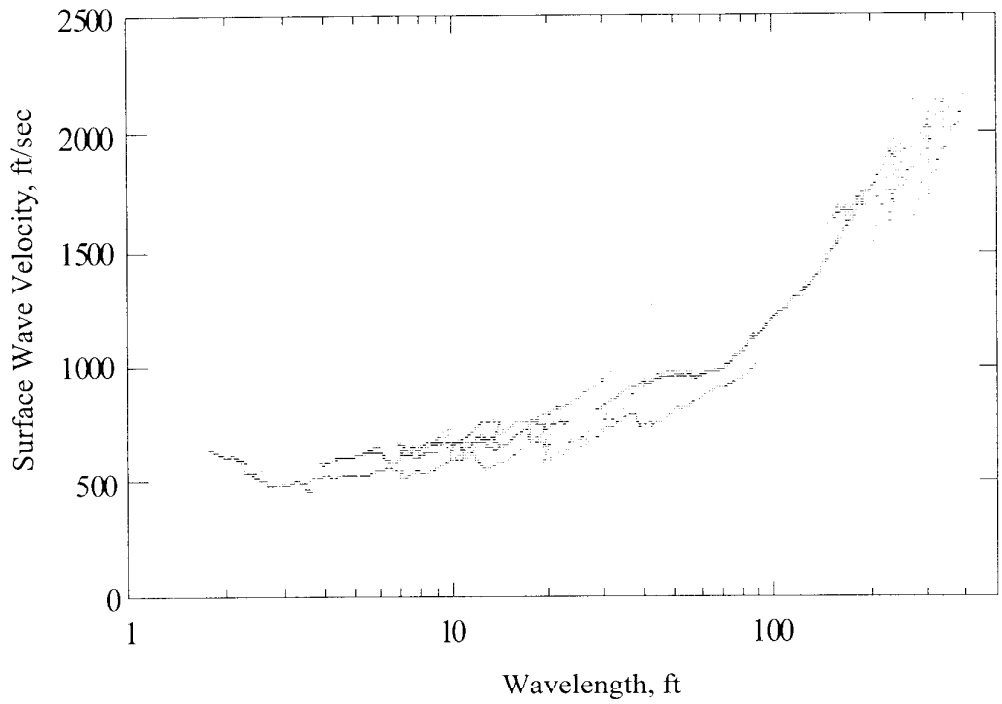


Fig. 8 Experimental Dispersion Curve Measured Southwest of the Aeration Basin, Little Cottonwood Canyon Water Treatment Plant.

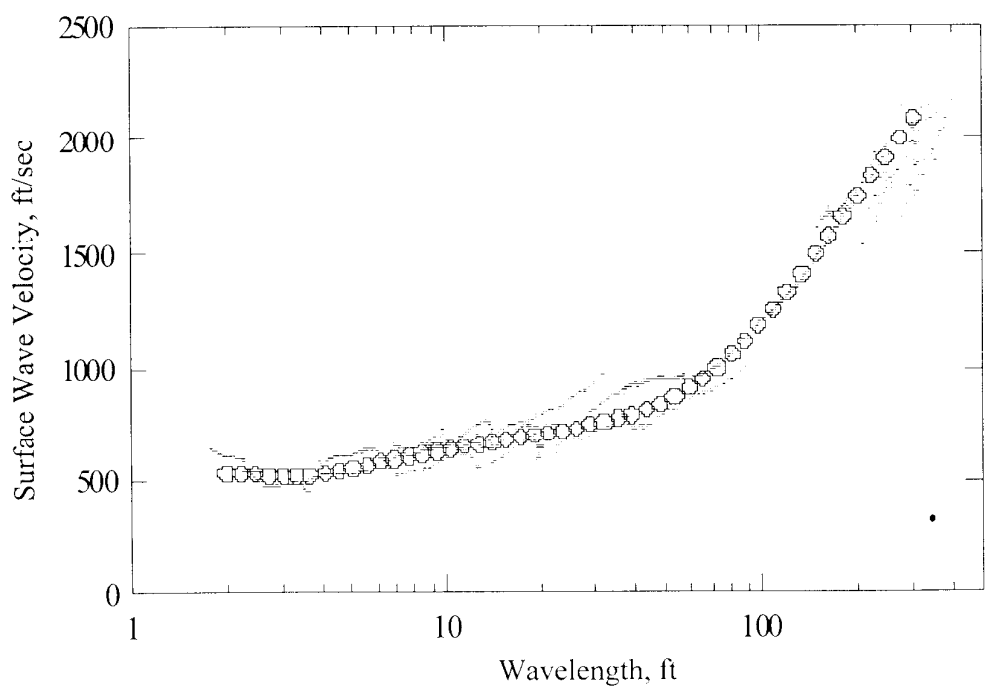


Fig. 9 Comparison between Experimental and Theoretical Dispersion Curves from Southwest of Aeration Basin, Little Cottonwood Canyon Water Treatment Plant.

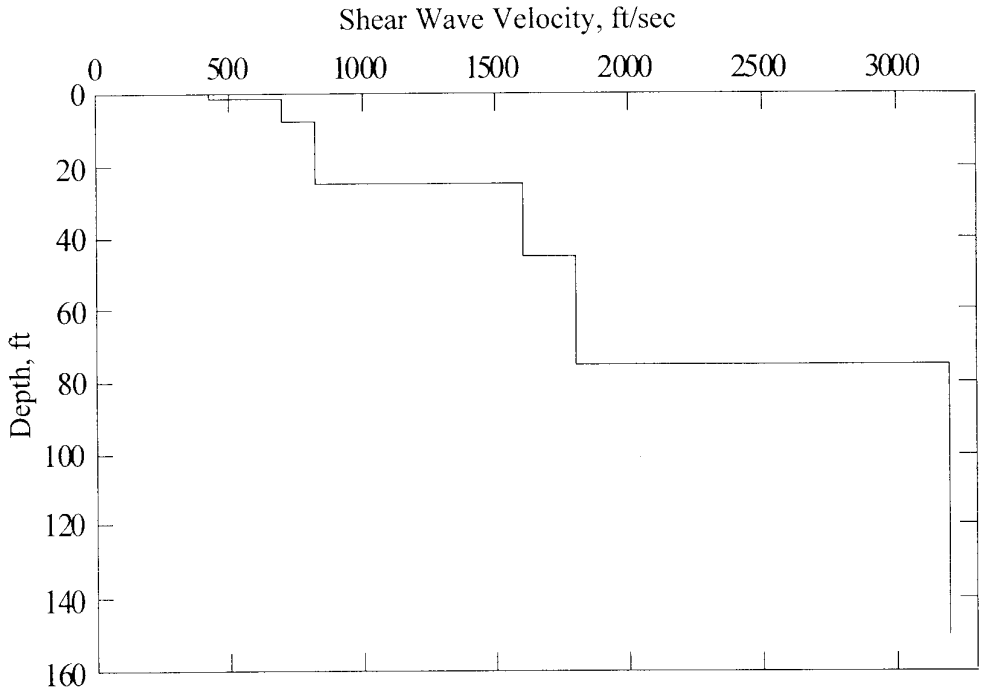


Fig. 10 Shear Wave Velocity Profile Determined from SASW Test Southwest of Aeration Basin, Little Cottonwood Canyon Water Treatment Plant.

Table 2 Soil Profile from SASW Test Southwest of Aeration Basin, Little Cottonwood Canyon Water Treatment Plant.

Layer No.	Layer Thickness (ft)	Shear Wave Velocity (ft/sec)	Assumed P-Wave Velocity (ft/sec)	Assumed Unit Weight (lb/ft^3)
1	0.2	2500	4680	145
2	1.3	425	795	120
3	6.5	700	1310	120
4	17.0	825	1540	120
5	20.0	1600	2990	120
6	30.0	1800	3370	135
7	75*	3200	5990	135

* Half-space in model

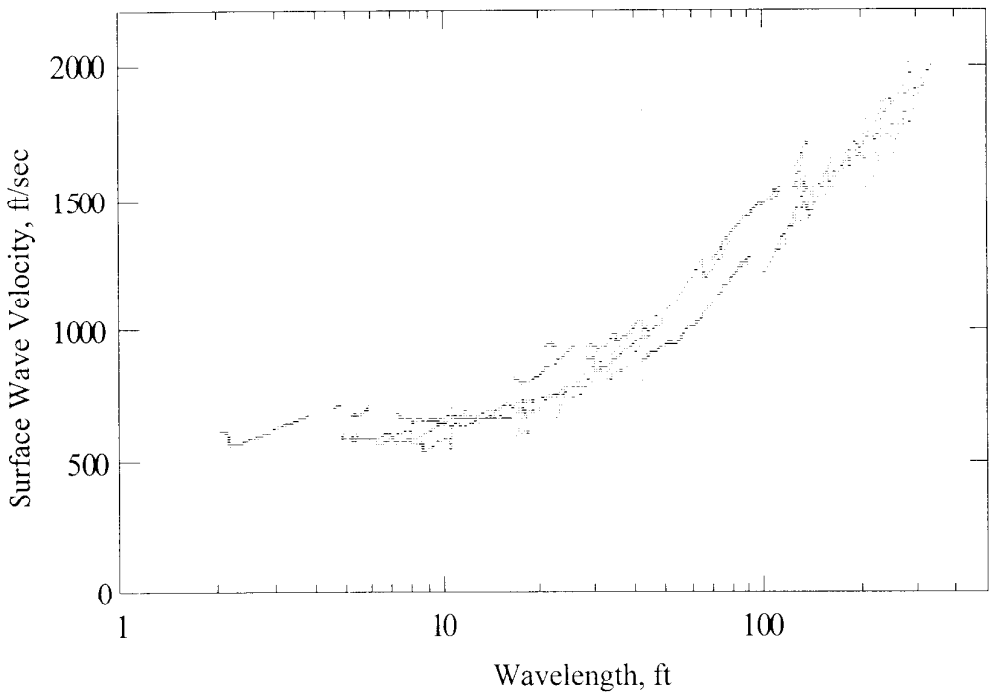


Fig. 11 Experimental Dispersion Curve Measured South of Old Chemical Building, Little Cottonwood Canyon Water Treatment Plant.

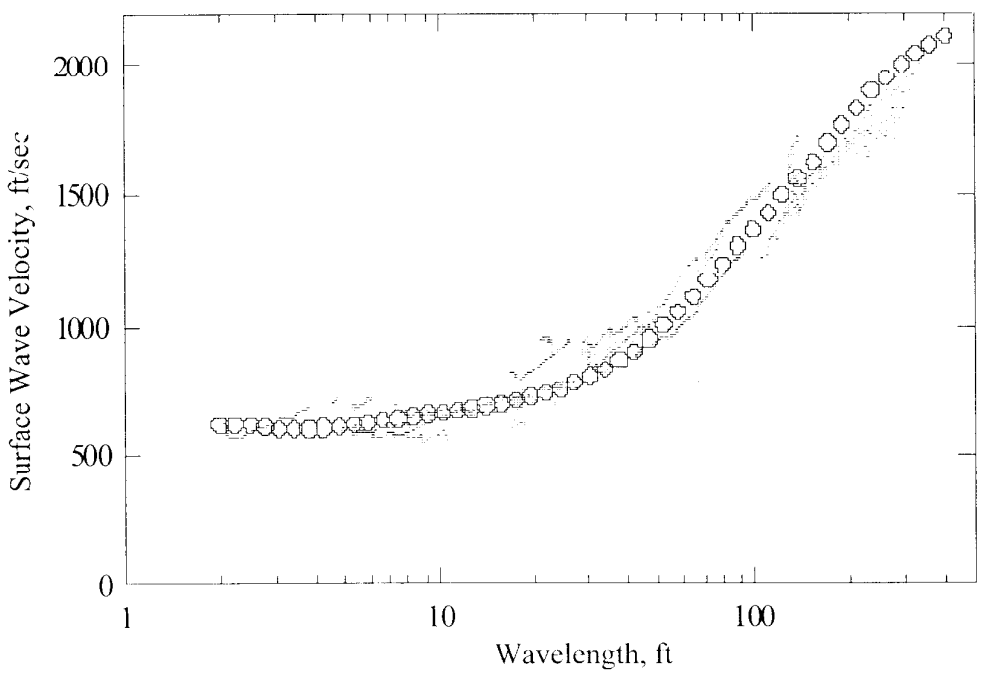


Fig. 12 Comparison between Experimental and Theoretical Dispersion Curves from South of the Old Chemical Building, Little Cottonwood Canyon Water Treatment Plant.

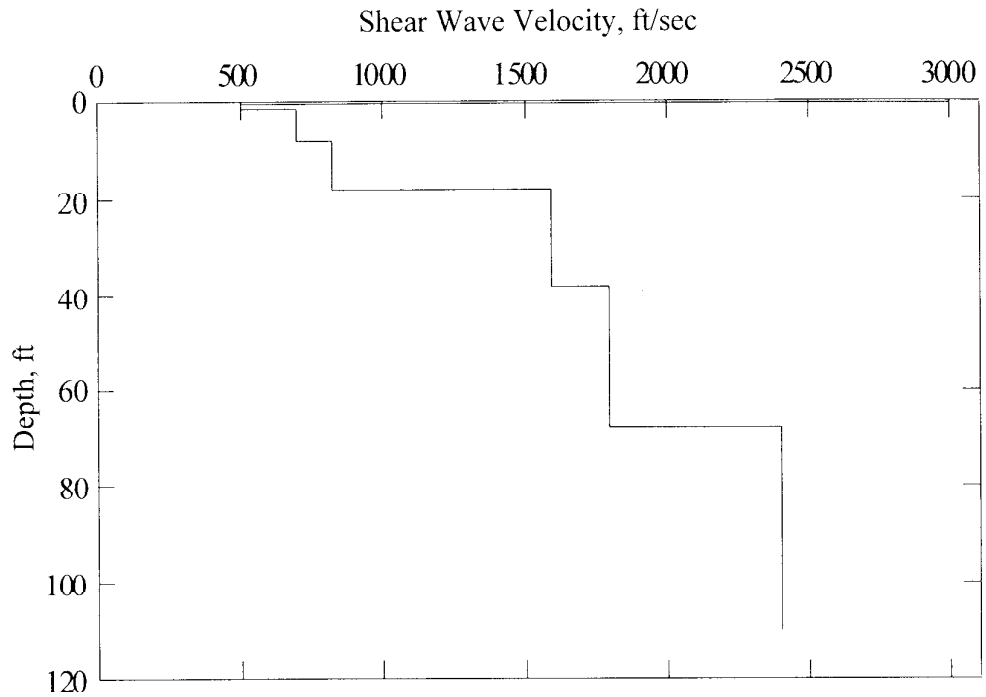


Fig. 13 Shear Wave Velocity Profile Determined from SASW Test South of the Old Chemical Building, Little Cottonwood Canyon Water Treatment Plant.

Table 3 Soil Profile from SASW Test South of Old Chemical Building, Little Cottonwood Canyon Water Treatment Plant.

Layer No.	Layer Thickness (ft)	Shear Wave Velocity (ft/sec)	Assumed P-Wave Velocity (ft/sec)	Assumed Unit Weight (lb/ft^3)
1	0.2	3000	5610	145
2	1.3	500	935	120
3	6.5	700	1310	120
4	10.0	825	1540	120
5	20.0	1600	2990	120
6	30.0	1800	3370	135
7	42.0*	2400	4490	135

* Half-space in model

Northwest of Filter Building The experimental dispersion curve measured northwest of filter building is shown in Fig. 14. The comparison between the experimental and theoretical dispersion curves determined from forward modeling is shown in Fig. 15. A plot of the shear wave velocity profile is shown in Fig. 16. Tabulated values of the parameters used in forward modeling are presented in Table 4.

South of new Maintenance Building The experimental dispersion curve measured south of the new maintenance building is shown in Fig. 17. The comparison between the experimental and theoretical dispersion curves determined from forward modeling is shown in Fig. 18. A plot of the shear wave velocity profile is shown in Fig. 19. Tabulated values of the parameters used in forward modeling are presented in Table 5.

North of new Maintenance Building The experimental dispersion curve measured north of the new maintenance building is shown in Fig. 20. The comparison between the experimental and theoretical dispersion curves determined from forward modeling is shown in Fig. 21. A plot of the shear wave velocity profile is shown in Fig. 22. Tabulated values of the parameters used in forward modeling are presented in Table 6.

East of Sludge Drying Beds The experimental dispersion curve measured east of the sludge drying beds is shown in Fig. 23. The comparison between the experimental and theoretical dispersion curves determined from forward modeling is shown in Fig. 24. A plot of the shear wave velocity profile is shown in Fig. 25. Tabulated values of the parameters used in forward modeling are presented in Table 7.

North of Sludge Drying Beds The experimental dispersion curve measured north of the sludge drying beds is shown in Fig. 26. The comparison between the experimental and theoretical dispersion curves determined from forward modeling is shown in Fig. 27. A plot of the shear wave velocity profile is shown in Fig. 28. Tabulated values of the parameters used in forward modeling are presented in Table 8.

Field North of Sludge Drying Beds The experimental dispersion curve measured in field north of the sludge drying beds is shown in Fig. 29. The comparison between the experimental and theoretical dispersion curves determined from forward modeling is shown in Fig. 30. A plot of the shear wave velocity profile is shown in Fig. 31. Tabulated values of the parameters used in forward modeling are presented in Table 9.

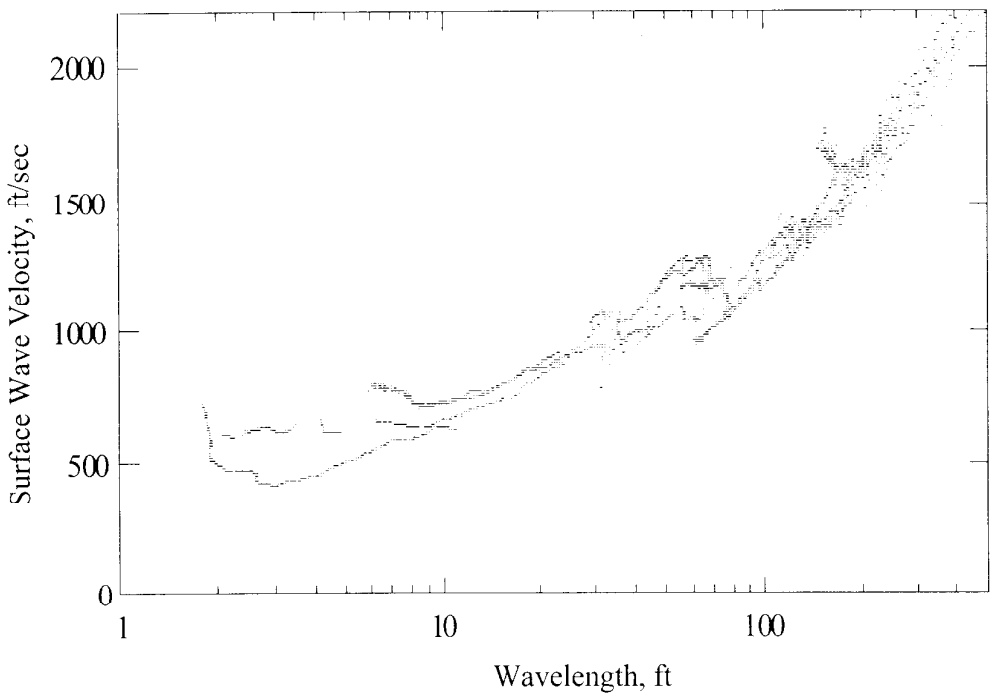


Fig. 14 Experimental Dispersion Curve Measured Northwest of Filter Building, Little Cottonwood Canyon Water Treatment Plant.

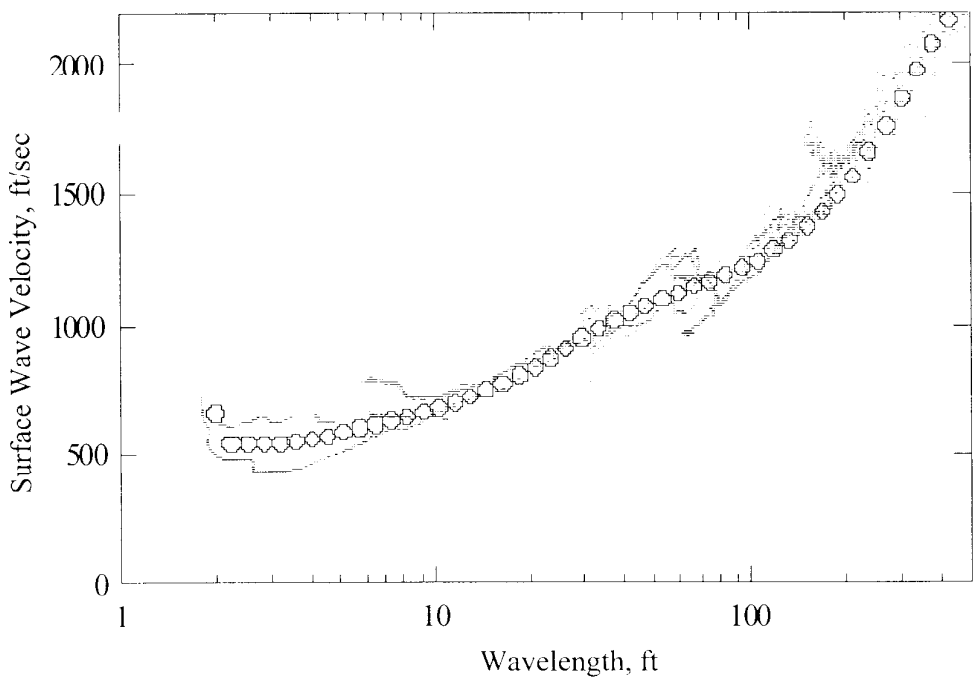


Fig. 15 Comparison between Experimental and Theoretical Dispersion Curves from Northwest of Filter Building, Little Cottonwood Canyon Water Treatment Plant.

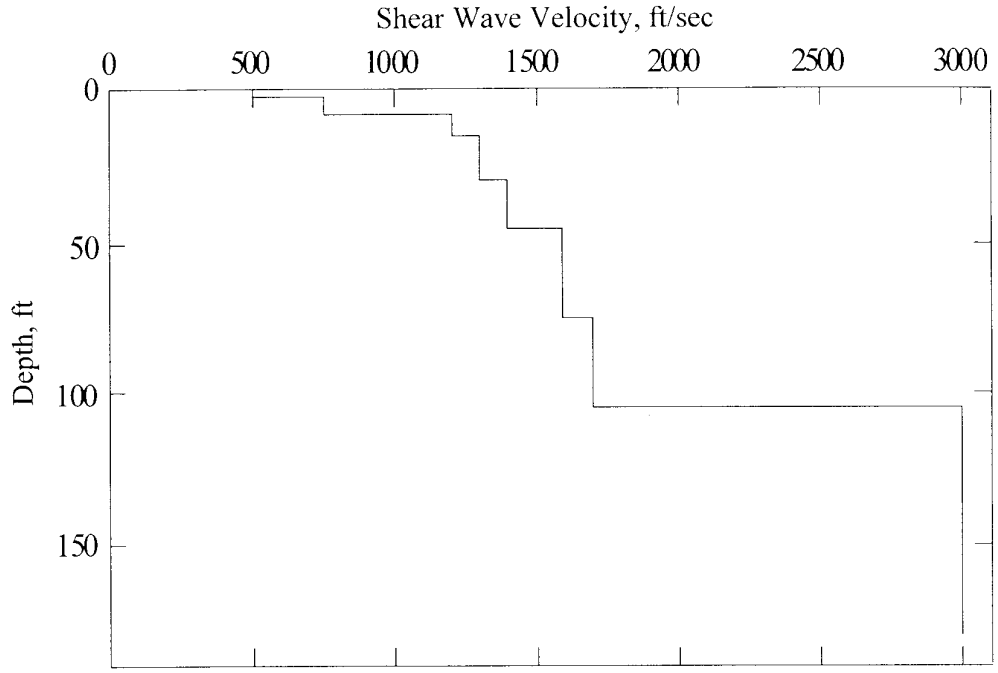


Fig. 16 Shear Wave Velocity Profile Determined from SASW Test Northwest of Filter Building, Little Cottonwood Canyon Water Treatment Plant.

Table 4 Soil Profile from SASW Test Northwest of Filter Building, Little Cottonwood Canyon Water Treatment Plant.

Layer No.	Layer Thickness (ft)	Shear Wave Velocity (ft/sec)	Assumed P-Wave Velocity (ft/sec)	Assumed Unit Weight (lb/ft^3)
1	0.15	2400	4990	145
2	1.85	500	935	120
3	6.0	750	1400	120
4	7.0	1200	2245	120
5	14.0	1300	2430	120
6	16.0	1400	2620	120
7	30.0	1600	2990	120
8	30.0	1700	3180	120
9	75*	3000	5610	135

* Half-space in model

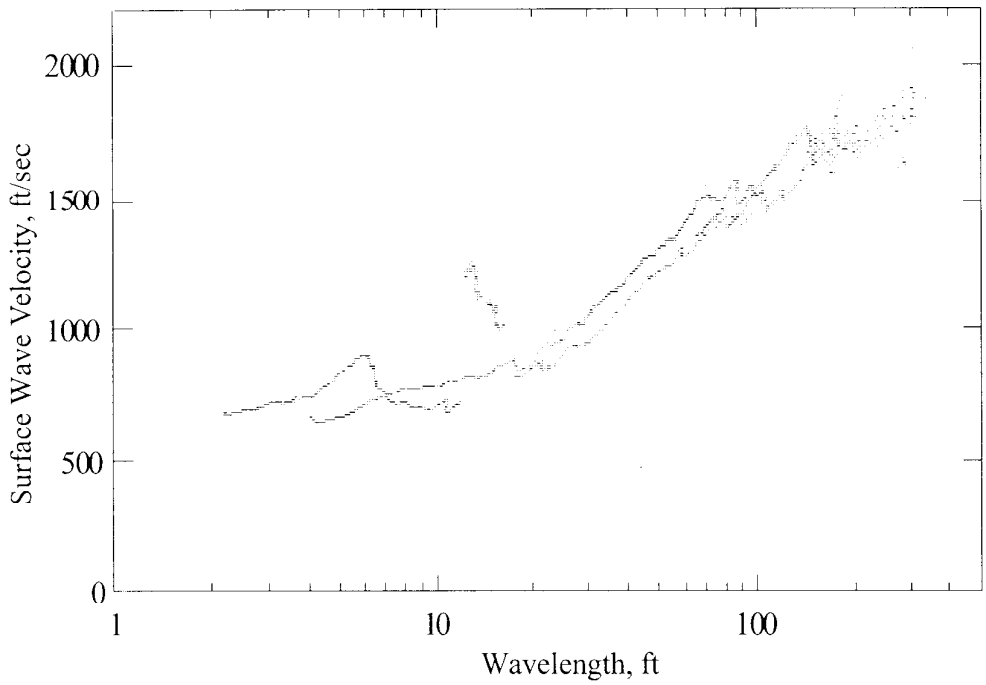


Fig. 17 Experimental Dispersion Curve Measured South of New Maintenance Building, Little Cottonwood Canyon Water Treatment Plant.

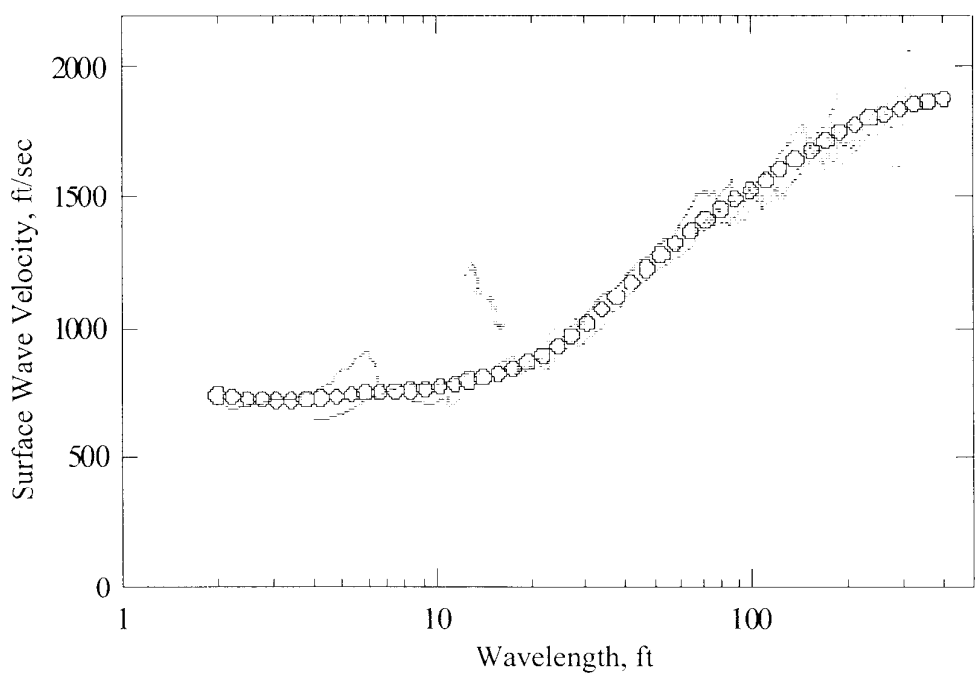


Fig. 18 Comparison between Experimental and Theoretical Dispersion Curves from South of New Maintenance Building, Little Cottonwood Canyon Water Treatment Plant.

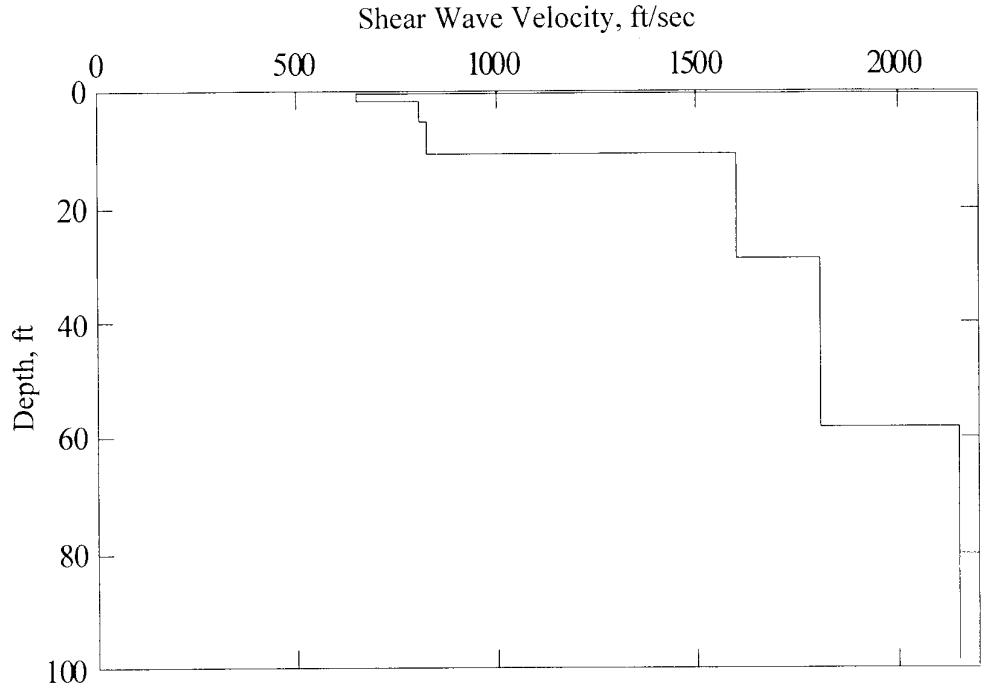


Fig. 19 Shear Wave Velocity Profile Determined from SASW Test South of New maintenance Building, Little Cottonwood Canyon Water Treatment Plant.

Table 5 Soil Profile from SASW Test South of New Maintenance Building, Little Cottonwood Canyon Water Treatment Plant.

Layer No.	Layer Thickness (ft)	Shear Wave Velocity (ft/sec)	Assumed P-Wave Velocity (ft/sec)	Assumed Unit Weight (lb/ft^3)
1	0.2	2500	4680	145
2	1.3	650	1220	120
3	4.0	800	1500	120
4	5.0	825	1540	120
5	18.0	1600	2990	120
6	30.0	1800	3370	135
7	40.0*	2150	4020	135

* Half-space in model

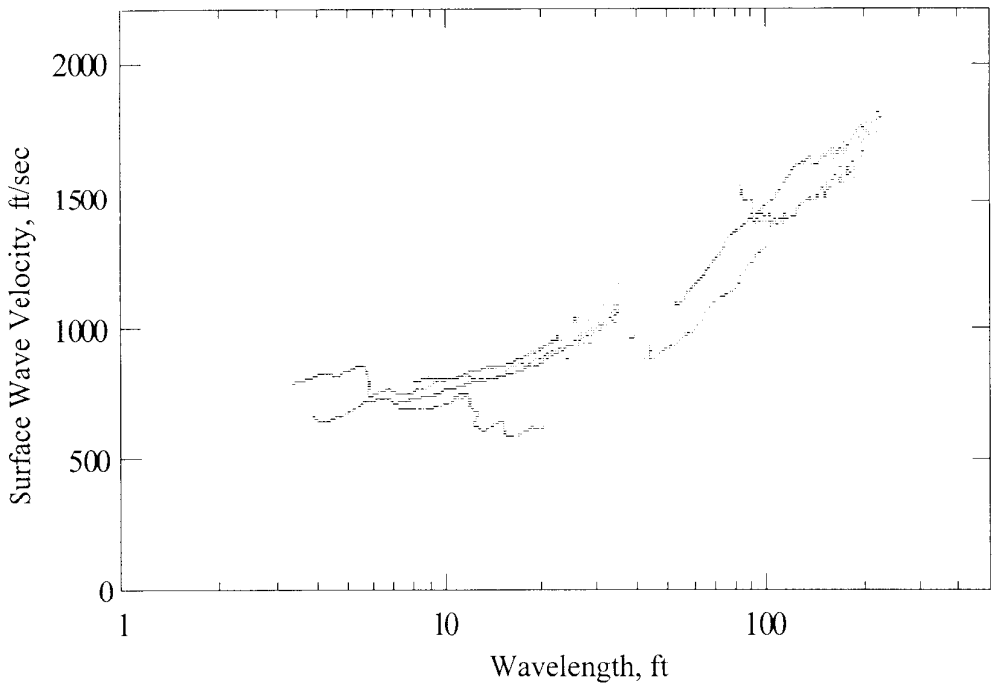


Fig. 20 Experimental Dispersion Curve Measured North of New Maintenance Building, Little Cottonwood Canyon Water Treatment Plant.

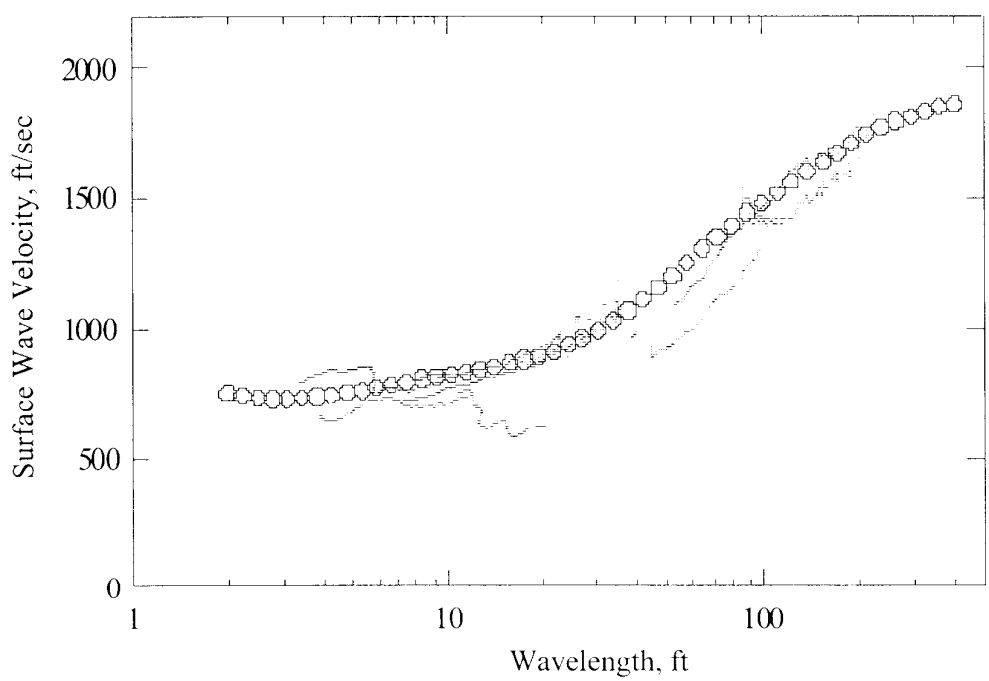


Fig. 21 Comparison between Experimental and Theoretical Dispersion Curves from North of New Maintenance Building, Little Cottonwood Canyon Water Treatment Plant.

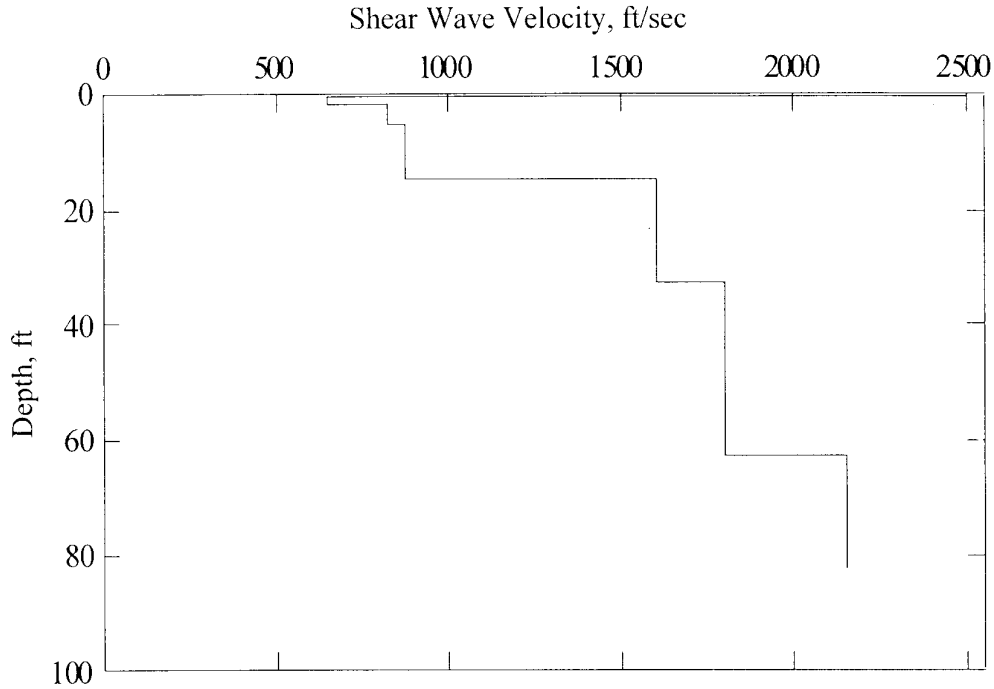


Fig. 22 Shear Wave Velocity Profile Determined from SASW Test North of New Maintenance Building, Little Cottonwood Canyon Water Treatment Plant.

Table 6 Soil Profile from SASW Test North of New Maintenance Building, Little Cottonwood Canyon Water Treatment Plant.

Layer No.	Layer Thickness (ft)	Shear Wave Velocity (ft/sec)	Assumed P-Wave Velocity (ft/sec)	Assumed Unit Weight (lb/ft^3)
1	0.2	2500	4680	145
2	1.3	650	1220	120
3	4.0	825	1540	120
4	9.0	875	1640	120
5	18.0	1600	2990	120
6	30.0	1800	3370	135
7	20.0*	2150	4020	135

* Half-space in model

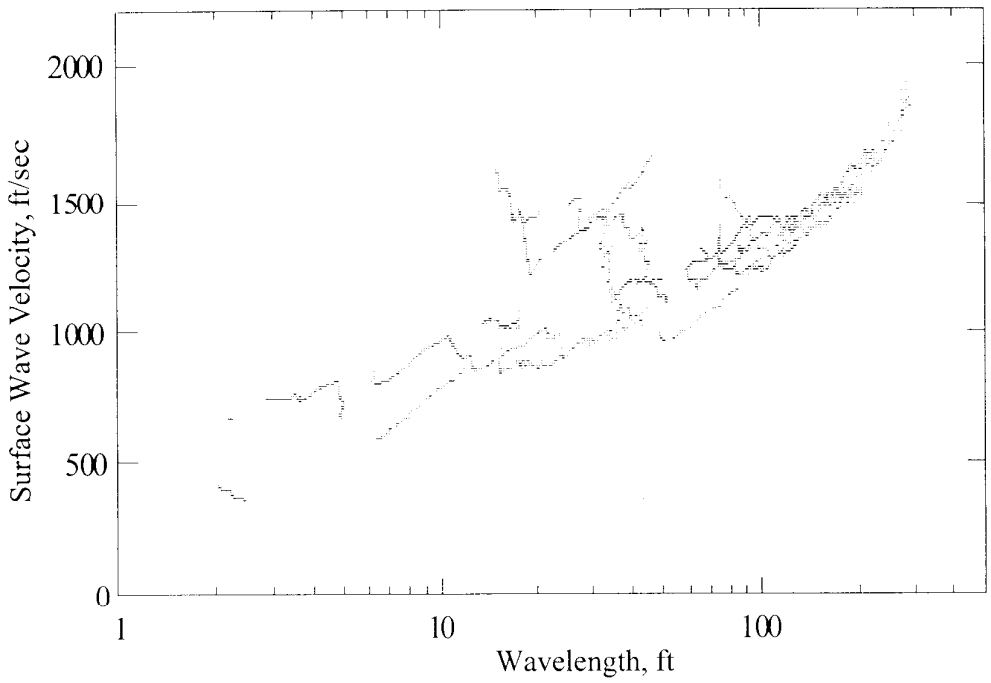


Fig. 23 Experimental Dispersion Curve Measured East of Sludge Drying Beds, Little Cottonwood Canyon Water Treatment Plant.

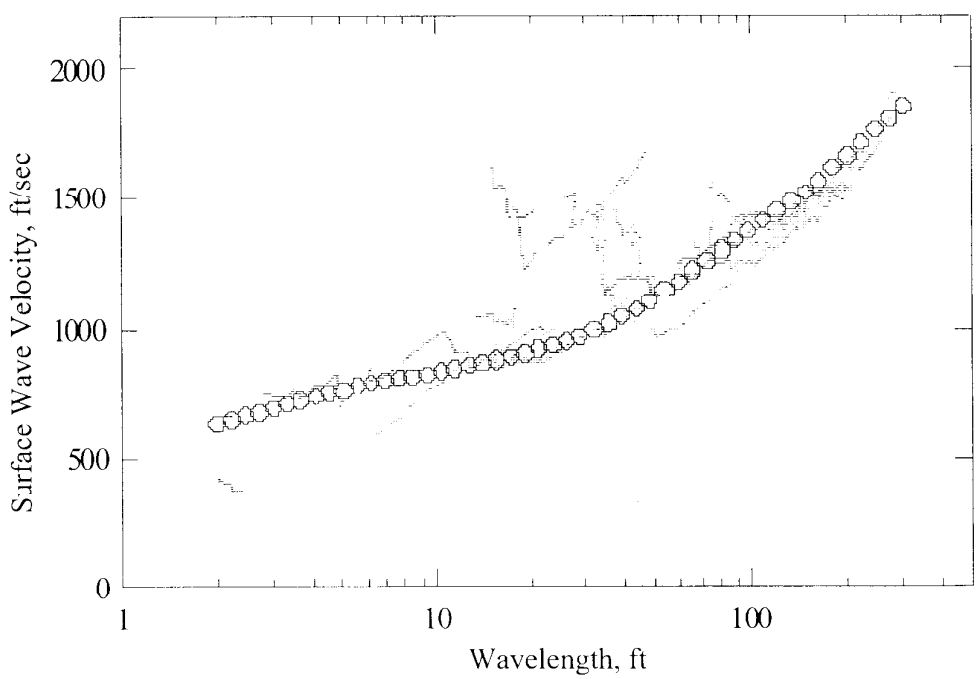


Fig. 24 Comparison between Experimental and Theoretical Dispersion Curves from East of Sludge Drying Beds, Little Cottonwood Canyon Water Treatment Plant.

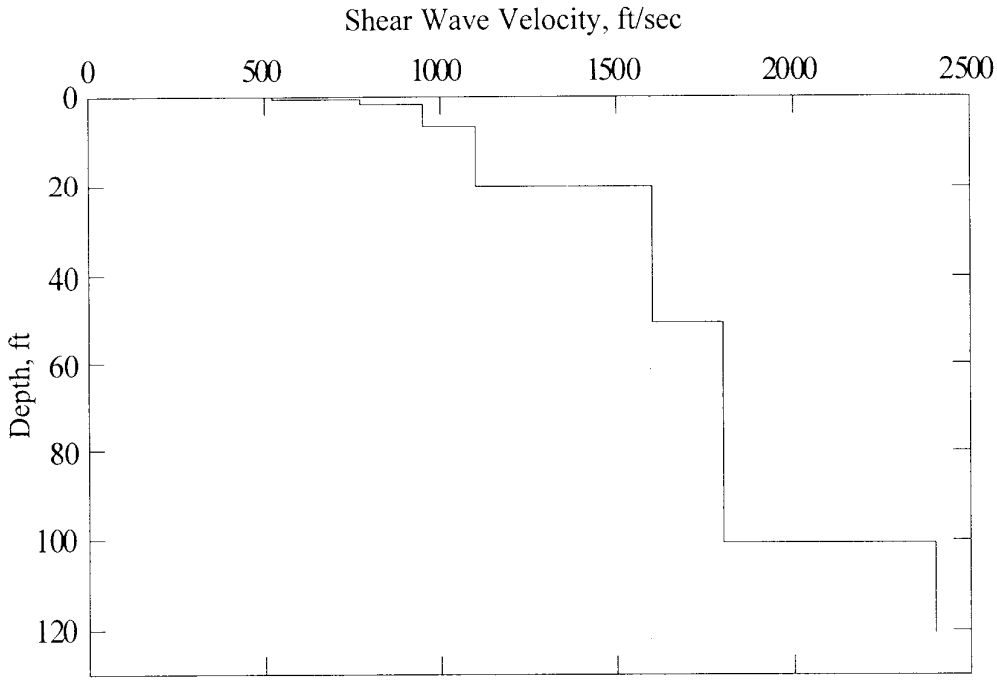


Fig. 25 Shear Wave Velocity Profile Determined from SASW Test East of Sludge Drying Beds, Little Cottonwood Canyon Water Treatment Plant.

Table 7 Soil Profile from SASW Test East of Sludge Drying Beds, Little Cottonwood Canyon Water Treatment Plant.

Layer No.	Layer Thickness (ft)	Shear Wave Velocity (ft/sec)	Assumed P-Wave Velocity (ft/sec)	Assumed Unit Weight (lb/ft^3)
1	0.5	525	980	120
2	1.0	775	1450	120
3	5.5	950	1780	120
4	13.0	1100	2060	120
5	31.0	1600	2990	120
6	50.0	1800	3370	135
7	20.0*	2400	4490	135

* Half-space in model

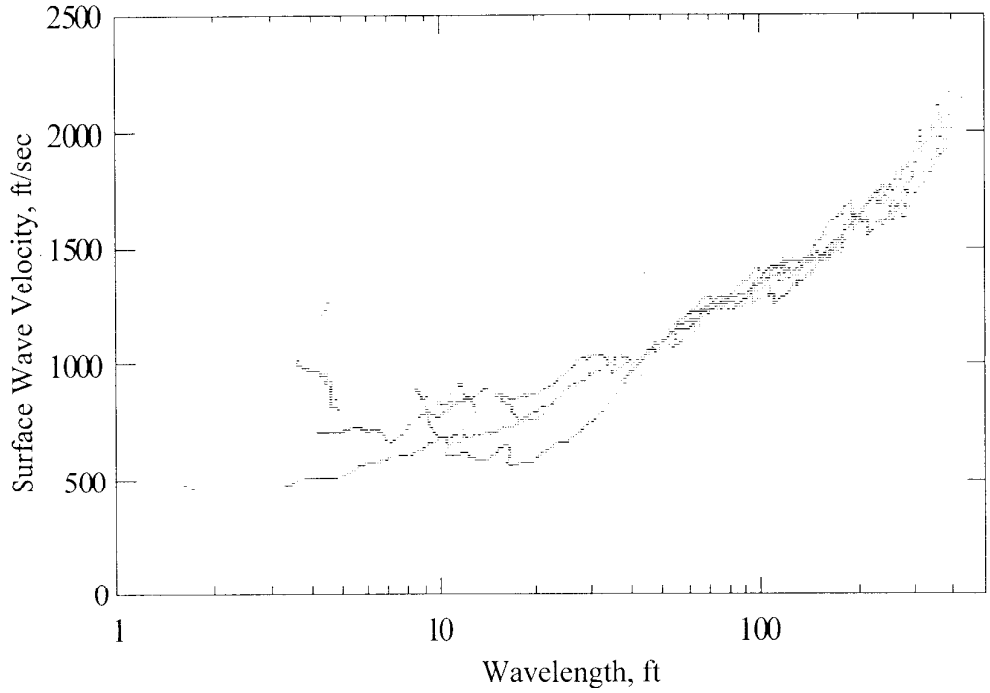


Fig. 26 Experimental Dispersion Curve Measured North of Sludge Drying Beds, Little Cottonwood Canyon Water Treatment Plant.

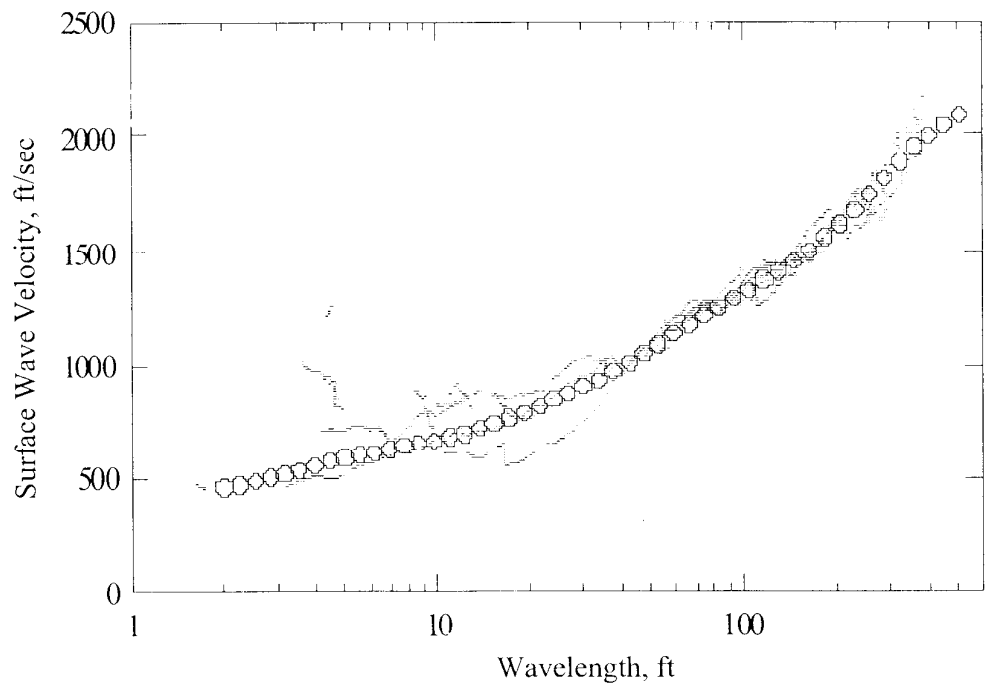


Fig. 27 Comparison between Experimental and Theoretical Dispersion Curves from North of Sludge Drying Beds, Little Cottonwood Canyon Water Treatment Plant.

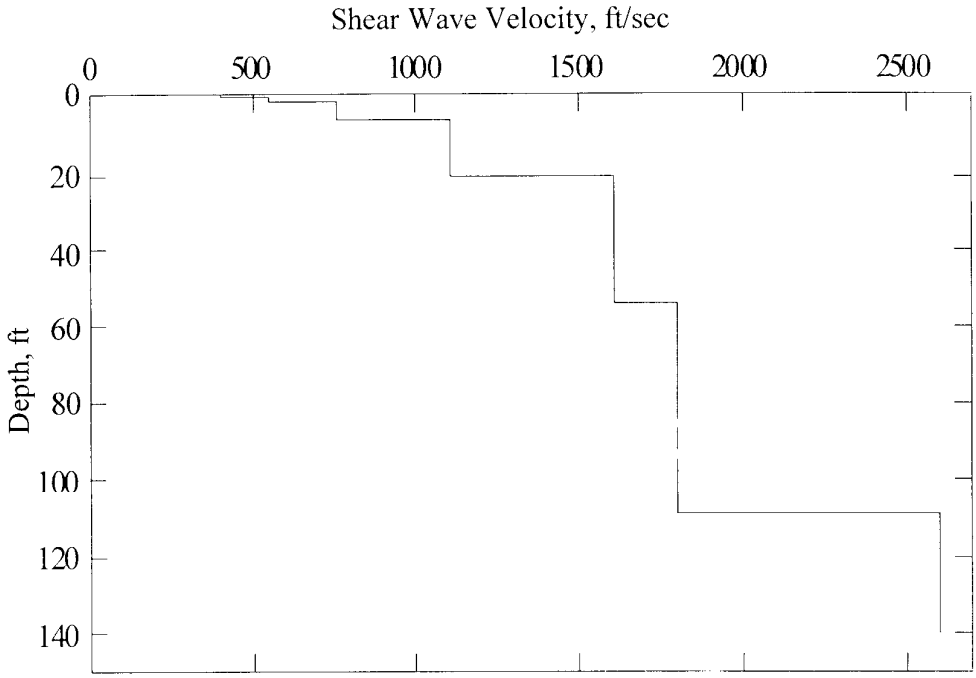


Fig. 28 Shear Wave Velocity Profile Determined from SASW Test North of Sludge Drying Beds, Little Cottonwood Canyon Water Treatment Plant.

Table 8 Soil Profile from SASW Test North of Sludge Drying Beds, Little Cottonwood Canyon Water Treatment Plant.

Layer No.	Layer Thickness (ft)	Shear Wave Velocity (ft/sec)	Assumed P-Wave Velocity (ft/sec)	Assumed Unit Weight (lb/ft^3)
1	0.5	400	750	120
2	1.0	550	1030	120
3	5.5	775	1450	120
4	13.0	1100	2060	120
5	34.0	1600	2990	120
6	55.0	1800	3370	135
7	31.0*	2600	4860	135

* Half-space in model

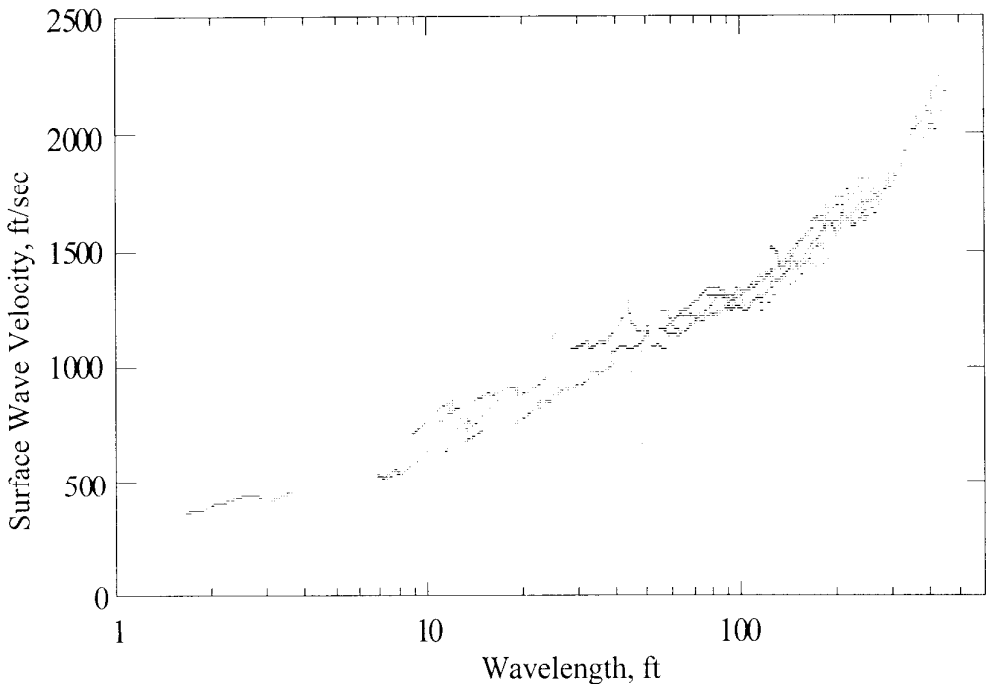


Fig. 29 Experimental Dispersion Curve Measured in Field North of Sludge Drying Beds, Little Cottonwood Canyon Water Treatment Plant.

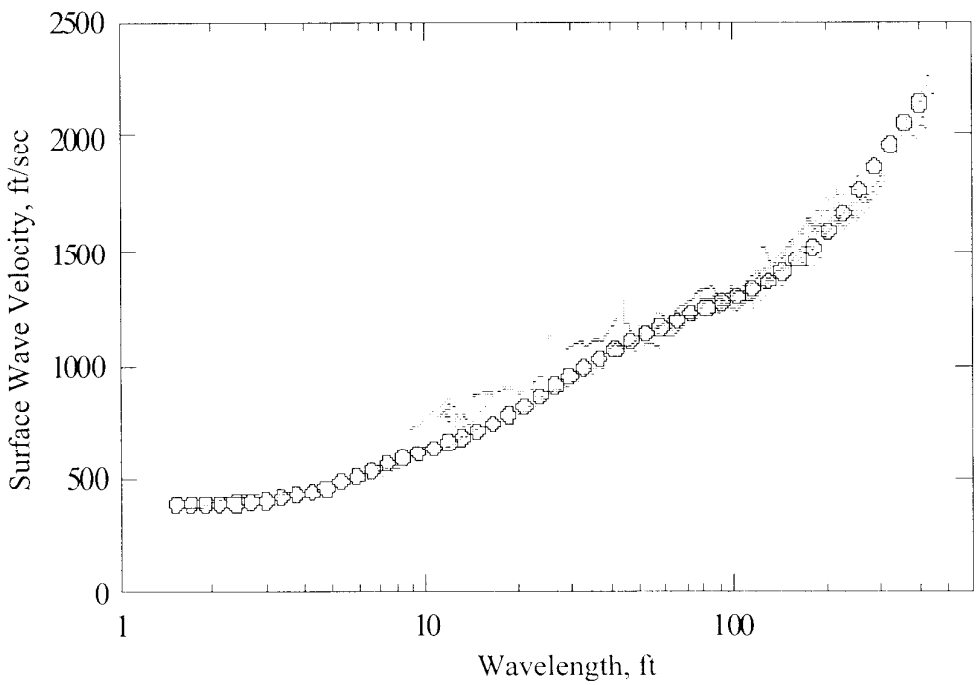


Fig. 30 Comparison between Experimental and Theoretical Dispersion Curves from Field North of Sludge Drying Beds, Little Cottonwood Canyon Water Treatment Plant.

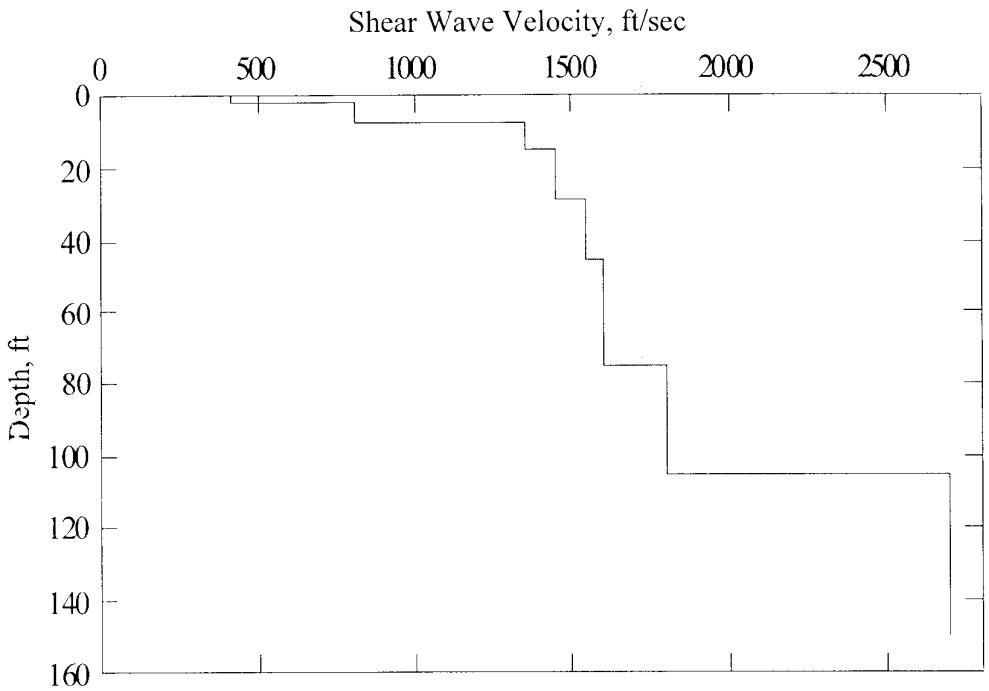


Fig. 31 Shear Wave Velocity Profile Determined from SASW Test in Field North of Sludge Drying Beds, Little Cottonwood Canyon Water Treatment Plant.

Table 9 Soil Profile from SASW Test in Field North of Sludge Drying Beds, Little Cottonwood Canyon Water Treatment Plant.

Layer No.	Layer Thickness (ft)	Shear Wave Velocity (ft/sec)	Assumed P-Wave Velocity (ft/sec)	Assumed Unit Weight (lb/ft^3)
1	2.0	420	790	120
2	6.0	800	1500	120
3	7.0	1350	2530	120
4	14.0	1450	2710	120
5	16.0	1550	2900	120
6	30.0	1600	2990	120
7	30.0	1800	3370	120
8	45.0*	2700	5050	135

* Half-space in model

Conclusions

High quality dispersion curves were obtained from field SASW measurements at all of the sited except the site East of the sludge drying beds. This site was on a constructed fill, and there was significant scatter in the dispersion data. The Forward modeling procedure resulted in good matches between experimental and theoretical dispersion. This indicates that shear wave velocity profiles presented should accurately represent the shear wave velocity profiles at each site.

References

1. Ballard, R.F., Jr., "Determination of Soil Shear Moduli at Depth by In Situ Vibratory Techniques," U.S. Army, Corps of Engineers, Waterways Experiment Station, Miscellaneous Paper No. 4-691, December 1964.
2. Nazarian, S., "In Situ Determination of Elastic Moduli of Soil Deposits and Pavement Systems by Spectral-Analysis-of-Surface-Waves Method," Ph.D. Dissertation, The University of Texas at Austin, December 1984.
3. Stokoe, K.H., II, S. Nazarian, G.J. Rix, I. Sanchez-Salinero, J.-C. Sheu and Y.-J. Mok, "In Situ Seismic Testing of Hard-to-Sample Soils by Surface Wave Method," *Proceedings*, American Society of Civil Engineers, Specialty Conference on Earthquake Engineering and Soil Dynamics II - Recent Advances in Ground Motion Evaluation, Park City, Utah, June 1988, pp. 264-278.
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4. Kausel, E. and Roesset, J.M., "Stiffness Matrices for layered Soils," Bulletin of Seismological Society of America, Vol. 71, No. 6, PP 1743-1761, December 1981.

Respectfully Submitted

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Metro water plant data (Bay and others, 2003)

	layer thickn	Vs (ft/s)	b/c	
t1	0.25	3000	8.33333E-05	
	1.75	700	0.0025	
	5	650	0.007692308	
	18	935	0.019251337	
	24	900	0.026666667	
	51	2500	0.0204	
	100		0.076593645	
	30.48			
		Vsmean	**1305.6**	**397.9**
t2	0.2	2500	0.00008	
	1.3	425	0.003058824	
	6.5	700	0.009285714	
	17	825	0.020606061	
	20	1600	0.0125	
	30	1800	0.016666667	
	75	3200	0.0234375	
	150		0.085634765	
	45.72			
		Vsmean	**1751.6**	**533.9**
t3	0.2	3000	6.66667E-05	
	1.3	500	0.0026	
	6.5	700	0.009285714	
	10	825	0.012121212	
	20	1600	0.0125	
	30	1800	0.016666667	
	42	2400	0.0175	
	110		0.07074026	
	33.528			
		Vsmean	**1555.0**	**474.0**
t4	0.15	2400	0.0000625	
	1.85	500	0.0037	
	6	750	0.008	
	7	1200	0.005833333	
	14	1300	0.010769231	
	16	1400	0.011428571	
	30	1600	0.01875	
	30	1700	0.017647059	
	75	3000	0.025	
	180		0.101190694	
	54.864			
		Vsmean	**1778.8**	**542.2**
t5	0.2	2500	0.00008	
	1.3	650	0.002	
	4	800	0.005	
	5	825	0.006060606	
	18	1600	0.01125	
	30	1800	0.016666667	
	40	2150	0.018604651	
	98.5		0.059661924	
	30.0228			
		Vsmean	**1651.0**	**503.2**

	layer thick	Vs (ft/s)	b/c	
t1	0.25	3000	8.33333E-05	
	1.75	700	0.0025	
	5	650	0.007692308	
	18	935	0.019251337	
	24	900	0.026666667	
	51	2500	0.0204	
	100		0.076593645	
		Vs30	**1305.6**	**397.9**
t2	0.2	2500	0.00008	
	1.3	425	0.003058824	
	6.5	700	0.009285714	
	17	825	0.020606061	
	20	1600	0.0125	
	30	1800	0.016666667	
	25	3200	0.0078125	
	100		0.070009765	
		Vs30	**1428.4**	**435.4**
t3	0.2	3000	6.66667E-05	
	1.3	500	0.0026	
	6.5	700	0.009285714	
	10	825	0.012121212	
	20	1600	0.0125	
	30	1800	0.016666667	
	32	2400	0.013333333	
	100		0.066573593	
		Vs30	**1502.1**	**457.8**
t4	0.15	2400	0.0000625	
	1.85	500	0.0037	
	6	750	0.008	
	7	1200	0.005833333	
	14	1300	0.010769231	
	16	1400	0.011428571	
	30	1600	0.01875	
	25	1700	0.014705882	
	100		0.073249518	
		Vs30	**1365.2**	**416.1**
t5	0.2	2500	0.00008	
	1.3	650	0.002	
	4	800	0.005	
	5	825	0.006060606	
	18	1600	0.01125	
	30	1800	0.016666667	
	41.5	2150	0.019302326	
	100		0.060359598	
	**** actual total depth 98.5**			
		Vs30	**1656.7**	**505.0**

t6	0.2	2500	0.00008	
	1.3	650	0.002	
	4	825	0.004848485	
	9	875	0.010285714	
	18	1600	0.01125	
	30	1800	0.016666667	
	20	2150	0.009302326	
	82.5		0.054433191	
	25.146			
		Vsmean	**1515.6**	**462.0**
t7	0.5	525	0.000952381	
	1	775	0.001290323	
	5.5	950	0.005789474	
	13	1100	0.011818182	
	31	1600	0.019375	
	50	1800	0.027777778	
	20	2400	0.008333333	
	121		0.07533647	
	36.8808			
		Vsmean	**1606.1**	**489.5**
t8	0.5	400	0.00125	
	1	550	0.001818182	
	5.5	775	0.007096774	
	13	1100	0.011818182	
	34	1600	0.02125	
	55	1800	0.030555556	
	31	2600	0.011923077	
	140		0.08571177	
	42.672			
		Vsmean	**1633.4**	**497.9**
t9	2	420	0.004761905	
	6	800	0.0075	
	7	1350	0.005185185	
	14	1450	0.009655172	
	16	1550	0.010322581	
	30	1600	0.01875	
	30	1800	0.016666667	
	45	2700	0.016666667	
	150		0.089508176	
	45.72			
		Vsmean	**1675.8**	**510.8**

t6	0.2	2500	0.00008	
	1.3	650	0.002	
	4	825	0.004848485	
	9	875	0.010285714	
	18	1600	0.01125	
	30	1800	0.016666667	
	20	2150	0.009302326	
	82.5		0.054433191	
	**** not vs30 (too shallow)**			
		Vs30	**1515.6**	**462.0**
t7	0.5	525	0.000952381	
	1	775	0.001290323	
	5.5	950	0.005789474	
	13	1100	0.011818182	
	31	1600	0.019375	
	49	1800	0.027222222	
	100		0.066447581	
		Vs30	**1504.9**	**458.7**
t8	0.5	400	0.00125	
	1	550	0.001818182	
	5.5	775	0.007096774	
	13	1100	0.011818182	
	34	1600	0.02125	
	46	1800	0.025555556	
	100		0.068788693	
		Vs30	**1453.7**	**443.1**
t9	2	420	0.004761905	
	6	800	0.0075	
	7	1350	0.005185185	
	14	1450	0.009655172	
	16	1550	0.010322581	
	30	1600	0.01875	
	25	1800	0.013888889	
	100		0.070063732	
		Vs30	**1427.3**	**435.0**

Vs30 of mean plot

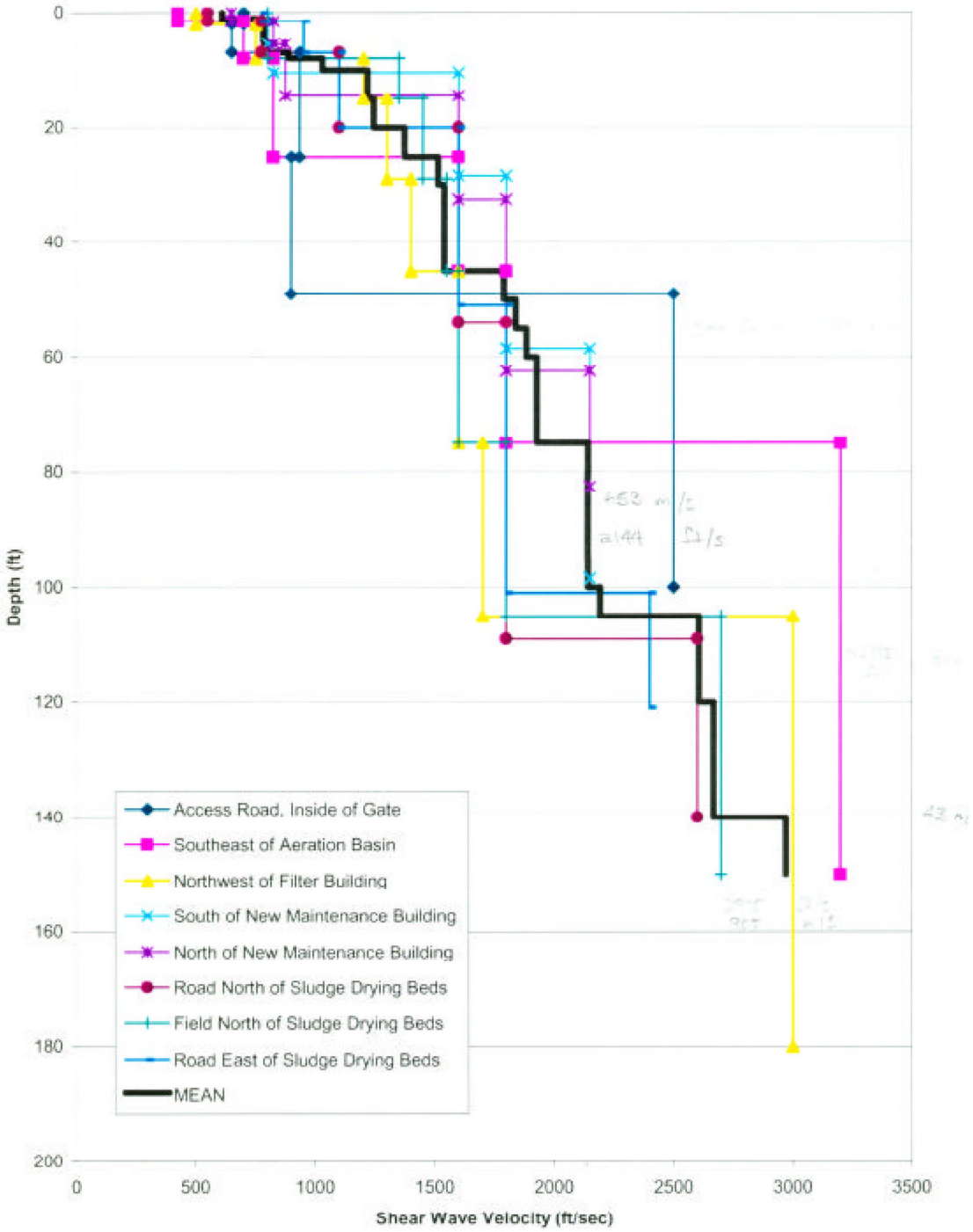
depth	thickness	Vs	
0	1	600	0.001666667
1	6	780	0.007692308
7	1	890	0.001123596
8	2	1010	0.001980198
10	5	1200	0.004166667
15	5	1210	0.004132231
20	5	1350	0.003703704
25	5	1500	0.003333333
30	15	1520	0.009868421
45	5	1780	0.002808989
50	5	1810	0.002762431
55	5	1860	0.002688172
60	15	1900	0.007894737
75	25	2130	0.011737089
100	5	2190	0.002283105
105	15	2610	0.005747126
120	20	2670	0.007490637
140	10	2960	0.003378378
150			
	150		0.084457788
	45.72		
Vs30		**1776.0**	**541.3**

Vs30 of mean plot

depth	thickness	Vs	
0	1	600	0.001666667
1	6	780	0.007692308
7	1	890	0.001123596
8	2	1010	0.001980198
10	5	1200	0.004166667
15	5	1210	0.004132231
20	5	1350	0.003703704
25	5	1500	0.003333333
30	15	1520	0.009868421
45	5	1780	0.002808989
50	5	1810	0.002762431
55	5	1860	0.002688172
60	15	1900	0.007894737
75	25	2130	0.011737089
100			
	100		0.065558542
Vs30		**1525.4**	**464.9**

Metro - LCC Facility

Preliminary Results of SASW Tests



Site 109 – Beehive Ball Park, American Fork

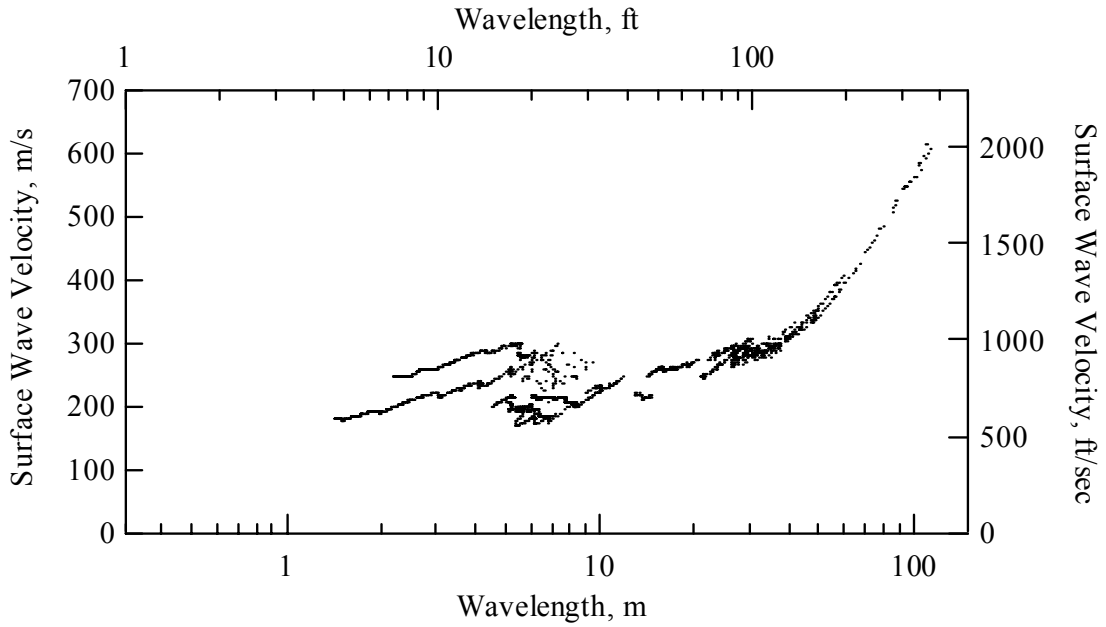
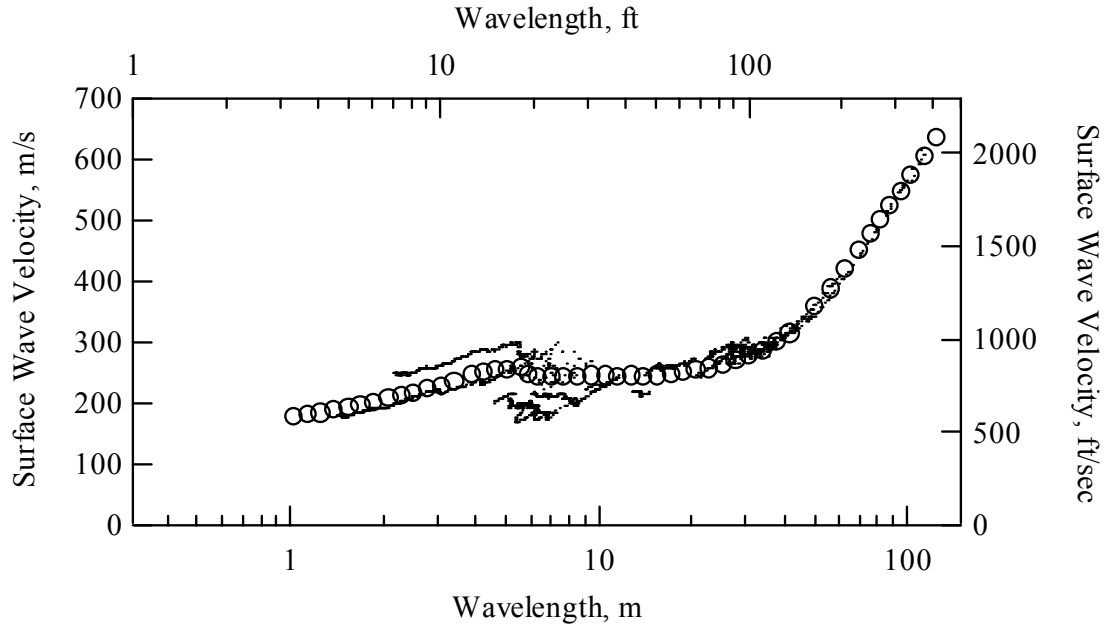
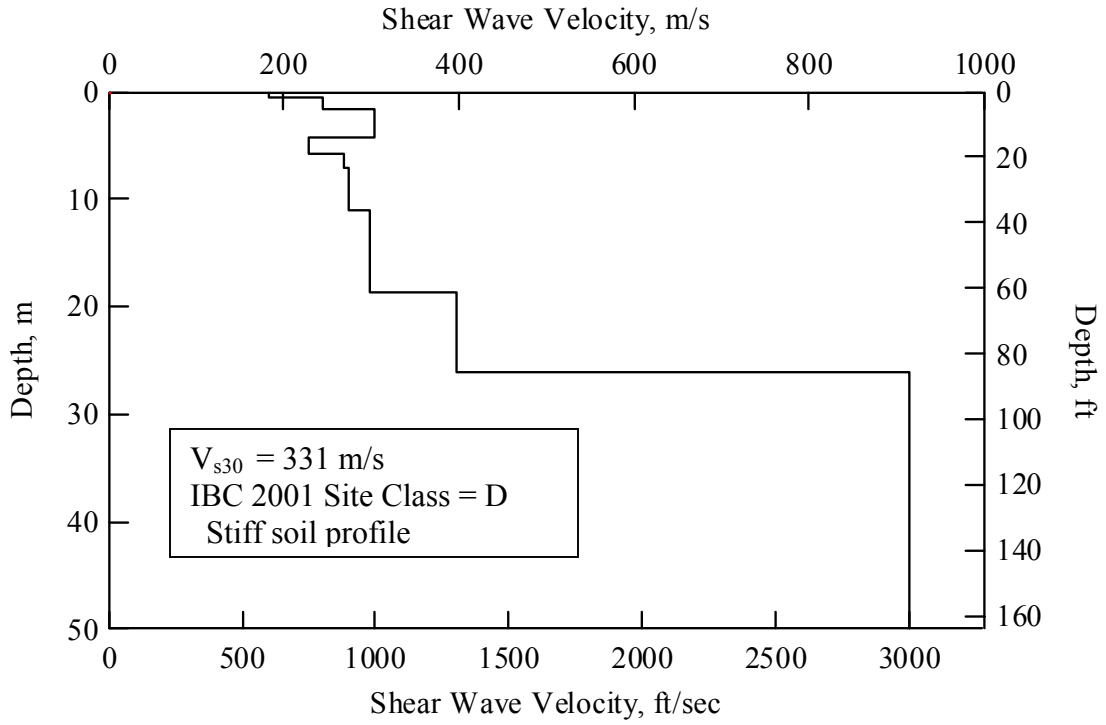


Fig 1 Experimental Dispersion Curve measured at Beehive Ball Park, American Fork, Site 109, Earthquake Site Response Unit Q02 (Ashland, 2001)



Comparison between Experimental & Theoretical Dispersion Curves at Beehive Ball Park, American Fork, Site 109, Earthquake Site Response Unit Q02 (Ashland, 2001)



Shear Wave Velocity Profile Determined from SASW Testing at Beehive Ball Park, American Fork, Site 109, Earthquake Site Response Unit Q02 (Ashland, 2001)

Tabulated Shear Wave Velocity Profile from Beehive Ball Park, American Fork, Site 109, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.61	182.90	342.1	1.92
0.61	0.91	243.80	456.2	1.92
1.52	2.74	304.80	570.2	2
4.26	1.52	228.60	399.2	1.92
5.78[a]	1.22	269.70	1524	1.92
7	3.96	274.30	1524	1.92
10.96	7.62	297.20	1524	1.92
18.58	7.62	396.20	1524	2
26.2	30.18[b]	914.40	1524	2.08

a. Depth to water table from Refraction Testing
b. Half-space in model

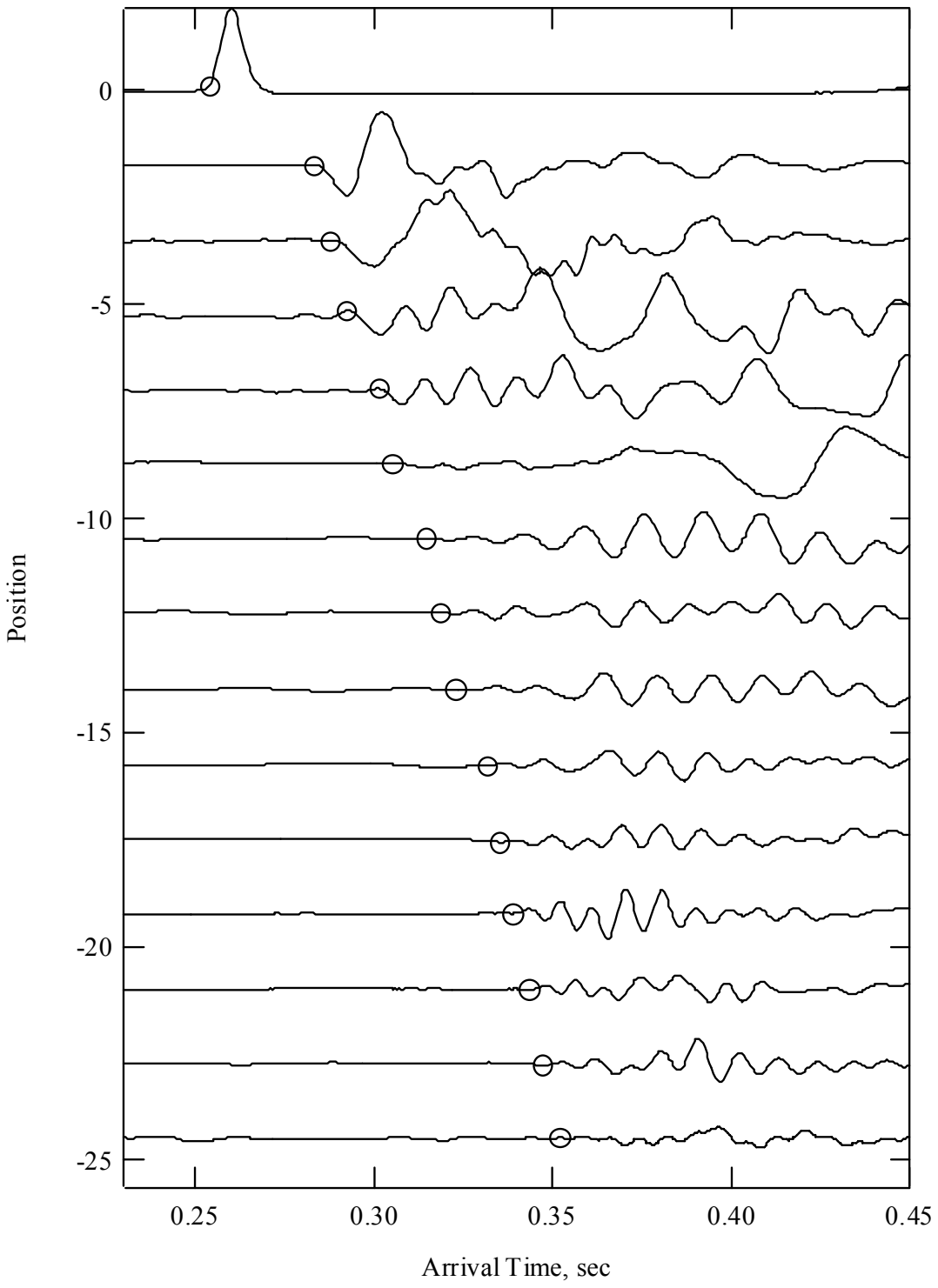


Fig 2 Arrival Times for Refraction Testing at Beehive Ball Park, American Fork, Site 109, Earthquake Site Response Unit Q02 (Ashland, 2001)

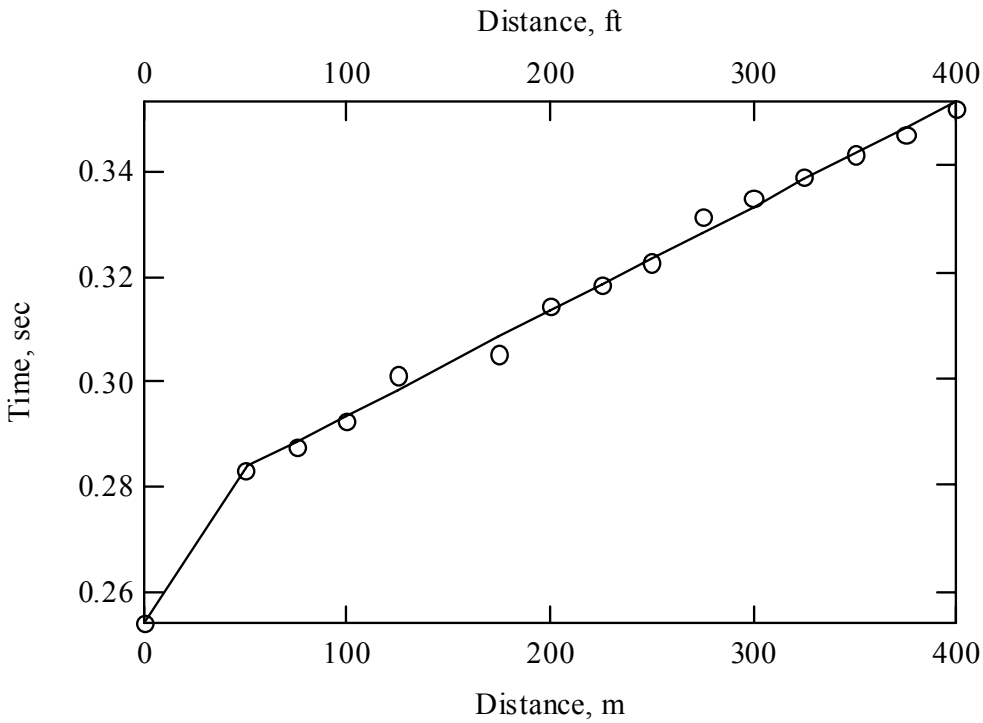


Fig 3 Time-Distance Curve for Refraction Testing at Beehive Ball Park, American Fork, Site 109, Earthquake Site Response Unit Q02 (Ashland, 2001)

Tabulated Refraction Profile from Beehive Ball Park, American Fork, Site 109, Earthquake Site Response Unit Q02 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	5.45[a]	520.26	278.09
2		1528.13	

a. Depth of fully saturated zone

Q02

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Site 109 – Beehive Ball Park, American Fork

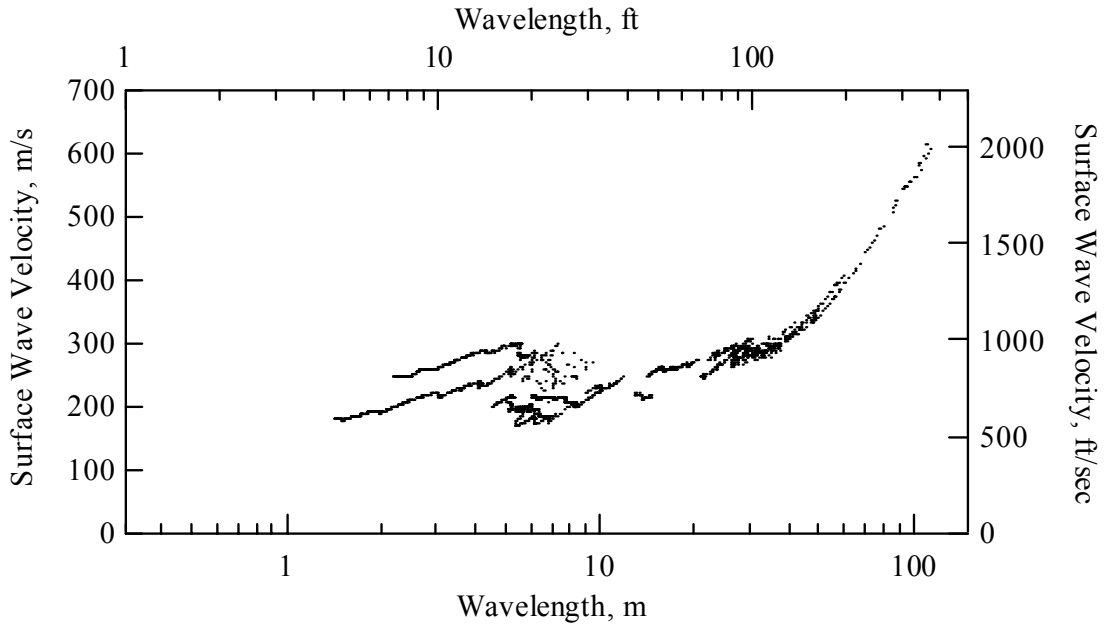
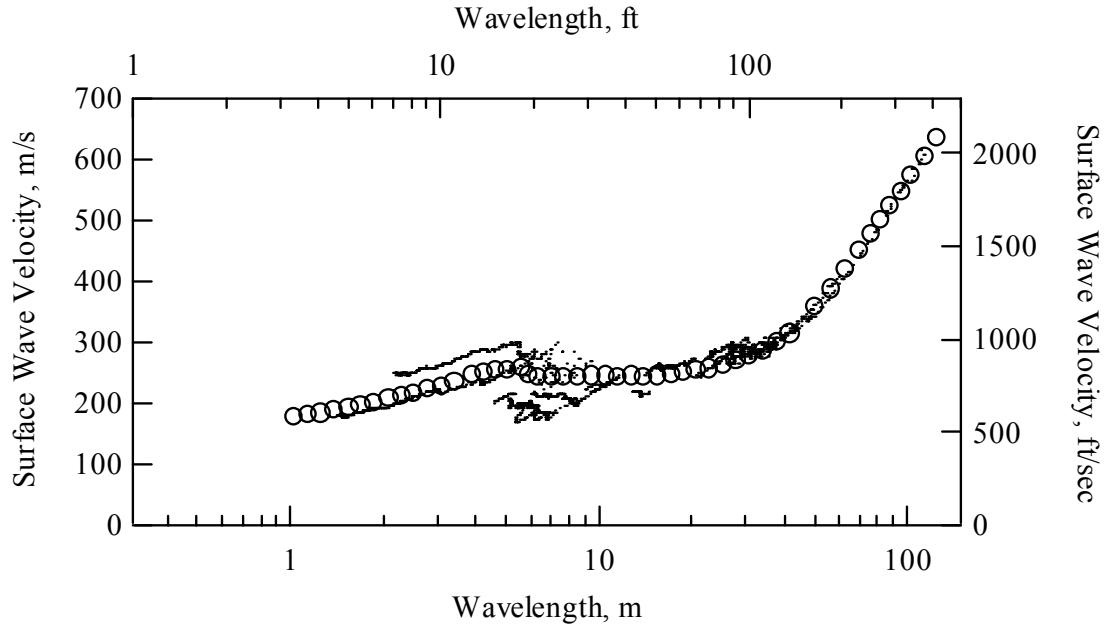
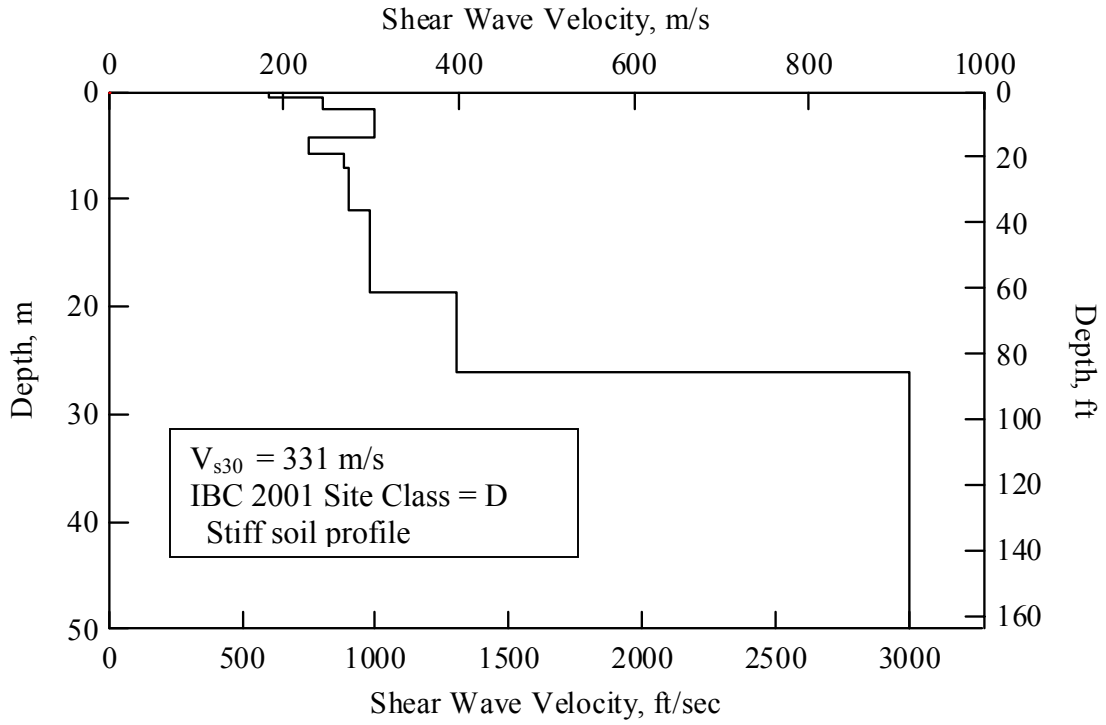


Fig 1 Experimental Dispersion Curve measured at Beehive Ball Park, American Fork, Site 109, Earthquake Site Response Unit Q02 (Ashland, 2001)



Comparison between Experimental & Theoretical Dispersion Curves at Beehive Ball Park, American Fork, Site 109, Earthquake Site Response Unit Q02 (Ashland, 2001)



Shear Wave Velocity Profile Determined from SASW Testing at Beehive Ball Park, American Fork, Site 109, Earthquake Site Response Unit Q02 (Ashland, 2001)

Tabulated Shear Wave Velocity Profile from Beehive Ball Park, American Fork, Site 109, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.61	182.90	342.1	1.92
0.61	0.91	243.80	456.2	1.92
1.52	2.74	304.80	570.2	2
4.26	1.52	228.60	399.2	1.92
5.78[a]	1.22	269.70	1524	1.92
7	3.96	274.30	1524	1.92
10.96	7.62	297.20	1524	1.92
18.58	7.62	396.20	1524	2
26.2	30.18[b]	914.40	1524	2.08

a. Depth to water table from Refraction Testing
b. Half-space in model

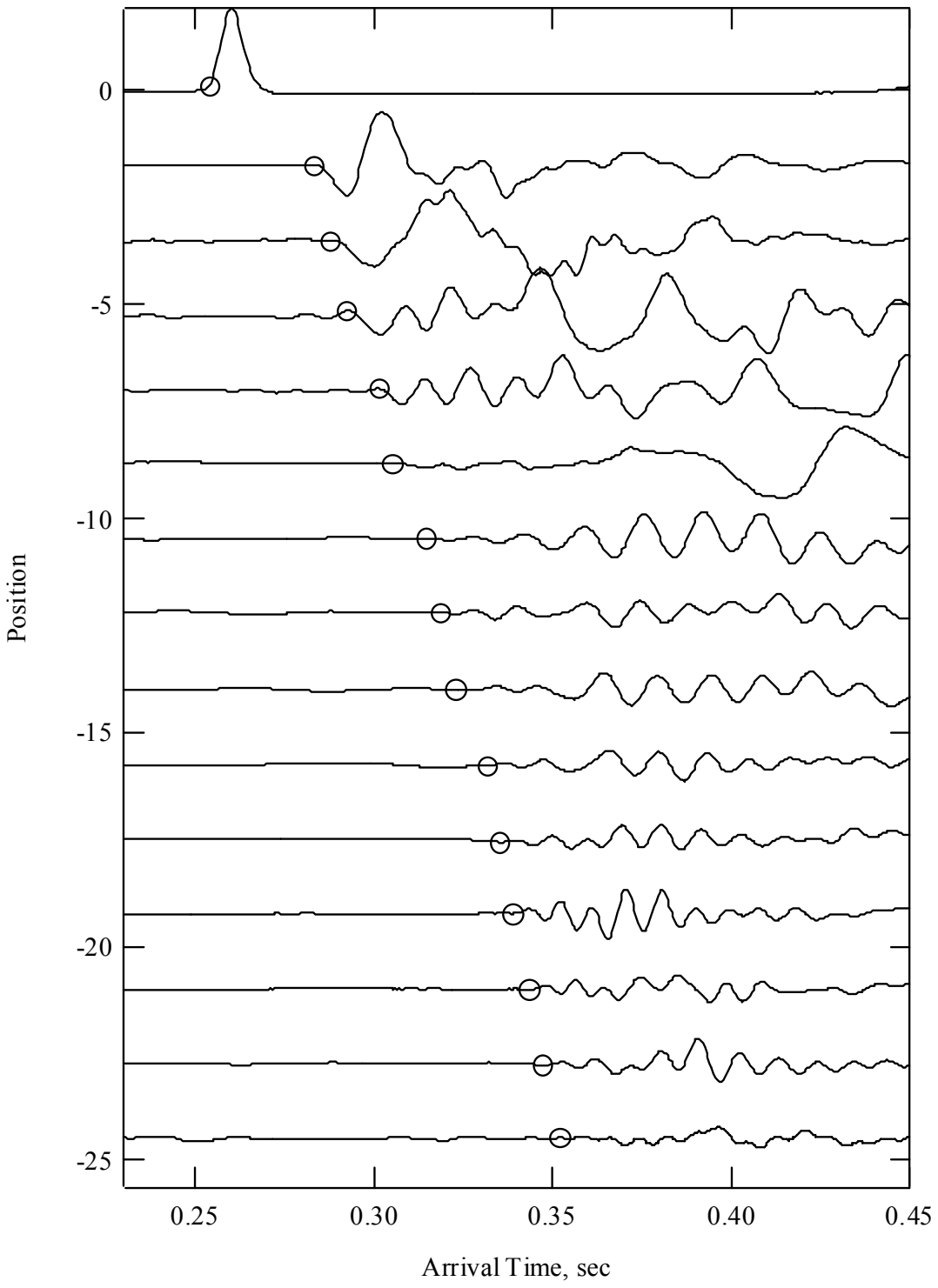


Fig 2 Arrival Times for Refraction Testing at Beehive Ball Park, American Fork, Site 109, Earthquake Site Response Unit Q02 (Ashland, 2001)

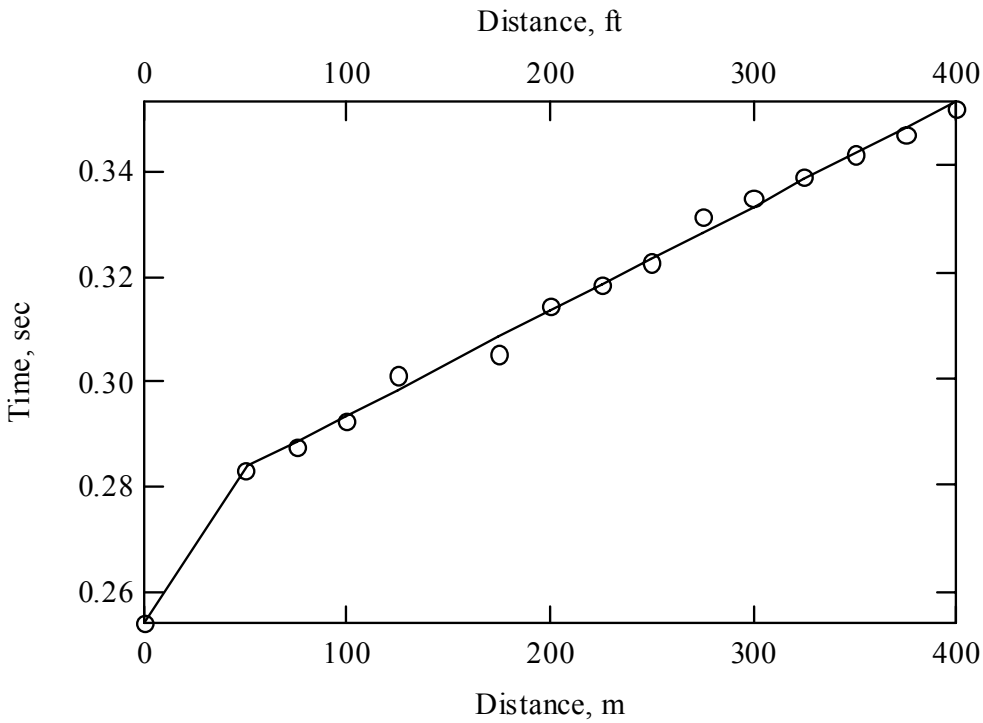


Fig 3 Time-Distance Curve for Refraction Testing at Beehive Ball Park, American Fork, Site 109, Earthquake Site Response Unit Q02 (Ashland, 2001)

Tabulated Refraction Profile from Beehive Ball Park, American Fork, Site 109, Earthquake Site Response Unit Q02 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	5.45[a]	520.26	278.09
2		1528.13	

a. Depth of fully saturated zone

Site 28, Utah Youth Sports Complex, West Jordan

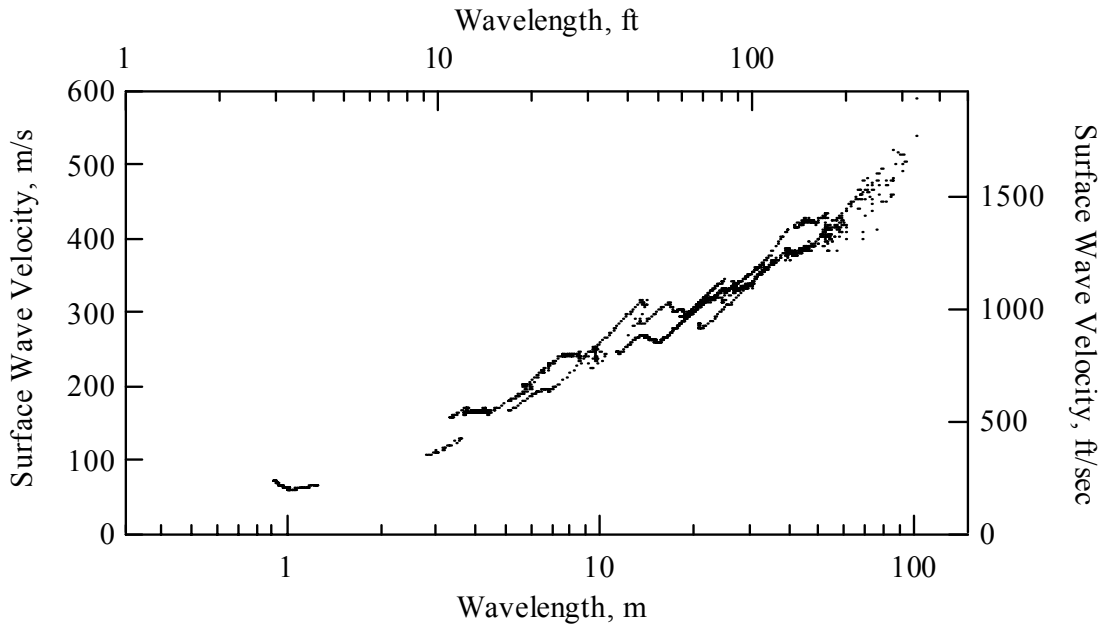


Fig 4 Experimental Dispersion Curve measured at Utah Youth Sports Complex, West Jordan, Site 28, Earthquake Site Response Unit Q02 (Ashland, 2001)

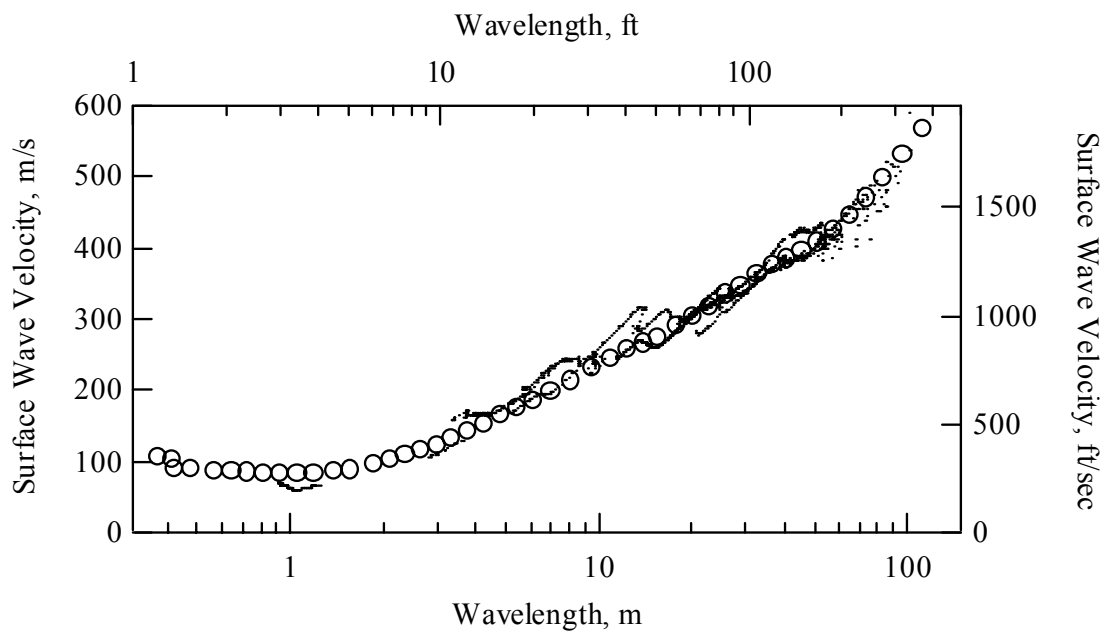


Fig 5 Comparison between Experimental & Theoretical Dispersion Curves from Utah Youth Sports Complex, West Jordan, Site 28, Earthquake Site Response Unit Q02 (Ashland, 2001)

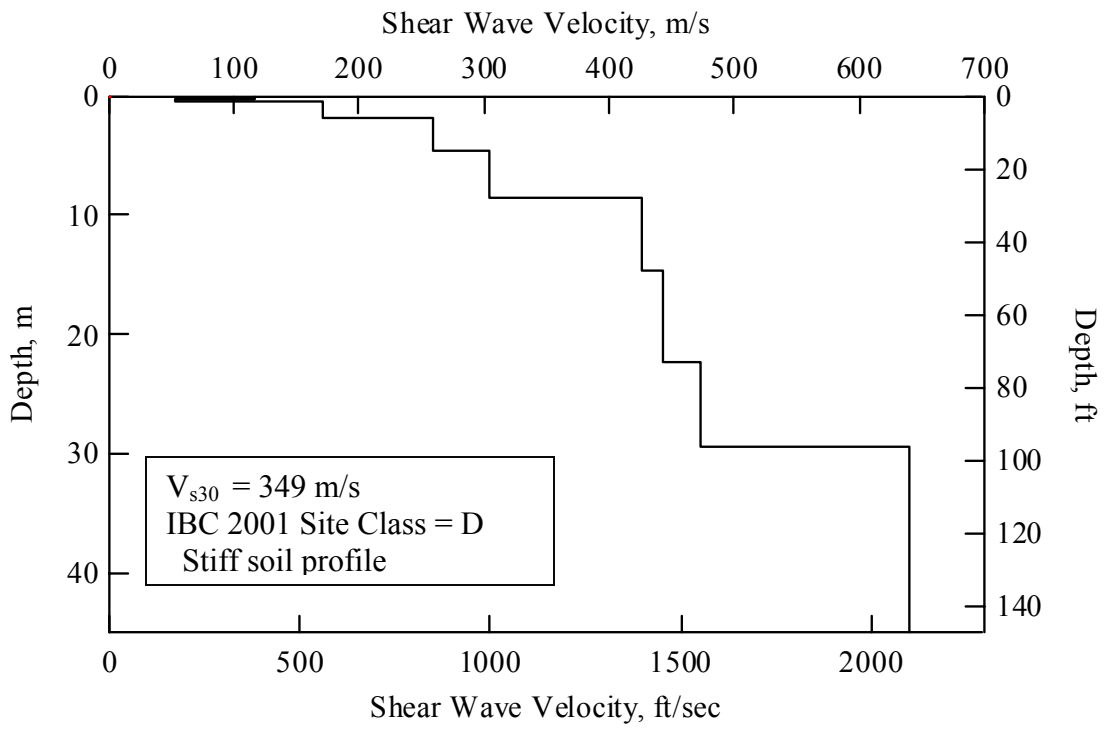


Fig 6 Shear Wave Velocity Profile Determined from SASW Testing at Utah Youth Sports Complex, West Jordan, Site 28, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 1 Tabulated Shear Wave Velocity Profile from Utah Youth Sports Complex, West Jordan, Site 28, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	117.4	219.50	1.89
0.3	0.24	53.3	99.80	1.89
0.54	1.37	170.7	319.30	1.92
1.91	2.74	259.1	484.70	1.92
4.65	3.96	304.8	570.20	2
8.61	6.1	426.7	798.30	2
14.71	7.62	442	826.90	2
22.33[a]	7.01	472.4	1524.00	2
29.34	30.18[b]	640.1	1524.00	2.08

a. Depth to fully saturated zone from Refraction testing
b. Half-space in model

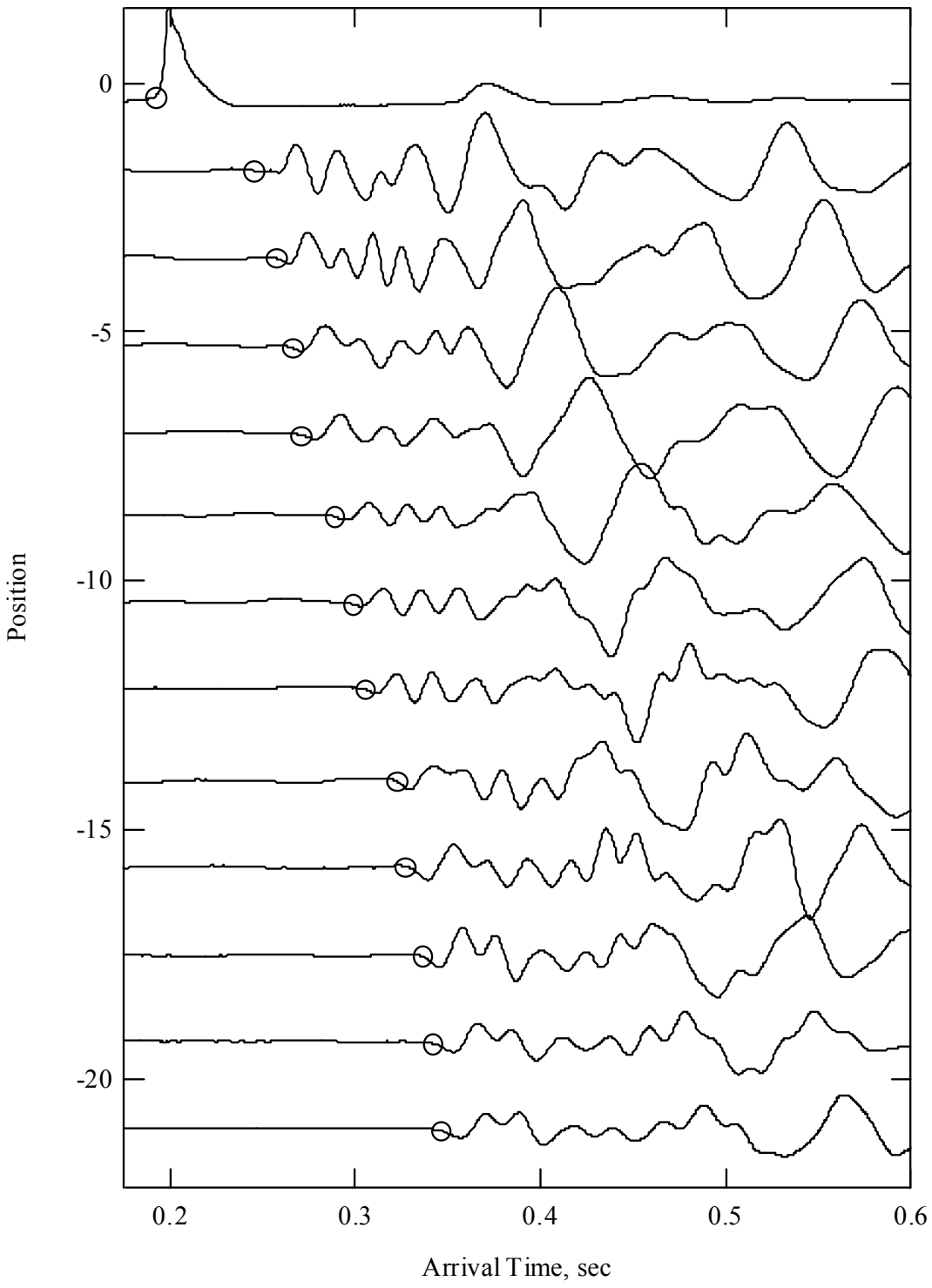


Fig 7 Arrival Times for Refraction Testing at Utah Youth Sports Complex, West Jordan, Site 28, Earthquake Site Response Unit Q02 (Ashland, 2001)

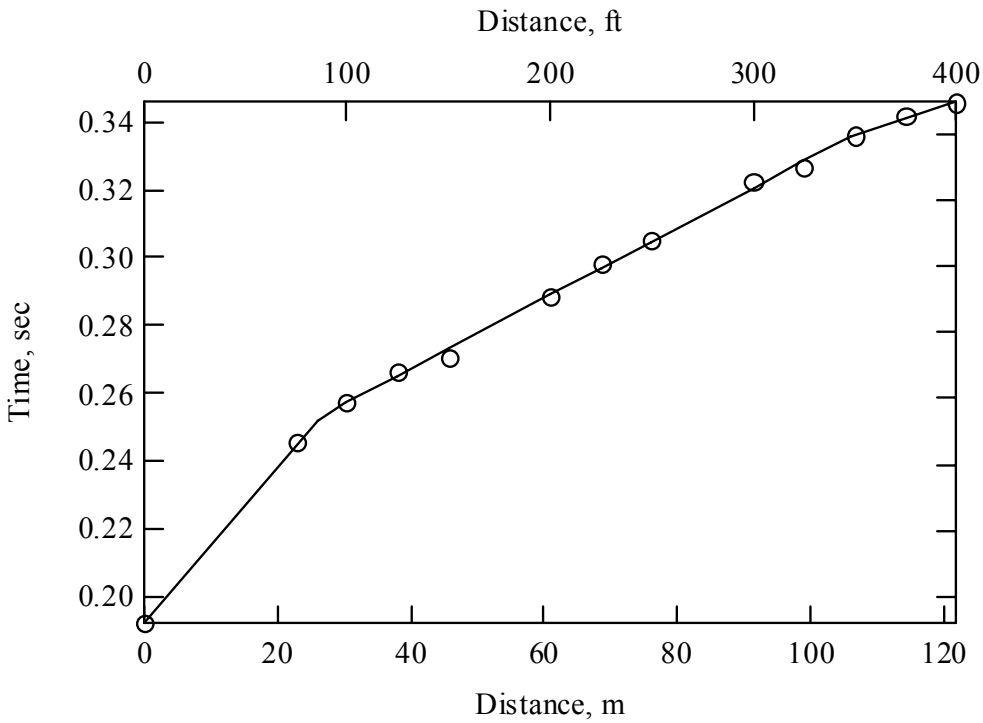


Fig 8 Time-Distance Curve for Refraction Testing at Utah Youth Sports Complex, West Jordan, Site 28, Earthquake Site Response Unit Q02 (Ashland, 2001)

Tabulated Refraction Profile from Utah Youth Sports Complex, West Jordan, Site 28, Earthquake Site Response Unit Q02 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	8.03	429.37	229.51
2	23.20[a]	959.34	512.79
3		1561	

a. Depth to fully saturated zone

Site 12, Riverton City Hall / Park

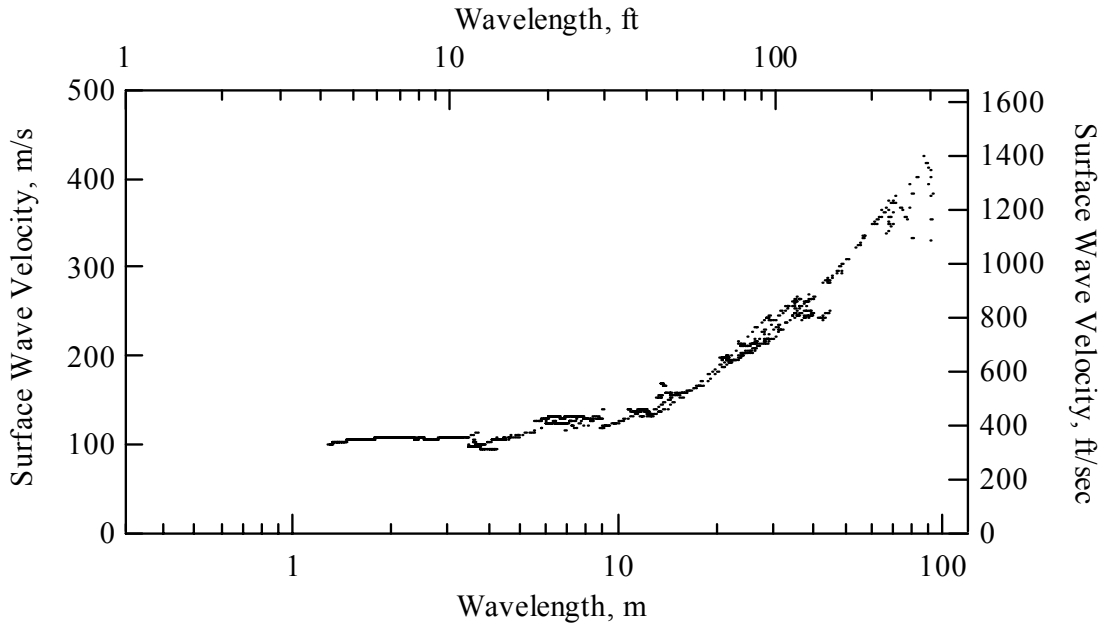


Fig 9 Experimental Dispersion Curve measured at Riverton City Hall/Park, Riverton, Site 12, Earthquake Site Response Unit Q02 (Ashland, 2001)

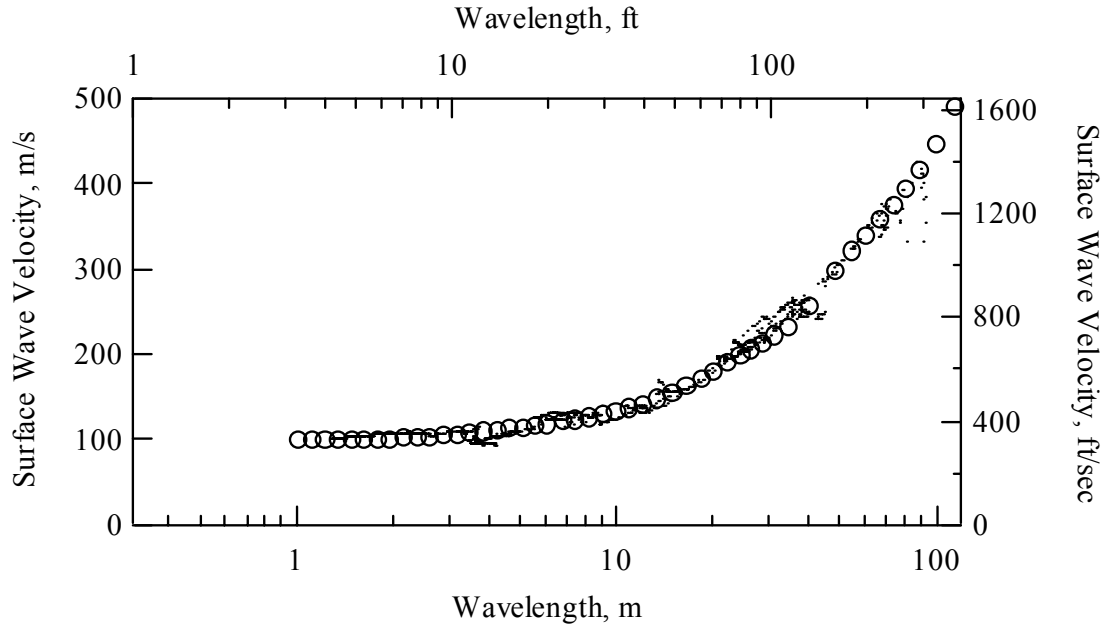


Fig 10 Comparison between Experimental & Theoretical Dispersion Curves from Riverton City Hall/Park, Riverton, Site 12, Earthquake Site Response Unit Q02 (Ashland, 2001)

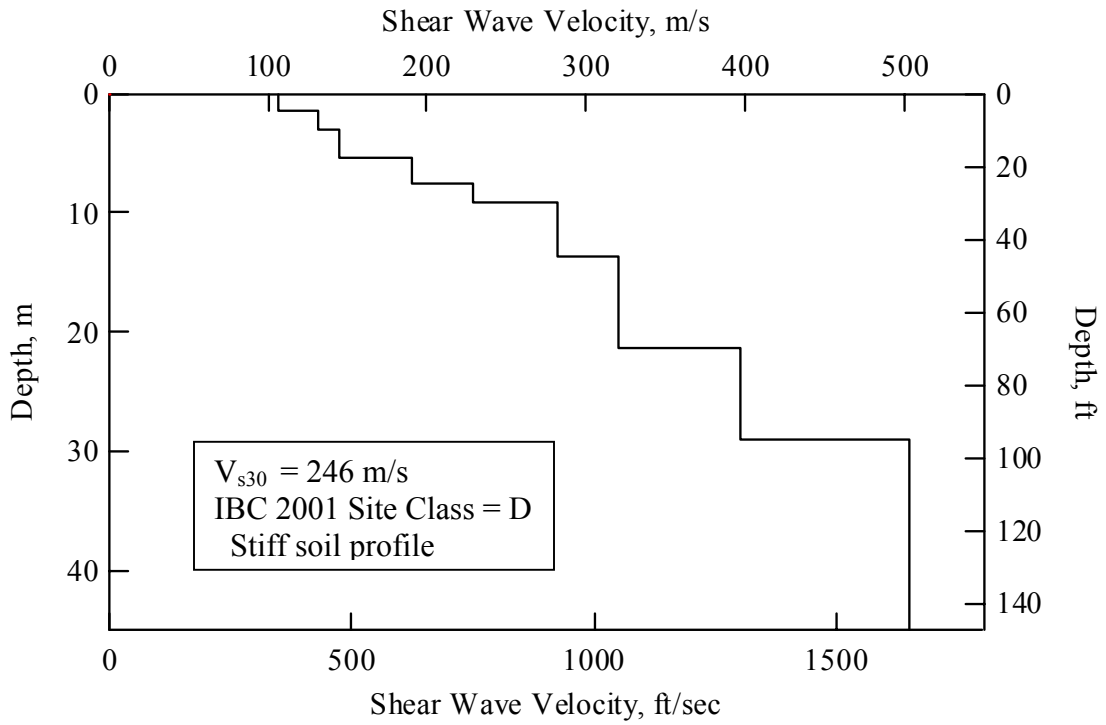


Fig 11 Shear Wave Velocity Profile Determined from SASW Testing at Riverton City Hall/Park, Riverton, Site 12, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 2 Tabulated Shear Wave Velocity Profile from Riverton City Hall/Park, Riverton, Site 12, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.38	106.7	199.6	1.89
0.38	1.14	106.7	199.6	1.89
1.52	1.52	131.1	245.2	1.92
3.04	2.44	144.8	270.9	1.89
5.48	2.13	190.5	356.4	1.92
7.61	1.52	228.6	427.7	1.92
9.13	4.57	281.9	527.5	1.92
13.7[a]	7.62	320	1524	2
21.32	7.62	396.2	1524	2
28.94	30.18[b]	502.9	1524	2

a. Assumed depth to fully saturated zone
b. Half-space in model

Site 123, Liberty Park

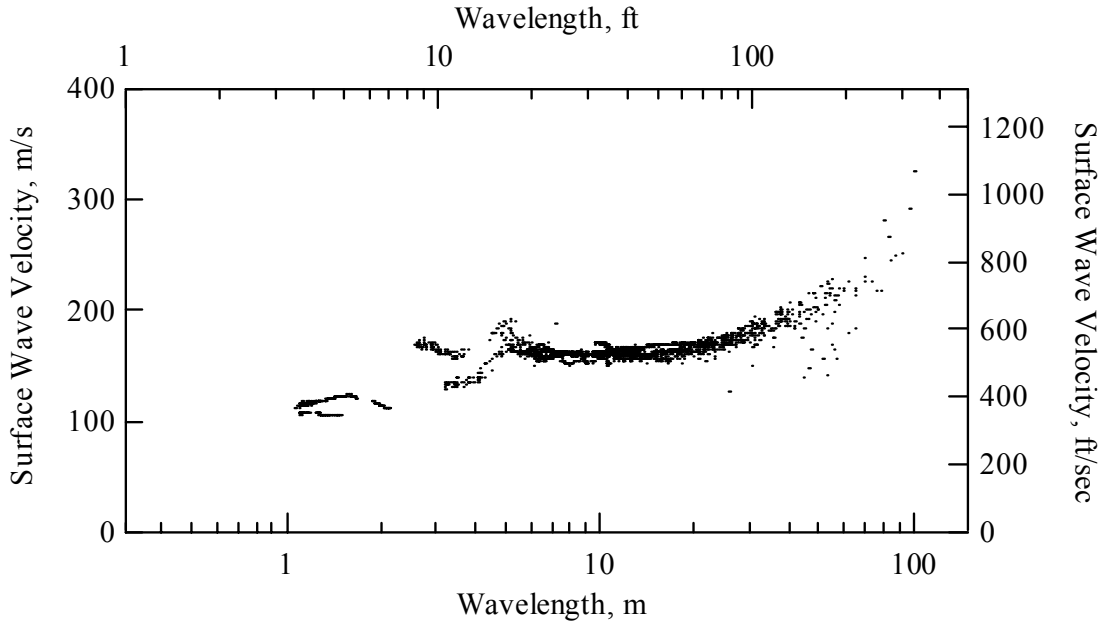


Fig 12 Experimental Dispersion Curve measured at Liberty Park, Ogden, Site 123, Earthquake Site Response Unit Q02 (Ashland, 2001)

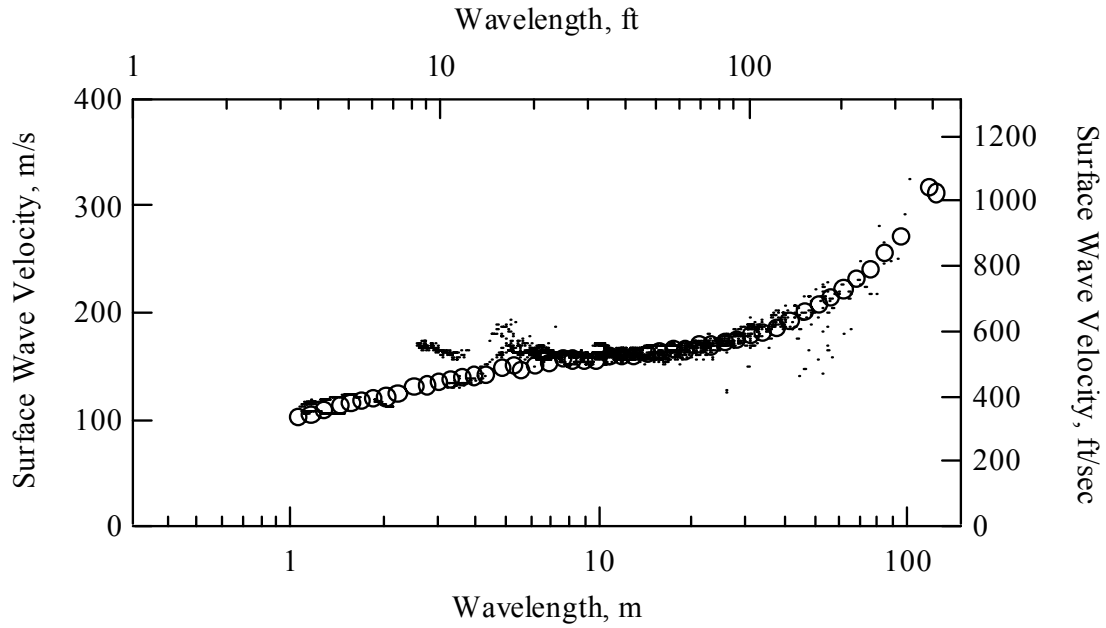


Fig 13 Comparison between Experimental & Theoretical Dispersion Curves from Liberty Park, Ogden, Site 123, Earthquake Site Response Unit Q02 (Ashland, 2001)

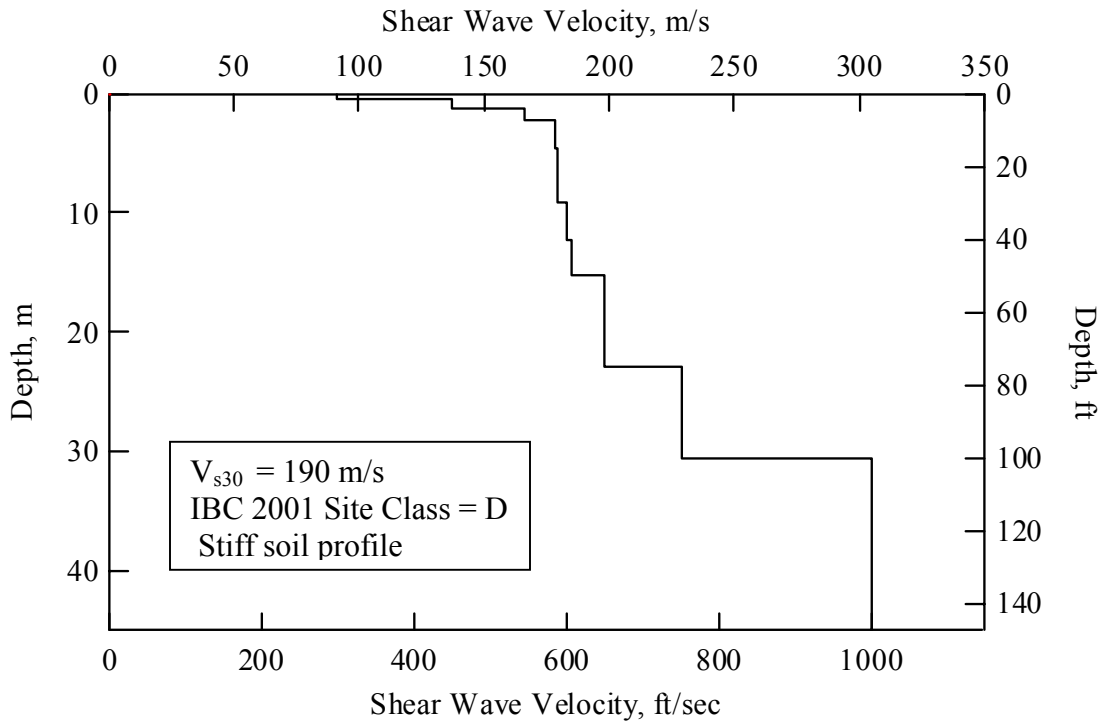
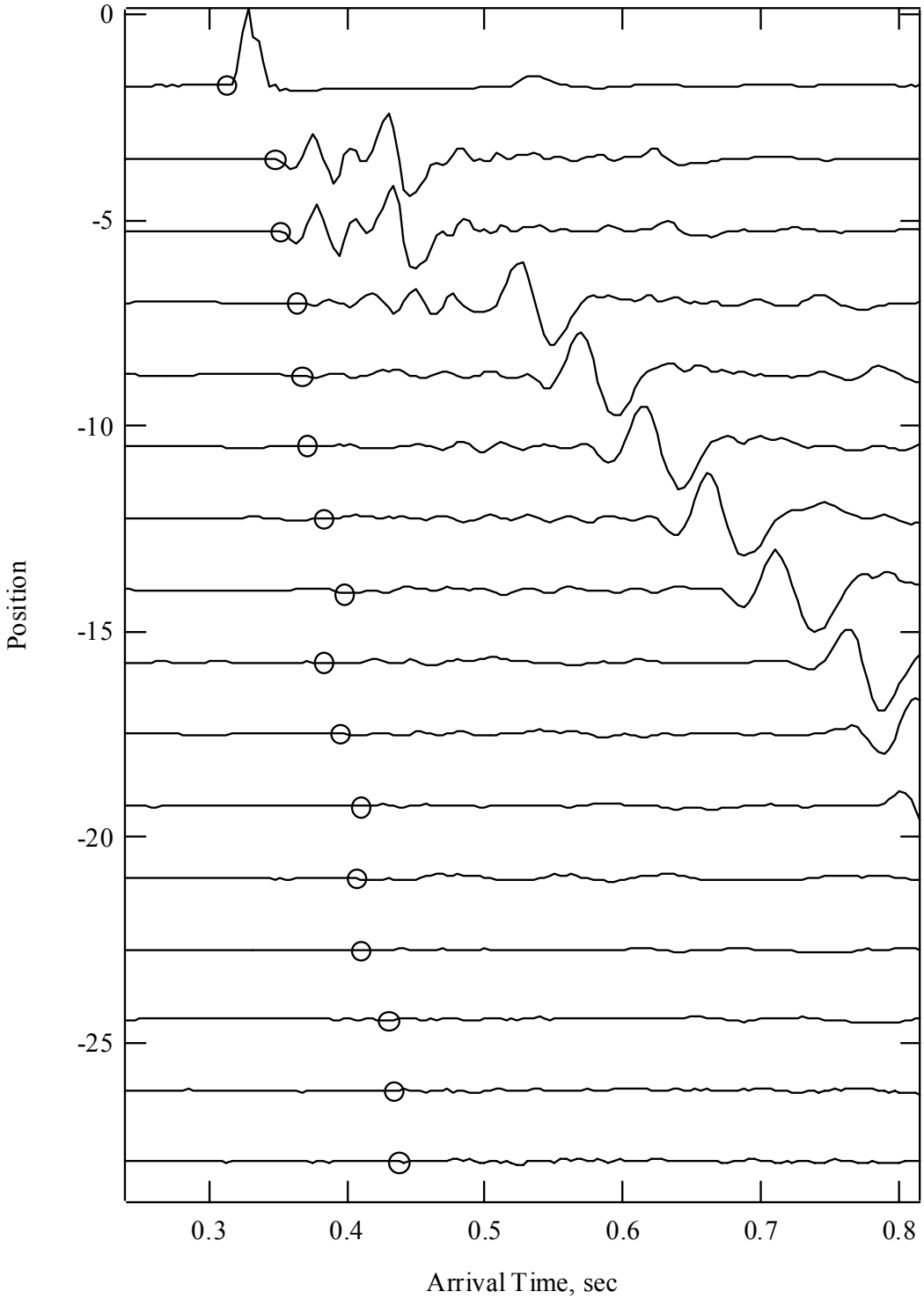


Fig 14 Shear Wave Velocity Profile Determined from SASW Testing at Liberty Park, Ogden, Site 123, Earthquake Site Response Unit Q02 (Ashland, 2001)

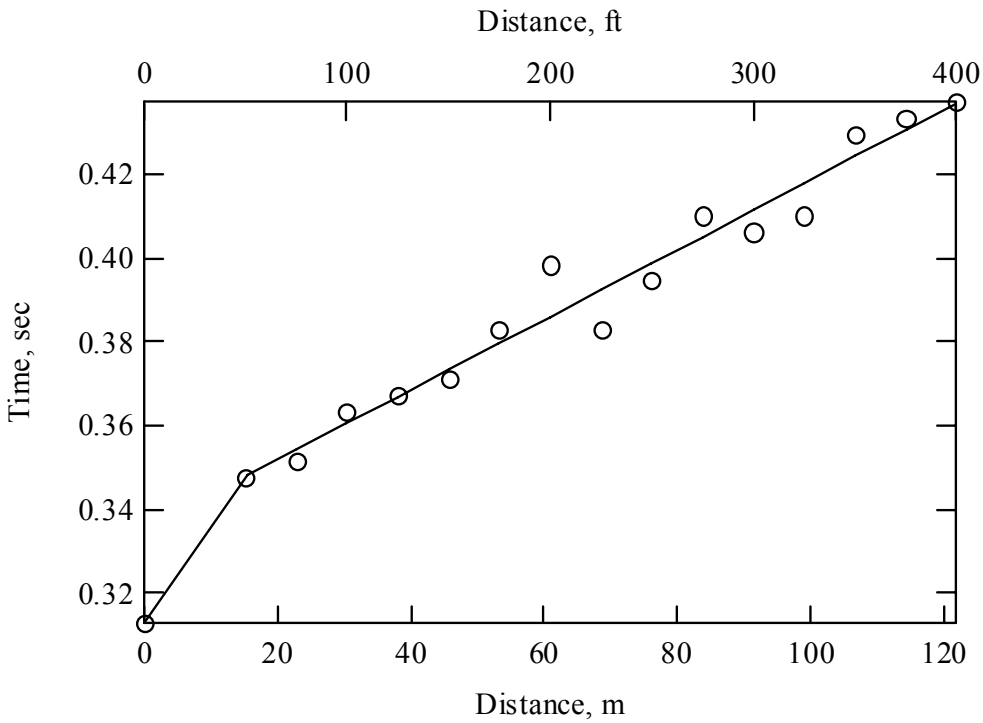
Table 3 Tabulated Shear Wave Velocity Profile from Liberty Park, Ogden, Site 123, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.41	91.40	171.1	1.89
0.41	0.84	137.20	256.6	1.89
1.25	0.91	166.10	310.8	1.92
2.16	2.44	178.30	333.6	1.92
4.6[a]	4.57	179.80	1524	1.92
9.17	3.05	182.90	1524	1.92
12.22	3.05	184.40	1524	1.92
15.27	7.62	198.10	1524	1.92
22.89	7.62	228.60	1524	1.92
30.51	30.18[b]	304.80	1524	2

a. Depth to fully saturated zone from Refraction Testing
b. Half-space in model



Arrival Times for Refraction Testing at Liberty Park, Ogden, Site 123, Earthquake Site Response Unit Q02 (Ashland, 2001)



Time-Distance Curve for Refraction Testing at Liberty Park, Ogden, Site 123, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 4 Tabulated Refraction Profile from Liberty Park, Ogden, Site 123, Earthquake Site Response Unit Q02 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	5.27[a]	433.44	231.69
2		1197.83	

a. Depth to fully saturated zone

Site 124, Ogden Lions Club Park

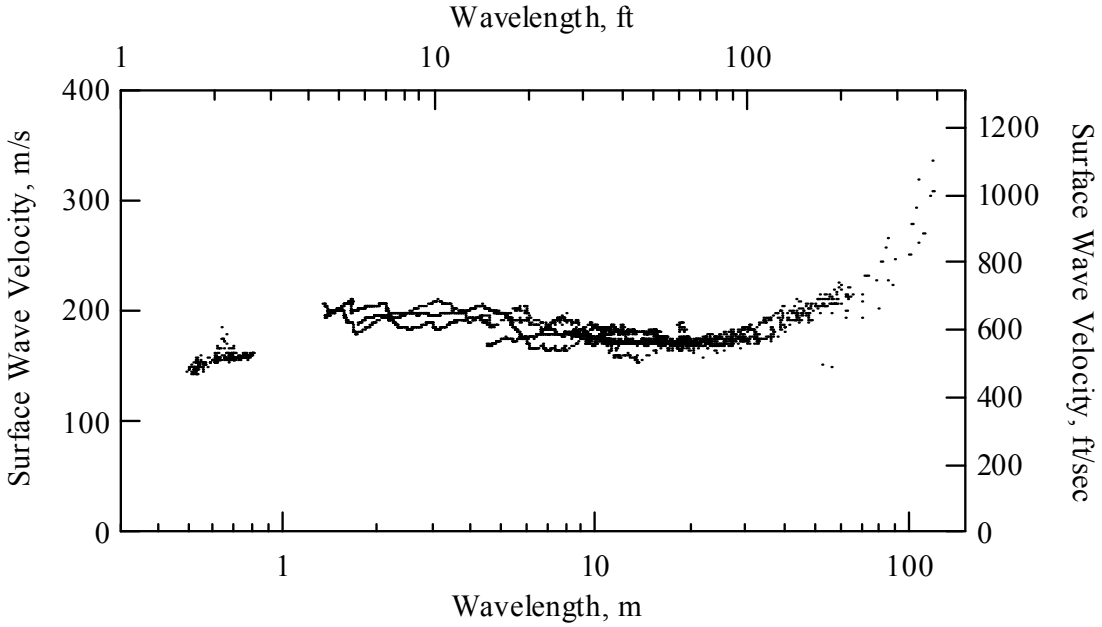


Fig 15 Experimental Dispersion Curve measured at Ogden Lions Club Park, Ogden, Site 124, Earthquake Site Response Unit Q02 (Ashland, 2001)

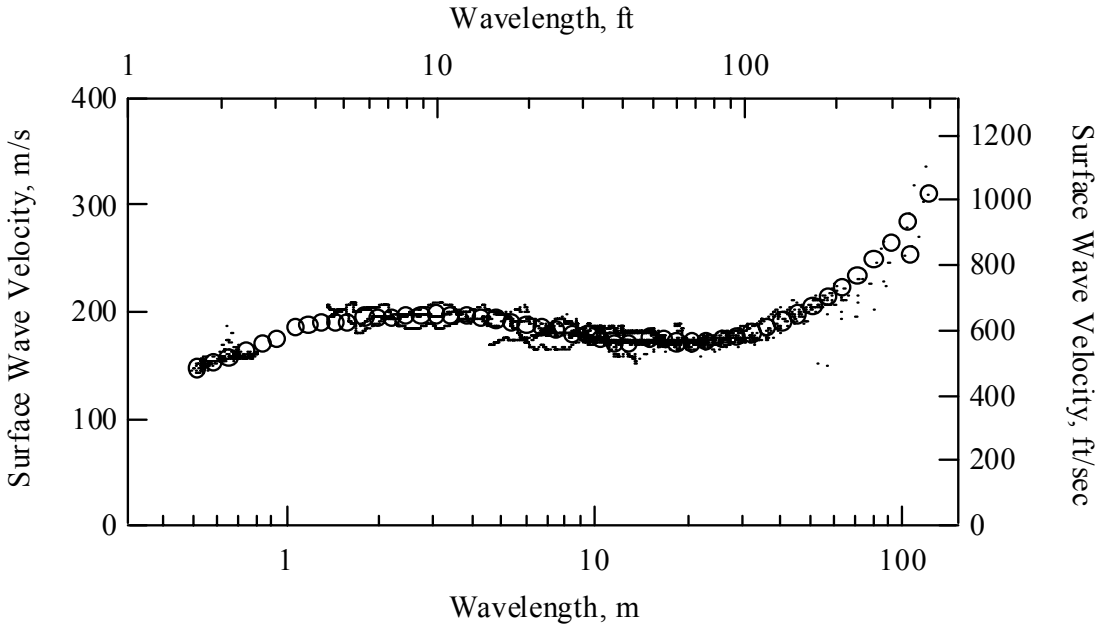


Fig 16 Comparison between Experimental & Theoretical Dispersion Curves from Ogden Lions Club Park, Ogden, Site 124, Earthquake Site Response Unit Q02 (Ashland, 2001)

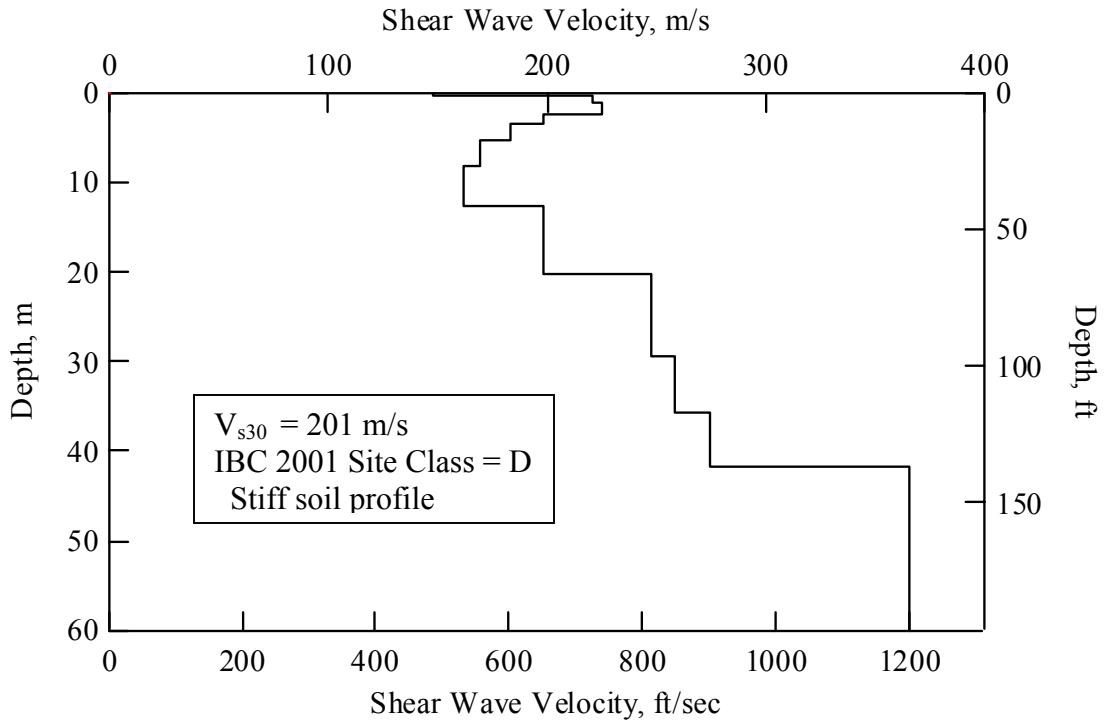


Fig 17 Shear Wave Velocity Profile Determined from SASW Testing at Ogden Lions Club Park, Ogden, Site 124, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 5 Tabulated Shear Wave Velocity Profile from Ogden Lions Club Park, Ogden, Site 124, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	147.8	276.6	1.89
0.3	0.67	221	413.4	1.92
0.97	1.52	225.6	422	1.92
2.49	0.91	198.1	370.6	1.92
3.4	1.83	182.9	342.1	1.92
5.23	2.9	169.2	316.5	1.92
8.13[a]	4.57	161.5	1524	1.92
12.7	7.62	198.1	1524	1.92
20.32	9.14	248.4	1524	1.92
29.46	6.1	259.1	1524	1.92
35.56	6.1	274.3	1524	1.92
41.66	30.18[b]	365.8	1524	2.00

a. Assumed depth to fully saturated zone
b. Half-space in model

Site 107, Orem City Park

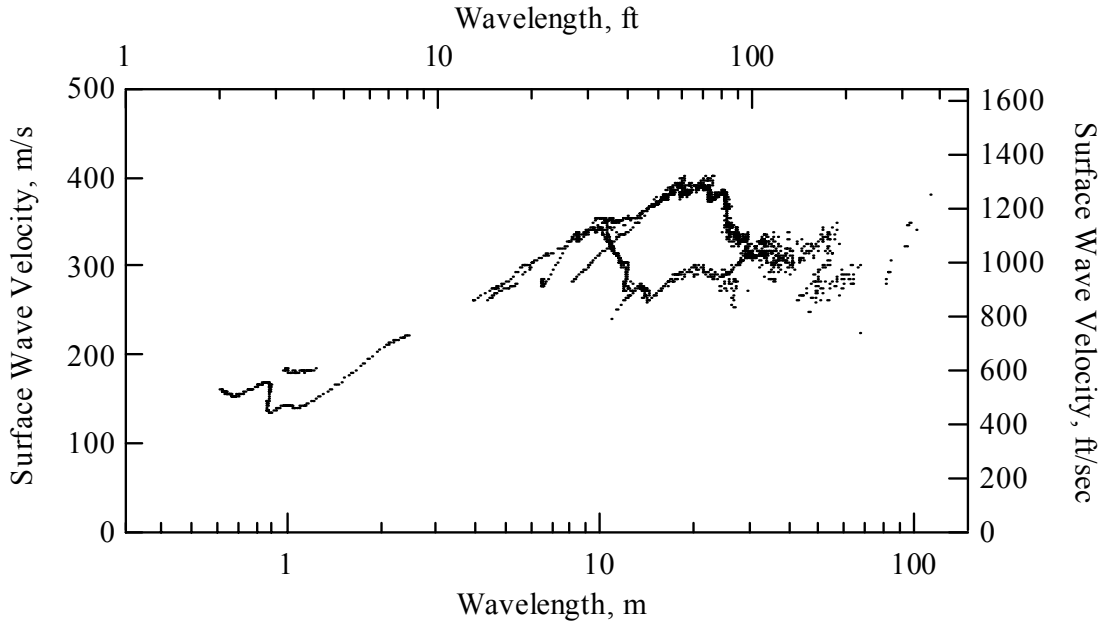


Fig 18 Experimental Dispersion Curve measured at Orem City Center Park, Orem, Site 107, Earthquake Site Response Unit Q02 (Ashland, 2001)

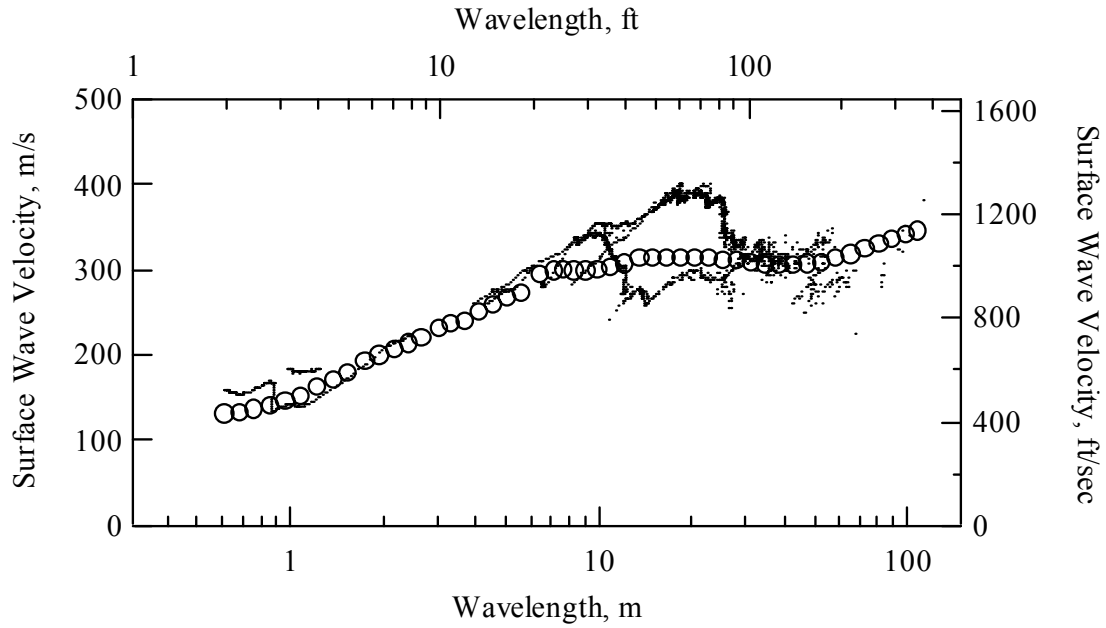


Fig 19 Comparison between Experimental & Theoretical Dispersion Curves from Orem City Center Park, Orem, Site 107, Earthquake Site Response Unit Q02 (Ashland, 2001)

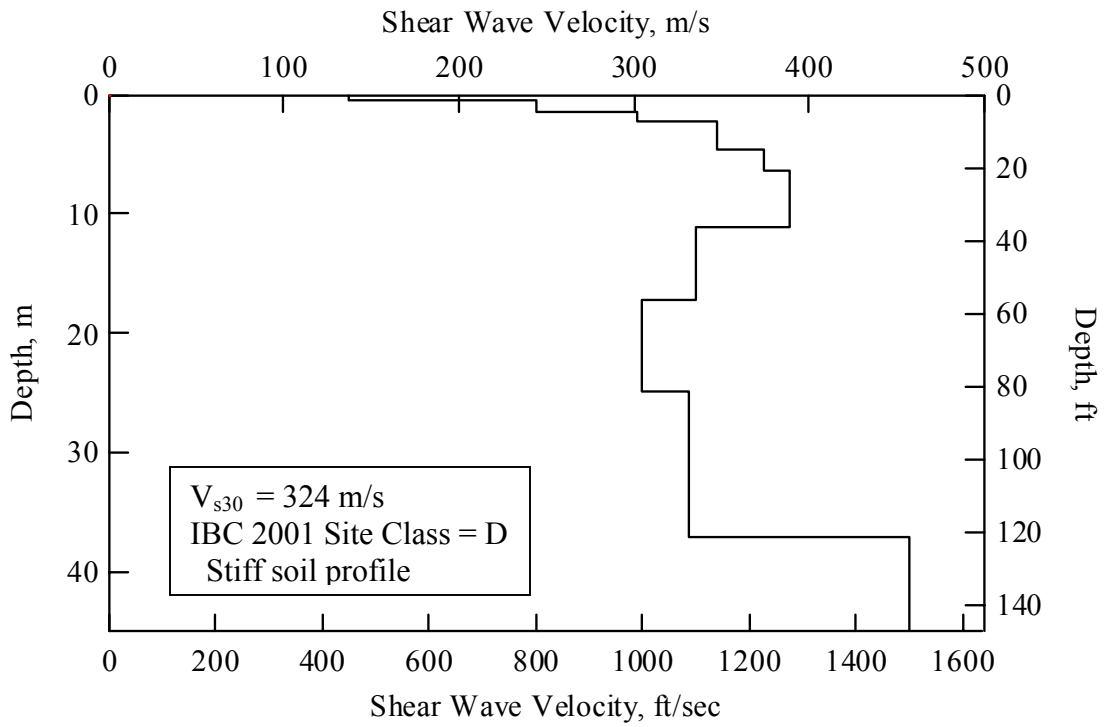


Fig 20 Shear Wave Velocity Profile Determined from SASW Testing at Orem City Center Park, Orem, Site 107, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 6 Tabulated Shear Wave Velocity Profile from Orem City Center Park, Orem, Site 107, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.46	137.2	256.7	1.89
0.46	1.04	243.8	456.1	1.92
1.5	0.73	301.8	564.5	1.92
2.23	2.44	347.5	650.1	2
4.67	1.83	373.4	698.5	2
6.5	4.57	388.6	727	2
11.07	6.1	335.3	627.3	2
17.17	7.62	304.8	570.2	2
24.79	12.19	330.7	618.7	2
36.98	30.18[a]	457.2	855.3	2

a. Half-space in model

Site 37, Highland Park Elementary

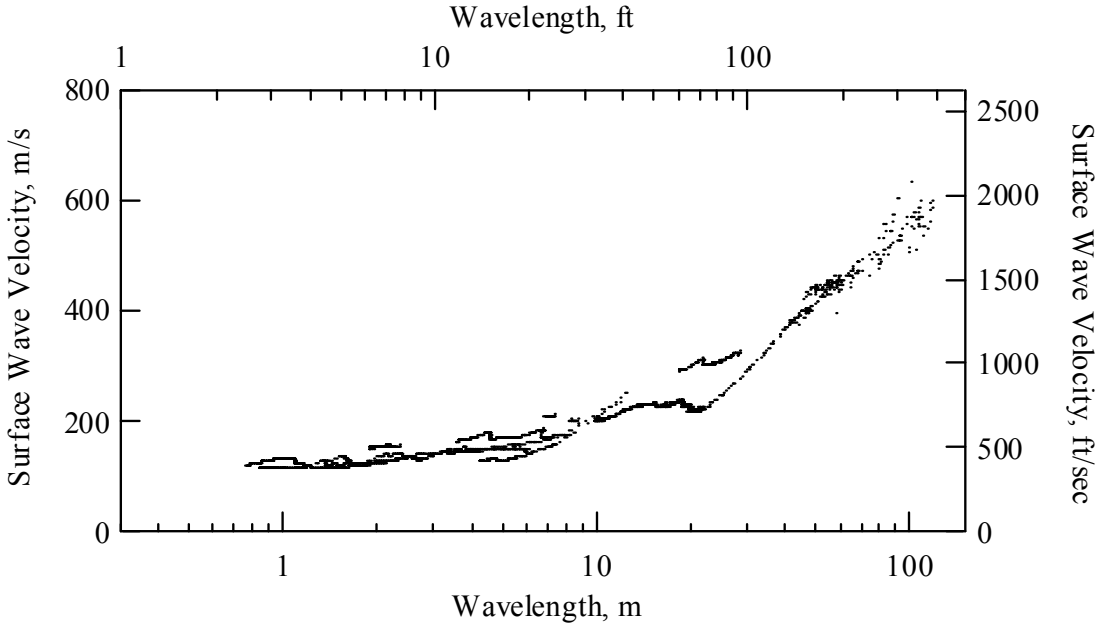


Fig 21 Experimental Dispersion Curve measured at Highland Park Elementary, Salt Lake City, Site 37, Earthquake Site Response Unit Q02 (Ashland, 2001)

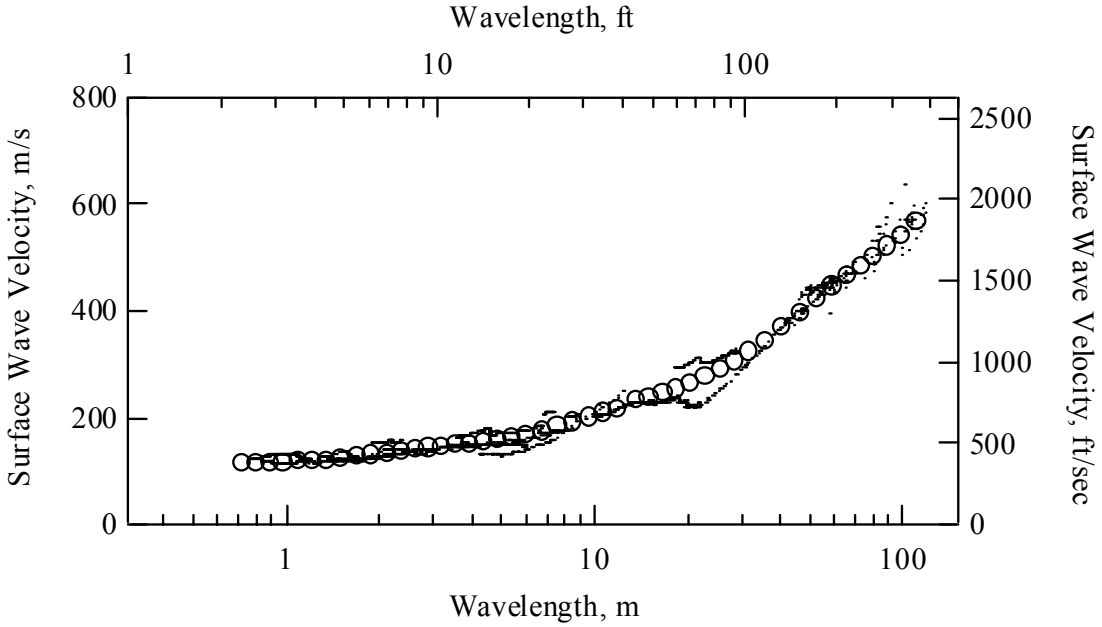


Fig 22 Comparison between Experimental & Theoretical Dispersion Curves from Highland Park Elementary, Salt Lake City, Site 37, Earthquake Site Response Unit Q02 (Ashland, 2001)

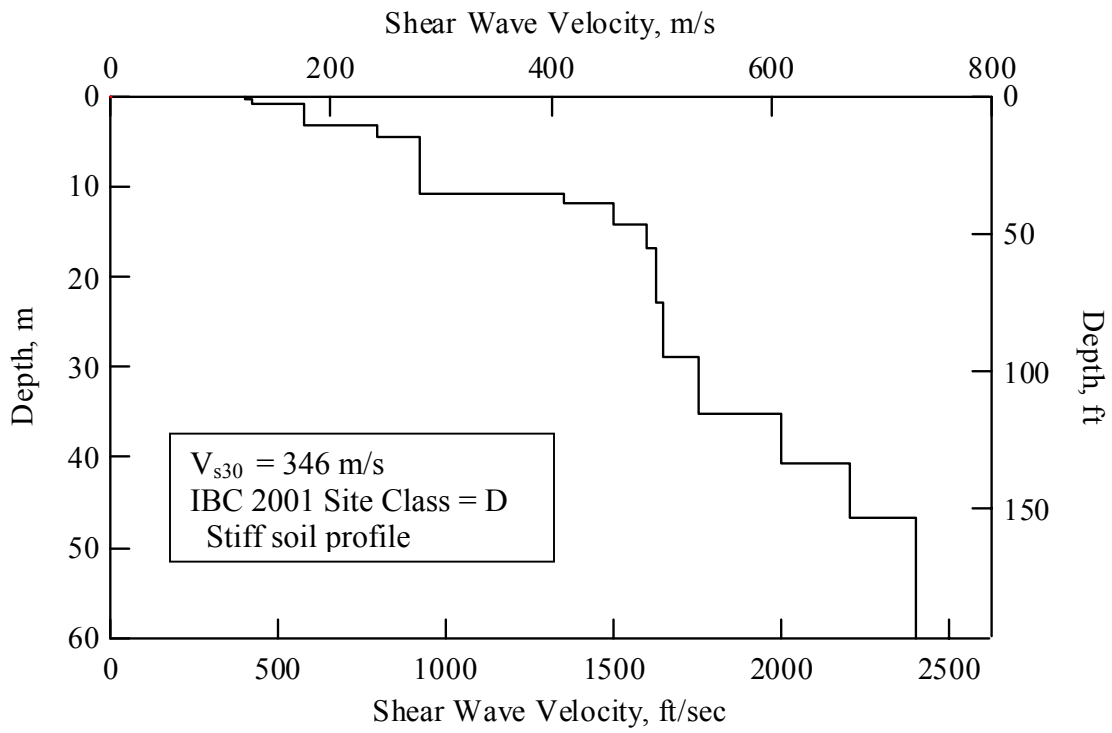


Fig 23 Shear Wave Velocity Profile Determined from SASW Testing at Highland Park Elementary, Salt Lake City, Site 37, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 7 Tabulated Shear Wave Velocity Profile from Highland Park Elementary, Salt Lake City, Site 37, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	121.9	228.1	1.89
0.3	0.61	129.5	242.4	1.89
0.91	2.13	176.8	330.7	1.92
3.04	1.52	243.8	456.2	1.92
4.56	6.1	281.9	527.5	1.92
10.66	1.22	411.5	769.8	2
11.88	2.44	457.2	855.3	2
14.32	2.44	487.7	869.6	2
16.76	6.1	495.3	926.6	2
22.86	6.1	502.9	940.9	2
28.96	6.1	533.4	997.9	2
35.06	5.49	609.6	1140.5	2
40.55	6.1	670.6	1254.5	2.08
46.65	30.18[a]	731.5	1368.6	2.08

a. Half-space in model

Site: 128, Tolman Elementary

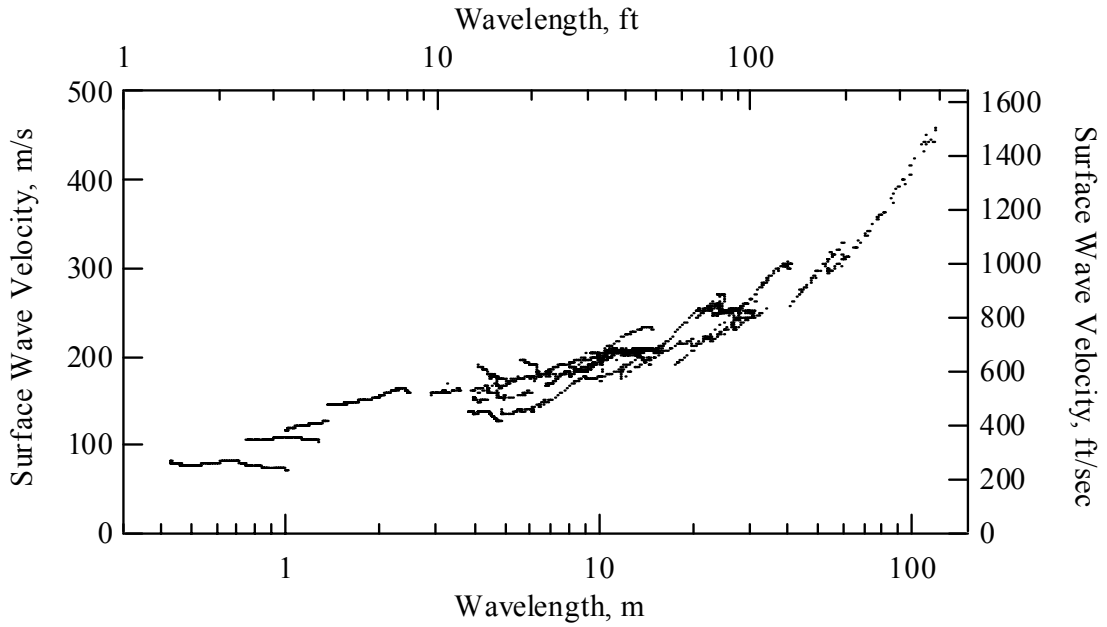


Fig 24 Experimental Dispersion Curve measured at Tolman Elementary, Bountiful, Site 128, Earthquake Site Response Unit Q02 (Ashland, 2001)

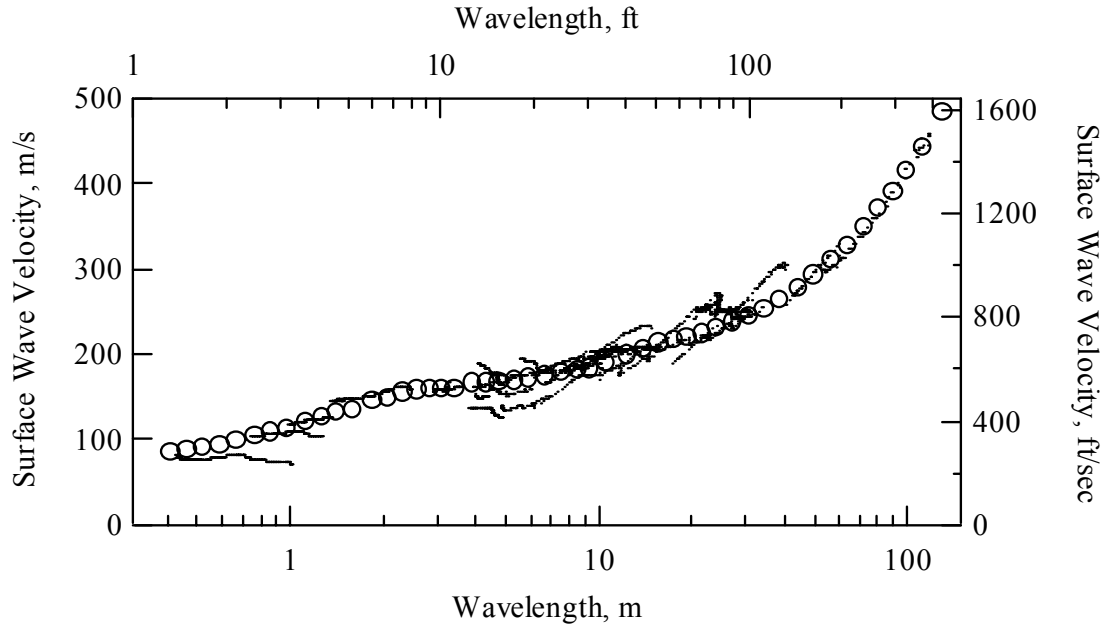


Fig 25 Comparison between Experimental & Theoretical Dispersion Curves from Tolman Elementary, Bountiful, Site 128, Earthquake Site Response Unit Q02 (Ashland, 2001)

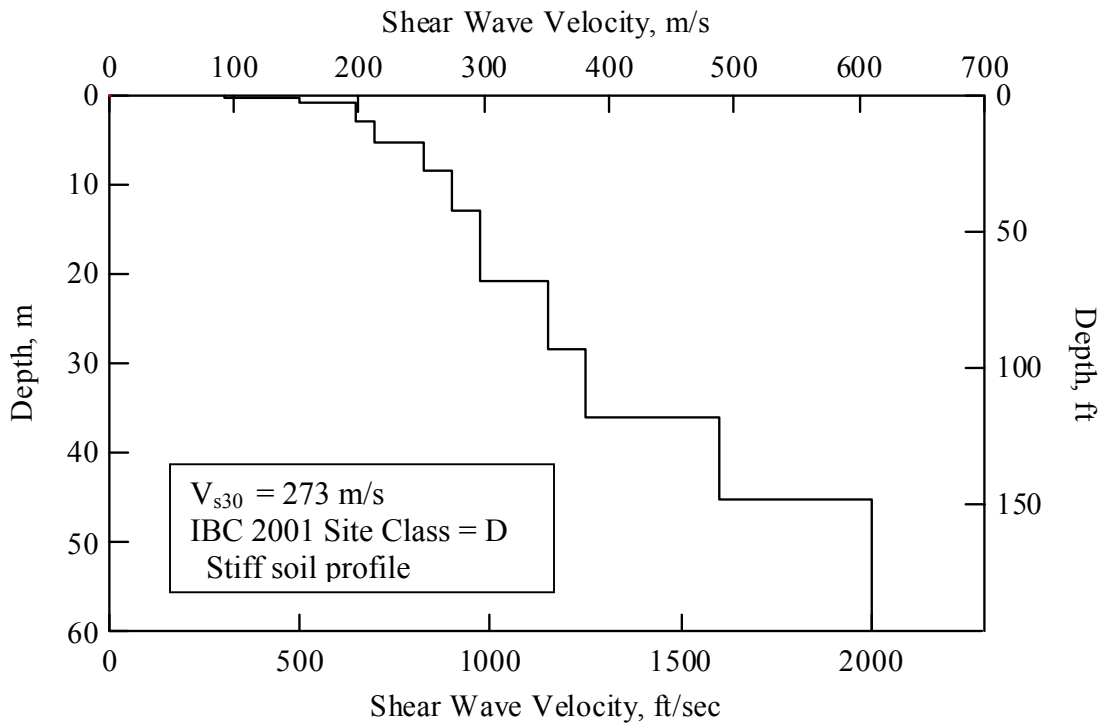


Fig 26 Shear Wave Velocity Profile Determined from SASW Testing at Tolman Elementary, Bountiful, Site 128, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 8 Tabulated Shear Wave Velocity Profile from Tolman Elementary, Bountiful, Site 128, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	91.4	171.1	1.89
0.3	0.61	152.4	285.1	1.92
0.91	2.13	198.1	370.6	1.92
3.04	2.44	213.4	399.2	1.92
5.48	3.05	251.5	470.4	1.92
8.53[a]	4.57	274.3	1524	1.92
13.1	7.62	297.2	1524	1.92
20.72	7.62	350.5	1524	2
28.34	7.62	381	1524	2
35.96	9.14	487.7	1524	2
45.1	30.18[b]	609.6	1524	2.08

a. Assumed depth to fully saturated zone
b. Half-space in model

Site: 127, Bountiful City Park

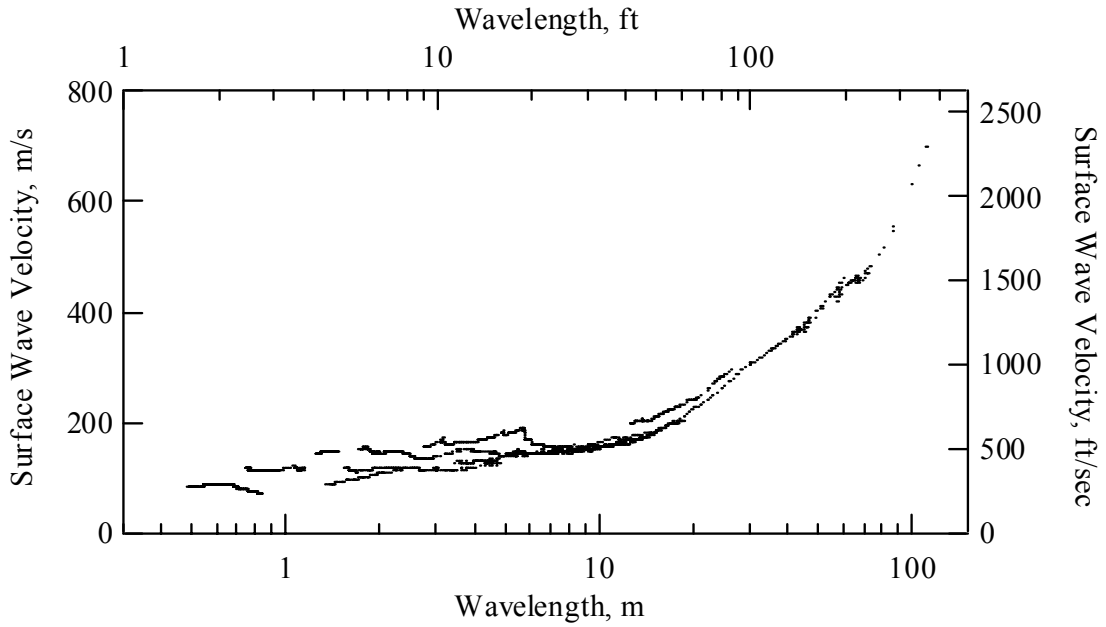


Fig 27 Experimental Dispersion Curve measured at Bountiful City Park, Bountiful, Site 127, Earthquake Site Response Unit Q02 (Ashland, 2001)

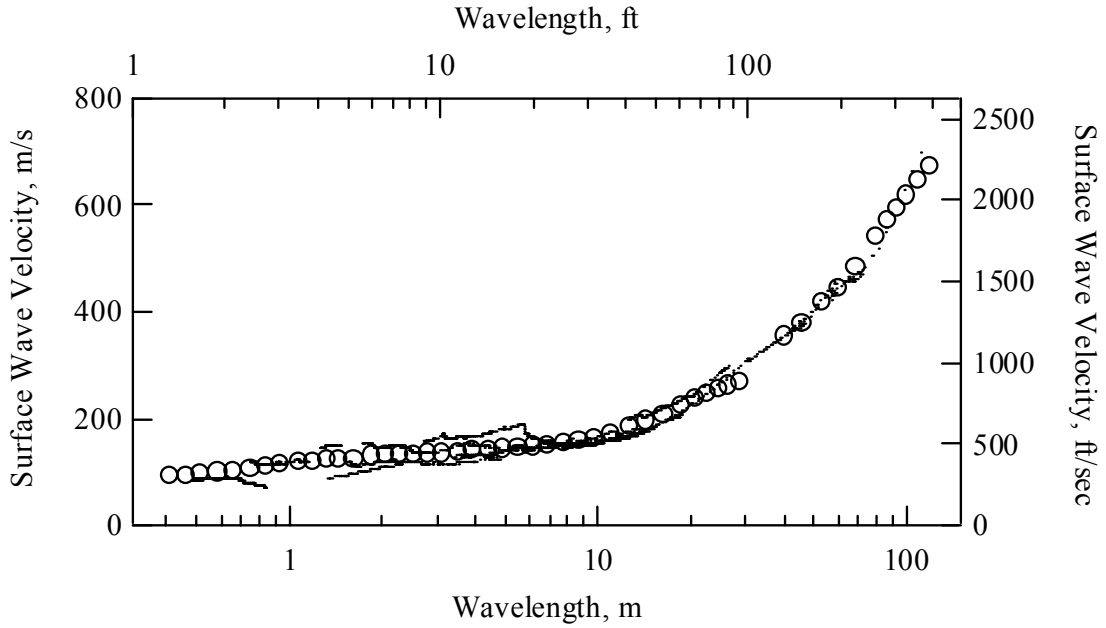


Fig 28 Comparison between Experimental & Theoretical Dispersion Curves from Bountiful City Park, Bountiful, Site 127, Earthquake Site Response Unit Q02 (Ashland, 2001)

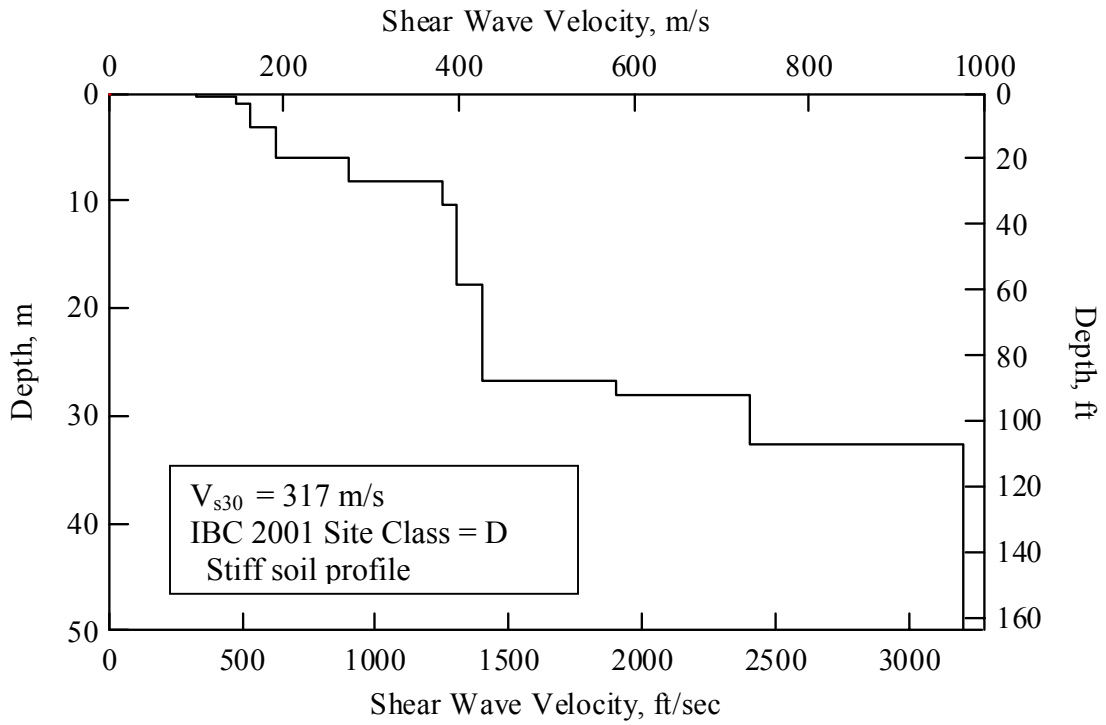


Fig 29 Shear Wave Velocity Profile Determined from SASW Testing at Bountiful City Park, Bountiful, Site 127, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 9 Tabulated Shear Wave Velocity Profile from Bountiful City Park, Bountiful, Site 127, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	99.1	185.3	1.89
0.3	0.61	144.8	270.9	1.89
0.91	2.13	160	299.4	1.92
3.04	3.05	190.5	356.4	1.92
6.09	2.13	274.3	513.2	1.92
8.22	2.13	381	712.8	2
10.35[a]	7.32	396.2	1524	2
17.67	9.14	426.7	1524	2
26.81	1.22	579.1	1524	2
28.03	4.57	731.5	1524	2.08
32.6	30.18[b]	975.4	1524	2.08

a. Assumed depth to fully saturated zone
b. Half-space in model

Site 46, Deseret Academy

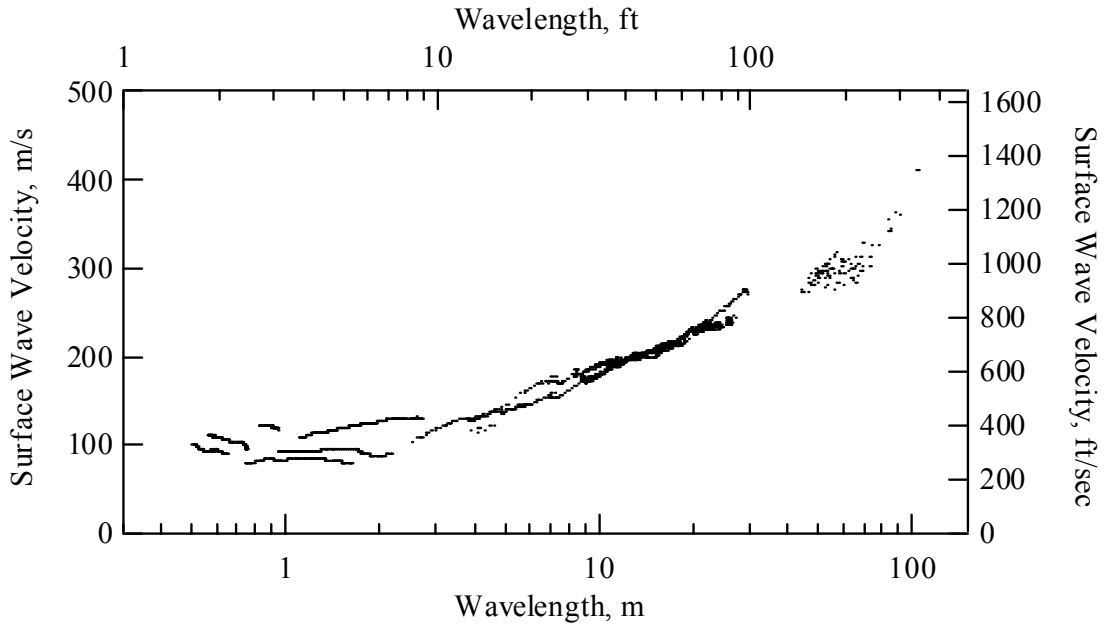


Fig 30 Experimental Dispersion Curve measured at Deseret Academy, Holladay, Site 46, Earthquake Site Response Unit Q02 (Ashland, 2001)

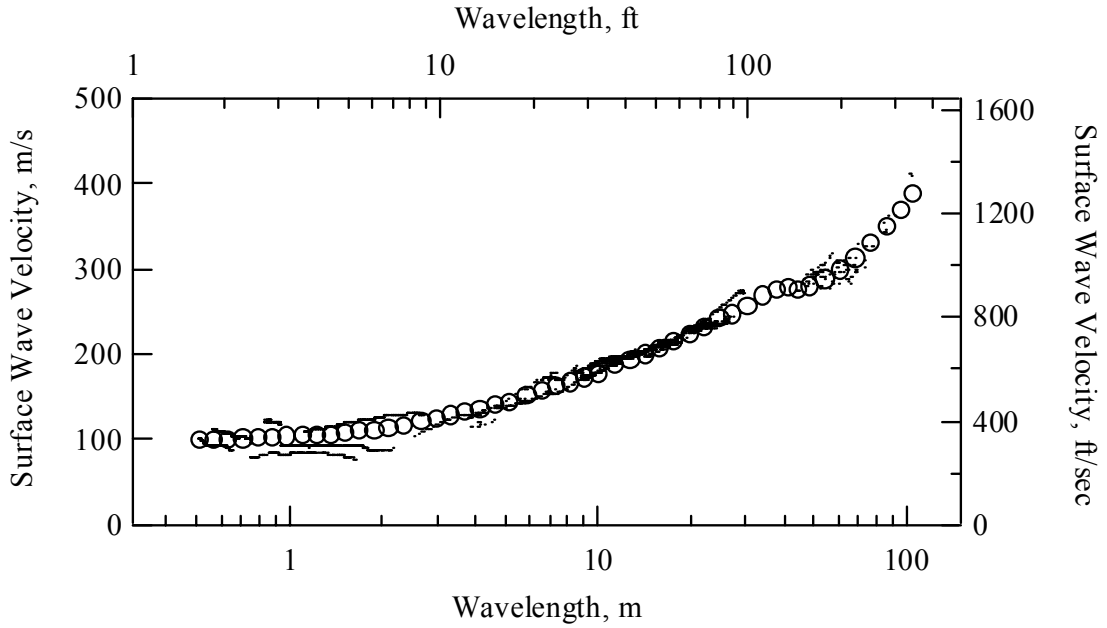


Fig 31 Comparison between Experimental & Theoretical Dispersion Curves from Deseret Academy, Holladay, Site 46, Earthquake Site Response Unit Q02 (Ashland, 2001)

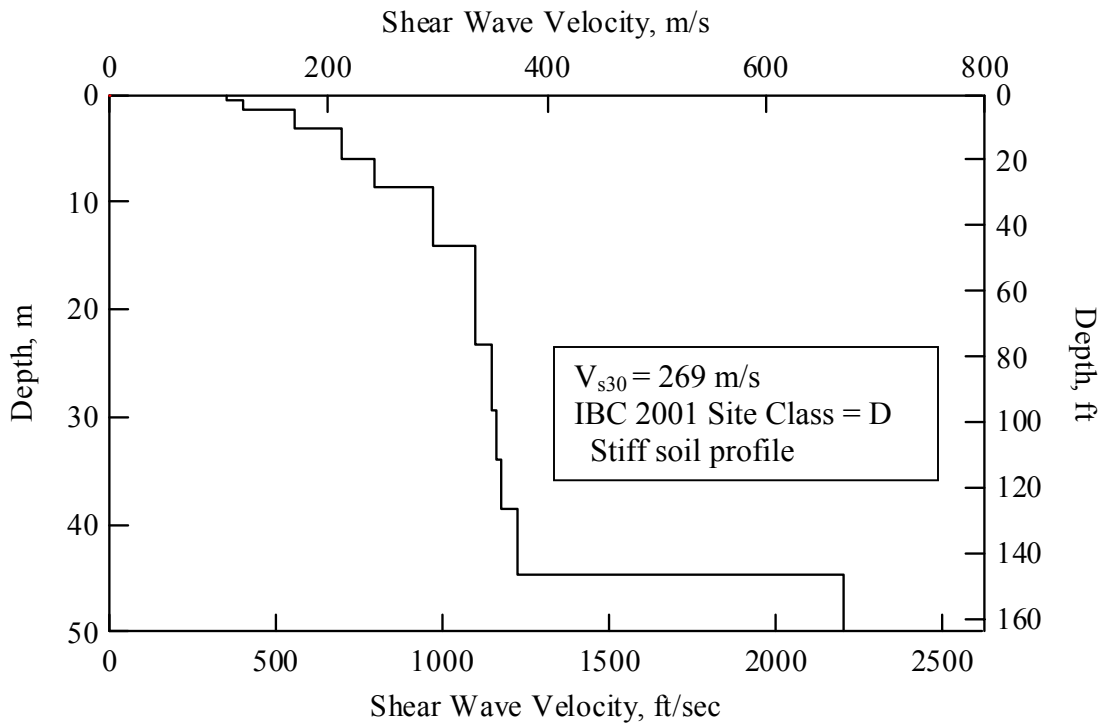


Fig 32 Shear Wave Velocity Profile Determined from SASW Testing at Deseret Academy, Holladay, Site 46, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 10 Tabulated Shear Wave Velocity Profile from Deseret Academy, Holladay, Site 46, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.46	106.7	199.6	1.89
0.46	0.91	121.9	228.1	1.89
1.37	1.83	169.2	316.5	1.92
3.2	2.74	213.4	399.2	1.92
5.94	2.74	243.8	456.2	1.92
8.68	5.49	297.2	556	1.92
14.17	9.14	335.3	627.3	2
23.31[a]	6.1	350.5	1524	2
29.41	4.57	353.6	1524	2
33.98	4.57	358.1	1524	2
38.55	6.1	373.4	1524	2
44.65	30.18[b]	670.6	1524	2.08

a. Assumed depth to fully saturated zone
b. Half-space in model

Site: 40, Applied Technology School, East Millcreek

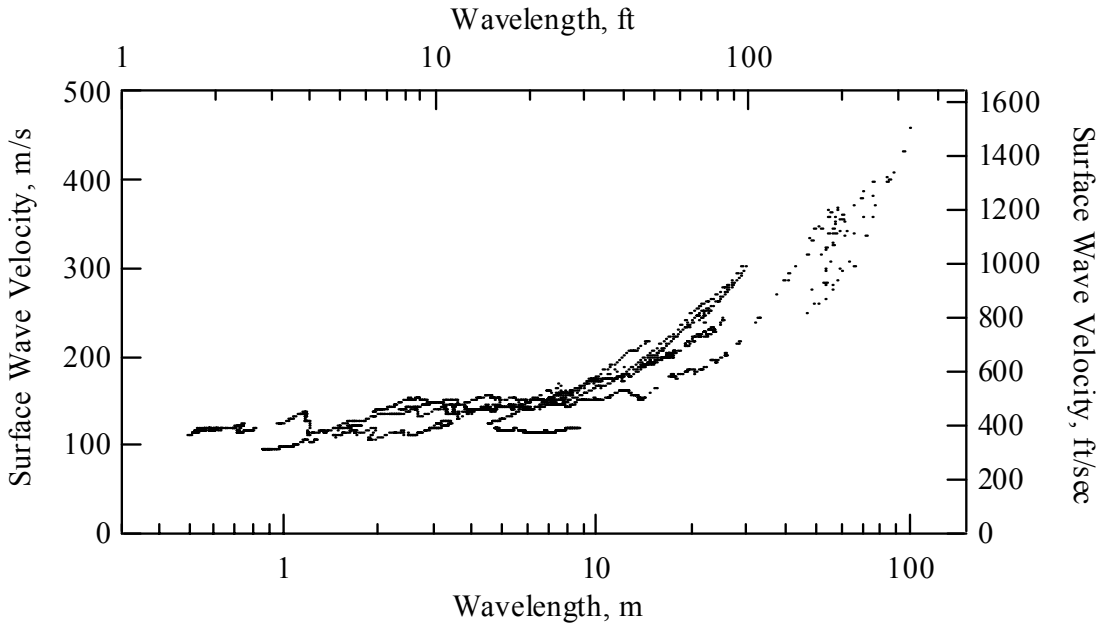


Fig 33 Experimental Dispersion Curve measured at Applied Technology School, East Millcreek, Site 40, Earthquake Site Response Unit Q02 (Ashland, 2001)

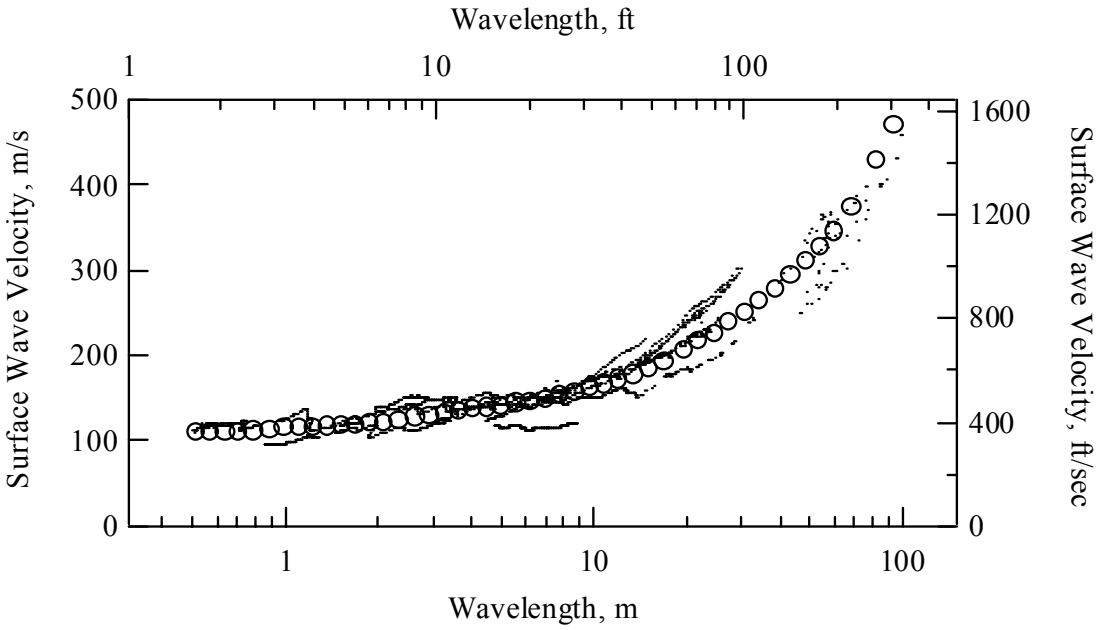


Fig 34 Comparison between Experimental & Theoretical Dispersion Curves from Applied Technology School, East Millcreek, Site 40, Earthquake Site Response Unit Q02 (Ashland, 2001)

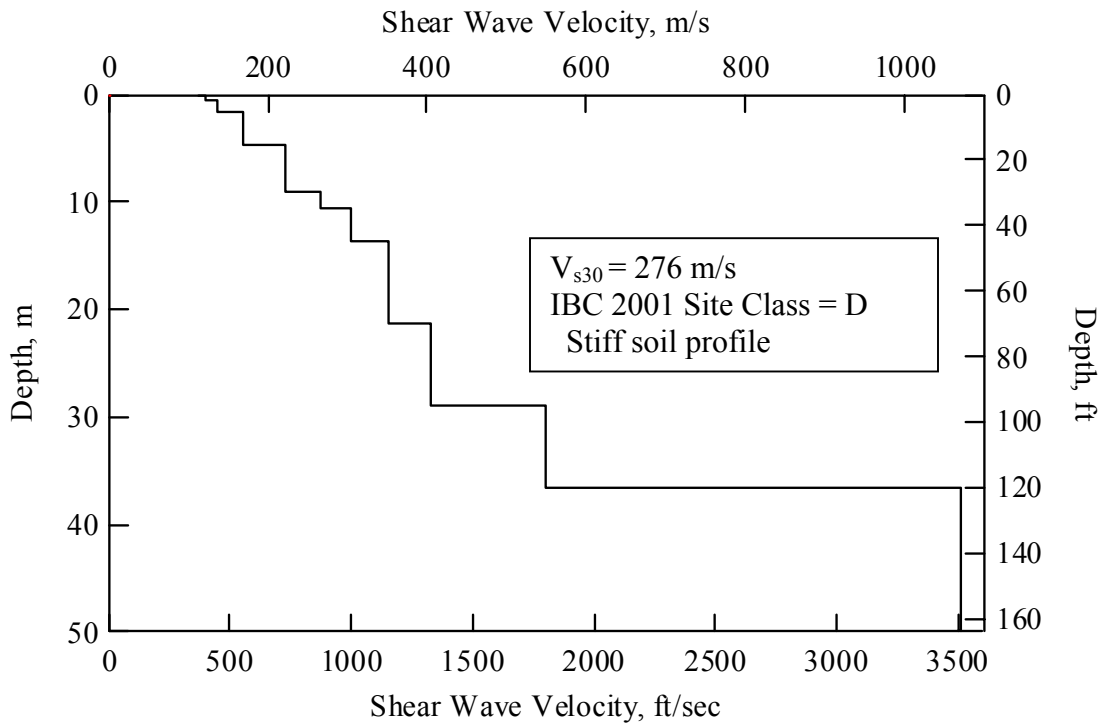


Fig 35 Shear Wave Velocity Profile Determined from SASW Testing at Applied Technology School, East Millcreek, Site 40, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 11 Tabulated Shear Wave Velocity Profile from Applied Technology School, East Millcreek, Site 40, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.15	114.3	213.9	1.89
0.15	0.46	121.9	228.1	1.89
0.61	0.91	137.2	256.6	1.89
1.52	3.05	167.6	313.6	1.92
4.57	4.57	221	413.4	1.92
9.14	1.52	266.7	499	1.92
10.66	3.05	304.8	570.2	2
13.71	7.62	350.5	655.8	2
21.33	7.62	403.9	755.6	2
28.95	7.62	548.6	1026.3	2
36.57	30.18[b]	1069.9[a]	2001.5	2.08

a. Refraction velocity
b. Half-space in model

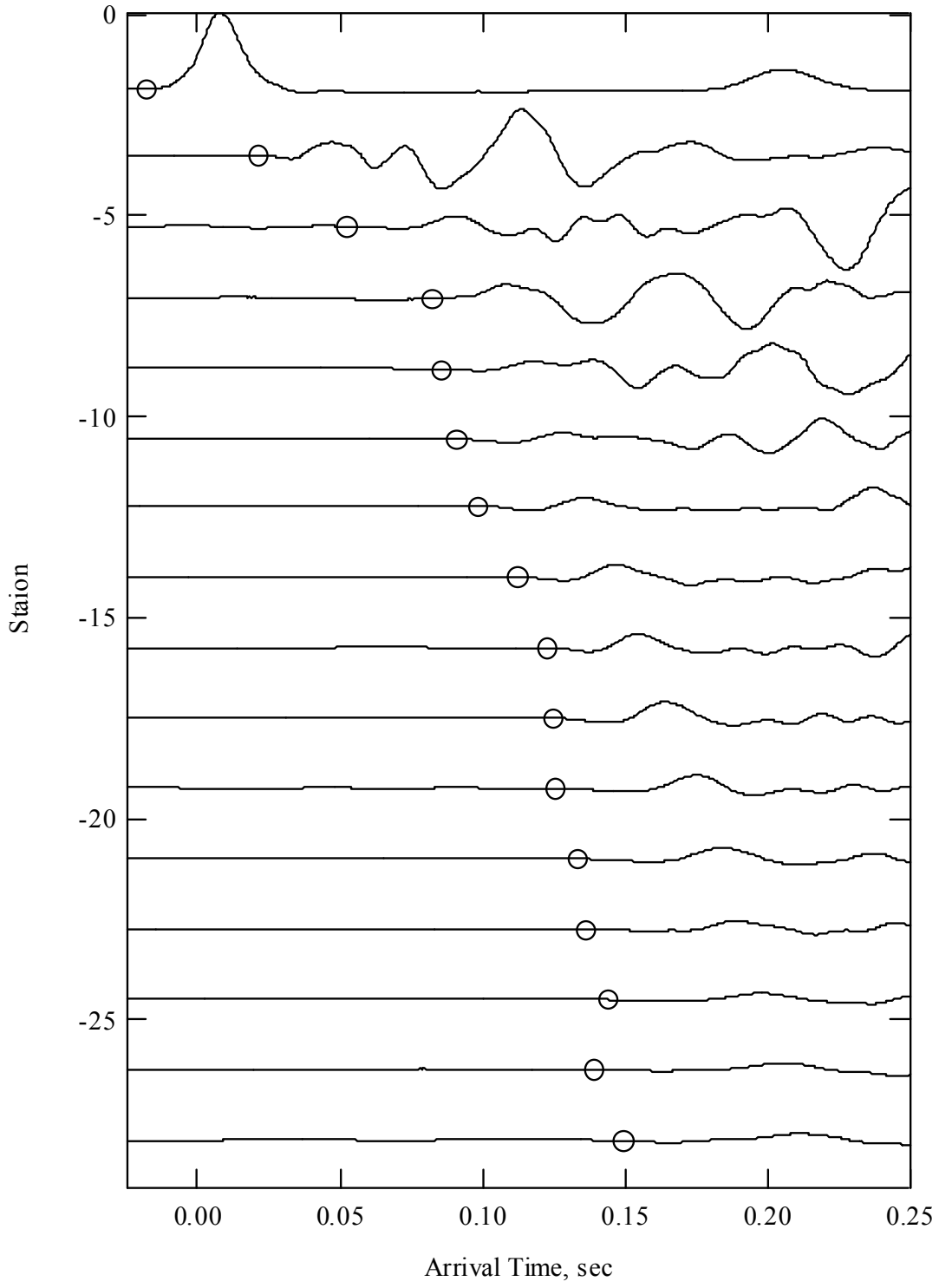


Fig 36 Arrival Times for Refraction Testing at Applied Technology School, East Millcreek, Site 40, Earthquake Site Response Unit Q02 (Ashland, 2001)

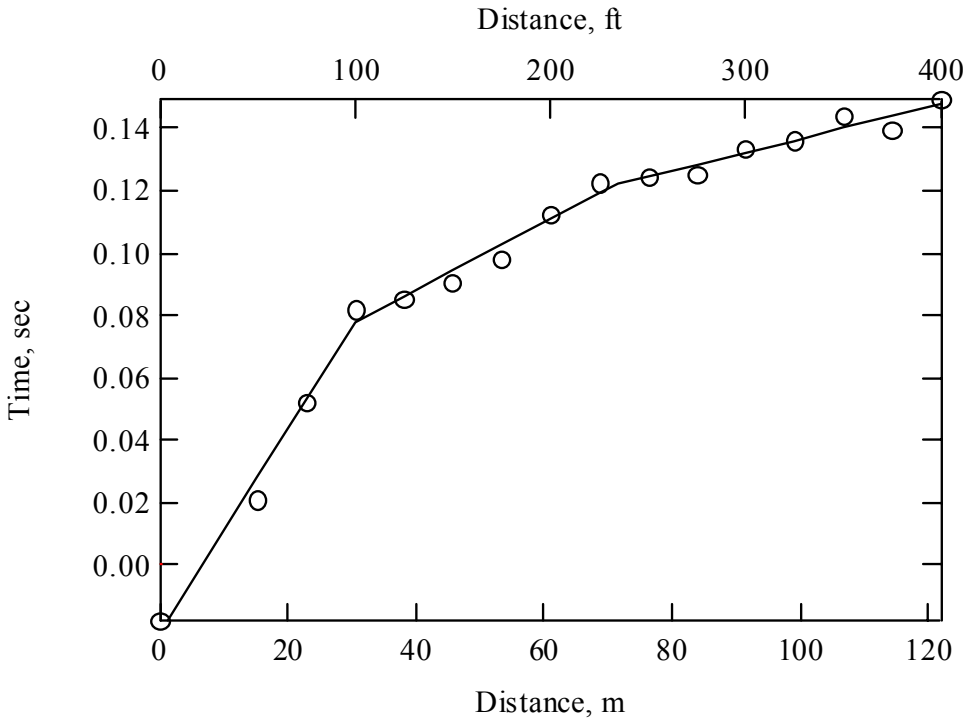


Fig 37 Time-Distance Curve for Refraction Testing at Applied Technology School, East Millcreek, Site 40, Earthquake Site Response Unit Q02 (Ashland, 2001)

Tabulated Refraction Profile from Applied Technology School, East Millcreek, Site 40, Earthquake Site Response Unit Q02 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	10.76	305.65	163.38
2	26.65	918.02	490.70
3		2001.60	1069.90

Site 3, Draper Elementary

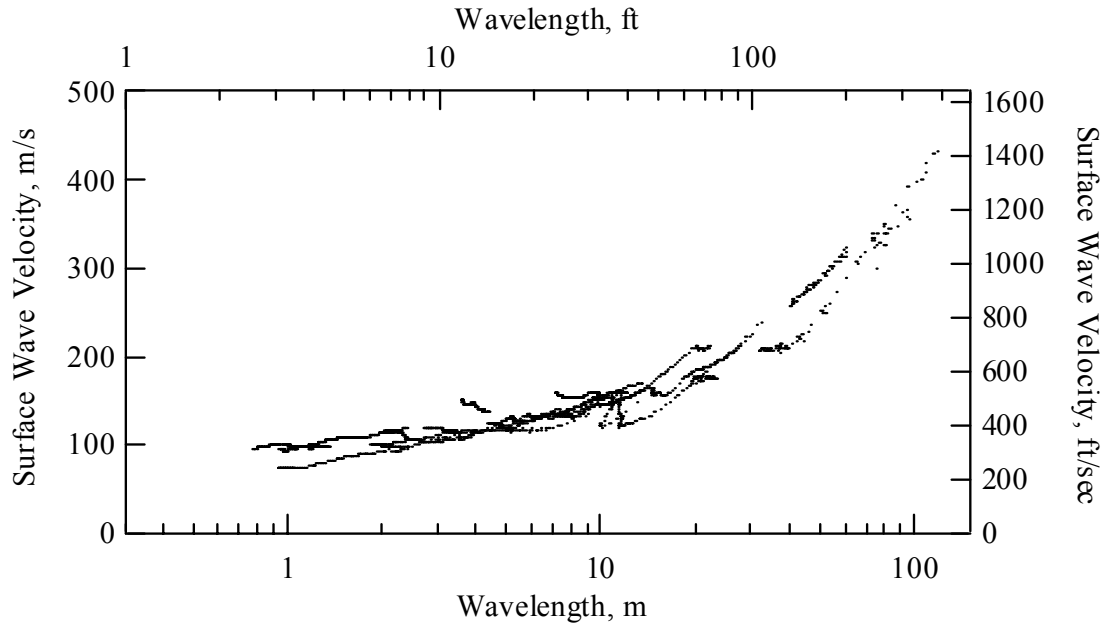


Fig 38 Experimental Dispersion Curve measured at Draper Elementary, Draper, Site 3, Earthquake Site Response Unit Q02 (Ashland, 2001)

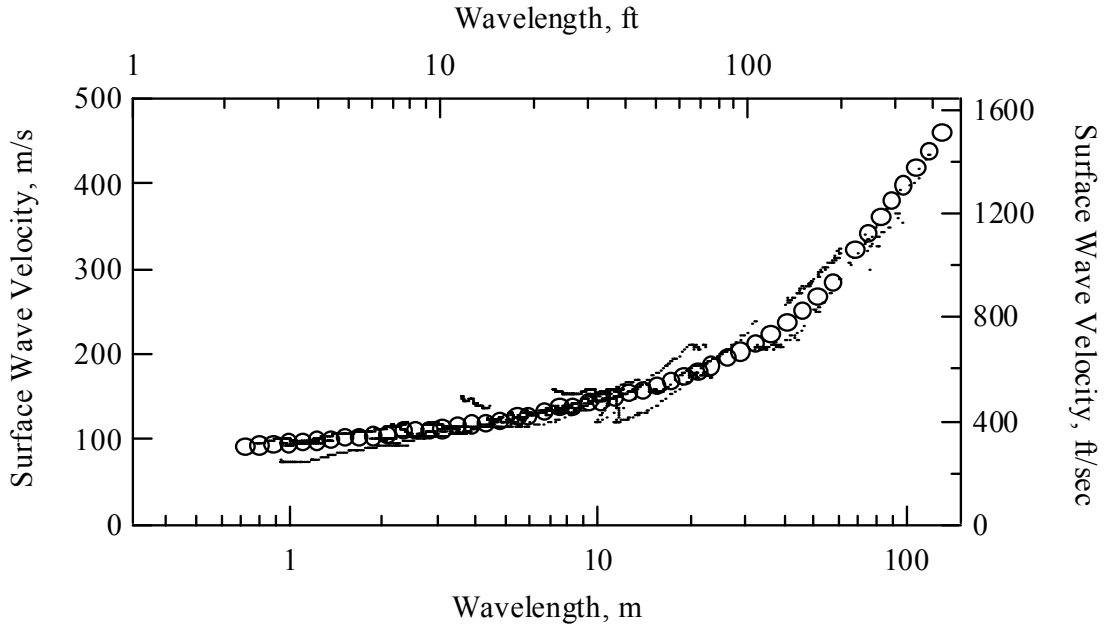


Fig 39 Comparison between Experimental & Theoretical Dispersion Curves from Draper Elementary, Draper, Site 3, Earthquake Site Response Unit Q02 (Ashland, 2001)

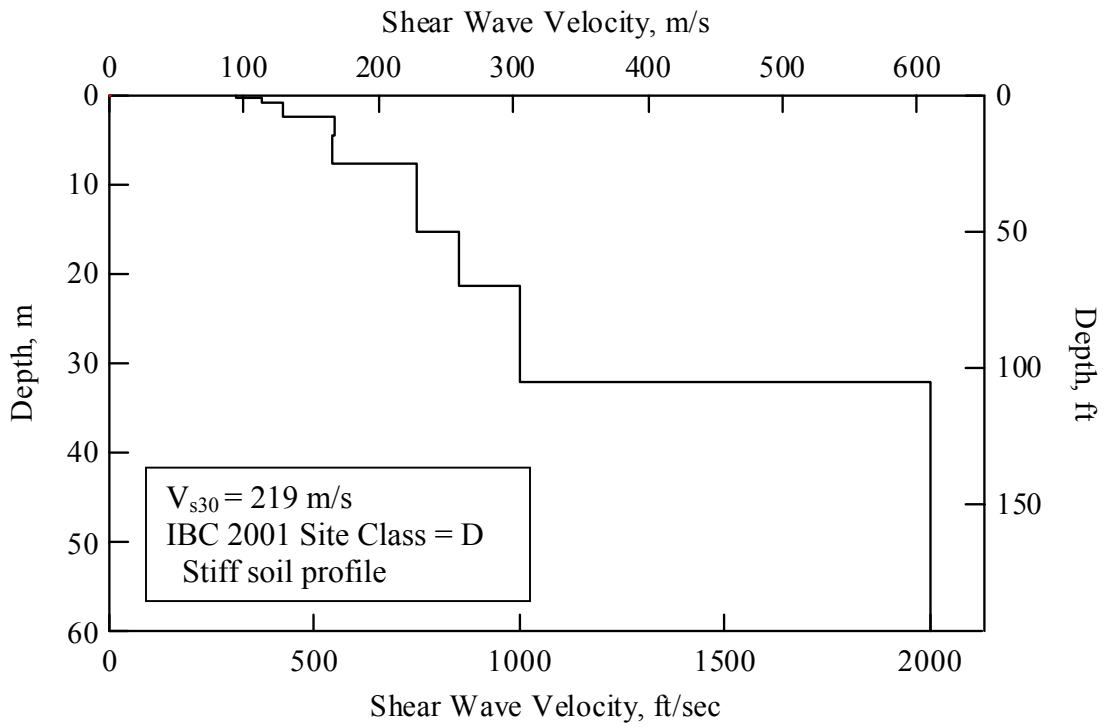


Fig 40 Shear Wave Velocity Profile Determined from SASW Testing at Draper Elementary, Draper, Site 3, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 12 Tabulated Shear Wave Velocity Profile from Draper Elementary, Draper, Site 3, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.38	94.5	176.8	1.89
0.38	0.61	114.3	213.9	1.89
0.99	1.52	129.5	242.4	1.89
2.51	2.06	167.6	313.6	1.92
4.57[a]	3.05	166.1	1524	1.92
7.62	7.62	228.6	1524	1.92
15.24	6.1	259.1	1524	1.92
21.34	10.67	304.8	1524	2.00
32.01	30.18[b]	609.6	1524	2.08

a. Depth to fully saturated zone from Refraction results
b. Half-space in model

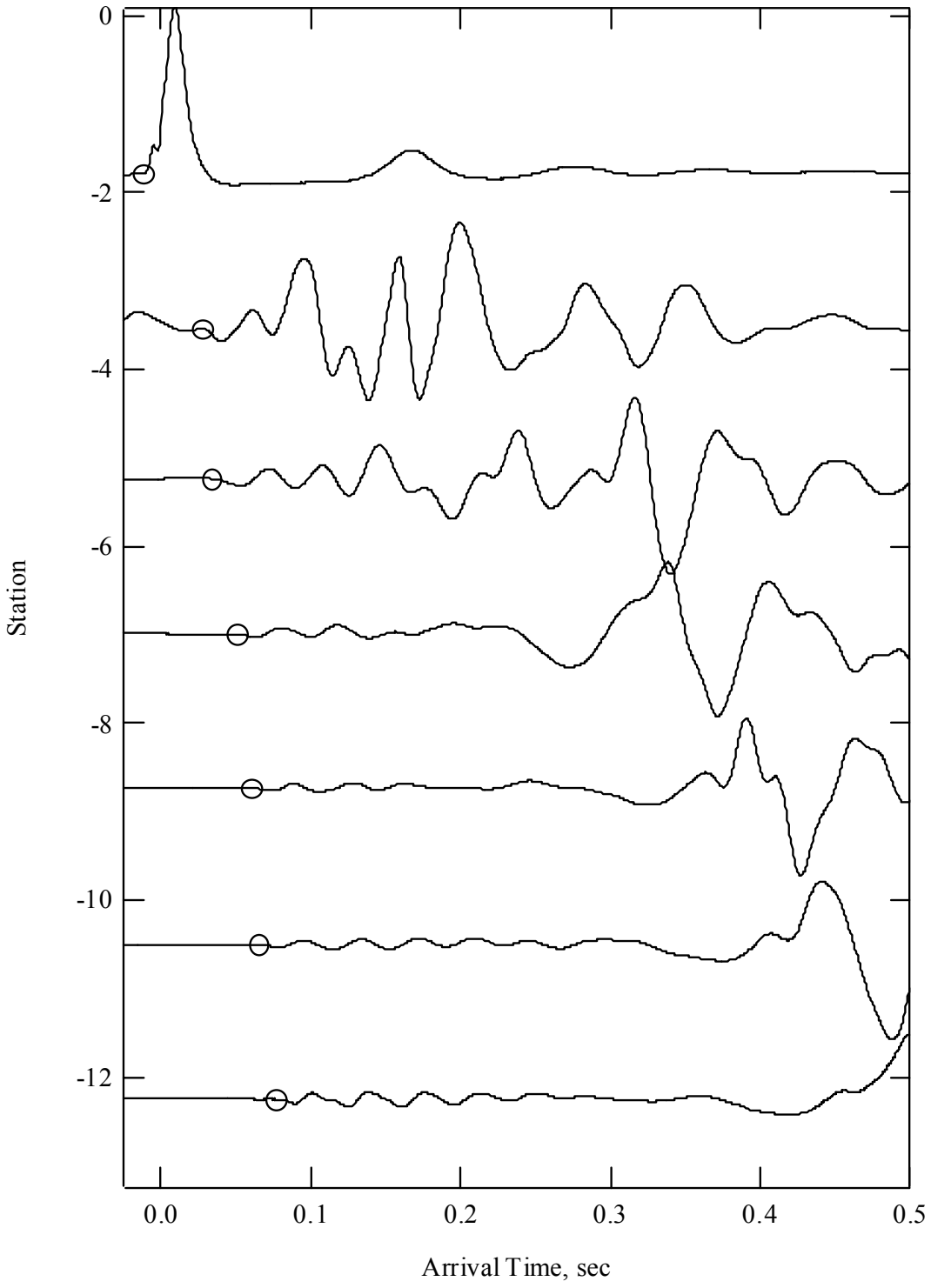


Fig 41 Arrival Times for Refraction Testing at Draper Elementary, Draper, Site 3, Earthquake Site Response Unit Q02 (Ashland, 2001)

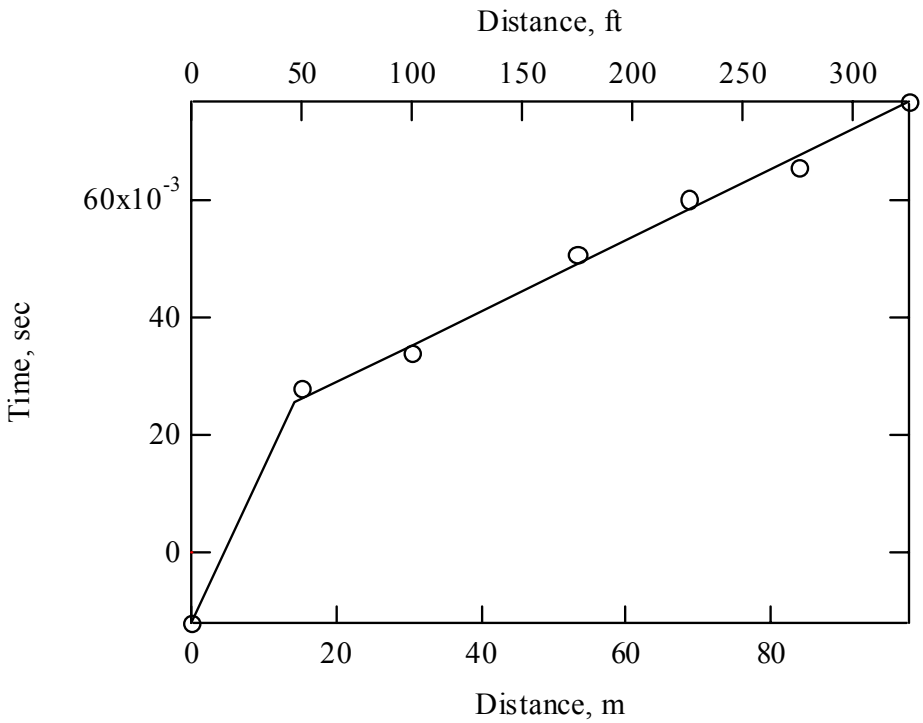


Fig 42 Time-Distance Curve for Refraction Testing at Draper Elementary, Draper, Site 3, Earthquake Site Response Unit Q02 (Ashland, 2001)

Tabulated Refraction Profile from Draper Elementary, Draper, Site 3, Earthquake Site Response Unit Q02 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	5.67[a]	380.63	203.46
2		1654.12	

a. Depth to fully saturated zone

Site: 302, Swire Coca-Cola

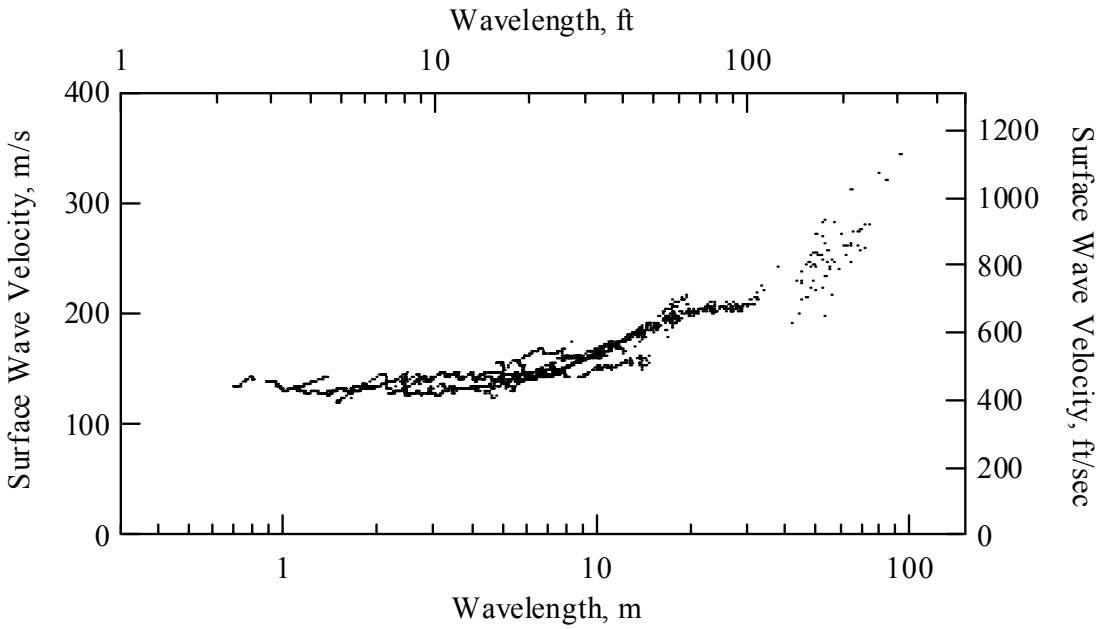


Fig 43 Experimental Dispersion Curve measured at Swire Coca-Cola, Draper, Site 302, Earthquake Site Response Unit Q02 (Ashland, 2001)

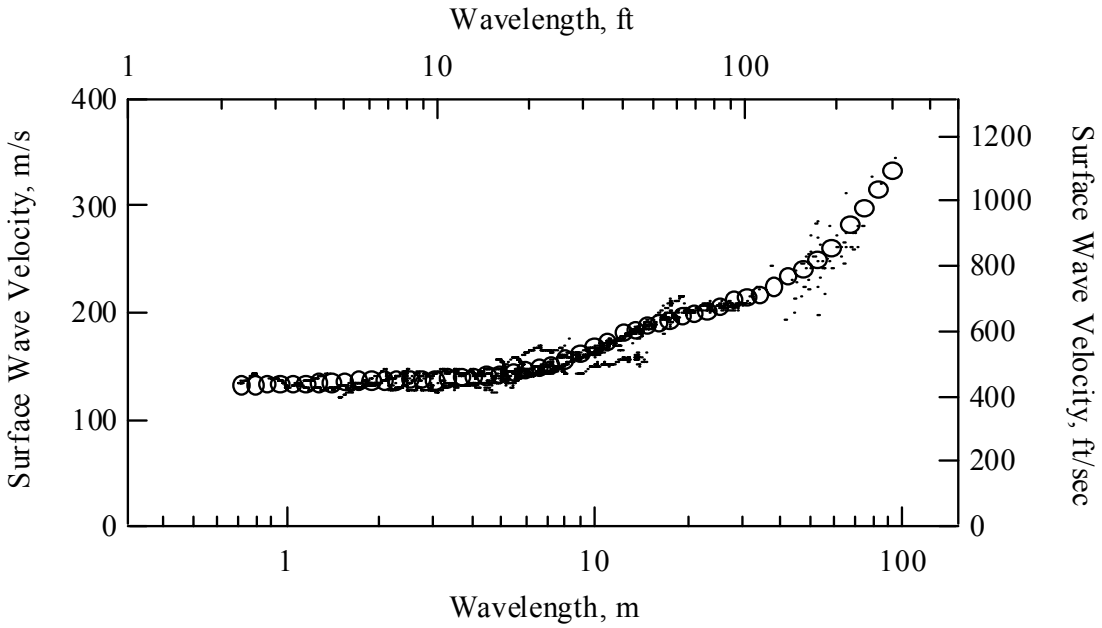


Fig 44 Comparison between Experimental & Theoretical Dispersion Curves Swire Coca-Cola, Draper, Site 302, Earthquake Site Response Unit Q02 (Ashland, 2001)

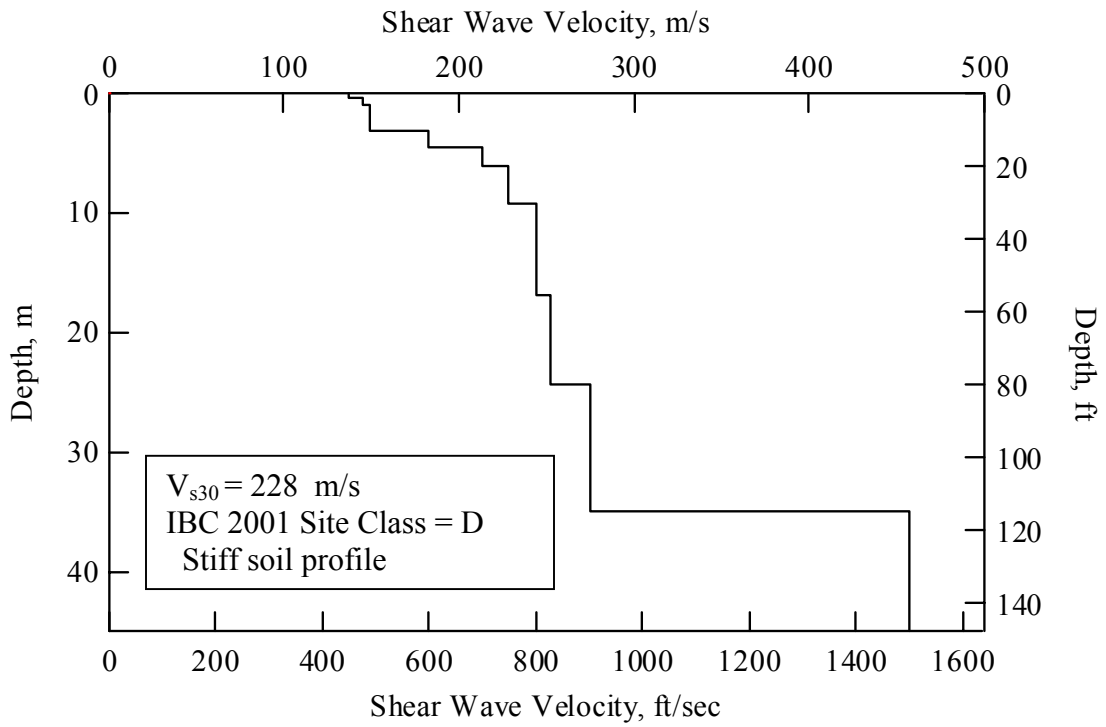


Fig 45 Shear Wave Velocity Profile Determined from SASW Testing at Swire Coca-Cola, Draper, Site 302, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 13 Tabulated Shear Wave Velocity Profile from Swire Coca-Cola, Draper, Site 302, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	137.2	256.6	1.89
0.3	0.61	144.8	270.9	1.89
0.91	2.13	149.4	279.4	1.89
3.04	1.52	182.9	342.1	1.92
4.56	1.52	213.4	399.2	1.92
6.08[a]	3.05	228.6	1524	1.92
9.13	7.62	243.8	1524	1.92
16.75	7.62	251.5	1524	1.92
24.37	10.67	274.3	1524	1.92
35.04	30.18[b]	457.2	1524	2

a. Assumed depth to fully saturated zone
b. Half-space in model

Site: 14, Rose Creek Elementary

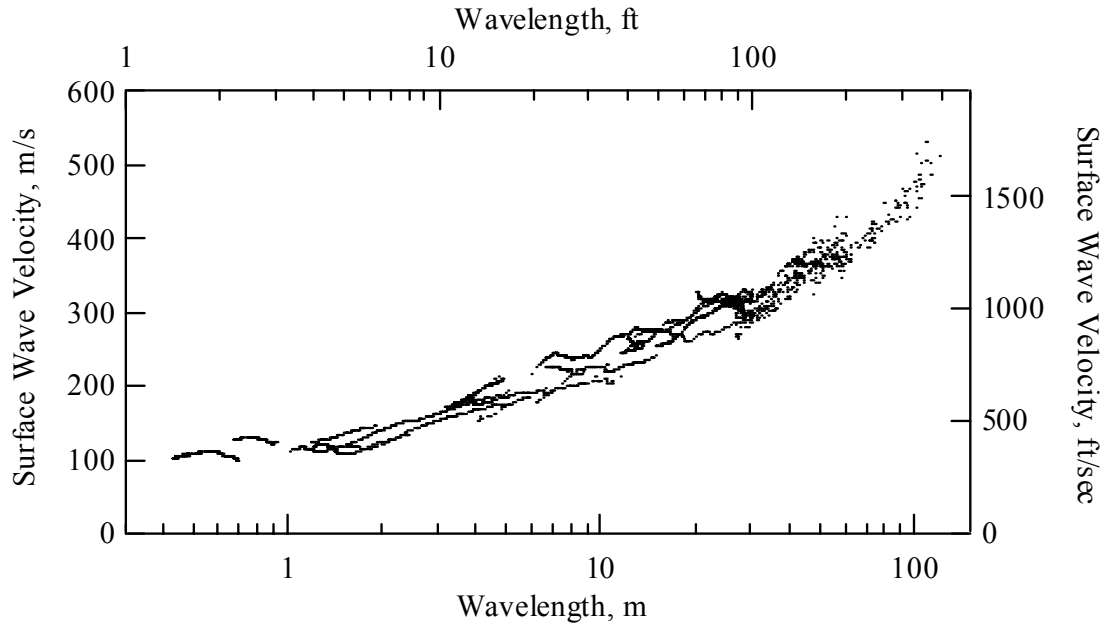


Fig 46 Experimental Dispersion Curve measured at Rose Creek Elementary, Riverton, Site 14, Earthquake Site Response Unit Q02 (Ashland, 2001)

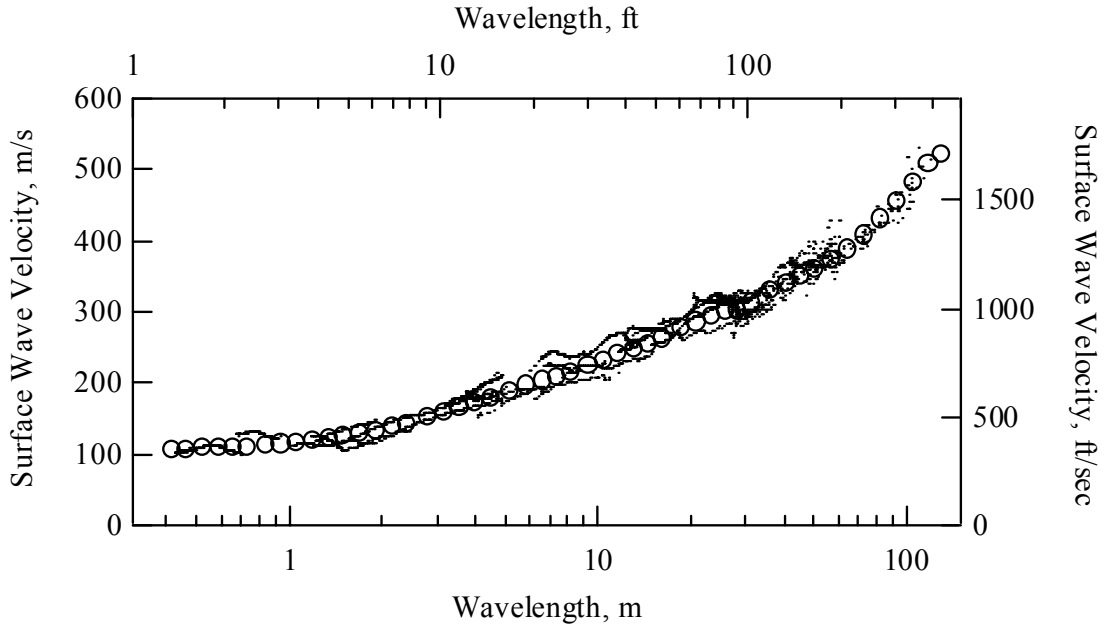


Fig 47 Comparison between Experimental & Theoretical Dispersion Curves from Rose Creek Elementary, Riverton, Site 14, Earthquake Site Response Unit Q02 (Ashland, 2001)

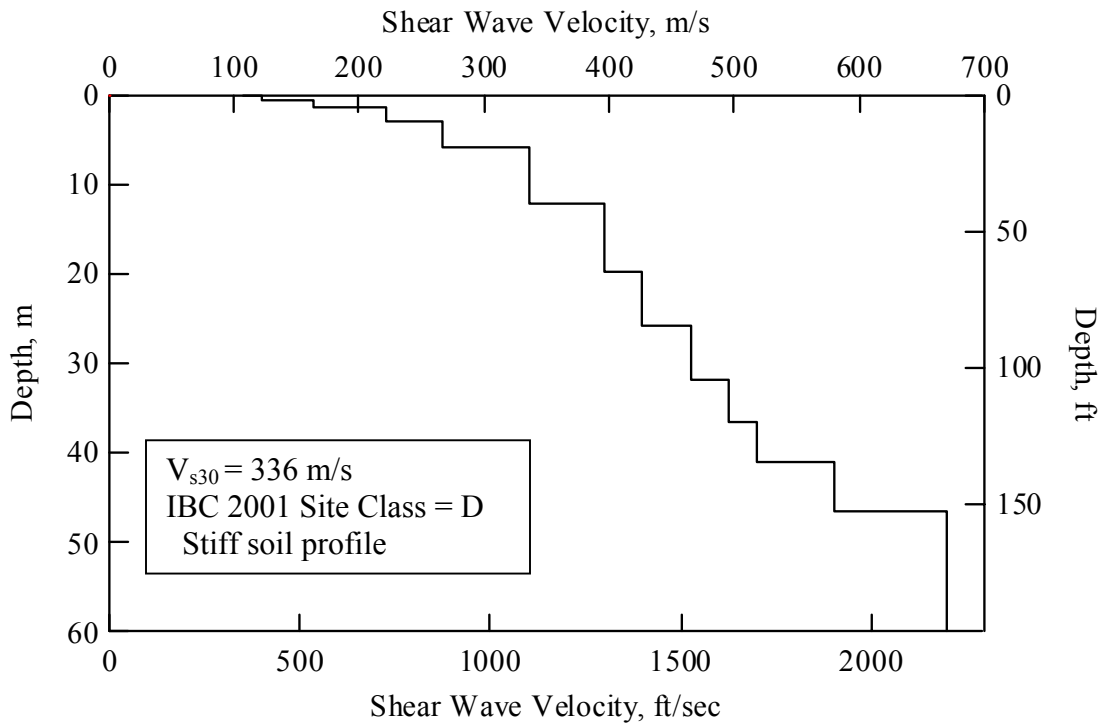


Fig 48 Shear Wave Velocity Profile Determined from SASW Testing at Rose Creek Elementary, Riverton, Site 14, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 14 Tabulated Shear Wave Velocity Profile from Rose Creek Elementary, Riverton, Site 14, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.15	106.7	199.6	1.89
0.15	0.46	121.9	228.1	1.89
0.61	0.84	163.1	305.1	1.92
1.45	1.52	221	413.4	1.92
2.97	3.05	266.7	499	1.92
6.02	6.1	335.3	627.3	2
12.12	7.62	396.2	741.2	2
19.74	6.1	426.7	798.3	2
25.84[a]	6.1	464.8	1524	2
31.94	4.57	495.3	1524	2
36.51	4.57	518.2	1524	2
41.08	5.49	579.1	1524	2
46.57	30.18[b]	670.6	1524	2.08

a. Assumed depth to fully saturated zone
b. Half-space in model

Site: 27, Copper Hills High School

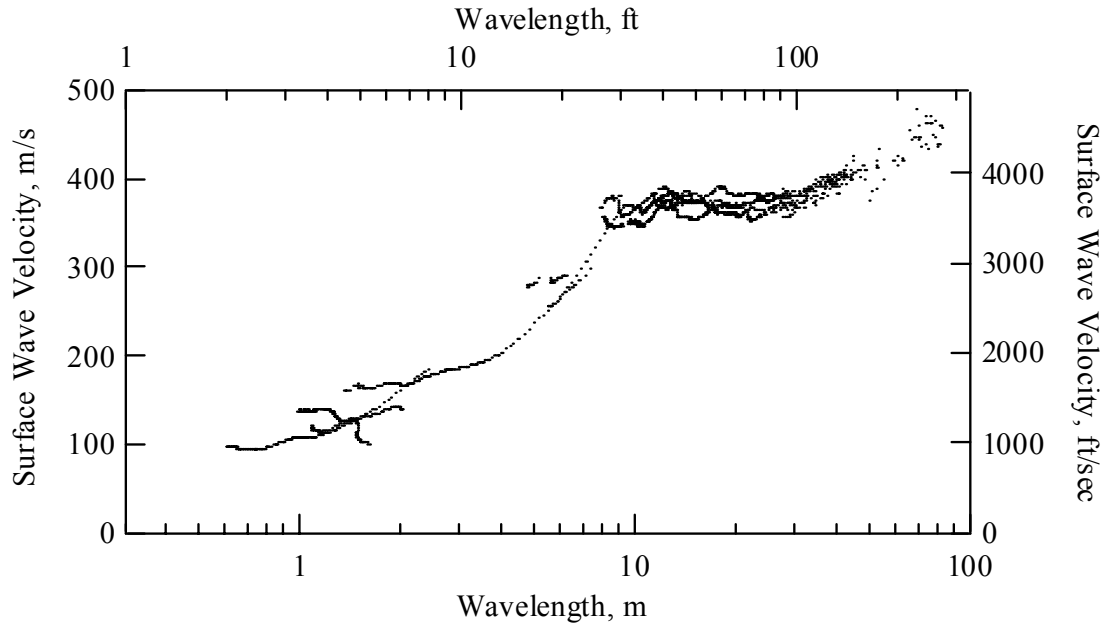


Fig 49 Experimental Dispersion Curve measured at Copper Hills High School, West Jordan, Site 27, Earthquake Site Response Unit Q02 (Ashland, 2001)

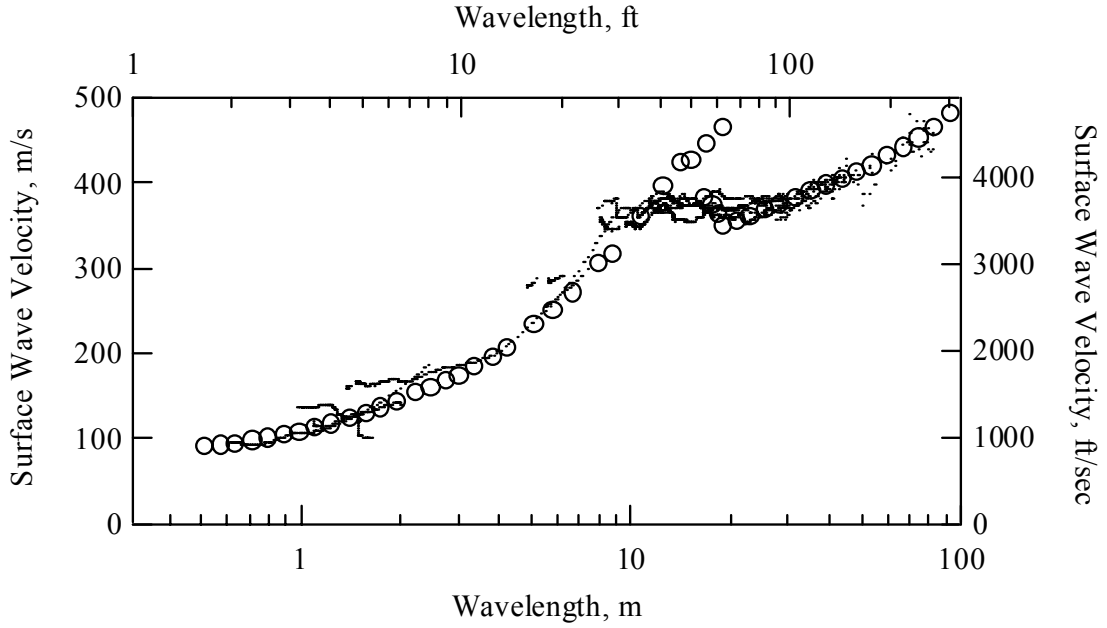


Fig 50 Comparison between Experimental & Theoretical Dispersion Curves from Copper Hills High School, West Jordan, Site 27, Earthquake Site Response Unit Q02 (Ashland, 2001)

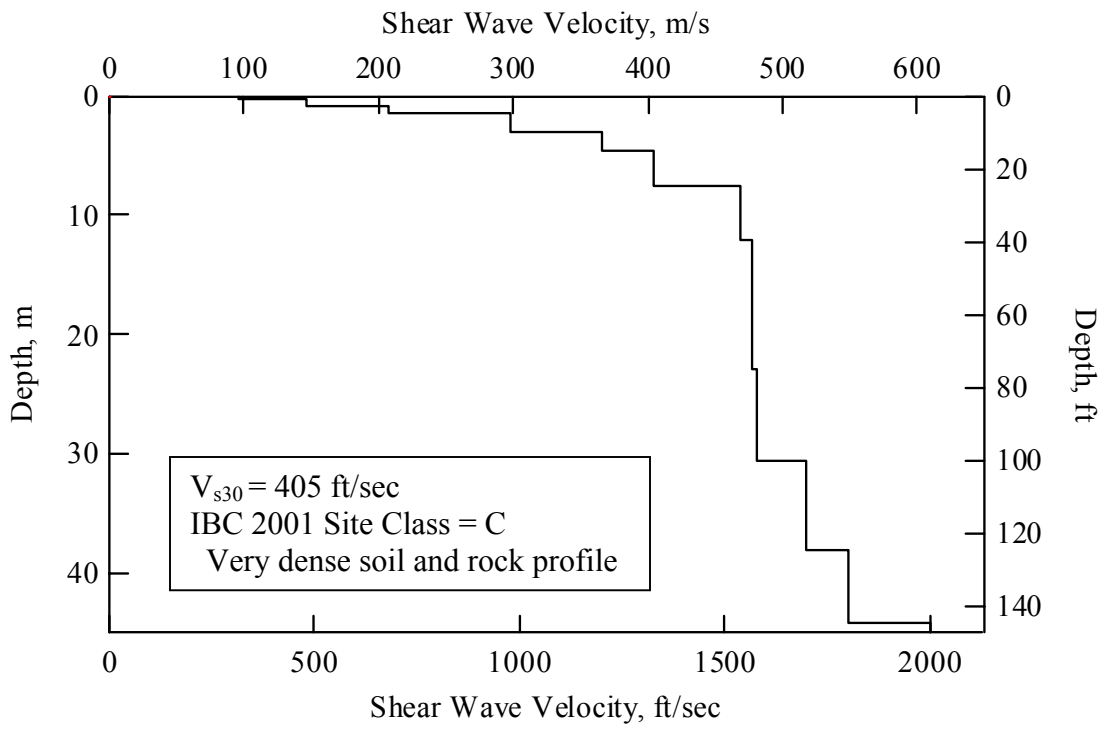


Fig 51 Shear Wave Velocity Profile Determined from SASW Testing at Copper Hills High School, West Jordan, Site 27, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 15 Tabulated Shear Wave Velocity Profile from Copper Hills High School, West Jordan, Site 27, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.37	96	179.6	1.89
0.37	0.46	146.3	273.7	1.89
0.83	0.7	207.3	387.8	1.92
1.53	1.49	297.2	556	1.92
3.02	1.52	365.8	684.3	2
4.54	3.05	403.9	755.5	2
7.59	4.57	469.4	878.2	2
12.16	10.67	477	892.4	2
22.83[a]	7.62	481.6	1524	2
30.45	7.62	518.2	1524	2
38.07	6.1	548.6	1524	2
44.17	30.18[b]	609.6	1524	2.08

a. Assumed depth to fully saturated zone
b. Half-space in model

Site: 125, Dee Memorial Park

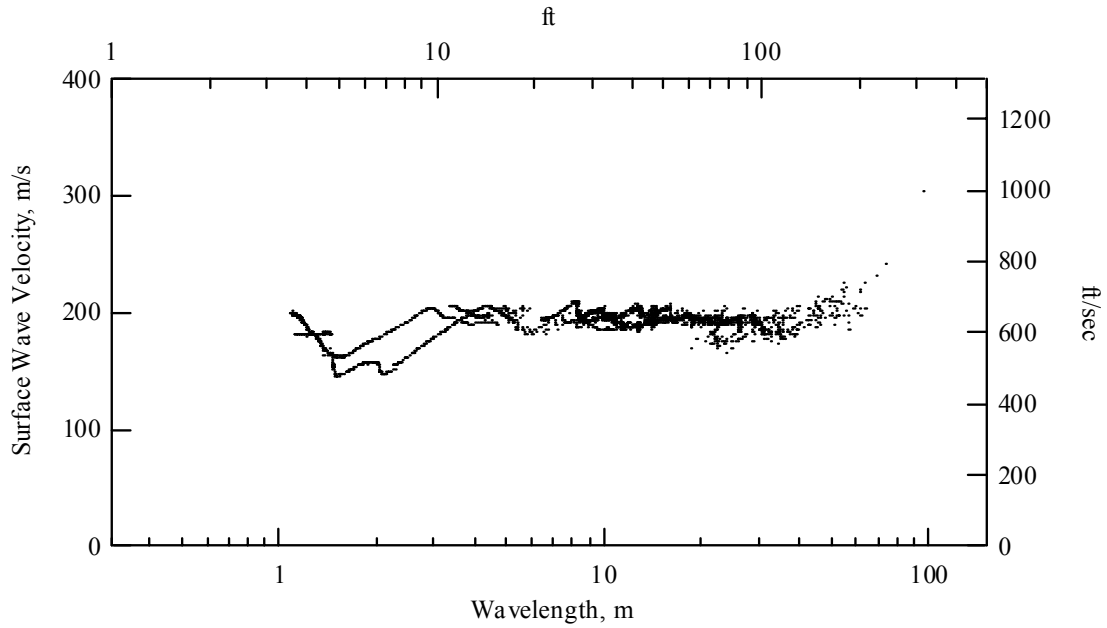


Fig 52 Experimental Dispersion Curve measured at Dee Memorial Park, Ogden, Site 125, Earthquake Site Response Unit Q02 (Ashland, 2001)

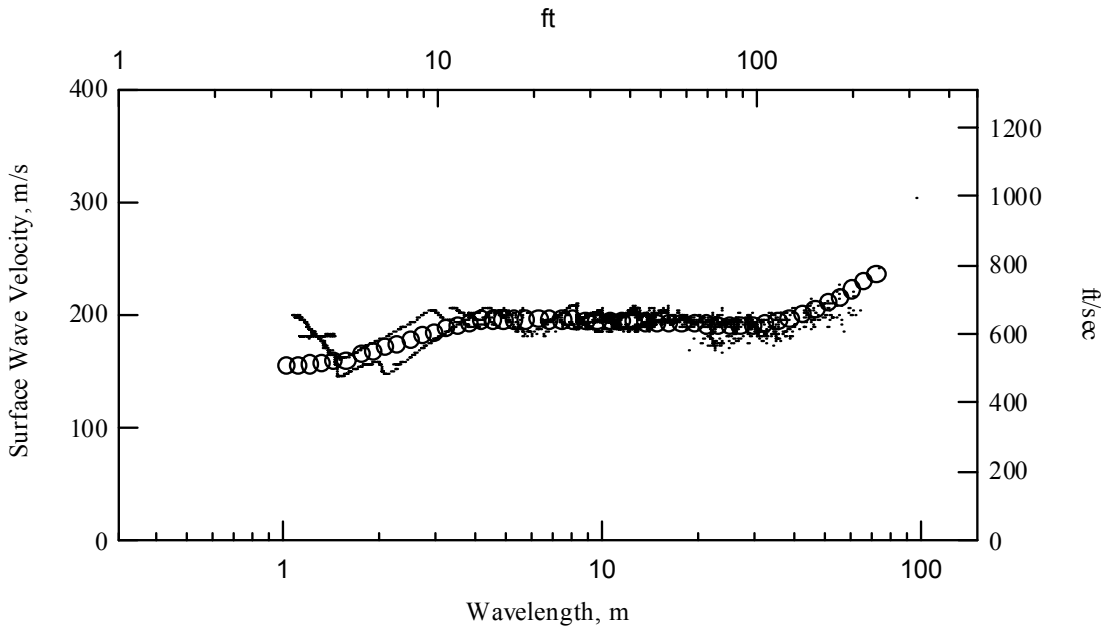


Fig 53 Comparison between Experimental & Theoretical Dispersion Curves from Dee Memorial Park, Ogden, Site 125, Earthquake Site Response Unit Q02 (Ashland, 2001)

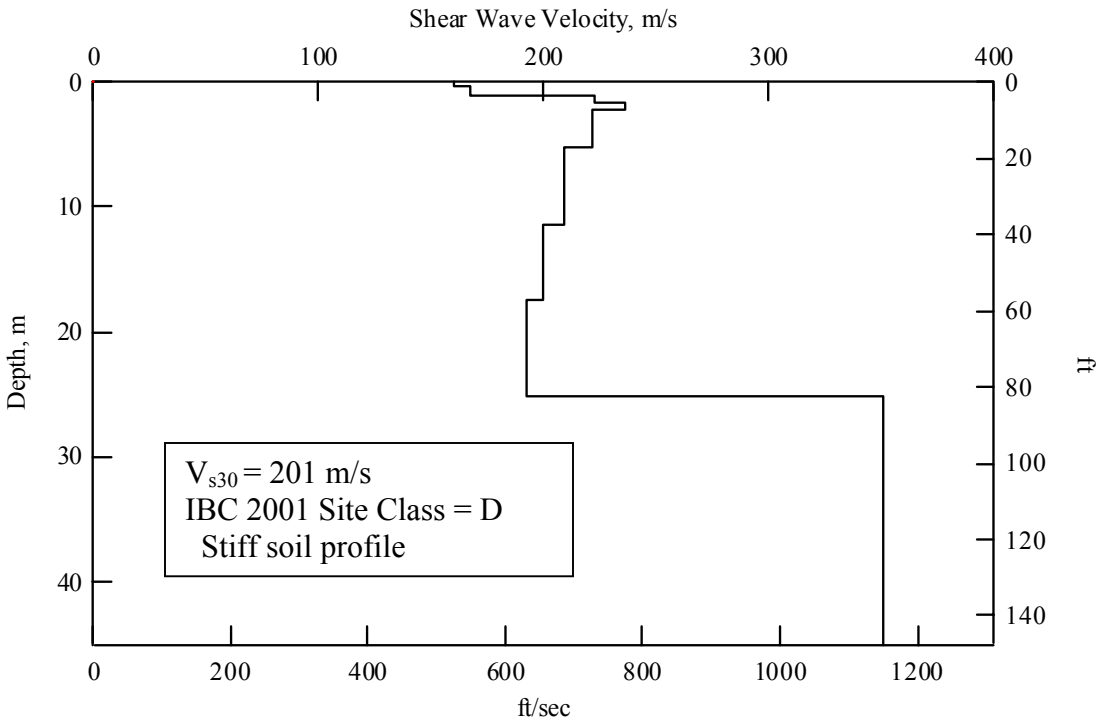


Fig 54 Shear Wave Velocity Profile Determined from SASW Testing at Dee Memorial Park, Ogden, Site 125, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 16 Tabulated Shear Wave Velocity Profile from Dee Memorial Park, Ogden, Site 125, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	160	285.1	1.92
0.3	0.69	167.6	313.6	1.92
0.99	0.61	222.5	416.3	1.92
1.6	0.61	236.2	441.9	1.92
2.21	3.05	221	413.4	1.92
5.26	6.1	208.8	390.6	1.92
11.36	6.1	199.6	373.5	1.92
17.46[a]	7.62	192	1524	1.92
25.08	6.1	198.1	1524	1.92
31.18	30.18[b]	350.5	1524	2

a. Assumed depth to fully saturated zone
b. Half-space in model

Site: 13, Riverton City Park

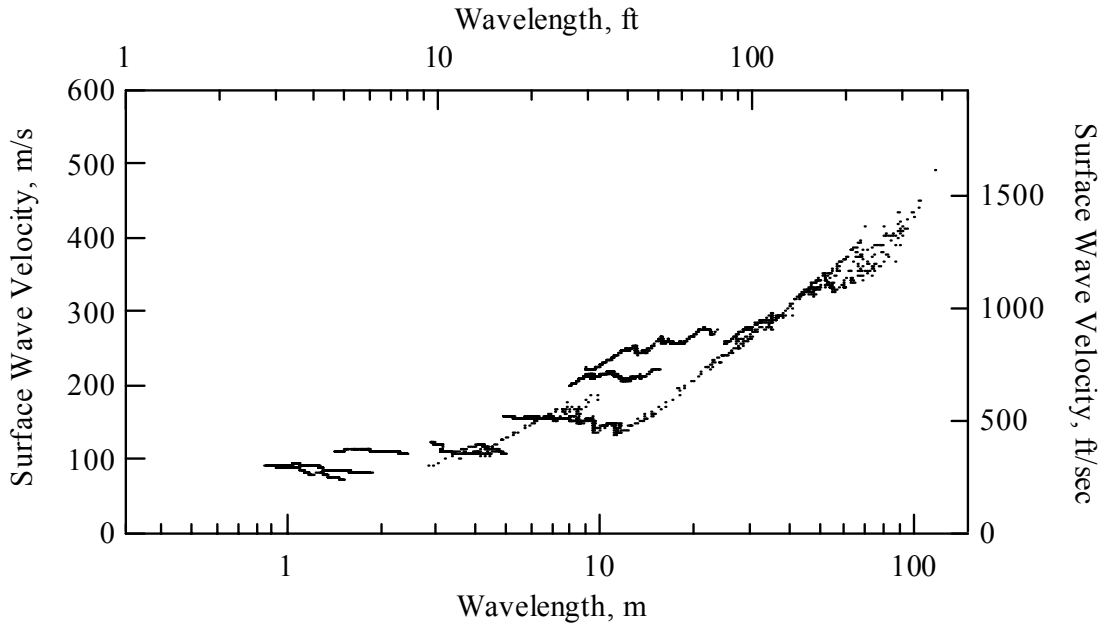


Fig 55 Experimental Dispersion Curve measured at Riverton Park, Riverton, Site 13, Earthquake Site Response Unit Q02 (Ashland, 2001)

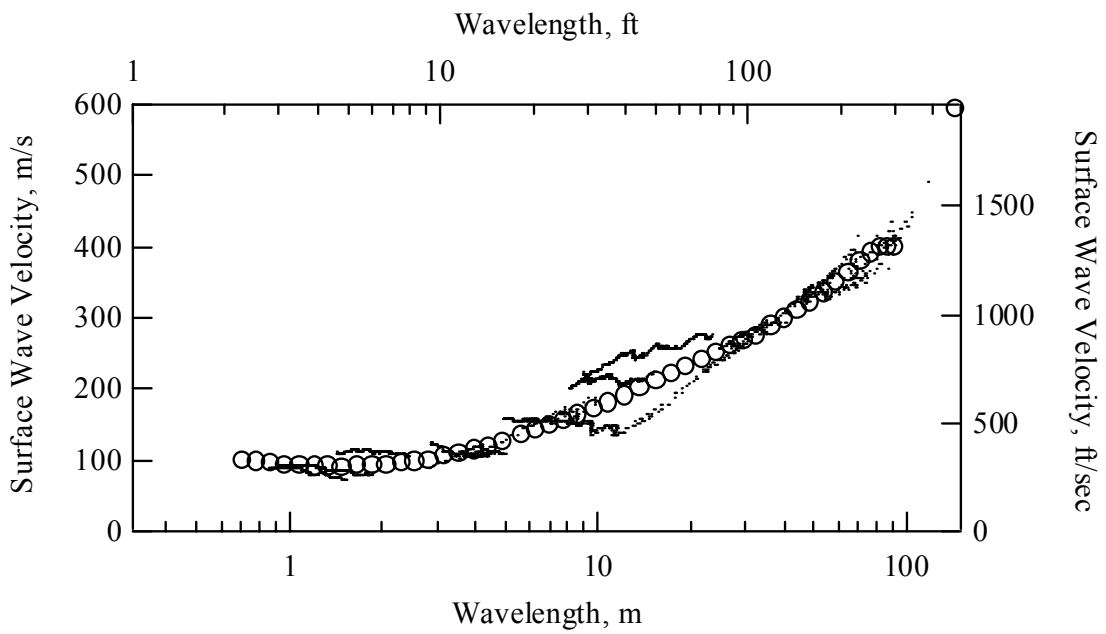


Fig 56 Comparison between Experimental & Theoretical Dispersion Curves from Riverton Park, Riverton, Site 13, Earthquake Site Response Unit Q02 (Ashland, 2001)

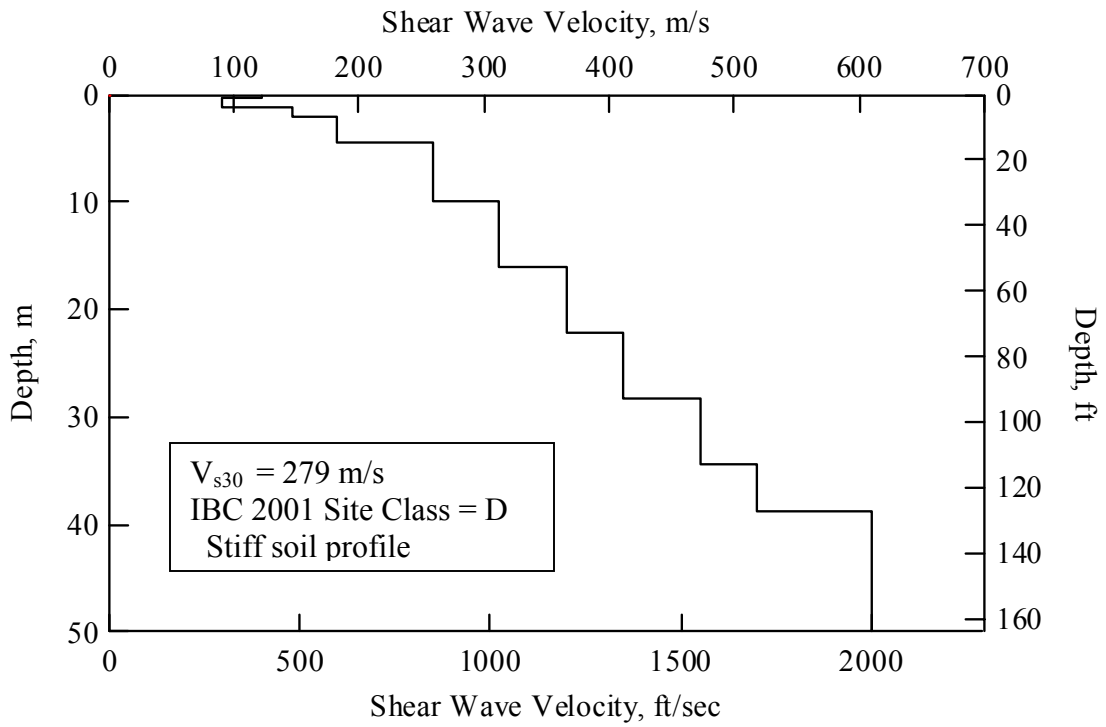


Fig 57 Shear Wave Velocity Profile Determined from SASW Testing at Riverton Park, Riverton, Site 13, Earthquake Site Response Unit Q02 (Ashland, 2001)

Tabulated Shear Wave Velocity Profile from Riverton Park, Riverton, Site 13, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	121.9	228.10	1.89
0.3	0.91	89.9	168.20	1.89
1.21	0.91	146.3	273.70	1.89
2.12	2.29	182.9	342.10	1.92
4.41	5.49	259.1	484.70	1.92
9.9	6.1	312.4	584.50	2
16[a]	6.1	365.8	1524.00	2
22.1	6.1	411.5	1524.00	2
28.2	6.1	472.4	1524.00	2
34.3	4.57	518.2	1524.00	2
38.87	30.18[b]	609.6	1524.00	2.08

a. Depth to fully saturated zone
b. Half-space in model

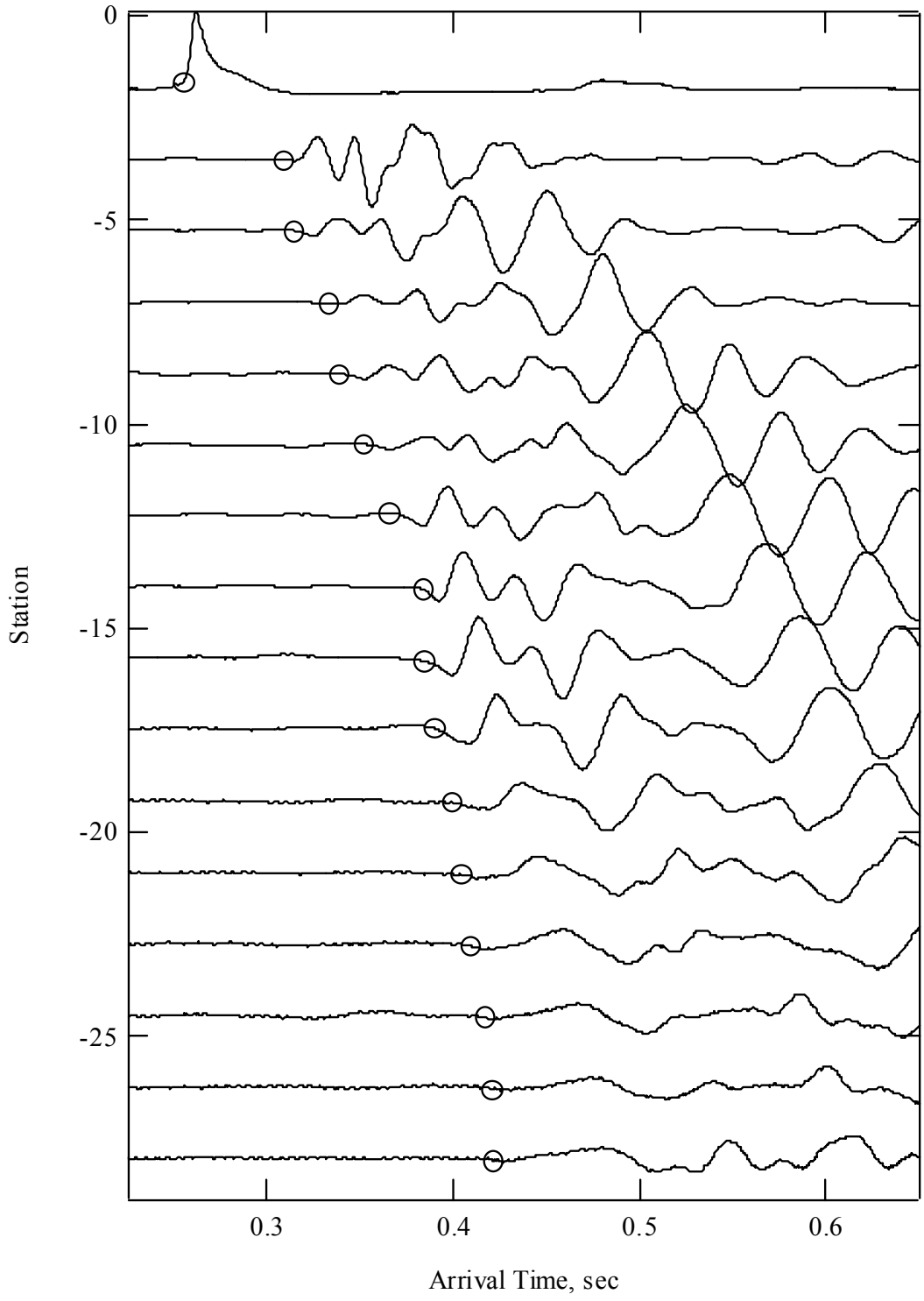


Fig 58 Arrival Times for Refraction Testing at Riverton Park, Riverton, Site 13, Earthquake Site Response Unit Q02 (Ashland, 2001)

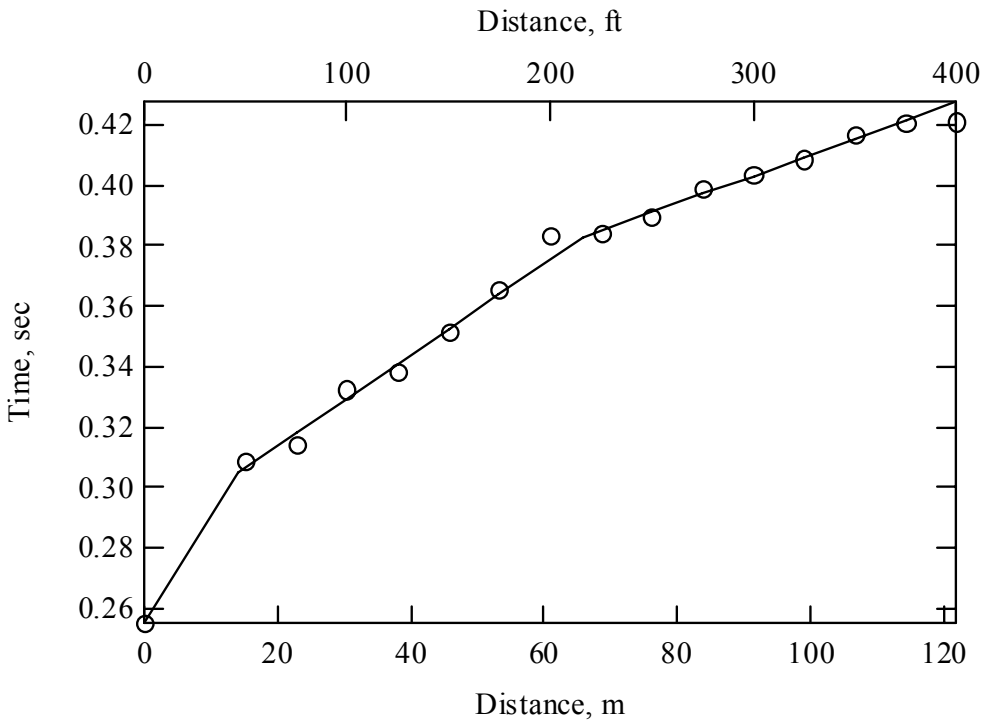


Fig 59 Time-Distance Curve for Refraction Testing at Riverton Park, Riverton, Site 13, Earthquake Site Response Unit Q02 (Ashland, 2001)

Tabulated Refraction Profile for Riverton Park, Riverton, Site 13, Earthquake Site Response Unit Q02 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	4.47	283.74	151.67
2	16.80[a]	663.66	354.74
3		1241.33	

a. Depth to fully saturated zone

Site: 43, Crestview Elementary

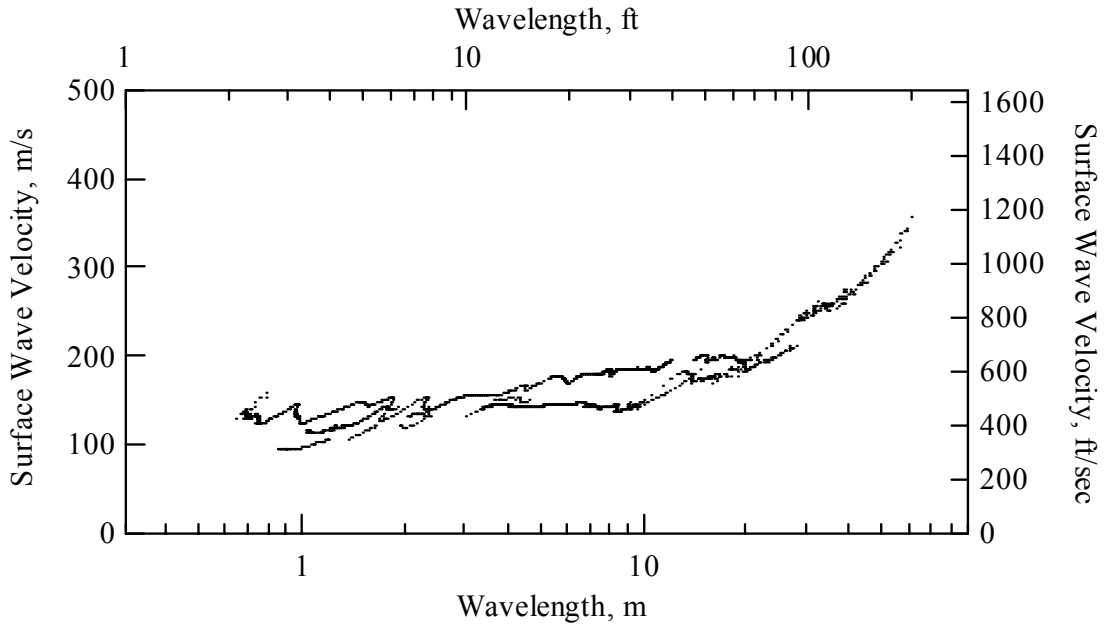


Fig 60 Experimental Dispersion Curve measured at Crestview Elementary, East Millcreek, Site 43, Earthquake Site Response Unit Q02 (Ashland, 2001)

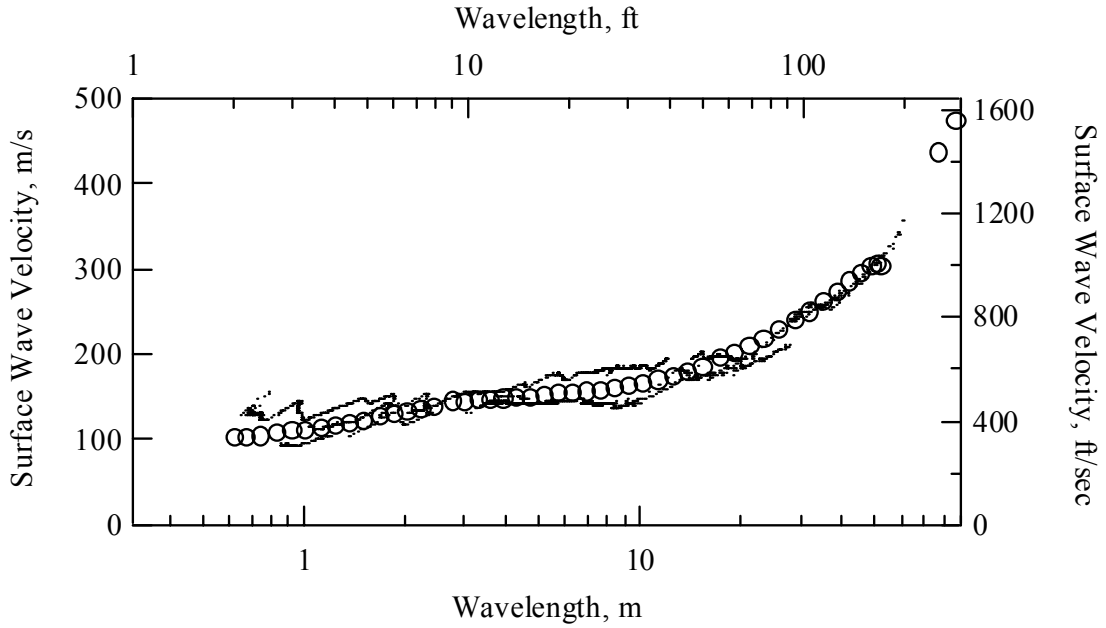


Fig 61 Comparison between Experimental & Theoretical Dispersion Curves from Crestview Elementary, East Millcreek, Site 43, Earthquake Site Response Unit Q02 (Ashland, 2001)

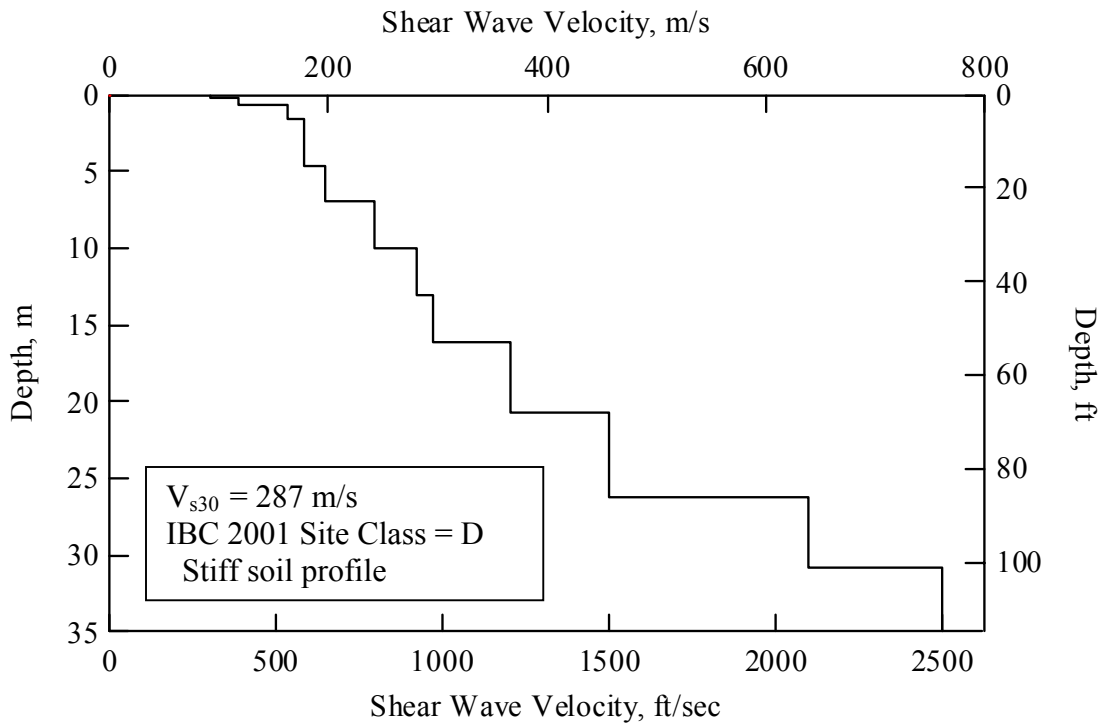


Fig 62 Shear Wave Velocity Profile Determined from SASW Testing at Crestview Elementary, East Millcreek, Site 43, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 17 Tabulated Shear Wave Velocity Profile for Average Profile from Crestview Elementary, East Millcreek, Site 43, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.15	91.4	171.1	1.89
0.15	0.46	118.9	222.4	1.89
0.61	0.91	163.1	305.1	1.92
1.52	3.05	178.3	333.6	1.92
4.57	2.44	198.1	370.6	1.92
7.01	3.05	243.8	456.2	1.92
10.06	3.05	281.9	527.5	1.92
13.11	3.05	297.2	556	1.92
16.16	4.57	365.8	684.3	2
20.73[a]	5.49	457.2	1524	2
26.22	4.57	640.1	1524	2.08
30.79	30.18[b]	762	1524	2.08

a. Assumed depth to fully saturated zone
b. Half-space in model

Q03

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Site 300 – Hang-Glider

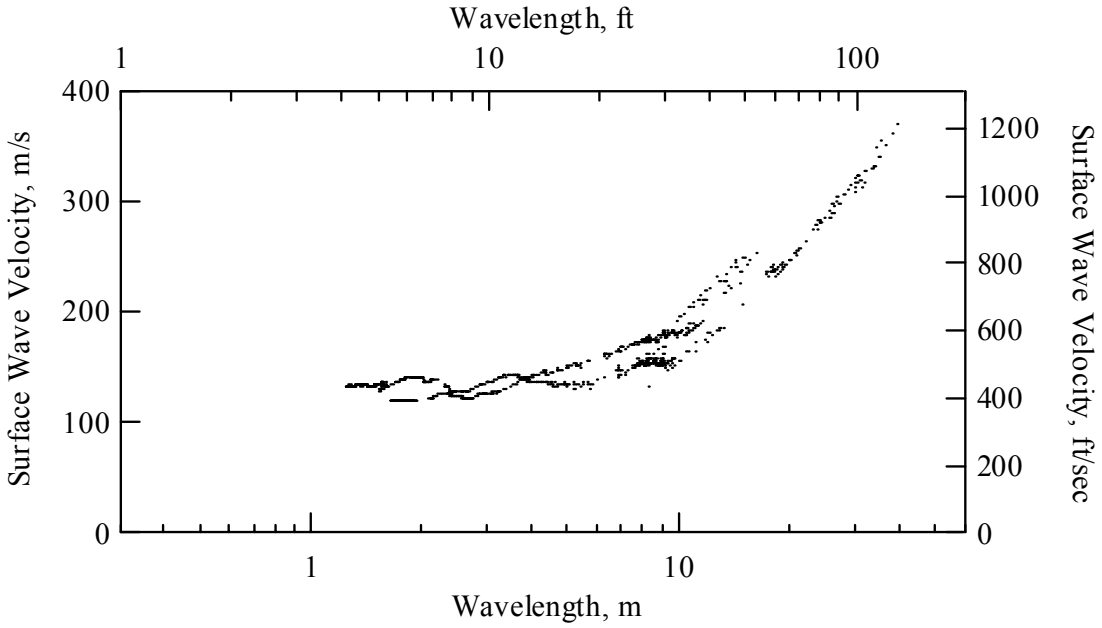

Figure 1 Experimental Dispersion Curve measured at North Hang-Gliding Park, Draper, Site 300, Earthquake Site Response Unit Q03 (Ashland, 2001)

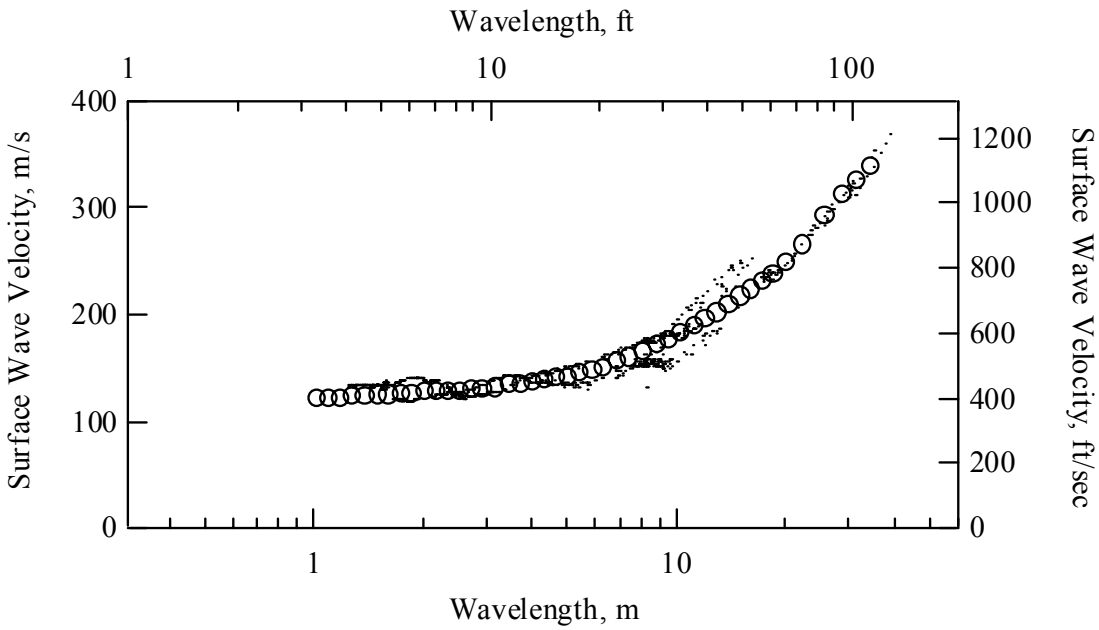

Figure 2 Comparison between Experimental & Theoretical Dispersion Curves from North Hang-Gliding Park, Draper, Site 300, Earthquake Site Response Unit Q03 (Ashland, 2001)

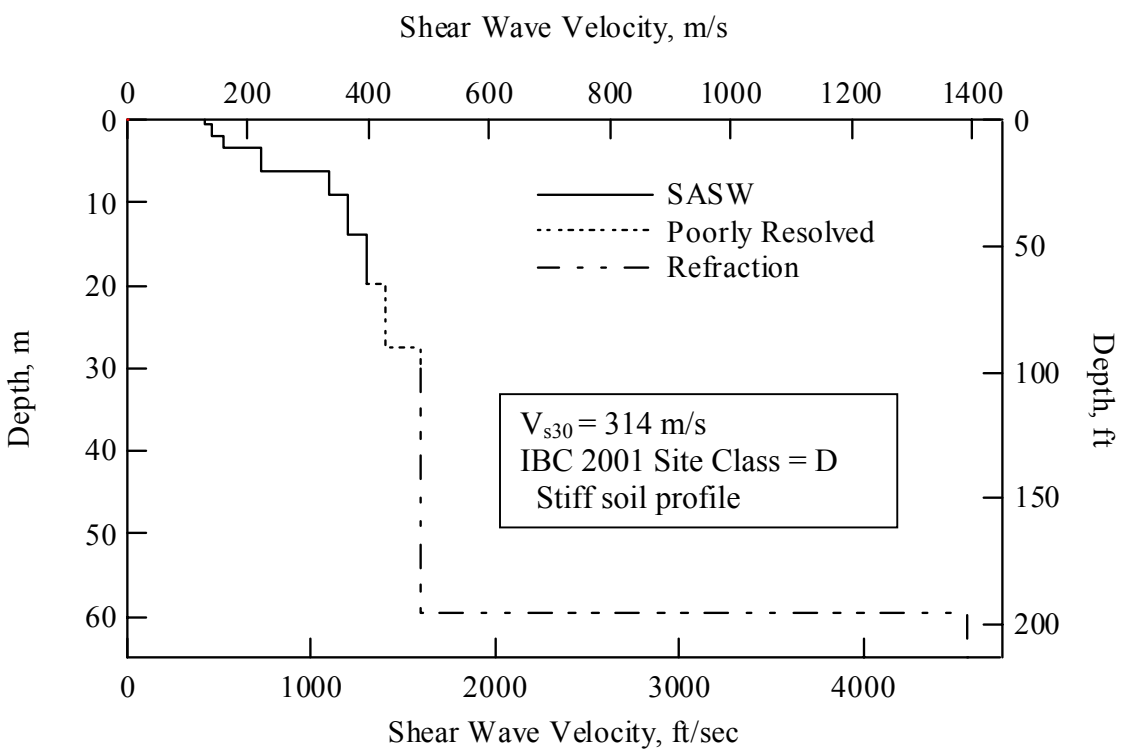

Figure 3 Shear Wave Velocity Profile Determined from SASW Testing at North Hang-Gliding Park, Draper, Site 300, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 1 Tabulated Shear Wave Velocity Profile from North Hang-Gliding Park, Draper, Site 300, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.61	128	239.5	1.89
0.61	1.22	140.2	262.3	1.89
1.83	1.52	160	299.4	1.92
3.35	2.74	221	413.4	1.92
6.09	3.05	335.3	627.3	2.00
9.14	4.57	365.8	684.3	2.00
13.71	6.1	396.2	741.3	2.00
19.81	7.62	426.7	812.6	2.00
27.43	30.18[a]	485[b]	907.4	2.00

a. Half-space in model
b. Refraction velocity

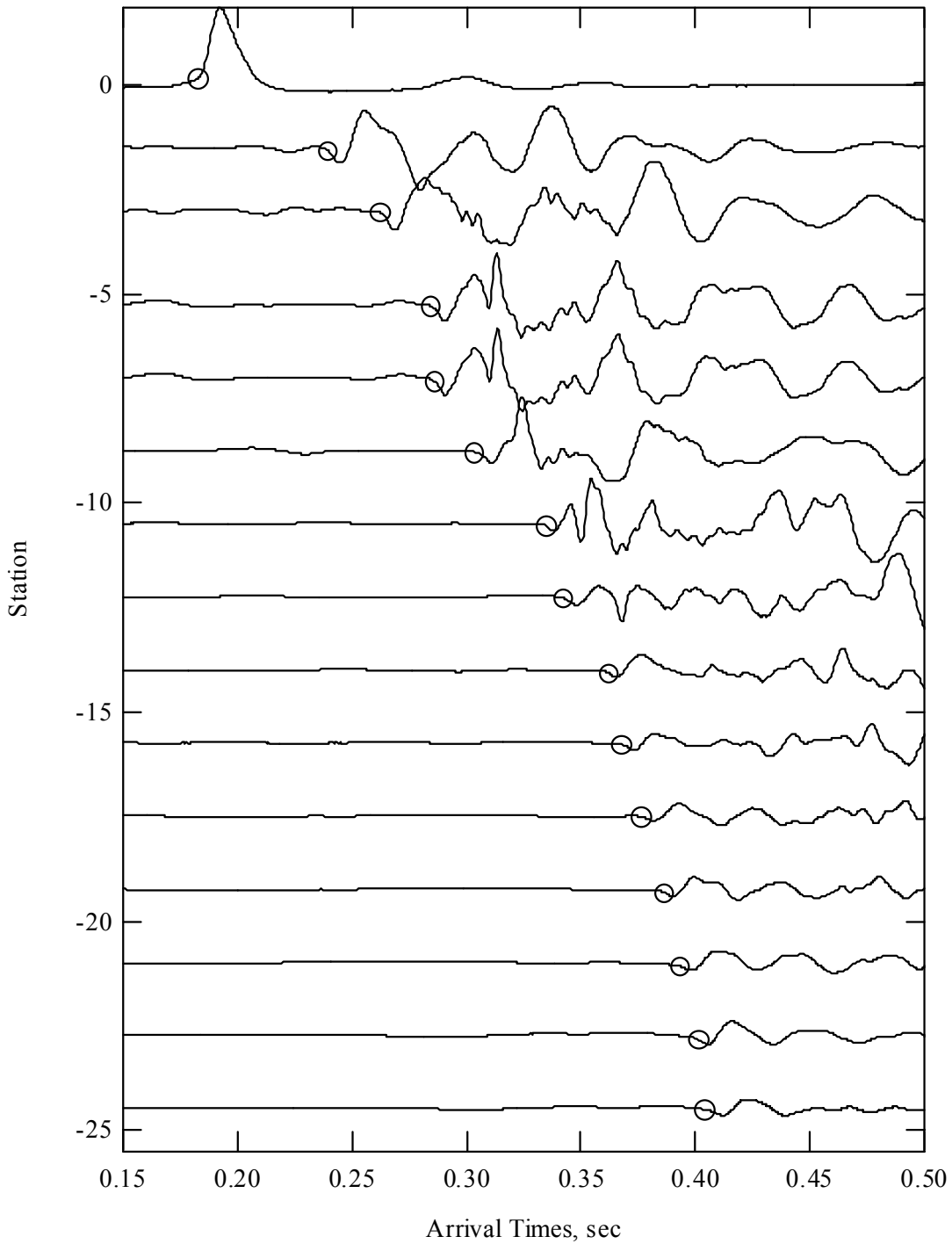

Fig 1 Arrival Times for Refraction Testing at North Hang-Gliding Park, Draper, Site 300, Earthquake Site Response Unit Q03 (Ashland 2001)

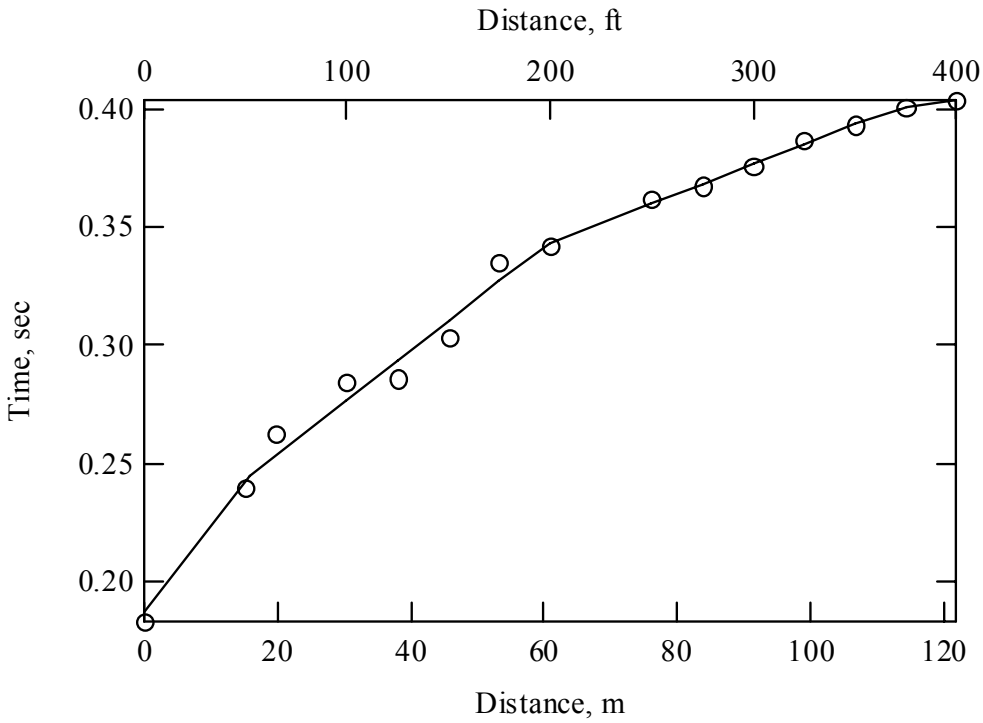

Fig 2 Time-Distance Curve for Refraction Testing at North Hang-Gliding Park, Draper, Site 300, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 2 Tabulated Refraction Profile from North Hang-Gliding Park, Draper, Site 300, Earthquake Site Response Unit Q03 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	4.18	253.68	135.60
2	16.39	452.45	241.84
3	59.55	908.76	485.75
4		2600.71	1390.14

Site 301 – Herriman Lot

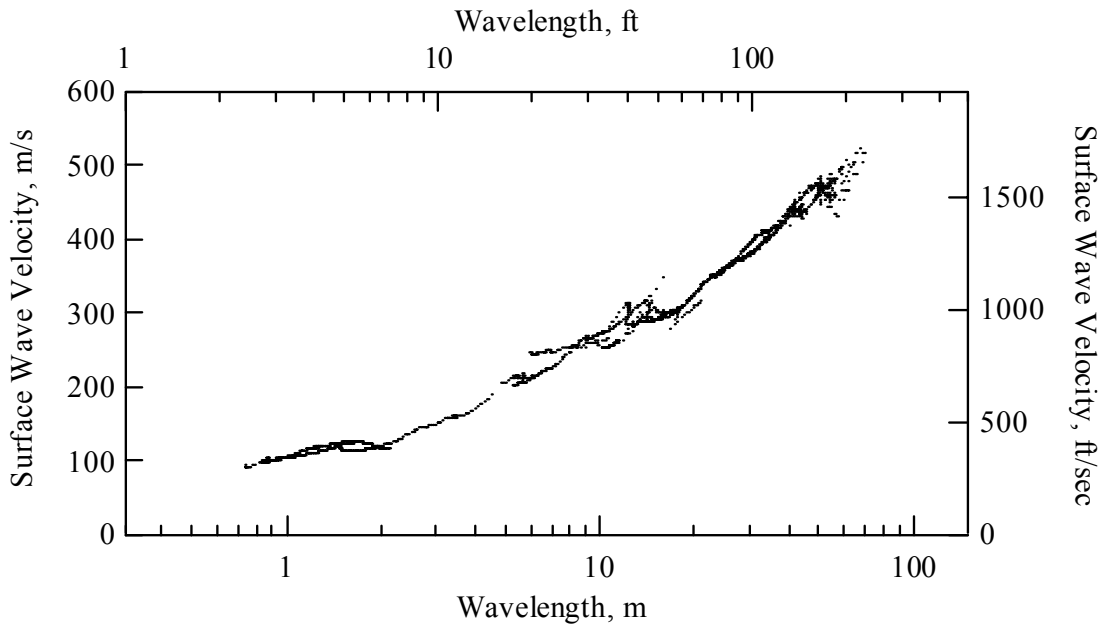

Figure 4 Experimental Dispersion Curve measured at Herriman Lot, Riverton, Site 301, Earthquake Site Response Unit Q03 (Ashland, 2001)

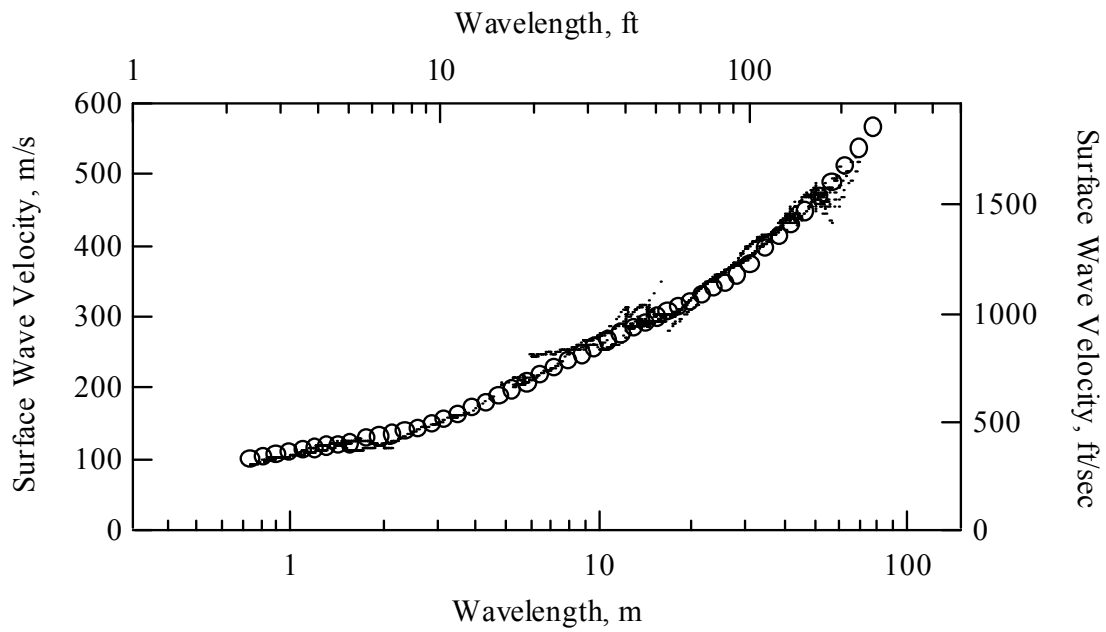

Figure 5 Comparison between Experimental & Theoretical Dispersion Curves from Herriman Lot, Riverton, Site 301, Earthquake Site Response Unit Q03 (Ashland, 2001)

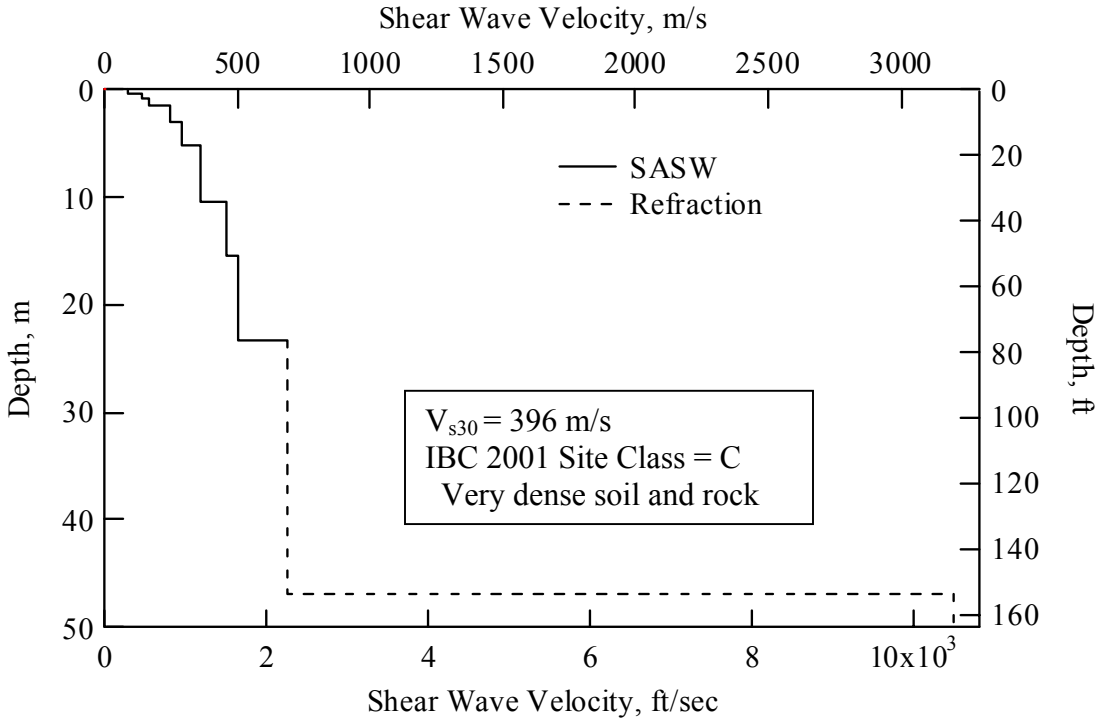

Figure 6 Shear Wave Velocity Profile Determined from SASW Testing at Herriman Lot, Riverton, Site 301, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 3 Tabulated Shear Wave Velocity Profile from Herriman Lot, Riverton, Site 301, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	91.4	171.1	1.89
0.3	0.61	137.2	256.6	1.89
0.91	0.61	167.6	313.6	1.92
1.52	1.52	249	465.9	1.92
3.04	2.13	289.6	541.7	2
5.17	5.18	358.1	670	2
10.35	5.18	457.2	855.3	2
15.53	7.62	502.9	940.9	2
23.15	30.18[a]	685[b]	1281.5	2.08

a. Half-space in model
b. Refraction velocity

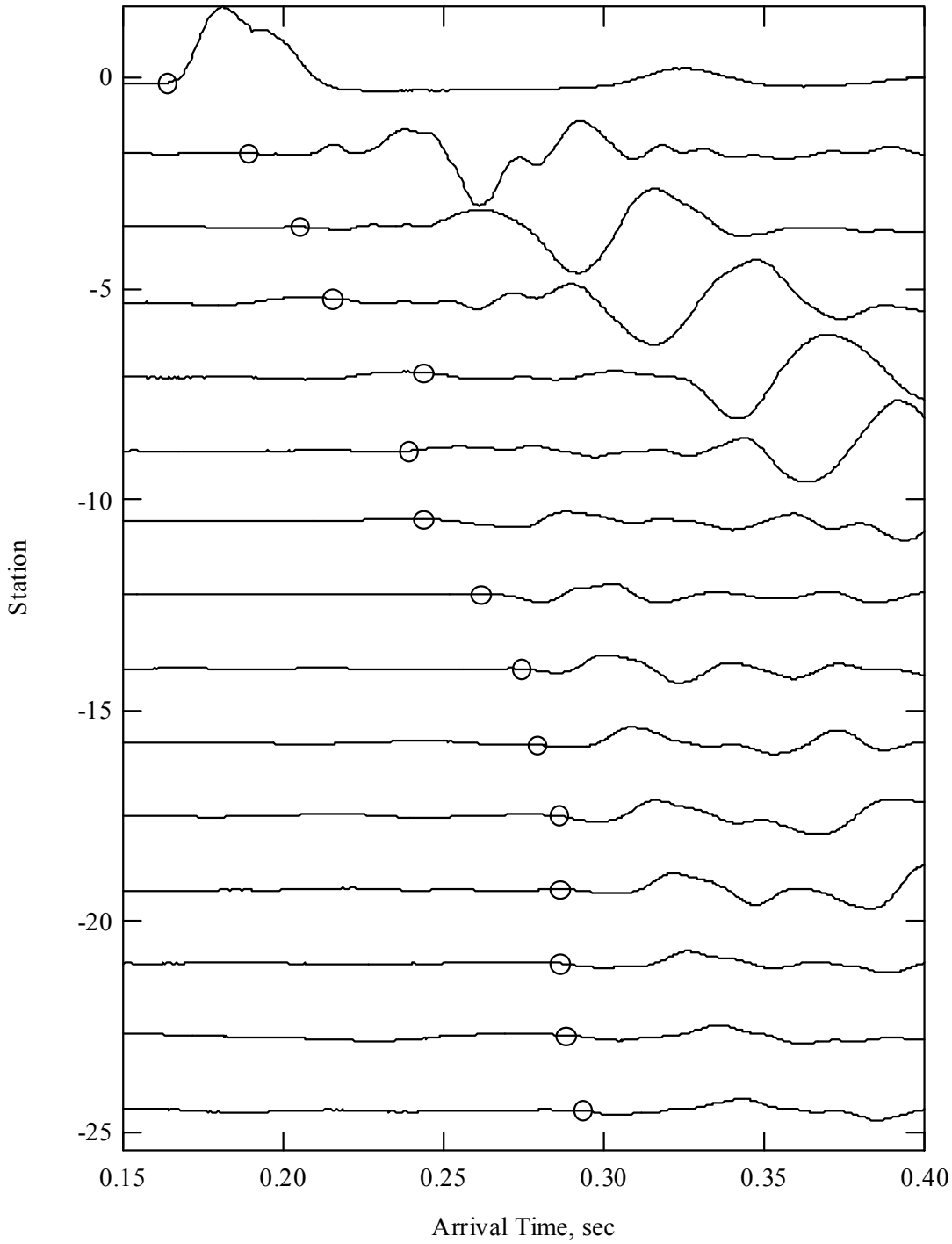

Figure 7 Arrival Times for Refraction Testing at Herriman Lot, Riverton, Site 301, Earthquake Site Response Unit Q03 (Ashland, 2001)

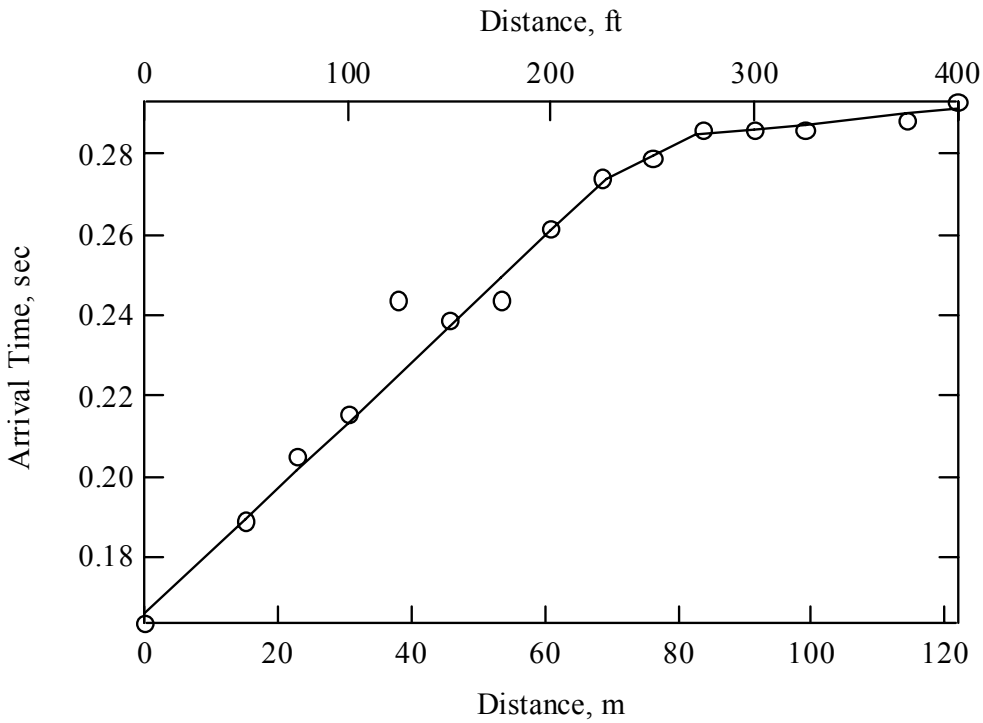

Figure 8 Time-Distance Curve for Refraction Testing at Herriman Lot, Riverton, Site 301, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 4 Tabulated Refraction Profile from Herriman Lot, Riverton, Site 301, Earthquake Site Response Unit Q03 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	20.05	641.40	342.84
2	46.79	1282.20	685.36
3		5985.873	3199.5839[a]

a. Bedrock velocity

Site 96 – Cedar Valley, County Road

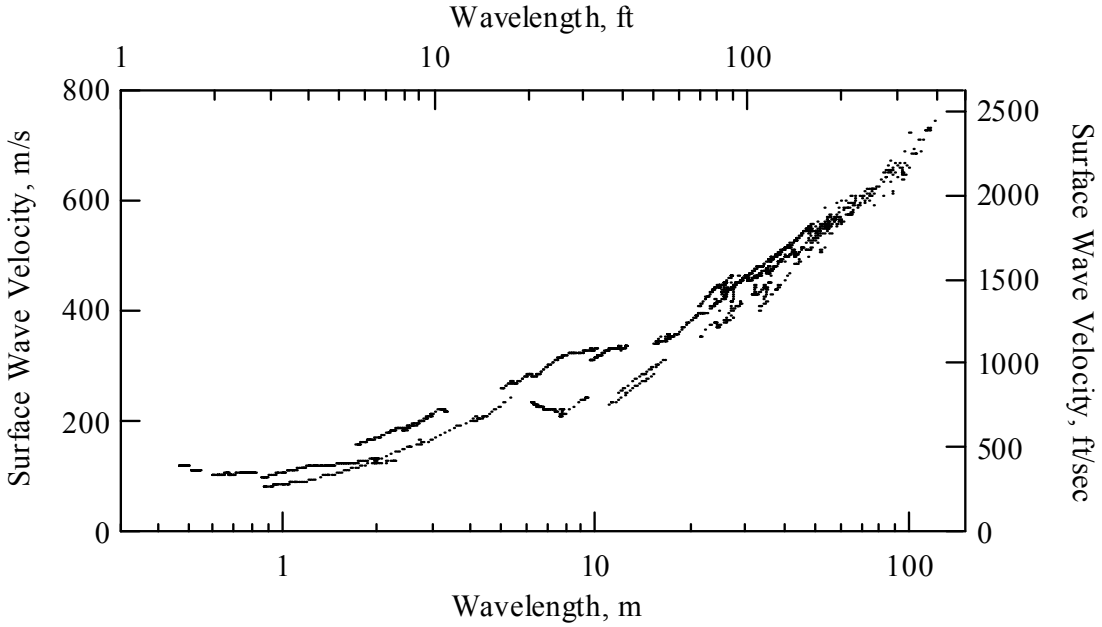

Fig 3 Experimental Dispersion Curve measured at Cedar Valley County Road, Cedar Valley, Site 96, Earthquake Site Response Unit Q03 (Ashland, 2001)

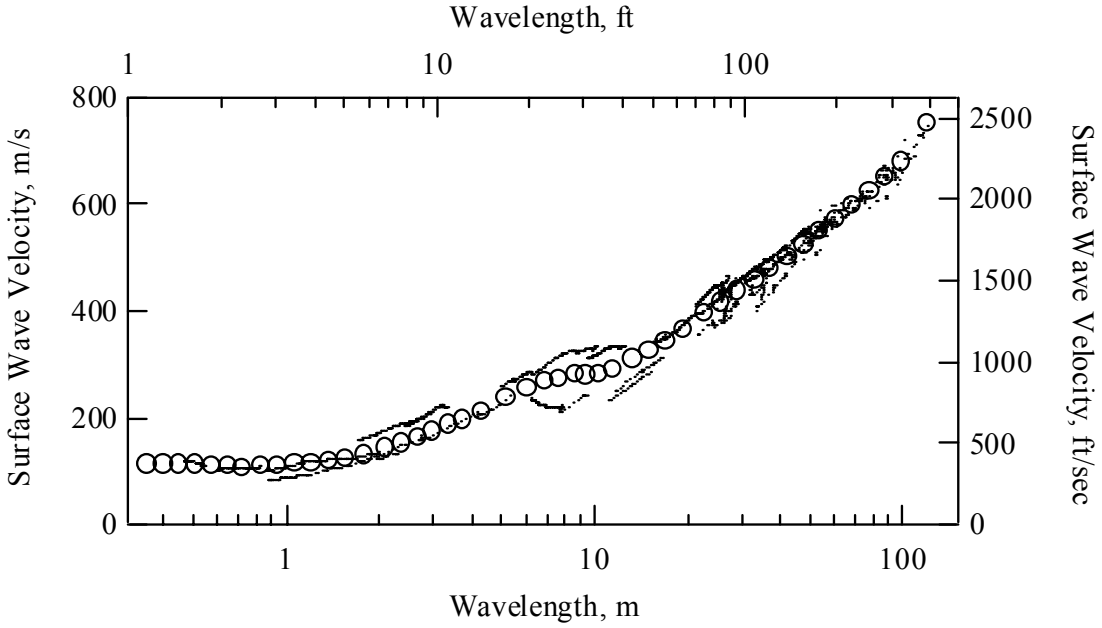

Fig 4 Comparison between Experimental & Theoretical Dispersion Curves from Cedar Valley County Road, Cedar Valley, Site 96, Earthquake Site Response Unit Q03 (Ashland, 2001)

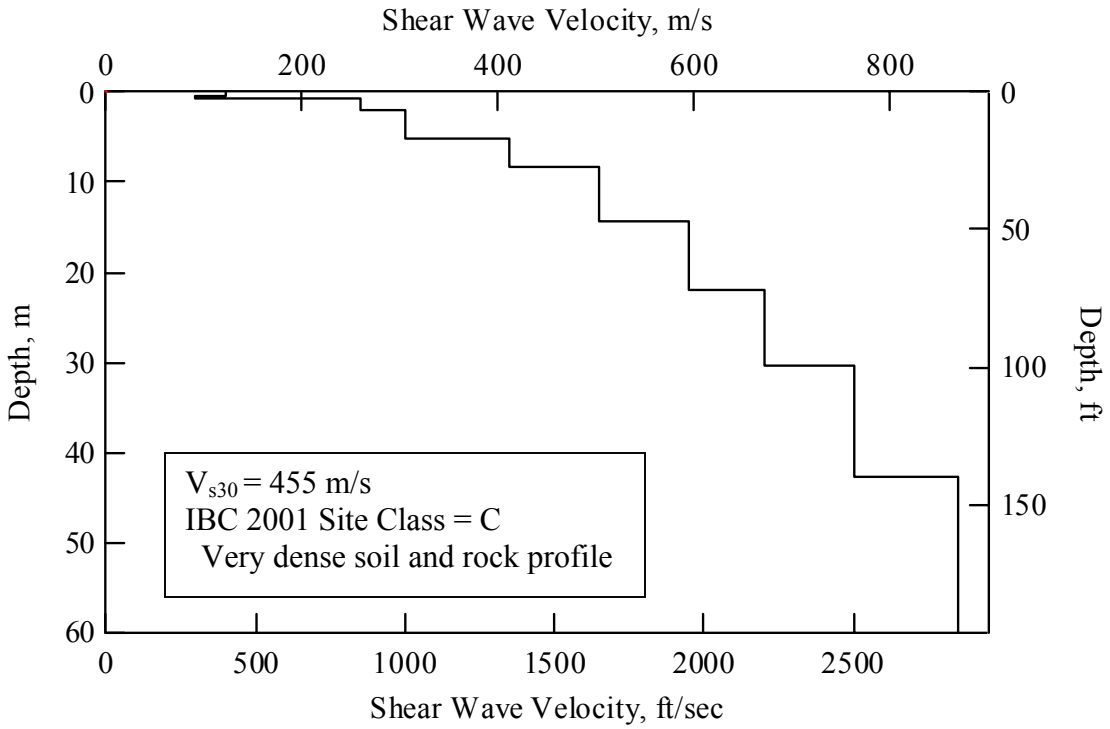

Fig 5 Shear Wave Velocity Profile Determined from SASW Testing at Cedar Valley County Road, Cedar Valley, Site 96, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 5 Tabulated Shear Wave Velocity Profile from Cedar Valley County Road, Cedar Valley, Site 96, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.53	121.9	228.1	1.89
0.53	0.15	91.4	171.1	1.89
0.68	1.22	259.1	484.7	1.92
1.9	3.35	304.8	570.2	2
5.25	3.05	411.5	769.8	2
8.3	6.1	502.9	940.9	2
14.4	7.62	594.4	1111.9	2
22.02	8.38	670.6	1254.5	2.08
30.4	12.19	762	1425.6	2.08
42.59	30.18[a]	868.7	1625.2	2.08

a. Half-space in model

Site 105, Eagle Mountain, Cedar Valley

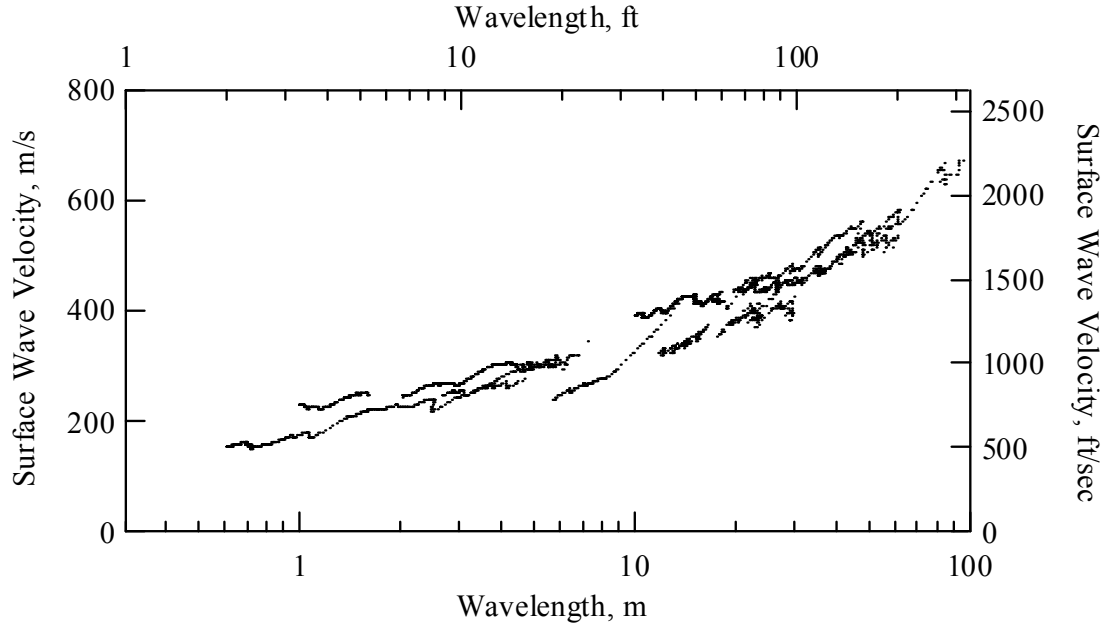

Fig 6 Experimental Dispersion Curve measured at Eagle Mountain, Cedar Valley, Site 105, Earthquake Site Response Unit Q03 (Ashland, 2001)

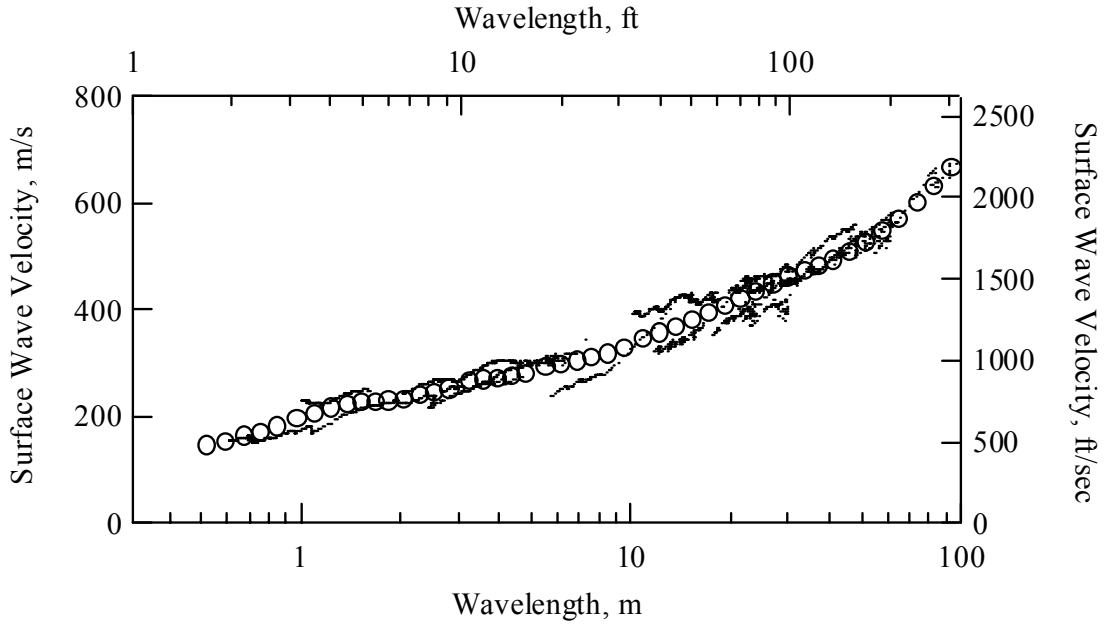

Fig 7 Comparison between Experimental & Theoretical Dispersion Curves at Eagle Mountain, Cedar Valley, Site 105, Earthquake Site Response Unit Q03 (Ashland, 2001)

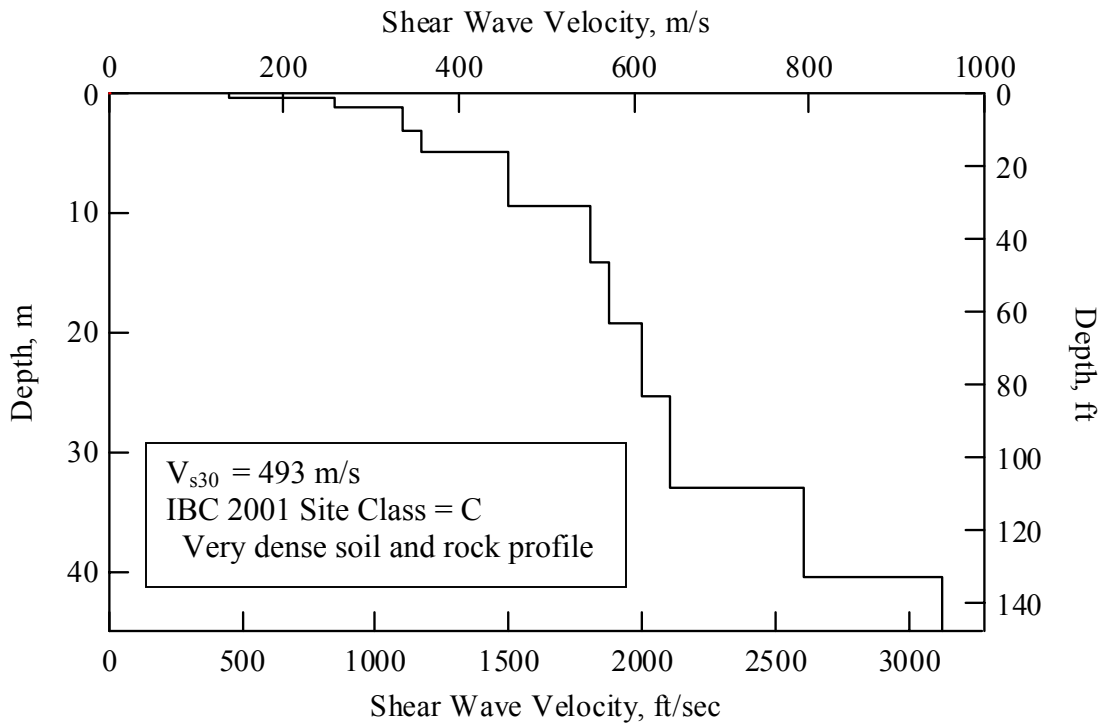

Fig 8 Shear Wave Velocity Profile Determined from SASW Testing Eagle Mountain, Cedar Valley, Site 105, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 6 Tabulated Shear Wave Velocity Profile from Eagle Mountain, Cedar Valley, Site 105, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.26	137.2	256.60	1.89
0.26	0.91	259.1	484.70	1.92
1.17	1.87	335.3	627.30	2
3.04	1.83	358.1	670.00	2
4.87	4.57	457.2	855.30	2
9.44	4.57	548.6	1026.40	2
14.01	5.18	571.5	1069.20	2
19.19	6.1	609.6	1140.50	2.08
25.29	7.62	640.1	1197.50	2.08
32.91	7.62	792.5	1482.60	2.08
40.53	30.18[a]	952.5	1782.00	2.08

a. Half-space in model

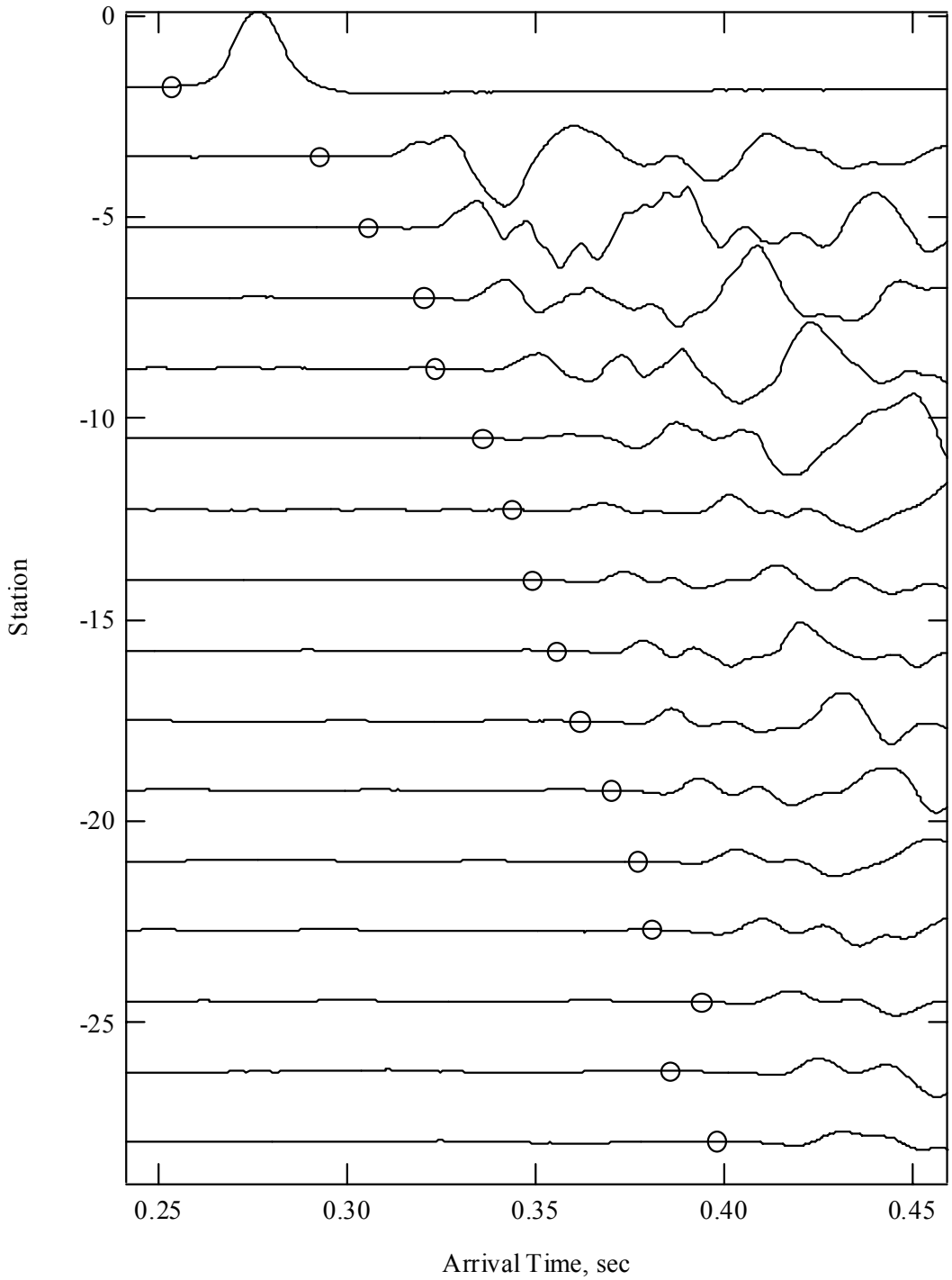

Fig 9 Arrival Times for Refraction Testing at Eagle Mountain, Cedar Valley, Site 105, Earthquake Site Response Unit Q03 (Ashland, 2001)

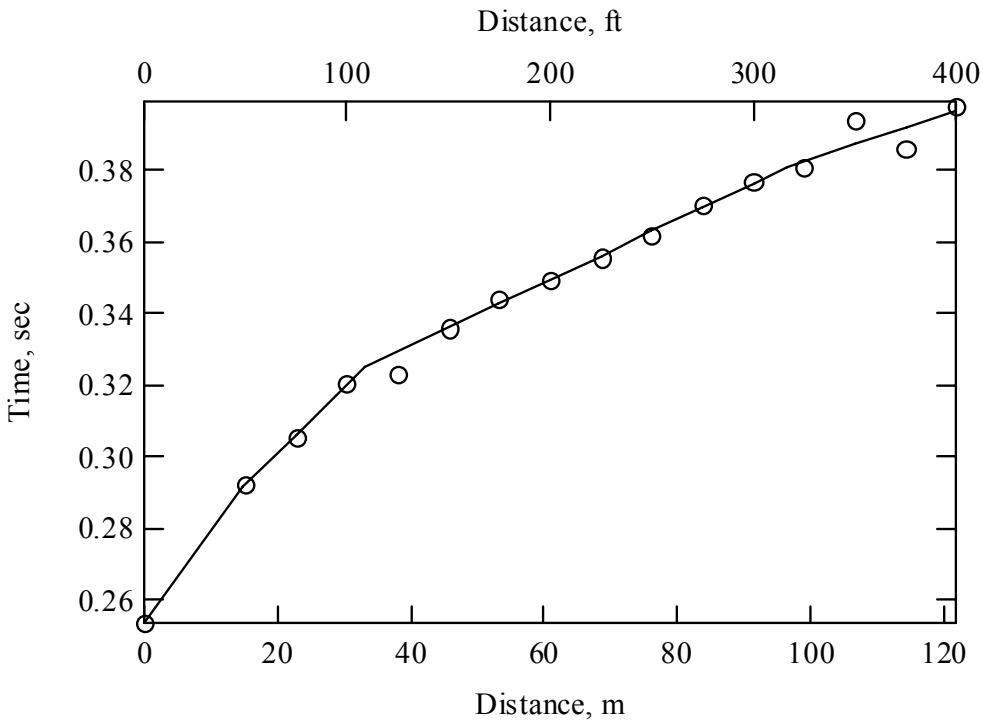

Fig 10 Time-Distance Curve for Refraction Testing at Eagle Mountain, Cedar Valley, Site 105, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 7 Tabulated Refraction Profile from Eagle Mountain, Cedar Valley, Site 105, Earthquake Site Response Unit Q03 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	3.05	390.14	208.54
2	9.64	547.59	292.70
3	33.46	1132.32	605.25
4		1623.69	867.90

Site 203, Barney's Wash Baseball Field

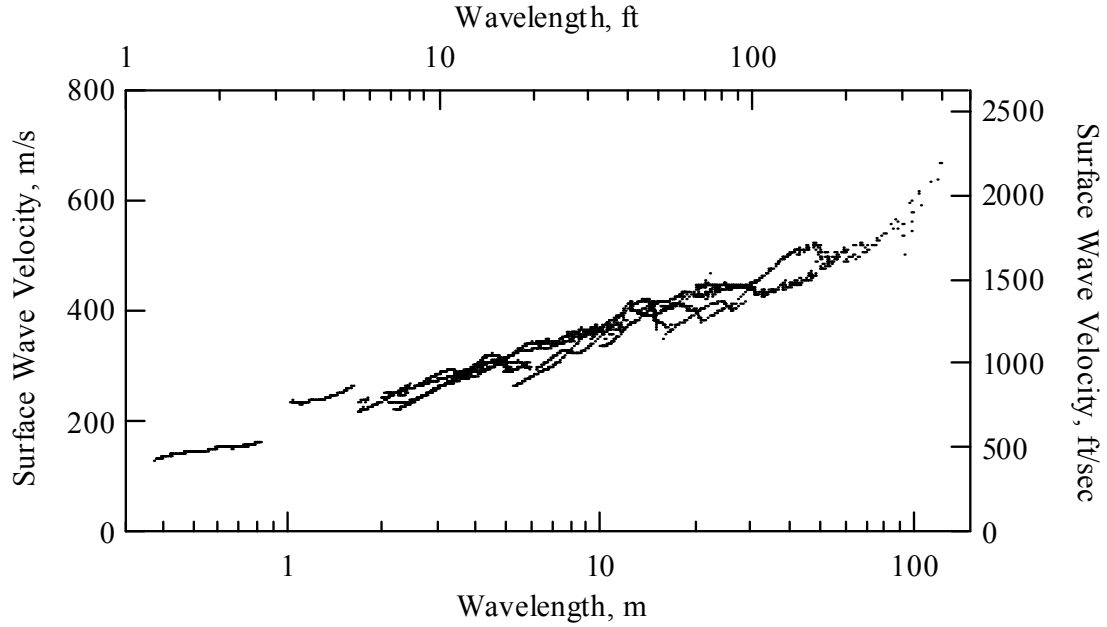

Fig 11 Experimental Dispersion Curve measured at Barney's Wash Baseball Field, West Jordan, Site 203, Earthquake Site Response Unit Q03 (Ashland, 2001)

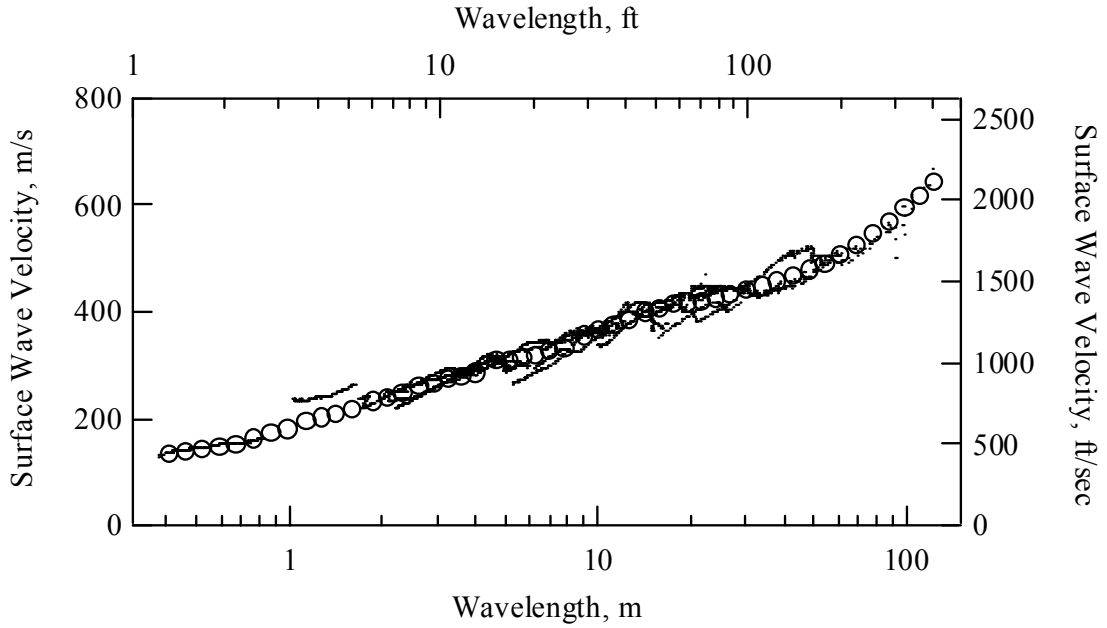

Fig 12 Comparison between Experimental & Theoretical Dispersion Curves from Barney's Wash Baseball Field, West Jordan, Site 203, Earthquake Site Response Unit Q03 (Ashland, 2001)

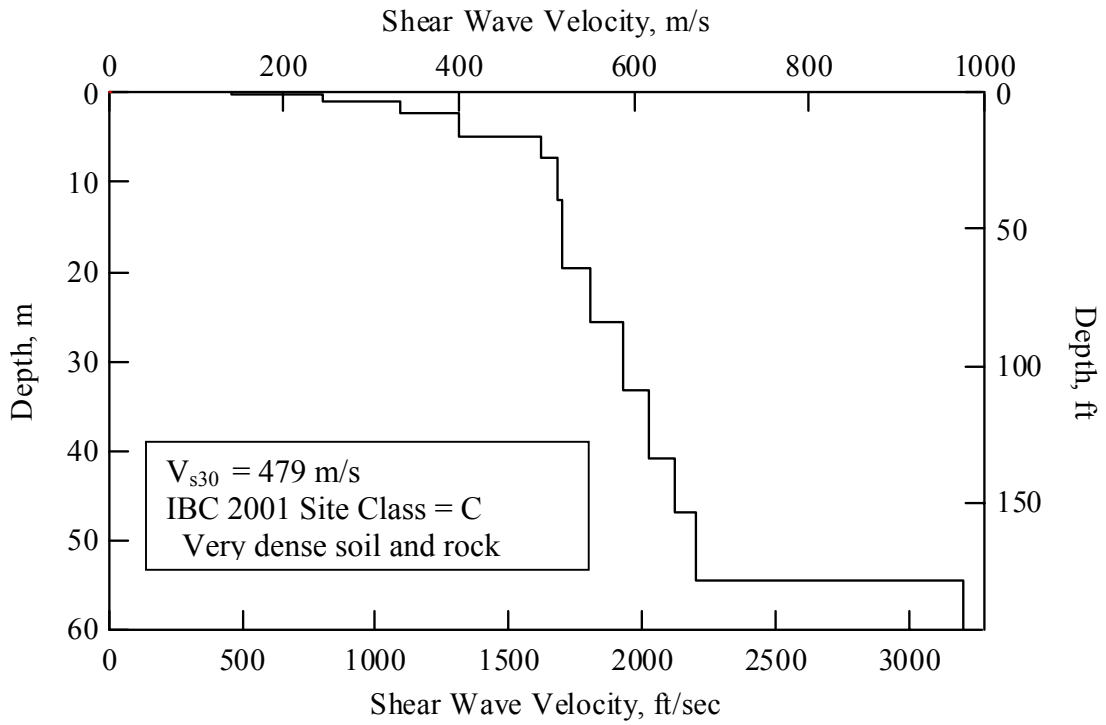

Fig 13 Shear Wave Velocity Profile Determined from SASW Testing at Barney's Wash Baseball Field, West Jordan, Site 203, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 8 Tabulated Shear Wave Velocity Profile from Barney's Wash Baseball Field, West Jordan, Site 203, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	140.20	262.3	1.89
0.3	0.69	243.80	456.2	1.92
0.99	1.45	333.80	624.4	2
2.44	2.44	399.30	747	2
4.88	2.44	492.30	920.9	2
7.32	4.57	513.60	960.8	2
11.89[a]	7.62	518.20	1524	2
19.51	6.1	548.60	1524	2
25.61	7.62	586.70	1524	2
33.23	7.62	617.20	1524	2.08
40.85	6.1	647.70	1524	2.08
46.95	7.62	670.60	1524	2.08
54.57	30.18[b]	975.40	1524	2.08

a. Depth to fully saturated zone from Refraction Testing
b. Half-space in model

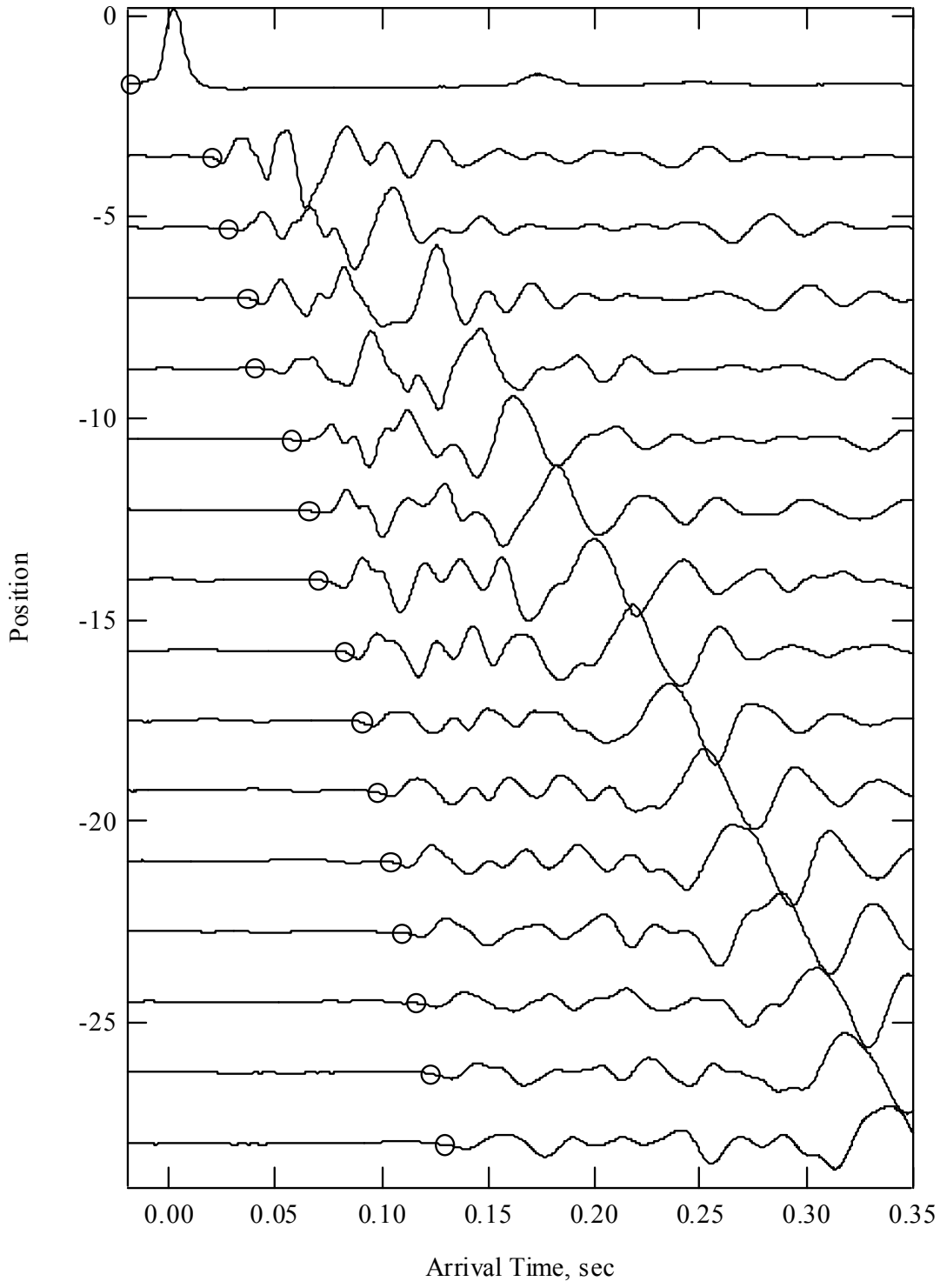

Fig 14 Arrival Times for Refraction Testing at Barney's Wash Baseball Field, West Jordan, Site 203, Earthquake Site Response Unit Q03 (Ashland, 2001)

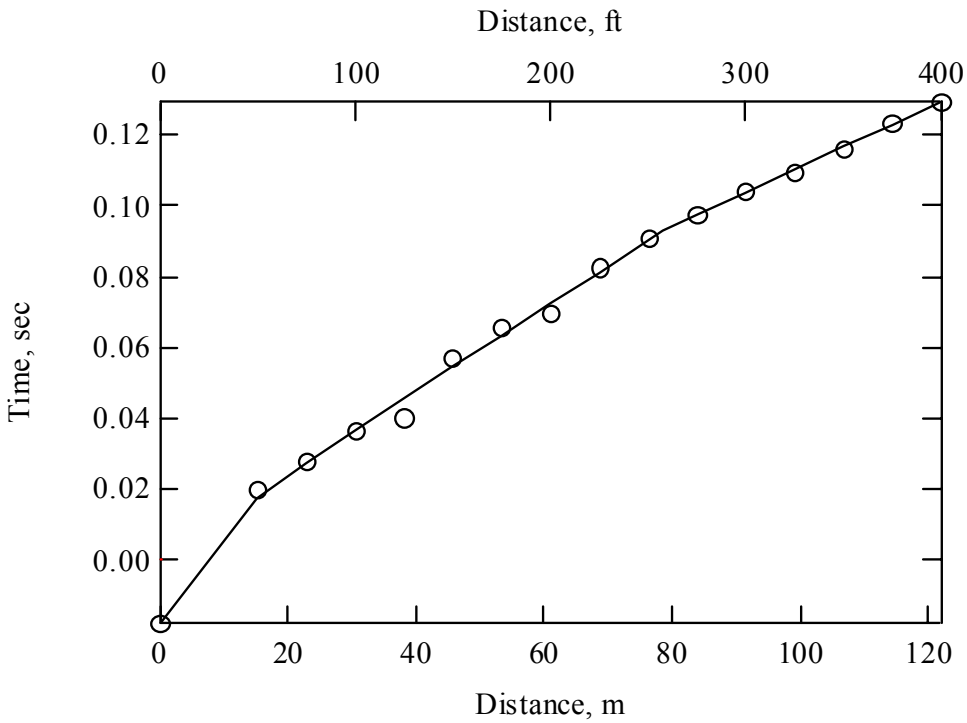

Fig 15 Time-Distance Curve for Refraction Testing at Barney's Wash Baseball Field, West Jordan, Site 203, Earthquake Site Response Unit Q03 (Ashland, 2001)

Tabulated Refraction Profile from Barney's Wash Baseball Field, West Jordan, Site 203, Earthquake Site Response Unit Q03 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	4.26	400.14	213.89
2	11.75[a]	852.37	455.61
3		1193.93	

a. Depth of fully saturated zone

Site 69, White City Park, Salt Lake County

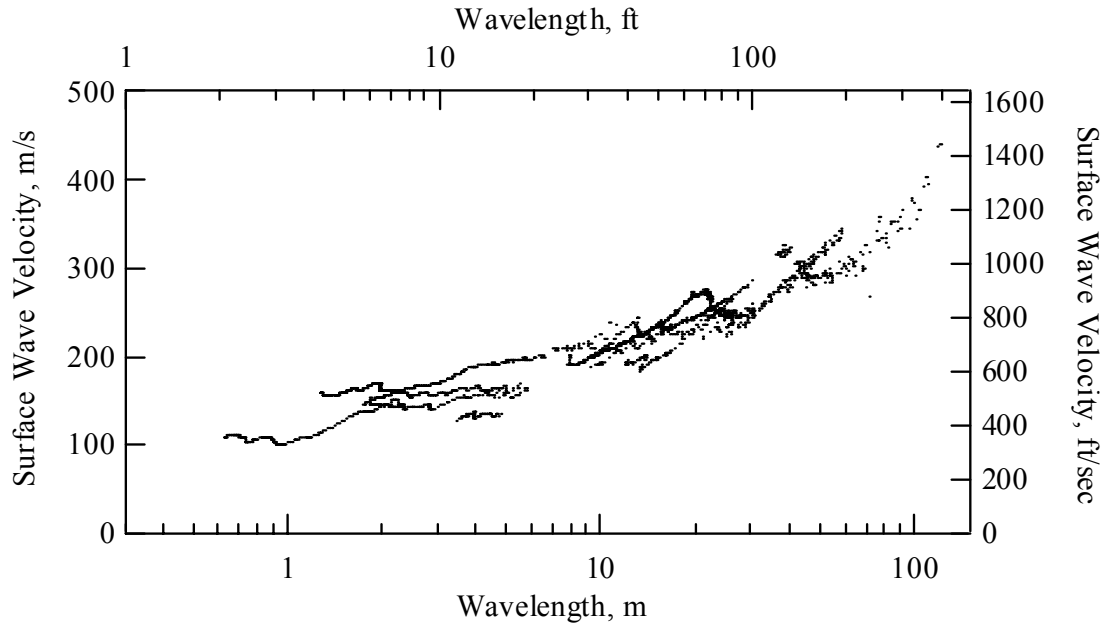

Fig 16 Experimental Dispersion Curve measured at White City Park, Salt Lake County, Site 69, Earthquake Site Response Unit Q03 (Ashland, 2001)

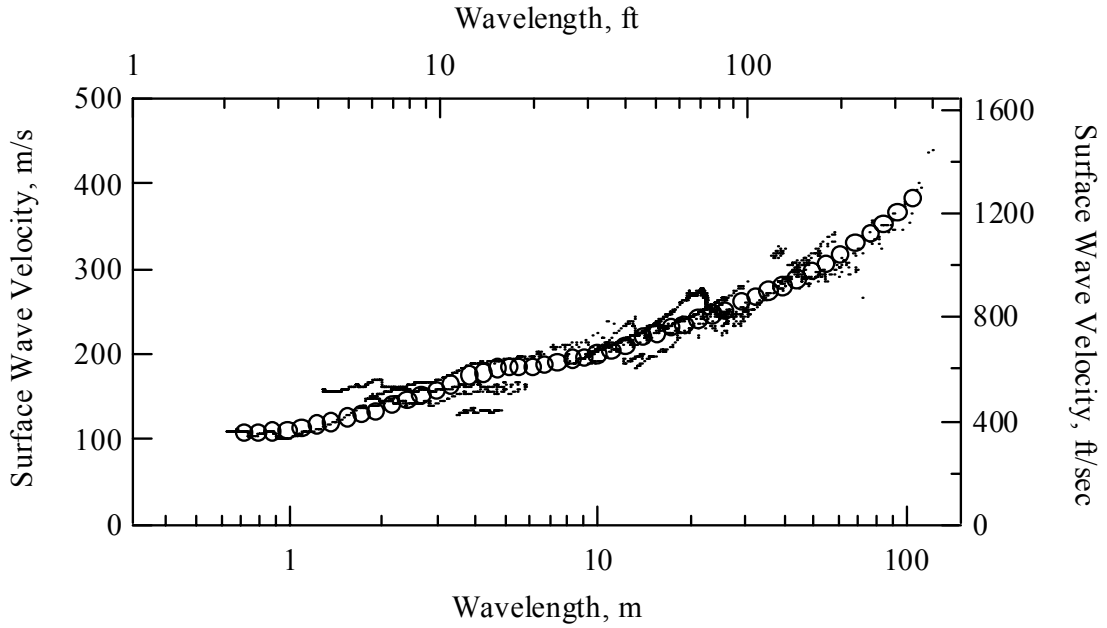

Fig 17 Comparison between Experimental & Theoretical Dispersion Curves from White City Park, Salt Lake County, Site 69, Earthquake Site Response Unit Q03 (Ashland, 2001)

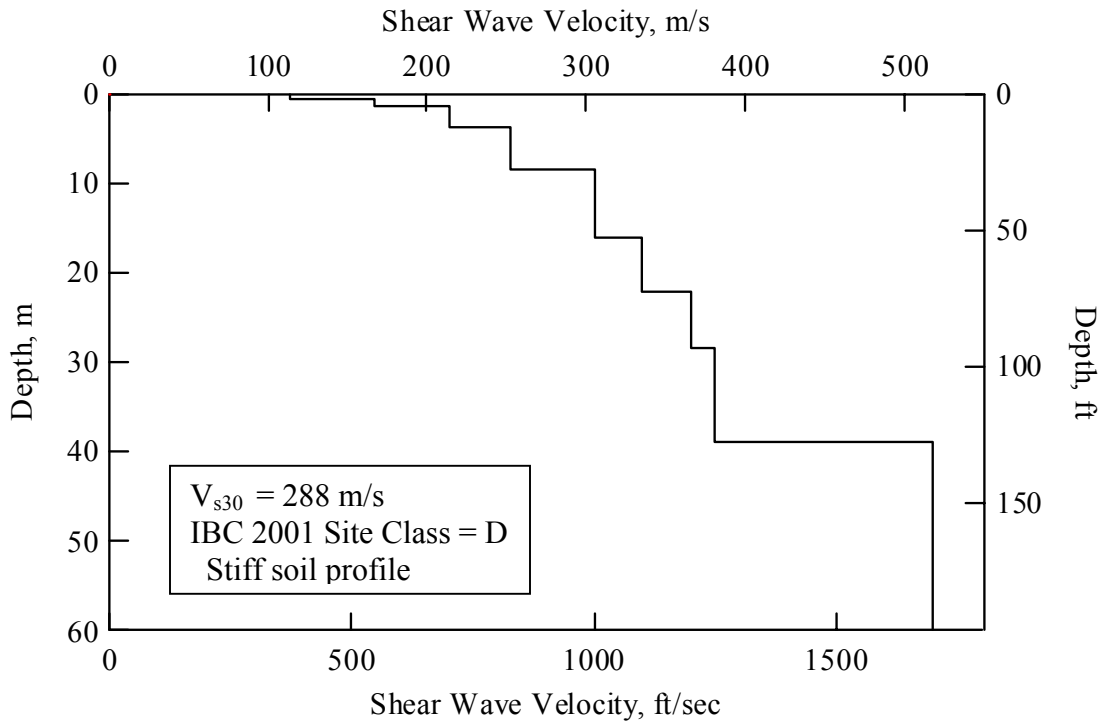

Fig 18 Shear Wave Velocity Profile Determined from SASW Testing at White City Park, Salt Lake County, Site 69, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 9 Tabulated Shear Wave Velocity Profile from White City Park, Salt Lake County, Site 69, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.61	114.30	213.9	1.89
0.61	0.76	167.60	313.6	1.92
1.37	2.44	213.40	399.2	1.92
3.81	4.72	251.50	470.4	1.92
8.53	7.62	304.80	570.2	2
16.15	6.1	335.30	627.3	2
22.25	6.1	365.80	684.4	2
28.35	10.67	381.00	712.8	2
39.02	30.18[a]	518.20	969.4	2

a. Half-space in model

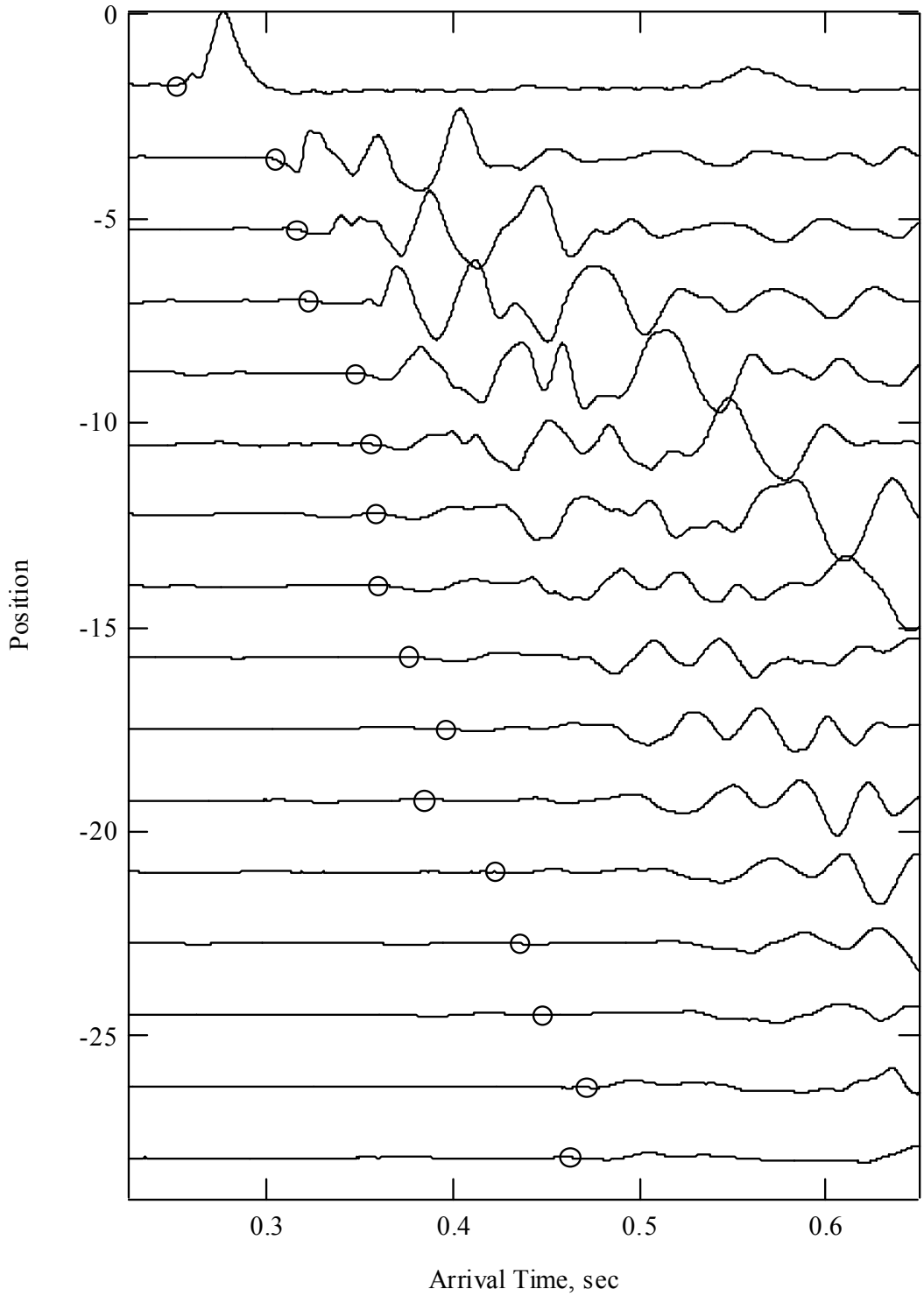

Fig 19 Arrival Times for Refraction Testing at White City Park, Salt Lake County, Site 69, Earthquake Site Response Unit Q03 (Ashland, 2001)

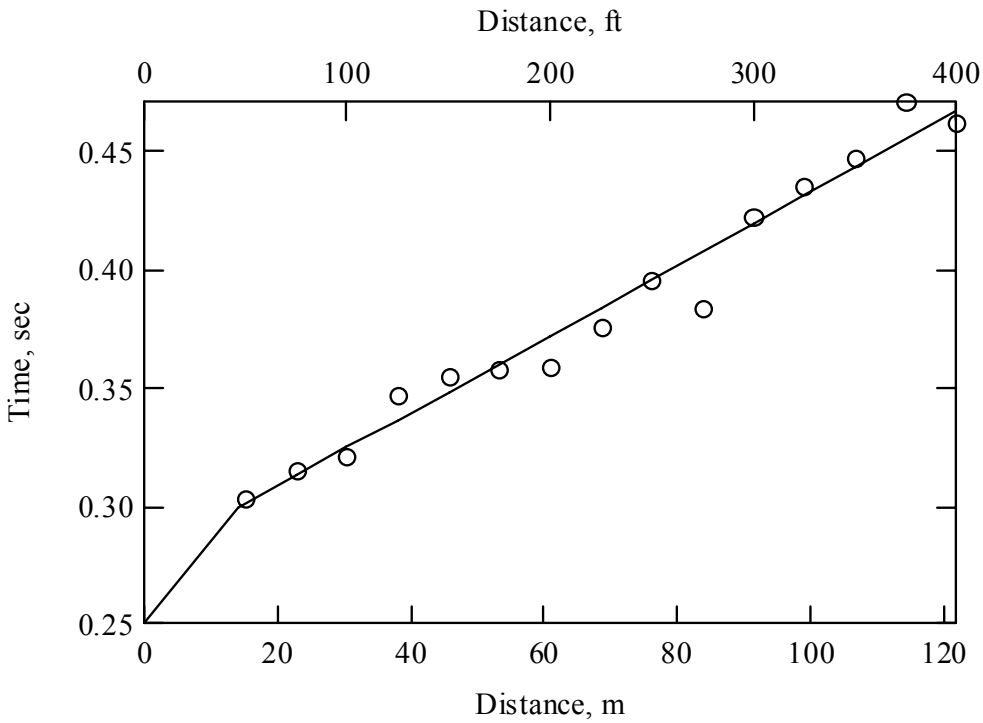

Fig 20 Time-Distance Curve for Refraction Testing at White City Park, Salt Lake County, Site 69, Earthquake Site Response Unit Q03 (Ashland, 2001)

Tabulated Refraction Profile for White City Park, Salt Lake County, Site 69, Earthquake Site Response Unit Q03 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	4.34	289.00	154.48
2		643.25	343.83

Site: 85, Granite Park

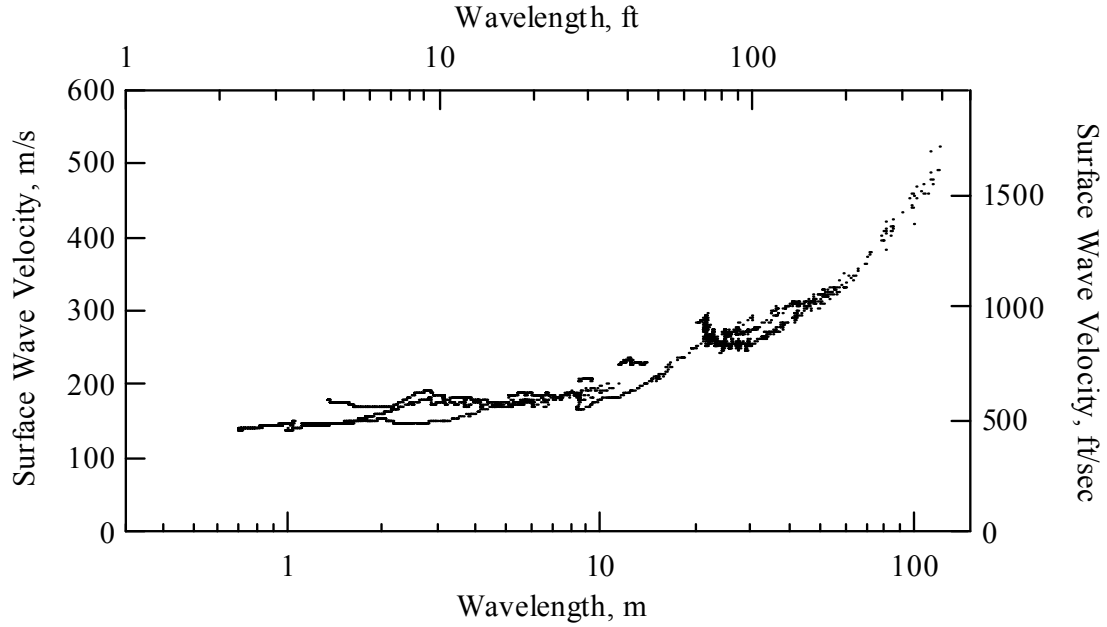

Fig 21 Experimental Dispersion Curve measured at Granite Park, Sandy, Site 85, Earthquake Site Response Unit Q03 (Ashland, 2001)

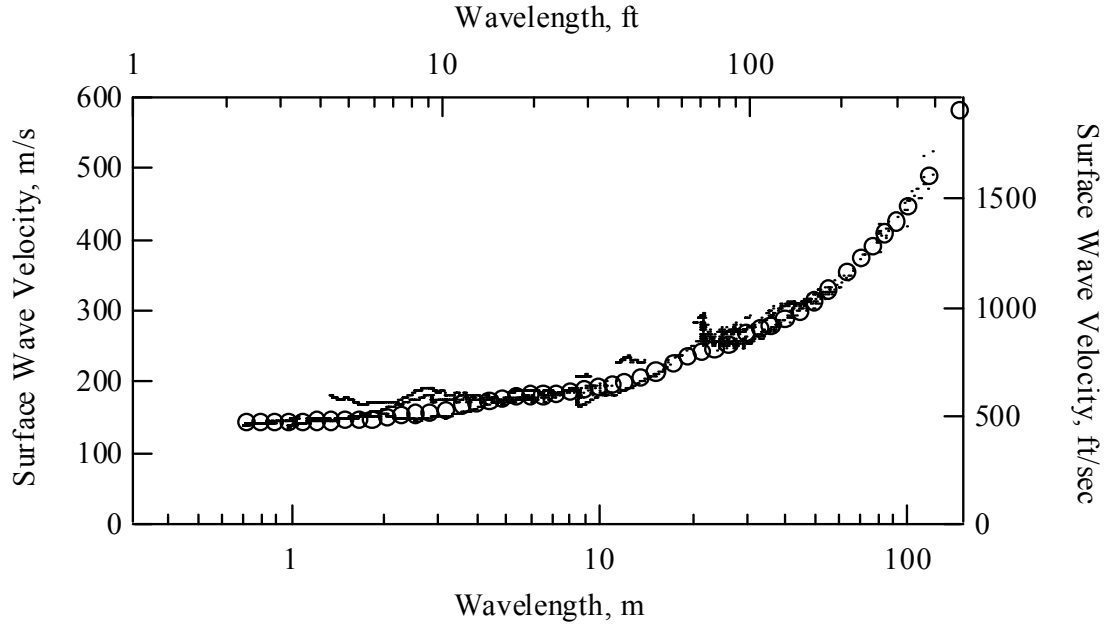

Fig 22 Comparison between Experimental & Theoretical Dispersion Curves from Granite Park, Sandy, Site 85, Earthquake Site Response Unit Q03 (Ashland, 2001)

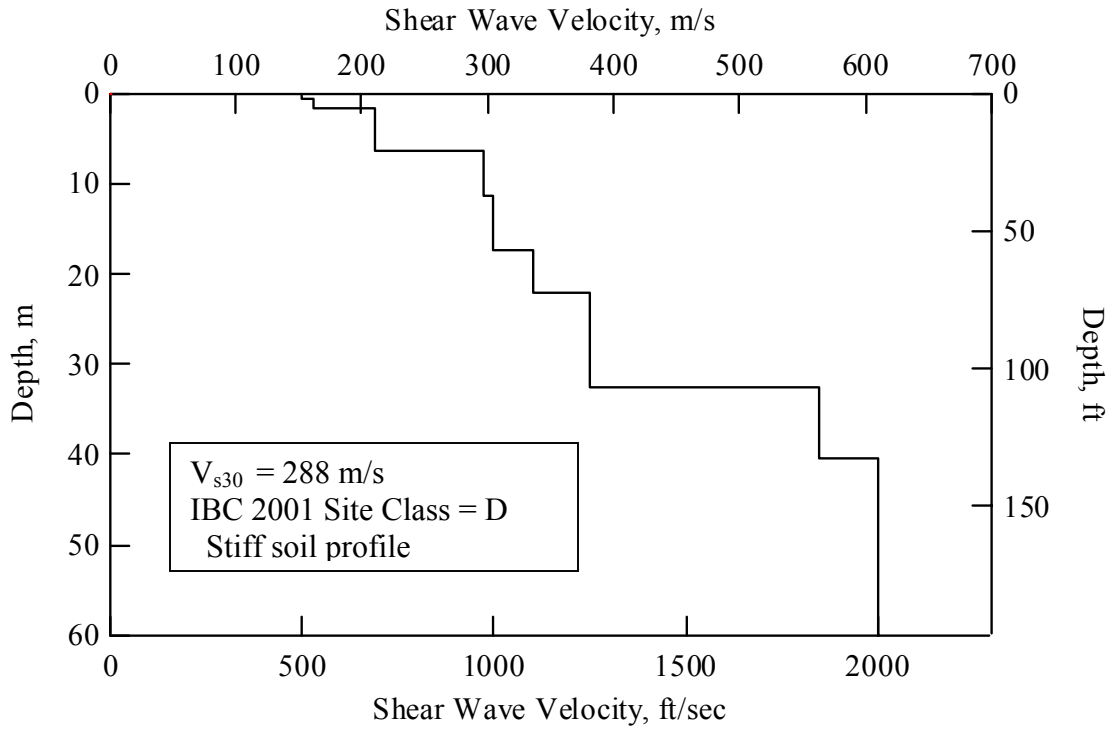

Fig 23 Shear Wave Velocity Profile Determined from SASW Testing at Granite Park, Sandy, Site 85, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 10 Tabulated Shear Wave Velocity Profile from Granite Park, Sandy, Site 85, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.61	152.4	285.1	1.92
0.61	0.91	161.5	302.2	1.92
1.52	4.88	210.3	393.5	1.92
6.4	0.91	295.7	553.1	1.92
7.31	3.96	297.2	556	1.92
11.27[a]	6.1	304.8	1524	2
17.37	4.57	335.3	1524	2
21.94	10.67	381	1524	2
32.61	7.62	563.9	1524	2
40.23	30.18[b]	609.6	1524	2.08

a. Depth to fully saturated zone from Refraction testing
b. Half-space in model

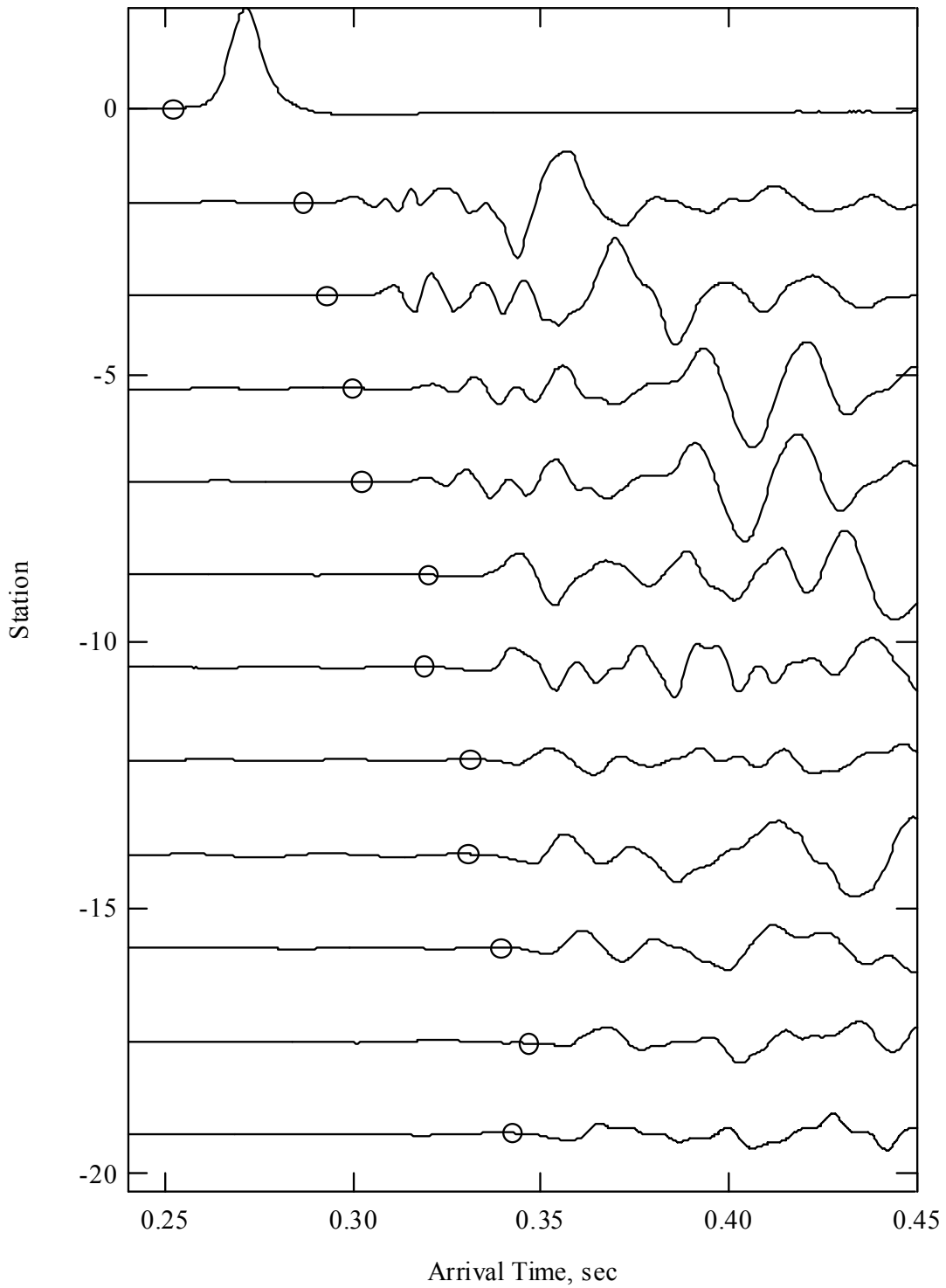

Fig 24 Arrival Times for Refraction Testing at Granite Park, Sandy, Site 85, Earthquake Site Response Unit Q03 (Ashland, 2001)

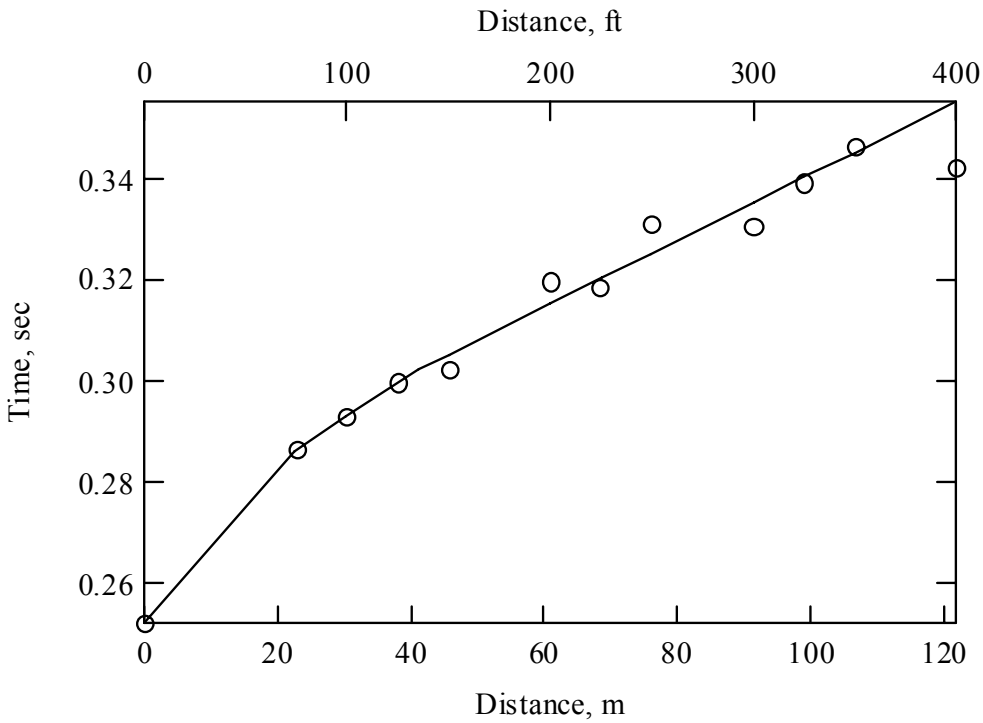

Fig 25 Time-Distance Curve for Refraction Testing at Granite Park, Sandy, Site 85, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 11 Tabulated Refraction Profile from Granite Park, Sandy, Site 85, Earthquake Site Response Unit Q03 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	5.95	659.41	352.47
2	8.62[a]	1156.56	618.21
3		1521.12	

a. Depth to fully saturated zone

Site 72, Buttercup Park

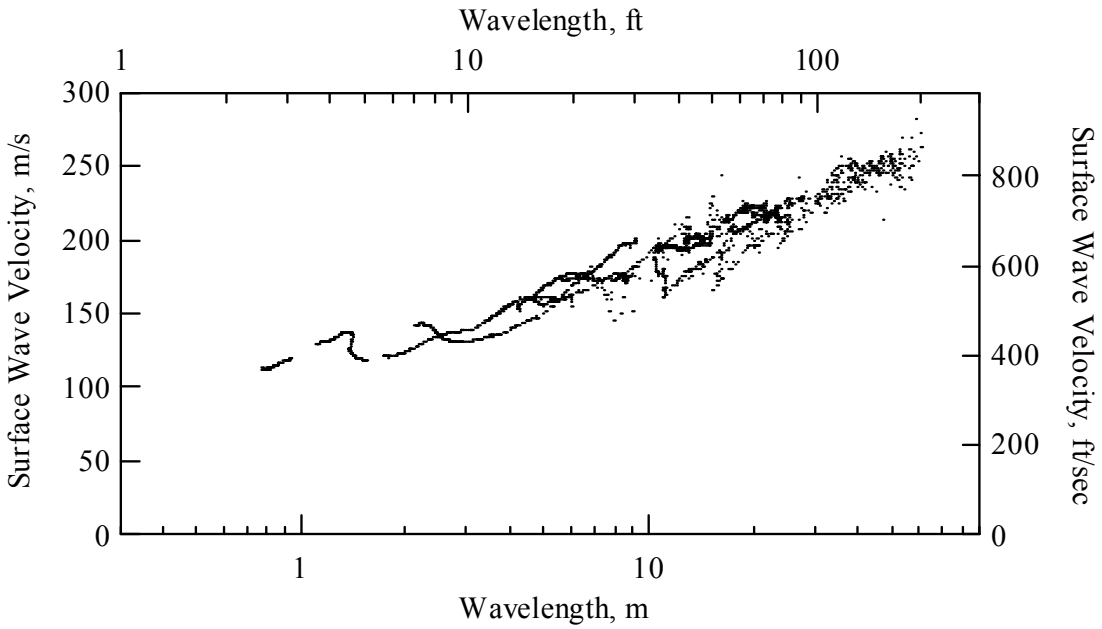

Fig 26 Experimental Dispersion Curve measured at Buttercup Park, Sandy, Site 72, Earthquake Site Response Unit Q03 (Ashland, 2001)

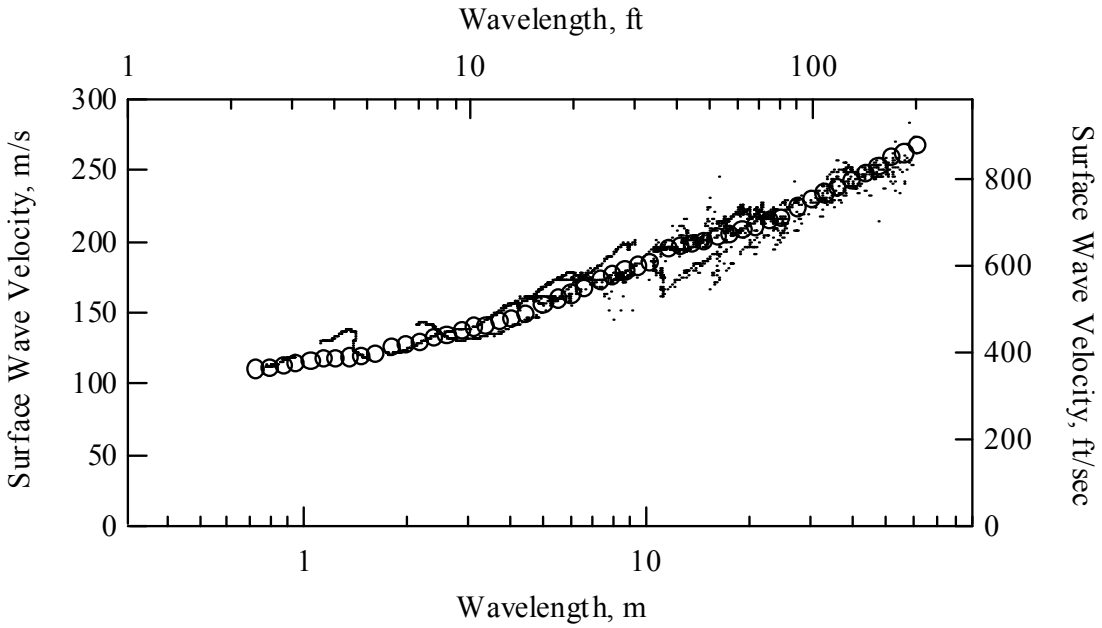

Fig 27 Comparison between Experimental & Theoretical Dispersion Curves from Buttercup Park, Sandy, Site 72, Earthquake Site Response Unit Q03 (Ashland, 2001)

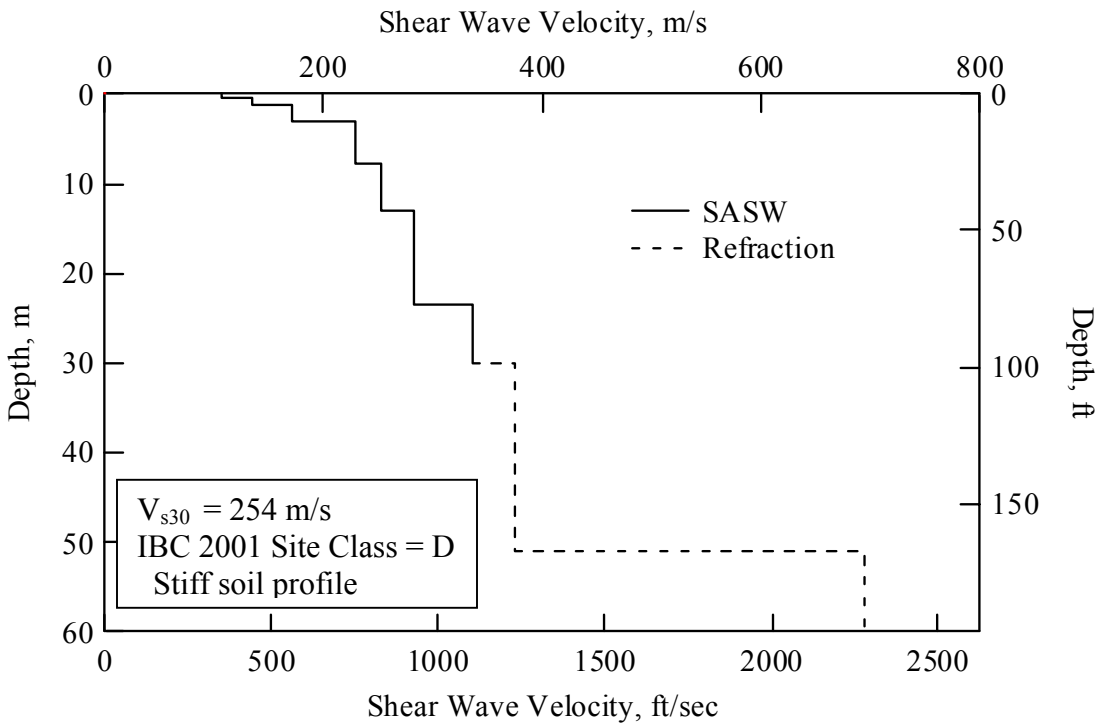

Fig 28 Shear Wave Velocity Profile Determined from SASW Testing at Buttercup Park, Sandy, Site 72, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 12 Tabulated Shear Wave Velocity Profile from Buttercup Park, Sandy, Site 72, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	106.7	199.6	1.89
0.3	0.84	134.1	250.9	1.89
1.14	1.98	172.2	322.2	1.92
3.12	4.57	228.6	427.7	1.92
7.69	5.18	251.5	470.4	1.92
12.87	10.67	281.9	527.5	1.92
23.54	30.18[a]	335.3	627.3	2

a. Half-space in model

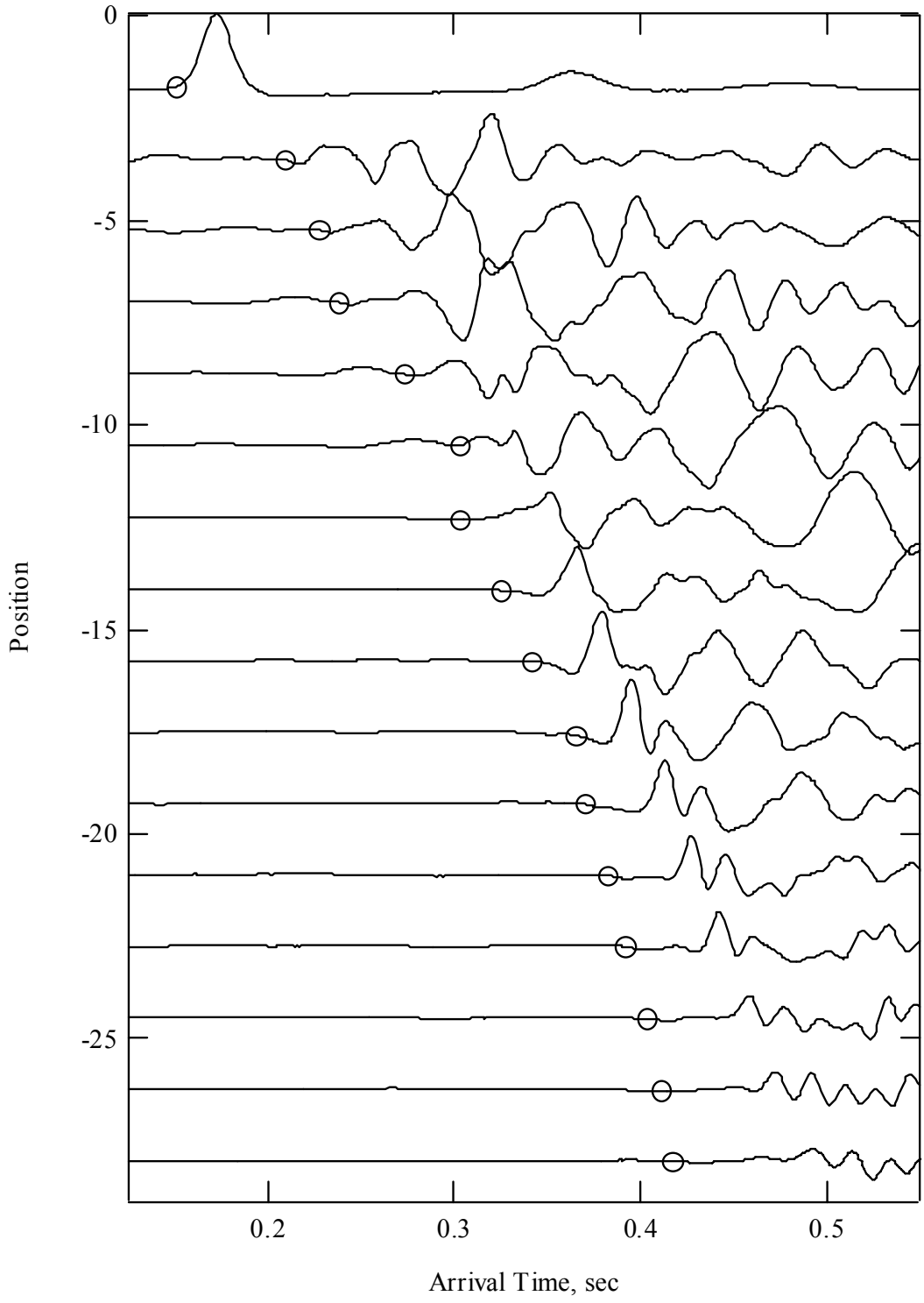

Fig 29 Arrival Times for Refraction Testing at Buttercup Park, Sandy, Site 72, Earthquake Site Response Unit Q03 (Ashland, 2001)

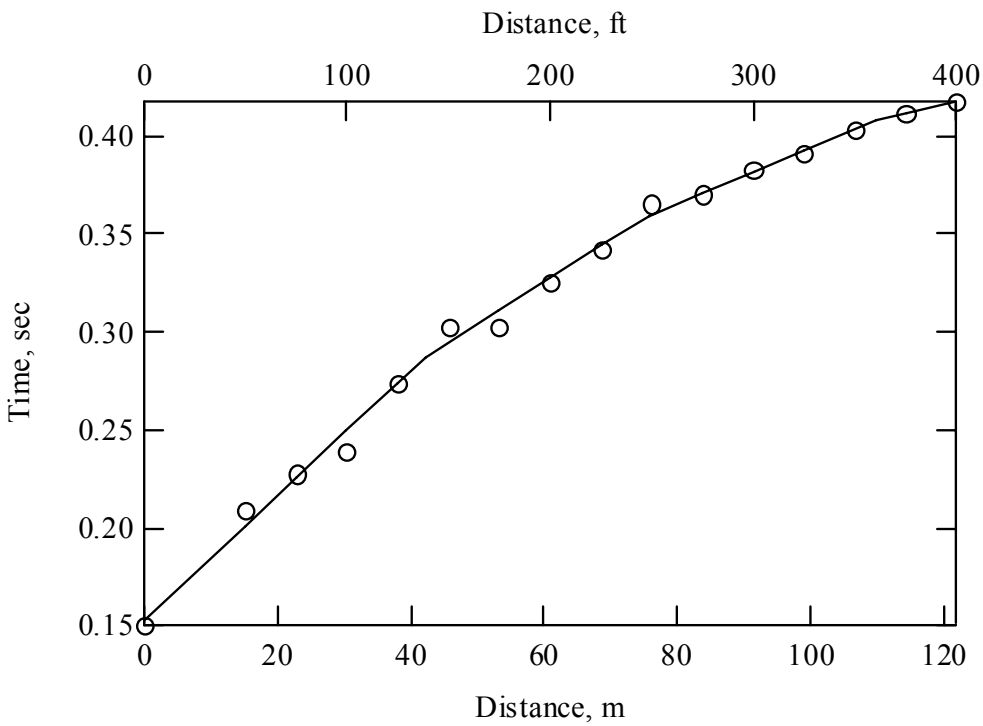

Fig 30 Time-Distance Curve for Refraction Testing at Buttercup Park, Sandy, Site 72, Earthquake Site Response Unit Q03 (Ashland, 2001)

Tabulated Refraction Profile from Buttercup Park, Sandy, Site 72, Earthquake Site Response Unit Q03 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	9.29	314.07	167.88
2	17.28	464.45	248.26
3	51.12	702.89	375.71
4		1300.34	695.06

Site 238, Lambert Park

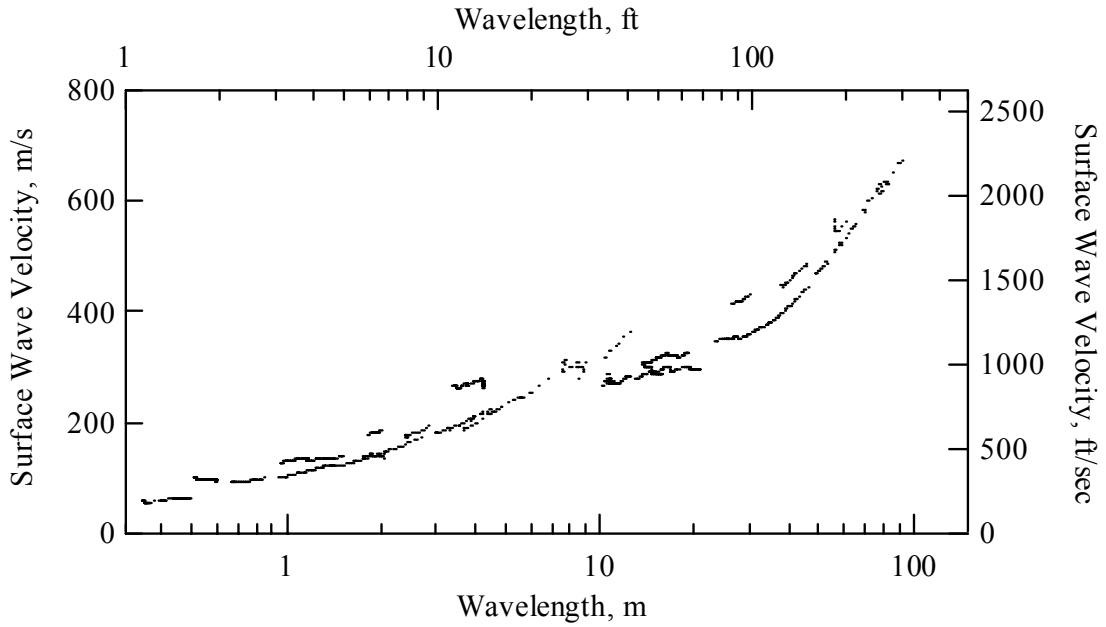

Fig 31 Experimental Dispersion Curve measured at Lambert Park, Alpine, Site 238, Earthquake Site Response Unit Q03 (Ashland, 2001)

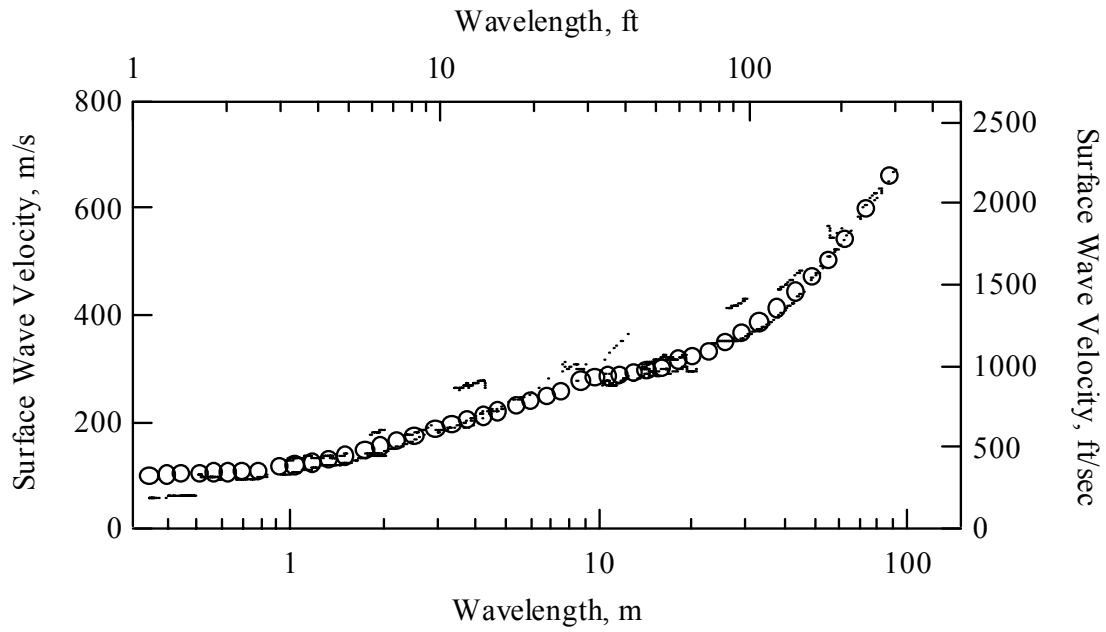

Fig 32 Comparison between Experimental & Theoretical Dispersion Curves from Lambert Park, Alpine, Site 238, Earthquake Site Response Unit Q03 (Ashland, 2001)

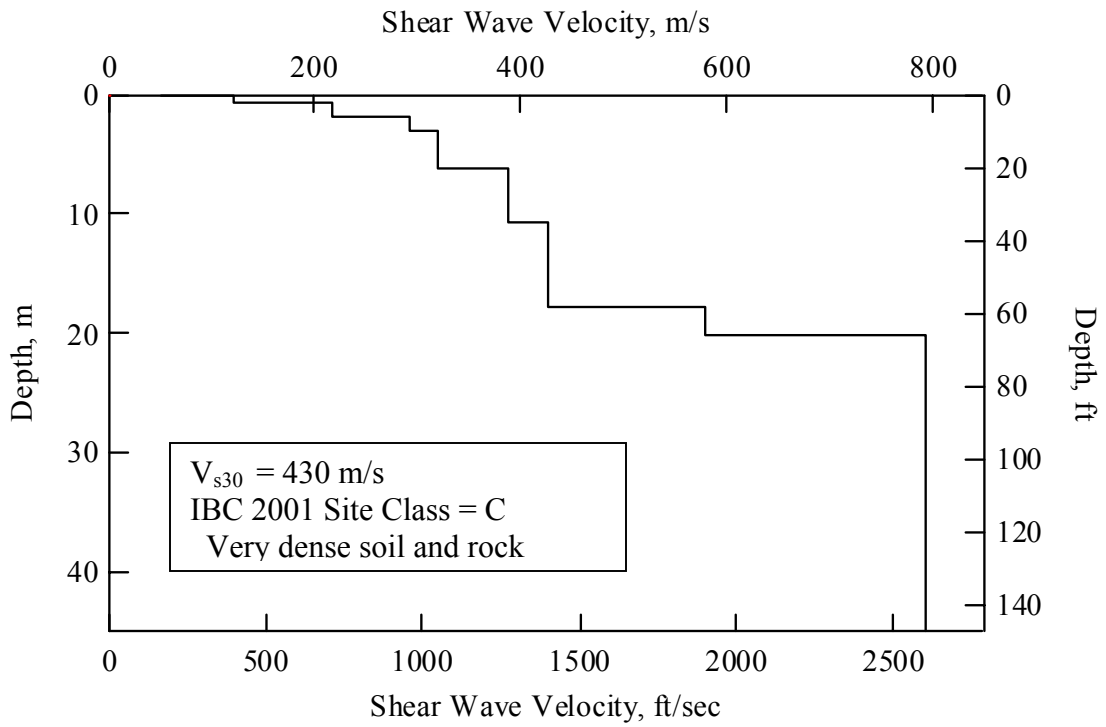

Fig 33 Shear Wave Velocity Profile Determined from SASW Testing at Lambert Park, Alpine, Site 238, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 13 Tabulated Shear Wave Velocity Profile from Lambert Park, Alpine, Site 238, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.15	96	179.6	1.89
0.15	0.46	121.9	228.1	1.89
0.61	1.3	216.4	404.9	1.92
1.91	1.22	291.1	544.6	1.92
3.13	3.05	320	598.8	2
6.18	4.57	388.6	727	2
10.75	7.01	426.7	798.3	2
17.76	2.44	579.1	1083.4	2
20.2	30.18[a]	792.5	1482.6	2.08

a. Half-space in model

Site: 112, Alpine City Park

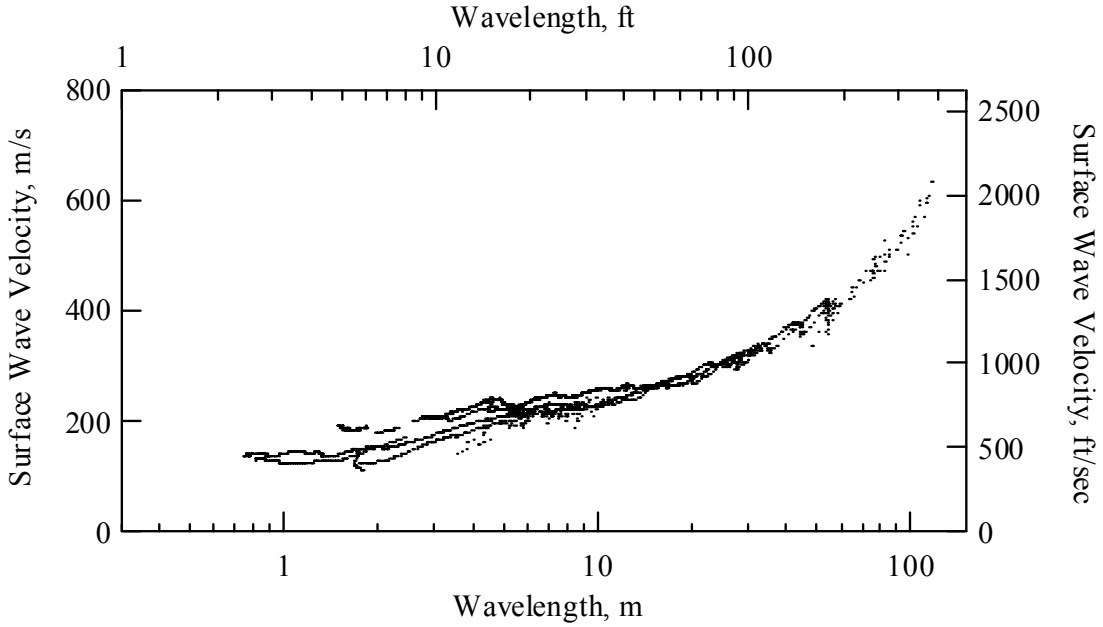

Fig 34 Experimental Dispersion Curve measured at Alpine City Park, Site 112, Earthquake Site Response Unit Q03 (Ashland, 2001)

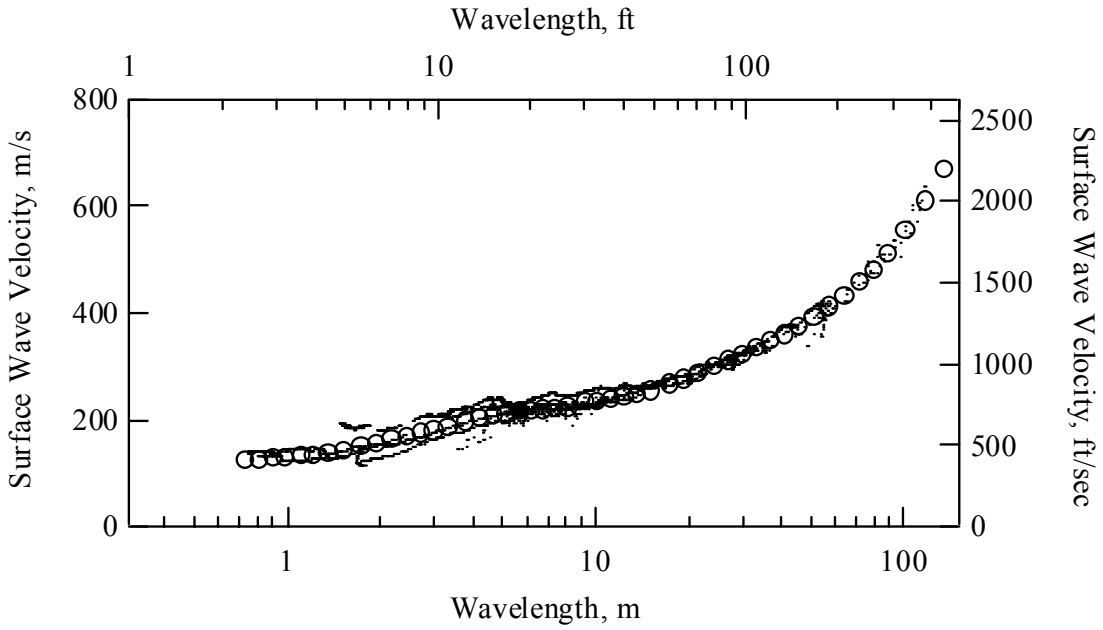

Fig 35 Comparison between Experimental & Theoretical Dispersion Curves from Alpine City Park, Site 112, Earthquake Site Response Unit Q03 (Ashland, 2001)

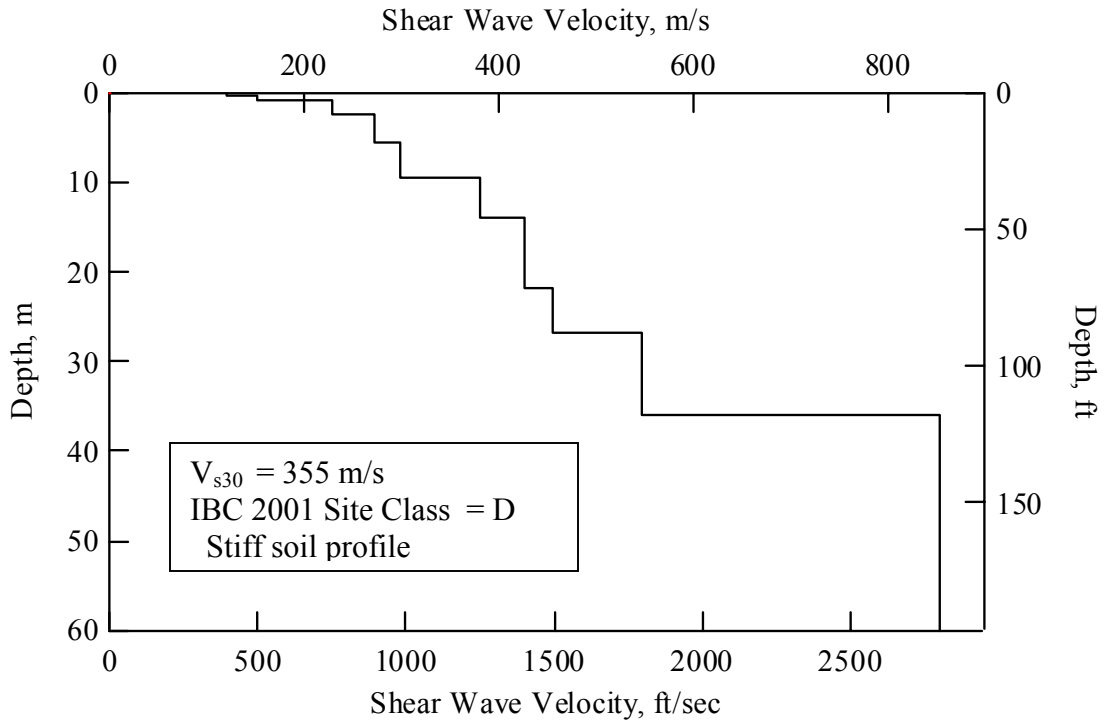

Fig 36 Shear Wave Velocity Profile Determined from SASW Testing at Alpine City Park, Site 112, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 14 Tabulated Shear Wave Velocity Profile from Alpine City Park, Site 112, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	121.9	228.1	1.89
0.3	0.61	152.4	285.1	1.92
0.91	1.52	228.6	427.7	1.92
2.43	3.05	274.3	513.2	1.92
5.48	3.96	298.7	558.8	1.92
9.44	4.57	381	712.8	2
14.01	7.62	426.7	798.3	2
21.63	5.18	455.7	852.5	2
26.81	9.14	548.6	1026.4	2
35.95	30.18[a]	853.4	1596.6	2.08

a. Half-space in model

Site 131, Oak Hills Elementary

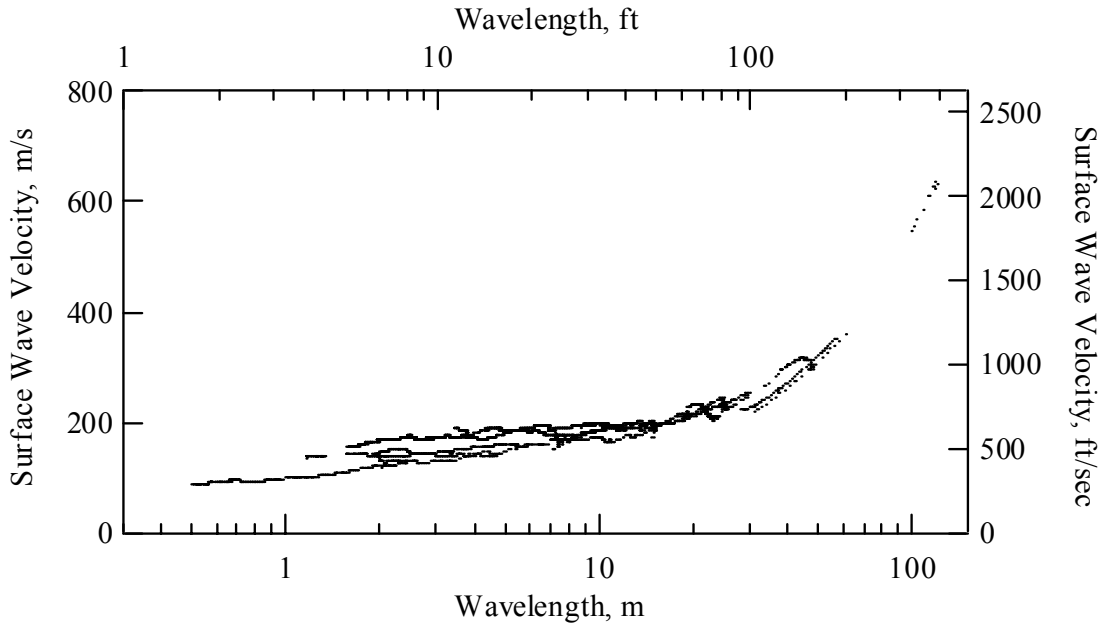

Fig 37 Experimental Dispersion Curve measured at Oak Hills Elementary, Bountiful, Site 131, Earthquake Site Response Unit Q03 (Ashland, 2001)

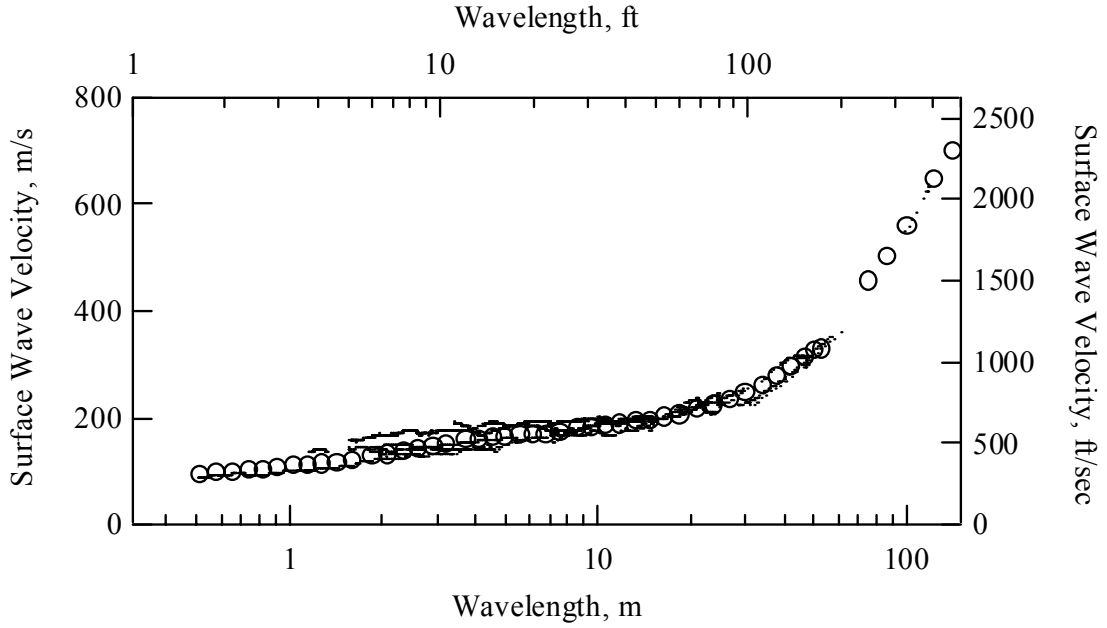

Fig 38 Comparison between Experimental & Theoretical Dispersion Curves from Oak Hills Elementary, Bountiful, Site 131, Earthquake Site Response Unit Q03 (Ashland, 2001)

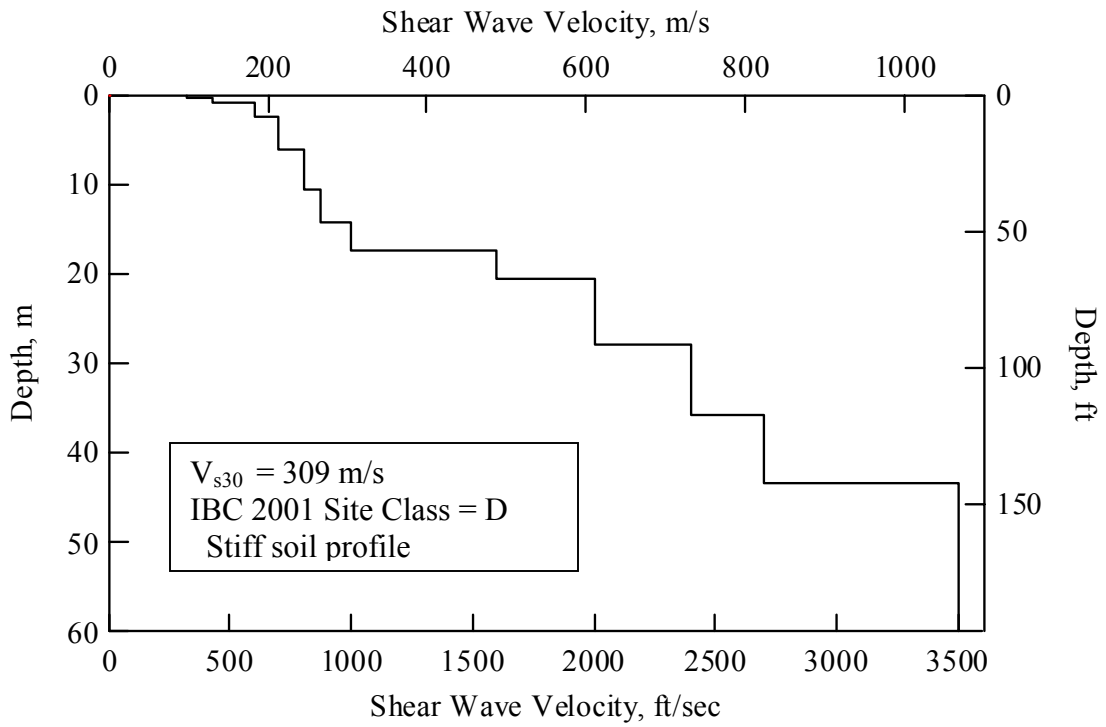

Fig 39 Shear Wave Velocity Profile Determined from SASW Testing at Oak Hills Elementary, Bountiful, Site 131, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 15 Tabulated Shear Wave Velocity Profile from Oak Hills Elementary, Bountiful, Site 131, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	97.5	182.5	1.89
0.3	0.61	129.5	242.4	1.89
0.91	1.52	182.9	342.1	1.92
2.43	3.66	213.4	399.2	1.92
6.09	4.57	243.8	456.2	1.92
10.66	3.66	266.7	499	1.92
14.32	3.05	304.8	570.2	2
17.37	3.05	487.7	912.4	2
20.42	7.62	609.6	1140.5	2.08
28.04	7.62	731.5	1368.6	2.08
35.66	7.62	823	1539.6	2.08
43.28	30.18[a]	1066.8	1995.8	2.08

a. Half-space in model

Site: 134, Eastwood Elementary

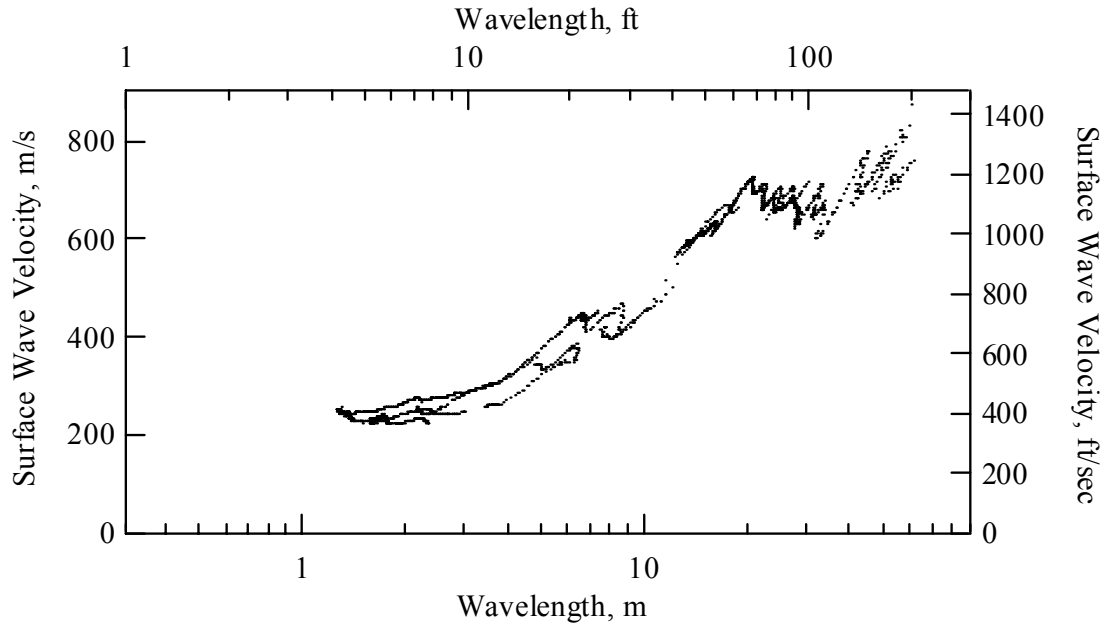

Fig 40 Experimental Dispersion Curve measured at Eastwood Elementary, East Millcreek, Site 134, Earthquake Site Response Unit Q03 (Ashland, 2001)

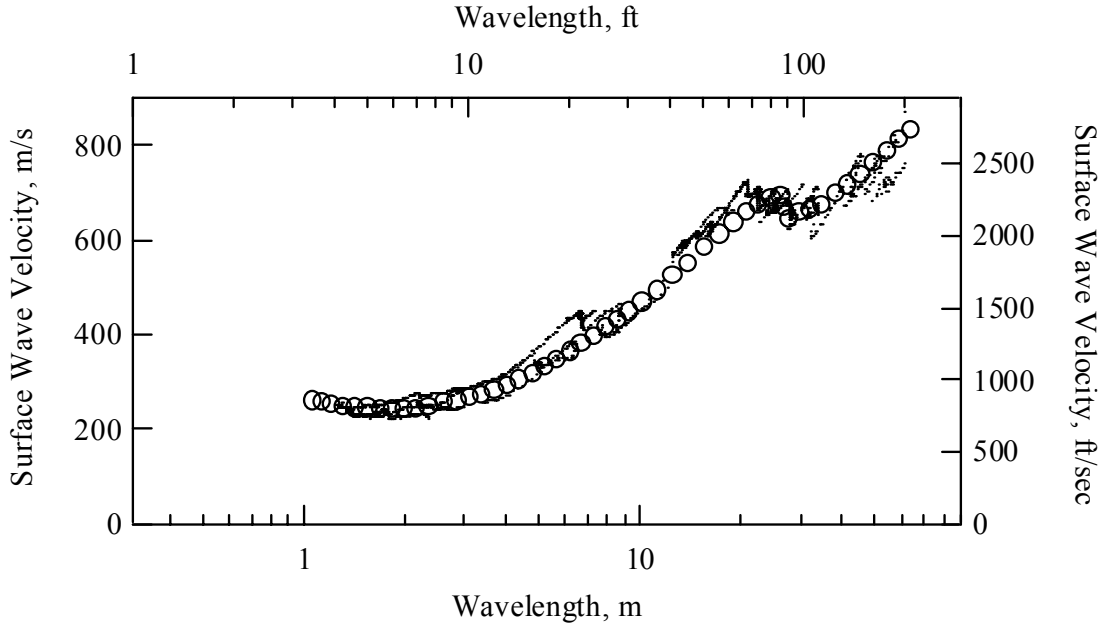

Fig 41 Comparison between Experimental & Theoretical Dispersion Curves from Eastwood Elementary, East Millcreek, Site 134, Earthquake Site Response Unit Q03 (Ashland, 2001)

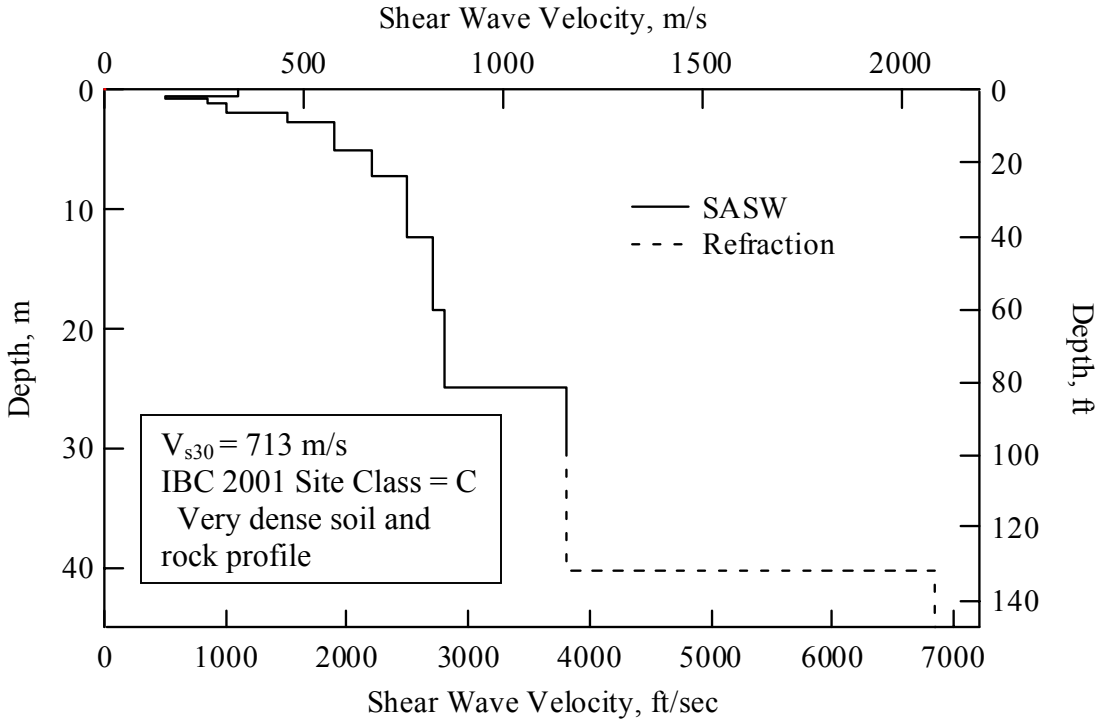

Fig 42 Shear Wave Velocity Profile Determined from SASW & Refraction Testing at Eastwood Elementary, East Millcreek, Site 134, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 16 Tabulated Shear Wave Velocity Profile from Eastwood Elementary, East Millcreek, Site 134, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.46	335.30	627.3	1.92
0.46	0.18	152.40	285.1	1.92
0.64	0.53	259.10	484.7	1.92
1.17	0.69	304.80	570.2	2
1.86	0.91	457.20	855.3	2
2.77	2.29	579.10	1083.4	2
5.06	2.13	670.60	1254.5	2.08
7.19	5.18	762.00	1425.6	2.08
12.37	6.1	823.00	1539.6	2.08
18.47	6.4	853.40	1596.6	2.08
24.87	30.18[a]	1163.30[b]	2176.3	2.08

a. Half-space in model
b. Refraction velocity

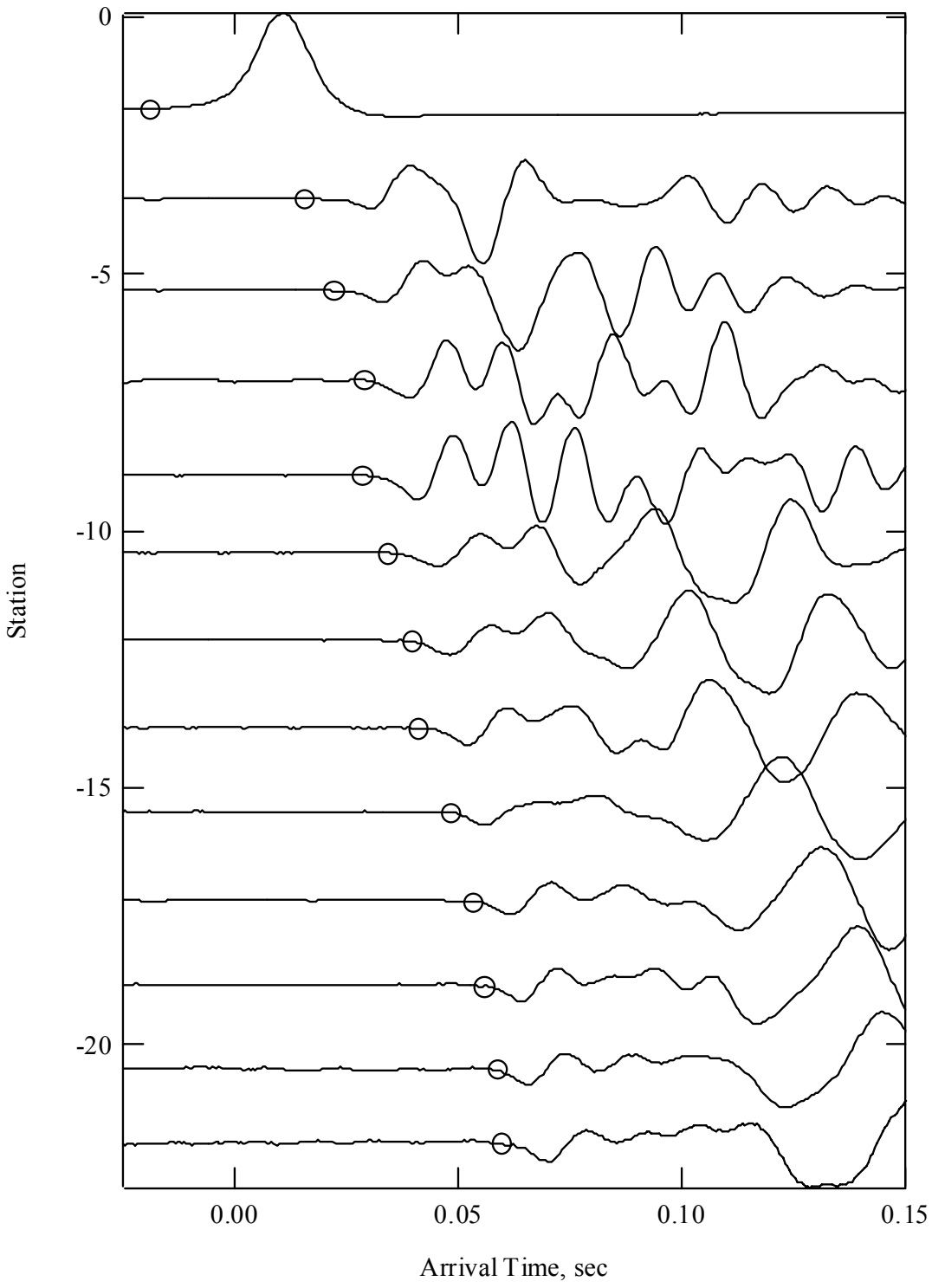

Fig 43 Arrival Times for Refraction Testing at Eastwood Elementary, East Millcreek, Site 134, Earthquake Site Response Unit Q03 (Ashland, 2001)

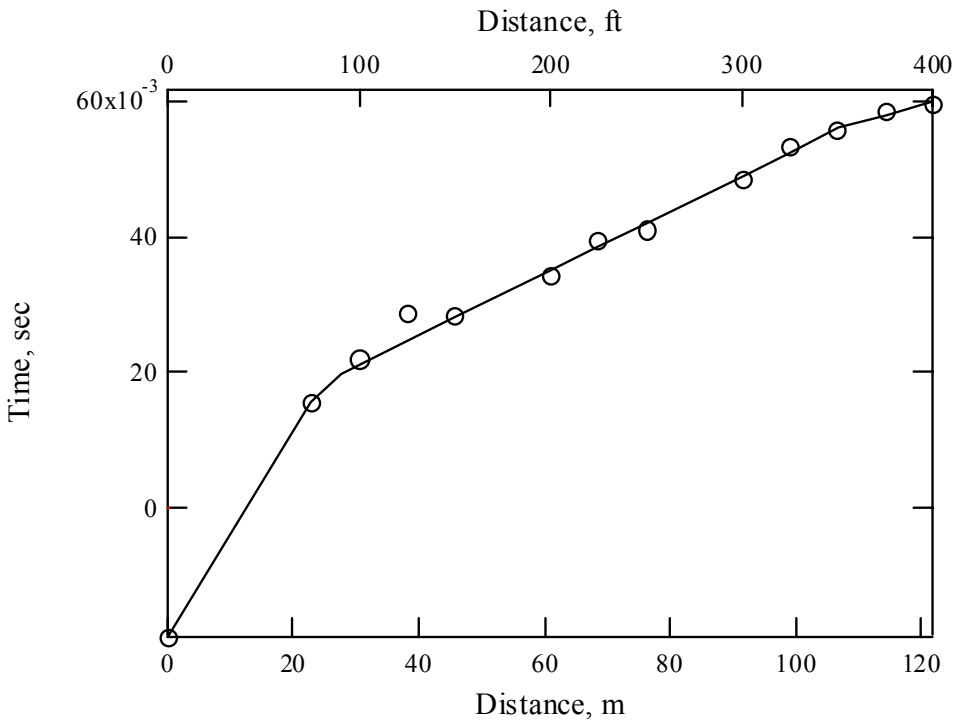

Fig 44 Time-Distance Curve for Refraction Testing at Eastwood Elementary, East Millcreek, Site 134, Earthquake Site Response Unit Q03 (Ashland, 2001)

Tabulated Refraction Profile from Eastwood Elementary, East Millcreek, Site 134, Earthquake Site Response Unit Q03 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	6.17	659.41	352.47
2	10.25	1200.44	641.66
3	40.12	2176.33	1163.30
4		3901.53	2085.45

Site 84, Park Lane Elementary

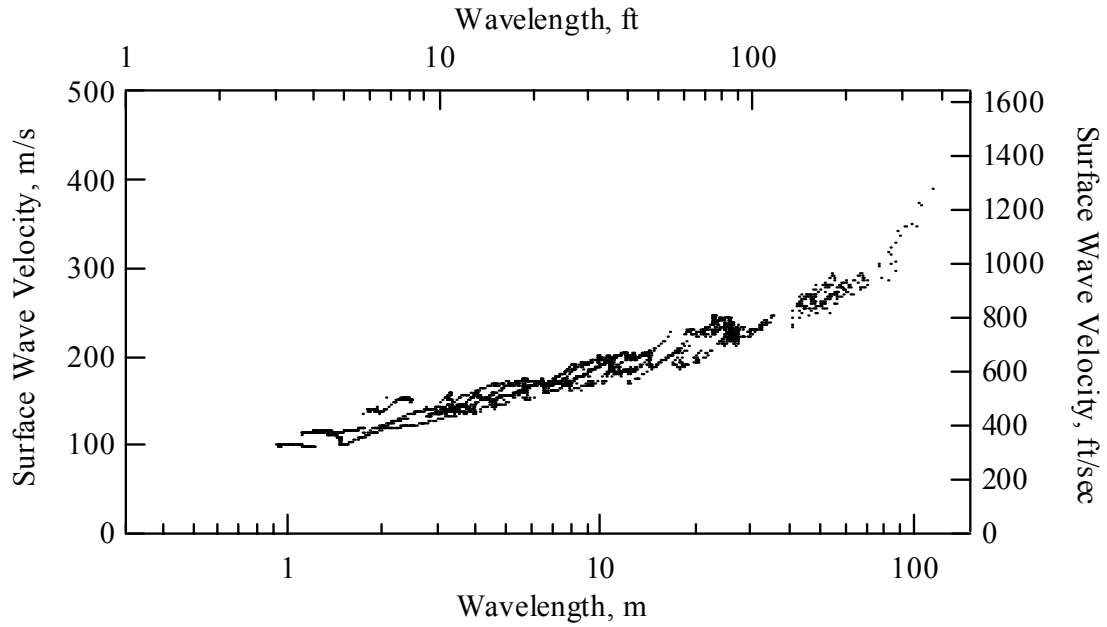

Fig 45 Experimental Dispersion Curve measured at Park Lane Elementary, Sandy, Site 84, Earthquake Site Response Unit Q03 (Ashland, 2001)

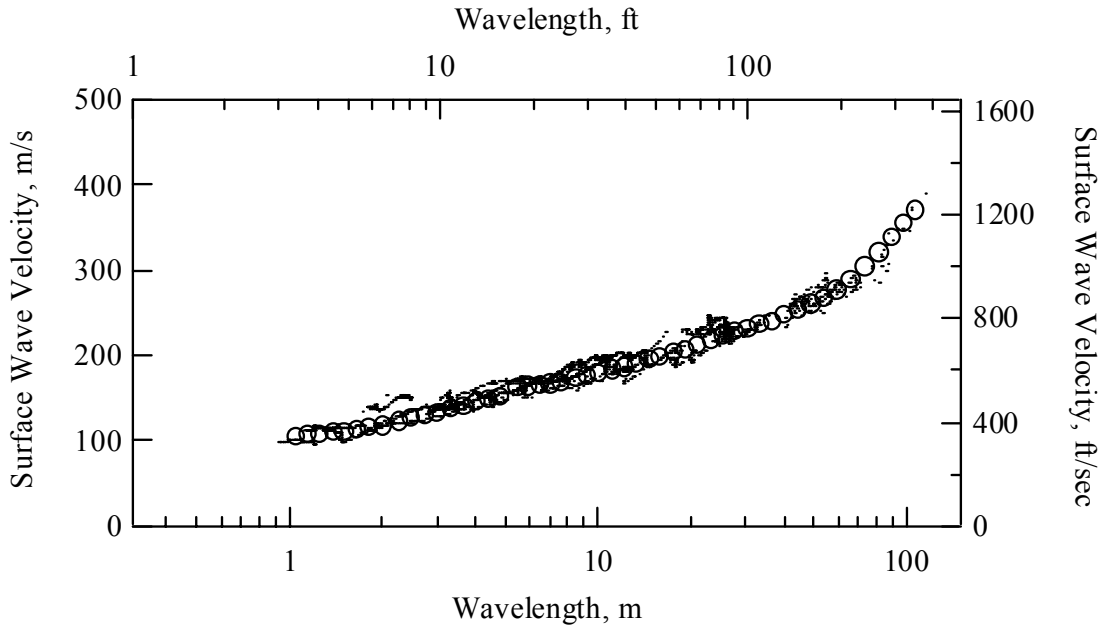

Fig 46 Comparison between Experimental & Theoretical Dispersion Curves from Park Lane Elementary, Sandy, Site 84, Earthquake Site Response Unit Q03 (Ashland, 2001)

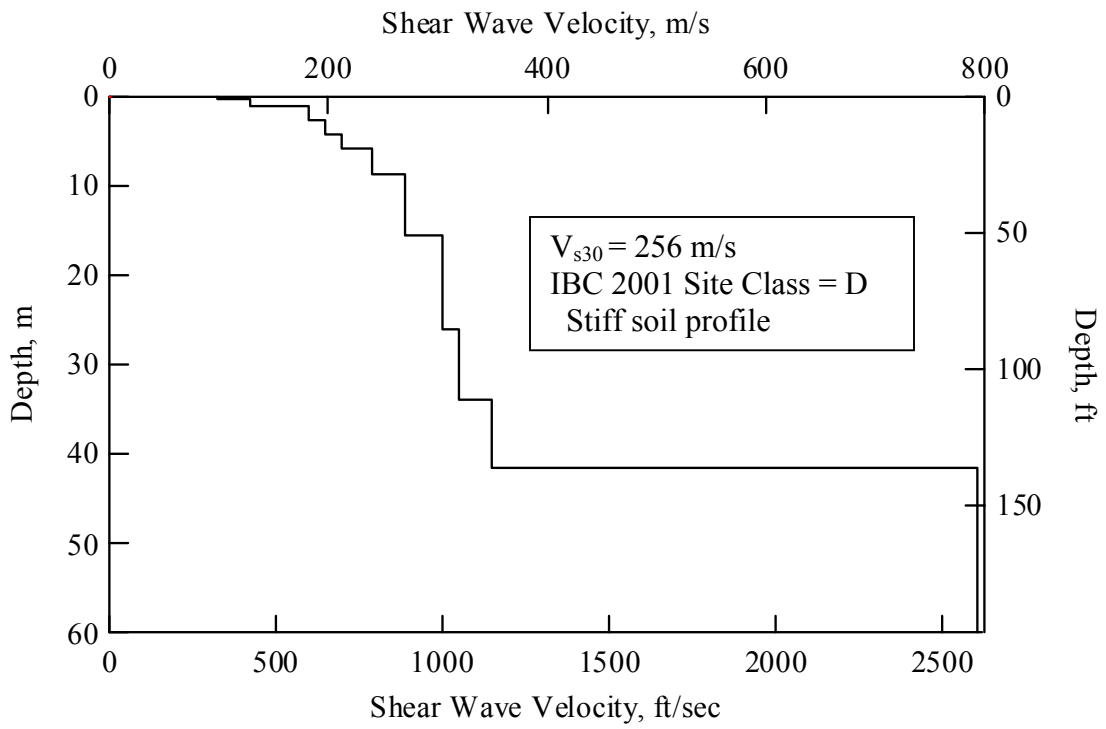

Fig 47 Shear Wave Velocity Profile Determined from SASW Testing at Park Lane Elementary, Sandy, Site 84, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 17 Tabulated Shear Wave Velocity Profile from Park Lane Elementary, Sandy, Site 84, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.38	99.10	185.30	1.89
0.38	0.91	129.50	242.40	1.89
1.29	1.45	182.90	342.10	1.92
2.74	1.52	198.10	370.60	1.92
4.26	1.52	213.4	399.2	1.92
5.78	3.05	240.8	450.5	1.92
8.83	6.71	271.3	507.5	1.92
15.54	10.67	304.8	570.2	2
26.21	7.62	320	598.8	2
33.83	7.62	350.5	655.8	2
41.45	30.18[a]	794[b]	1485.4	2

a. Half-space in model
b. Refraction velocity

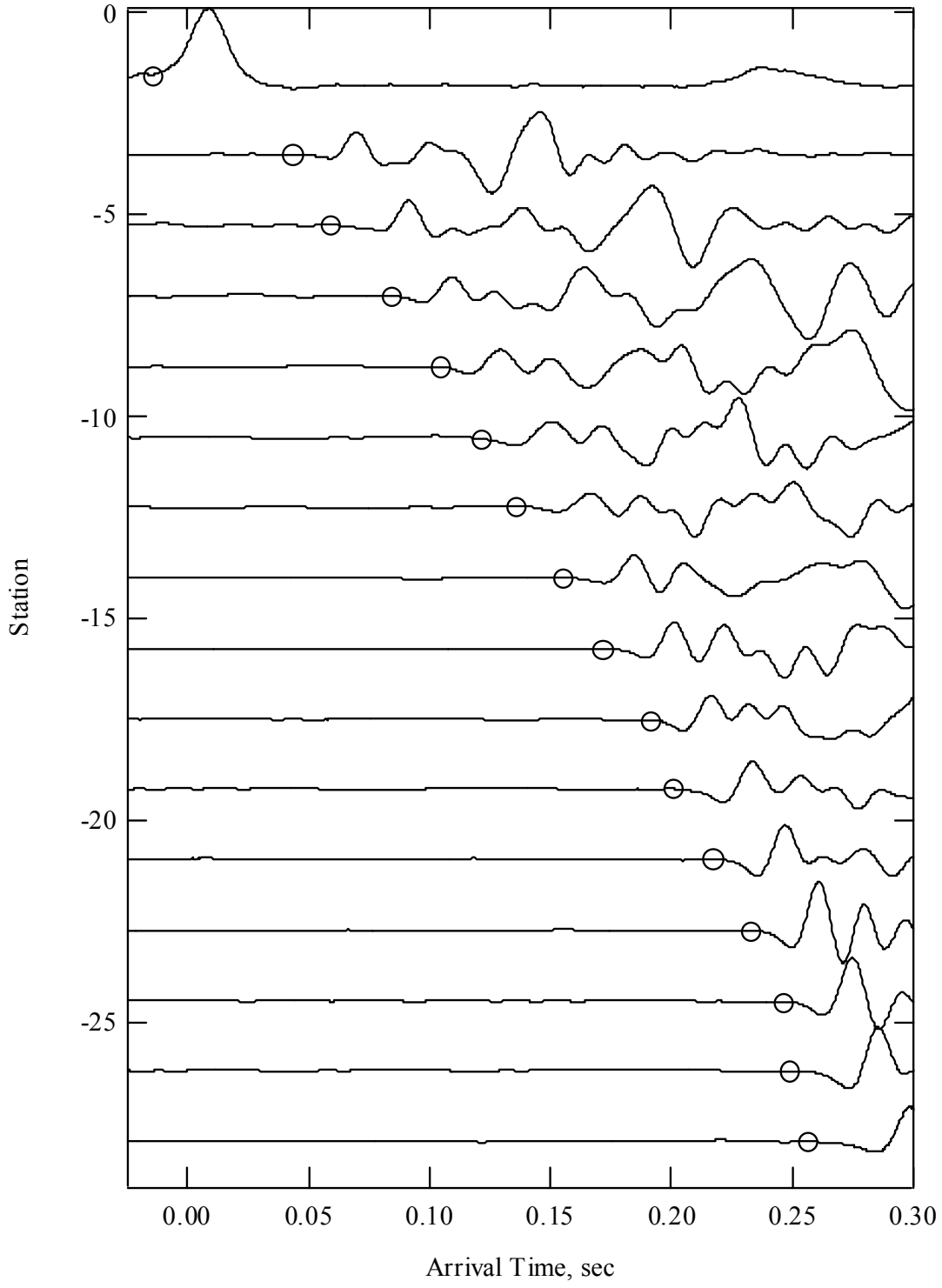

Fig 48 Arrival Times for Refraction Testing at Park Lane Elementary, Sandy, Site 84, Earthquake Site Response Unit Q03 (Ashland, 2001)

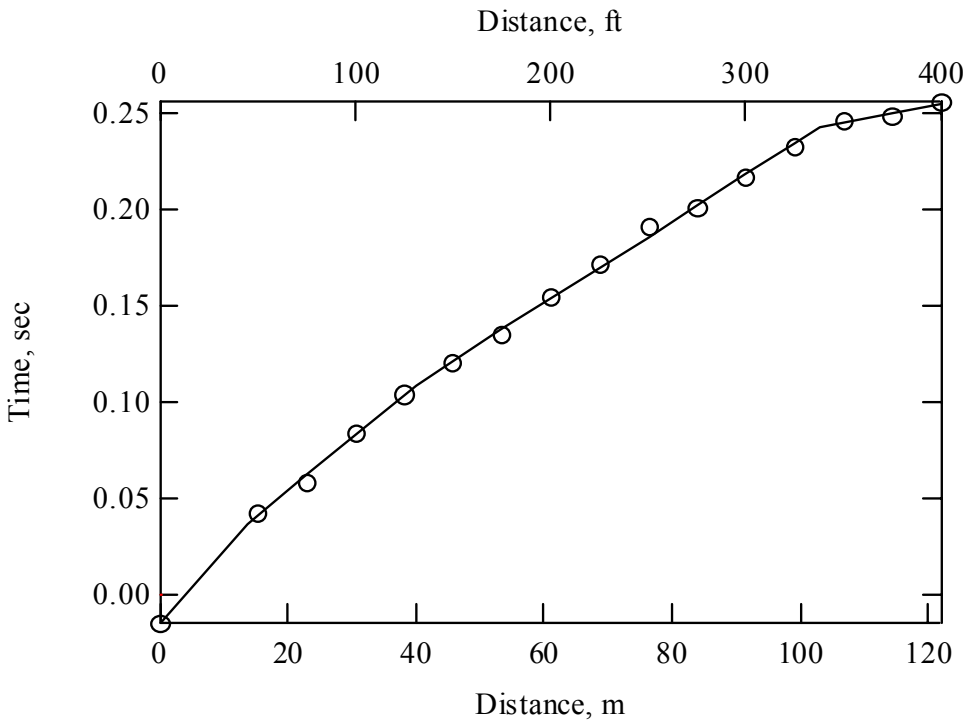

Fig 49 Time-Distance Curve for Refraction Testing at Park Lane Elementary, Sandy, Site 84, Earthquake Site Response Unit Q03 (Ashland, 2001)

Tabulated Refraction Profile from Park Lane Elementary, Sandy, Site 84, Earthquake Site Response Unit Q03 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	2.69	264.50	141.38
2	5.29	363.76	194.44
3	43.68	472.19	252.40
4		1485.77	794.18

Site 19, Salt Lake County Fire Tower

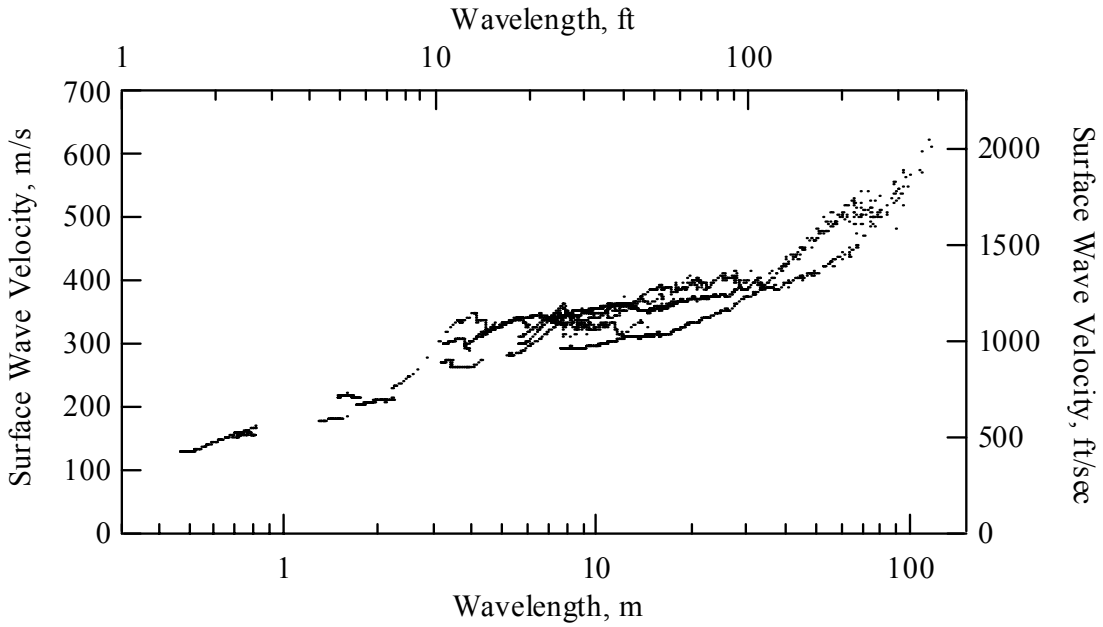

Fig 50 Experimental Dispersion Curve measured at Salt Lake County Fire Tower, Magna, Site 19, Earthquake Site Response Unit Q03 (Ashland, 2001)

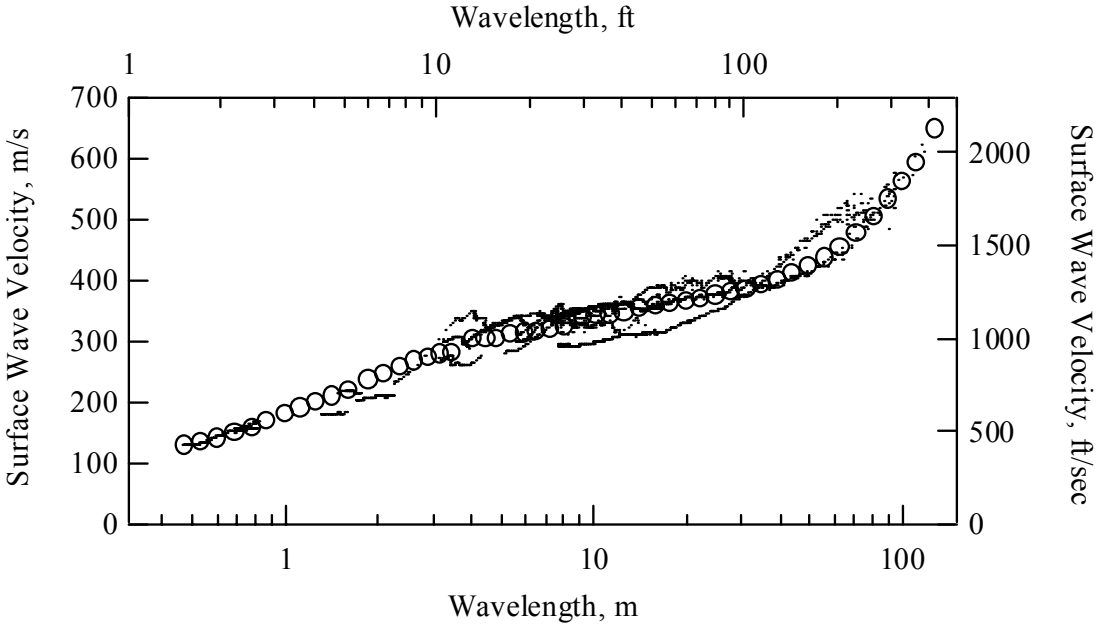

Fig 51 Comparison between Experimental & Theoretical Dispersion Curves from Salt Lake County Fire Tower, Magna, Site 19, Earthquake Site Response Unit Q03 (Ashland, 2001)

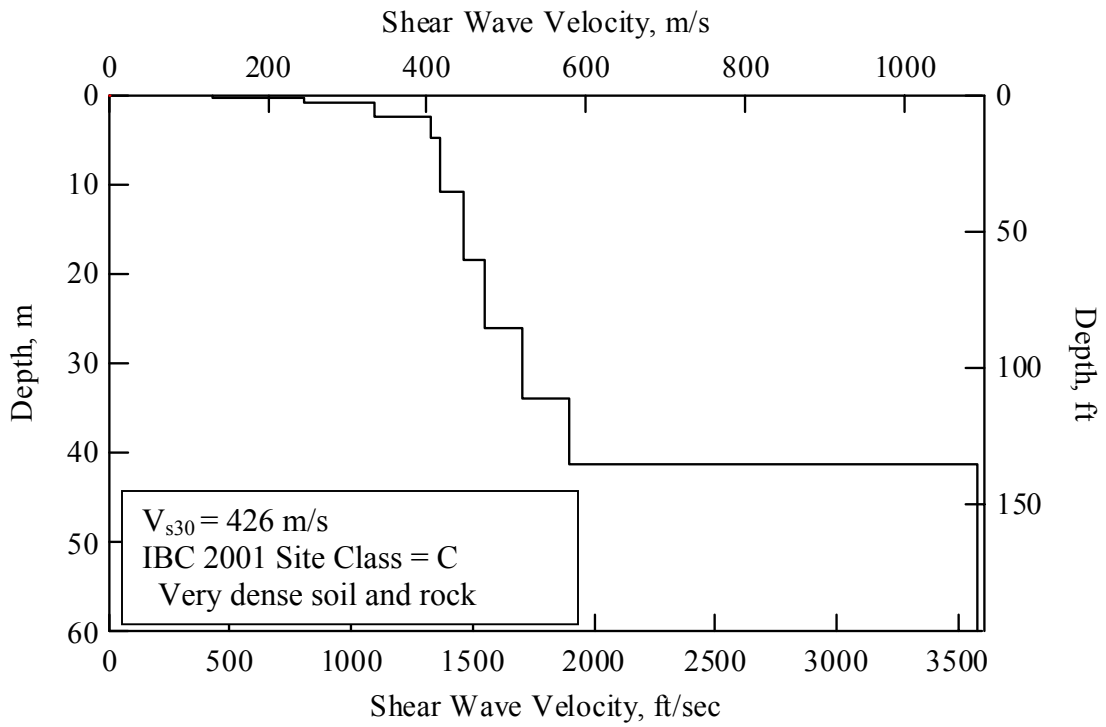

Fig 52 Shear Wave Velocity Profile Determined from SASW Testing at Salt Lake County Fire Tower, Magna, Site 19, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 18 Site 19 (zh34), Magna Fire Station, Q03 Tabulated Shear Wave Velocity Profile from Salt Lake County Fire Tower, Magna, Site 19, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.27	129.5	242.4	1.89
0.27	0.61	243.8	456.2	1.92
0.88	1.52	335.3	627.3	2
2.4	2.44	403.9	755.5	2
4.84	6.10	414.5	775.5	2
10.94	7.62	445	832.5	2
18.56	7.62	472.4	883.9	2
26.18	7.62	518.2	969.4	2
33.8	7.62	579.1	1083.4	2
41.42	30.18[a]	1090[b]	2039.2	2.08

a. Half-space in model
b. Refraction velocity

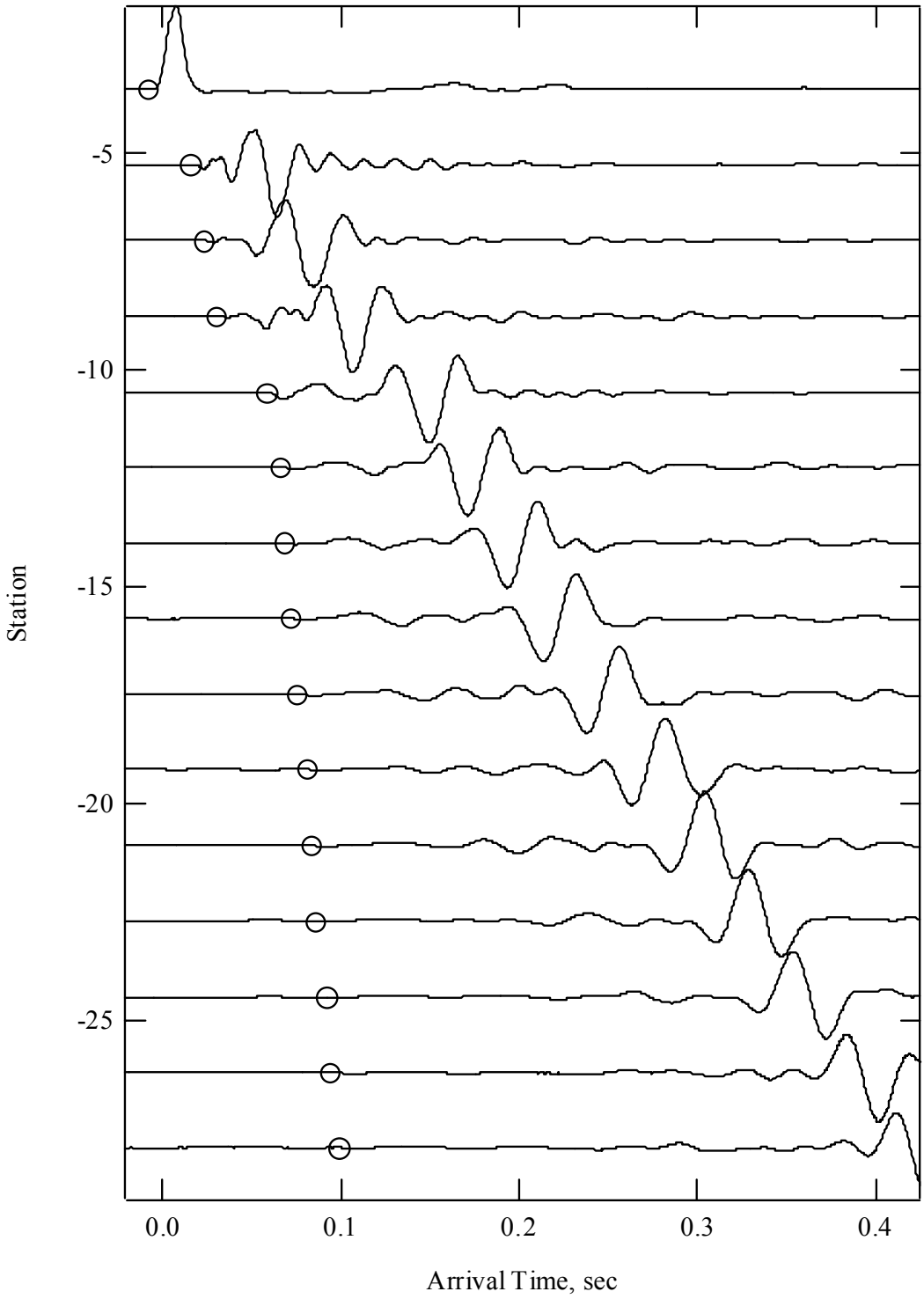

Fig 53 Arrival Times for Refraction Testing at Salt Lake County Fire Tower, Magna, Site 19, Earthquake Site Response Unit Q03 (Ashland, 2001)

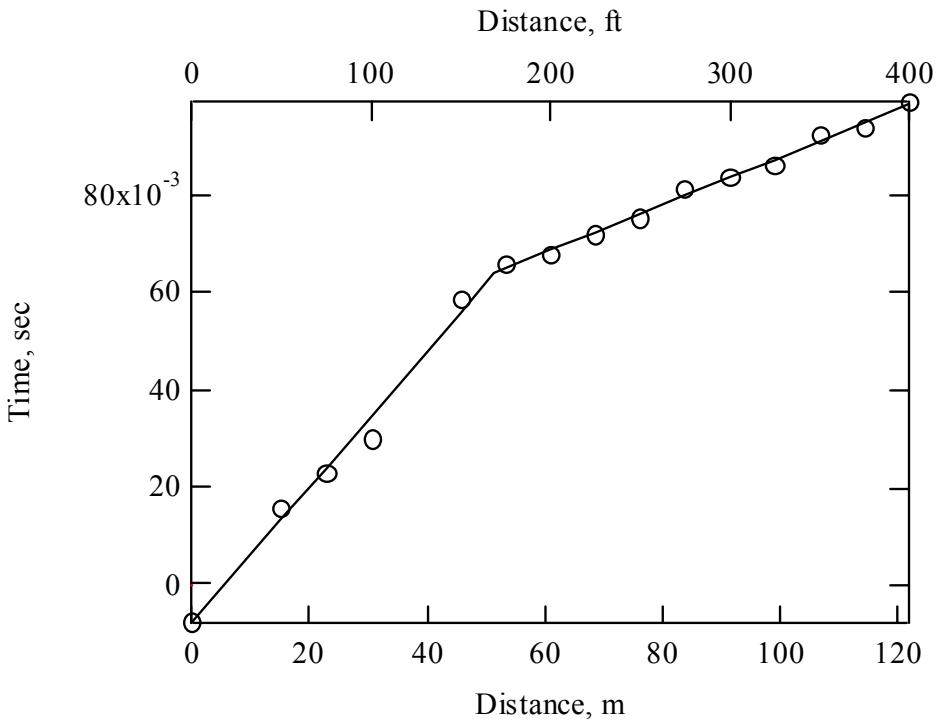

Fig 54 Time-Distance Curve for Refraction Testing at Salt Lake County Fire Tower, Magna, Site 19, Earthquake Site Response Unit Q03 (Ashland, 2001)

Tabulated Forward Refraction Profile from Salt Lake County Fire Tower, Magna, Site 19, Earthquake Site Response Unit Q03 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	17.85	714.23	381.77
2		2037.16	1088.91

Site: 33, Herriman Elementary

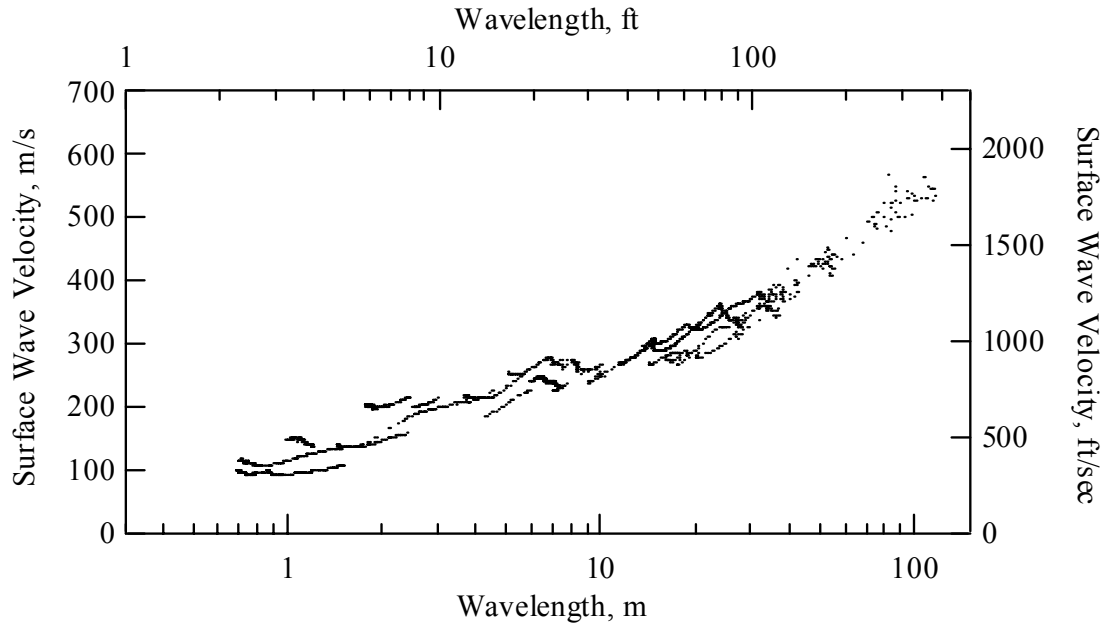

Fig 55 Experimental Dispersion Curve measured at Herriman Elementary, Herriman, Site 33, Earthquake Site Response Unit Q03 (Ashland, 2001)

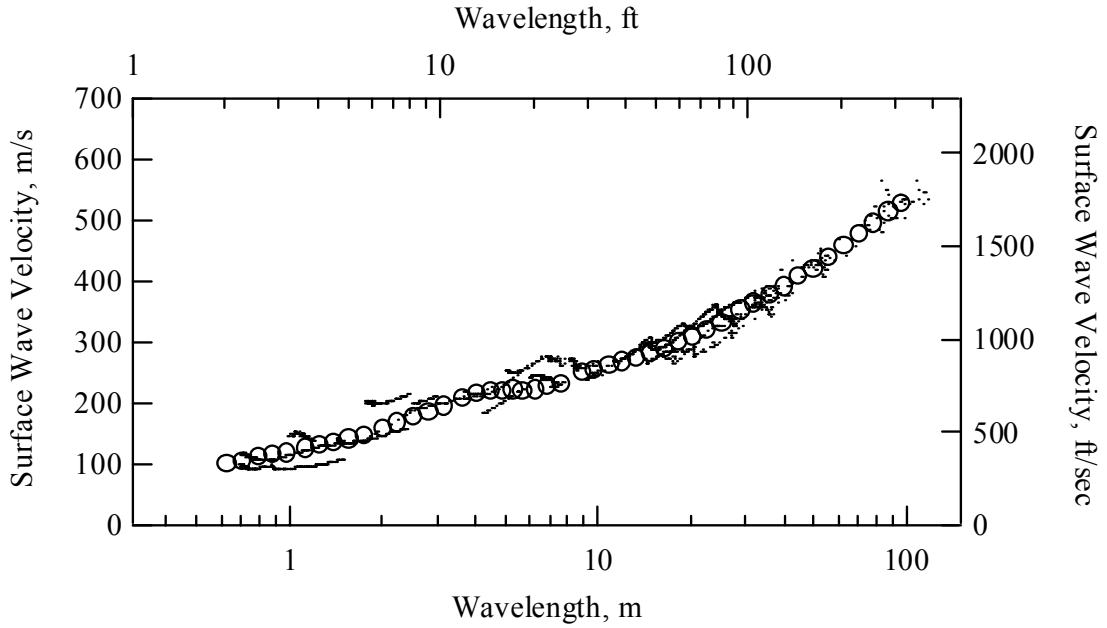

Fig 56 Comparison between Experimental & Theoretical Dispersion Curves from Herriman Elementary, Herriman, Site 33, Earthquake Site Response Unit Q03 (Ashland, 2001)

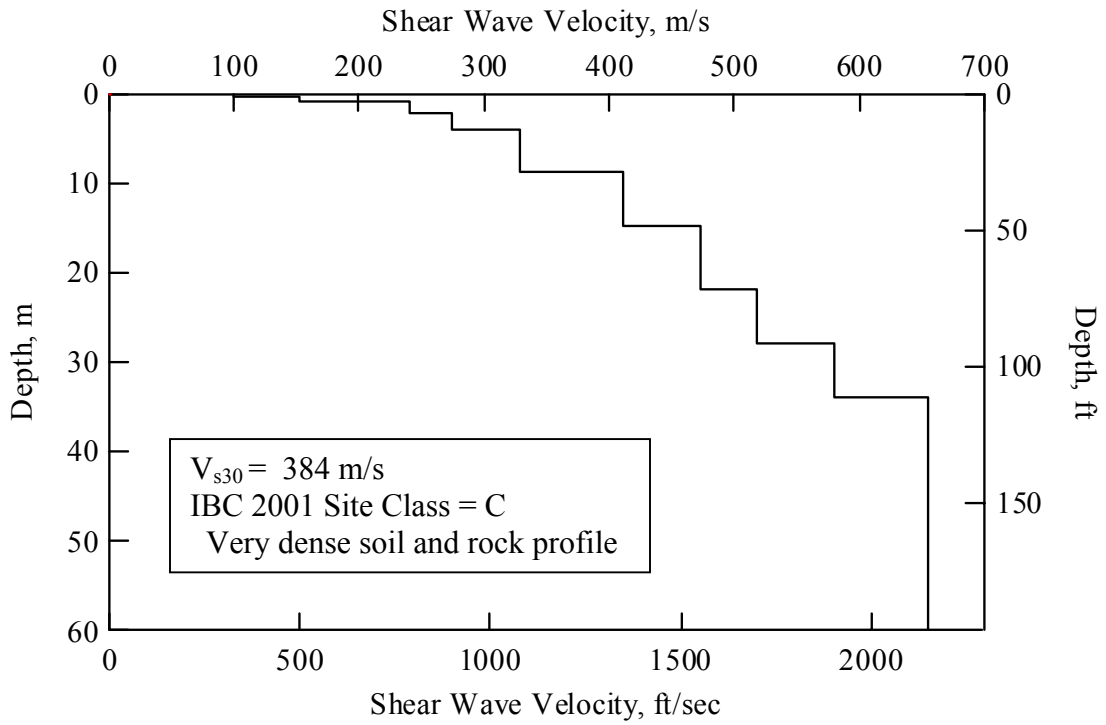

Fig 57 Shear Wave Velocity Profile Determined from SASW Testing at Herriman Elementary, Herriman, Site 33, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 19 Tabulated Shear Wave Velocity Profile from Herriman Elementary, Herriman, Site 33, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	99.1	185.3	1.89
0.3	0.53	152.4	285.1	1.92
0.83	1.45	240.8	450.5	1.92
2.28	1.83	274.3	513.2	1.92
4.11	4.57	327.7	613	2
8.68	6.1	411.5	769.8	2
14.78	7.01	472.4	883.9	2
21.79	6.1	518.2	969.4	2
27.89	6.1	579.1	1083.4	2
33.99	30.18[a]	655.3	1226	2.08

a. Half-space in model

Q04

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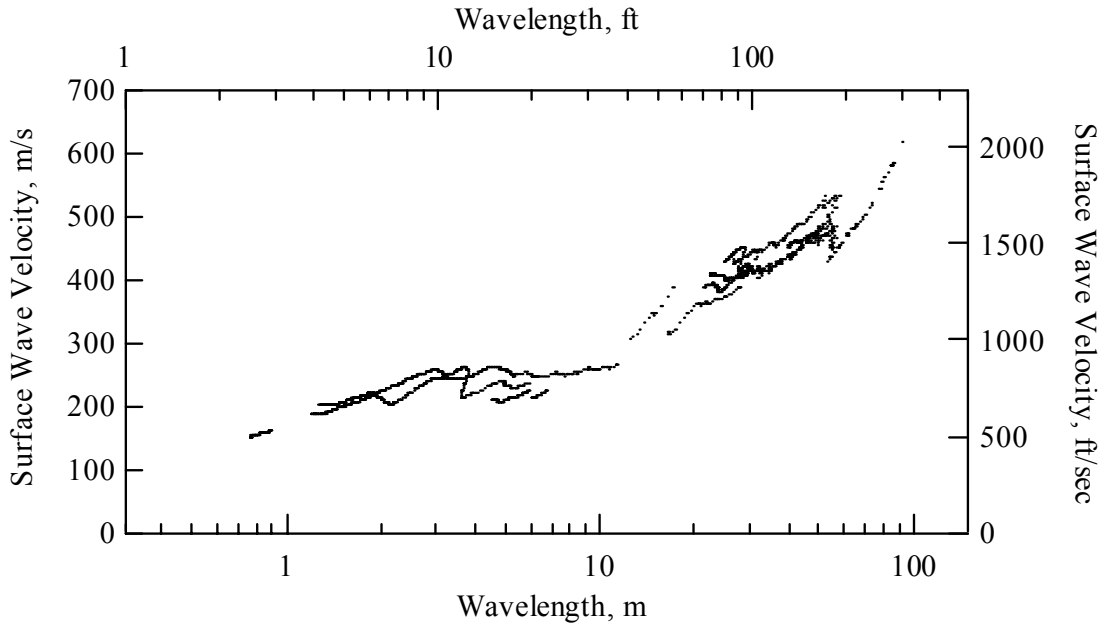
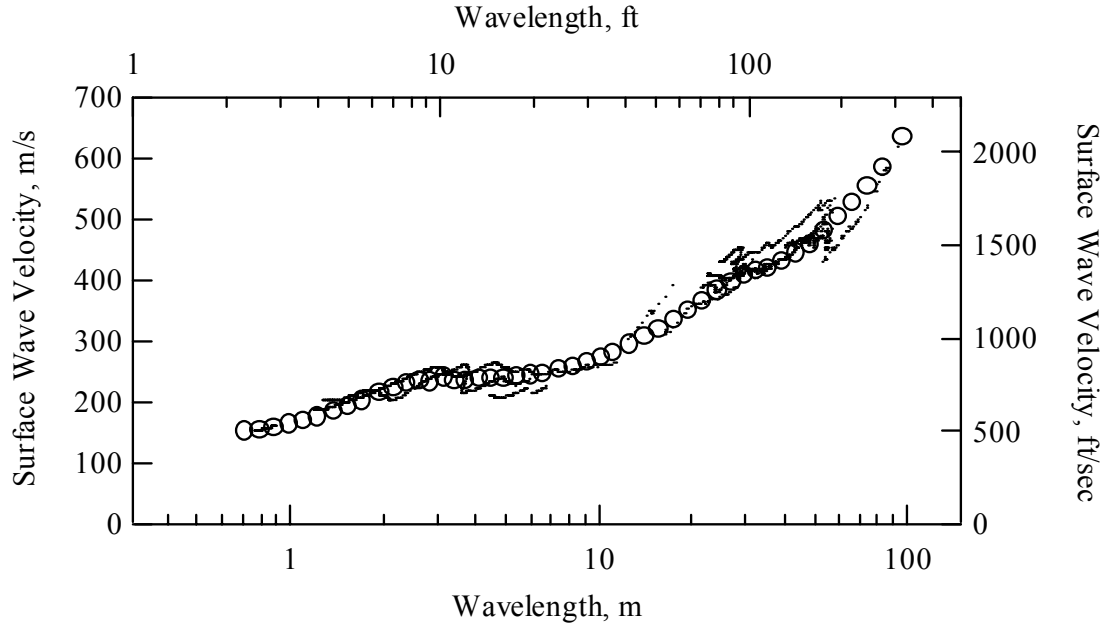
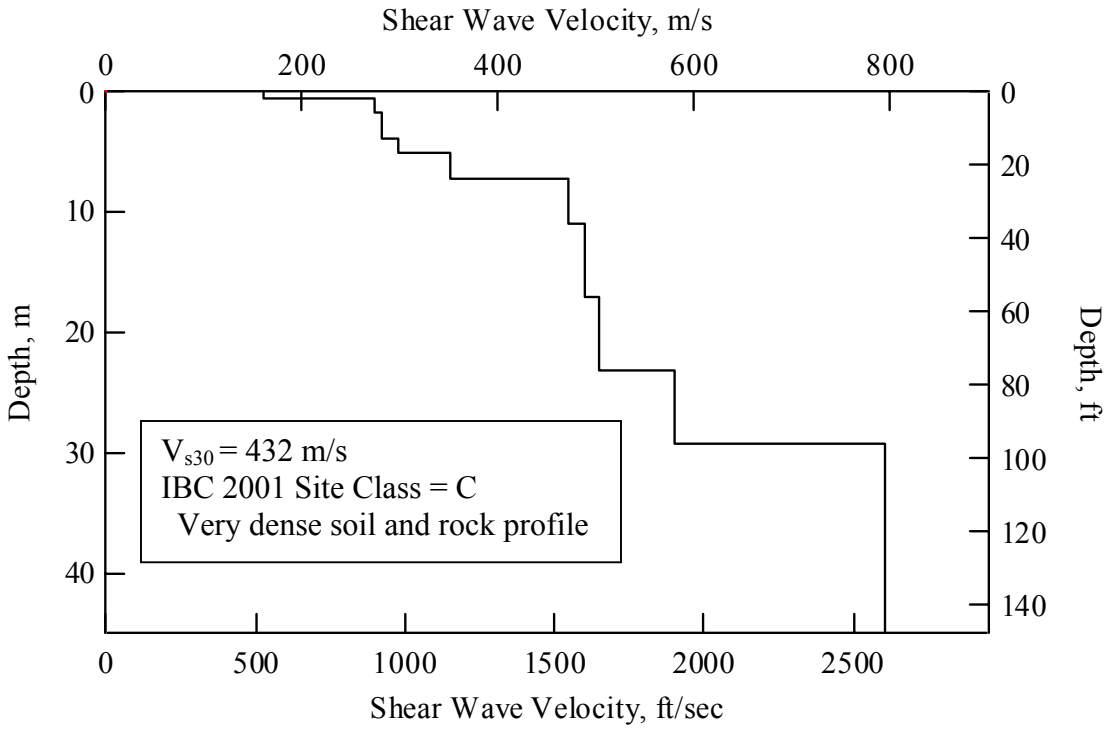
Site 98 – Cedar Valley, county road intersection



Experimental Dispersion Curve measured at Cedar Valley County Road Intersection, Cedar Valley,Site 98, Earthquake Site Response Unit Q04 (Ashland, 2001)



Comparison between Experimental & Theoretical Dispersion Curves from Cedar Valley County Road Intersection, Cedar Valley, Site 98, Earthquake Site Response Unit Q04 (Ashland, 2001)

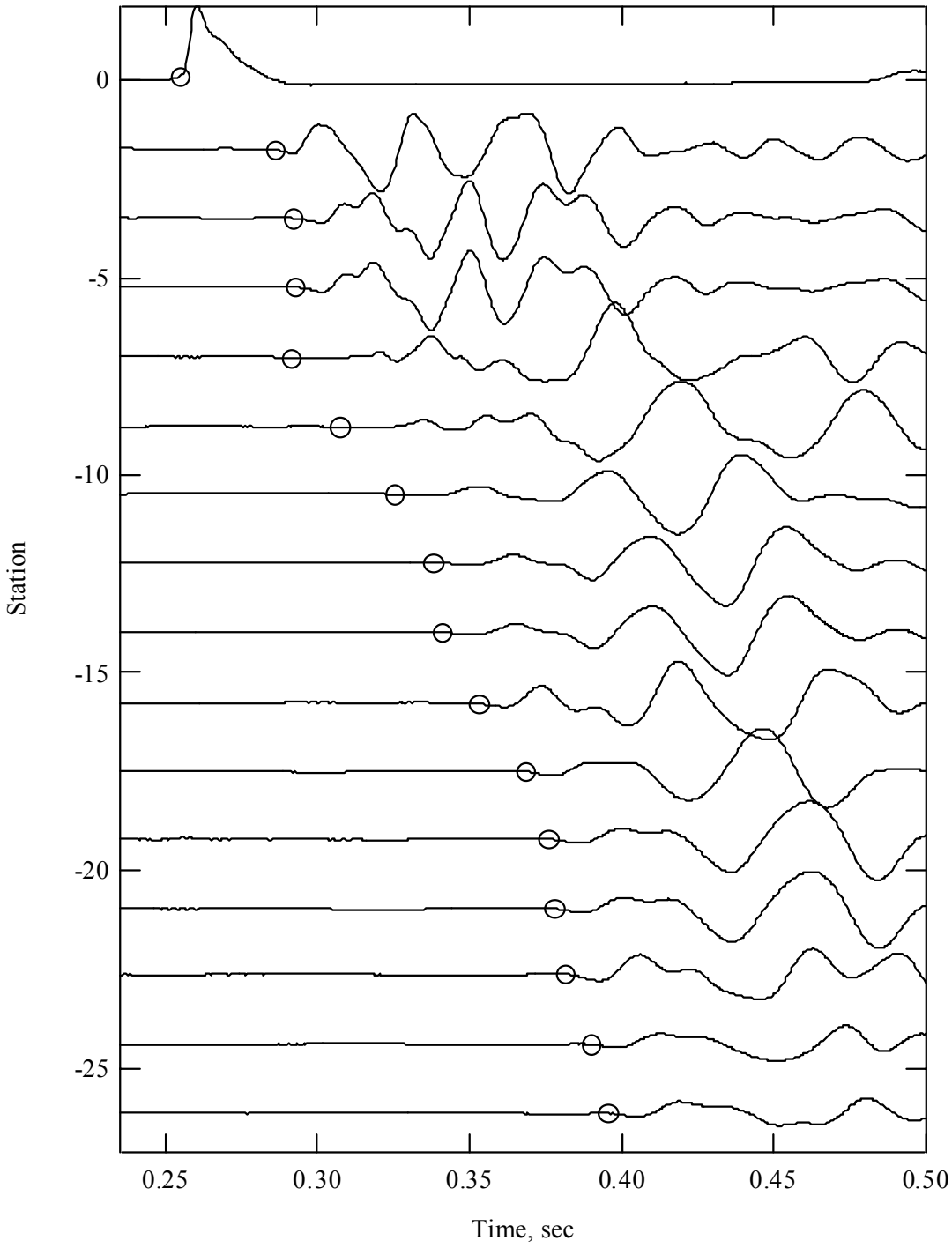


Shear Wave Velocity Profile Determined from SASW Testing at Cedar Valley County Road Intersection, Cedar Valley, Site 98, Earthquake Site Response Unit Q04 (Ashland, 2001)

Tabulated Shear Wave Velocity Profile from Cedar Valley County Road Intersection Cedar Valley, Site 98, Earthquake Site Response Unit Q04 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.53	160	299.4	1.92
0.53	1.22	274.3	513.2	1.92
1.75	2.13	281.9	527.5	1.92
3.88	1.22	297.2	556	1.92
5.1	2.13	350.5	655.8	2
7.23	3.66	472.4	855.3	2
10.89	6.1	487.7	912.4	2
16.99	6.1	502.9	940.9	2
23.09	6.1	579.1	1083.4	2
29.19	30.18[a]	795[b]	1487.3	2.08

a. Half-space in model
b. Refraction velocity



Arrival Times for Refraction Testing at Cedar Valley County Road Intersection, Cedar Valley, Site 98, Earthquake Site Response Unit Q04 (Ashland, 2001)

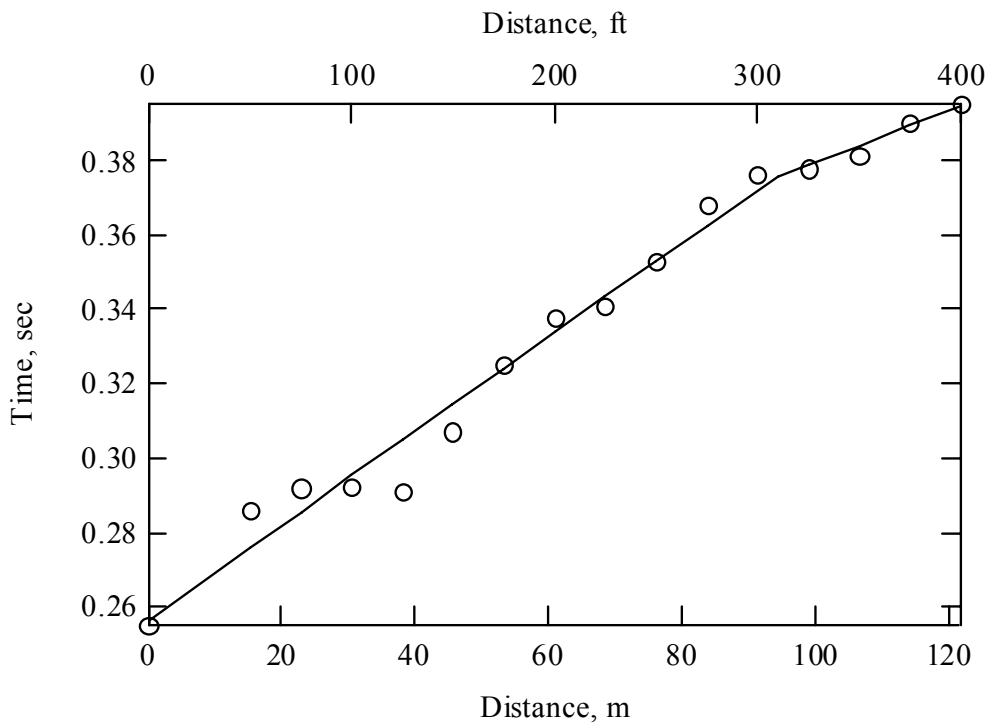


Fig 1 Time-Distance Curve for Refraction Testing at Cedar Valley County Road Intersection, Cedar Valley, Site 98, Earthquake Site Response Unit Q04 (Ashland, 2001)

Table 1 Tabulated Refraction Profile from Cedar Valley County Road Intersection, Cedar Valley, Site 98, Earthquake Site Response Unit Q04 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	26.07	791.46	423.05
2		1486.25	794.43

Site 23, Copperton Park

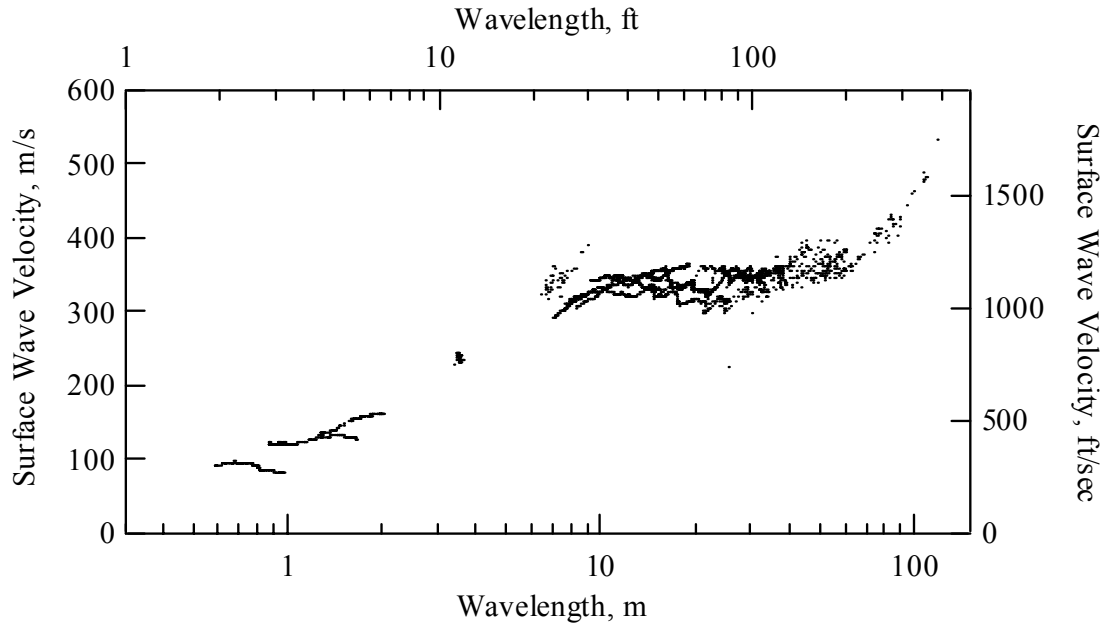


Fig 2 Experimental Dispersion Curve measured at Copperton Park, Copperton, Site 23, Earthquake Site Response Unit Q04 (Ashland, 2001)

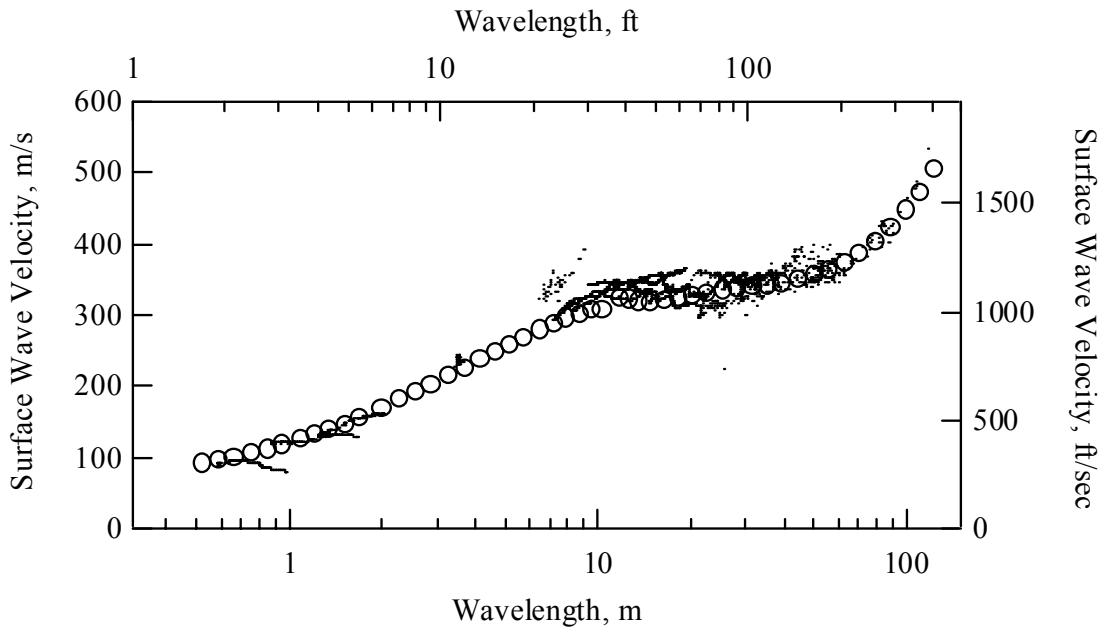


Fig 3 Comparison between Experimental & Theoretical Dispersion Curves from Copperton Park, Copperton, Site 23, Earthquake Site Response Unit Q04 (Ashland, 2001)

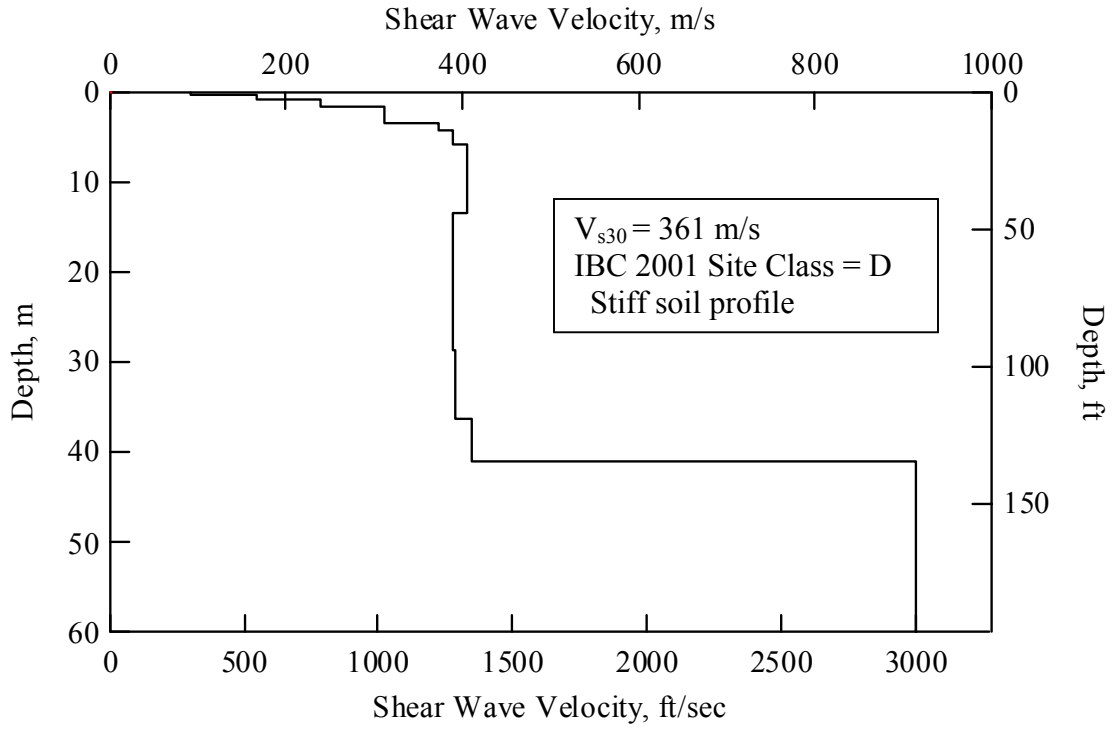


Fig 4 Shear Wave Velocity Profile Determined from SASW Testing at Copperton Park, Copperton, Site 23, Earthquake Site Response Unit Q04 (Ashland, 2001)

Table 2 Tabulated Shear Wave Velocity Profile from Copperton Park, Copperton, Site 23, Earthquake Site Response Unit Q04 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	91.4	171.1	1.89
0.3	0.46	167.6	313.6	1.92
0.76	0.91	239.3	447.7	1.92
1.67	1.92	312.4	584.5	2
3.59	0.76	373.4	698.5	2
4.35	1.52	388.6	727	2
5.87	7.62	403.9	755.6	2
13.49	7.62	388.6	727	2
21.11	7.62	390.1	729.8	2
28.73	7.62	393.2	735.6	2
36.35	4.57	411.5	769.9	2
40.92	30.18[a]	914.4	1710.7	2.08

a. Half-space in model

Site: 308, Lark

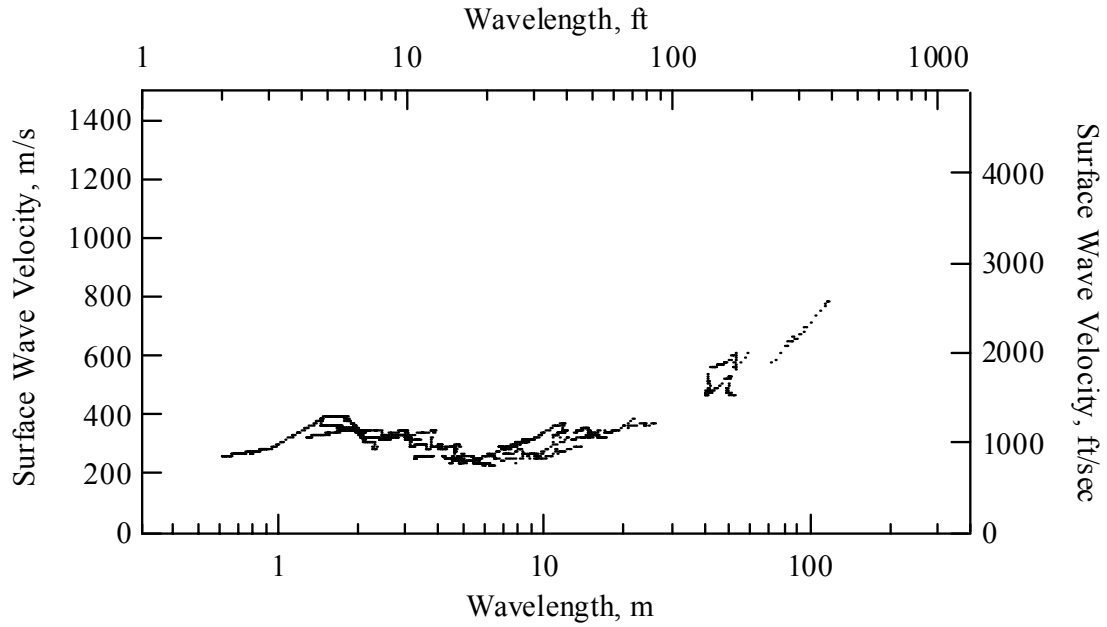


Fig 5 Experimental Dispersion Curve measured at Lark, Salt Lake County, Site 308, Earthquake Site Response Unit Q04 (Ashland, 2001)

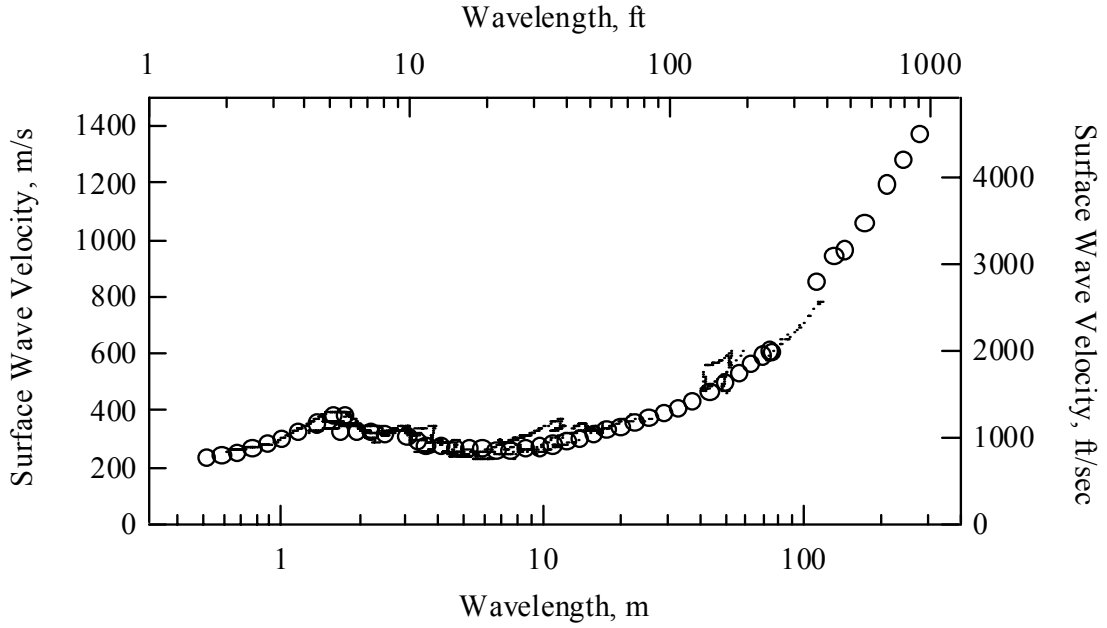


Fig 6 Comparison between Experimental & Theoretical Dispersion Curves from Lark, Salt Lake County, Site 308, Earthquake Site Response Unit Q04 (Ashland, 2001)

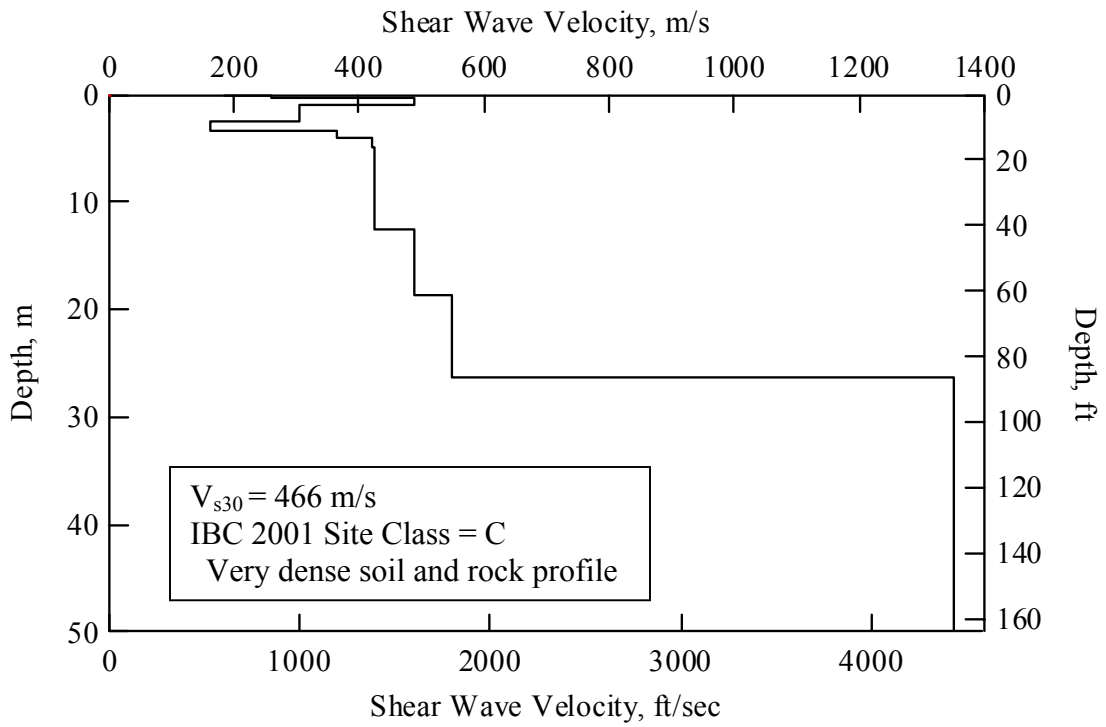


Fig 7 Shear Wave Velocity Profile Determined from SASW Testing at Lark, Salt Lake County, Site 308, Earthquake Site Response Unit Q04 (Ashland, 2001)

Table 3 Tabulated Shear Wave Velocity Profile from Lark, Salt Lake County, Site 308, Earthquake Site Response Unit Q04 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.08	182.90	342.10	1.92
0.08	0.30	259.10	484.70	1.92
0.38	0.61	487.70	912.40	2
0.99	1.52	304.80	570.20	2
2.51	0.91	160	299.4	1.89
3.42	0.61	365.8	684.3	2
4.03	0.91	419.1	784.1	2
4.94	7.62	426.7	798.3	2
12.56	6.1	487.7	912.4	2
18.66	7.62	548.6	1026.4	2
26.28	30.18[a]	1350[b]	2525.6	2.08

a. Half-space in model
b. Refraction velocity

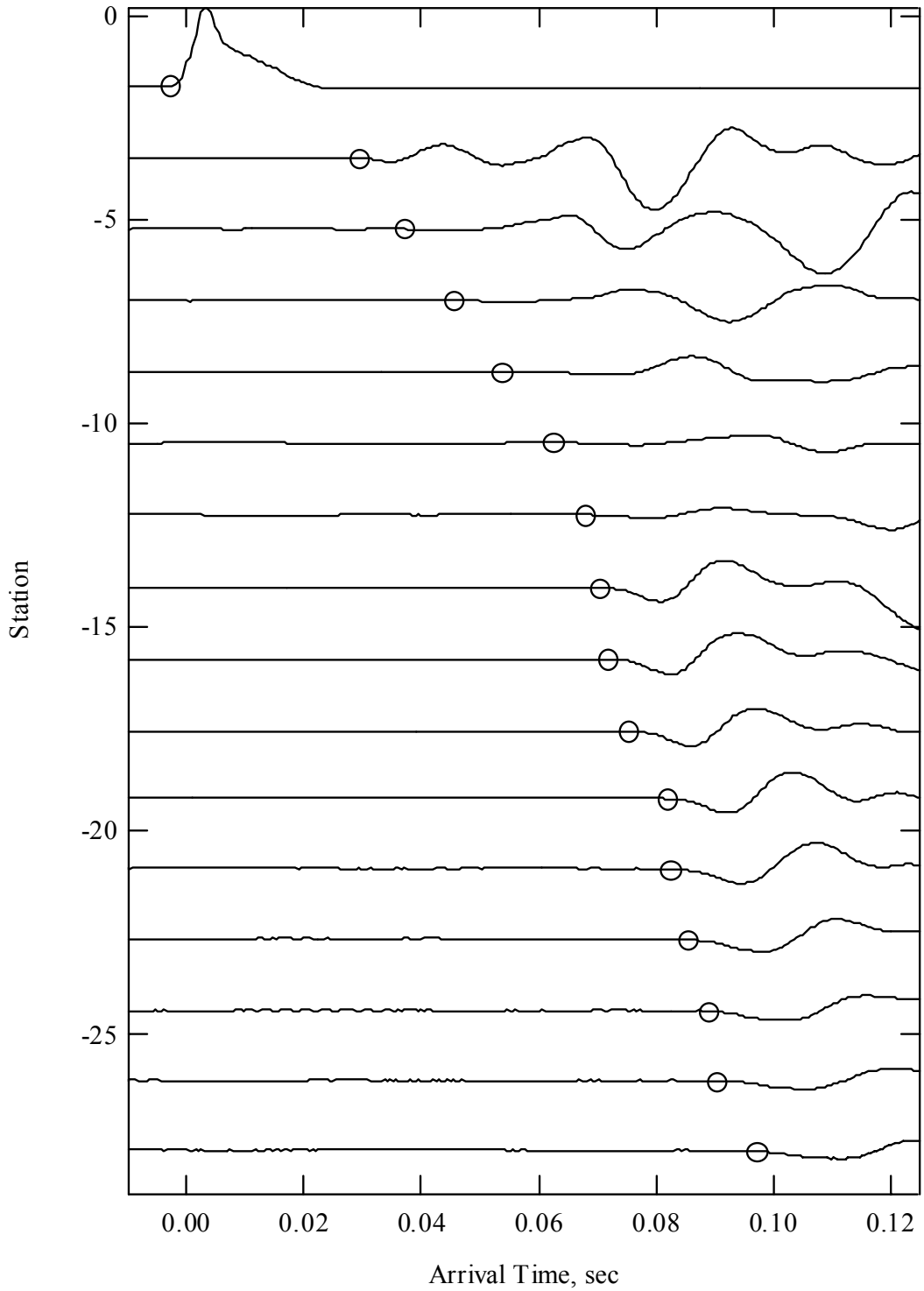


Fig 8 Arrival Times for Refraction Testing at Lark, Salt Lake County, Site 308, Earthquake Site Response Unit Q04 (Ashland, 2001)

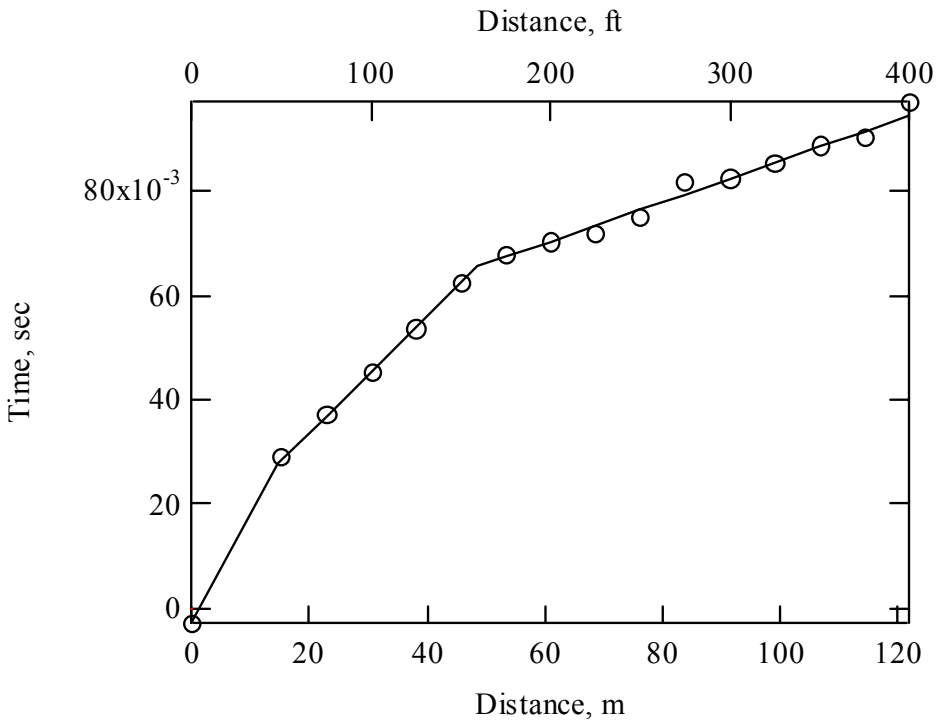


Fig 9 Time-Distance Curve for Refraction Testing at Lark, Salt Lake County, Site 308, Earthquake Site Response Unit Q04 (Ashland, 2001)

Tabulated Refraction Profile from Lark, Salt Lake County, Site 308, Earthquake Site Response Unit Q04 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	4.05	472.90	252.78
2	17.73	902.04	482.16
3		2538.78	1357.03

Site: 106, Eagle Mtn Water Tank

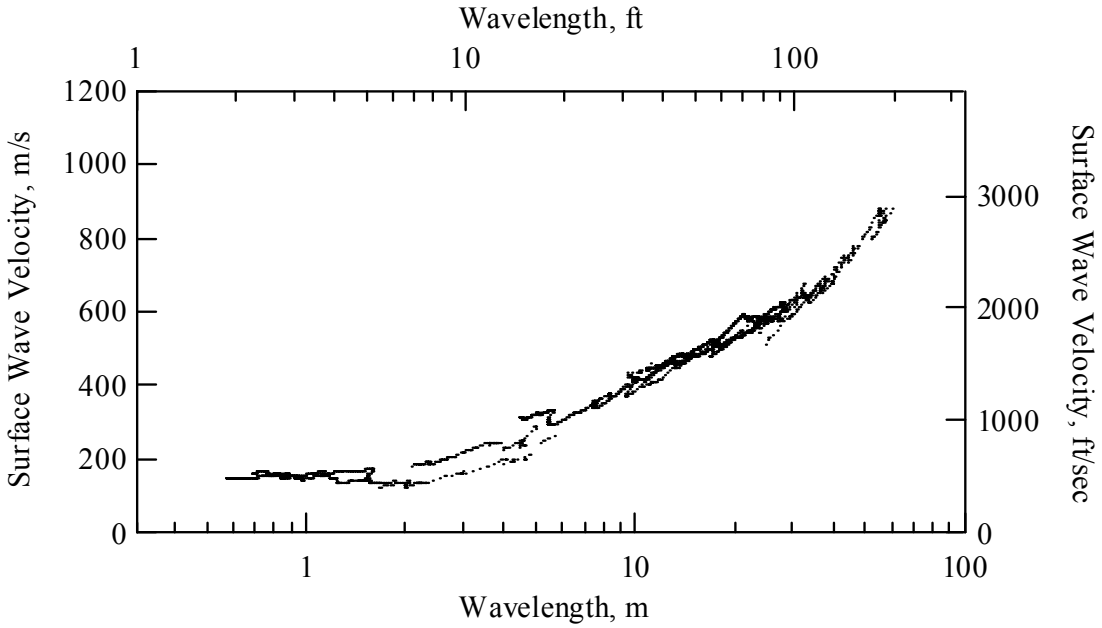


Fig 10 Experimental Dispersion Curve measured at Eagle Mountain Water Tank, Cedar Valley, Site 106, Earthquake Site Response Unit Q04 (Ashland, 2001)

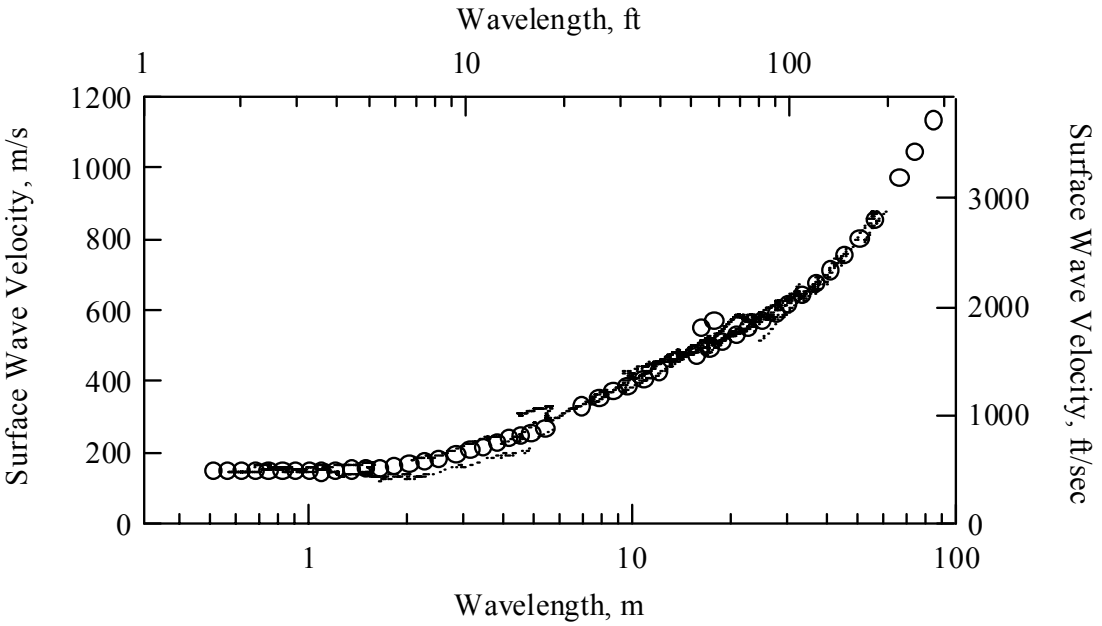


Fig 11 Comparison between Experimental & Theoretical Dispersion Curves at Eagle Mountain Water Tank, Cedar Valley, Site 106, Earthquake Site Response Unit Q04 (Ashland, 2001)

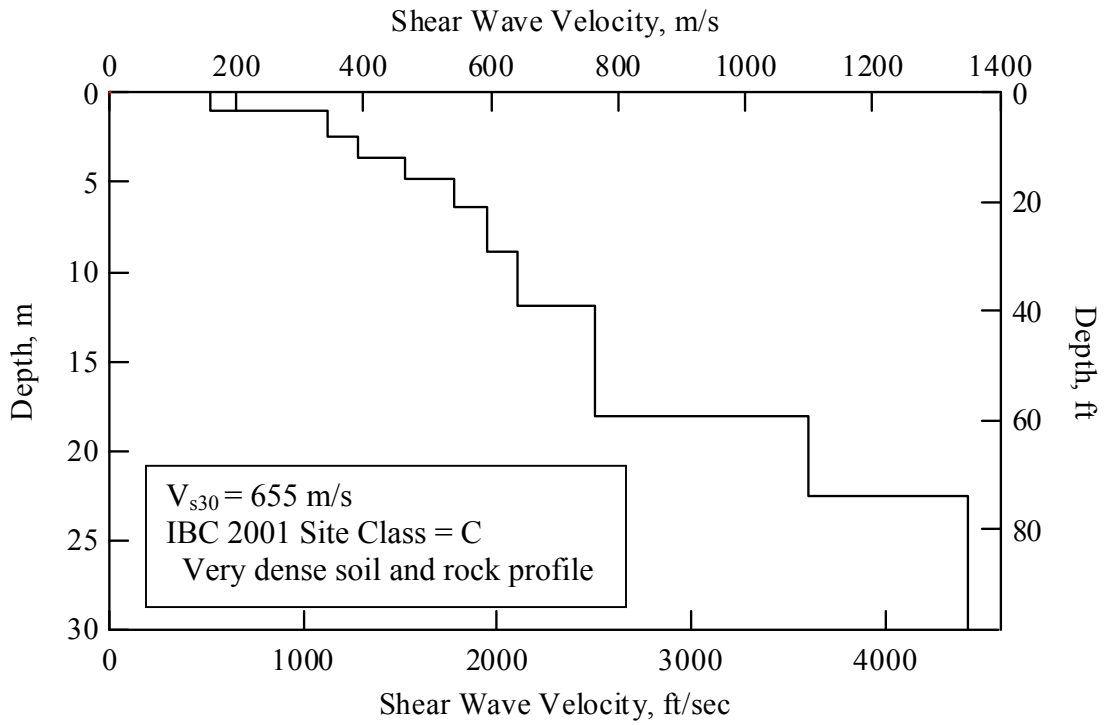


Fig 12 Shear Wave Velocity Profile Determined from SASW Testing at Eagle Mountain Water Tank, Cedar Valley, Site 106, Earthquake Site Response Unit Q04 (Ashland, 2001)

Table 4 Tabulated Shear Wave Velocity Profile from Eagle Mountain Water Tank, Cedar Valley, Site 106, Earthquake Site Response Unit Q04 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	1.07	160	299.4	1.92
1.07	1.37	342.9	641.5	2
2.44	1.22	393.2	735.6	2
3.66	1.22	463.3	866.8	2
4.88	1.52	541	1012.2	2
6.4	2.44	594.4	1112	2
8.84	3.05	640.1	1197.5	2.08
11.89	6.10	762	1425.6	2.08
17.99	4.57	1097.3	2052.8	2.08
22.56	30.18[a]	1350[b]	2525.6	2.08

a. Half-space in model
b. Refraction Velocity

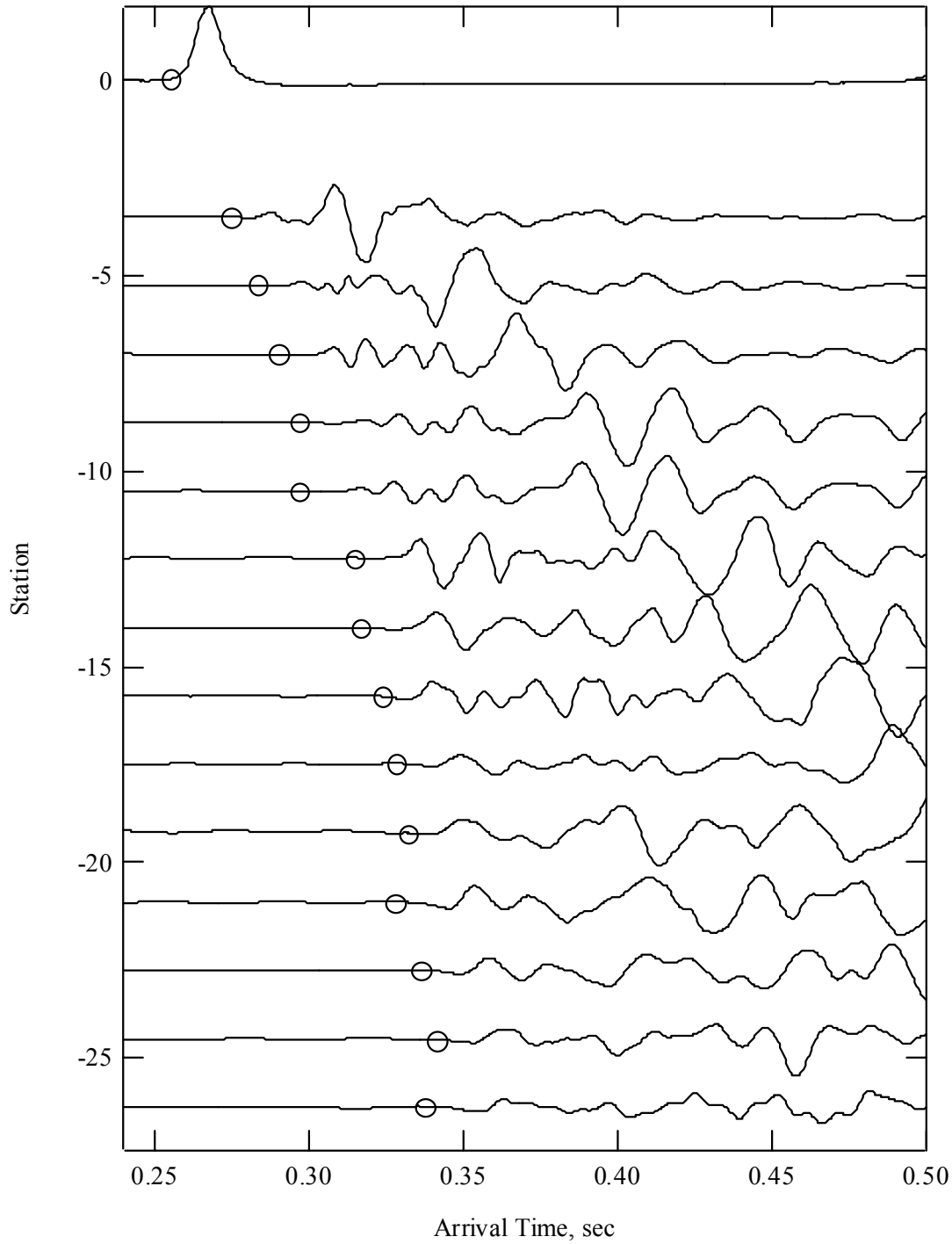


Fig 13 Arrival Times for Refraction Testing at Eagle Mountain Water Tank, Cedar Valley, Site 106, Earthquake Site Response Unit Q04 (Ashland, 2001)

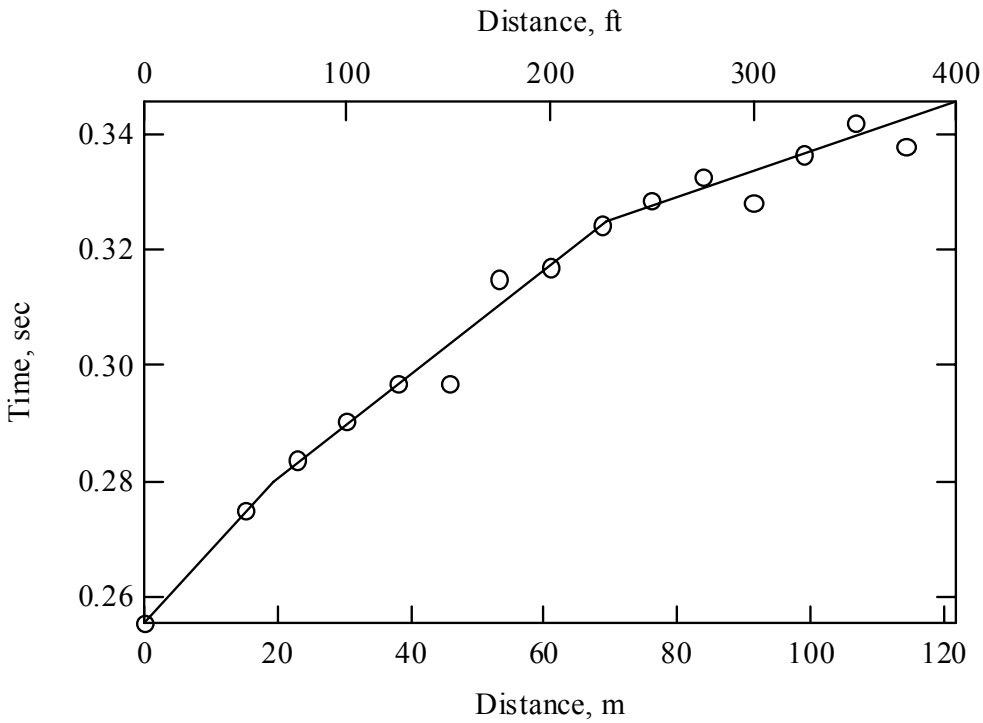


Fig 14 Time-Distance Curve for Refraction Testing at Eagle Mountain Water Tank, Cedar Valley, Site 106, Earthquake Site Response Unit Q04 (Ashland, 2001)

Table 5 Tabulated Refraction Profile from Eagle Mountain Water Tank, Cedar Valley, Site 106, Earthquake Site Response Unit Q04 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	3.90	803.15	429.30
2	20.05	1109.00	592.79
3		2516.93	1345.35

Site: 309, South Field Kennecott

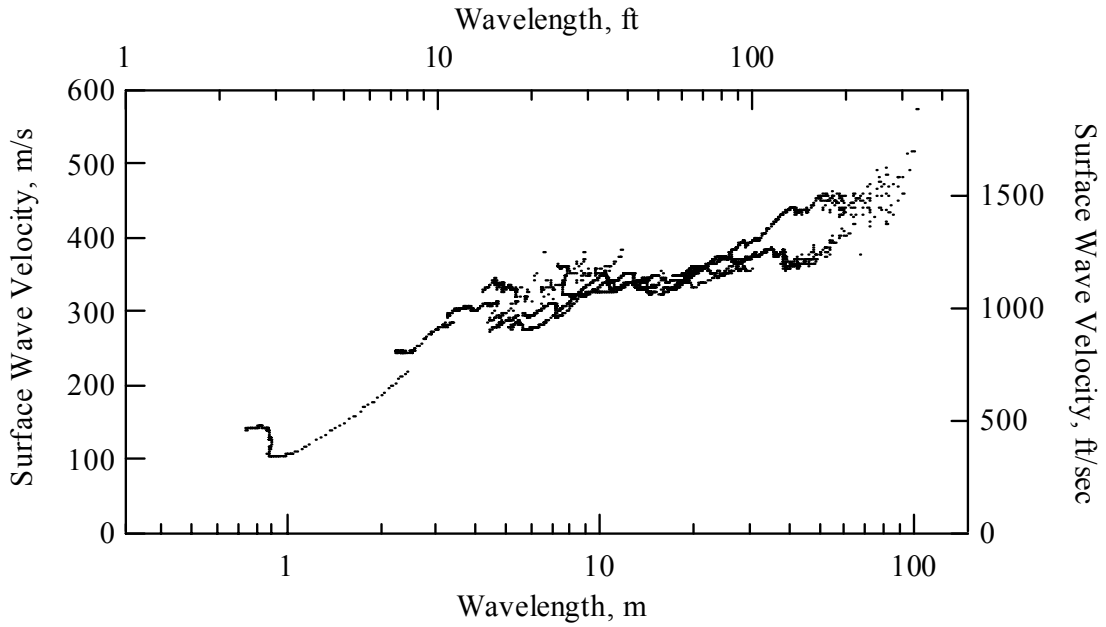


Fig 15 Experimental Dispersion Curve measured at South Field-Kennecott, Salt Lake County, Site 309, Earthquake Site Response Unit Q04 (Ashland, 2001)

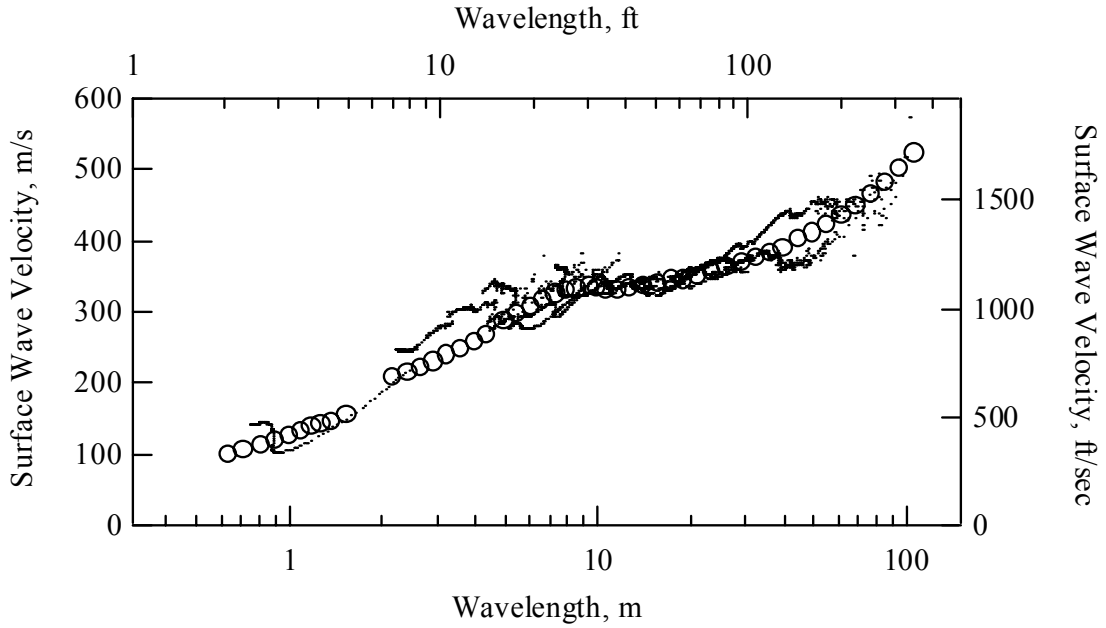


Fig 16 Comparison between Experimental & Theoretical Dispersion Curves from South Field-Kennecott, Salt Lake County, Site 309, Earthquake Site Response Unit Q04 (Ashland, 2001)

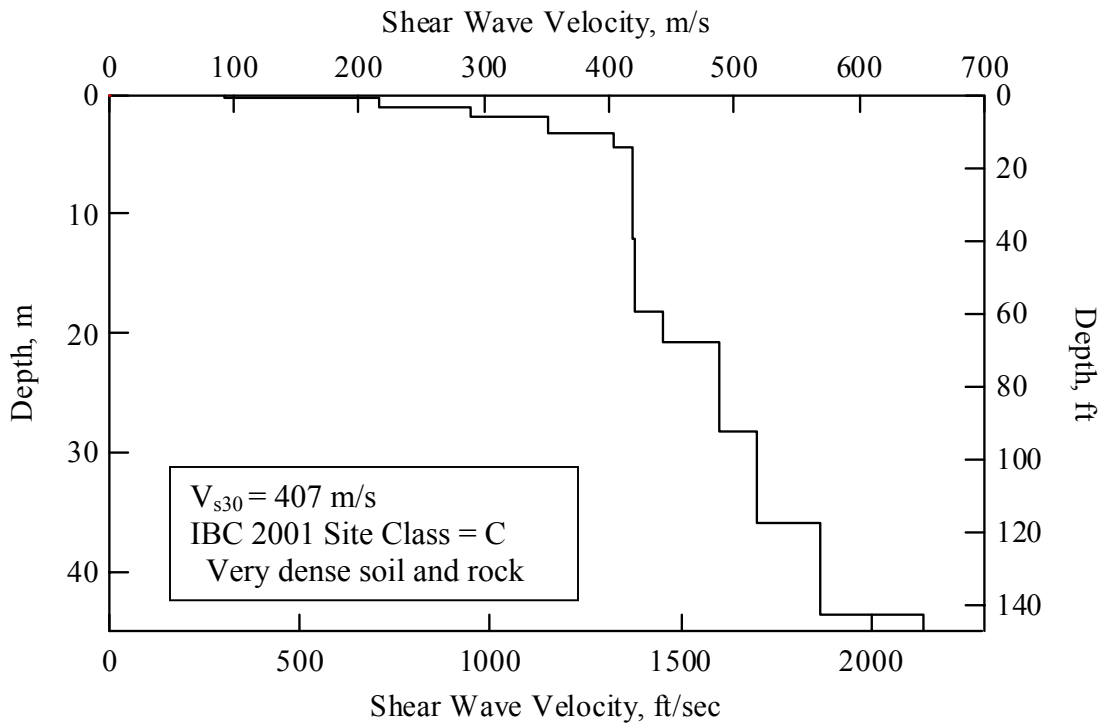


Fig 17 Shear Wave Velocity Profile Determined from SASW Testing at South Field-Kennecott, Salt Lake County, Site 309, Earthquake Site Response Unit Q04 (Ashland, 2001)

Table 6 Tabulated Shear Wave Velocity Profile from South Field-Kennecott, Salt Lake County, Site 309, Earthquake Site Response Unit Q04 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	91.40	171.1	1.89
0.3	0.73	216.40	404.9	1.92
1.03	0.76	289.60	541.7	1.92
1.79	1.52	350.50	655.8	2
3.31	1.22	403.90	755.5	2
4.53	7.62	419.10	784.1	2
12.15	6.1	420.60	786.9	2
18.25[a]	2.44	442.00	1524	2
20.69	7.62	487.70	1524	2
28.31	7.62	518.20	1524	2
35.93	7.62	568.50	1524	2
43.55	30.18[b]	650.00	1524	2.08

a. Depth to fully saturated zone from Refraction testing
b. Half-space in model

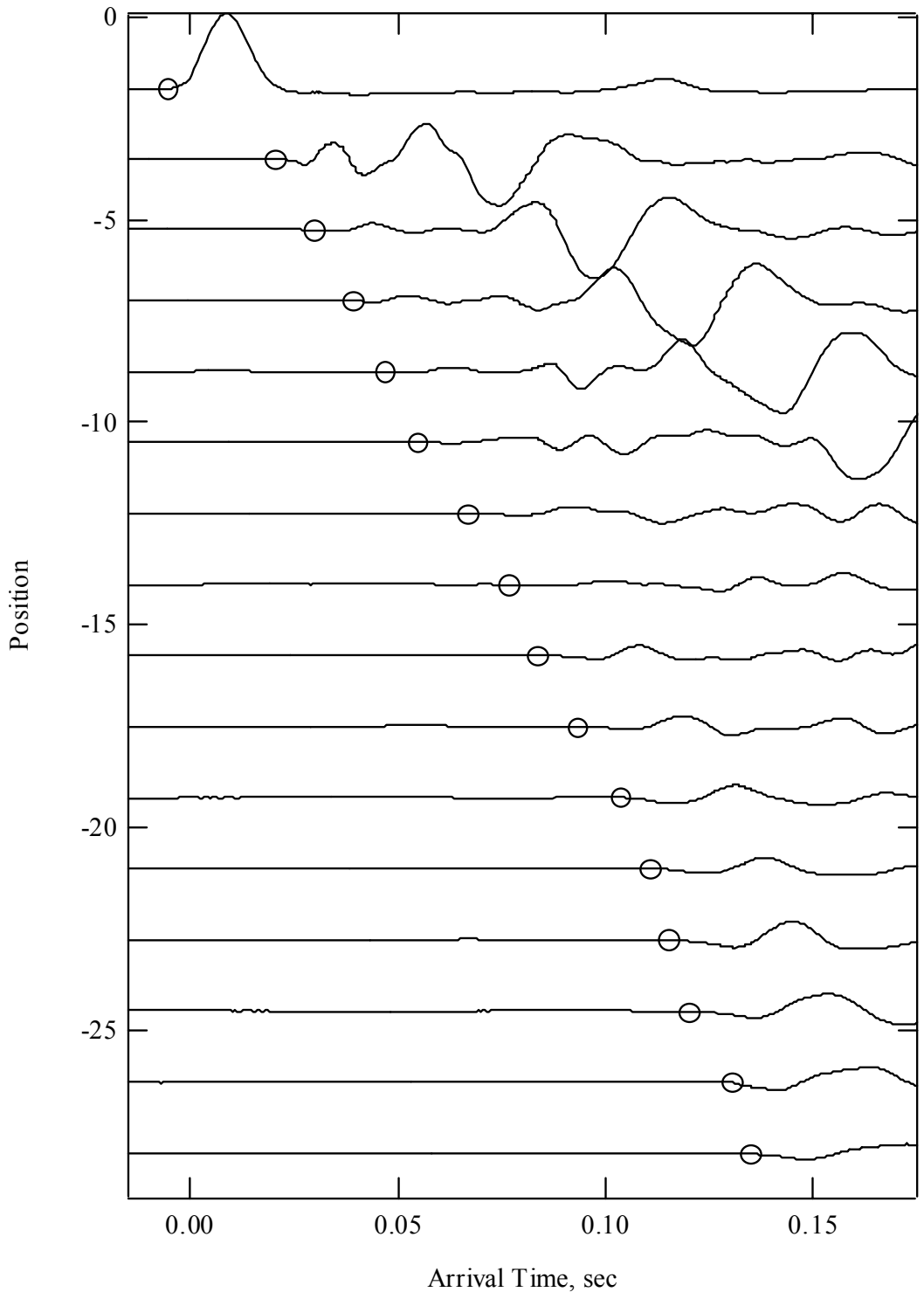


Fig 18 Arrival Times for Refraction Testing at South Field-Kennecott, Salt Lake County, Site 309, Earthquake Site Response Unit Q04 (Ashland, 2001)

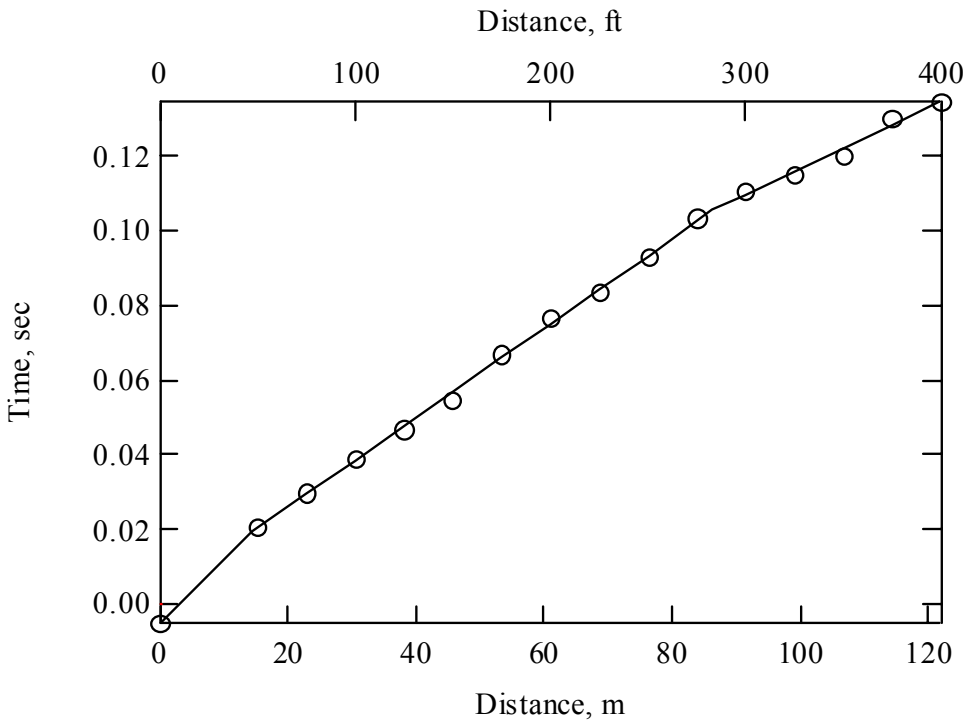


Fig 19 Time-Distance Curve for Refraction Testing at South Field-Kennecott, Salt Lake County, Site 309, Earthquake Site Response Unit Q04 (Ashland, 2001)

Tabulated Refraction Profile from South Field-Kennecott, Salt Lake County, Site 309, Earthquake Site Response Unit Q04 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	3.03	588.89	314.78
2	12.35[a]	833.33	445.44
3		1213.77	

a. Depth to fully saturated zone

Site: 310, North Field Kennecott

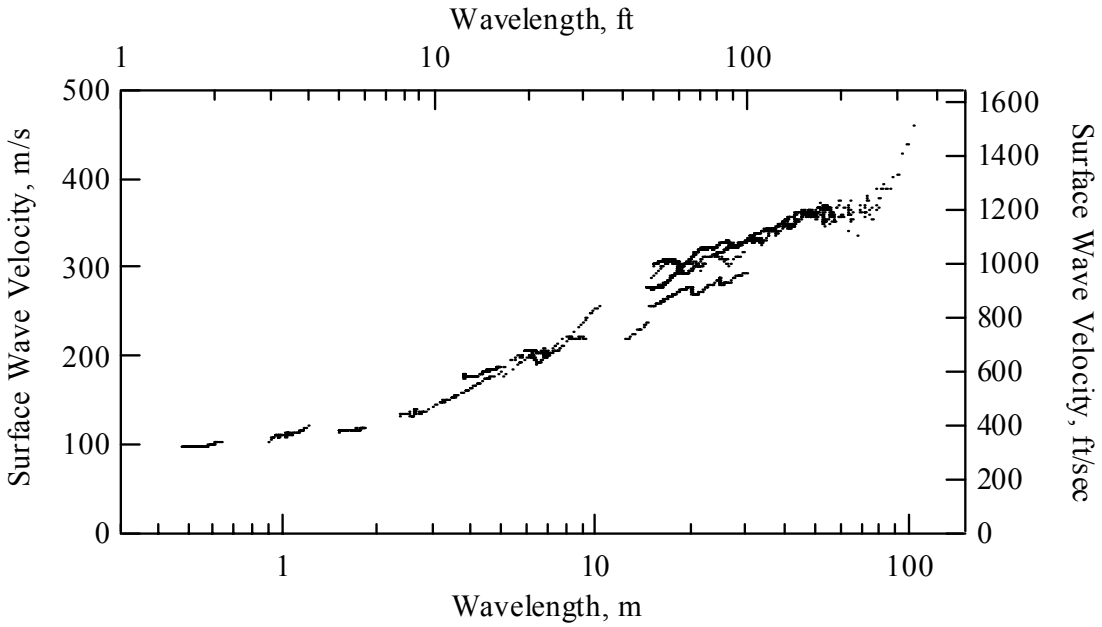


Fig 20 Experimental Dispersion Curve measured at North Field-Kennecott, Salt Lake County, Site 310, Earthquake Site Response Unit Q04 (Ashland, 2001).

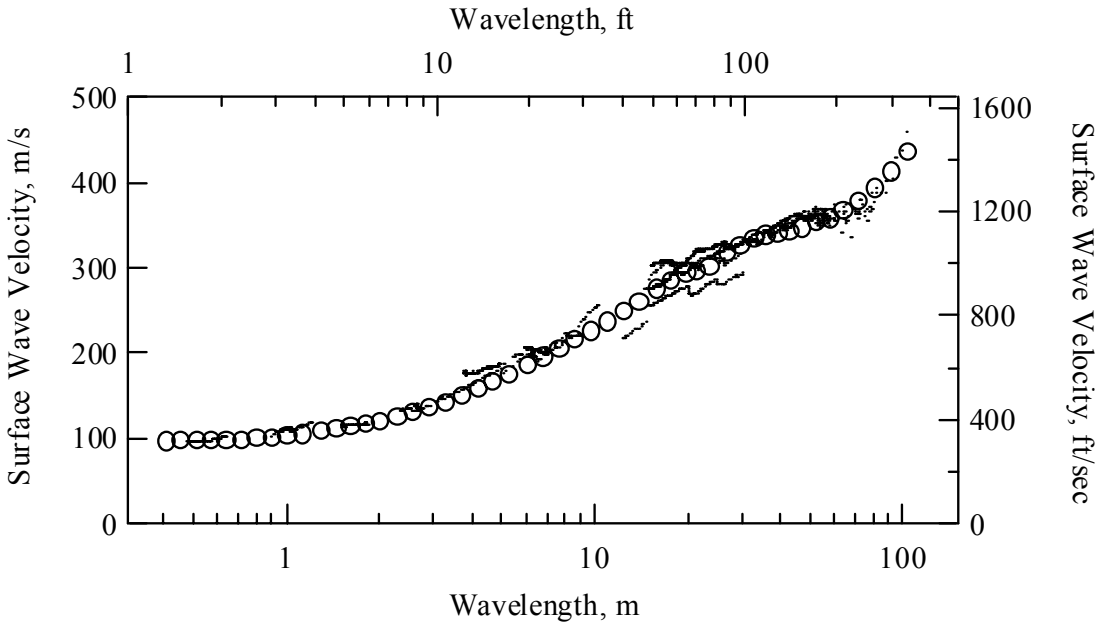


Fig 21 Comparison between Experimental & Theoretical Dispersion Curves from North Field-Kennecott, Salt Lake County, Site 310, Earthquake Site Response Unit Q04 (Ashland, 2001)

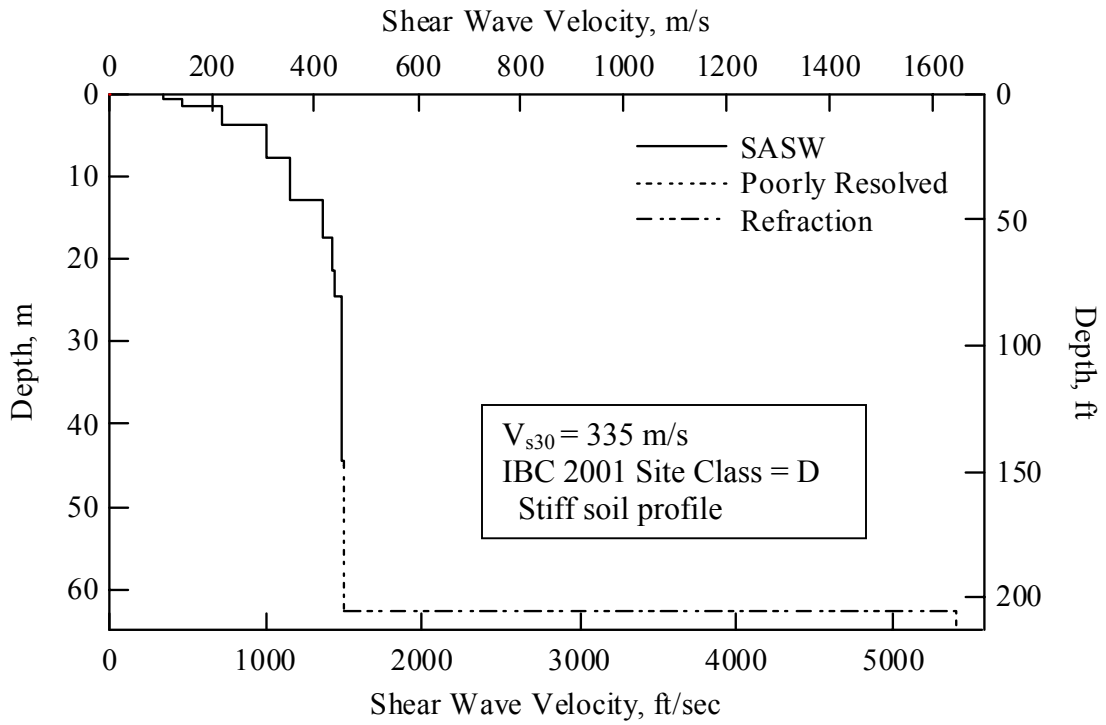


Fig 22 Shear Wave Velocity Profile Determined from SASW Testing at North Field-Kennecott, Salt Lake County, Site 310, Earthquake Site Response Unit Q04 (Ashland, 2001)

Table 7 Tabulated Shear Wave Velocity Profile from North Field-Kennecott, Salt Lake County, Site 310, Earthquake Site Response Unit Q04 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.23	104	194.6	1.89
0.23	0.38	106.7	199.6	1.89
0.61	0.90	143.3	268	1.89
1.51	2.36	221	413.4	1.92
3.87	3.96	304.8	570.2	2
7.83	5.18	350.5	655.8	2
13.01	4.57	414.5	775.5	2
17.58[a]	3.96	434.3	1524	2
21.54	3.05	438.9	1524	2
24.59	3.05	449.6	1524	2
27.64	7.62	451.1	1524	2
35.26	9.14	454.2	1524	2
44.4	9.14	457.2	1524	2
53.54	9.14	458.7	1524	2
62.68	30.18[b]	1645.9[c]	1524	2.08

a. Depth to fully saturated zone from Refraction testing
b. Half-space in model
c. Refraction Velocity

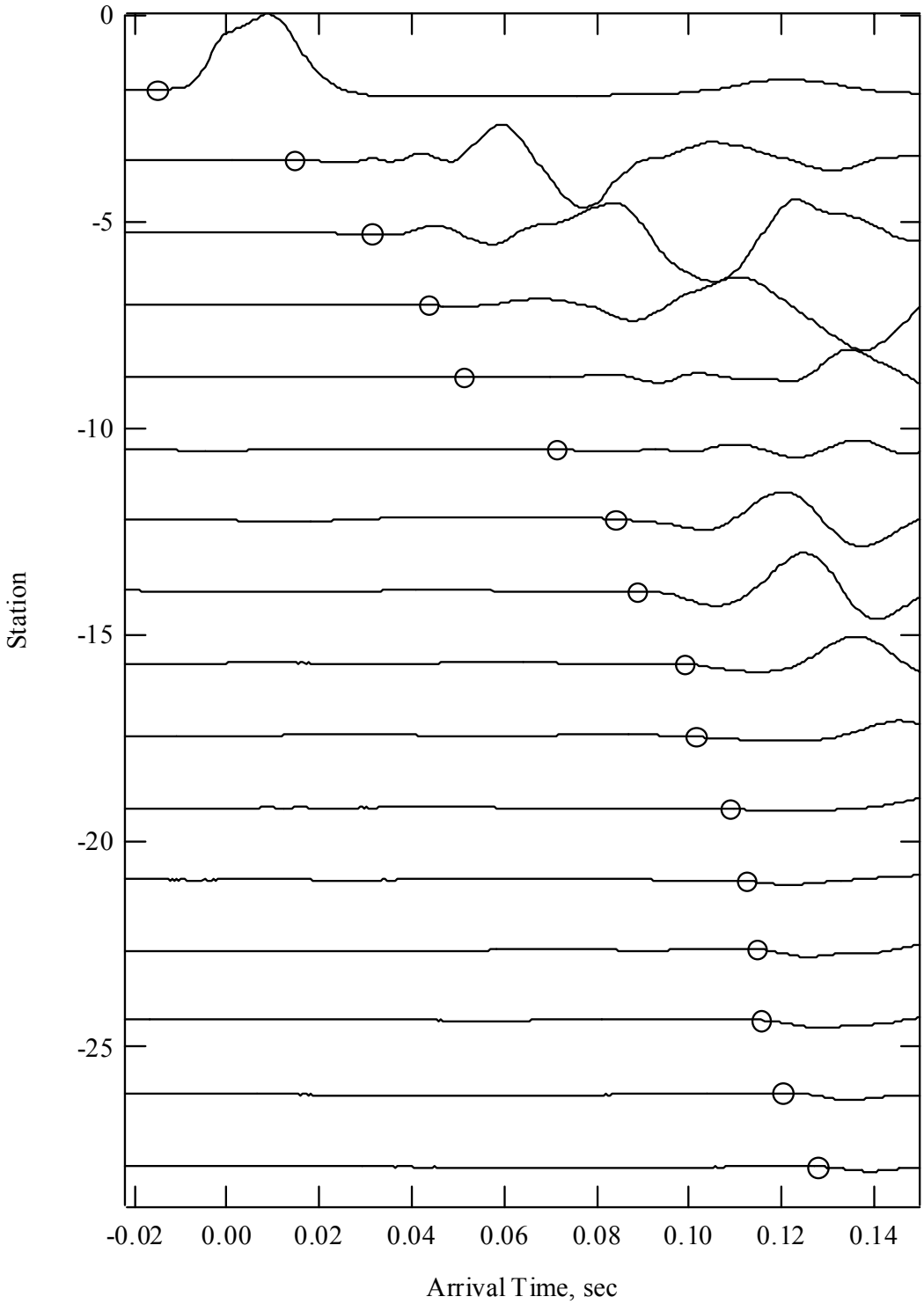


Figure 1 Arrival Times for Refraction Testing at North Field-Kennecott, Salt Lake County, Site 310, Earthquake Site Response Unit Q04 (Ashland, 2001)

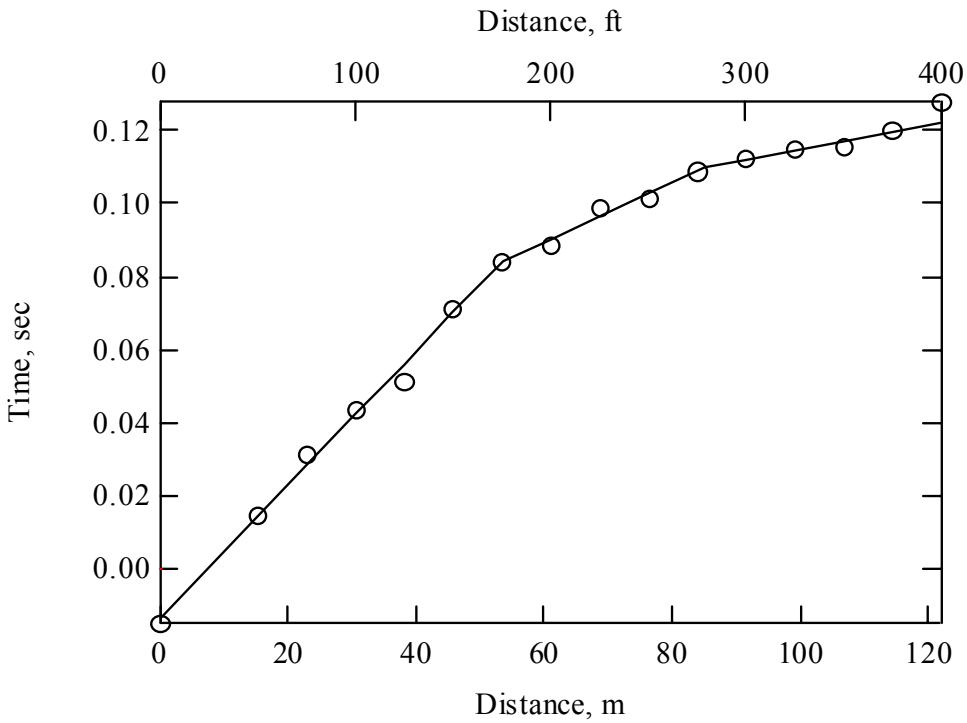


Figure 2 Time-Distance Curve for Refraction Testing at North Field-Kennecott, Salt Lake County, Site 310, Earthquake Site Response Unit Q04 (Ashland, 2001)

Tabulated Refraction Profile from North Field-Kennecott, Salt Lake County, Site 310, Earthquake Site Response Unit Q04 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	16.49	547.02	292.39
2	37.27[a]	1219.24	
3		3120.22	1667.83

a. Depth to fully saturated zone

Q05

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Site 303, Stone Mountain Lane,

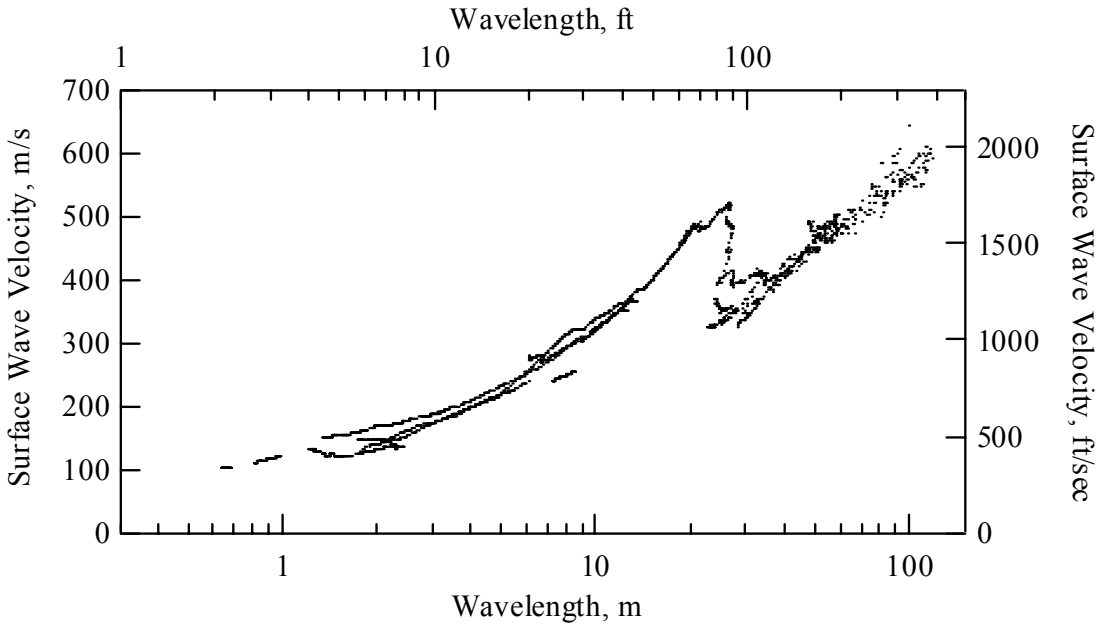


Fig 1 Experimental Dispersion Curve measured at Stone Mountain Lane, Sandy, Site 303, Earthquake Site Response Unit Q05 (Ashland, 2001)

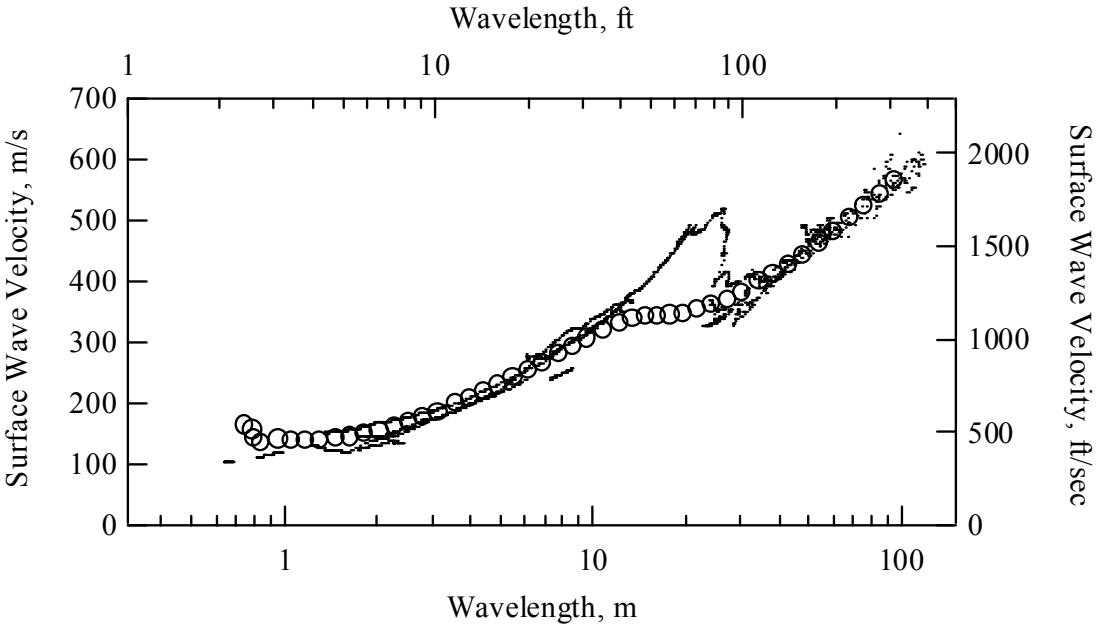


Fig 2 Comparison between Experimental & Theoretical Dispersion Curves from Stone Mountain Lane, Sandy, Site 303, Earthquake Site Response Unit Q05 (Ashland, 2001)

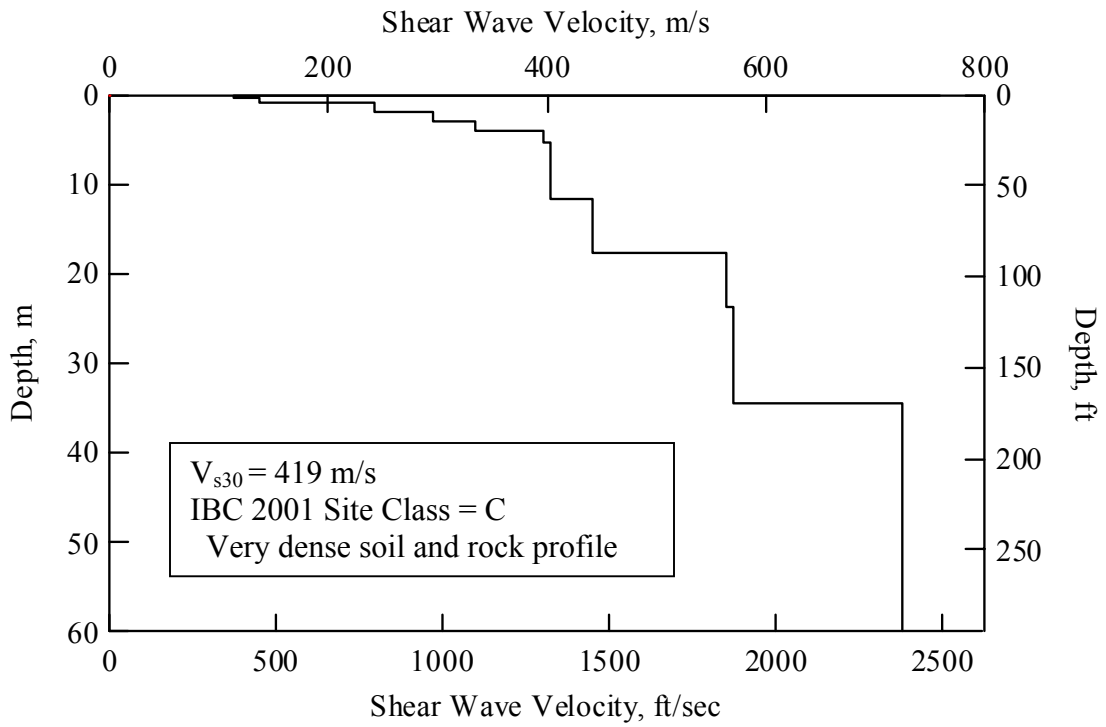


Fig 3 Shear Wave Velocity Profile Determined from SASW Testing at Stone Mountain Lane, Sandy, Site 303, Earthquake Site Response Unit Q05 (Ashland, 2001)

Table 1 Tabulated Shear Wave Velocity Profile from Stone Mountain Lane, Sandy, Site 303, Earthquake Site Response Unit Q05 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.06	760	1421.8	1.89
0.06	0.24	114.3	213.8	1.89
0.3	0.61	137.2	256.6	1.89
0.91	0.91	243.8	456.2	1.92
1.82	1.22	297.2	556	1.92
3.04	0.91	335.3	627.3	2
3.95	1.52	396.2	741.3	2
5.47	6.10	403.9	755.6	2
11.57	6.10	442	826.8	2
17.67	6.10	563.9	1054.9	2
23.77	10.67	571.5	1069.2	2
34.44	30.18[a]	724[b]	1354.5	2.08

a. Half-space in model
b. Refraction velocity

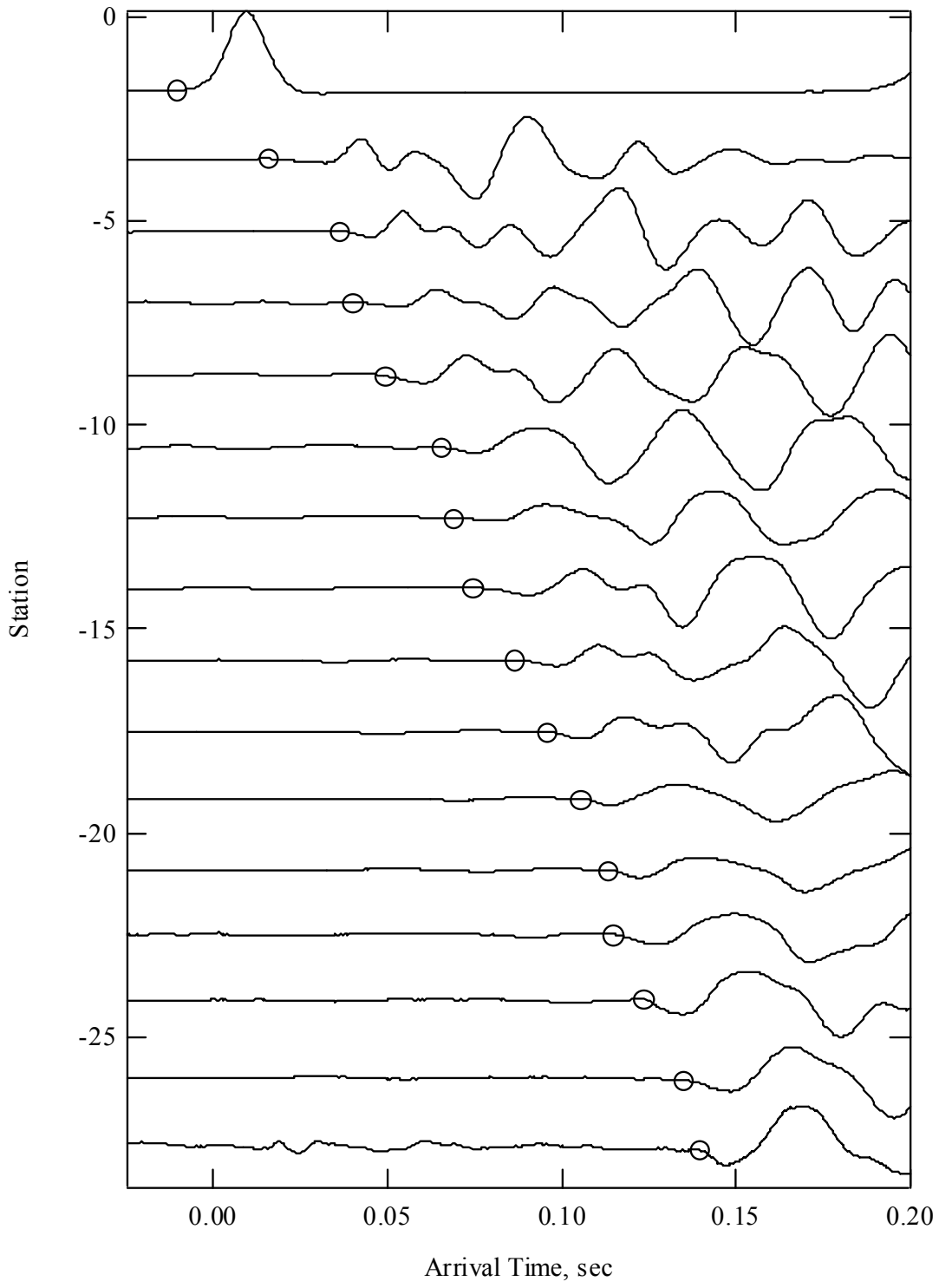


Fig 4 Arrival Times for Forward Refraction Testing at Stone Mountain Lane, Sandy, Site 303, Earthquake Site Response Unit Q05 (Ashland, 2001)

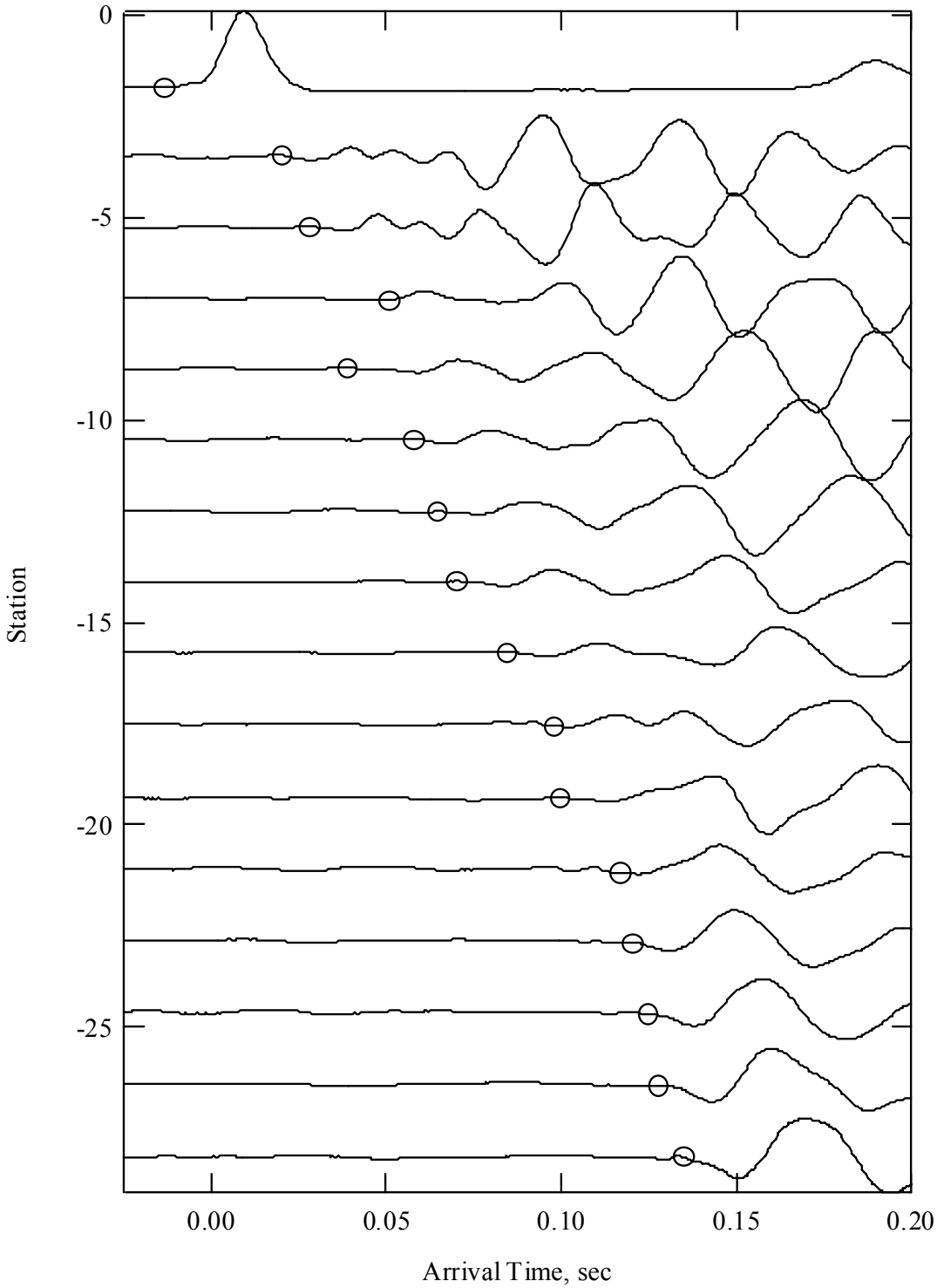


Fig 5 Arrival Times for Reverse Refraction Testing at Stone Mountain Lane, Sandy, Site 303, Earthquake Site Response Unit Q05 (Ashland, 2001)

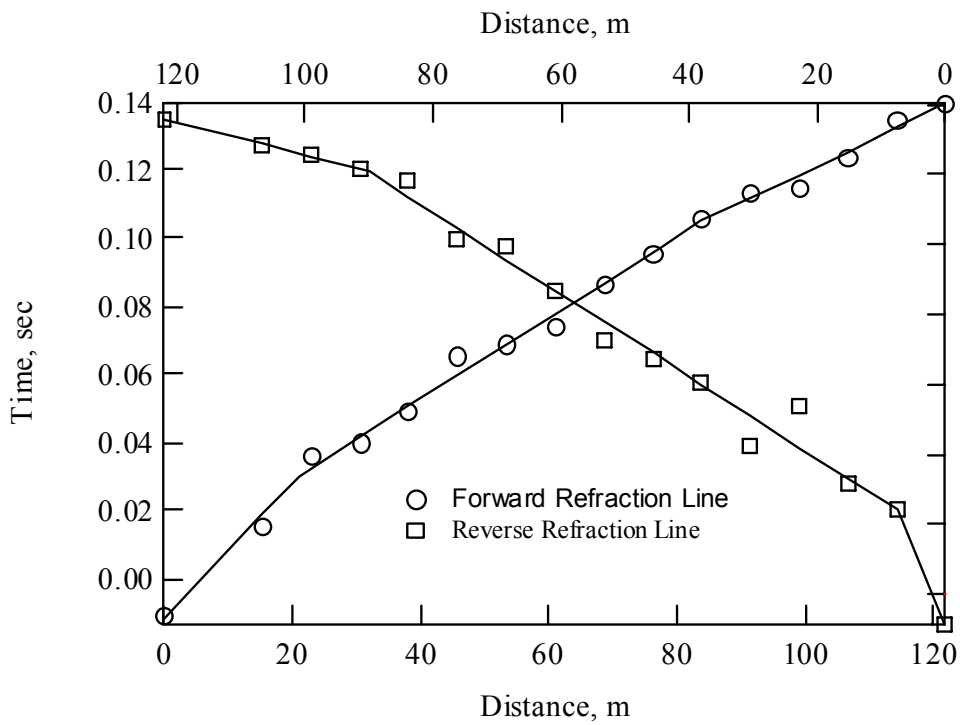


Fig 6 Time-Distance Curve for Refraction Testing at Stone Mountain Lane, Sandy, Site 303, Earthquake Site Response Unit Q05 (Ashland, 2001)

Table 2 Tabulated Forward Refraction Profile from Stone Mountain Lane, Sandy, Site 303, Earthquake Site Response Unit Q05 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	5.34	498.80	266.62
2	9.41	844.10	451.19
3		1047.33	559.82

Table 3 Tabulated Reverse Refraction Profile from Stone Mountain Lane, Sandy, Site 303, Earthquake Site Response Unit Q05 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming ν = 0.3 (m/s)
1	2.15	226.17	120.89
2	26.63	825.56	441.28
3		2116.31	1131.22

Inclined bed calculations:

Up = Reverse Refraction Line
Down = Forward Refraction Line

gamma = 14.81 degrees

V1average = (451.19 + 441.28)/2 = 446.24 m/s
V2= 724.1 m/s

$$\gamma = \tfrac{1}{2}[\sin^{-1}(\frac{V_1}{V_{2D}}) - \sin^{-1}(\frac{V_1}{V_{2U}})]$$

$$V_2 = \frac{2V_{2D}V_{2U}}{V_{2D} + V_{2U}}\cos\gamma$$

Site: 304, Gun Club West

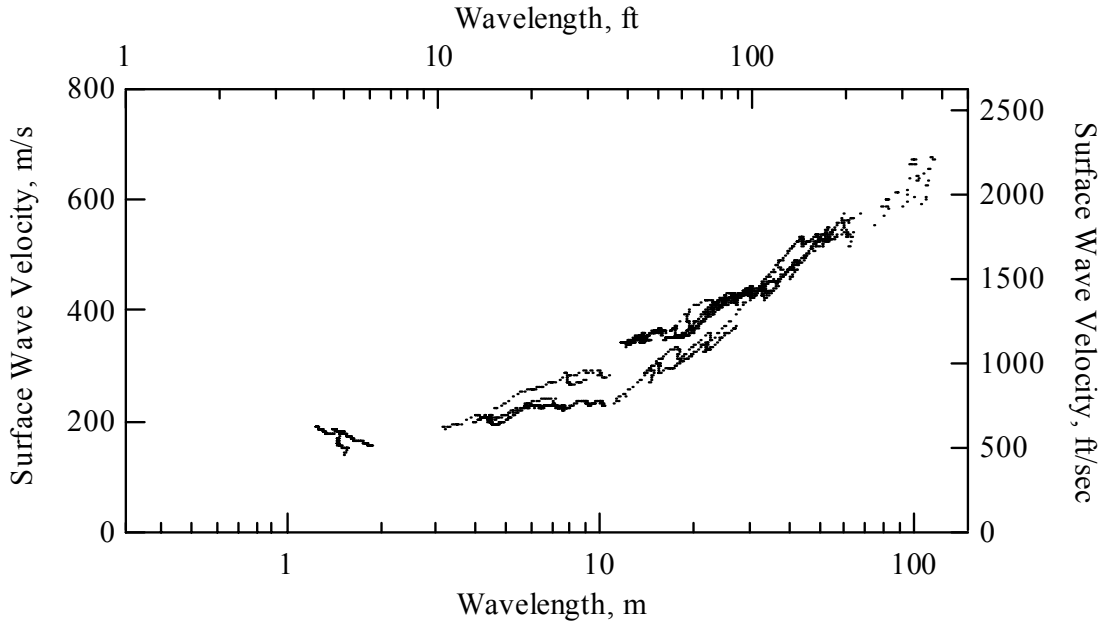


Fig 7 Experimental Dispersion Curve measured at Gun Club West, Cottonwood Heights, Site 304, Earthquake Site Response Unit Q05 (Ashland, 2001)

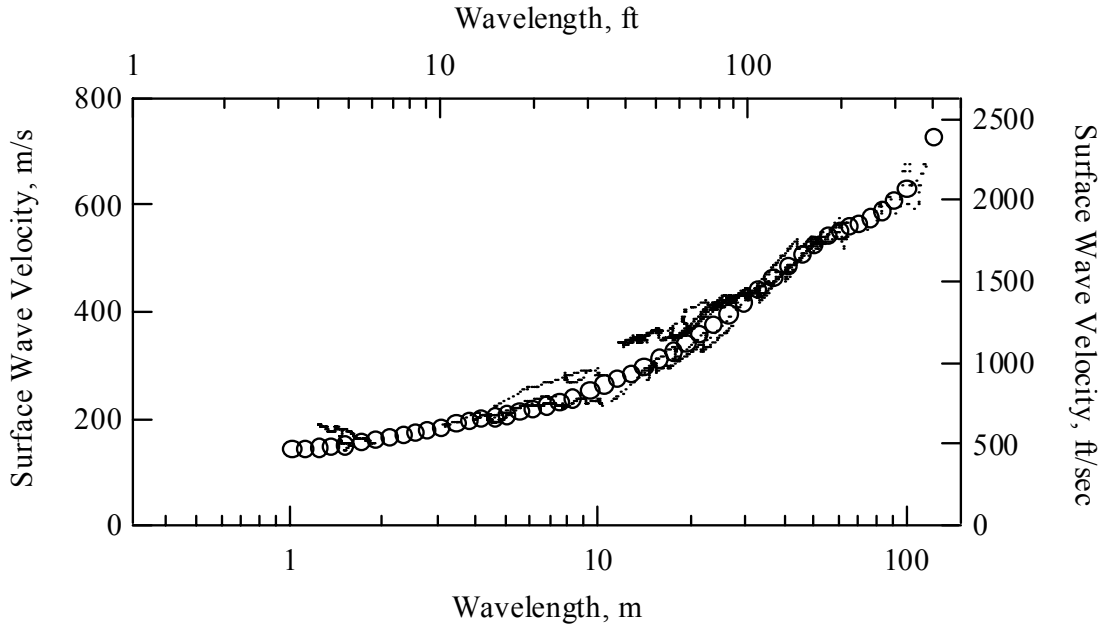


Fig 8 Comparison between Experimental & Theoretical Dispersion Curves from Gun Club West, Cottonwood Heights, Site 304, Earthquake Site Response Unit Q05 (Ashland, 2001)

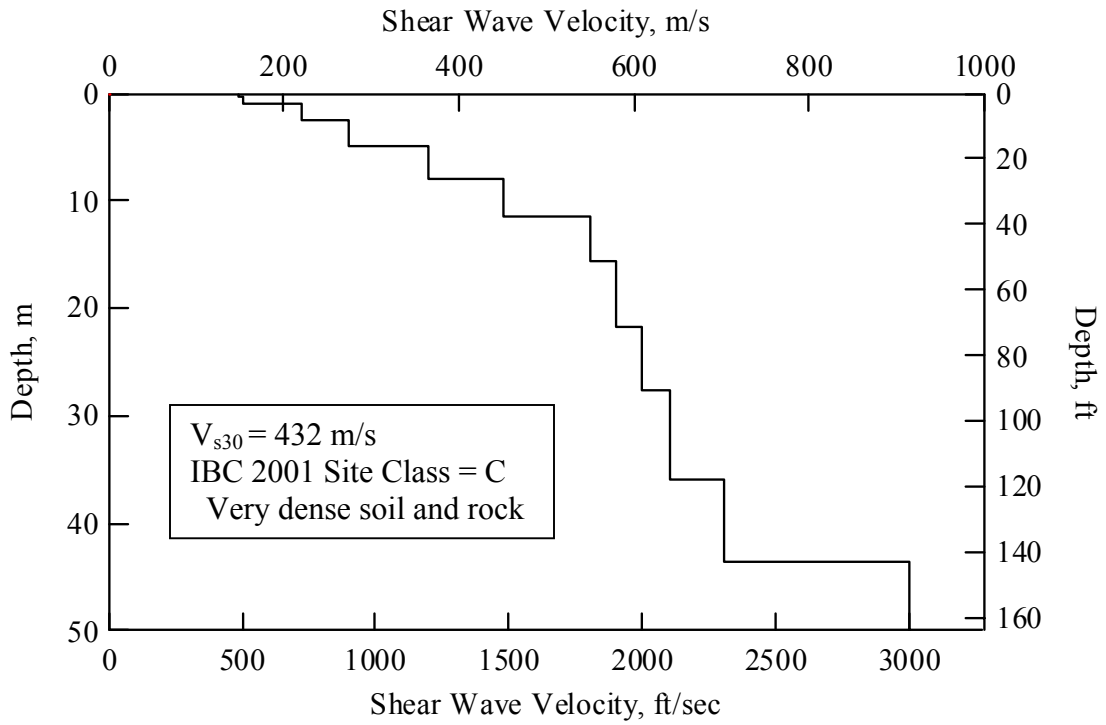


Fig 9 Shear Wave Velocity Profile Determined from SASW Testing at Gun Club West, Cottonwood Heights, Site 304, Earthquake Site Response Unit Q05 (Ashland, 2001)

Table 4 Tabulated Shear Wave Velocity Profile from Gun Club West, Cottonwood Heights, Site 304, Earthquake Site Response Unit Q05 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.30	147.8	276.6	1.89
0.3	0.58	152.4	285.1	1.92
0.88	1.52	221	413.4	1.92
2.4	2.44	274.3	513.2	1.92
4.84	3.05	365.8	684.3	2
7.89	3.66	449.6	841.1	2
11.55	3.96	548.6	1026.4	2
15.51	6.10	579.1	1083.4	2
21.61	6.10	609.6	1140.5	2.08
27.71	8.23	640.1	1197.5	2.08
35.94	7.62	701	1311.5	2.08
43.56	30.18[a]	914.4	1710.7	2.08

a. Half-space in model

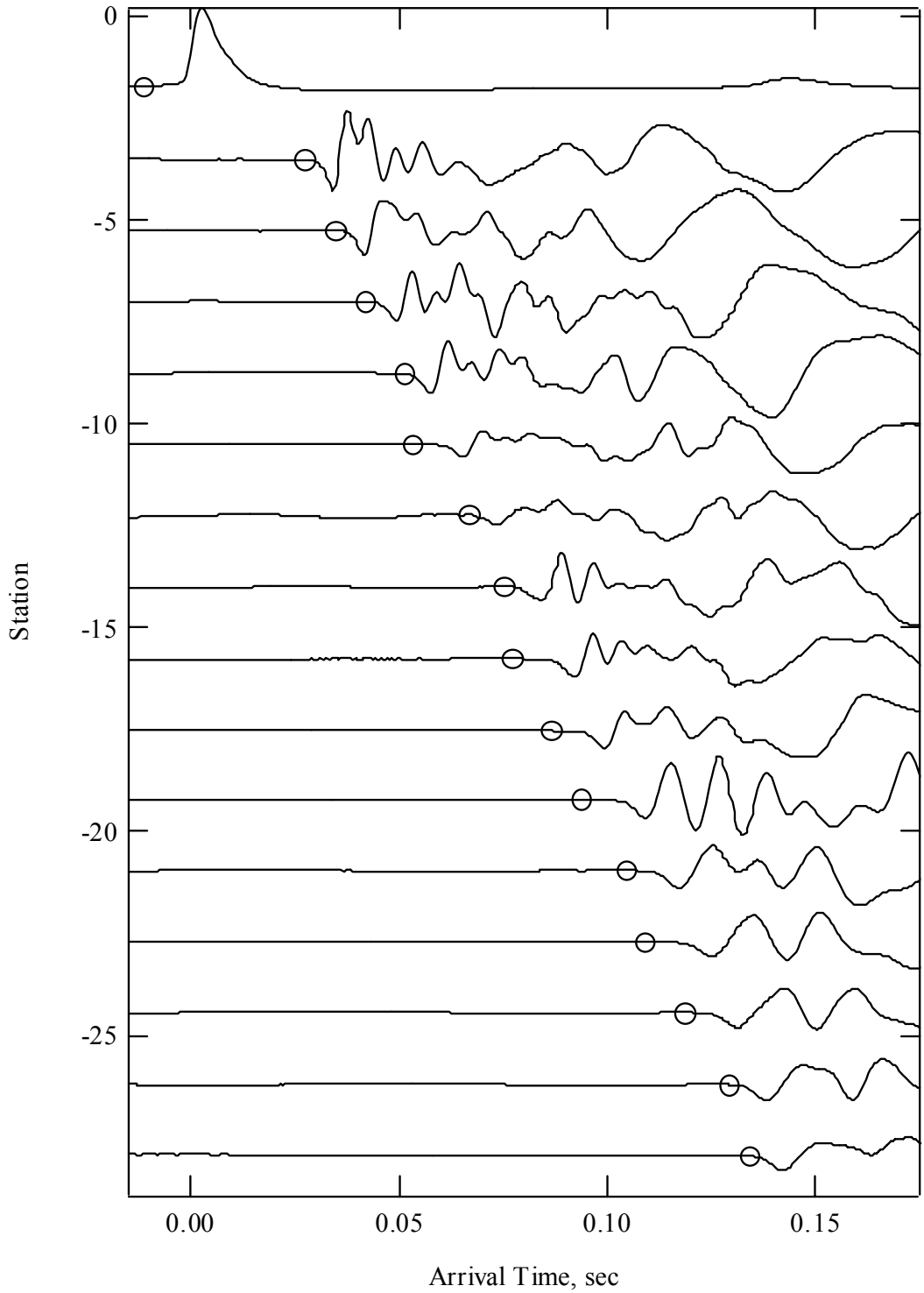


Fig 10 Arrival Times for Reverse Refraction Testing at Gun Club West, Cottonwood Heights, Site 304, Earthquake Site Response Unit Q05 (Ashland, 2001)

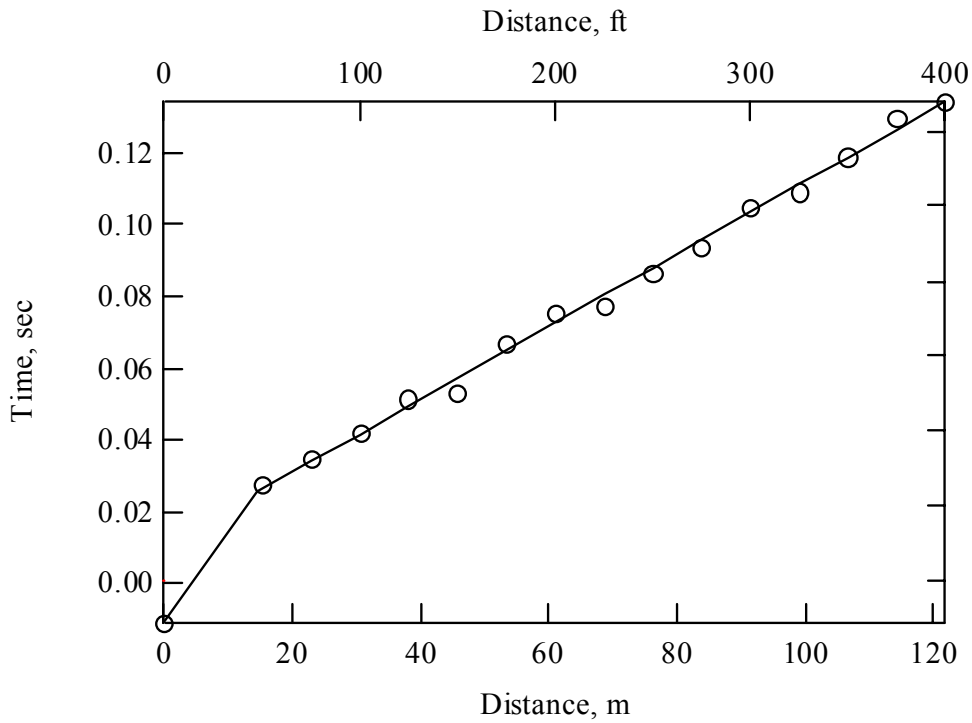


Fig 11 Time-Distance Curve for Refraction Testing at Gun Club West, Cottonwood Heights, Site 304, Earthquake Site Response Unit Q05 (Ashland, 2001)

Tabulated Refraction Profile from Gun Club West, Cottonwood Heights, Site 304, Earthquake Site Response Unit Q05 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	4.76	395.09	211.18
2		989.12	528.71

Site: 305, Gun Club East

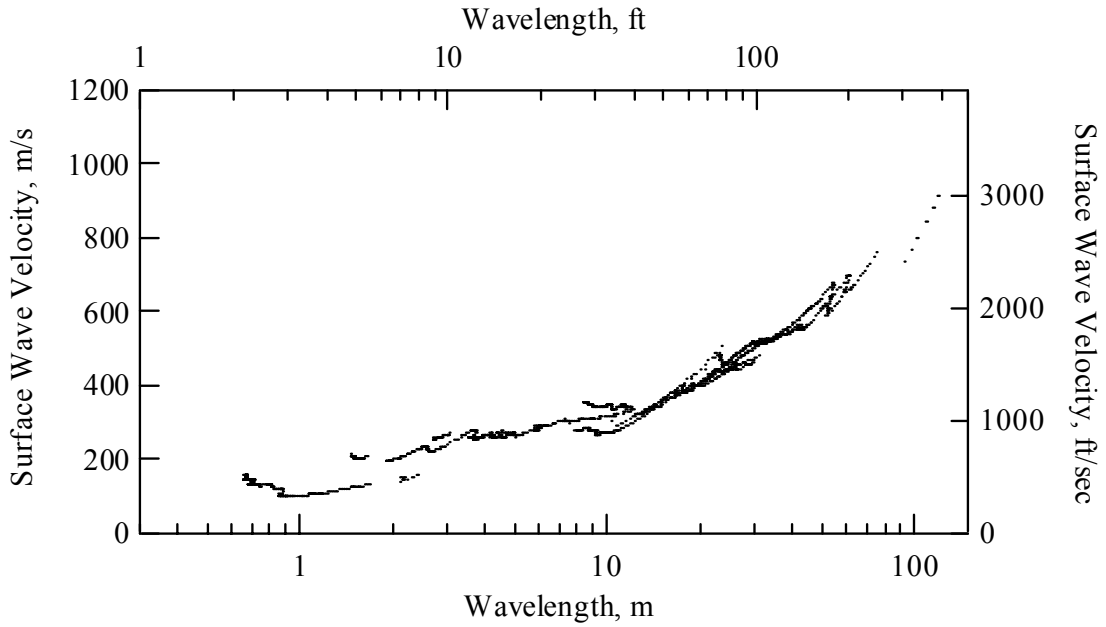


Fig 12 Experimental Dispersion Curve measured at Gun Club East, Cottonwood Heights, Site 305, Earthquake Site Response Unit Q05 (Ashland, 2001)

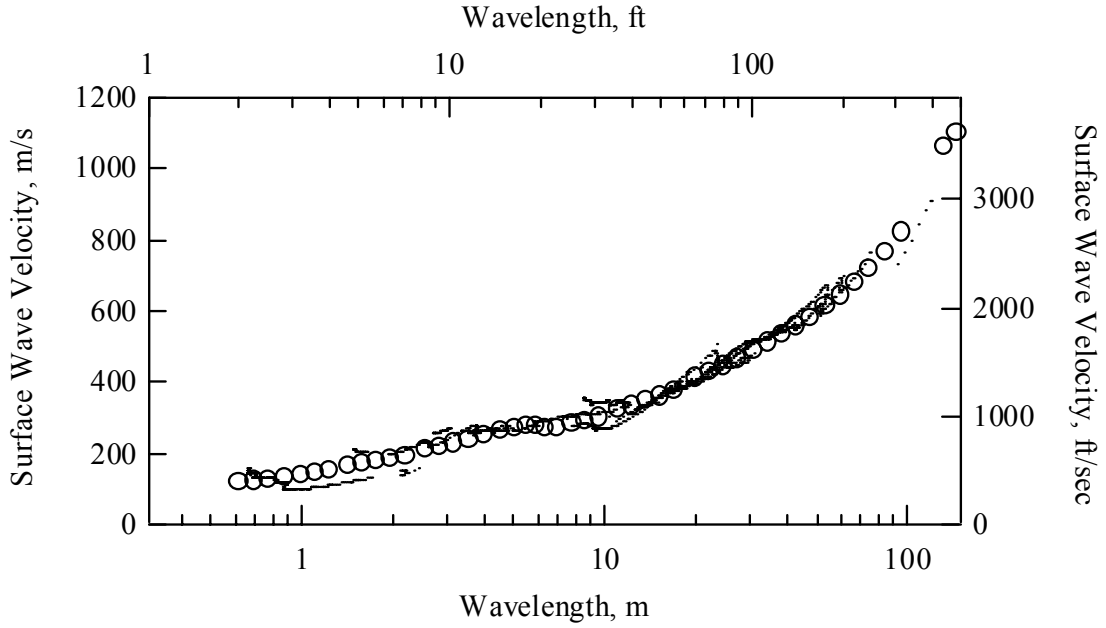


Fig 13 Comparison between Experimental & Theoretical Dispersion Curves from Gun Club East, Cottonwood Heights, Site 305, Earthquake Site Response Unit Q05 (Ashland, 2001)

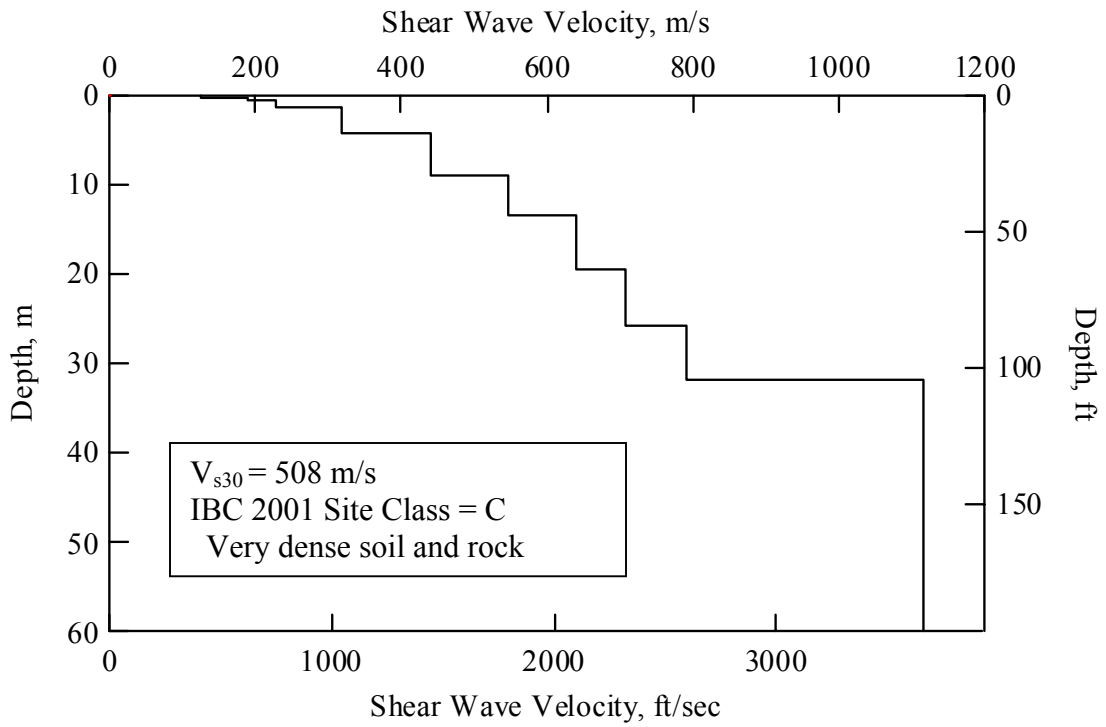


Fig 14 Shear Wave Velocity Profile Determined from SASW Testing at Gun Club East, Cottonwood Heights, Site 305, Earthquake Site Response Unit Q05 (Ashland, 2001)

Table 5 Tabulated Shear Wave Velocity Profile from Gun Club East, Cottonwood Heights, Site 305, Earthquake Site Response Unit Q05 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.38	125	233.90	1.89
0.38	0.23	190	355.50	1.92
0.61	0.7	228.6	427.70	1.92
1.31	3.05	320	598.80	2
4.36	4.57	442	826.80	2
8.93	4.57	548.6	1026.40	2
13.5	6.1	640.1	1197.50	2.08
19.6	6.1	708.7	1325.80	2.08
25.7	6.1	792.5	1482.60	2.08
31.8	30.18[a]	1115[b]	2086.00	2.08

a. Half-space in model
b. Refraction velocity

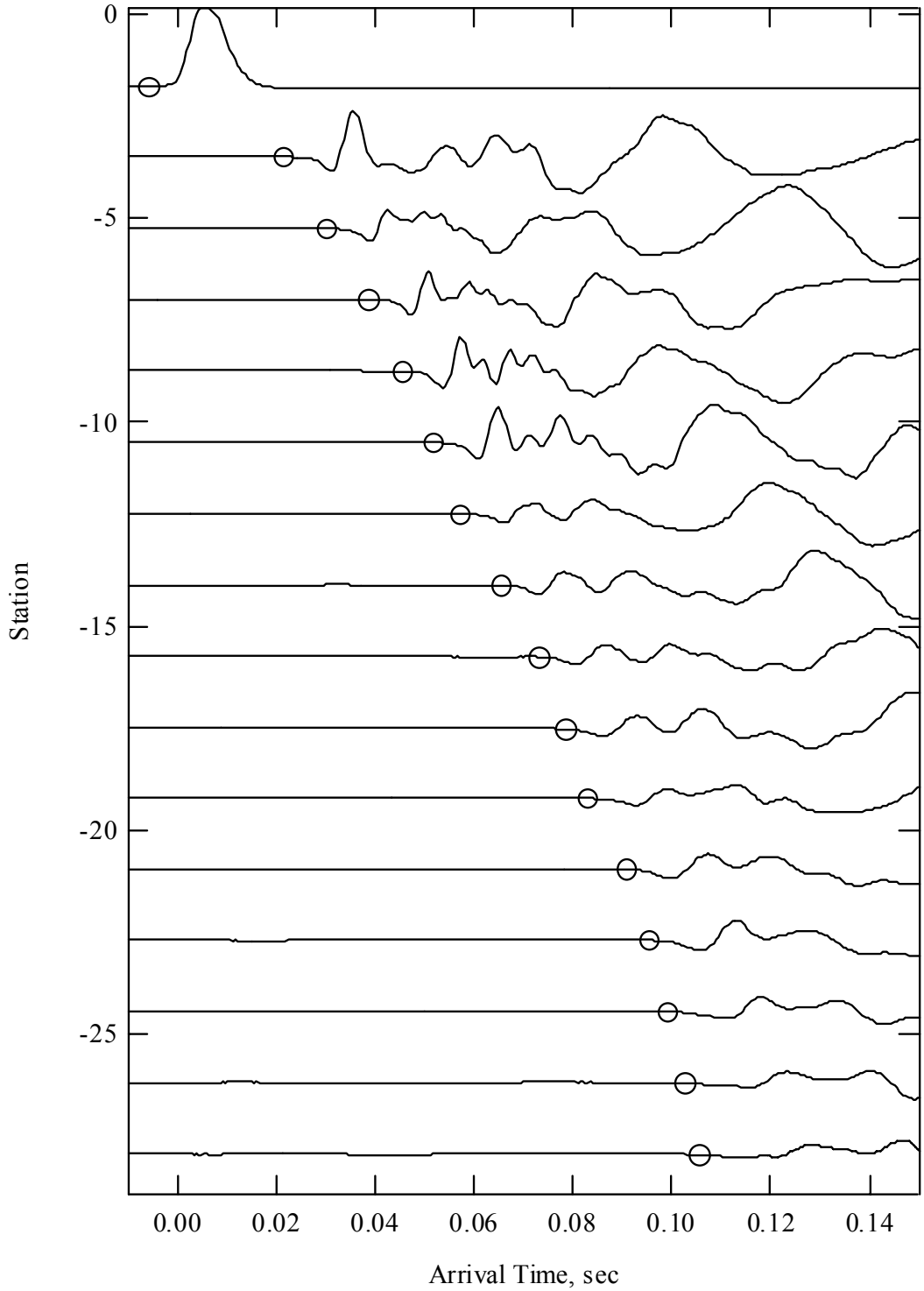


Fig 15 Arrival Times for Refraction Testing at Gun Club East, Cottonwood Heights, Site 305, Earthquake Site Response Unit Q05 (Ashland, 2001)

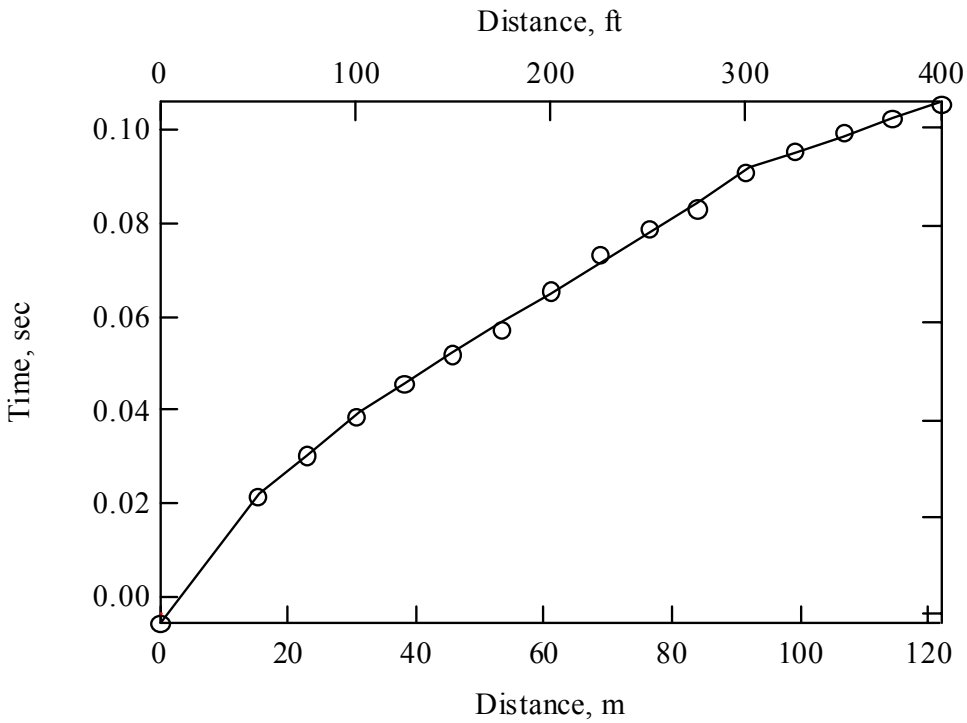


Fig 16 Time-Distance Curve for Refraction Testing at Gun Club East, Cottonwood Heights, Site 305, Earthquake Site Response Unit Q05 (Ashland, 2001)

Table 6 Tabulated Refraction Profile from Gun Club East, Cottonwood Heights, Site 305, Earthquake Site Response Unit Q05 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	3.69	557.35	297.92
2	5.70	891.74	476.66
3	31.39	1168.35	624.51
4		2080.95	1112.31

Site 307, Mock Lane

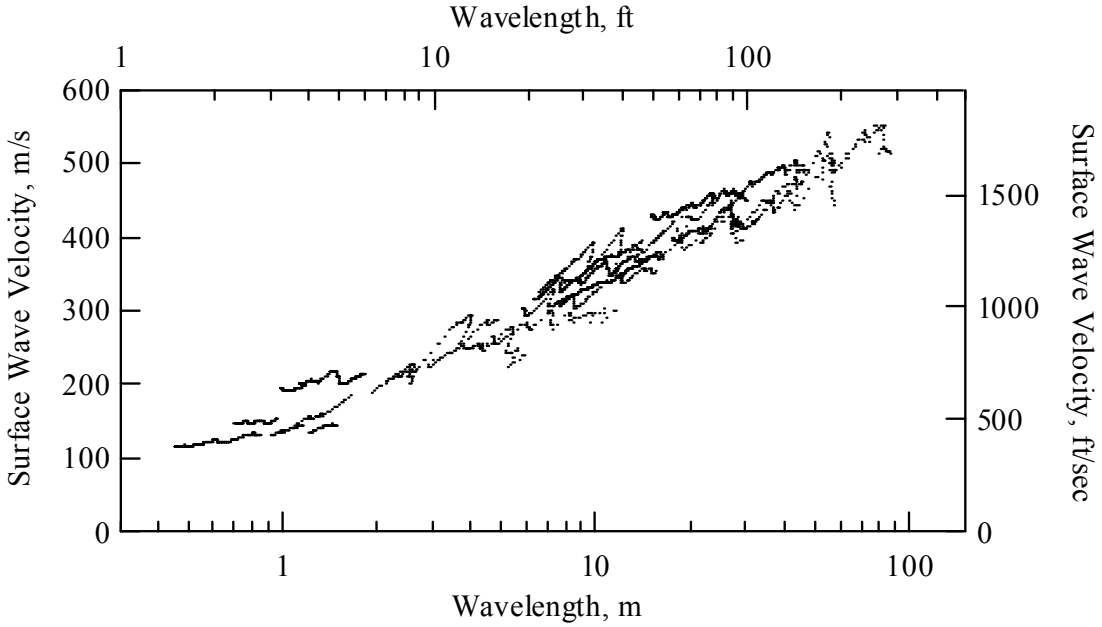


Fig 17 Experimental Dispersion Curve measured at Mock Lane, Salt Lake County, Site 307, Earthquake Site Response Unit Q05 (Ashland, 2001)

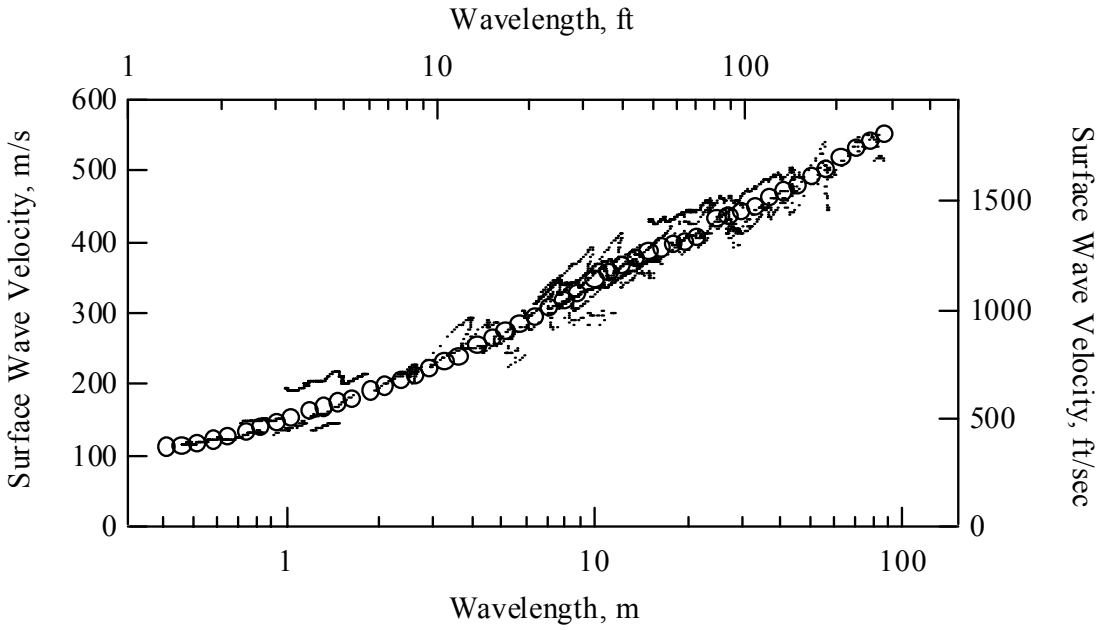


Fig 18 Comparison between Experimental & Theoretical Dispersion Curves from Mock Lane, Salt Lake County, Site 307, Earthquake Site Response Unit Q05 (Ashland, 2001)

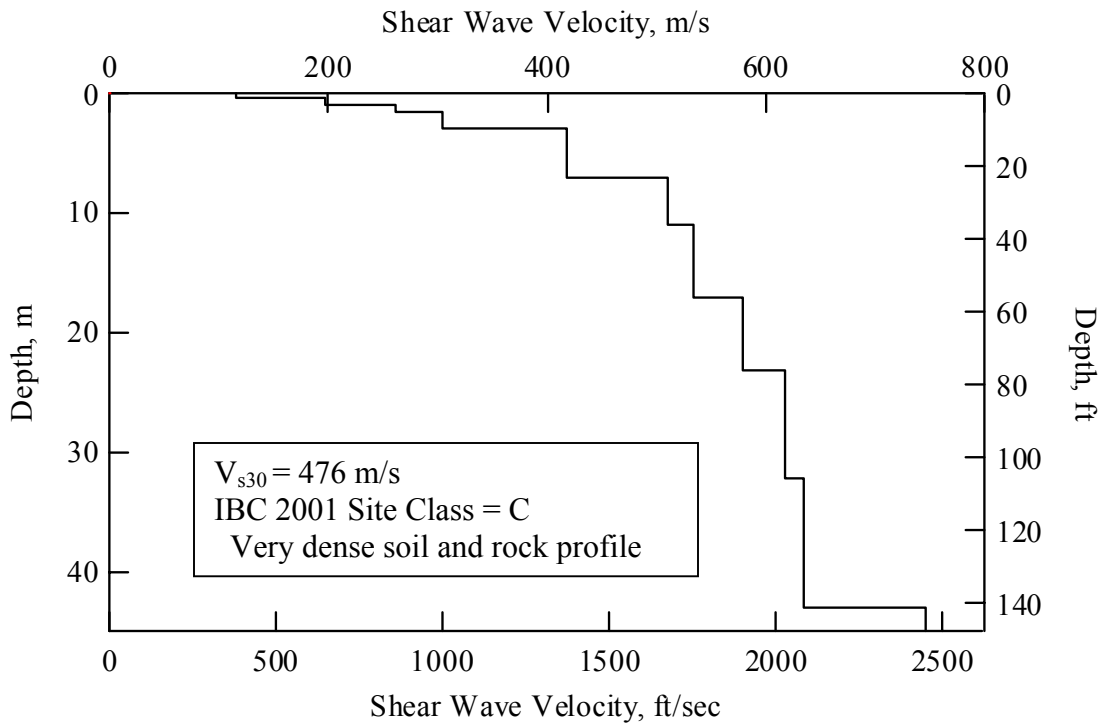
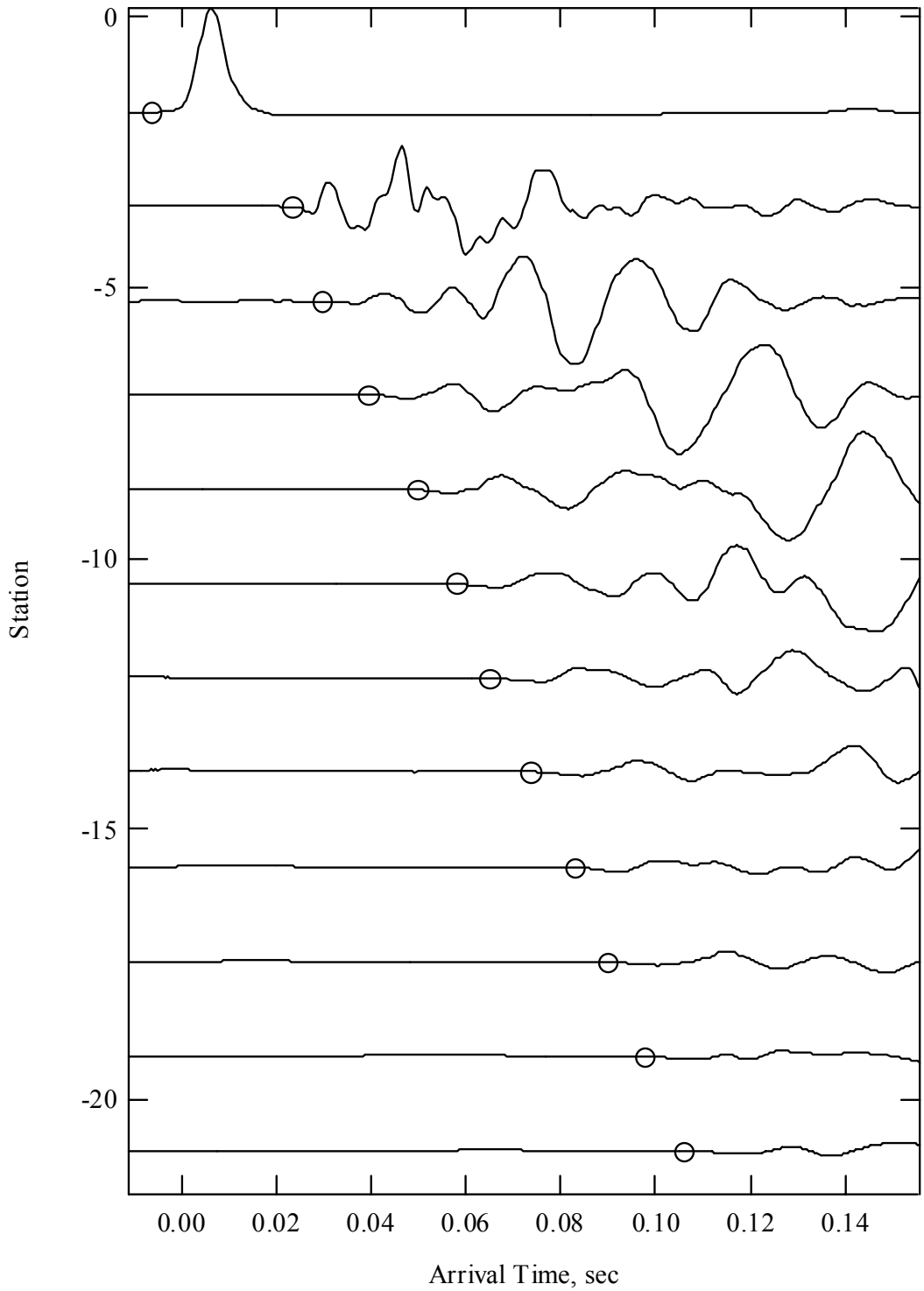


Fig 19 Shear Wave Velocity Profile Determined from SASW Testing at Mock Lane, Salt Lake County, Site 307, Earthquake Site Response Unit Q05 (Ashland, 2001)

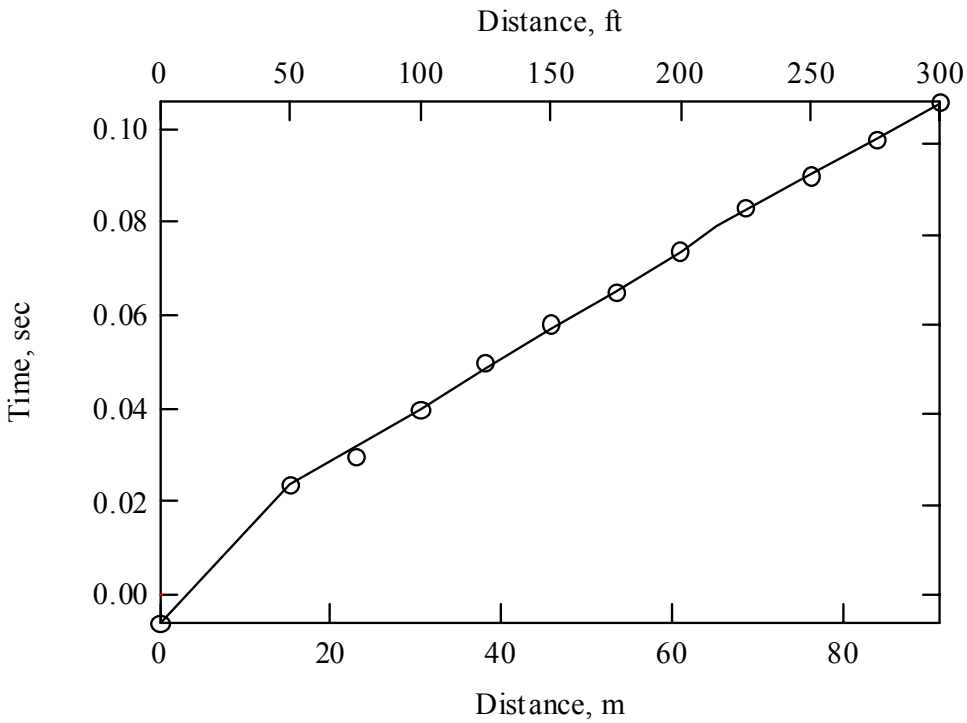
Table 7 Tabulated Shear Wave Velocity Profile from Mock Lane, Salt Lake County, Site 307, Earthquake Site Response Unit Q05 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	117.4	219.6	1.89
0.3	0.61	198.1	370.6	1.92
0.91	0.55	262.1	490.4	1.92
1.46	1.52	304.8	570.2	2
2.98	3.96	419.1	784.1	2
6.94	3.96	510.5	955.1	2
10.9	6.1	533.4	997.9	2
17	6.1	579.1	1083.4	2
23.1	9.14	617.2	1154.7	2.08
32.24	10.67	634	1186.1	2.08
42.91	30.18[a]	746.8	1397.1	2.08

a. Half-space in model



Arrival Times for Refraction Testing at Mock Lane, Salt Lake County, Site 307, Earthquake Site Response Unit Q05 (Ashland, 2001)



Time-Distance Curve for Refraction Testing at Mock Lane, Salt Lake County, Site 307, Earthquake Site Response Unit Q05 (Ashland, 2001)

Tabulated Refraction Profile from Mock Lane, Salt Lake County, Site 307, Earthquake Site Response Unit Q05 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	3.53	511.67	273.50
2	5.21	876.73	468.63
3		994.04	531.33

Site: 306, Granite Elementary

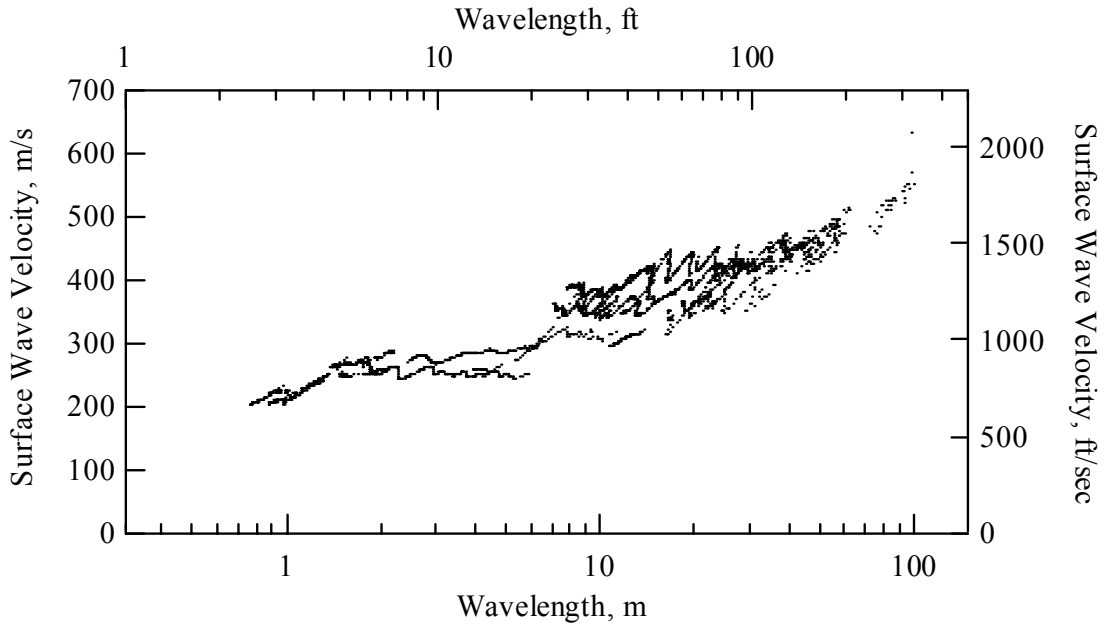


Fig 20 Experimental Dispersion Curve measured at Granite Elementary, Sandy, Site 306, Earthquake Site Response Unit Q05 (Ashland, 2001)

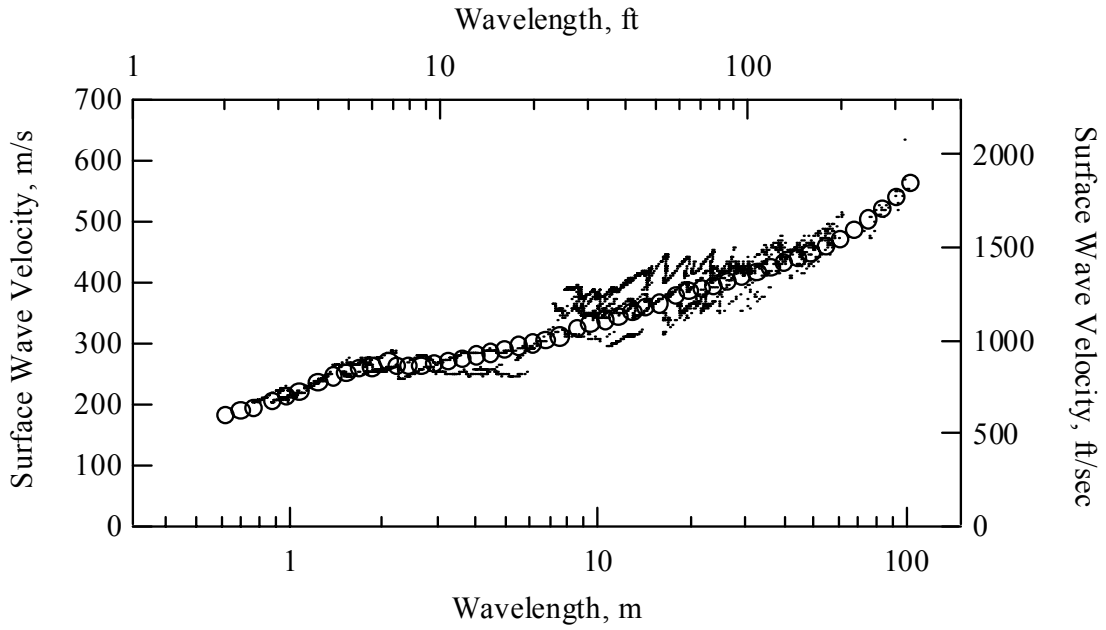


Fig 21 Comparison between Experimental & Theoretical Dispersion Curves from Granite Elementary, Sandy, Site 306, Earthquake Site Response Unit Q05 (Ashland, 2001)

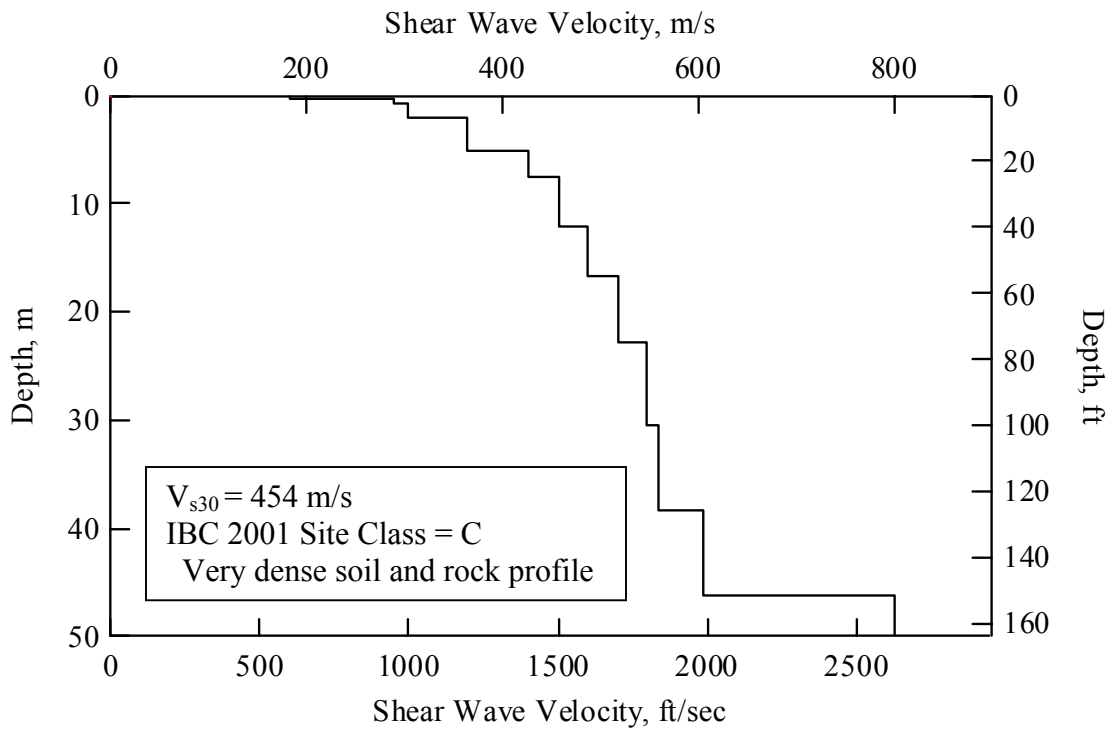
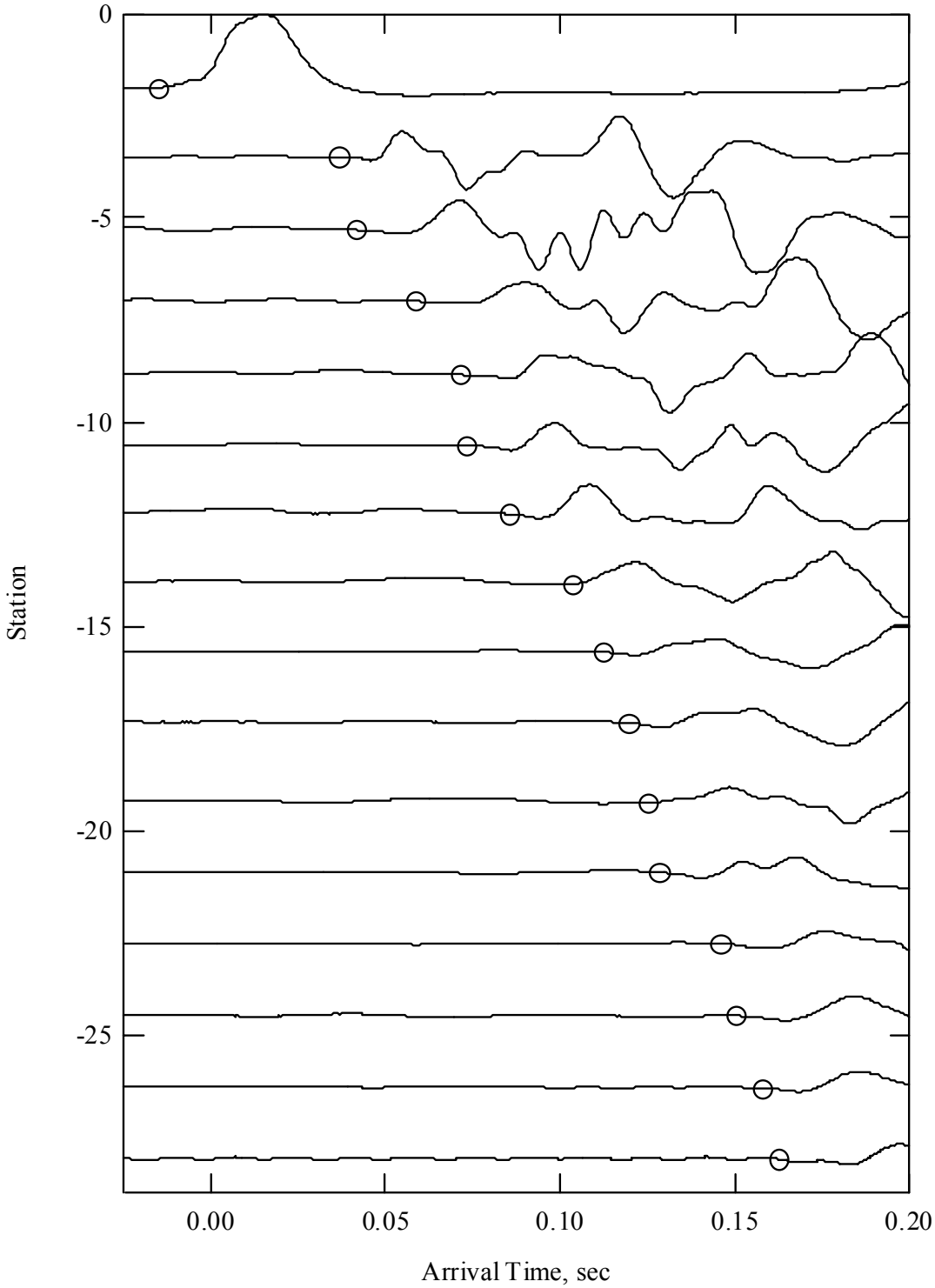


Fig 22 Shear Wave Velocity Profile Determined from SASW Testing at Granite Elementary, Sandy, Site 306, Earthquake Site Response Unit Q05 (Ashland, 2001)

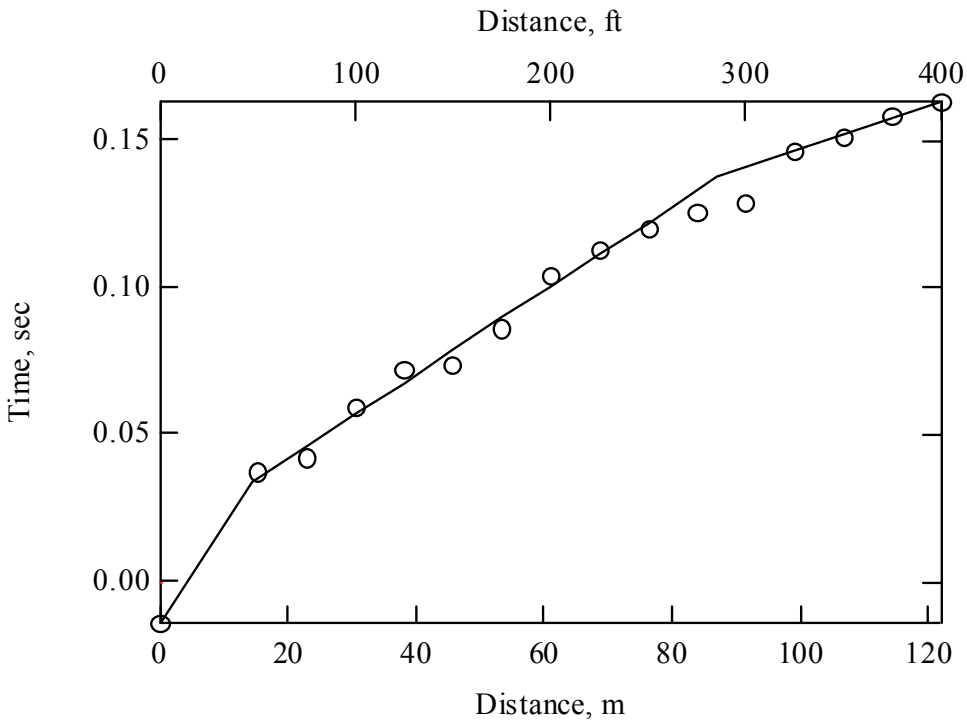
Table 8 Tabulated Shear Wave Velocity Profile from Granite Elementary, Sandy, Site 306, Earthquake Site Response Unit Q05 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.35	182.9	342.10	1.92
0.35	0.3	289.6	541.70	1.92
0.65	1.48	304.8	570.20	2
2.13	3.05	365.8	684.30	2
5.18	2.44	426.7	798.30	2
7.62	4.57	457.2	855.30	2
12.19	4.57	487.7	912.40	2
16.76	6.1	518.2	969.40	2
22.86[a]	7.62	548.6	1524.00	2
30.48	7.8	560	1524.00	2
38.28	8	605	1524.00	2.08
46.28	30.18[b]	800	1524.00	2.08

a. Depth to fully saturated zone from Refraction testing
b. Half-space in model



Arrival Times for Refraction Testing at Granite Elementary, Sandy, Site 306, Earthquake Site Response Unit Q05 (Ashland, 2001)



Time-Distance Curve for Refraction Testing at Granite Elementary, Sandy, Site 306, Earthquake Site Response Unit Q05 (Ashland, 2001)

Table 9 Tabulated Refraction Profile from Granite Elementary, Sandy, Site 306, Earthquake Site Response Unit Q05 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	4.59	294.45	157.39
2	21.37[a]	705.07	376.88
3		1333.65	

a. Depth to fully saturated zone

Site 28, Utah Youth Sports Complex, West Jordan

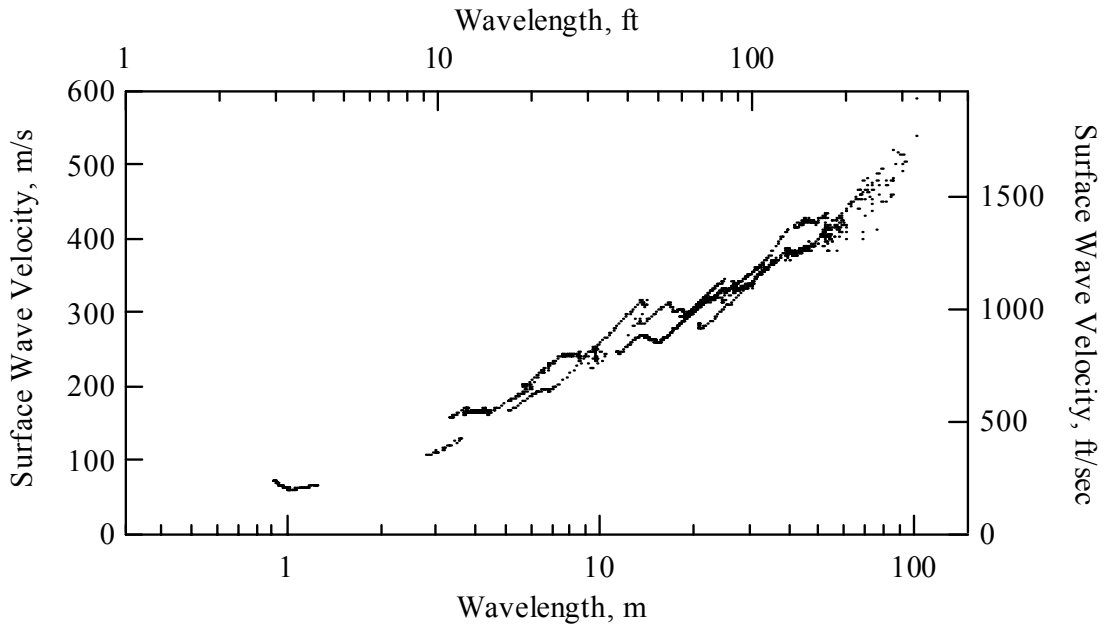


Fig 4 Experimental Dispersion Curve measured at Utah Youth Sports Complex, West Jordan, Site 28, Earthquake Site Response Unit Q02 (Ashland, 2001)

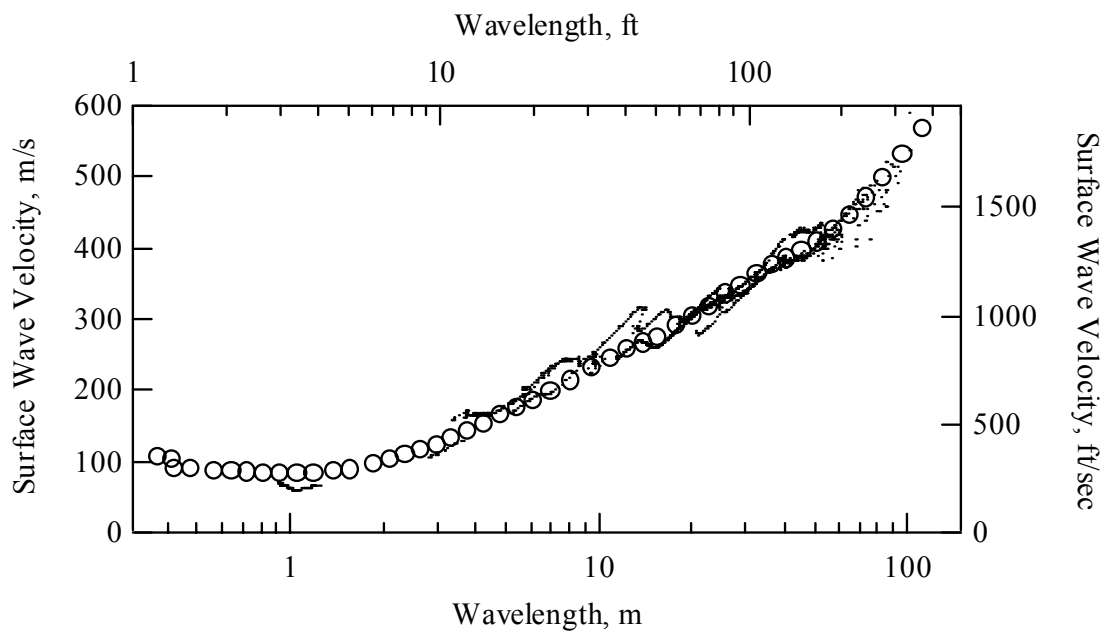


Fig 5 Comparison between Experimental & Theoretical Dispersion Curves from Utah Youth Sports Complex, West Jordan, Site 28, Earthquake Site Response Unit Q02 (Ashland, 2001)

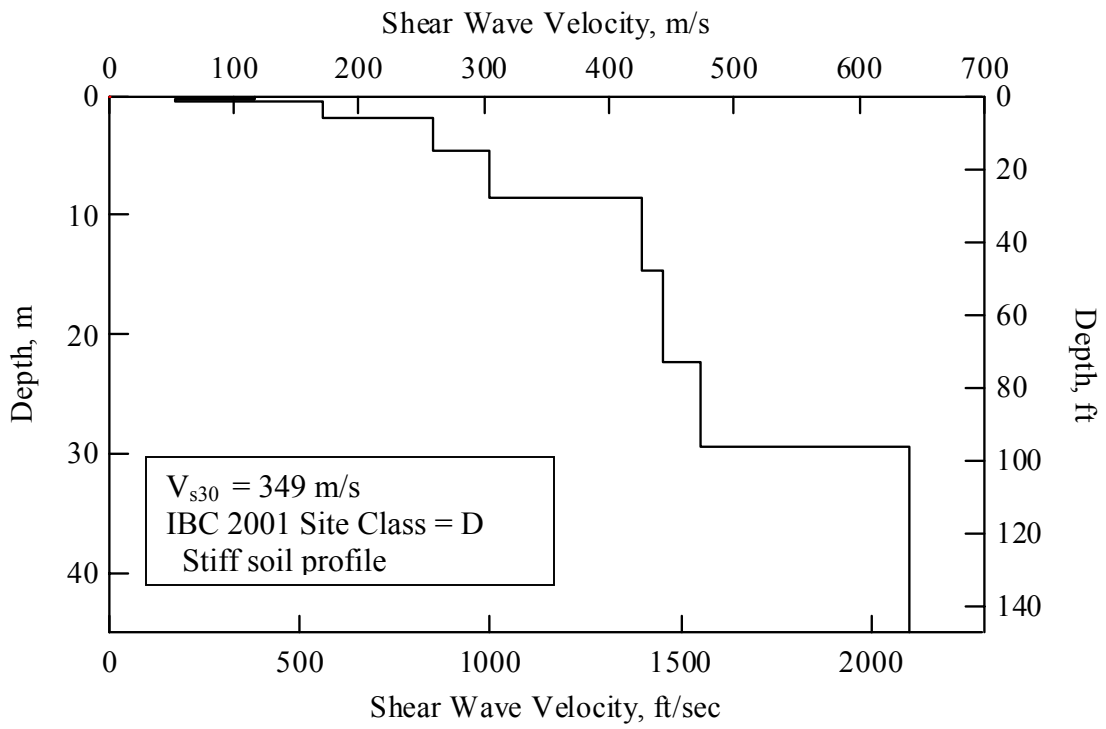


Fig 6 Shear Wave Velocity Profile Determined from SASW Testing at Utah Youth Sports Complex, West Jordan, Site 28, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 1 Tabulated Shear Wave Velocity Profile from Utah Youth Sports Complex, West Jordan, Site 28, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	117.4	219.50	1.89
0.3	0.24	53.3	99.80	1.89
0.54	1.37	170.7	319.30	1.92
1.91	2.74	259.1	484.70	1.92
4.65	3.96	304.8	570.20	2
8.61	6.1	426.7	798.30	2
14.71	7.62	442	826.90	2
22.33[a]	7.01	472.4	1524.00	2
29.34	30.18[b]	640.1	1524.00	2.08

a. Depth to fully saturated zone from Refraction testing
b. Half-space in model

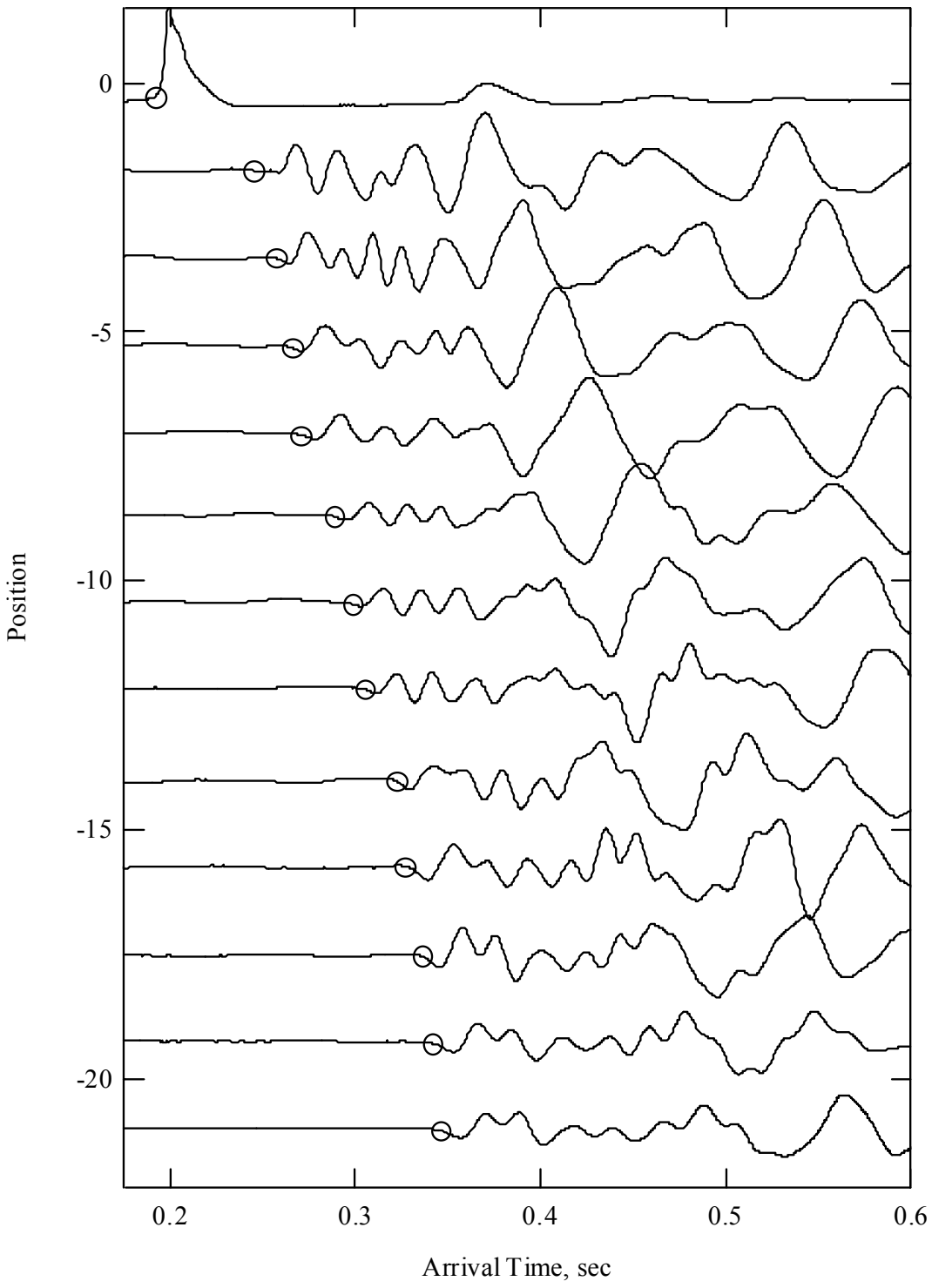


Fig 7 Arrival Times for Refraction Testing at Utah Youth Sports Complex, West Jordan, Site 28, Earthquake Site Response Unit Q02 (Ashland, 2001)

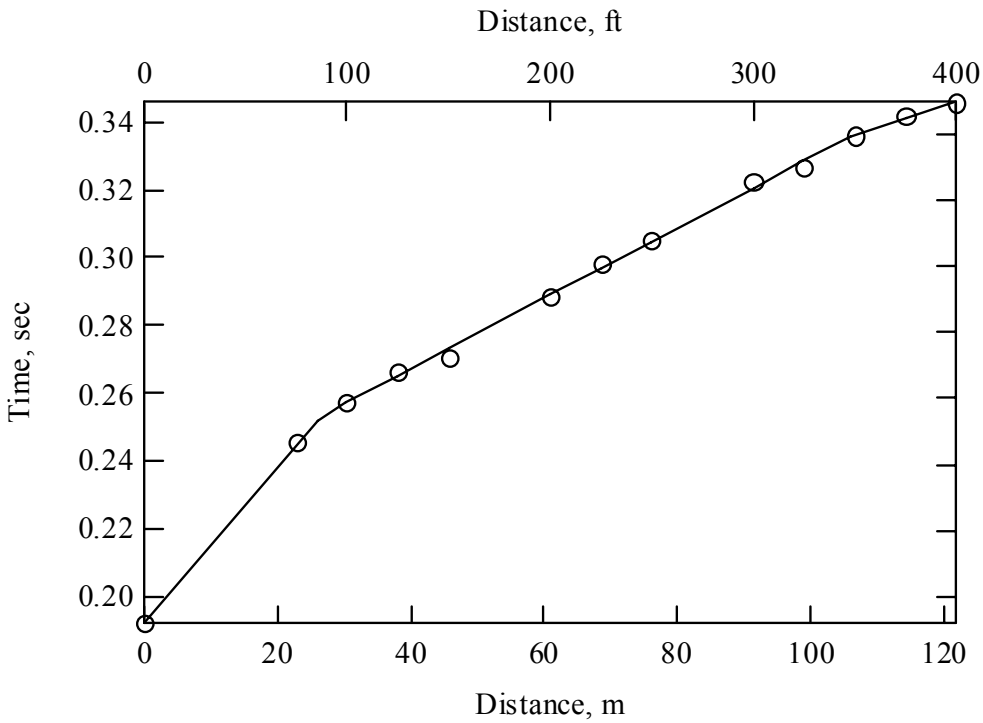


Fig 8 Time-Distance Curve for Refraction Testing at Utah Youth Sports Complex, West Jordan, Site 28, Earthquake Site Response Unit Q02 (Ashland, 2001)

Tabulated Refraction Profile from Utah Youth Sports Complex, West Jordan, Site 28, Earthquake Site Response Unit Q02 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	8.03	429.37	229.51
2	23.20[a]	959.34	512.79
3		1561	

a. Depth to fully saturated zone

Site 12, Riverton City Hall / Park

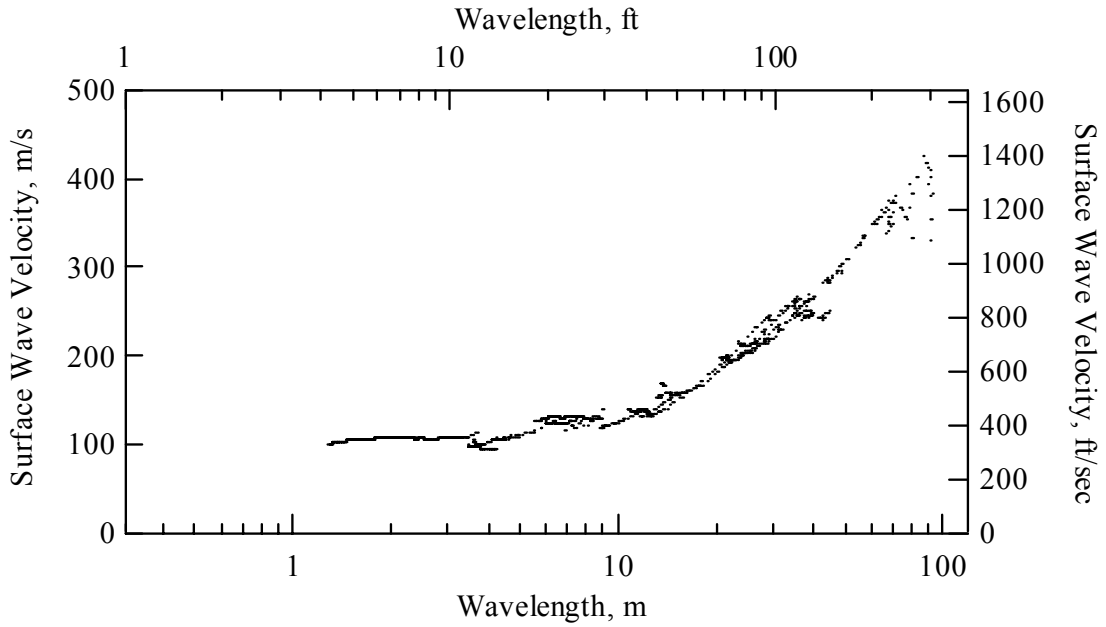


Fig 9 Experimental Dispersion Curve measured at Riverton City Hall/Park, Riverton, Site 12, Earthquake Site Response Unit Q02 (Ashland, 2001)

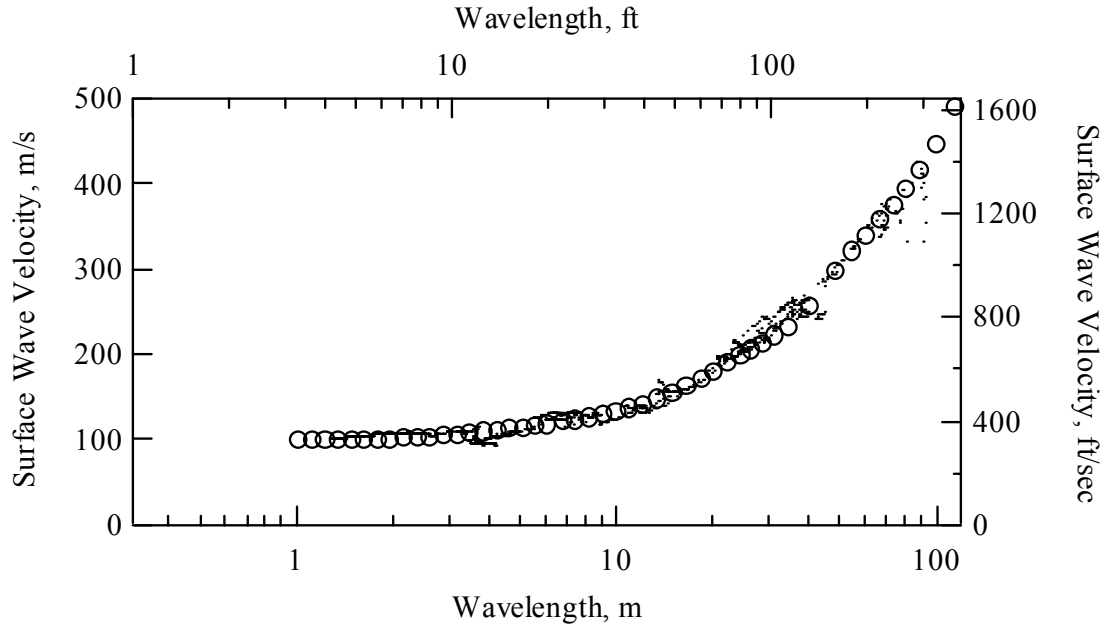


Fig 10 Comparison between Experimental & Theoretical Dispersion Curves from Riverton City Hall/Park, Riverton, Site 12, Earthquake Site Response Unit Q02 (Ashland, 2001)

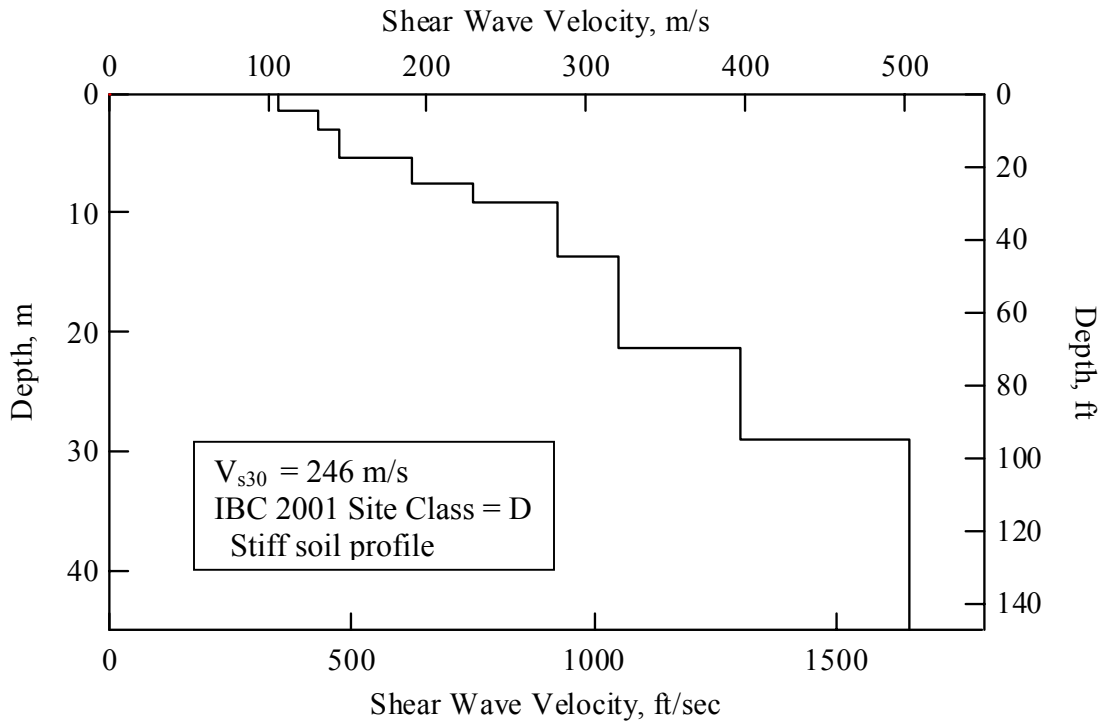


Fig 11 Shear Wave Velocity Profile Determined from SASW Testing at Riverton City Hall/Park, Riverton, Site 12, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 2 Tabulated Shear Wave Velocity Profile from Riverton City Hall/Park, Riverton, Site 12, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.38	106.7	199.6	1.89
0.38	1.14	106.7	199.6	1.89
1.52	1.52	131.1	245.2	1.92
3.04	2.44	144.8	270.9	1.89
5.48	2.13	190.5	356.4	1.92
7.61	1.52	228.6	427.7	1.92
9.13	4.57	281.9	527.5	1.92
13.7[a]	7.62	320	1524	2
21.32	7.62	396.2	1524	2
28.94	30.18[b]	502.9	1524	2

a. Assumed depth to fully saturated zone
b. Half-space in model

Site 123, Liberty Park

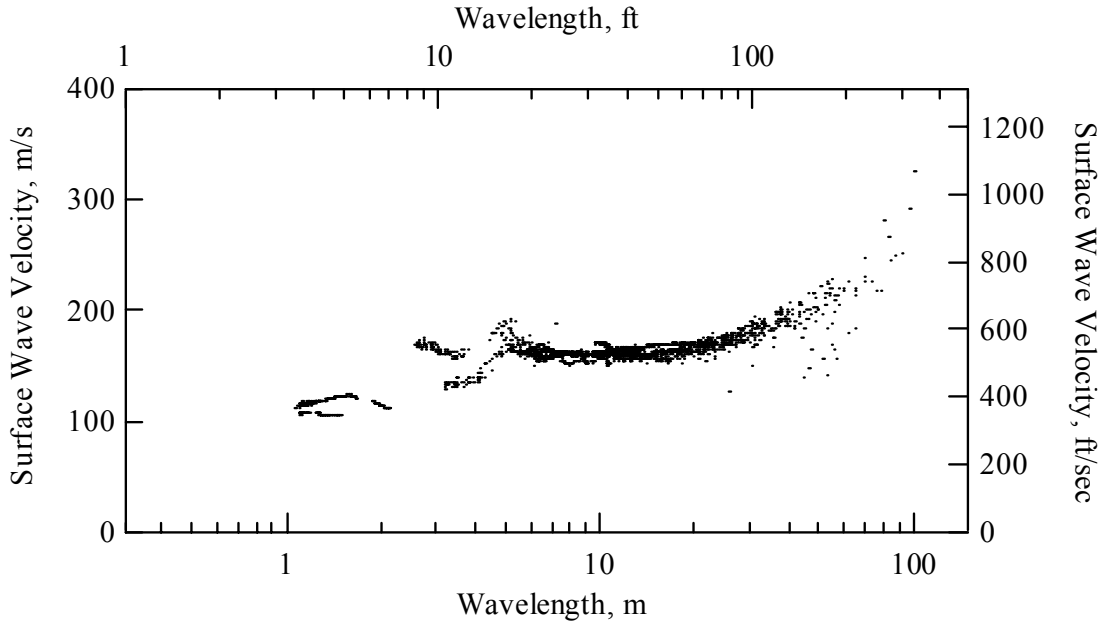


Fig 12 Experimental Dispersion Curve measured at Liberty Park, Ogden, Site 123, Earthquake Site Response Unit Q02 (Ashland, 2001)

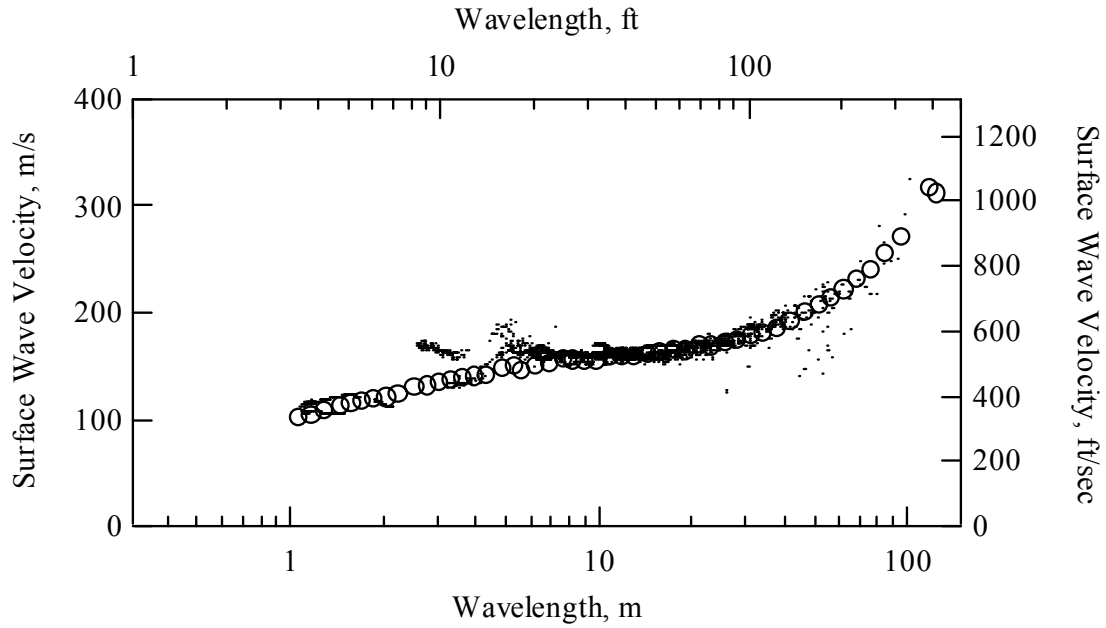


Fig 13 Comparison between Experimental & Theoretical Dispersion Curves from Liberty Park, Ogden, Site 123, Earthquake Site Response Unit Q02 (Ashland, 2001)

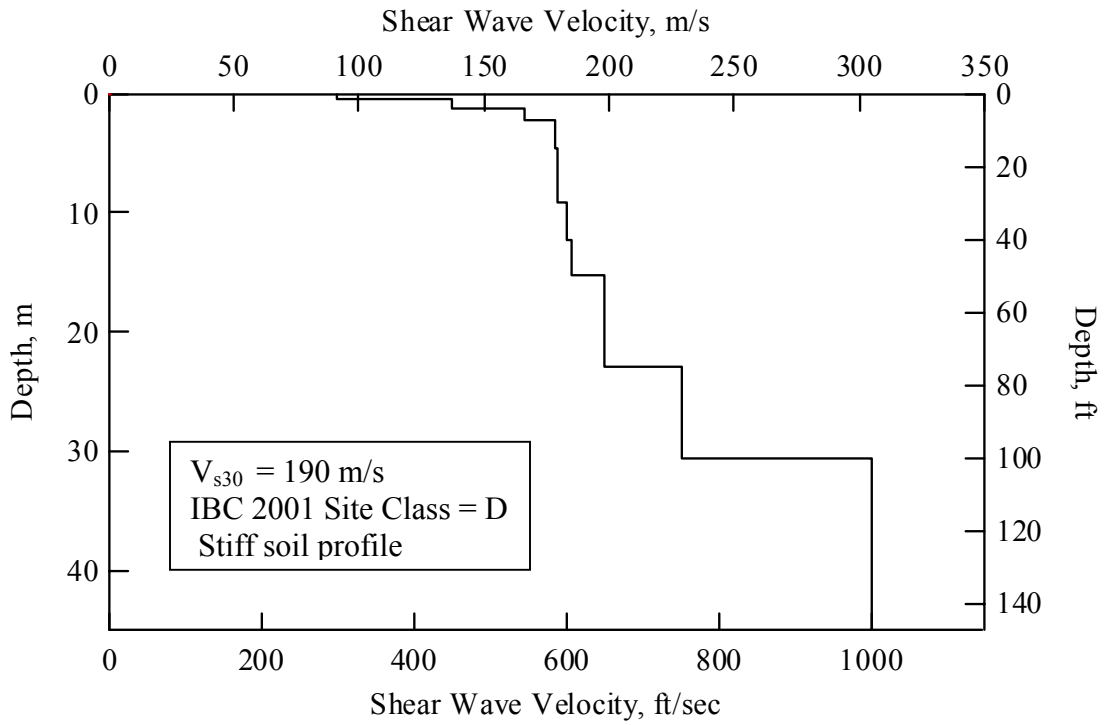
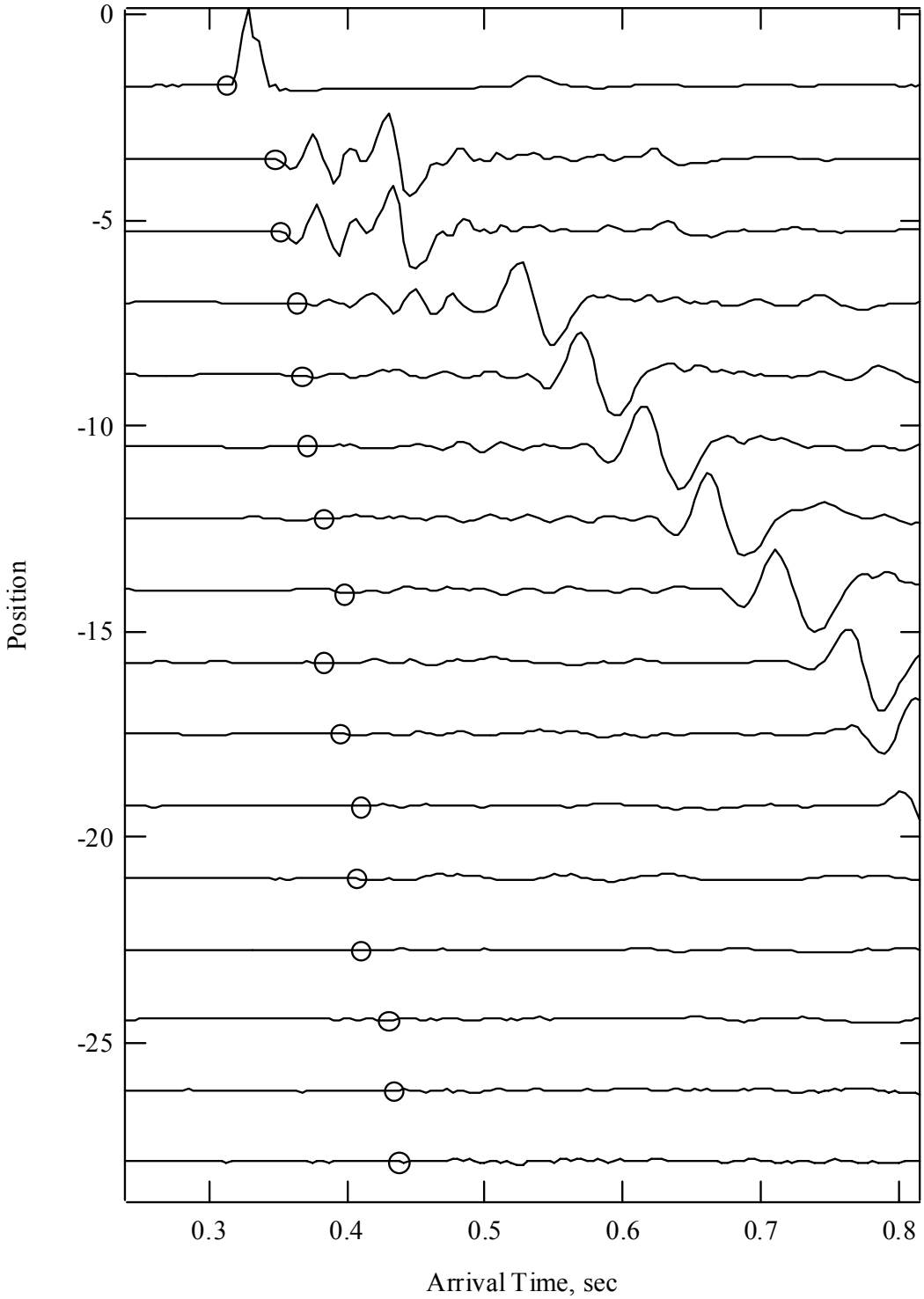


Fig 14 Shear Wave Velocity Profile Determined from SASW Testing at Liberty Park, Ogden, Site 123, Earthquake Site Response Unit Q02 (Ashland, 2001)

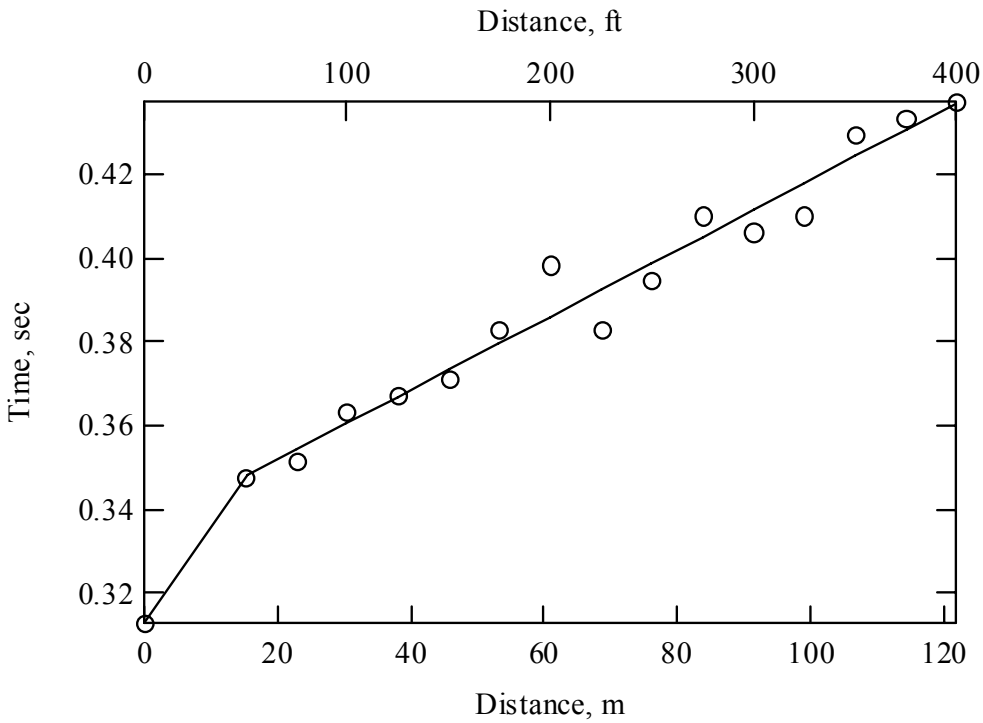
Table 3 Tabulated Shear Wave Velocity Profile from Liberty Park, Ogden, Site 123, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.41	91.40	171.1	1.89
0.41	0.84	137.20	256.6	1.89
1.25	0.91	166.10	310.8	1.92
2.16	2.44	178.30	333.6	1.92
4.6[a]	4.57	179.80	1524	1.92
9.17	3.05	182.90	1524	1.92
12.22	3.05	184.40	1524	1.92
15.27	7.62	198.10	1524	1.92
22.89	7.62	228.60	1524	1.92
30.51	30.18[b]	304.80	1524	2

a. Depth to fully saturated zone from Refraction Testing
b. Half-space in model



Arrival Times for Refraction Testing at Liberty Park, Ogden, Site 123, Earthquake Site Response Unit Q02 (Ashland, 2001)



Time-Distance Curve for Refraction Testing at Liberty Park, Ogden, Site 123, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 4 Tabulated Refraction Profile from Liberty Park, Ogden, Site 123, Earthquake Site Response Unit Q02 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	5.27[a]	433.44	231.69
2		1197.83	

a. Depth to fully saturated zone

Site 124, Ogden Lions Club Park

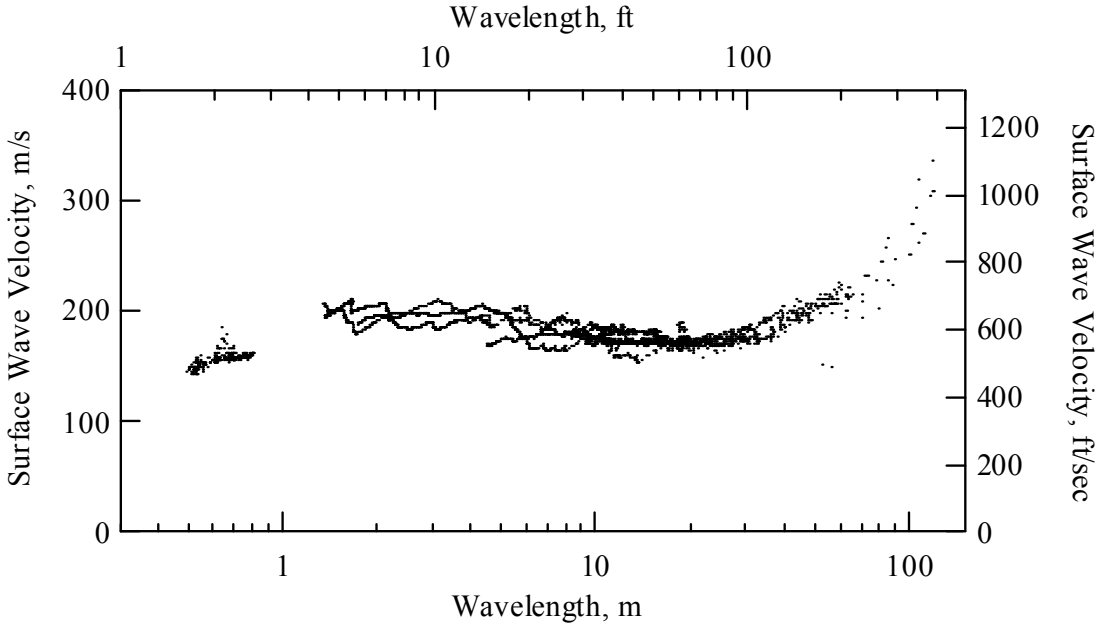


Fig 15 Experimental Dispersion Curve measured at Ogden Lions Club Park, Ogden, Site 124, Earthquake Site Response Unit Q02 (Ashland, 2001)

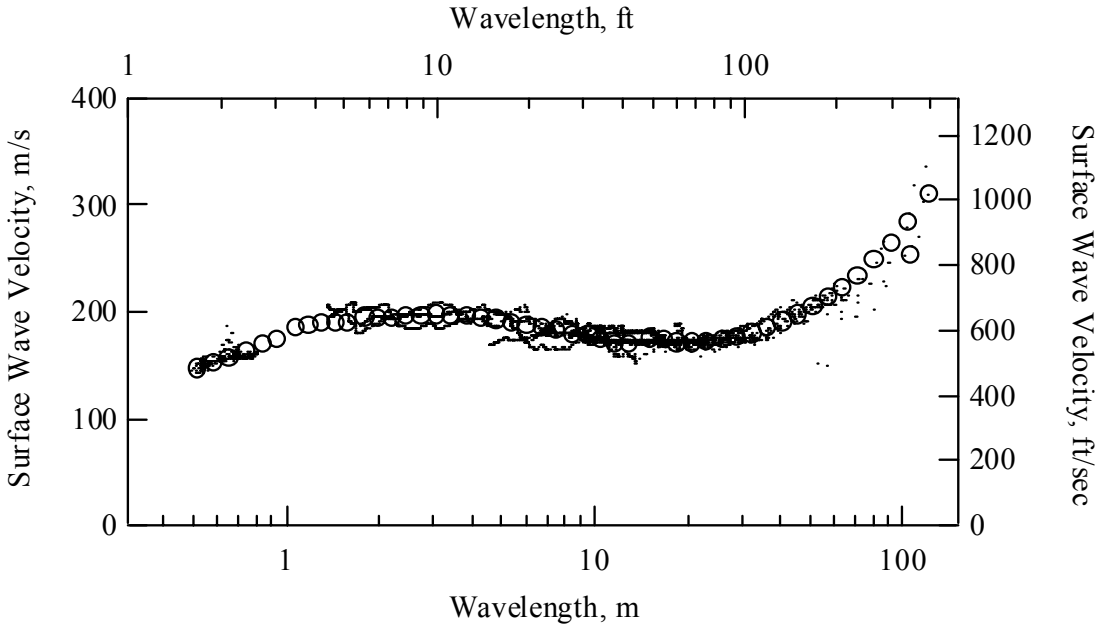


Fig 16 Comparison between Experimental & Theoretical Dispersion Curves from Ogden Lions Club Park, Ogden, Site 124, Earthquake Site Response Unit Q02 (Ashland, 2001)

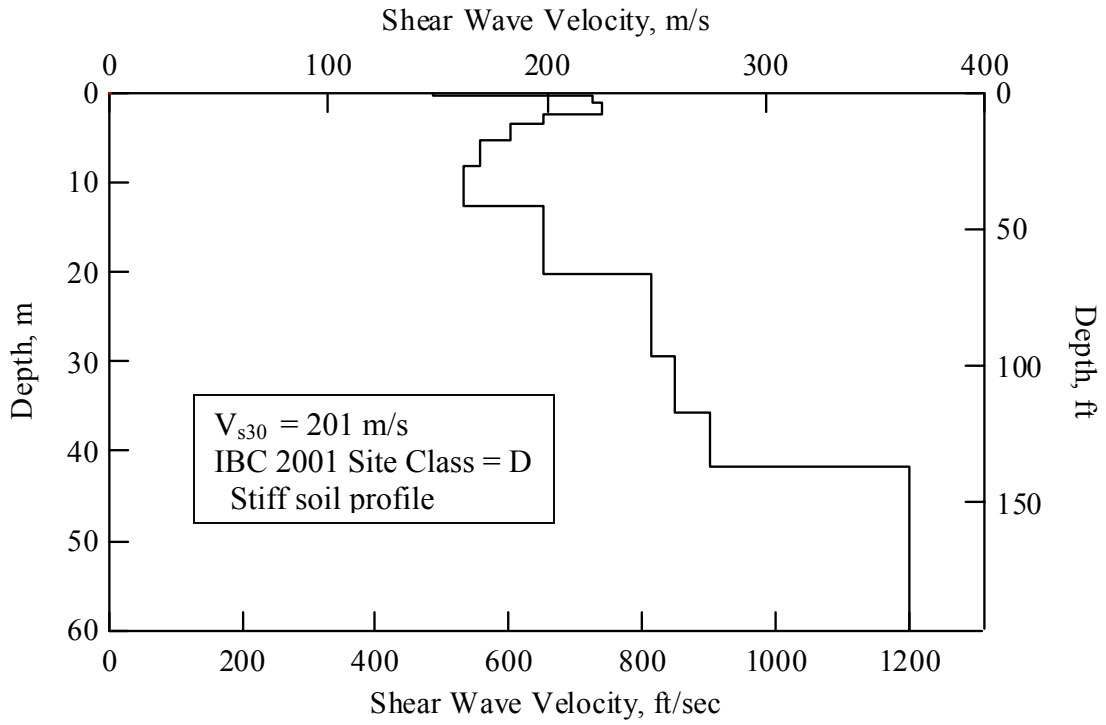


Fig 17 Shear Wave Velocity Profile Determined from SASW Testing at Ogden Lions Club Park, Ogden, Site 124, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 5 Tabulated Shear Wave Velocity Profile from Ogden Lions Club Park, Ogden, Site 124, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	147.8	276.6	1.89
0.3	0.67	221	413.4	1.92
0.97	1.52	225.6	422	1.92
2.49	0.91	198.1	370.6	1.92
3.4	1.83	182.9	342.1	1.92
5.23	2.9	169.2	316.5	1.92
8.13[a]	4.57	161.5	1524	1.92
12.7	7.62	198.1	1524	1.92
20.32	9.14	248.4	1524	1.92
29.46	6.1	259.1	1524	1.92
35.56	6.1	274.3	1524	1.92
41.66	30.18[b]	365.8	1524	2.00

a. Assumed depth to fully saturated zone
b. Half-space in model

Site 107, Orem City Park

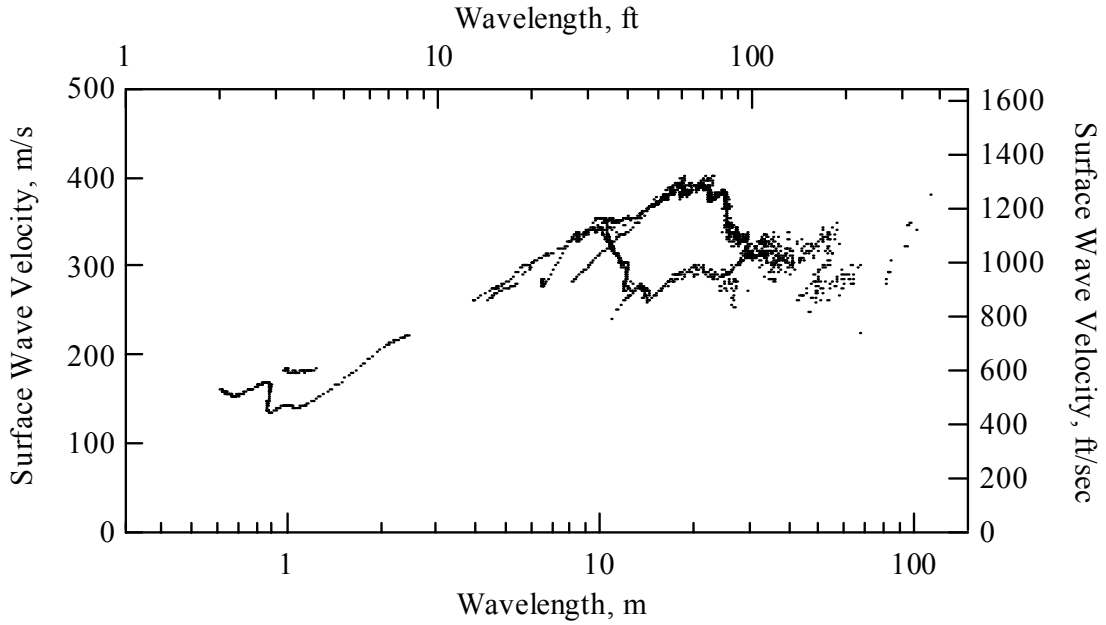


Fig 18 Experimental Dispersion Curve measured at Orem City Center Park, Orem, Site 107, Earthquake Site Response Unit Q02 (Ashland, 2001)

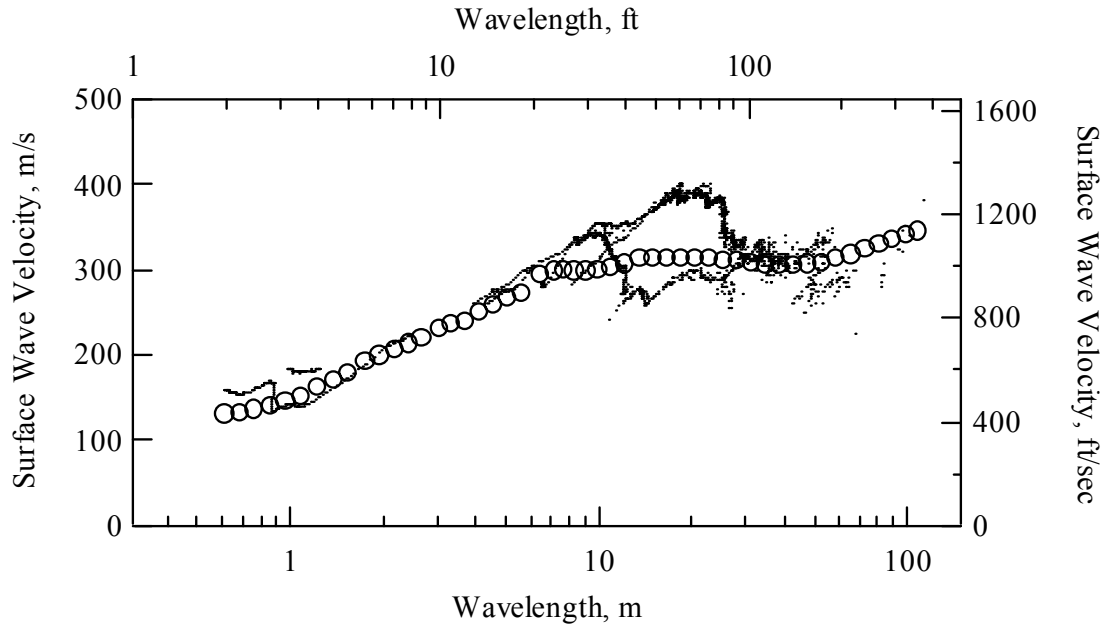


Fig 19 Comparison between Experimental & Theoretical Dispersion Curves from Orem City Center Park, Orem, Site 107, Earthquake Site Response Unit Q02 (Ashland, 2001)

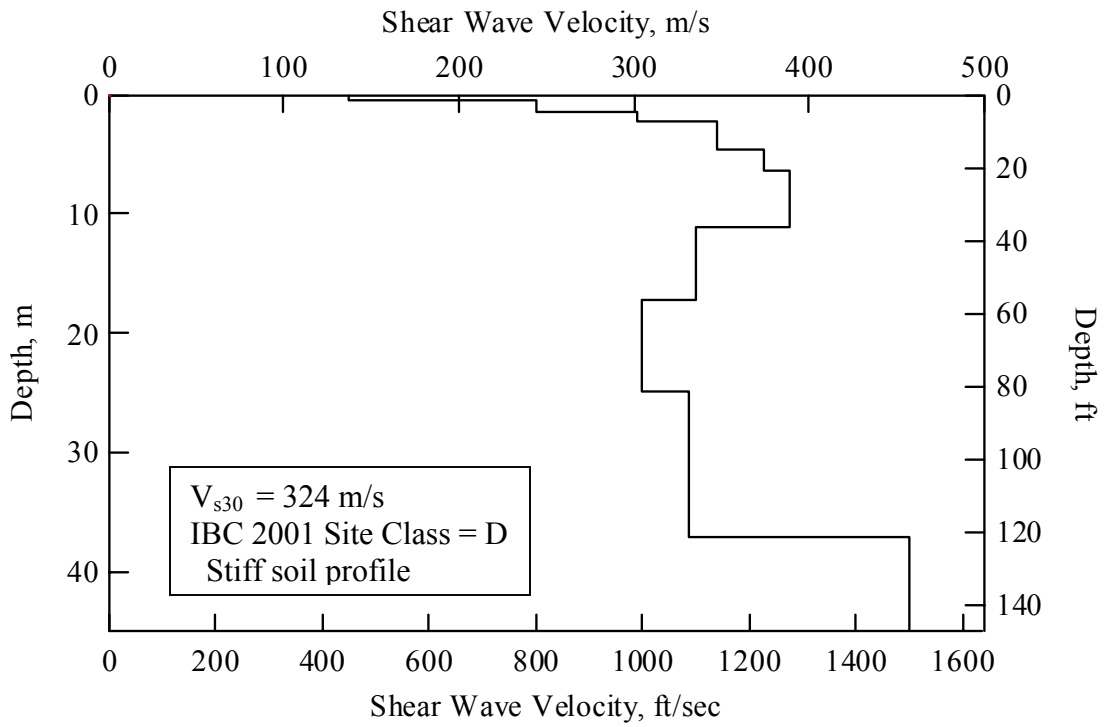


Fig 20 Shear Wave Velocity Profile Determined from SASW Testing at Orem City Center Park, Orem, Site 107, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 6 Tabulated Shear Wave Velocity Profile from Orem City Center Park, Orem, Site 107, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.46	137.2	256.7	1.89
0.46	1.04	243.8	456.1	1.92
1.5	0.73	301.8	564.5	1.92
2.23	2.44	347.5	650.1	2
4.67	1.83	373.4	698.5	2
6.5	4.57	388.6	727	2
11.07	6.1	335.3	627.3	2
17.17	7.62	304.8	570.2	2
24.79	12.19	330.7	618.7	2
36.98	30.18[a]	457.2	855.3	2

a. Half-space in model

Site 37, Highland Park Elementary

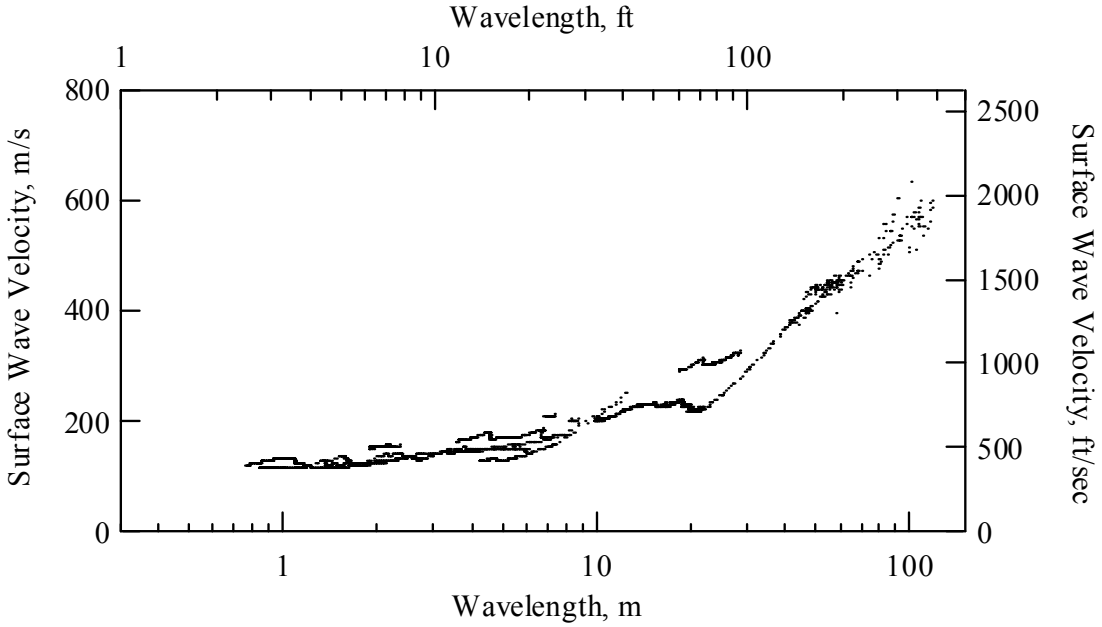


Fig 21 Experimental Dispersion Curve measured at Highland Park Elementary, Salt Lake City, Site 37, Earthquake Site Response Unit Q02 (Ashland, 2001)

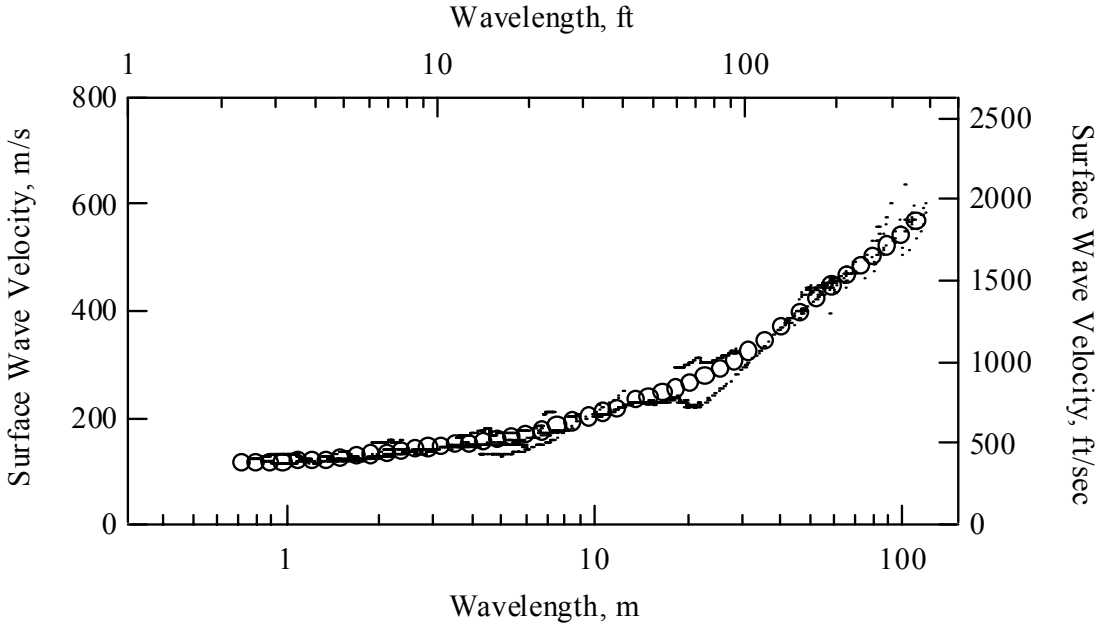


Fig 22 Comparison between Experimental & Theoretical Dispersion Curves from Highland Park Elementary, Salt Lake City, Site 37, Earthquake Site Response Unit Q02 (Ashland, 2001)

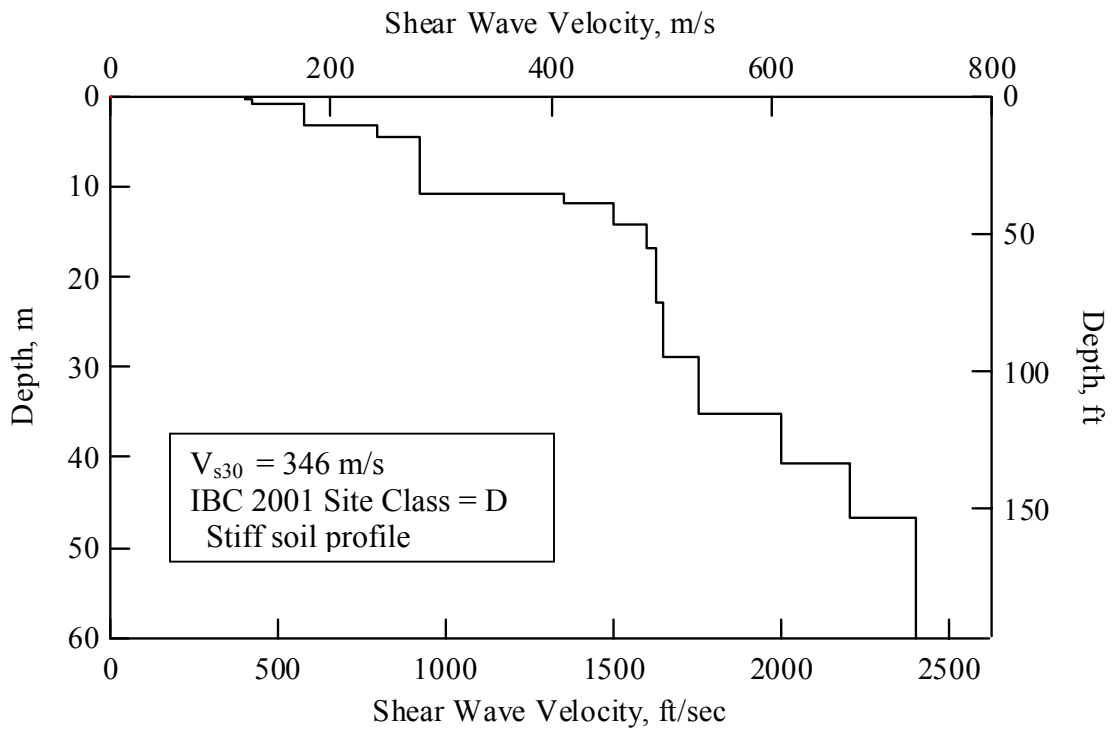


Fig 23 Shear Wave Velocity Profile Determined from SASW Testing at Highland Park Elementary, Salt Lake City, Site 37, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 7 Tabulated Shear Wave Velocity Profile from Highland Park Elementary, Salt Lake City, Site 37, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	121.9	228.1	1.89
0.3	0.61	129.5	242.4	1.89
0.91	2.13	176.8	330.7	1.92
3.04	1.52	243.8	456.2	1.92
4.56	6.1	281.9	527.5	1.92
10.66	1.22	411.5	769.8	2
11.88	2.44	457.2	855.3	2
14.32	2.44	487.7	869.6	2
16.76	6.1	495.3	926.6	2
22.86	6.1	502.9	940.9	2
28.96	6.1	533.4	997.9	2
35.06	5.49	609.6	1140.5	2
40.55	6.1	670.6	1254.5	2.08
46.65	30.18[a]	731.5	1368.6	2.08

a. Half-space in model

Site: 128, Tolman Elementary

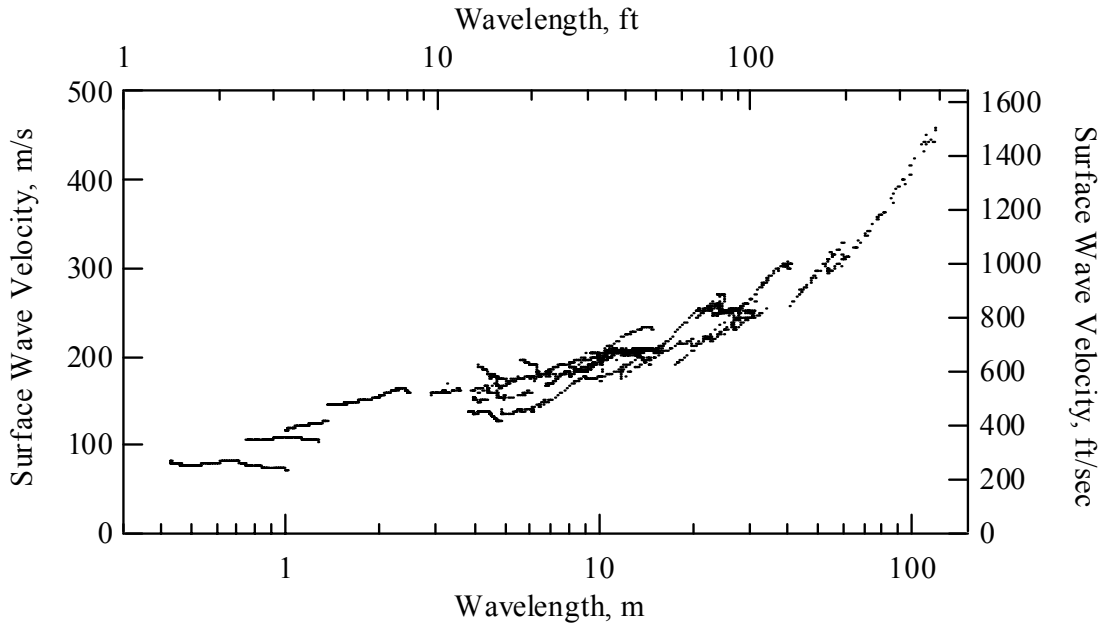


Fig 24 Experimental Dispersion Curve measured at Tolman Elementary, Bountiful, Site 128, Earthquake Site Response Unit Q02 (Ashland, 2001)

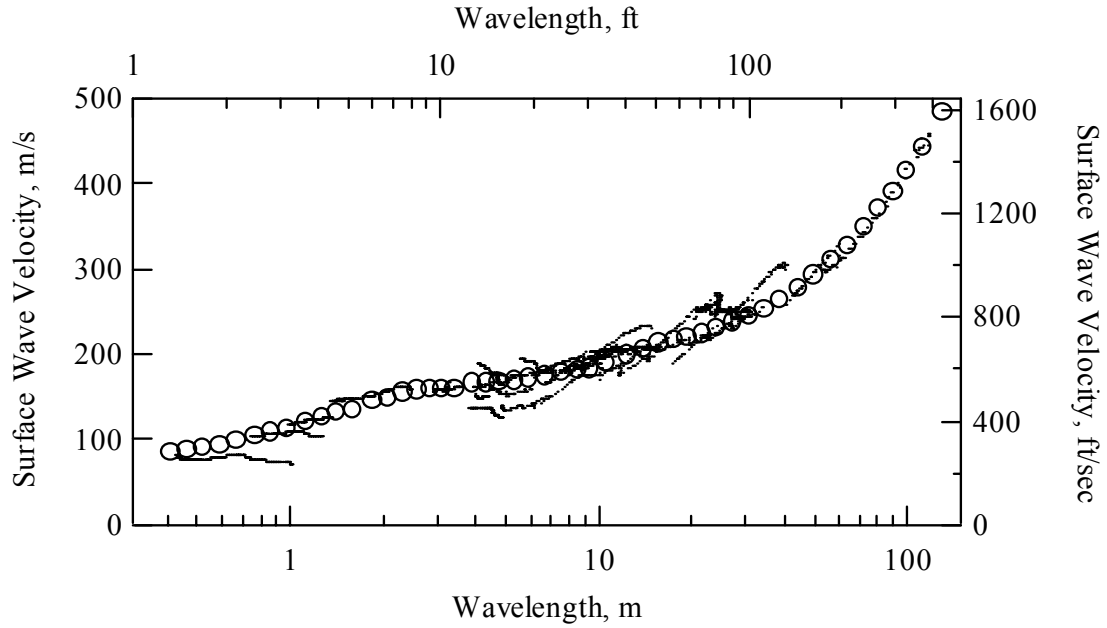


Fig 25 Comparison between Experimental & Theoretical Dispersion Curves from Tolman Elementary, Bountiful, Site 128, Earthquake Site Response Unit Q02 (Ashland, 2001)

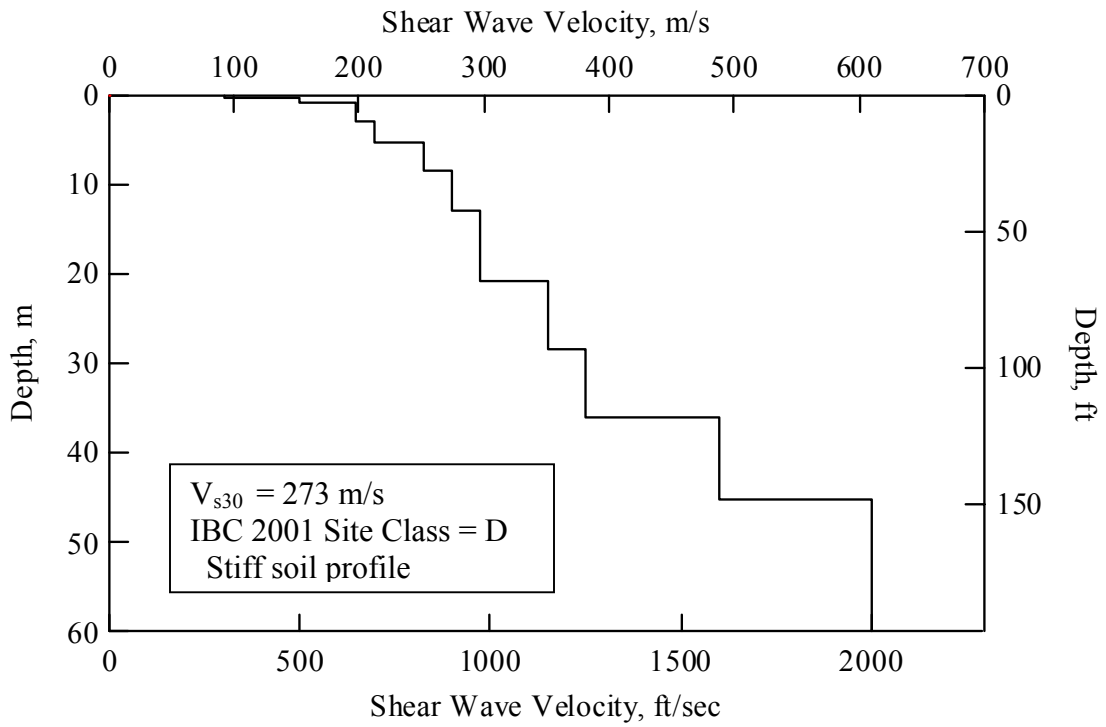


Fig 26 Shear Wave Velocity Profile Determined from SASW Testing at Tolman Elementary, Bountiful, Site 128, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 8 Tabulated Shear Wave Velocity Profile from Tolman Elementary, Bountiful, Site 128, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	91.4	171.1	1.89
0.3	0.61	152.4	285.1	1.92
0.91	2.13	198.1	370.6	1.92
3.04	2.44	213.4	399.2	1.92
5.48	3.05	251.5	470.4	1.92
8.53[a]	4.57	274.3	1524	1.92
13.1	7.62	297.2	1524	1.92
20.72	7.62	350.5	1524	2
28.34	7.62	381	1524	2
35.96	9.14	487.7	1524	2
45.1	30.18[b]	609.6	1524	2.08

a. Assumed depth to fully saturated zone
b. Half-space in model

Site: 127, Bountiful City Park

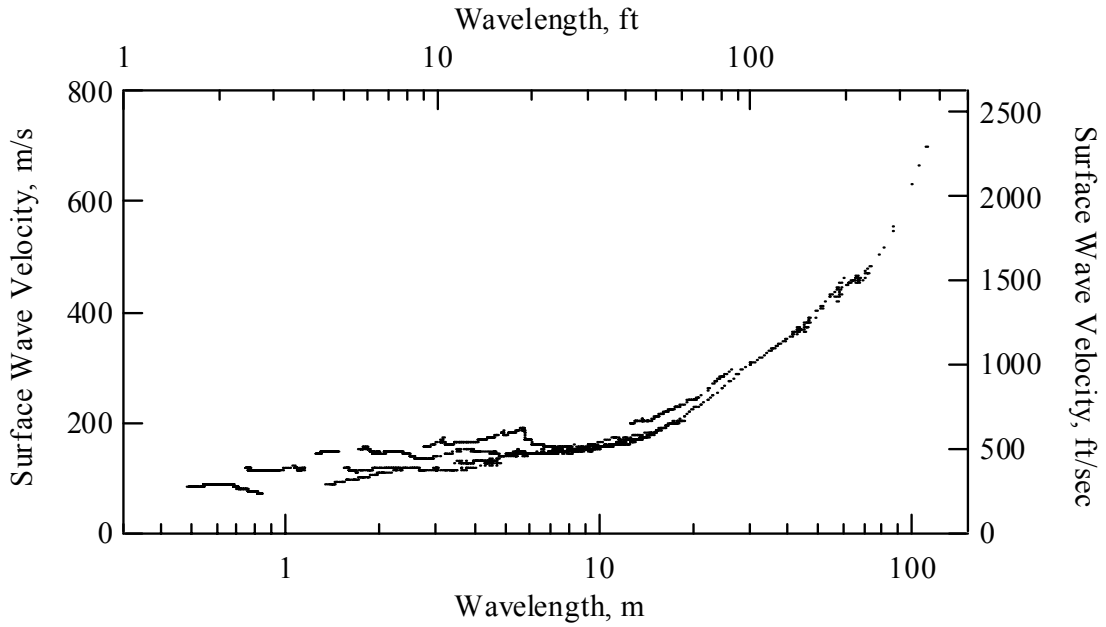


Fig 27 Experimental Dispersion Curve measured at Bountiful City Park, Bountiful, Site 127, Earthquake Site Response Unit Q02 (Ashland, 2001)

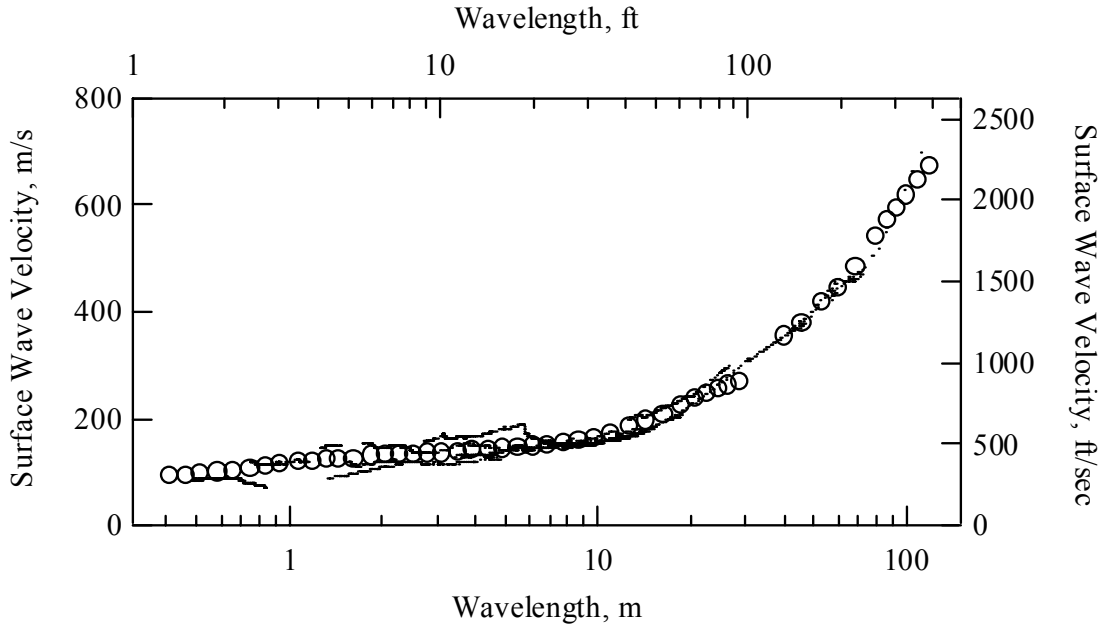


Fig 28 Comparison between Experimental & Theoretical Dispersion Curves from Bountiful City Park, Bountiful, Site 127, Earthquake Site Response Unit Q02 (Ashland, 2001)

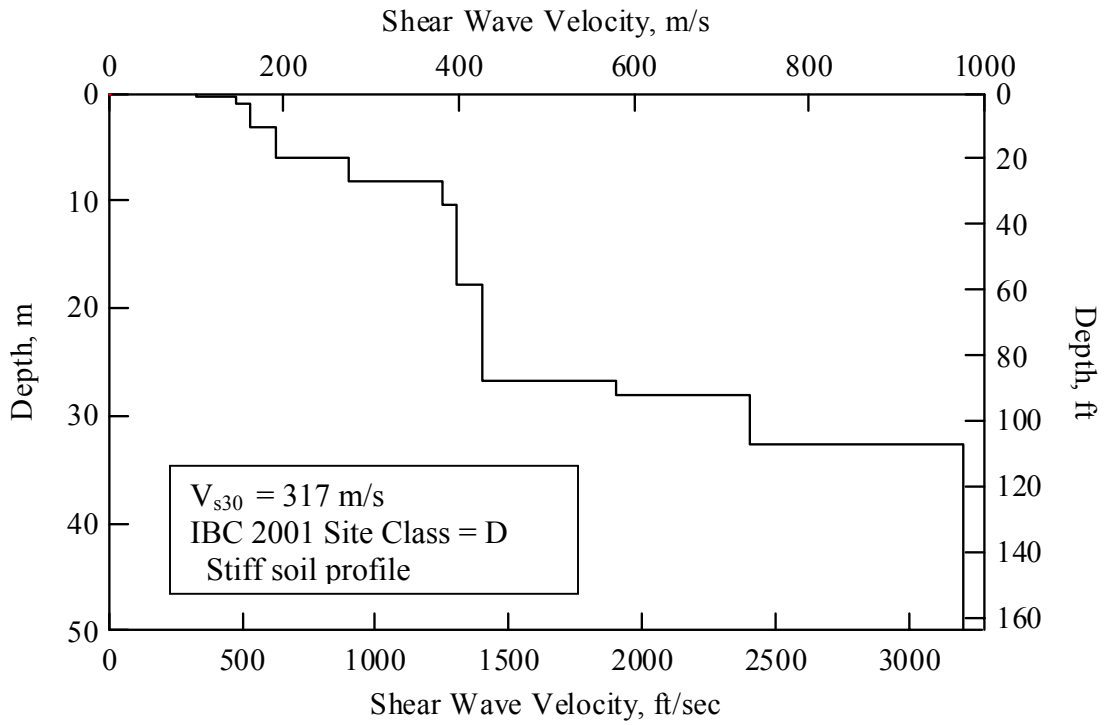


Fig 29 Shear Wave Velocity Profile Determined from SASW Testing at Bountiful City Park, Bountiful, Site 127, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 9 Tabulated Shear Wave Velocity Profile from Bountiful City Park, Bountiful, Site 127, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	99.1	185.3	1.89
0.3	0.61	144.8	270.9	1.89
0.91	2.13	160	299.4	1.92
3.04	3.05	190.5	356.4	1.92
6.09	2.13	274.3	513.2	1.92
8.22	2.13	381	712.8	2
10.35[a]	7.32	396.2	1524	2
17.67	9.14	426.7	1524	2
26.81	1.22	579.1	1524	2
28.03	4.57	731.5	1524	2.08
32.6	30.18[b]	975.4	1524	2.08

a. Assumed depth to fully saturated zone
b. Half-space in model

Site 46, Deseret Academy

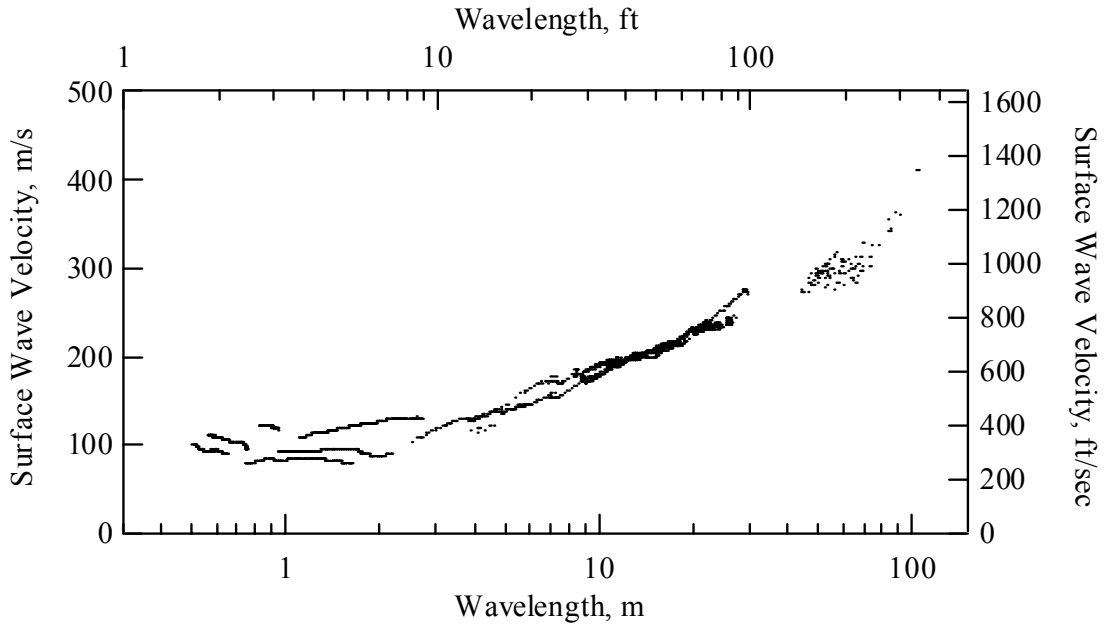


Fig 30 Experimental Dispersion Curve measured at Deseret Academy, Holladay, Site 46, Earthquake Site Response Unit Q02 (Ashland, 2001)

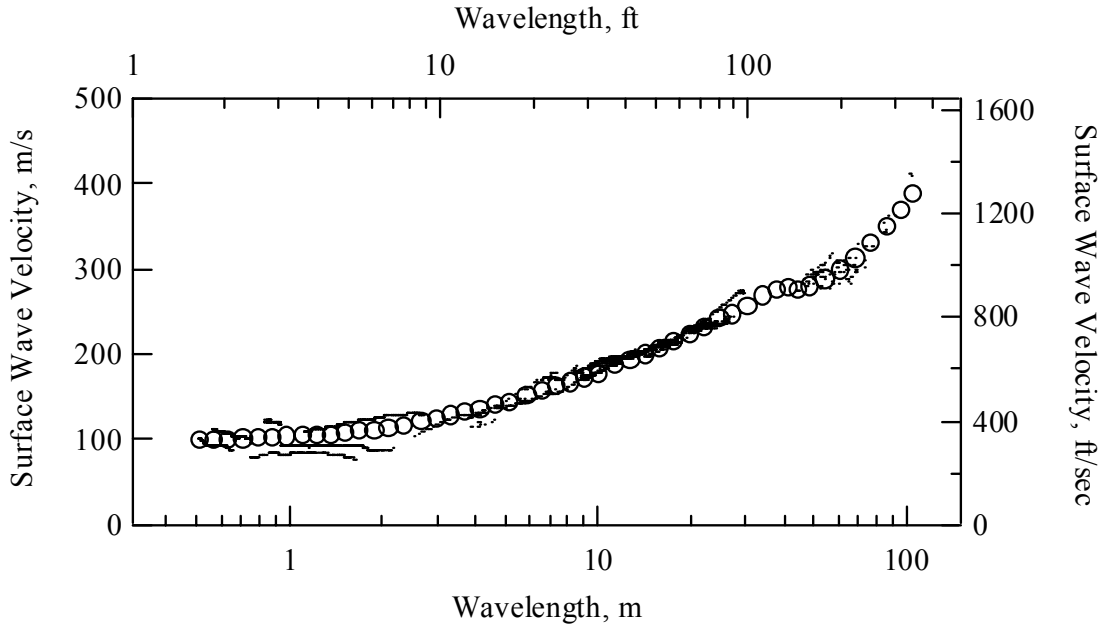


Fig 31 Comparison between Experimental & Theoretical Dispersion Curves from Deseret Academy, Holladay, Site 46, Earthquake Site Response Unit Q02 (Ashland, 2001)

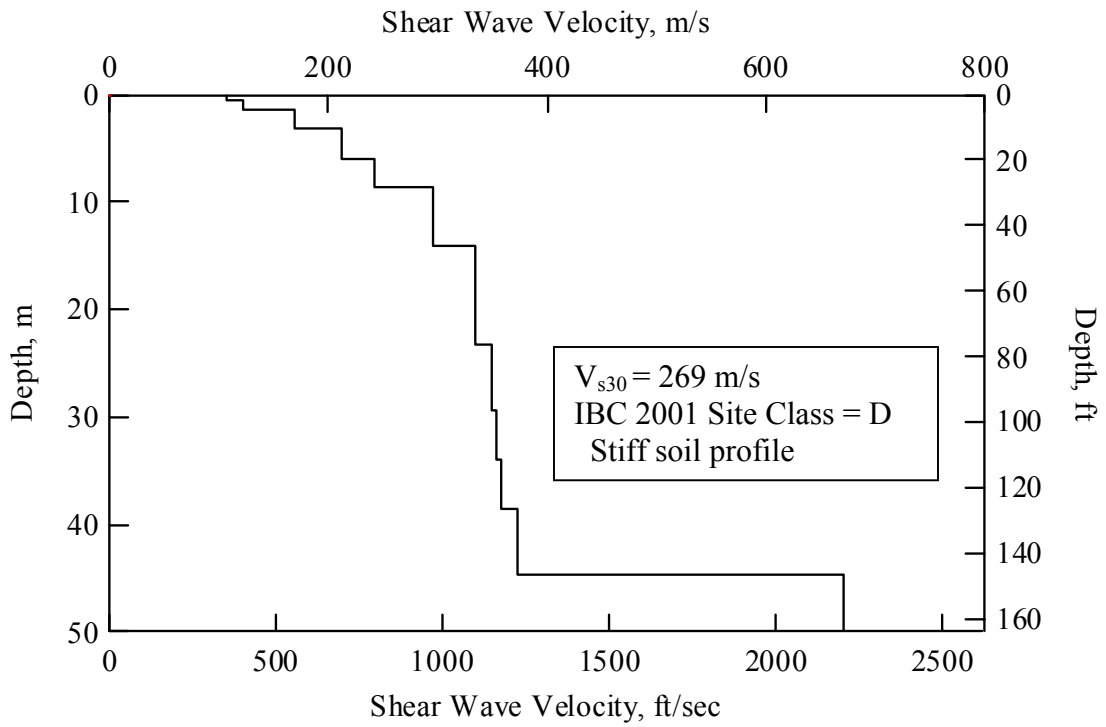


Fig 32 Shear Wave Velocity Profile Determined from SASW Testing at Deseret Academy, Holladay, Site 46, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 10 Tabulated Shear Wave Velocity Profile from Deseret Academy, Holladay, Site 46, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.46	106.7	199.6	1.89
0.46	0.91	121.9	228.1	1.89
1.37	1.83	169.2	316.5	1.92
3.2	2.74	213.4	399.2	1.92
5.94	2.74	243.8	456.2	1.92
8.68	5.49	297.2	556	1.92
14.17	9.14	335.3	627.3	2
23.31[a]	6.1	350.5	1524	2
29.41	4.57	353.6	1524	2
33.98	4.57	358.1	1524	2
38.55	6.1	373.4	1524	2
44.65	30.18[b]	670.6	1524	2.08

a. Assumed depth to fully saturated zone
b. Half-space in model

Site: 40, Applied Technology School, East Millcreek

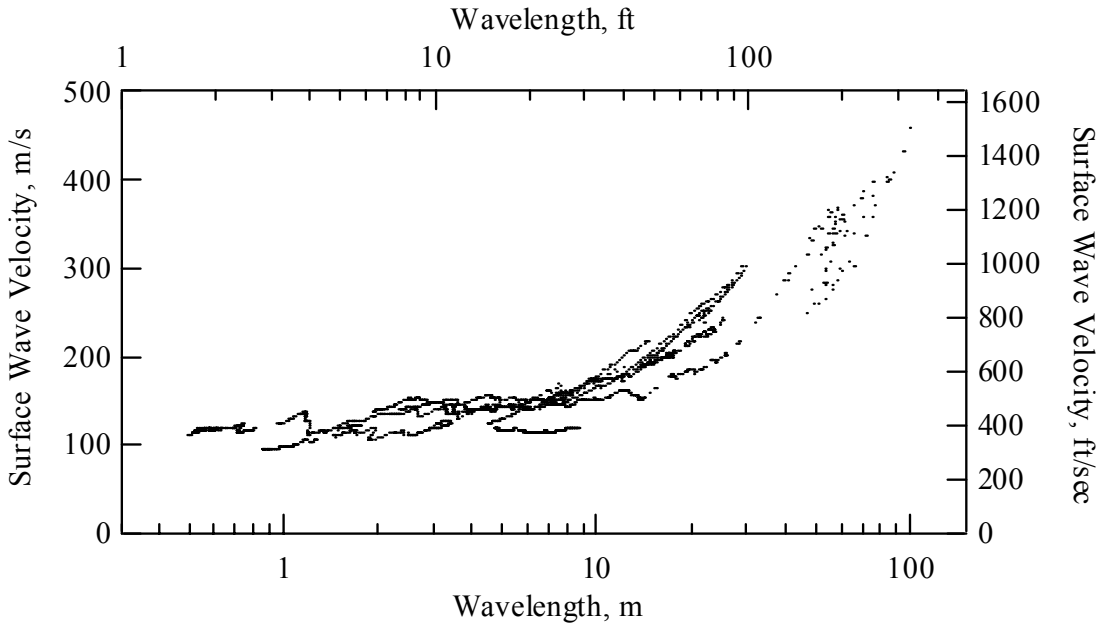


Fig 33 Experimental Dispersion Curve measured at Applied Technology School, East Millcreek, Site 40, Earthquake Site Response Unit Q02 (Ashland, 2001)

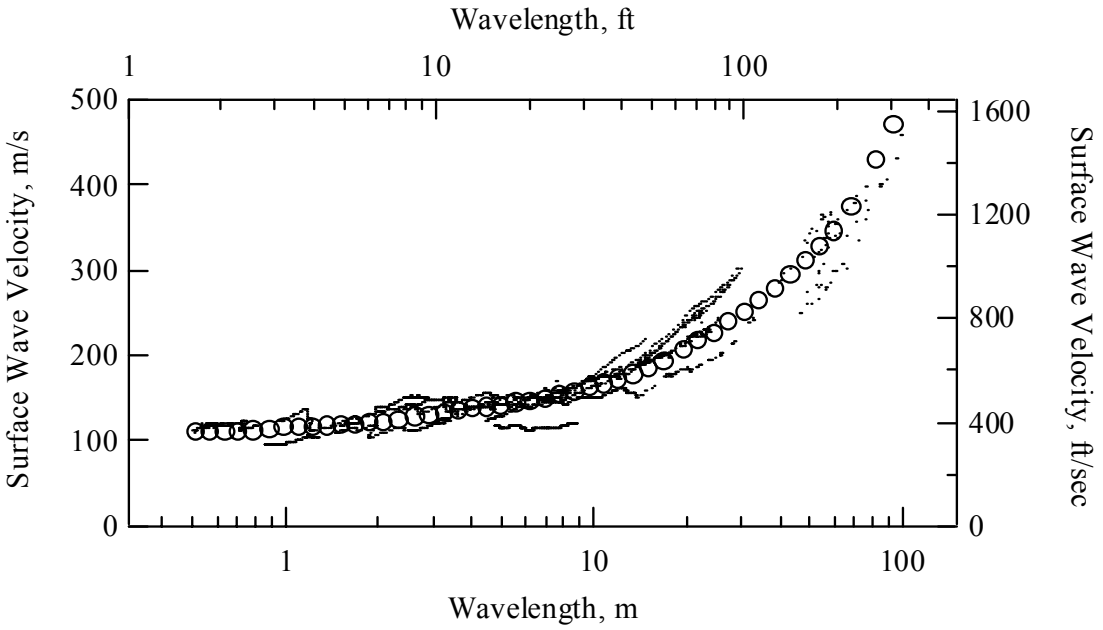


Fig 34 Comparison between Experimental & Theoretical Dispersion Curves from Applied Technology School, East Millcreek, Site 40, Earthquake Site Response Unit Q02 (Ashland, 2001)

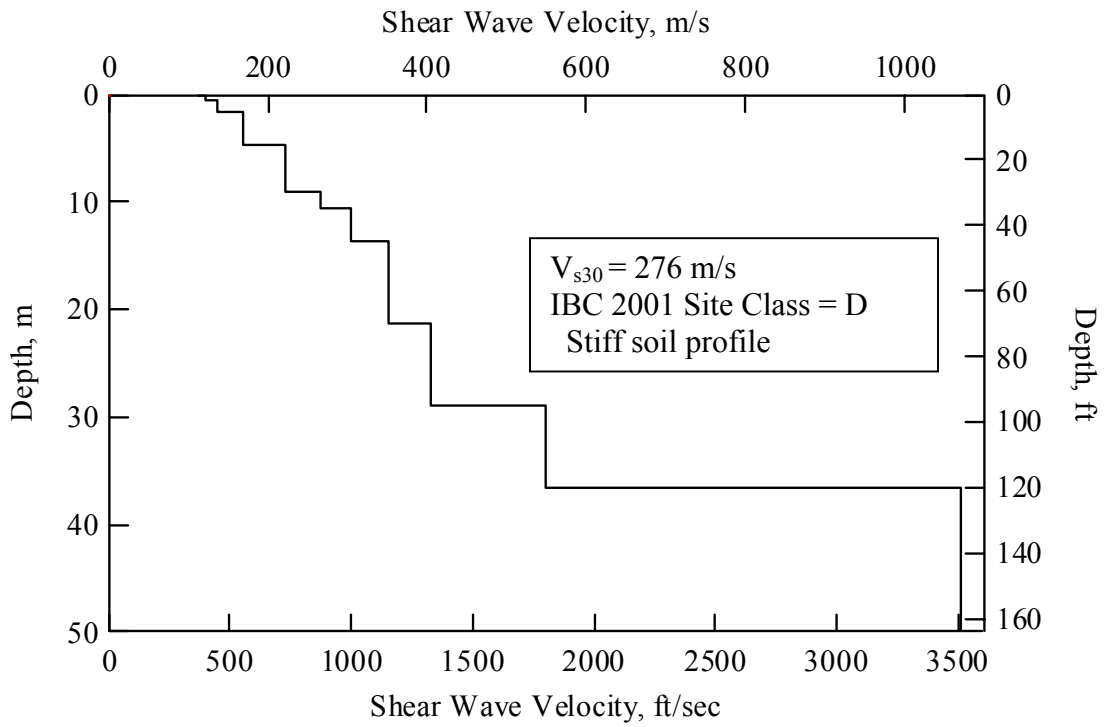


Fig 35 Shear Wave Velocity Profile Determined from SASW Testing at Applied Technology School, East Millcreek, Site 40, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 11 Tabulated Shear Wave Velocity Profile from Applied Technology School, East Millcreek, Site 40, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.15	114.3	213.9	1.89
0.15	0.46	121.9	228.1	1.89
0.61	0.91	137.2	256.6	1.89
1.52	3.05	167.6	313.6	1.92
4.57	4.57	221	413.4	1.92
9.14	1.52	266.7	499	1.92
10.66	3.05	304.8	570.2	2
13.71	7.62	350.5	655.8	2
21.33	7.62	403.9	755.6	2
28.95	7.62	548.6	1026.3	2
36.57	30.18[b]	1069.9[a]	2001.5	2.08

a. Refraction velocity
b. Half-space in model

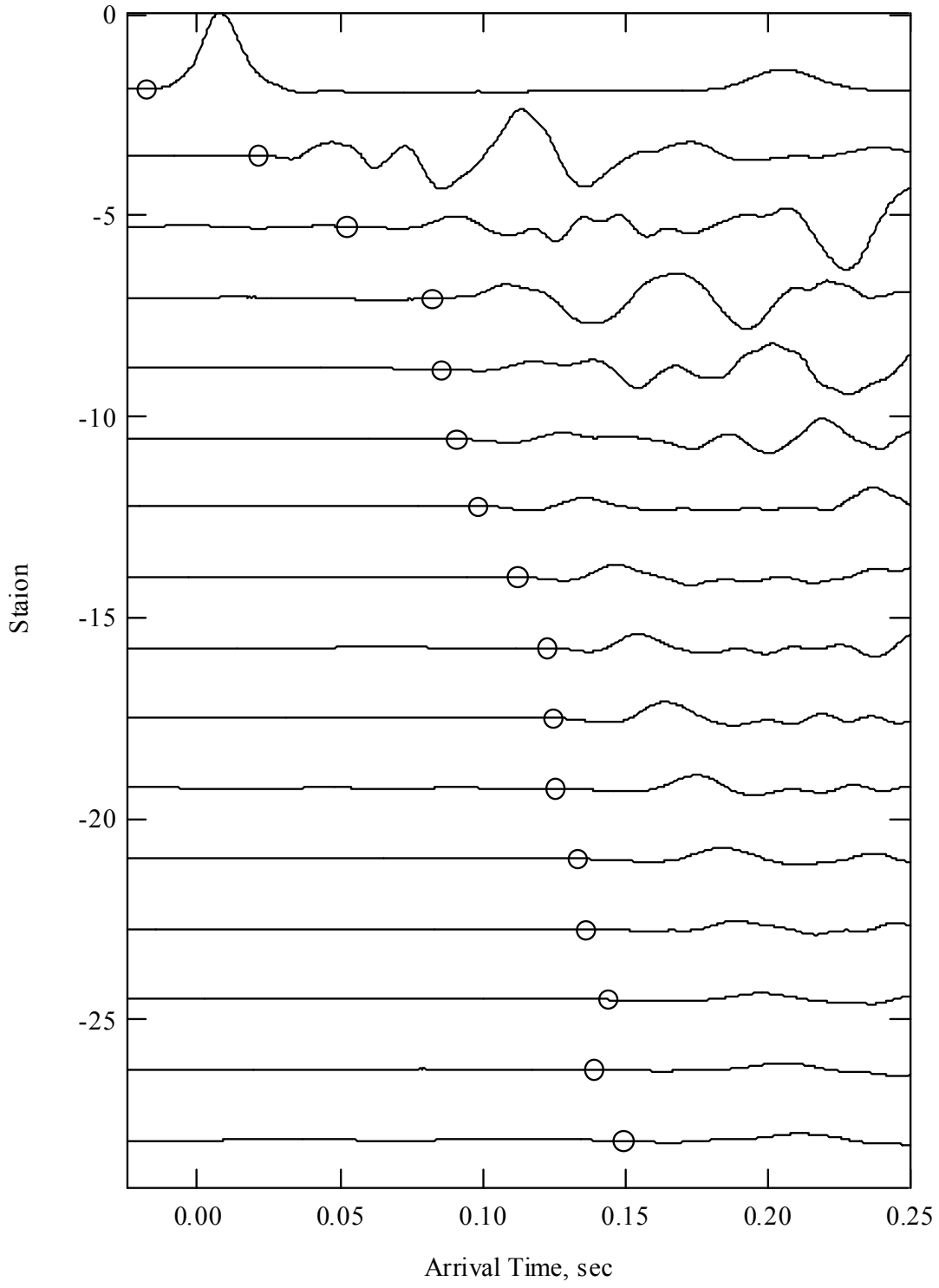


Fig 36 Arrival Times for Refraction Testing at Applied Technology School, East Millcreek, Site 40, Earthquake Site Response Unit Q02 (Ashland, 2001)

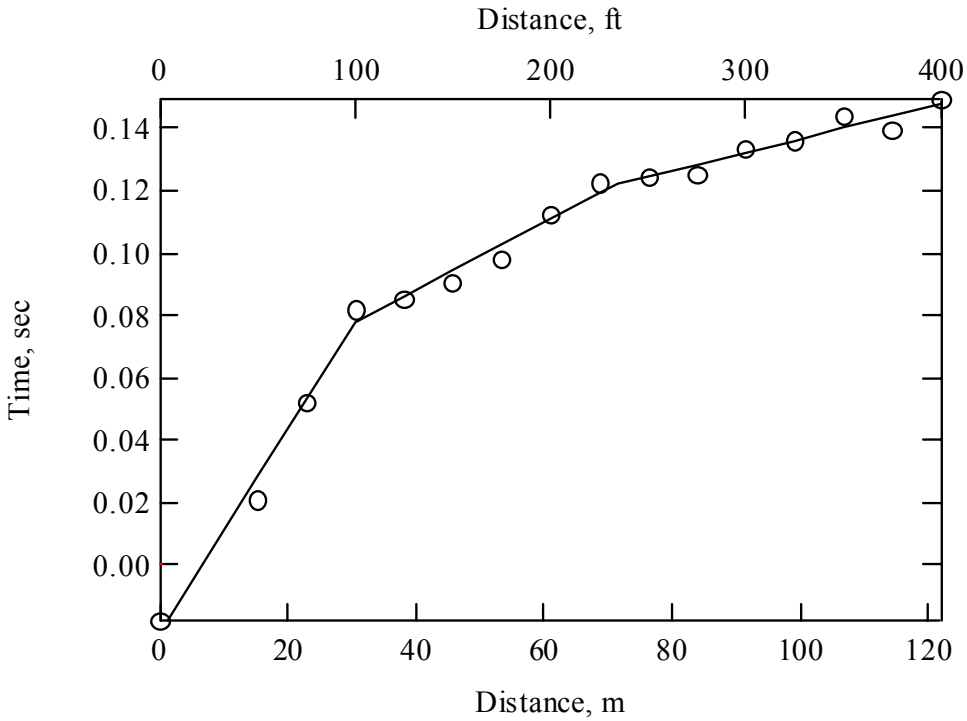


Fig 37 Time-Distance Curve for Refraction Testing at Applied Technology School, East Millcreek, Site 40, Earthquake Site Response Unit Q02 (Ashland, 2001)

Tabulated Refraction Profile from Applied Technology School, East Millcreek, Site 40, Earthquake Site Response Unit Q02 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	10.76	305.65	163.38
2	26.65	918.02	490.70
3		2001.60	1069.90

Site 3, Draper Elementary

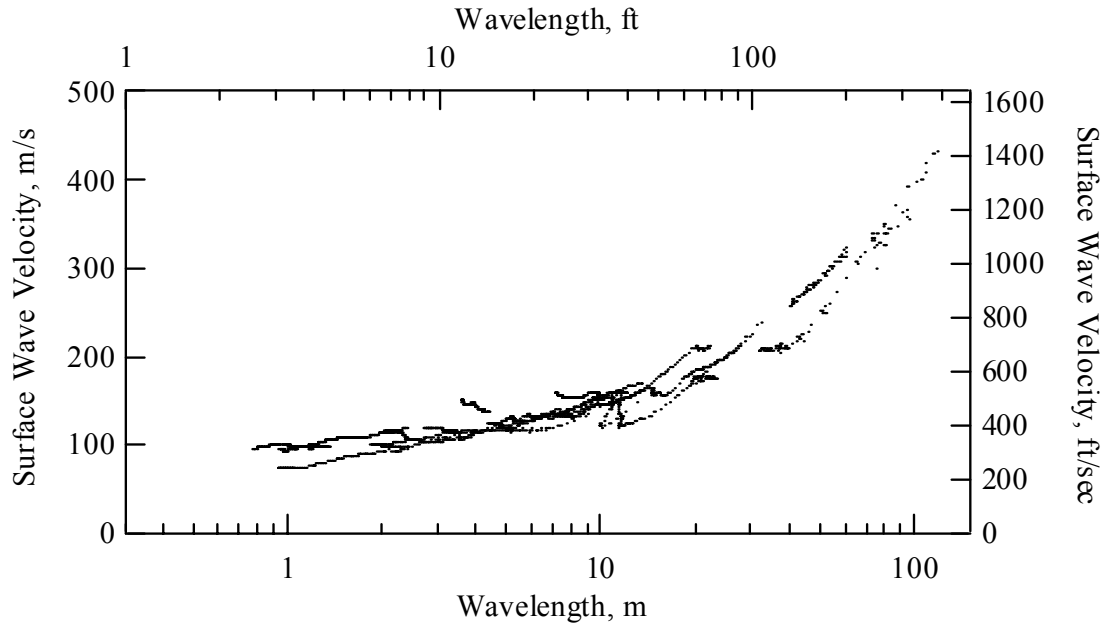


Fig 38 Experimental Dispersion Curve measured at Draper Elementary, Draper, Site 3, Earthquake Site Response Unit Q02 (Ashland, 2001)

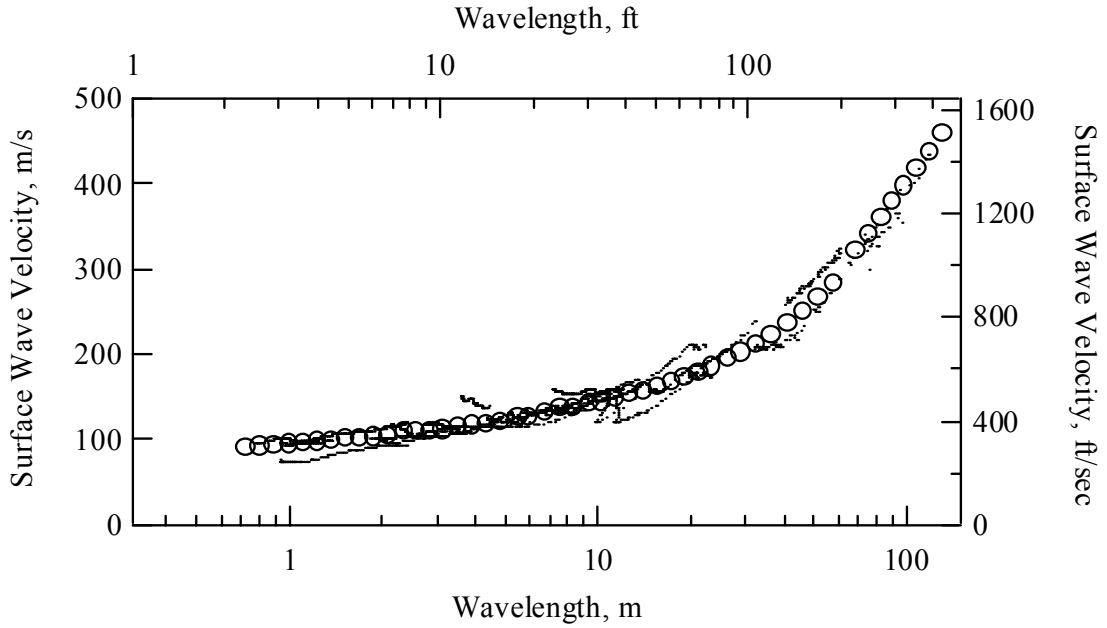


Fig 39 Comparison between Experimental & Theoretical Dispersion Curves from Draper Elementary, Draper, Site 3, Earthquake Site Response Unit Q02 (Ashland, 2001)

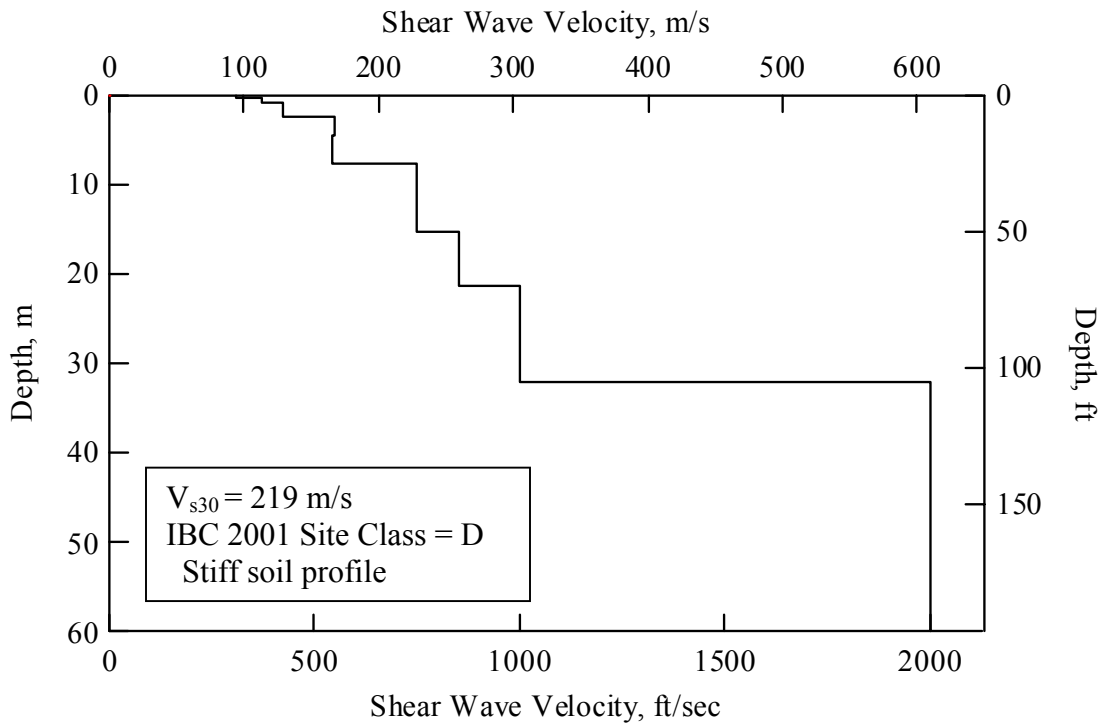


Fig 40 Shear Wave Velocity Profile Determined from SASW Testing at Draper Elementary, Draper, Site 3, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 12 Tabulated Shear Wave Velocity Profile from Draper Elementary, Draper, Site 3, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.38	94.5	176.8	1.89
0.38	0.61	114.3	213.9	1.89
0.99	1.52	129.5	242.4	1.89
2.51	2.06	167.6	313.6	1.92
4.57[a]	3.05	166.1	1524	1.92
7.62	7.62	228.6	1524	1.92
15.24	6.1	259.1	1524	1.92
21.34	10.67	304.8	1524	2.00
32.01	30.18[b]	609.6	1524	2.08

a. Depth to fully saturated zone from Refraction results
b. Half-space in model

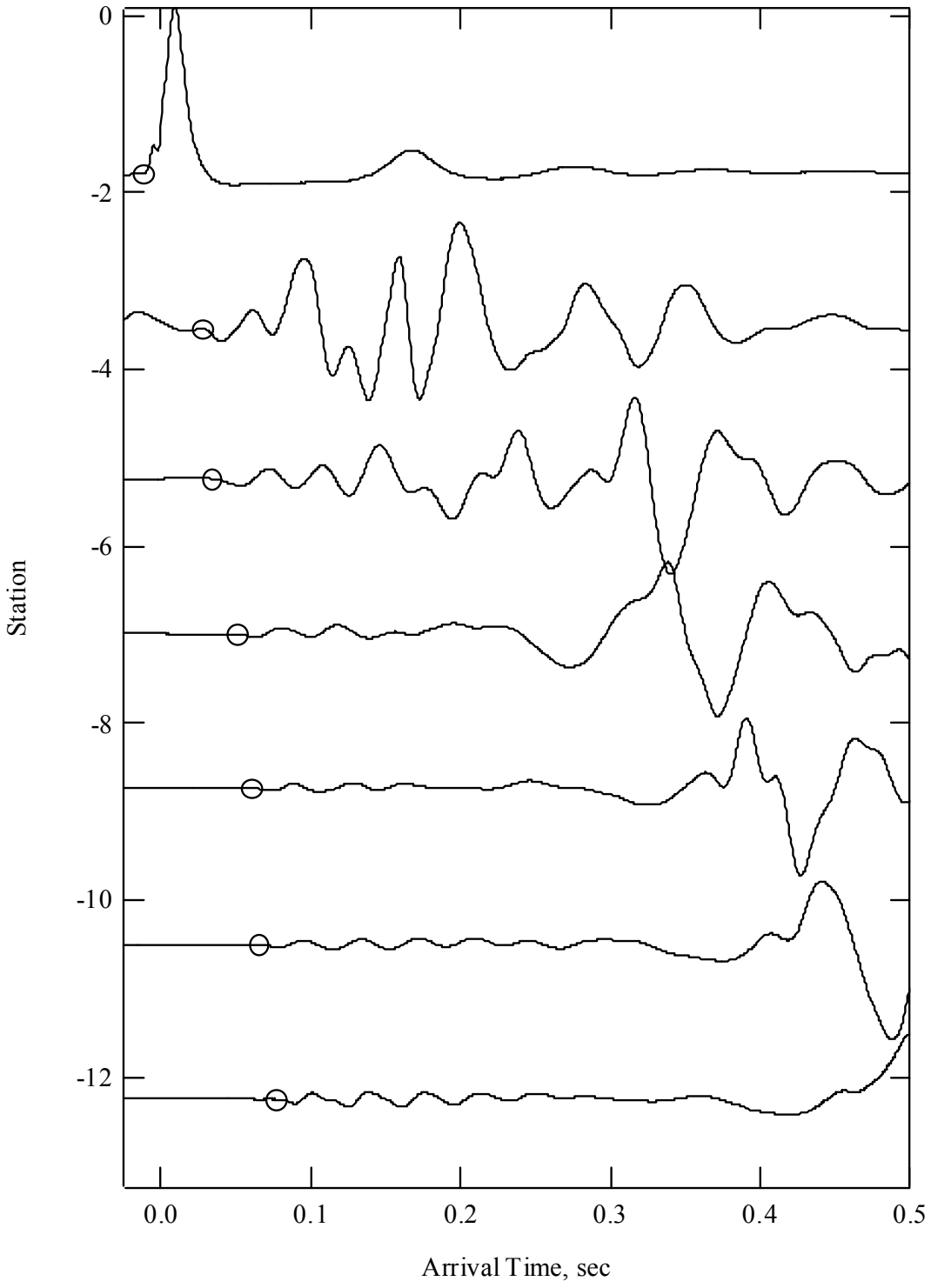


Fig 41 Arrival Times for Refraction Testing at Draper Elementary, Draper, Site 3, Earthquake Site Response Unit Q02 (Ashland, 2001)

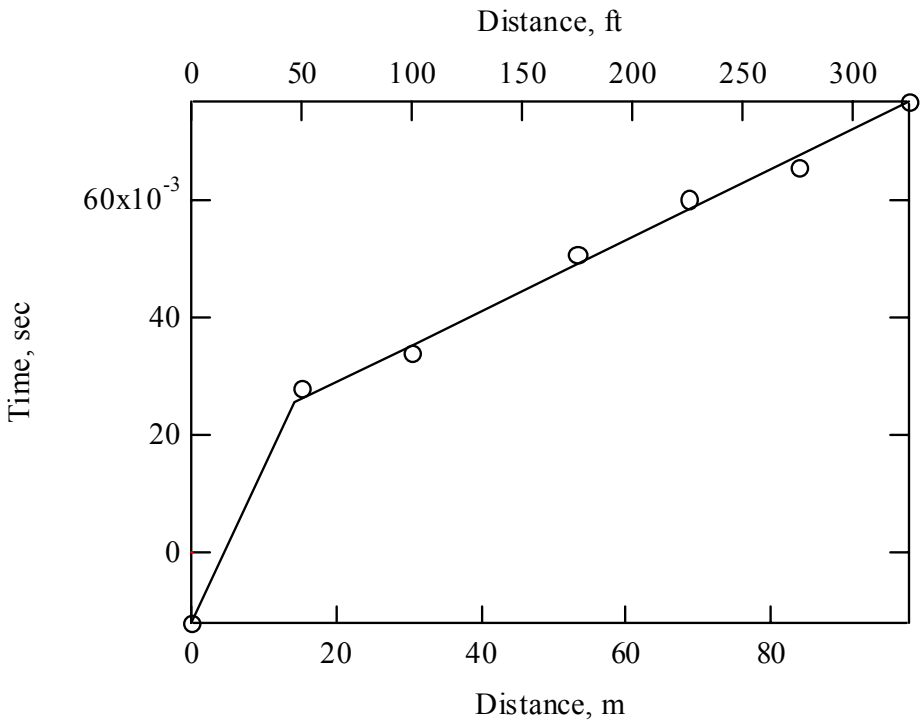


Fig 42 Time-Distance Curve for Refraction Testing at Draper Elementary, Draper, Site 3, Earthquake Site Response Unit Q02 (Ashland, 2001)

Tabulated Refraction Profile from Draper Elementary, Draper, Site 3, Earthquake Site Response Unit Q02 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	5.67[a]	380.63	203.46
2		1654.12	

a. Depth to fully saturated zone

Site: 302, Swire Coca-Cola

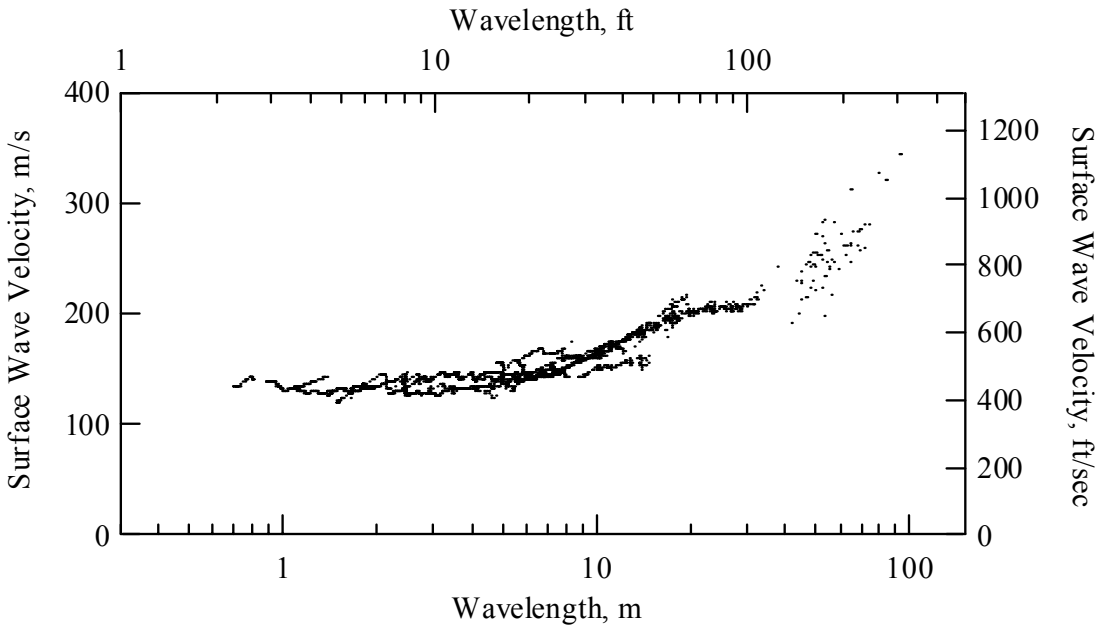


Fig 43 Experimental Dispersion Curve measured at Swire Coca-Cola, Draper, Site 302, Earthquake Site Response Unit Q02 (Ashland, 2001)

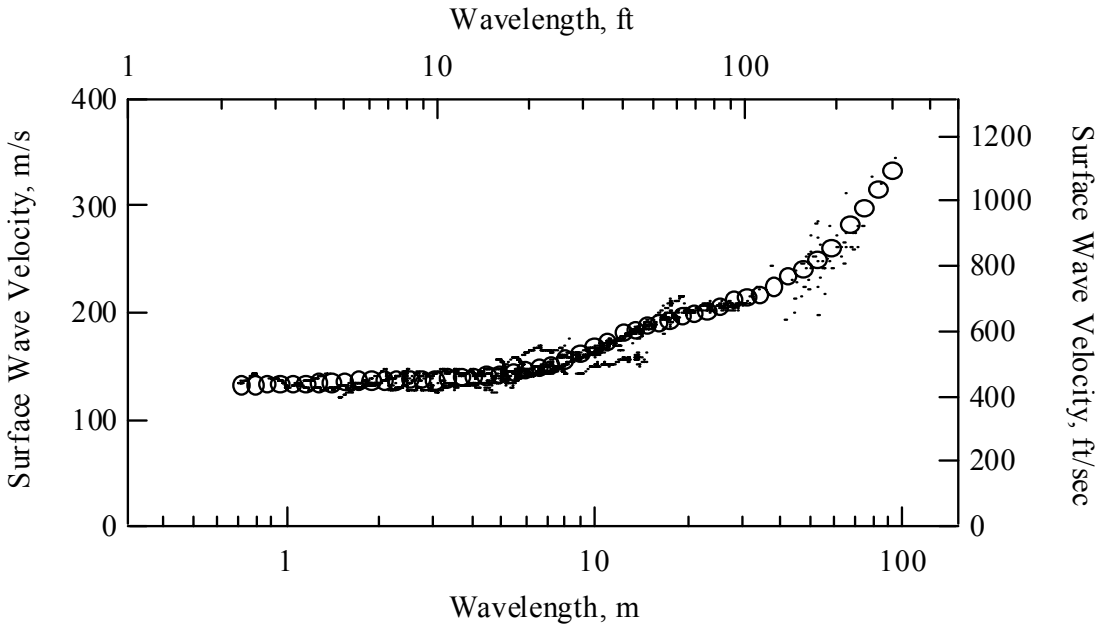


Fig 44 Comparison between Experimental & Theoretical Dispersion Curves Swire Coca-Cola, Draper, Site 302, Earthquake Site Response Unit Q02 (Ashland, 2001)

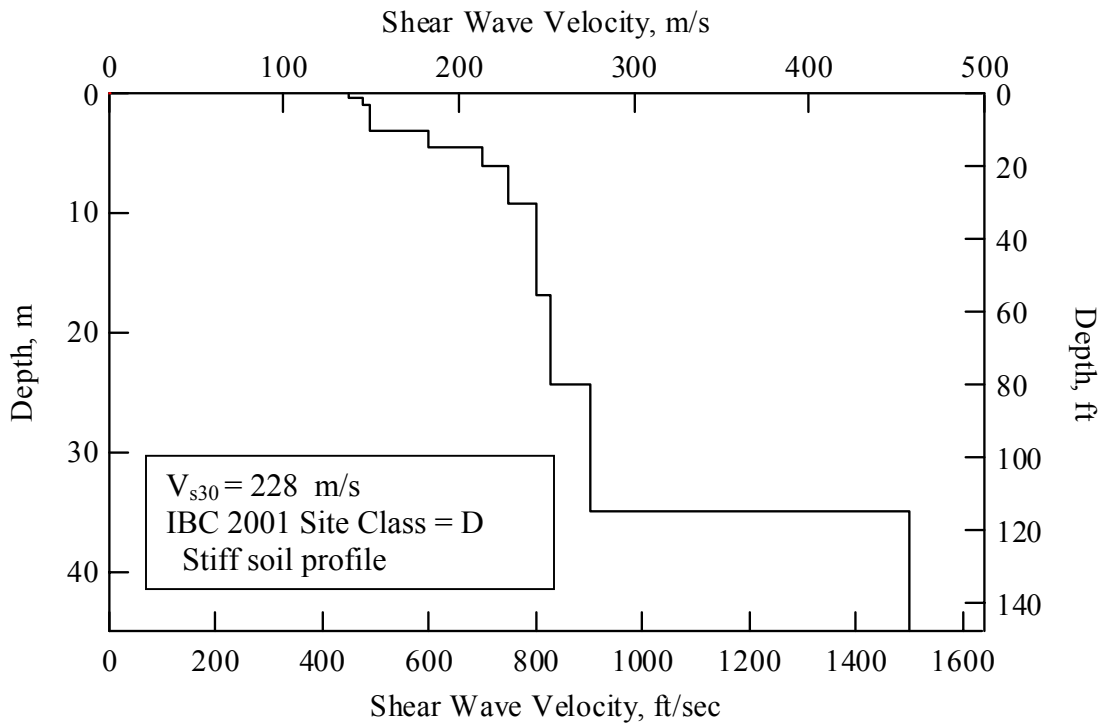


Fig 45 Shear Wave Velocity Profile Determined from SASW Testing at Swire Coca-Cola, Draper, Site 302, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 13 Tabulated Shear Wave Velocity Profile from Swire Coca-Cola, Draper, Site 302, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	137.2	256.6	1.89
0.3	0.61	144.8	270.9	1.89
0.91	2.13	149.4	279.4	1.89
3.04	1.52	182.9	342.1	1.92
4.56	1.52	213.4	399.2	1.92
6.08[a]	3.05	228.6	1524	1.92
9.13	7.62	243.8	1524	1.92
16.75	7.62	251.5	1524	1.92
24.37	10.67	274.3	1524	1.92
35.04	30.18[b]	457.2	1524	2

a. Assumed depth to fully saturated zone
b. Half-space in model

Site: 14, Rose Creek Elementary

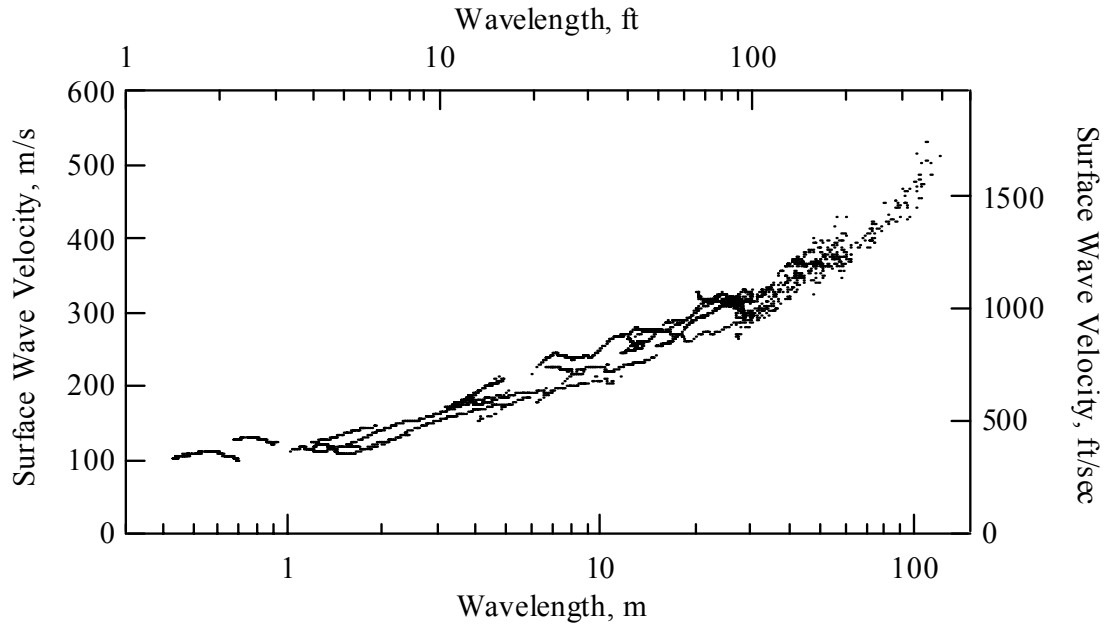


Fig 46 Experimental Dispersion Curve measured at Rose Creek Elementary, Riverton, Site 14, Earthquake Site Response Unit Q02 (Ashland, 2001)

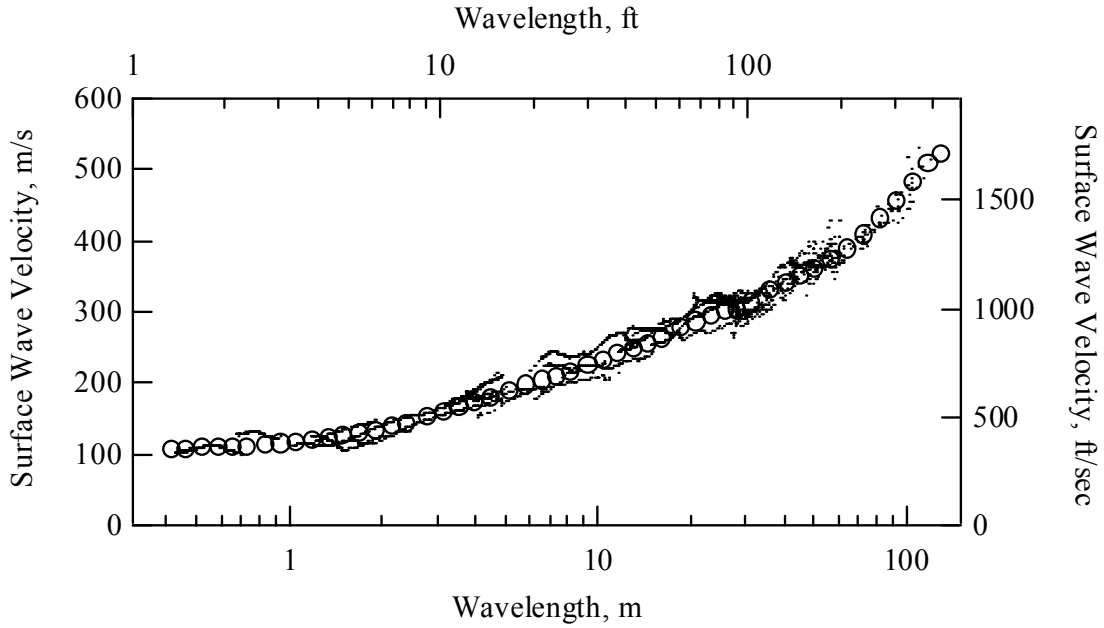


Fig 47 Comparison between Experimental & Theoretical Dispersion Curves from Rose Creek Elementary, Riverton, Site 14, Earthquake Site Response Unit Q02 (Ashland, 2001)

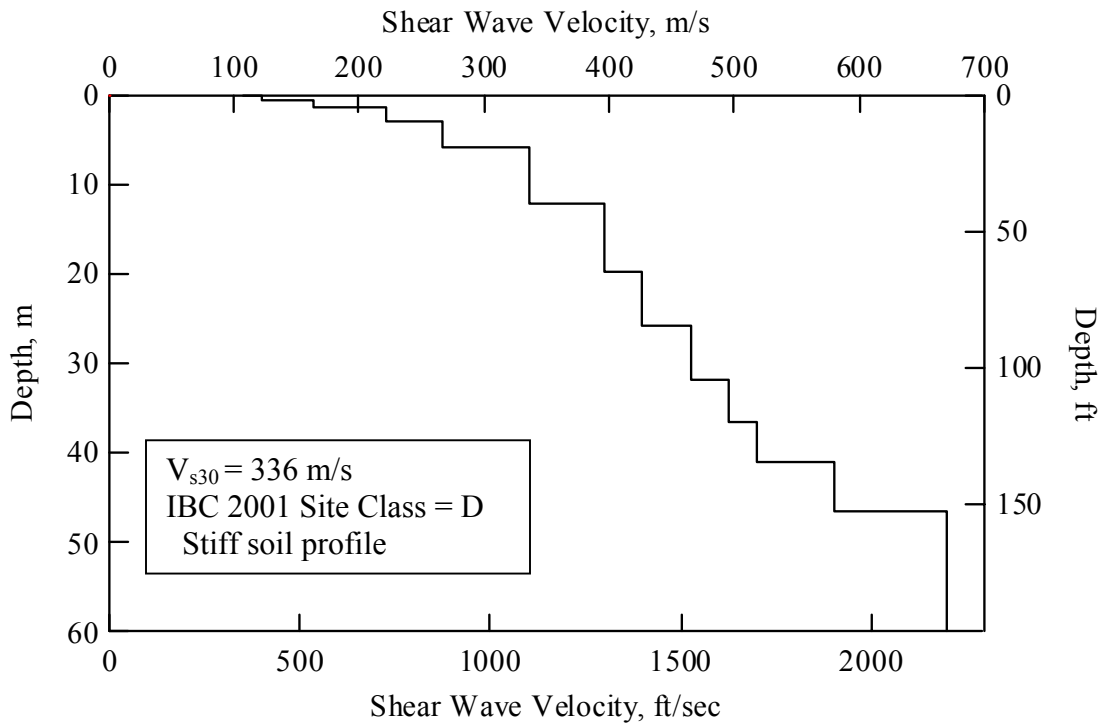


Fig 48 Shear Wave Velocity Profile Determined from SASW Testing at Rose Creek Elementary, Riverton, Site 14, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 14 Tabulated Shear Wave Velocity Profile from Rose Creek Elementary, Riverton, Site 14, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.15	106.7	199.6	1.89
0.15	0.46	121.9	228.1	1.89
0.61	0.84	163.1	305.1	1.92
1.45	1.52	221	413.4	1.92
2.97	3.05	266.7	499	1.92
6.02	6.1	335.3	627.3	2
12.12	7.62	396.2	741.2	2
19.74	6.1	426.7	798.3	2
25.84[a]	6.1	464.8	1524	2
31.94	4.57	495.3	1524	2
36.51	4.57	518.2	1524	2
41.08	5.49	579.1	1524	2
46.57	30.18[b]	670.6	1524	2.08

a. Assumed depth to fully saturated zone
b. Half-space in model

Site: 27, Copper Hills High School

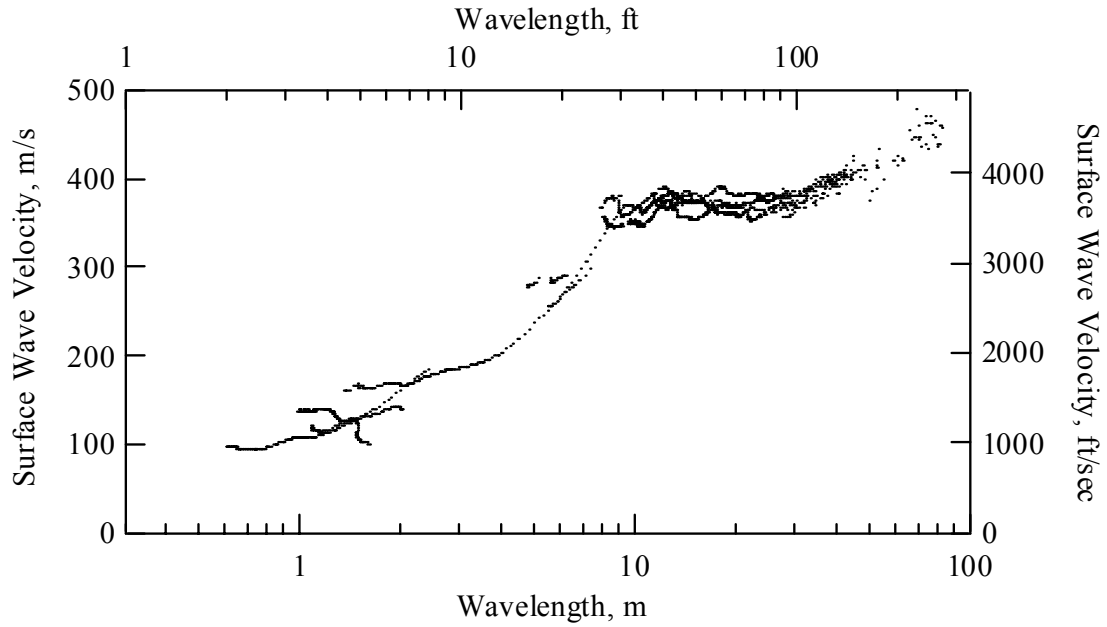


Fig 49 Experimental Dispersion Curve measured at Copper Hills High School, West Jordan, Site 27, Earthquake Site Response Unit Q02 (Ashland, 2001)

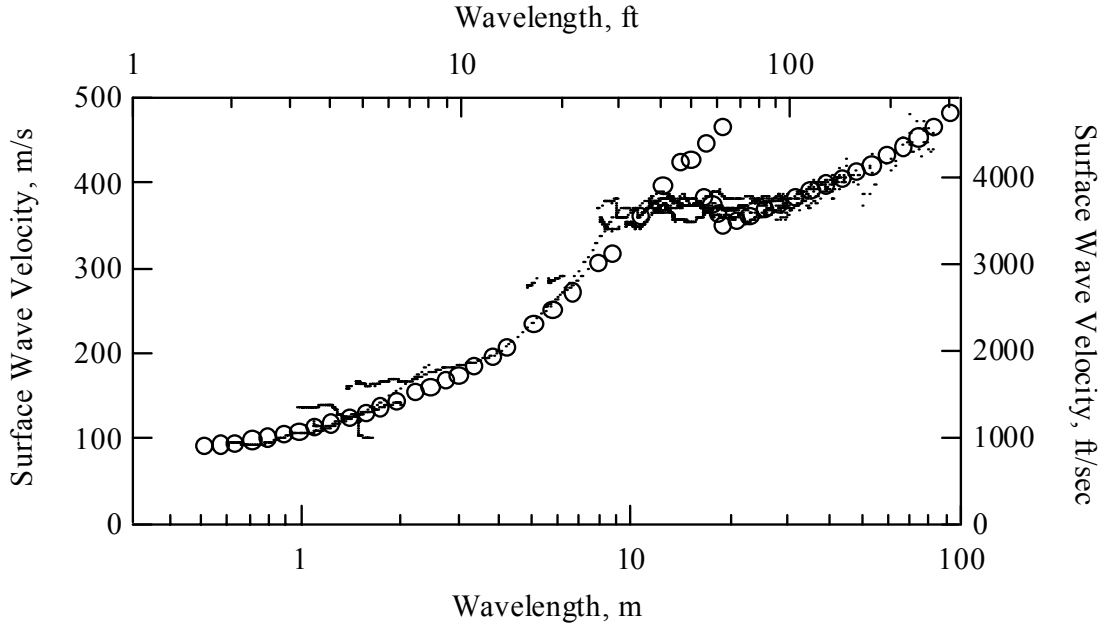


Fig 50 Comparison between Experimental & Theoretical Dispersion Curves from Copper Hills High School, West Jordan, Site 27, Earthquake Site Response Unit Q02 (Ashland, 2001)

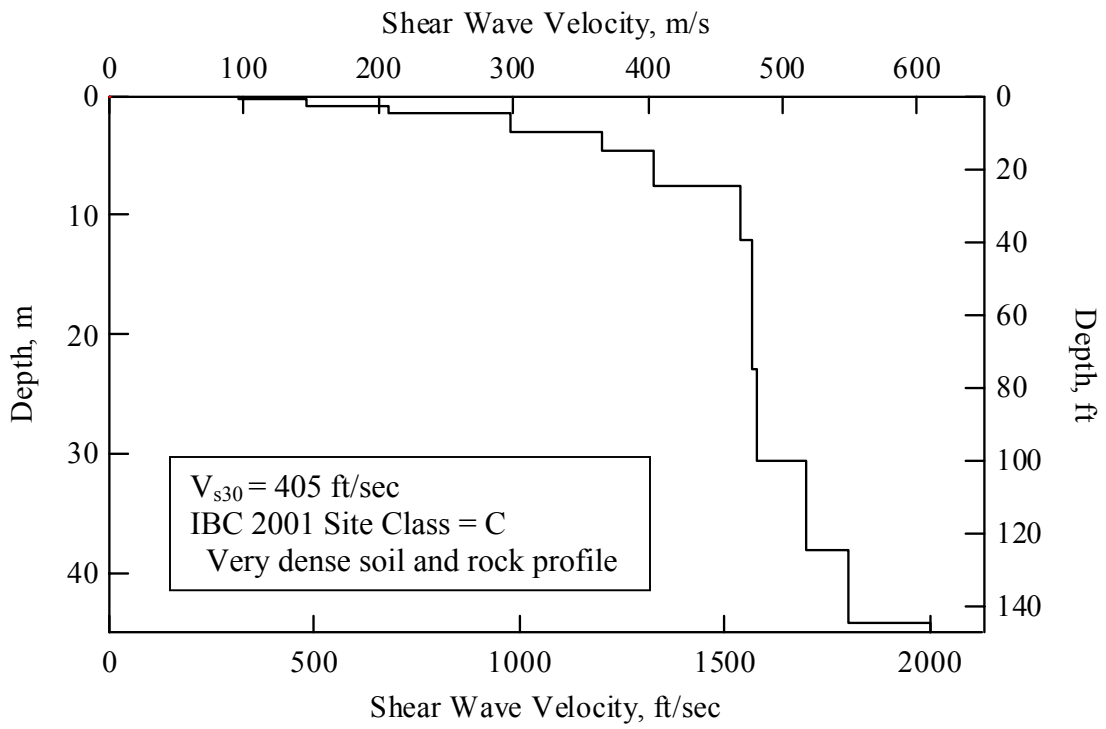


Fig 51 Shear Wave Velocity Profile Determined from SASW Testing at Copper Hills High School, West Jordan, Site 27, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 15 Tabulated Shear Wave Velocity Profile from Copper Hills High School, West Jordan, Site 27, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.37	96	179.6	1.89
0.37	0.46	146.3	273.7	1.89
0.83	0.7	207.3	387.8	1.92
1.53	1.49	297.2	556	1.92
3.02	1.52	365.8	684.3	2
4.54	3.05	403.9	755.5	2
7.59	4.57	469.4	878.2	2
12.16	10.67	477	892.4	2
22.83[a]	7.62	481.6	1524	2
30.45	7.62	518.2	1524	2
38.07	6.1	548.6	1524	2
44.17	30.18[b]	609.6	1524	2.08

a. Assumed depth to fully saturated zone
b. Half-space in model

Site: 125, Dee Memorial Park

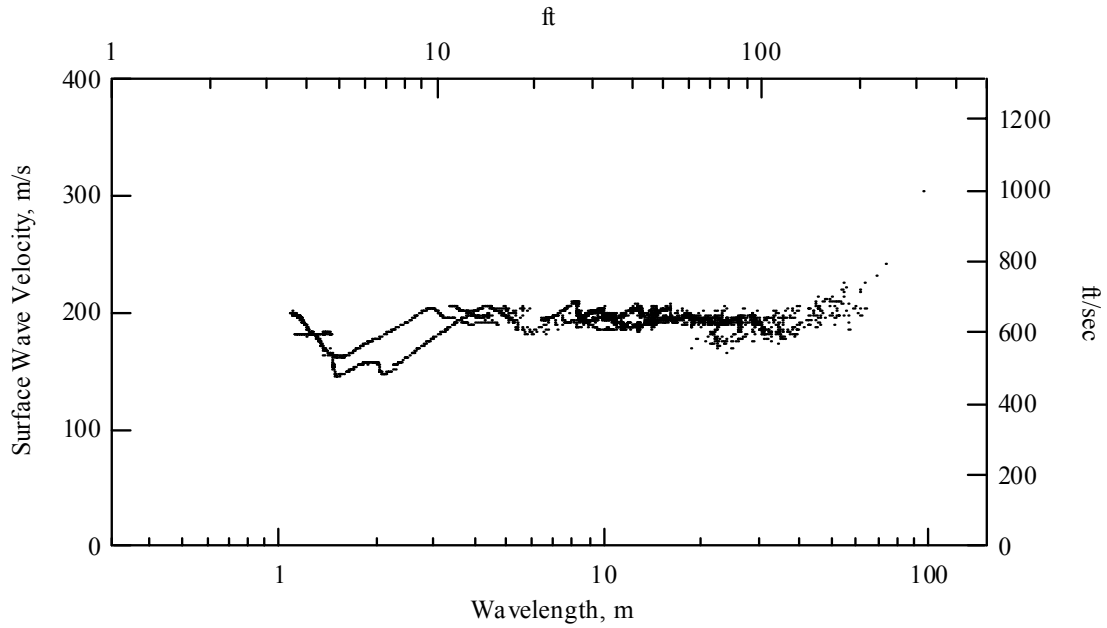


Fig 52 Experimental Dispersion Curve measured at Dee Memorial Park, Ogden, Site 125, Earthquake Site Response Unit Q02 (Ashland, 2001)

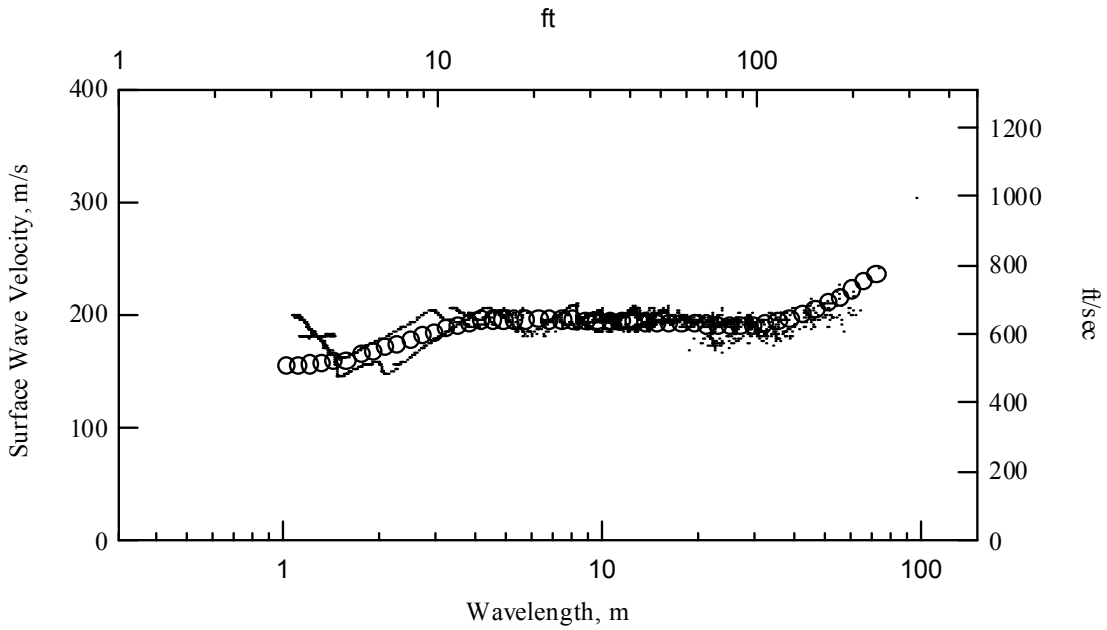


Fig 53 Comparison between Experimental & Theoretical Dispersion Curves from Dee Memorial Park, Ogden, Site 125, Earthquake Site Response Unit Q02 (Ashland, 2001)

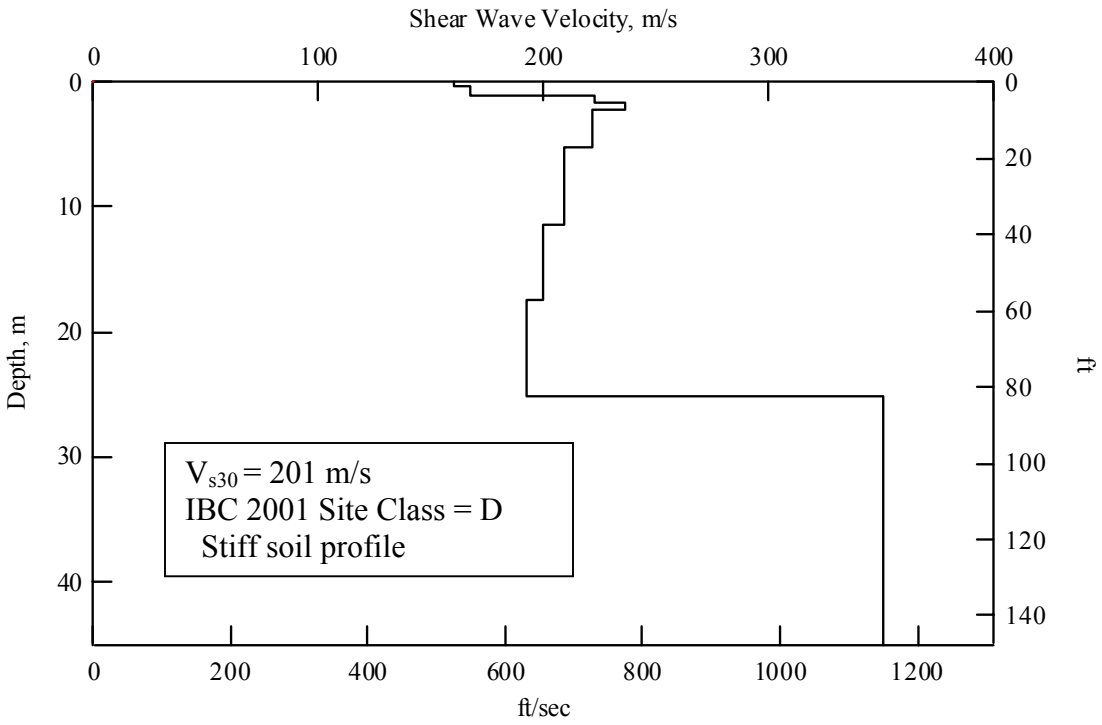


Fig 54 Shear Wave Velocity Profile Determined from SASW Testing at Dee Memorial Park, Ogden, Site 125, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 16 Tabulated Shear Wave Velocity Profile from Dee Memorial Park, Ogden, Site 125, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	160	285.1	1.92
0.3	0.69	167.6	313.6	1.92
0.99	0.61	222.5	416.3	1.92
1.6	0.61	236.2	441.9	1.92
2.21	3.05	221	413.4	1.92
5.26	6.1	208.8	390.6	1.92
11.36	6.1	199.6	373.5	1.92
17.46[a]	7.62	192	1524	1.92
25.08	6.1	198.1	1524	1.92
31.18	30.18[b]	350.5	1524	2

a. Assumed depth to fully saturated zone
b. Half-space in model

Site: 13, Riverton City Park

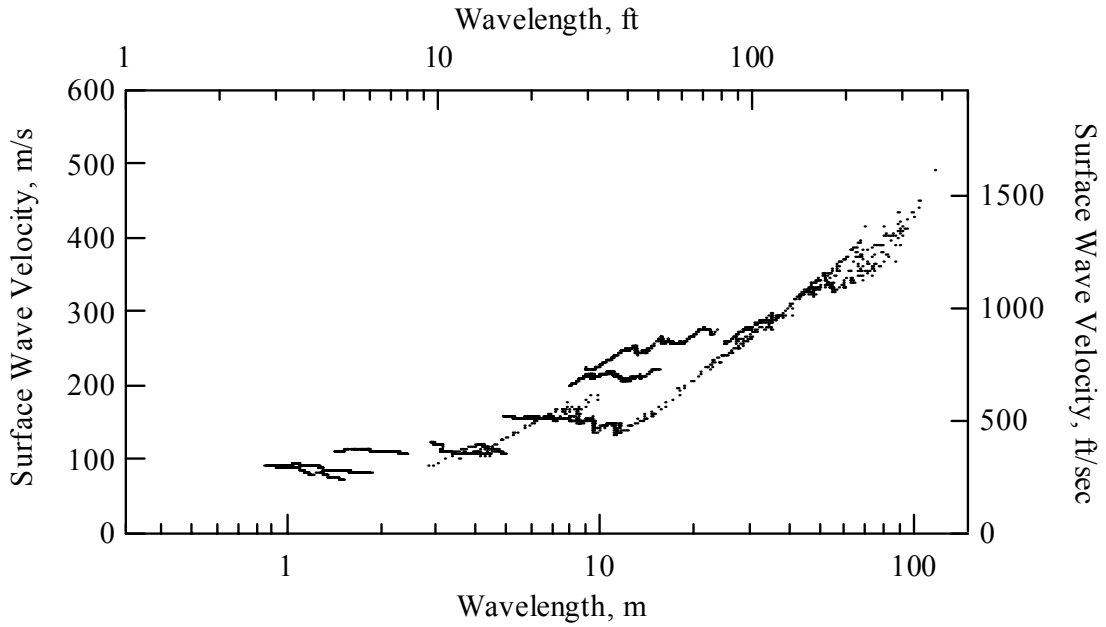


Fig 55 Experimental Dispersion Curve measured at Riverton Park, Riverton, Site 13, Earthquake Site Response Unit Q02 (Ashland, 2001)

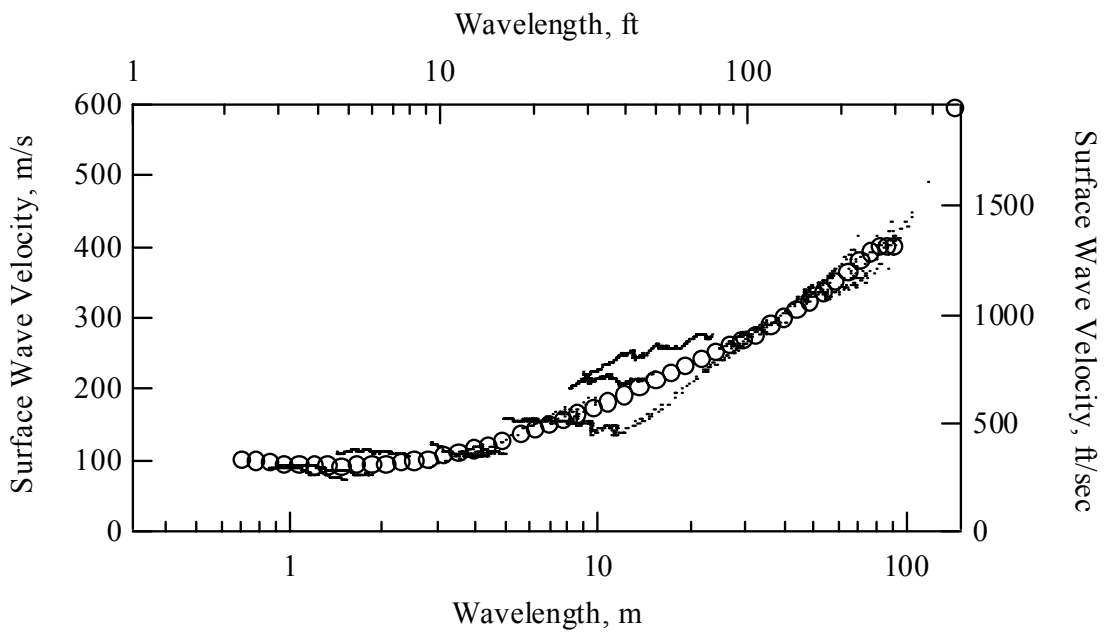


Fig 56 Comparison between Experimental & Theoretical Dispersion Curves from Riverton Park, Riverton, Site 13, Earthquake Site Response Unit Q02 (Ashland, 2001)

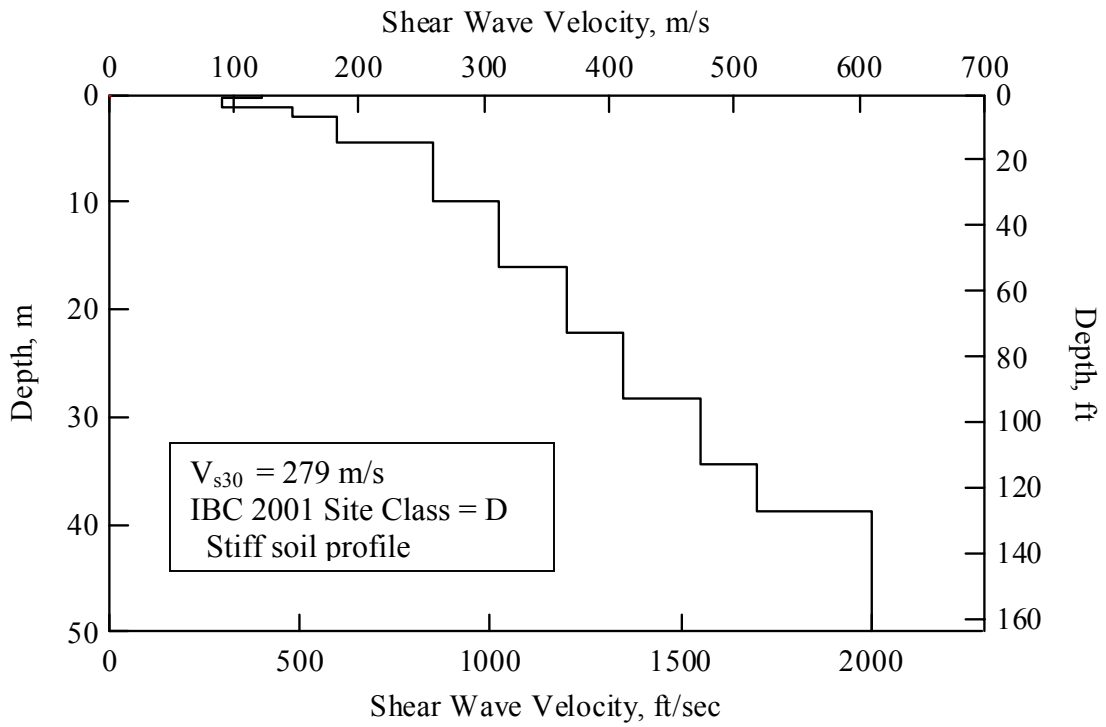


Fig 57 Shear Wave Velocity Profile Determined from SASW Testing at Riverton Park, Riverton, Site 13, Earthquake Site Response Unit Q02 (Ashland, 2001)

Tabulated Shear Wave Velocity Profile from Riverton Park, Riverton, Site 13, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	121.9	228.10	1.89
0.3	0.91	89.9	168.20	1.89
1.21	0.91	146.3	273.70	1.89
2.12	2.29	182.9	342.10	1.92
4.41	5.49	259.1	484.70	1.92
9.9	6.1	312.4	584.50	2
16[a]	6.1	365.8	1524.00	2
22.1	6.1	411.5	1524.00	2
28.2	6.1	472.4	1524.00	2
34.3	4.57	518.2	1524.00	2
38.87	30.18[b]	609.6	1524.00	2.08

a. Depth to fully saturated zone
b. Half-space in model

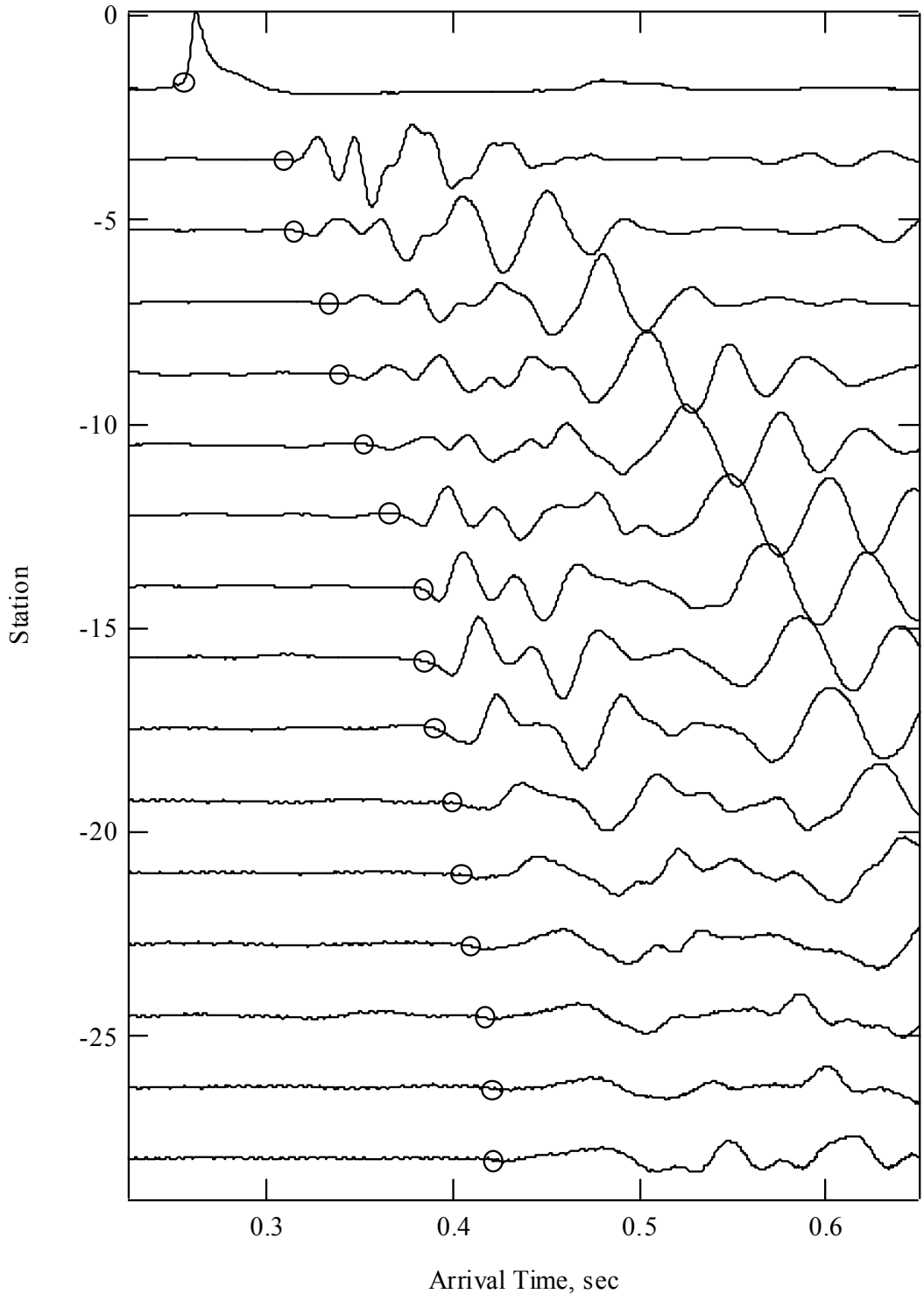


Fig 58 Arrival Times for Refraction Testing at Riverton Park, Riverton, Site 13, Earthquake Site Response Unit Q02 (Ashland, 2001)

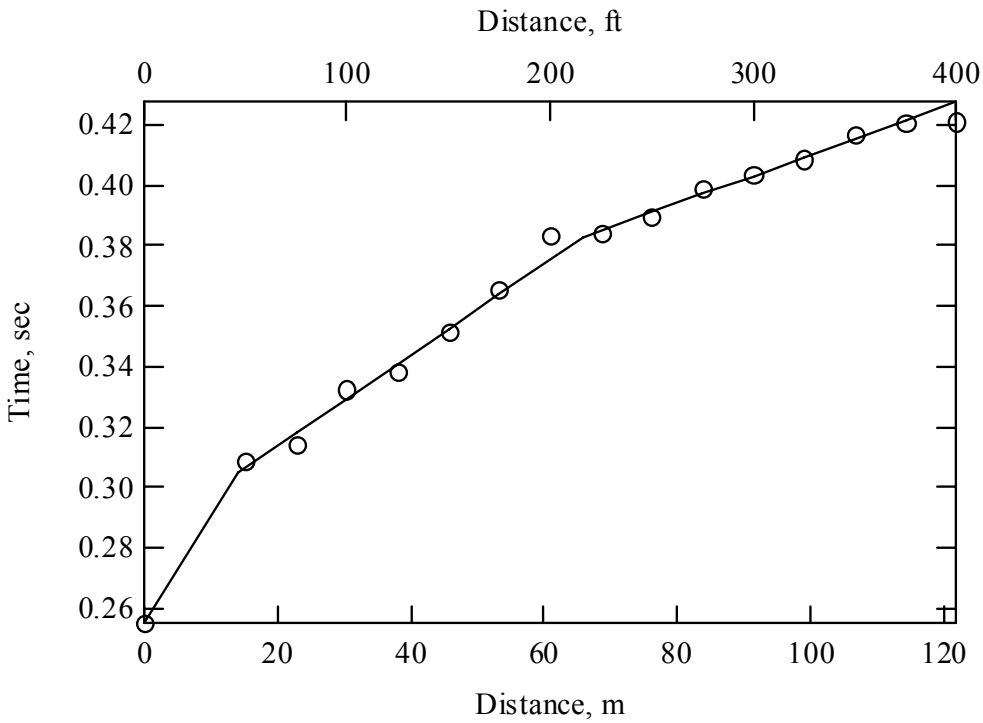


Fig 59 Time-Distance Curve for Refraction Testing at Riverton Park, Riverton, Site 13, Earthquake Site Response Unit Q02 (Ashland, 2001)

Tabulated Refraction Profile for Riverton Park, Riverton, Site 13, Earthquake Site Response Unit Q02 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	4.47	283.74	151.67
2	16.80[a]	663.66	354.74
3		1241.33	

a. Depth to fully saturated zone

Site: 43, Crestview Elementary

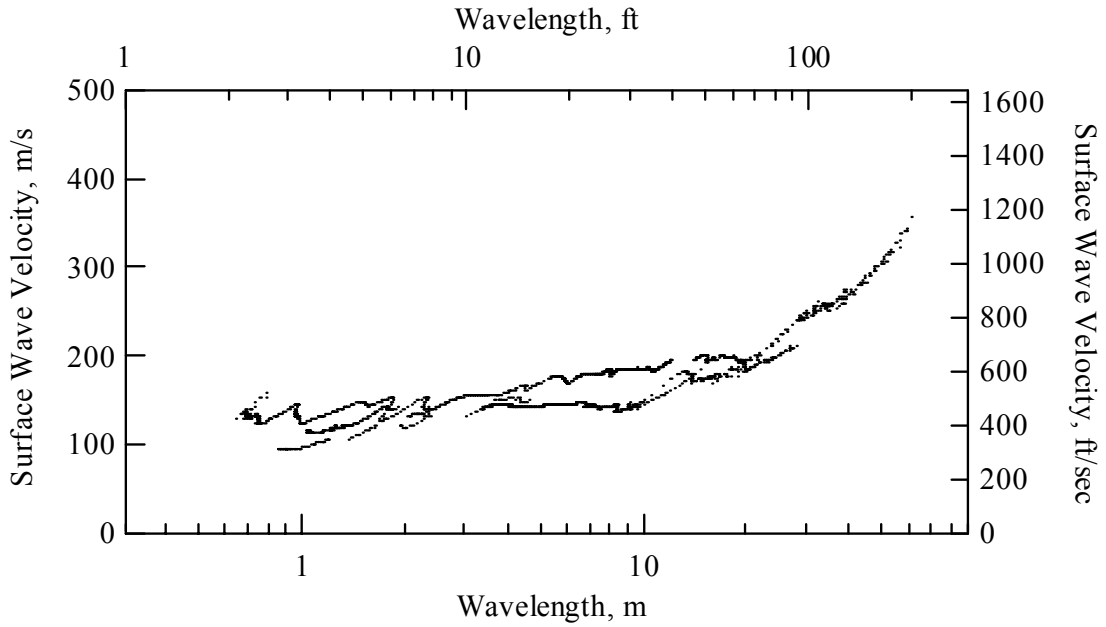


Fig 60 Experimental Dispersion Curve measured at Crestview Elementary, East Millcreek, Site 43, Earthquake Site Response Unit Q02 (Ashland, 2001)

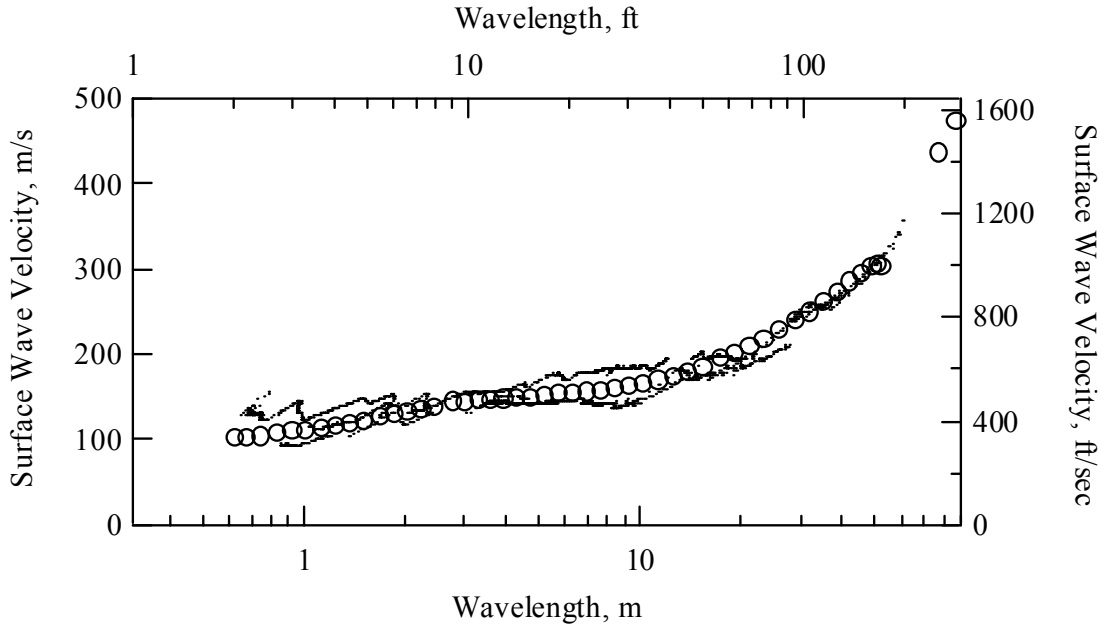


Fig 61 Comparison between Experimental & Theoretical Dispersion Curves from Crestview Elementary, East Millcreek, Site 43, Earthquake Site Response Unit Q02 (Ashland, 2001)

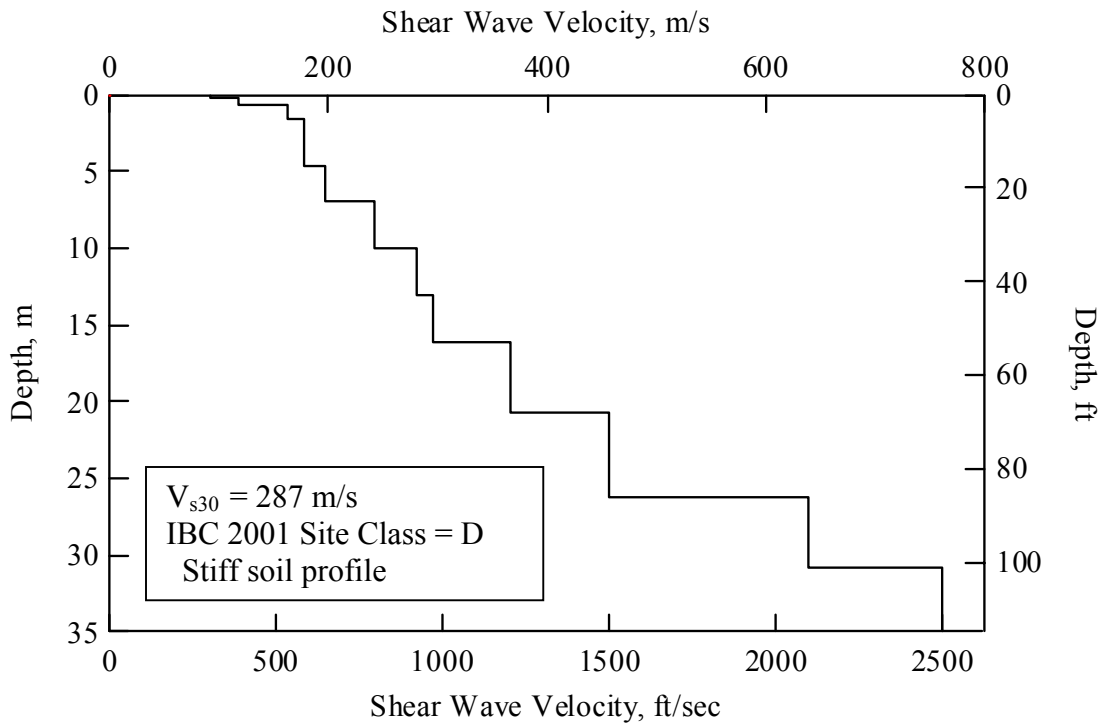


Fig 62 Shear Wave Velocity Profile Determined from SASW Testing at Crestview Elementary, East Millcreek, Site 43, Earthquake Site Response Unit Q02 (Ashland, 2001)

Table 17 Tabulated Shear Wave Velocity Profile for Average Profile from Crestview Elementary, East Millcreek, Site 43, Earthquake Site Response Unit Q02 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.15	91.4	171.1	1.89
0.15	0.46	118.9	222.4	1.89
0.61	0.91	163.1	305.1	1.92
1.52	3.05	178.3	333.6	1.92
4.57	2.44	198.1	370.6	1.92
7.01	3.05	243.8	456.2	1.92
10.06	3.05	281.9	527.5	1.92
13.11	3.05	297.2	556	1.92
16.16	4.57	365.8	684.3	2
20.73[a]	5.49	457.2	1524	2
26.22	4.57	640.1	1524	2.08
30.79	30.18[b]	762	1524	2.08

a. Assumed depth to fully saturated zone
b. Half-space in model

Site 300 – Hang-Glider

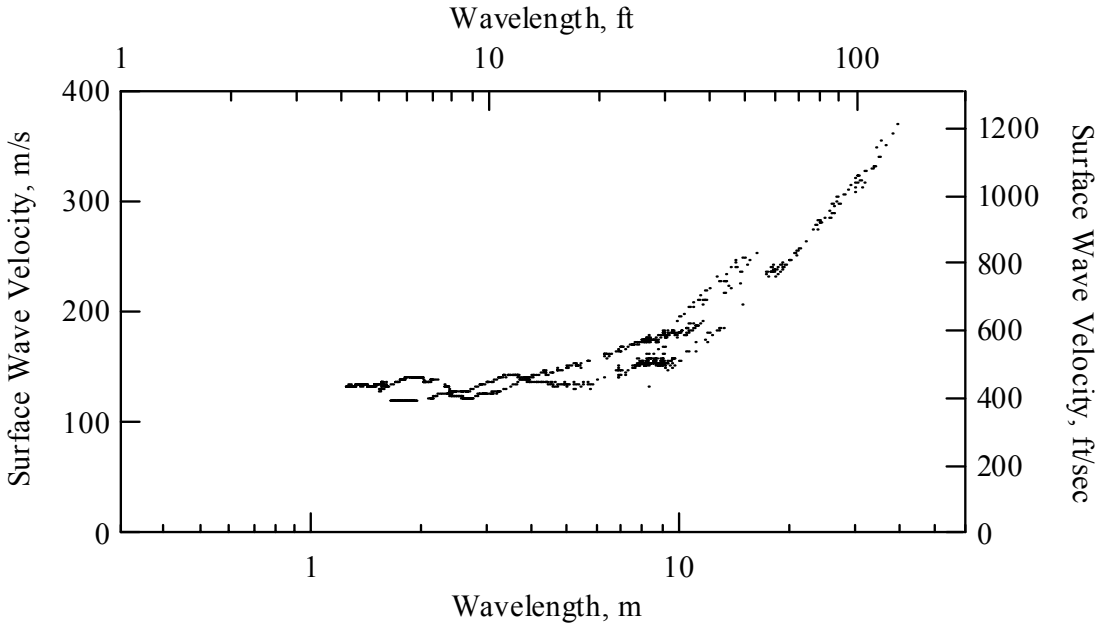


Figure 1 Experimental Dispersion Curve measured at North Hang-Gliding Park, Draper, Site 300, Earthquake Site Response Unit Q03 (Ashland, 2001)

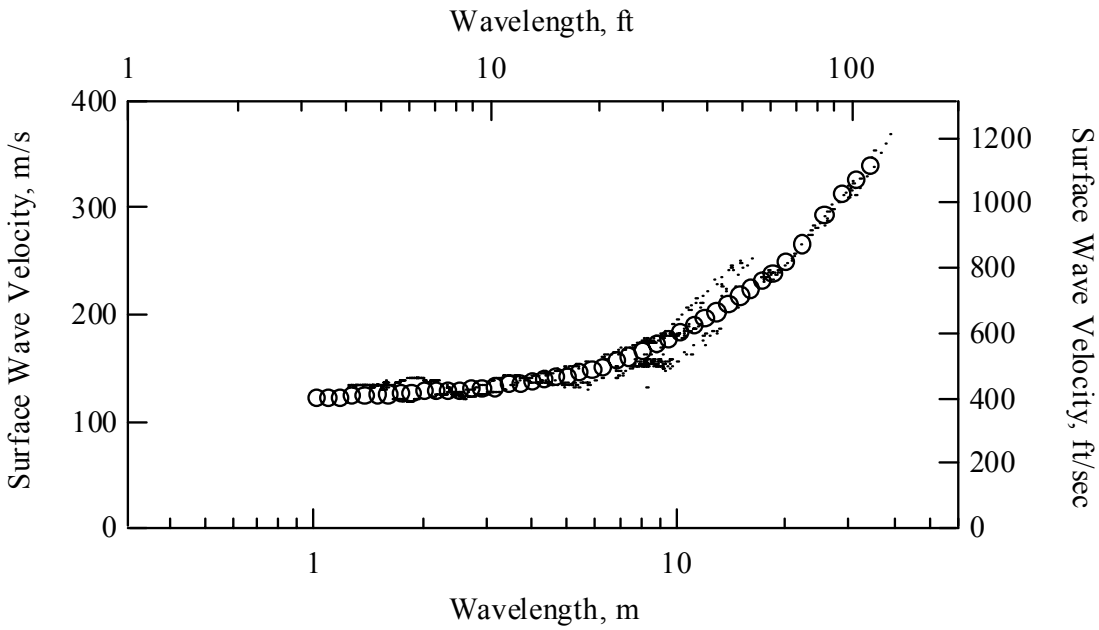


Figure 2 Comparison between Experimental & Theoretical Dispersion Curves from North Hang-Gliding Park, Draper, Site 300, Earthquake Site Response Unit Q03 (Ashland, 2001)

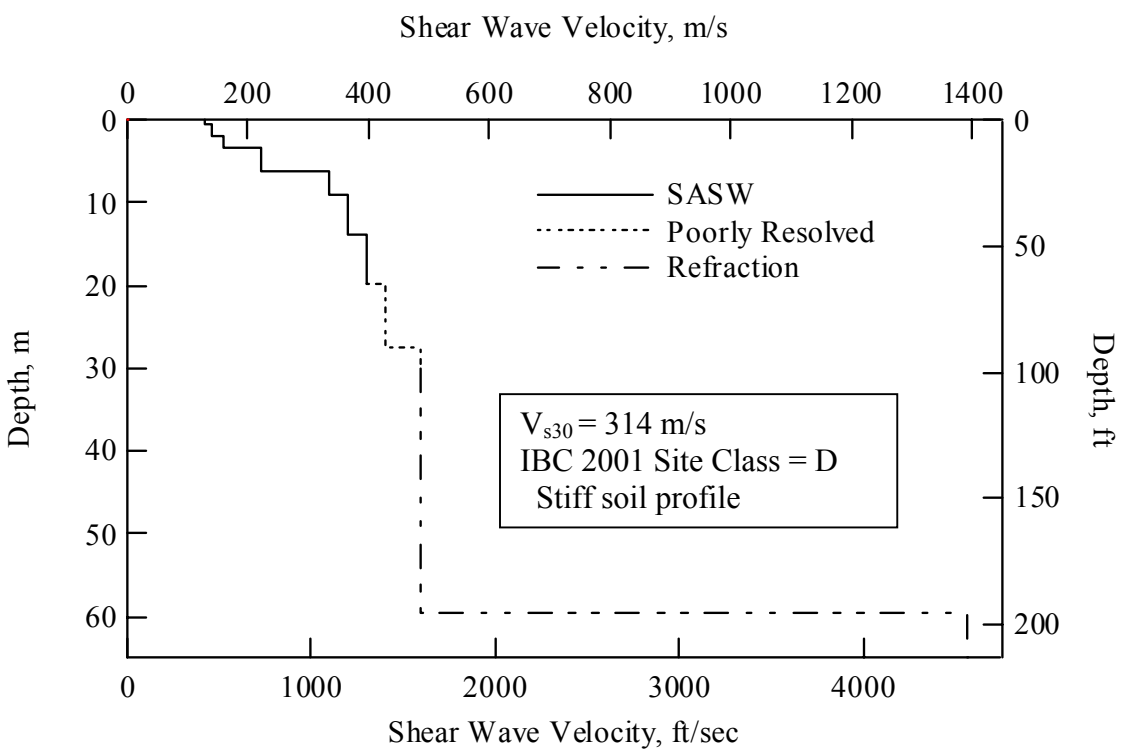


Figure 3 Shear Wave Velocity Profile Determined from SASW Testing at North Hang-Gliding Park, Draper, Site 300, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 1 Tabulated Shear Wave Velocity Profile from North Hang-Gliding Park, Draper, Site 300, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.61	128	239.5	1.89
0.61	1.22	140.2	262.3	1.89
1.83	1.52	160	299.4	1.92
3.35	2.74	221	413.4	1.92
6.09	3.05	335.3	627.3	2.00
9.14	4.57	365.8	684.3	2.00
13.71	6.1	396.2	741.3	2.00
19.81	7.62	426.7	812.6	2.00
27.43	30.18[a]	485[b]	907.4	2.00

a. Half-space in model
b. Refraction velocity

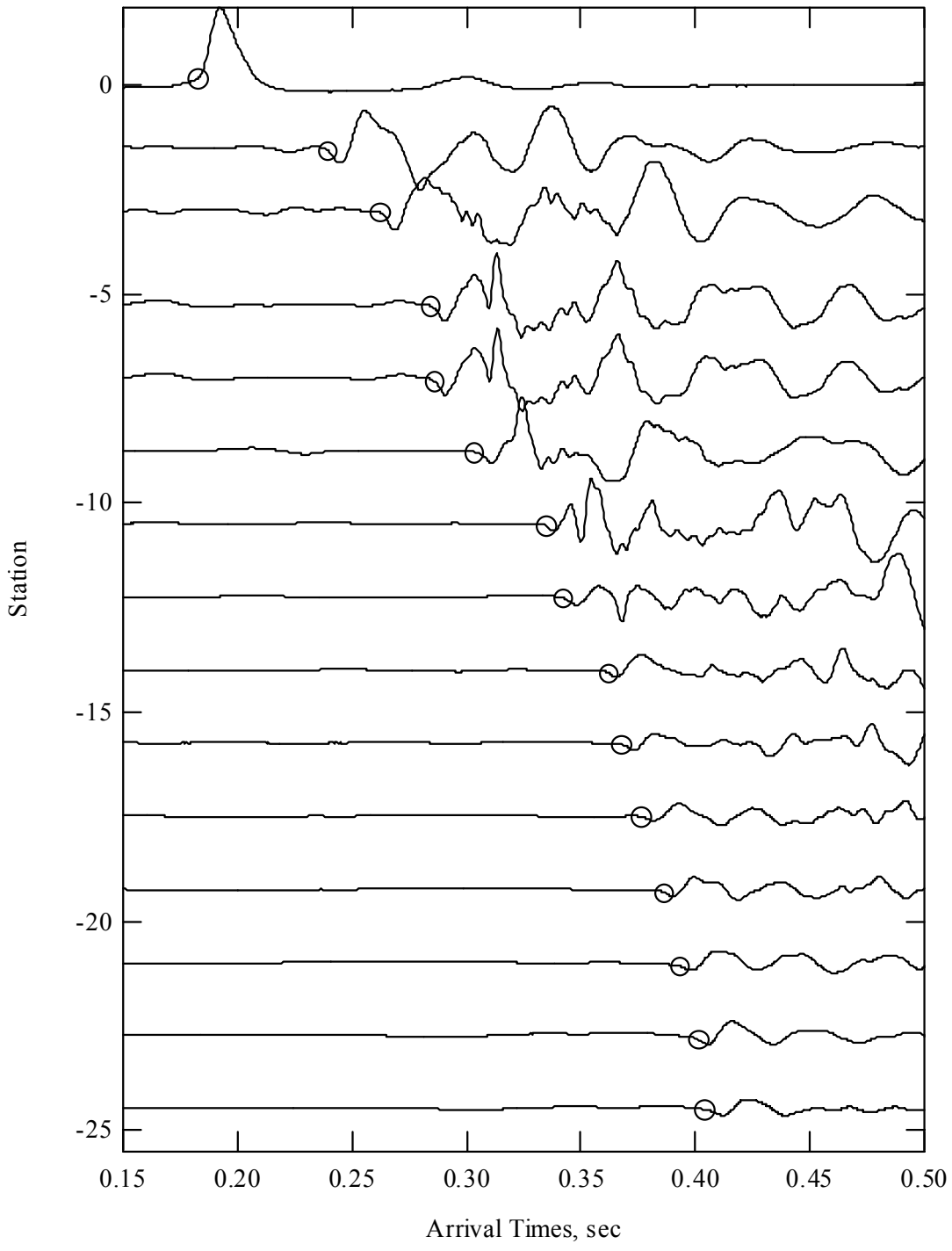


Fig 1 Arrival Times for Refraction Testing at North Hang-Gliding Park, Draper, Site 300, Earthquake Site Response Unit Q03 (Ashland 2001)

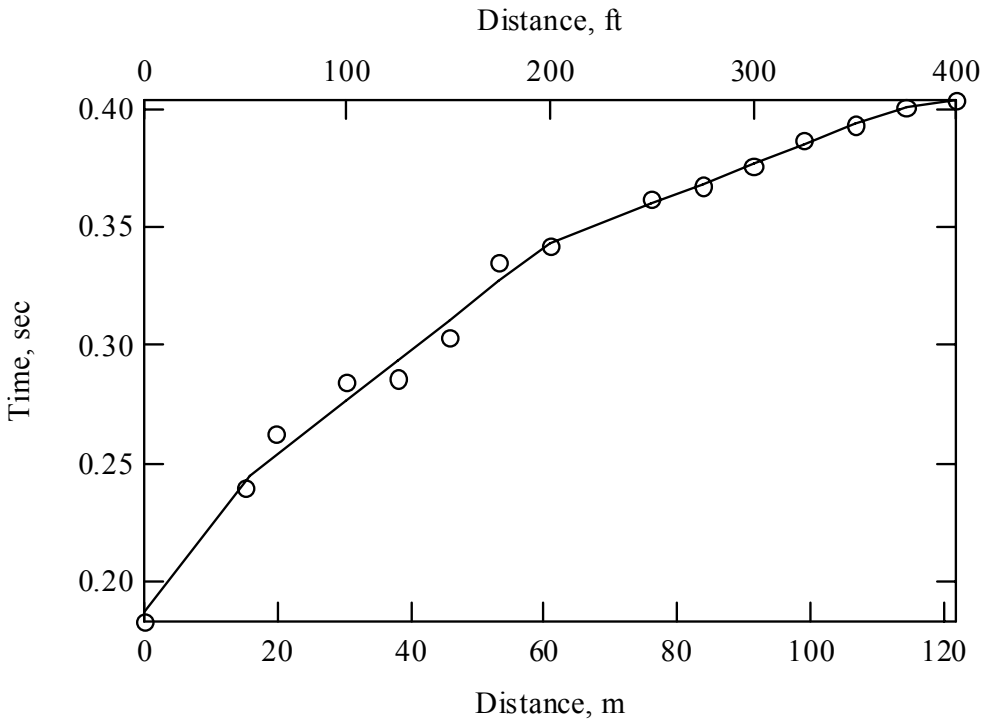


Fig 2 Time-Distance Curve for Refraction Testing at North Hang-Gliding Park, Draper, Site 300, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 2 Tabulated Refraction Profile from North Hang-Gliding Park, Draper, Site 300, Earthquake Site Response Unit Q03 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	4.18	253.68	135.60
2	16.39	452.45	241.84
3	59.55	908.76	485.75
4		2600.71	1390.14

Site 301 – Herriman Lot

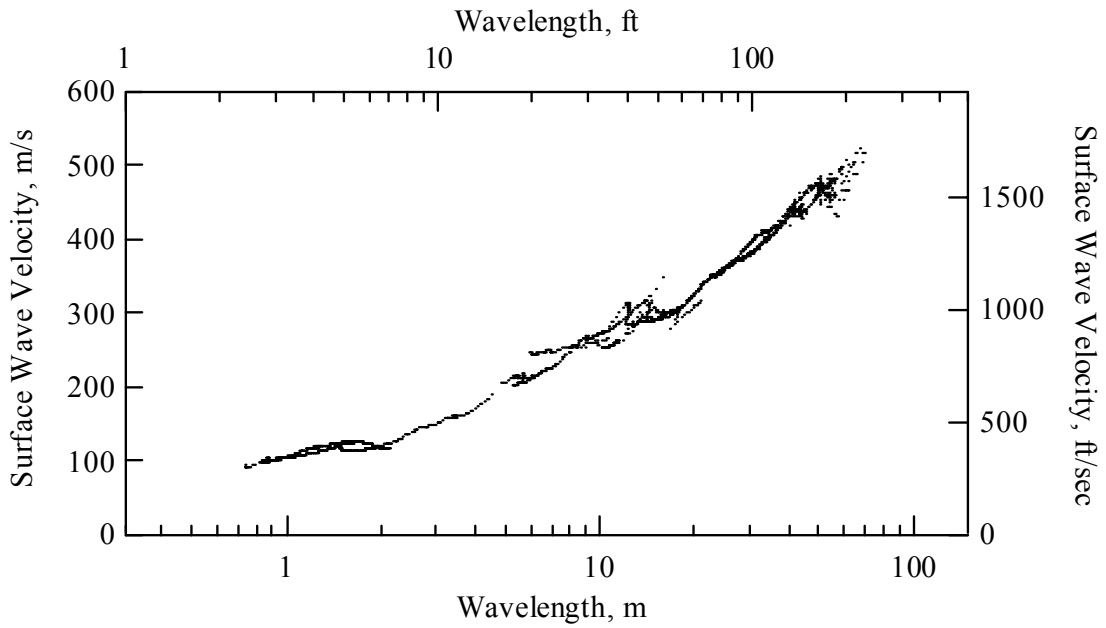


Figure 4 Experimental Dispersion Curve measured at Herriman Lot, Riverton, Site 301, Earthquake Site Response Unit Q03 (Ashland, 2001)

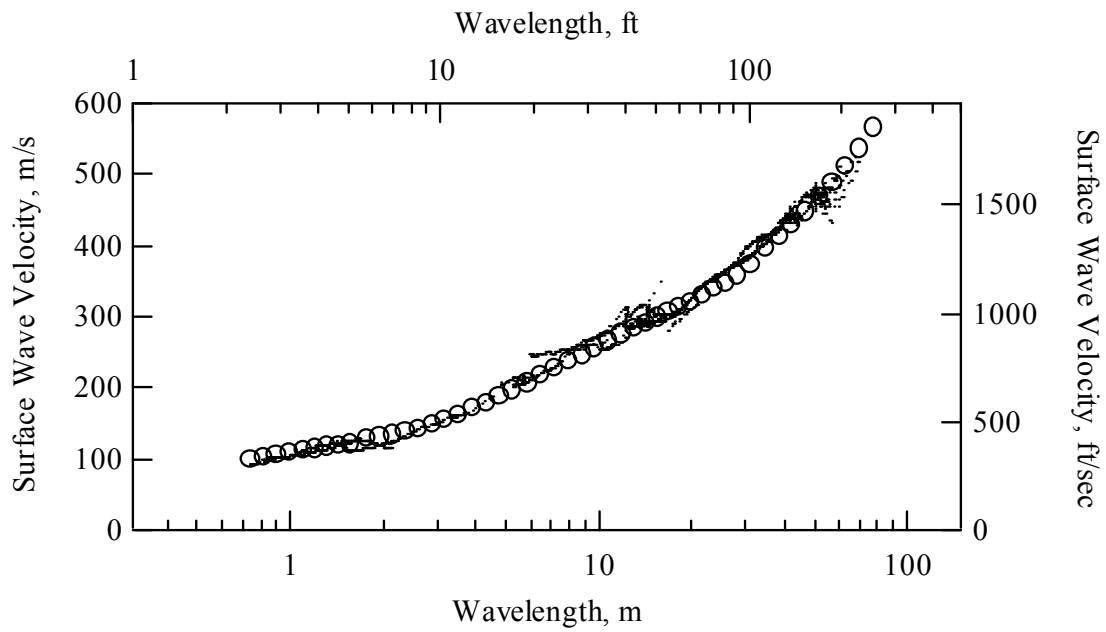


Figure 5 Comparison between Experimental & Theoretical Dispersion Curves from Herriman Lot, Riverton, Site 301, Earthquake Site Response Unit Q03 (Ashland, 2001)

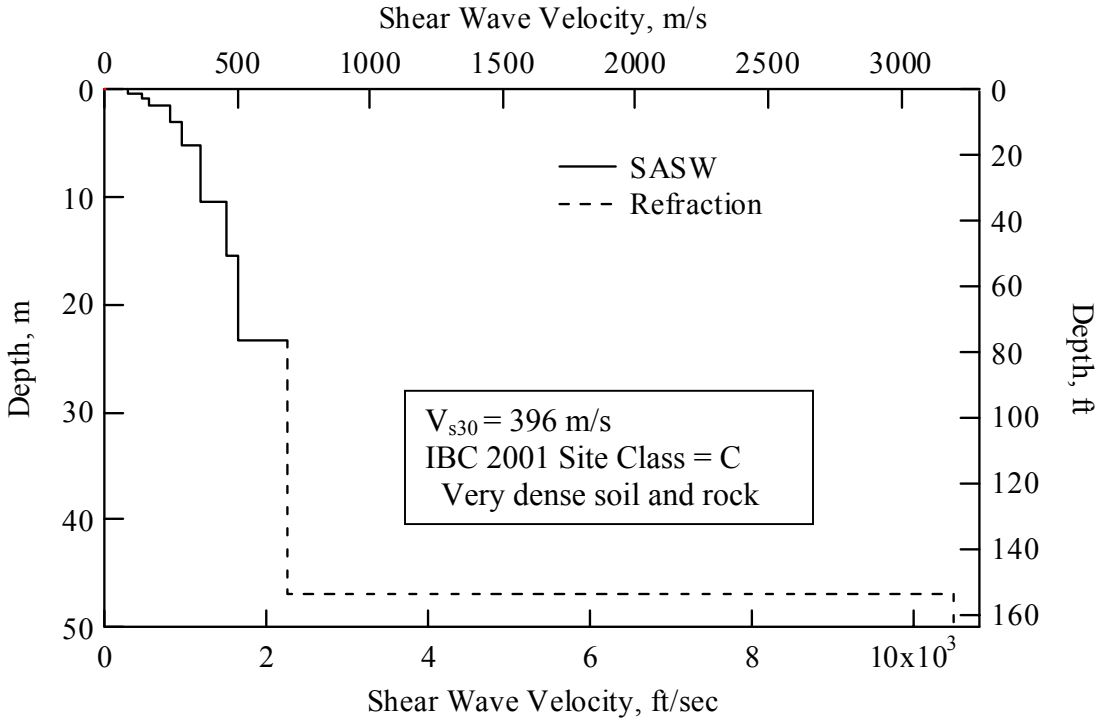


Figure 6 Shear Wave Velocity Profile Determined from SASW Testing at Herriman Lot, Riverton, Site 301, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 3 Tabulated Shear Wave Velocity Profile from Herriman Lot, Riverton, Site 301, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	91.4	171.1	1.89
0.3	0.61	137.2	256.6	1.89
0.91	0.61	167.6	313.6	1.92
1.52	1.52	249	465.9	1.92
3.04	2.13	289.6	541.7	2
5.17	5.18	358.1	670	2
10.35	5.18	457.2	855.3	2
15.53	7.62	502.9	940.9	2
23.15	30.18[a]	685[b]	1281.5	2.08

a. Half-space in model
b. Refraction velocity

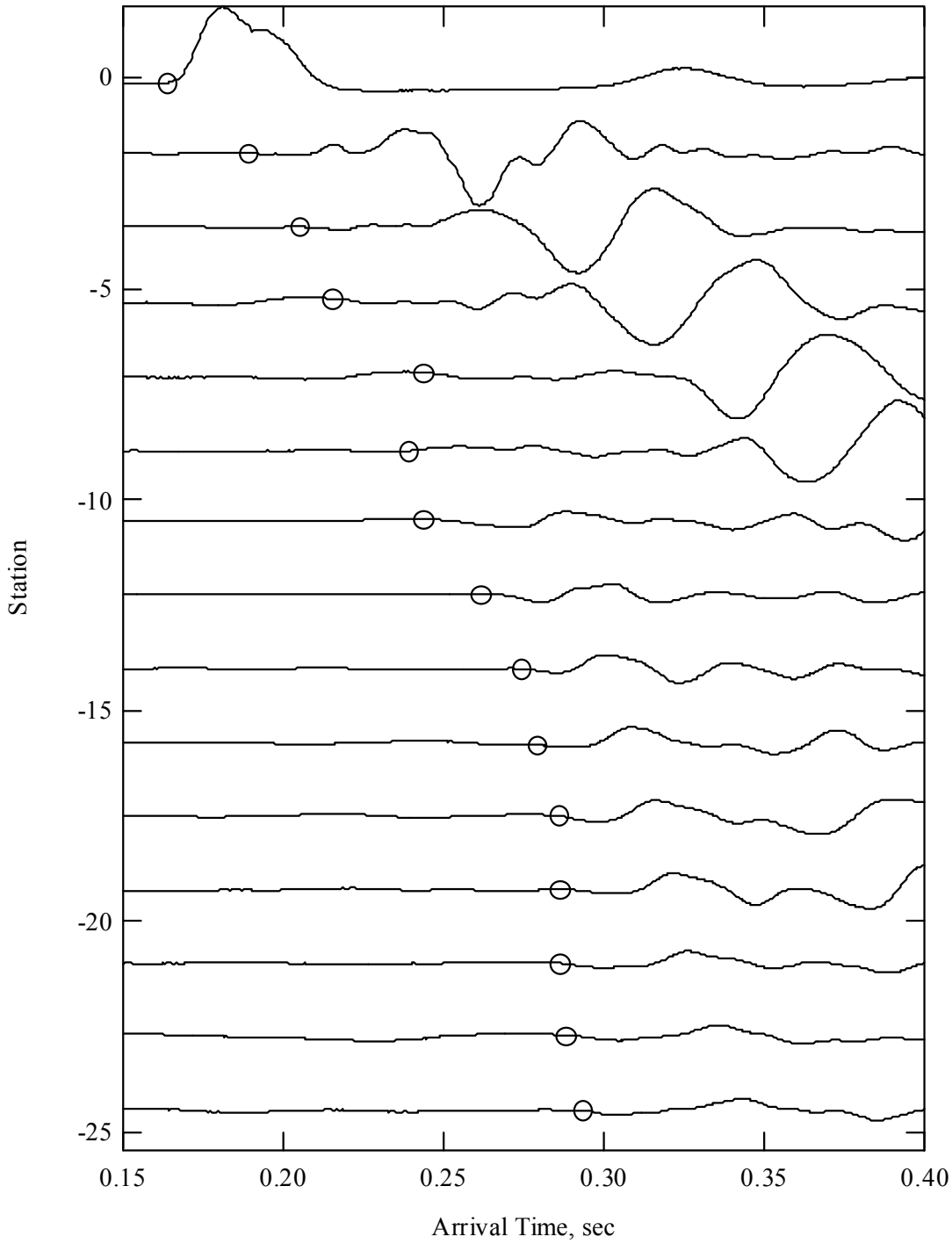


Figure 7 Arrival Times for Refraction Testing at Herriman Lot, Riverton, Site 301, Earthquake Site Response Unit Q03 (Ashland, 2001)

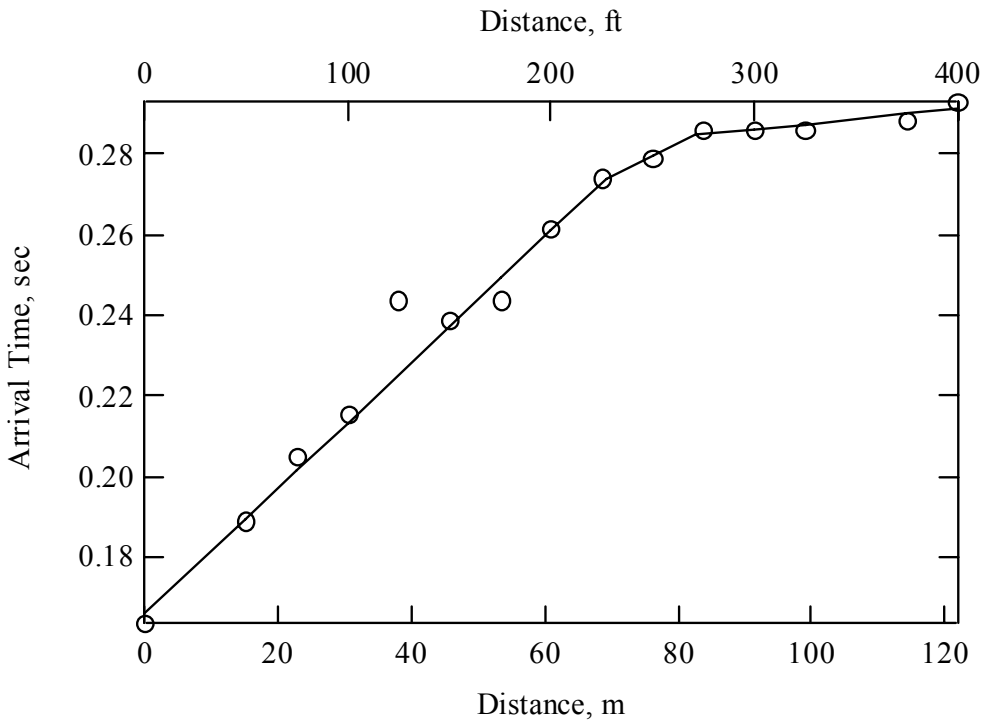


Figure 8 Time-Distance Curve for Refraction Testing at Herriman Lot, Riverton, Site 301, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 4 Tabulated Refraction Profile from Herriman Lot, Riverton, Site 301, Earthquake Site Response Unit Q03 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	20.05	641.40	342.84
2	46.79	1282.20	685.36
3		5985.873	3199.5839[a]

a. Bedrock velocity

Site 96 – Cedar Valley, County Road

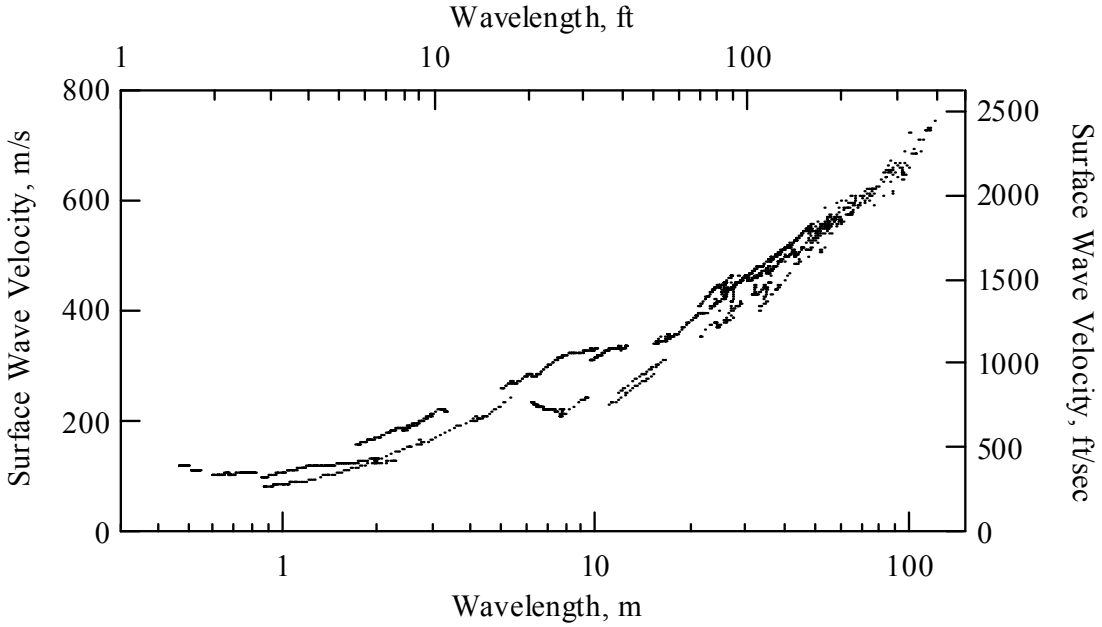


Fig 3 Experimental Dispersion Curve measured at Cedar Valley County Road, Cedar Valley, Site 96, Earthquake Site Response Unit Q03 (Ashland, 2001)

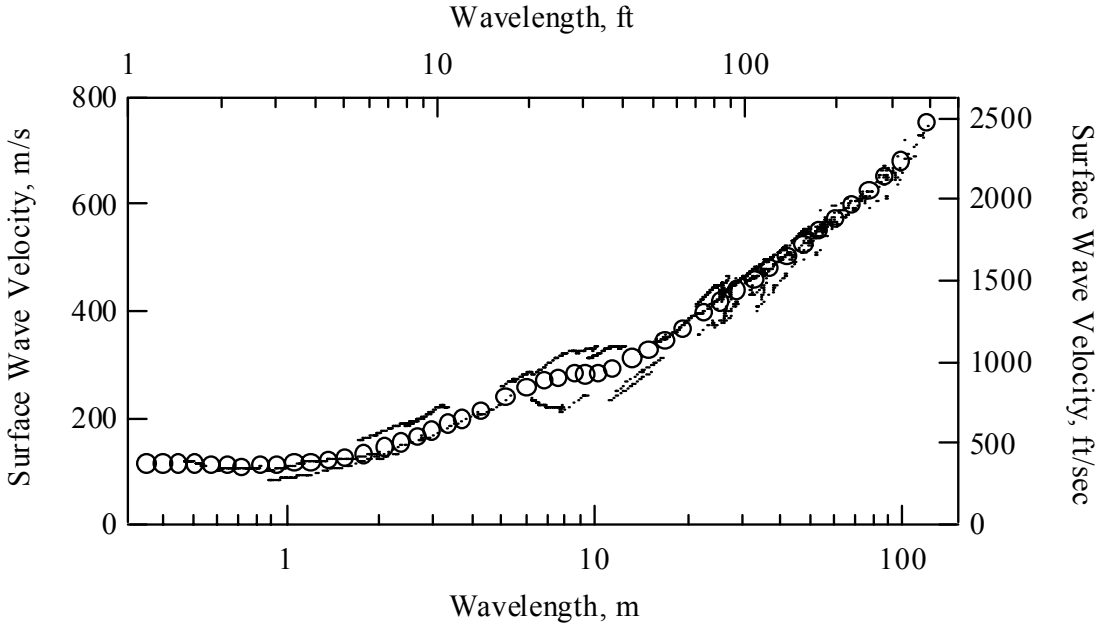


Fig 4 Comparison between Experimental & Theoretical Dispersion Curves from Cedar Valley County Road, Cedar Valley, Site 96, Earthquake Site Response Unit Q03 (Ashland, 2001)

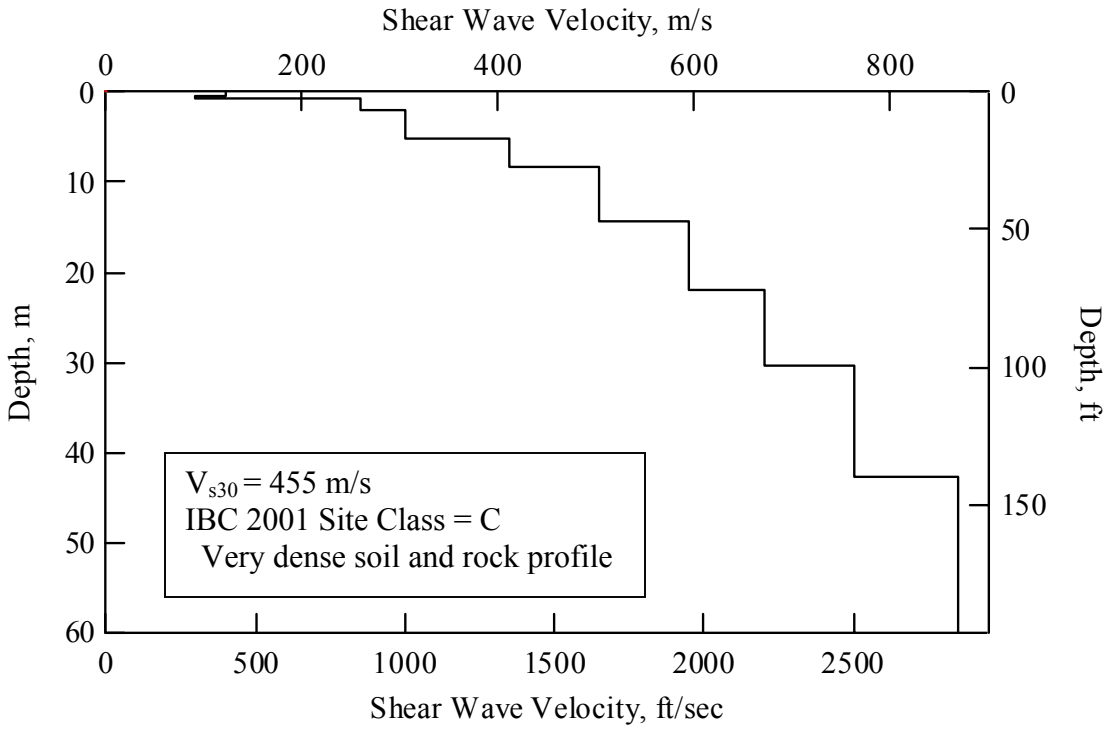


Fig 5 Shear Wave Velocity Profile Determined from SASW Testing at Cedar Valley County Road, Cedar Valley, Site 96, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 5 Tabulated Shear Wave Velocity Profile from Cedar Valley County Road, Cedar Valley, Site 96, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.53	121.9	228.1	1.89
0.53	0.15	91.4	171.1	1.89
0.68	1.22	259.1	484.7	1.92
1.9	3.35	304.8	570.2	2
5.25	3.05	411.5	769.8	2
8.3	6.1	502.9	940.9	2
14.4	7.62	594.4	1111.9	2
22.02	8.38	670.6	1254.5	2.08
30.4	12.19	762	1425.6	2.08
42.59	30.18[a]	868.7	1625.2	2.08

a. Half-space in model

Site 105, Eagle Mountain, Cedar Valley

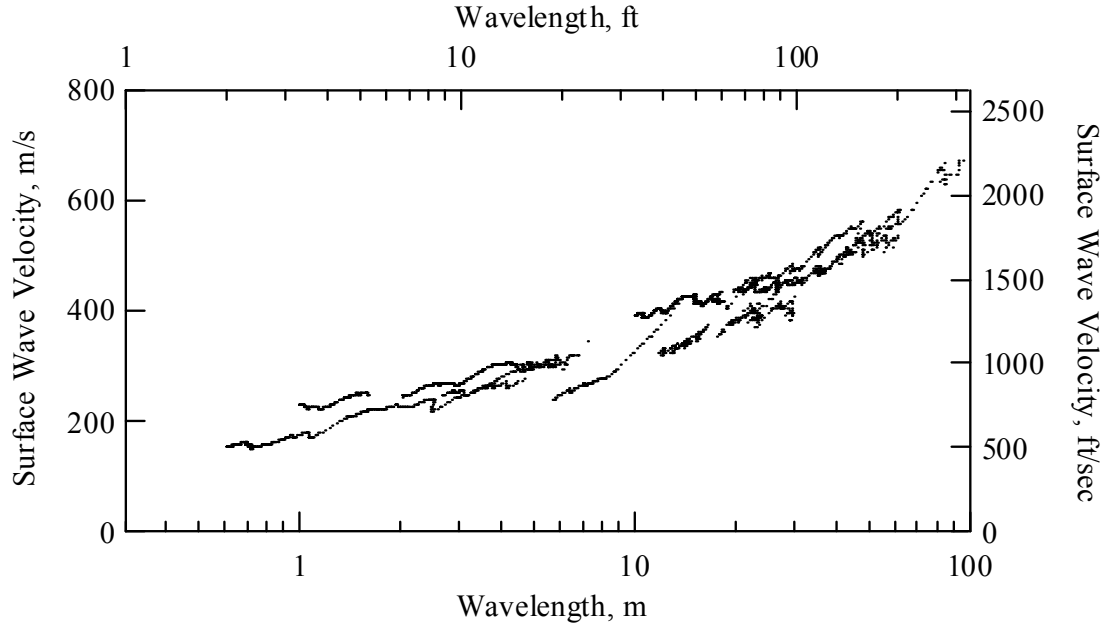


Fig 6 Experimental Dispersion Curve measured at Eagle Mountain, Cedar Valley, Site 105, Earthquake Site Response Unit Q03 (Ashland, 2001)

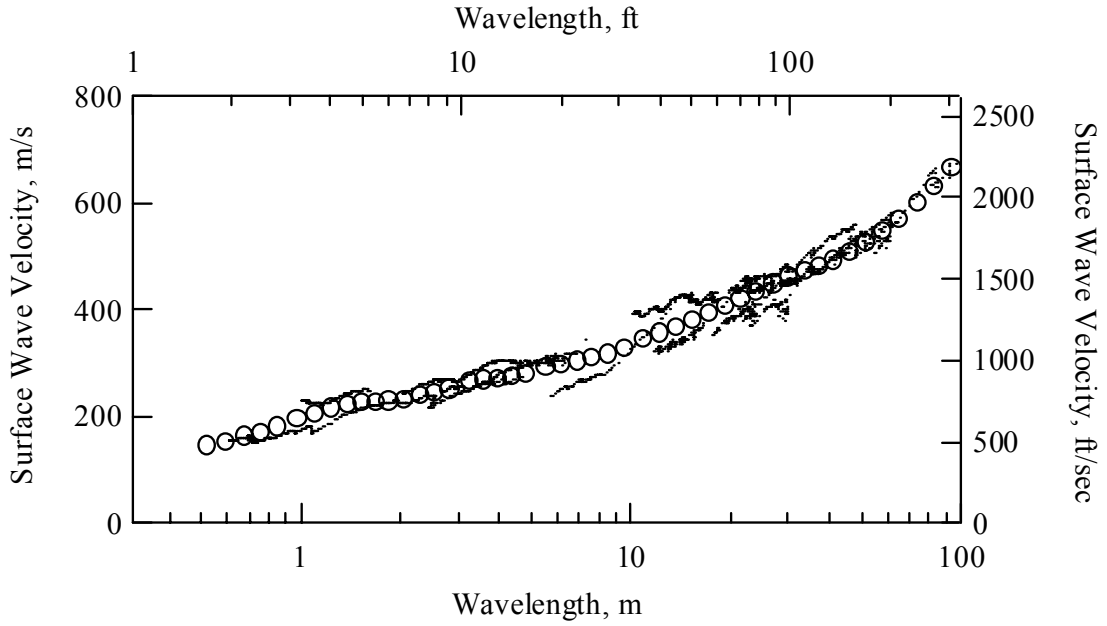


Fig 7 Comparison between Experimental & Theoretical Dispersion Curves at Eagle Mountain, Cedar Valley, Site 105, Earthquake Site Response Unit Q03 (Ashland, 2001)

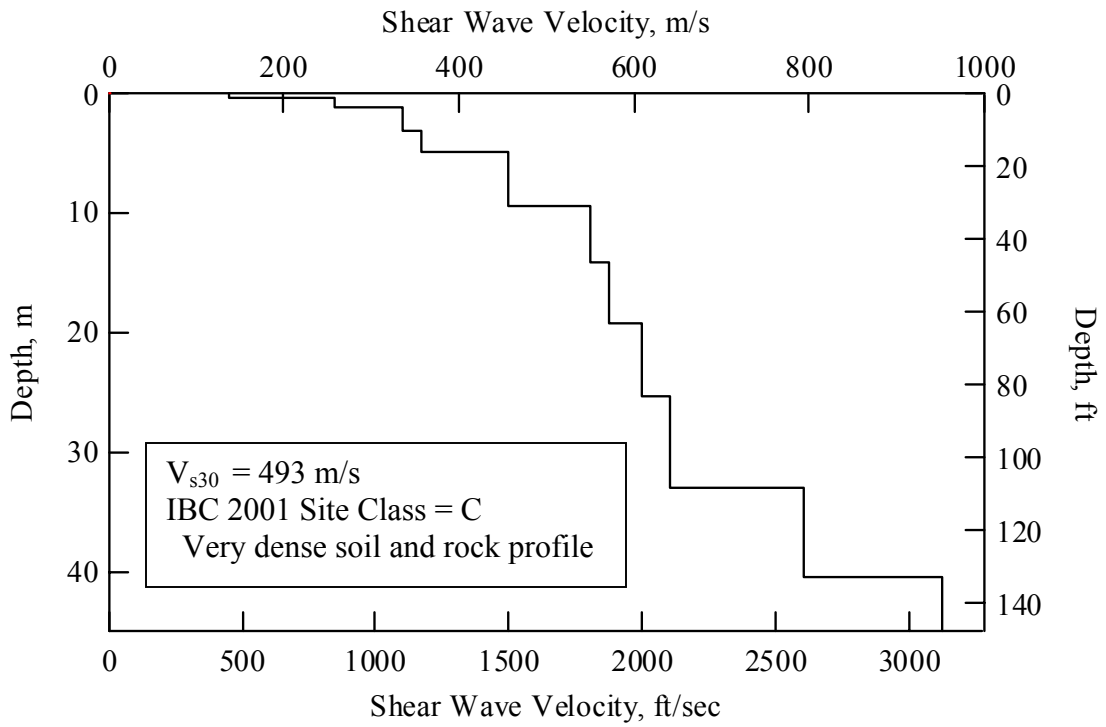


Fig 8 Shear Wave Velocity Profile Determined from SASW Testing Eagle Mountain, Cedar Valley, Site 105, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 6 Tabulated Shear Wave Velocity Profile from Eagle Mountain, Cedar Valley, Site 105, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.26	137.2	256.60	1.89
0.26	0.91	259.1	484.70	1.92
1.17	1.87	335.3	627.30	2
3.04	1.83	358.1	670.00	2
4.87	4.57	457.2	855.30	2
9.44	4.57	548.6	1026.40	2
14.01	5.18	571.5	1069.20	2
19.19	6.1	609.6	1140.50	2.08
25.29	7.62	640.1	1197.50	2.08
32.91	7.62	792.5	1482.60	2.08
40.53	30.18[a]	952.5	1782.00	2.08

a. Half-space in model

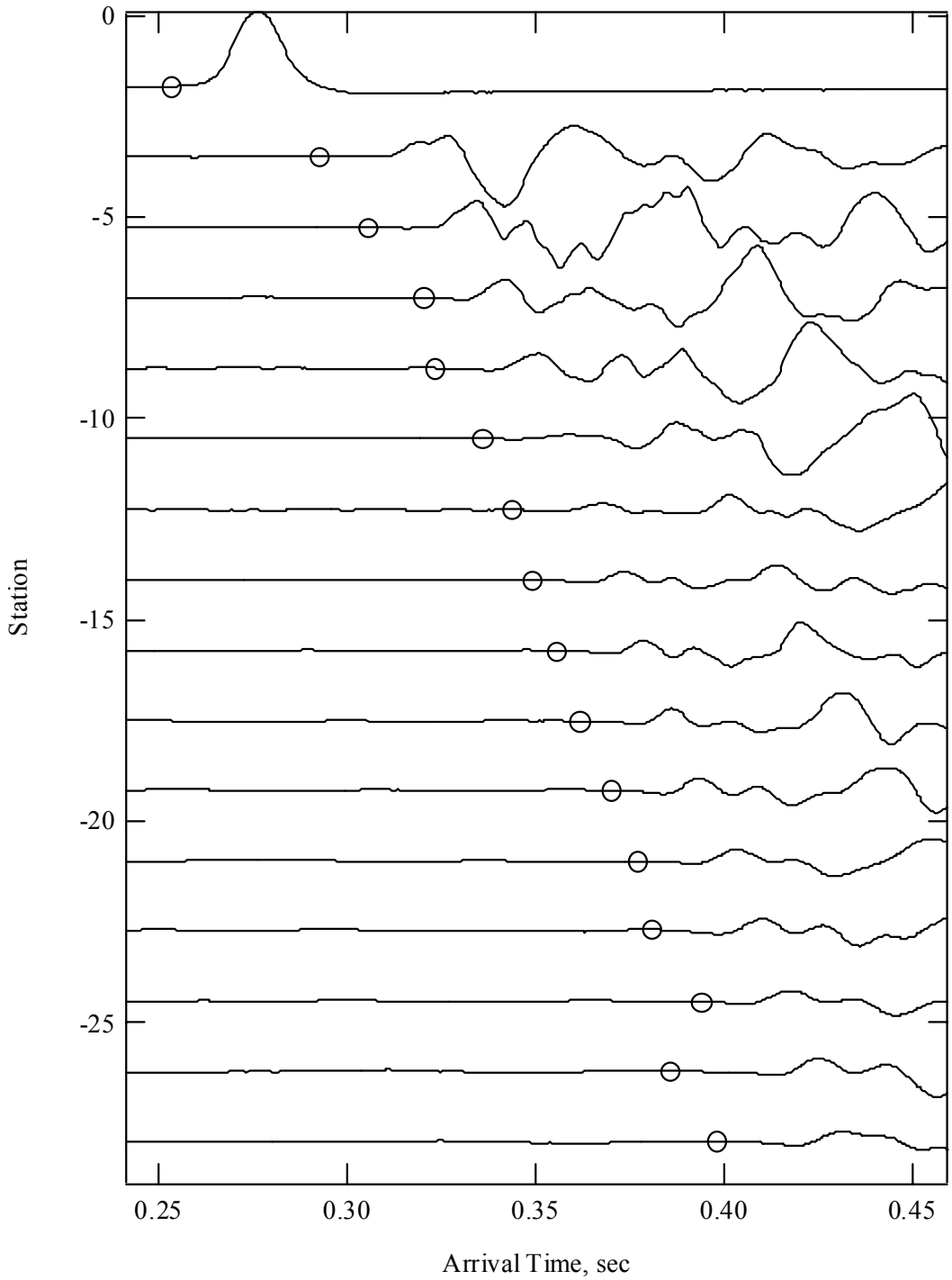


Fig 9 Arrival Times for Refraction Testing at Eagle Mountain, Cedar Valley, Site 105, Earthquake Site Response Unit Q03 (Ashland, 2001)

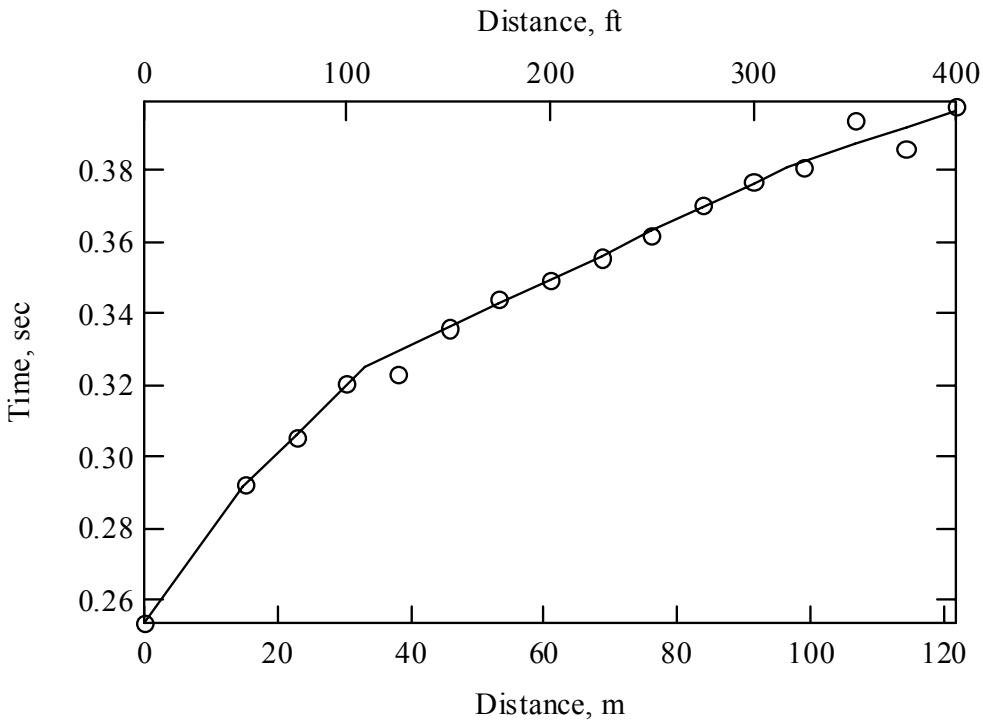


Fig 10 Time-Distance Curve for Refraction Testing at Eagle Mountain, Cedar Valley, Site 105, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 7 Tabulated Refraction Profile from Eagle Mountain, Cedar Valley, Site 105, Earthquake Site Response Unit Q03 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	3.05	390.14	208.54
2	9.64	547.59	292.70
3	33.46	1132.32	605.25
4		1623.69	867.90

Site 203, Barney's Wash Baseball Field

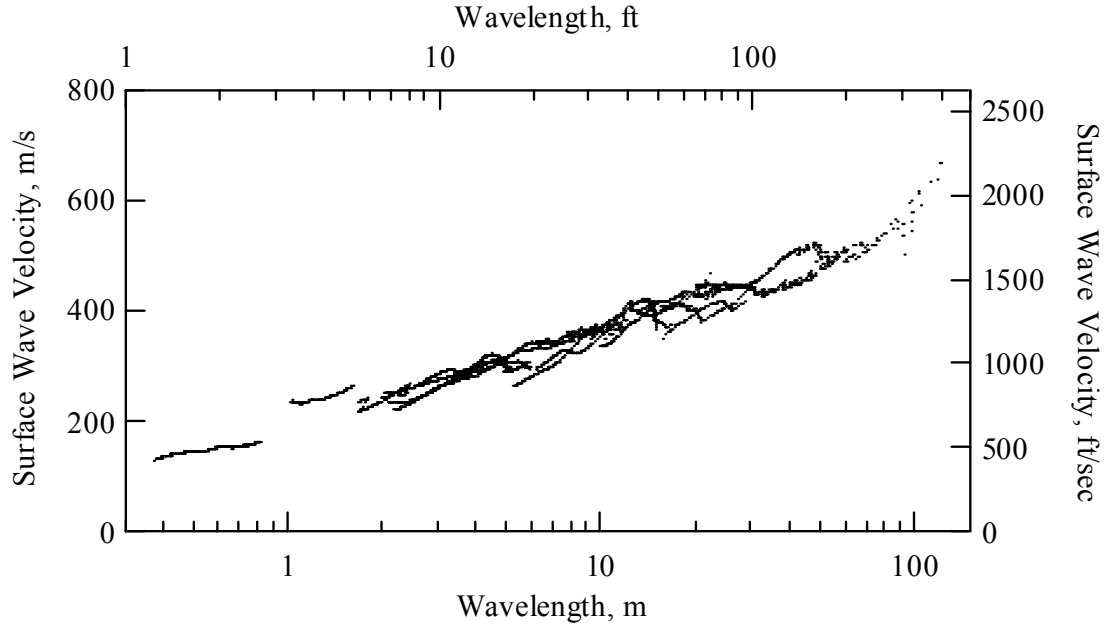


Fig 11 Experimental Dispersion Curve measured at Barney's Wash Baseball Field, West Jordan, Site 203, Earthquake Site Response Unit Q03 (Ashland, 2001)

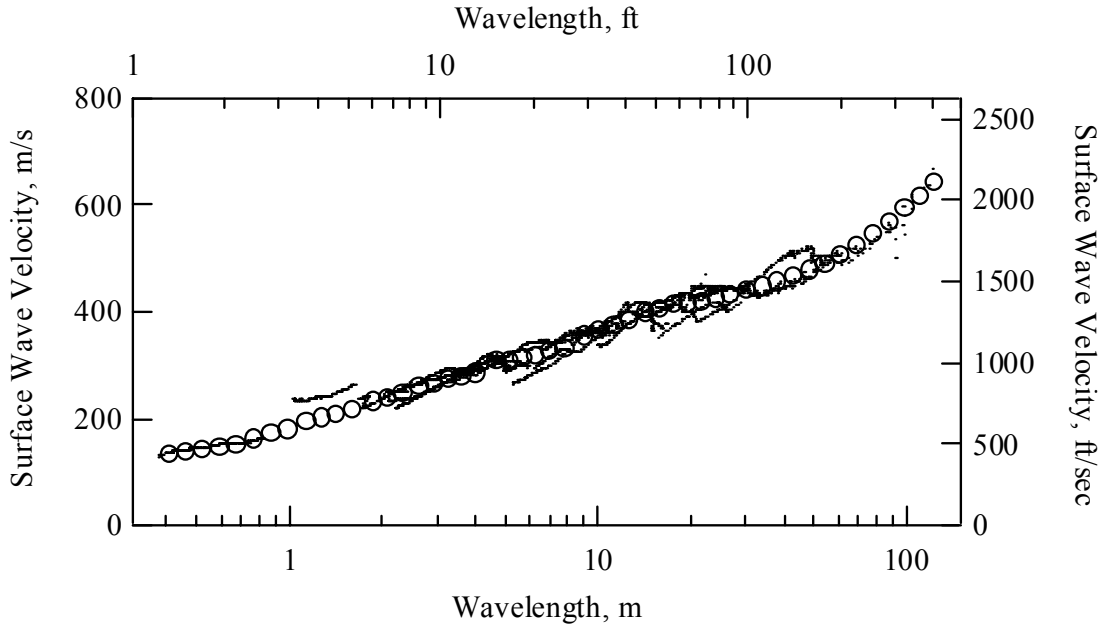


Fig 12 Comparison between Experimental & Theoretical Dispersion Curves from Barney's Wash Baseball Field, West Jordan, Site 203, Earthquake Site Response Unit Q03 (Ashland, 2001)

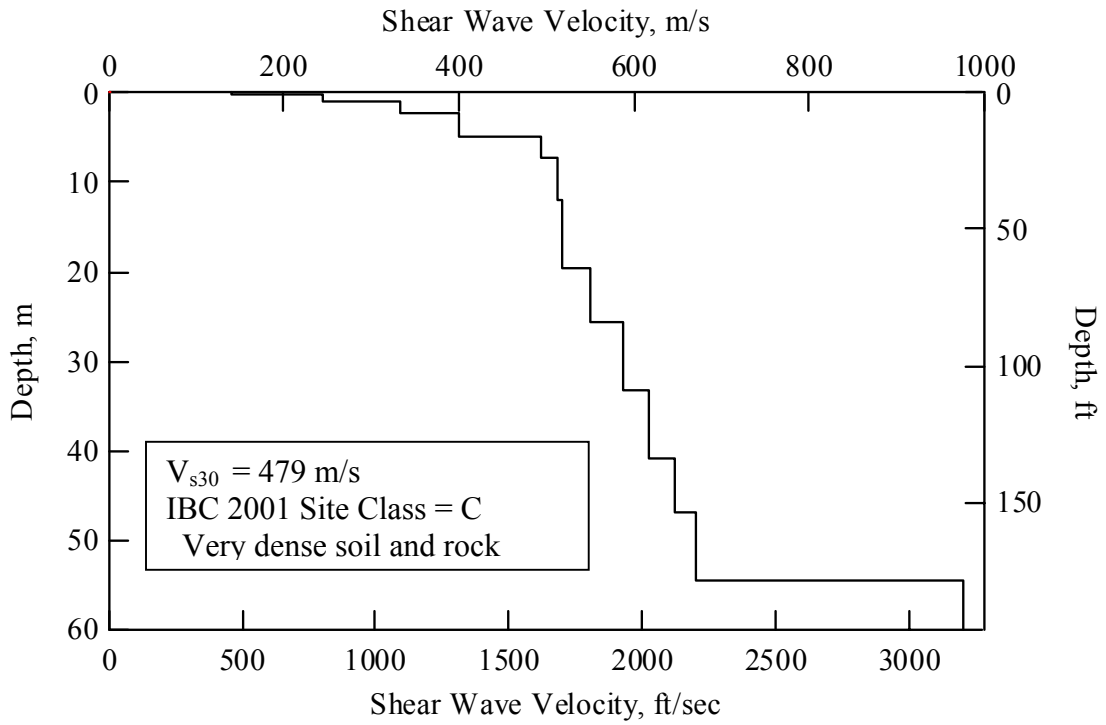


Fig 13 Shear Wave Velocity Profile Determined from SASW Testing at Barney's Wash Baseball Field, West Jordan, Site 203, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 8 Tabulated Shear Wave Velocity Profile from Barney's Wash Baseball Field, West Jordan, Site 203, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	140.20	262.3	1.89
0.3	0.69	243.80	456.2	1.92
0.99	1.45	333.80	624.4	2
2.44	2.44	399.30	747	2
4.88	2.44	492.30	920.9	2
7.32	4.57	513.60	960.8	2
11.89[a]	7.62	518.20	1524	2
19.51	6.1	548.60	1524	2
25.61	7.62	586.70	1524	2
33.23	7.62	617.20	1524	2.08
40.85	6.1	647.70	1524	2.08
46.95	7.62	670.60	1524	2.08
54.57	30.18[b]	975.40	1524	2.08

a. Depth to fully saturated zone from Refraction Testing
b. Half-space in model

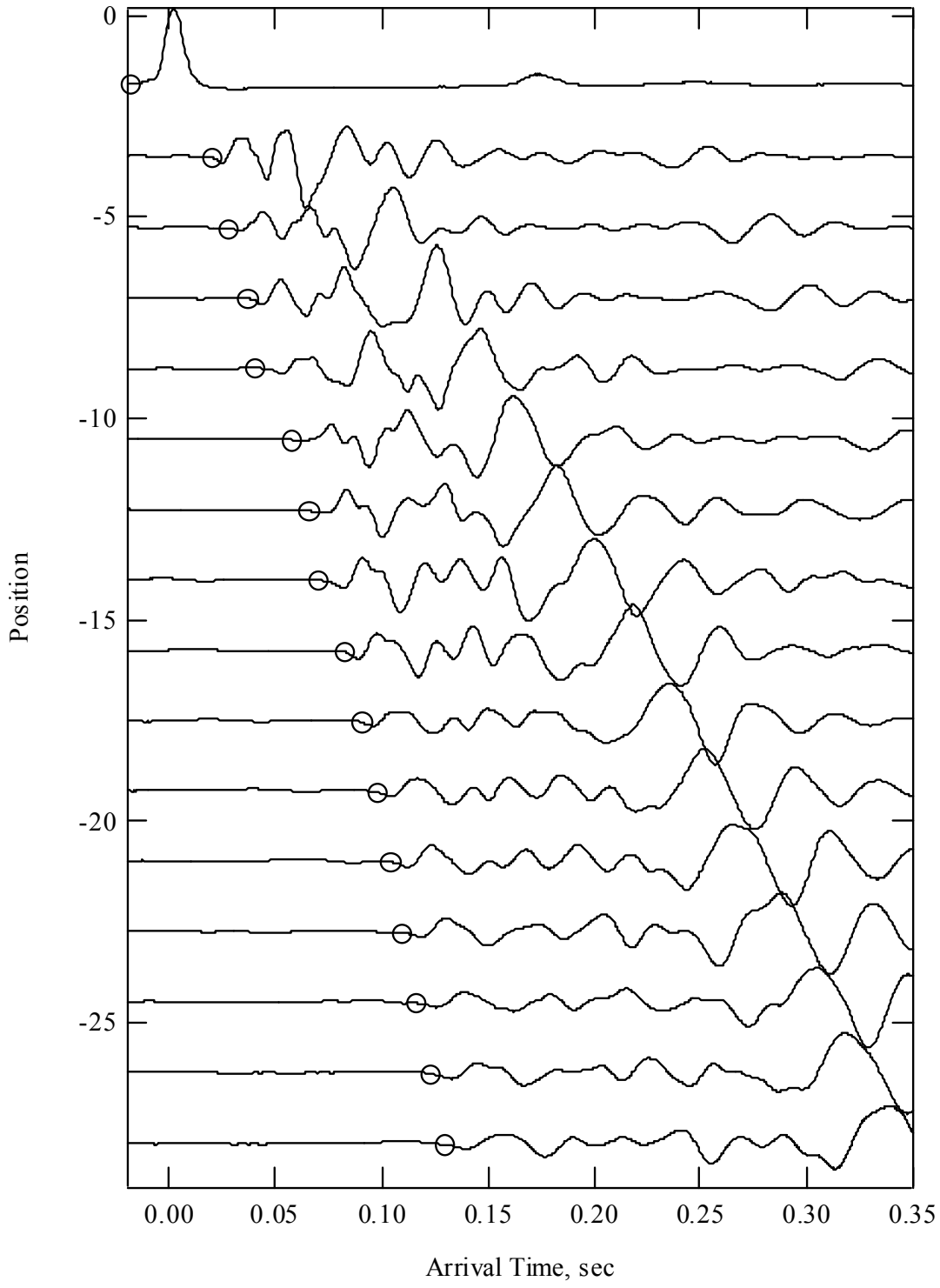


Fig 14 Arrival Times for Refraction Testing at Barney's Wash Baseball Field, West Jordan, Site 203, Earthquake Site Response Unit Q03 (Ashland, 2001)

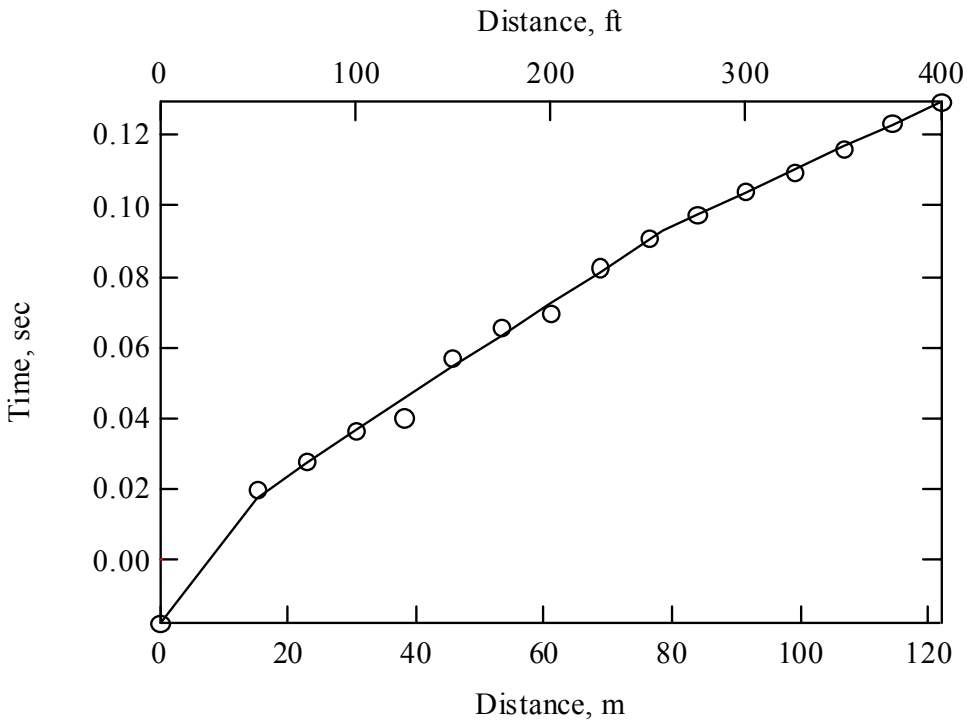


Fig 15 Time-Distance Curve for Refraction Testing at Barney's Wash Baseball Field, West Jordan, Site 203, Earthquake Site Response Unit Q03 (Ashland, 2001)

Tabulated Refraction Profile from Barney's Wash Baseball Field, West Jordan, Site 203, Earthquake Site Response Unit Q03 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	4.26	400.14	213.89
2	11.75[a]	852.37	455.61
3		1193.93	

a. Depth of fully saturated zone

Site 69, White City Park, Salt Lake County

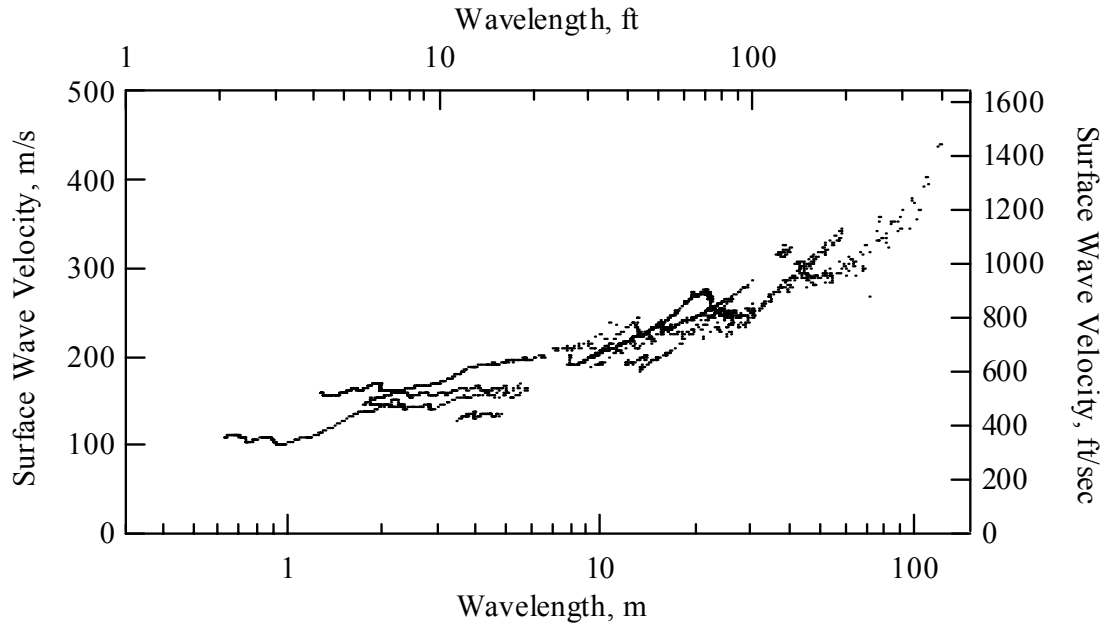


Fig 16 Experimental Dispersion Curve measured at White City Park, Salt Lake County, Site 69, Earthquake Site Response Unit Q03 (Ashland, 2001)

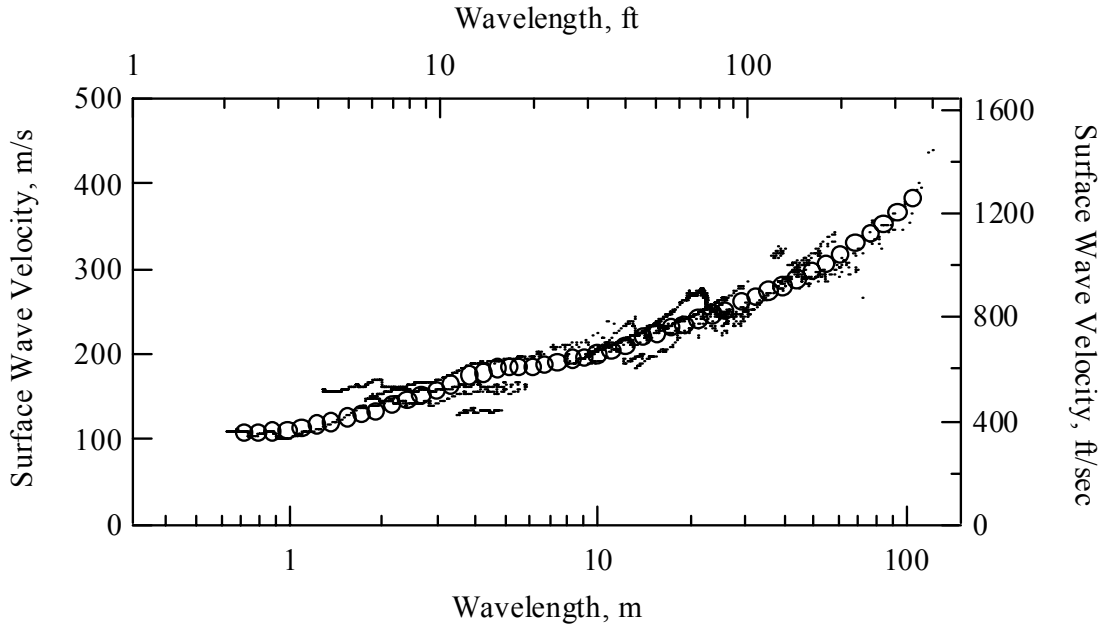


Fig 17 Comparison between Experimental & Theoretical Dispersion Curves from White City Park, Salt Lake County, Site 69, Earthquake Site Response Unit Q03 (Ashland, 2001)

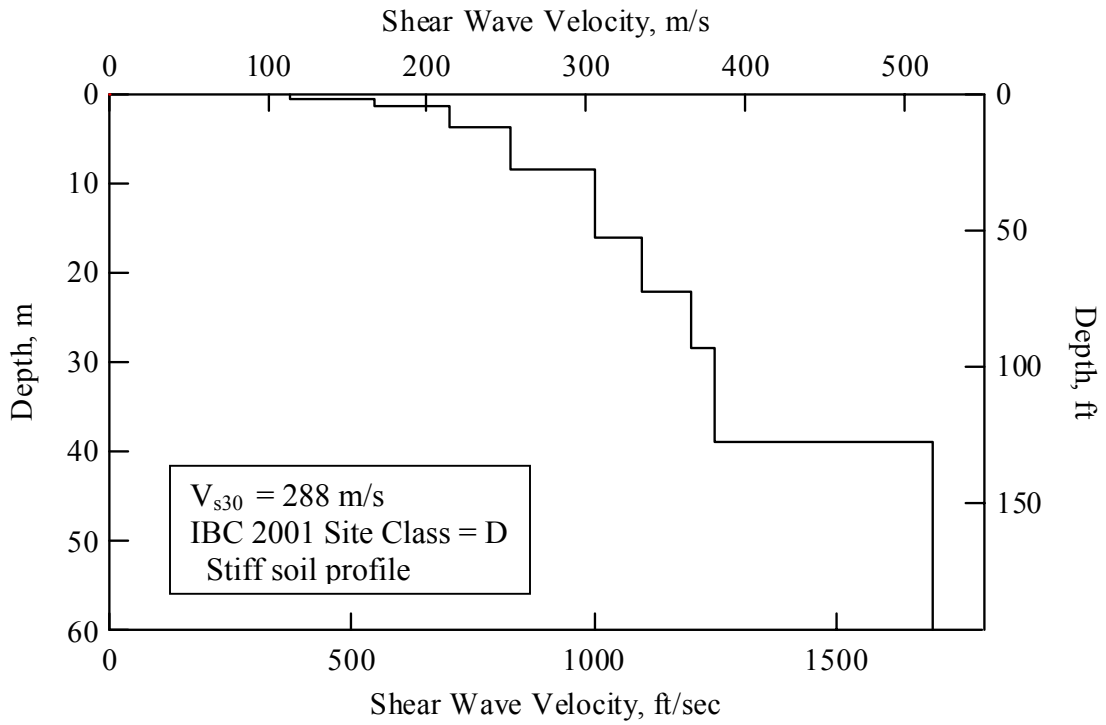


Fig 18 Shear Wave Velocity Profile Determined from SASW Testing at White City Park, Salt Lake County, Site 69, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 9 Tabulated Shear Wave Velocity Profile from White City Park, Salt Lake County, Site 69, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.61	114.30	213.9	1.89
0.61	0.76	167.60	313.6	1.92
1.37	2.44	213.40	399.2	1.92
3.81	4.72	251.50	470.4	1.92
8.53	7.62	304.80	570.2	2
16.15	6.1	335.30	627.3	2
22.25	6.1	365.80	684.4	2
28.35	10.67	381.00	712.8	2
39.02	30.18[a]	518.20	969.4	2

a. Half-space in model

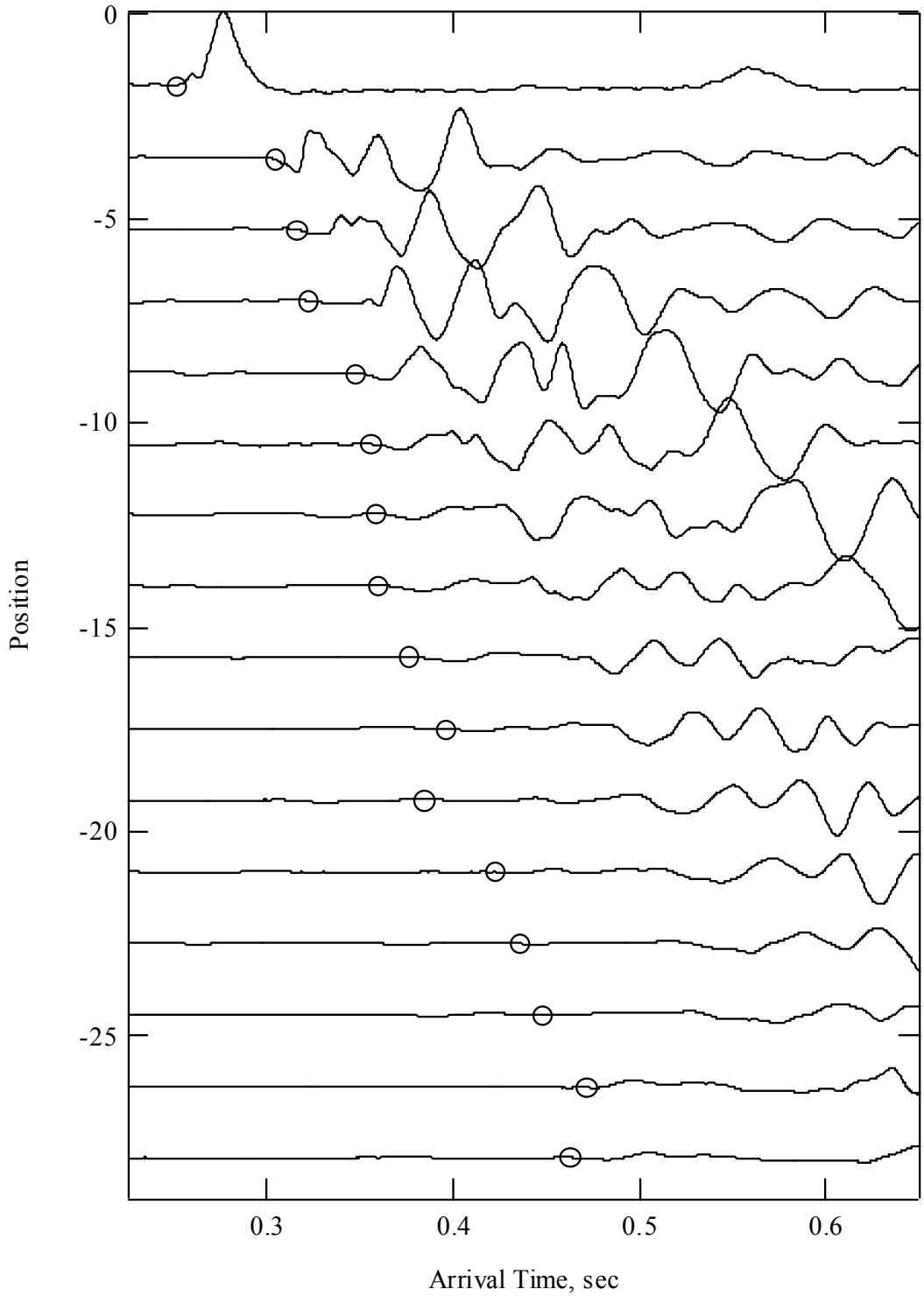


Fig 19 Arrival Times for Refraction Testing at White City Park, Salt Lake County, Site 69, Earthquake Site Response Unit Q03 (Ashland, 2001)

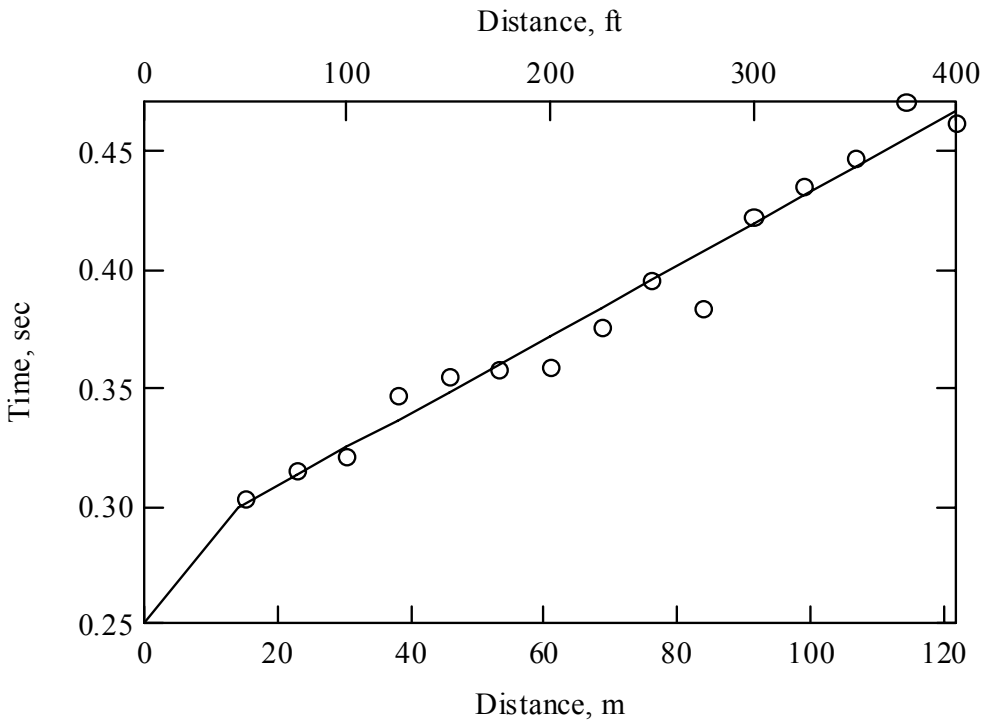


Fig 20 Time-Distance Curve for Refraction Testing at White City Park, Salt Lake County, Site 69, Earthquake Site Response Unit Q03 (Ashland, 2001)

Tabulated Refraction Profile for White City Park, Salt Lake County, Site 69, Earthquake Site Response Unit Q03 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	4.34	289.00	154.48
2		643.25	343.83

Site: 85, Granite Park

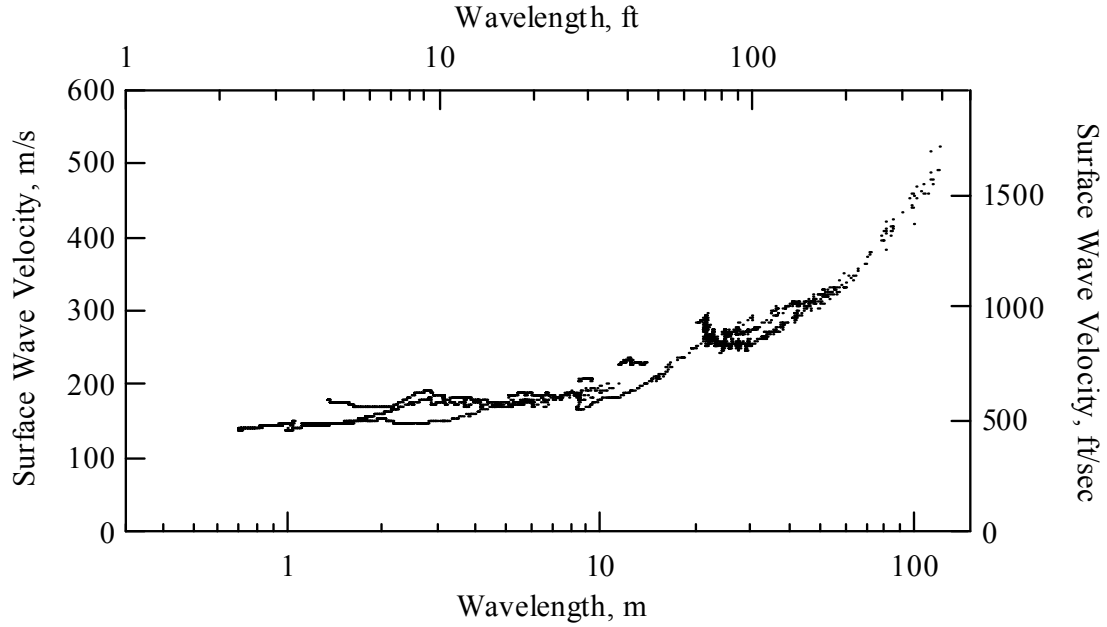


Fig 21 Experimental Dispersion Curve measured at Granite Park, Sandy, Site 85, Earthquake Site Response Unit Q03 (Ashland, 2001)

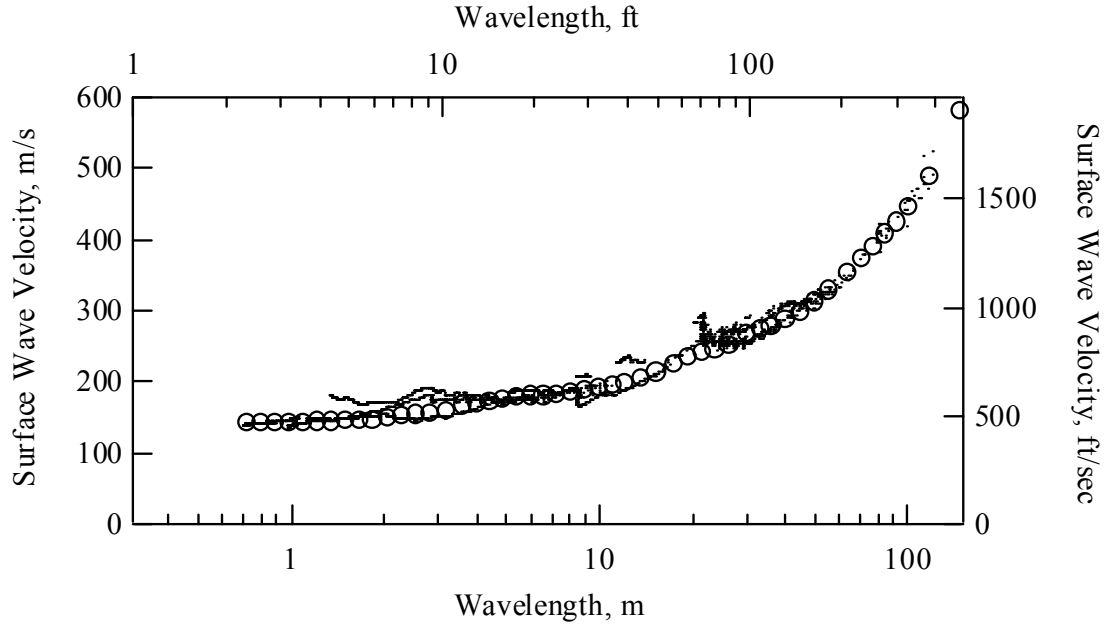


Fig 22 Comparison between Experimental & Theoretical Dispersion Curves from Granite Park, Sandy, Site 85, Earthquake Site Response Unit Q03 (Ashland, 2001)

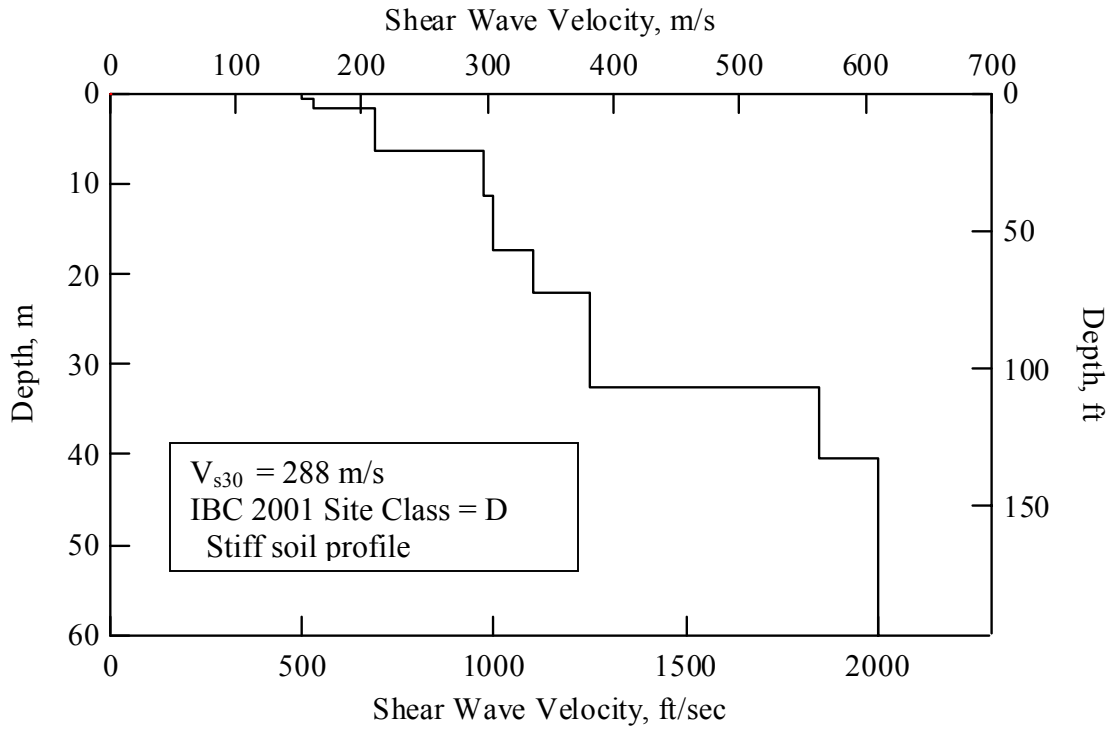


Fig 23 Shear Wave Velocity Profile Determined from SASW Testing at Granite Park, Sandy, Site 85, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 10 Tabulated Shear Wave Velocity Profile from Granite Park, Sandy, Site 85, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.61	152.4	285.1	1.92
0.61	0.91	161.5	302.2	1.92
1.52	4.88	210.3	393.5	1.92
6.4	0.91	295.7	553.1	1.92
7.31	3.96	297.2	556	1.92
11.27[a]	6.1	304.8	1524	2
17.37	4.57	335.3	1524	2
21.94	10.67	381	1524	2
32.61	7.62	563.9	1524	2
40.23	30.18[b]	609.6	1524	2.08

a. Depth to fully saturated zone from Refraction testing
b. Half-space in model

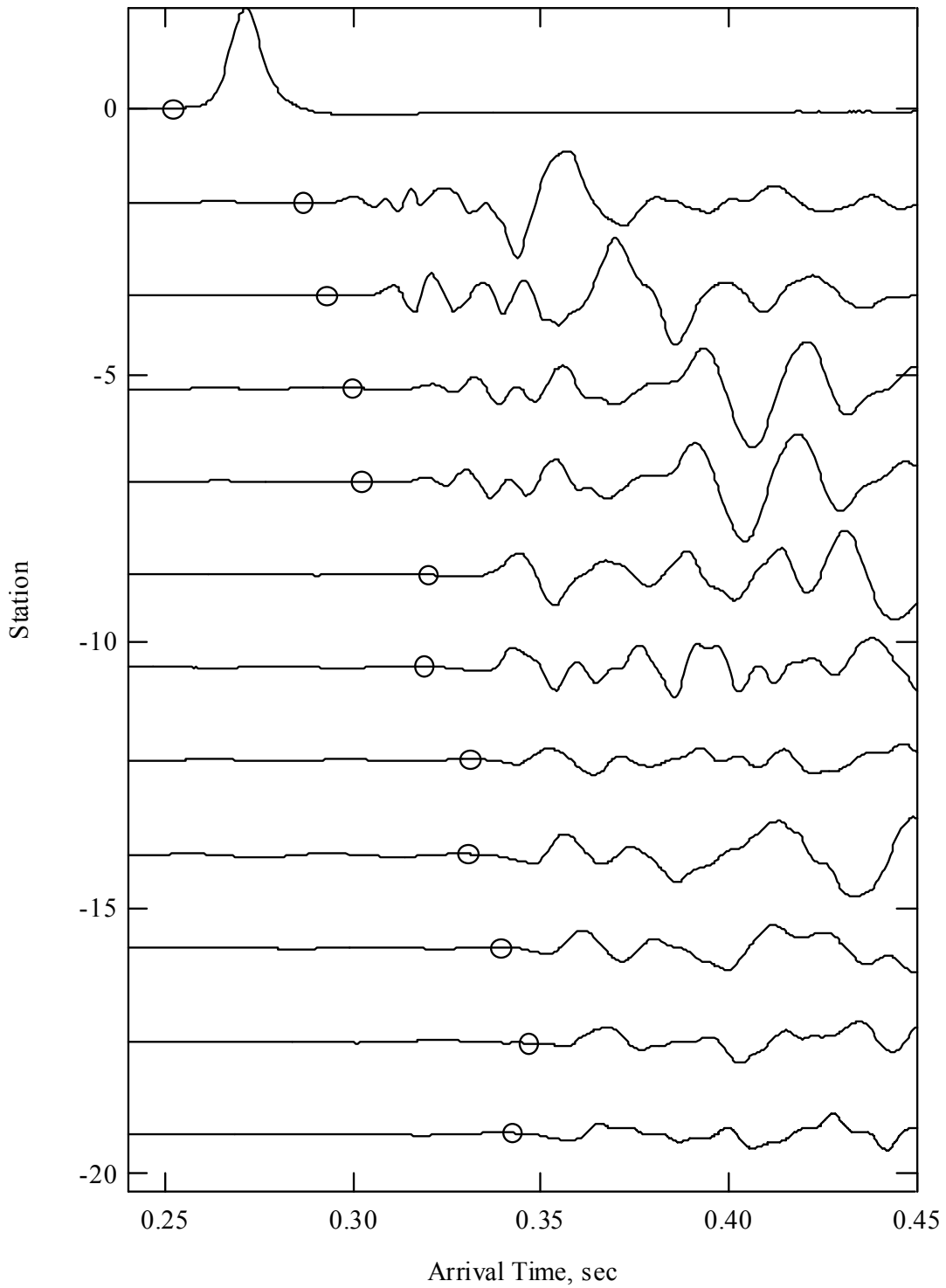


Fig 24 Arrival Times for Refraction Testing at Granite Park, Sandy, Site 85, Earthquake Site Response Unit Q03 (Ashland, 2001)

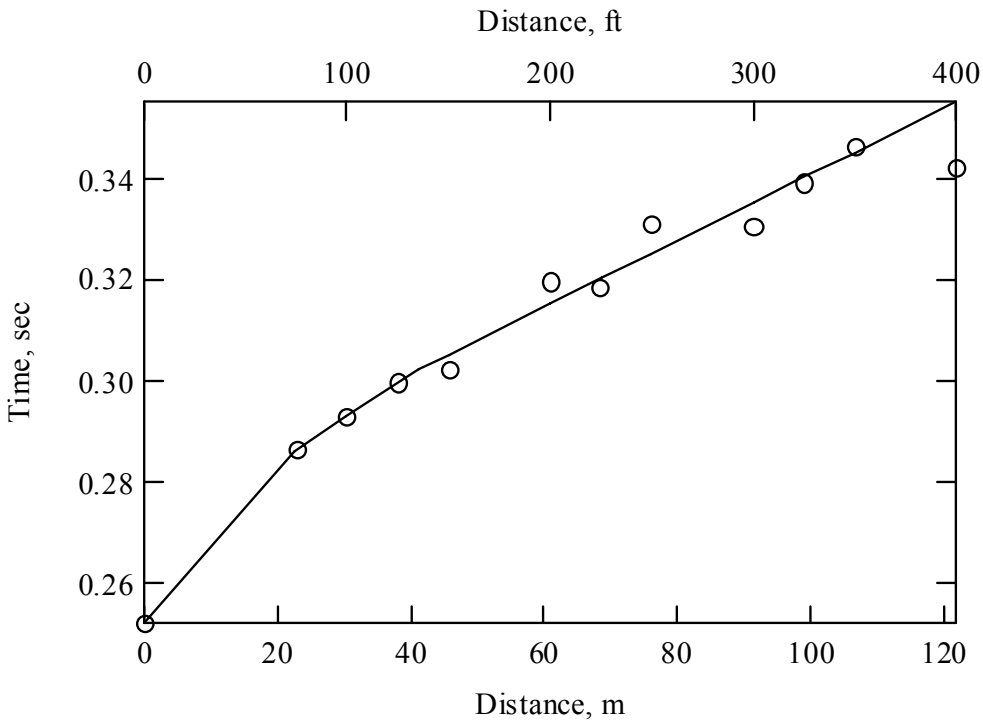


Fig 25 Time-Distance Curve for Refraction Testing at Granite Park, Sandy, Site 85, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 11 Tabulated Refraction Profile from Granite Park, Sandy, Site 85, Earthquake Site Response Unit Q03 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	5.95	659.41	352.47
2	8.62[a]	1156.56	618.21
3		1521.12	

a. Depth to fully saturated zone

Site 72, Buttercup Park

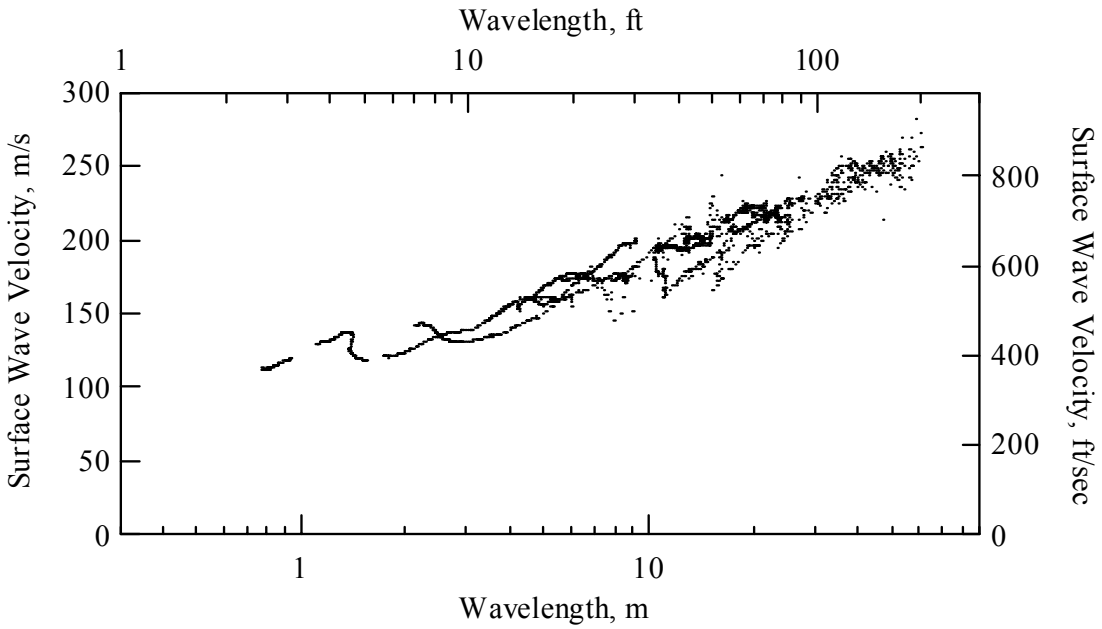


Fig 26 Experimental Dispersion Curve measured at Buttercup Park, Sandy, Site 72, Earthquake Site Response Unit Q03 (Ashland, 2001)

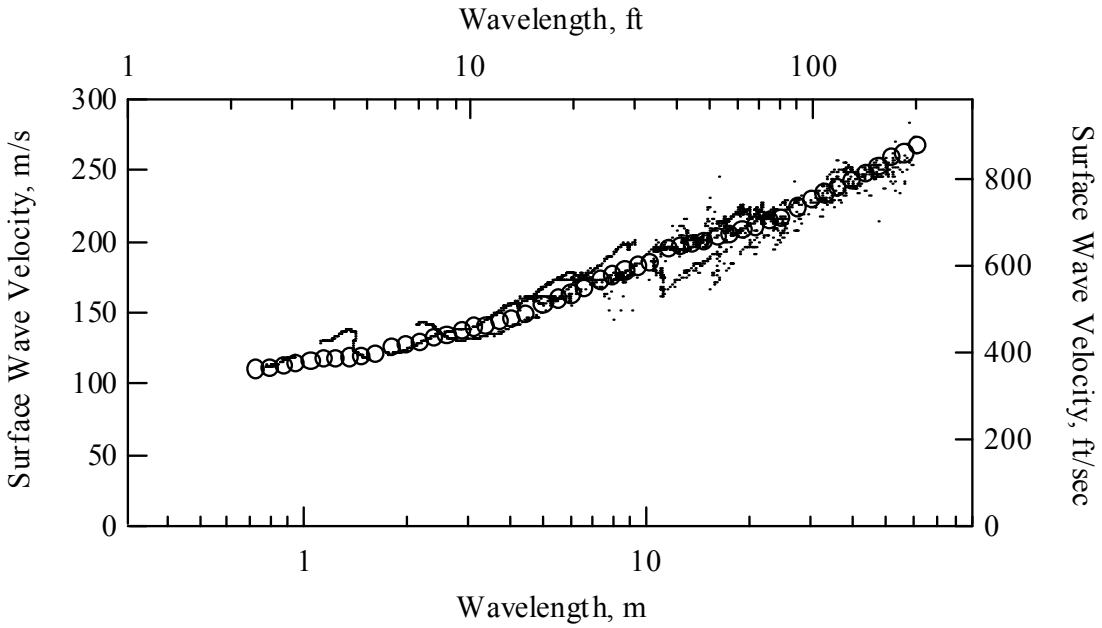


Fig 27 Comparison between Experimental & Theoretical Dispersion Curves from Buttercup Park, Sandy, Site 72, Earthquake Site Response Unit Q03 (Ashland, 2001)

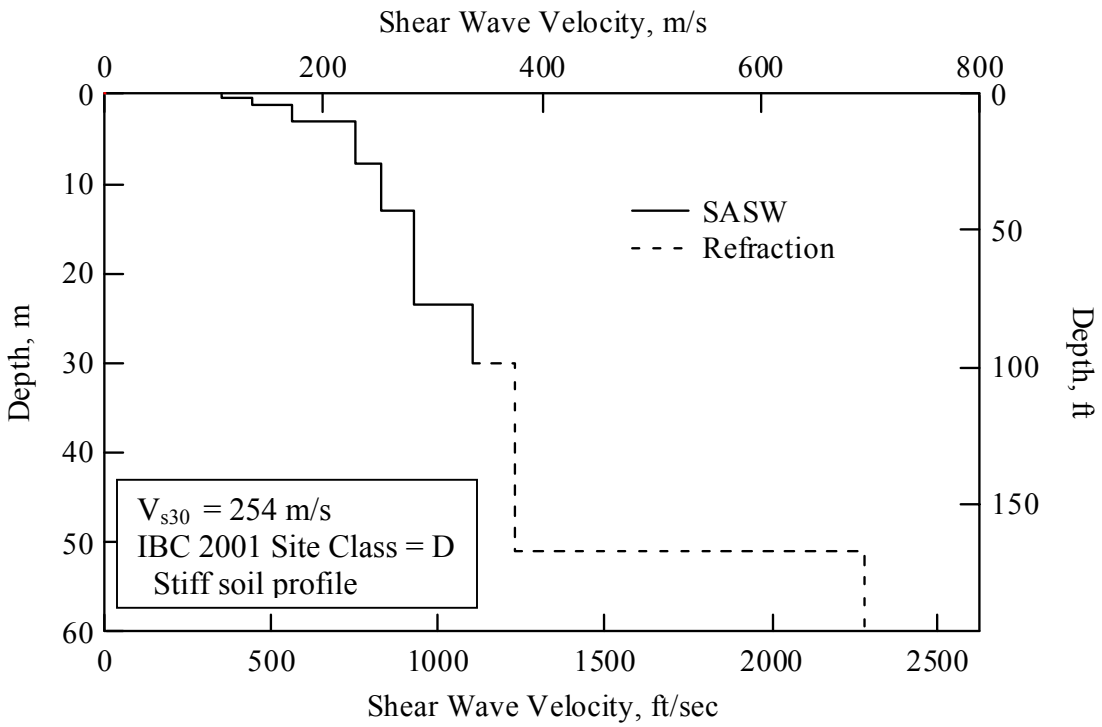


Fig 28 Shear Wave Velocity Profile Determined from SASW Testing at Buttercup Park, Sandy, Site 72, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 12 Tabulated Shear Wave Velocity Profile from Buttercup Park, Sandy, Site 72, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	106.7	199.6	1.89
0.3	0.84	134.1	250.9	1.89
1.14	1.98	172.2	322.2	1.92
3.12	4.57	228.6	427.7	1.92
7.69	5.18	251.5	470.4	1.92
12.87	10.67	281.9	527.5	1.92
23.54	30.18[a]	335.3	627.3	2

a. Half-space in model

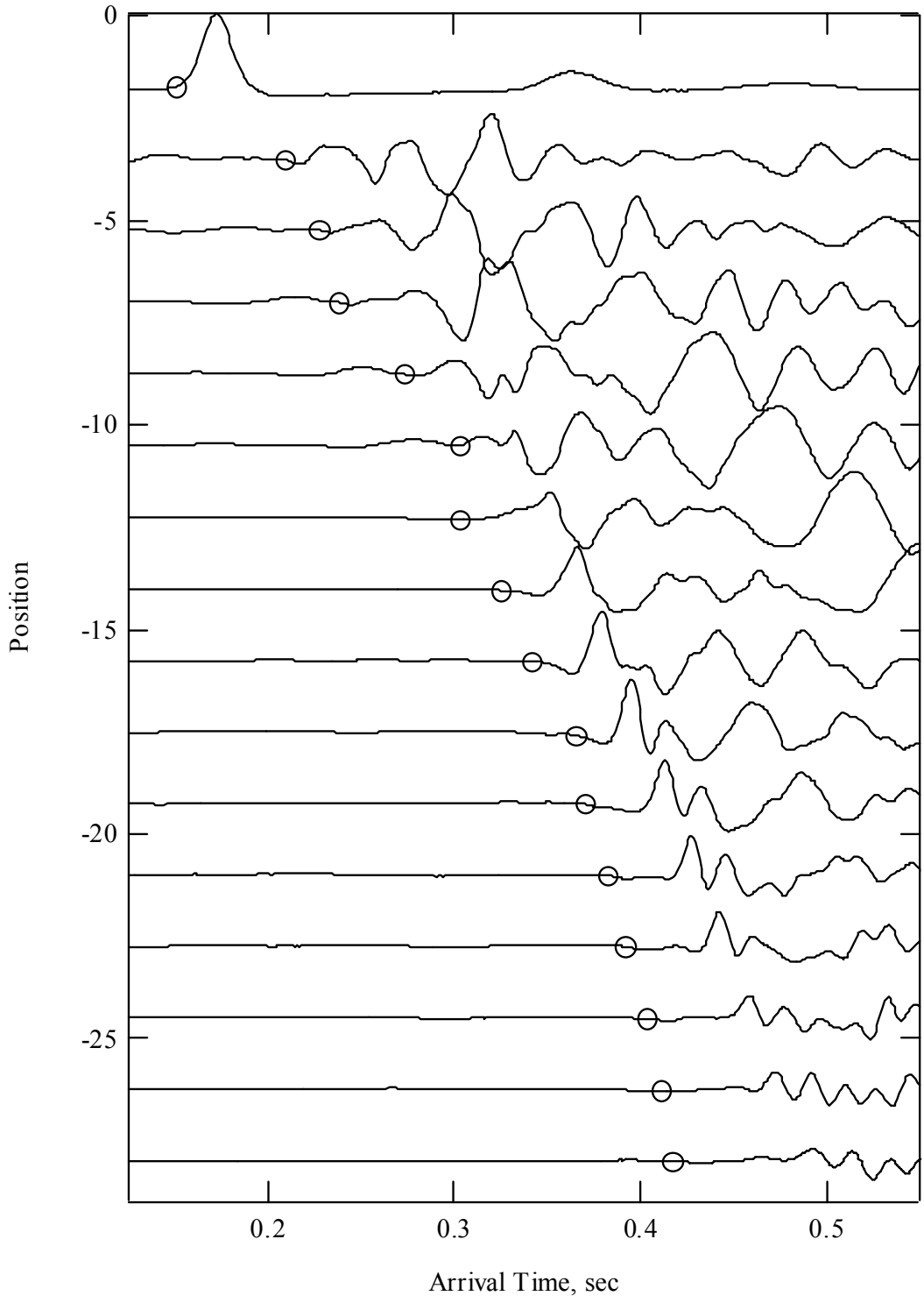


Fig 29 Arrival Times for Refraction Testing at Buttercup Park, Sandy, Site 72, Earthquake Site Response Unit Q03 (Ashland, 2001)

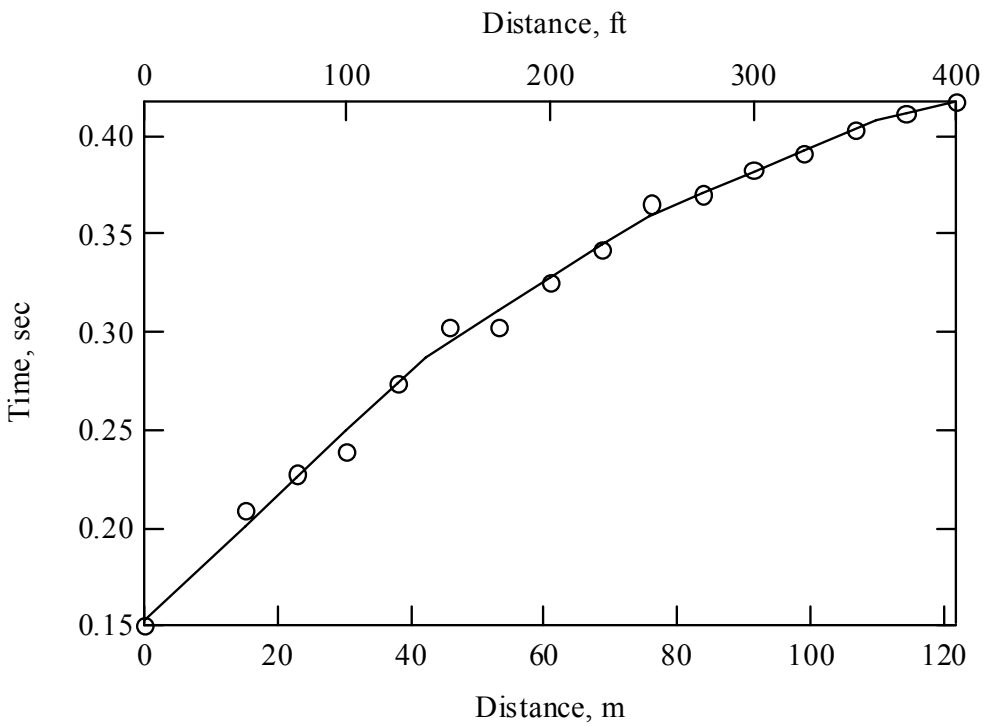


Fig 30 Time-Distance Curve for Refraction Testing at Buttercup Park, Sandy, Site 72, Earthquake Site Response Unit Q03 (Ashland, 2001)

Tabulated Refraction Profile from Buttercup Park, Sandy, Site 72, Earthquake Site Response Unit Q03 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	9.29	314.07	167.88
2	17.28	464.45	248.26
3	51.12	702.89	375.71
4		1300.34	695.06

Site 238, Lambert Park

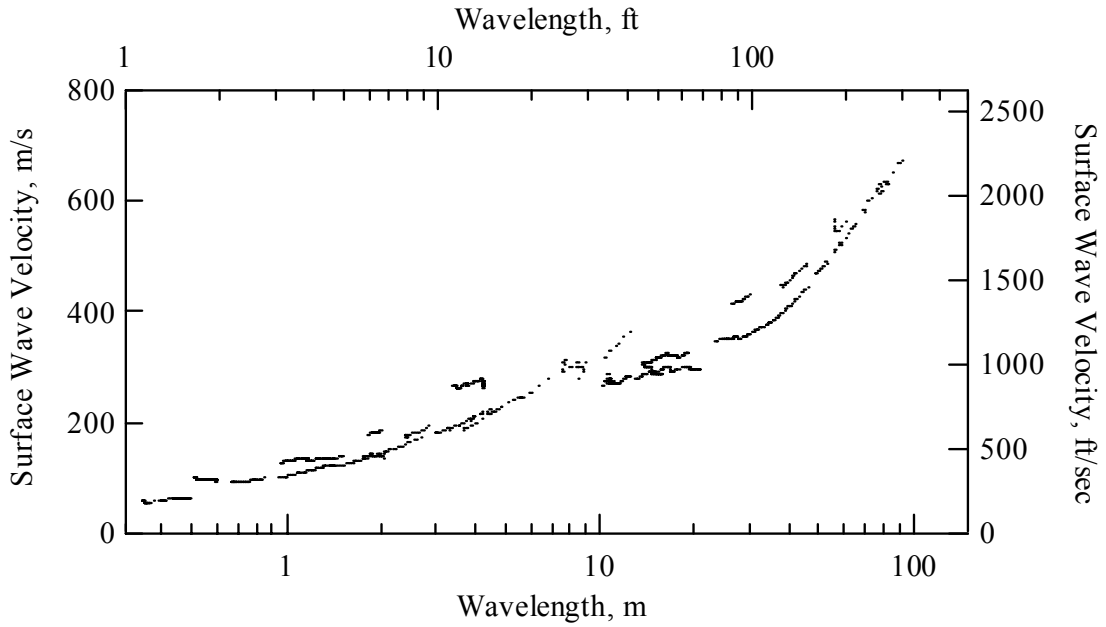


Fig 31 Experimental Dispersion Curve measured at Lambert Park, Alpine, Site 238, Earthquake Site Response Unit Q03 (Ashland, 2001)

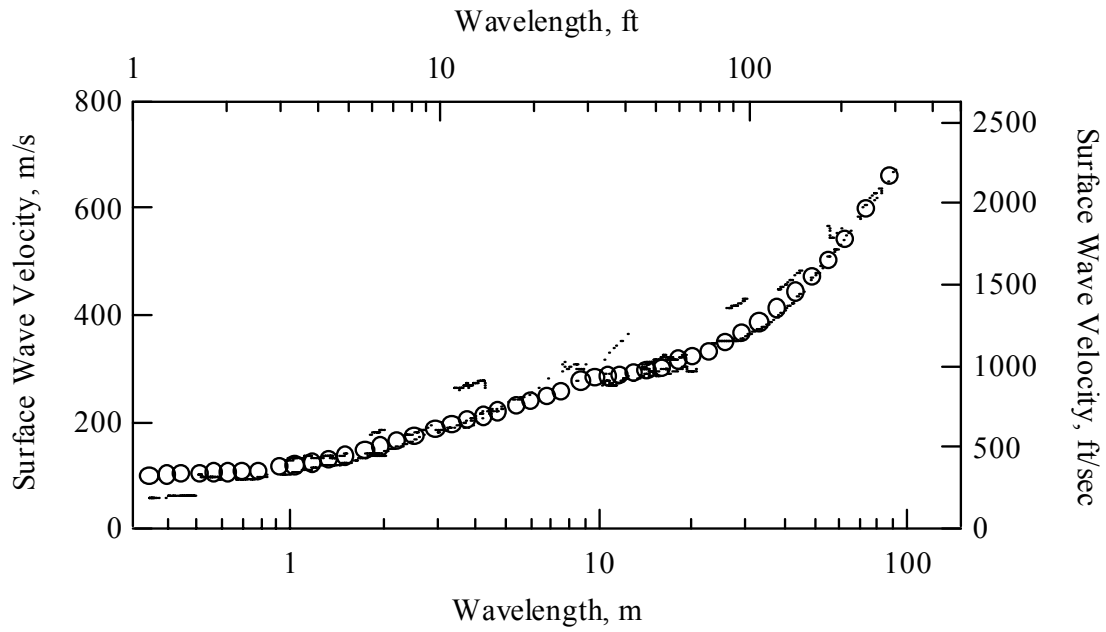


Fig 32 Comparison between Experimental & Theoretical Dispersion Curves from Lambert Park, Alpine, Site 238, Earthquake Site Response Unit Q03 (Ashland, 2001)

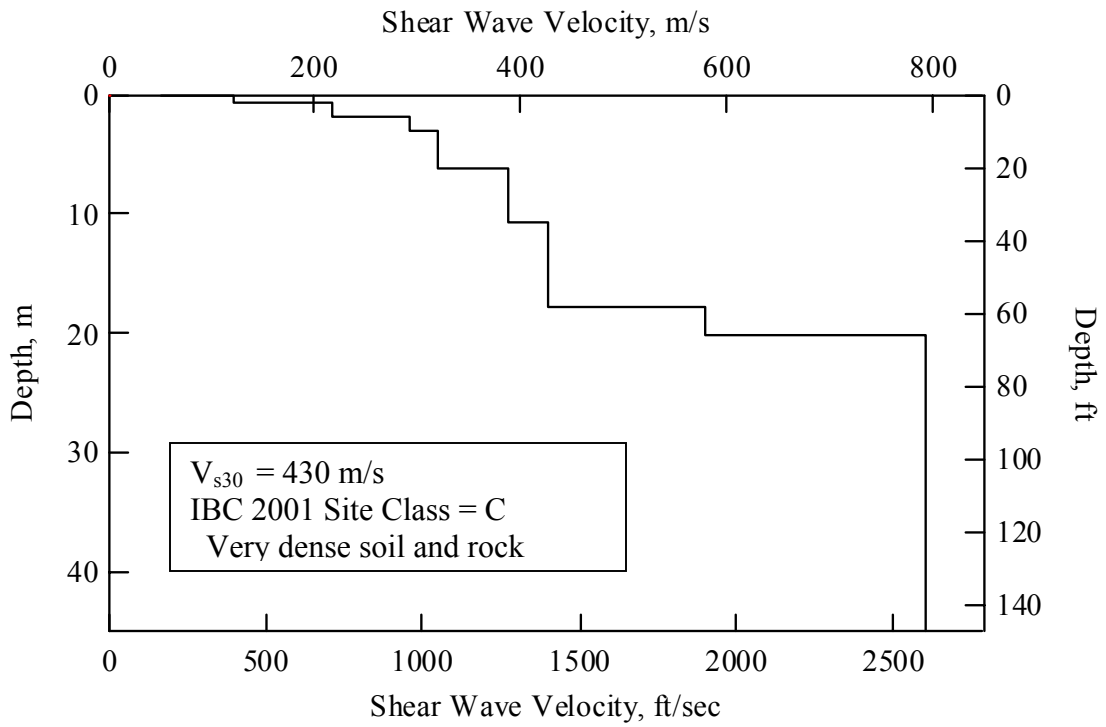


Fig 33 Shear Wave Velocity Profile Determined from SASW Testing at Lambert Park, Alpine, Site 238, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 13 Tabulated Shear Wave Velocity Profile from Lambert Park, Alpine, Site 238, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.15	96	179.6	1.89
0.15	0.46	121.9	228.1	1.89
0.61	1.3	216.4	404.9	1.92
1.91	1.22	291.1	544.6	1.92
3.13	3.05	320	598.8	2
6.18	4.57	388.6	727	2
10.75	7.01	426.7	798.3	2
17.76	2.44	579.1	1083.4	2
20.2	30.18[a]	792.5	1482.6	2.08

a. Half-space in model

Site: 112, Alpine City Park

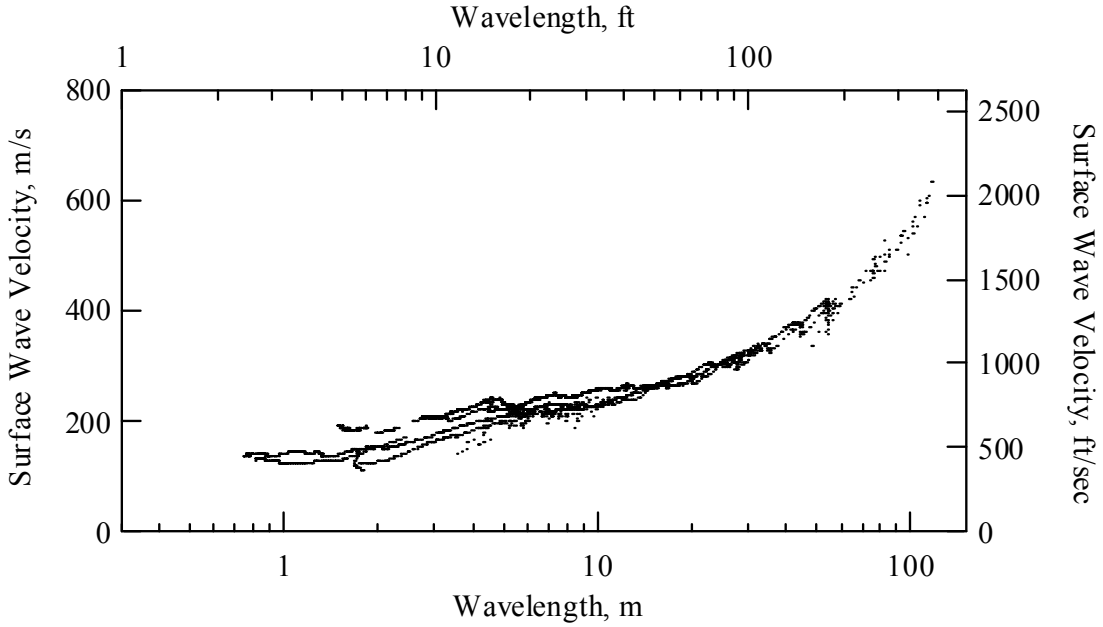


Fig 34 Experimental Dispersion Curve measured at Alpine City Park, Site 112, Earthquake Site Response Unit Q03 (Ashland, 2001)

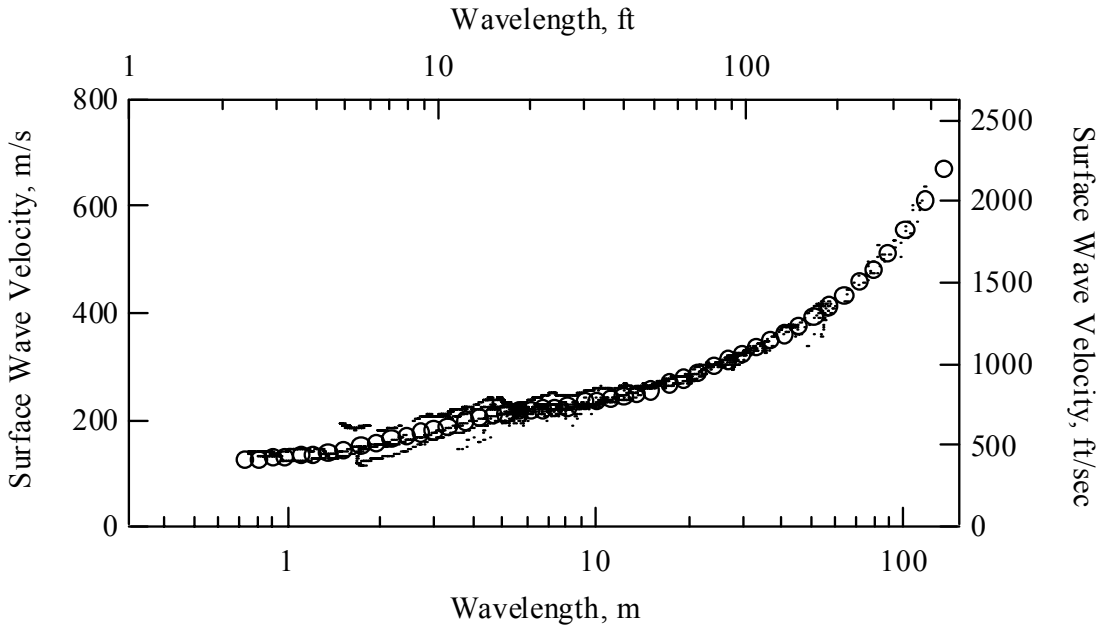


Fig 35 Comparison between Experimental & Theoretical Dispersion Curves from Alpine City Park, Site 112, Earthquake Site Response Unit Q03 (Ashland, 2001)

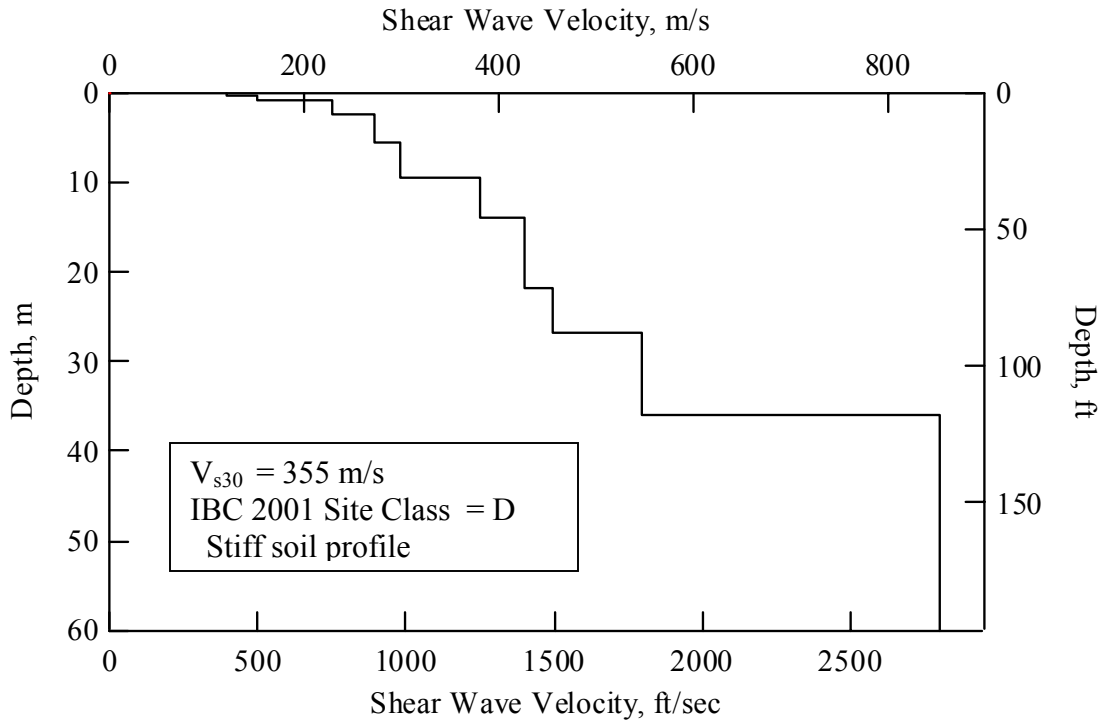


Fig 36 Shear Wave Velocity Profile Determined from SASW Testing at Alpine City Park, Site 112, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 14 Tabulated Shear Wave Velocity Profile from Alpine City Park, Site 112, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	121.9	228.1	1.89
0.3	0.61	152.4	285.1	1.92
0.91	1.52	228.6	427.7	1.92
2.43	3.05	274.3	513.2	1.92
5.48	3.96	298.7	558.8	1.92
9.44	4.57	381	712.8	2
14.01	7.62	426.7	798.3	2
21.63	5.18	455.7	852.5	2
26.81	9.14	548.6	1026.4	2
35.95	30.18[a]	853.4	1596.6	2.08

a. Half-space in model

Site 131, Oak Hills Elementary

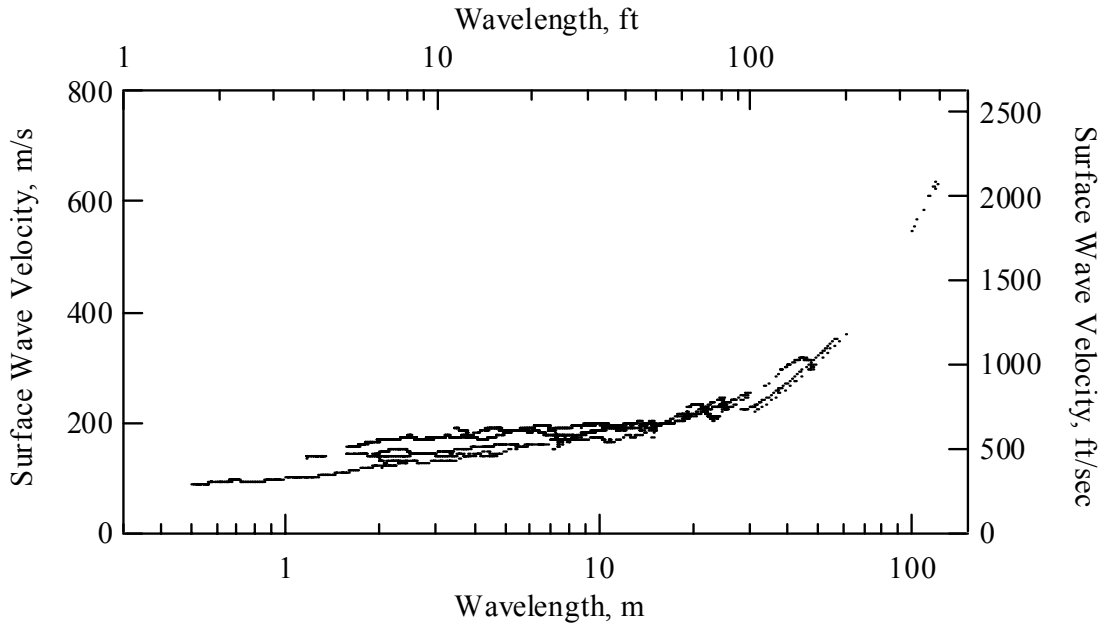


Fig 37 Experimental Dispersion Curve measured at Oak Hills Elementary, Bountiful, Site 131, Earthquake Site Response Unit Q03 (Ashland, 2001)

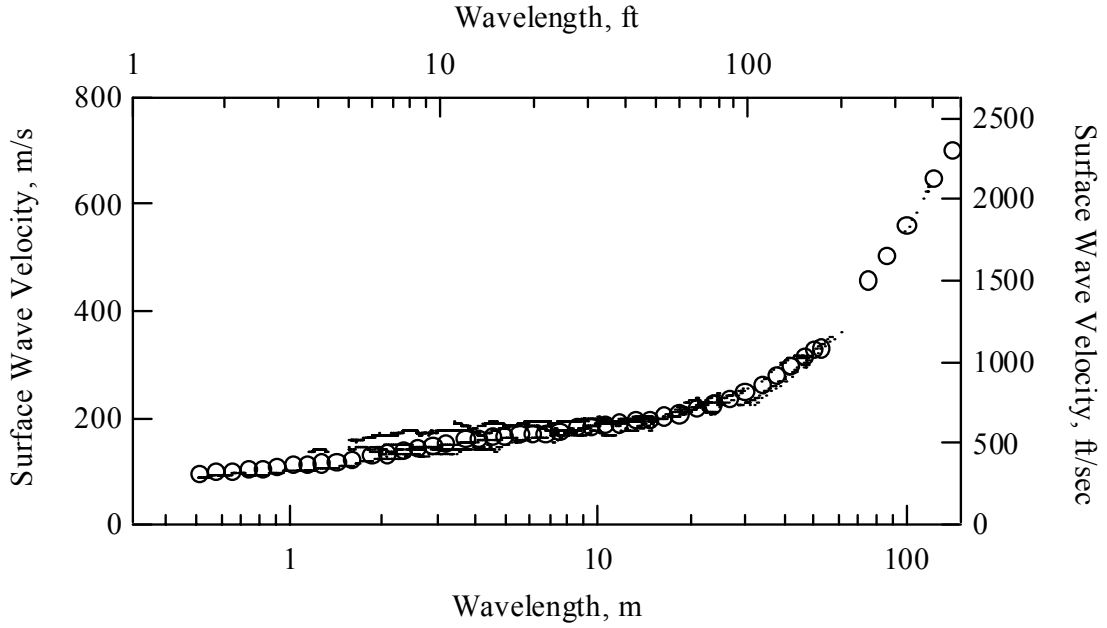


Fig 38 Comparison between Experimental & Theoretical Dispersion Curves from Oak Hills Elementary, Bountiful, Site 131, Earthquake Site Response Unit Q03 (Ashland, 2001)

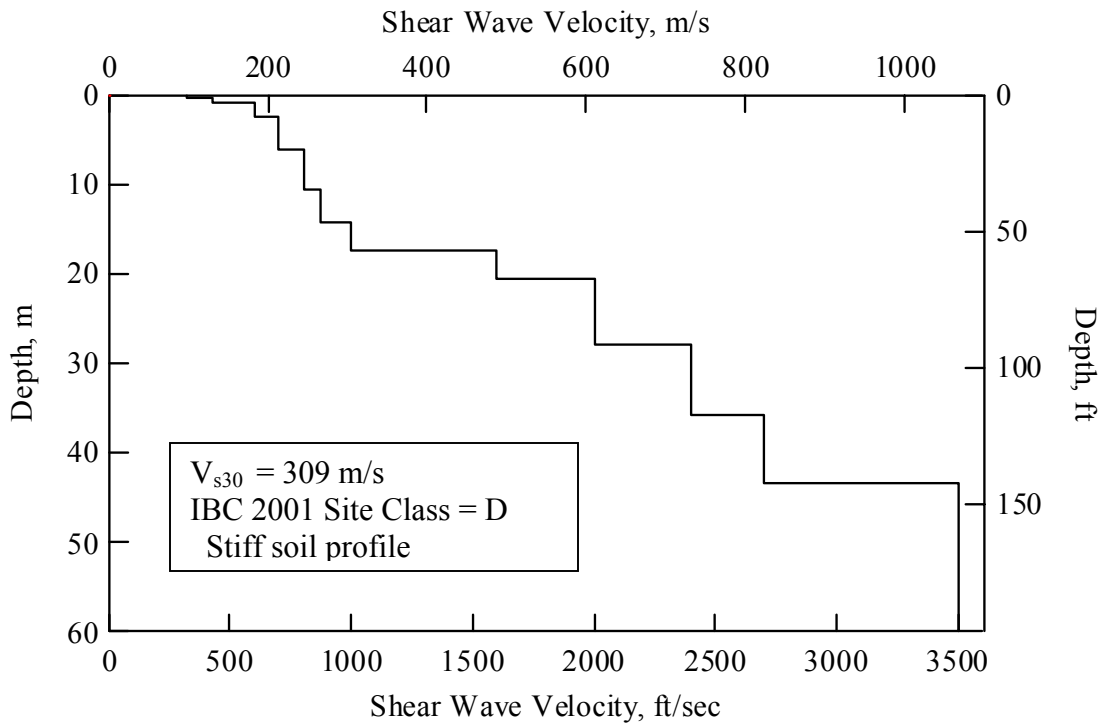


Fig 39 Shear Wave Velocity Profile Determined from SASW Testing at Oak Hills Elementary, Bountiful, Site 131, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 15 Tabulated Shear Wave Velocity Profile from Oak Hills Elementary, Bountiful, Site 131, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	97.5	182.5	1.89
0.3	0.61	129.5	242.4	1.89
0.91	1.52	182.9	342.1	1.92
2.43	3.66	213.4	399.2	1.92
6.09	4.57	243.8	456.2	1.92
10.66	3.66	266.7	499	1.92
14.32	3.05	304.8	570.2	2
17.37	3.05	487.7	912.4	2
20.42	7.62	609.6	1140.5	2.08
28.04	7.62	731.5	1368.6	2.08
35.66	7.62	823	1539.6	2.08
43.28	30.18[a]	1066.8	1995.8	2.08

a. Half-space in model

Site: 134, Eastwood Elementary

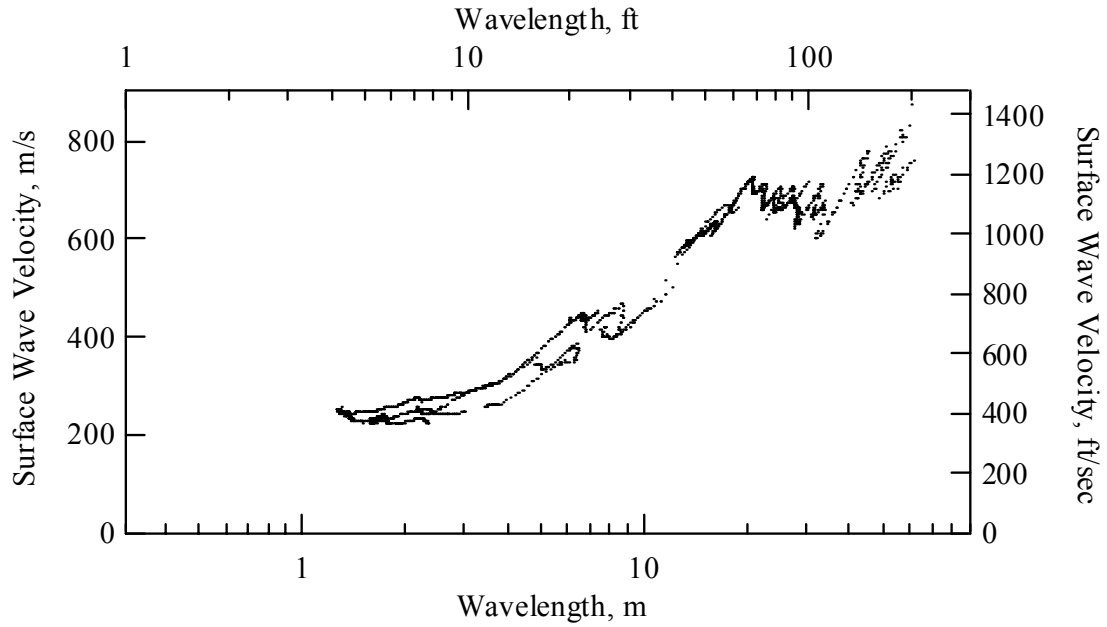


Fig 40 Experimental Dispersion Curve measured at Eastwood Elementary, East Millcreek, Site 134, Earthquake Site Response Unit Q03 (Ashland, 2001)

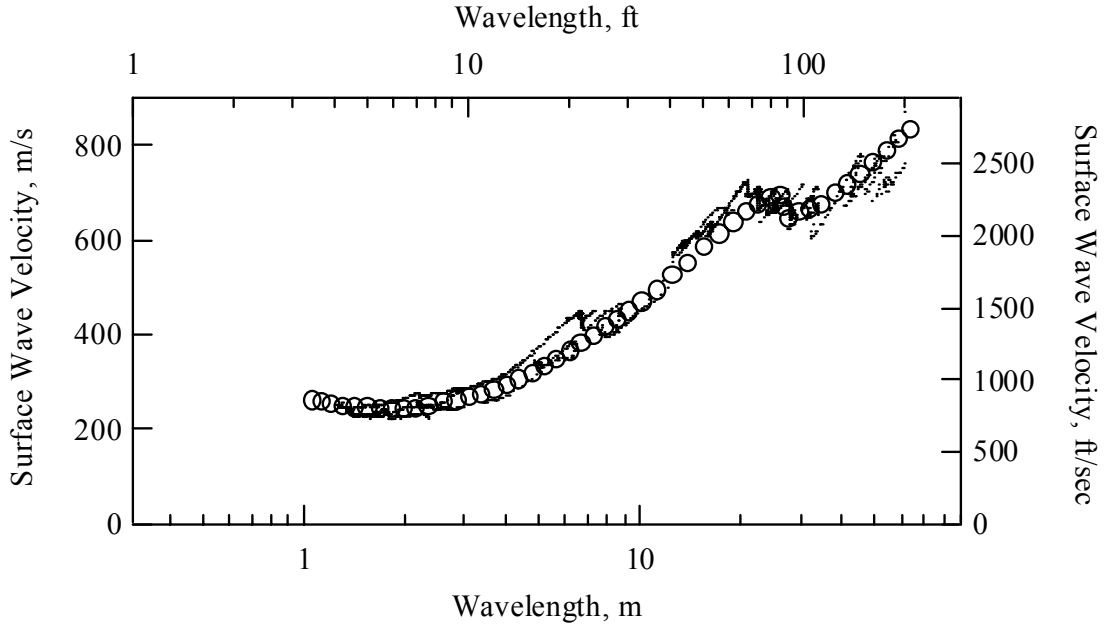


Fig 41 Comparison between Experimental & Theoretical Dispersion Curves from Eastwood Elementary, East Millcreek, Site 134, Earthquake Site Response Unit Q03 (Ashland, 2001)

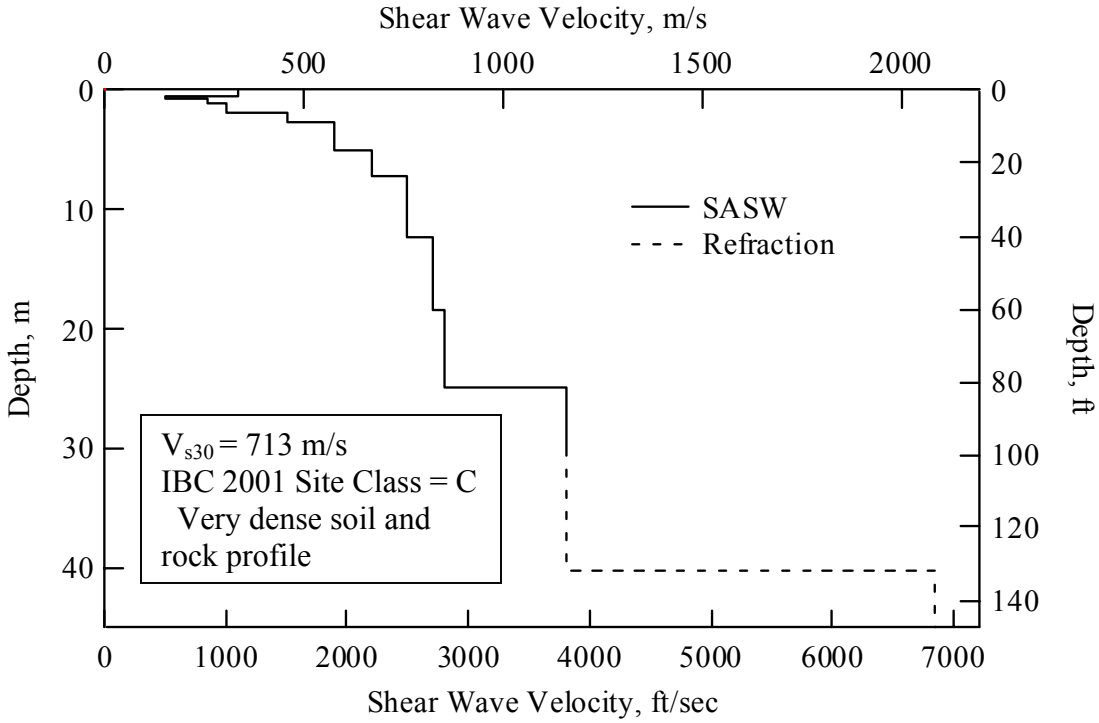


Fig 42 Shear Wave Velocity Profile Determined from SASW & Refraction Testing at Eastwood Elementary, East Millcreek, Site 134, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 16 Tabulated Shear Wave Velocity Profile from Eastwood Elementary, East Millcreek, Site 134, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.46	335.30	627.3	1.92
0.46	0.18	152.40	285.1	1.92
0.64	0.53	259.10	484.7	1.92
1.17	0.69	304.80	570.2	2
1.86	0.91	457.20	855.3	2
2.77	2.29	579.10	1083.4	2
5.06	2.13	670.60	1254.5	2.08
7.19	5.18	762.00	1425.6	2.08
12.37	6.1	823.00	1539.6	2.08
18.47	6.4	853.40	1596.6	2.08
24.87	30.18[a]	1163.30[b]	2176.3	2.08

a. Half-space in model
b. Refraction velocity

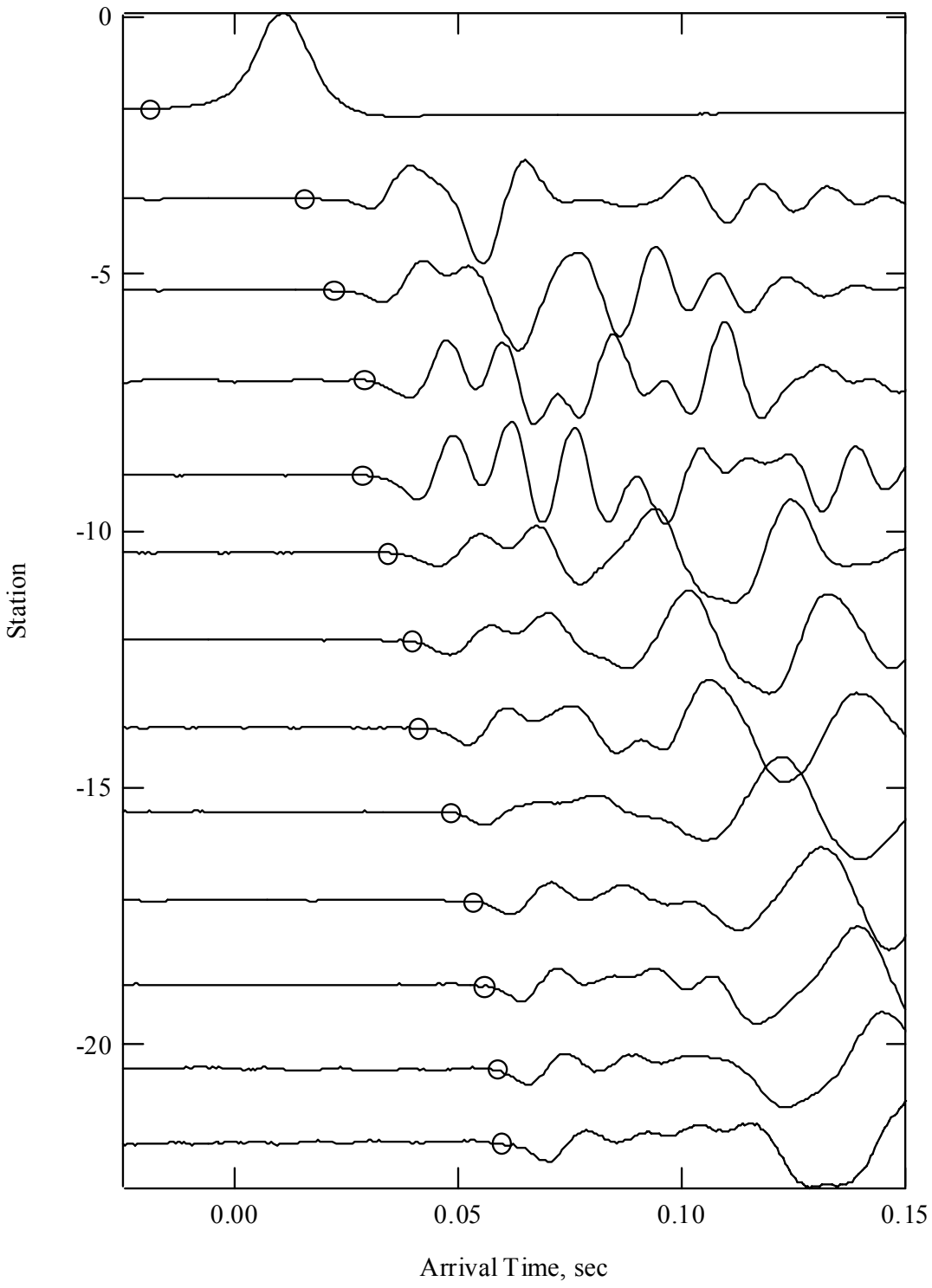


Fig 43 Arrival Times for Refraction Testing at Eastwood Elementary, East Millcreek, Site 134, Earthquake Site Response Unit Q03 (Ashland, 2001)

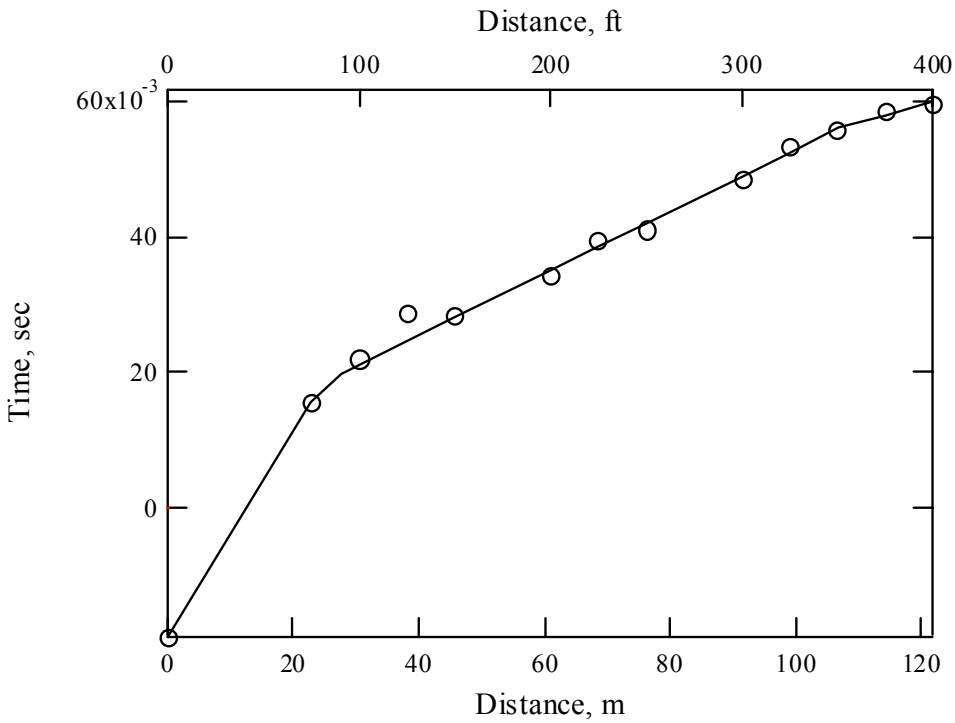


Fig 44 Time-Distance Curve for Refraction Testing at Eastwood Elementary, East Millcreek, Site 134, Earthquake Site Response Unit Q03 (Ashland, 2001)

Tabulated Refraction Profile from Eastwood Elementary, East Millcreek, Site 134, Earthquake Site Response Unit Q03 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	6.17	659.41	352.47
2	10.25	1200.44	641.66
3	40.12	2176.33	1163.30
4		3901.53	2085.45

Site 84, Park Lane Elementary

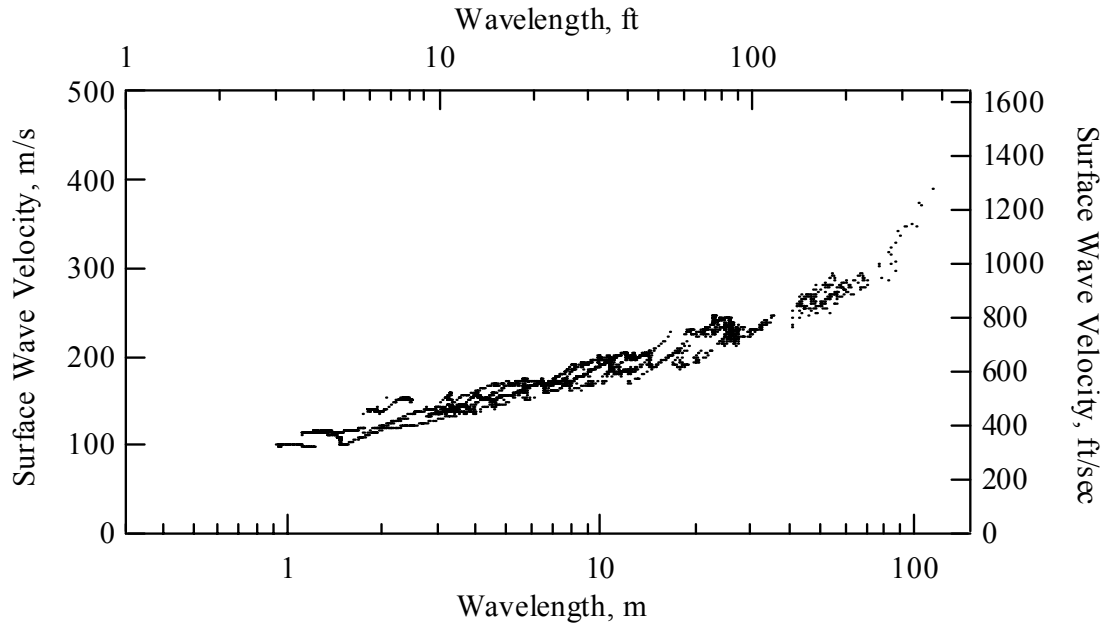


Fig 45 Experimental Dispersion Curve measured at Park Lane Elementary, Sandy, Site 84, Earthquake Site Response Unit Q03 (Ashland, 2001)

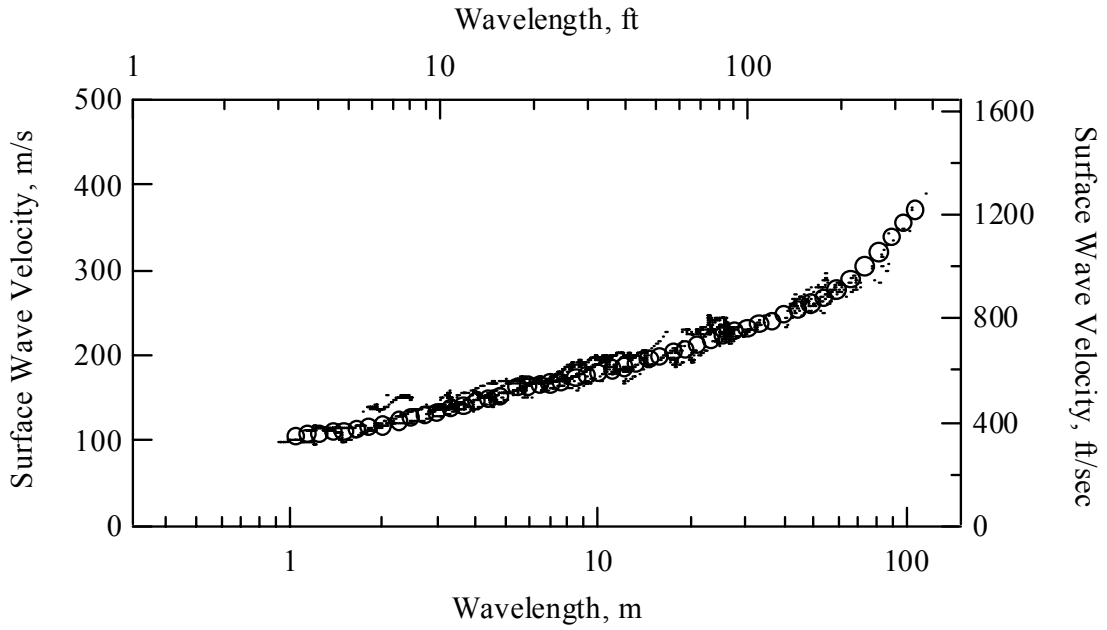


Fig 46 Comparison between Experimental & Theoretical Dispersion Curves from Park Lane Elementary, Sandy, Site 84, Earthquake Site Response Unit Q03 (Ashland, 2001)

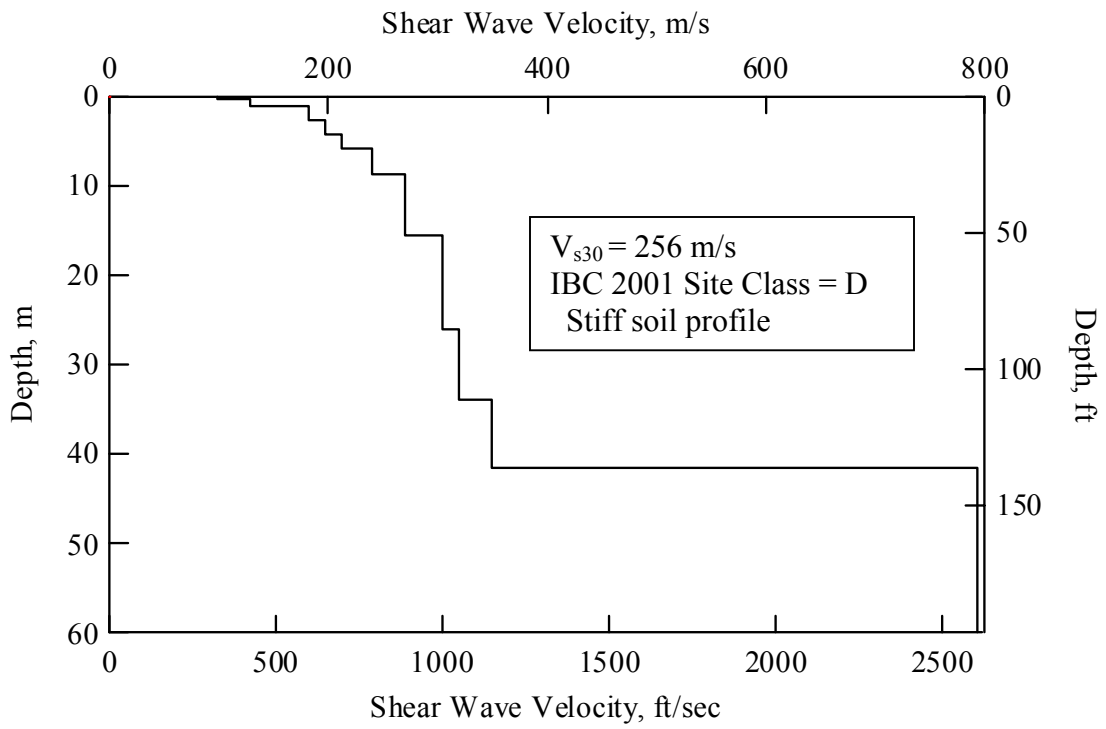


Fig 47 Shear Wave Velocity Profile Determined from SASW Testing at Park Lane Elementary, Sandy, Site 84, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 17 Tabulated Shear Wave Velocity Profile from Park Lane Elementary, Sandy, Site 84, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.38	99.10	185.30	1.89
0.38	0.91	129.50	242.40	1.89
1.29	1.45	182.90	342.10	1.92
2.74	1.52	198.10	370.60	1.92
4.26	1.52	213.4	399.2	1.92
5.78	3.05	240.8	450.5	1.92
8.83	6.71	271.3	507.5	1.92
15.54	10.67	304.8	570.2	2
26.21	7.62	320	598.8	2
33.83	7.62	350.5	655.8	2
41.45	30.18[a]	794[b]	1485.4	2

a. Half-space in model
b. Refraction velocity

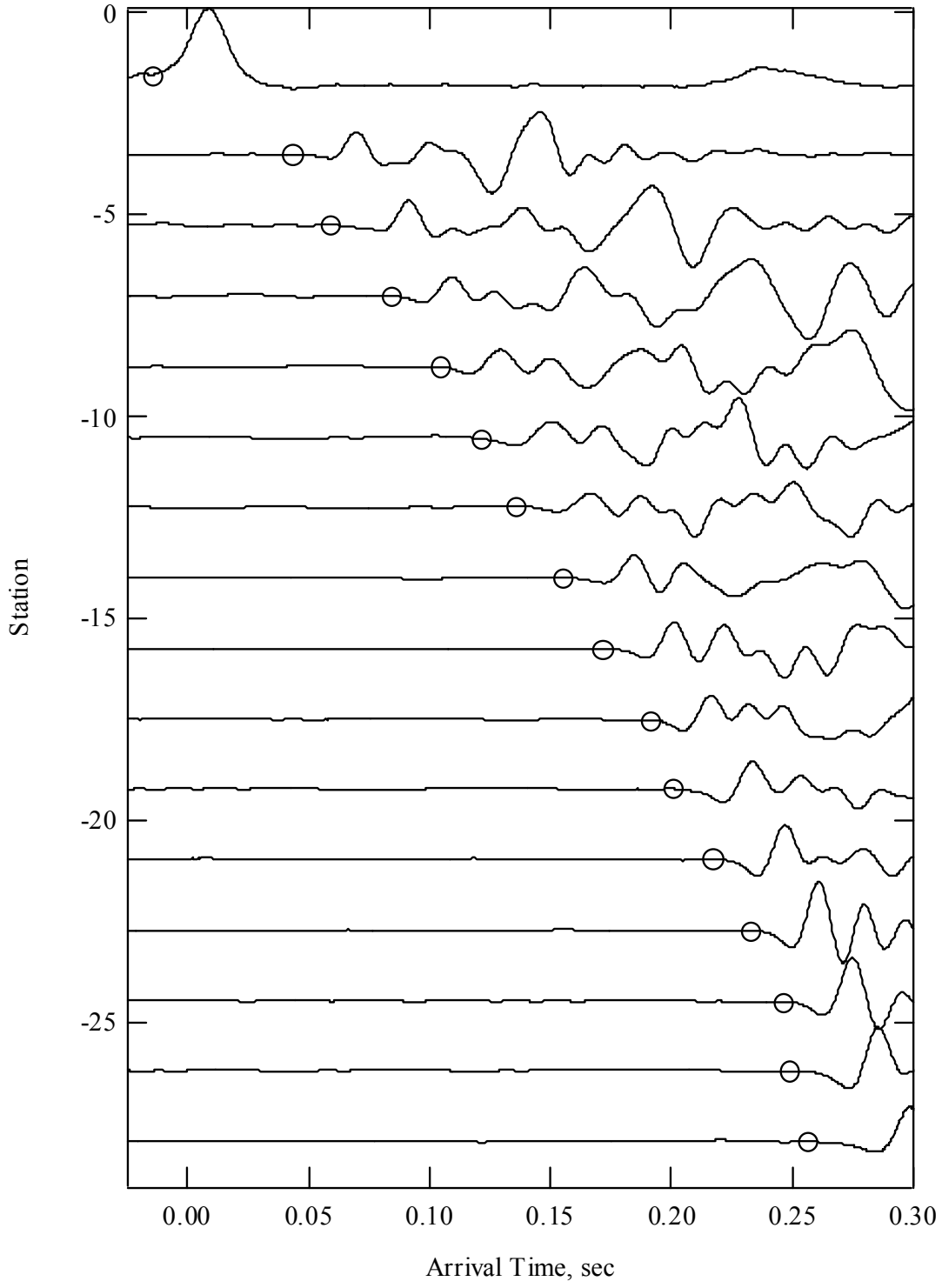


Fig 48 Arrival Times for Refraction Testing at Park Lane Elementary, Sandy, Site 84, Earthquake Site Response Unit Q03 (Ashland, 2001)

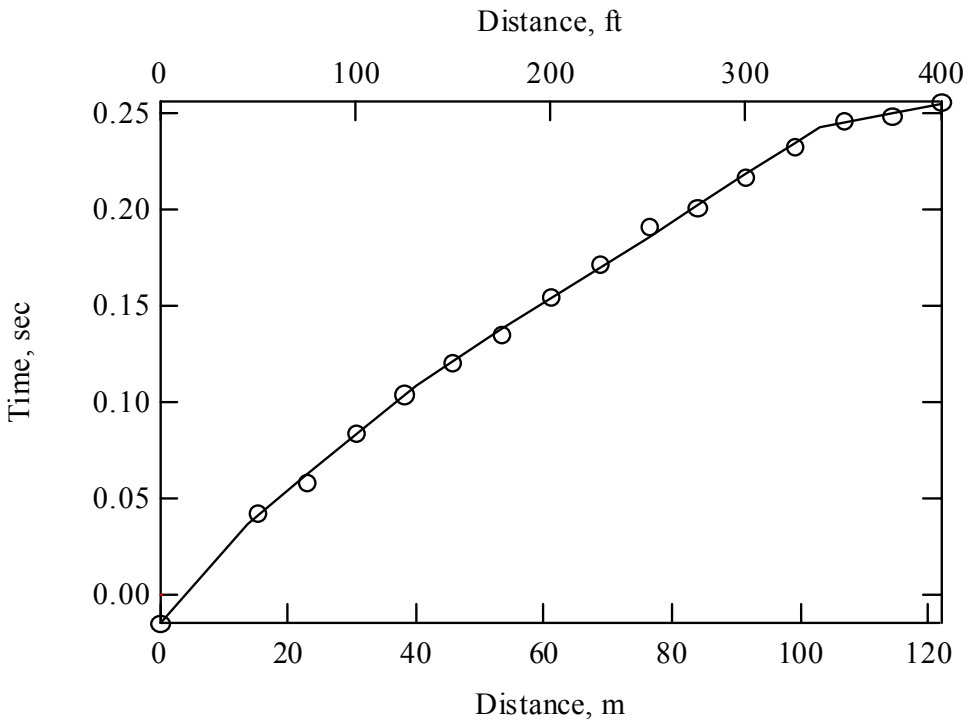


Fig 49 Time-Distance Curve for Refraction Testing at Park Lane Elementary, Sandy, Site 84, Earthquake Site Response Unit Q03 (Ashland, 2001)

Tabulated Refraction Profile from Park Lane Elementary, Sandy, Site 84, Earthquake Site Response Unit Q03 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	2.69	264.50	141.38
2	5.29	363.76	194.44
3	43.68	472.19	252.40
4		1485.77	794.18

Site 19, Salt Lake County Fire Tower

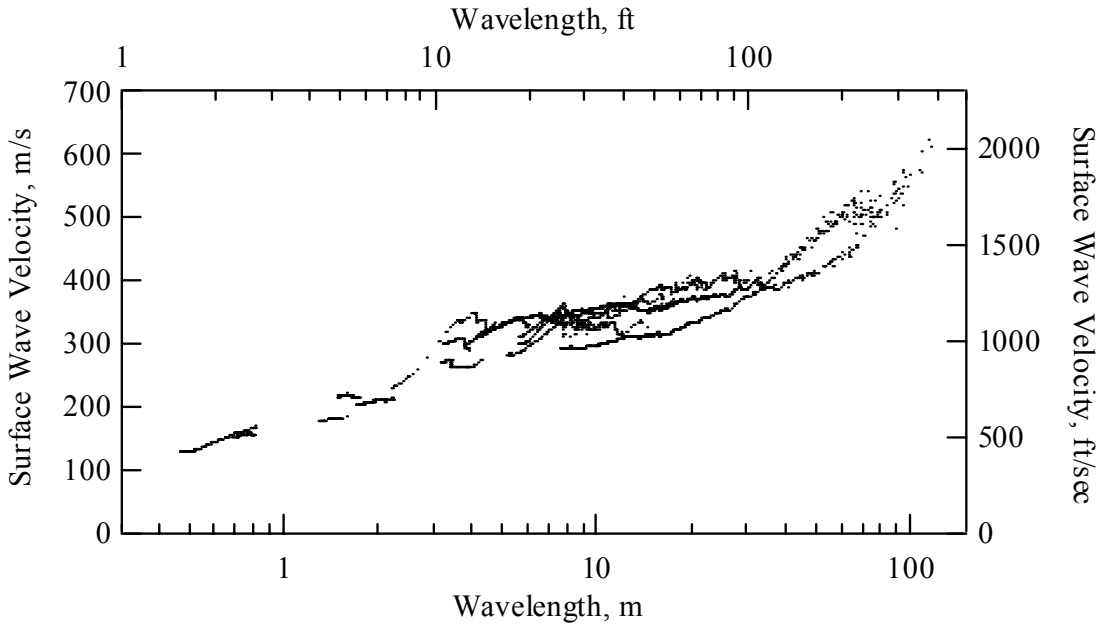


Fig 50 Experimental Dispersion Curve measured at Salt Lake County Fire Tower, Magna, Site 19, Earthquake Site Response Unit Q03 (Ashland, 2001)

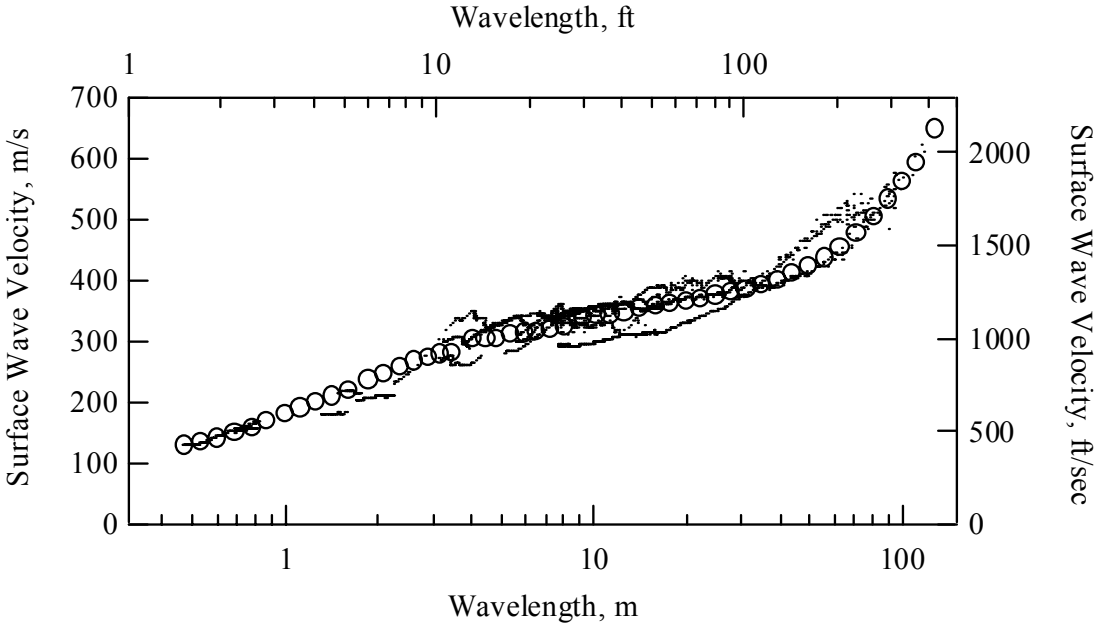


Fig 51 Comparison between Experimental & Theoretical Dispersion Curves from Salt Lake County Fire Tower, Magna, Site 19, Earthquake Site Response Unit Q03 (Ashland, 2001)

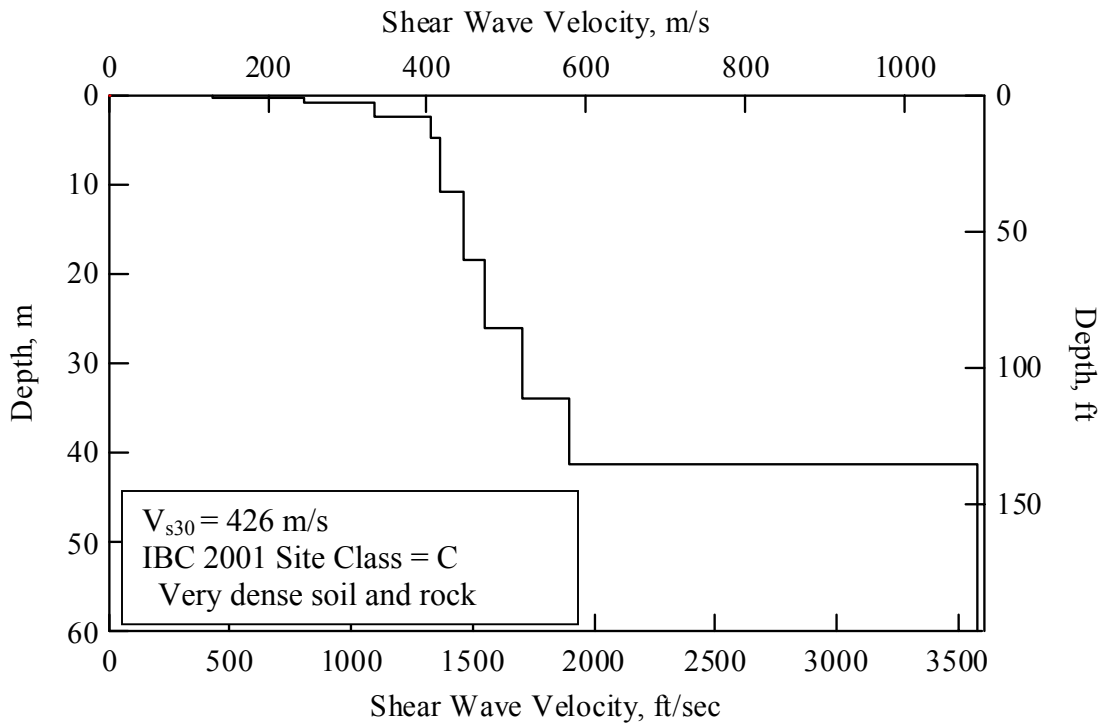


Fig 52 Shear Wave Velocity Profile Determined from SASW Testing at Salt Lake County Fire Tower, Magna, Site 19, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 18 Site 19 (zh34), Magna Fire Station, Q03 Tabulated Shear Wave Velocity Profile from Salt Lake County Fire Tower, Magna, Site 19, Earthquake Site Response Unit Q03 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.27	129.5	242.4	1.89
0.27	0.61	243.8	456.2	1.92
0.88	1.52	335.3	627.3	2
2.4	2.44	403.9	755.5	2
4.84	6.10	414.5	775.5	2
10.94	7.62	445	832.5	2
18.56	7.62	472.4	883.9	2
26.18	7.62	518.2	969.4	2
33.8	7.62	579.1	1083.4	2
41.42	30.18[a]	1090[b]	2039.2	2.08

a. Half-space in model
b. Refraction velocity

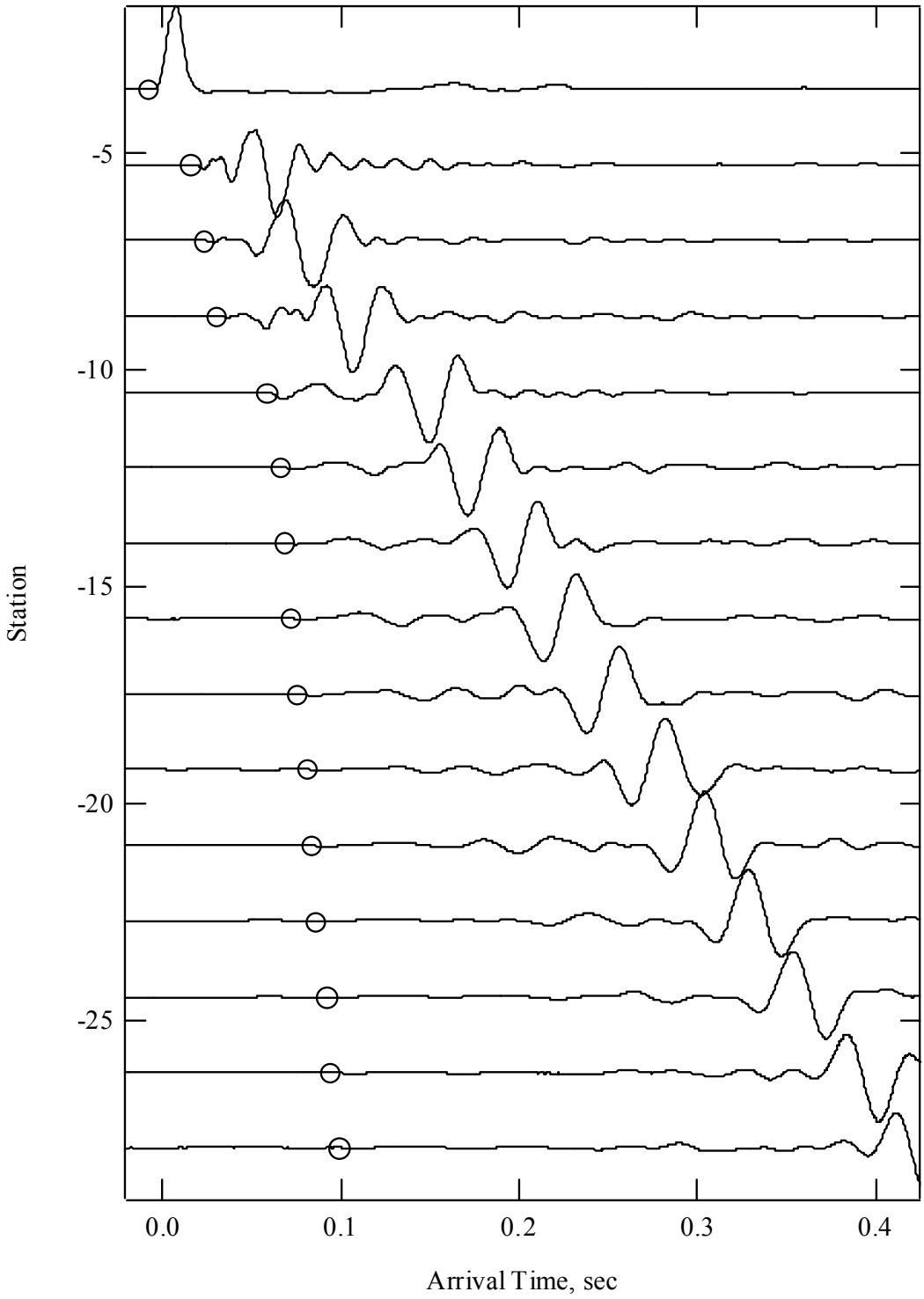


Fig 53 Arrival Times for Refraction Testing at Salt Lake County Fire Tower, Magna, Site 19, Earthquake Site Response Unit Q03 (Ashland, 2001)

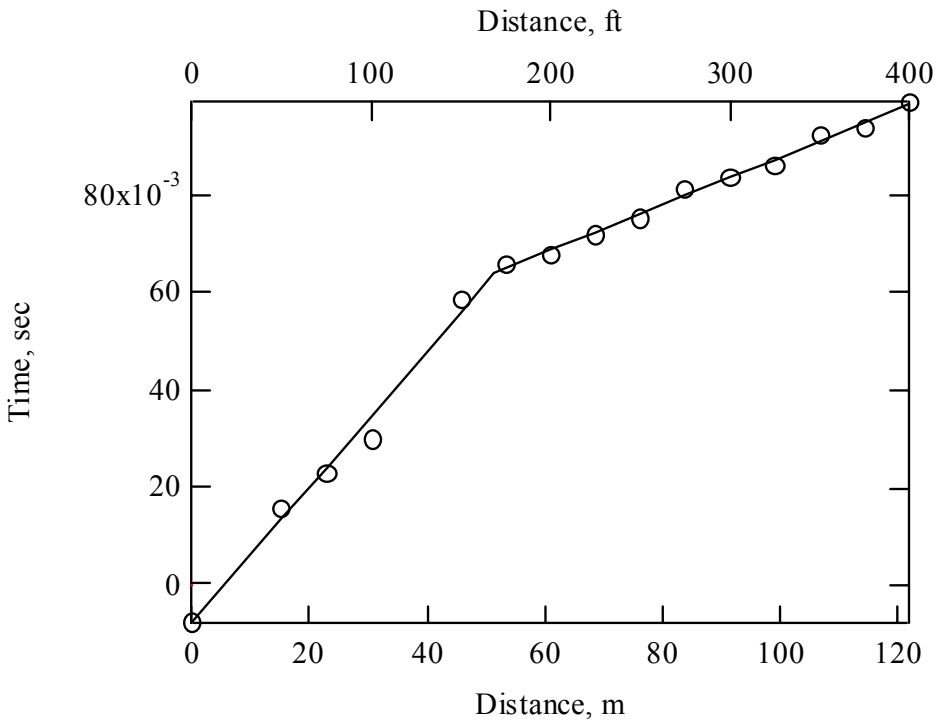


Fig 54 Time-Distance Curve for Refraction Testing at Salt Lake County Fire Tower, Magna, Site 19, Earthquake Site Response Unit Q03 (Ashland, 2001)

Tabulated Forward Refraction Profile from Salt Lake County Fire Tower, Magna, Site 19, Earthquake Site Response Unit Q03 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	17.85	714.23	381.77
2		2037.16	1088.91

Site: 33, Herriman Elementary

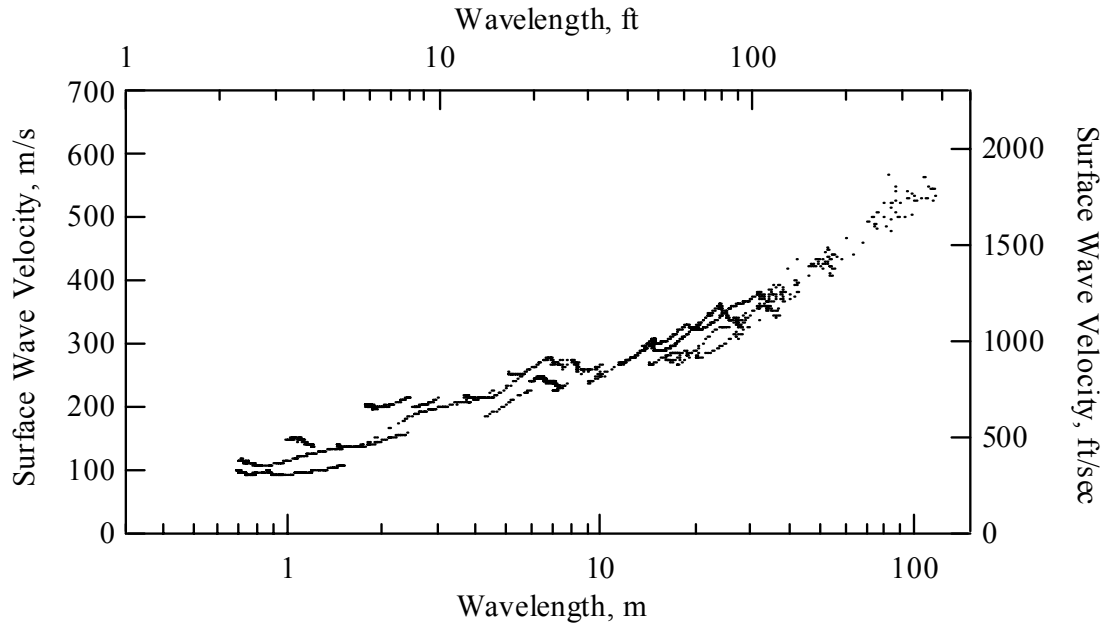


Fig 55 Experimental Dispersion Curve measured at Herriman Elementary, Herriman, Site 33, Earthquake Site Response Unit Q03 (Ashland, 2001)

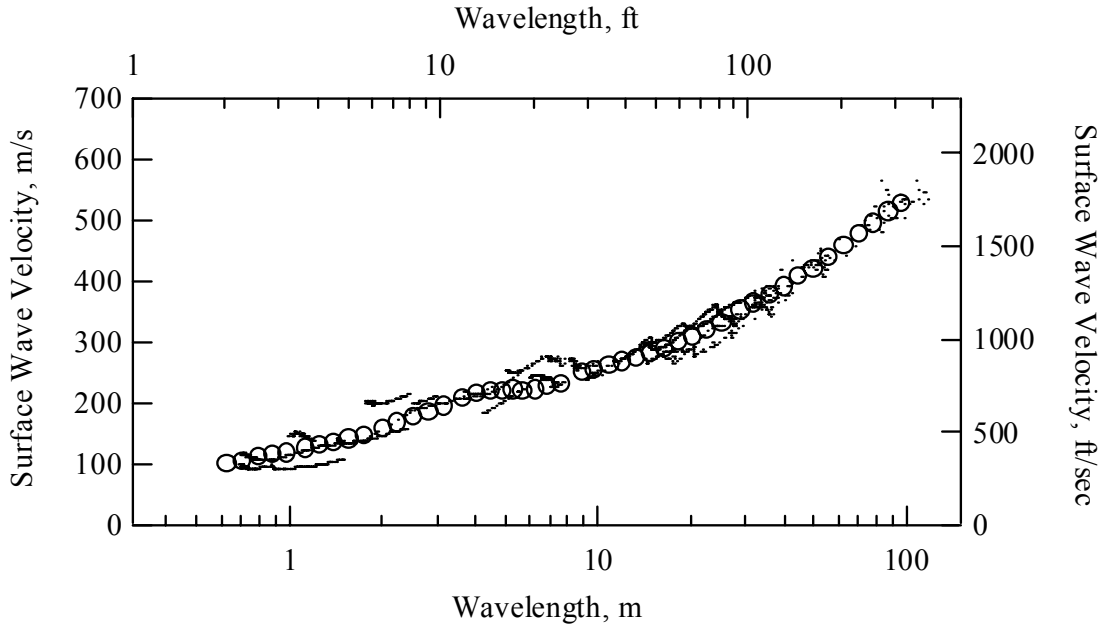


Fig 56 Comparison between Experimental & Theoretical Dispersion Curves from Herriman Elementary, Herriman, Site 33, Earthquake Site Response Unit Q03 (Ashland, 2001)

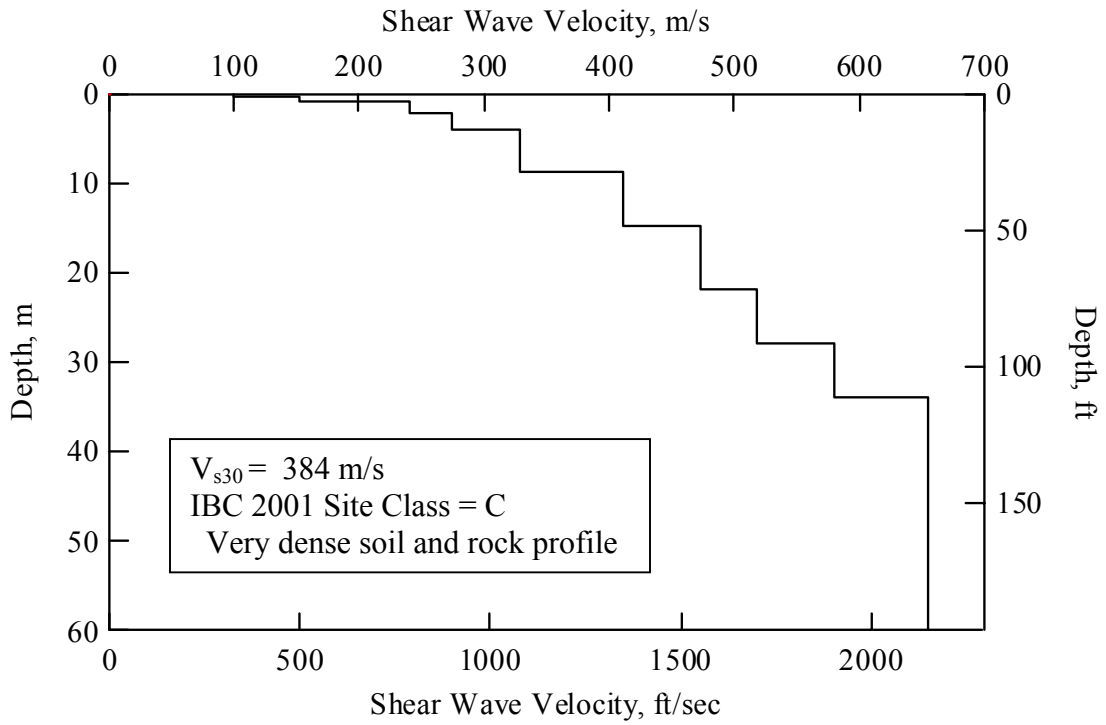


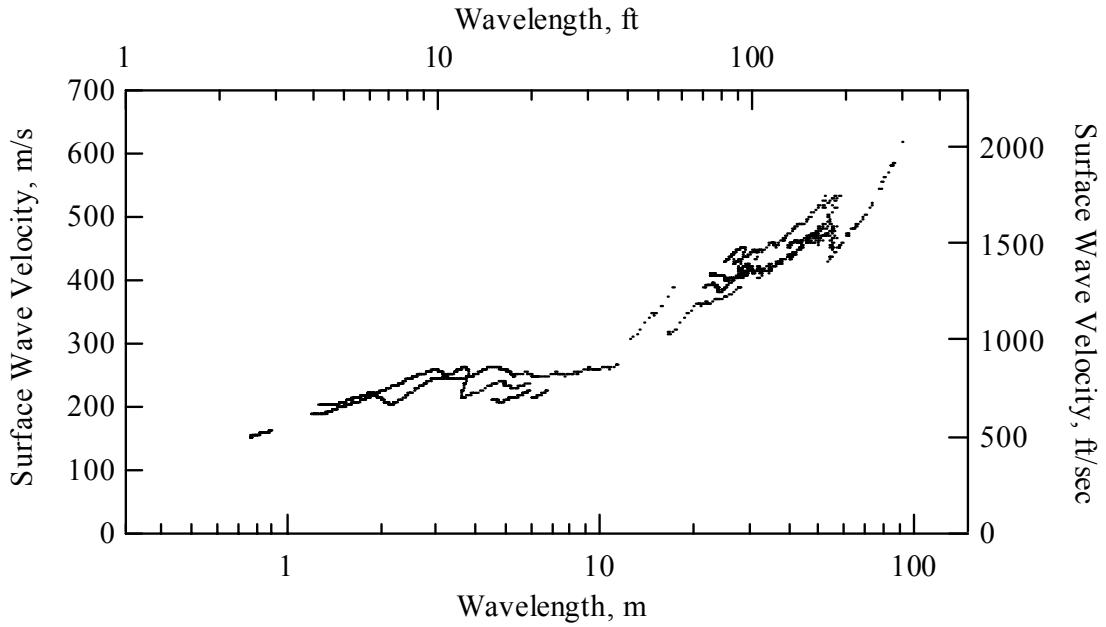
Fig 57 Shear Wave Velocity Profile Determined from SASW Testing at Herriman Elementary, Herriman, Site 33, Earthquake Site Response Unit Q03 (Ashland, 2001)

Table 19 Tabulated Shear Wave Velocity Profile from Herriman Elementary, Herriman, Site 33, Earthquake Site Response Unit Q03 (Ashland, 2001)

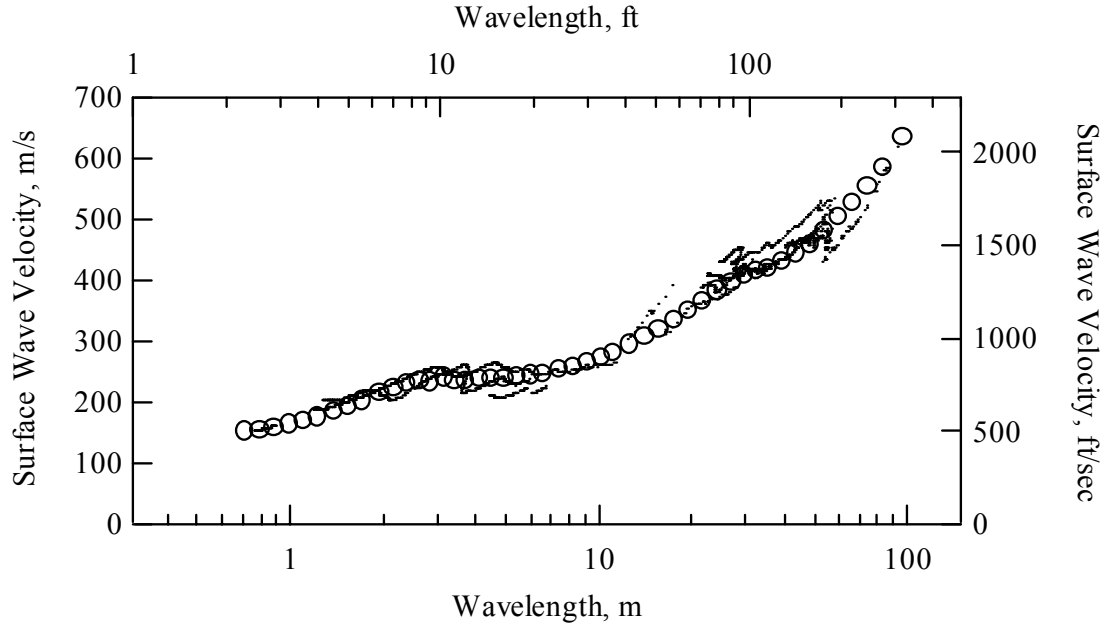
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	99.1	185.3	1.89
0.3	0.53	152.4	285.1	1.92
0.83	1.45	240.8	450.5	1.92
2.28	1.83	274.3	513.2	1.92
4.11	4.57	327.7	613	2
8.68	6.1	411.5	769.8	2
14.78	7.01	472.4	883.9	2
21.79	6.1	518.2	969.4	2
27.89	6.1	579.1	1083.4	2
33.99	30.18[a]	655.3	1226	2.08

a. Half-space in model

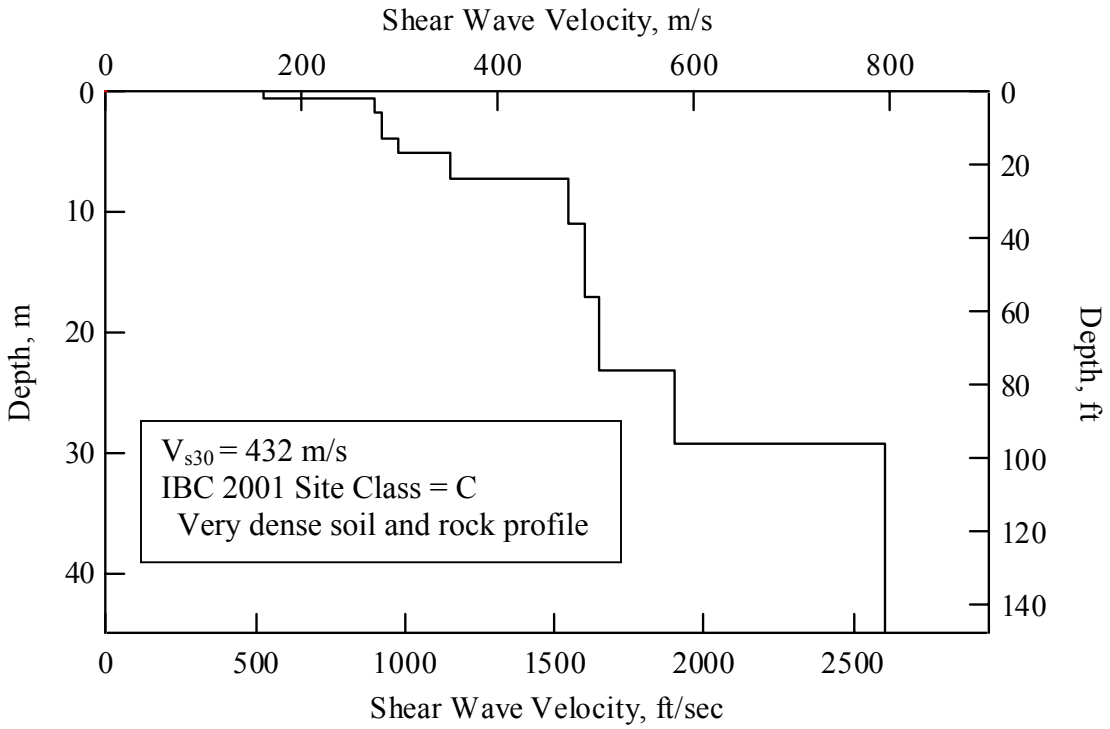
Site 98 – Cedar Valley, county road intersection



Experimental Dispersion Curve measured at Cedar Valley County Road Intersection, Cedar Valley,Site 98, Earthquake Site Response Unit Q04 (Ashland, 2001)



Comparison between Experimental & Theoretical Dispersion Curves from Cedar Valley County Road Intersection, Cedar Valley, Site 98, Earthquake Site Response Unit Q04 (Ashland, 2001)

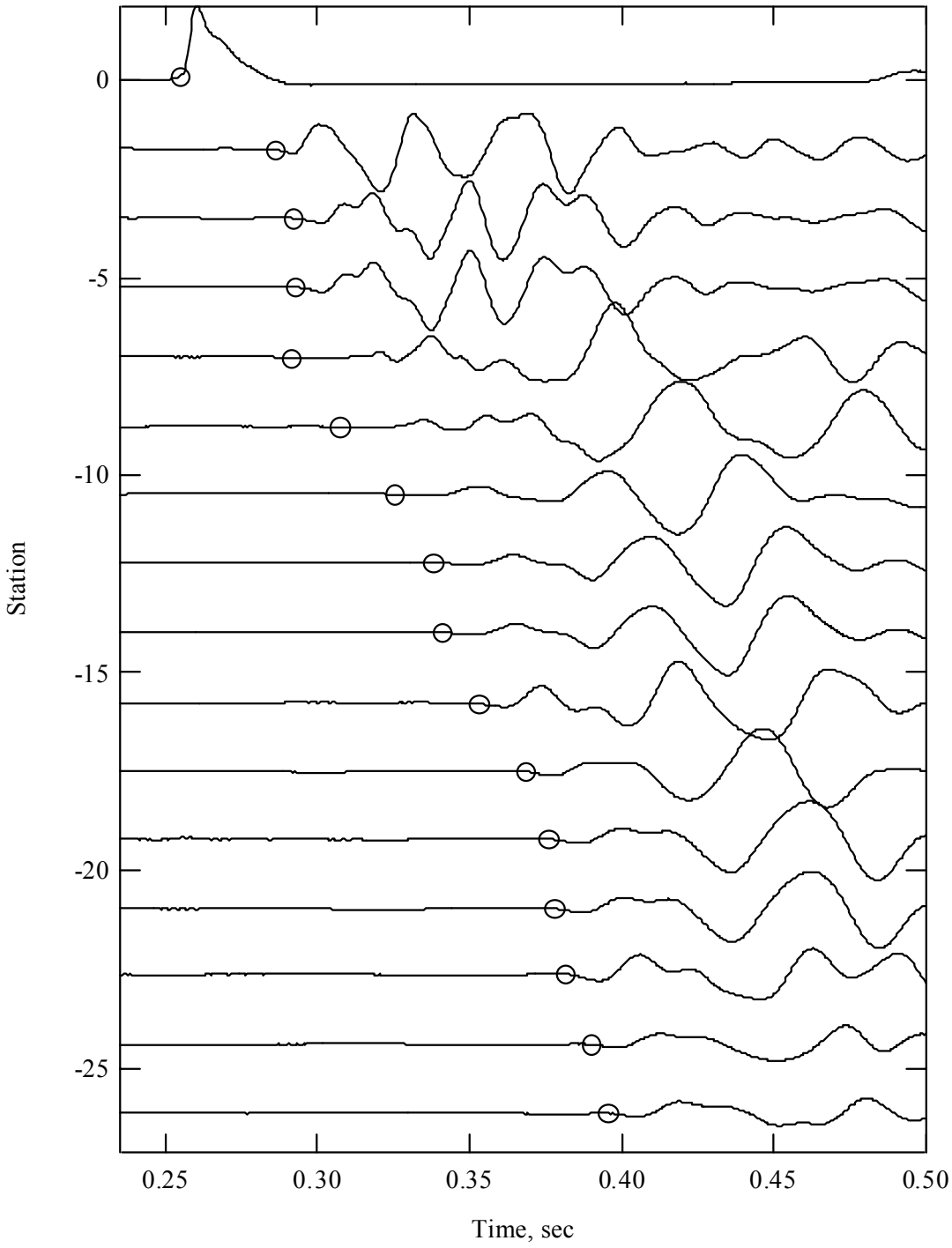


Shear Wave Velocity Profile Determined from SASW Testing at Cedar Valley County Road Intersection, Cedar Valley, Site 98, Earthquake Site Response Unit Q04 (Ashland, 2001)

Tabulated Shear Wave Velocity Profile from Cedar Valley County Road Intersection Cedar Valley, Site 98, Earthquake Site Response Unit Q04 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.53	160	299.4	1.92
0.53	1.22	274.3	513.2	1.92
1.75	2.13	281.9	527.5	1.92
3.88	1.22	297.2	556	1.92
5.1	2.13	350.5	655.8	2
7.23	3.66	472.4	855.3	2
10.89	6.1	487.7	912.4	2
16.99	6.1	502.9	940.9	2
23.09	6.1	579.1	1083.4	2
29.19	30.18[a]	795[b]	1487.3	2.08

a. Half-space in model
b. Refraction velocity



Arrival Times for Refraction Testing at Cedar Valley County Road Intersection, Cedar Valley, Site 98, Earthquake Site Response Unit Q04 (Ashland, 2001)

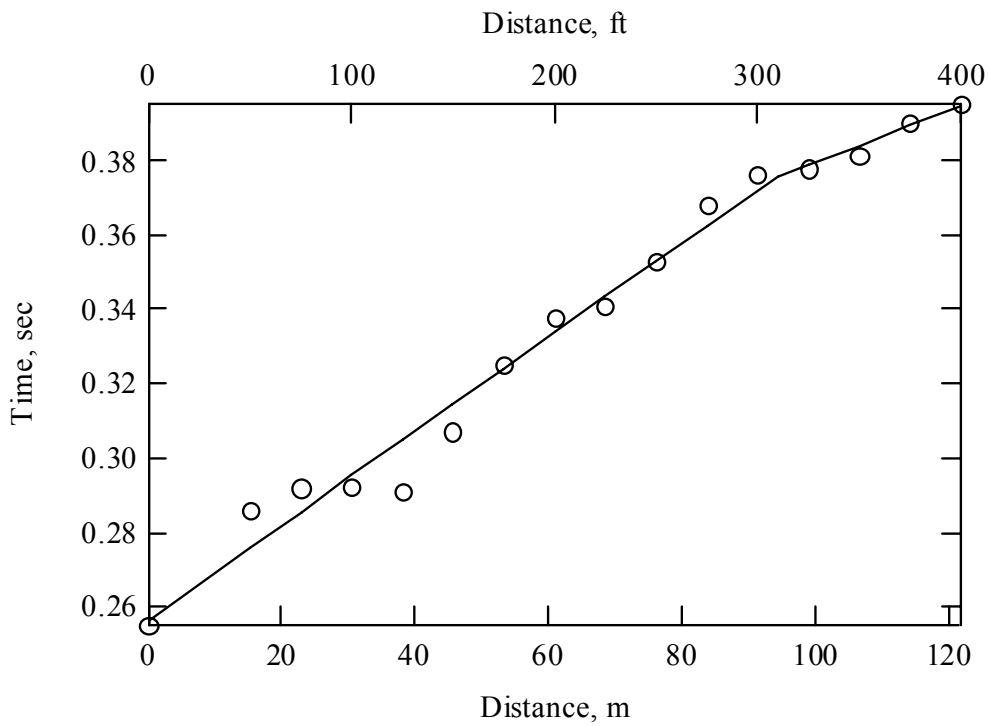


Fig 1 Time-Distance Curve for Refraction Testing at Cedar Valley County Road Intersection, Cedar Valley, Site 98, Earthquake Site Response Unit Q04 (Ashland, 2001)

Table 1 Tabulated Refraction Profile from Cedar Valley County Road Intersection, Cedar Valley, Site 98, Earthquake Site Response Unit Q04 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	26.07	791.46	423.05
2		1486.25	794.43

Site 23, Copperton Park

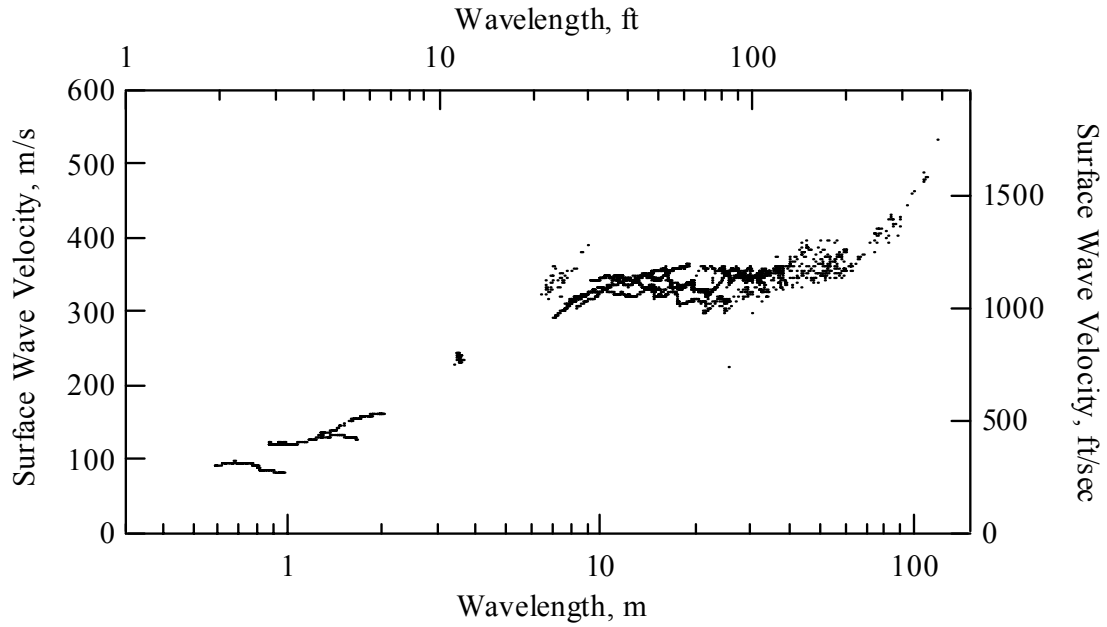


Fig 2 Experimental Dispersion Curve measured at Copperton Park, Copperton, Site 23, Earthquake Site Response Unit Q04 (Ashland, 2001)

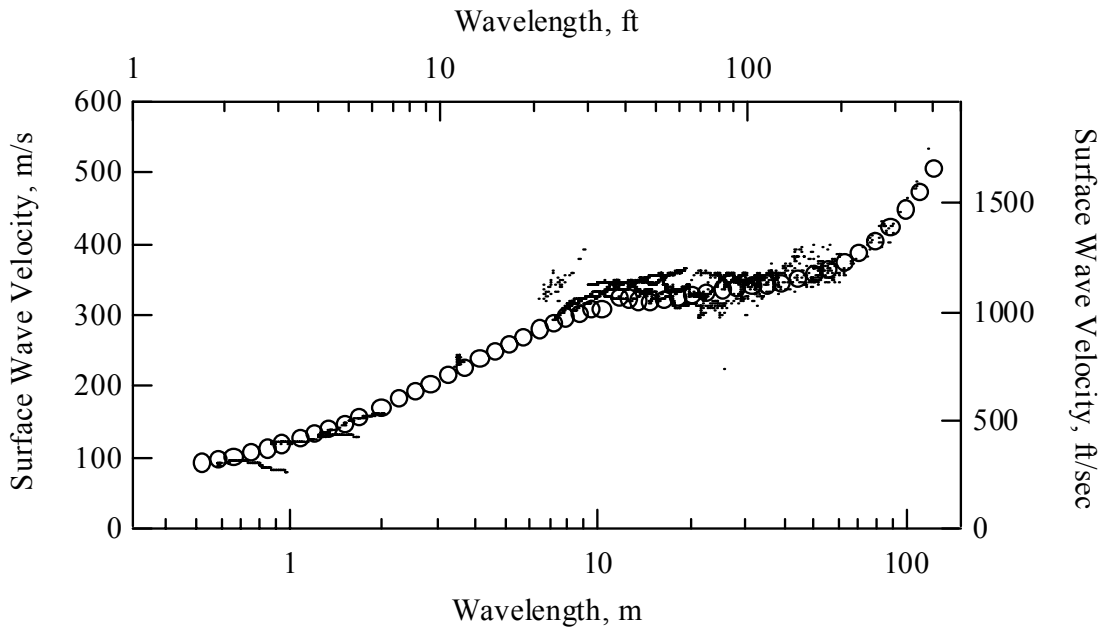


Fig 3 Comparison between Experimental & Theoretical Dispersion Curves from Copperton Park, Copperton, Site 23, Earthquake Site Response Unit Q04 (Ashland, 2001)

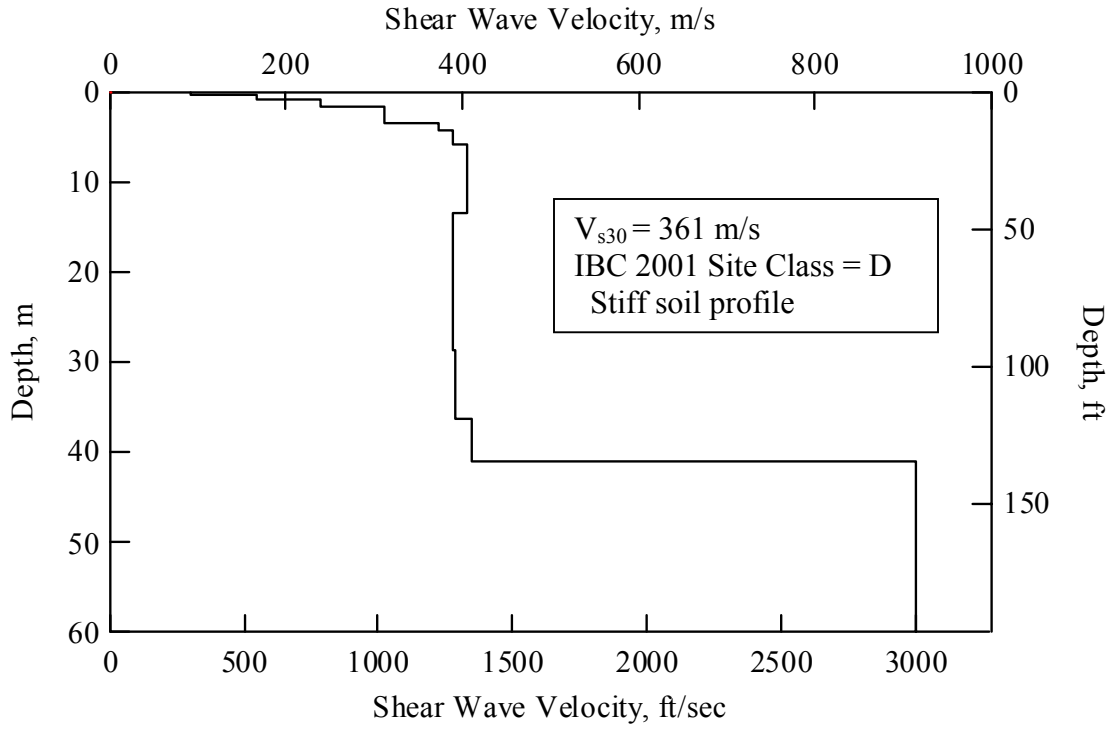


Fig 4 Shear Wave Velocity Profile Determined from SASW Testing at Copperton Park, Copperton, Site 23, Earthquake Site Response Unit Q04 (Ashland, 2001)

Table 2 Tabulated Shear Wave Velocity Profile from Copperton Park, Copperton, Site 23, Earthquake Site Response Unit Q04 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	91.4	171.1	1.89
0.3	0.46	167.6	313.6	1.92
0.76	0.91	239.3	447.7	1.92
1.67	1.92	312.4	584.5	2
3.59	0.76	373.4	698.5	2
4.35	1.52	388.6	727	2
5.87	7.62	403.9	755.6	2
13.49	7.62	388.6	727	2
21.11	7.62	390.1	729.8	2
28.73	7.62	393.2	735.6	2
36.35	4.57	411.5	769.9	2
40.92	30.18[a]	914.4	1710.7	2.08

a. Half-space in model

Site: 308, Lark

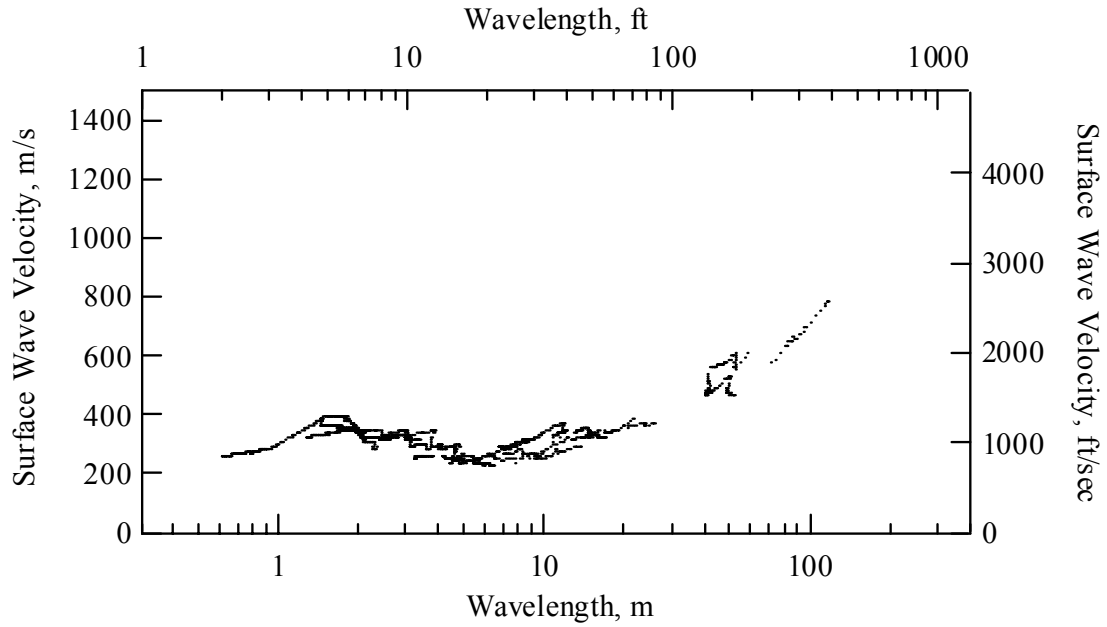


Fig 5 Experimental Dispersion Curve measured at Lark, Salt Lake County, Site 308, Earthquake Site Response Unit Q04 (Ashland, 2001)

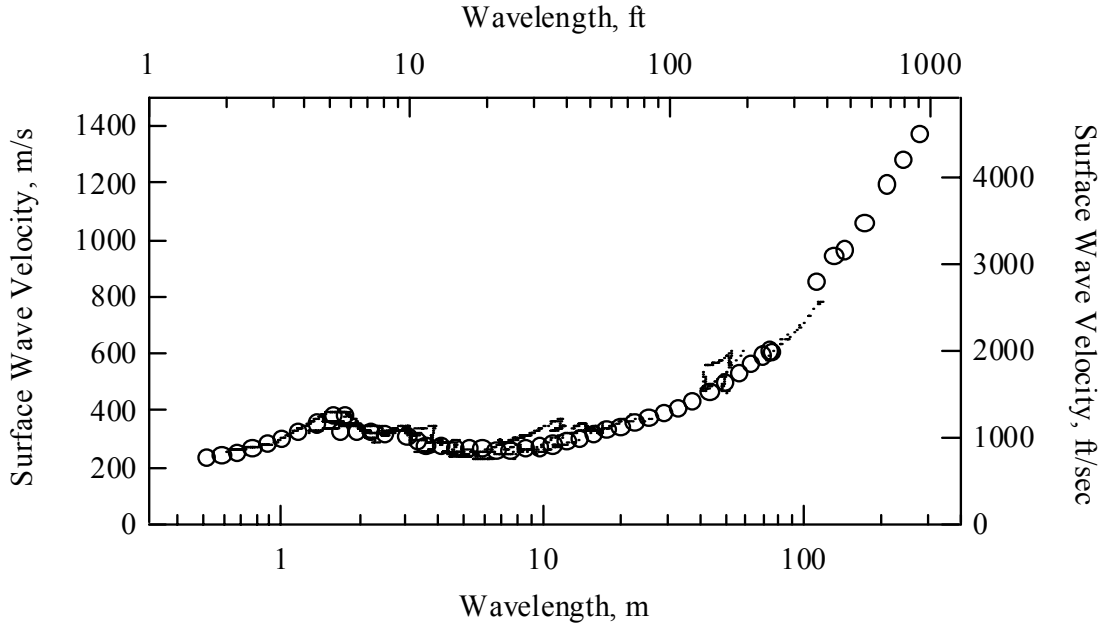


Fig 6 Comparison between Experimental & Theoretical Dispersion Curves from Lark, Salt Lake County, Site 308, Earthquake Site Response Unit Q04 (Ashland, 2001)

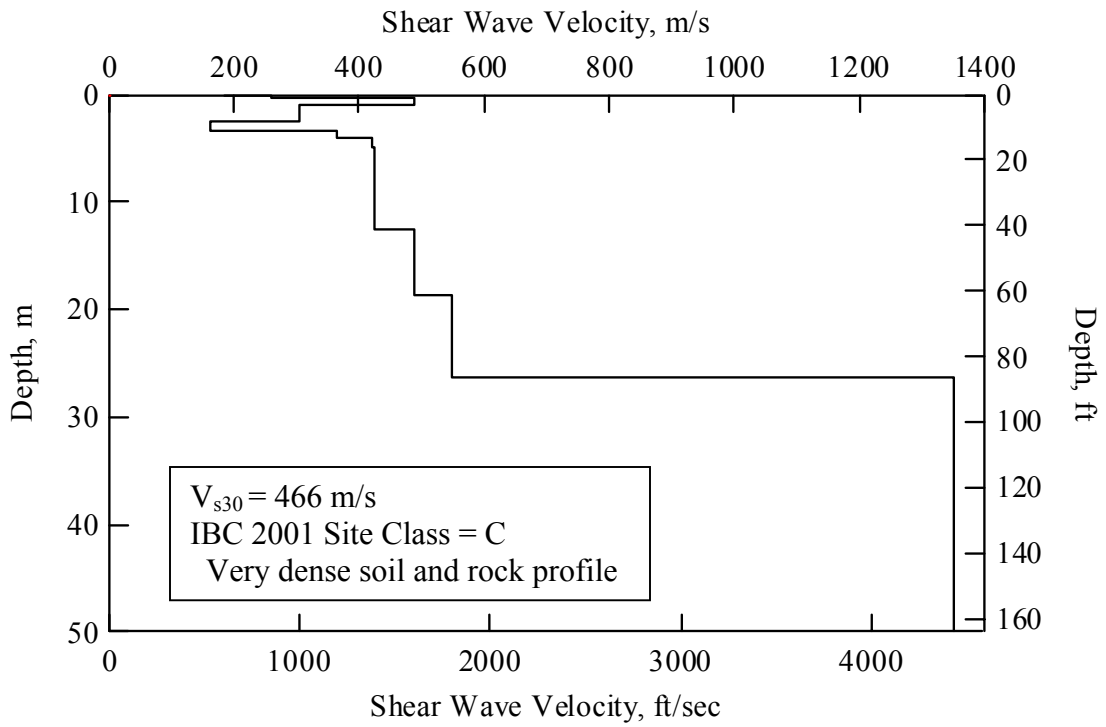


Fig 7 Shear Wave Velocity Profile Determined from SASW Testing at Lark, Salt Lake County, Site 308, Earthquake Site Response Unit Q04 (Ashland, 2001)

Table 3 Tabulated Shear Wave Velocity Profile from Lark, Salt Lake County, Site 308, Earthquake Site Response Unit Q04 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.08	182.90	342.10	1.92
0.08	0.30	259.10	484.70	1.92
0.38	0.61	487.70	912.40	2
0.99	1.52	304.80	570.20	2
2.51	0.91	160	299.4	1.89
3.42	0.61	365.8	684.3	2
4.03	0.91	419.1	784.1	2
4.94	7.62	426.7	798.3	2
12.56	6.1	487.7	912.4	2
18.66	7.62	548.6	1026.4	2
26.28	30.18[a]	1350[b]	2525.6	2.08

a. Half-space in model
b. Refraction velocity

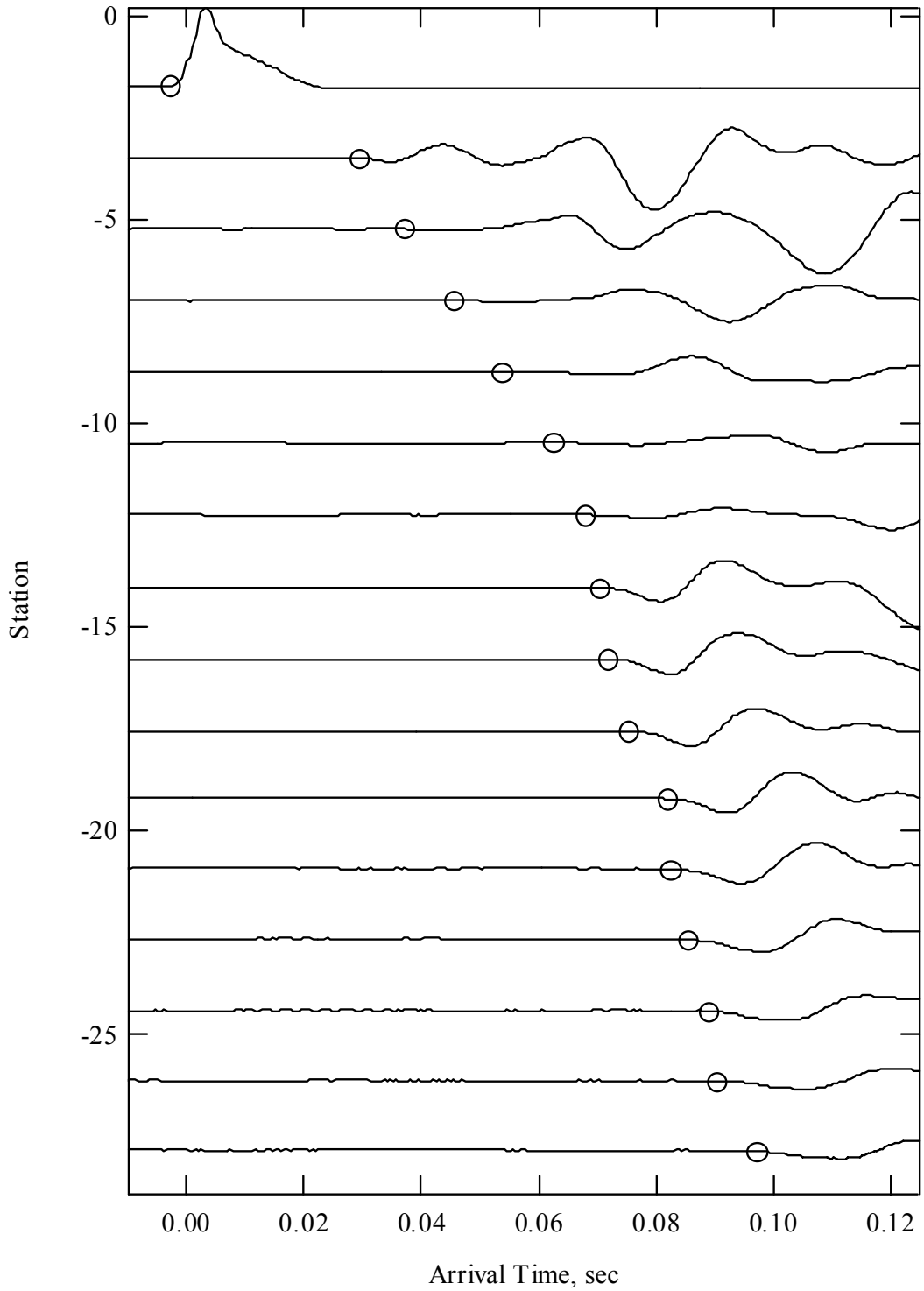


Fig 8 Arrival Times for Refraction Testing at Lark, Salt Lake County, Site 308, Earthquake Site Response Unit Q04 (Ashland, 2001)

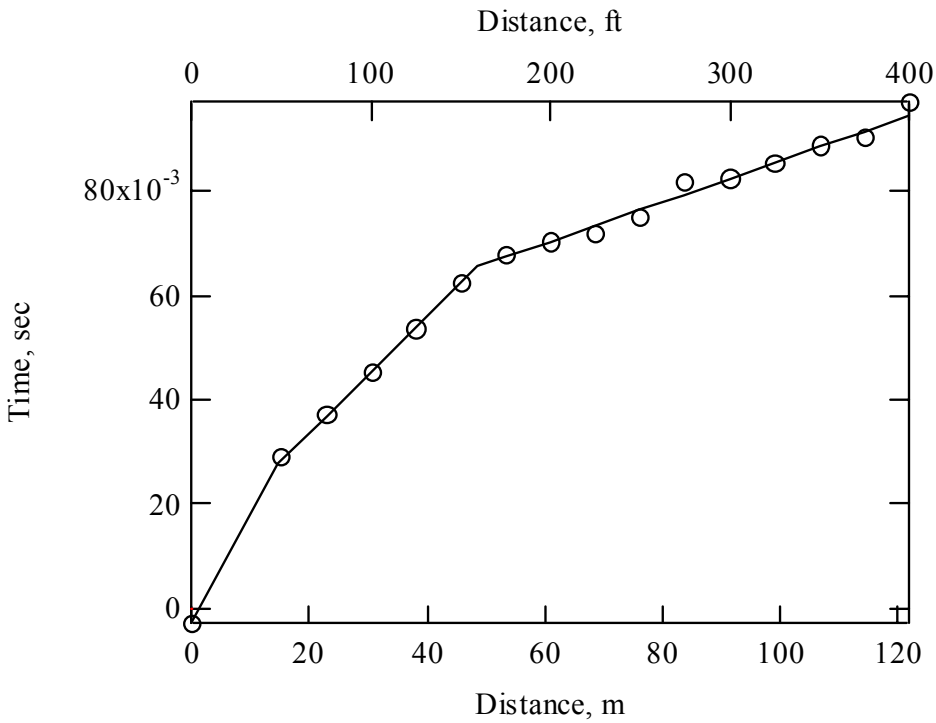


Fig 9 Time-Distance Curve for Refraction Testing at Lark, Salt Lake County, Site 308, Earthquake Site Response Unit Q04 (Ashland, 2001)

Tabulated Refraction Profile from Lark, Salt Lake County, Site 308, Earthquake Site Response Unit Q04 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	4.05	472.90	252.78
2	17.73	902.04	482.16
3		2538.78	1357.03

Site: 106, Eagle Mtn Water Tank

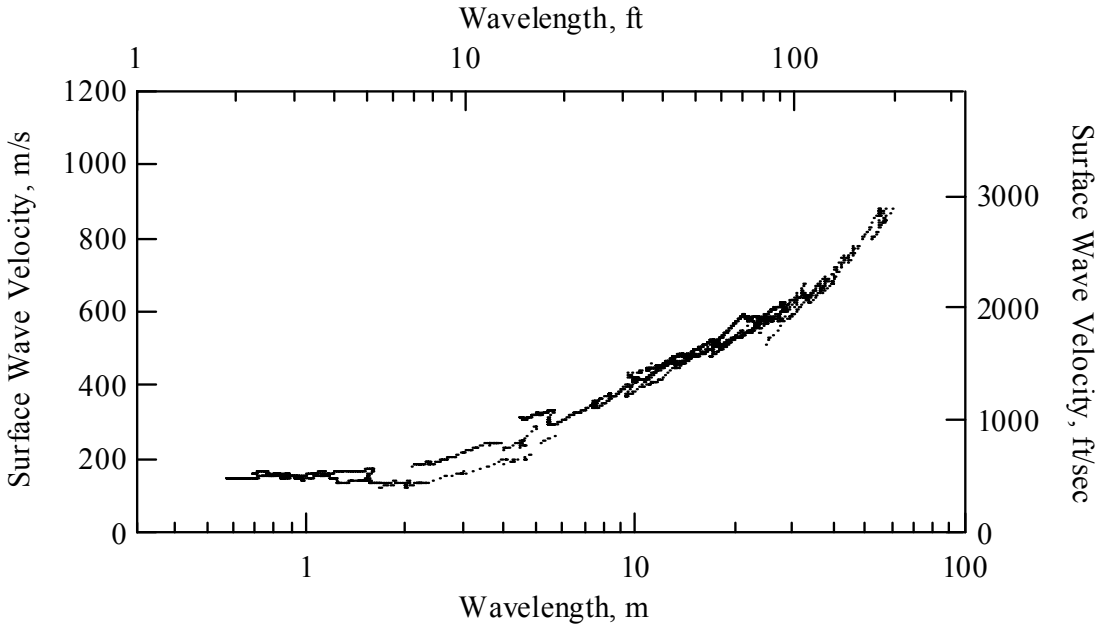


Fig 10 Experimental Dispersion Curve measured at Eagle Mountain Water Tank, Cedar Valley, Site 106, Earthquake Site Response Unit Q04 (Ashland, 2001)

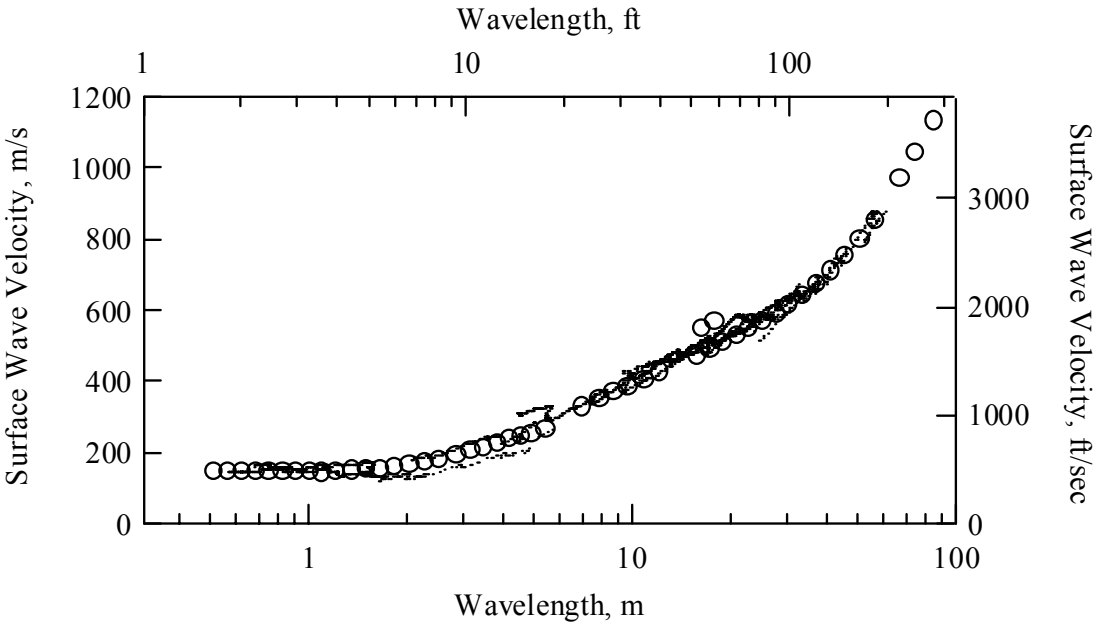


Fig 11 Comparison between Experimental & Theoretical Dispersion Curves at Eagle Mountain Water Tank, Cedar Valley, Site 106, Earthquake Site Response Unit Q04 (Ashland, 2001)

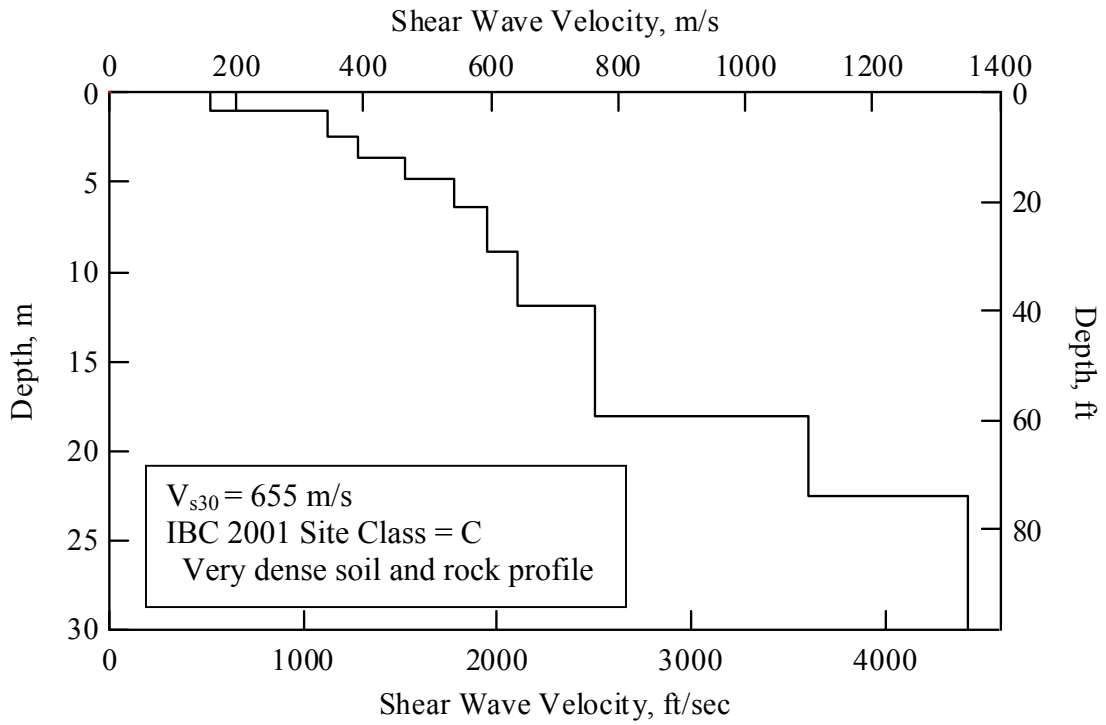


Fig 12 Shear Wave Velocity Profile Determined from SASW Testing at Eagle Mountain Water Tank, Cedar Valley, Site 106, Earthquake Site Response Unit Q04 (Ashland, 2001)

Table 4 Tabulated Shear Wave Velocity Profile from Eagle Mountain Water Tank, Cedar Valley, Site 106, Earthquake Site Response Unit Q04 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	1.07	160	299.4	1.92
1.07	1.37	342.9	641.5	2
2.44	1.22	393.2	735.6	2
3.66	1.22	463.3	866.8	2
4.88	1.52	541	1012.2	2
6.4	2.44	594.4	1112	2
8.84	3.05	640.1	1197.5	2.08
11.89	6.10	762	1425.6	2.08
17.99	4.57	1097.3	2052.8	2.08
22.56	30.18[a]	1350[b]	2525.6	2.08

a. Half-space in model
b. Refraction Velocity

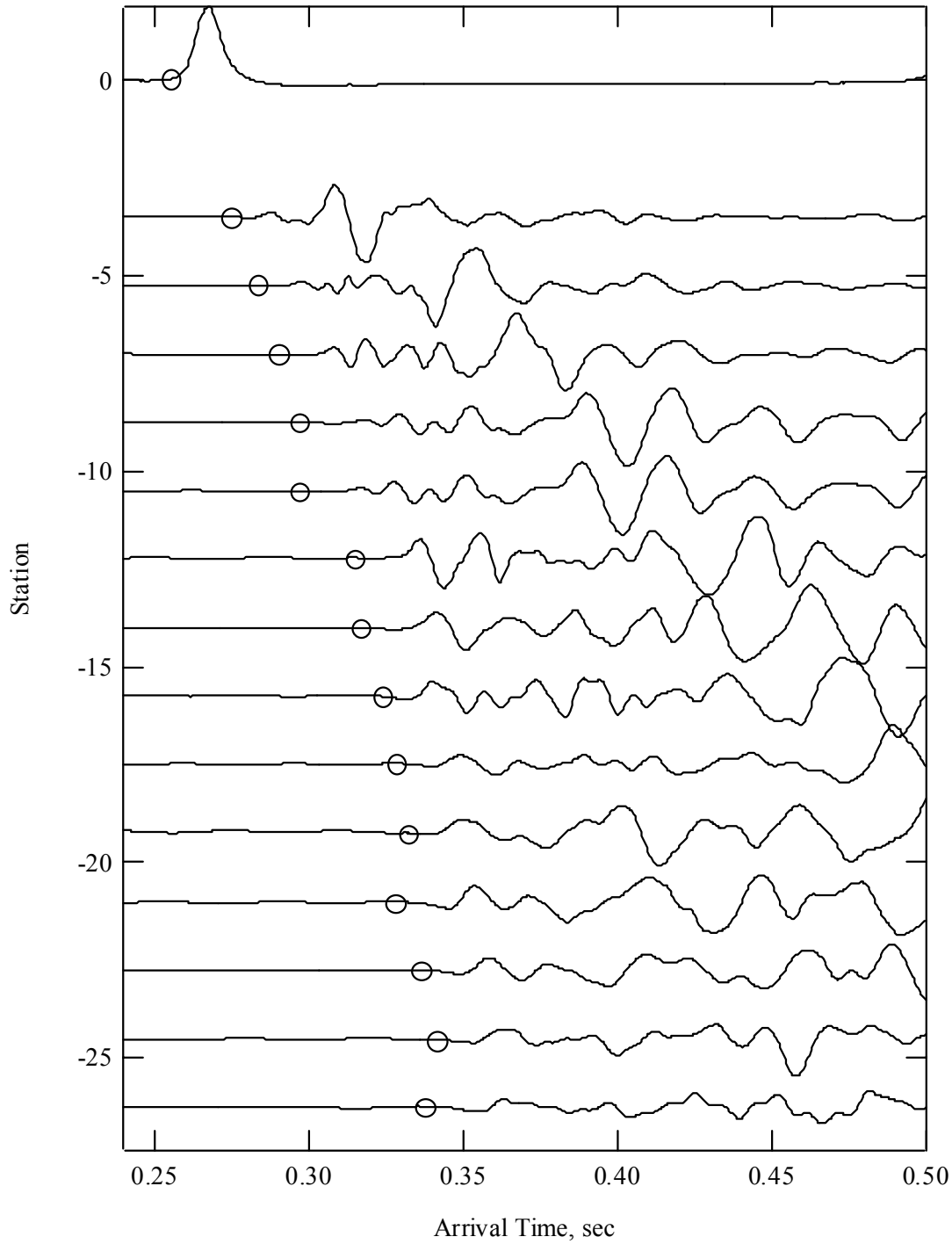


Fig 13 Arrival Times for Refraction Testing at Eagle Mountain Water Tank, Cedar Valley, Site 106, Earthquake Site Response Unit Q04 (Ashland, 2001)

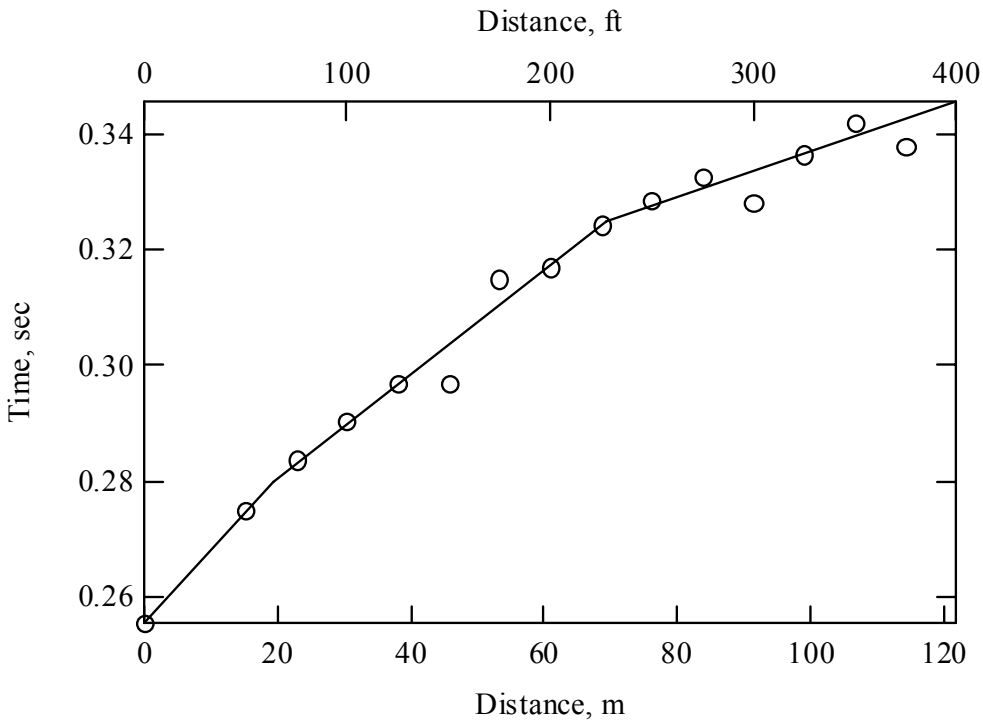


Fig 14 Time-Distance Curve for Refraction Testing at Eagle Mountain Water Tank, Cedar Valley, Site 106, Earthquake Site Response Unit Q04 (Ashland, 2001)

Table 5 Tabulated Refraction Profile from Eagle Mountain Water Tank, Cedar Valley, Site 106, Earthquake Site Response Unit Q04 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	3.90	803.15	429.30
2	20.05	1109.00	592.79
3		2516.93	1345.35

Site: 309, South Field Kennecott

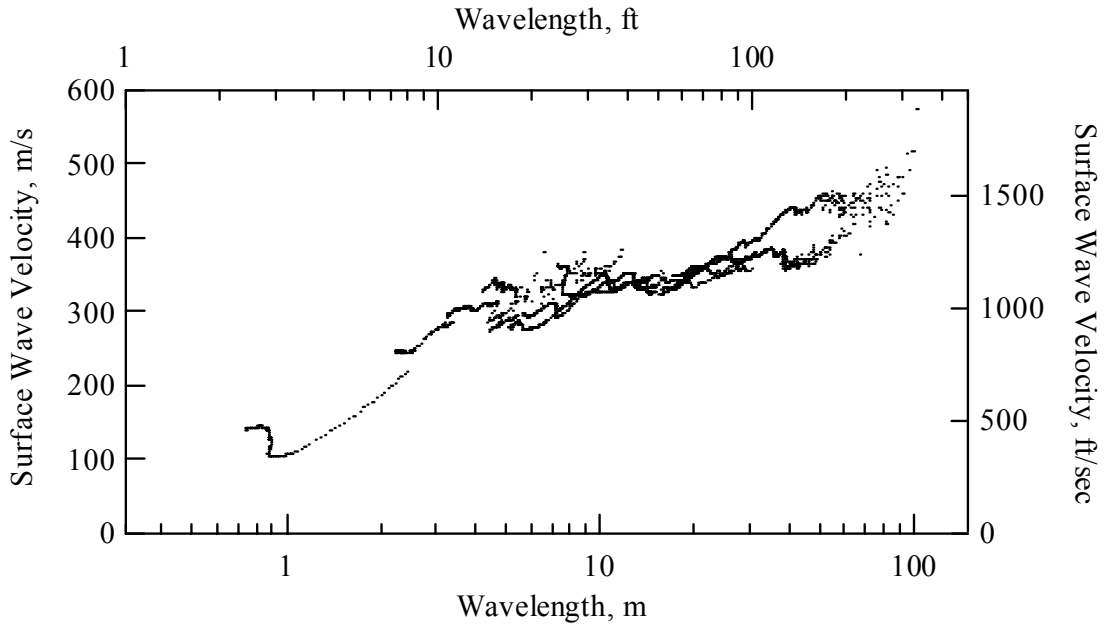


Fig 15 Experimental Dispersion Curve measured at South Field-Kennecott, Salt Lake County, Site 309, Earthquake Site Response Unit Q04 (Ashland, 2001)

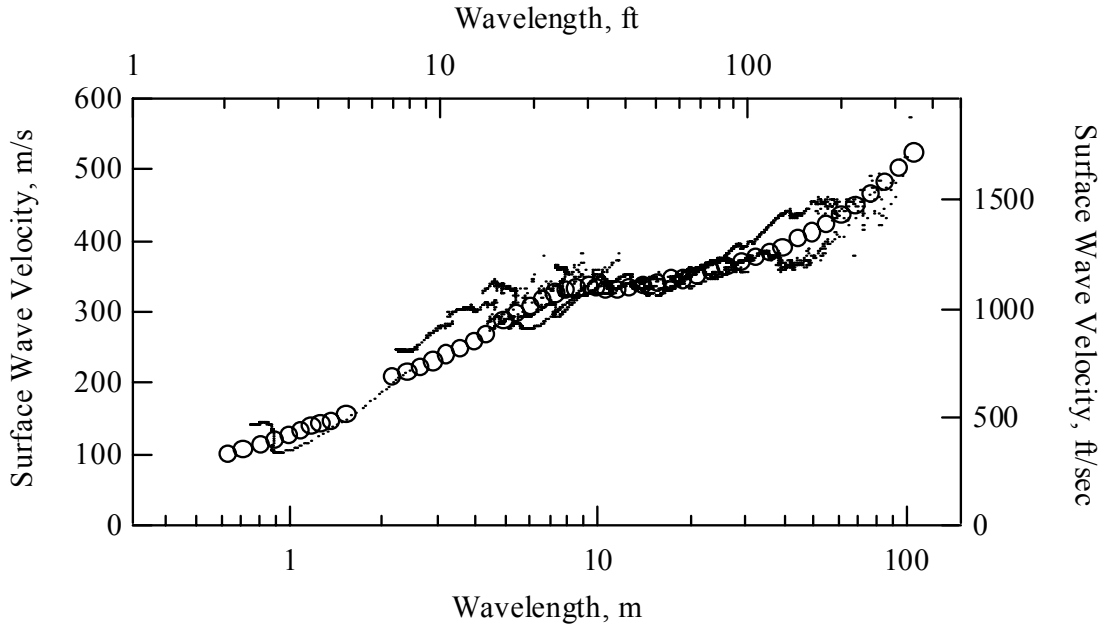


Fig 16 Comparison between Experimental & Theoretical Dispersion Curves from South Field-Kennecott, Salt Lake County, Site 309, Earthquake Site Response Unit Q04 (Ashland, 2001)

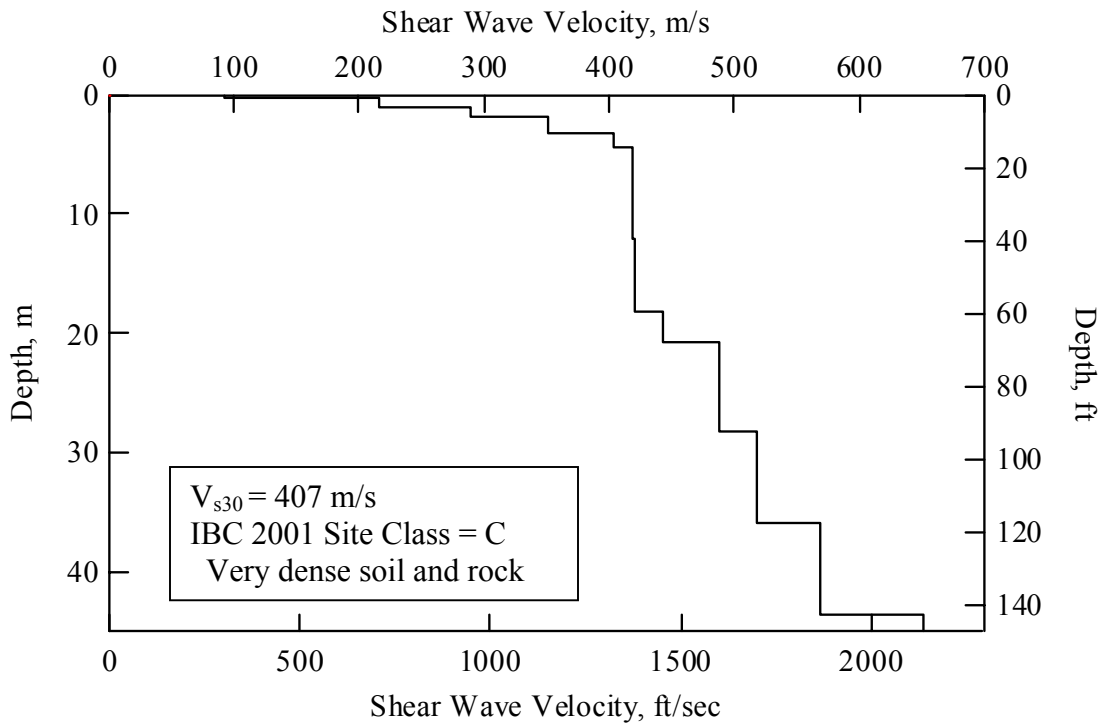


Fig 17 Shear Wave Velocity Profile Determined from SASW Testing at South Field-Kennecott, Salt Lake County, Site 309, Earthquake Site Response Unit Q04 (Ashland, 2001)

Table 6 Tabulated Shear Wave Velocity Profile from South Field-Kennecott, Salt Lake County, Site 309, Earthquake Site Response Unit Q04 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	91.40	171.1	1.89
0.3	0.73	216.40	404.9	1.92
1.03	0.76	289.60	541.7	1.92
1.79	1.52	350.50	655.8	2
3.31	1.22	403.90	755.5	2
4.53	7.62	419.10	784.1	2
12.15	6.1	420.60	786.9	2
18.25[a]	2.44	442.00	1524	2
20.69	7.62	487.70	1524	2
28.31	7.62	518.20	1524	2
35.93	7.62	568.50	1524	2
43.55	30.18[b]	650.00	1524	2.08

a. Depth to fully saturated zone from Refraction testing
b. Half-space in model

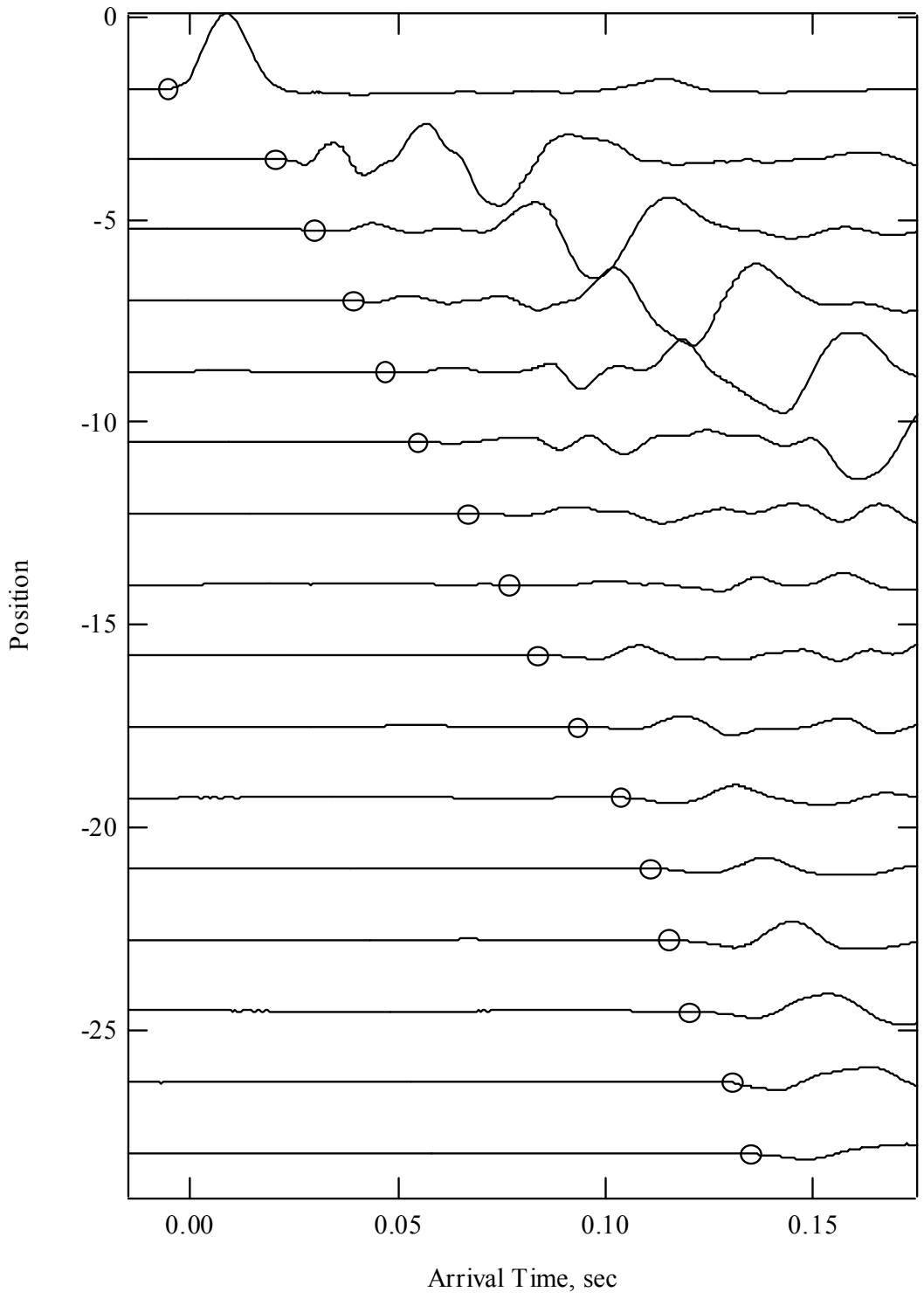


Fig 18 Arrival Times for Refraction Testing at South Field-Kennecott, Salt Lake County, Site 309, Earthquake Site Response Unit Q04 (Ashland, 2001)

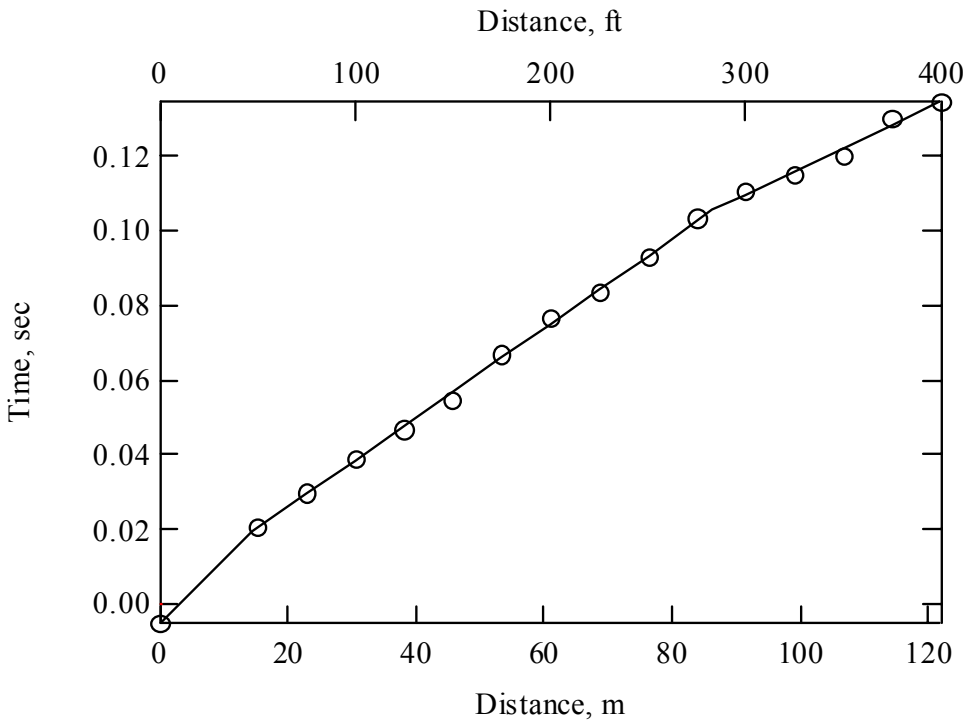


Fig 19 Time-Distance Curve for Refraction Testing at South Field-Kennecott, Salt Lake County, Site 309, Earthquake Site Response Unit Q04 (Ashland, 2001)

Tabulated Refraction Profile from South Field-Kennecott, Salt Lake County, Site 309, Earthquake Site Response Unit Q04 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	3.03	588.89	314.78
2	12.35[a]	833.33	445.44
3		1213.77	

a. Depth to fully saturated zone

Site: 310, North Field Kennecott

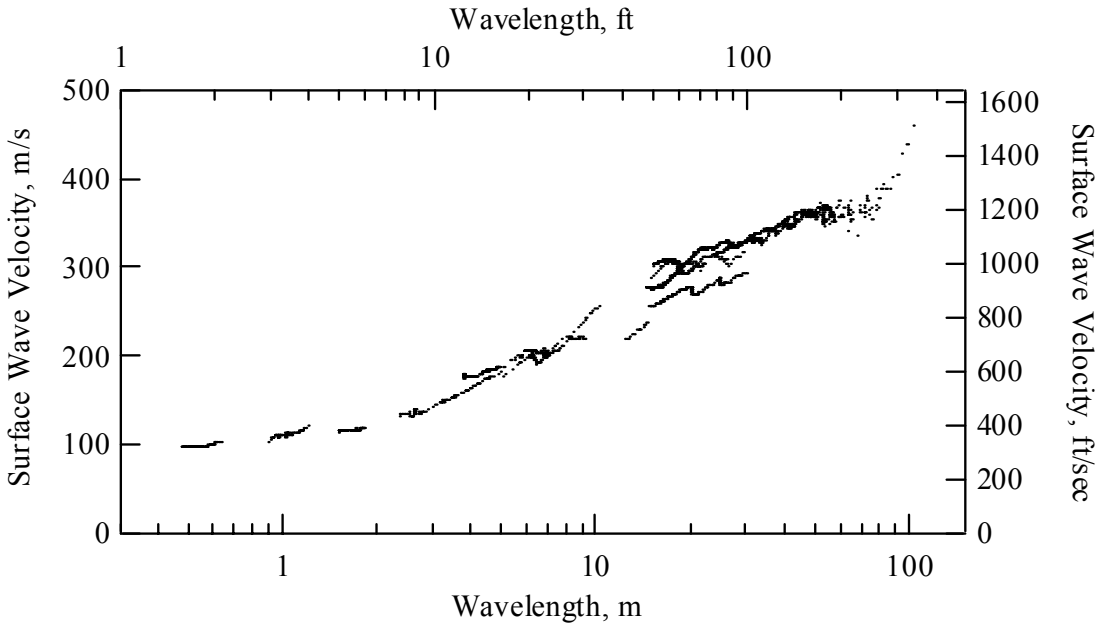


Fig 20 Experimental Dispersion Curve measured at North Field-Kennecott, Salt Lake County, Site 310, Earthquake Site Response Unit Q04 (Ashland, 2001).

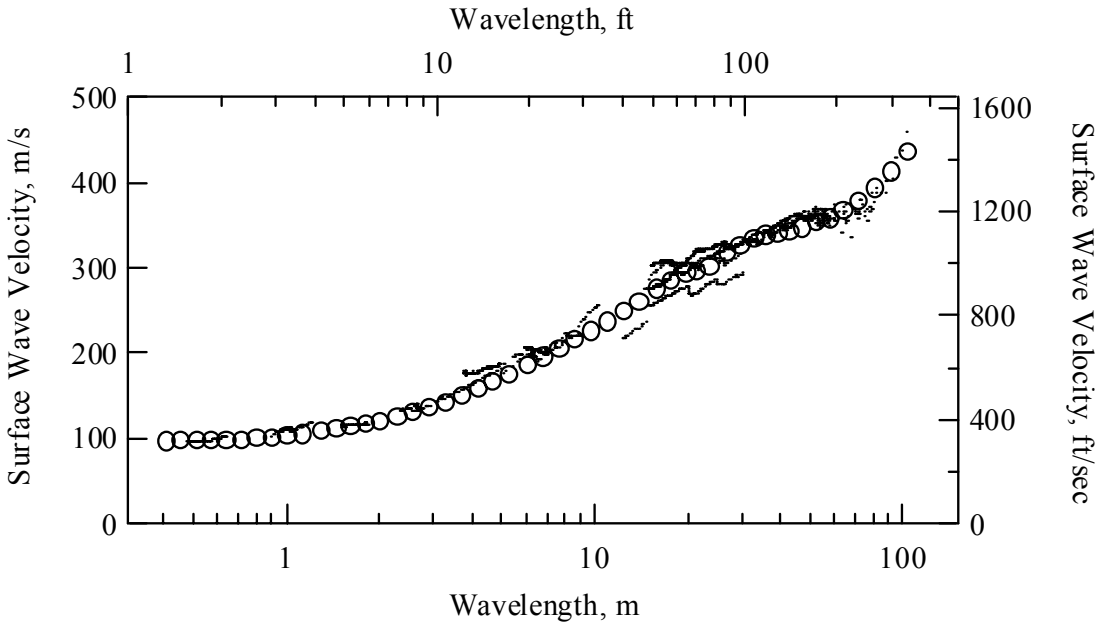


Fig 21 Comparison between Experimental & Theoretical Dispersion Curves from North Field-Kennecott, Salt Lake County, Site 310, Earthquake Site Response Unit Q04 (Ashland, 2001)

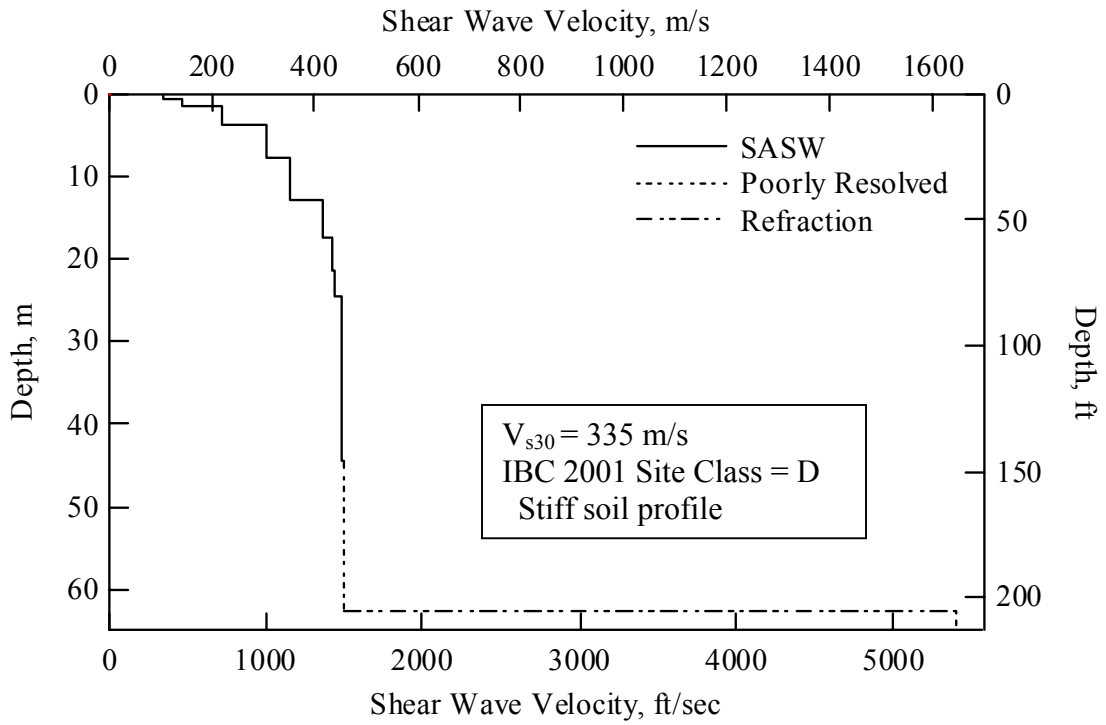


Fig 22 Shear Wave Velocity Profile Determined from SASW Testing at North Field-Kennecott, Salt Lake County, Site 310, Earthquake Site Response Unit Q04 (Ashland, 2001)

Table 7 Tabulated Shear Wave Velocity Profile from North Field-Kennecott, Salt Lake County, Site 310, Earthquake Site Response Unit Q04 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.23	104	194.6	1.89
0.23	0.38	106.7	199.6	1.89
0.61	0.90	143.3	268	1.89
1.51	2.36	221	413.4	1.92
3.87	3.96	304.8	570.2	2
7.83	5.18	350.5	655.8	2
13.01	4.57	414.5	775.5	2
17.58[a]	3.96	434.3	1524	2
21.54	3.05	438.9	1524	2
24.59	3.05	449.6	1524	2
27.64	7.62	451.1	1524	2
35.26	9.14	454.2	1524	2
44.4	9.14	457.2	1524	2
53.54	9.14	458.7	1524	2
62.68	30.18[b]	1645.9[c]	1524	2.08

a. Depth to fully saturated zone from Refraction testing
b. Half-space in model
c. Refraction Velocity

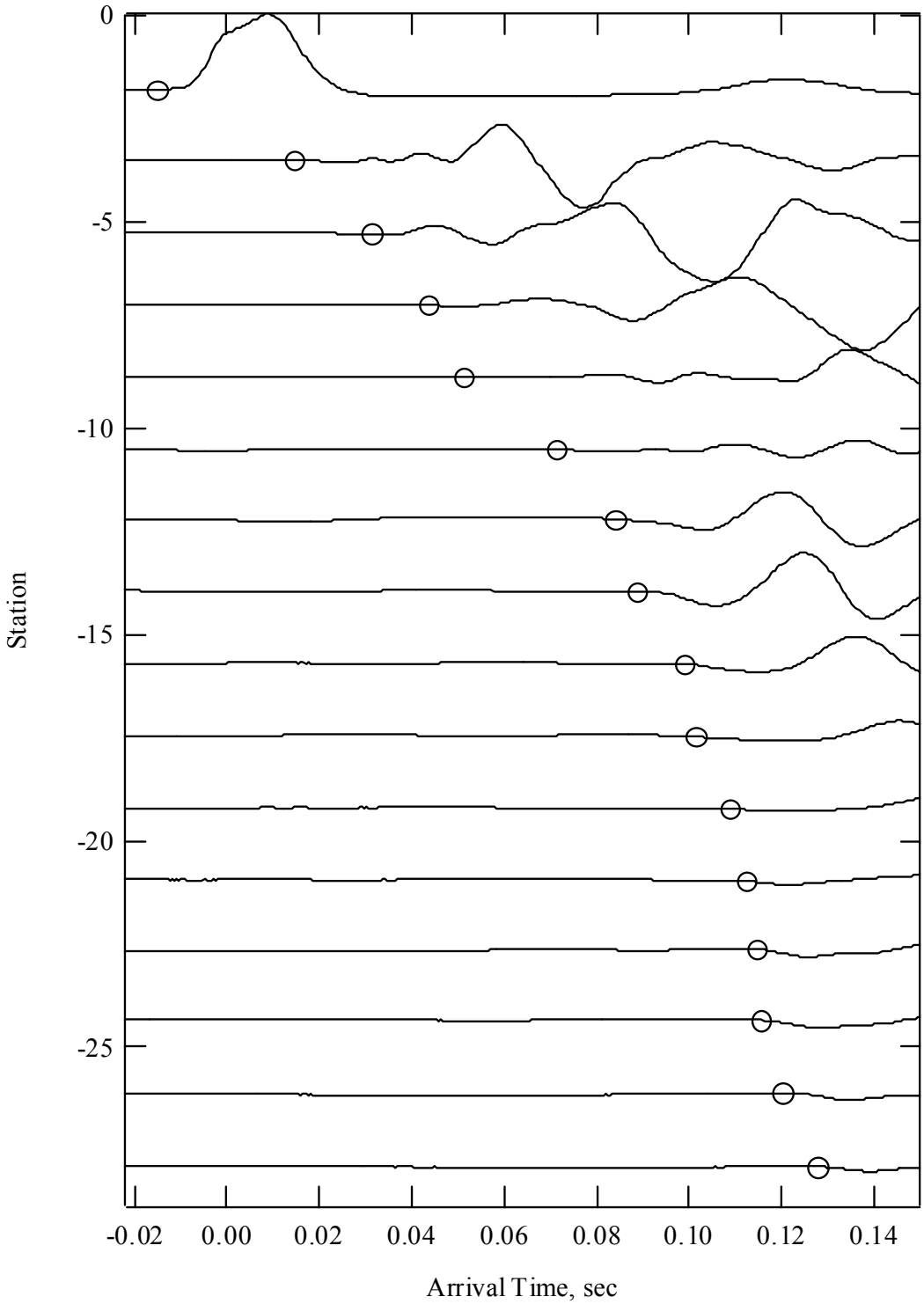


Figure 1 Arrival Times for Refraction Testing at North Field-Kennecott, Salt Lake County, Site 310, Earthquake Site Response Unit Q04 (Ashland, 2001)

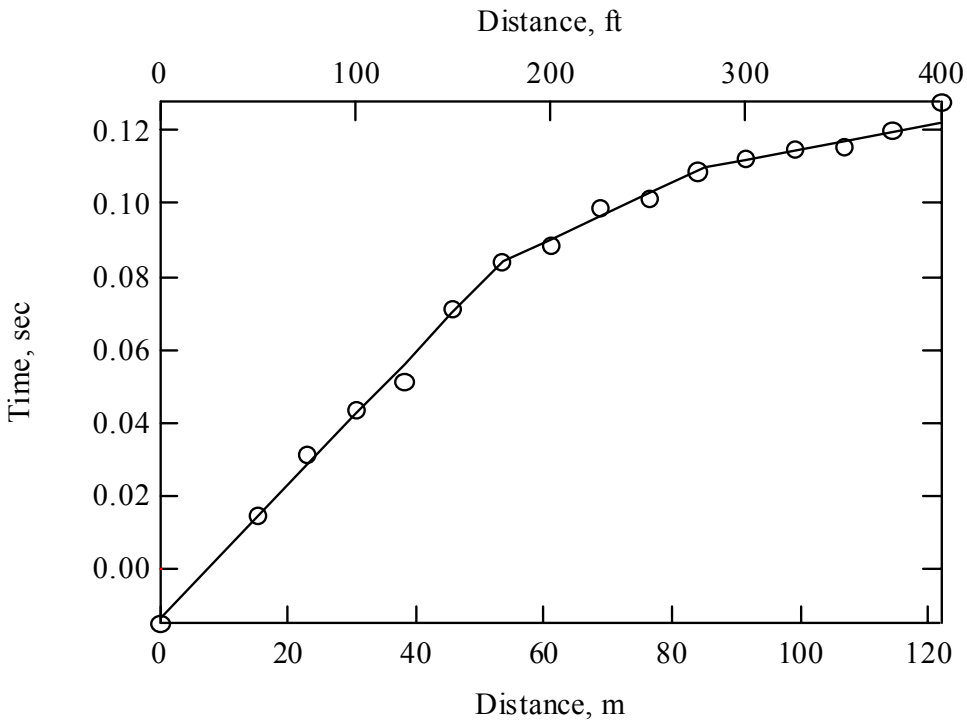


Figure 2 Time-Distance Curve for Refraction Testing at North Field-Kennecott, Salt Lake County, Site 310, Earthquake Site Response Unit Q04 (Ashland, 2001)

Tabulated Refraction Profile from North Field-Kennecott, Salt Lake County, Site 310, Earthquake Site Response Unit Q04 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	16.49	547.02	292.39
2	37.27[a]	1219.24	
3		3120.22	1667.83

a. Depth to fully saturated zone

Site 303, Stone Mountain Lane,

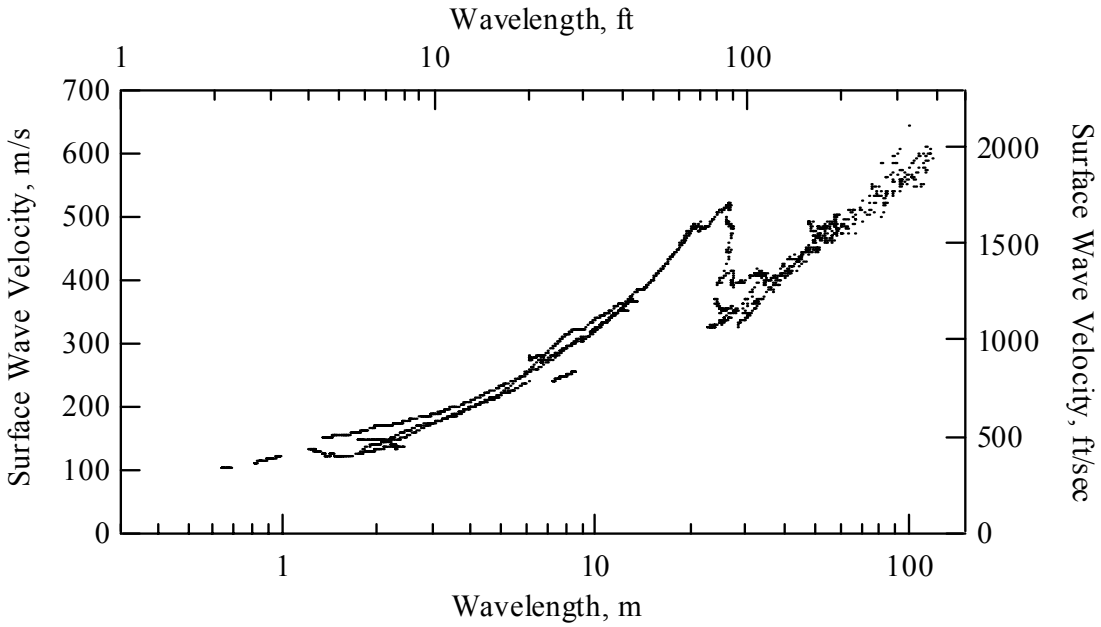


Fig 1 Experimental Dispersion Curve measured at Stone Mountain Lane, Sandy, Site 303, Earthquake Site Response Unit Q05 (Ashland, 2001)

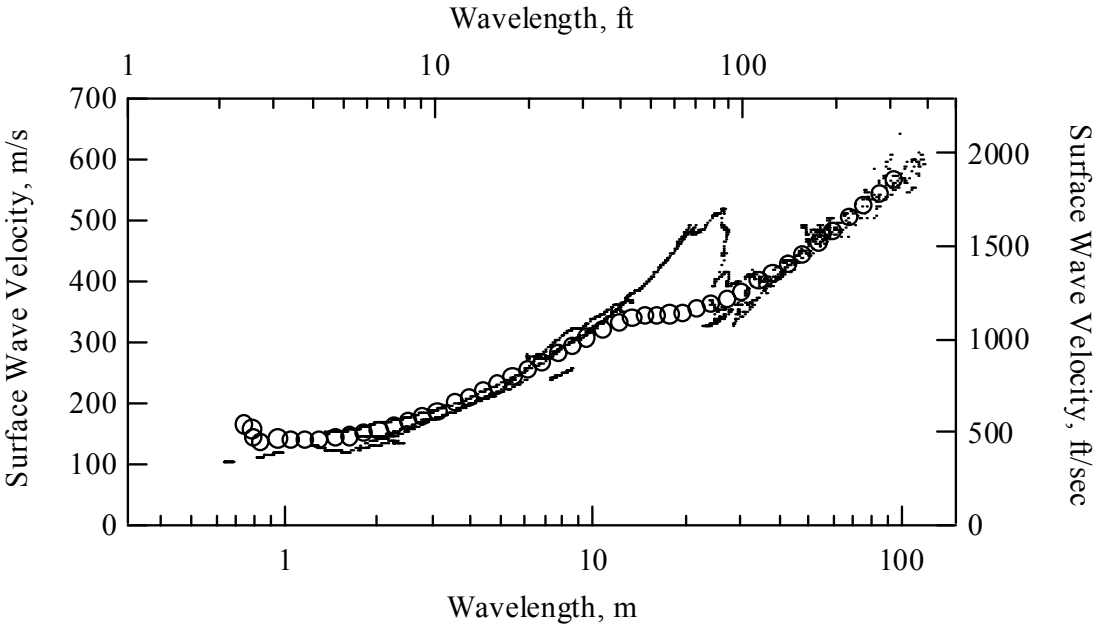


Fig 2 Comparison between Experimental & Theoretical Dispersion Curves from Stone Mountain Lane, Sandy, Site 303, Earthquake Site Response Unit Q05 (Ashland, 2001)

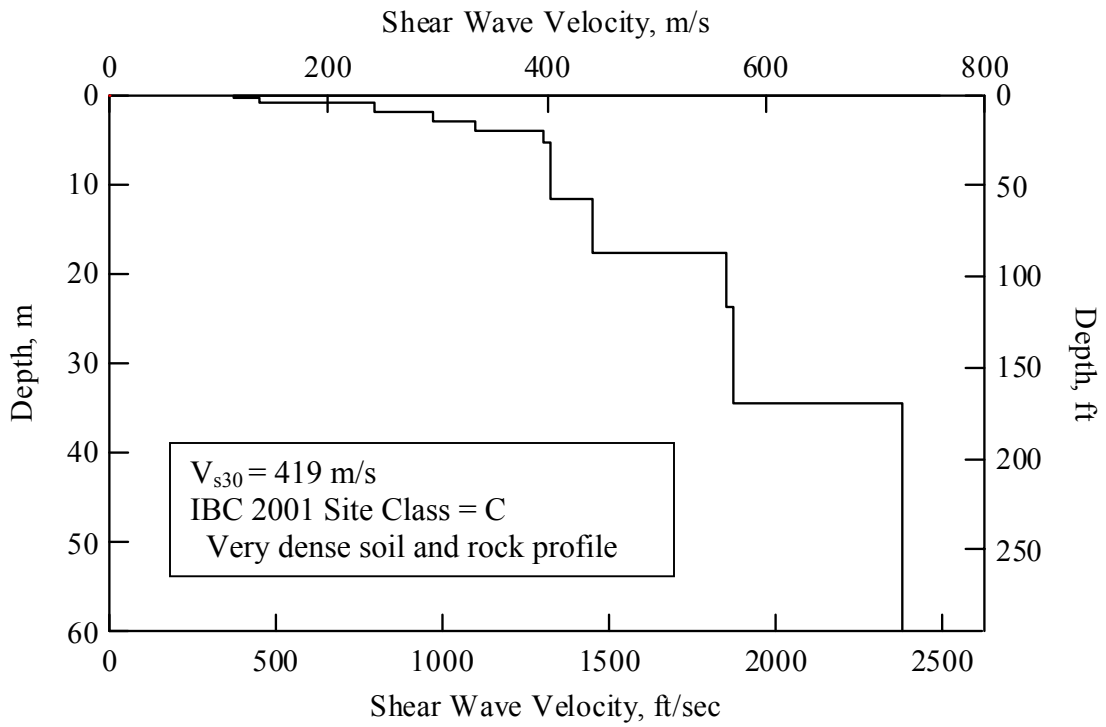


Fig 3 Shear Wave Velocity Profile Determined from SASW Testing at Stone Mountain Lane, Sandy, Site 303, Earthquake Site Response Unit Q05 (Ashland, 2001)

Table 1 Tabulated Shear Wave Velocity Profile from Stone Mountain Lane, Sandy, Site 303, Earthquake Site Response Unit Q05 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.06	760	1421.8	1.89
0.06	0.24	114.3	213.8	1.89
0.3	0.61	137.2	256.6	1.89
0.91	0.91	243.8	456.2	1.92
1.82	1.22	297.2	556	1.92
3.04	0.91	335.3	627.3	2
3.95	1.52	396.2	741.3	2
5.47	6.10	403.9	755.6	2
11.57	6.10	442	826.8	2
17.67	6.10	563.9	1054.9	2
23.77	10.67	571.5	1069.2	2
34.44	30.18[a]	724[b]	1354.5	2.08

a. Half-space in model
b. Refraction velocity

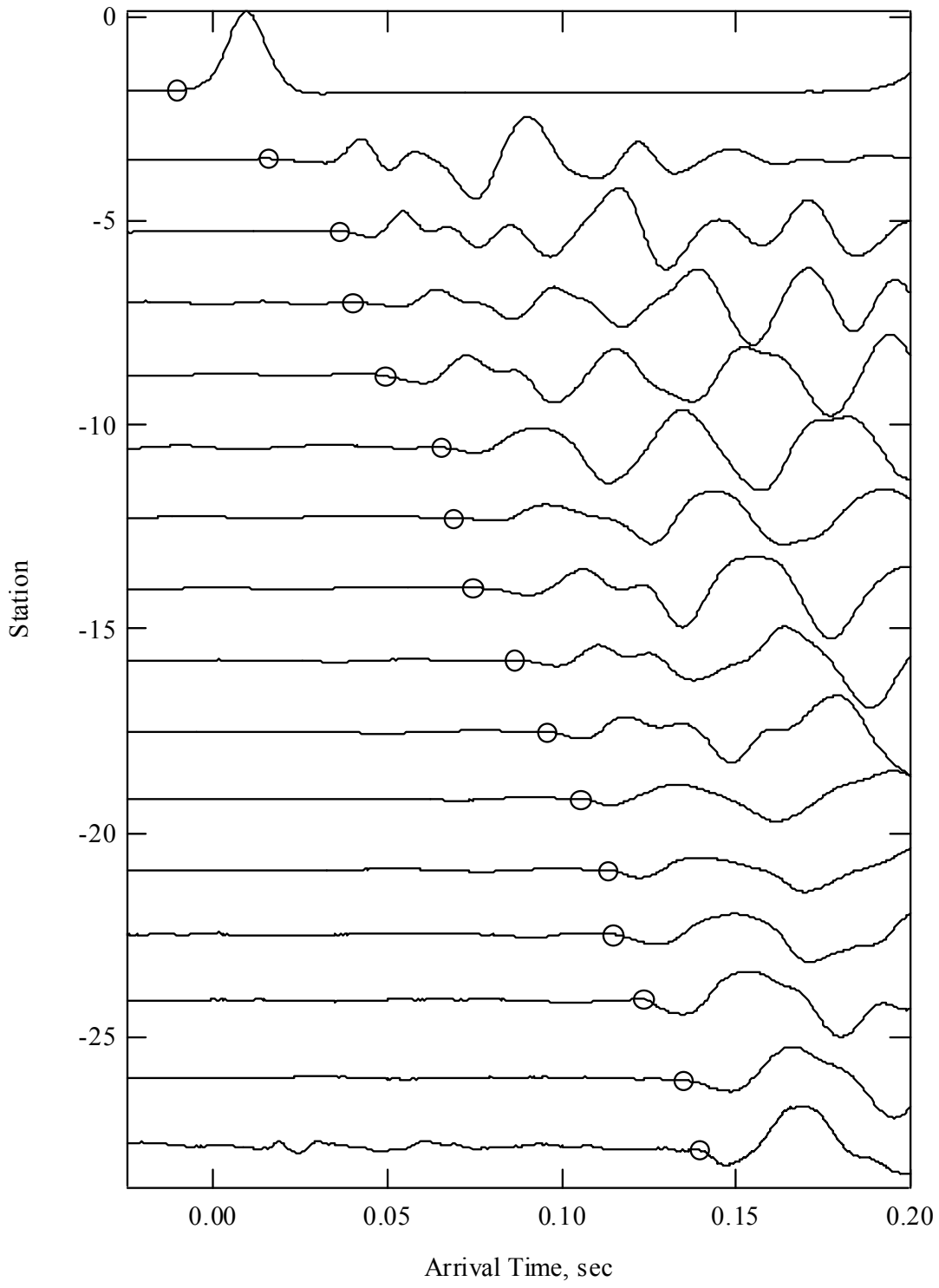


Fig 4 Arrival Times for Forward Refraction Testing at Stone Mountain Lane, Sandy, Site 303, Earthquake Site Response Unit Q05 (Ashland, 2001)

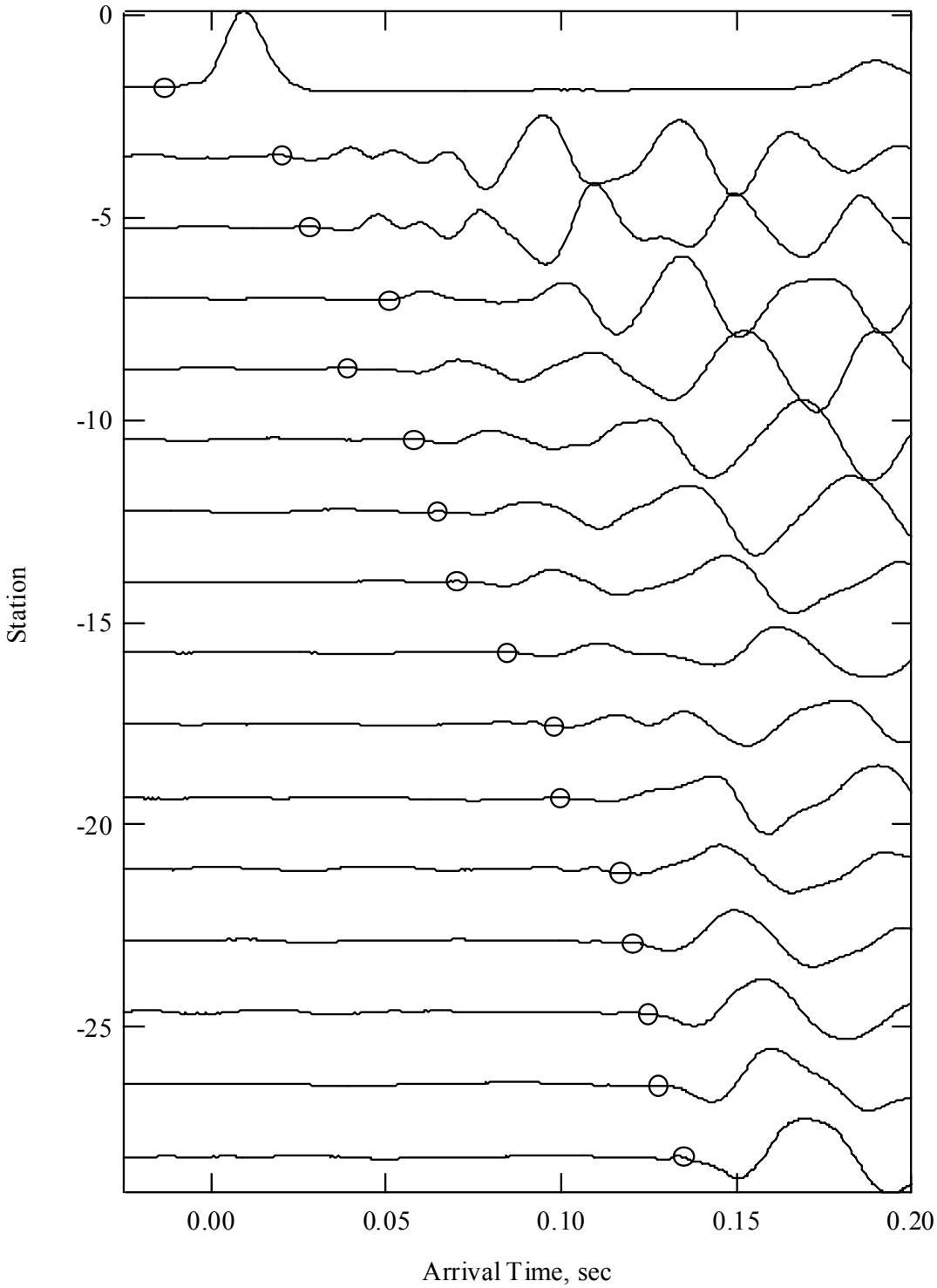


Fig 5 Arrival Times for Reverse Refraction Testing at Stone Mountain Lane, Sandy, Site 303, Earthquake Site Response Unit Q05 (Ashland, 2001)

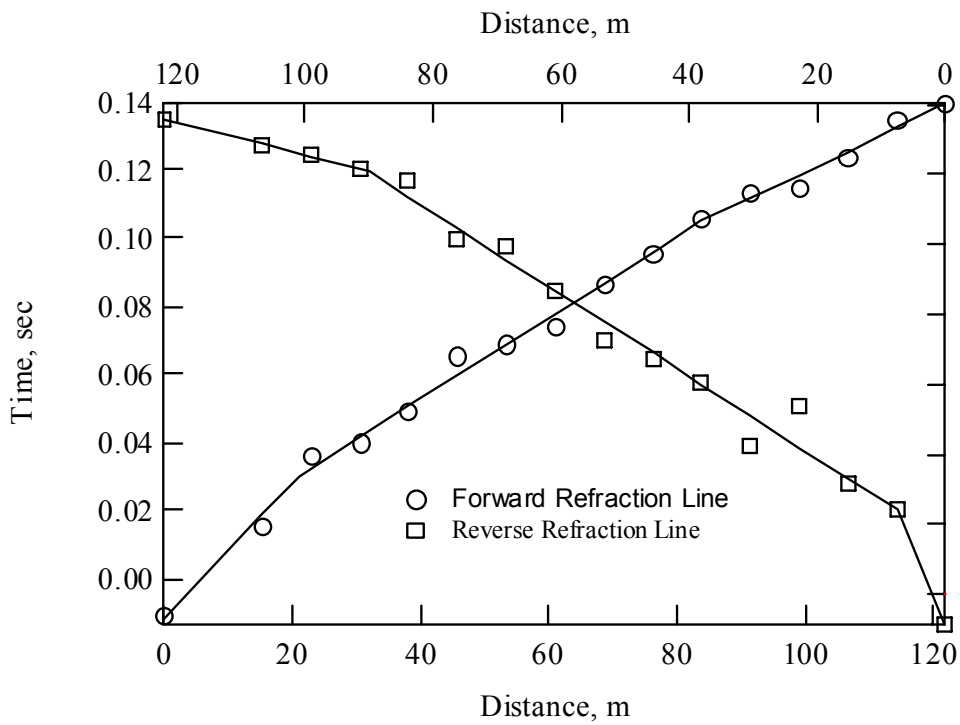


Fig 6 Time-Distance Curve for Refraction Testing at Stone Mountain Lane, Sandy, Site 303, Earthquake Site Response Unit Q05 (Ashland, 2001)

Table 2 Tabulated Forward Refraction Profile from Stone Mountain Lane, Sandy, Site 303, Earthquake Site Response Unit Q05 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	5.34	498.80	266.62
2	9.41	844.10	451.19
3		1047.33	559.82

Table 3 Tabulated Reverse Refraction Profile from Stone Mountain Lane, Sandy, Site 303, Earthquake Site Response Unit Q05 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming ν = 0.3 (m/s)
1	2.15	226.17	120.89
2	26.63	825.56	441.28
3		2116.31	1131.22

Inclined bed calculations:

Up = Reverse Refraction Line
Down = Forward Refraction Line

gamma = 14.81 degrees

V1average = (451.19 + 441.28)/2 = 446.24 m/s
V2= 724.1 m/s

$$\gamma = \tfrac{1}{2}[\sin^{-1}(\frac{V_1}{V_{2D}}) - \sin^{-1}(\frac{V_1}{V_{2U}})]$$

$$V_2 = \frac{2V_{2D}V_{2U}}{V_{2D} + V_{2U}}\cos\gamma$$

Site: 304, Gun Club West

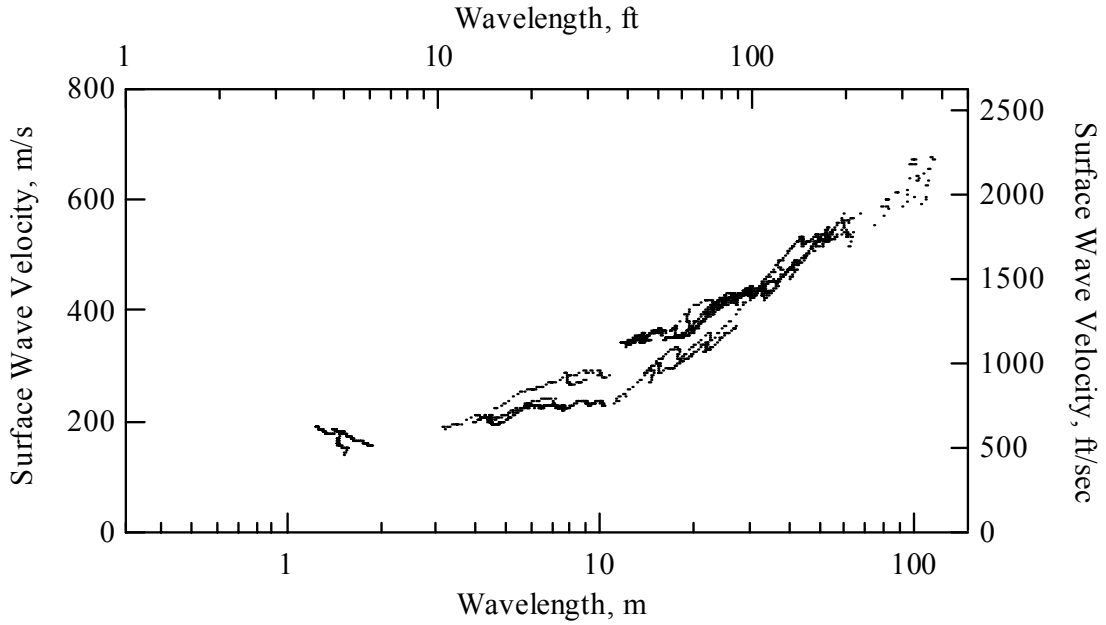


Fig 7 Experimental Dispersion Curve measured at Gun Club West, Cottonwood Heights, Site 304, Earthquake Site Response Unit Q05 (Ashland, 2001)

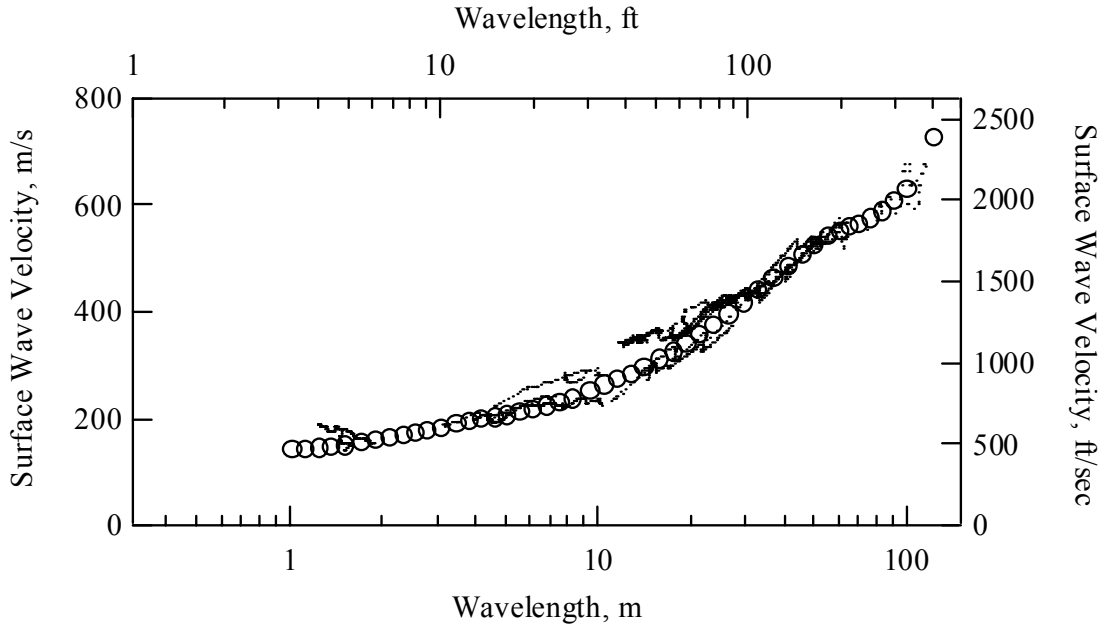


Fig 8 Comparison between Experimental & Theoretical Dispersion Curves from Gun Club West, Cottonwood Heights, Site 304, Earthquake Site Response Unit Q05 (Ashland, 2001)

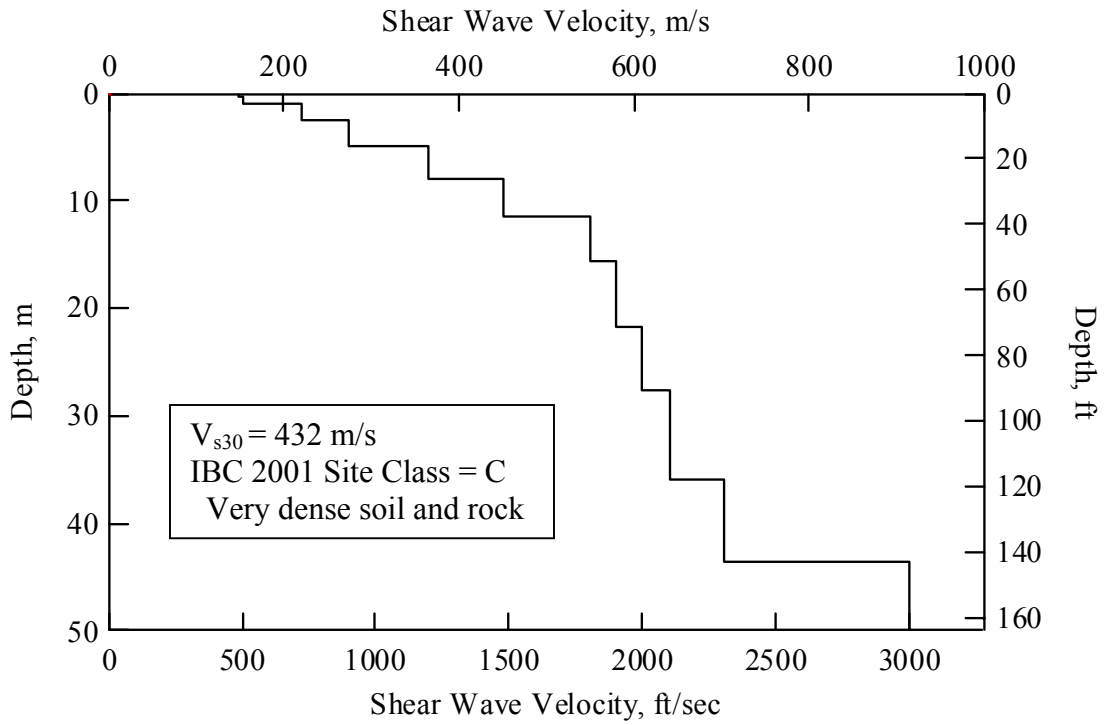


Fig 9 Shear Wave Velocity Profile Determined from SASW Testing at Gun Club West, Cottonwood Heights, Site 304, Earthquake Site Response Unit Q05 (Ashland, 2001)

Table 4 Tabulated Shear Wave Velocity Profile from Gun Club West, Cottonwood Heights, Site 304, Earthquake Site Response Unit Q05 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.30	147.8	276.6	1.89
0.3	0.58	152.4	285.1	1.92
0.88	1.52	221	413.4	1.92
2.4	2.44	274.3	513.2	1.92
4.84	3.05	365.8	684.3	2
7.89	3.66	449.6	841.1	2
11.55	3.96	548.6	1026.4	2
15.51	6.10	579.1	1083.4	2
21.61	6.10	609.6	1140.5	2.08
27.71	8.23	640.1	1197.5	2.08
35.94	7.62	701	1311.5	2.08
43.56	30.18[a]	914.4	1710.7	2.08

a. Half-space in model

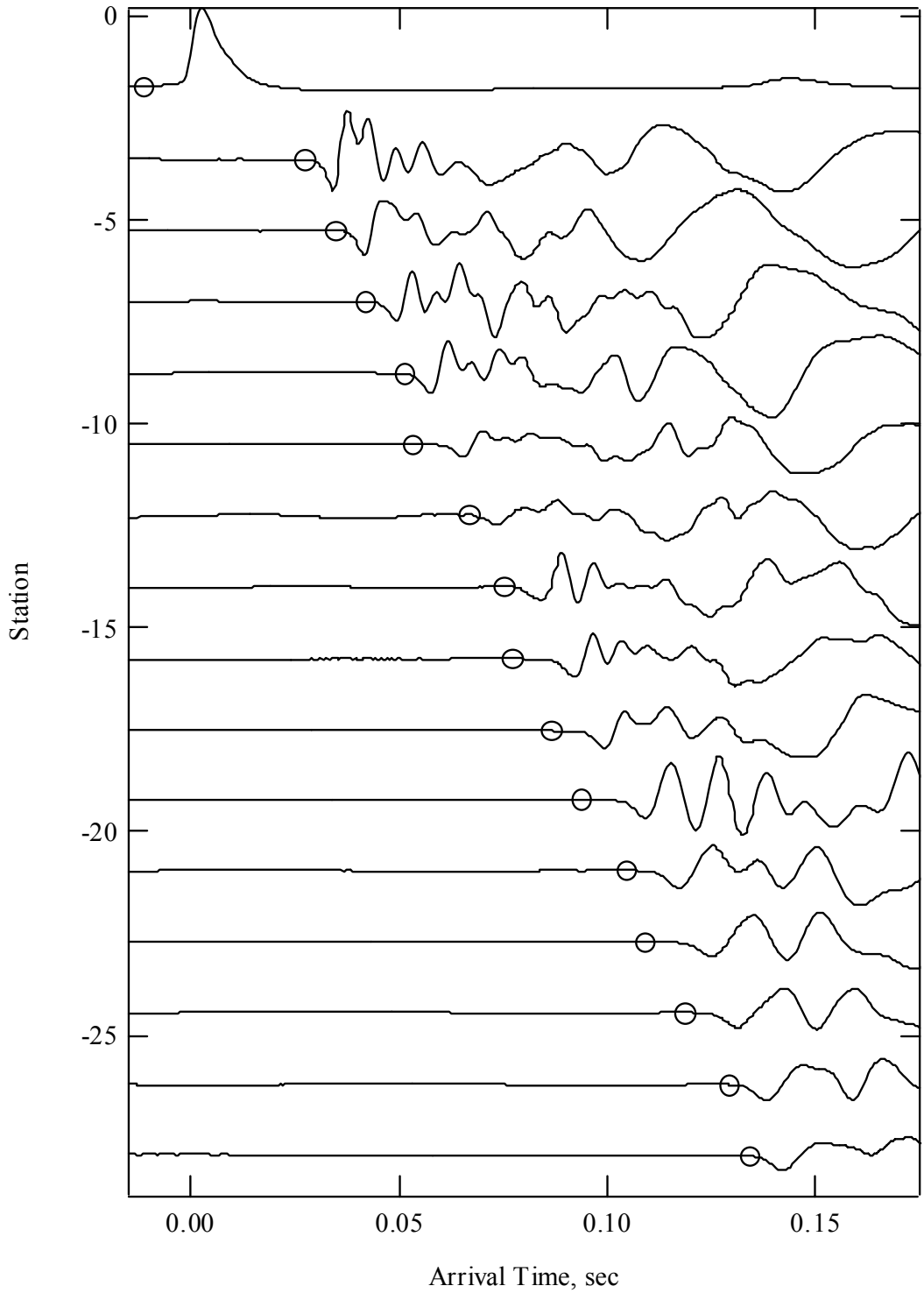


Fig 10 Arrival Times for Reverse Refraction Testing at Gun Club West, Cottonwood Heights, Site 304, Earthquake Site Response Unit Q05 (Ashland, 2001)

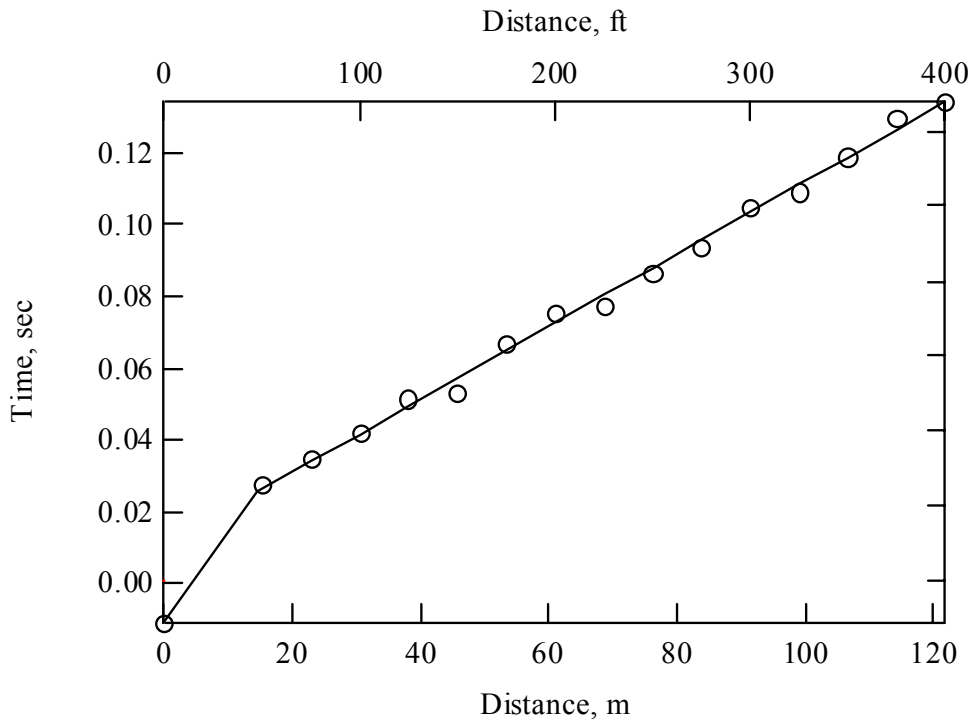


Fig 11 Time-Distance Curve for Refraction Testing at Gun Club West, Cottonwood Heights, Site 304, Earthquake Site Response Unit Q05 (Ashland, 2001)

Tabulated Refraction Profile from Gun Club West, Cottonwood Heights, Site 304, Earthquake Site Response Unit Q05 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	4.76	395.09	211.18
2		989.12	528.71

Site: 305, Gun Club East

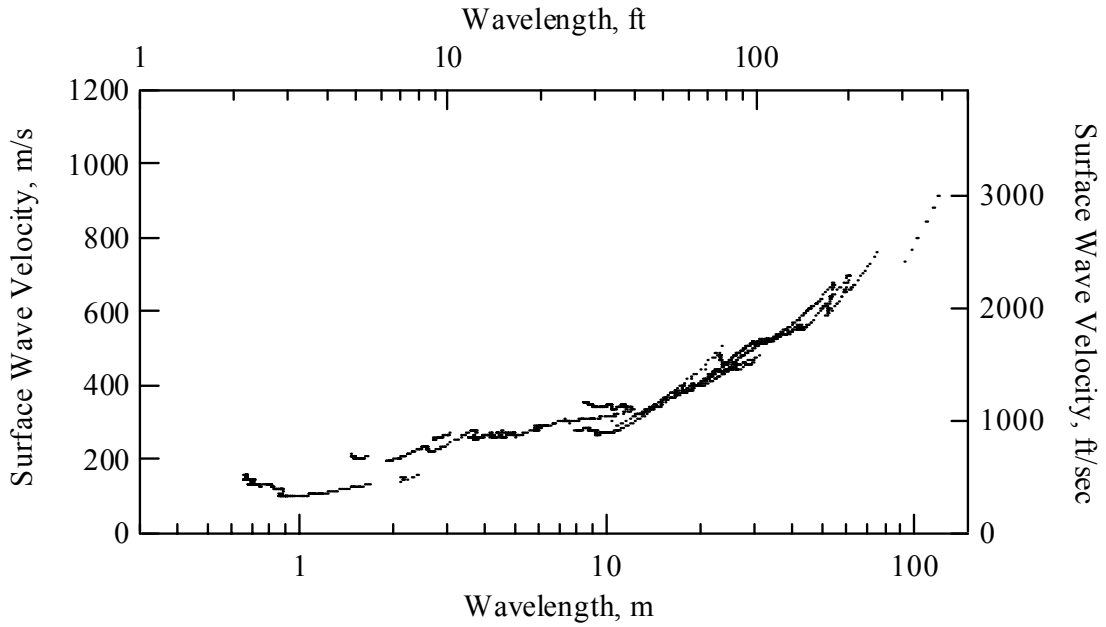


Fig 12 Experimental Dispersion Curve measured at Gun Club East, Cottonwood Heights, Site 305, Earthquake Site Response Unit Q05 (Ashland, 2001)

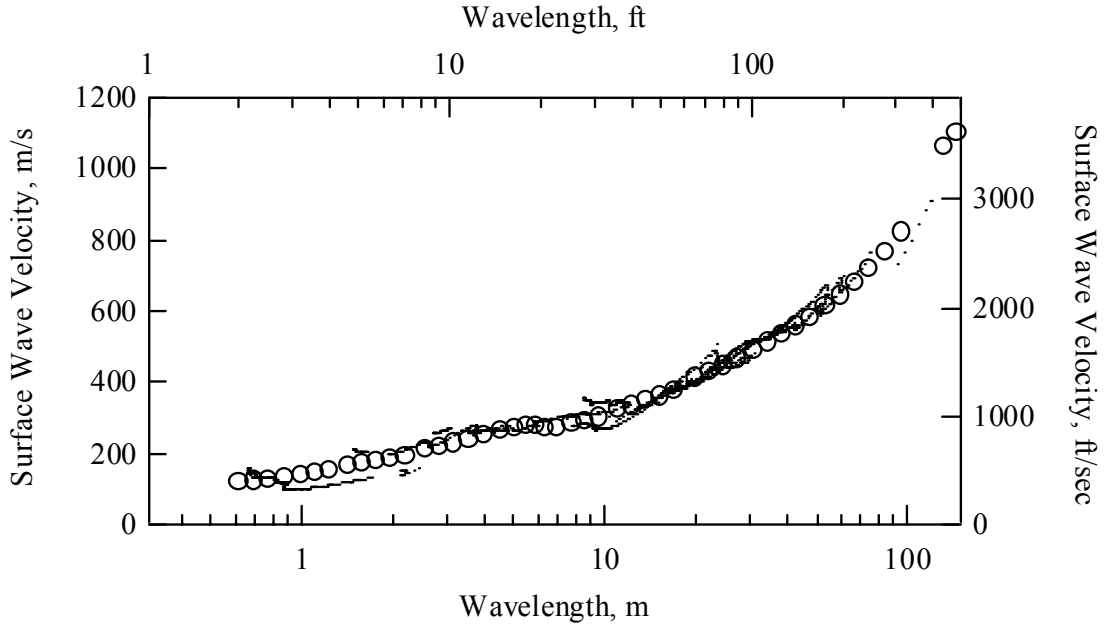


Fig 13 Comparison between Experimental & Theoretical Dispersion Curves from Gun Club East, Cottonwood Heights, Site 305, Earthquake Site Response Unit Q05 (Ashland, 2001)

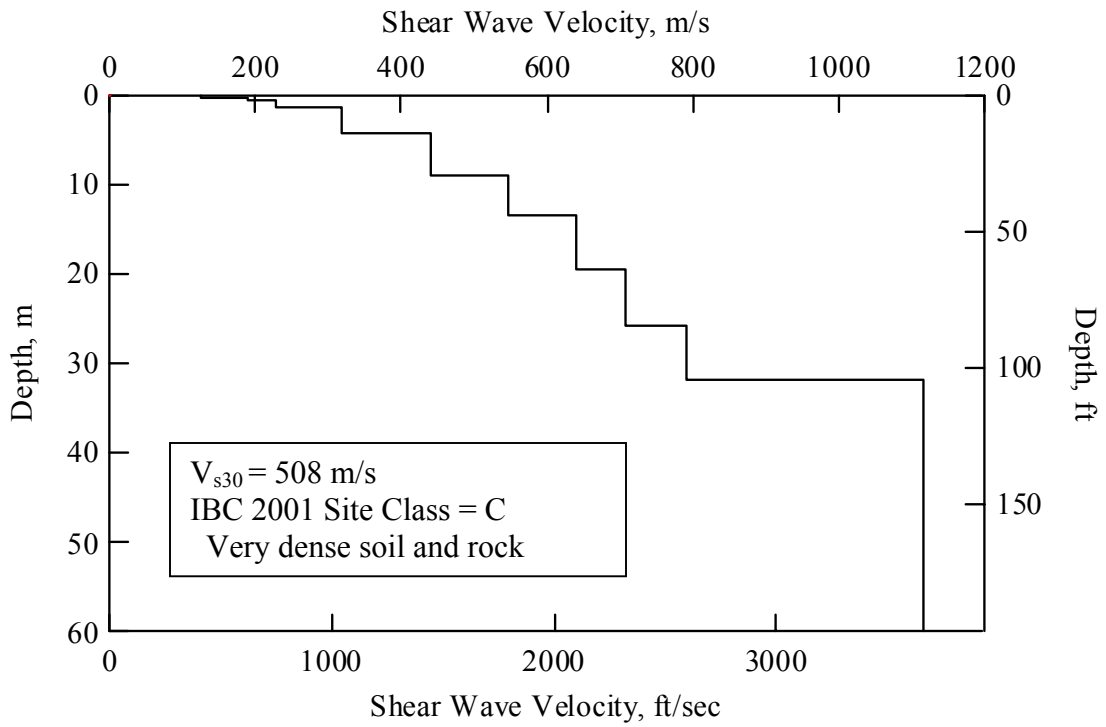


Fig 14 Shear Wave Velocity Profile Determined from SASW Testing at Gun Club East, Cottonwood Heights, Site 305, Earthquake Site Response Unit Q05 (Ashland, 2001)

Table 5 Tabulated Shear Wave Velocity Profile from Gun Club East, Cottonwood Heights, Site 305, Earthquake Site Response Unit Q05 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.38	125	233.90	1.89
0.38	0.23	190	355.50	1.92
0.61	0.7	228.6	427.70	1.92
1.31	3.05	320	598.80	2
4.36	4.57	442	826.80	2
8.93	4.57	548.6	1026.40	2
13.5	6.1	640.1	1197.50	2.08
19.6	6.1	708.7	1325.80	2.08
25.7	6.1	792.5	1482.60	2.08
31.8	30.18[a]	1115[b]	2086.00	2.08

a. Half-space in model
b. Refraction velocity

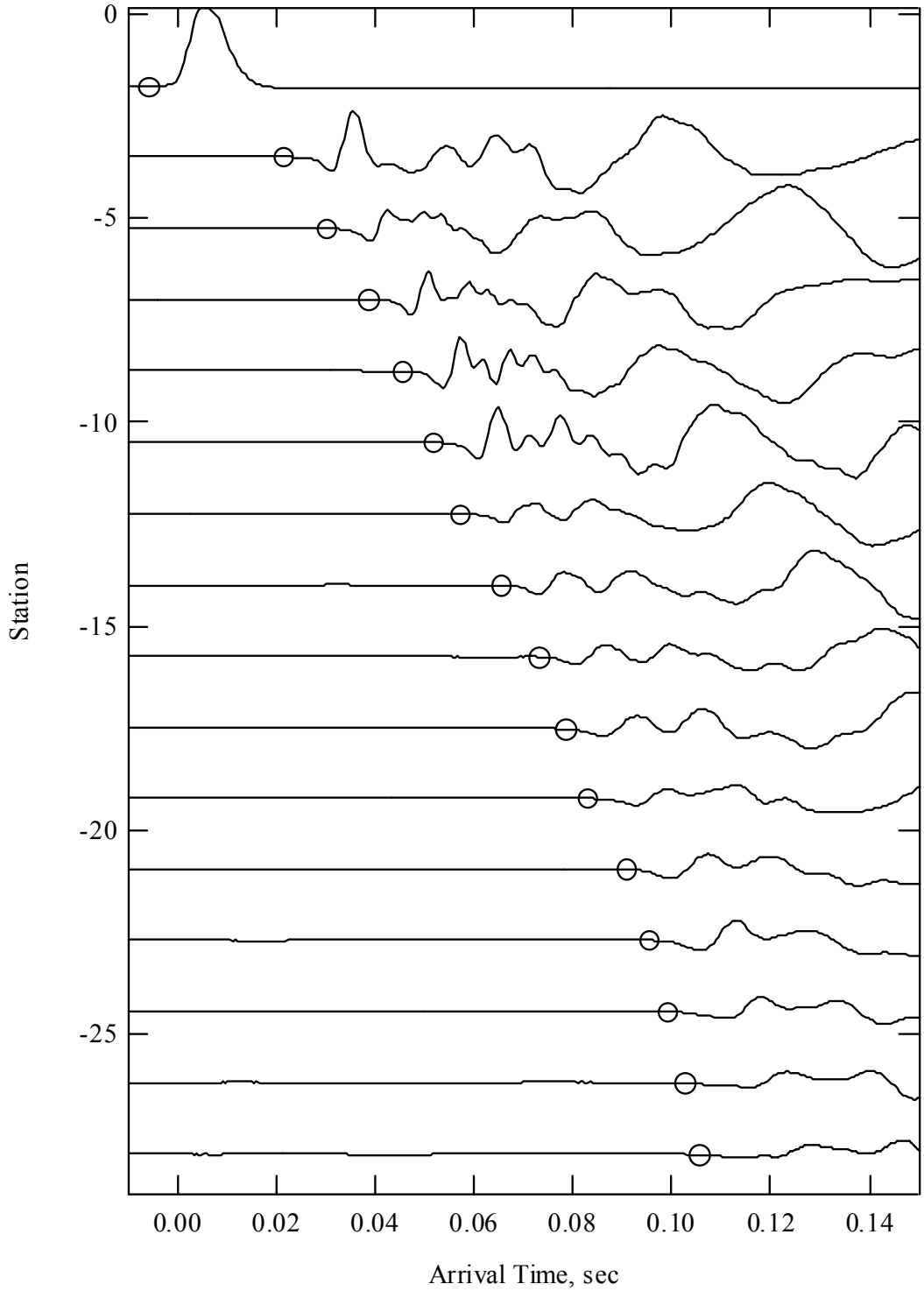


Fig 15 Arrival Times for Refraction Testing at Gun Club East, Cottonwood Heights, Site 305, Earthquake Site Response Unit Q05 (Ashland, 2001)

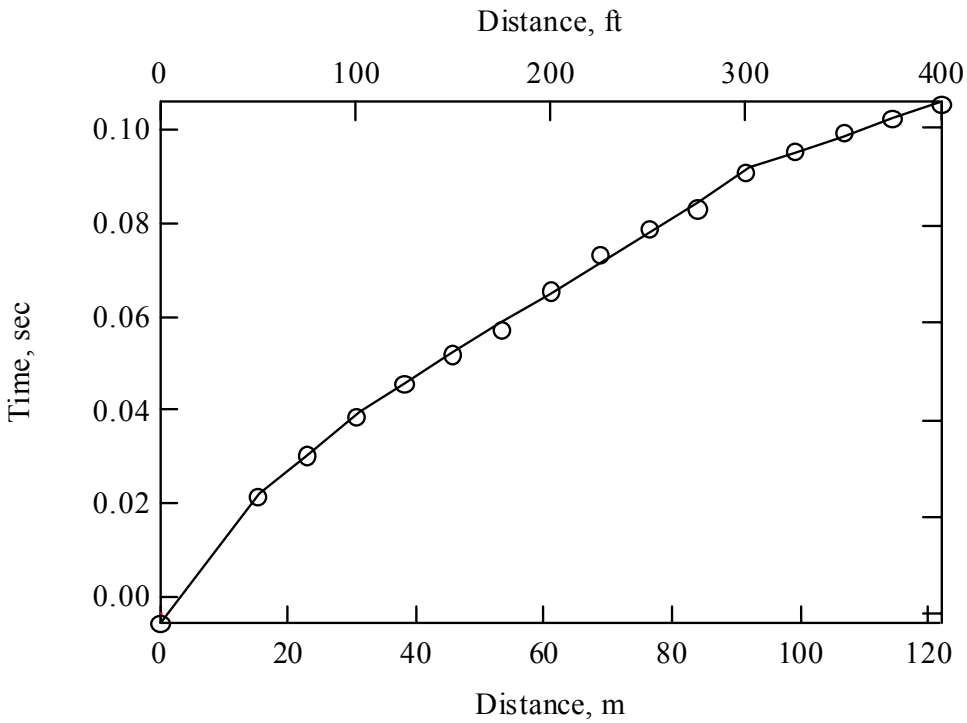


Fig 16 Time-Distance Curve for Refraction Testing at Gun Club East, Cottonwood Heights, Site 305, Earthquake Site Response Unit Q05 (Ashland, 2001)

Table 6 Tabulated Refraction Profile from Gun Club East, Cottonwood Heights, Site 305, Earthquake Site Response Unit Q05 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	3.69	557.35	297.92
2	5.70	891.74	476.66
3	31.39	1168.35	624.51
4		2080.95	1112.31

Site 307, Mock Lane

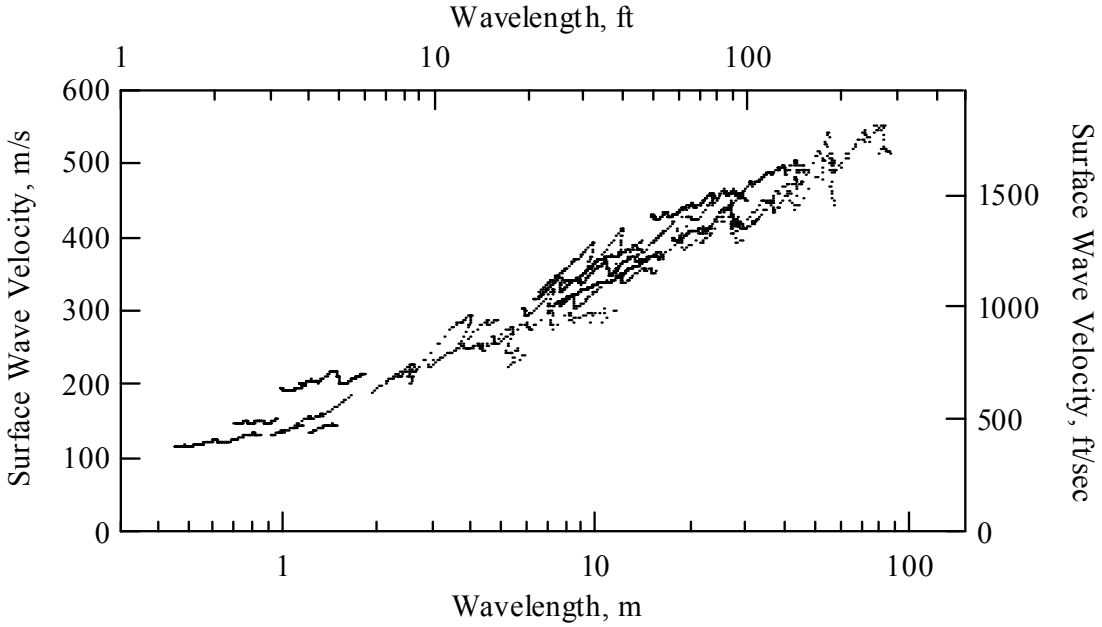


Fig 17 Experimental Dispersion Curve measured at Mock Lane, Salt Lake County, Site 307, Earthquake Site Response Unit Q05 (Ashland, 2001)

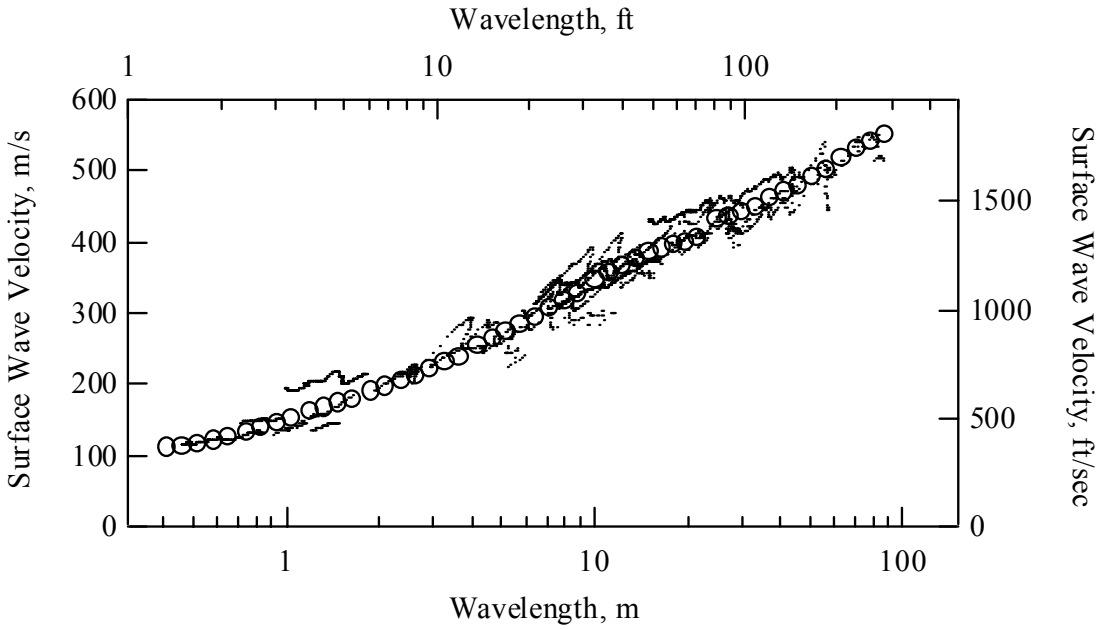


Fig 18 Comparison between Experimental & Theoretical Dispersion Curves from Mock Lane, Salt Lake County, Site 307, Earthquake Site Response Unit Q05 (Ashland, 2001)

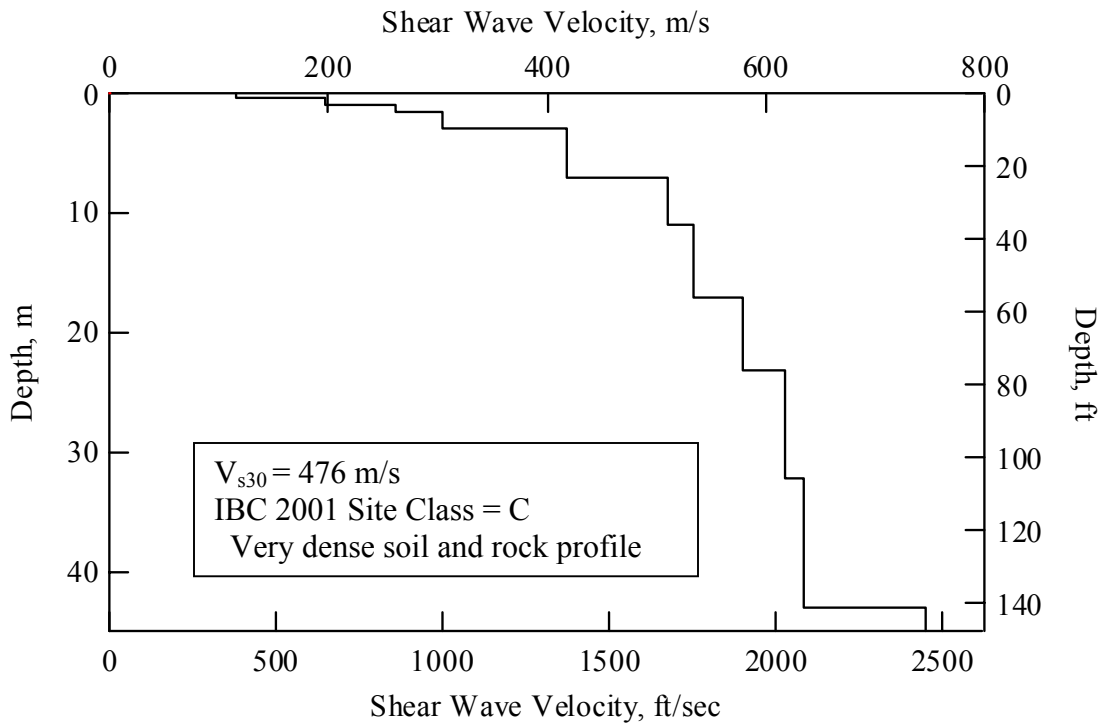
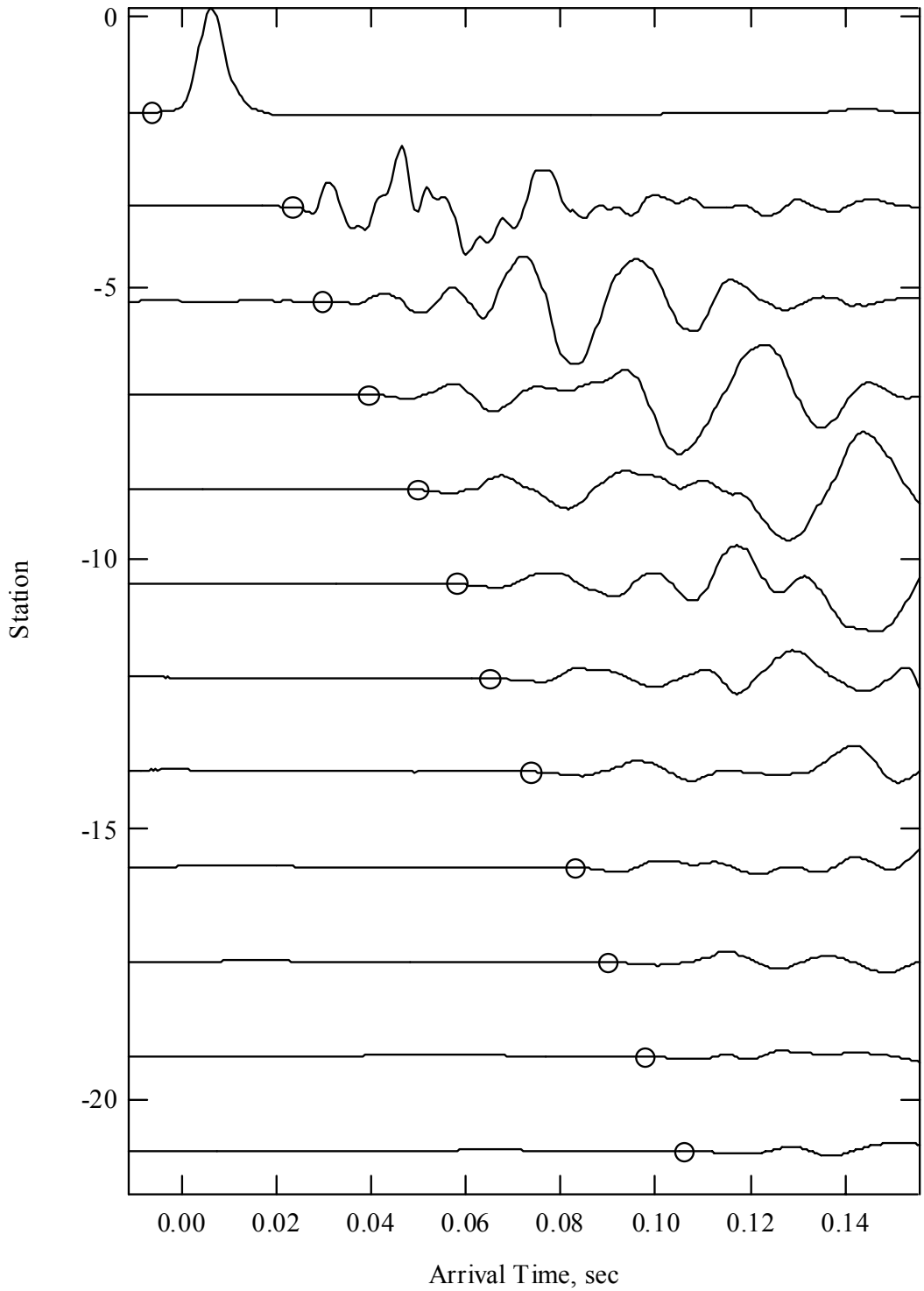


Fig 19 Shear Wave Velocity Profile Determined from SASW Testing at Mock Lane, Salt Lake County, Site 307, Earthquake Site Response Unit Q05 (Ashland, 2001)

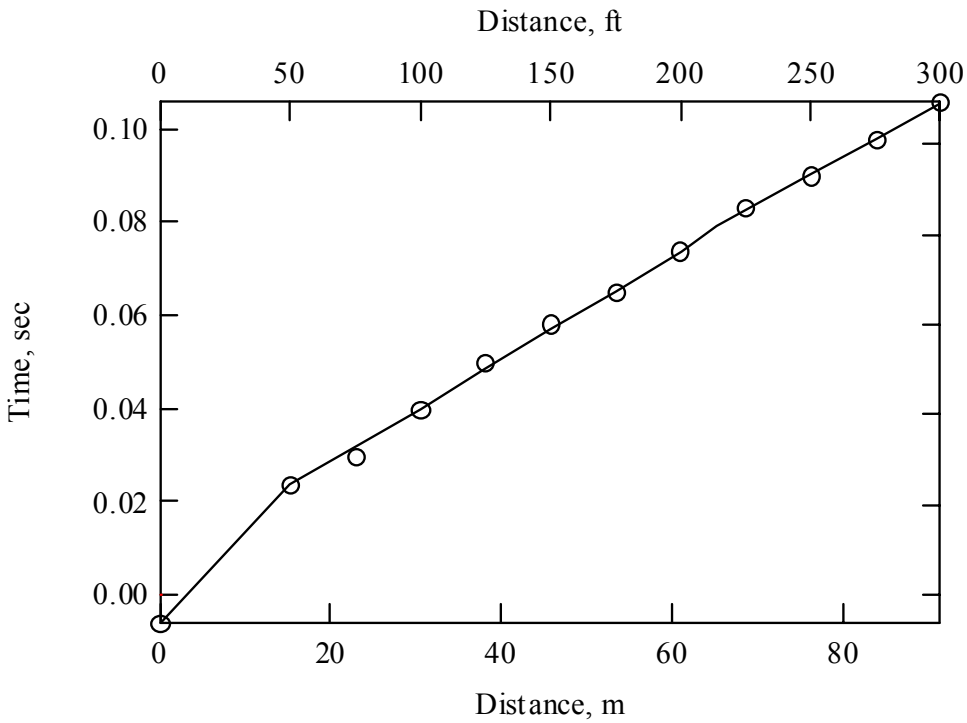
Table 7 Tabulated Shear Wave Velocity Profile from Mock Lane, Salt Lake County, Site 307, Earthquake Site Response Unit Q05 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.3	117.4	219.6	1.89
0.3	0.61	198.1	370.6	1.92
0.91	0.55	262.1	490.4	1.92
1.46	1.52	304.8	570.2	2
2.98	3.96	419.1	784.1	2
6.94	3.96	510.5	955.1	2
10.9	6.1	533.4	997.9	2
17	6.1	579.1	1083.4	2
23.1	9.14	617.2	1154.7	2.08
32.24	10.67	634	1186.1	2.08
42.91	30.18[a]	746.8	1397.1	2.08

a. Half-space in model



Arrival Times for Refraction Testing at Mock Lane, Salt Lake County, Site 307, Earthquake Site Response Unit Q05 (Ashland, 2001)



Time-Distance Curve for Refraction Testing at Mock Lane, Salt Lake County, Site 307, Earthquake Site Response Unit Q05 (Ashland, 2001)

Tabulated Refraction Profile from Mock Lane, Salt Lake County, Site 307, Earthquake Site Response Unit Q05 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	3.53	511.67	273.50
2	5.21	876.73	468.63
3		994.04	531.33

Site: 306, Granite Elementary

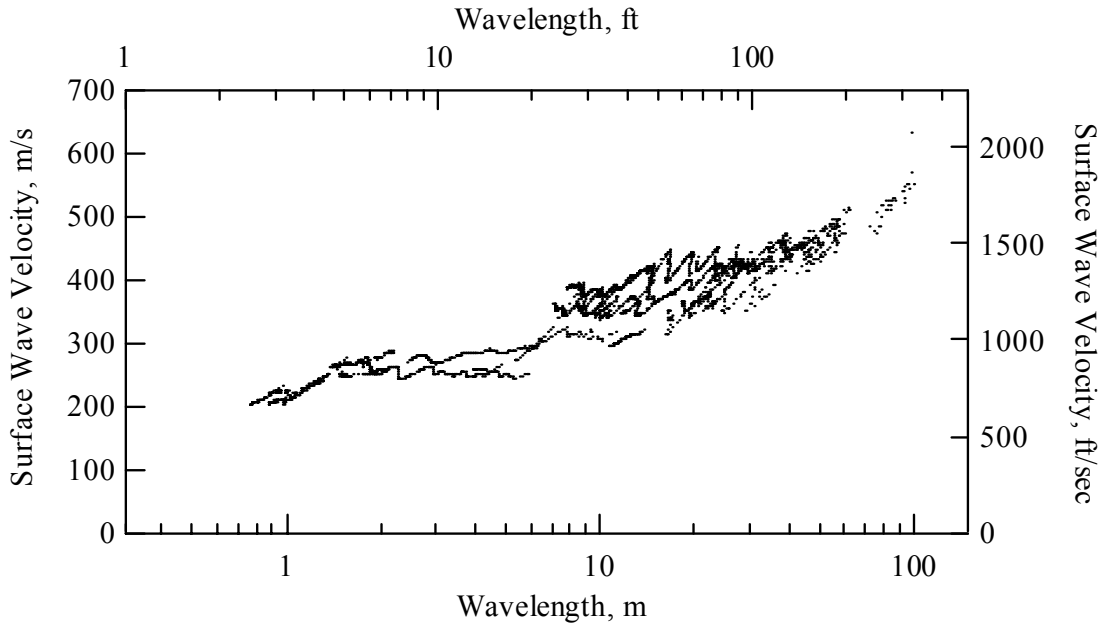


Fig 20 Experimental Dispersion Curve measured at Granite Elementary, Sandy, Site 306, Earthquake Site Response Unit Q05 (Ashland, 2001)

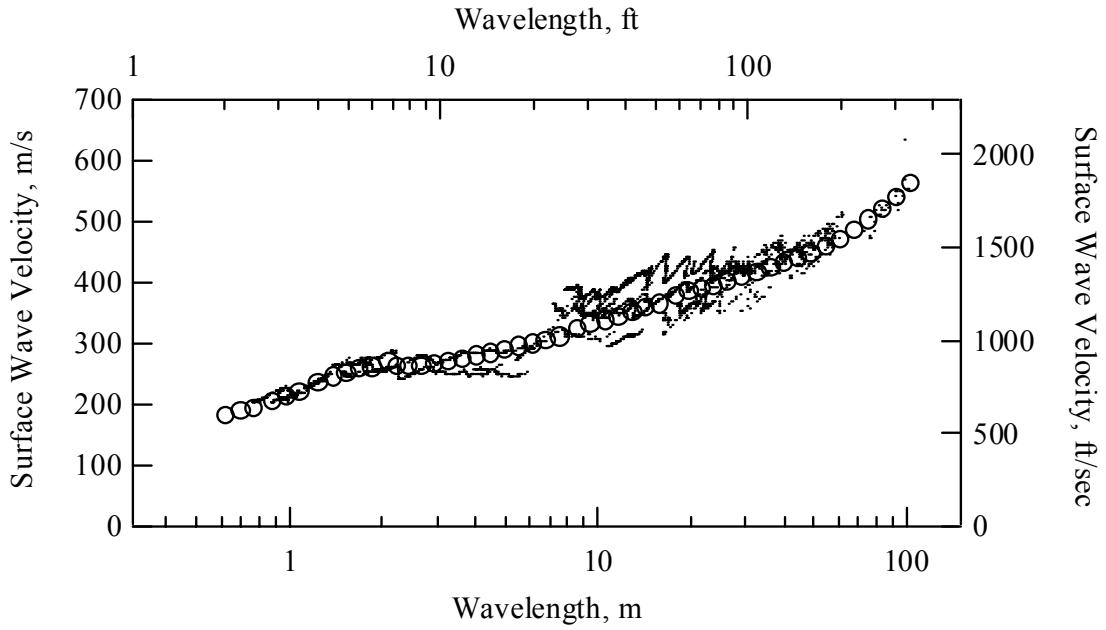


Fig 21 Comparison between Experimental & Theoretical Dispersion Curves from Granite Elementary, Sandy, Site 306, Earthquake Site Response Unit Q05 (Ashland, 2001)

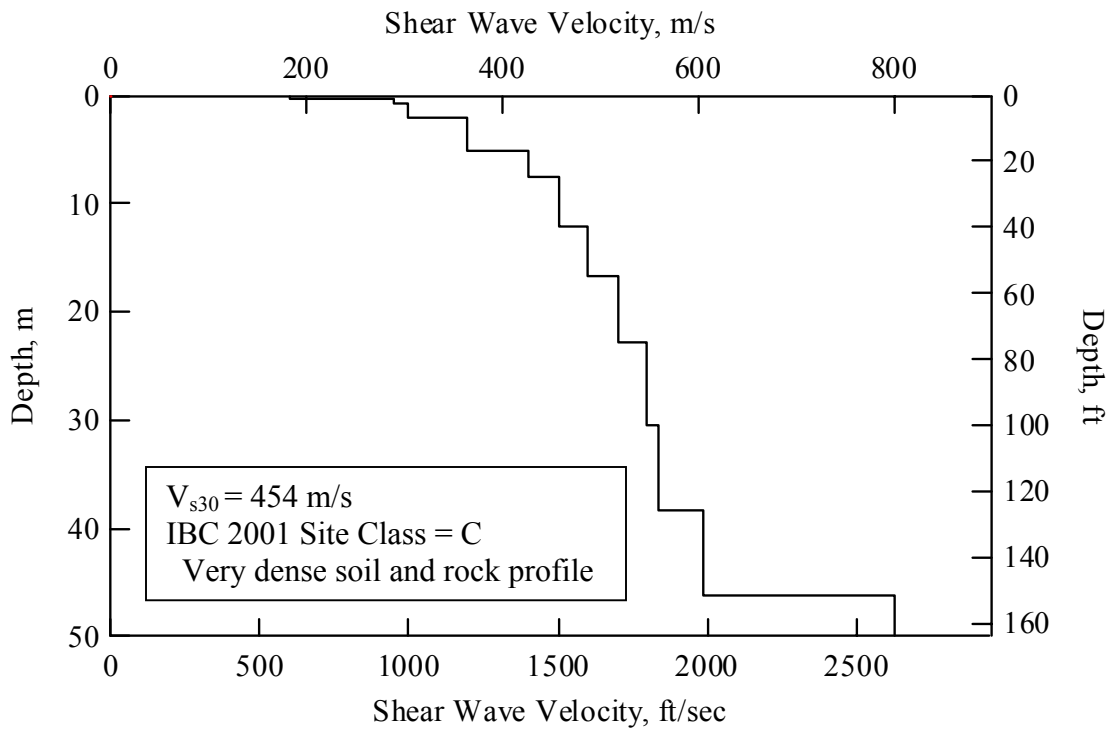
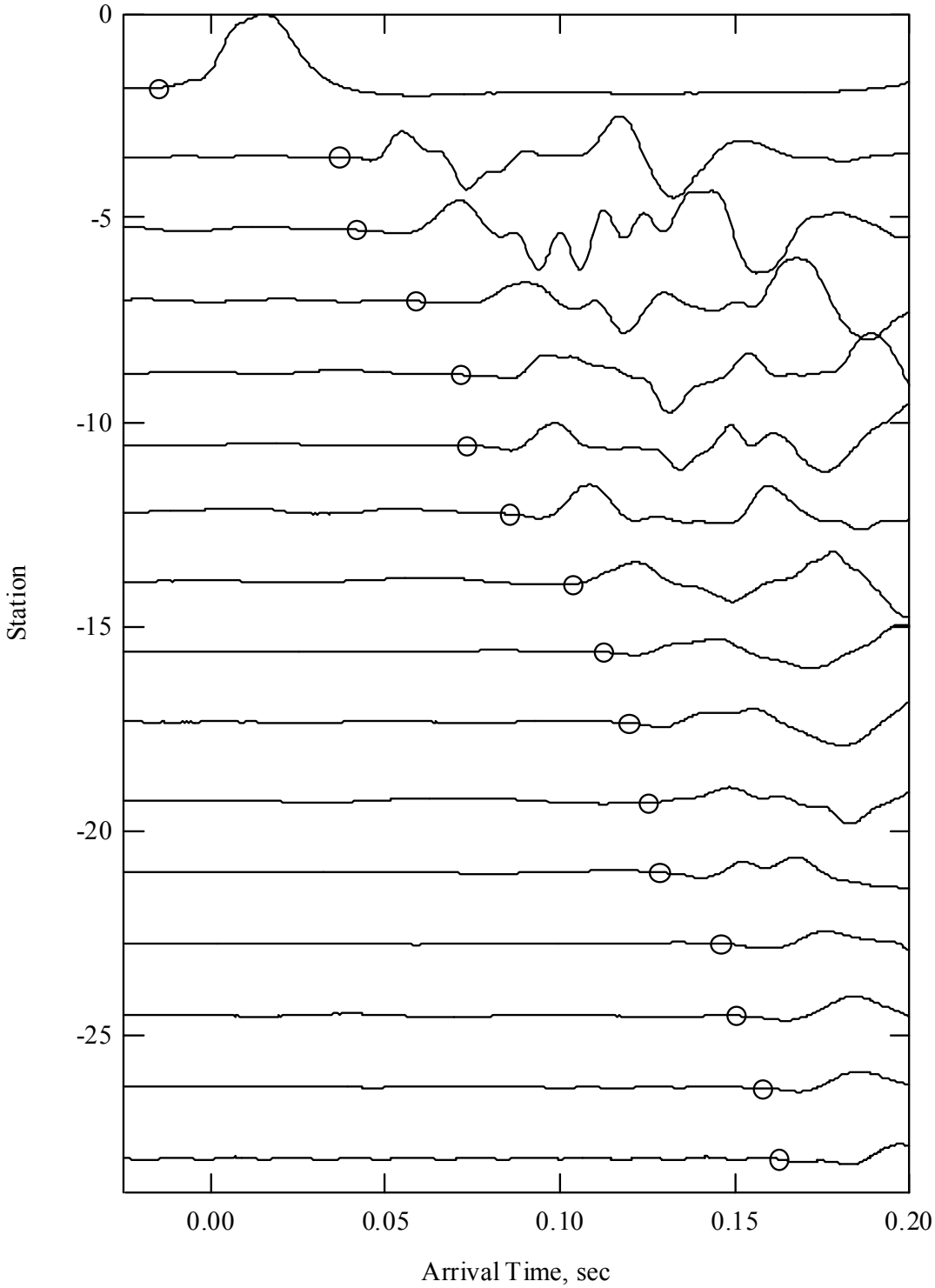


Fig 22 Shear Wave Velocity Profile Determined from SASW Testing at Granite Elementary, Sandy, Site 306, Earthquake Site Response Unit Q05 (Ashland, 2001)

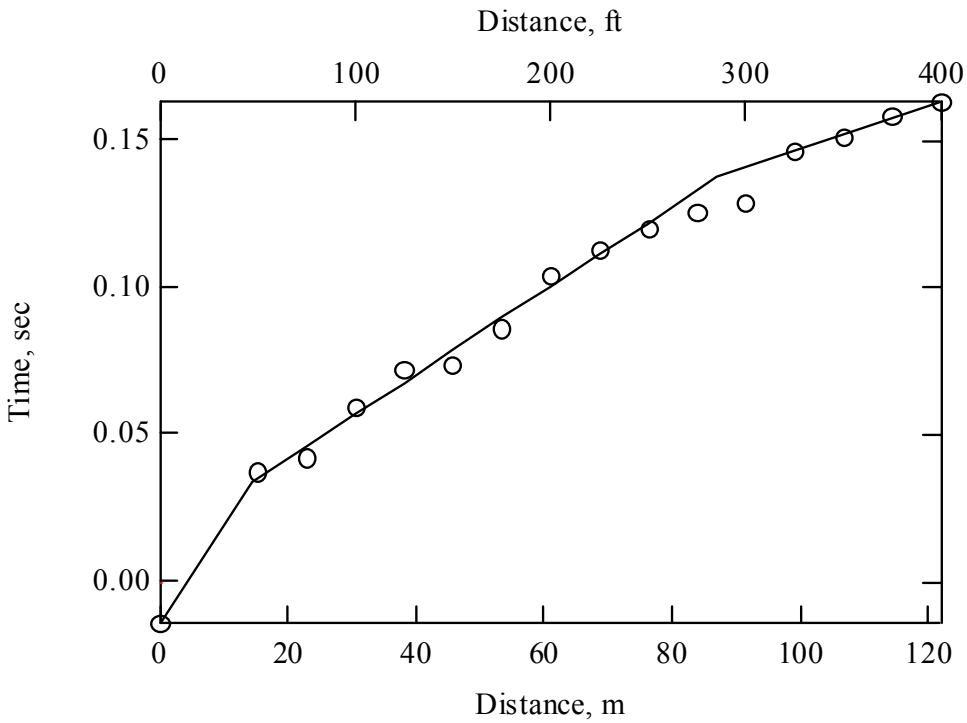
Table 8 Tabulated Shear Wave Velocity Profile from Granite Elementary, Sandy, Site 306, Earthquake Site Response Unit Q05 (Ashland, 2001)

Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	Assumed P-Wave Velocity (m/s)	Assumed Unit Weight (t/m^3)
0	0.35	182.9	342.10	1.92
0.35	0.3	289.6	541.70	1.92
0.65	1.48	304.8	570.20	2
2.13	3.05	365.8	684.30	2
5.18	2.44	426.7	798.30	2
7.62	4.57	457.2	855.30	2
12.19	4.57	487.7	912.40	2
16.76	6.1	518.2	969.40	2
22.86[a]	7.62	548.6	1524.00	2
30.48	7.8	560	1524.00	2
38.28	8	605	1524.00	2.08
46.28	30.18[b]	800	1524.00	2.08

a. Depth to fully saturated zone from Refraction testing
b. Half-space in model



Arrival Times for Refraction Testing at Granite Elementary, Sandy, Site 306, Earthquake Site Response Unit Q05 (Ashland, 2001)



Time-Distance Curve for Refraction Testing at Granite Elementary, Sandy, Site 306, Earthquake Site Response Unit Q05 (Ashland, 2001)

Table 9 Tabulated Refraction Profile from Granite Elementary, Sandy, Site 306, Earthquake Site Response Unit Q05 (Ashland, 2001)

Segment	Depth from Surface to Velocity Change (m)	P-wave Velocity (m/s)	Estimated Shear Wave Velocity assuming $\nu = 0.3$ (m/s)
1	4.59	294.45	157.39
2	21.37[a]	705.07	376.88
3		1333.65	

a. Depth to fully saturated zone

Report No. UT-03.18

DOWNHOLE SEISMIC ARRAY AT THE INTERSECTION OF I-15, I-80 AND SR-201, SALT LAKE CITY, UTAH

Prepared For:

Utah Department of Transportation Research and Development Division

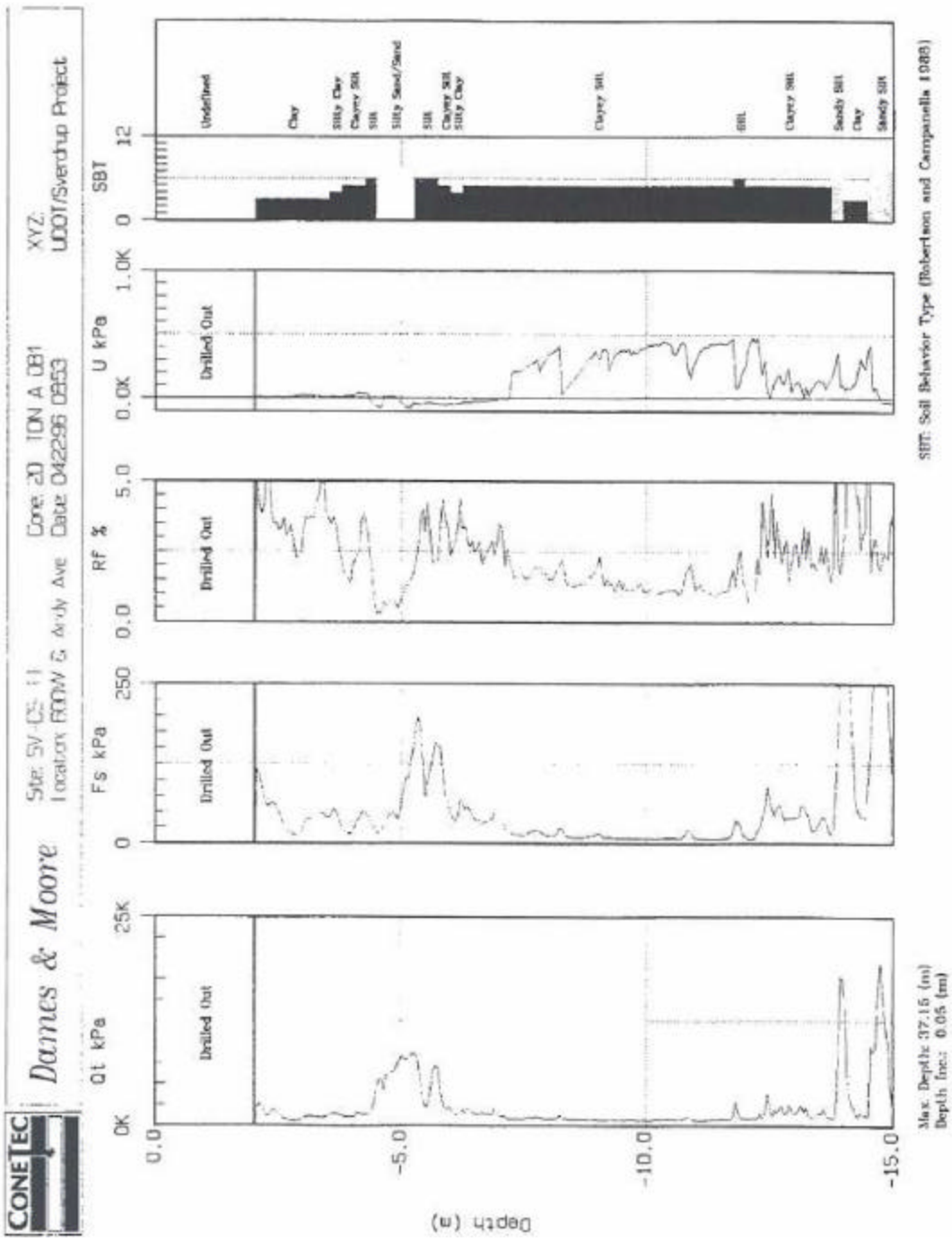
Submitted By:

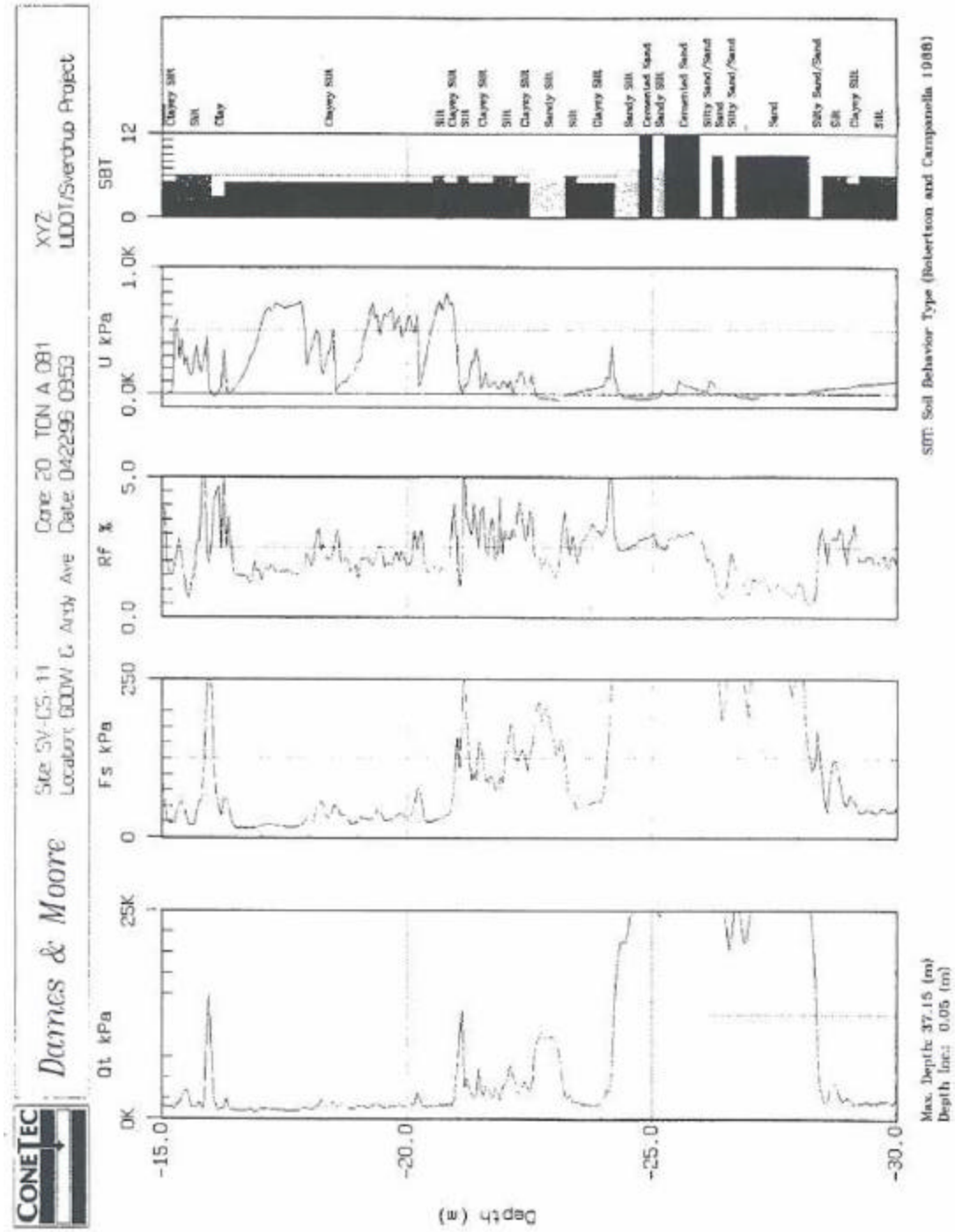
Brigham Young University
Department of Civil and Environmental Engineering

Authored By:

T. Leslie, Youd
David H. Briggs

2003


CONETEC
Dames & Moore
Site: SV-CS-11
Location: ROW & Andy Ave
Cone: 2D 10N A 0B1
Date: 042296 0853
XYZ:
UDOT/Sverdrup Project
qt kPa
0K
25K
Fs kPa
0
250
Rf %
0.0
5.0
U kPa
0.0K
1.0K
SBT
0
12
Drilled Out
Undefined
Clay
Silty Clay
Clayey Silt
Silt
Silty Sand/Sand
Sandy Silt
Depth (m)
0.0
-5.0
-10.0
-15.0
Max. Depth: 37.15 (m)
Depth Inc.: 0.05 (m)
SBT: Soil Behavior Type (Robertson and Campanella 1988)


CONETEC
Dames & Moore
Site SV-CS-11
Location 000W G Andy Ave
Cone 20 TON A 081
Date 042296 0353
XYZ
LDOT/Sverdrup Project
Qt kPa
0K
25K
Fs kPa
0
250
Rf %
0.0
5.0
U kPa
0.0K
1.0K
SBT
0
12
Depth (m)
-15.0
-20.0
-25.0
-30.0
Max. Depth: 37.15 (m)
Depth Inc: 0.05 (m)
SBT: Soil Behavior Type (Robertson and Campanella 1988)

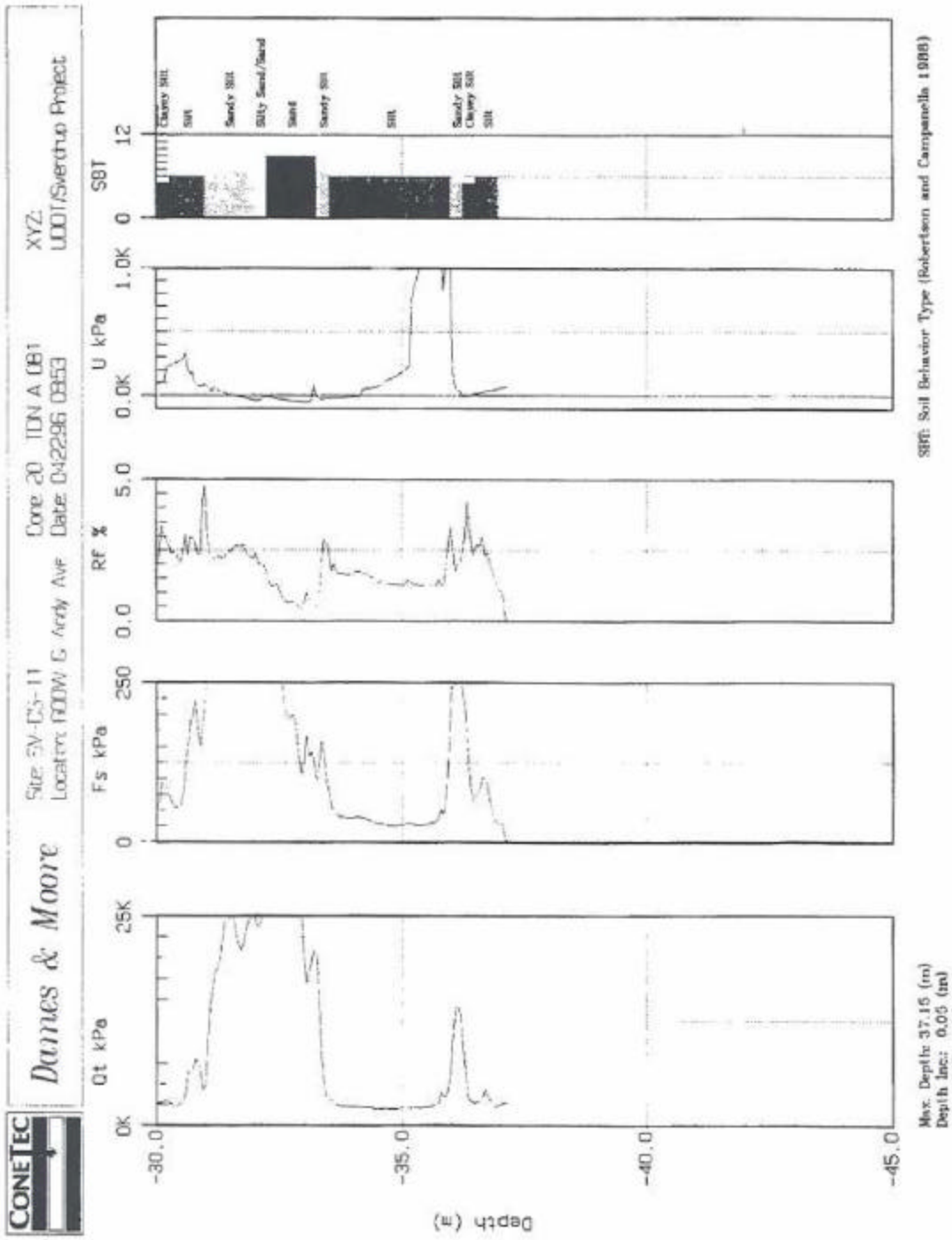


Figure 2.3. Cone penetration (CPT) log in three parts with soil stratigraphy interpreted by ConeTec from sounding CPT SV-SS-1; that sounding was located about 100 ft (30 m) north of I15DA and was installed during the I-15 reconstruction (log courtesy of ConeTec, Dames and Moore, and UDOT)

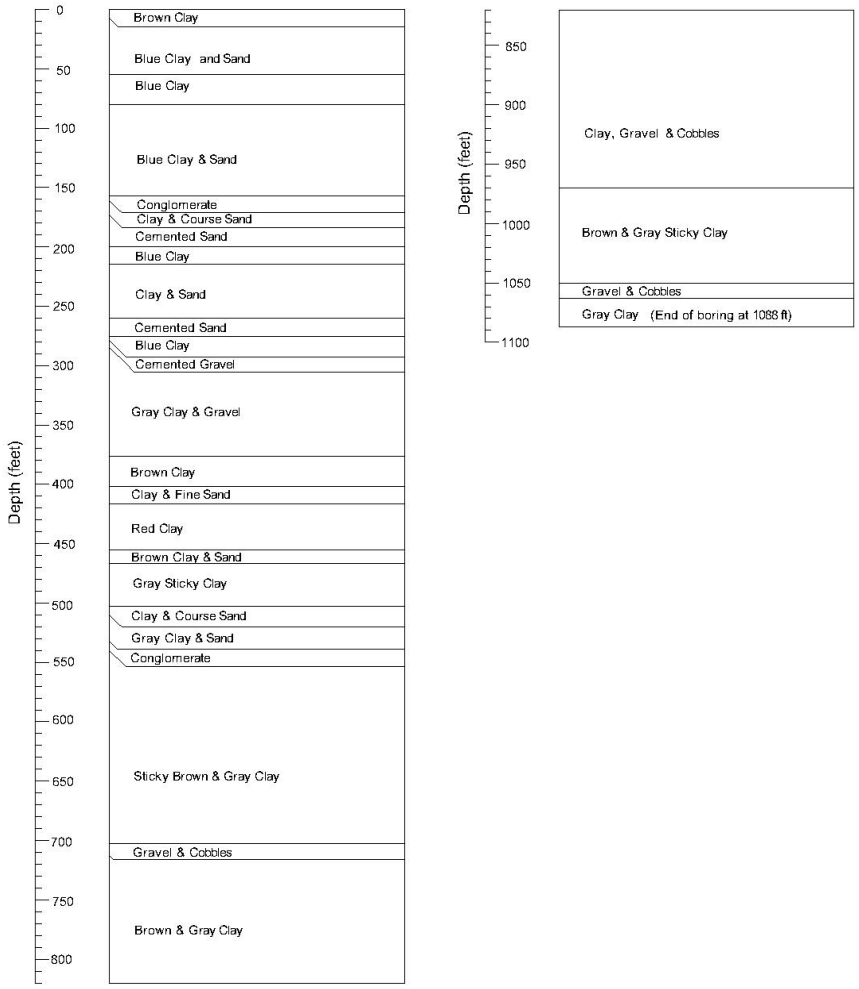


Figure 2.4. Sediment stratigraphy reported from Well Number 24 located about 600 ft (183 m) southeast of the I15DA site (Case, 1985)

The borehole log developed from the collected cuttings is reproduced in Figure 2.5. This log is consistent with the log from Well 25 reproduced in Figure 2.4. The log indicates clayey sediment to a depth of 150 ft (46 m). Below 150 ft (46 m), the cuttings indicate that the sediment is composed of clay or clayey sands with layers of varying shades of color. Some gravel was also

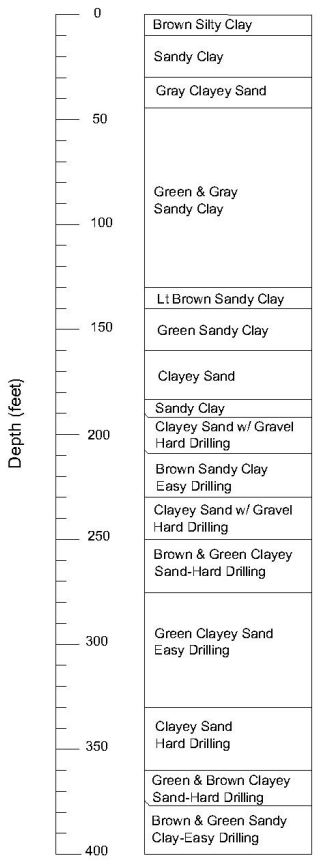


Figure 2.5. Lithologic log of 400-ft (122 m) deep hole in I15DA compiled by David Briggs from sediment cuttings extracted from the drilling fluid

patterns in the geophysical logs (Appendix 1, page 45), sediment layers were delineated and assigned either as fine-grained (clays) or coarse grained (sands).

The lithologic log interpreted from resistivity and gamma radiation measurements indicates that clay is the major sediment type in the profile, but that there are also many relatively thick sand layers dispersed through out the sediment stratigraphy. Thus, the interpreted lithologic log plotted in Figure 2.6 indicates much more granular sediment in the profile than is indicated by either the log from Well 24 (Figure 2.4) or the log estimated from sediment cuttings (Figure 2.5). The log in Figure 2.6, however, is only approximate, because of

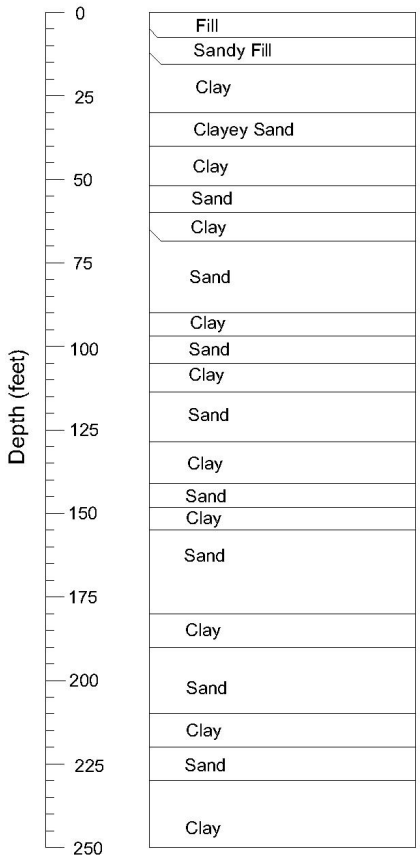


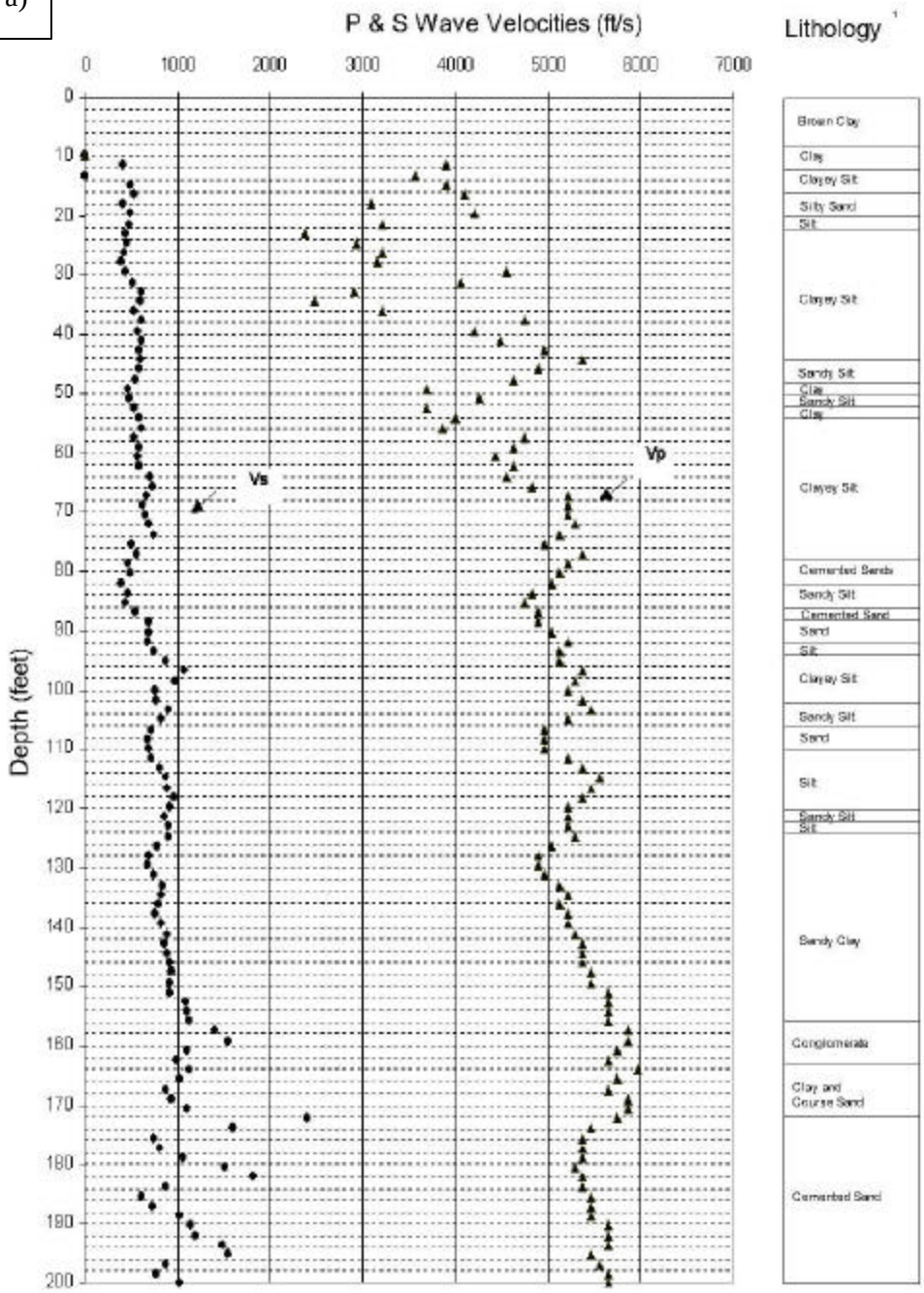
Figure 2.6. Lithologic log interpreted from resistitivity and gamma radiation logs prepared by GeoVision Geophysical Services, Inc (Appendix 1); lithology interpretation is by David Briggs, with assistance from Dr. John McBride, David Alderks, and Robert Steller

Seismic Velocity Logs

OYO Suspension Logger

During the I15DA site investigation, seismic velocities (both compression (P-wave) and shear (S-wave)) velocities were measured with an OYO in-hole suspension logger and by cross-hole velocity measurements between the 160 ft (49 m) and 400 ft (122 m) deep PVC casings. The suspension logging was performed by Robert Steller,

a)



[1] Composite log interpreted by David Briggs from Well Number 24, Cuttings from I15DA 400 ft hole and CPT SV-CS-11

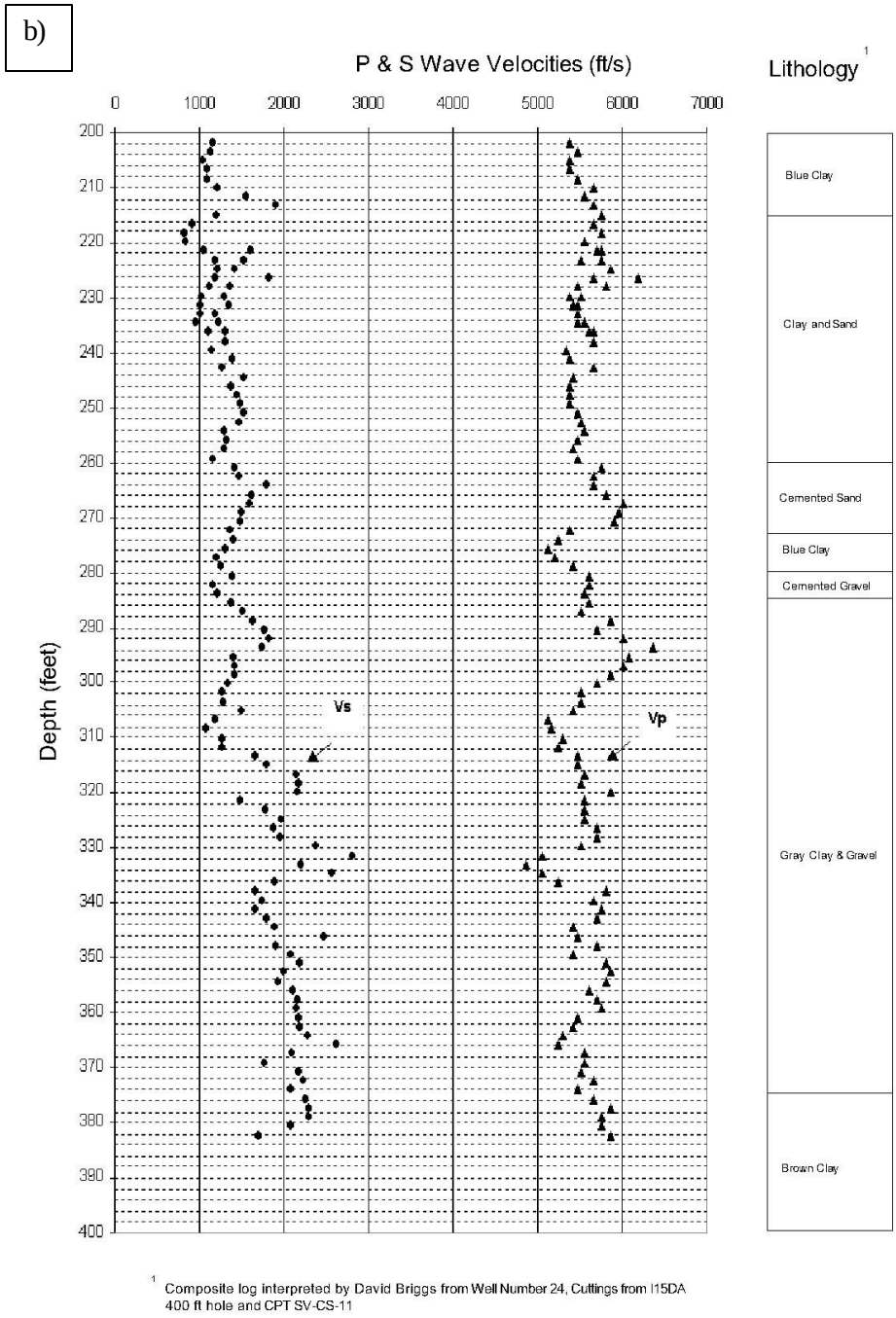


Figure 2.8. I15DA compression and shear wave velocity logs from 400 ft (122 m) borehole at I15DA; (a) logs from 10 ft to 200 ft (3 m to 61 m) depth; (b) logs from 200 ft to 400 ft (61 m to 122 m) depth (data courtesy of GeoVision Geophysical Services, Inc. Geotechnical Log compiled by David Briggs)

saturated below a depth of 10 ft, except for the zone noted above. Below a depth of 90 ft (30 m), P-wave velocities from the two test procedures are generally consistent and consistently above 4,800 ft/sec (1,460 m/sec).

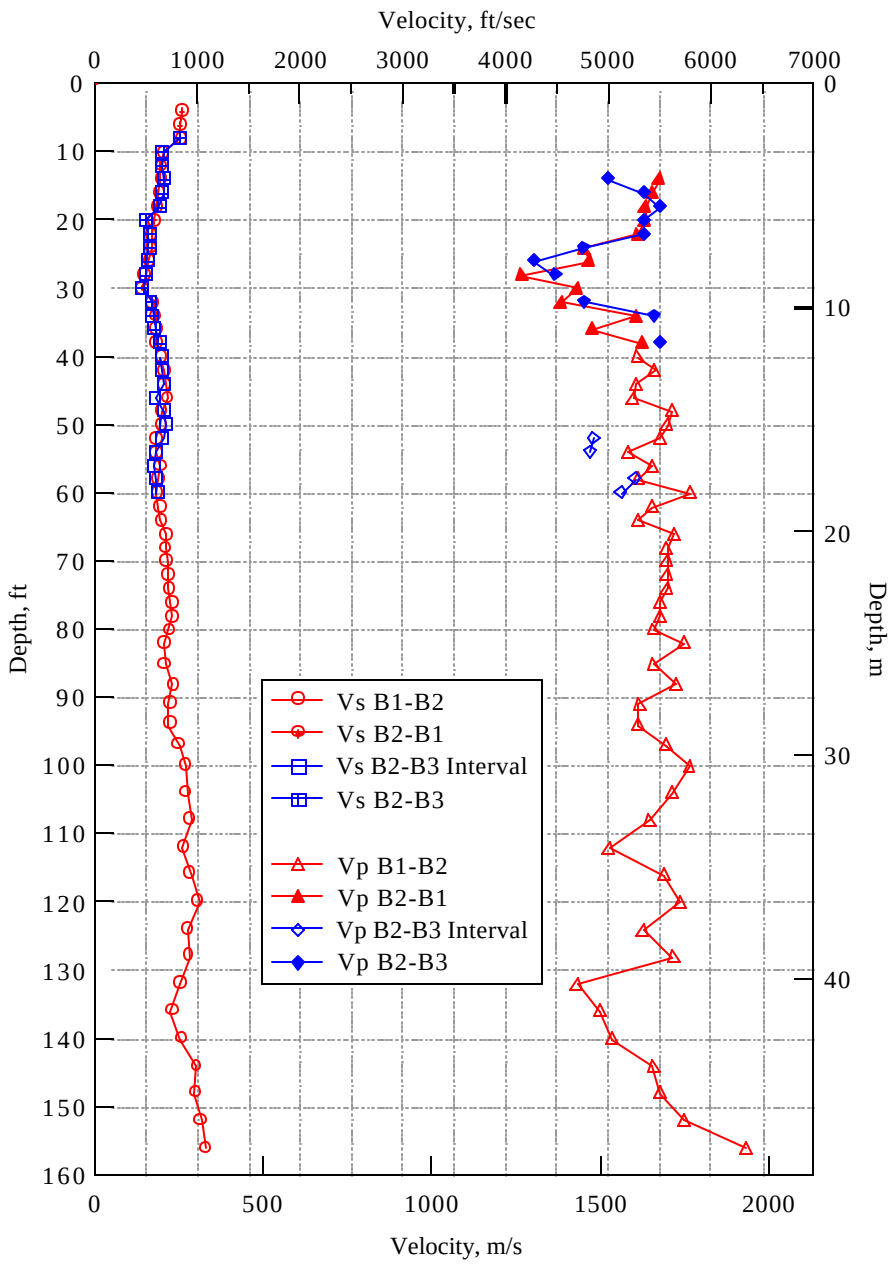


Figure 2.9. Seismic velocities from cross-hole tests at I15DA (J. A. Bay, Utah State University)

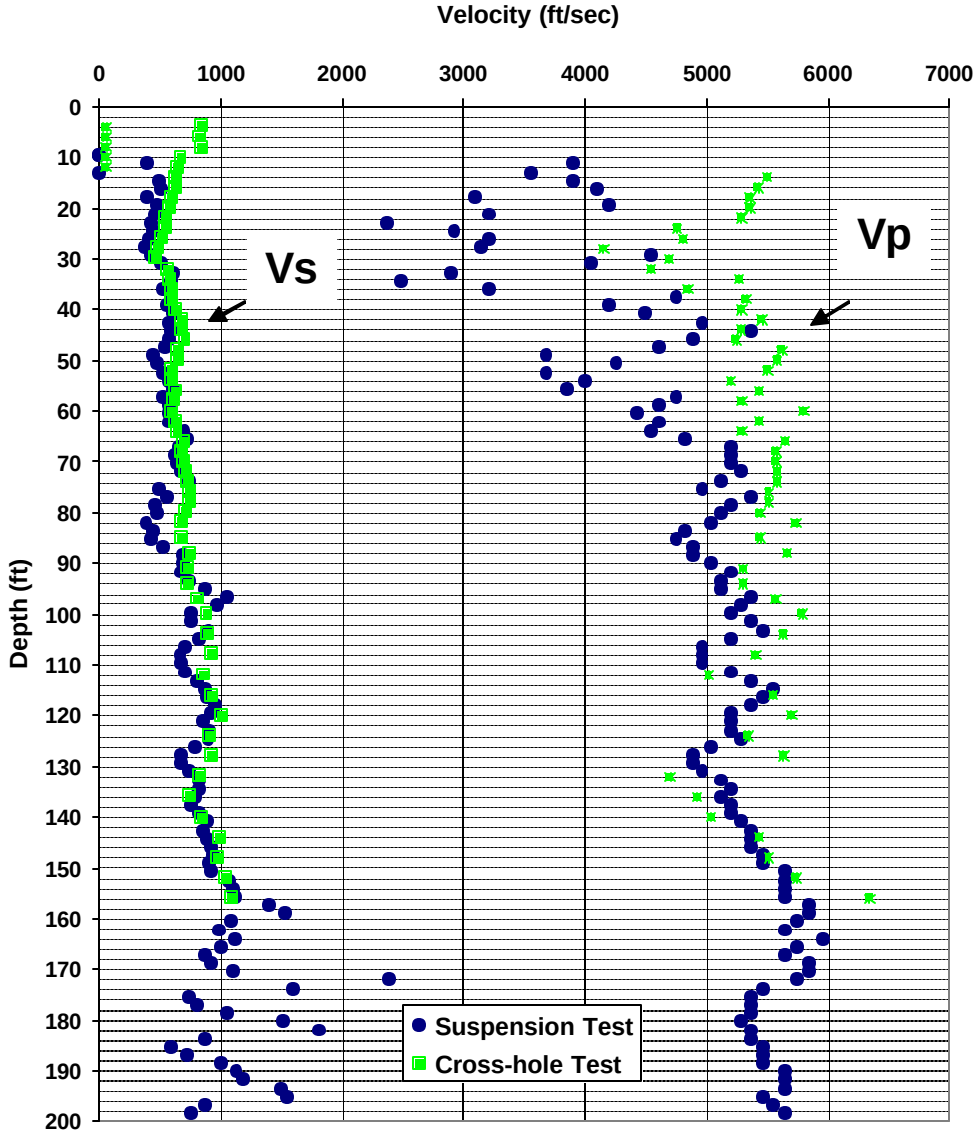


Figure 2.10. Comparison of seismic velocities measured with cross-hole and OYO suspension tests

SALT LAKE CITY
UDOT 400 FT BORING AT
I15 AND 2200 SOUTH
BOREHOLE GEOPHYSICS

Prepared for

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Prepared by

GEOVision Geophysical Services
1151 Pomona Road, Unit P
Corona, California 92882
(909) 549-1234
Project 2488

May 30, 2003
Report 2488-02

Depth		Pick Times						Velocity			
(m)	(feet)	Far-Hn (millisec)	Far-Hr (millisec)	Far-V (millisec)	Near-Hn (millisec)	Near-Hr (millisec)	Near-V (millisec)	$V\text{-}S_H$ (m/sec)	V-P (m/sec)	$V\text{-}S_H$ (ft/sec)	V-P (ft/sec)
3.0	9.8				25.30		7.56			0	0
3.5	11.5	36.80		8.40	28.70		7.56	123	1190	405	3906
4.0	13.1			8.42	30.80		7.50		1087	0	3566
4.5	14.8	39.20	39.90	8.36	32.50	33.30	7.52	150	1190	493	3906
5.0	16.4	40.00	39.60	8.26	33.40	33.70	7.46	160	1250	525	4101
5.5	18.0	35.80	36.10	8.36	27.00	28.60	7.30	123	943	403	3095
6.0	19.7	34.50	35.20	8.42	27.80	28.40	7.64	148	1282	486	4206
6.5	21.3	34.60	34.60	8.98	27.30	27.90	7.96	143	980	469	3217
7.0	23.0	34.80	34.30	9.48	26.90	27.30	8.10	134	725	440	2377
7.5	24.6	34.15	33.90	9.48	26.40	26.95	8.36	136	893	446	2929
8.0	26.2	33.45	32.70	9.48	25.05	25.55	8.46	129	980	422	3217
8.5	27.9	31.85	32.55	9.18	24.10	23.40	8.14	118	962	388	3155
9.0	29.5	30.75	30.15	8.68	23.20	22.35	7.96	130	1389	427	4557
9.5	31.2	29.10	28.45	8.20	22.70	22.05	7.39	156	1235	513	4050
10.0	32.8	28.05	27.00	8.76	22.70	21.65	7.63	187	885	613	2903
10.5	34.4	27.30	26.60	8.53	21.90	21.10	7.21	183	758	602	2485
11.0	36.1	28.10	27.00	8.38	21.90	20.85	7.36	162	980	531	3217
11.5	37.7	28.05	27.00	7.26	22.90	21.30	6.57	184	1449	605	4755
12.0	39.4	28.05	27.50	7.26	22.00	22.05	6.48	174	1282	571	4206
12.5	41.0	27.75	29.05	7.26	22.55	23.60	6.53	188	1370	616	4494
13.0	42.7	30.55	29.40	7.21	24.95	23.85	6.55	179	1515	588	4971
13.5	44.3	30.65	29.40	7.13	25.30	23.85	6.52	183	1639	602	5378
14.0	45.9	30.80	30.05	7.66	25.50	24.05	6.99	177	1493	581	4897
14.5	47.6	31.20	30.20	7.64	25.15	24.15	6.93	165	1408	542	4621
15.0	49.2	31.70	30.60	7.69	24.45	23.50	6.80	139	1124	457	3686
15.5	50.9	30.10	30.30	7.82	23.75	23.00	7.05	147	1299	481	4261
16.0	52.5	29.75	28.60	7.43	23.15	22.85	6.54	162	1124	531	3686
16.5	54.1	29.10	27.75	7.28	23.00	22.70	6.46	179	1220	588	4001
17.0	55.8	26.15	27.45	7.24	20.50	22.35	6.39	186	1176	610	3860
17.5	57.4	27.40	27.85	7.40	21.05	21.95	6.71	163	1449	536	4755
18.0	59.1	26.00	27.40	7.32	20.60	21.65	6.61	179	1408	588	4621
18.5	60.7	25.80	27.15	7.31	20.10	21.45	6.57	175	1351	576	4434
19.0	62.3	25.80	26.55	7.25	20.00	21.00	6.54	176	1408	578	4621
19.5	64.0	25.00	25.20	7.18	20.20	20.70	6.46	215	1389	706	4557
20.0	65.6	25.80	26.40	7.18	21.45	21.80	6.50	223	1471	733	4825
20.5	67.3	26.40	26.40	7.15	21.40	21.45	6.52	201	1587	659	5208
21.0	68.9	26.45	26.70	6.97	21.30	21.40	6.34	191	1587	628	5208
21.5	70.5	25.70	26.40	6.95	20.70	21.30	6.32	198	1587	650	5208
22.0	72.2	27.30	26.70	6.89	22.15	22.30	6.27	209	1613	687	5292
22.5	73.8		29.45	7.02	22.40	25.05	6.38	227	1563	746	5126
23.0	75.5		28.55	7.08	22.85	22.10	6.42	155	1515	509	4971
23.5	77.1	28.20	27.70	6.86	22.10	22.10	6.25	171	1639	561	5378
24.0	78.7	29.60	29.70	7.04	22.80	22.25	6.41	140	1587	460	5208
24.5	80.4	30.00	30.20	7.05	23.40	23.45	6.41	150	1562	492	5126
25.0	82.0	30.45	30.75	7.05	22.30	22.20	6.40	120	1538	393	5047
25.5	83.7	27.85	28.10	7.06	20.80	20.75	6.38	139	1471	456	4825
26.0	85.3	26.80	26.45	7.09	19.15	19.20	6.40	134	1449	440	4755
26.5	86.9	25.15	24.95	7.06	19.00	18.95	6.39	165	1493	540	4897
27.0	88.6	23.70	24.55	7.05	19.00	19.85	6.38	213	1493	698	4897
27.5	90.2	22.50	22.55	6.97	17.65	17.95	6.32	212	1538	694	5047

Table 3. UDOT 400' Boring, Suspension R1-R2 depth, pick times, and velocities collected 8/10/02

Depth		Pick Times						Velocity			
(m)	(feet)	Far-Hn (millisec)	Far-Hr (millisec)	Far-V (millisec)	Near-Hn (millisec)	Near-Hr (millisec)	Near-V (millisec)	$V\text{-}S_H$ (m/sec)	V-P (m/sec)	$V\text{-}S_H$ (ft/sec)	V-P (ft/sec)
28.0	91.9	22.10	22.20	6.93	17.30	17.35	6.30	207	1587	680	5208
28.5	93.5	21.60	21.70	6.89	17.20	17.35	6.25	229	1563	750	5126
29.0	95.1	21.20	21.15	6.85	17.35	17.55	6.21	268	1563	881	5126
29.5	96.8	21.15	21.30	6.87	18.05	18.25	6.26	325	1639	1067	5378
30.0	98.4	21.60	21.80	6.86	18.25	18.40	6.24	296	1613	972	5292
30.5	100.1	22.45	22.70	6.86	18.20	18.35	6.23	233	1587	763	5208
31.0	101.7	23.05	23.00	6.89	18.75	18.80	6.28	235	1639	772	5378
31.5	103.3	22.25	22.45	6.88	18.70	18.75	6.28	276	1667	905	5468
32.0	105.0	22.40	22.55	6.90	18.50	18.50	6.27	252	1587	825	5208
32.5	106.6	22.35	22.45	6.88	17.70	17.90	6.22	217	1515	713	4971
33.0	108.3	21.80	22.00	6.83	16.95	17.10	6.17	205	1515	673	4971
33.5	109.9	21.20	21.35	6.80	16.45	16.55	6.14	209	1515	687	4971
34.0	111.5	20.65	20.80	6.77	16.05	16.20	6.14	217	1587	713	5208
34.5	113.2	20.00	20.15	6.74	16.00	16.15	6.13	250	1639	820	5378
35.0	114.8	19.85	20.05	6.74	16.10	16.35	6.15	268	1695	881	5561
35.5	116.5	20.20	20.45	6.76	16.55	16.75	6.16	272	1667	893	5468
36.0	118.1	20.65	20.90	6.78	17.25	17.50	6.17	294	1639	965	5378
36.5	119.8	21.30	21.55	6.82	17.75	18.00	6.19	282	1587	924	5208
37.0	121.4	21.90	22.10	6.83	18.10	18.30	6.20	263	1587	863	5208
37.5	123.0	21.95	22.20	6.70	18.35	18.60	6.07	278	1587	911	5208
38.0	124.7	22.20	22.45	6.69	18.60	18.80	6.07	276	1613	905	5292
38.5	126.3	22.58	22.78	6.65	18.44	18.64	6.00	242	1538	792	5047
39.0	128.0	22.72	22.94	6.66	17.96	18.16	5.99	210	1493	688	4897
39.5	129.6	22.14	22.36	6.64	17.34	17.56	5.97	208	1493	684	4897
40.0	131.2	21.56	21.80	6.61	17.18	17.42	5.95	228	1515	749	4971
40.5	132.9	21.14	21.32	6.59	17.20	17.40	5.95	254	1562	835	5126
41.0	134.5	20.84	21.04	6.57	16.84	17.06	5.94	251	1587	822	5208
41.5	136.2	20.64	20.84	6.55	16.52	16.72	5.91	243	1563	796	5126
42.0	137.8	20.56	20.72	6.54	16.20	16.42	5.91	231	1587	758	5208
42.5	139.4	20.34	20.52	6.53	16.34	16.54	5.90	251	1587	822	5208
43.0	141.1	19.70	19.92	6.51	16.02	16.28	5.89	273	1613	896	5292
43.5	142.7	19.56	19.78	6.49	15.78	16.00	5.88	265	1639	868	5378
44.0	144.4	19.14	19.34	6.49	15.46	15.66	5.88	272	1639	892	5378
44.5	146.0	18.84	19.08	6.45	15.28	15.52	5.84	281	1639	922	5378
45.0	147.6	19.10	19.34	6.45	15.60	15.86	5.85	287	1667	940	5468
45.5	149.3	19.48	19.72	6.45	15.90	16.14	5.85	279	1667	916	5468
46.0	150.9	19.54	19.74	6.43	15.96	16.20	5.85	281	1724	922	5657
46.5	152.6	18.72	18.90	6.41	15.68	15.86	5.83	329	1724	1079	5657
47.0	154.2	18.66	18.96	6.41	15.68	15.98	5.83	336	1724	1101	5657
47.5	155.8	18.88	19.04	6.39	15.96	16.14	5.81	344	1724	1127	5657
48.0	157.5	18.04	18.24	6.37	15.70	15.92	5.81	429	1786	1408	5859
48.5	159.1	17.76	17.88	6.38	15.60	15.78	5.82	469	1786	1540	5859
49.0	160.8	18.42	18.68	6.36	15.42	15.68	5.79	333	1754	1094	5756
49.5	162.4	19.70	19.92	6.38	16.40	16.62	5.80	303	1724	994	5657
50.0	164.0	20.12	20.32	6.49	17.20	17.44	5.94	345	1818	1131	5965
50.5	165.7	19.86	20.00	6.51	16.72	16.70	5.94	311	1754	1019	5756
51.0	167.3	18.96	19.16	6.53	15.24	15.46	5.95	270	1724	884	5657
51.5	169.0	18.66	18.86	6.52	15.14	15.32	5.96	283	1786	929	5859
52.0	170.6	18.56	18.76	6.57	15.58	15.78	6.01	336	1786	1101	5859
52.5	172.2	19.70	19.94	6.53	18.34	18.56	5.96	730	1754	2395	5756

Table 3, continued. UDOT 400' Boring, Suspension R1-R2 depth, pick times, and velocities collected 8/10/02

Depth		Pick Times						Velocity			
(m)	(feet)	Far-Hn (millisec)	Far-Hr (millisec)	Far-V (millisec)	Near-Hn (millisec)	Near-Hr (millisec)	Near-V (millisec)	$V\text{-}S_H$ (m/sec)	V-P (m/sec)	$V\text{-}S_H$ (ft/sec)	V-P (ft/sec)
53.0	173.9	20.58	20.54	6.63	18.42	18.60	6.03	488	1667	1600	5468
53.5	175.5	20.60	20.76	6.61	16.22	16.38	6.00	228	1639	749	5378
54.0	177.2	19.56	19.76	6.64	15.56	15.74	6.03	249	1639	818	5378
54.5	178.8	18.74	18.92	6.49	15.64	15.80	5.88	322	1639	1055	5378
55.0	180.4	18.48	18.68	6.49	16.30	16.56	5.87	465	1613	1526	5292
55.5	182.1	18.56	18.72	6.49	16.72	16.96	5.88	556	1639	1823	5378
56.0	183.7	19.54	19.78	6.46	15.80	16.04	5.85	267	1639	877	5378
56.5	185.4	21.22	21.36	6.44	15.74	16.00	5.84	185	1667	605	5468
57.0	187.0	19.52	19.74	6.47	15.10	15.26	5.87	225	1667	737	5468
57.5	188.6	17.70	17.88	6.47	14.46	14.66	5.87	310	1667	1016	5468
58.0	190.3	17.10	17.30	6.44	14.22	14.40	5.86	346	1724	1135	5657
58.5	191.9	17.06	17.28	6.43	14.32	14.52	5.85	364	1724	1193	5657
59.0	193.6	16.92	17.16	6.43	14.74	14.96	5.85	457	1724	1498	5657
59.5	195.2	17.16	17.40	6.53	15.04	15.28	5.93	472	1667	1548	5468
60.0	196.9	17.96	18.20	6.55	14.26	14.44	5.96	268	1695	880	5561
60.5	198.5	18.34	18.54	6.55	14.06	14.28	5.97	234	1724	768	5657
61.0	200.1	17.40	17.58	6.56	14.16	14.38	5.98	311	1724	1019	5657
61.5	201.8	17.32	17.58	6.57	14.54	14.72	5.96	355	1639	1163	5378
62.0	203.4	17.94	18.14	6.44	15.08	15.22	5.84	346	1667	1135	5468
62.5	205.1	19.38	19.58	6.57	16.24	16.42	5.96	317	1639	1042	5378
63.0	206.7	19.74	19.94	6.52	16.76	16.94	5.91	334	1639	1097	5378
63.5	208.3	18.68	18.94	6.52	15.66	15.94	5.92	332	1667	1090	5468
64.0	210.0	17.92	18.16	6.48	15.26	15.44	5.90	372	1724	1220	5657
64.5	211.6	17.60	17.80	6.45	15.50	15.68	5.86	474	1695	1555	5561
65.0	213.3	17.40	17.68	6.42	15.74	15.90	5.84	581	1724	1907	5657
65.5	214.9	17.80	17.98	6.43	15.08	15.22	5.86	365	1754	1197	5756
66.0	216.5	18.26	18.48	6.45	14.70	14.90	5.87	280	1724	919	5657
66.5	218.2	18.24	18.40	6.45	14.20	14.46	5.88	251	1754	822	5756
67.0	219.8	17.96	18.18	6.46	14.06	14.28	5.87	256	1695	841	5561
67.5	221.5	17.44	17.62	6.45	14.30	14.50	5.88	319	1754	1048	5756
68.0	223.1	17.16	17.36	6.46	14.42	14.60	5.89	364	1754	1193	5756
68.5	224.7	17.18	17.34	6.44	14.48	14.62	5.88	369	1786	1211	5859
69.0	226.4	17.16	17.22	6.50	14.38	14.50	5.92	364	1724	1193	5657
69.5	228.0	17.26	17.46	6.45	14.34	14.56	5.85	344	1667	1127	5468
70.0	229.7	17.36	17.56	6.51	14.14	14.36	5.90	312	1639	1022	5378
70.5	231.3	17.20	17.38	6.51	13.94	14.16	5.91	309	1667	1013	5468
71.0	232.9	16.76	16.98	6.51	13.52	13.74	5.91	309	1667	1013	5468
71.5	234.6	16.60	16.82	6.51	13.18	13.38	5.92	292	1695	957	5561
72.0	236.2	16.30	16.50	6.50	13.35	13.50	5.92	336	1724	1103	5657

Table 3, continued. UDOT 400' Boring, Suspension R1-R2 depth, pick times, and velocities collected 8/10/02

Depth		Pick Times						Velocity			
(m)	(feet)	Far-Hn (millisec)	Far-Hr (millisec)	Far-V (millisec)	Near-Hn (millisec)	Near-Hr (millisec)	Near-V (millisec)	$V\text{-}S_H$ (m/sec)	V-P (m/sec)	$V\text{-}S_H$ (ft/sec)	V-P (ft/sec)
67.5	221.5	10.54	10.52	6.53	8.48	8.50	5.96	490	1739	1608	5706
68.0	223.1	10.34	10.54	6.53	8.28	8.30	5.93	465	1681	1526	5514
68.5	224.7	10.90	10.98	6.53	8.60	8.66	5.97	433	1786	1420	5859
69.0	226.4	10.52	10.58	6.55	8.78	8.72	6.02	556	1887	1823	6190
69.5	228.0	12.78	12.68	6.58	10.28	10.38	6.02	417	1770	1367	5807
70.0	229.7	13.30	13.20	6.58	10.68	10.78	5.99	397	1681	1302	5514
70.5	231.3	13.82	13.76	6.61	11.36	11.36	6.00	412	1653	1350	5423
71.0	232.9	13.96	13.86	6.58	11.18	11.10	5.98	361	1667	1184	5468
71.5	234.6	14.36	14.36	6.52	11.68	11.72	5.92	376	1667	1233	5468
72.0	236.2	14.48	14.40	6.58	11.96	11.90	6.00	398	1709	1307	5608
72.5	237.9	13.98	14.00	6.58	11.44	11.54	6.00	400	1724	1312	5657
73.0	239.5	14.26	14.16	6.55	11.34	11.40	5.93	352	1626	1155	5335
73.5	241.1	11.68	11.86	6.48	9.38	9.46	5.87	426	1639	1396	5378
74.0	242.8	13.60	13.70	6.63	11.08	11.04	6.05	386	1724	1267	5657
74.5	244.4	14.66	14.60	6.60	12.50	12.48	5.99	467	1653	1533	5423
75.0	246.1	14.70	14.66	6.61	12.30	12.32	6.00	422	1639	1384	5378
75.5	247.7	12.76	12.84	6.63	10.50	10.58	6.02	442	1639	1452	5378
76.0	249.3	12.74	12.66	6.62	10.48	10.52	6.01	455	1639	1491	5378
76.5	251.0	12.76	12.78	6.58	10.58	10.68	5.98	467	1667	1533	5468
77.0	252.6	12.88	12.84	6.55	10.68	10.60	5.96	450	1681	1478	5514
77.5	254.3	12.78	12.72	6.50	10.20	10.24	5.91	395	1695	1297	5561
78.0	255.9	12.84	12.94	6.47	10.38	10.42	5.87	402	1667	1318	5468
78.5	257.5	12.68	12.72	6.60	10.10	10.22	5.99	394	1653	1292	5423
79.0	259.2	12.58	12.52	6.59	9.72	9.74	5.99	355	1667	1163	5468
79.5	260.8	14.60	14.68	6.55	12.28	12.38	5.98	433	1754	1420	5756
80.0	262.5	14.66	14.70	6.57	12.40	12.50	5.99	448	1724	1471	5657
80.5	264.1	14.60	14.60	6.57	12.72	12.82	5.99	546	1724	1793	5657
81.0	265.7	15.66	15.86	6.60	13.62	13.86	6.04	495	1770	1624	5807
81.5	267.4	12.34	12.18	6.62	10.30	10.12	6.08	488	1835	1600	6020
82.0	269.0	14.38	14.44	6.65	12.16	12.28	6.10	457	1818	1498	5965
82.5	270.7	12.44	13.52	6.53	10.22	11.32	5.97	452	1802	1485	5911
83.0	272.3	14.42	14.50	6.68	12.02	12.10	6.07	417	1639	1367	5378
83.5	274.0	12.42	13.60	6.70	10.10	11.26	6.08	429	1600	1408	5249
84.0	275.6	12.64	12.74	6.56	10.14	10.22	5.92	398	1563	1307	5126
84.5	277.2	12.64	14.54	6.66	10.06	11.68	6.03	368	1587	1206	5208
85.0	278.9	13.06	14.00	6.62	10.52	11.30	6.02	382	1653	1252	5423
85.5	280.5	12.52	12.62	6.60	10.20	10.24	6.01	426	1709	1396	5608
86.0	282.2	14.14	14.20	6.58	11.30	11.42	6.00	356	1709	1168	5608
86.5	283.8	13.68	13.80	6.56	10.96	11.10	5.97	369	1695	1211	5561
87.0	285.4	11.90	12.02	6.54	9.54	9.64	5.96	422	1709	1384	5608
87.5	287.1	11.68	11.86	6.54	9.56	9.64	5.94	461	1681	1512	5514
88.0	288.7	11.66	13.44	6.49	9.92	11.18	5.93	500	1786	1640	5859
88.5	290.4	11.74	12.76	6.52	10.06	10.74	5.94	541	1739	1773	5706
89.0	292.0	12.08	12.40	6.52	10.36	10.52	5.98	556	1835	1823	6020
89.5	293.6	12.38	12.62	6.51	10.58	10.66	6.00	532	1942	1745	6371
90.0	295.3	12.82	12.92	6.54	10.52	10.54	6.00	427	1852	1402	6076
90.5	296.9	12.94	12.86	6.61	10.58	10.58	6.06	431	1835	1414	6020
91.0	298.6	12.74	12.74	6.64	10.38	10.46	6.08	431	1786	1414	5859
91.5	300.2	16.32	16.36	6.66	13.86	13.92	6.09	408	1739	1339	5706
92.0	301.8	16.28	16.36	6.67	13.68	13.80	6.07	388	1681	1272	5514

Table 4. UDOT 400’ Boring, Suspension R1-R2 depth, pick times, and velocities collected 4/15/03

Depth		Pick Times						Velocity			
(m)	(feet)	Far-Hn (millisec)	Far-Hr (millisec)	Far-V (millisec)	Near-Hn (millisec)	Near-Hr (millisec)	Near-V (millisec)	$V\text{-}S_H$ (m/sec)	V-P (m/sec)	$V\text{-}S_H$ (ft/sec)	V-P (ft/sec)
92.5	303.5	13.12	16.64	6.63	10.80	13.86	6.04	392	1681	1287	5514
93.0	305.1	12.92	13.00	6.64	10.78	10.76	6.03	457	1653	1498	5423
93.5	306.8	12.82	16.94	6.65	9.90	14.32	6.01	361	1562	1184	5126
94.0	308.4	14.62	14.62	6.65	11.56	11.60	6.01	329	1575	1079	5167
94.5	310.0	14.26	14.16	6.61	11.66	11.62	5.99	389	1613	1277	5292
95.0	311.7	14.26	14.28	6.55	11.66	11.70	5.93	386	1600	1267	5249
95.5	313.3	11.44	11.66	6.52	9.70	9.44	5.92	505	1667	1657	5468
96.0	315.0	11.52	11.58	6.50	9.68	9.78	5.90	549	1667	1803	5468
96.5	316.6	11.36	11.48	6.48	9.84	9.94	5.89	654	1695	2144	5561
97.0	318.2	11.24	11.36	6.43	9.76	9.82	5.84	662	1681	2173	5514
97.5	319.9	11.18	11.16	6.53	9.64	9.66	5.97	658	1786	2158	5859
98.0	321.5	10.92	10.88	6.58	8.76	8.64	5.99	455	1695	1491	5561
98.5	323.2	10.18	10.20	6.56	8.40	8.30	5.97	543	1695	1783	5561
99.0	324.8	9.72	9.62	6.61	8.04	7.98	6.02	602	1695	1976	5561
99.5	326.4	9.96	9.94	6.62	8.24	8.16	6.04	571	1739	1875	5706
100.0	328.1	9.78	9.74	6.62	8.10	8.06	6.04	595	1739	1953	5706
100.5	329.7	9.90	9.90	6.62	8.52	8.52	6.02	725	1681	2377	5514
101.0	331.4	10.08	10.06	6.73	8.92	8.88	6.08	855	1538	2804	5047
101.5	333.0	12.60	12.66	6.58	11.10	11.18	5.90	671	1481	2202	4861
102.0	334.6	12.28	12.24	6.52	10.96	11.00	5.87	781	1538	2563	5047
102.5	336.3	10.62	12.58	6.52	8.96	10.76	5.89	575	1600	1886	5249
103.0	337.9	10.78	12.60	6.45	8.92	10.52	5.88	508	1770	1665	5807
103.5	339.6	10.50	12.42	6.57	8.68	10.48	5.99	532	1724	1745	5657
104.0	341.2	10.36	10.44	6.57	8.40	8.44	6.00	505	1754	1657	5756
104.5	342.8	10.40	10.34	6.57	8.56	8.52	6.00	546	1739	1793	5706
105.0	344.5	10.22	10.16	6.59	8.50	8.42	5.98	578	1653	1896	5423
105.5	346.1	10.04	10.08	6.45	8.72	8.74	5.85	752	1667	2467	5468
106.0	347.8	10.14	10.08	6.48	8.44	8.34	5.90	581	1739	1907	5706
106.5	349.4	10.20	10.20	6.63	8.60	8.64	6.02	633	1653	2076	5423
107.0	351.0	10.04	10.00	6.47	8.52	8.52	5.90	667	1770	2187	5807
107.5	352.7	10.00	9.94	6.48	8.30	8.36	5.92	610	1786	2001	5859
108.0	354.3	9.84	9.76	6.50	8.10	8.10	5.93	588	1770	1930	5807
108.5	356.0	9.78	10.14	6.53	8.22	8.58	5.95	641	1709	2103	5608
109.0	357.6	9.52	9.54	6.52	7.98	8.04	5.95	658	1739	2158	5706
109.5	359.3	9.46	9.50	6.59	7.92	7.98	6.02	654	1754	2144	5756
110.0	360.9	9.38	9.40	6.60	7.86	7.90	6.00	662	1667	2173	5468
110.5	362.5	9.34	9.36	6.61	7.82	7.88	6.00	667	1653	2187	5423
111.0	364.2	9.36	9.34	6.62	7.90	7.92	6.00	694	1613	2278	5292
111.5	365.8	9.32	9.26	6.61	8.06	8.02	5.98	800	1600	2625	5249
112.0	367.5	9.36	9.34	6.56	7.82	7.74	5.97	637	1695	2090	5561
112.5	369.1	9.54	9.56	6.54	7.68	7.72	5.95	541	1695	1773	5561
113.0	370.7	9.34	9.34	6.54	7.82	7.84	5.94	662	1681	2173	5514
113.5	372.4	9.34	9.20	6.55	7.82	7.78	5.97	680	1724	2232	5657
114.0	374.0	9.30	9.28	6.52	7.70	7.72	5.92	633	1667	2076	5468
114.5	375.7	9.28	9.26	6.48	7.80	7.84	5.90	690	1724	2263	5657
115.0	377.3	9.20	9.24	6.49	7.74	7.84	5.93	699	1786	2294	5859
115.5	378.9	9.22	9.32	6.49	7.78	7.90	5.92	699	1754	2294	5756
116.0	380.6	9.40	9.54	6.46	7.80	7.98	5.89	633	1754	2076	5756
116.5	382.2	9.46	9.58	6.34	7.52	7.66	5.78	518	1786	1700	5859

Table 4, continued. UDOT 400' Boring, Suspension R1-R2 depth, pick times, and velocities collected 4/15/03

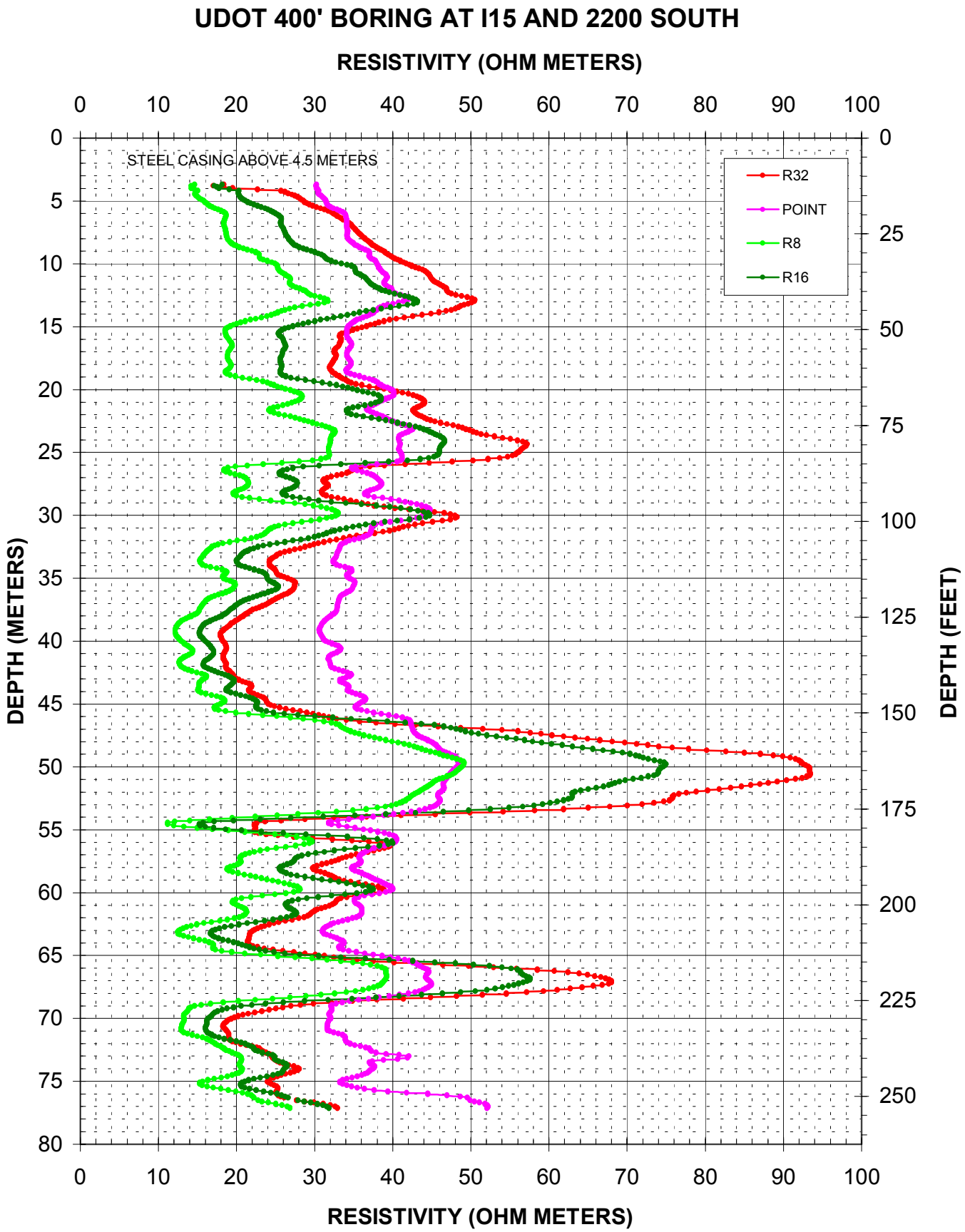


Figure 5. UDOT 400' Boring, Resistivity data

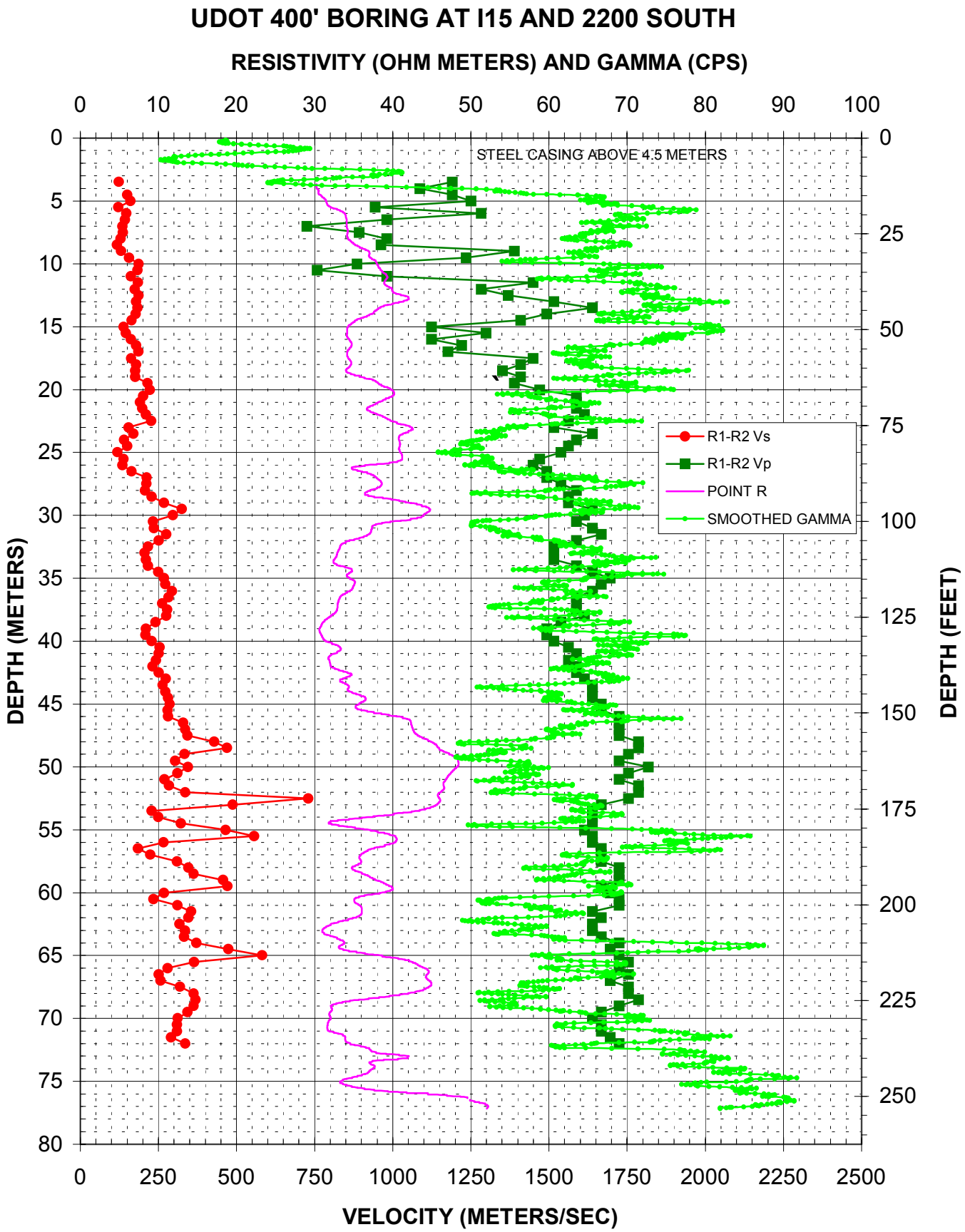


Figure 6. UDOT 400' Boring, Gamma, Point Resistivity and Suspension velocities

APPENDIX A

SUSPENSION VELOCITY MEASUREMENT QUALITY ASSURANCE SUSPENSION SOURCE TO RECEIVER ANALYSIS RESULTS

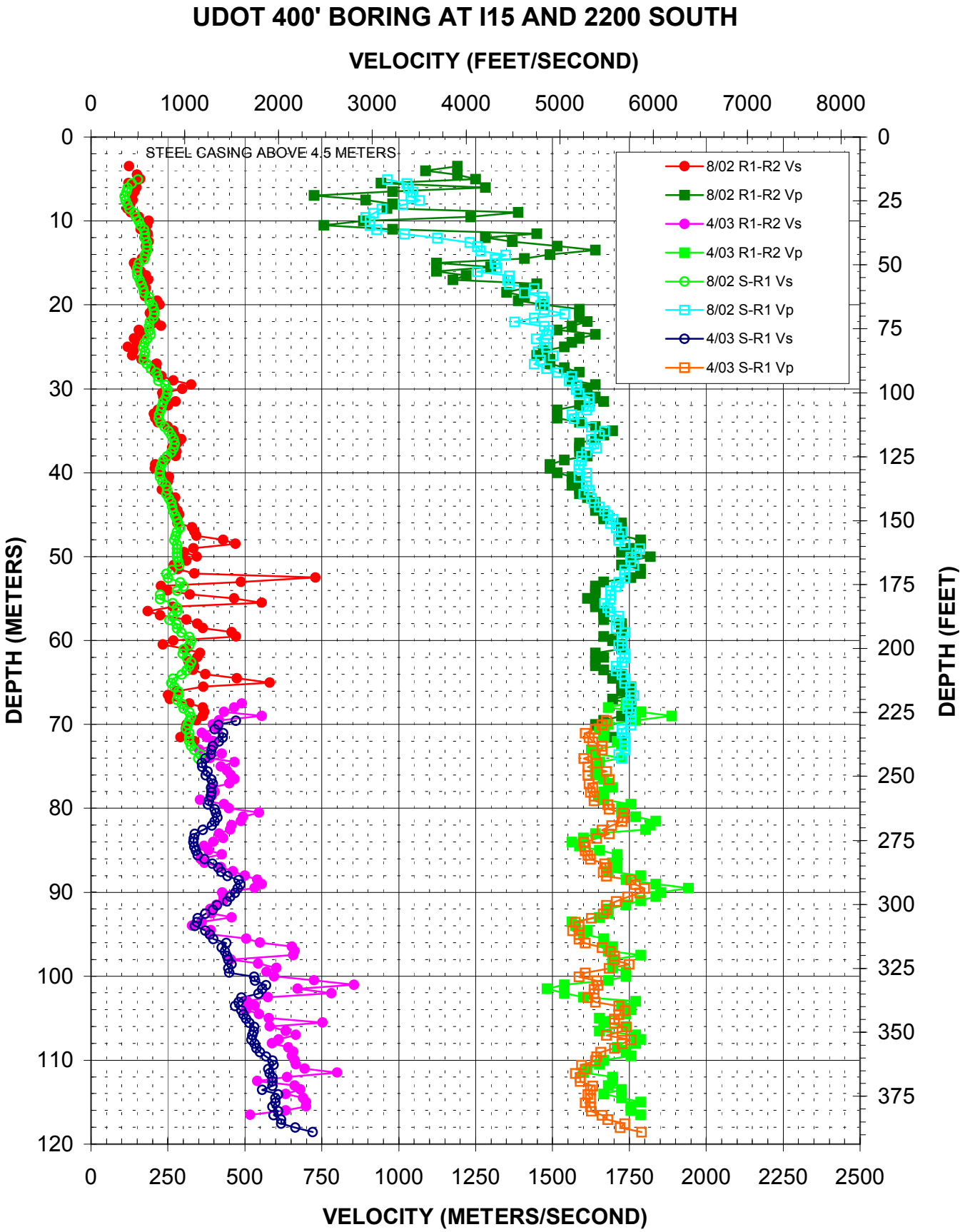


Figure A-1. UDOT 400' Boring, R1 - R2 high resolution analysis and S-R1 quality assurance analysis P- and S_H-wave data

Depth (meters)	Velocity V-S_H (m/sec)	Velocity V-p (m/sec)	Depth (feet)	Velocity V- S_H (ft/sec)	Velocity V-p (ft/sec)
5.1	153	963	16.6	503	3160
5.6	132	1026	18.3	435	3367
6.1	120	1033	19.9	394	3389
6.6	116	1047	21.6	380	3434
7.1	110	1040	23.2	360	3411
7.6	113	1068	24.8	371	3504
8.1	119	1013	26.5	392	3323
8.6	126	946	28.1	414	3103
9.1	141	918	29.8	464	3012
9.6	146	892	31.4	480	2927
10.1	156	908	33.0	513	2977
10.6	162	908	34.7	531	2977
11.1	173	929	36.3	568	3048
11.6	176	1019	38.0	579	3345
12.1	176	1125	39.6	579	3692
12.6	182	1231	41.2	597	4040
13.1	181	1256	42.9	594	4121
13.6	181	1266	44.5	594	4154
14.1	176	1348	46.2	579	4421
14.6	173	1314	47.8	568	4310
15.1	156	1314	49.4	513	4310
15.6	152	1319	51.1	499	4329
16.1	150	1256	52.7	491	4121
16.6	151	1359	54.4	495	4460
17.1	159	1353	56.0	522	4440
17.6	165	1359	57.6	541	4460
18.1	170	1440	59.3	557	4726
18.6	173	1408	60.9	568	4620
19.1	189	1467	62.6	621	4814
19.6	191	1474	64.2	626	4837
20.1	201	1460	65.8	658	4792
20.6	205	1474	67.5	673	4837
21.1	207	1539	69.1	678	5050
21.6	204	1440	70.8	669	4726
22.1	192	1377	72.4	630	4518
22.6	189	1474	74.0	619	4837
23.1	190	1488	75.7	622	4882
23.6	195	1481	77.3	640	4859
24.1	183	1447	79.0	599	4747
24.6	174	1474	80.6	572	4837

Depth (meters)	Velocity V-S_H (m/sec)	Velocity V-p (m/sec)	Depth (feet)	Velocity V- S_H (ft/sec)	Velocity V-p (ft/sec)
25.1	170	1481	82.3	557	4859
25.6	175	1454	83.9	576	4769
26.1	173	1502	85.5	568	4929
26.6	172	1460	87.2	564	4792
27.1	181	1440	88.8	594	4726
27.6	195	1481	90.5	640	4859
28.1	211	1517	92.1	694	4977
28.6	218	1562	93.7	715	5125
29.1	219	1554	95.4	719	5100
29.6	242	1578	97.0	792	5177
30.1	248	1578	98.7	814	5177
30.6	248	1586	100.3	814	5203
31.1	243	1619	101.9	799	5310
31.6	235	1619	103.6	772	5310
32.1	231	1619	105.2	757	5310
32.6	228	1610	106.9	747	5283
33.1	222	1562	108.5	728	5125
33.6	220	1570	110.1	723	5151
34.1	226	1594	111.8	741	5229
34.6	239	1627	113.4	783	5338
35.1	252	1670	115.1	827	5480
35.6	262	1653	116.7	858	5422
36.1	270	1627	118.3	884	5338
36.6	273	1635	120.0	896	5366
37.1	270	1644	121.6	884	5394
37.6	262	1610	123.3	858	5283
38.1	248	1594	124.9	814	5229
38.6	235	1594	126.5	772	5229
39.1	229	1586	128.2	752	5203
39.6	225	1586	129.8	738	5203
40.1	223	1610	131.5	733	5283
40.6	225	1586	133.1	737	5203
41.1	232	1610	134.7	762	5283
41.6	245	1610	136.4	804	5283
42.1	248	1619	138.0	815	5310
42.6	245	1602	139.7	804	5256
43.1	254	1627	141.3	832	5338
43.6	261	1635	142.9	857	5366
44.1	263	1653	144.6	864	5422
44.6	267	1670	146.2	876	5480

Table A-1. UDOT 400' Boring, S - R1 quality assurance analysis P- and S_H -wave data collected 8/10/02

Depth (meters)	Velocity V-S_H (m/sec)	Velocity V-p (m/sec)	Depth (feet)	Velocity V- S_H (ft/sec)	Velocity V-p (ft/sec)
45.1	274	1679	147.9	897	5509
45.6	280	1697	149.5	918	5569
46.1	284	1688	151.1	933	5539
46.6	291	1707	152.8	956	5599
47.1	280	1725	154.4	918	5660
47.6	275	1716	156.1	904	5629
48.1	271	1716	157.7	890	5629
48.6	280	1735	159.4	918	5692
49.1	280	1784	161.0	918	5853
49.6	280	1774	162.6	918	5820
50.1	280	1754	164.3	918	5755
50.6	284	1754	165.9	933	5755
51.1	287	1764	167.6	942	5788
51.6	263	1735	169.2	864	5692
52.1	245	1735	170.8	804	5692
52.6	250	1735	172.5	821	5692
53.1	289	1716	174.1	949	5629
53.6	301	1707	175.8	989	5599
54.1	280	1688	177.4	918	5539
54.6	225	1688	179.0	737	5539
55.1	225	1688	180.7	737	5539
55.6	265	1670	182.3	870	5480
56.1	280	1679	184.0	918	5509
56.6	280	1688	185.6	918	5539
57.1	267	1716	187.2	876	5629
57.6	256	1707	188.9	839	5599
58.1	278	1716	190.5	912	5629
58.6	280	1707	192.2	918	5599
59.1	294	1735	193.8	965	5692
59.6	320	1725	195.4	1051	5660
60.1	326	1725	197.1	1071	5660
60.6	320	1716	198.7	1051	5629
61.1	301	1725	200.4	989	5660
61.6	299	1735	202.0	981	5692
62.1	312	1735	203.6	1024	5692
62.6	326	1725	205.3	1071	5660
63.1	320	1707	206.9	1051	5599
63.6	309	1707	208.6	1015	5599
64.1	296	1725	210.2	972	5660
64.6	267	1735	211.8	876	5692

Depth (meters)	Velocity V-S_H (m/sec)	Velocity V-p (m/sec)	Depth (feet)	Velocity V- S_H (ft/sec)	Velocity V-p (ft/sec)
65.1	261	1735	213.5	857	5692
65.6	271	1754	215.1	890	5755
66.1	284	1754	216.8	933	5755
66.6	284	1764	218.4	933	5788
67.1	280	1754	220.0	918	5755
67.6	296	1744	221.7	972	5723
68.1	301	1744	223.3	989	5723
68.6	320	1754	225.0	1051	5755
69.1	326	1754	226.6	1071	5755
69.6	320	1754	228.2	1051	5755
70.1	315	1754	229.9	1032	5755
70.6	310	1725	231.5	1016	5660
71.1	320	1725	233.2	1051	5660
71.6	320	1735	234.8	1051	5692
72.1	320	1735	236.5	1051	5692
72.6	326	1735	238.1	1071	5692
73.1	336	1735	239.7	1103	5692
73.6	356	1716	241.4	1168	5629
74.1	349	1725	243.0	1145	5660

Table A-1, continued. UDOT 400' Boring, S - R1 quality assurance analysis P- and S_H -wave data collected 8/10/02

Depth (meters)	Velocity V-S_H (m/sec)	Velocity V-p (m/sec)	Depth (feet)	Velocity V- S_H (ft/sec)	Velocity V-p (ft/sec)
69.6	471	1675	228.2	1547	5494
70.1	414	1661	229.9	1359	5451
70.6	402	1640	231.5	1319	5380
71.1	430	1606	233.2	1411	5269
71.6	428	1619	234.8	1404	5310
72.1	417	1631	236.5	1368	5352
72.6	396	1661	238.1	1301	5451
73.1	393	1661	239.7	1288	5451
73.6	389	1640	241.4	1275	5380
74.1	372	1602	243.0	1221	5256
74.6	360	1644	244.7	1181	5394
75.1	362	1614	246.3	1187	5297
75.6	379	1675	247.9	1244	5494
76.1	374	1614	249.6	1226	5297
76.6	393	1684	251.2	1288	5524
77.1	396	1619	252.9	1301	5310
77.6	391	1631	254.5	1281	5352
78.1	393	1623	256.1	1288	5324
78.6	389	1635	257.8	1275	5366
79.1	383	1635	259.4	1256	5366
79.6	381	1679	261.1	1250	5509
80.1	403	1684	262.7	1321	5524
80.6	407	1730	264.3	1334	5676
81.1	411	1730	266.0	1348	5676
81.6	403	1725	267.6	1321	5660
82.1	394	1693	269.3	1293	5554
82.6	363	1661	270.9	1192	5451
83.1	338	1684	272.5	1108	5524
83.6	334	1644	274.2	1097	5394
84.1	333	1602	275.8	1094	5256
84.6	336	1606	277.5	1103	5269
85.1	341	1606	279.1	1120	5269
85.6	347	1614	280.7	1140	5297
86.1	369	1623	282.4	1209	5324
86.6	394	1670	284.0	1294	5480
87.1	414	1675	285.7	1359	5494
87.6	423	1666	287.3	1388	5465
88.1	445	1675	288.9	1459	5494
88.6	480	1754	290.6	1575	5755
89.1	486	1769	292.2	1595	5804

Depth (meters)	Velocity V-S_H (m/sec)	Velocity V-p (m/sec)	Depth (feet)	Velocity V- S_H (ft/sec)	Velocity V-p (ft/sec)
89.6	477	1799	293.9	1566	5904
90.1	469	1784	295.5	1538	5853
90.6	452	1744	297.1	1484	5723
91.1	442	1707	298.8	1451	5599
91.6	409	1675	300.4	1341	5494
92.1	396	1675	302.1	1301	5494
92.6	372	1666	303.7	1221	5465
93.1	347	1627	305.3	1140	5338
93.6	344	1574	307.0	1130	5164
94.1	338	1586	308.6	1108	5203
94.6	372	1566	310.3	1221	5138
95.1	387	1586	311.9	1269	5203
95.6	398	1586	313.5	1307	5203
96.1	440	1606	315.2	1443	5269
96.6	426	1661	316.8	1397	5451
97.1	435	1688	318.5	1427	5539
97.6	442	1702	320.1	1451	5584
98.1	448	1702	321.8	1469	5584
98.6	458	1749	323.4	1502	5739
99.1	447	1684	325.0	1467	5524
99.6	450	1606	326.7	1476	5269
100.1	530	1586	328.3	1740	5203
100.6	534	1644	330.0	1752	5394
101.1	569	1648	331.6	1866	5408
101.6	557	1635	333.2	1827	5366
102.1	545	1635	334.9	1789	5366
102.6	489	1614	336.5	1605	5297
103.1	480	1640	338.2	1575	5380
103.6	469	1716	339.8	1538	5629
104.1	489	1735	341.4	1605	5692
104.6	495	1716	343.1	1625	5629
105.1	505	1702	344.7	1656	5584
105.6	515	1702	346.4	1689	5584
106.1	530	1740	348.0	1740	5707
106.6	529	1725	349.6	1734	5660
107.1	525	1675	351.3	1723	5494
107.6	522	1754	352.9	1711	5755
108.1	531	1725	354.6	1743	5660
108.6	538	1702	356.2	1764	5584
109.1	549	1657	357.8	1801	5436

Table A-2. UDOT 400' Boring, S - R1 quality assurance analysis P- and S_H -wave data collected 4/15/03

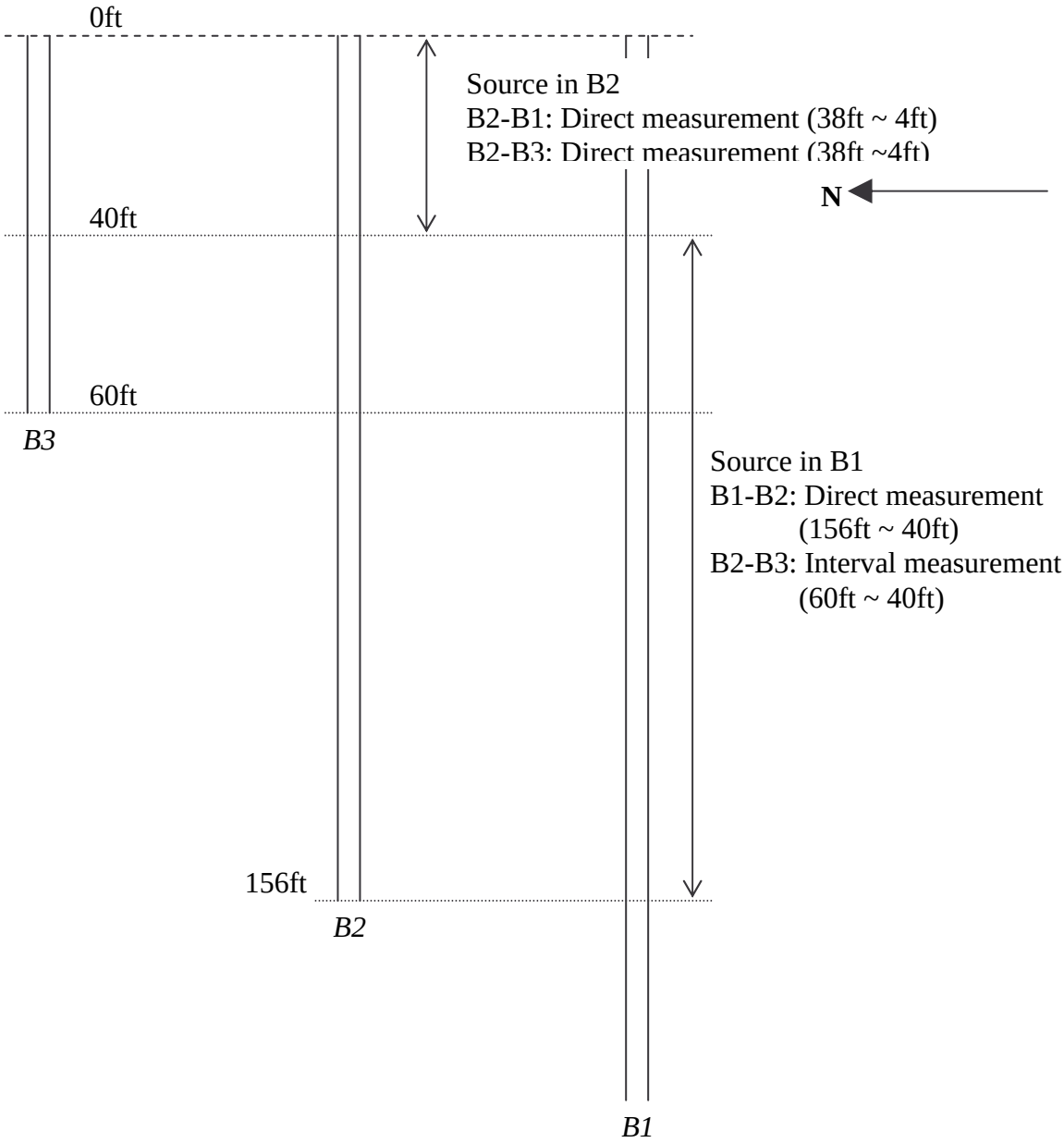
Depth (meters)	Velocity V-S_H (m/sec)	Velocity V-p (m/sec)	Depth (feet)	Velocity V- S_H (ft/sec)	Velocity V-p (ft/sec)
109.6	569	1644	359.5	1868	5394
110.1	590	1640	361.1	1936	5380
110.6	595	1594	362.8	1951	5229
111.1	577	1606	364.4	1894	5269
111.6	581	1574	366.0	1908	5164
112.1	590	1590	367.7	1936	5216
112.6	590	1590	369.3	1936	5216
113.1	590	1631	371.0	1936	5352
113.6	557	1623	372.6	1827	5324
114.1	609	1614	374.2	1996	5297
114.6	599	1623	375.9	1966	5324
115.1	599	1606	377.5	1966	5269
115.6	590	1623	379.2	1936	5324
116.1	609	1627	380.8	1996	5338
116.6	595	1661	382.4	1951	5451
117.1	618	1679	384.1	2028	5509
117.6	618	1735	385.7	2028	5692
118.1	665	1721	387.4	2183	5645
118.6	720	1789	389.0	2363	5870

Table A-2, continued. UDOT 400' Boring, S - R1 quality assurance analysis P- and S_H -wave data collected 4/15/03

Appendix 3

Cross Hole data by Dr. James Bay, Utah State University

Test Description at I-15 and 2100 South



We measured p and shear wave velocities like the description above.
Because we could not obtain clear phase due to the long spacing (B1-B3), we moved our source from B1 to B2 for 38ft-4ft measurements.

Cross hole testing at I-15 and 2100 South from Utah State University

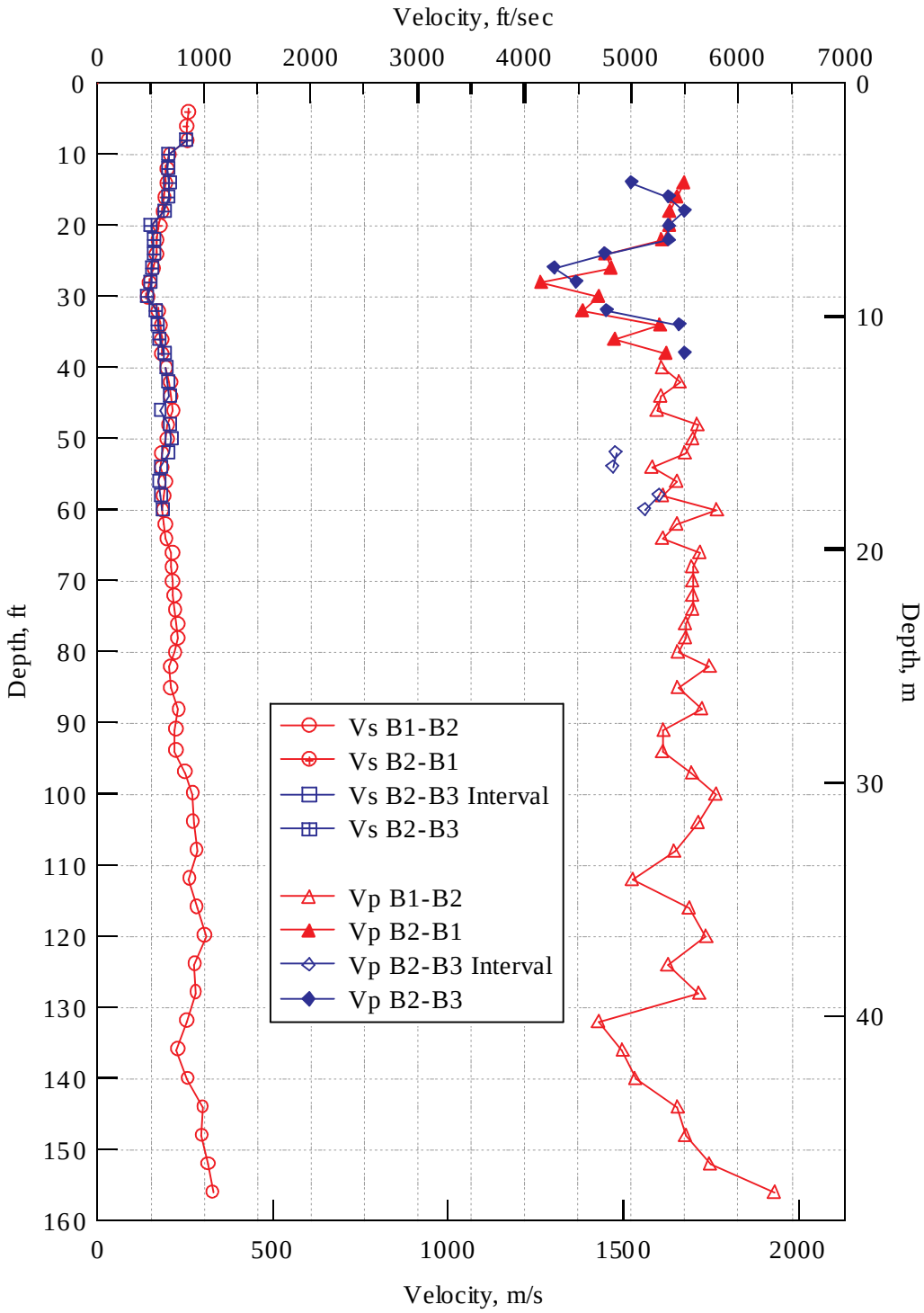


Figure 1. Velocity profile

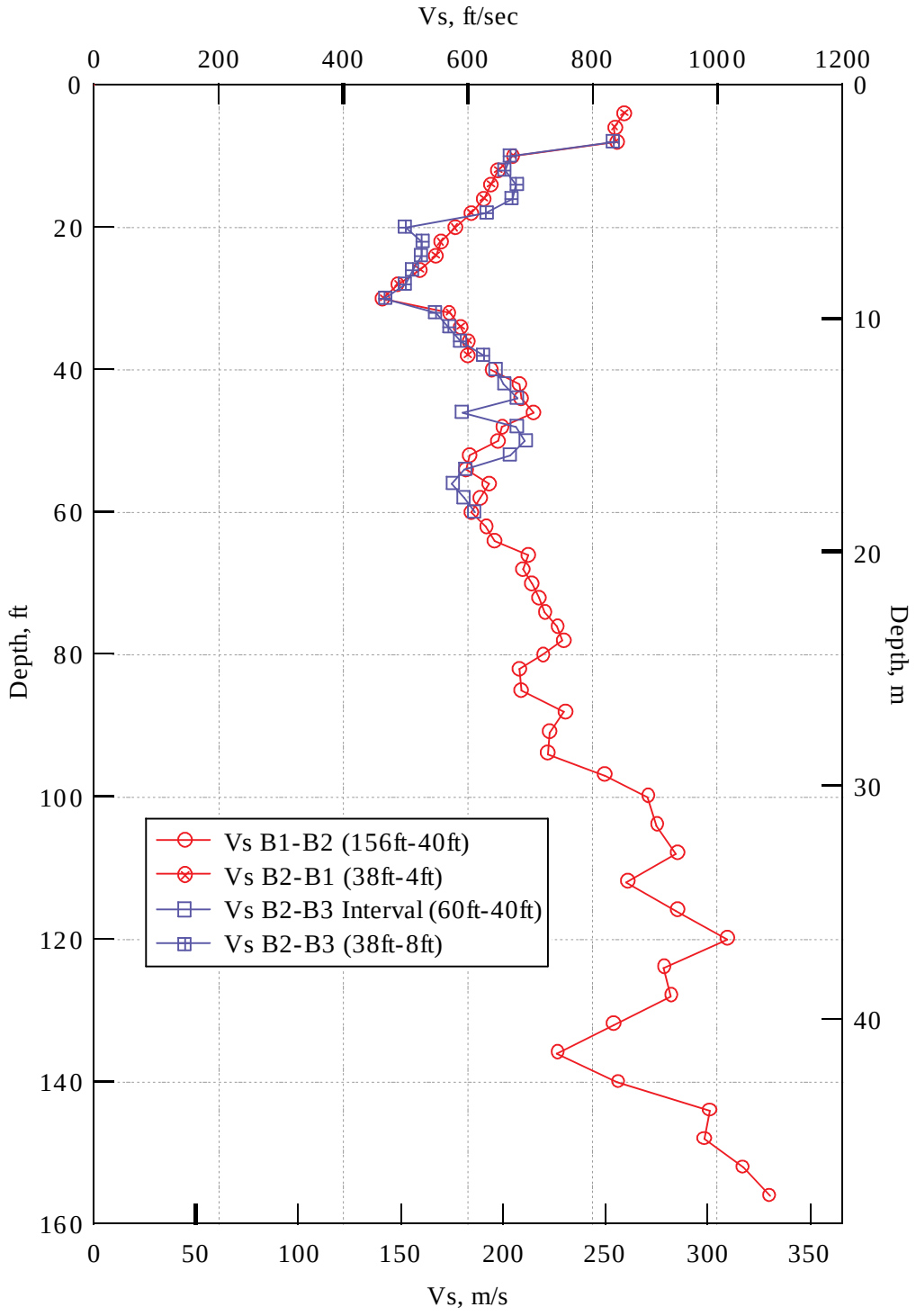


Figure 2. Shear wave velocity

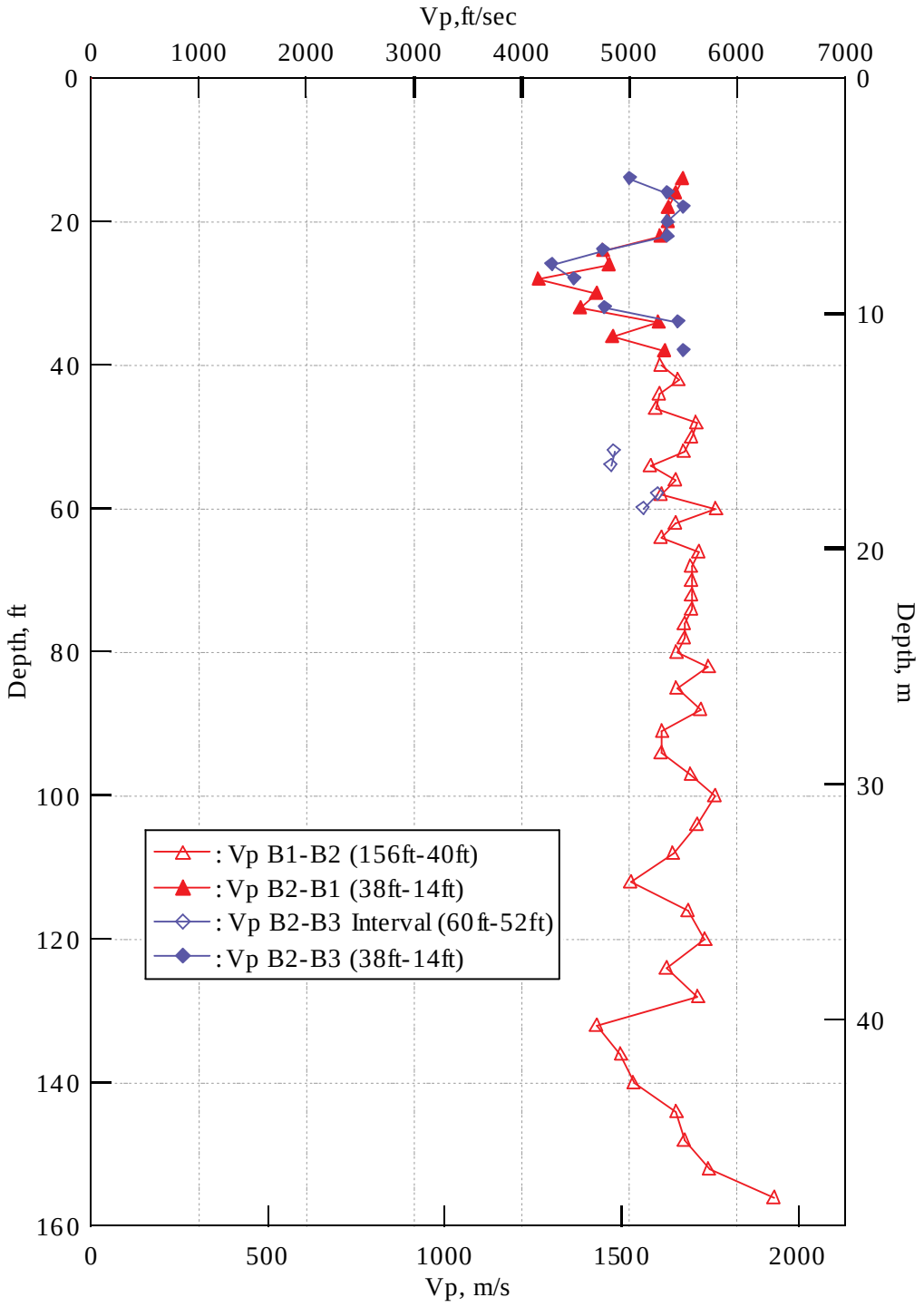


Figure 3. P-wave velocity

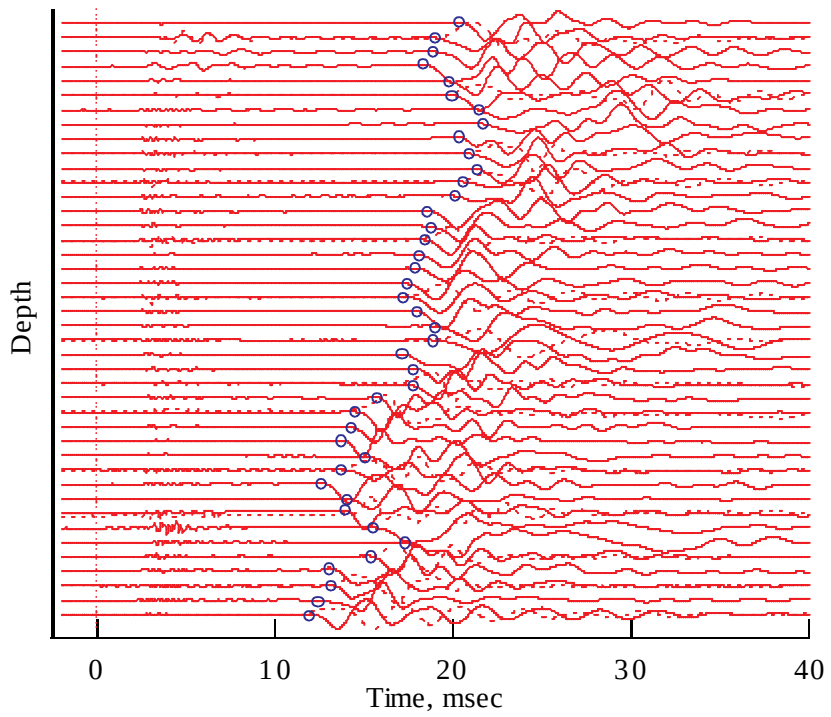


Figure 4. Picks for Vs at B1-B2 (156ft-40ft)

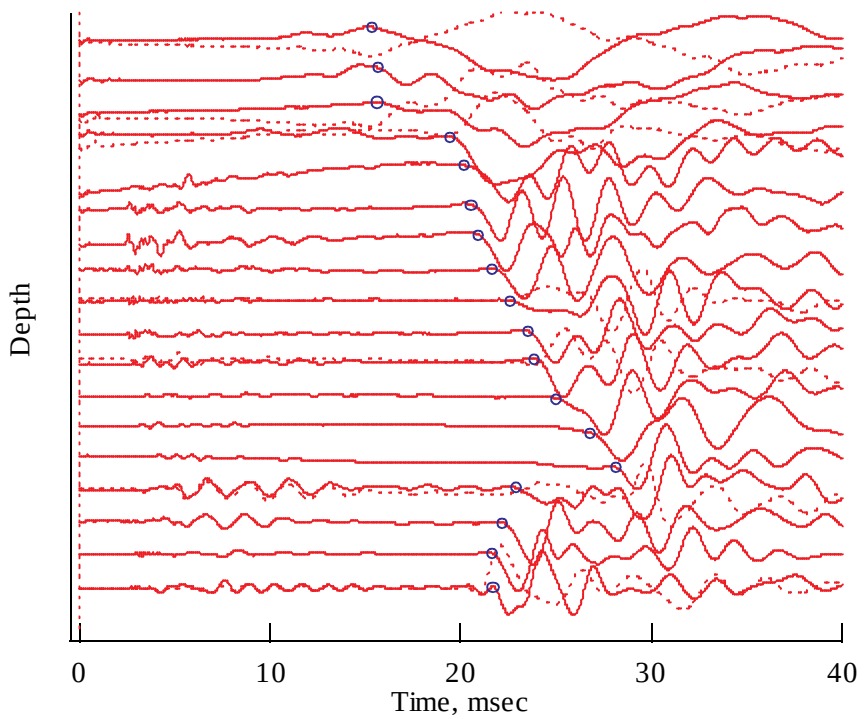


Figure 5. Picks for Vs at B2-B1 (38ft-4ft)

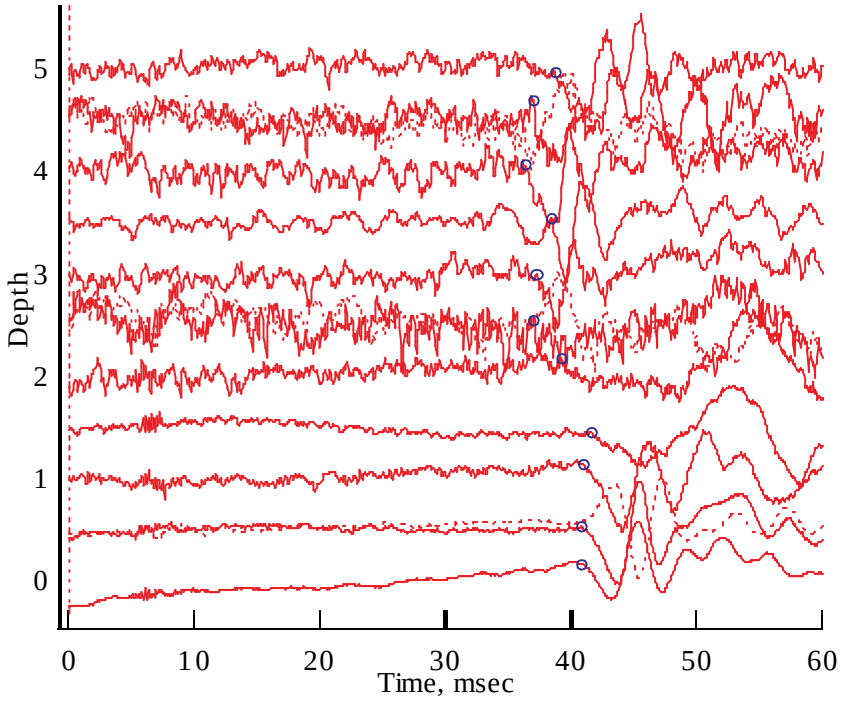


Figure 6. Picks for Vs at B2-B3 interval (60ft-40ft)

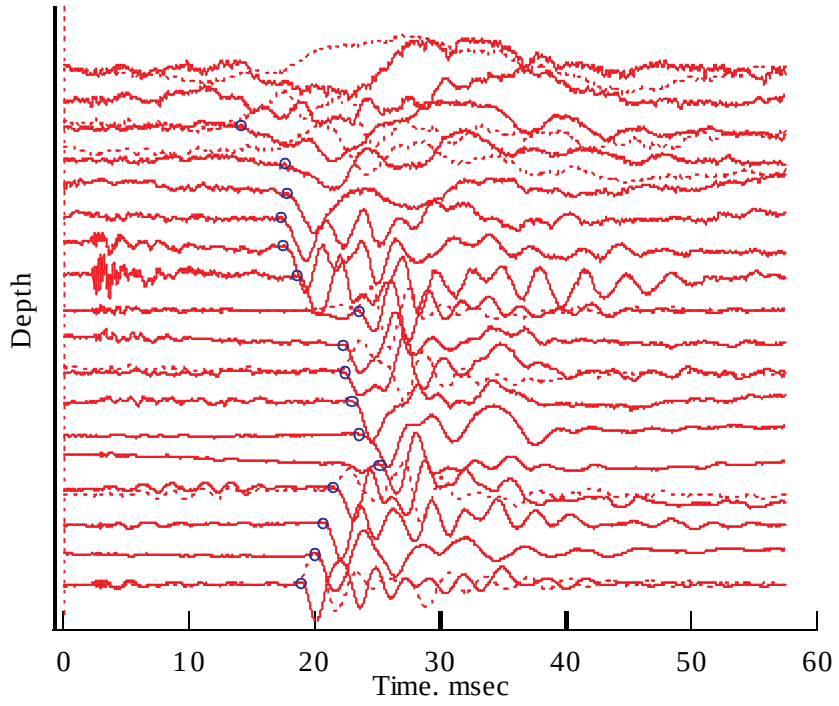


Figure 7. Picks for Vs at B2-B3 (38ft-4ft)

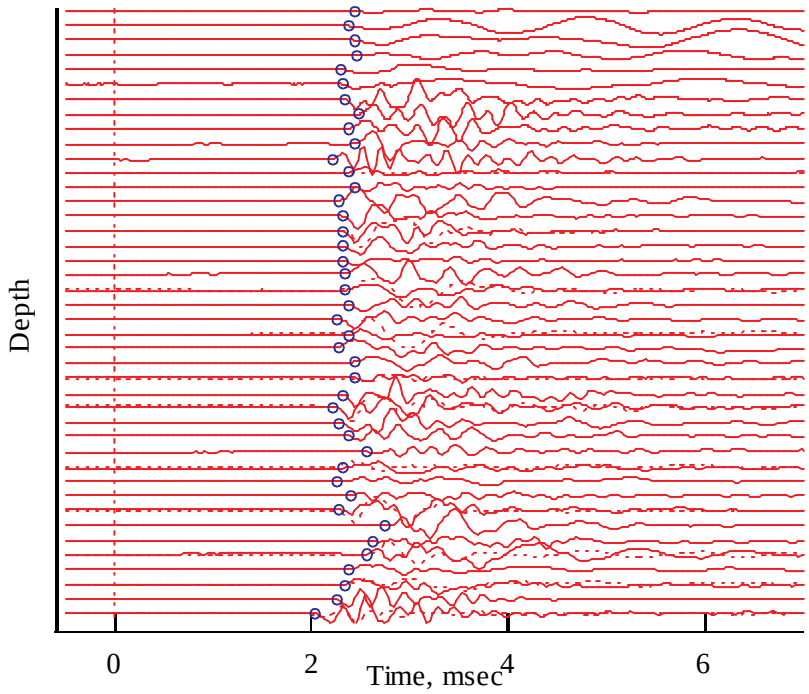


Figure 8. Picks for Vp at B1-B2 (156ft-40ft)

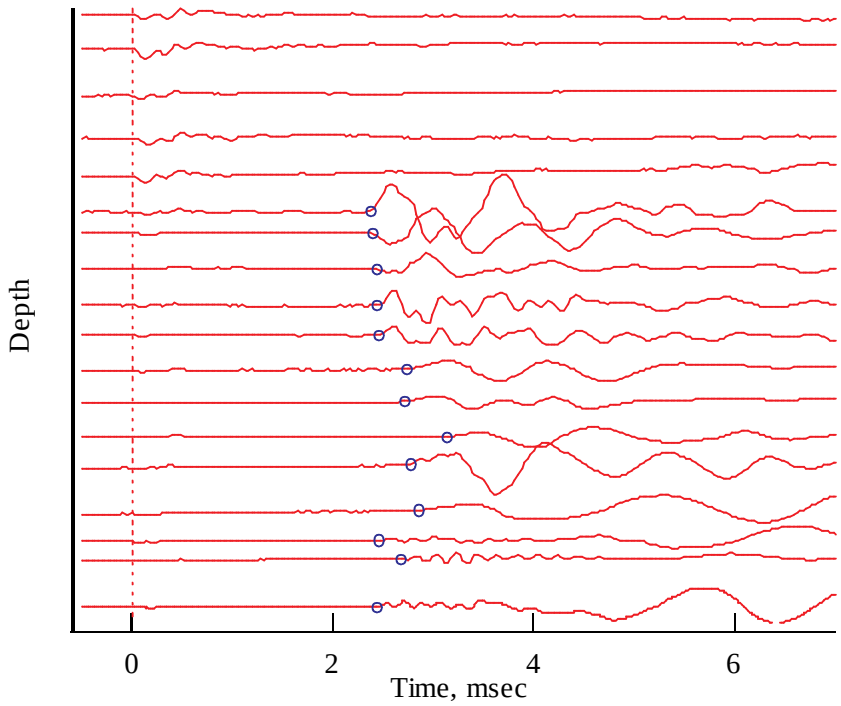


Figure 9. Picks for Vp at B2-B1 (38ft-4ft)

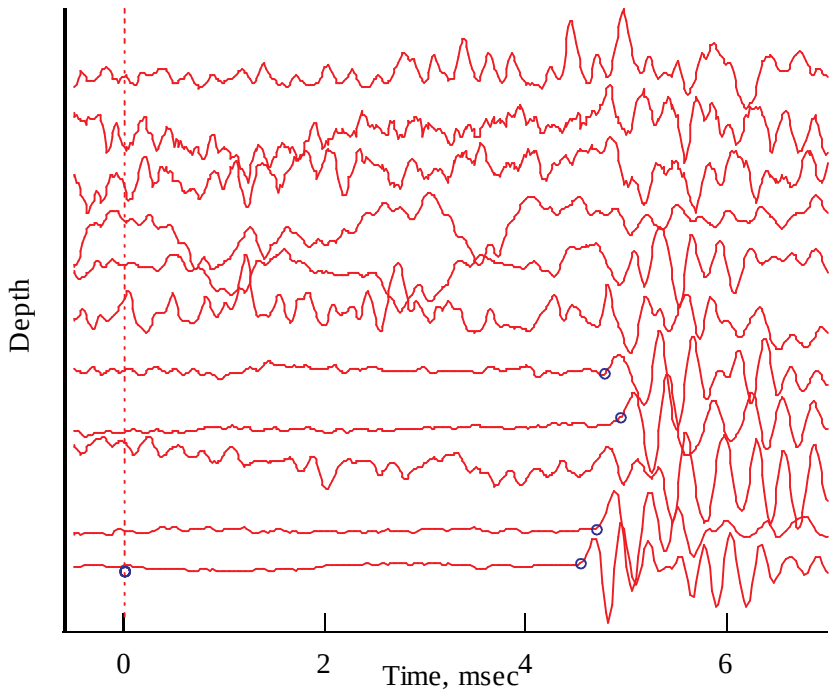


Figure 10. Picks for Vp at B2-B3 interval (60ft-40ft)

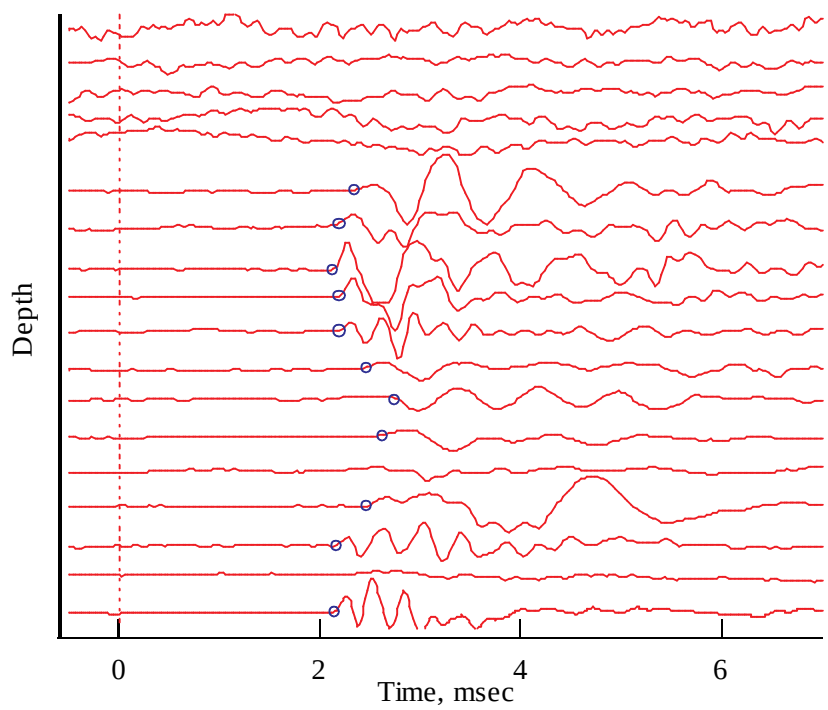


Figure 11. Picks for Vp at B2-B3 (38ft-4ft)

Direct Measurement B1-B2

Depth, ft	Spacing, ft	Shear Wave		P-Wave	
		Δt, msec	Vs, ft/sec	Δt, msec	Vp, ft/sec
156	12.9721	11.963	1084.35	2.0447	6344.25
152	12.9593	12.451	1040.82	2.2583	5738.52
148	12.9465	13.214	979.757	2.3499	5509.39
144	12.9335	13.092	987.895	2.3804	5433.34
140	12.9192	15.381	839.944	2.5635	5039.67
136	12.9114	17.365	743.531	2.6245	4919.57
132	12.9042	15.503	832.369	2.7466	4698.25
128	12.8945	13.947	924.533	2.2888	5633.72
124	12.8851	14.099	913.903	2.4109	5344.52
120	12.8719	12.665	1016.33	2.2583	5699.8
116	12.8624	13.763	934.562	2.3193	5545.8
112	12.8581	15.045	854.64	2.5635	5015.82
108	12.8614	13.763	934.488	2.3804	5403.02
104	12.8776	14.282	901.664	2.2888	5626.34
100	12.9003	14.526	888.084	2.2278	5790.61
97	12.9178	15.778	818.721	2.3193	5569.69
94	12.9326	17.761	728.146	2.4414	5297.21
91	12.9429	17.731	729.961	2.4414	5301.44
88	12.9497	17.151	755.041	2.2888	5657.86
85	12.9525	18.921	684.559	2.3804	5441.33
82	12.9527	19.012	681.291	2.2583	5735.6
80	12.9512	17.975	720.51	2.3804	5440.75
78	12.9486	17.212	752.299	2.3499	5510.26
76	12.9451	17.426	742.864	2.3499	5508.8
74	12.9411	17.883	723.653	2.3193	5579.74
72	12.9367	18.127	713.67	2.3193	5577.84
70	12.9321	18.402	702.754	2.3193	5575.85
68	12.9279	18.799	687.688	2.3193	5574.03
66	12.9245	18.555	696.551	2.2888	5646.85
64	12.9218	20.142	641.533	2.4414	5292.77
62	12.92	20.538	629.077	2.3804	5427.65
60	12.9193	21.362	604.78	2.2278	5799.14
58	12.921	20.874	618.997	2.4414	5292.43
56	12.9251	20.386	634.02	2.3804	5429.82
54	12.9302	21.667	596.768	2.4872	5198.69
52	12.9359	21.484	602.116	2.3499	5504.85
50	12.9422	19.958	648.471	2.3193	5580.21
48	12.9513	19.775	654.934	2.3041	5620.98
46	12.9628	18.372	705.573	2.4719	5244.06
44	12.9743	18.921	685.707	2.4567	5281.17
42	12.9858	19.043	681.919	2.3804	5455.3
40	12.9968	20.386	637.537	2.4567	5290.36

Direct Measurement B2-B1

Depth, ft	Spacing, ft	Shear Wave		P-Wave	
		Δt, msec	Vs, ft/sec	Δt, msec	Vp, ft/sec
38	13.0072	21.698	599.467	2.4414	5327.78
36	13.0166	21.667	600.756	2.6855	4846.99
34	13.0259	22.156	587.917	2.4719	5269.59
32	13.0342	22.858	570.224	2.8687	4543.58
30	13.0418	28.107	464.004	2.7771	4696.18
28	13.0505	26.764	487.613	3.1433	4151.84
26	13.0599	24.994	522.521	2.7161	4808.33
24	13.068	23.804	548.985	2.7466	4757.89
22	13.0748	23.499	556.399	2.4719	5289.38
20	13.0805	22.583	579.217	2.4414	5357.77
18	13.0828	21.637	604.648	2.4414	5358.71
16	13.0834	20.905	625.851	2.4109	5426.77
14	13.0841	20.538	637.066	2.3804	5496.58
12	13.0843	20.172	648.635		
10	13.0854	19.47	672.078		
8	13.0891	15.625	837.704		
6	13.0959	15.686	834.878		
4	13.1058	15.411	850.417		

B1: Borehole 1
B2: Borehole 2
B2: Borehole 3

Interval Measurement B2-B3

Depth, ft	Spacing, ft	Shear Wave		P-Wave	
		Δt, msec	Vs, ft/sec	Δt, msec	Vp, ft/sec
60	11.899	19.471	611.112	2.3193	5130.41
58	11.8898	20.02	593.898	2.2583	5264.95
56	11.8762	20.63	575.677		
54	11.8669	19.959	594.566	2.4566	4830.64
52	11.8631	17.762	667.894	2.4414	4859.15
50	11.8638	17.151	691.728		
48	11.8653	17.517	677.358		
46	11.861	20.08	590.685		
44	11.8541	17.456	679.085		
42	11.8486	18.005	658.072		
40	11.8436	18.371	644.692		

Direct Measurement B2-B3

Depth, ft	Spacing, ft	Shear Wave		P-Wave	
		Δt, msec	Vs, ft/sec	Δt, msec	Vp, ft/sec
38	11.8409	18.951	624.815	2.1515	5503.54
36	11.8271	20.111	588.091		
34	11.8133	20.752	569.26	2.1667	5452.2
32	11.8023	21.515	548.562	2.4719	4774.59
30	11.793	25.238	467.271		
28	11.7784	23.59	499.298	2.6245	4487.88
26	11.7638	23.01	511.247	2.7466	4283.04
24	11.7554	22.4	524.796	2.4719	4755.63
22	11.7528	22.308	526.843	2.1973	5348.75
20	11.7568	23.56	499.017	2.1973	5350.58
18	11.7557	18.677	629.42	2.1362	5503.08
16	11.7524	17.517	670.915	2.1973	5348.57
14	11.7552	17.334	678.159	2.3499	5002.43
12	11.7655	17.853	659.023		
10	11.782	17.639	667.949		
8	11.7966	14.16	833.095		

B1: Borehole 1
B2: Borehole 2
B2: Borehole 3

Conelec Inc. - CPT Interpretation
Interpretation Output - Release 1.00.06
Run No: 96-0709-1243-2138
Job No: 96-308
Client: Dames & Moore
Project: 115 2400S Project
Site: SV-CS-11
Location: 600W & Andy Ave
Cone: 20 TON A 081
CPT Date: 96/22/04
CPT Time: 08:53
CPT File: 308CS11.COR

Water Table (m): 3.80 (ft): 12.5
Averaging Increment (m): 0.25
Su Nkt used: 12.50
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
Used Unit Weights Assigned to Soil Zones

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60 (blows/ft)	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
0.41	0.12	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	1.0
1.23	0.38	0.0	0.0	0.0	7.3	0.0	0.0	0.0	0.0	0.0	0.0	1.0
2.05	0.62	0.0	0.0	0.0	12.2	0.0	0.0	0.0	0.0	0.0	0.0	1.0
2.87	0.88	0.0	0.0	0.0	17.1	0.0	0.0	0.0	0.0	0.0	0.0	1.0
3.69	1.12	0.0	0.0	0.0	21.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0
4.51	1.38	0.0	0.0	0.0	26.8	0.0	0.0	0.0	0.0	0.0	0.0	1.0
5.33	1.62	0.0	0.0	0.0	31.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0
6.15	1.88	0.0	0.0	0.0	36.6	0.0	0.0	0.0	0.0	0.0	0.0	1.0
6.97	2.12	1974.3	88.3	4.5	41.2	0.0	19.7	30.1	154.7	0.0	0.0	6.0
7.79	2.38	1505.5	58.3	3.9	45.6	0.0	15.1	21.8	116.8	0.0	0.0	6.0
8.61	2.62	721.5	24.1	3.3	49.9	0.0	7.2	10.0	53.7	0.0	0.0	6.0
9.43	2.88	574.8	15.3	2.7	54.3	0.0	5.7	7.6	41.6	0.0	0.0	3.0
10.25	3.12	1007.2	38.4	3.8	58.7	0.0	10.1	12.9	75.9	0.0	0.0	6.0
11.07	3.38	997.3	43.7	4.4	63.1	0.0	10.0	12.3	74.7	0.0	0.0	6.0
11.89	3.62	1344.1	42.8	3.2	67.5	0.0	9.0	10.7	102.1	0.0	0.0	6.0
12.71	3.88	1025.0	17.6	1.7	71.3	0.7	5.1	5.9	76.2	0.0	0.0	6.0
13.53	4.12	1352.6	39.5	2.9	73.3	3.2	6.8	7.7	102.1	0.0	0.0	6.0
14.35	4.38	2480.6	28.9	1.2	75.4	5.6	9.9	11.2	192.0	31.4	36.0	6.0
15.17	4.62	5487.5	28.8	0.5	77.5	8.1	13.7	15.2	0.0	53.7	40.0	1.0
15.99	4.88	7113.6	47.7	0.7	79.8	10.5	17.8	19.5	0.0	60.7	42.0	1.0
16.81	5.12	8279.4	112.4	1.4	82.1	13.0	20.7	22.4	0.0	64.7	42.0	1.0
17.63	5.38	5207.9	149.9	2.9	84.3	15.5	20.8	22.2	408.7	51.0	40.0	10.0
18.45	5.62	5368.3	132.2	2.5	86.3	17.9	21.5	22.6	421.1	51.5	40.0	10.0
19.27	5.88	2548.9	88.5	3.5	88.4	20.4	12.7	13.3	195.2	0.0	0.0	6.0
20.09	6.12	1488.7	49.6	3.3	90.4	22.8	9.9	10.2	110.0	0.0	0.0	6.0
20.92	6.38	1677.7	47.9	2.9	92.5	25.3	8.4	8.5	124.8	0.0	0.0	6.0
21.74	6.62	1373.6	33.6	2.4	94.5	27.7	6.9	6.9	100.1	0.0	0.0	6.0
22.56	6.88	1490.7	41.5	2.8	96.6	30.2	7.5	7.4	109.1	0.0	0.0	6.0
23.38	7.12	940.1	22.2	2.4	98.6	32.6	4.7	4.6	64.7	0.0	0.0	3.0
24.20	7.38	791.3	12.7	1.6	100.7	35.1	4.0	3.9	52.4	0.0	0.0	3.0
25.02	7.62	1006.7	17.8	1.8	102.7	37.5	5.0	4.9	69.3	0.0	0.0	3.0
25.84	7.88	825.4	14.2	1.7	104.8	40.0	4.1	3.9	54.4	0.0	0.0	3.0
26.66	8.12	907.4	17.1	1.9	106.8	42.4	4.5	4.3	60.7	0.0	0.0	3.0
27.48	8.38	768.0	11.4	1.5	108.9	44.9	3.8	3.6	49.1	0.0	0.0	1.5
28.30	8.62	702.1	9.3	1.3	110.9	47.3	3.5	3.3	43.5	0.0	0.0	1.5
29.12	8.88	717.5	12.2	1.7	113.0	49.8	3.6	3.3	44.4	0.0	0.0	1.5
29.94	9.12	653.2	10.6	1.6	115.0	52.2	3.3	3.0	38.9	0.0	0.0	1.5
30.76	9.38	648.6	8.2	1.3	117.1	54.7	3.2	2.9	38.1	0.0	0.0	1.5
31.58	9.62	662.3	8.0	1.2	119.1	57.1	3.3	3.0	38.9	0.0	0.0	1.5
32.40	9.88	634.4	7.6	1.2	121.2	59.6	3.2	2.8	36.3	0.0	0.0	1.5
33.22	10.12	663.1	7.1	1.1	123.2	62.0	3.3	2.9	38.2	0.0	0.0	1.5
34.04	10.38	708.4	7.8	1.1	125.2	64.5	3.5	3.1	41.5	0.0	0.0	1.5
34.86	10.62	705.3	7.9	1.1	127.3	67.0	3.5	3.1	40.9	0.0	0.0	1.5
35.68	10.88	831.0	14.3	1.7	129.3	69.4	4.2	3.6	50.6	0.0	0.0	1.5
36.50	11.12	627.5	7.3	1.2	131.4	71.9	3.1	2.7	33.9	0.0	0.0	1.5
37.32	11.38	706.1	6.9	1.0	133.4	74.3	3.5	3.0	39.9	0.0	0.0	1.5
38.14	11.62	781.4	10.9	1.4	135.5	76.8	3.9	3.3	45.5	0.0	0.0	1.5
38.96	11.88	1410.2	23.0	1.6	137.5	79.2	5.6	4.7	95.5	30.0	30.0	3.0
39.78	12.12	815.8	9.8	1.2	139.6	81.7	4.1	3.4	47.6	0.0	0.0	1.5
40.60	12.38	1976.3	55.5	2.8	141.6	84.1	9.9	8.1	140.0	0.0	0.0	3.0
41.42	12.62	1865.0	52.8	2.8	143.7	86.6	9.3	7.6	130.8	0.0	0.0	3.0
42.24	12.88	1741.5	38.7	2.2	145.7	89.0	8.7	7.1	120.5	0.0	0.0	3.0

ConeTec Inc. - CPT Interpretation
Run No: 96-0709-1243-2138
CPT File: 308C811.CDR

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60 (blows/ft)	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
43.06	13.12	2012.4	49.6	2.5	147.8	91.5	10.1	8.1	141.9	0.0	0.0	3.0
43.88	13.38	1179.6	26.8	2.3	149.8	93.9	5.9	4.7	74.9	0.0	0.0	1.5
44.70	13.62	1328.6	29.4	2.2	151.9	96.4	6.6	5.3	86.4	0.0	0.0	3.0
45.52	13.88	9207.7	207.3	2.3	154.0	98.8	30.7	24.2	0.0	58.7	40.0	1.0
46.34	14.12	4775.6	238.5	5.0	156.0	101.3	47.8	37.4	361.5	0.0	0.0	6.0
47.16	14.38	1303.9	54.9	4.2	157.9	103.7	13.0	10.2	83.4	0.0	0.0	3.0
47.98	14.62	12447.2	271.3	2.2	160.0	106.2	41.5	32.1	0.0	66.8	40.0	1.0
48.80	14.88	9037.4	230.9	2.6	162.2	108.6	30.1	23.2	0.0	57.4	40.0	1.0
49.62	15.12	1362.8	29.4	2.2	164.3	111.1	6.8	5.2	87.0	0.0	0.0	3.0
50.44	15.38	2615.9	45.4	1.7	166.3	113.6	10.5	7.9	186.9	30.0	32.0	6.0
51.26	15.62	1814.4	30.9	1.7	168.4	116.0	7.3	5.5	122.4	30.0	30.0	3.0
52.08	15.88	7139.7	183.6	2.6	170.4	118.5	28.6	21.4	548.1	50.0	38.0	6.0
52.90	16.12	1552.0	64.3	4.1	172.4	120.9	15.5	11.6	100.7	0.0	0.0	3.0
53.72	16.38	1354.3	32.7	2.4	174.4	123.4	6.8	5.0	84.5	0.0	0.0	1.5
54.54	16.62	996.5	14.2	1.4	176.4	125.8	5.0	3.7	55.5	0.0	0.0	1.5
55.36	16.88	993.6	15.2	1.5	178.5	128.3	5.0	3.6	54.9	0.0	0.0	1.5
56.18	17.12	1152.6	20.1	1.7	180.5	130.7	5.8	4.2	67.3	0.0	0.0	1.5
57.00	17.38	1025.3	16.7	1.6	182.6	133.2	5.1	3.7	56.8	0.0	0.0	1.5
57.82	17.62	970.2	15.4	1.6	184.6	135.6	4.9	3.5	52.0	0.0	0.0	1.5
58.64	17.88	1190.3	22.4	1.9	186.7	138.1	6.0	4.3	69.2	0.0	0.0	1.5
59.46	18.12	1552.5	39.4	2.5	188.7	140.5	7.8	5.5	97.9	0.0	0.0	3.0
60.28	18.38	1710.1	38.5	2.3	190.8	143.0	8.6	6.1	110.1	0.0	0.0	3.0
61.10	18.62	1642.0	39.3	2.4	192.8	145.4	8.2	5.8	104.3	0.0	0.0	3.0
61.93	18.88	1328.5	22.7	1.7	194.9	147.9	6.6	4.7	78.9	0.0	0.0	1.5
62.75	19.12	1419.7	29.3	2.1	196.9	150.3	7.1	5.0	85.8	0.0	0.0	1.5
63.57	19.38	1623.2	36.3	2.2	199.0	152.8	8.1	5.6	101.7	0.0	0.0	3.0
64.39	19.62	1434.5	27.6	1.9	201.0	155.2	7.2	5.0	86.3	0.0	0.0	1.5
65.21	19.88	1573.3	33.6	2.1	203.1	157.7	7.9	5.4	97.0	0.0	0.0	1.5
66.03	20.12	2212.3	55.1	2.5	205.1	160.1	11.1	7.6	147.8	0.0	0.0	3.0
66.85	20.38	1534.8	30.7	2.0	207.1	162.6	7.7	5.2	93.2	0.0	0.0	1.5
67.67	20.62	1635.2	28.9	1.8	209.2	165.1	6.5	4.4	100.9	30.0	30.0	1.5
68.49	20.88	2671.4	77.4	2.9	211.2	167.5	13.4	9.0	183.4	0.0	0.0	3.0
69.31	21.12	7023.8	178.3	2.5	213.3	170.0	28.1	18.8	531.2	46.3	36.0	6.0
70.13	21.38	3669.1	115.8	3.2	215.3	172.4	18.3	12.2	262.5	0.0	0.0	6.0
70.95	21.62	3242.6	96.6	3.0	217.4	174.9	16.2	10.8	228.0	0.0	0.0	6.0
71.77	21.88	3491.4	93.3	2.7	219.4	177.3	14.0	9.2	247.6	30.0	32.0	6.0
72.59	22.12	4821.8	145.9	3.0	221.5	179.8	19.3	12.7	353.6	35.0	34.0	6.0
73.41	22.38	3767.5	126.4	3.4	223.5	182.2	18.8	12.3	268.9	0.0	0.0	6.0
74.23	22.62	8316.9	184.6	2.2	225.6	184.7	27.7	18.1	0.0	50.3	38.0	1.0
75.05	22.88	9840.1	183.5	1.9	227.8	187.1	32.8	21.3	0.0	55.0	38.0	1.0
75.87	23.12	6276.9	134.5	2.1	230.0	189.6	20.9	13.5	0.0	42.0	34.0	1.0
76.69	23.38	2394.9	58.8	2.5	232.1	192.0	9.6	6.2	157.7	30.0	30.0	3.0
77.51	23.62	1833.2	51.3	2.8	234.1	194.5	9.2	5.9	112.4	0.0	0.0	1.5
78.33	23.88	1824.1	57.0	3.1	236.2	196.9	9.1	5.8	111.3	0.0	0.0	1.5
79.15	24.12	5859.2	216.9	3.7	238.2	199.4	29.3	18.6	433.7	0.0	0.0	6.0
79.97	24.38	20828.6	512.7	2.5	240.3	201.8	69.4	43.8	0.0	75.7	42.0	1.0
80.79	24.62	25250.9	664.5	2.6	242.5	204.3	84.2	52.9	0.0	81.1	42.0	1.0
81.61	24.88	27425.6	785.5	2.9	244.8	206.7	137.1	85.8	0.0	83.4	42.0	1.0
82.43	25.12	25880.6	680.1	2.6	247.0	209.2	86.3	53.7	0.0	81.6	42.0	1.0
83.25	25.38	31205.1	867.8	2.8	249.2	211.7	156.0	96.7	0.0	86.8	42.0	1.0
84.07	25.62	32359.0	955.6	3.0	251.5	214.1	161.8	99.8	0.0	87.7	44.0	1.0
84.89	25.88	30145.7	889.3	2.9	253.8	216.6	150.7	92.6	0.0	85.6	42.0	1.0
85.71	26.12	32366.6	718.3	2.2	256.1	219.0	80.9	49.5	0.0	87.5	44.0	1.0
86.53	26.38	28740.9	296.6	1.0	258.5	221.5	57.5	35.0	0.0	83.9	42.0	1.0
87.35	26.62	23376.1	408.6	1.7	260.8	223.9	58.4	35.4	0.0	77.9	42.0	1.0
88.17	26.88	22917.7	268.9	1.2	263.2	226.4	45.8	27.7	0.0	77.2	42.0	1.0
88.99	27.12	26159.7	328.1	1.3	265.6	228.8	52.3	31.4	0.0	80.8	42.0	1.0
89.81	27.38	28077.3	314.7	1.1	268.0	231.3	56.2	33.6	0.0	82.7	42.0	1.0
90.63	27.62	29914.5	322.9	1.1	270.5	233.7	59.8	35.6	0.0	84.4	42.0	1.0
91.45	27.88	29720.3	262.9	0.9	272.9	236.2	59.4	35.2	0.0	84.1	42.0	1.0
92.27	28.12	28661.7	241.6	0.8	275.3	238.6	57.3	33.8	0.0	82.9	42.0	1.0
93.09	28.38	11530.1	121.4	1.1	277.7	241.1	28.8	16.9	0.0	56.7	38.0	1.0
93.91	28.62	3190.0	85.3	2.7	279.8	243.5	12.8	7.5	213.3	30.0	30.0	3.0
94.73	28.88	2722.4	72.0	2.6	281.9	246.0	10.9	6.3	175.6	30.0	30.0	3.0
95.55	29.12	2052.3	54.1	2.6	283.9	248.4	10.3	6.0	121.6	0.0	0.0	1.5
96.37	29.38	1984.0	41.8	2.1	286.0	250.9	7.9	4.6	115.8	30.0	30.0	1.5
97.19	29.62	2103.6	42.6	2.0	288.0	253.3	8.4	4.9	125.0	30.0	30.0	1.5
98.01	29.88	2173.5	42.5	2.0	290.1	255.8	8.7	5.0	130.2	30.0	30.0	1.5
98.83	30.12	2842.2	81.1	2.9	292.1	258.2	14.2	8.1	183.3	0.0	0.0	3.0

Conetec Inc. - CPT Interpretation
Run No: 96-0709-1243-2138
CPT File: 308CS11.COR

Depth (ft)	Depth (m)	AvgQt (kPa)	AvgFs (kPa)	AvgRf (%)	E.Stress (kPa)	Hyd. Pr. (kPa)	N60 (blows/ft)	(N1)60	Su (kPa)	Dr (%)	Phi (deg.)	OCR (ratio)
99.65	30.38	2501.7	56.9	2.3	294.2	260.7	10.0	5.7	155.7	30.0	30.0	3.0
100.47	30.62	5320.5	146.9	2.8	296.2	263.2	21.3	12.1	380.9	33.6	32.0	6.0
101.29	30.88	6143.6	190.1	3.1	298.3	265.6	24.6	13.9	446.4	37.6	32.0	6.0
102.11	31.12	15226.5	359.9	2.4	300.4	268.1	50.8	28.7	0.0	63.6	38.0	1.0
102.94	31.38	22889.1	528.2	2.3	302.6	270.5	76.3	42.9	0.0	75.1	40.0	1.0
103.76	31.62	22877.8	596.7	2.6	304.7	273.0	76.3	42.8	0.0	75.0	40.0	1.0
104.58	31.88	24130.9	570.9	2.4	306.9	275.4	80.4	44.9	0.0	76.5	40.0	1.0
105.40	32.12	25059.7	505.3	2.0	309.1	277.9	62.6	34.9	0.0	77.4	42.0	1.0
106.22	32.38	28412.8	361.9	1.3	311.5	280.3	56.8	31.5	0.0	80.9	42.0	1.0
107.04	32.62	30078.9	213.6	0.7	313.9	282.8	60.2	33.2	0.0	82.4	42.0	1.0
107.86	32.88	26054.0	148.6	0.6	316.3	285.2	52.1	28.7	0.0	78.2	42.0	1.0
108.68	33.12	19122.8	132.6	0.7	318.8	287.7	38.2	21.0	0.0	69.2	40.0	1.0
109.50	33.38	6704.3	118.3	1.8	321.1	290.1	22.3	12.2	0.0	39.1	34.0	1.0
110.32	33.62	2584.0	45.5	1.8	323.2	292.6	10.3	5.6	157.5	30.0	30.0	1.5
111.14	33.88	2306.5	37.8	1.6	325.2	295.0	9.2	5.0	134.9	30.0	30.0	1.5
111.96	34.12	2226.8	38.1	1.7	327.3	297.5	8.9	4.8	128.2	30.0	30.0	1.5
112.78	34.38	2097.9	31.2	1.5	329.3	299.9	8.4	4.5	117.5	30.0	30.0	1.5
113.60	34.62	2024.7	26.9	1.3	331.4	302.4	8.1	4.4	111.3	30.0	30.0	1.5
114.42	34.88	2050.9	26.1	1.3	333.4	304.8	8.2	4.4	113.0	30.0	30.0	1.5
115.24	35.12	2113.7	28.2	1.3	335.5	307.3	8.5	4.5	117.7	30.0	30.0	1.5
116.06	35.38	2118.6	26.6	1.3	337.5	309.8	8.5	4.5	117.7	30.0	30.0	1.5
116.88	35.62	2437.8	31.8	1.3	339.5	312.2	9.8	5.2	142.9	30.0	30.0	1.5
117.70	35.88	4377.8	98.1	2.2	341.6	314.7	17.5	9.3	297.7	30.0	30.0	3.0
118.52	36.12	12374.2	263.6	2.1	343.7	317.1	41.2	21.8	0.0	55.7	38.0	1.0
119.34	36.38	3715.1	116.7	3.1	345.8	319.6	18.6	9.8	244.0	0.0	0.0	3.0
120.16	36.62	3446.2	89.6	2.6	347.9	322.0	13.8	7.2	222.1	30.0	30.0	3.0
120.98	36.88	2586.1	39.5	1.5	349.9	324.5	10.3	5.4	152.9	30.0	30.0	1.5

Table 4.2 UDOT 123 S. & I-15 Shear Wave Velocity Data

Depth (m)	Depth (ft)	Vs (m/s)	Vs (ft/s)
1.7	5.58		
2.7	8.86	263.03	862.96
3.7	12.14	272.37	893.61
4.7	15.42	317.87	1042.89
5.7	18.70	305.07	1000.90
6.7	21.98	336.52	1104.06
7.7	25.26	299.41	982.31
8.7	28.54	226.74	743.90
9.7	31.82	259.92	852.75
10.7	35.10	306.26	1004.78
11.7	38.39	262.80	862.19
12.7	41.67	273.64	897.78
13.7	44.95	237.84	780.32
14.7	48.23	249.76	819.43
15.7	51.51	205.58	674.49
16.7	54.79	203.92	669.03
17.7	58.07	310.81	1019.73
18.7	61.35	269.72	884.91
19.7	64.63	289.67	950.36
20.7	67.91	298.33	978.77
21.7	71.19	238.24	781.64
22.7	74.47	217.27	712.84
23.7	77.75	222.60	730.32
24.7	81.04	219.19	719.13
25.7	84.32	272.35	893.54
26.7	87.60	241.73	793.07
27.7	90.88	221.63	727.13
28.7	94.16	208.68	684.64
29.7	97.44	200.72	658.53
30.7	100.72	257.63	845.23
31.7	104.00	341.16	1119.29
32.7	107.28	296.18	971.72
33.7	110.56	356.37	1169.19
34.7	113.84	298.40	978.99
35.7	117.12	269.81	885.19
36.7	120.41	247.74	812.80

Vs30 (ft/s)	877.91
Vs30 (m/s)	267.59

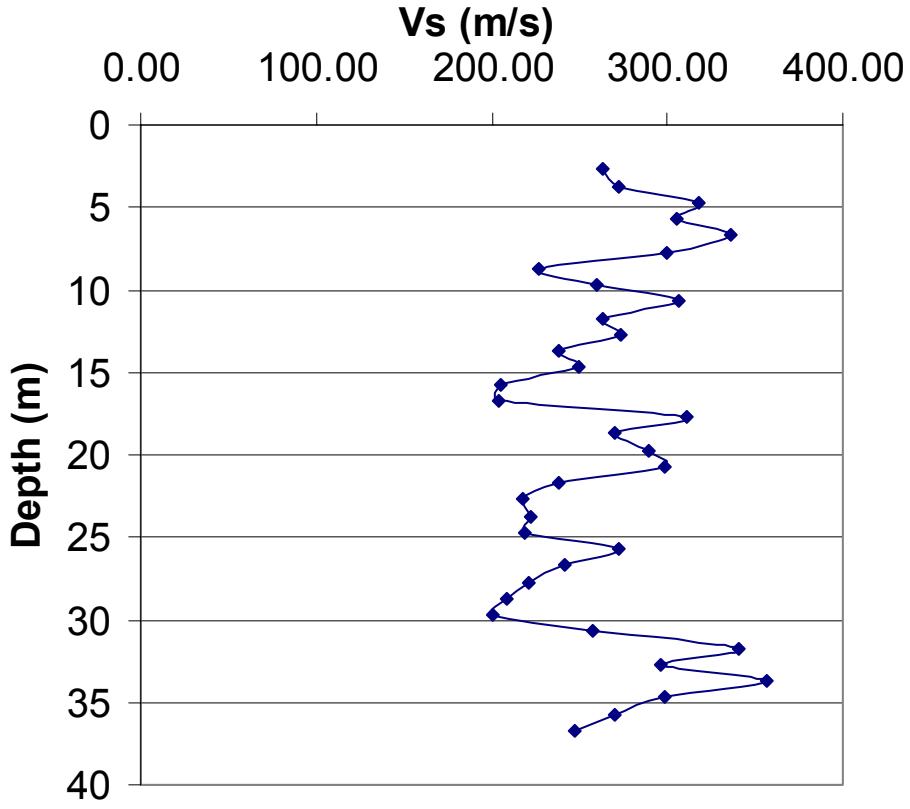


Figure 4.1 UDOT 123 S. & I-15 Shear Wave Velocity Profile

Table 4.3 UDOT 123 S. & I-15 Shear Wave Velocity Data

Depth (m)	Depth (ft)	Vs (m/s)	Vs ft(s)
0.6	1.97		
1.6	5.25	138.18	453.34
2.6	8.53	139.28	456.96
3.6	11.81	137.93	452.54
4.6	15.09	231.06	758.08
5.6	18.37	204.71	671.62
6.6	21.65	245.07	804.04
7.6	24.93	220.91	724.77
8.6	28.21	238.56	782.66
9.6	31.50	221.23	725.82
10.6	34.78	202.88	665.61
11.6	38.06	215.66	707.53
12.6	41.34	221.45	726.53
13.6	44.62	197.02	646.40
14.6	47.90	239.01	784.15
15.6	51.18	221.55	726.86
16.6	54.46	227.11	745.10
17.6	57.74	233.50	766.05
18.6	61.02	239.67	786.32
19.6	64.30	220.15	722.27
20.6	67.58	193.33	634.29
21.6	70.87	214.50	703.74
22.6	74.15	261.68	858.52
23.6	77.43	283.99	931.72
24.6	80.71	242.05	794.13
25.6	83.99	254.38	834.56
26.6	87.27	234.13	768.13
27.6	90.55	227.22	745.45
28.6	93.83	251.83	826.20
29.6	97.11	251.20	824.14
30.6	100.39	328.88	1078.99
31.6	103.67	327.81	1075.47
32.6	106.95	319.43	1047.99

Vs30 (ft/s)	725.60
Vs30 (m/s)	221.17

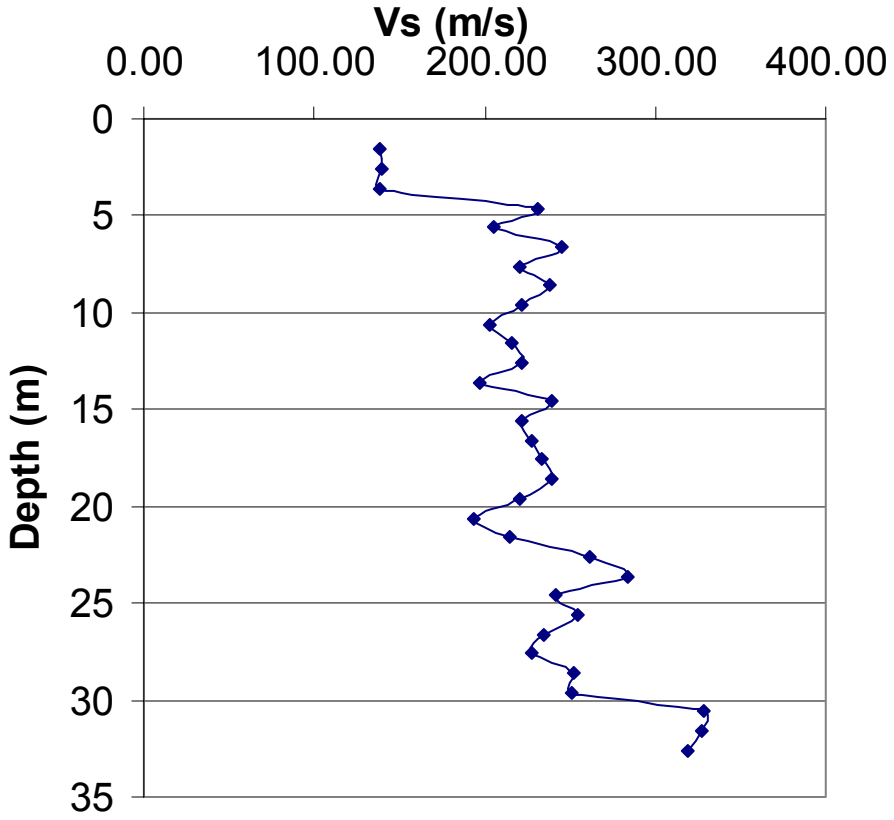


Figure 4.2 UDOT 123 S. & I-15 Shear Wave Velocity Profile

Table 4.4 UDOT SR201/Redwood Shear Wave Velocity Data

Depth (m)	Depth (ft)	Vs (m/s)	Vs (ft/s)
0.65	2.13		
1.65	5.41	210.68	691.20
2.65	8.69	161.30	529.19
3.65	11.97	201.15	659.93
4.65	15.26	150.84	494.89
5.65	18.54	144.57	474.31
6.65	21.82	184.36	604.84
7.65	25.10	195.57	641.63
8.65	28.38	184.74	606.10
9.65	31.66	170.27	558.64
10.65	34.94	148.08	485.83
11.65	38.22	148.97	488.74
12.65	41.50	185.46	608.45
13.65	44.78	223.13	732.06
14.65	48.06	190.05	623.51
15.65	51.34	245.01	803.85
16.65	54.63	245.02	803.86
17.65	57.91	262.38	860.83
18.65	61.19	267.29	876.95
19.65	64.47	272.39	893.68
20.65	67.75	259.66	851.91
21.65	71.03	226.18	742.05
22.65	74.31	295.77	970.37
23.65	77.59	287.27	942.49
24.65	80.87	462.83	1518.47
25.65	84.15	287.27	942.50
26.65	87.43	290.61	953.46
27.65	90.71	285.63	937.12
28.65	93.99	295.77	970.39
29.65	97.28	316.37	1037.95
30.65	100.56	354.51	1163.09

Vs30 (ft/s)	737.45
Vs30 (m/s)	224.78

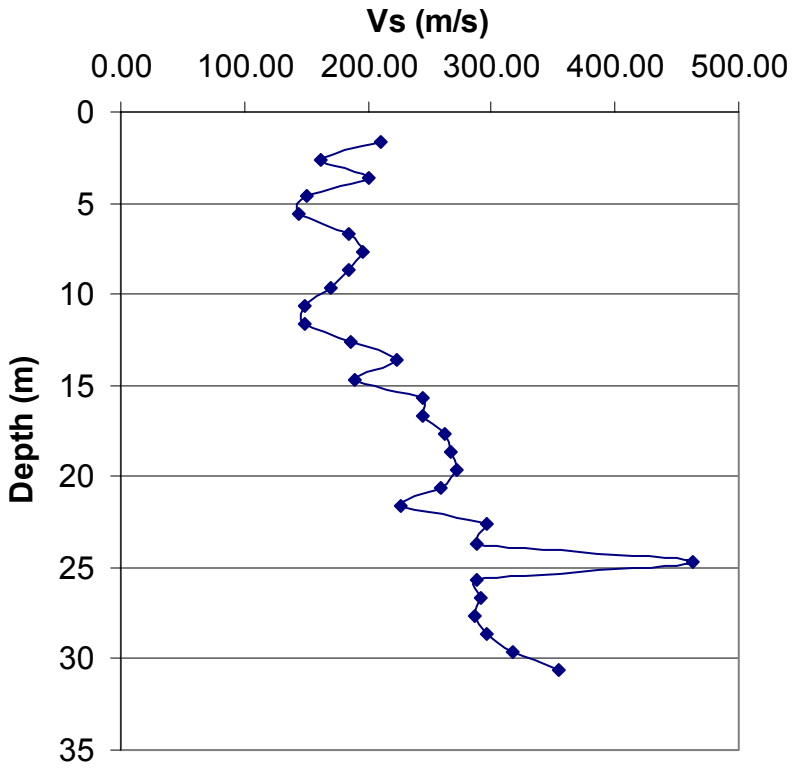


Figure 4.3 UDOT SR201/Redwood Shear Wave Velocity Profile

Table 4.6 UDOT Ogden 31st St. Interchange. Shear Wave Velocity Data

Depth (m)	Depth (ft)	Vs (m/s)	Vs (ft/s)
0.6	1.97		
1.6	5.25	189.96	623.21
2.6	8.53	206.08	676.10
3.6	11.81	173.89	570.48
4.6	15.09	162.92	534.52
5.6	18.37	149.98	492.05
6.6	21.65	201.42	660.81
7.6	24.93	181.48	595.39
8.6	28.21	186.04	610.35
9.6	31.50	176.91	580.40
10.6	34.78	190.13	623.77
11.6	38.06	192.39	631.18
12.6	41.34	201.36	660.61
13.6	44.62	221.00	725.05
14.6	47.90	221.52	726.77
15.6	51.18	227.09	745.03
16.6	54.46	233.48	765.99
17.6	57.74	216.31	709.68
18.6	61.02	232.97	764.32
19.6	64.30	231.36	759.06
20.6	67.58	240.27	788.29
21.6	70.87	234.09	768.02
22.6	74.15	247.43	811.77
23.6	77.43	255.67	838.79
24.6	80.71	248.06	813.83
25.6	83.99	282.40	926.51
26.6	87.27	248.07	813.87
27.6	90.55	281.62	923.93
28.6	93.83	277.71	911.12
29.6	97.11	261.72	858.66
30.6	100.39	293.19	961.91
31.6	103.67	261.05	856.44
32.6	106.95	312.44	1025.06
33.6	110.23	261.05	856.46
34.6	113.52	302.07	991.02
35.6	116.80	254.41	834.68
36.6	120.08	276.97	908.68
37.6	123.36	309.56	1015.59
38.6	126.64	312.46	1025.12
39.6	129.92	284.06	931.93
40.6	133.20	312.46	1025.13
41.6	136.48	311.49	1021.94
42.6	139.76	293.22	962.01
43.6	143.04	312.47	1025.15
44.6	146.32	322.55	1058.22
45.6	149.60	292.37	959.21

Vs30 (ft/s)	722.58
Vs30 (m/s)	220.24

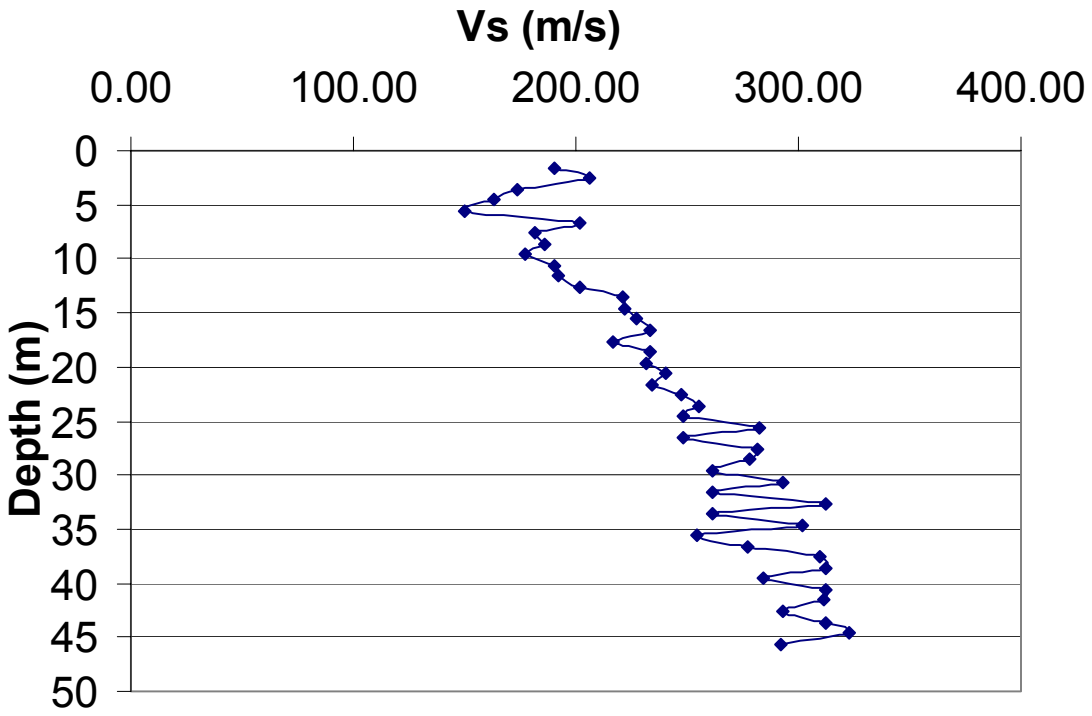


Figure 4.5 UDOT Ogden 31st St Interchange Shear Wave Velocity Profile

Table 4.8 Metro Water District Shear Wave Velocity Data

Depth (m)	Depth (ft)	Vs (m/s)	Vs (ft/s)
0.5	1.64		
1.5	4.92	210.27	689.85
2.5	8.20	231.01	757.88
3.5	11.48	231.54	759.64
4.5	14.76	223.62	733.65
5.5	18.04	257.81	845.82
6.5	21.33	278.67	914.25
7.5	24.61	264.95	869.24
8.5	27.89	294.13	964.98
9.5	31.17	303.25	994.91
10.5	34.45	286.00	938.31
11.5	37.73	322.08	1056.70
12.5	41.01	286.99	941.54
13.5	44.29	303.62	996.11
14.5	47.57	265.71	871.73
15.5	50.85	312.24	1024.40
16.5	54.13	303.73	996.48
17.5	57.41	303.76	996.56
18.5	60.69	320.33	1050.93
19.5	63.98	273.08	895.93
20.5	67.26	247.41	811.70
21.5	70.54	482.89	1584.26
22.5	73.82	425.37	1395.55
23.5	77.10	442.32	1451.17
24.5	80.38	485.28	1592.11
25.5	83.66	425.41	1395.67
26.5	86.94	504.91	1656.51
27.5	90.22	398.30	1306.76
28.5	93.50	564.84	1853.12
29.5	96.78	471.59	1547.20
30.5	100.06	515.36	1690.78

Vs30(ft/s)	1053.46
Vs30(m/s)	321.10

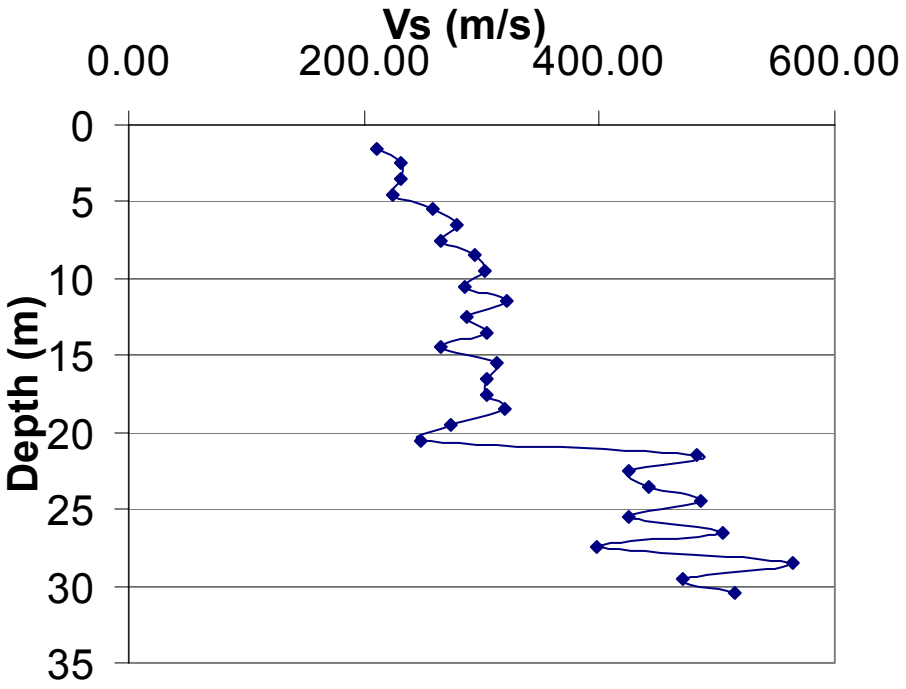


Figure 4.7 Metro Water District Shear Wave Velocity Profile

Table 4.11 Salt Lake County Maintenance Facility Shear Wave Velocity Data

Depth (m)	Depth (ft)	Vs (m/s)	Vs (ft/s)
0.6	1.97		
1.6	5.25	110.54	362.67
2.6	8.53	133.28	437.26
3.6	11.81	158.18	518.96
4.6	15.09	155.74	510.95
5.6	18.37	149.98	492.05
6.6	21.65	163.92	537.79
7.6	24.93	186.23	610.97
8.6	28.21	191.03	626.72
9.6	31.50	196.80	645.65
10.6	34.78	180.50	592.19
11.6	38.06	138.49	454.35
12.6	41.34	148.62	487.59
13.6	44.62	194.72	638.84
14.6	47.90	160.36	526.12
15.6	51.18	160.38	526.18
16.6	54.46	148.70	487.86
17.6	57.74	166.84	547.36
18.6	61.02	185.77	609.47
19.6	64.30	246.18	807.67
20.6	67.58	245.59	805.72
21.6	70.87	241.44	792.13
22.6	74.15	184.77	606.20
23.6	77.43	164.15	538.53
24.6	80.71	190.42	624.71
25.6	83.99	258.32	847.50
26.6	87.27	295.78	970.39
27.6	90.55	303.87	996.95
28.6	93.83	265.89	872.35
29.6	97.11	236.35	775.43
30.6	100.39	193.38	634.45

Vs30 (ft/s)	605.94
Vs30 (m/s)	184.69

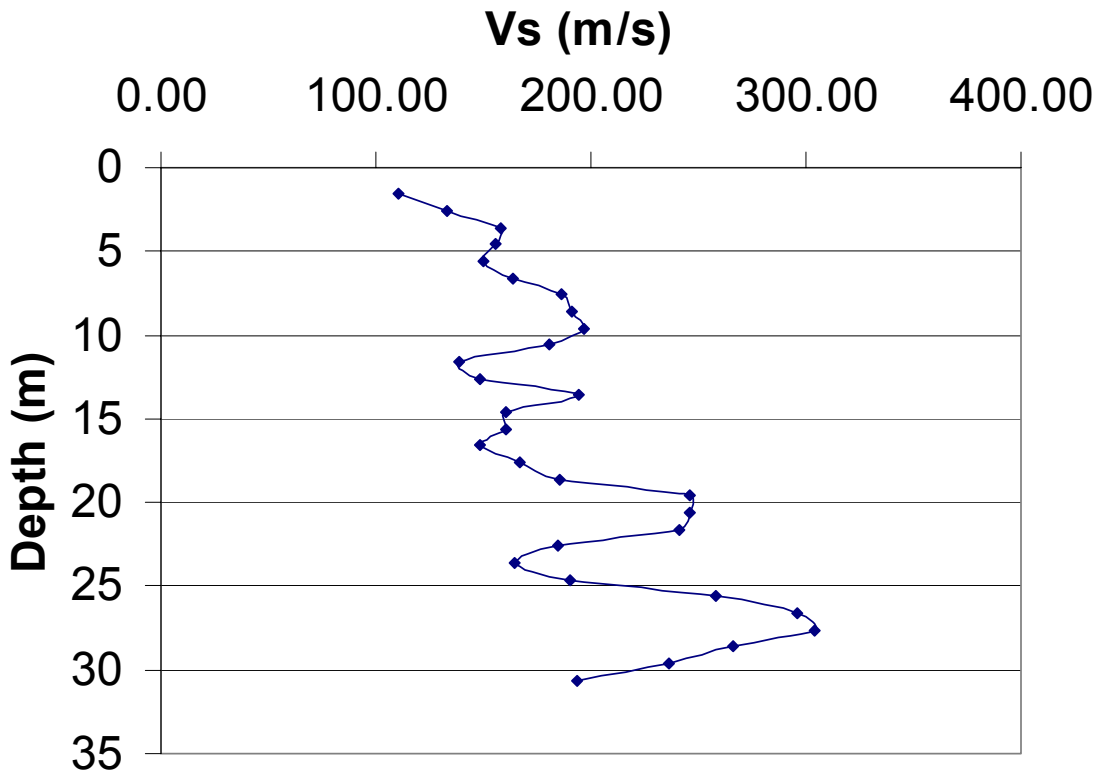


Figure 4.10 Salt Lake County Maintenance Facility Shear Wave Velocity Profile

Table 4.16 UTA 5300 S Trax Bridge Shear Wave Velocity Data

Depth (m)	Depth (ft)	Vs (m/s)	Vs (ft/s)
2.6	8.53		
3.6	11.81	204.74	671.72
4.6	15.09	169.63	556.53
5.6	18.37	286.13	938.72
6.6	21.65	285.92	938.05
7.6	24.93	235.53	772.74
8.6	28.21	221.10	725.39
9.6	31.50	246.97	810.26
10.6	34.78	221.33	726.12
11.6	38.06	200.90	659.12
12.6	41.34	177.08	580.96
13.6	44.62	197.02	646.40
14.6	47.90	260.17	853.58
15.6	51.18	201.45	660.91
16.6	54.46	206.89	678.77
17.6	57.74	253.00	830.05
18.6	61.02	295.69	970.10
19.6	64.30	272.34	893.50
20.6	67.58	304.74	999.78
21.6	70.87	265.85	872.19
22.6	74.15	332.10	1089.55
23.6	77.43	366.17	1201.34
24.6	80.71	313.38	1028.13
25.6	83.99	316.36	1037.92
26.6	87.27	295.78	970.39
27.6	90.55	285.64	937.13
28.6	93.83	316.38	1037.98
29.6	97.11	276.95	908.61
30.6	100.39	316.39	1038.01

Vs30 (ft/s)	901.14
Vs30 (m/s)	274.67

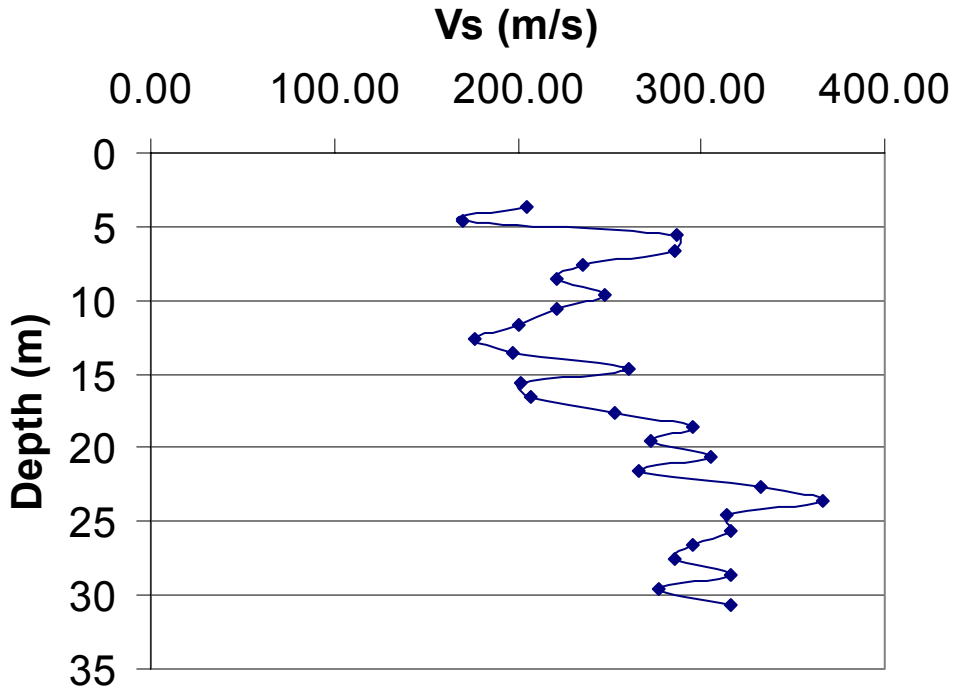


Figure 4.15 UTA 5300 S Trax Bridge Shear Wave Velocity Profile

Table 4.17 UTA Trax Weber County Shear Wave Velocity Data

Depth (m)	Depth (ft)	Vs (m/s)	Vs (ft/s)
0.55	1.80		
1.55	5.09	160.53	526.66
2.55	8.37	151.30	496.39
3.55	11.65	125.33	411.18
4.55	14.93	173.15	568.07
5.55	18.21	164.90	541.01
6.55	21.49	213.50	700.46
7.55	24.77	213.79	701.40
8.55	28.05	213.98	702.01
9.55	31.33	220.74	724.19
10.55	34.61	247.07	810.58
11.55	37.89	259.34	850.86
12.55	41.17	241.24	791.45
13.55	44.45	241.87	793.51
14.55	47.74	252.93	829.80
15.55	51.02	241.93	793.73
16.55	54.30	221.57	726.92
17.55	57.58	246.76	809.56
18.55	60.86	247.38	811.62
19.55	64.14	283.14	928.93
20.55	67.42	248.02	813.72
21.55	70.70	254.35	834.46
22.55	73.98	241.45	792.16
23.55	77.26	235.77	773.50
24.55	80.54	284.81	934.40
25.55	83.82	241.47	792.23
26.55	87.11	302.95	993.91
27.55	90.39	302.04	990.93
28.55	93.67	248.70	815.93
29.55	96.95	281.63	923.97
30.55	100.23	268.76	881.75

Vs30 (ft/s)	750.57
Vs30 (m/s)	228.78

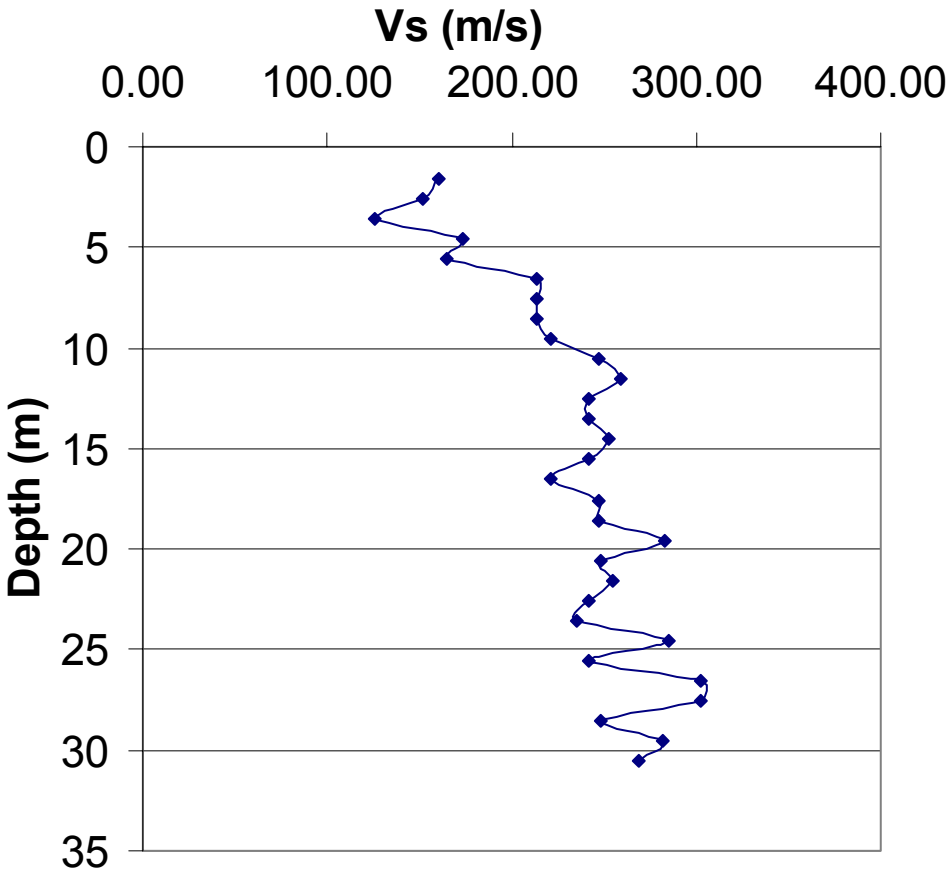


Figure 4.16 UTA Trax Weber County Shear Wave Velocity Profile

Table 4.23 North Davis Jr. High Shear Wave Velocity Data

Depth (m)	Depth (ft)	Vs (m/s)	Vs (ft/s)
0.55	1.80		
1.55	5.09	206.45	677.31
2.55	8.37	242.70	796.25
3.55	11.65	210.77	691.49
4.55	14.93	205.98	675.76
5.55	18.21	190.54	625.12
6.55	21.49	201.40	660.76
7.55	24.77	191.22	627.36
8.55	28.05	186.03	610.33
9.55	31.33	186.14	610.70
10.55	34.61	207.95	682.24
11.55	37.89	221.39	726.34
12.55	41.17	258.74	848.86
13.55	44.45	265.67	871.60
14.55	47.74	253.57	831.91
15.55	51.02	279.88	918.24
16.55	54.30	279.13	915.76
17.55	57.58	259.57	851.61
18.55	60.86	284.74	934.17
19.55	64.14	265.82	872.11
20.55	67.42	247.41	811.70
21.55	70.70	265.85	872.19
22.55	73.98	253.07	830.26
23.55	77.26	265.86	872.25
24.55	80.54	259.66	851.88
25.55	83.82	272.40	893.69
26.55	87.11	295.78	970.38
27.55	90.39	272.41	893.72
28.55	93.67	273.16	896.18
29.55	96.95	312.43	1025.02
30.55	100.23	303.89	996.9982

Vs30 (ft/s)	807.14
Vs30 (m/s)	246.02

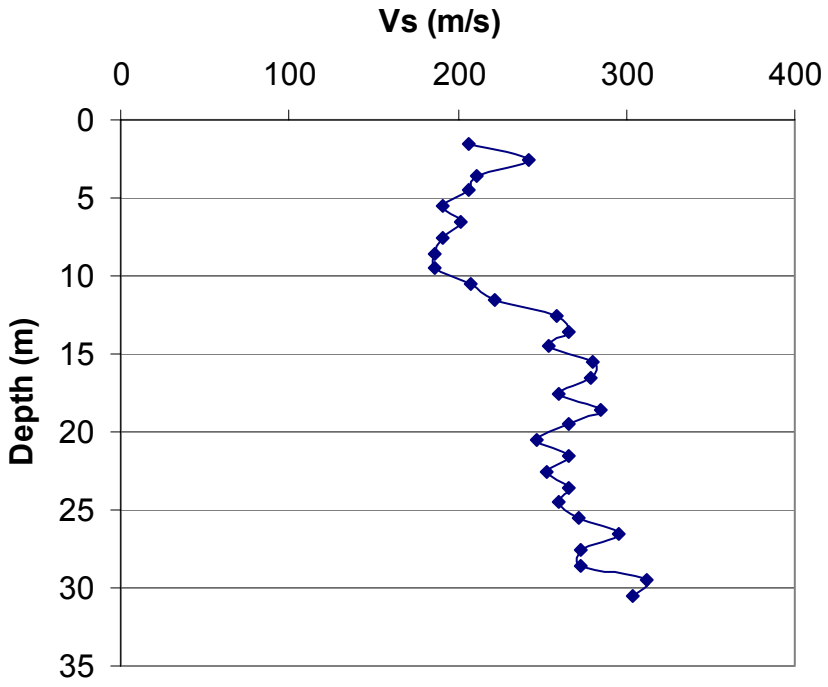


Figure 4.22 North Davis Jr. High Shear Wave Velocity Profile

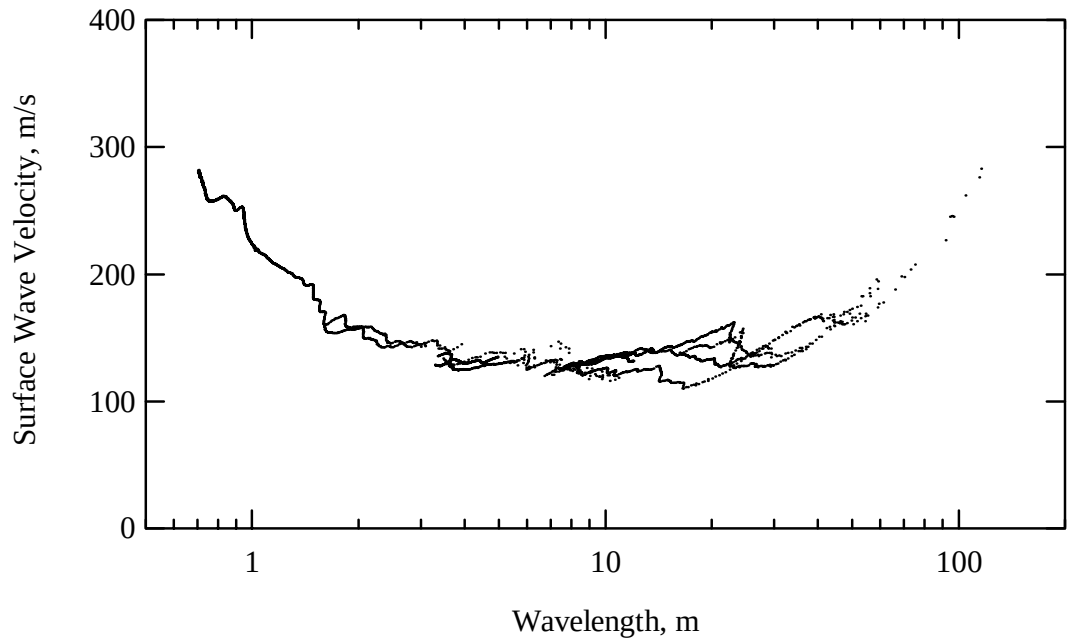


Fig. 4.4 Experimental dispersion curve measured at the Plain City Landfill (PCL), Weber County, Utah.

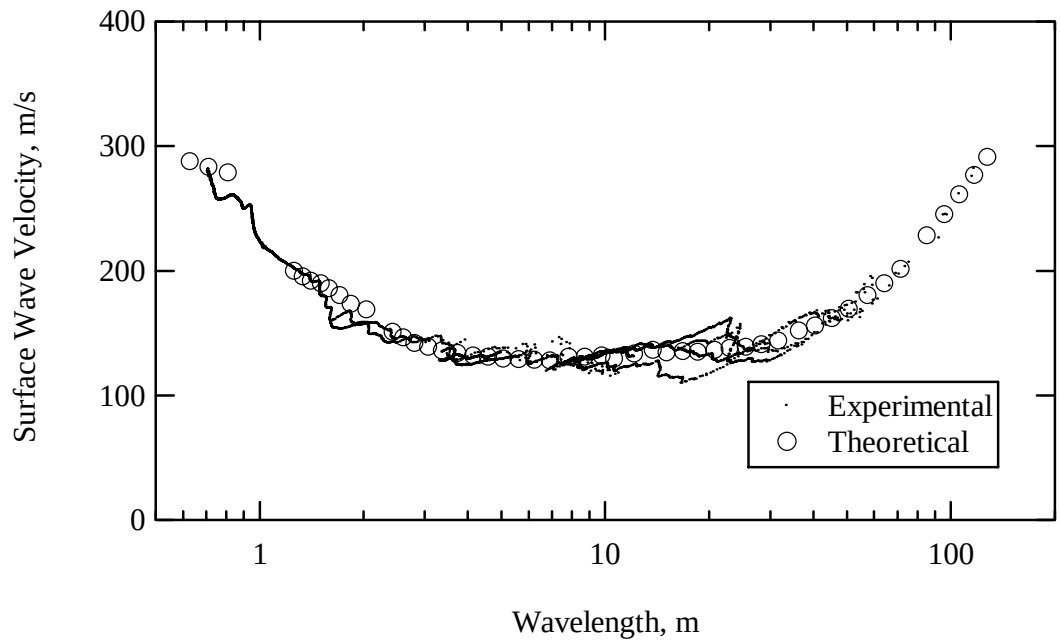


Fig. 4.5 Comparison of experimental and theoretical dispersion curves from the Plain City Landfill (PCL), Weber County, Utah.

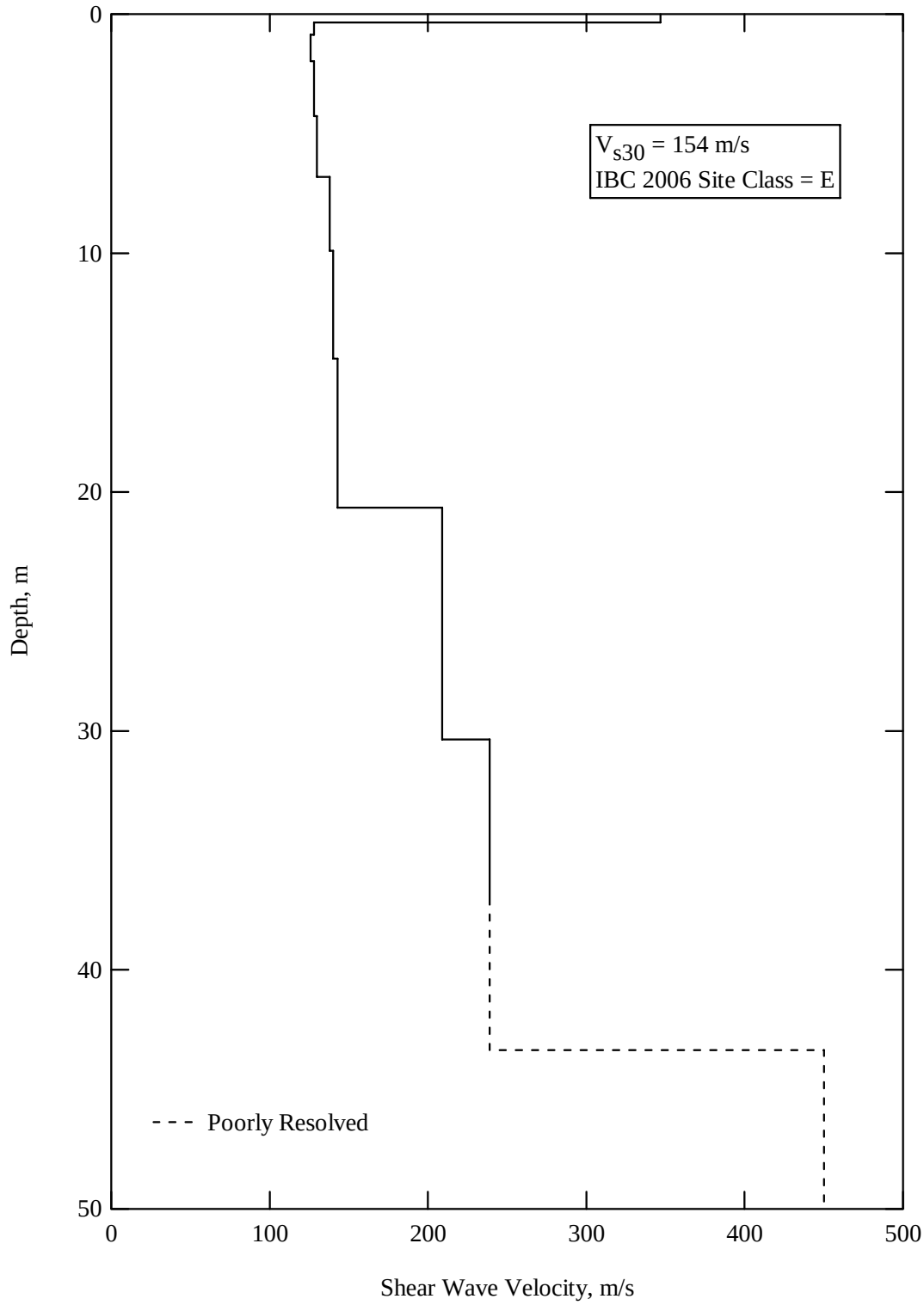


Fig. 4.6 Shear wave velocity profile determined from SASW testing at the Plain City Landfill (PCL), Weber County, Utah.

The average shear wave velocity in the upper 30 m of soil is 154 m/s, which corresponds to an IBC 2006 site class E. The shear wave velocity profile is well resolved to a depth of 37 m and poorly resolved from 37 m to 50 m.

Table 4.1 Tabulated measured and assumed layer properties at the Plain City Landfill (PCL), Weber County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.4	347	649	0.30	1.92
0.4	0.5	128	240	0.30	1.89
0.9	1.1	126	236	0.30	1.89
2.0	2.3	128	1500	0.49	1.89
4.3	2.6	130	1500	0.49	1.89
6.8	3.1	138	1500	0.49	1.89
9.9	4.5	140	1500	0.49	1.89
14.4	6.2	143	1500	0.49	1.89
20.7	9.7	209	1500	0.49	1.92
30.4	6.7	239	1500	0.49	1.92
37.0	6.4	239*	1500	0.49	1.92
43.4	Half-Space	450*	1500	0.45	1.96

* Poorly resolved

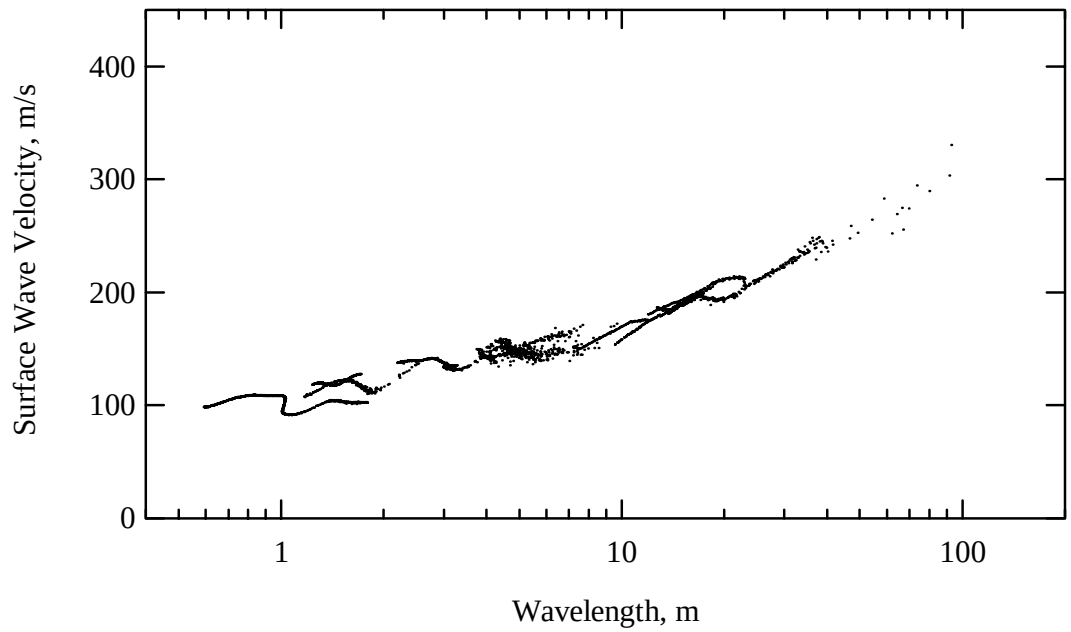


Fig. 4.9 Experimental dispersion curve measured at the Syracuse Cemetery (SCS), Davis County, Utah.

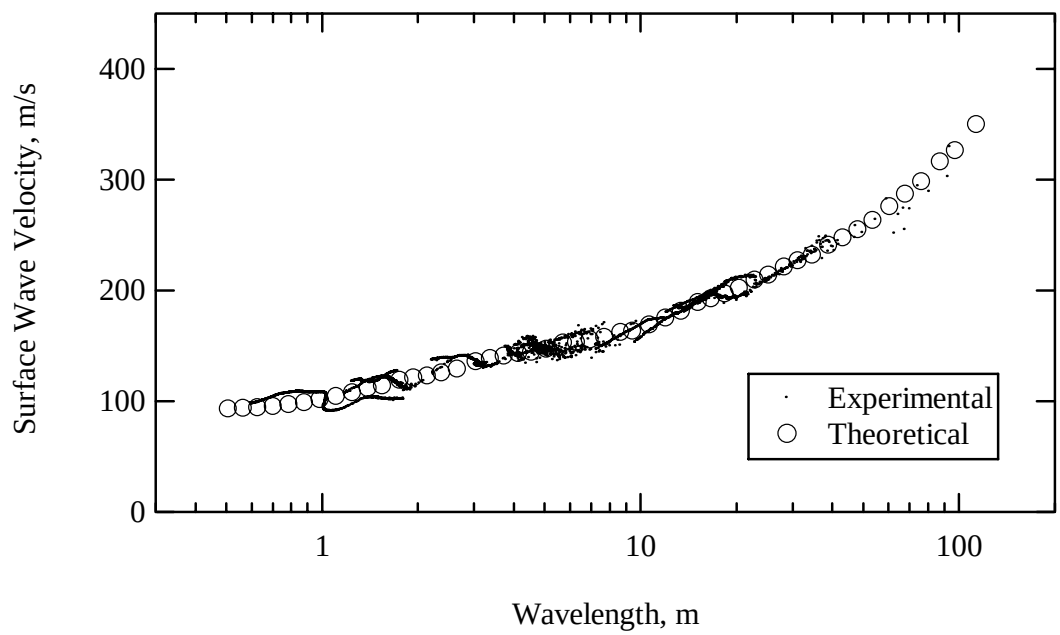


Fig. 4.10 Comparison of experimental and theoretical dispersion curves from the Syracuse Cemetery (SCS), Davis County, Utah.

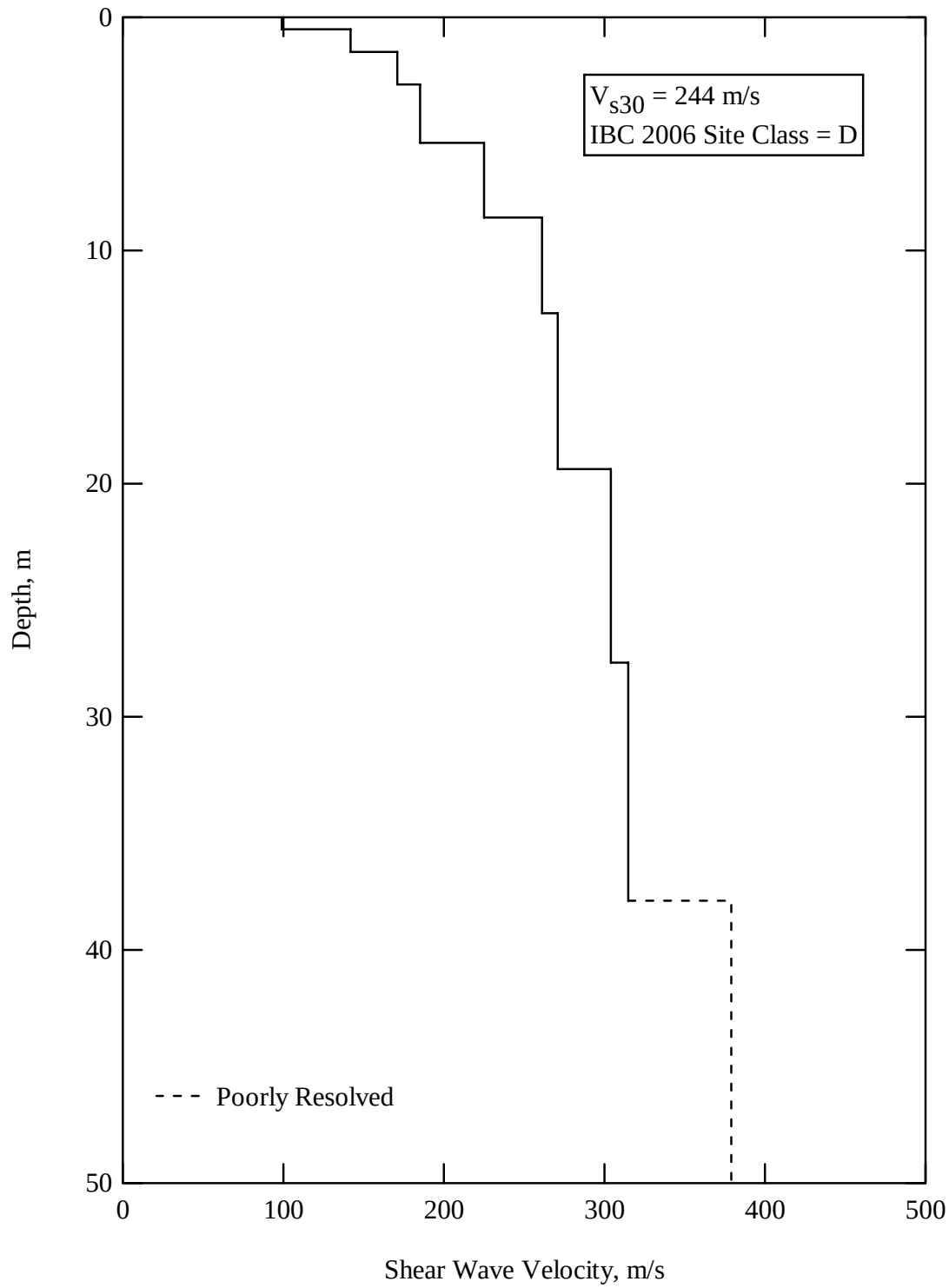


Fig. 4.11 Shear wave velocity profile determined from SASW testing at the Syracuse Cemetery (SCS), Davis County, Utah.

The average shear wave velocity in the upper 30 m of soil is 244 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 37.9 m and poorly resolved from 37.9 m to 50 m.

Table 4.2 Tabulated measured and assumed layer properties at the Syracuse Cemetery (SCS), Davis County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.5	99	185	0.30	1.89
0.5	1.0	142	266	0.30	1.89
1.5	1.4	171	320	0.30	1.92
2.9	2.5	185	346	0.30	1.92
5.4	3.2	225	1500	0.48	1.92
8.6	4.1	261	1500	0.48	1.92
12.7	6.7	271	1500	0.48	1.92
19.4	8.3	304	1500	0.48	1.96
27.7	10.2	315	1500	0.48	1.96
37.9	Half-Space	379*	1500	0.47	1.96

* Poorly Resolved

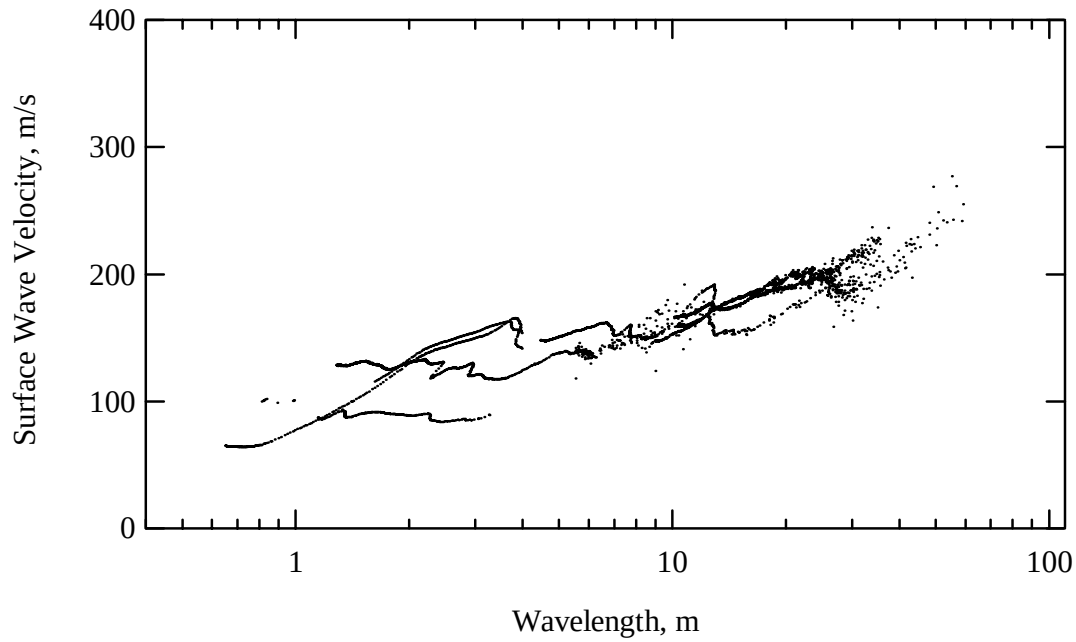


Fig. 4.14 Experimental dispersion curve measured at Central Davis Jr. High School (CDJ), Davis County, Utah.

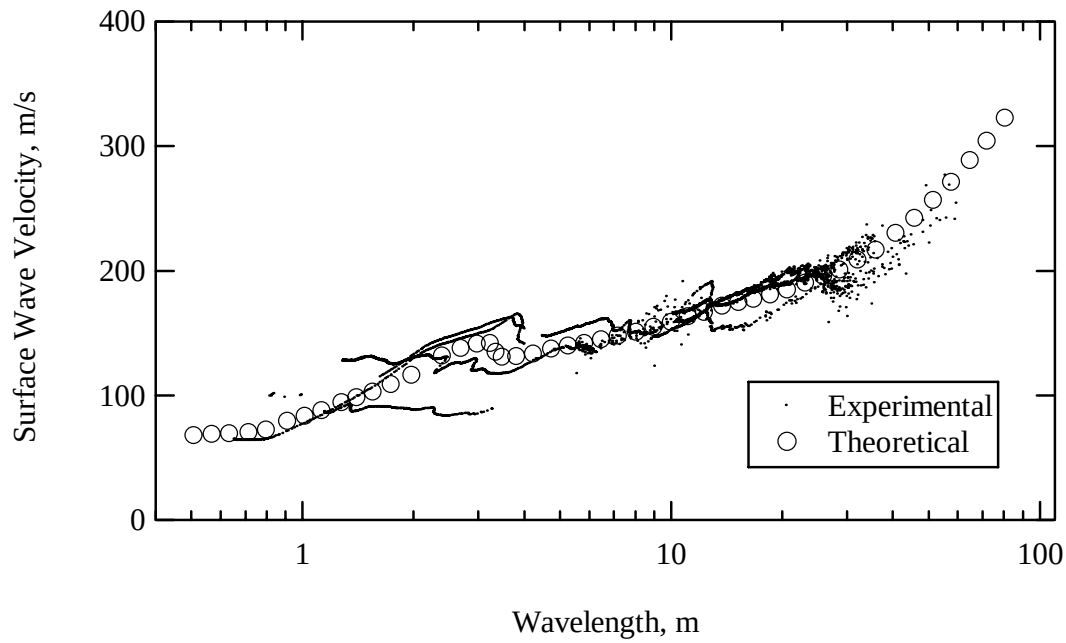


Fig. 4.15 Comparison of experimental and theoretical dispersion curves from Central Davis Jr. High School (CDJ), Davis County, Utah.

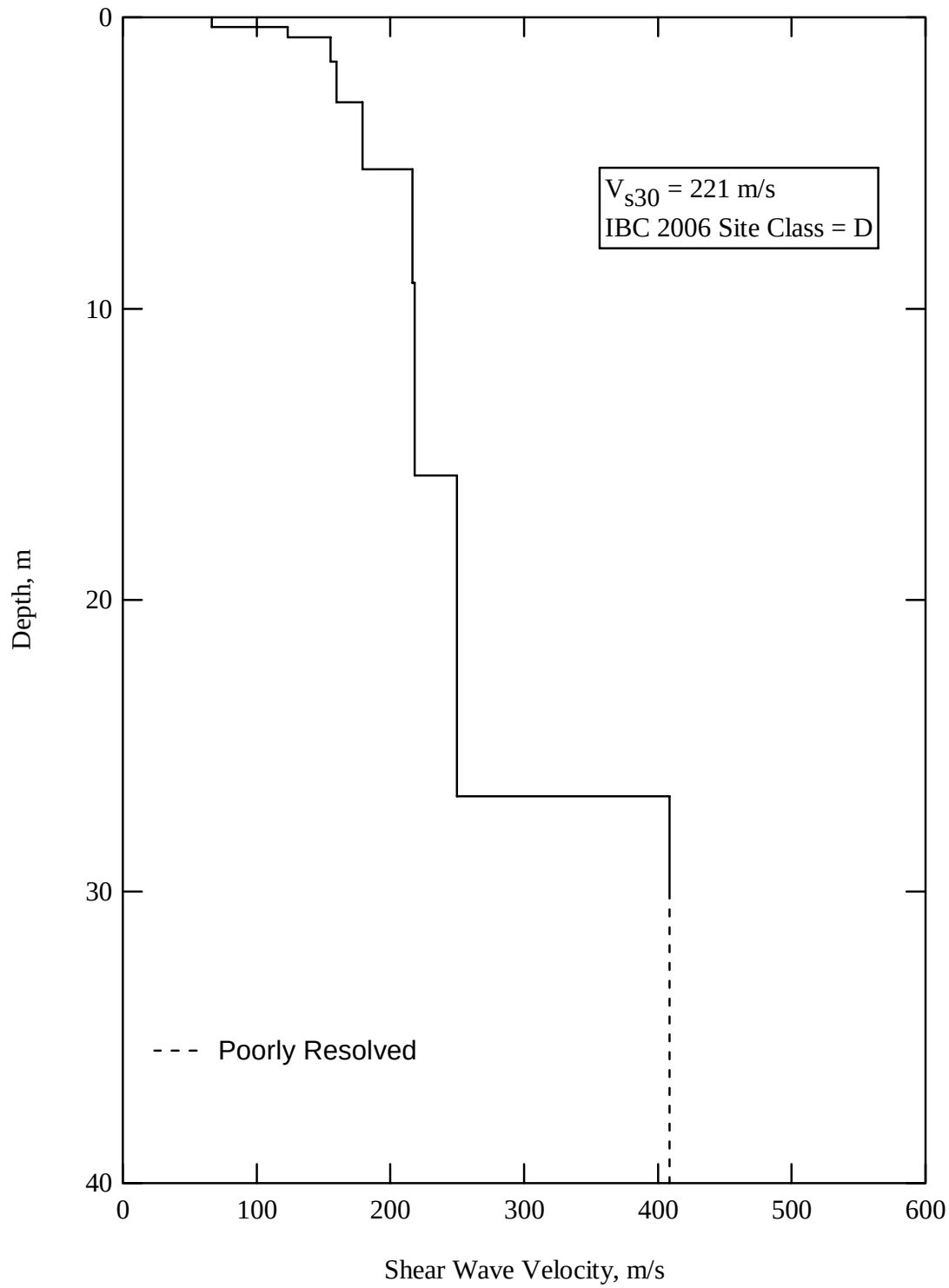


Fig. 4.17 Shear wave velocity profile determined from SASW testing at Central Davis Jr. High School (CDJ), Davis County, Utah.

The average shear wave velocity in the upper 30 m of soil is 221 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 30 m and poorly resolved from 30 m to 40 m.

Table 4.3 Tabulated measured and assumed layer properties at Central Davis Jr. High School (CDJ), Weber County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.3	66	124	0.3	1.89
0.3	0.4	123	231	0.3	1.89
0.7	0.8	155	290	0.3	1.89
1.5	1.4	160	299	0.3	1.90
2.9	2.3	179	335	0.3	1.92
5.2	3.9	217	1500	0.49	1.92
9.1	6.6	218	1500	0.49	1.92
15.7	11.0	250	1500	0.48	1.92
26.7	3.3	408	1500	0.46	1.96
30.0	Half-Space	408*	1500	0.46	1.96

* Poorly Resolved

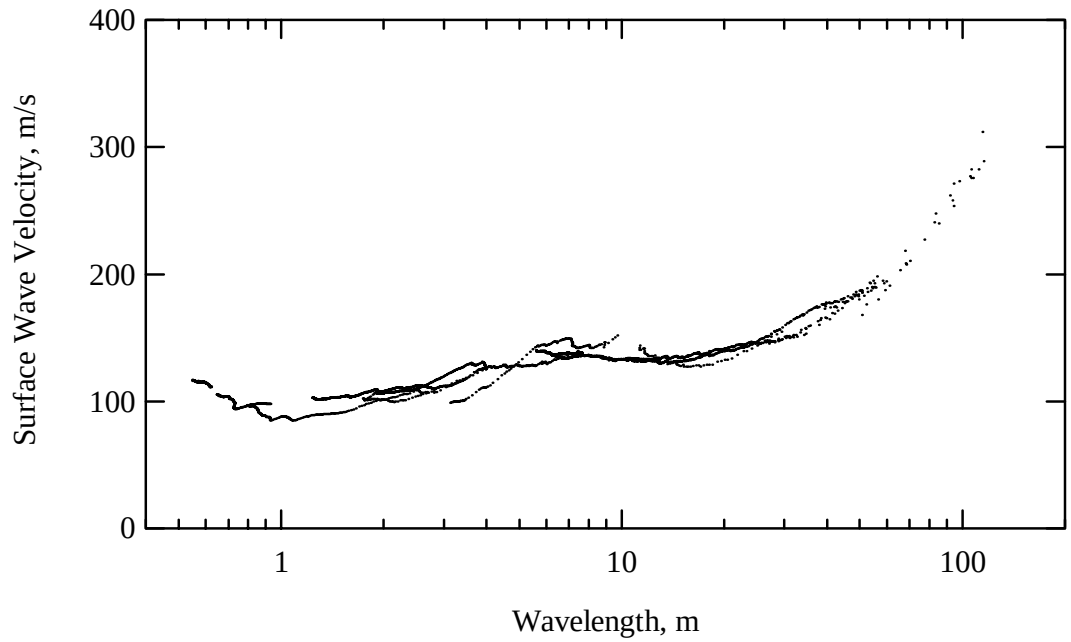


Fig. 4.19 Experimental dispersion curve measured at Kanesville Elementary School (KSU), Weber County, Utah.

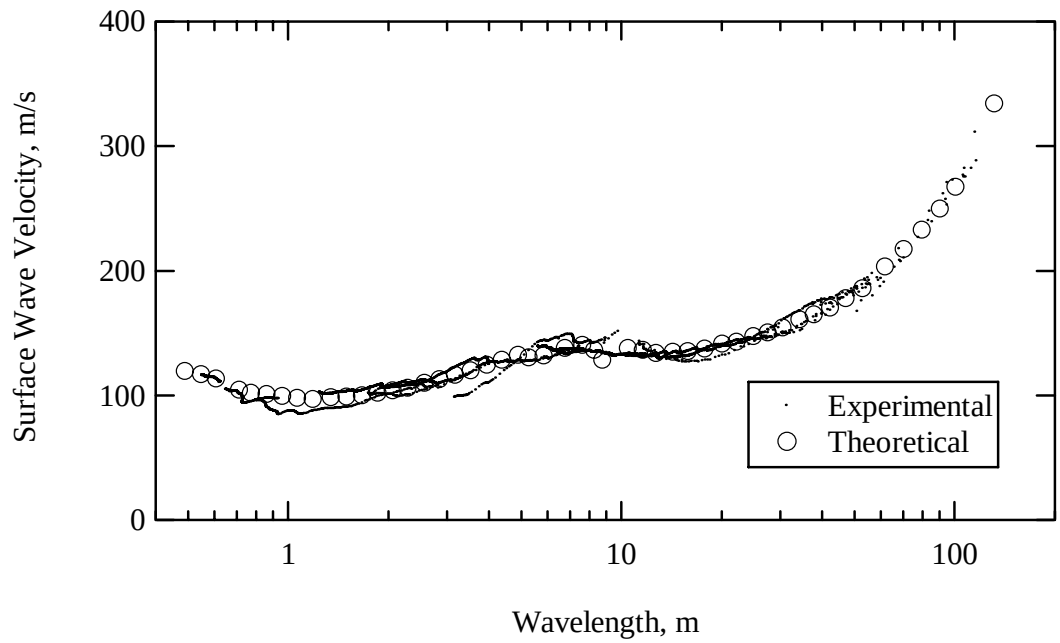


Fig. 4.20 Comparison of experimental and theoretical dispersion curves from Kanesville Elementary School (KSU), Weber County, Utah.

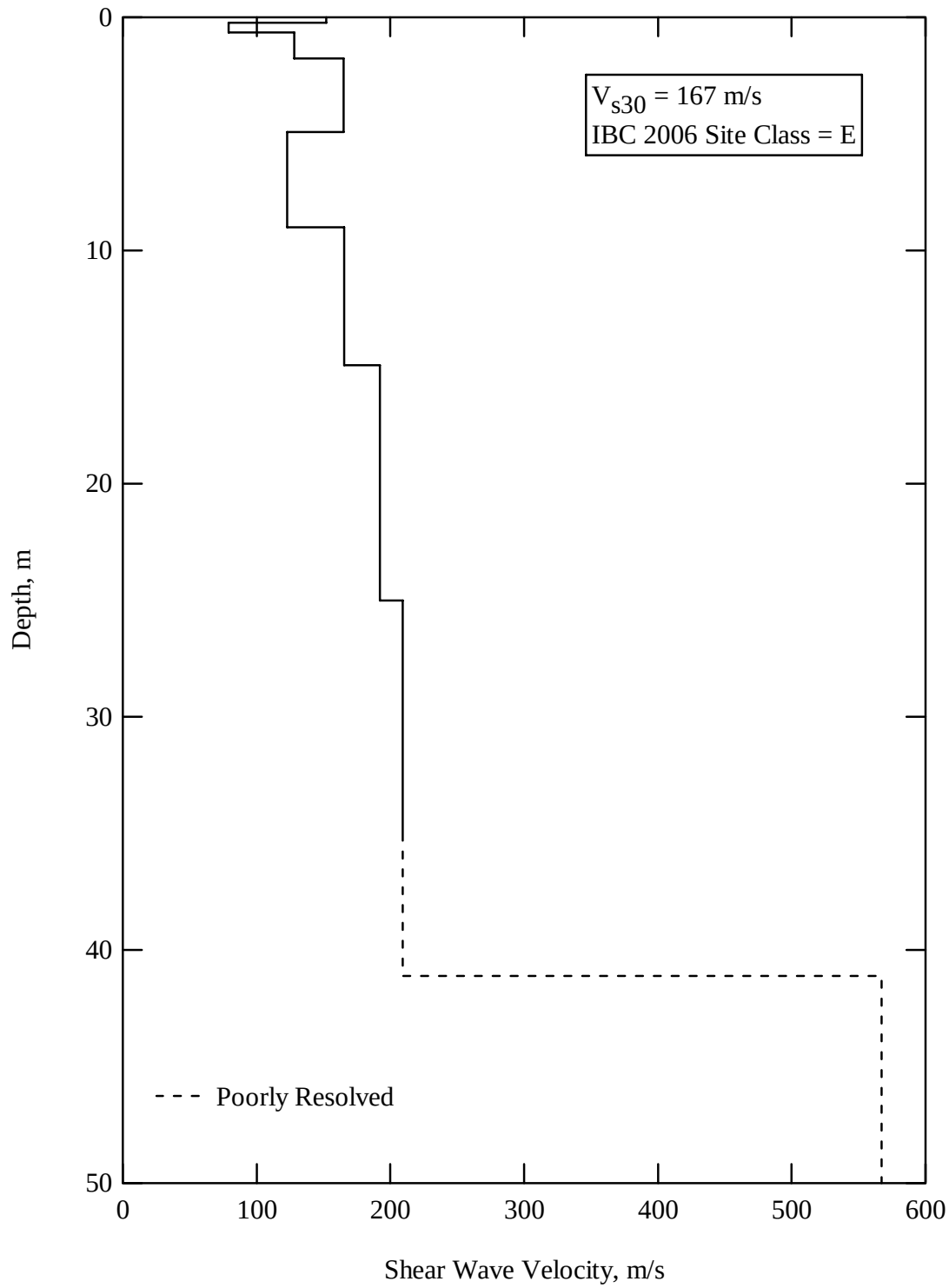


Fig. 4.21 Shear wave velocity profile determined from SASW testing at Kanesville Elementary School (KSU), Weber County, Utah.

The average shear wave velocity in the upper 30 m of soil is 167 m/s, which corresponds to an IBC 2006 site class E. The shear wave velocity profile is well resolved to a depth of 35 m and poorly resolved from 35 m to 50 m.

Table 4.4 Tabulated measured and assumed layer properties at Kanesville Elementary School (KSU), Weber County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.2	152	284	0.3	1.89
0.2	0.4	79	148	0.3	1.89
0.7	1.1	128	240	0.3	1.89
1.8	3.2	165	309	0.3	1.89
4.9	4.1	123	1500	0.49	1.92
9.0	5.9	166	1500	0.49	1.92
14.9	10.1	192	1500	0.49	1.92
25.0	10.0	209	1500	0.49	1.92
35.0	6.1	209*	1500	0.49	1.92
41.1	Half-Space	567*	1500	0.42	2.00

* Poorly Resolved

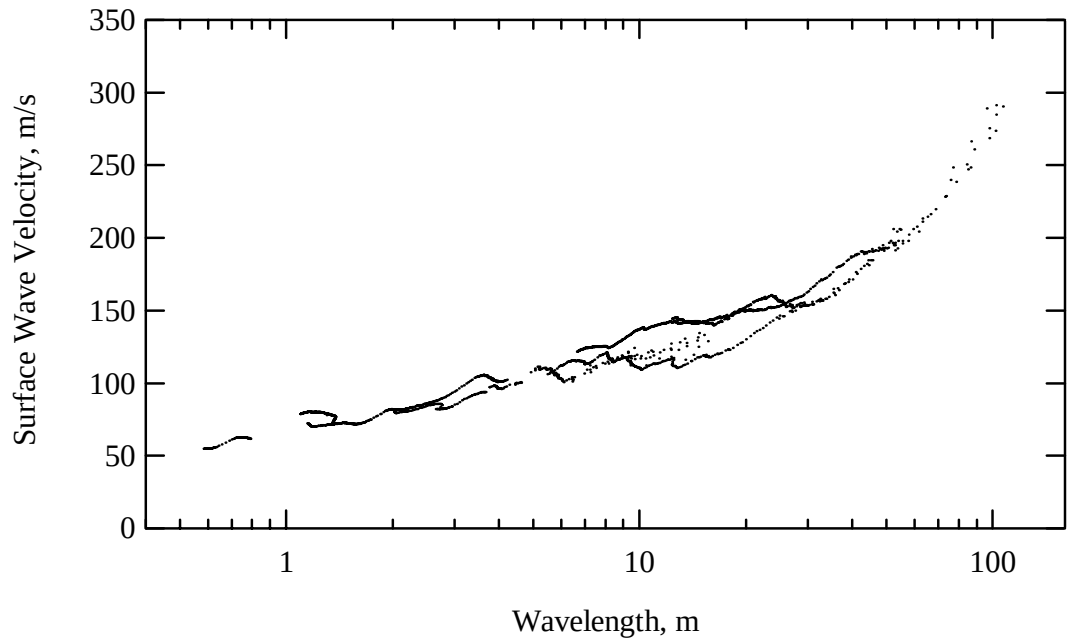


Fig. 4.24 Experimental dispersion curve measured at the West Weber Field (WWF), Weber County, Utah.

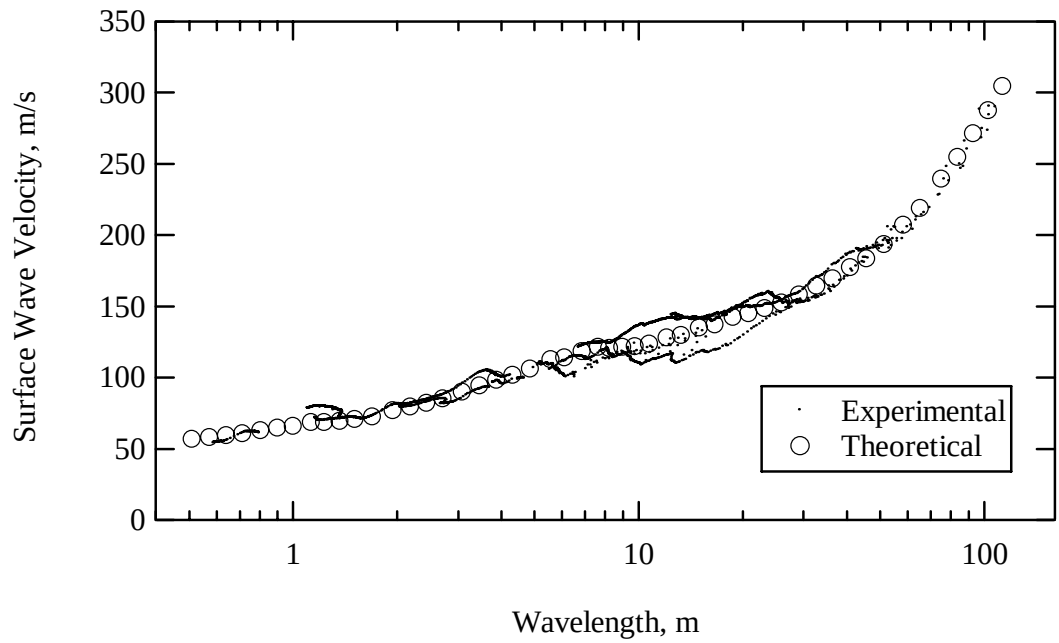


Fig. 4.25 Comparison of experimental and theoretical dispersion curves from the West Weber Field (WWF), Weber County, Utah.

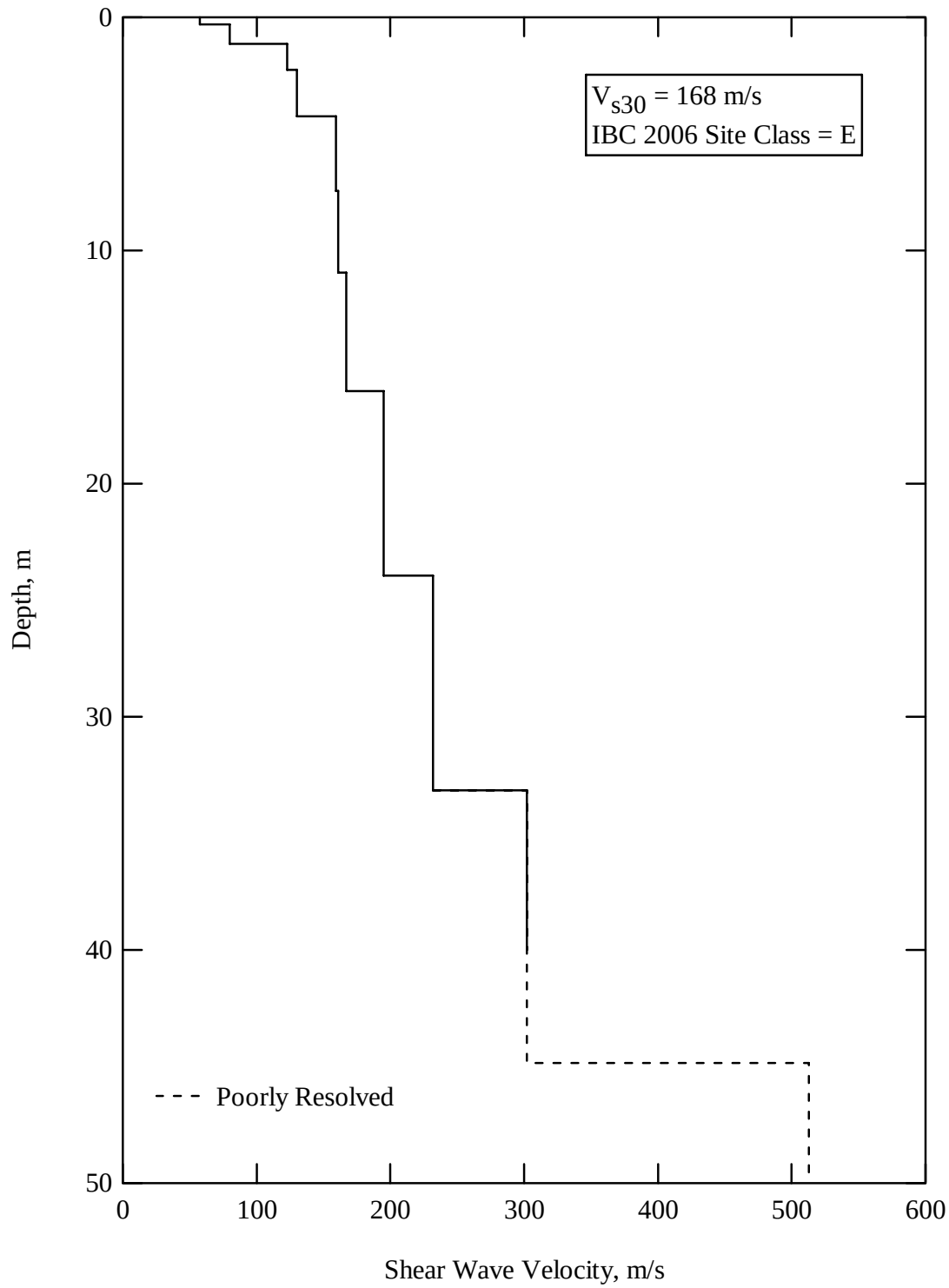


Fig. 4.26 Shear wave velocity profile determined from SASW testing at the West Weber Field (WWF), Weber County, Utah.

The average shear wave velocity in the upper 30 m of soil is 168 m/s, which corresponds to an IBC 2006 site class E. The shear wave velocity profile is well resolved to a depth of 40 m and poorly resolved from 40 m to 50 m.

Table 4.5 Tabulated measured and assumed layer properties at the West Weber Field (WWF), Weber County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.3	58	108	0.3	1.89
0.3	0.8	80	150	0.3	1.89
1.1	1.1	123	230	0.3	1.89
2.2	2.0	130	244	0.3	1.89
4.2	3.2	160	1500	0.49	1.92
7.4	3.5	161	1500	0.49	1.92
10.9	5.1	167	1500	0.49	1.92
16.0	7.9	195	1500	0.49	1.92
23.9	9.2	232	1500	0.49	1.92
33.2	6.9	302	1500	0.48	1.96
40.0	4.9	302*	1500	0.48	1.96
44.9	Half-Space	513*	1500	0.43	2.00

* Poorly Resolved

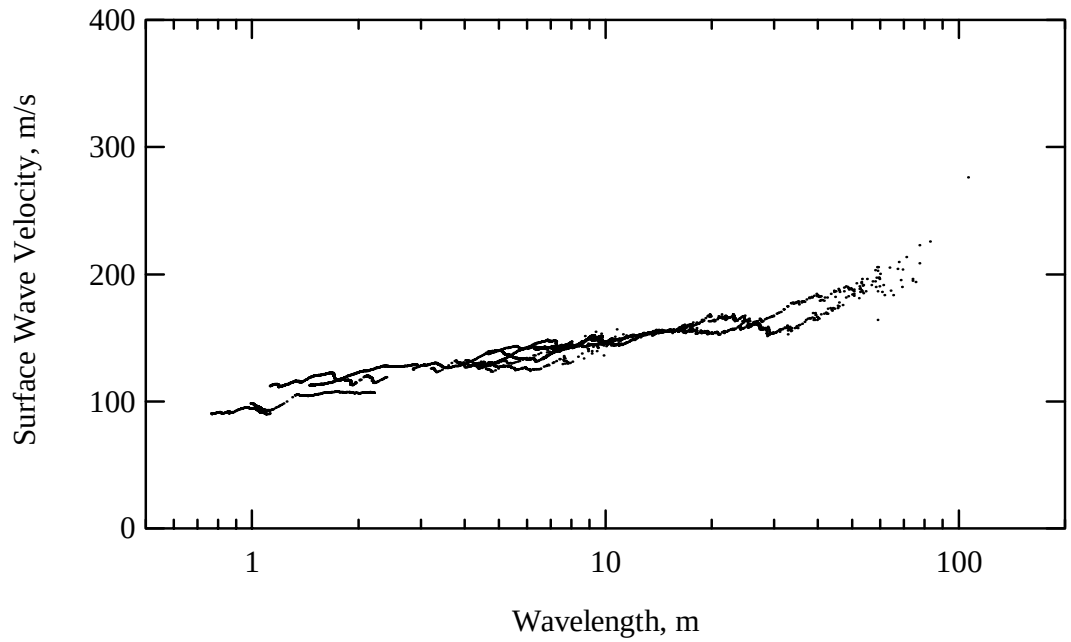


Fig. 4.29 Experimental dispersion curve measured at Hooper Elementary School (HES), Weber County, Utah.

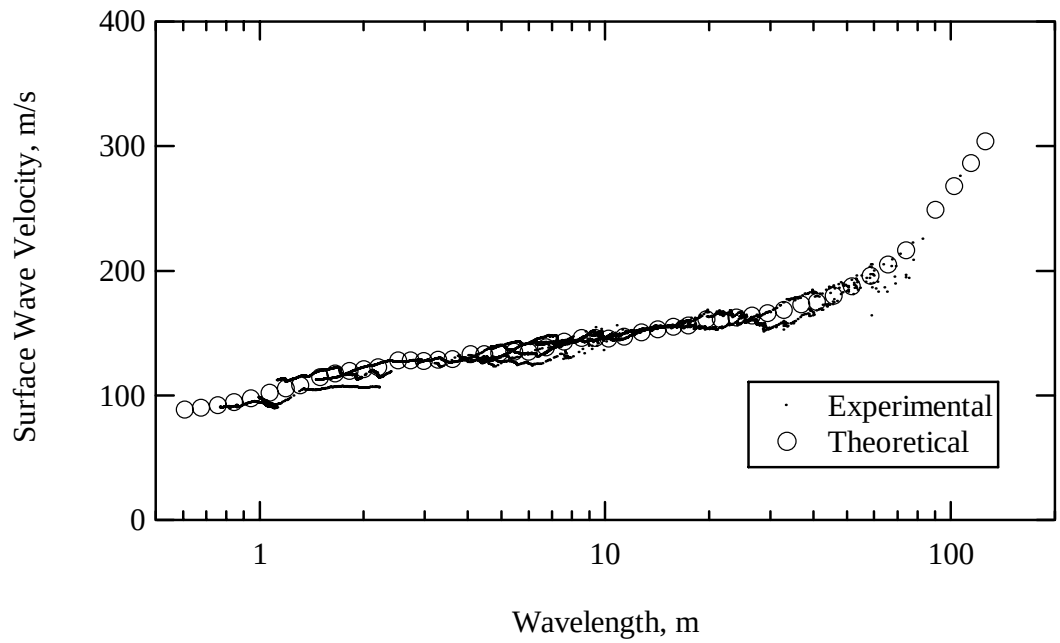


Fig. 4.30 Comparison of experimental and theoretical dispersion curves from Hooper Elementary School (HES), Weber County, Utah.

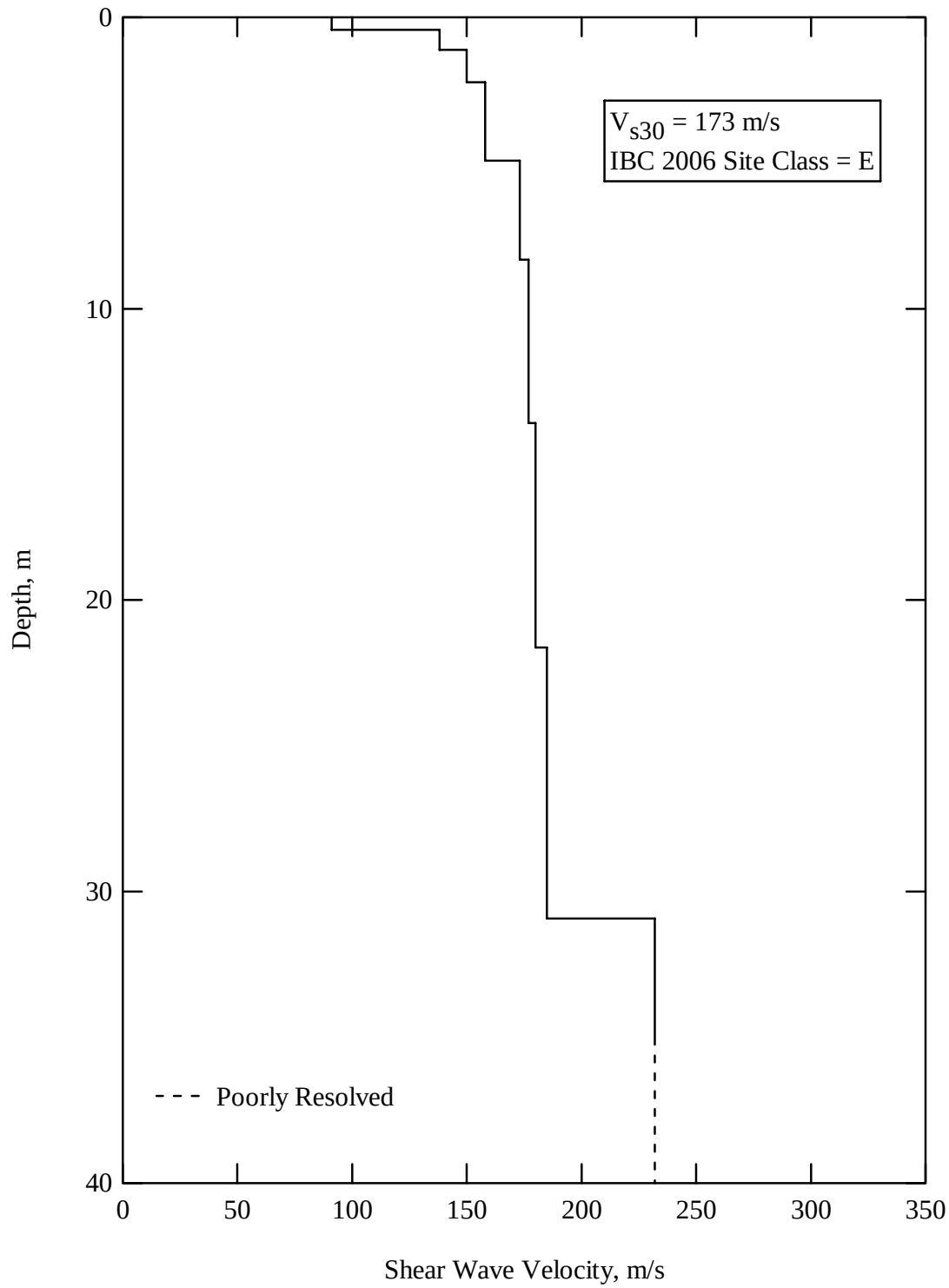


Fig. 4.31 Shear wave velocity profile determined from SASW testing at Hooper Elementary School (HES), Weber County, Utah.

The average shear wave velocity in the upper 30 m of soil is 173 m/s, which corresponds to an IBC 2006 site class E. The shear wave velocity profile is well resolved to a depth of 35 m and poorly resolved from 35 m to 40 m.

Table 4.6 Tabulated measured and assumed layer properties at Hooper Elementary School (HES), Weber County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.4	91	170	0.3	1.89
0.4	0.7	138	258	0.3	1.89
1.1	1.1	150	280	0.3	1.89
2.2	2.7	158	296	0.3	1.89
4.9	3.4	173	1500	0.49	1.89
8.3	5.6	177	1500	0.49	1.92
13.9	7.7	180	1500	0.49	1.92
21.6	9.3	185	1500	0.49	1.96
30.9	4.1	232	1500	0.49	1.96
35.0	8.9	232*	1500	0.49	1.96
43.9	Half-Space	499**	1500	0.44	1.96

* Poorly resolved
** Poorly resolved and not shown in profile

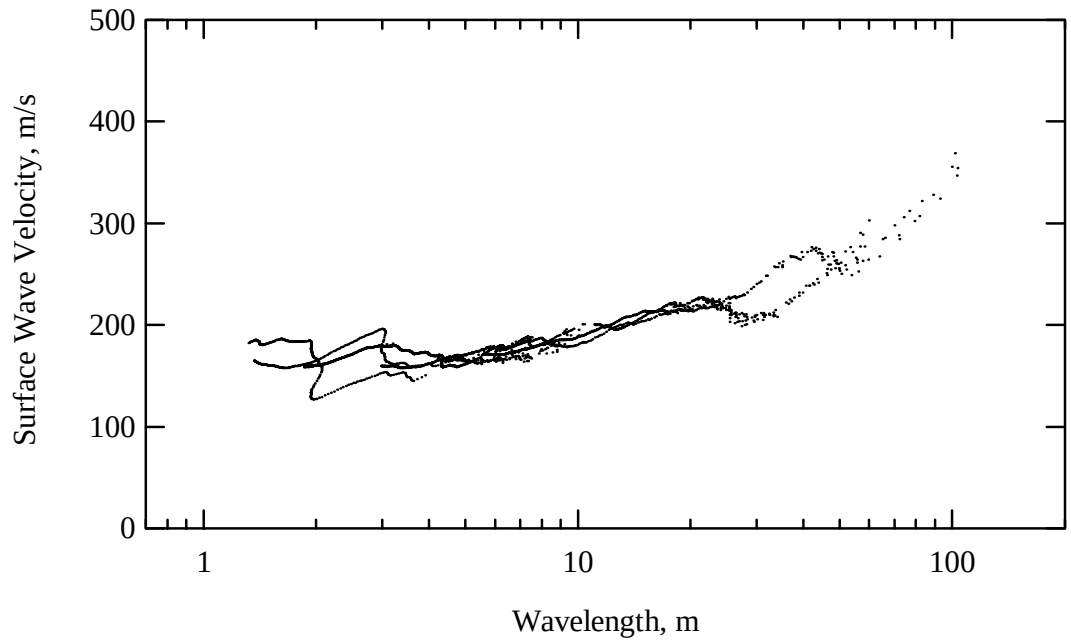


Fig. 4.34 Experimental dispersion curve measured at East Layton Elementary School (ELE), Davis County, Utah.

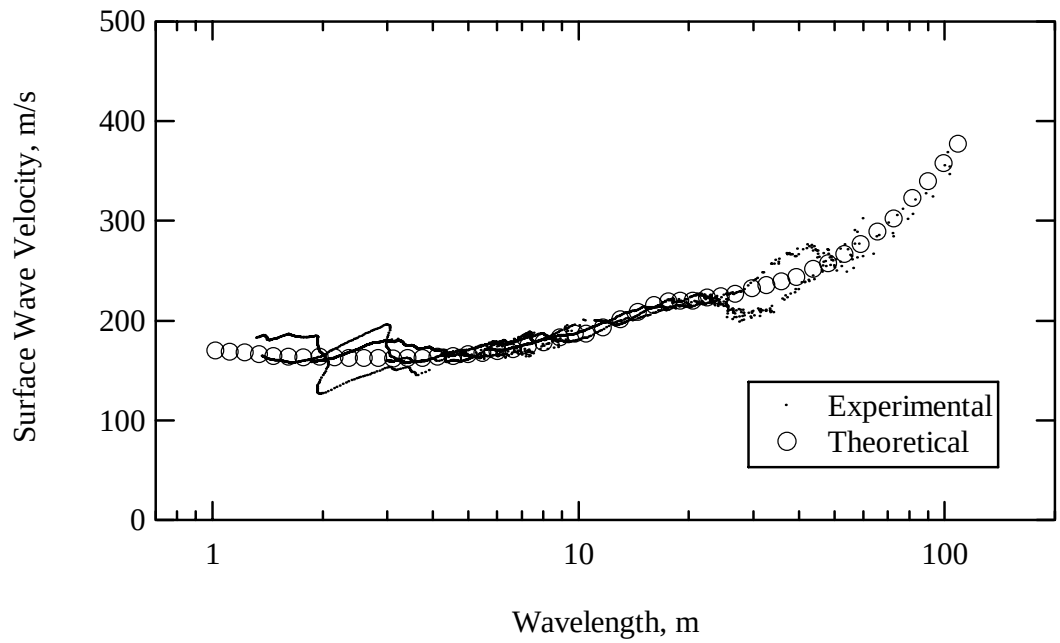


Fig. 4.35 Comparison of experimental and theoretical dispersion curves from East Layton Elementary School (ELE), Davis County, Utah.

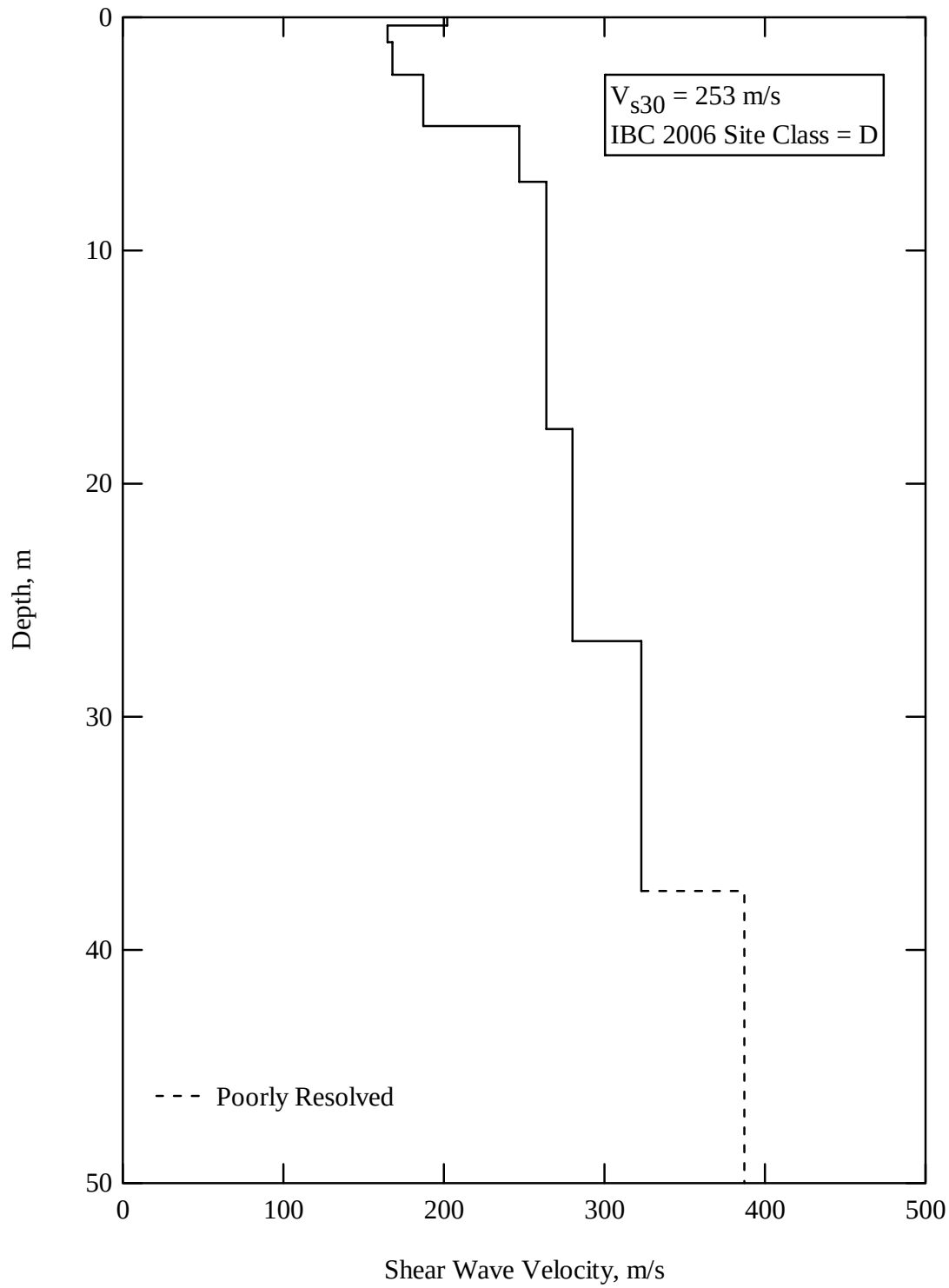


Fig. 4.36 Shear wave velocity profile determined from SASW testing at East Layton Elementary School (ELE), Davis County, Utah.

The average shear wave velocity in the upper 30 m of soil is 253 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 37.5 m and poorly resolved from 37.5 m to 50 m.

Table 4.7 Tabulated measured and assumed layer properties at East Layton Elementary School (ELE), Davis County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.3	202	378	0.3	1.89
0.3	0.7	165	309	0.3	1.89
1.1	1.4	168	314	0.3	1.89
2.5	2.2	187	350	0.3	1.89
4.7	2.4	247	462	0.3	1.92
7.1	2.7	264	494	0.3	1.92
9.8	7.9	264	1500	0.48	1.92
17.7	9.1	280	1500	0.48	1.96
26.8	10.7	323	1500	0.48	1.96
37.5	13.0	387*	1500	0.46	2.00
50.5	Half-Space	636**	1500	0.39	2.00

* Poorly resolved
** Poorly resolved and not shown in profile

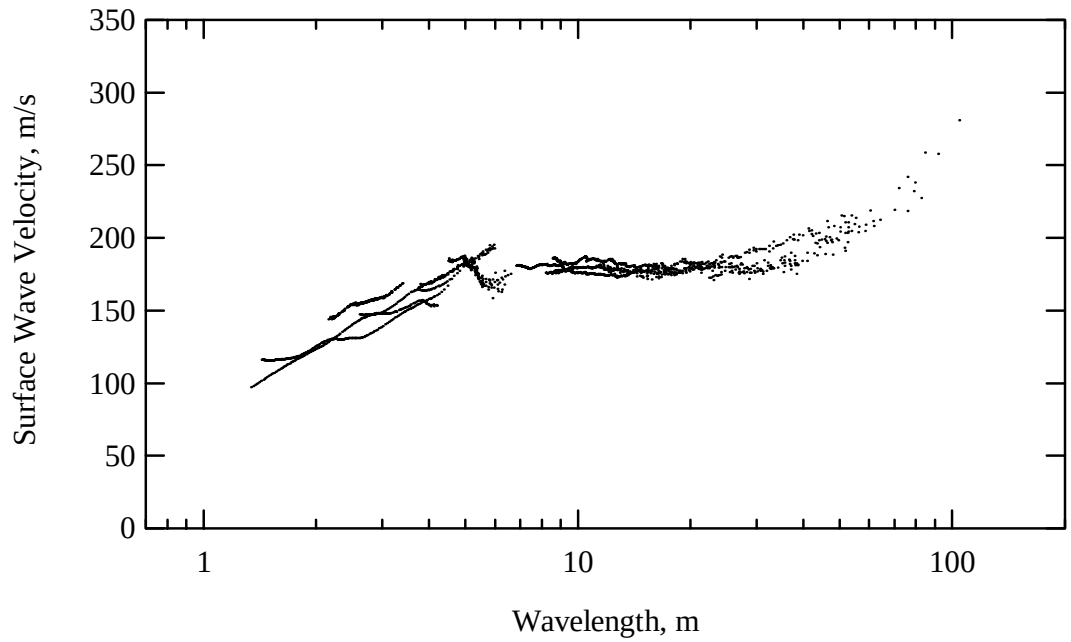


Fig. 4.39 Experimental dispersion curve measured at the Ogden Fire Station #2 (OF2), Weber County, Utah.

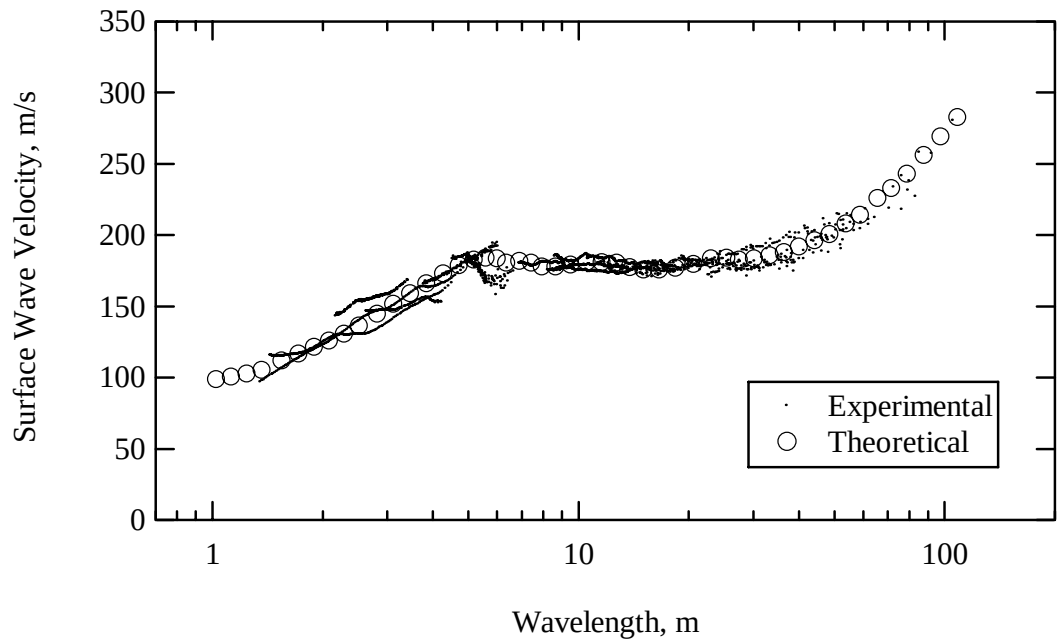


Fig. 4.40 Comparison of experimental and theoretical dispersion curves from the Ogden Fire Station #2 (OF2), Weber County, Utah.

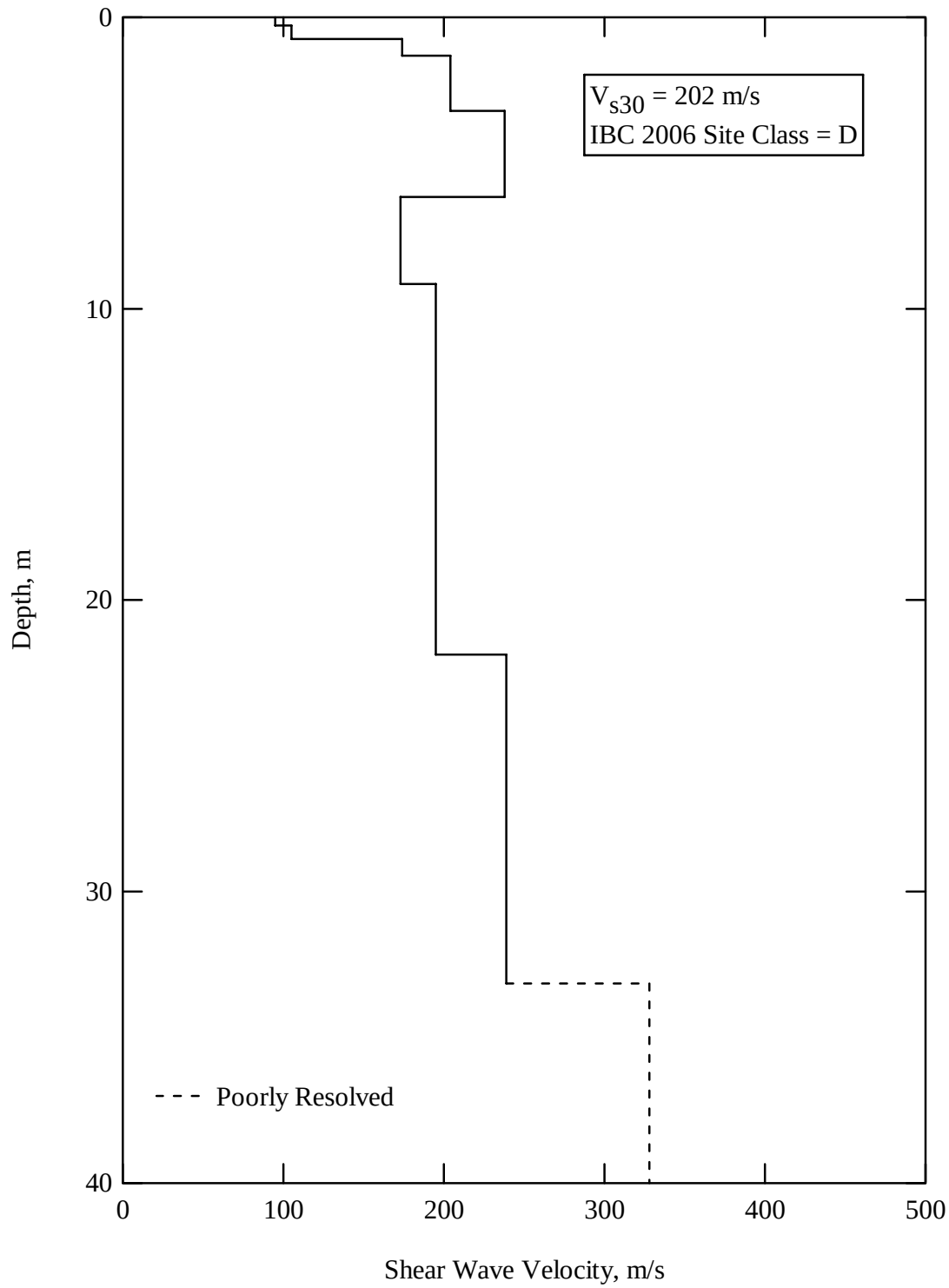


Fig. 4.41 Shear wave velocity profile determined from SASW testing at the Ogden Fire Station #2 (OF2), Weber County, Utah.

The average shear wave velocity in the upper 30 m of soil is 202 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 33.2 m and poorly resolved from 33.2 m to 40 m.

Table 4.8 Tabulated measured and assumed layer properties at the Ogden Fire Station #2 (OF2), Weber County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.3	95	178	0.3	1.89
0.3	0.5	105	196	0.3	1.89
0.7	0.6	174	326	0.3	1.92
1.3	1.9	204	382	0.3	1.92
3.2	2.9	238	445	0.3	1.92
6.2	3.0	173	324	0.3	1.92
9.2	3.8	195	365	0.3	1.92
13.0	8.9	195	1500	0.49	1.92
21.9	11.3	239	1500	0.49	1.92
33.2	Half-Space	328*	1500	0.47	1.96

* Poorly Resolved

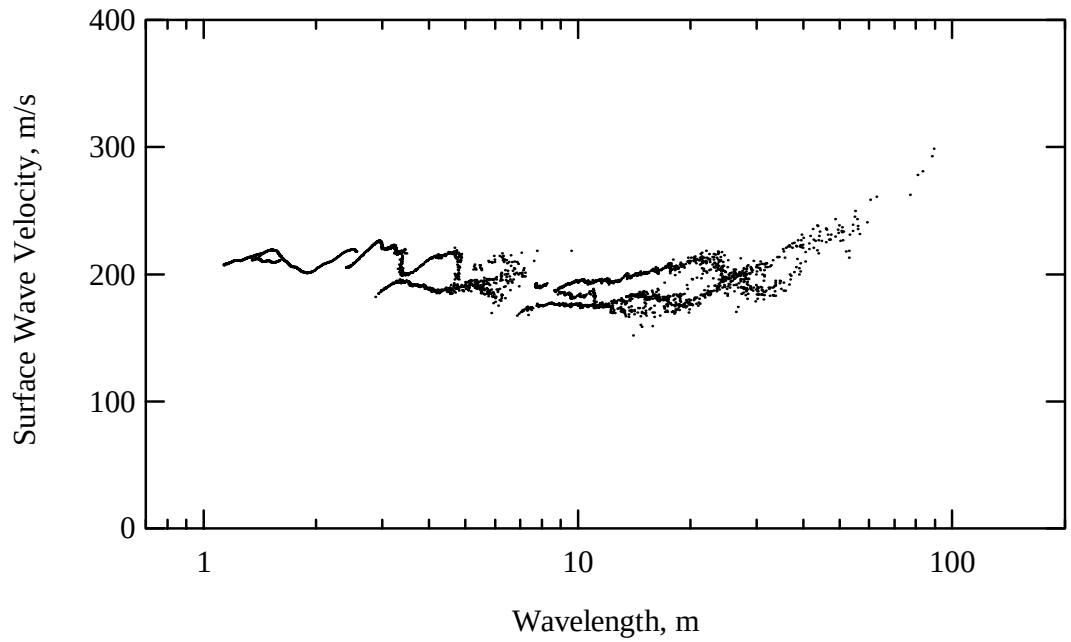


Fig. 4.45 Experimental dispersion curve measured at the Ogden Public Safety Building (OPS), Weber County, Utah.

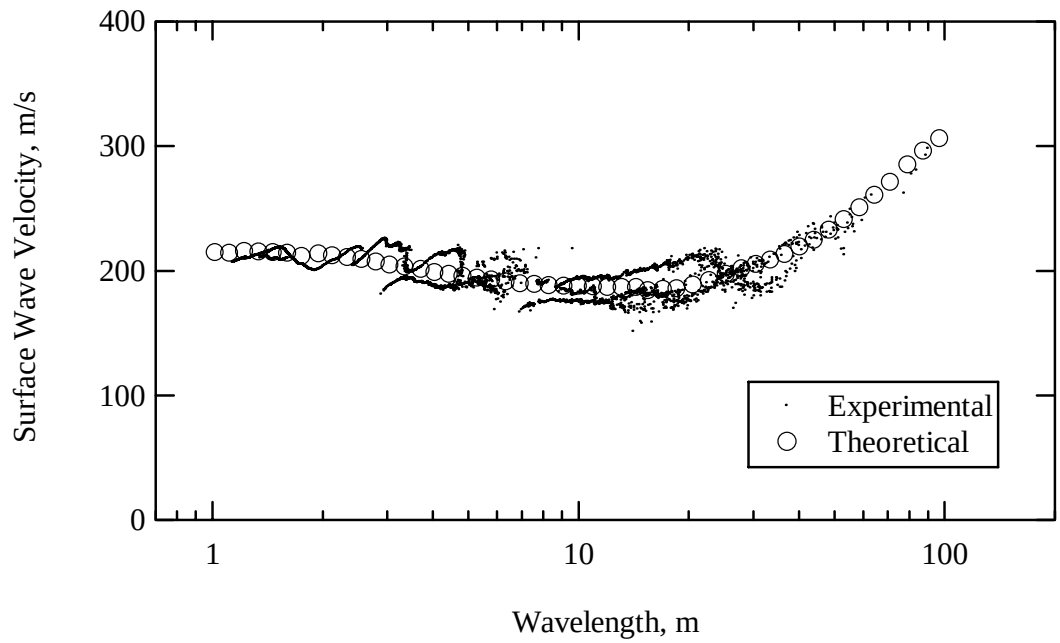


Fig. 4.46 Comparison of experimental and theoretical dispersion curves from the Ogden Public Safety Building (OPS), Weber County, Utah.

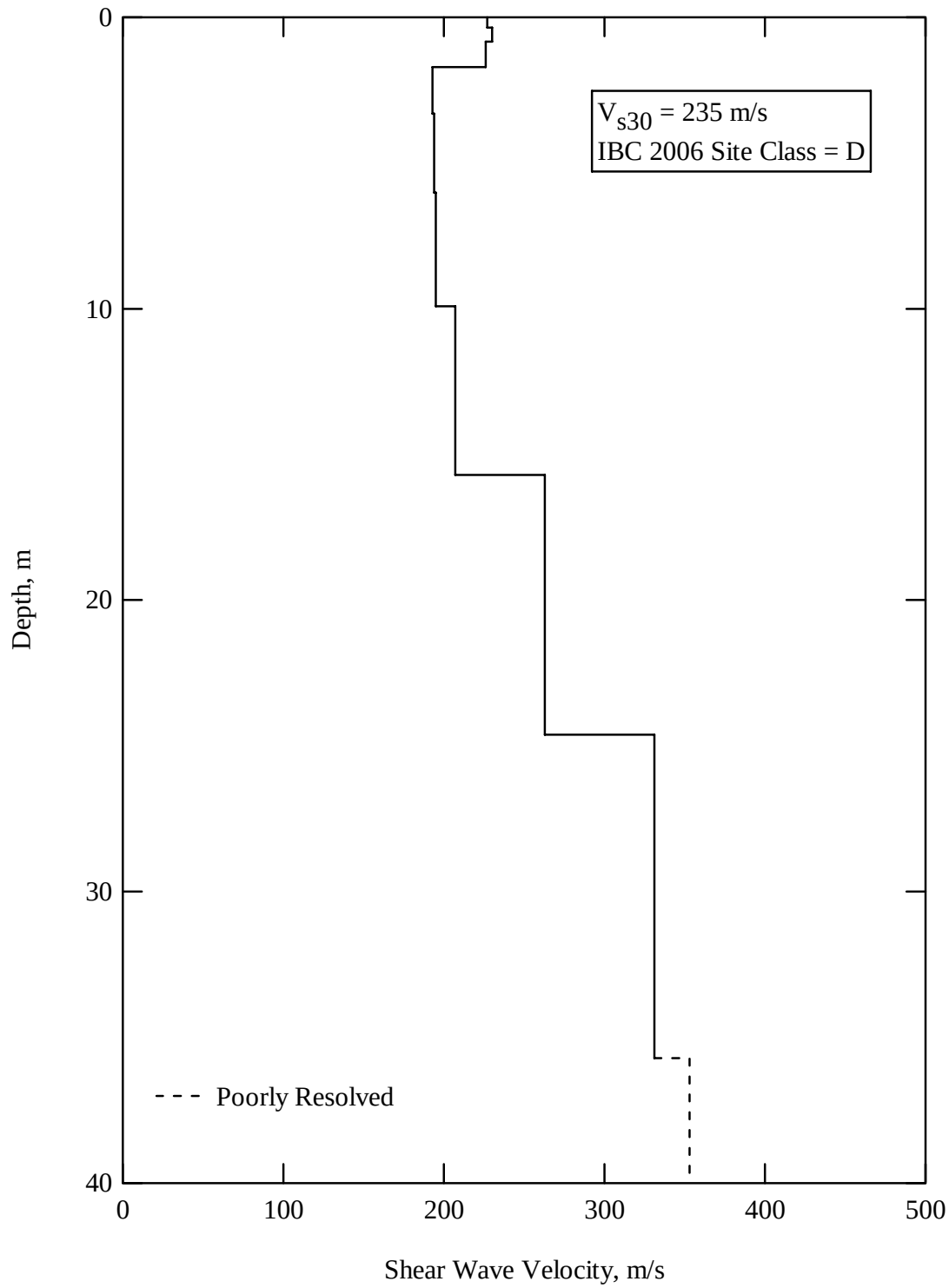


Fig. 4.47 Shear wave velocity profile determined from SASW testing at the Ogden Public Safety Building (OPS), Weber County, Utah.

The average shear wave velocity in the upper 30 m of soil is 235 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 35.7 m and poorly resolved from 35.7 m to 40 m.

Table 4.9 Tabulated measured and assumed layer properties at the Ogden Public Safety Building (OPS), Weber County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.4	227	425	0.3	1.92
0.4	0.5	230	430	0.3	1.92
0.8	0.9	226	423	0.3	1.92
1.7	1.6	193	361	0.3	1.92
3.3	2.7	194	363	0.3	1.92
6.0	3.9	195	365	0.3	1.92
9.9	5.8	207	387	0.3	1.92
15.7	8.9	263	1500	0.48	1.92
24.6	11.1	331	1500	0.47	1.96
35.7	Half-Space	353*	1500	0.47	1.96

* Poorly Resolved

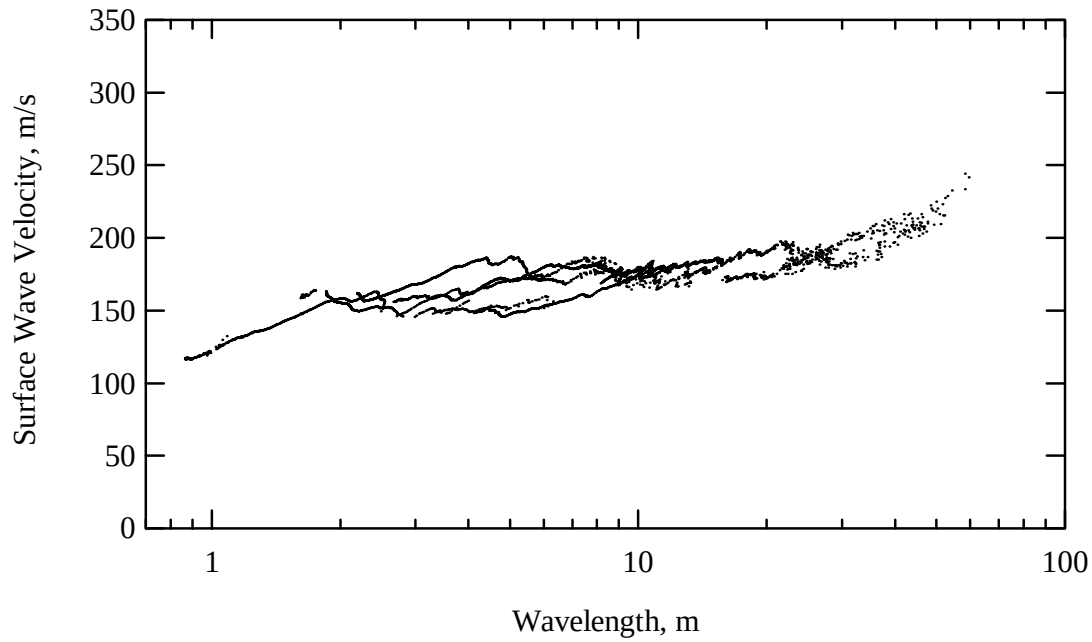


Fig. 4.50 Experimental dispersion curve measured at Bell Jr. High School (BJH), Weber County, Utah.

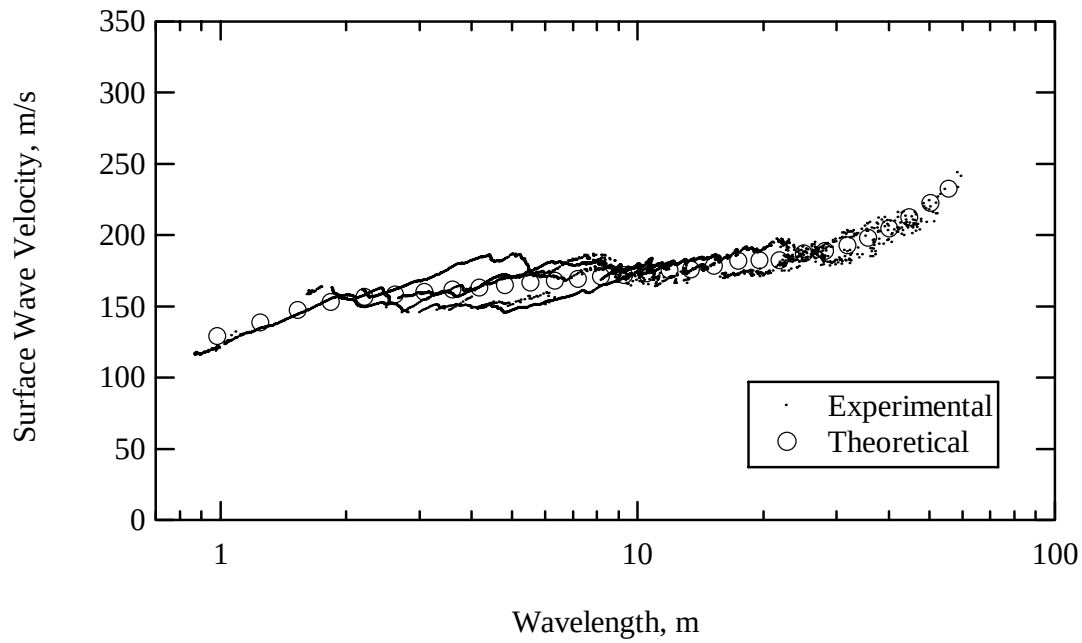


Fig. 4.51 Comparison of experimental and theoretical dispersion curves from Bell Jr. High School (BJH), Weber County, Utah.

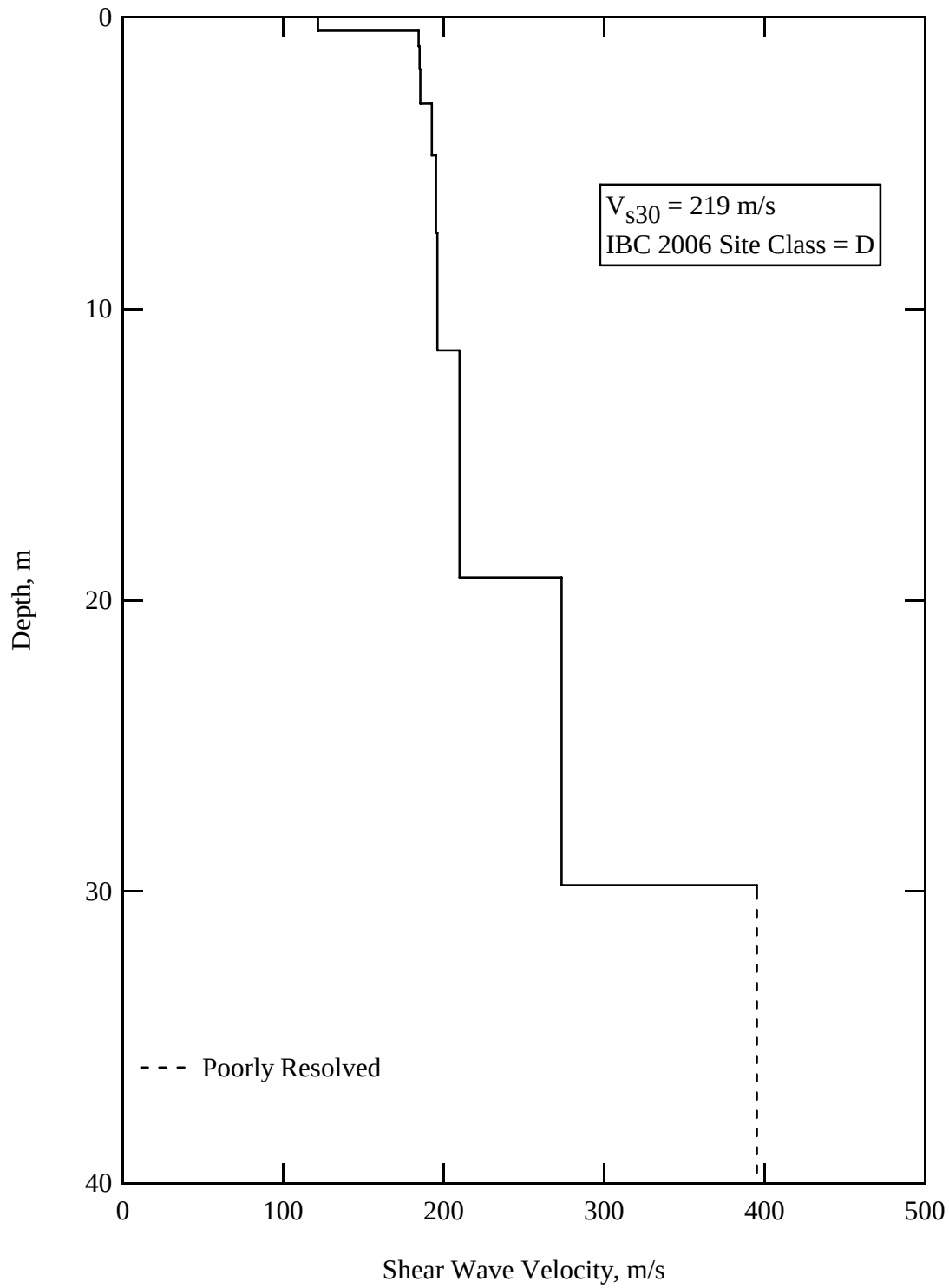


Fig. 4.52 Shear wave velocity profile determined from SASW testing at Bell Jr. High School (BJH), Weber County, Utah.

The average shear wave velocity in the upper 30 m of soil is 219 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 35 m and poorly resolved from 35 m to 40 m.

Table 4.10 Tabulated measured and assumed layer at Bell Jr. High School (BJH), Weber County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.5	122	227	0.3	1.87
0.5	0.5	184	345	0.3	1.90
1.0	0.8	185	346	0.3	1.90
1.8	1.2	185	347	0.3	1.90
3.0	1.8	193	360	0.3	1.90
4.7	2.7	195	365	0.3	1.90
7.4	4.0	196	367	0.3	1.90
11.4	7.8	210	393	0.3	1.90
19.2	10.6	273	1500	0.49	1.95
29.8	Half-Space	395*	1500	0.46	2.00

* Poorly Resolved

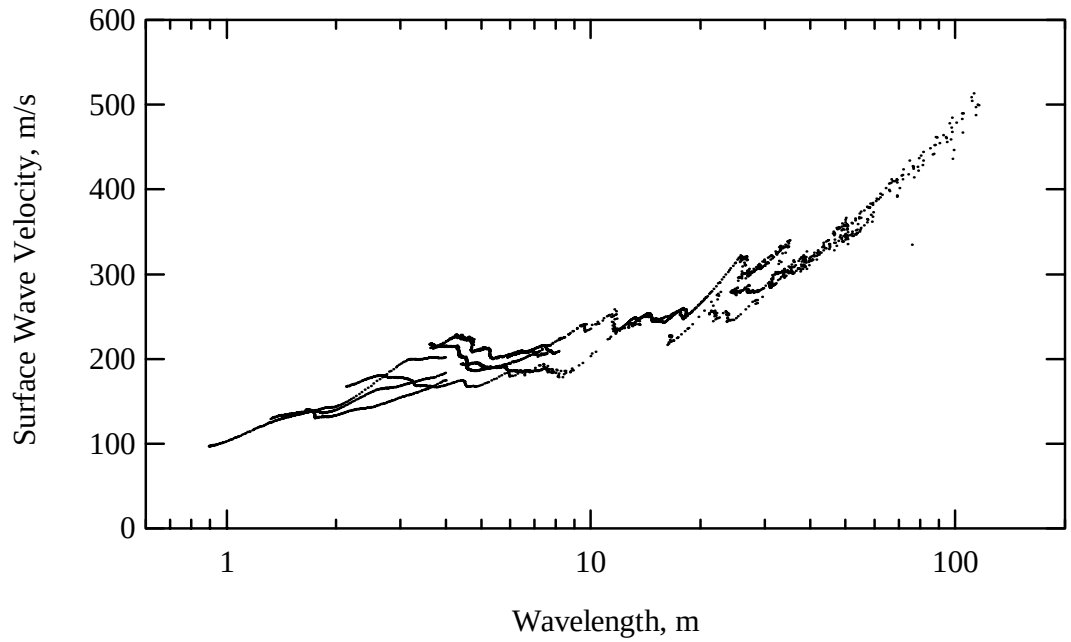


Fig. 4.55 Experimental dispersion curve measured at the Uintah Town Hall (UTH), Weber County, Utah.

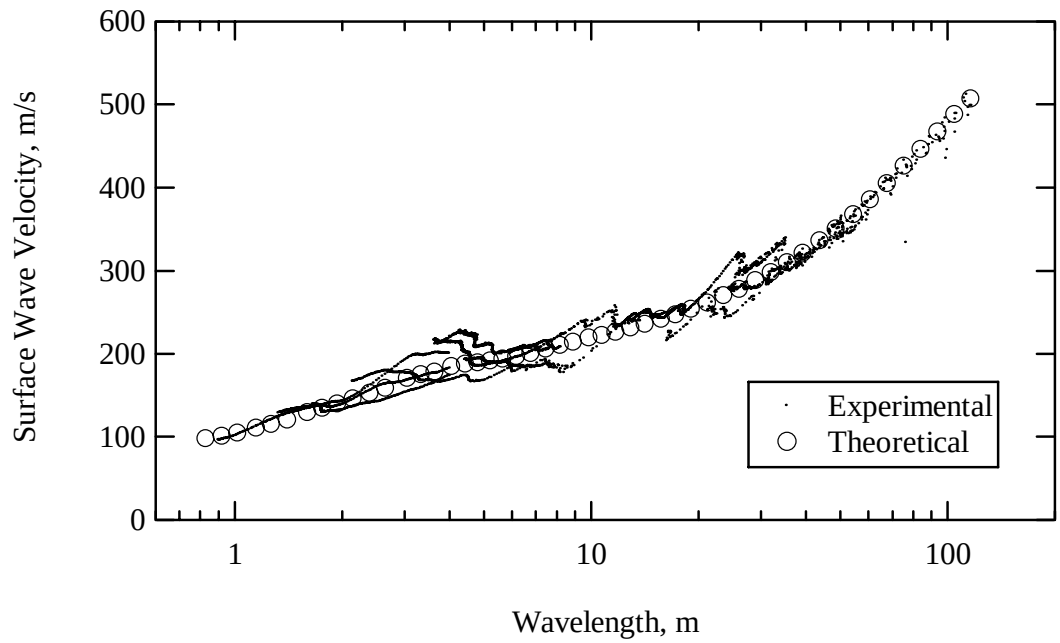


Fig. 4.56 Comparison of experimental and theoretical dispersion curves from the Uintah Town Hall (UTH), Weber County, Utah.

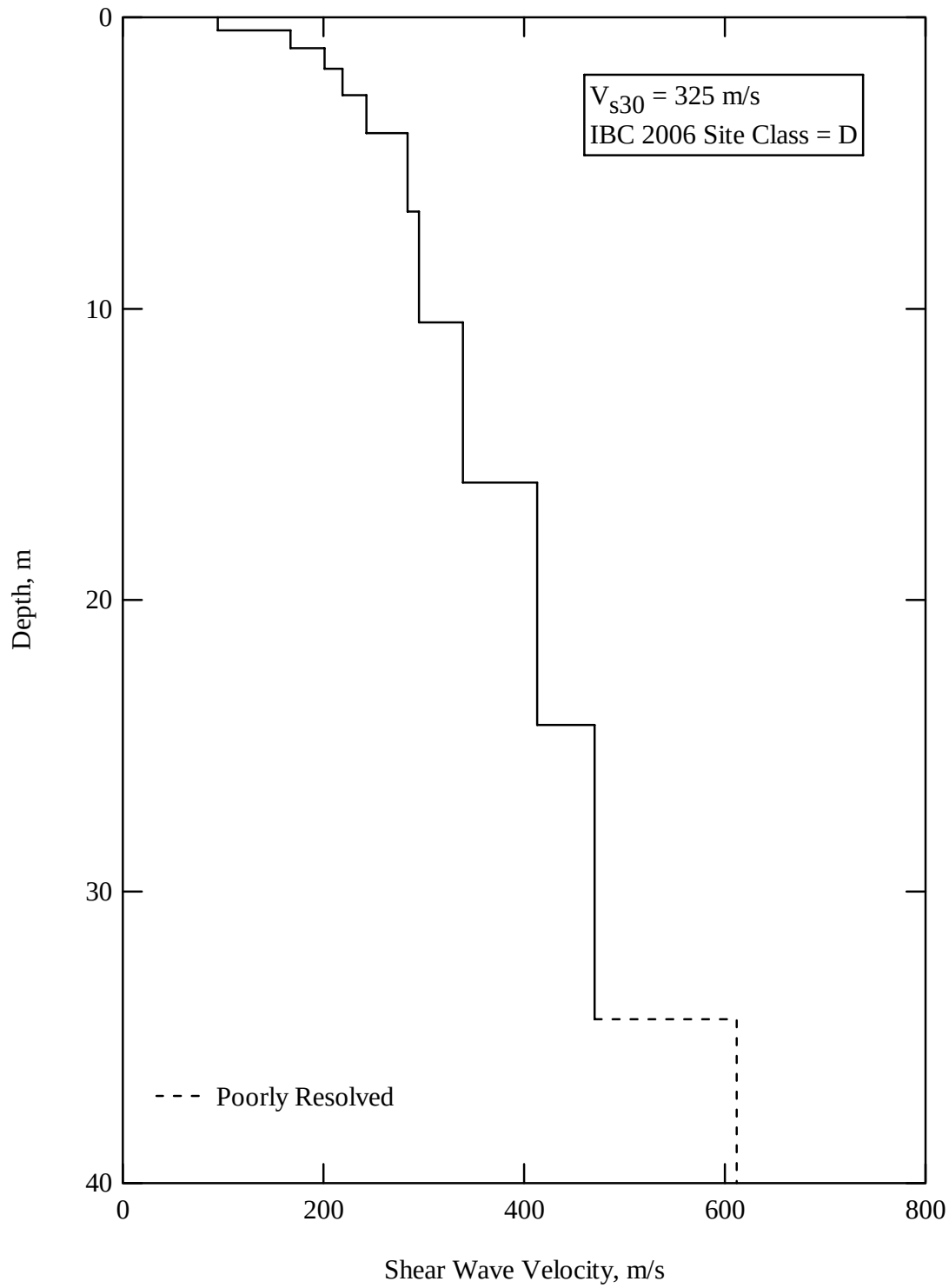


Fig. 4.57 Shear wave velocity profile determined from SASW testing at the Uintah Town Hall (UTH), Weber County, Utah.

The average shear wave velocity in the upper 30 m of soil is 325 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 34.4 m and poorly resolved from 34.4 m to 40 m.

Table 4.11 Tabulated measured and assumed layer at the Uintah Town Hall (UTH), Weber County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.5	95	177	0.3	1.89
0.5	0.6	167	312	0.3	1.89
1.1	0.7	201	376	0.3	1.89
1.8	0.9	219	410	0.3	1.90
2.7	1.3	243	454	0.3	1.90
4.0	2.7	284	531	0.3	1.90
6.7	3.8	295	552	0.3	1.92
10.5	5.5	339	634	0.3	2.00
16.0	8.3	413	773	0.3	2.00
24.3	10.1	470	879	0.3	2.00
34.4	Half-Space	612*	1145	0.3	2.00

* Poorly Resolved

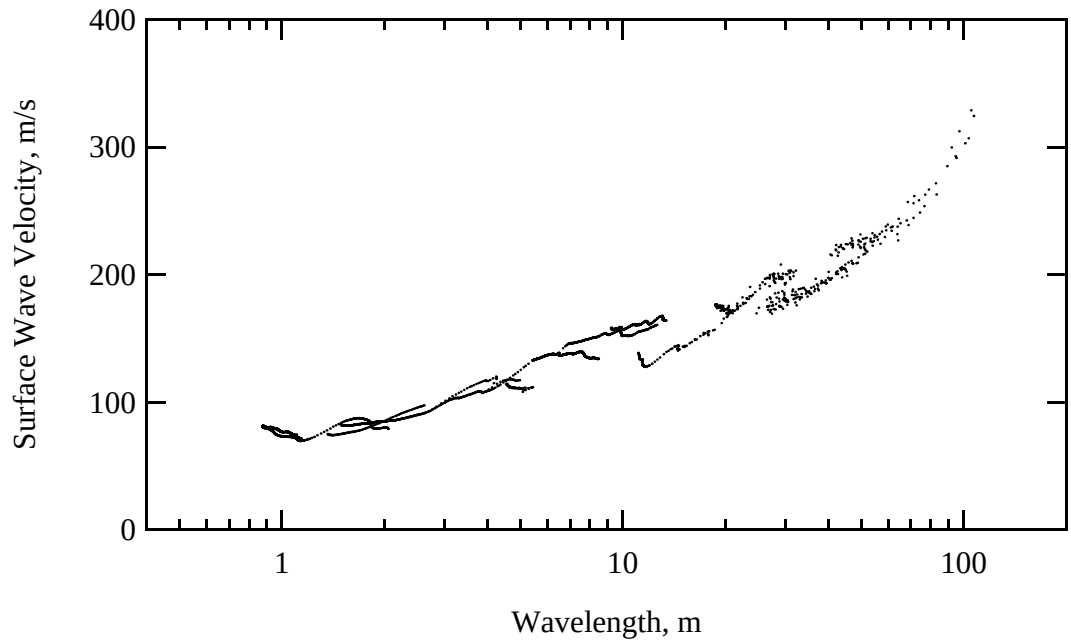


Fig. 4.60 Experimental dispersion curve measured at Mountain View Elementary (MVE), Weber County, Utah.

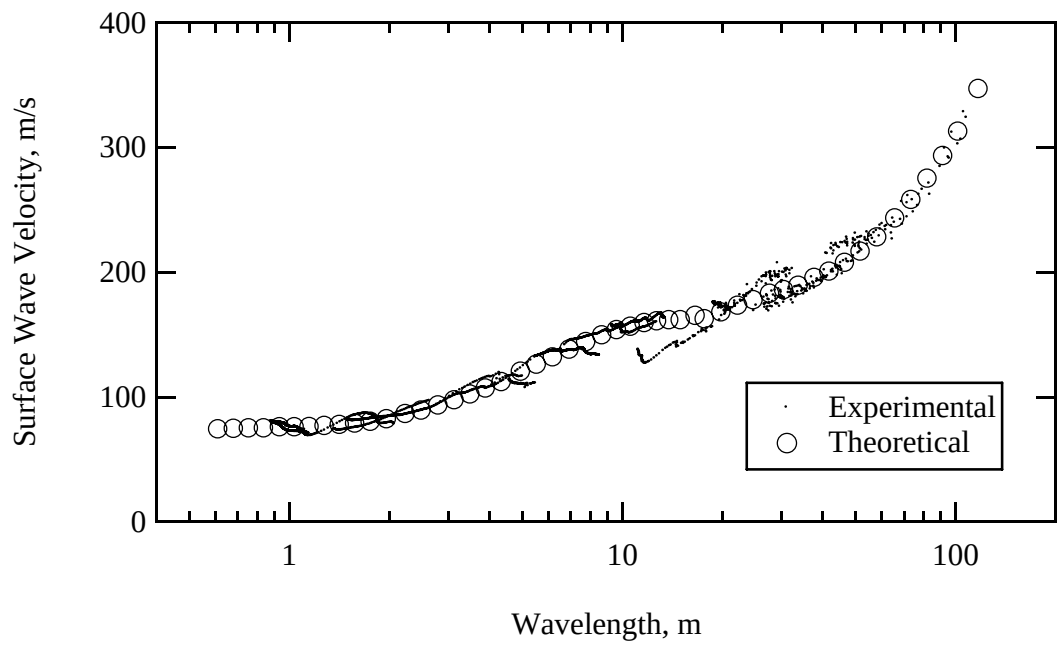


Fig. 4.61 Comparison of experimental and theoretical dispersion curves from Mountain View Elementary (MVE), Weber County, Utah.

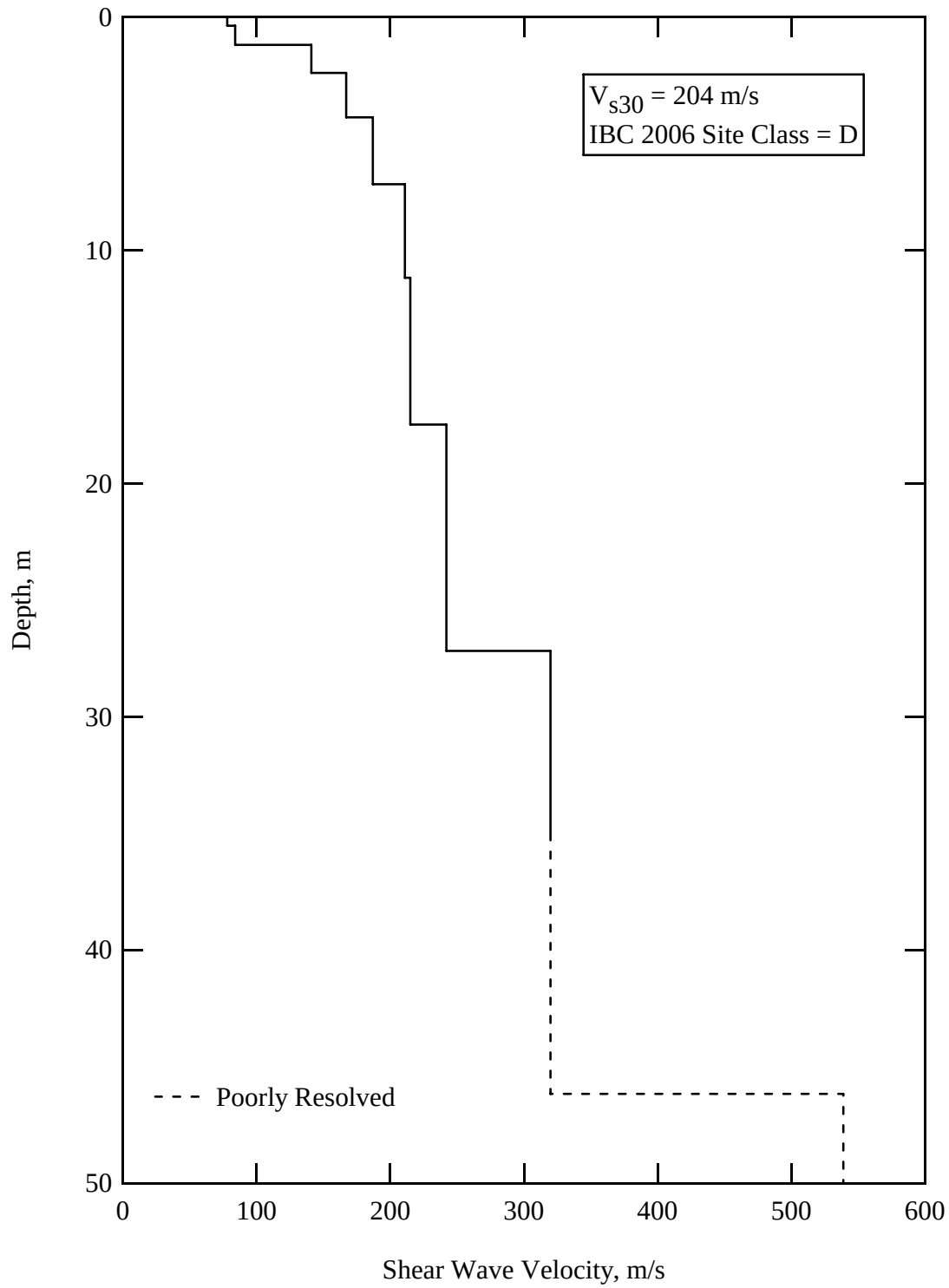


Fig. 4.62 Shear wave velocity profile determined from SASW testing at Mountain View Elementary (MVE), Weber County, Utah.

The average shear wave velocity in the upper 30 m of soil is 204 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 35 m and poorly resolved from 35 m to 50 m.

Table 4.12 Tabulated measured and assumed layer at Mountain View Elementary (MVE), Weber County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.4	78	146	0.3	1.89
0.4	0.8	84	157	0.3	1.89
1.2	1.2	141	264	0.3	1.89
2.4	1.9	167	312	0.3	1.89
4.3	2.9	187	350	0.3	1.92
7.2	4.0	211	395	0.3	1.92
11.2	6.3	215	402	0.3	1.92
17.5	9.7	242	1500	0.49	1.92
27.2	7.8	320	1500	0.48	1.96
35.0	11.2	320*	1500	0.48	1.96
46.2	Half-Space	539*	1500	0.43	2.00

* Poorly Resolved

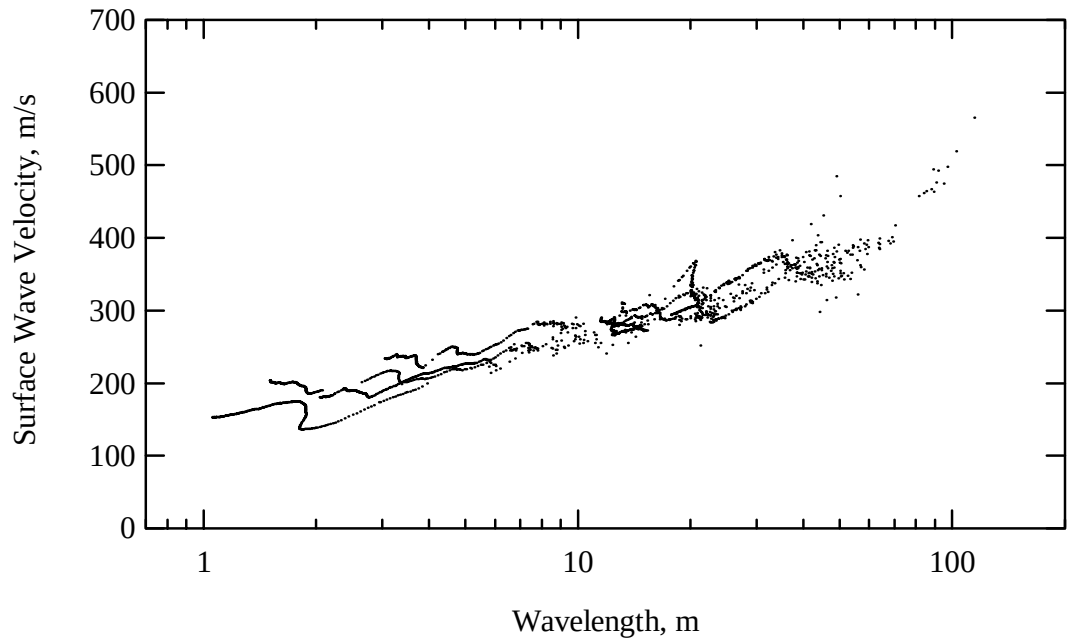


Fig. 4.65 Experimental dispersion curve measured at Bates Elementary School (BES), Weber County, Utah.

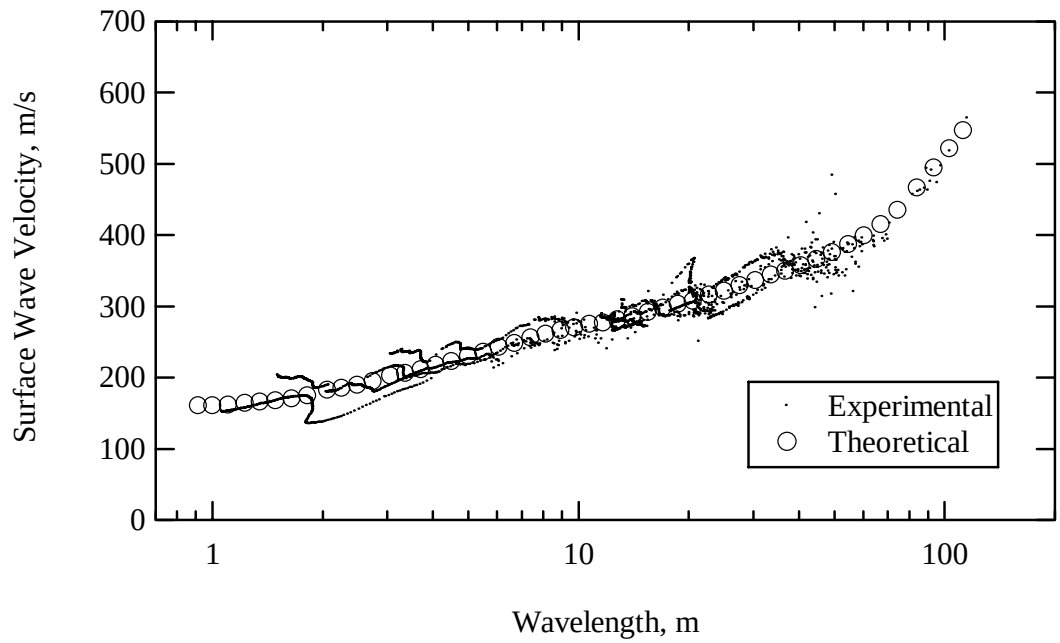


Fig. 4.66 Comparison of experimental and theoretical dispersion curves from Bates Elementary School (BES), Weber County, Utah.

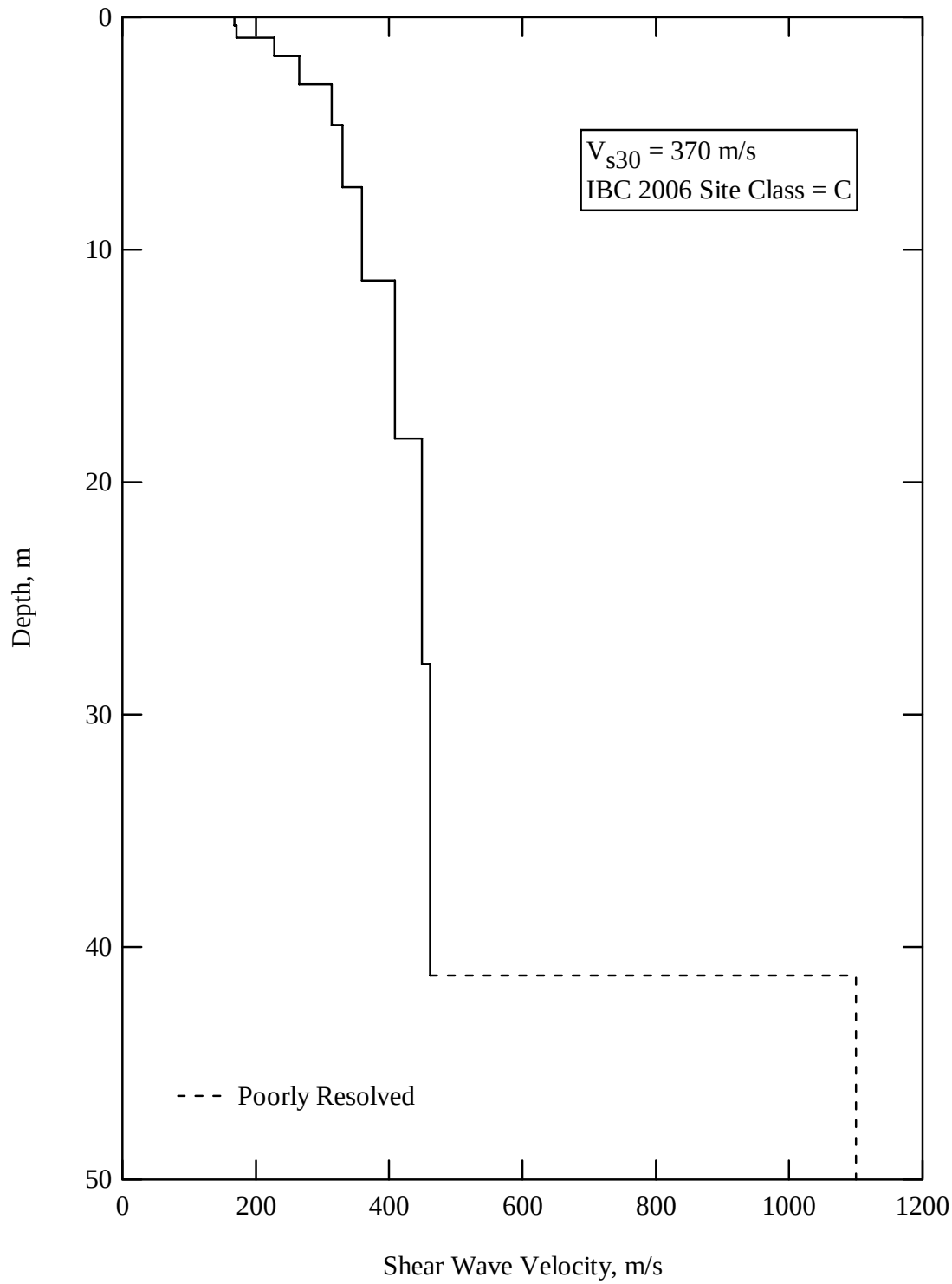


Fig. 4.67 Shear wave velocity profile determined from SASW testing at Bates Elementary School (BES), Weber County, Utah.

The average shear wave velocity in the upper 30 m of soil is 370 m/s, which corresponds to an IBC 2006 site class C. The shear wave velocity profile is well resolved to a depth of 41.2 m and poorly resolved from 41.2 m to 50 m.

Table 4.13 Tabulated measured and assumed layer at Bates Elementary School (BES), Weber County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.4	168	314	0.3	1.89
0.4	0.5	171	320	0.3	1.92
0.9	0.8	228	427	0.3	1.92
1.7	1.2	265	496	0.3	1.92
2.9	1.8	314	587	0.3	1.92
4.7	2.7	330	617	0.3	2.00
7.3	4.0	359	672	0.3	2.00
11.3	6.8	409	765	0.3	2.00
18.1	9.7	449	840	0.3	2.00
27.8	13.4	461	863	0.3	2.00
41.2	Half Space	1100*	2058	0.3	2.10

* Poorly Resolved

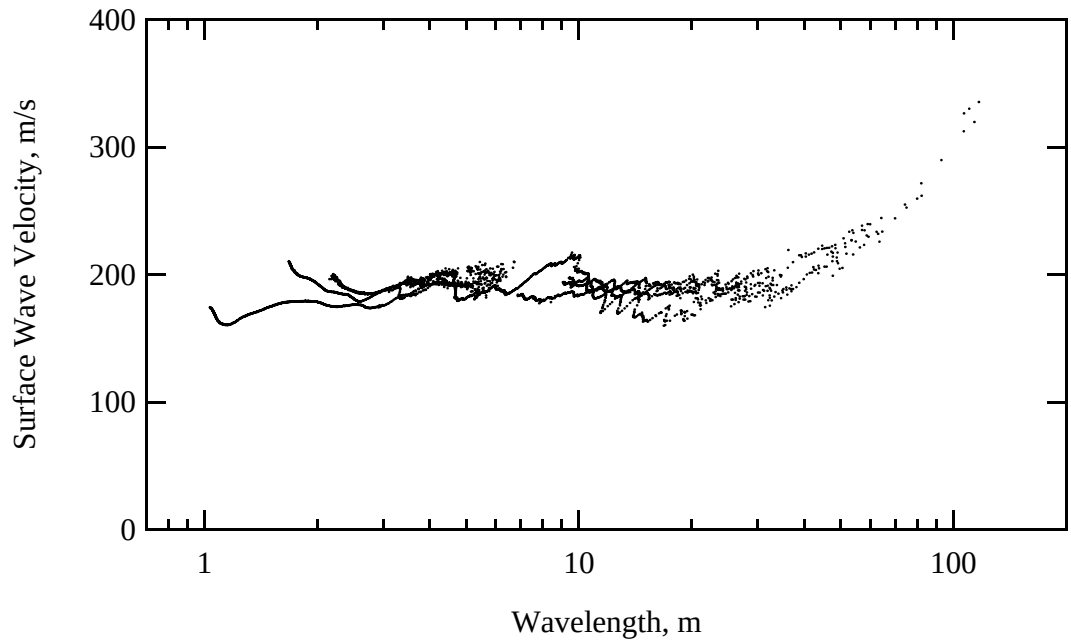


Fig. 4.70 Experimental dispersion curve measured at Weber State University (7212), Weber County, Utah.

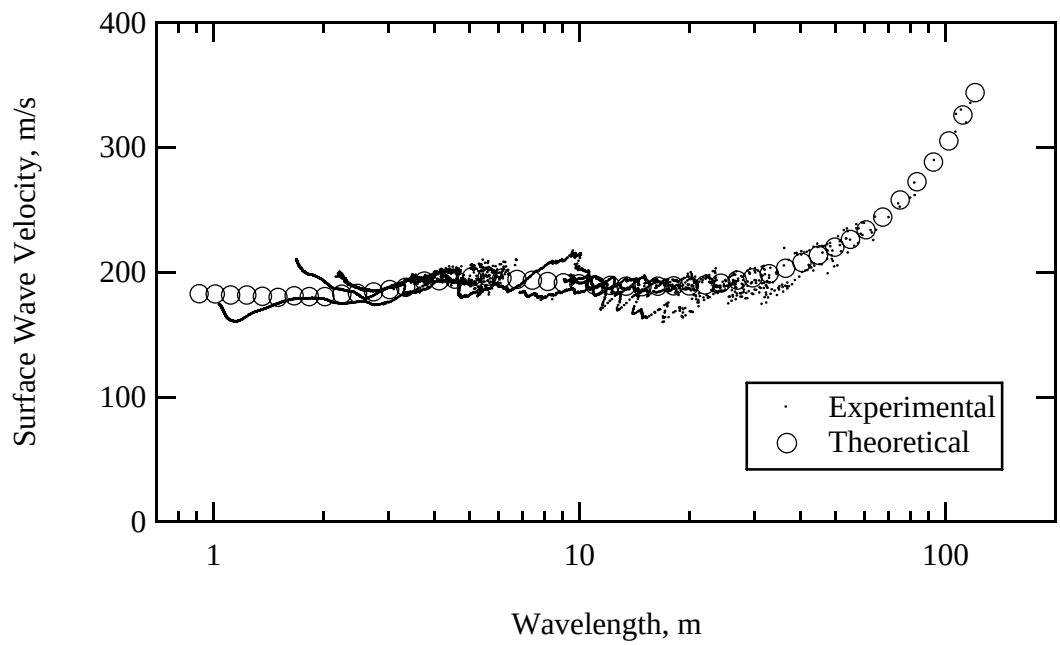


Fig. 4.71 Comparison of experimental and theoretical dispersion curves from Weber State University (7212), Weber County, Utah.

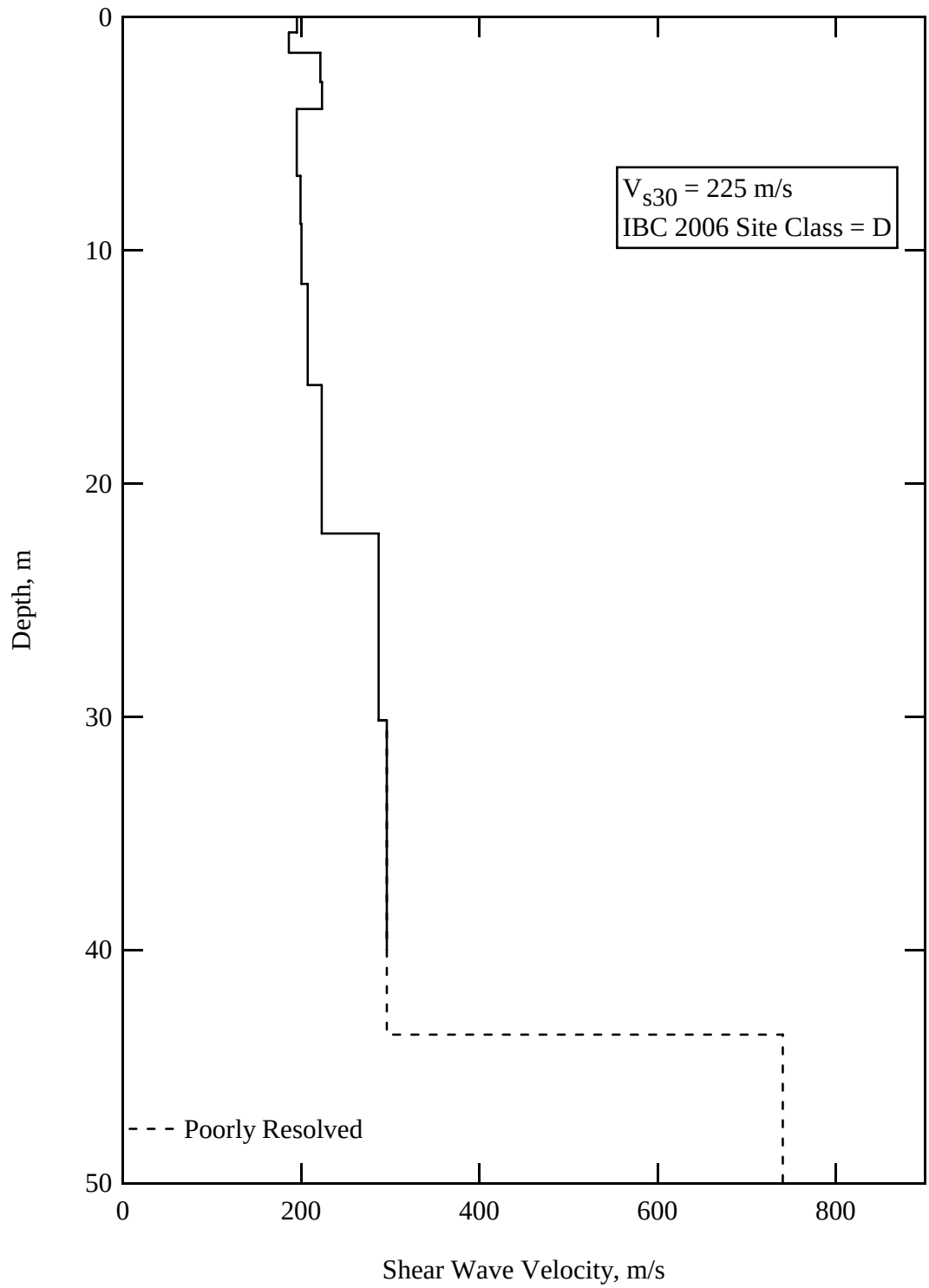


Fig. 4.72 Shear wave velocity profile determined from SASW testing at Weber State University (7212), Weber County, Utah.

The average shear wave velocity in the upper 30 m of soil is 225 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 40 m and poorly resolved from 40 m to 50 m.

Table 4.14 Tabulated measured and assumed layer at Weber State University (7212), Weber County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.7	195	365	0.30	1.92
0.7	0.9	186	349	0.30	1.92
1.5	1.3	222	415	0.30	1.92
2.8	1.2	223	418	0.30	1.92
3.9	2.9	195	365	0.30	1.92
6.8	2.1	199	373	0.30	1.92
8.9	2.6	201	375	0.30	1.92
11.4	4.3	208	388	0.30	1.92
15.8	6.4	223	418	0.30	1.92
22.1	8.0	287	537	0.30	1.92
30.2	9.8	296	554	0.30	1.92
40.0	3.7	296*	554	0.30	1.92
43.6	Half-Space	741*	1385	0.30	2.08

* Poorly Resolved

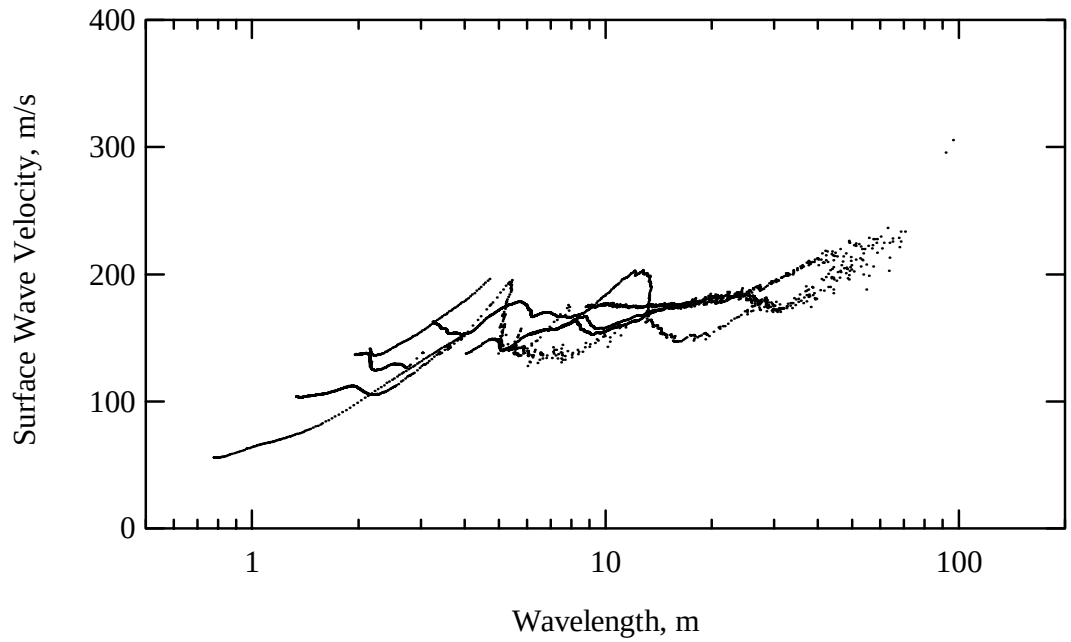


Fig. 4.75 Experimental dispersion curve measured at South Ogden Jr. High School (SOJ), Weber County, Utah.

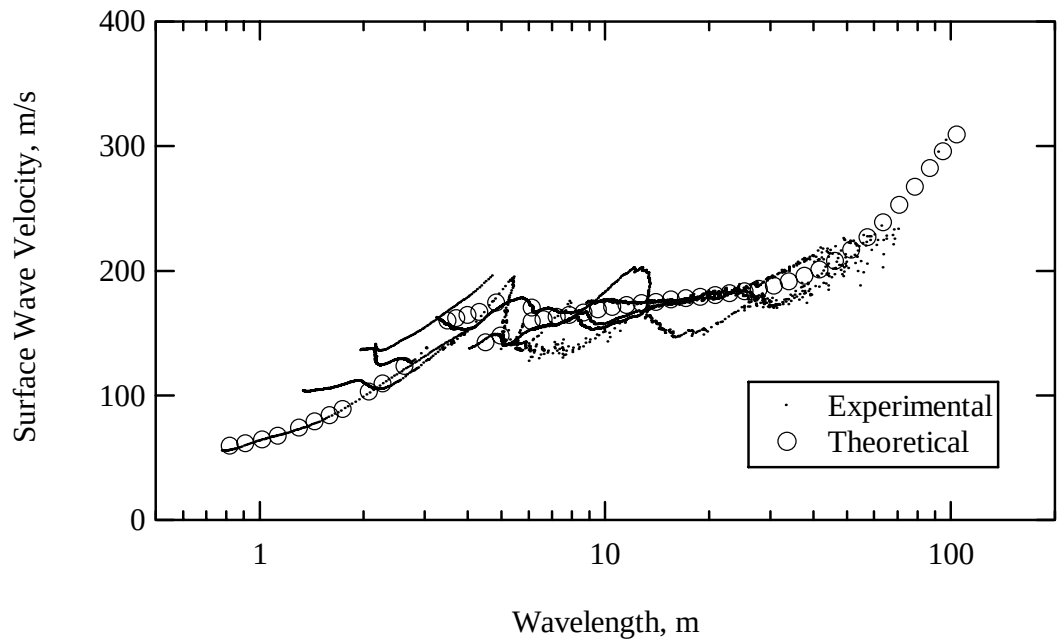


Fig. 4.76 Comparison of experimental and theoretical dispersion curves from South Ogden Jr. High School (SOJ), Weber County, Utah.

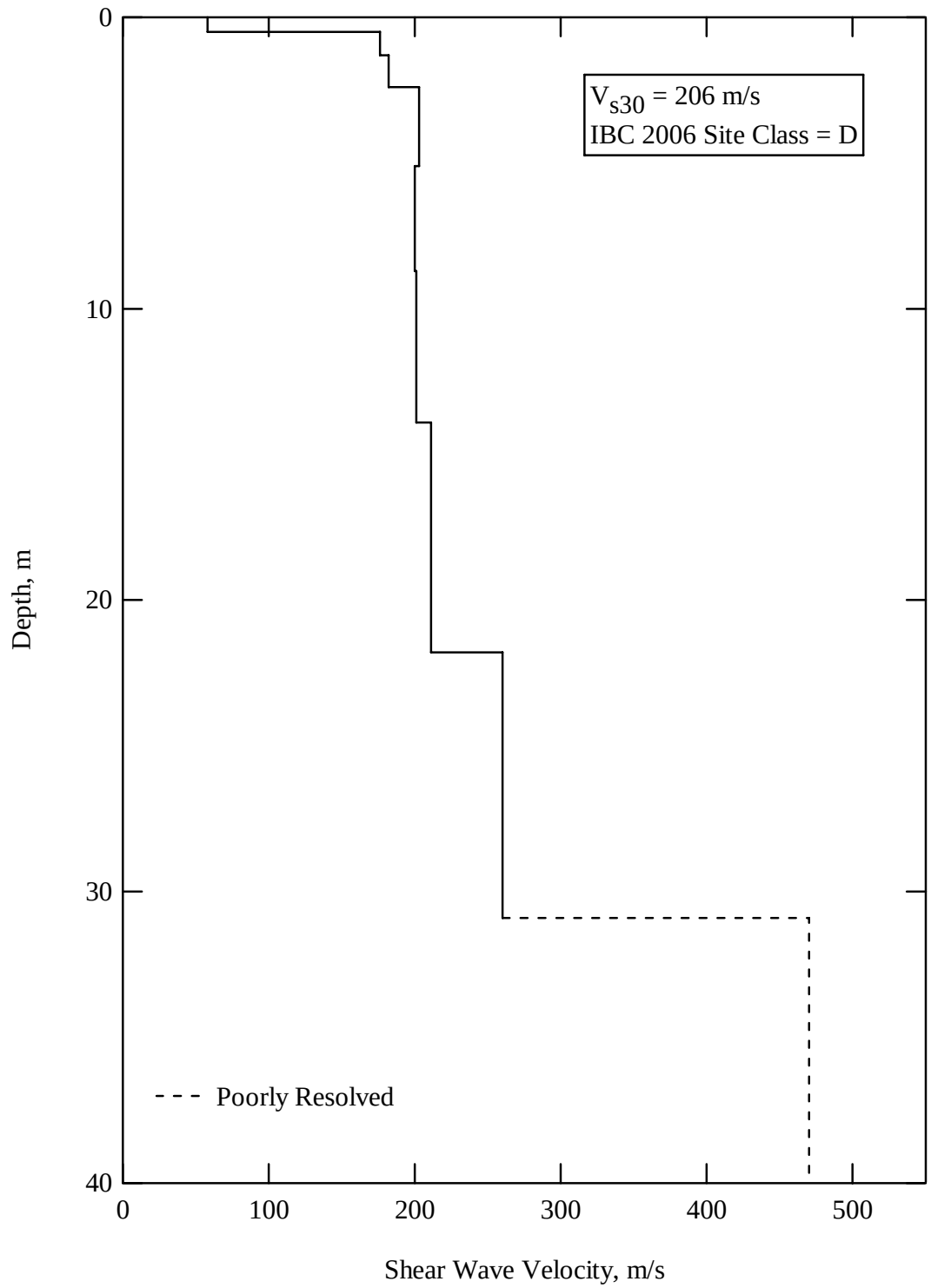


Fig. 4.77 Shear wave velocity profile determined from SASW testing at South Ogden Jr. High School (SOJ), Weber County, Utah.

The average shear wave velocity in the upper 30 m of soil is 206 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 30.9 m and poorly resolved from 30.9 m to 40 m.

Table 4.15 Tabulated measured and assumed layer at South Ogden Jr. High School (SOJ), Weber County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.5	58	109	0.3	1.92
0.5	0.8	176	329	0.3	1.92
1.3	1.1	182	341	0.3	1.92
2.4	2.7	203	380	0.3	1.92
5.1	3.6	200	374	0.3	1.92
8.7	5.2	201	376	0.3	1.92
13.9	7.9	211	395	0.3	1.92
21.8	9.1	260	486	0.3	1.92
30.9	Half-Space	470*	879	0.3	1.96

* Poorly Resolved

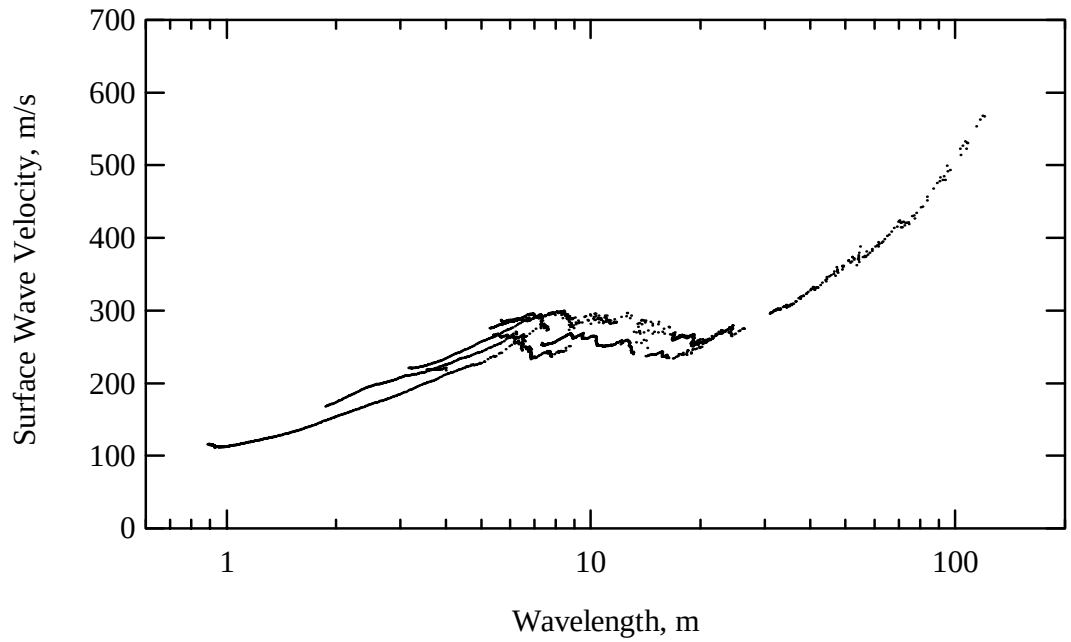


Fig. 4.80 Experimental dispersion curve measured at Wasatch Elementary School (WES), Weber County, Utah.

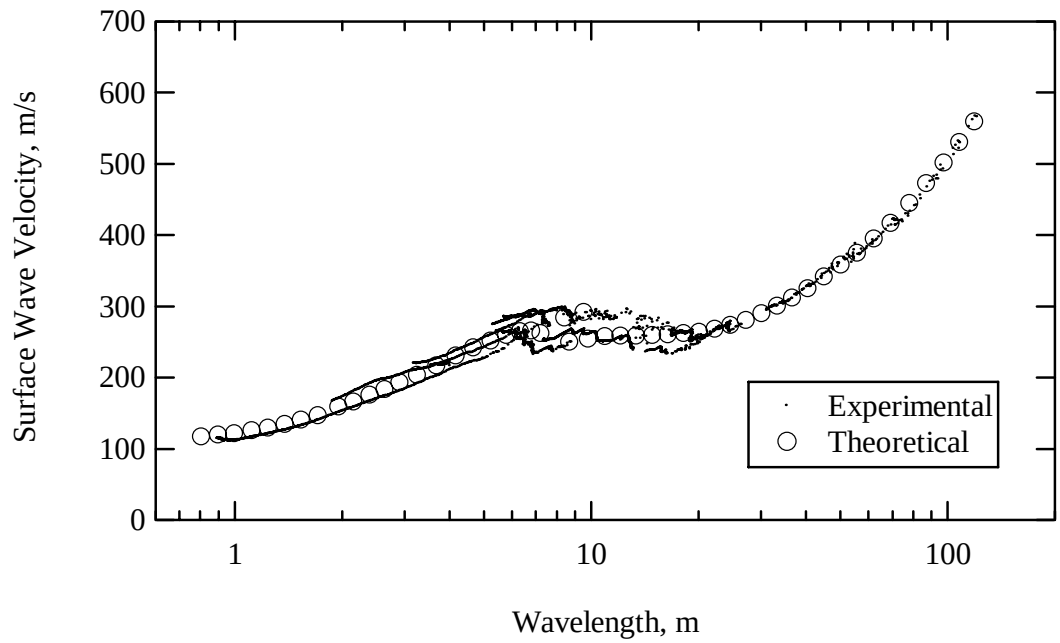


Fig. 4.81 Comparison of experimental and theoretical dispersion curves from Wasatch Elementary School (WES), Weber County, Utah.

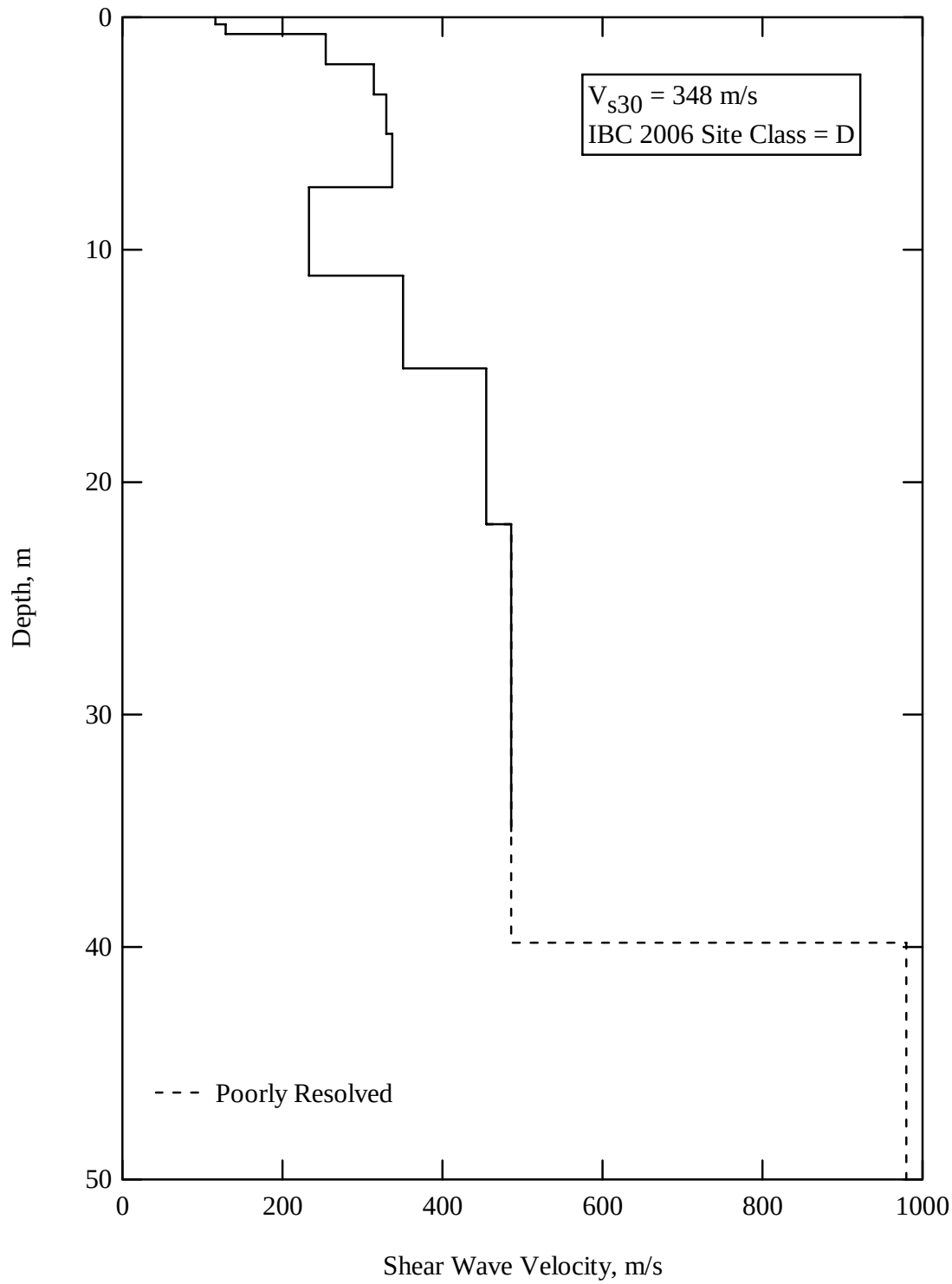


Fig. 4.82 Shear wave velocity profile determined from SASW testing at Wasatch Elementary School (WES), Weber County, Utah.

The average shear wave velocity in the upper 30 m of soil is 348 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 35 m and poorly resolved from 35 m to 50 m.

Table 4.16 Tabulated measured and assumed layer at Wasatch Elementary School (WES), Weber County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.3	116	218	0.30	1.89
0.3	0.4	129	241	0.30	1.89
0.7	1.3	254	475	0.30	1.92
2.0	1.3	314	588	0.30	1.96
3.3	1.7	330	616	0.30	1.96
5.0	2.3	337	631	0.30	1.96
7.3	3.8	233	436	0.30	1.92
11.1	4.0	351	657	0.30	1.96
15.1	6.7	455	851	0.30	1.96
21.8	8.2	486	909	0.30	1.96
35.0	13.2	486*	909	0.30	1.96
39.8	Half-Space	980*	1833	0.30	2.08

* Poorly Resolved

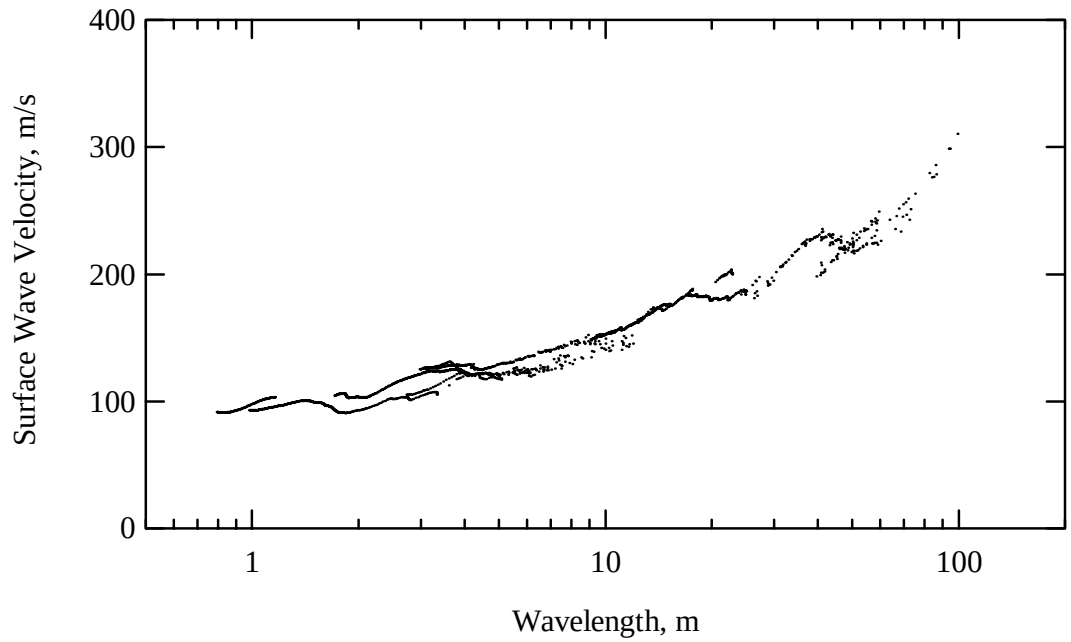


Fig. 4.85 Experimental dispersion curve measured at Highland Middle School (HMS), Weber County, Utah.

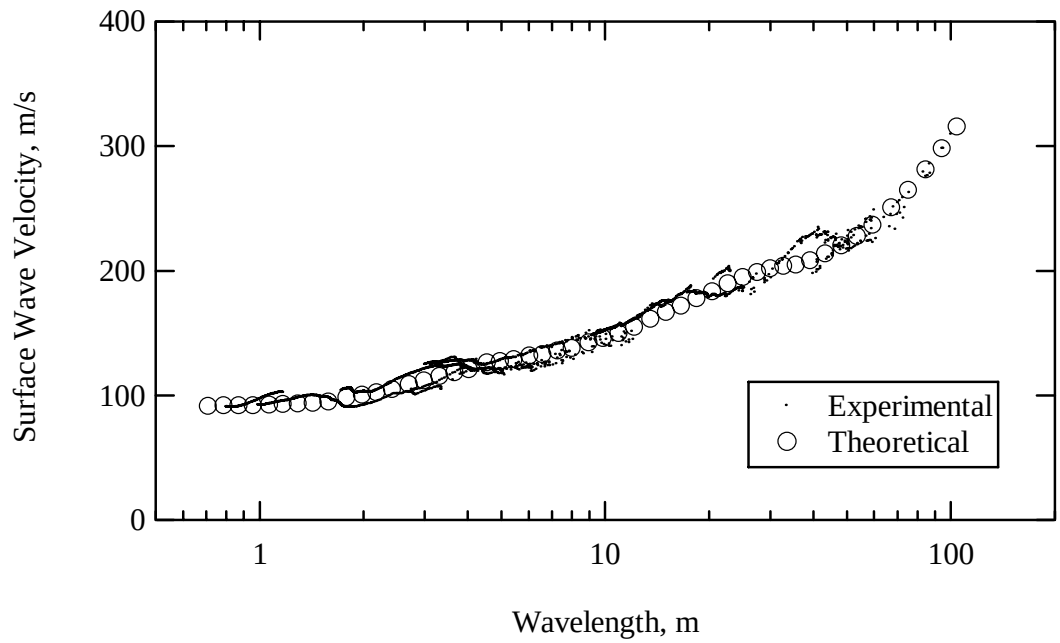


Fig. 4.86 Comparison of experimental and theoretical dispersion curves from Highland Middle School (HMS), Weber County, Utah.

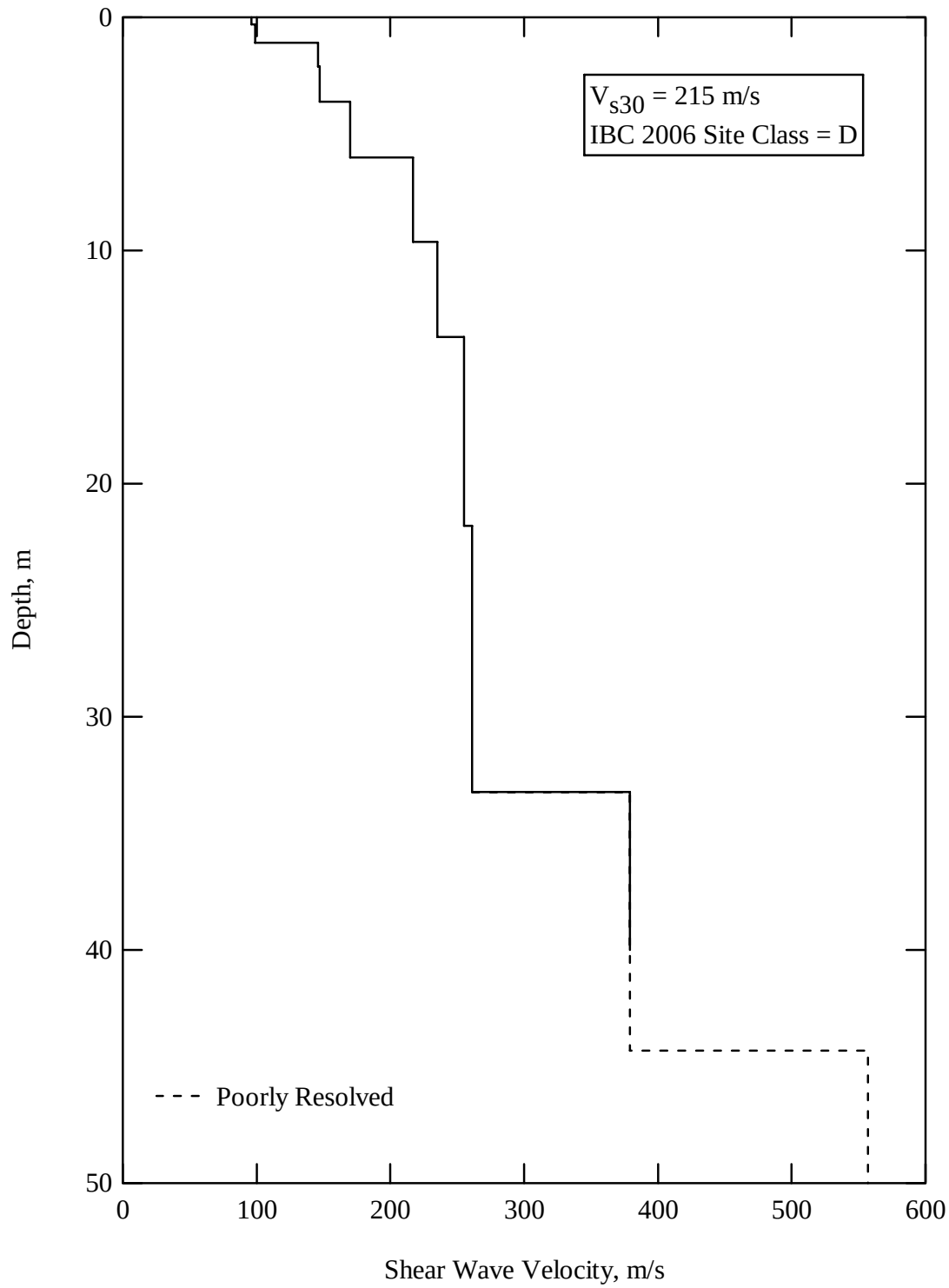


Fig. 4.87 Shear wave velocity profile determined from SASW testing at Highland Middle School (HMS), Weber County, Utah.

The average shear wave velocity in the upper 30 m of soil is 215 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 40 m and poorly resolved from 40 m to 50 m.

Table 4.17 Tabulated measured and assumed layer at Highland Middle School (HMS), Weber County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.3	96	180	0.3	1.89
0.3	0.8	99	185	0.3	1.89
1.1	1.0	146	273	0.3	1.89
2.1	1.5	147	275	0.3	1.89
3.6	2.4	170	318	0.3	1.92
6.0	3.6	217	406	0.3	1.92
9.6	4.1	235	440	0.3	1.92
13.7	8.1	255	477	0.3	1.92
21.8	11.4	261	488	0.3	1.92
33.2	6.8	379	709	0.3	1.96
40	4.3	379*	709	0.3	1.96
44.3	Half-Space	557*	1042	0.3	2.00

* Poorly Resolved

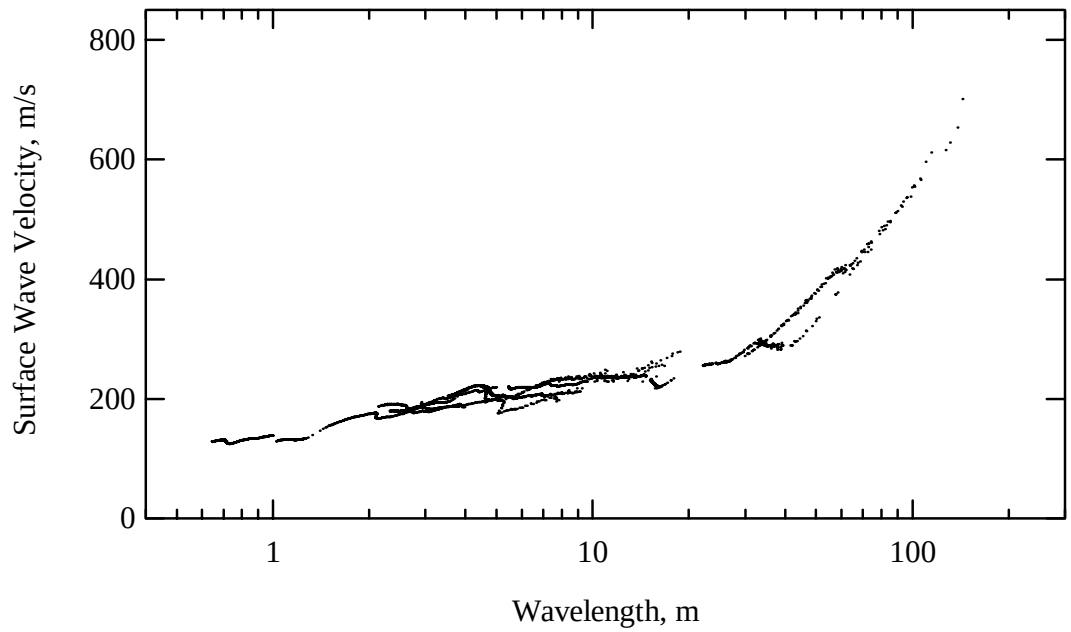


Fig. 4.90 Experimental dispersion curve measured at Lemond View Park (LVP), Weber County, Utah.

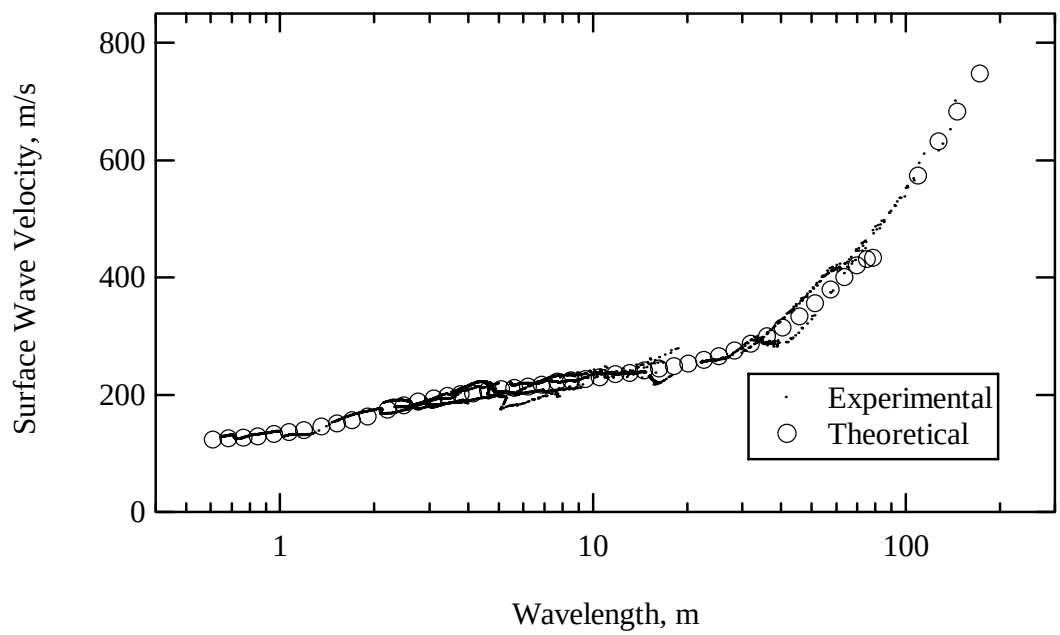


Fig. 4.91 Comparison of experimental and theoretical dispersion curves from Lemond View Park (LVP), Weber County, Utah.

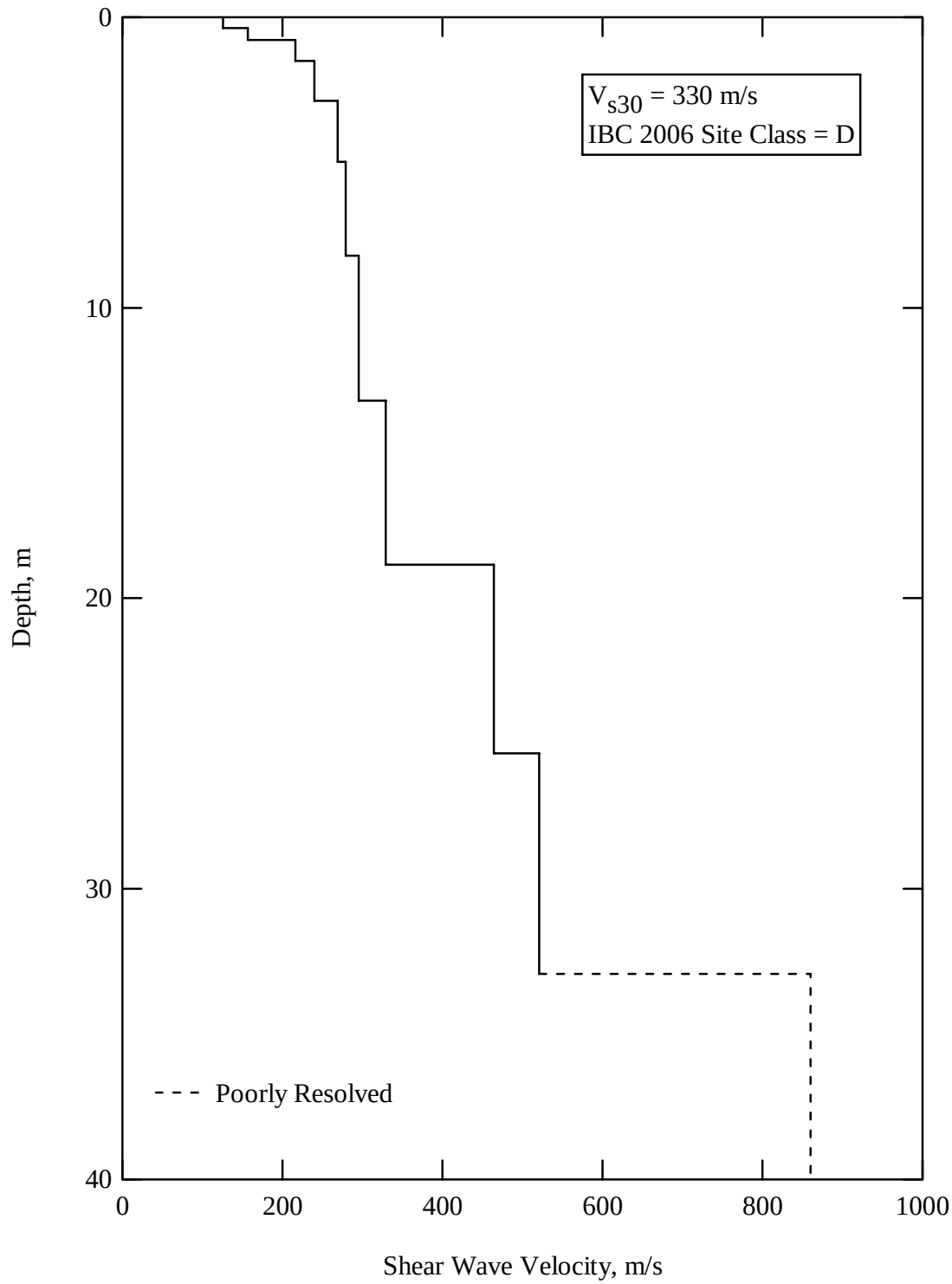


Fig. 4.92 Shear wave velocity profile determined from SASW testing at Lemond View Park (LVP), Weber County, Utah.

The average shear wave velocity in the upper 30 m of soil is 330 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 32.9 m and poorly resolved from 32.9 m to 50 m.

Table 4.18 Tabulated measured and assumed layer at Lemond View Park (LVP), Weber County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.4	126	236	0.30	1.89
0.4	0.4	157	294	0.30	1.89
0.8	0.7	216	404	0.30	1.92
1.5	1.4	240	449	0.30	1.92
2.9	2.1	269	503	0.30	1.92
5.0	3.2	279	522	0.30	1.92
8.2	5.0	295	552	0.30	1.92
13.2	5.7	329	616	0.30	1.96
18.8	6.5	464	868	0.30	1.96
25.3	7.6	521	975	0.30	2.00
32.9	Half-Space	860*	1609	0.30	2.00

* Poorly Resolved

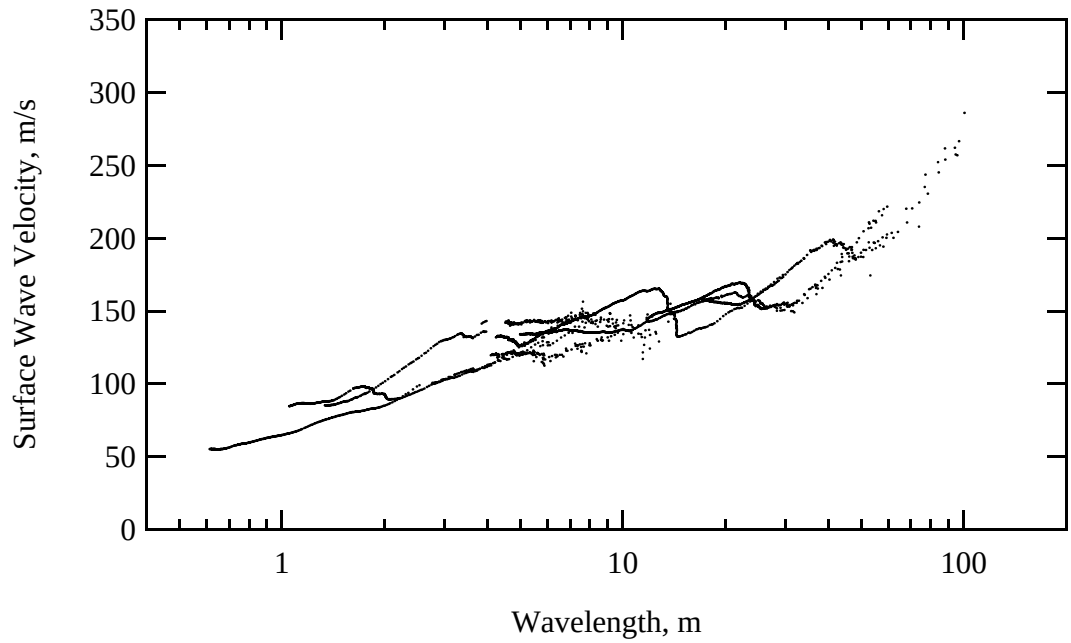


Fig. 4.96 Experimental dispersion curve measured at the Lakeside Golf Coarse (LGC), Davis County, Utah.

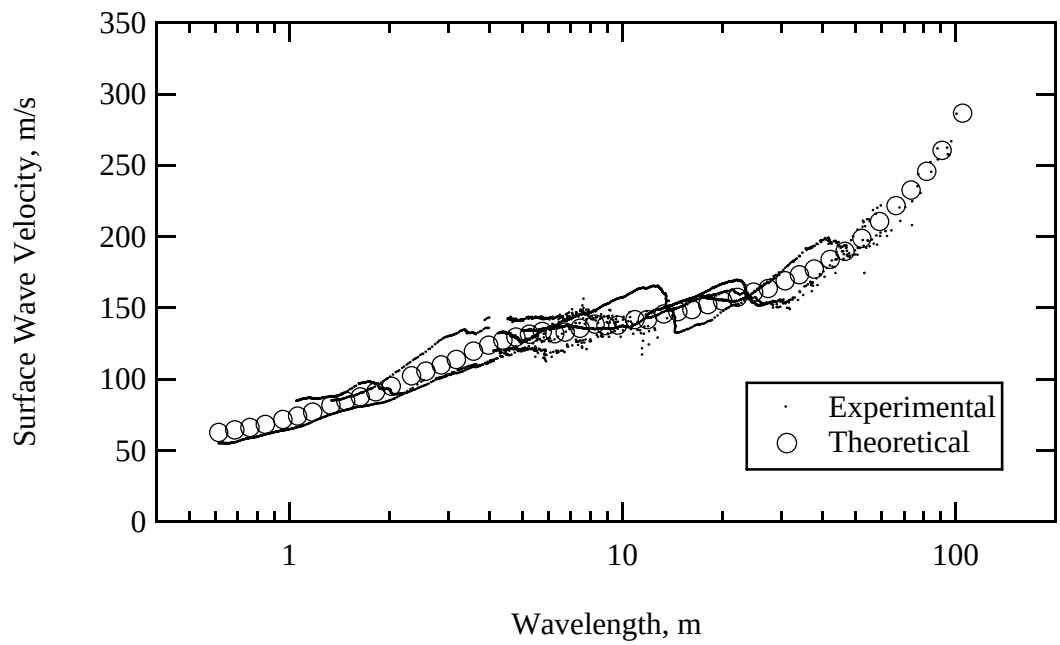


Fig. 4.97 Comparison of experimental and theoretical dispersion curves from the Lakeside Golf Coarse (LGC), Davis County, Utah.

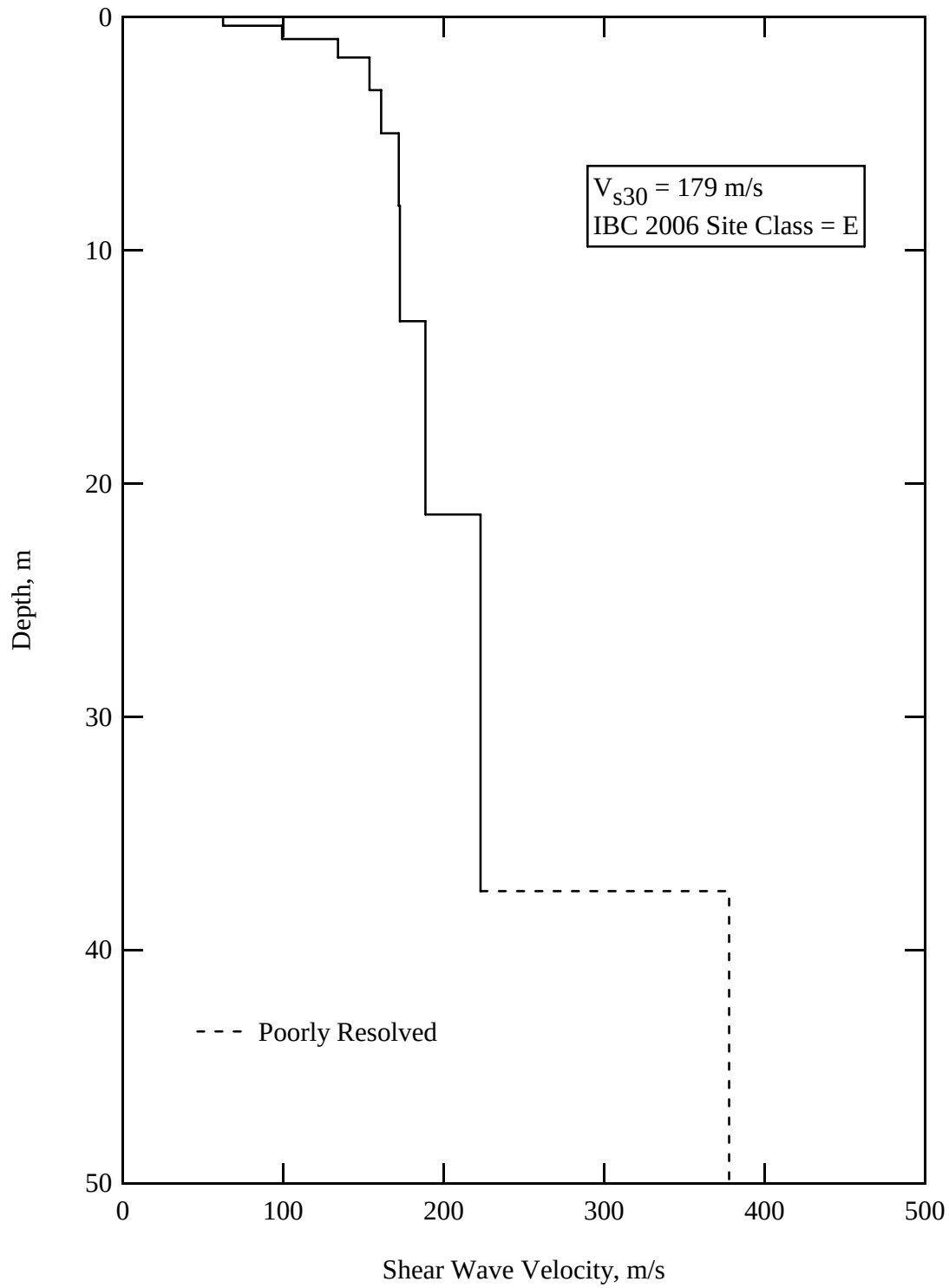


Fig. 4.98 Shear wave velocity profile determined from SASW at the Lakeside Golf Coarse (LGC), Davis County, Utah.

The average shear wave velocity in the upper 30 m of soil is 179 m/s, which corresponds to an IBC 2006 site class E. The uncertainties and scatter in the data make this a difficult site to classify because it is so close to site class D. The shear wave velocity profile is well resolved to a depth of 37.5 m and poorly resolved from 37.5 m to 50 m.

Table 4.19 Tabulated measured and assumed layer properties at the Lakeside Golf Coarse (LGC), Davis County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.4	63	117	0.3	1.89
0.4	0.6	99	186	0.3	1.89
0.9	0.8	134	251	0.3	1.89
1.7	1.4	154	288	0.3	1.89
3.1	1.9	161	301	0.3	1.89
5.0	3.1	172	1500	0.49	1.90
8.1	5.0	173	1500	0.49	1.90
13.0	8.3	189	1500	0.49	1.90
21.3	16.2	223	1500	0.49	1.92
37.5	Half-Space	378*	1500	0.47	1.96

* Poorly Resolved

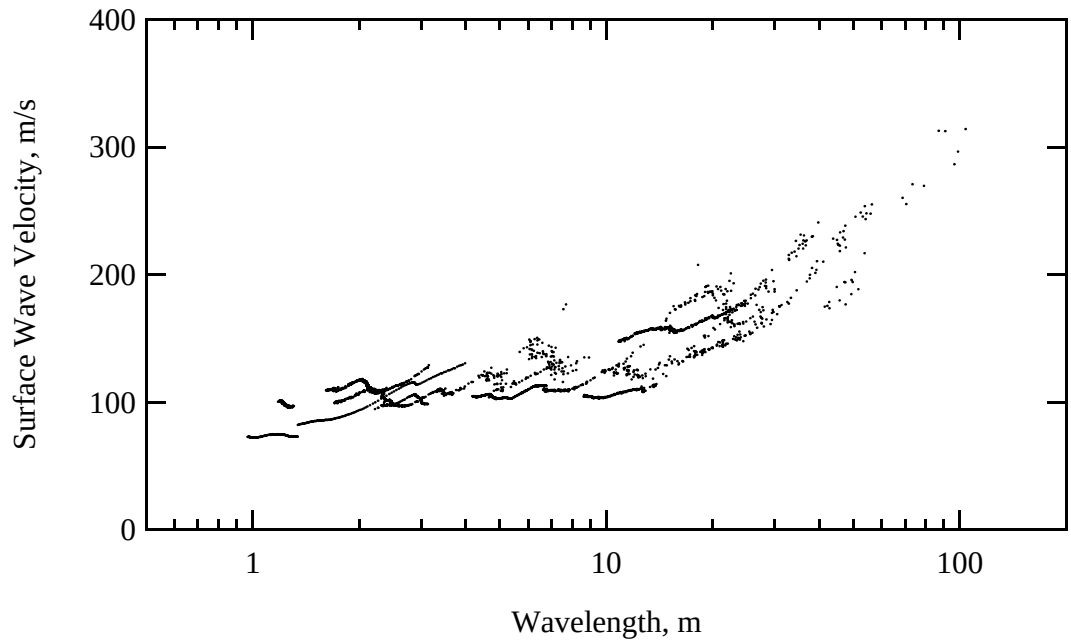


Fig. 4.101 Experimental dispersion curve measured at the Davis County Fairgrounds (DCF), Davis County, Utah.

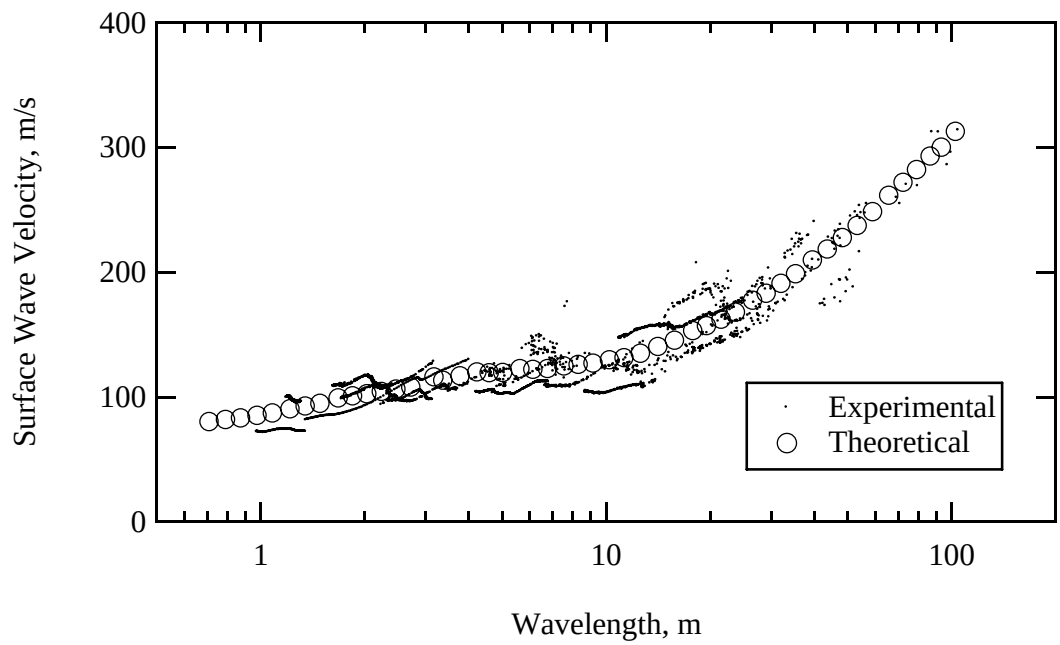


Fig. 4.102 Comparison of experimental and theoretical dispersion curves from the Davis County Fairgrounds (DCF), Davis County, Utah.

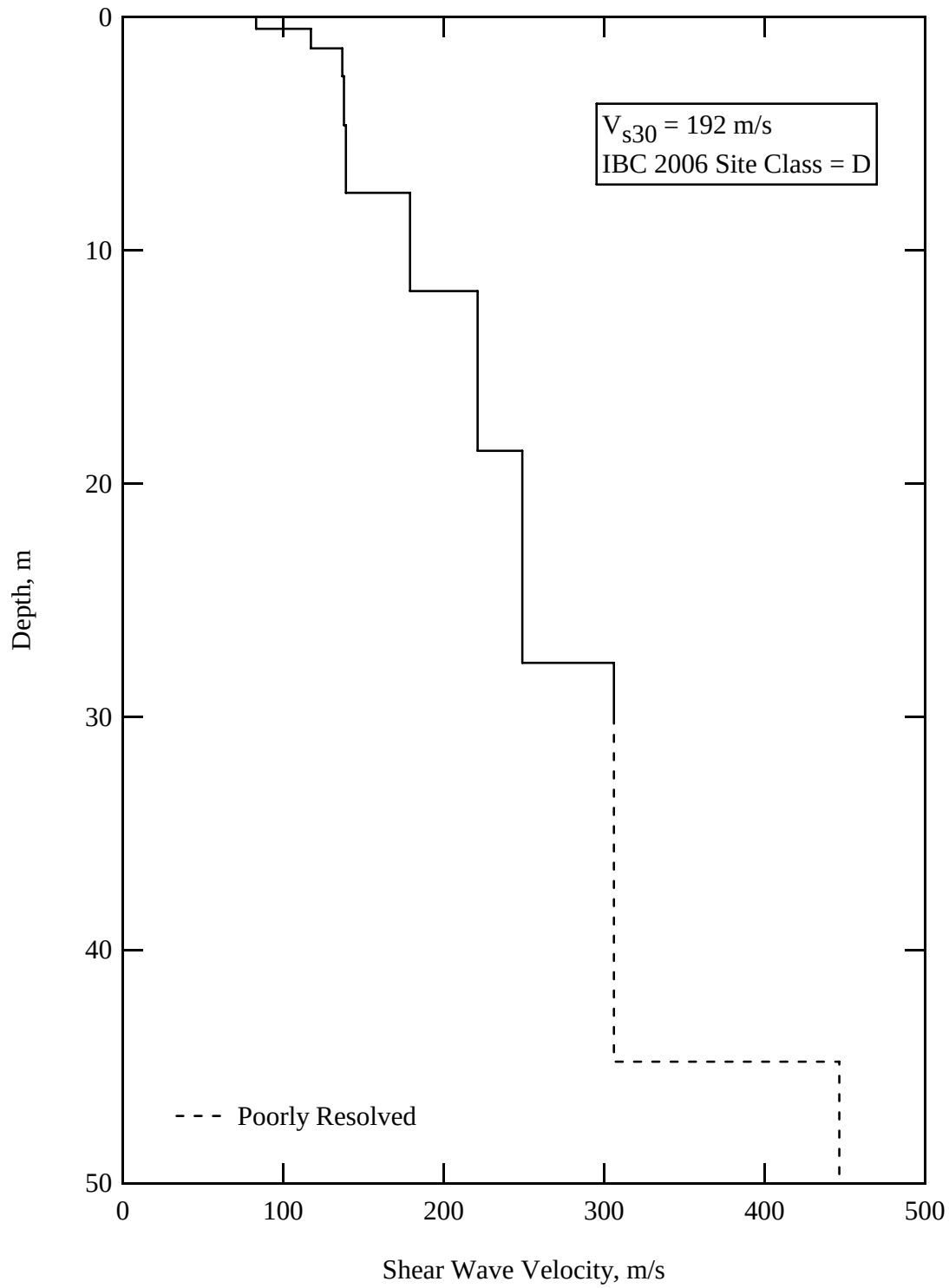


Fig. 4.103 Shear wave velocity profile determined from SASW at the Davis County Fairgrounds (DCF), Davis County, Utah.

The average shear wave velocity in the upper 30 m of soil is 192 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 30 m and poorly resolved from 30 m to 50 m.

Table 4.20 Tabulated measured and assumed layer properties at the Davis County Fairgrounds (DCF), Davis County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.5	83	156	0.3	1.89
0.5	0.8	117	219	0.3	1.89
1.3	1.2	137	256	0.3	1.89
2.5	2.1	138	1500	0.49	1.89
4.6	2.9	139	1500	0.49	1.90
7.5	4.2	179	1500	0.49	1.90
11.7	6.9	221	1500	0.49	1.90
18.6	9.1	249	1500	0.49	2.00
27.7	2.3	306	1500	0.48	2.00
30.0	14.8	306*	1500	0.48	2.00
44.8	Half-Space	447*	1500	0.45	2.00

* Poorly Resolved

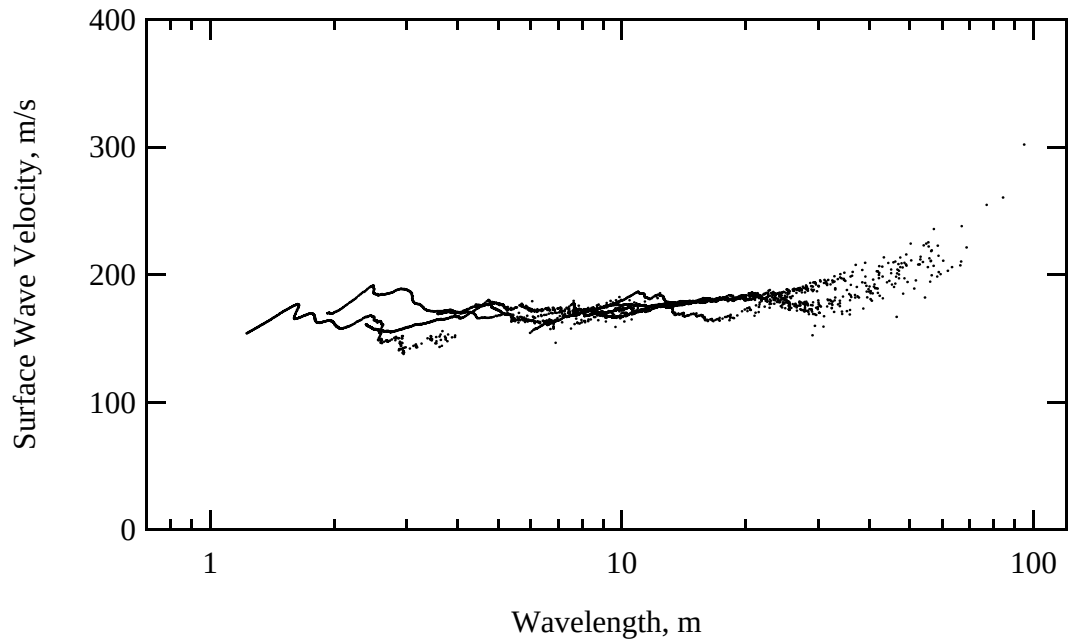


Fig. 4.106 Experimental dispersion curve measured at Kaysville Jr. High (KJH), Davis County, Utah.

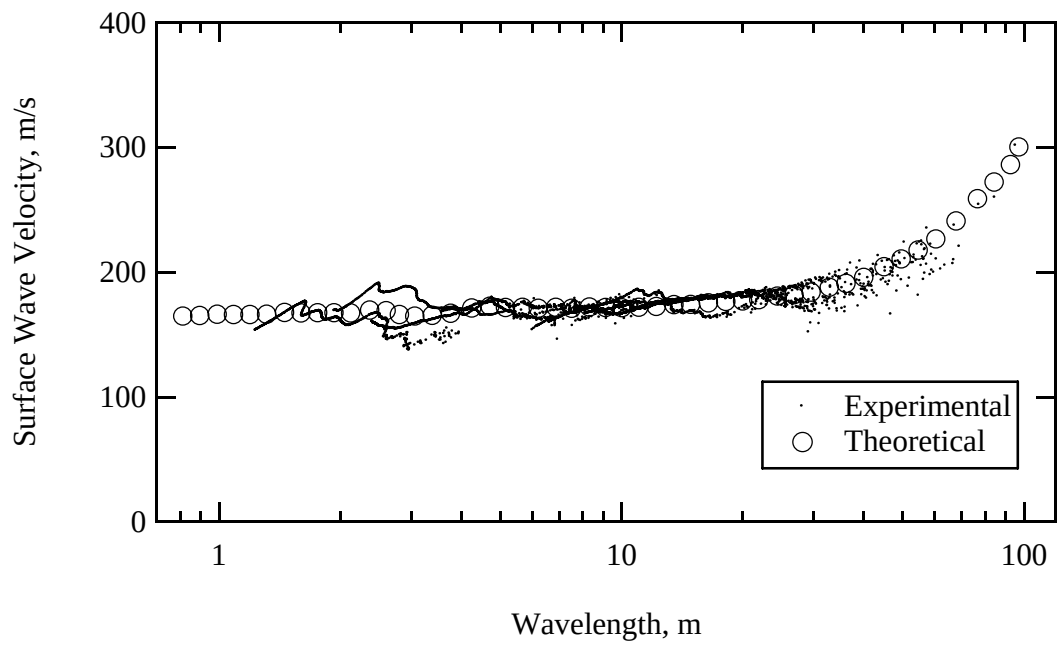


Fig. 4.107 Comparison of experimental and theoretical dispersion curves from Kaysville Jr. High (KJH), Davis County, Utah.

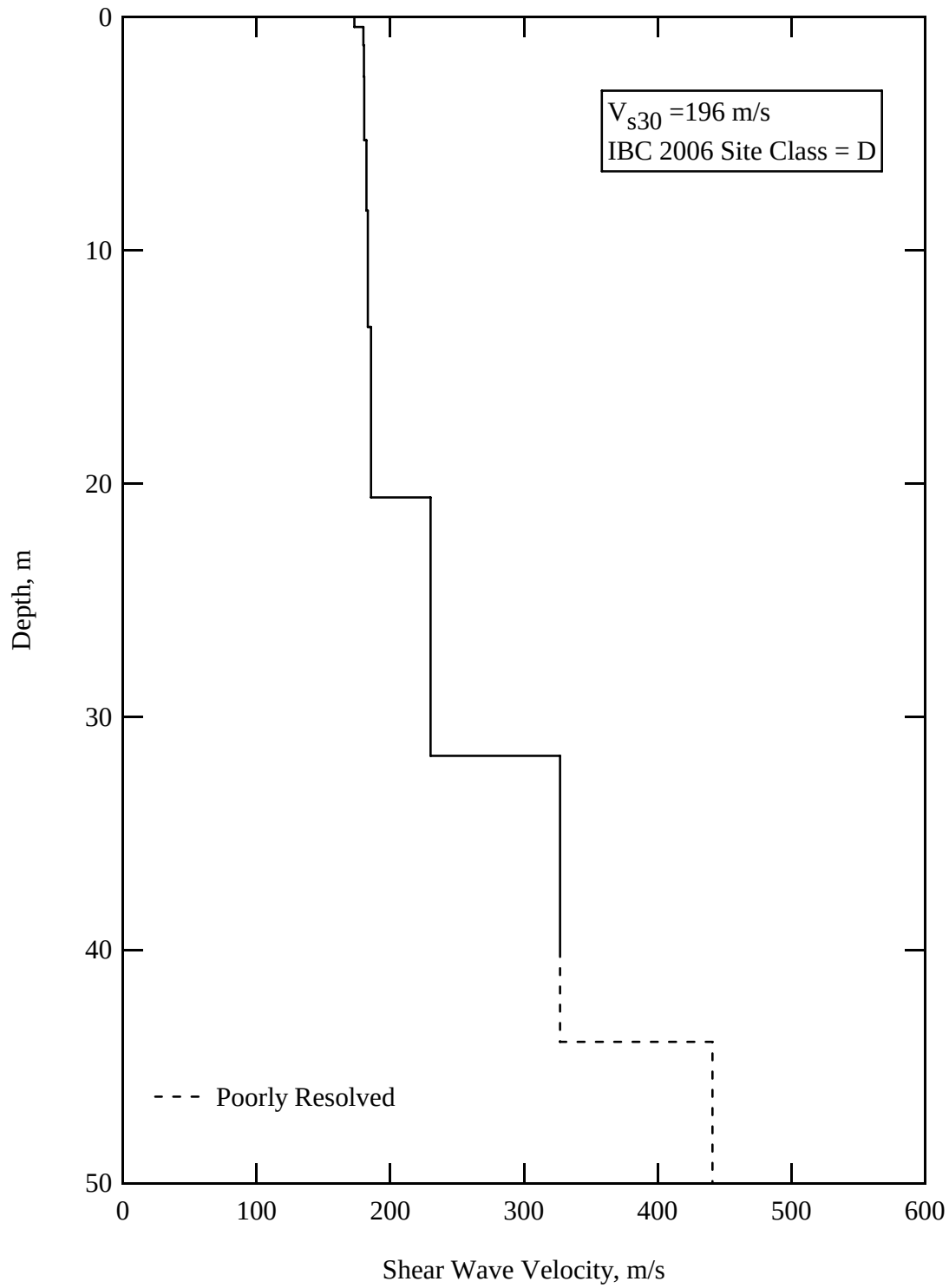


Fig. 4.108 Shear wave velocity profile determined from SASW at Kaysville Jr. High (KJH), Davis County, Utah.

The average shear wave velocity in the upper 30 m of soil is 196 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 40 m and poorly resolved from 40 m to 50 m.

Table 4.21 Tabulated measured and assumed layer properties at Kaysville Jr. High (KJH), Davis County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.4	173	324	0.3	1.92
0.4	0.8	180	337	0.3	1.92
1.2	1.4	180	338	0.3	1.92
2.6	2.7	181	1500	0.49	1.92
5.3	3.0	182	1500	0.49	1.92
8.3	5.0	183	1500	0.49	1.92
13.3	7.3	186	1500	0.49	1.92
20.6	11.1	230	1500	0.49	1.92
31.7	8.3	327	1500	0.48	1.96
40.0	3.9	327*	1500	0.48	1.96
43.9	Half-Space	441*	1500	0.45	1.96

* Poorly Resolved

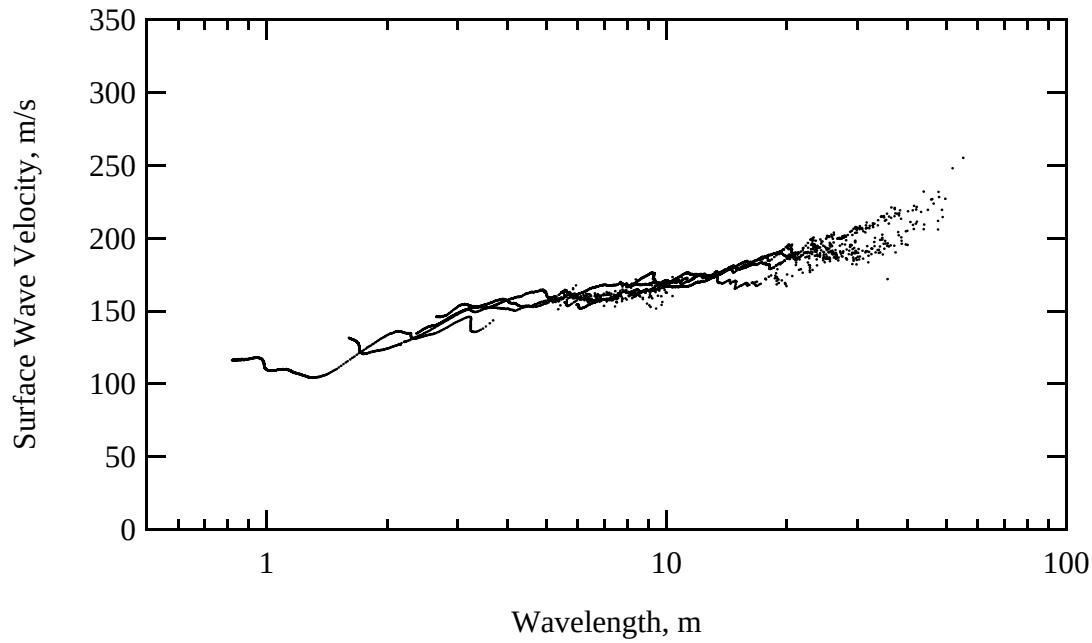


Fig. 4.111 Experimental dispersion curve measured at Windridge Elementary School (WRS), Davis County, Utah.

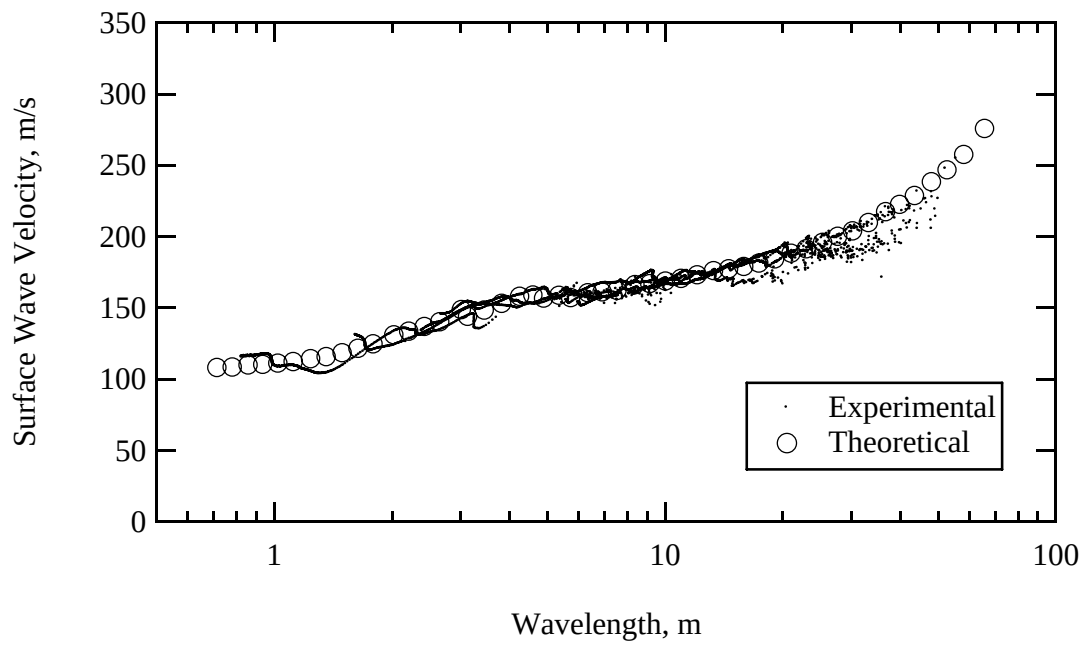


Fig. 4.112 Comparison of experimental and theoretical dispersion curves from Windridge Elementary School (WRS), Davis County, Utah.

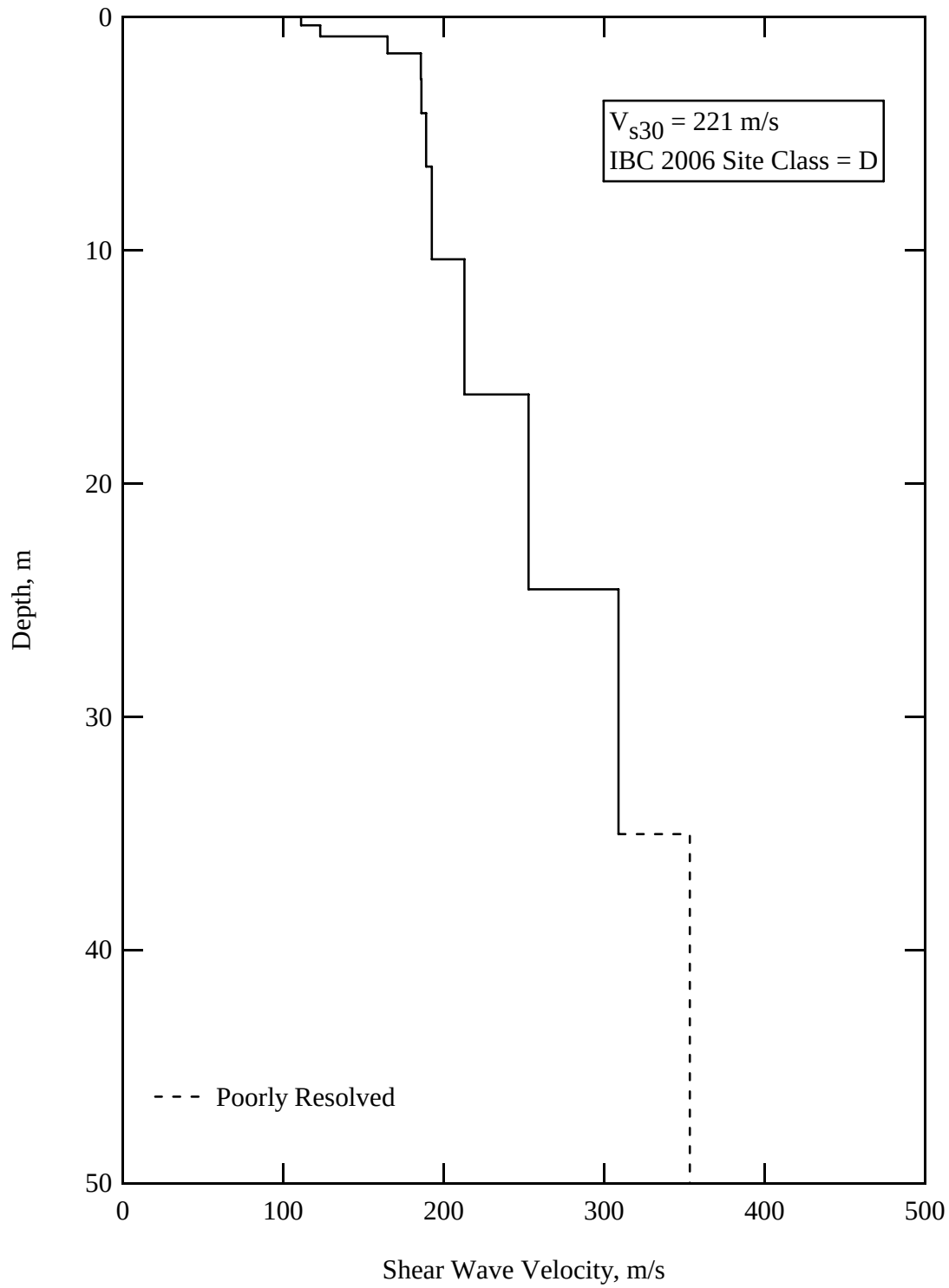


Fig. 4.113 Shear wave velocity profile determined from SASW at Windridge Elementary School (WRS), Davis County, Utah.

The average shear wave velocity in the upper 30 m of soil is 221 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 35 m and poorly resolved from 35 m to 50 m.

Table 4.22 Tabulated measured and assumed layer properties at Windridge Elementary School (WRS), Davis County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.4	111	208	0.3	1.89
0.4	0.5	123	230	0.3	1.89
0.8	0.7	165	309	0.3	1.89
1.6	1.1	186	348	0.3	1.89
2.7	1.5	186	1500	0.49	1.89
4.1	2.3	189	1500	0.49	1.92
6.4	4.0	193	1500	0.49	1.92
10.4	5.8	213	1500	0.49	1.92
16.2	8.4	253	1500	0.49	1.92
24.5	10.5	309	1500	0.48	1.96
35.0	Half-Space	354*	1500	0.47	2.00

* Poorly Resolved

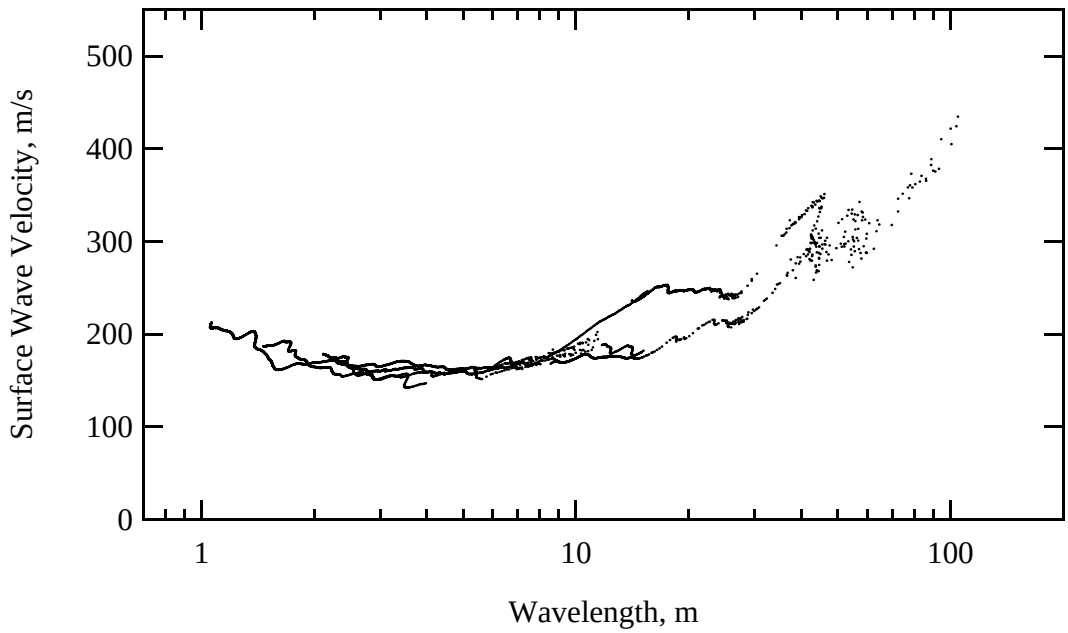


Fig. 4.116 Experimental dispersion curve measured at Washington Elementary School (WSE), Davis County, Utah.

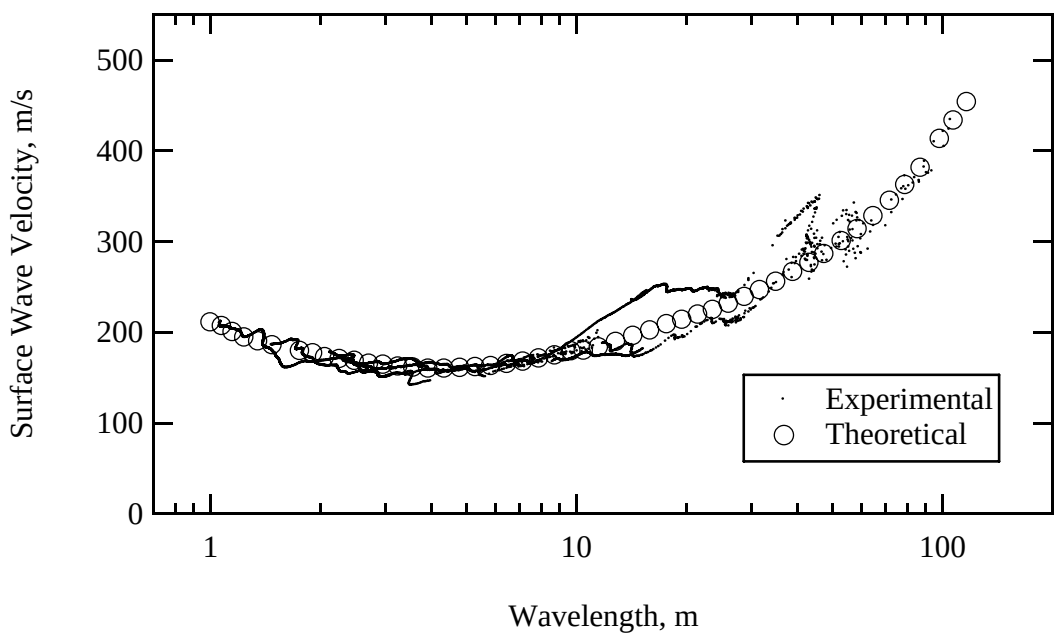


Fig. 4.117 Comparison of experimental and theoretical dispersion curves from Washington Elementary School (WSE), Davis County, Utah.

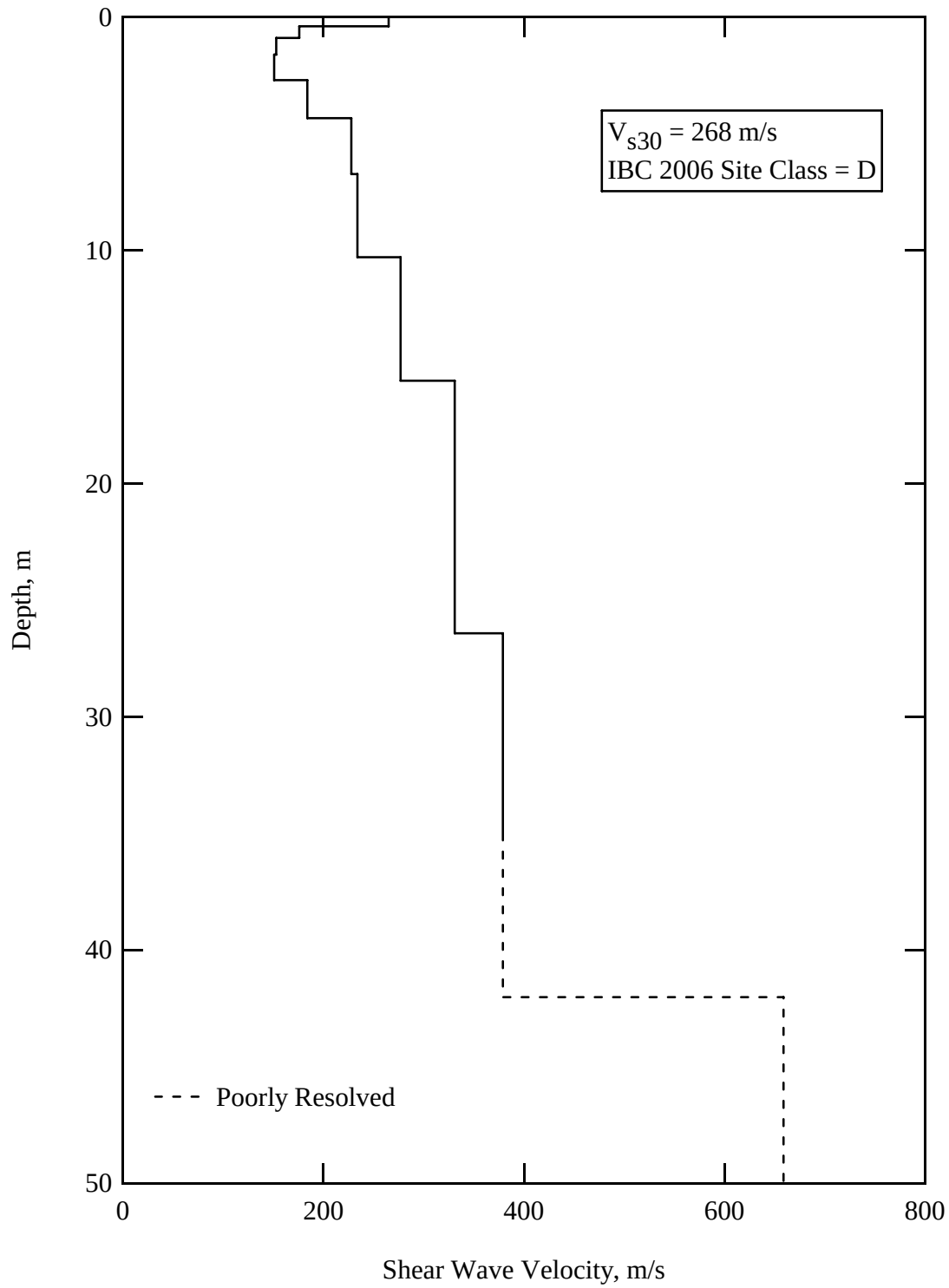


Fig. 4.118 Shear wave velocity profile determined from SASW at Washington Elementary School (WSE), Davis County, Utah.

The average shear wave velocity in the upper 30 m of soil is 268 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 35 m and poorly resolved from 35 m to 50 m.

Table 4.23 Tabulated measured and assumed layer properties at Washington Elementary School (WSE), Davis County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.4	265	496	0.3	1.90
0.4	0.5	176	329	0.3	1.90
0.9	0.7	153	286	0.3	1.90
1.6	1.1	151	283	0.3	1.90
2.7	1.6	184	344	0.3	1.90
4.3	2.4	228	427	0.3	1.90
6.7	3.6	234	438	0.3	1.90
10.3	5.3	277	1500	0.48	1.92
15.6	10.8	331	1500	0.47	1.96
26.4	8.6	379	1500	0.47	1.96
35.0	7.0	379*	1500	0.47	1.96
42.0	Half-Space	659*	1500	0.38	2.00

* Poorly Resolved

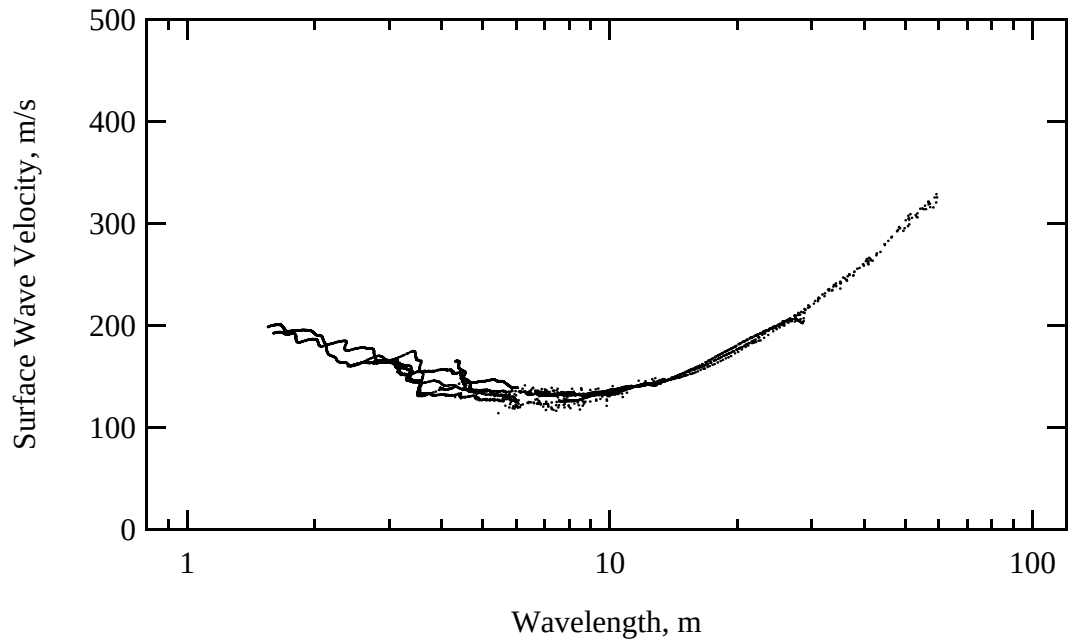


Fig. 4.121 Experimental dispersion curve measured at the Utah Highway Patrol Building (UHP), Davis County, Utah.

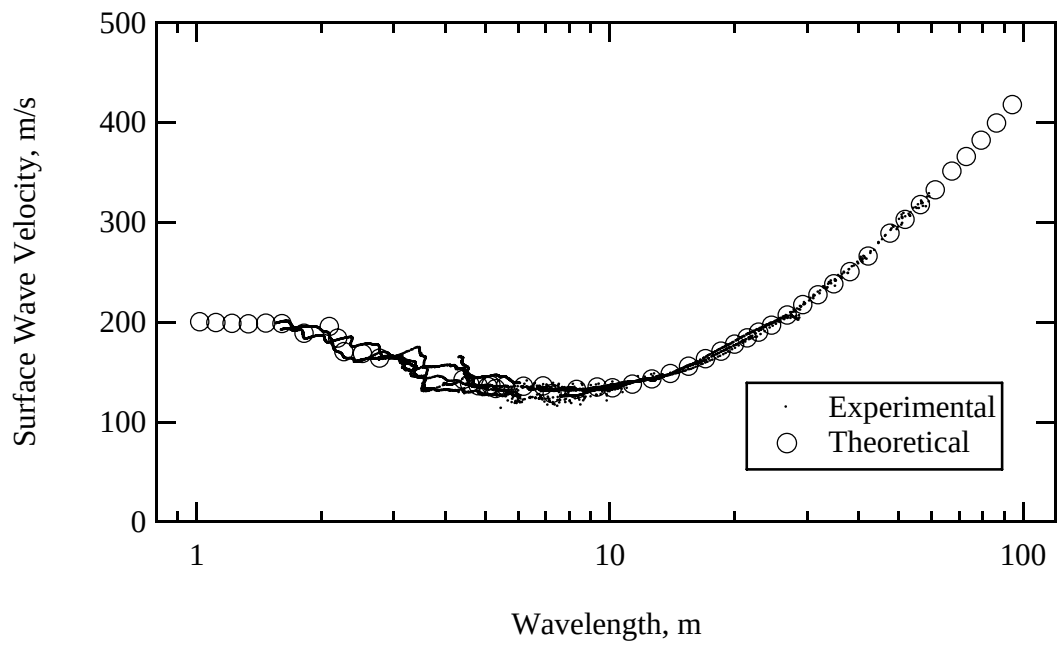


Fig. 4.122 Comparison of experimental and theoretical dispersion curves from the Utah Highway Patrol Building (UHP), Davis County, Utah.

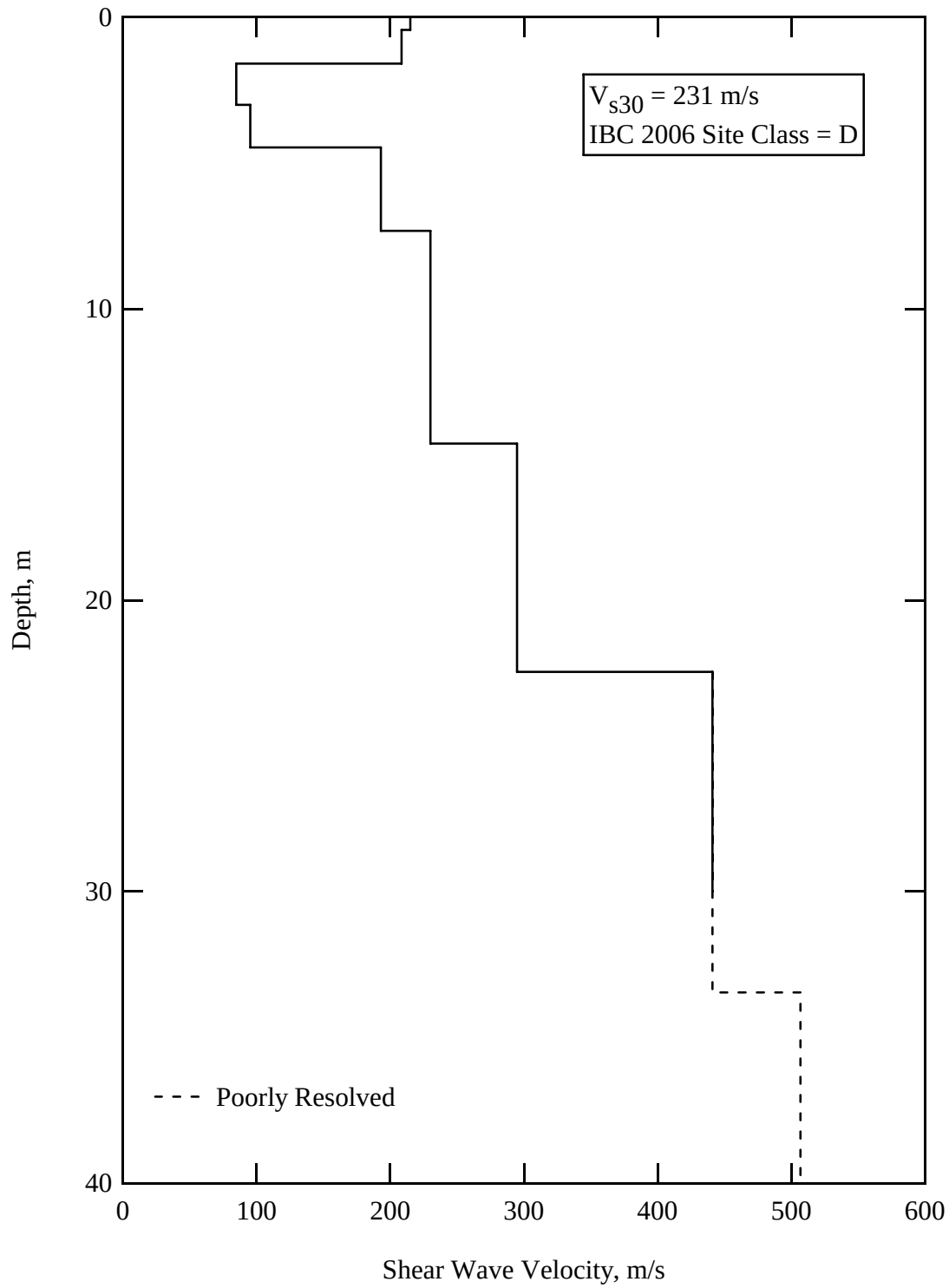


Fig. 4.123 Shear wave velocity profile determined from SASW at the Utah Highway Patrol Building (UHP), Davis County, Utah.

The average shear wave velocity in the upper 30 m of soil is 231 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 30 m and poorly resolved from 30 m to 40 m.

Table 4.24 Tabulated measured and assumed layer properties at the Utah Highway Patrol Building (UHP), Davis County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.4	215	402	0.3	1.90
0.4	1.2	209	390	0.3	1.90
1.6	1.4	85	159	0.3	1.90
3.0	1.5	95	1500	0.49	1.90
4.5	2.9	193	1500	0.49	1.90
7.3	7.3	230	1500	0.49	1.92
14.6	7.8	295	1500	0.48	1.92
22.5	7.5	441	1500	0.45	1.96
30.0	3.5	441*	1500	0.45	1.96
33.5	Half-Space	507*	1500	0.44	2.00

* Poorly Resolved

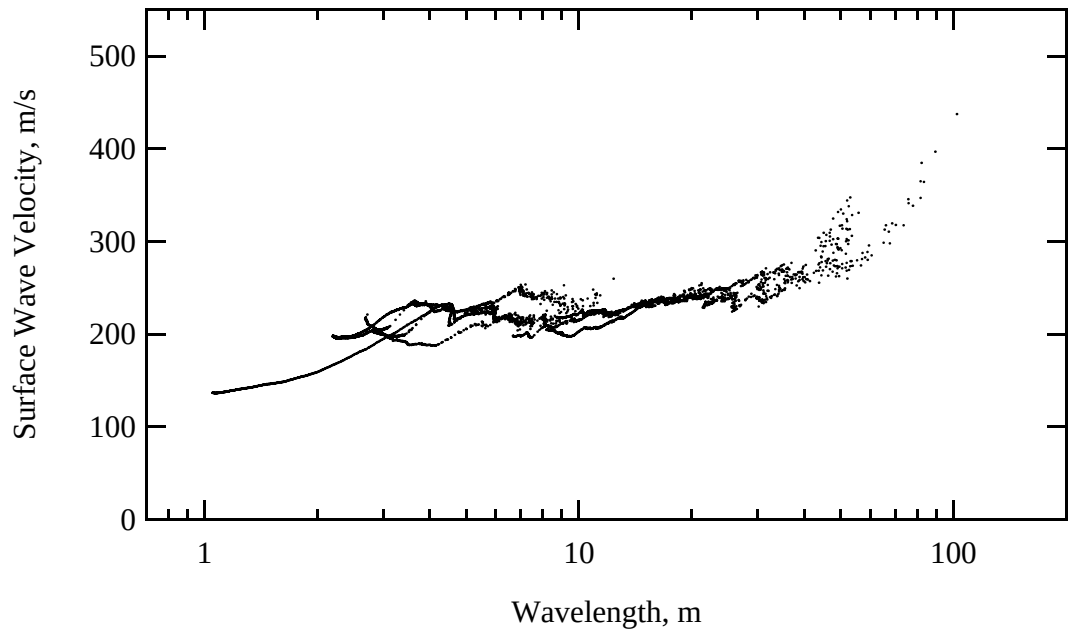


Fig. 4.126 Experimental dispersion curve measured at Orchard Elementary School (OSE), Davis County, Utah.

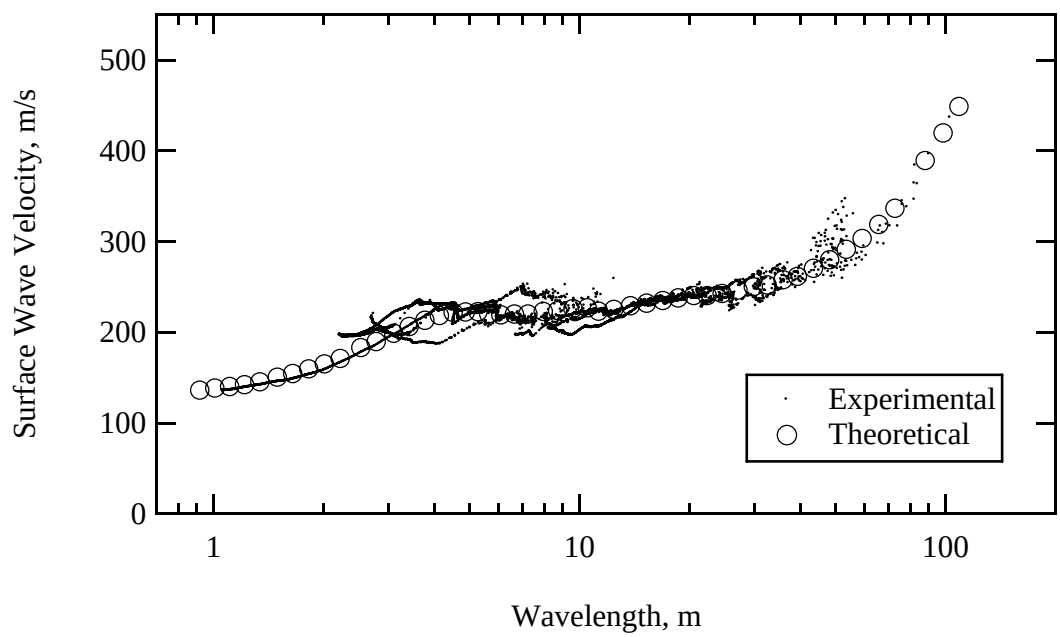


Fig. 4.127 Comparison of experimental and theoretical dispersion curves from the Orchard Elementary School (OSE), Davis County, Utah.

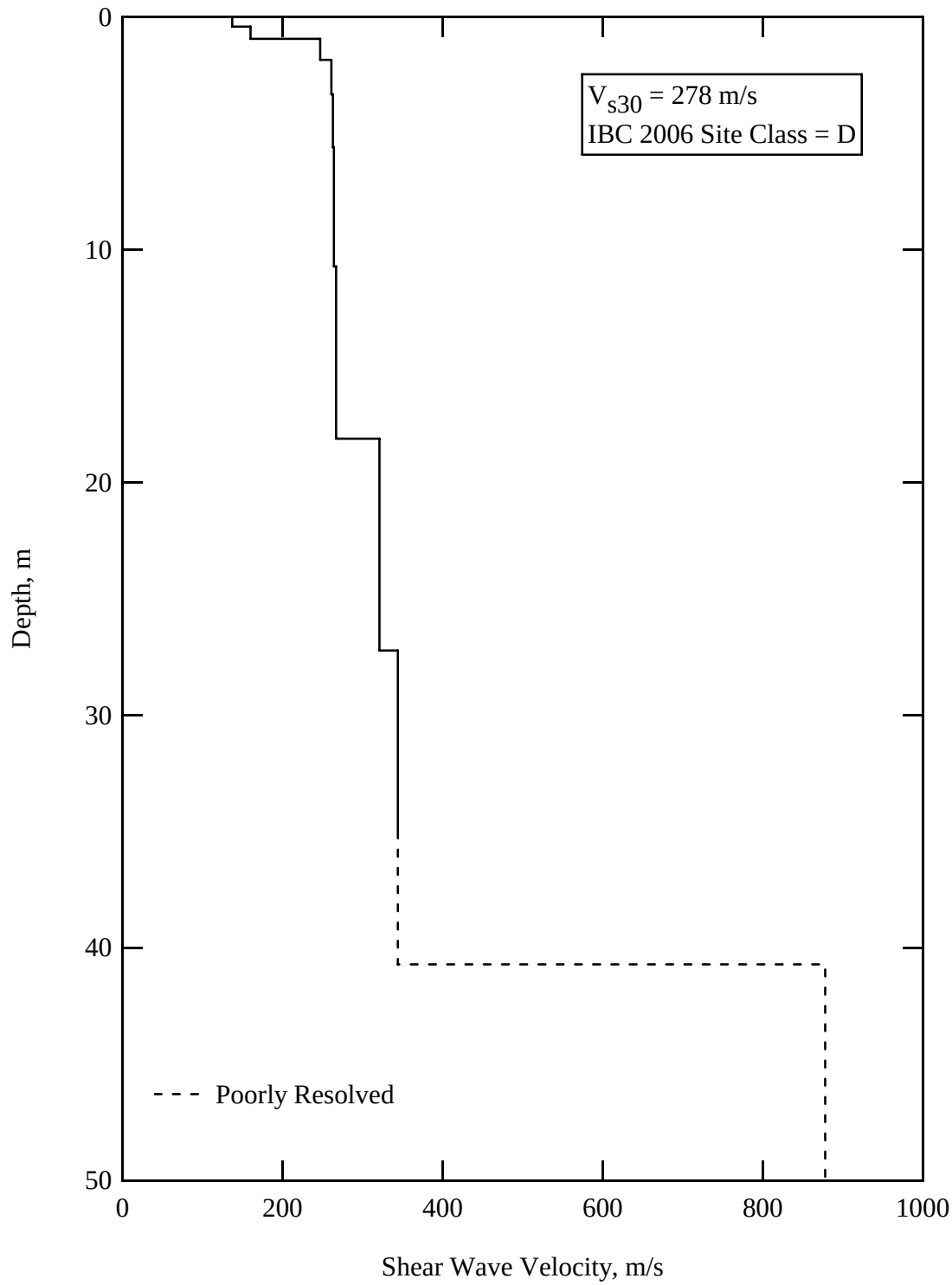


Fig. 4.128 Shear wave velocity profile determined from SASW at Orchard Elementary School (OSE), Davis County, Utah.

The average shear wave velocity in the upper 30 m of soil is 278 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 35 m and poorly resolved from 35 m to 50 m.

Table 4.25 Tabulated measured and assumed layer properties at Orchard Elementary School (OSE), Davis County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.4	137	256	0.3	1.90
0.4	0.5	160	299	0.3	1.90
0.9	0.9	247	462	0.3	1.90
1.8	1.5	261	488	0.3	1.90
3.3	2.3	263	492	0.3	1.90
5.6	5.1	264	494	0.3	1.92
10.7	7.4	267	1500	0.48	1.92
18.1	9.1	321	1500	0.48	1.96
27.2	7.8	344	1500	0.47	1.96
35.0	5.7	344*	1500	0.47	1.96
40.7	Half-Space	878*	1500	0.24	2.00

* Poorly Resolved

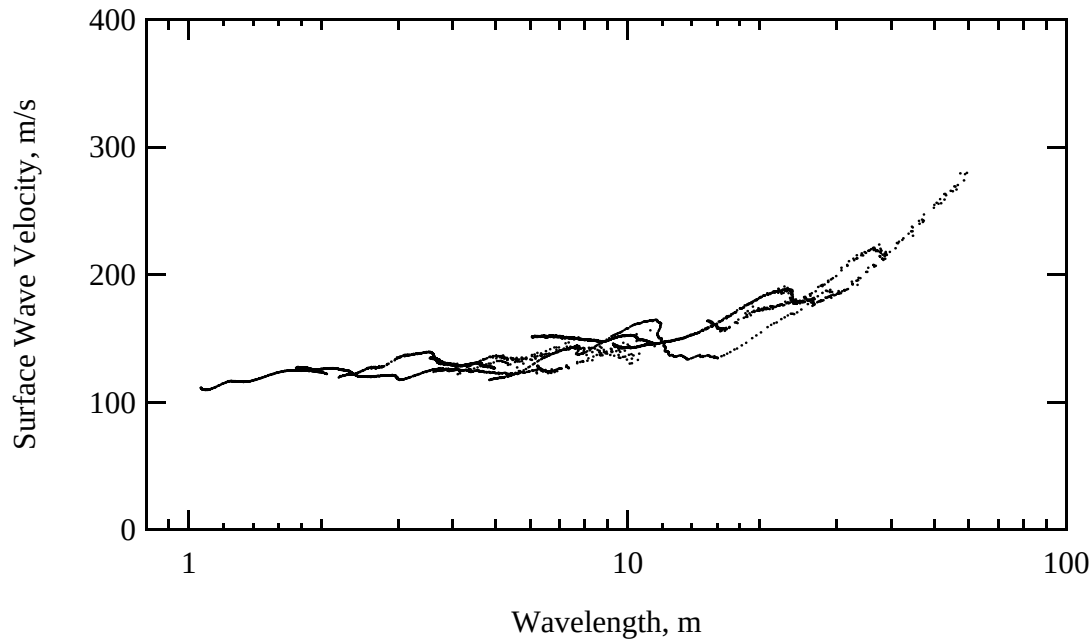


Fig. 4.131 Experimental dispersion curve measured at Farmington Elementary School (FES), Davis County, Utah.

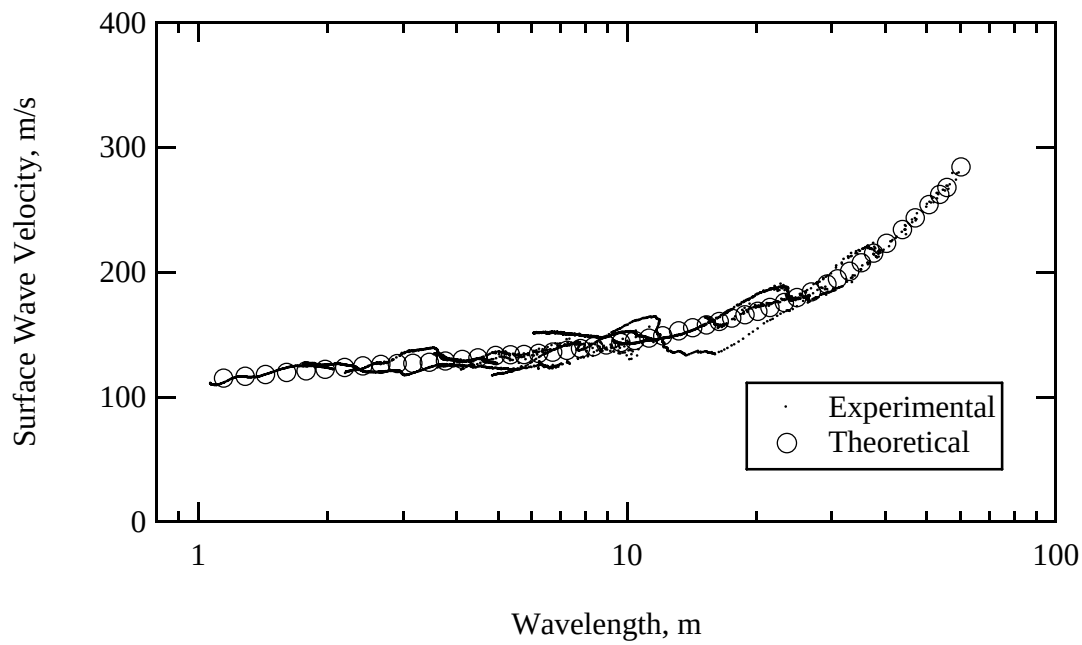


Fig. 4.132 Comparison of experimental and theoretical dispersion curves from Farmington Elementary School (FES), Davis County, Utah.

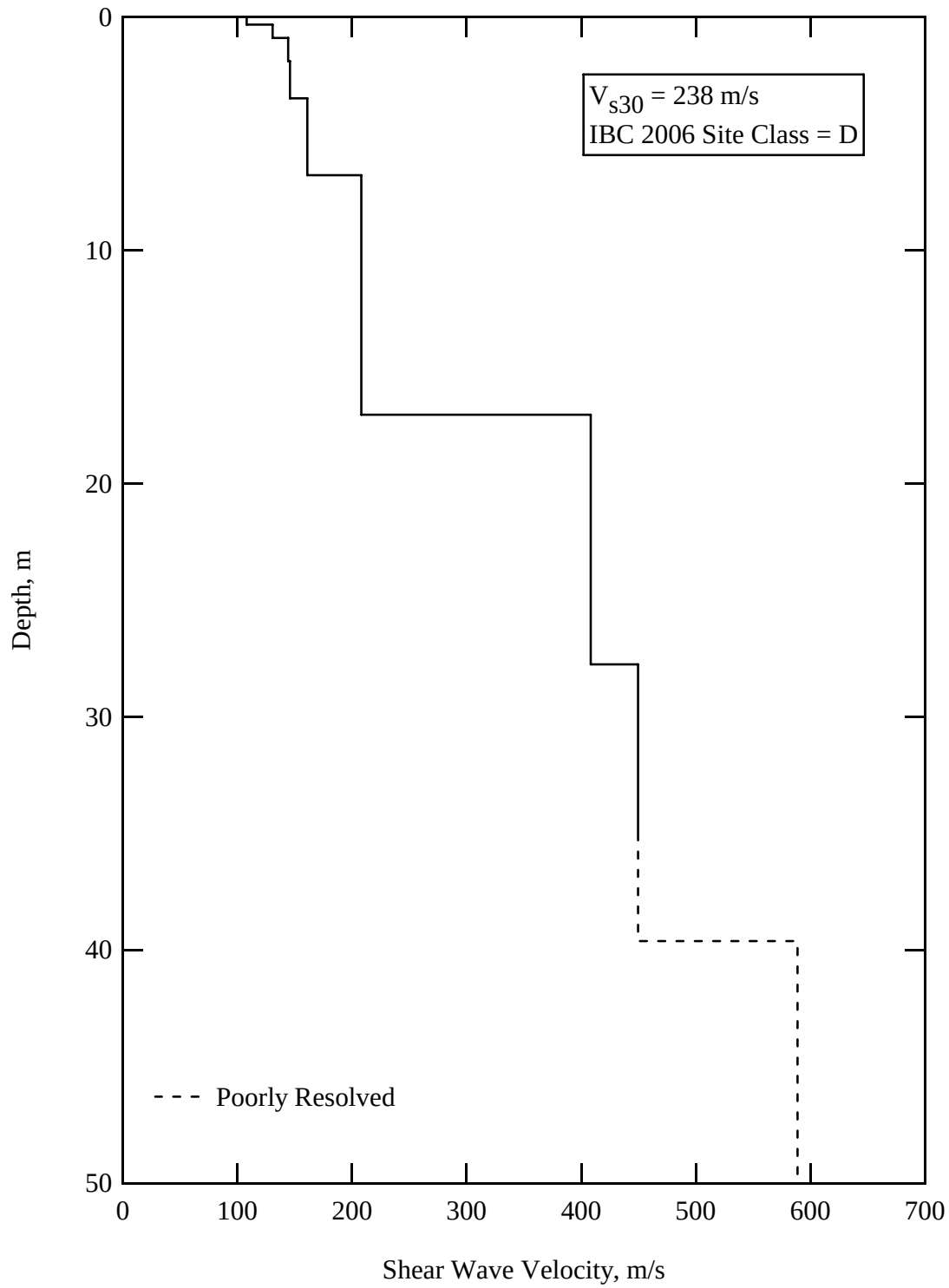


Fig. 4.133 Shear wave velocity profile determined from SASW at Farmington Elementary School (FES), Davis County, Utah.

The average shear wave velocity in the upper 30 m of soil is 238 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 35 m and poorly resolved from 35 m to 50 m.

Table 4.26 Tabulated measured and assumed layer properties at Farmington Elementary School (FES), Davis County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.3	108	202	0.3	1.89
0.3	0.6	131	245	0.3	1.89
0.9	1.0	144	270	0.3	1.89
1.9	1.6	146	273	0.3	1.89
3.5	3.3	161	301	0.3	1.90
6.8	10.3	208	389	0.3	1.90
17.1	10.7	408	764	0.3	1.90
27.8	7.3	450	841	0.3	1.92
35.0	4.7	450*	841	0.3	1.92
39.6	Half-Space	589*	1102	0.3	2.00

* Poorly Resolved

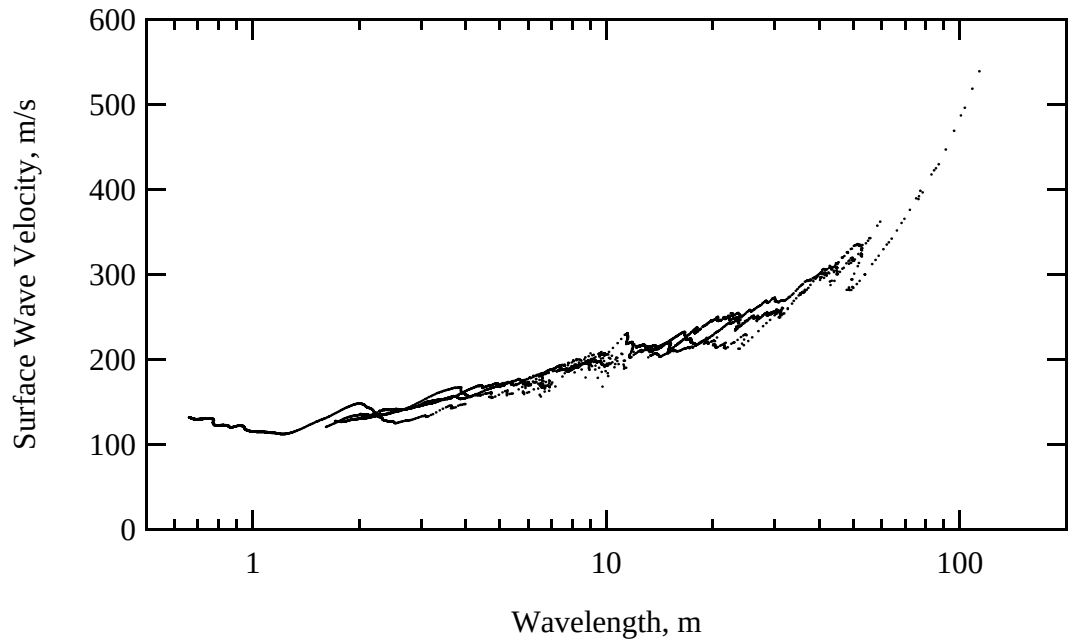


Fig. 4.136 Experimental dispersion curve measured at Mueller Park Jr. High School (MPS), Davis County, Utah.

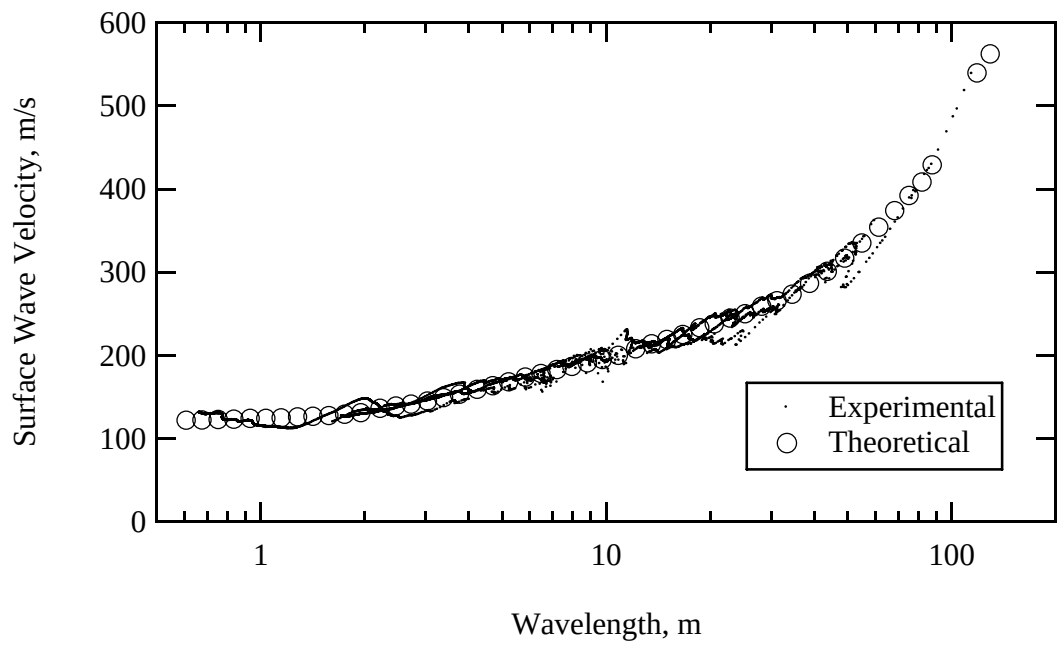


Fig. 4.137 Comparison of experimental and theoretical dispersion curves from Mueller Park Jr. High School (MPS), Davis County, Utah.

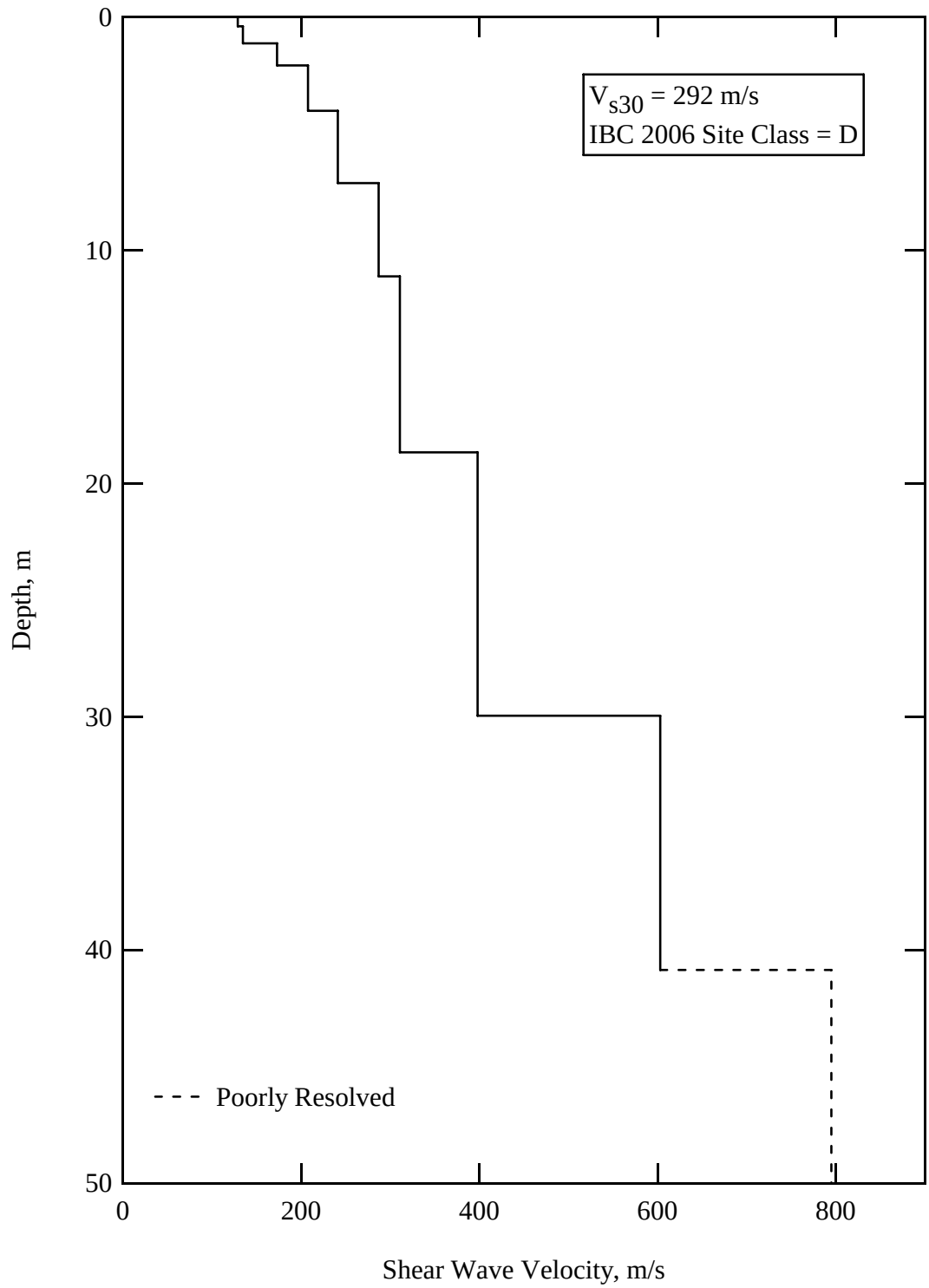


Fig. 4.138 Shear wave velocity profile determined from SASW at Mueller Park Jr. High School (MPS), Davis County, Utah.

The average shear wave velocity in the upper 30 m of soil is 292 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 40.9 m and poorly resolved from 40.9 m to 50 m.

Table 4.27 Tabulated measured and assumed layer properties at Mueller Park Jr. High School (MPS), Davis County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.4	129	241	0.3	1.89
0.4	0.7	135	252	0.3	1.89
1.1	1.0	173	324	0.3	1.90
2.1	1.9	208	389	0.3	1.90
4.0	3.1	241	451	0.3	1.90
7.1	4.0	287	537	0.3	1.92
11.1	7.6	311	582	0.3	1.96
18.7	11.3	398	745	0.3	1.96
30.0	10.9	603	1128	0.3	2.00
40.9	Half-Space	795*	1487	0.3	2.00

* Poorly Resolved

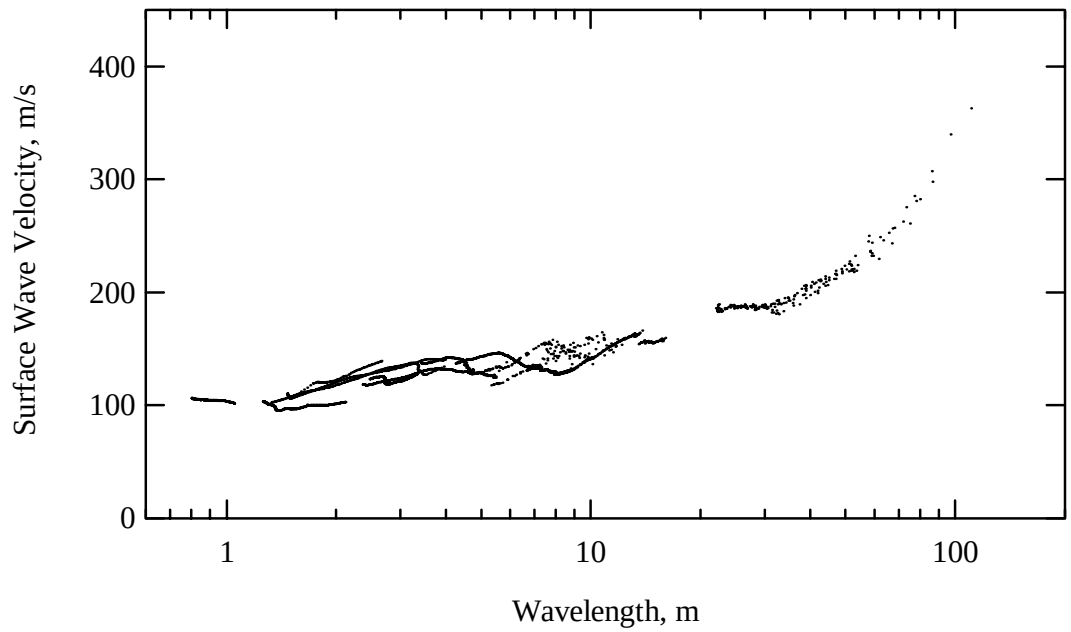


Fig. 4.164 Experimental dispersion curve measured at the Meadow School (MDS), Utah County, Utah.

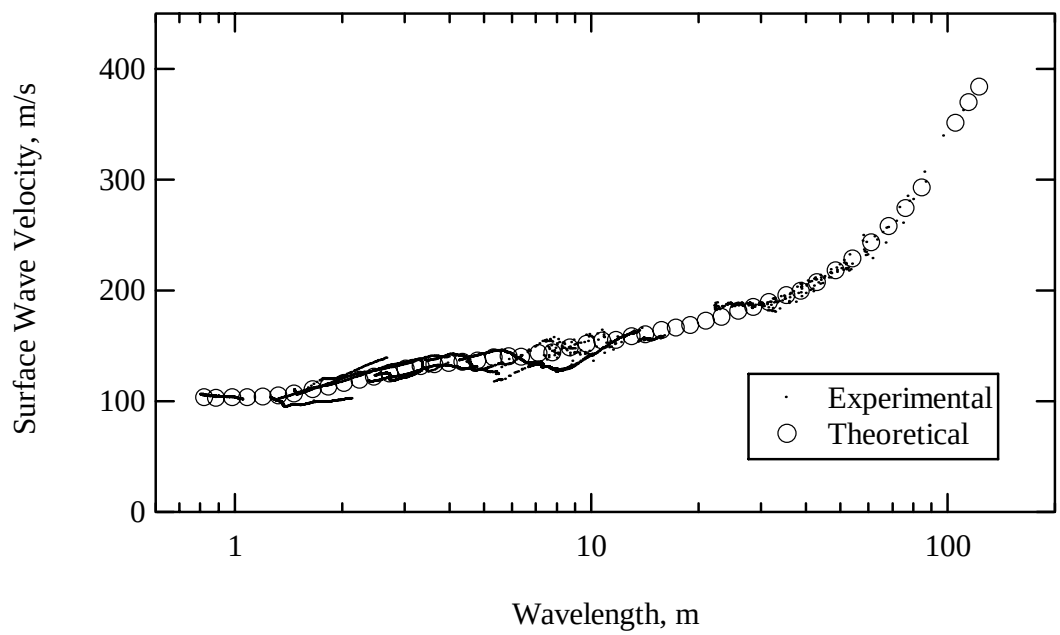


Fig. 4.165 Comparison of experimental and theoretical dispersion curves from the Meadow School (MDS), Utah County, Utah.

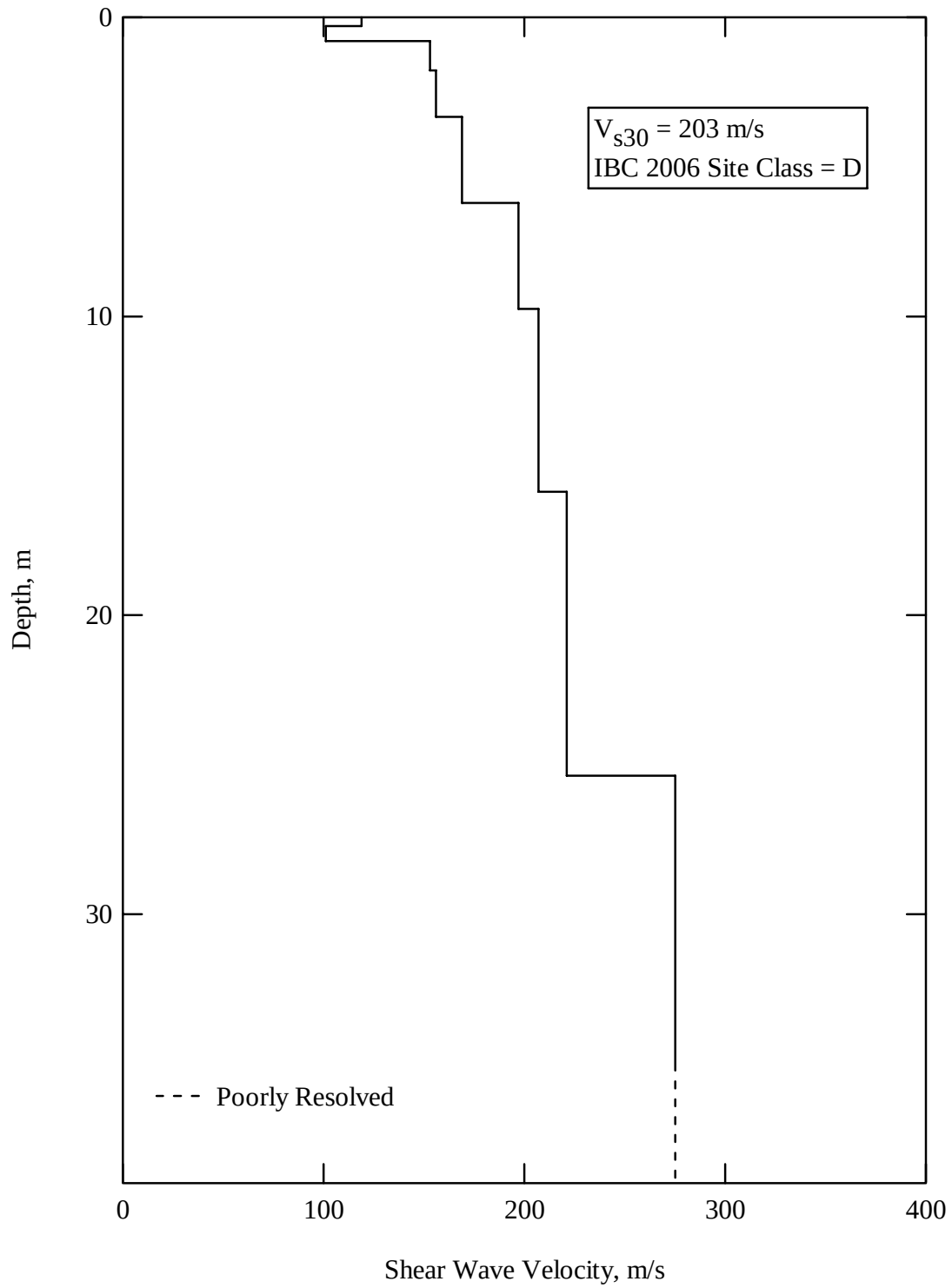


Fig. 4.166 Shear wave velocity profile determined from SASW at the Meadow School (MDS), Utah County, Utah.

The average shear wave velocity in the upper 30 m of soil is 203 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 35 m and poorly resolved from 35 m to 40 m.

Table 4.32 Tabulated measured and assumed layer properties at the Meadow School (MDS), Utah County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.00	0.29	119	223	0.3	1.89
0.29	0.51	101	189	0.3	1.89
0.80	0.97	153	286	0.3	1.92
1.77	1.56	156	292	0.3	1.92
3.33	2.87	169	1500	0.49	1.92
6.20	3.56	197	1500	0.49	1.92
9.76	6.12	207	1500	0.49	1.92
15.88	9.50	221	1500	0.49	1.92
25.38	9.62	275	1500	0.48	1.92
35.00	4.35	275*	1500	0.48	1.92
39.35	Half-Space	650**	1500	0.38	1.96

* Poorly Resolved
** Poorly Resolved and not shown in profile

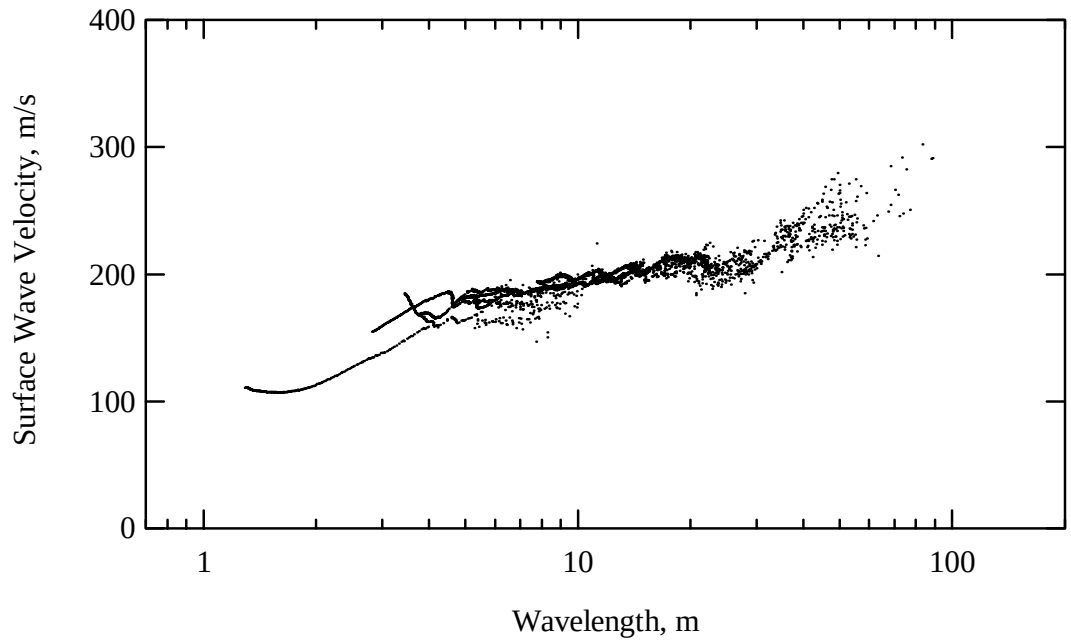


Fig. 4.169 Experimental dispersion curve measured at Lakeridge Jr. High School (LRJ), Utah County, Utah.

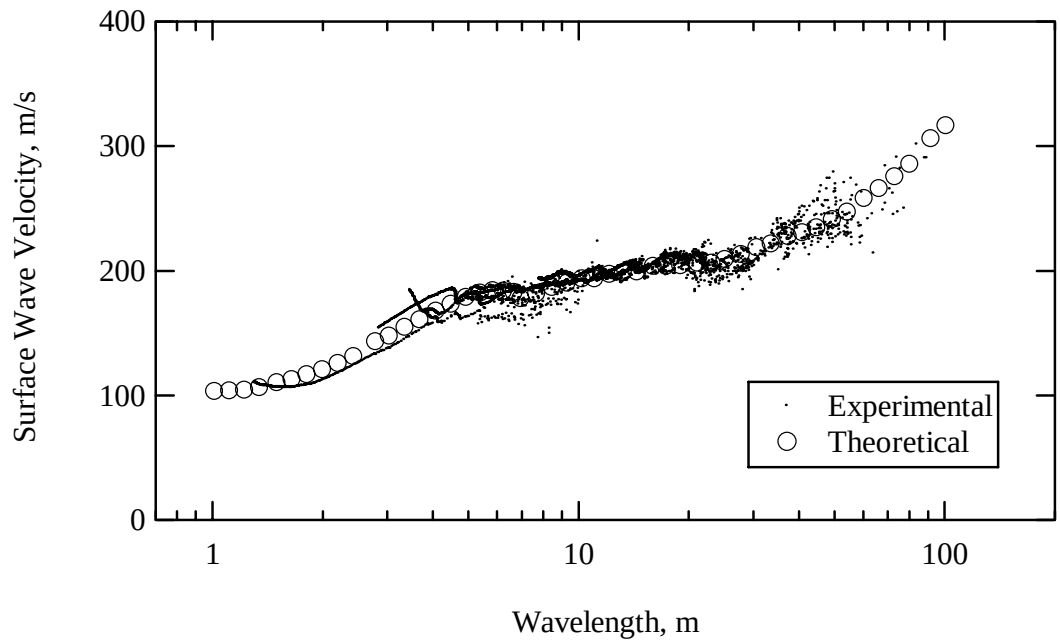


Fig. 4.170 Comparison of experimental and theoretical dispersion curves from Lakeridge Jr. High School (LRJ), Utah County, Utah.

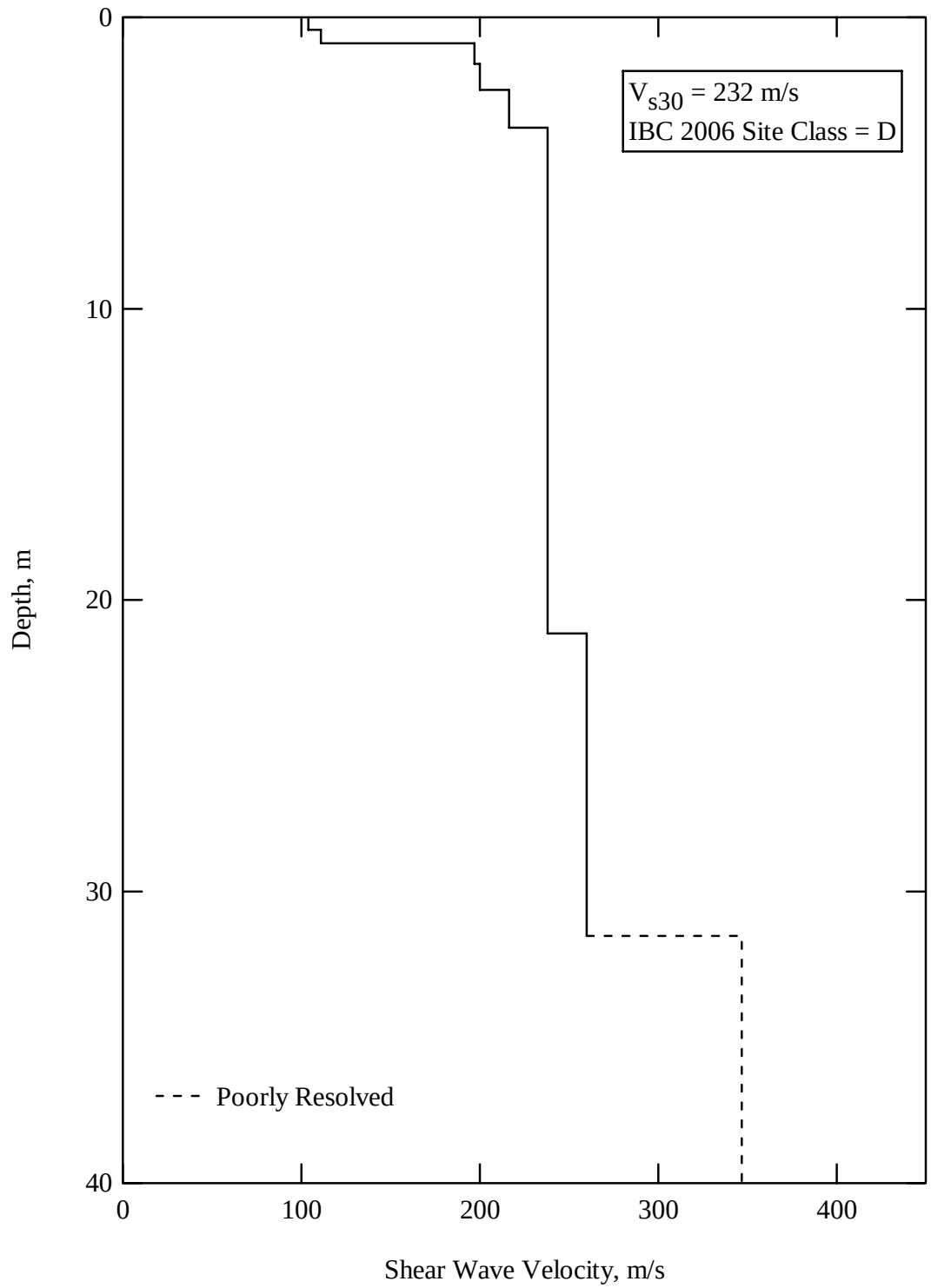


Fig. 4.171 Shear wave velocity profile determined from SASW at Lakeridge Jr. High School (LRJ), Utah County, Utah.

The average shear wave velocity in the upper 30 m of soil is 232 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 31.5 m and poorly resolved from 31.5 m to 40 m.

Table 4.33 Tabulated measured and assumed layer properties at Lakeridge Jr. High School (LRJ), Utah County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.4	104	195	0.3	1.89
0.4	0.5	111	208	0.3	1.89
0.9	0.7	197	369	0.3	1.89
1.6	0.9	200	374	0.3	1.90
2.5	1.3	217	405	0.3	1.90
3.8	2.8	238	1500	0.49	1.90
6.6	5.5	238	1500	0.49	1.90
12.1	9.0	238	1500	0.49	1.90
21.2	10.4	260	1500	0.48	1.90
31.5	Half-Space	347*	1500	0.47	2.00

* Poorly Resolved

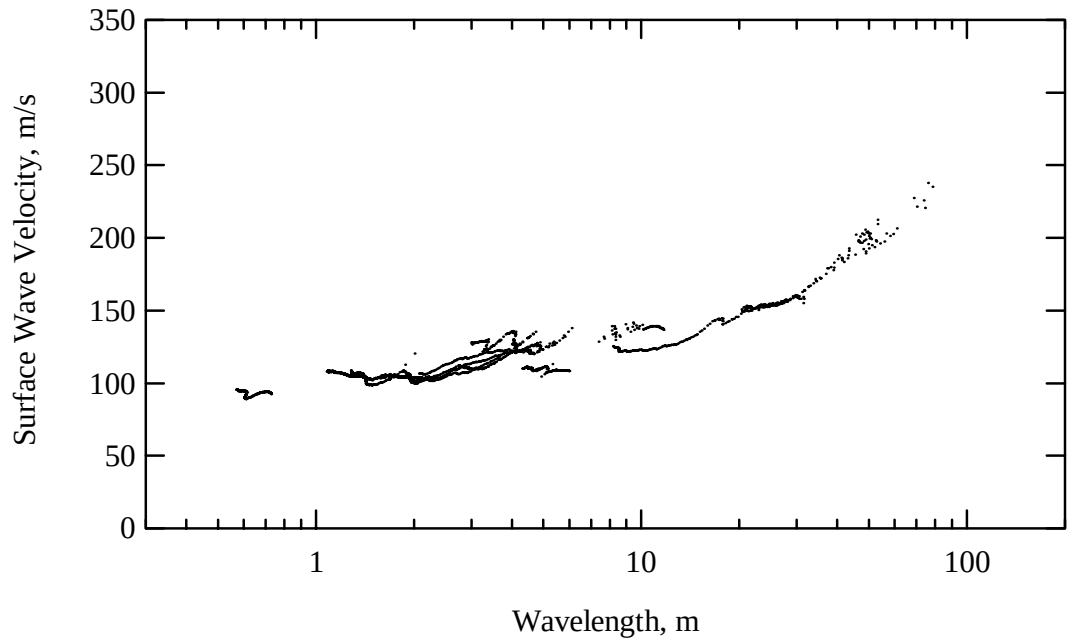


Fig. 4.174 Experimental dispersion curve measured in Lakeshore (LSU), Utah County, Utah.

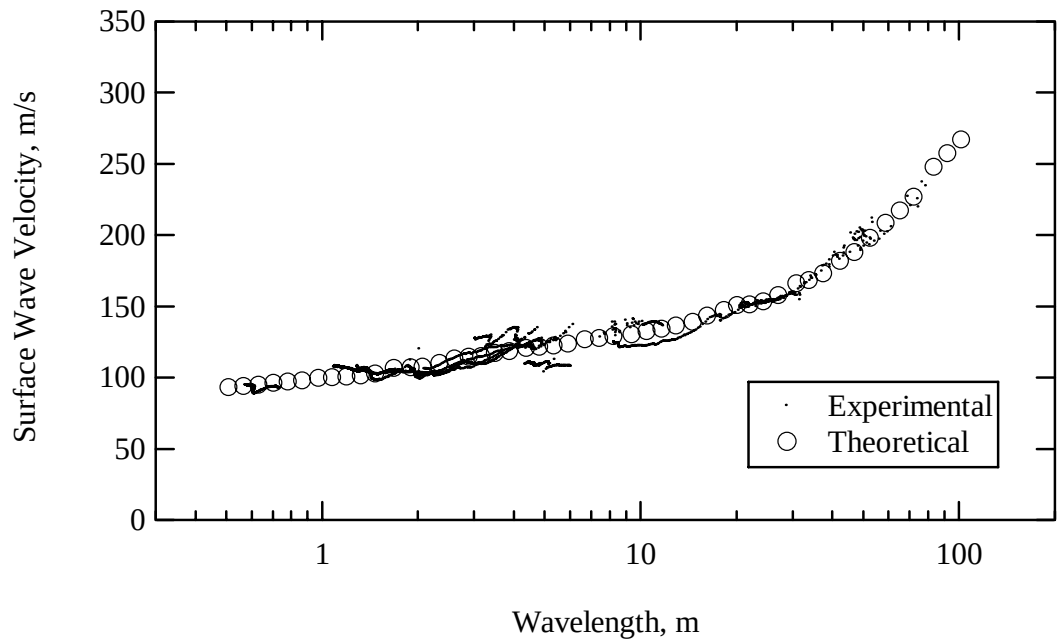


Fig. 4.175 Comparison of experimental and theoretical dispersion curves from Lakeshore (LSU), Utah County, Utah.

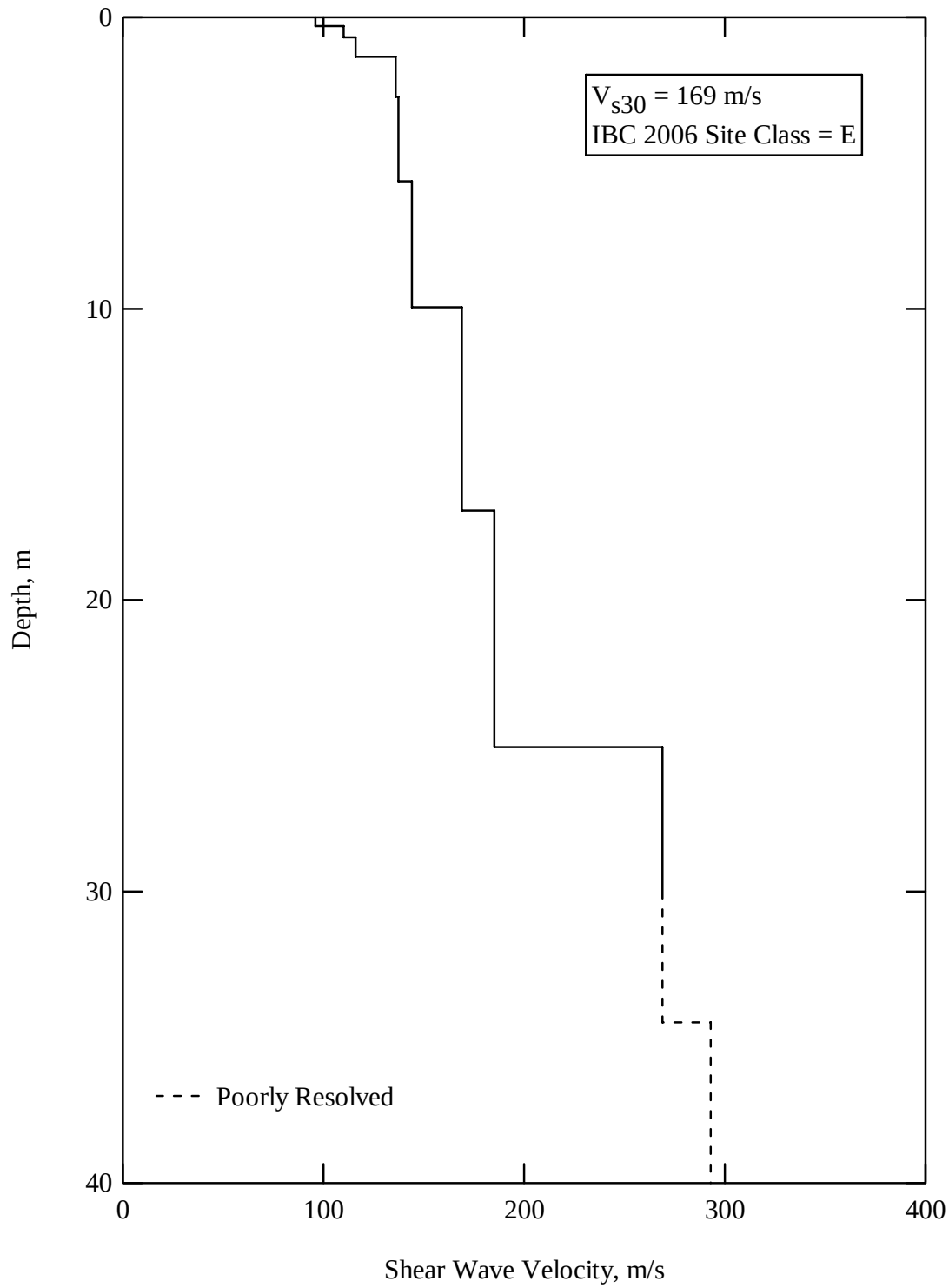


Fig. 4.176 Shear wave velocity profile determined from SASW in Lakeshore (LSU), Utah County, Utah.

The average shear wave velocity in the upper 30 m of soil is 169 m/s, which corresponds to an IBC 2006 site class E. The shear wave velocity profile is well resolved to a depth of 30 m and poorly resolved from 30 m to 40 m.

Table 4.34 Tabulated measured and assumed layer properties in Lakeshore (LSU), Utah County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.3	96	180	0.30	1.89
0.3	0.4	110	206	0.30	1.89
0.7	0.7	116	217	0.30	1.89
1.4	1.4	136	1500	0.50	1.89
2.7	2.9	137	1500	0.50	1.89
5.6	4.3	144	1500	0.50	1.89
10.0	7.0	169	1500	0.49	1.92
16.9	8.1	185	1500	0.49	1.92
25.0	5.0	269	1500	0.48	1.92
30	4.5	269*	1500	0.48	1.92
34.5	Half-Space	293*	1500	0.48	1.92

* Poorly Resolved

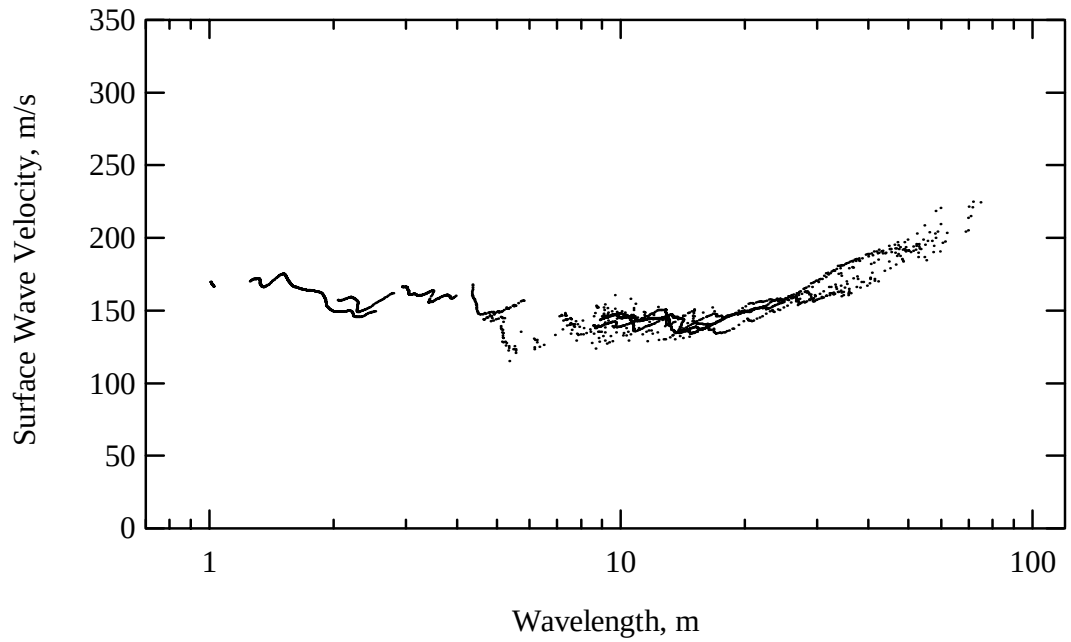


Fig. 4.179 Experimental dispersion curve measured at the Salem City Yard (SCY), Utah County, Utah.

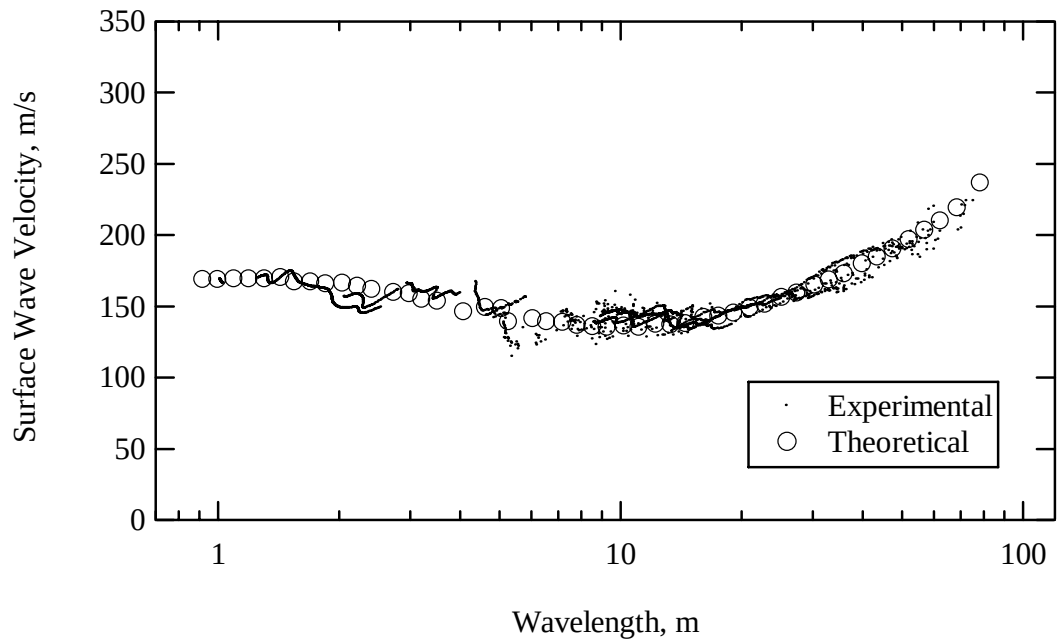


Fig. 4.180 Comparison of experimental and theoretical dispersion curves from the Salem City Yard (SCY), Utah County, Utah.

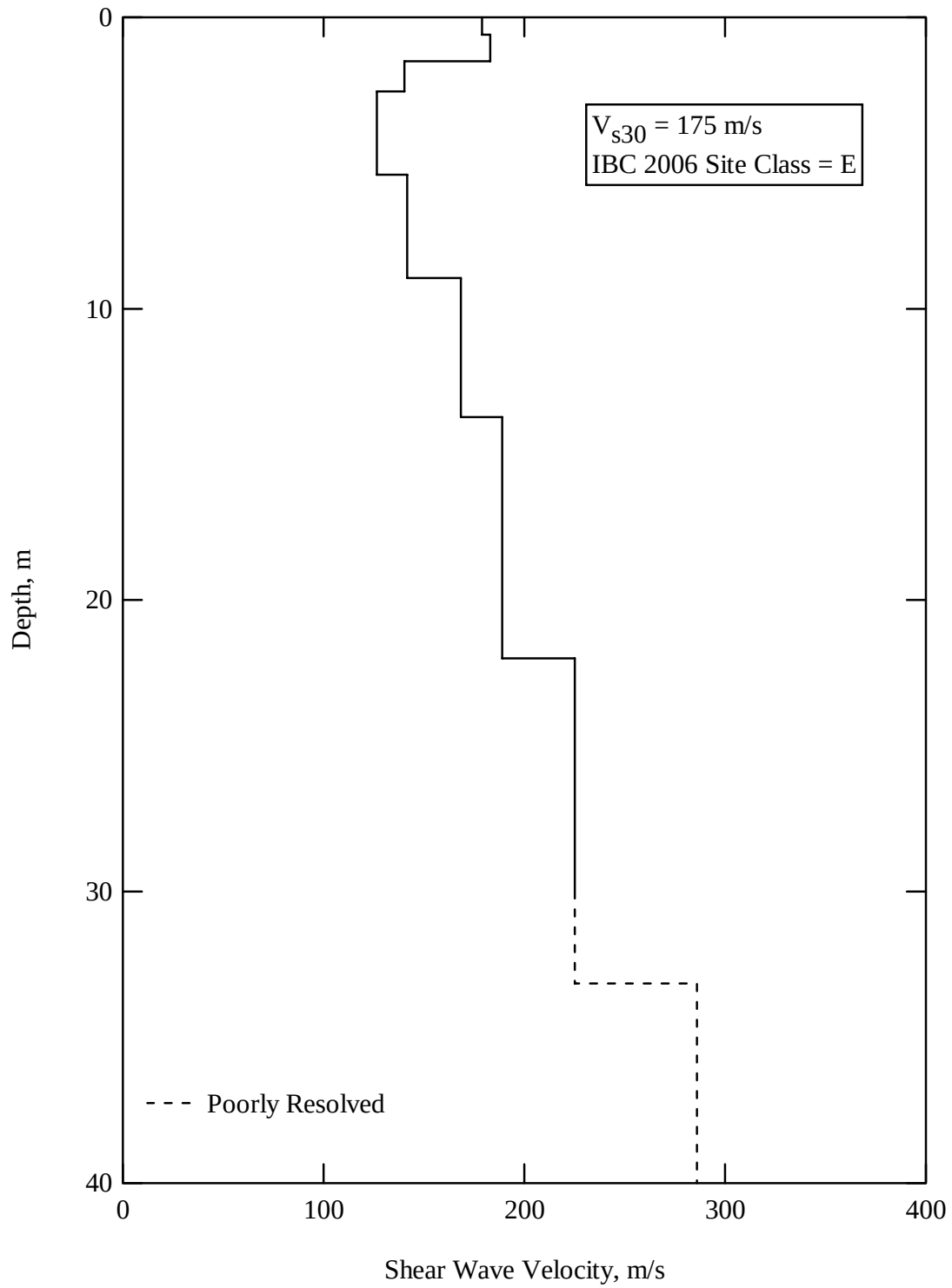


Fig. 4.181 Shear wave velocity profile determined from SASW at the Salem City Yard (SCY), Utah County, Utah.

The average shear wave velocity in the upper 30 m of soil is 175 m/s, which corresponds to an IBC 2006 site class E. The shear wave velocity profile is well resolved to a depth of 30 m and poorly resolved from 30 m to 40 m.

Table 4.35 Tabulated measured and assumed layer properties at the Salem City Yard (SCY), Utah County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.6	179	335	0.3	1.92
0.6	0.9	183	342	0.3	1.92
1.5	1.1	140	263	0.3	1.89
2.6	2.9	127	1500	0.49	1.89
5.4	3.6	142	1500	0.49	1.89
9.0	4.8	169	1500	0.49	1.92
13.7	8.3	189	1500	0.49	1.92
22.0	8.0	225	1500	0.49	1.92
30.0	3.2	225*	1500	0.48	1.92
33.2	Half-Space	286*	1500	0.48	1.92

* Poorly Resolved

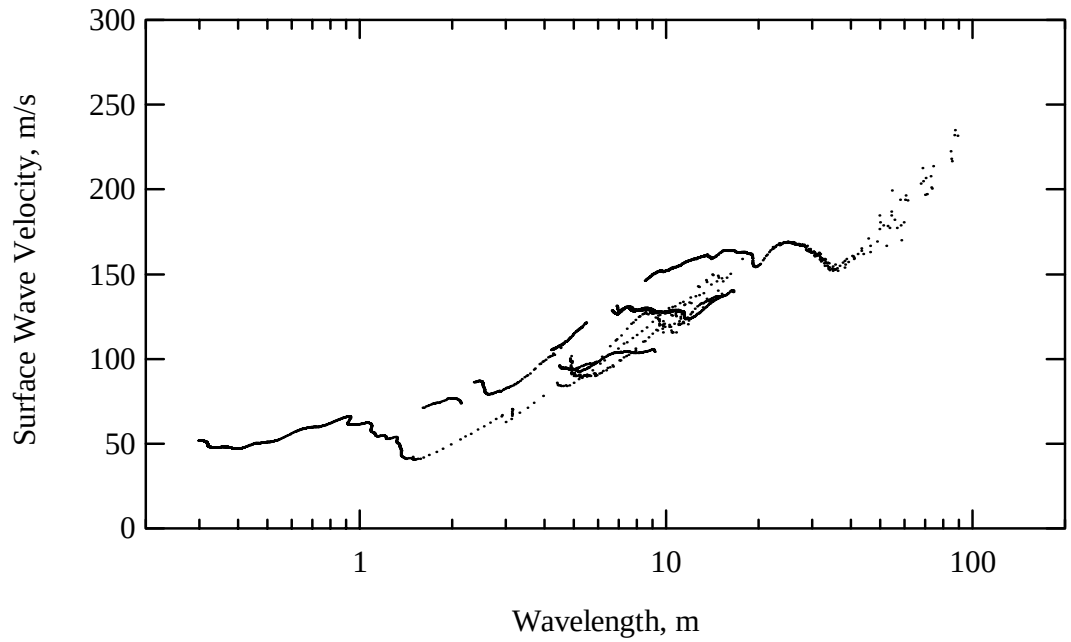


Fig. 4.184 Experimental dispersion curve measured at the Woffinden Home (WOF), Utah County, Utah.

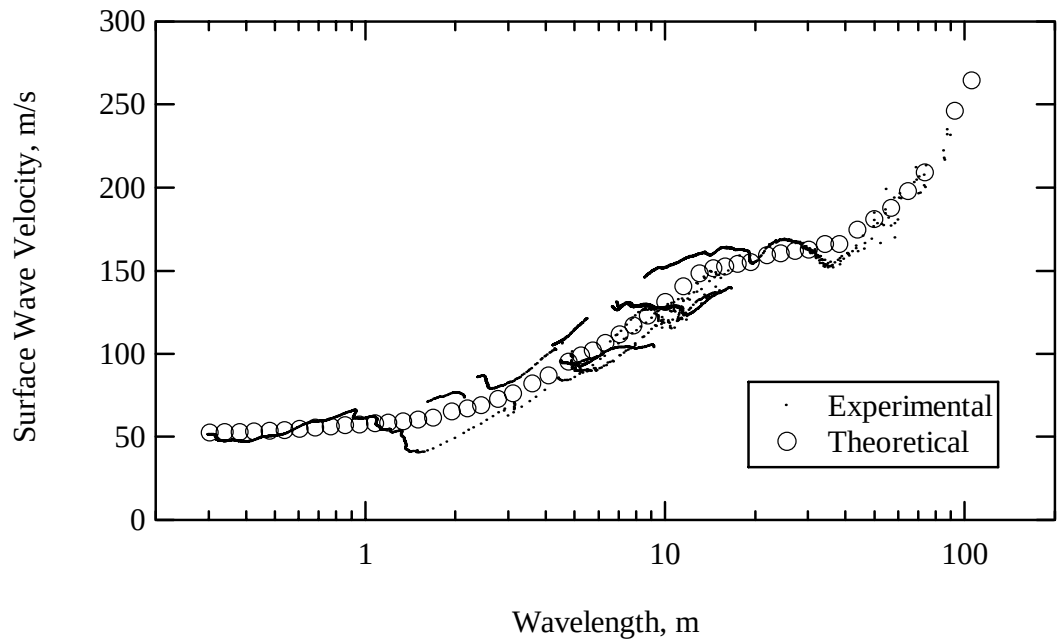


Fig. 4.185 Comparison of experimental and theoretical dispersion curves at the Woffinden Home (WOF), Utah County, Utah.

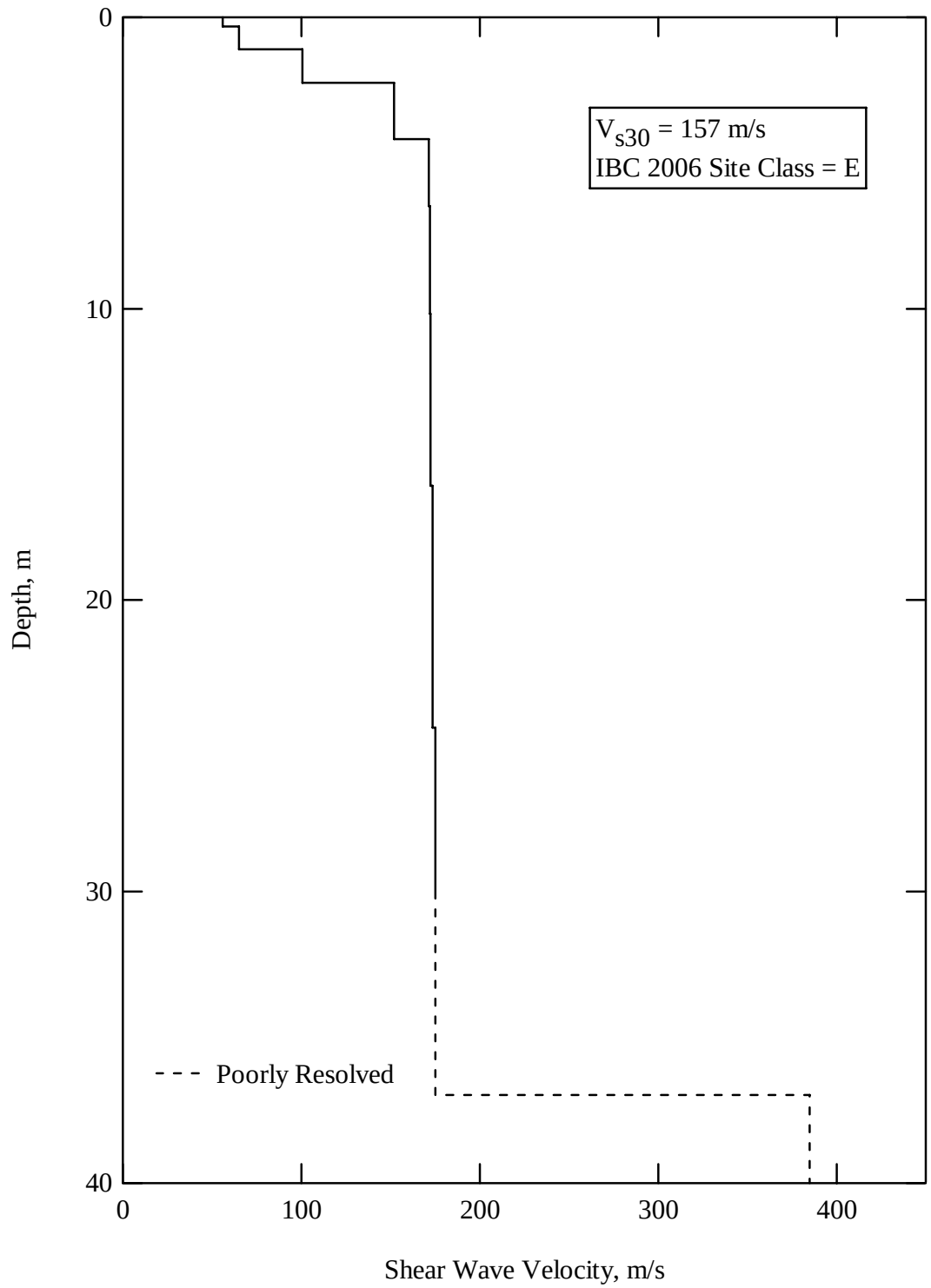


Fig. 4.186 Shear wave velocity profile determined from SASW at the Woffinden Home (WOF), Utah County, Utah.

The average shear wave velocity in the upper 30 m of soil is 157 m/s, which corresponds to an IBC 2006 site class E. The shear wave velocity profile is well resolved to a depth of 30 m and poorly resolved from 30 m to 40 m.

Table 4.36 Tabulated measured and assumed layer properties at the Woffinden Home (WOF), Utah County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.3	56	105	0.3	1.87
0.3	0.8	65	122	0.3	1.87
1.1	1.2	101	188	0.3	1.87
2.3	1.9	152	1500	0.49	1.87
4.2	2.3	171	1500	0.49	1.87
6.5	3.7	172	1500	0.49	1.87
10.2	5.9	173	1500	0.49	1.87
16.1	8.3	174	1500	0.49	1.90
24.4	5.6	175	1500	0.49	1.90
30.0	7.0	175*	1500	0.49	1.90
37.0	Half-Space	385*	1500	0.46	1.92

* Poorly Resolved

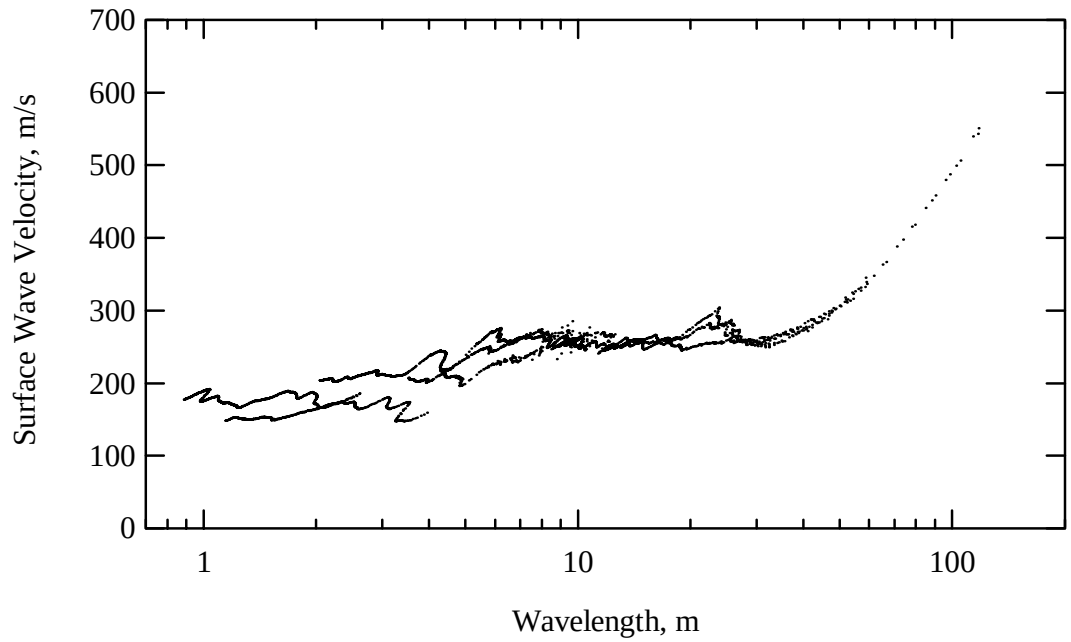


Fig. 4.189 Experimental dispersion curve measured at the Tri City Golf Course (AMF), Utah County, Utah.

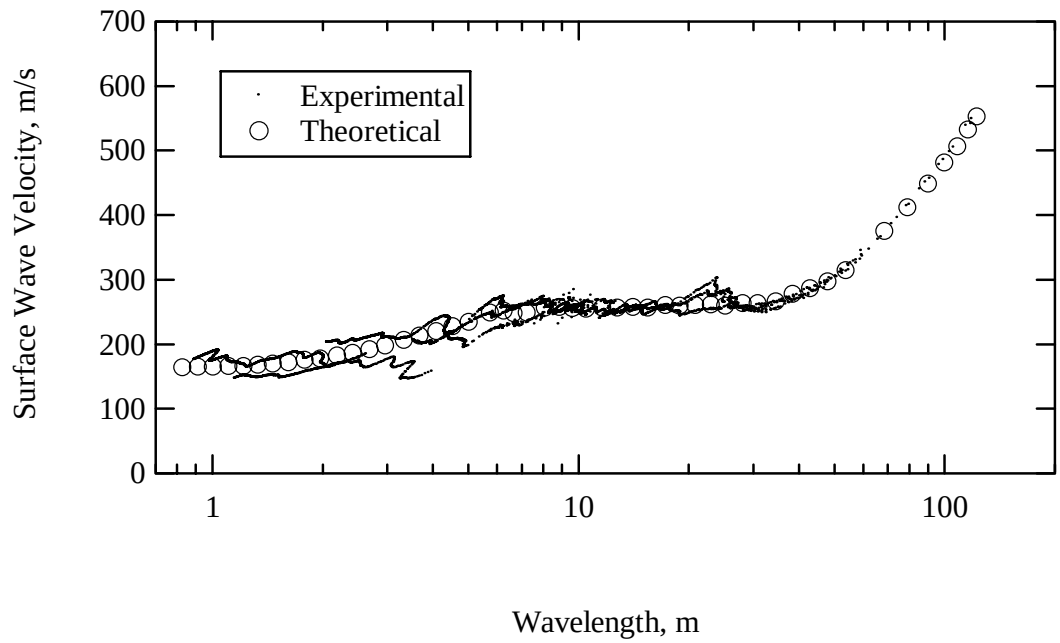


Fig. 4.190 Comparison of experimental and theoretical dispersion curves at the Tri City Golf Course (AMF), Utah County, Utah.

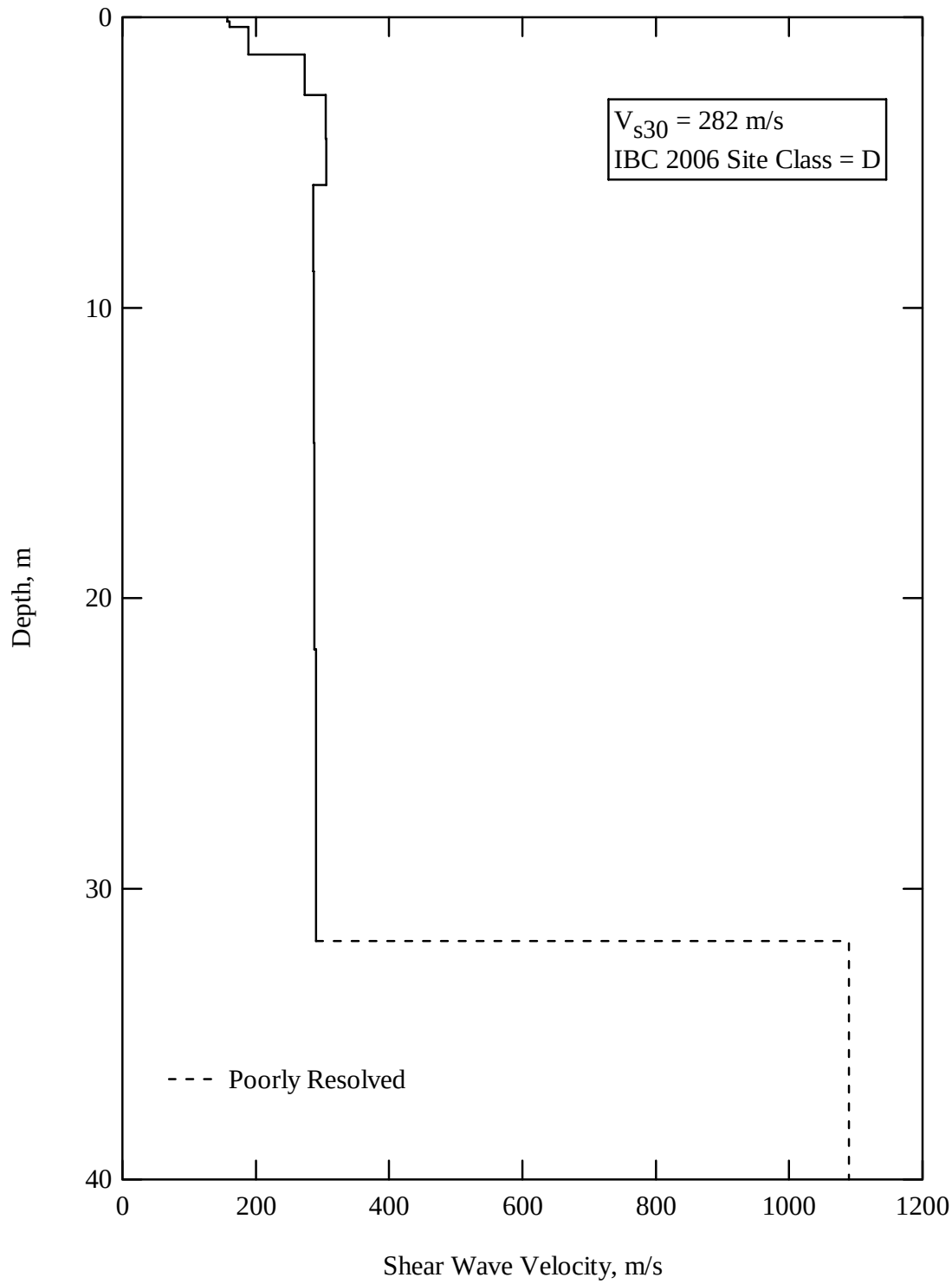


Fig. 4.191 Shear wave velocity profile determined from SASW at the Tri City Golf Course (AMF), Utah County, Utah.

The average shear wave velocity in the upper 30 m of soil is 282 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 31.8 m and poorly resolved from 31.8 m to 40 m.

Table 4.37 Tabulated measured and assumed layer properties at the Tri City Golf Course (AMF), Utah County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.1	157	295	0.30	1.92
0.1	0.2	160	300	0.30	1.92
0.3	0.9	189	354	0.30	1.92
1.3	1.4	274	512	0.30	1.92
2.7	1.5	305	571	0.30	1.96
4.2	1.6	306	573	0.30	1.96
5.8	3.0	286	1500	0.48	1.92
8.8	5.9	287	1500	0.48	1.92
14.7	7.1	288	1500	0.48	1.92
21.8	10.0	290	1500	0.48	1.92
31.8	Half-Space	1090*	1780	0.20	2.08

* Poorly Resolved

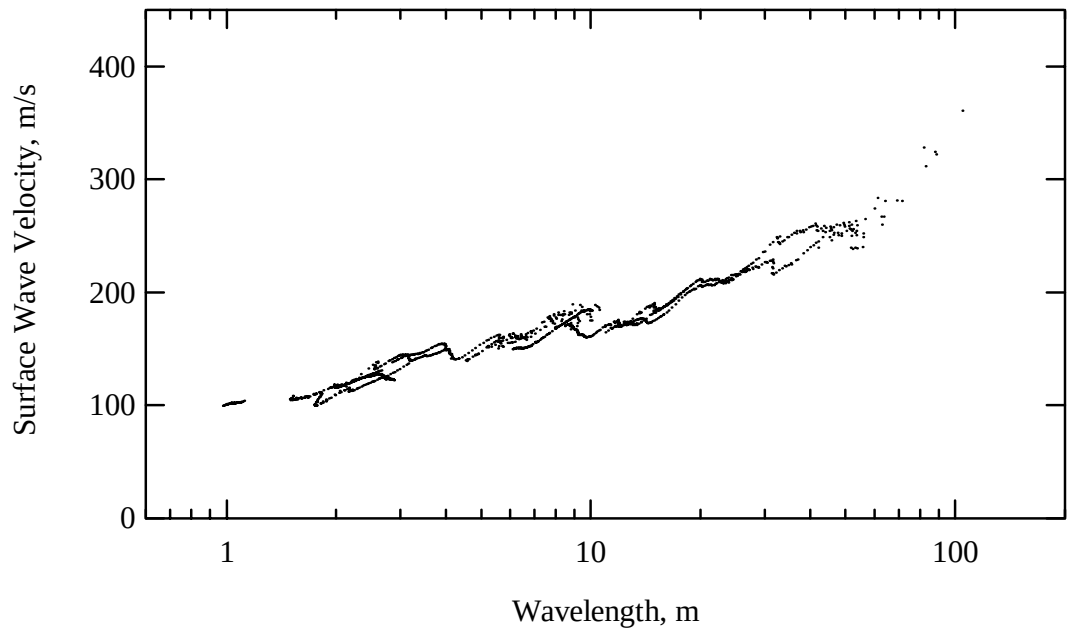


Fig. 4.194 Experimental dispersion curve measured at Thanksgiving Point (TPU), Utah County, Utah.

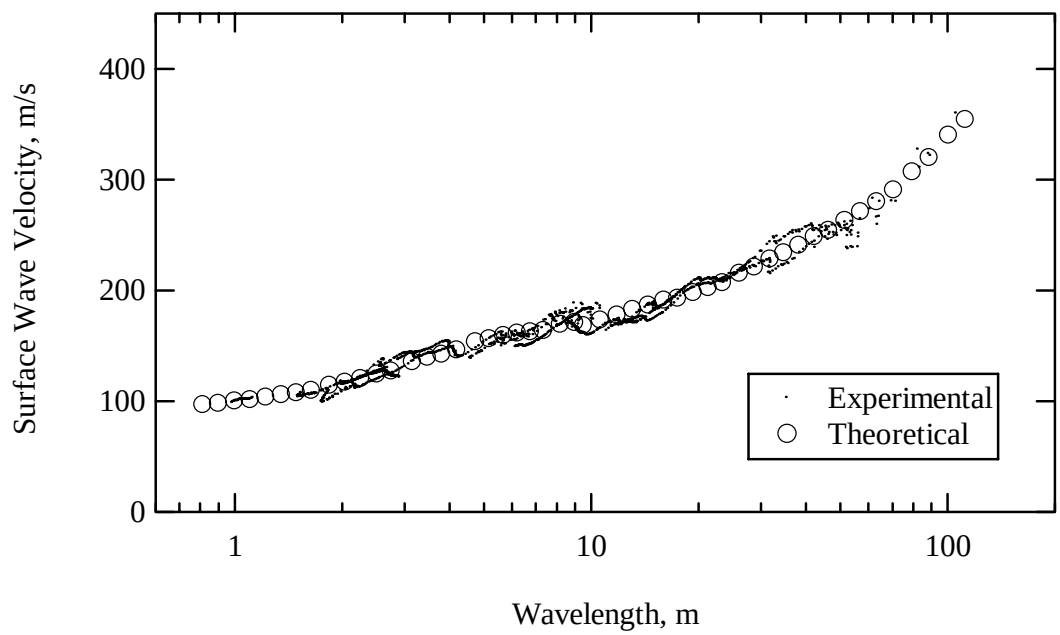


Fig. 4.195 Comparison of experimental and theoretical dispersion curves at Thanksgiving Point (TPU), Utah County, Utah.

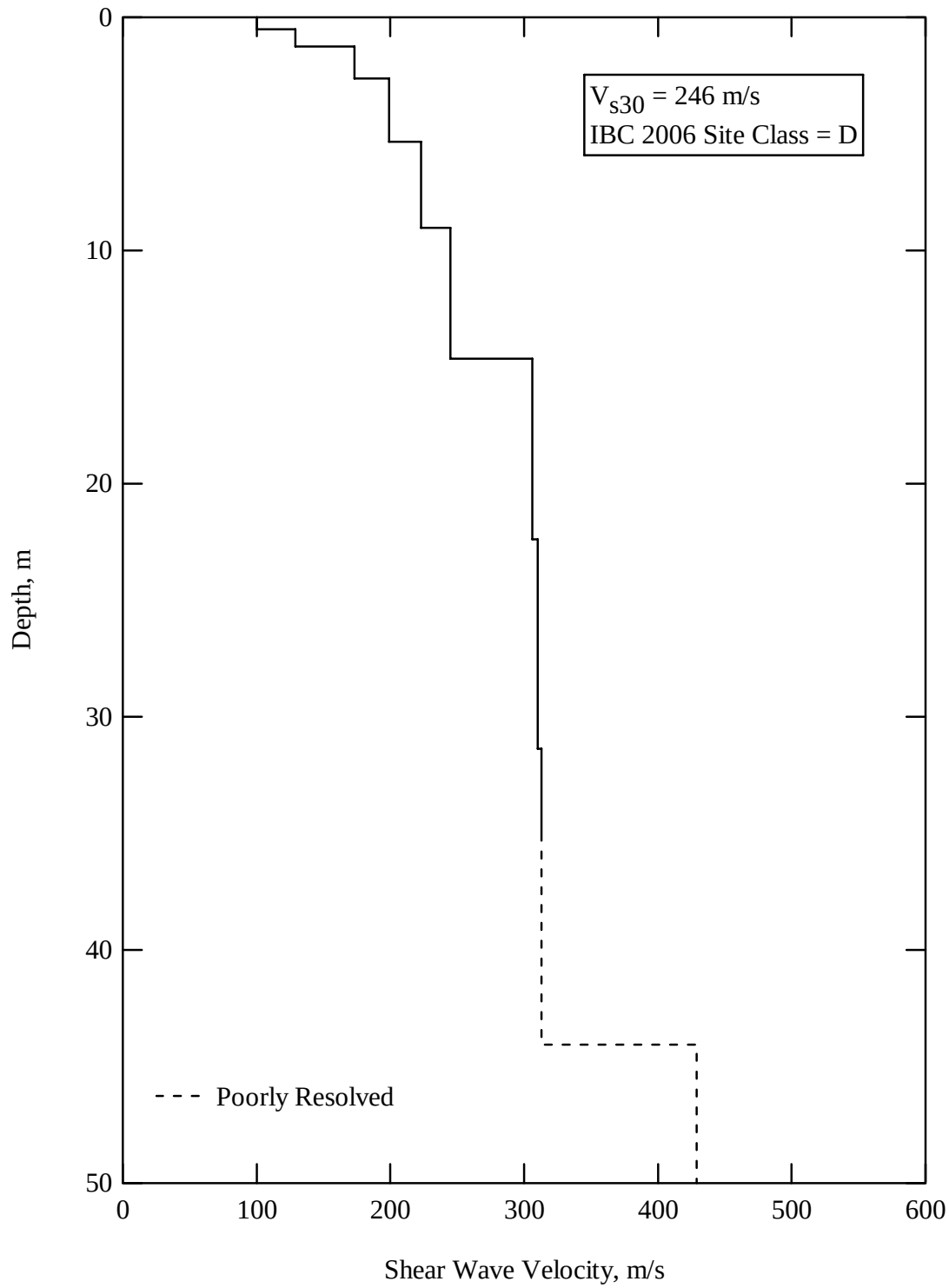


Fig. 4.196 Shear wave velocity profile determined from SASW at Thanksgiving Point (TPU), Utah County, Utah.

The average shear wave velocity in the upper 30 m of soil is 246 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 35 m and poorly resolved from 35 m to 50 m.

Table 4.38 Tabulated measured and assumed layer properties at Thanksgiving Point (TPU), Utah County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.5	100	187	0.30	1.89
0.5	0.7	129	241	0.30	1.89
1.3	1.4	173	324	0.30	1.92
2.6	2.7	199	372	0.30	1.92
5.3	3.7	223	417	0.30	1.92
9.0	5.6	245	1500	0.49	1.92
14.7	7.8	306	1500	0.48	1.96
22.4	9.0	310	1500	0.48	1.96
31.4	3.6	313	1500	0.48	1.96
35.0	9.1	313*	1500	0.48	1.96
44.1	Half-Space	429*	1500	0.46	1.96

* Poorly Resolved

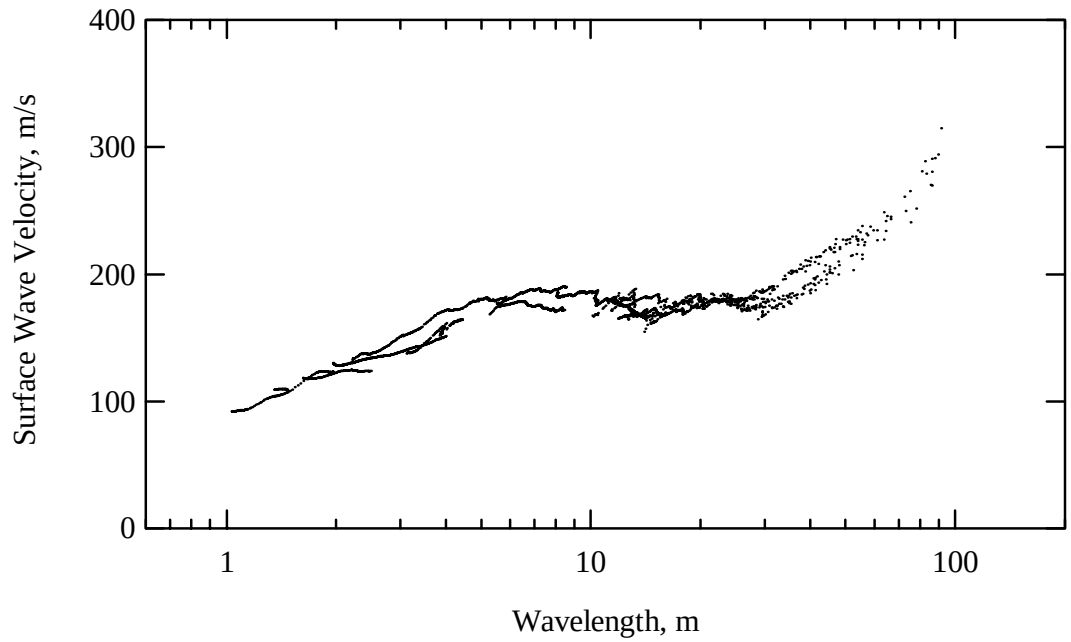


Fig. 4.199 Experimental dispersion curve measured at Dixon Jr. High School (DJH), Utah County, Utah.

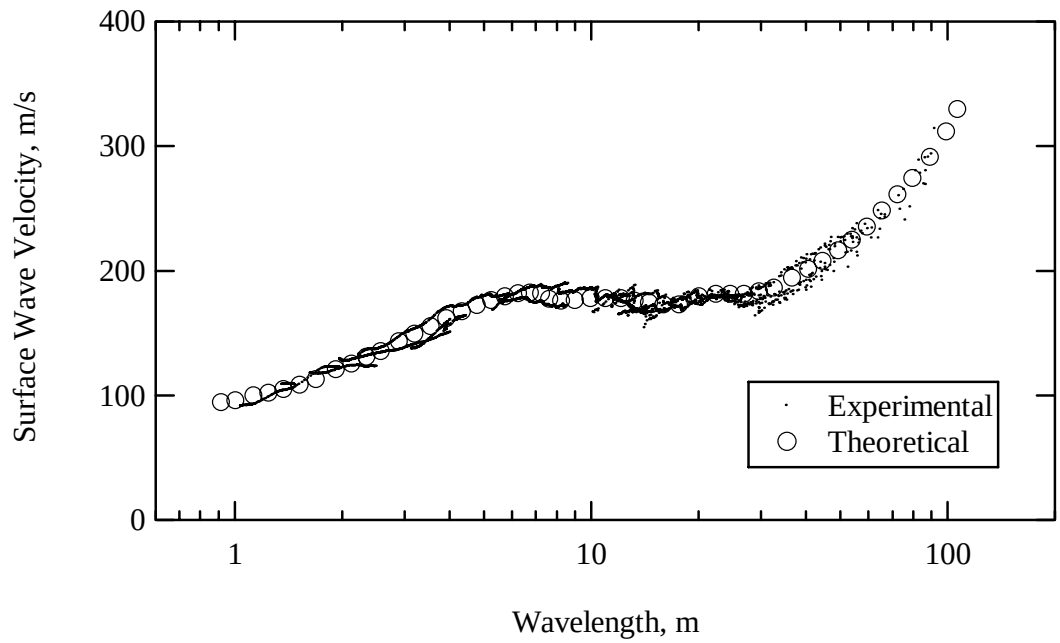


Fig. 4.200 Comparison of experimental and theoretical dispersion curves from Dixon Jr. High School (DJH), Utah County, Utah.

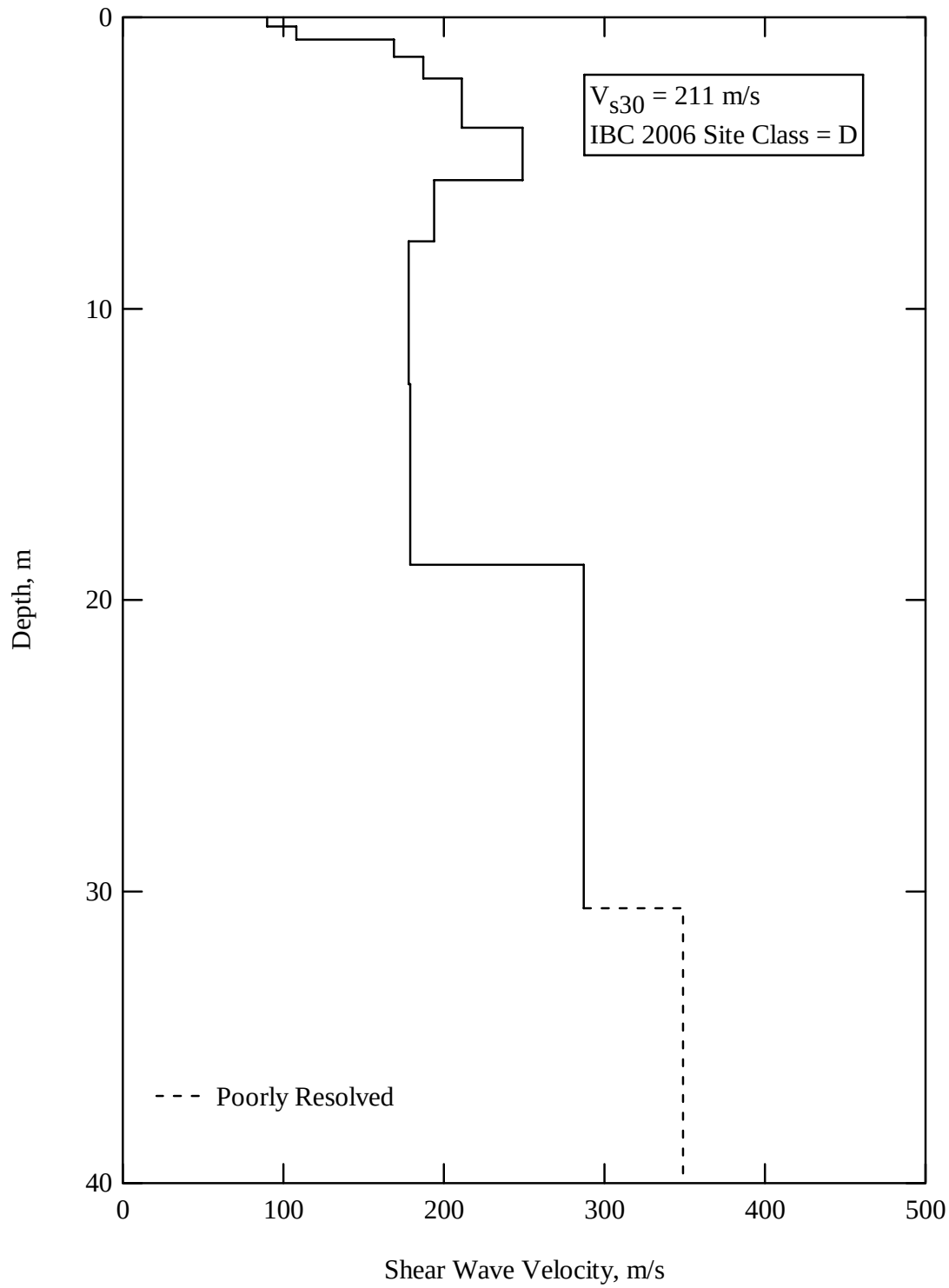


Fig. 4.201 Shear wave velocity profile determined from SASW testing at Dixon Jr. High School (DJH), Utah County, Utah.

The average shear wave velocity in the upper 30 m of soil is 211 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 30.6 m and poorly resolved from 30.6 m to 40 m.

Table 4.39 Tabulated measured and assumed layer properties at Dixon Jr. High School (DJH), Utah County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.3	90	168	0.3	1.89
0.3	0.5	108	202	0.3	1.89
0.8	0.6	169	316	0.3	1.92
1.4	0.7	187	350	0.3	1.92
2.1	1.7	211	395	0.3	1.92
3.8	1.8	249	466	0.3	1.92
5.6	2.1	194	363	0.3	1.92
7.7	4.9	178	333	0.3	1.92
12.6	6.2	179	1500	0.49	1.92
18.8	11.8	287	1500	0.48	1.92
30.6	Half-Space	349*	1500	0.47	1.96

* Poorly Resolved

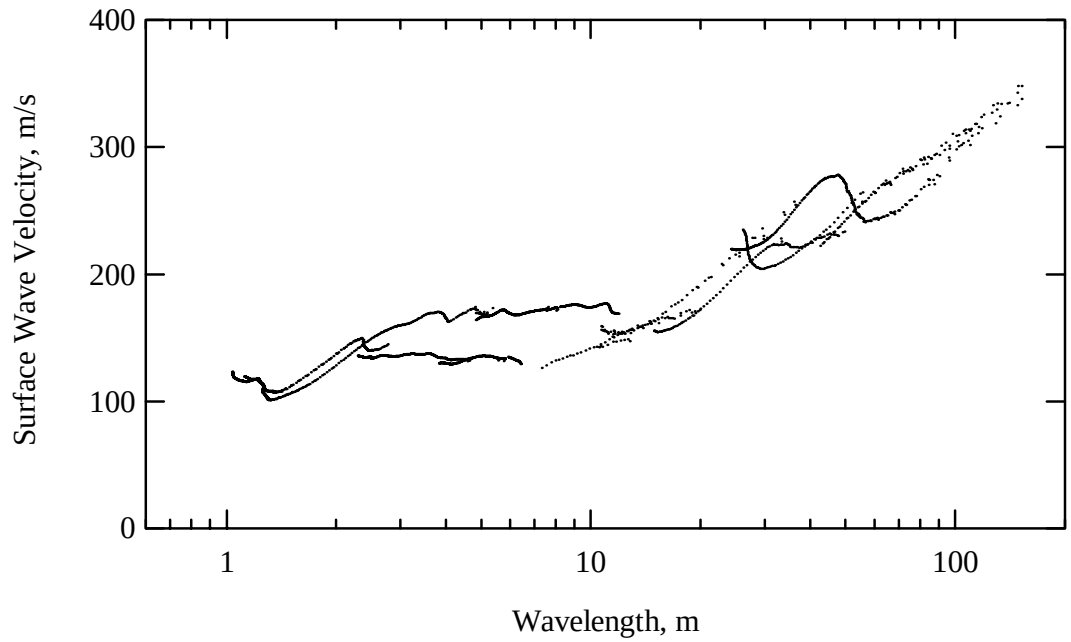


Fig. 4.204 Experimental dispersion curve measured West of Utah Lake (WUL), Utah County, Utah.

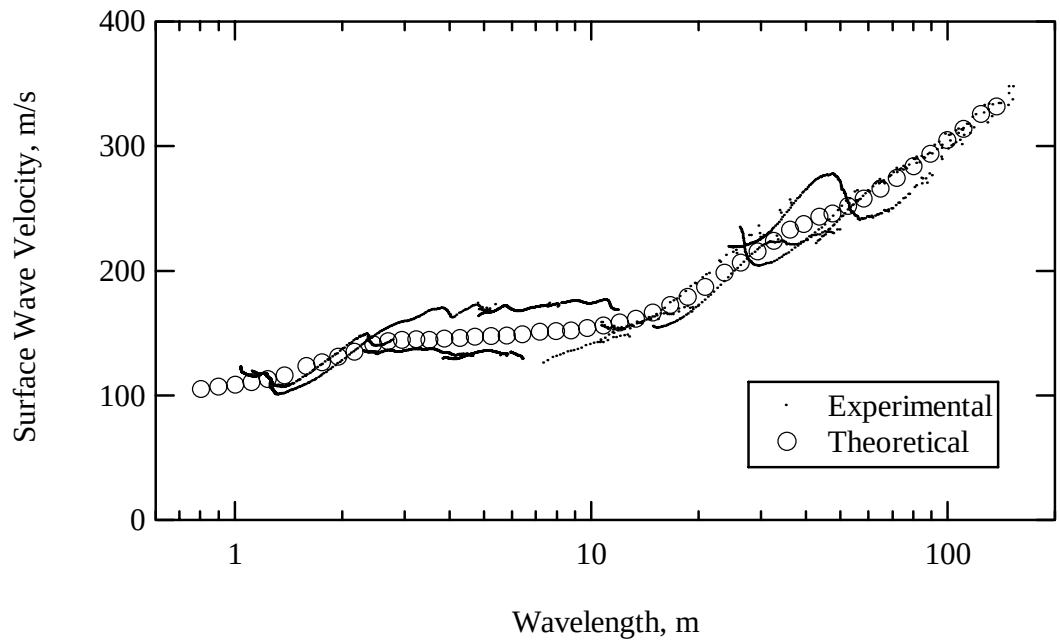


Fig. 4.205 Comparison of experimental and theoretical dispersion curves from West of Utah Lake (WUL), Utah County, Utah.

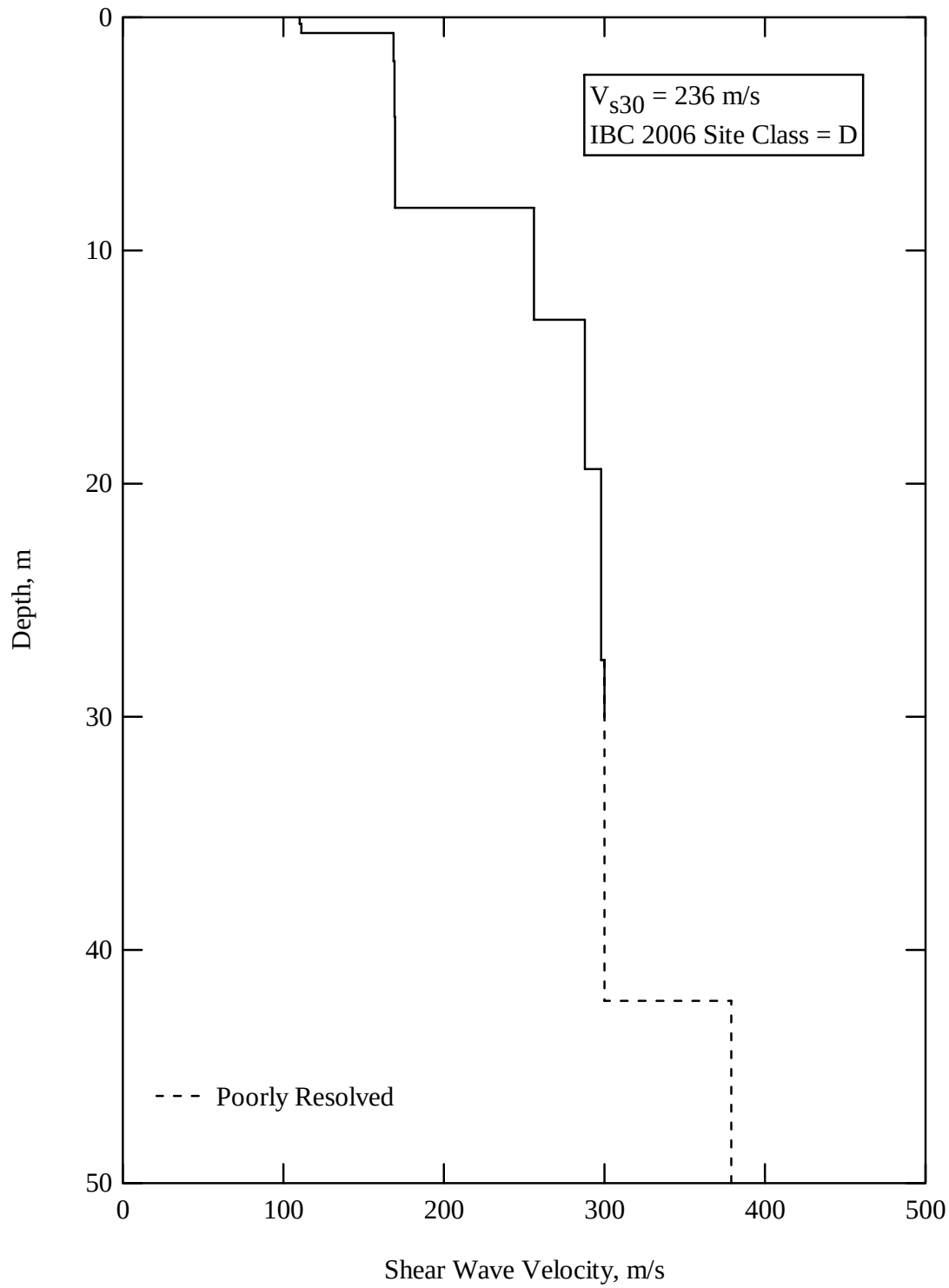


Fig. 4.206 Shear wave velocity profile determined from SASW testing West of Utah Lake (WUL), Utah County, Utah.

The average shear wave velocity in the upper 30 m of soil is 236 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 30 m and poorly resolved from 30 m to 50 m.

Table 4.40 Tabulated measured and assumed layer properties West of Utah Lake (WUL), Utah County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.3	110	206	0.30	1.89
0.3	0.4	111	208	0.30	1.89
0.7	1.2	169	315	0.30	1.89
1.9	2.4	169	317	0.30	1.92
4.3	3.9	170	318	0.30	1.92
8.2	4.8	256	479	0.30	1.92
13.0	6.4	288	1500	0.48	1.92
19.4	8.2	298	1500	0.48	1.92
27.6	2.4	300	1500	0.48	1.96
30.0	12.2	300*	1500	0.48	1.96
42.2	Half-Space	379*	1500	0.47	1.96

* Poorly Resolved

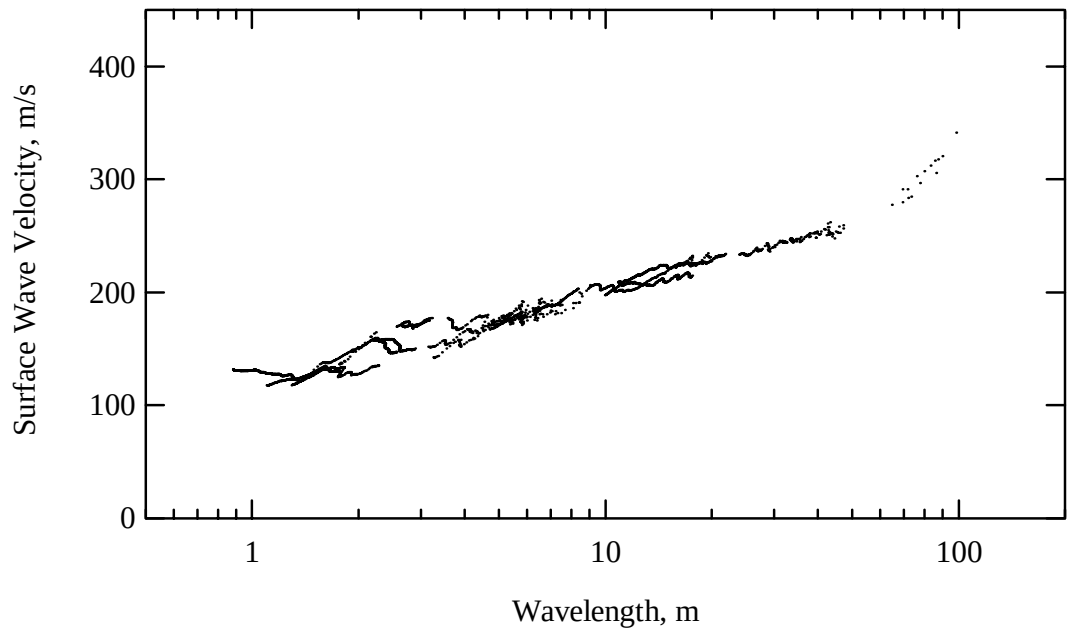


Fig. 4.209 Experimental dispersion curve measured at the Mapleton Ambulance Building (MAB), Utah County, Utah.

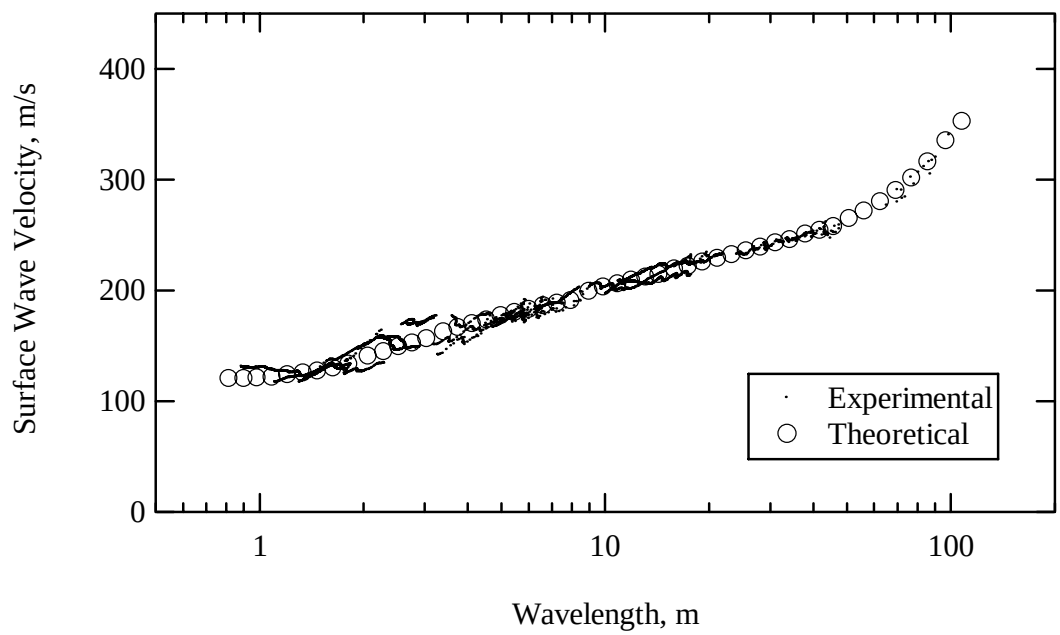


Fig. 4.210 Comparison of experimental and theoretical dispersion curves from the Mapleton Ambulance Building (MAB), Utah County, Utah.

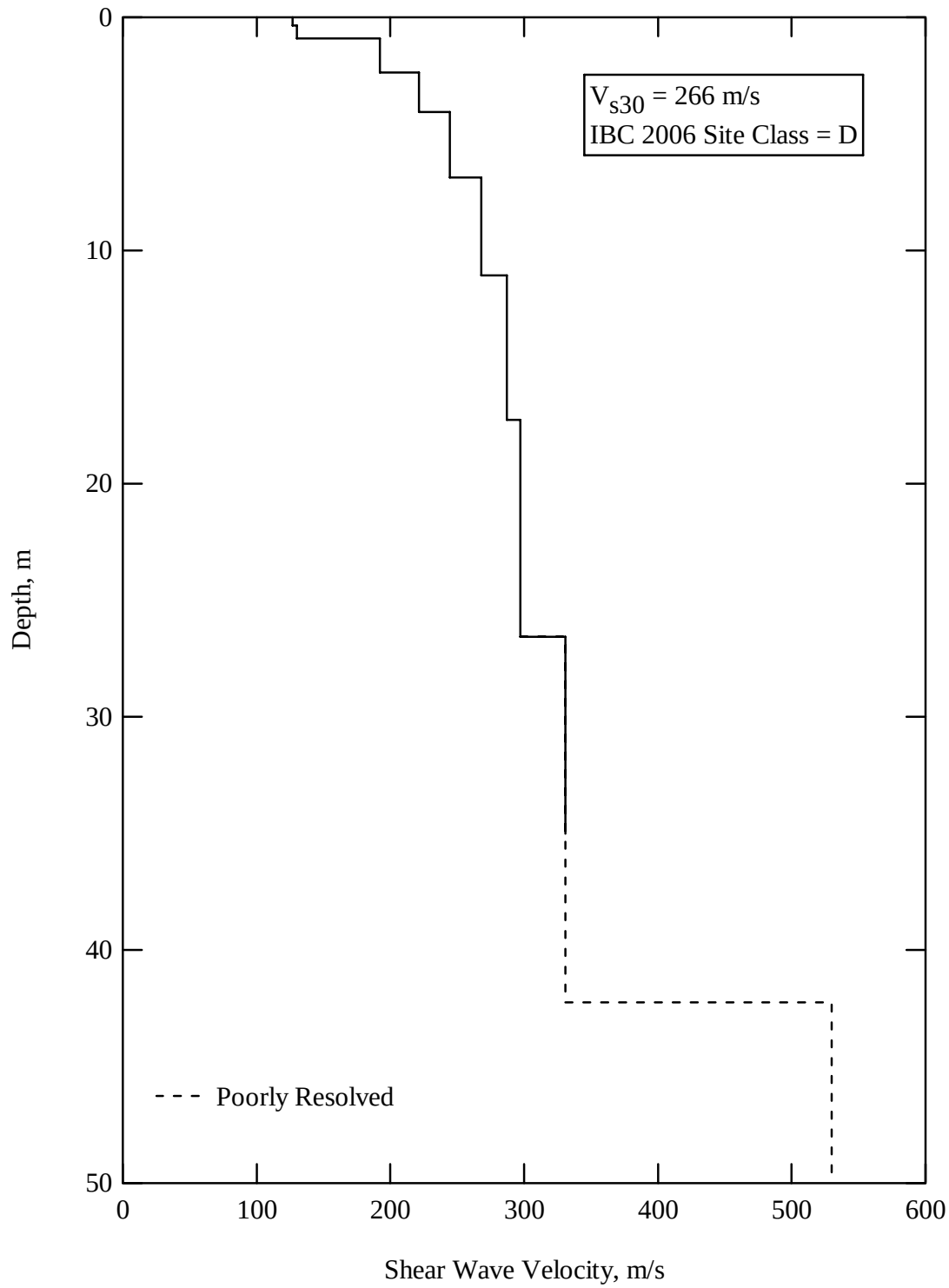


Fig. 4.211 Shear wave velocity profile determined from SASW testing at the Mapleton Ambulance Building (MAB), Utah County, Utah.

The average shear wave velocity in the upper 30 m of soil is 266 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 35 m and poorly resolved from 35 m to 50 m.

Table 4.41 Tabulated measured and assumed layer properties at the Mapleton Ambulance Building (MAB), Utah County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.3	127	238	0.3	1.89
0.3	0.6	130	243	0.3	1.89
0.9	1.5	192	359	0.3	1.92
2.4	1.7	221	414	0.3	1.92
4.1	2.8	245	457	0.3	1.92
6.9	4.2	268	502	0.3	1.92
11.1	6.2	287	537	0.3	1.92
17.3	9.3	297	556	0.3	1.92
26.6	8.4	331	619	0.3	1.96
35.0	7.3	331*	619	0.3	1.96
42.3	Half-Space	530*	992	0.3	1.96

* Poorly Resolved

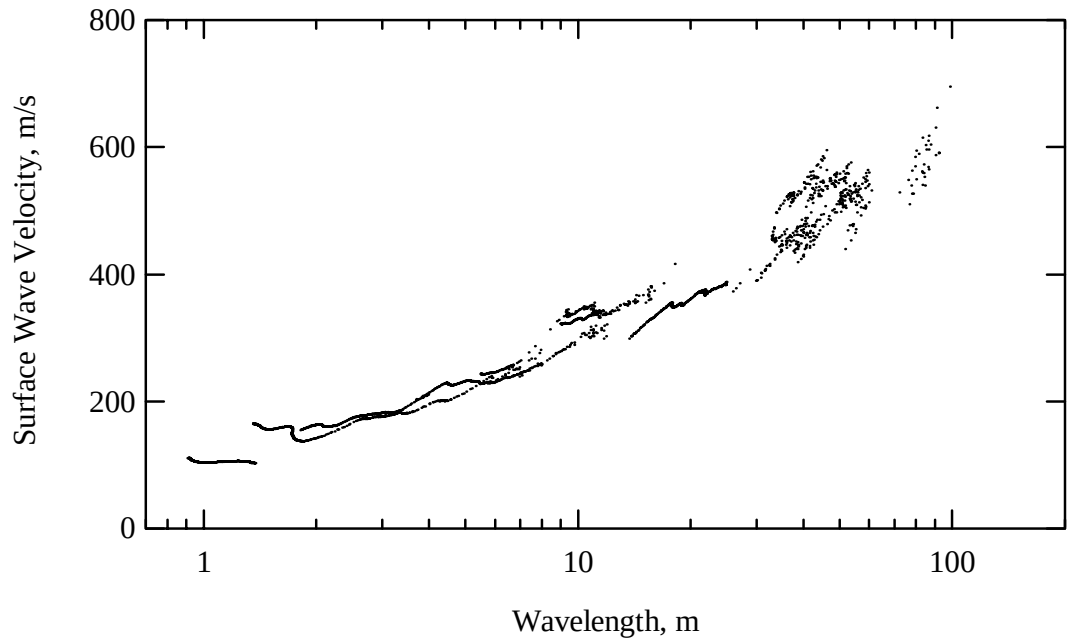


Fig. 4.214 Experimental dispersion curve measured at Cedar Ridge Elementary School (CRE), Utah County, Utah.

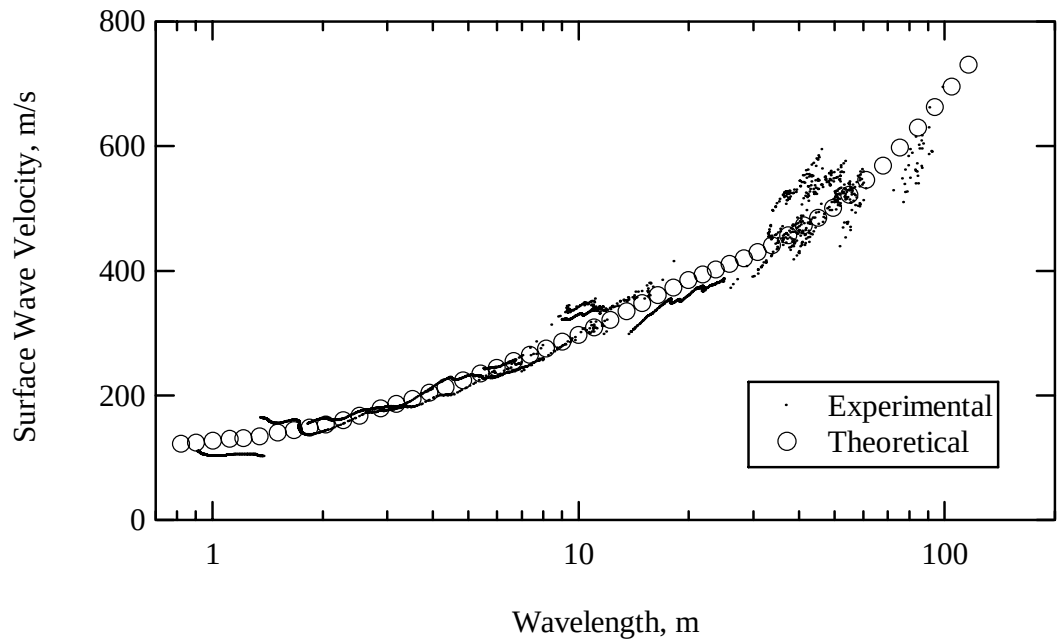


Fig. 4.215 Comparison of experimental and theoretical dispersion curves from Cedar Ridge Elementary School (CRE), Utah County, Utah.

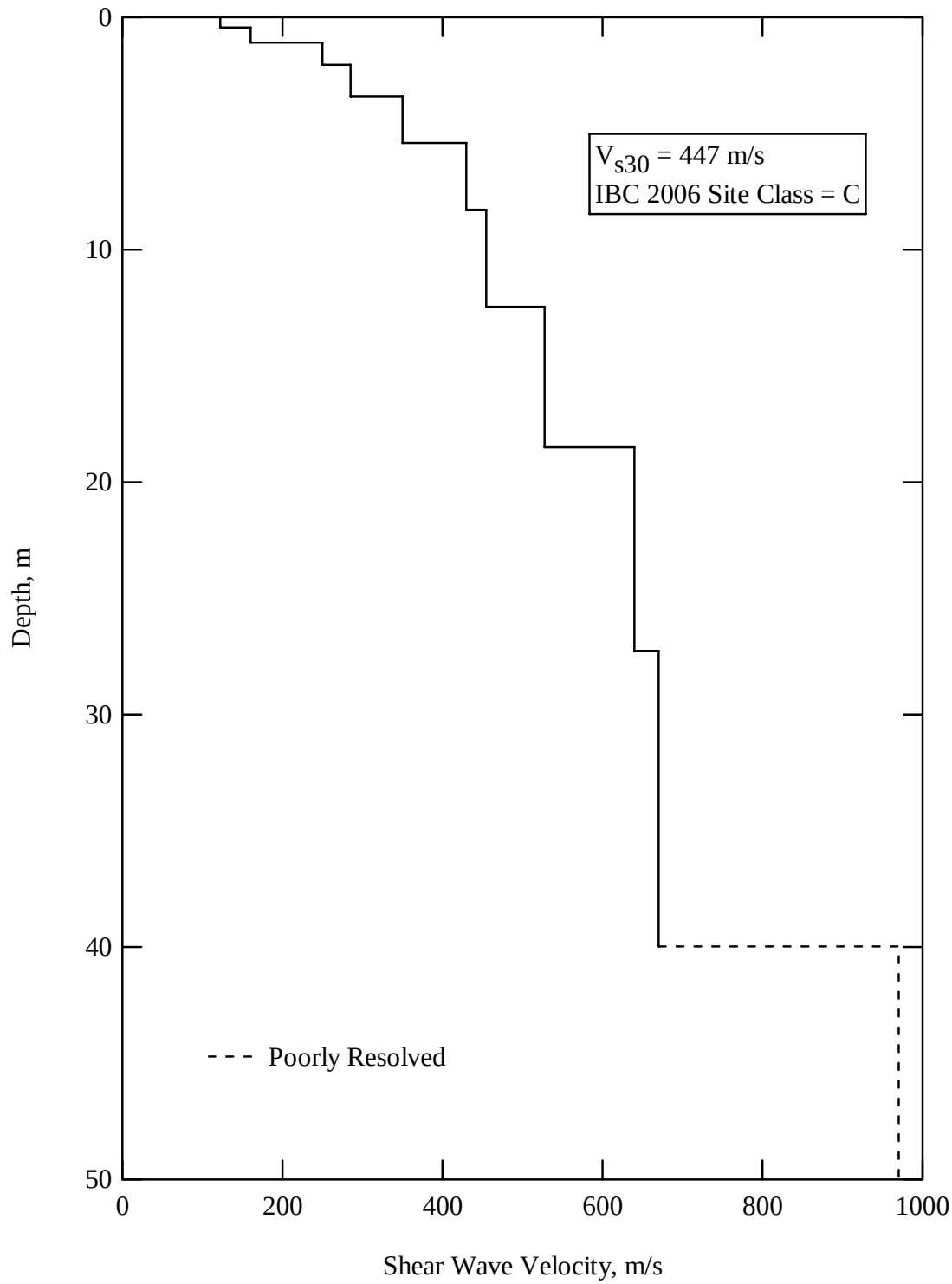


Fig. 4.216 Shear wave velocity profile determined from SASW testing at Cedar Ridge Elementary School (CRE), Utah County, Utah.

The average shear wave velocity in the upper 30 m of soil is 447 m/s, which corresponds to an IBC 2006 site class C. The shear wave velocity profile is well resolved to a depth of 40 m and poorly resolved from 40 m to 50 m.

Table 4.42 Tabulated measured and assumed layer at Cedar Ridge Elementary School (CRE), Utah County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.5	122	228	0.3	1.89
0.5	0.7	160	299	0.3	1.89
1.1	1.0	250	468	0.3	1.92
2.1	1.4	285	533	0.3	1.92
3.4	2.0	350	655	0.3	1.92
5.4	2.9	430	805	0.3	2.00
8.3	4.2	455	851	0.3	2.00
12.5	6.1	528	988	0.3	2.00
18.5	8.8	640	1197	0.3	2.00
27.3	12.7	670	1254	0.3	2.00
40.0	Half-Space	970*	1815	0.3	2.10

* Poorly Resolved

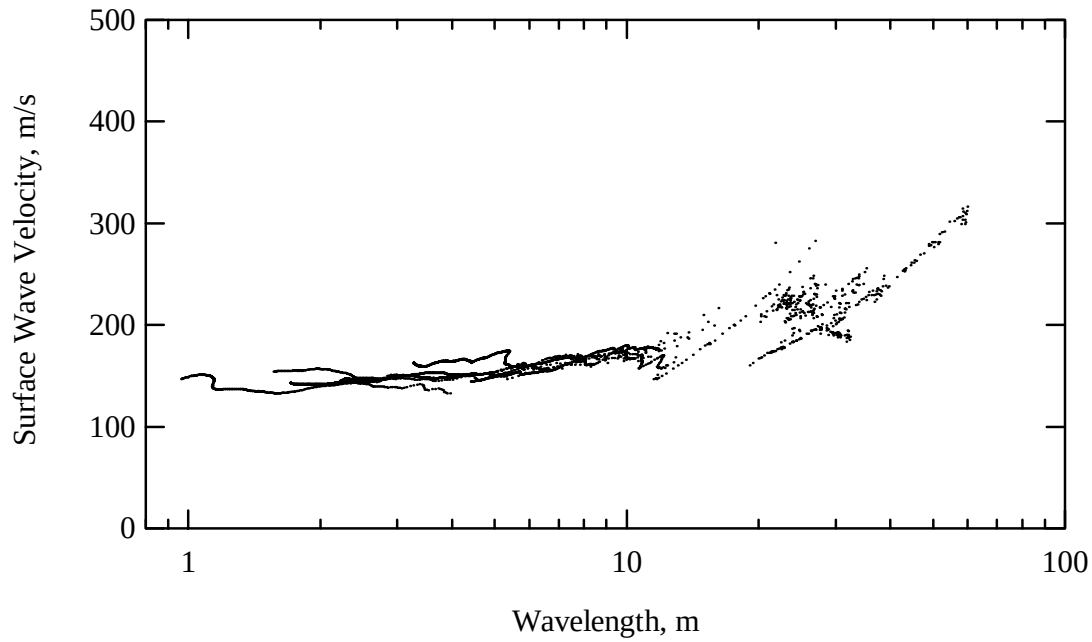


Fig. 4.219 Experimental dispersion curve measured at Canyon Crest School (CCS), Utah County, Utah.

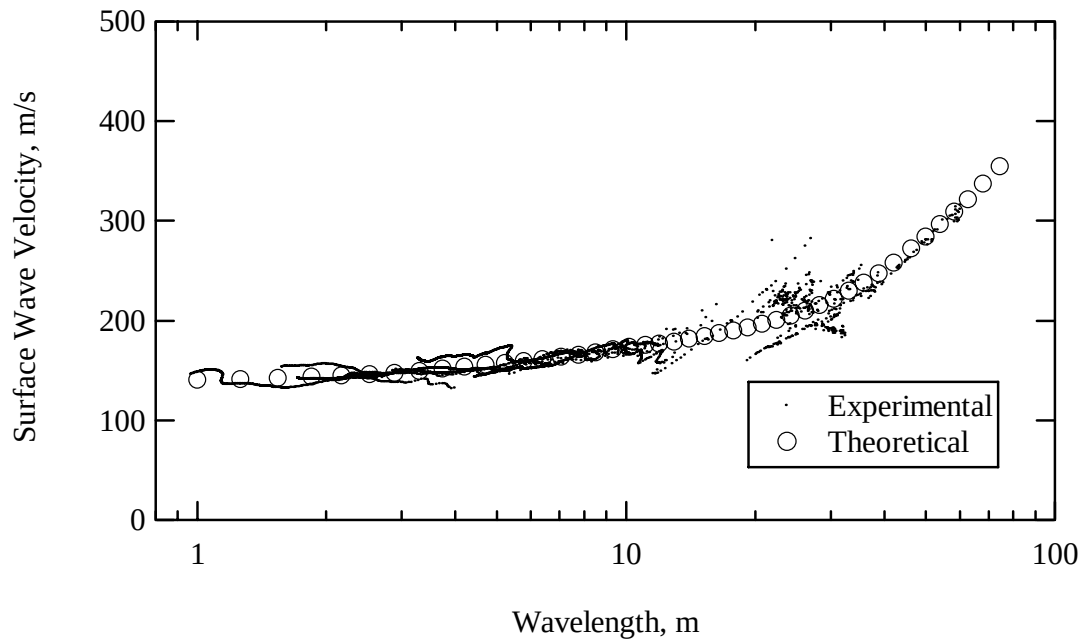


Fig. 4.220 Comparison of experimental and theoretical dispersion curves from Canyon Crest School (CCS), Utah County, Utah.

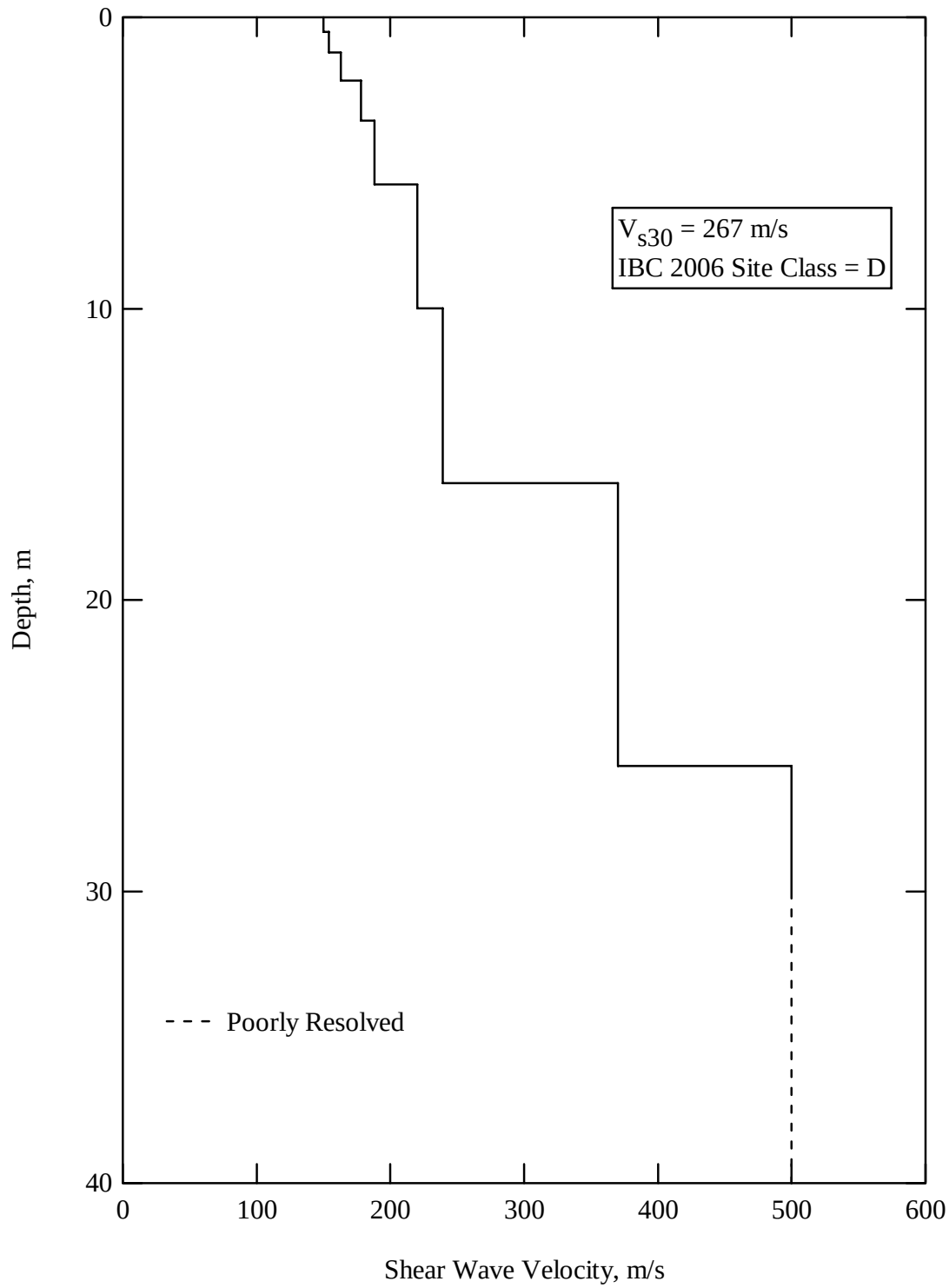


Fig. 4.221 Shear wave velocity profile determined from SASW testing at Canyon Crest School (CCS), Utah County, Utah.

The average shear wave velocity in the upper 30 m of soil is 267 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 30 m and poorly resolved from 30 m to 40 m.

Table 4.43 Tabulated measured and assumed layer at Canyon Crest School (CCS), Utah County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.5	150	281	0.3	1.89
0.5	0.7	154	288	0.3	1.92
1.2	1.0	163	305	0.3	1.92
2.2	1.4	178	333	0.3	1.92
3.6	2.2	188	352	0.3	1.92
5.7	4.3	220	412	0.3	1.92
10.0	6.0	239	447	0.3	1.96
16.0	9.7	370	692	0.3	2.00
25.7	4.3	500	935	0.3	2.00
30.0	Half-Space	500*	935	0.3	2.00

* Poorly Resolved

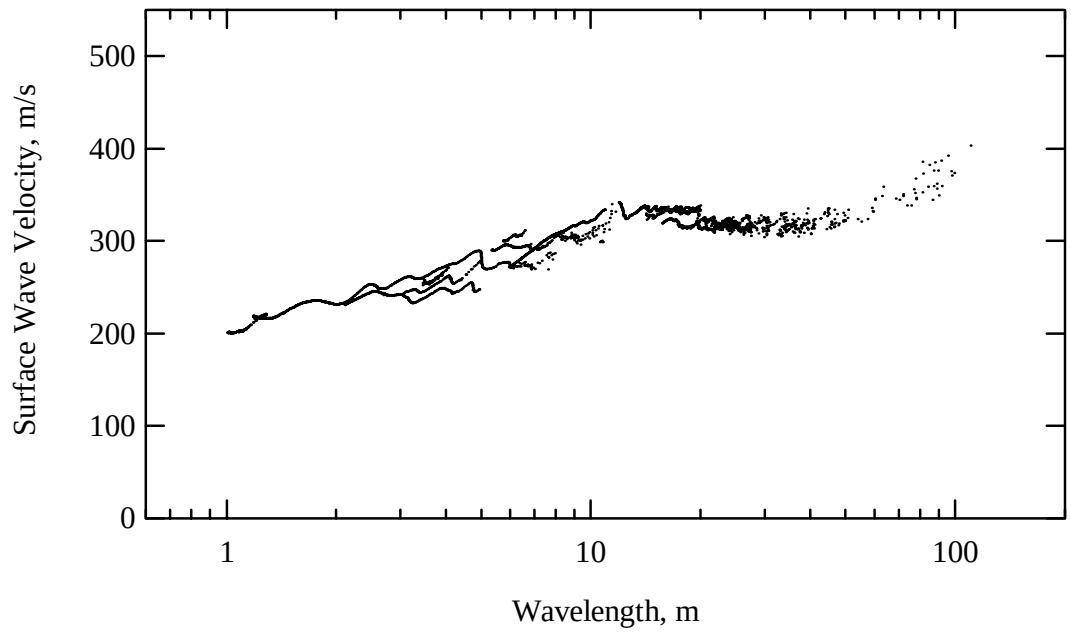


Fig. 4.224 Experimental dispersion curve measured at Canyon Crest School (CCS), Utah County, Utah.

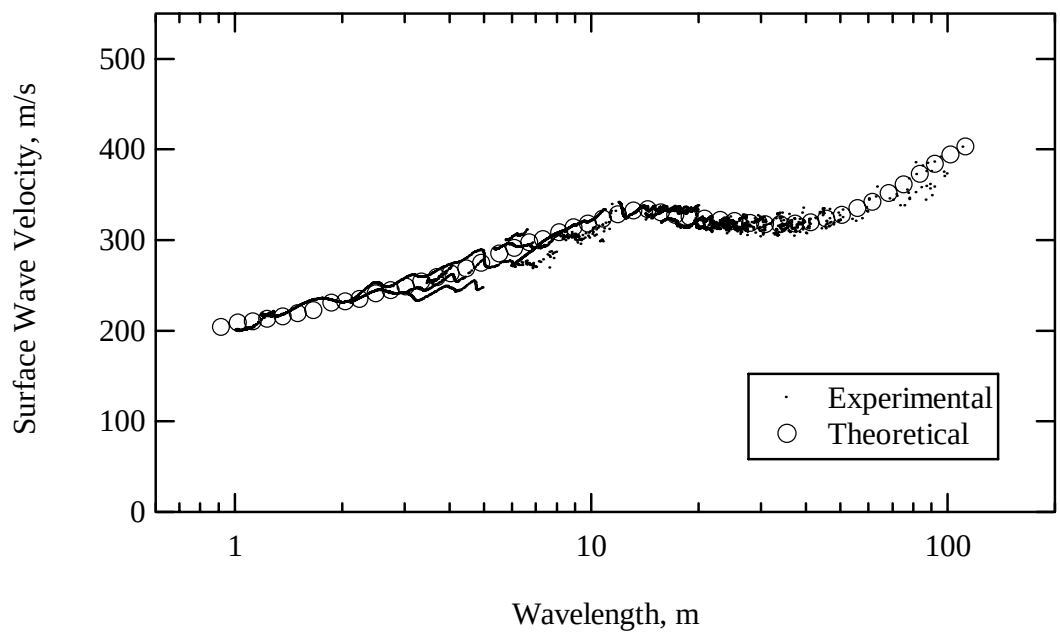


Fig. 4.225 Comparison of experimental and theoretical dispersion curves from Canyon Crest School (CCS), Utah County, Utah.

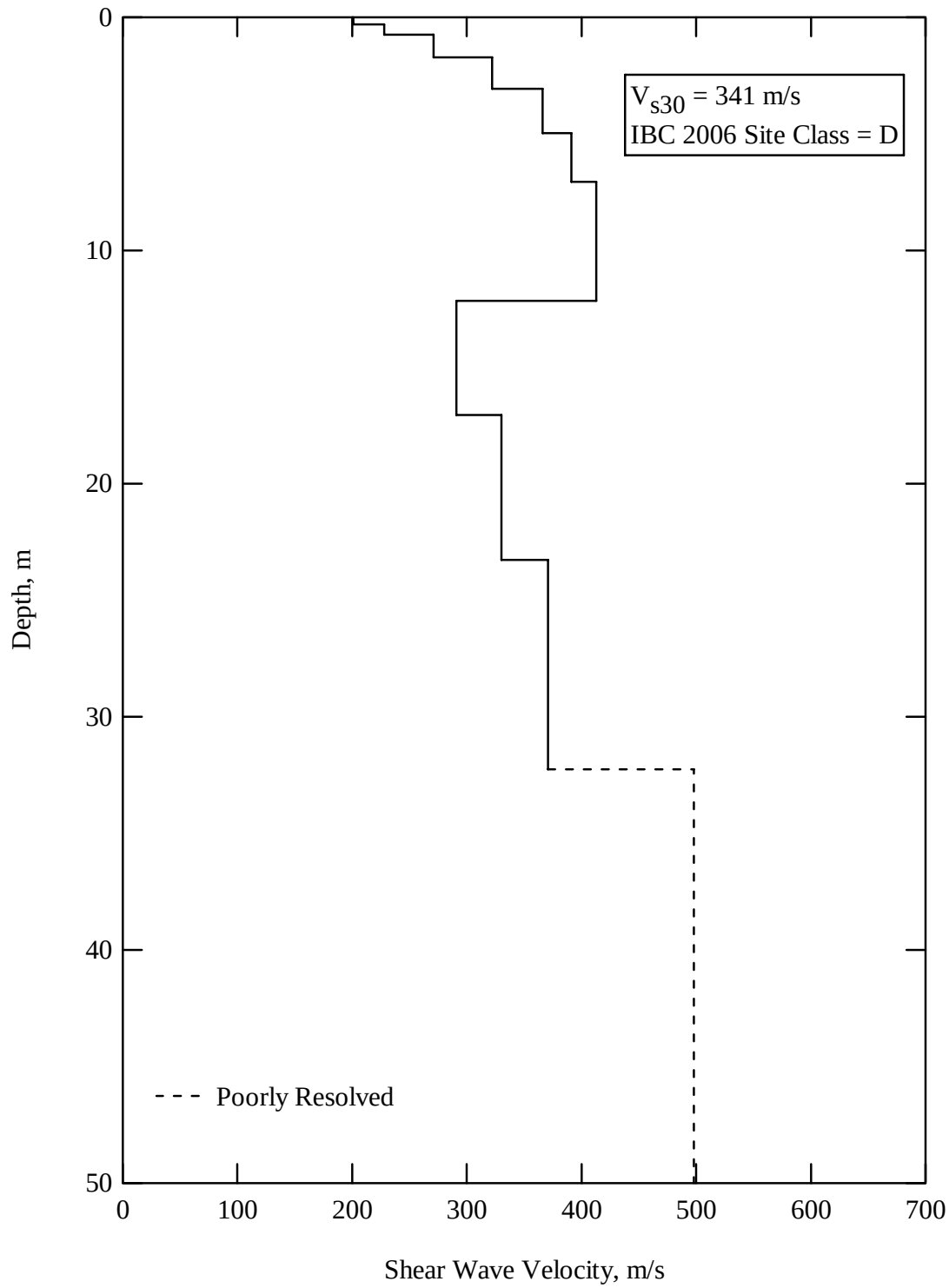


Fig. 4.226 Shear wave velocity profile determined from SASW testing at Canyon Crest School (CCS), Utah County, Utah.

The average shear wave velocity in the upper 30 m of soil is 341 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 32.3 m and poorly resolved from 32.3 m to 50 m.

Table 4.44 Tabulated measured and assumed layer at Canyon Crest School (CCS), Utah County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.3	201	376	0.30	1.92
0.3	0.4	228	427	0.30	1.92
0.7	1.0	271	507	0.30	1.92
1.7	1.4	322	602	0.30	2.00
3.1	1.9	366	685	0.30	2.00
5.0	2.1	391	732	0.30	2.00
7.1	5.1	413	773	0.30	2.00
12.2	4.9	291	544	0.30	1.96
17.1	6.2	330	617	0.30	2.00
23.3	9.0	371	694	0.30	2.00
32.3	Half-Space	498*	932	0.30	2.00

* Poorly Resolved

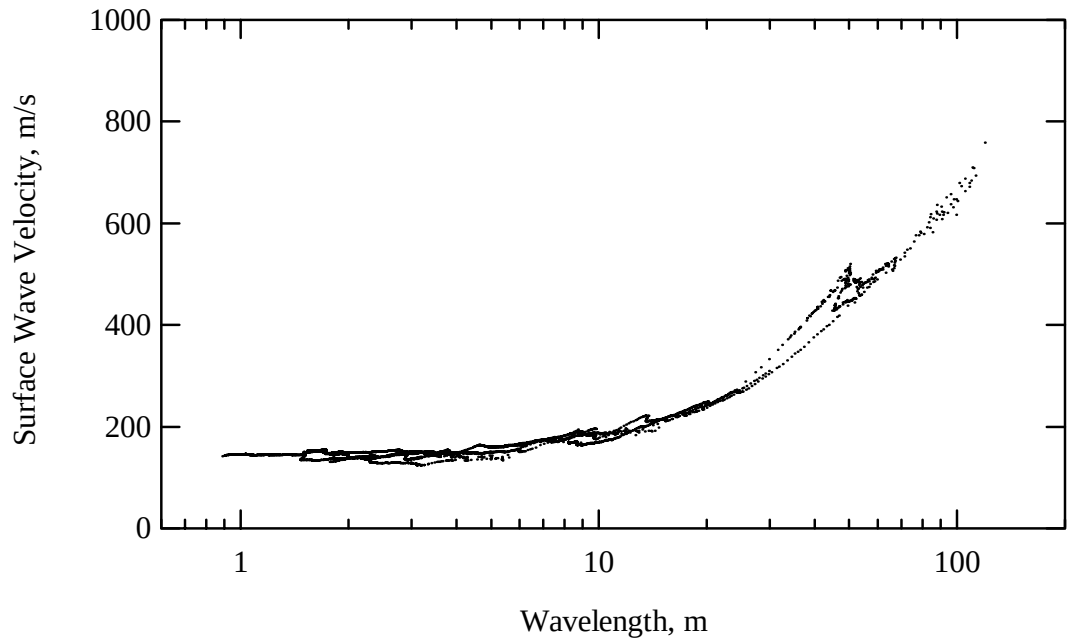


Fig. 4.229 Experimental dispersion curve measured at Pleasant Grove Jr. High School (PJH), Utah County, Utah.

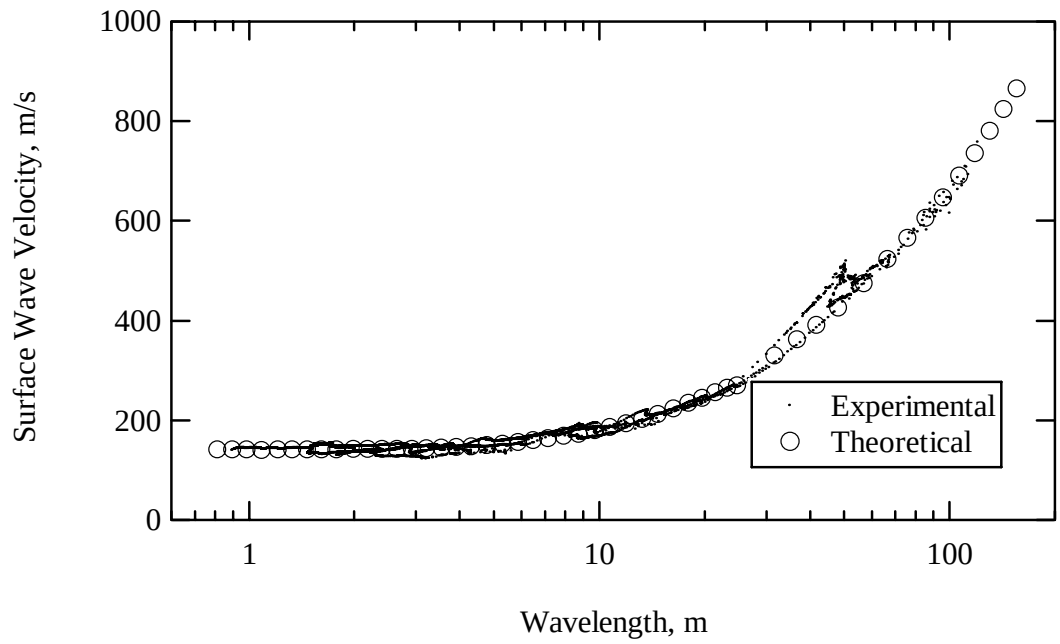


Fig. 4.230 Comparison of experimental and theoretical dispersion curves from Pleasant Grove Jr. High School (PJH), Utah County, Utah.

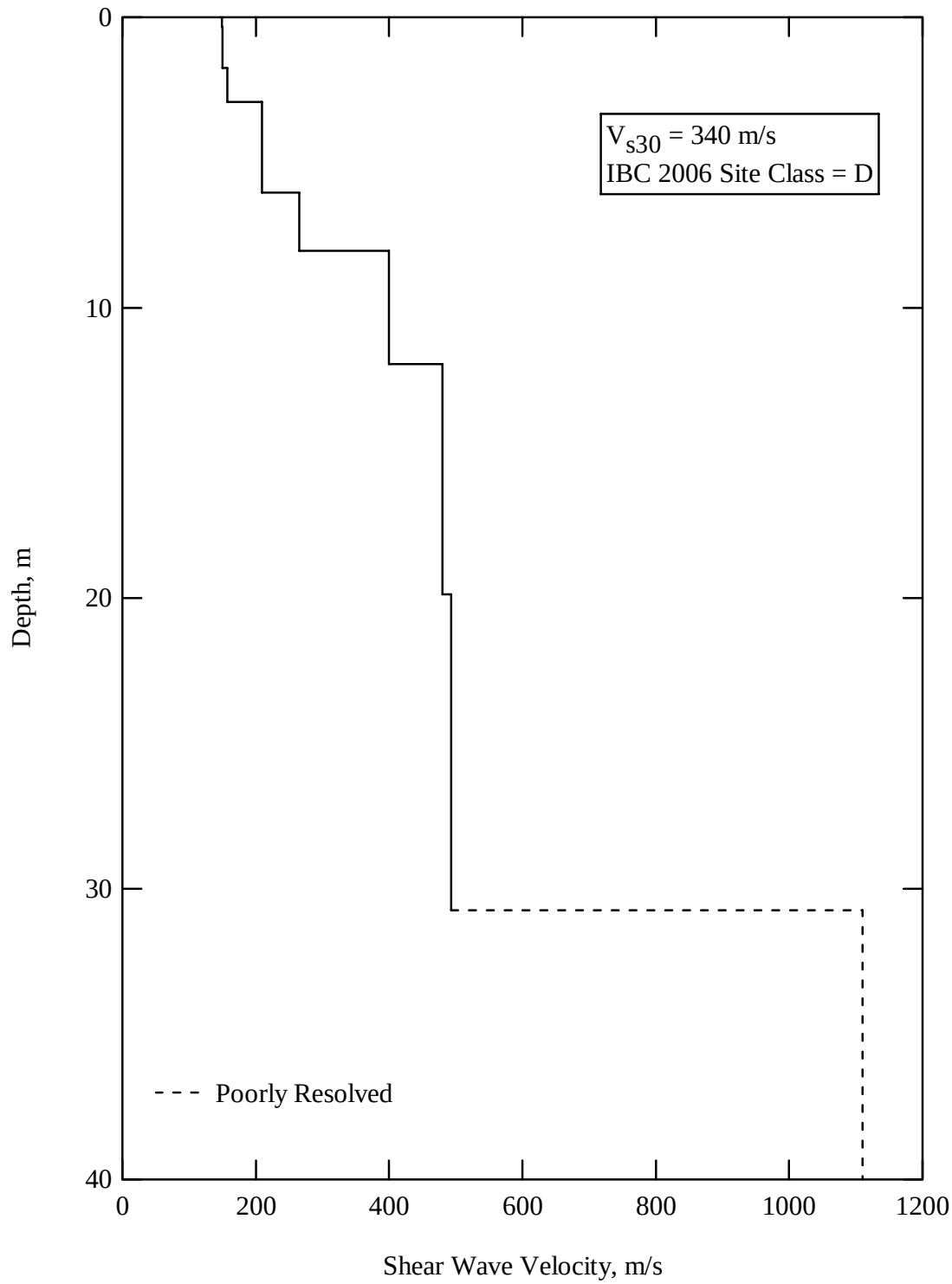


Fig. 4.231 Shear wave velocity profile determined from SASW testing at Pleasant Grove Jr. High School (PJH), Utah County, Utah.

The average shear wave velocity in the upper 30 m of soil is 340 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 30.7 m and poorly resolved from 30.7 m to 40 m.

Table 4.45 Tabulated measured and assumed layer at Pleasant Grove Jr. High School (PJH), Utah County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.3	149	279	0.3	1.89
0.3	0.5	150	281	0.3	1.89
0.9	0.9	150	281	0.3	1.89
1.8	1.2	157	294	0.3	1.92
2.9	1.4	209	391	0.3	1.92
4.3	1.8	210	392	0.3	1.92
6.0	2.0	266	497	0.3	1.92
8.0	3.9	400	748	0.3	1.96
11.9	7.9	480	898	0.3	1.96
19.9	10.9	493	922	0.3	1.96
30.7	Half-Space	1110*	2077	0.3	2.00

* Poorly Resolved

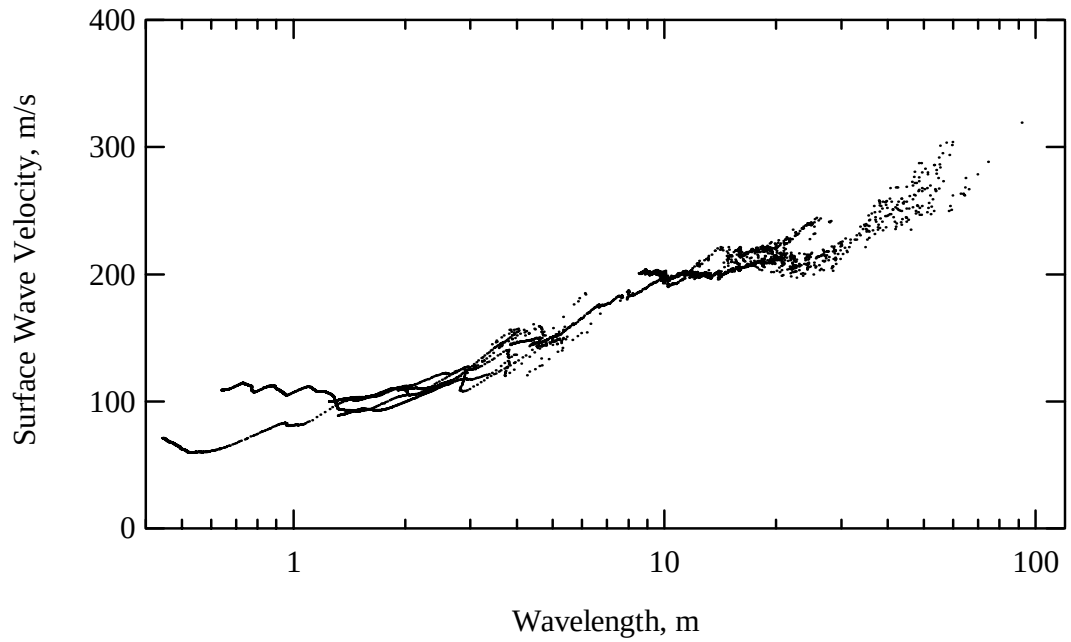


Fig. 4.234 Experimental dispersion curve measured at Brigham Young University (BYU), Utah County, Utah.

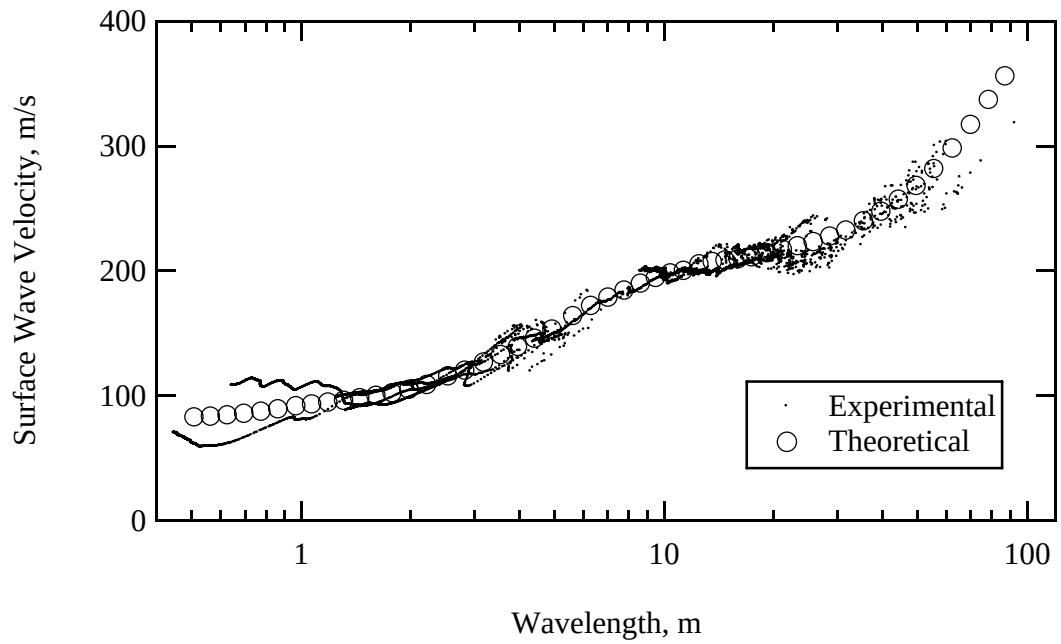


Fig. 4.235 Comparison of experimental and theoretical dispersion curves from Brigham Young University (BYU), Utah County, Utah.

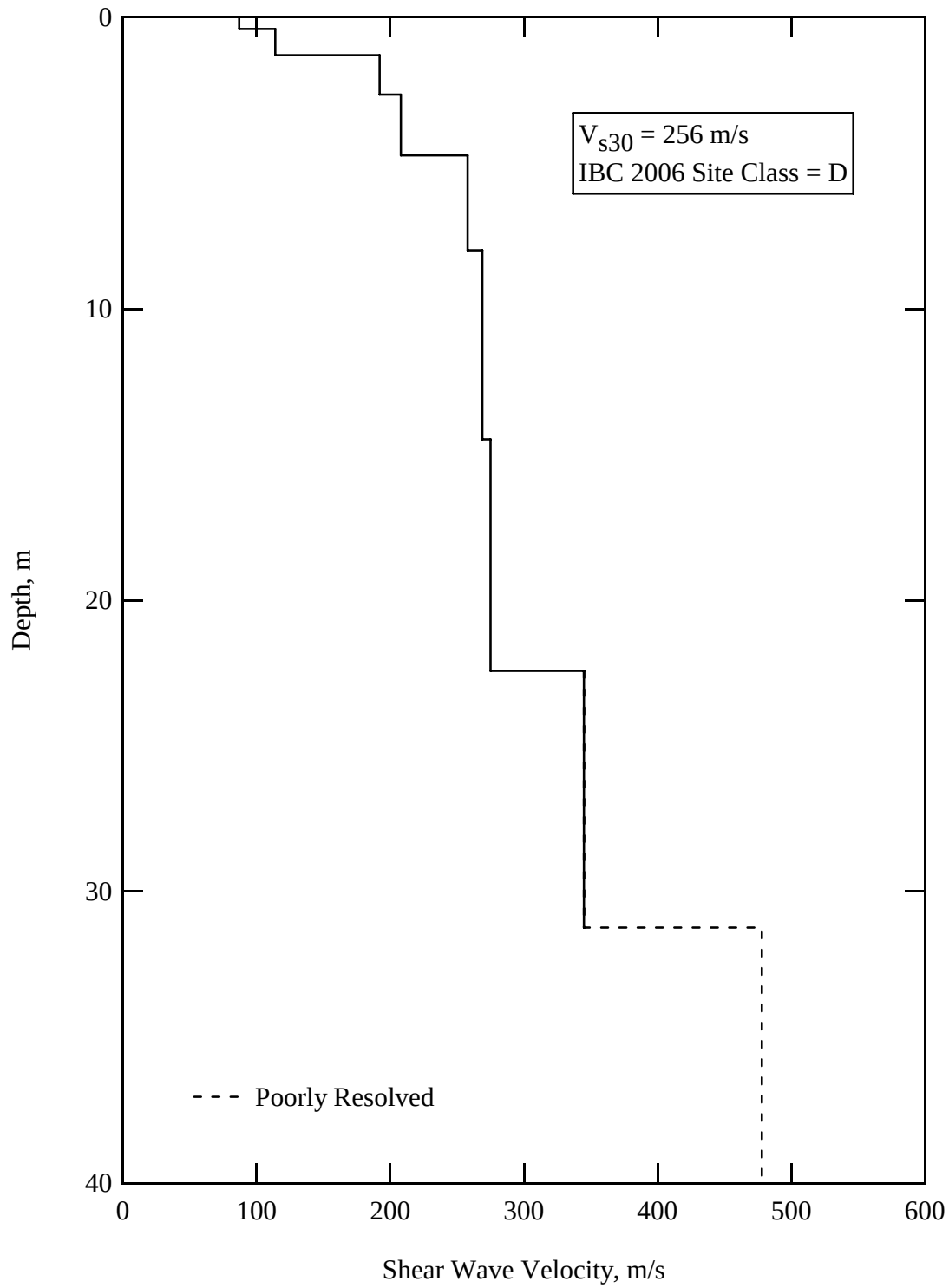


Fig. 4.236 Shear wave velocity profile determined from SASW testing at Brigham Young University (BYU), Utah County, Utah.

The average shear wave velocity in the upper 30 m of soil is 251 m/s, which corresponds to an IBC 2006 site class D. The shear wave velocity profile is well resolved to a depth of 31.2 m and poorly resolved from 31.2 m to 40 m.

Table 4.46 Tabulated measured and assumed layer properties at Brigham Young University (BYU), Utah County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.4	87	163	0.3	1.89
0.4	0.9	114	213	0.3	1.89
1.3	1.4	192	359	0.3	1.92
2.7	2.1	208	389	0.3	1.92
4.7	3.3	258	483	0.3	1.92
8.0	6.5	269	503	0.3	1.92
14.5	8.0	275	515	0.3	1.92
22.4	8.8	345	645	0.3	1.96
31.2	11.9	478*	894	0.3	1.96
43.1	Half-Space	597**	1117	0.3	2.00

* Poorly Resolved
** Poorly Resolved and not shown in profile

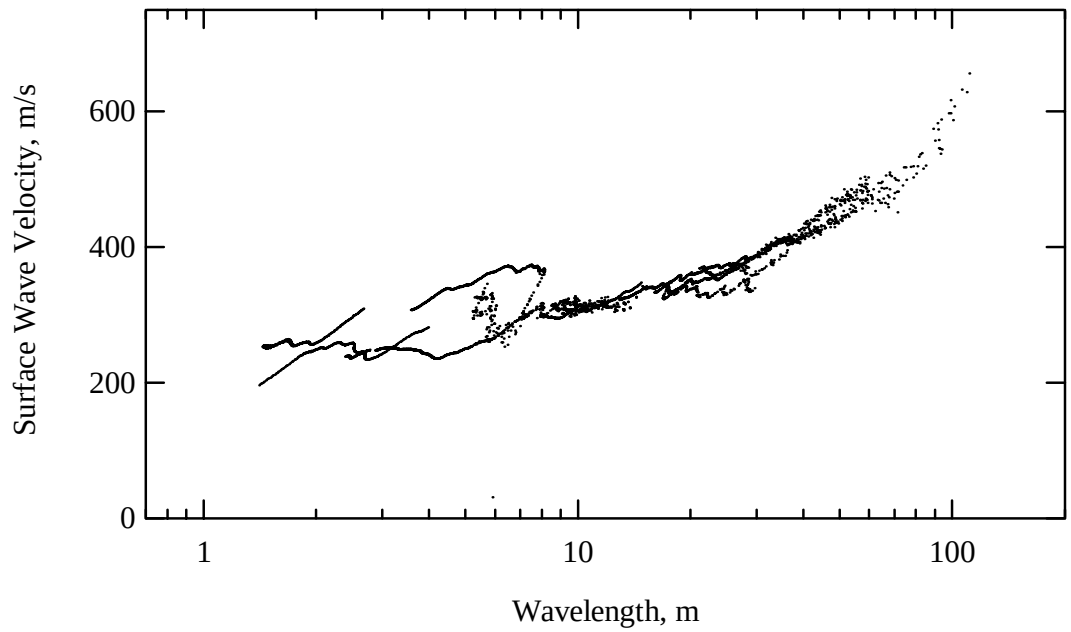


Fig. 4.142 Experimental dispersion curve measured at the Fire Training Tower (FTT), Salt Lake County, Utah.

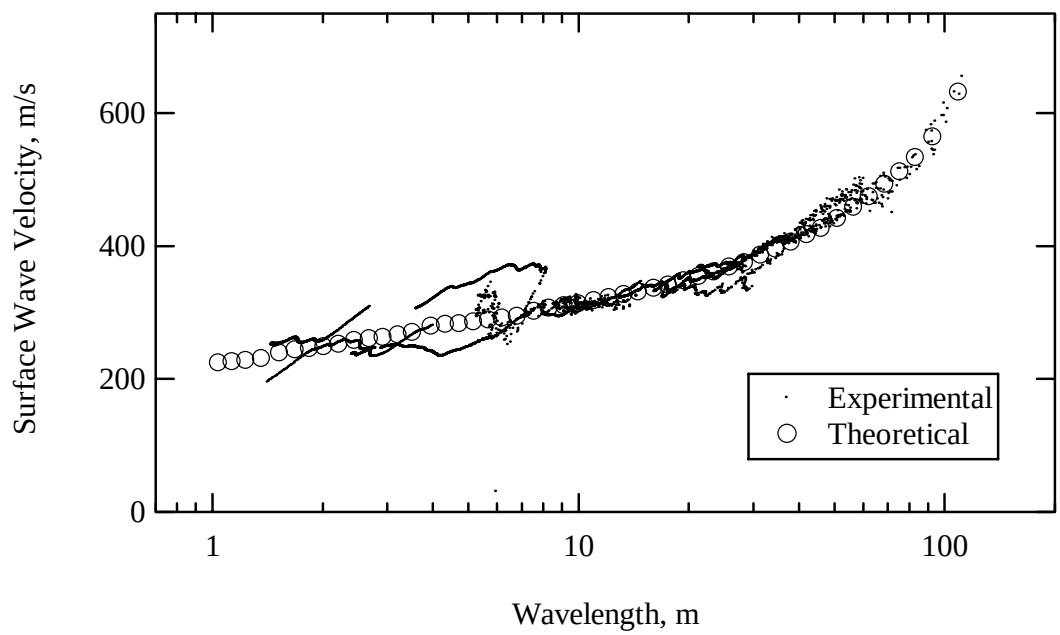


Fig. 4.143 Comparison of experimental and theoretical dispersion curves from the Fire Training Tower (FTT), Salt Lake County, Utah.

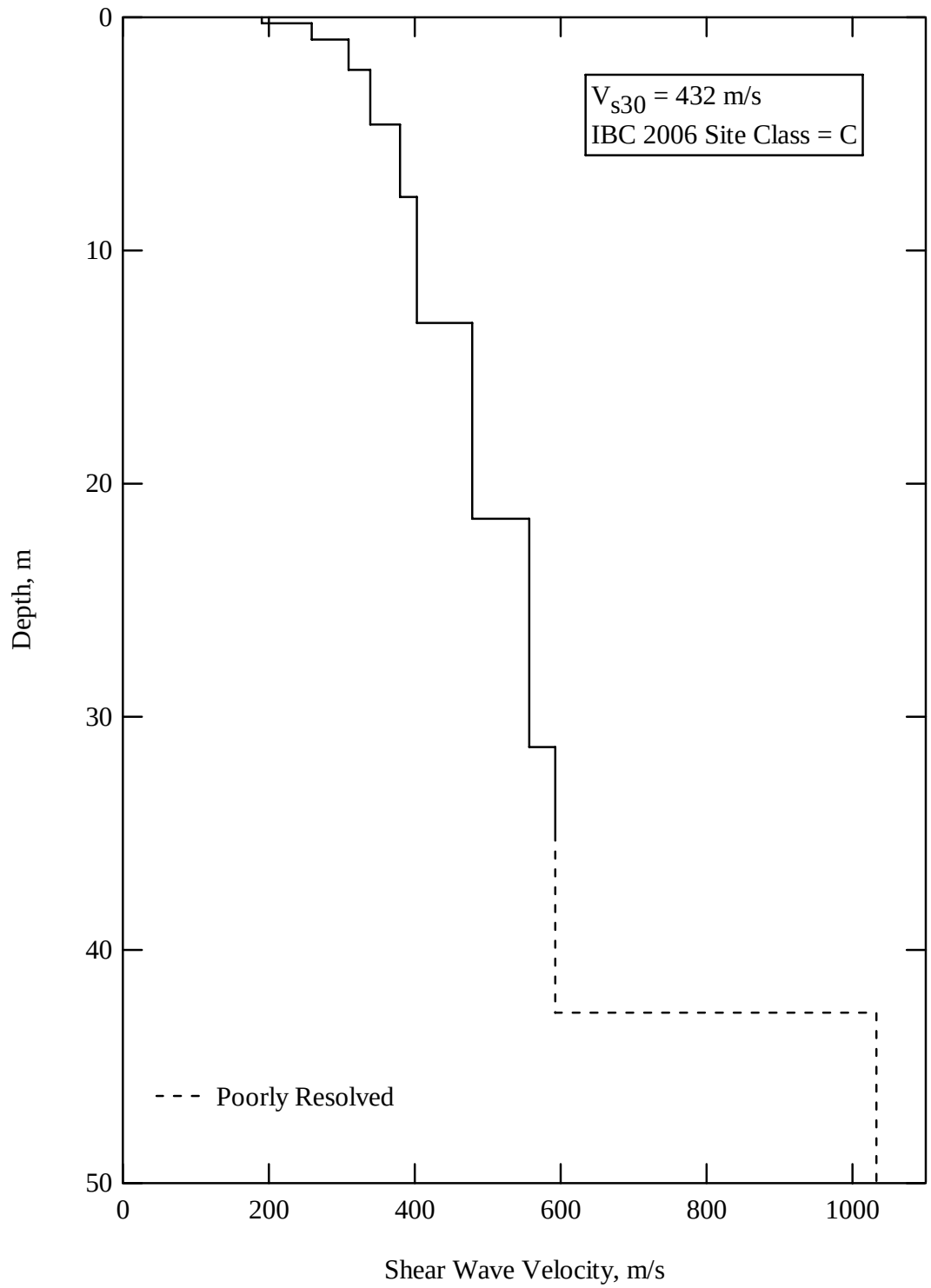


Fig. 4.144 Shear wave velocity profile determined from SASW at the Fire Training Tower (FTT), Salt Lake County, Utah.

The average shear wave velocity in the upper 30 m of soil is 432 m/s, which corresponds to an IBC 2006 site class C. The shear wave velocity profile is well resolved to a depth of 35 m and poorly resolved from 35 m to 50 m.

Table 4.28 Tabulated measured and assumed layer properties at the Fire Training Tower (FTT), Salt Lake County, Utah.

Measured Values			Assumed Values		
Depth to Top of Layer (m)	Layer Thickness (m)	Shear Wave Velocity (m/s)	P-Wave Velocity (m/s)	Poisson's Ratio	Unit Weight (t/m^3)
0.0	0.3	190	356	0.3	1.90
0.3	0.7	259	485	0.3	1.92
0.9	1.3	309	578	0.3	2.00
2.2	2.4	339	634	0.3	2.00
4.6	3.1	380	711	0.3	2.00
7.7	5.4	403	754	0.3	2.00
13.1	8.4	479	896	0.3	2.00
21.5	9.8	557	1042	0.3	2.00
31.3	3.7	592	1108	0.3	2.00
35.0	7.7	592*	1108	0.3	2.00
42.7	Half-Space	1032*	1931	0.3	2.02

* Poorly Resolved

Figure 4.145 shows the shear wave velocity profile from the 2003 SASW study of the Salt Lake Valley by Gilbert (2003) compared to the 2005 profile. The SASW array from the previous study was located in a field to the south of the Fire Training Tower, on the opposite side relative to the location of the 2005 array. The two profiles are very similar and have Vs30 values that are nearly identical. The slight differences are likely due to geologic variability at the site. The comparison is a good demonstration of the repeatability of the SASW method.

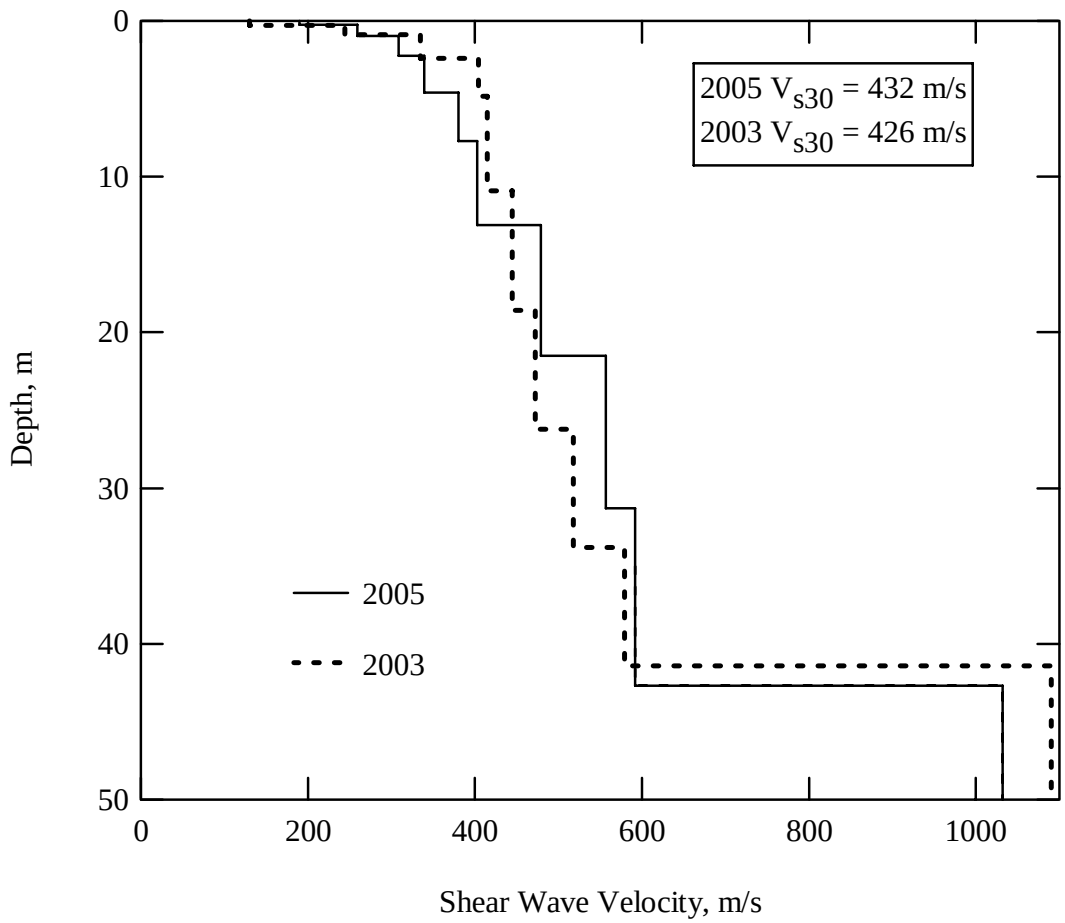


Fig. 4.145 Comparison of shear wave velocity profiles determined from SASW at the Fire Training Tower (FTT), Salt Lake County, Utah.

Saltair: Depth-converted stacked section

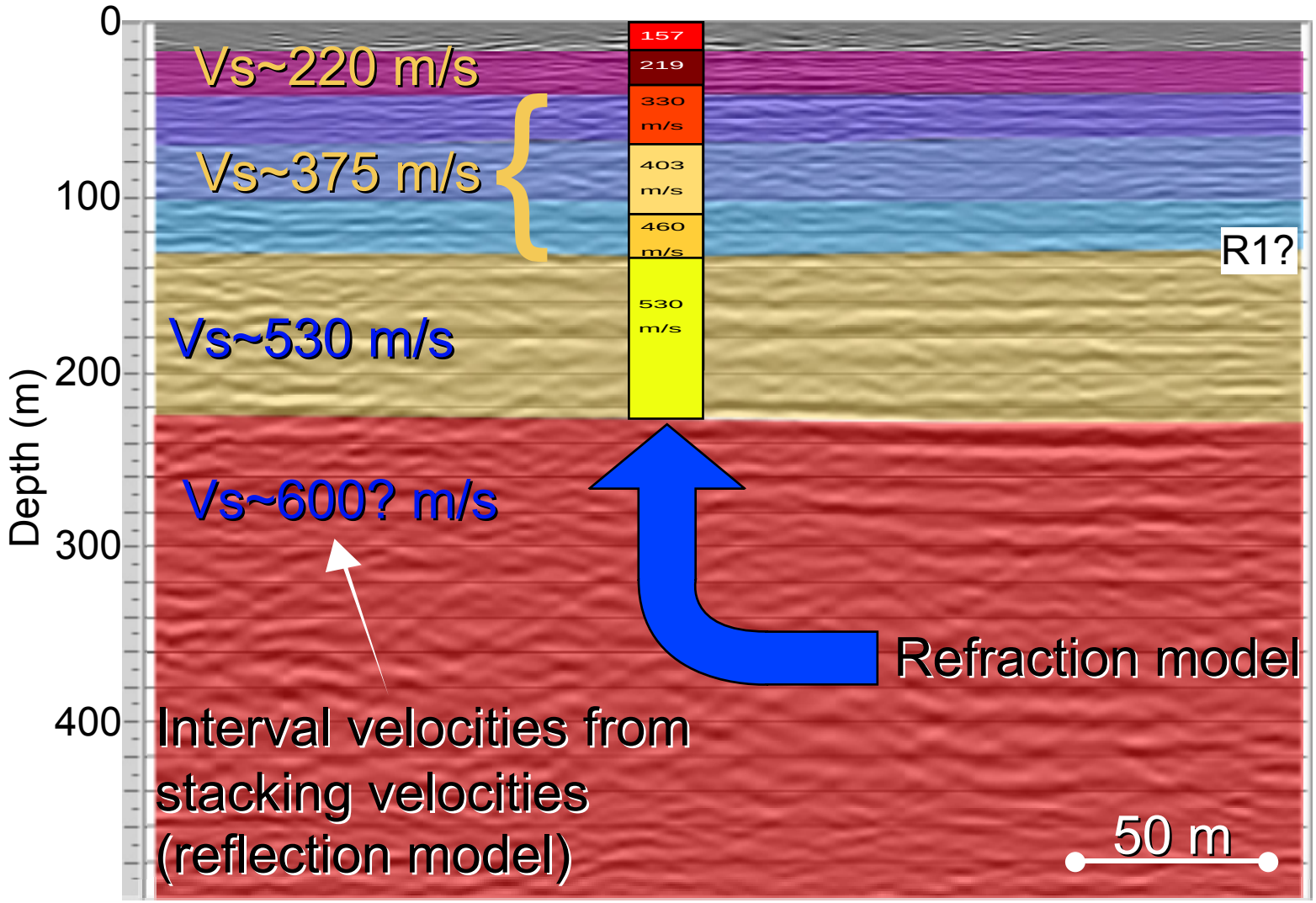


Figure 7b.

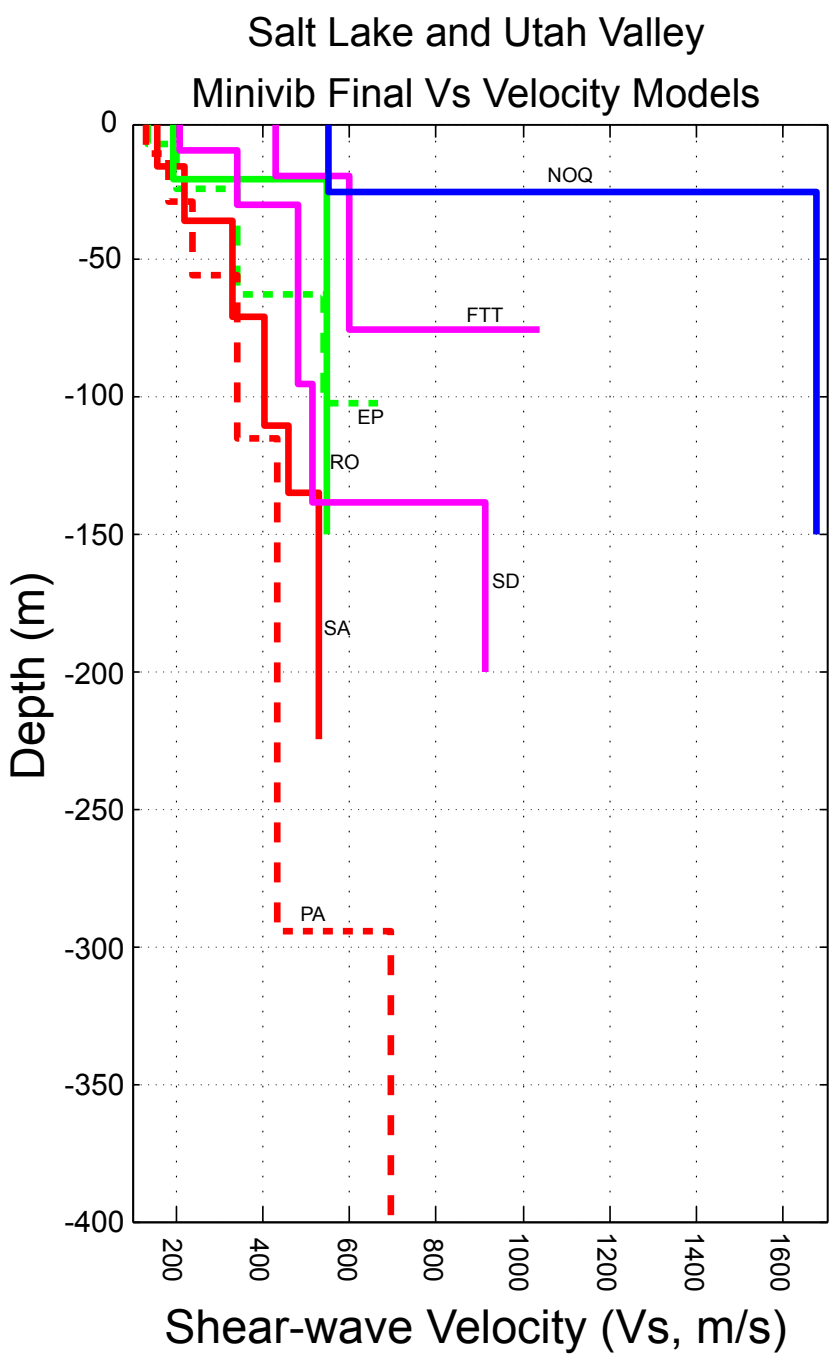


Figure 8

Saltair

Depth(m)	Vs(m/s)
0	160
16	160
16	220
36	220
36	330
70	330
70	400
110	400
110	460
135	460
135	530
225	530

Siesta Drive

Depth	Vs
0	210
10	210
10	340
30	340
30	480
95	480
95	515
138	515
138	914
200	914

River Oaks

Depth	Vs
0	195
20	195
20	550
150	550

FTT

Depth	Vs
0	430
19	430
19	600
75	600
75	1040

NOQ

Depth	Vs
0	550
25	550
25	1675
150	1675

Provo Airport

Depth	Vs
0	130
11	130
11	185
29	185
29	240
55	240
55	340
115	340
115	435
295	435
295	695
420	695

Exchange Park

Depth	Vs
0	135
8	135
8	200
24	200
24	340
62	340
62	540
102	540
102	665

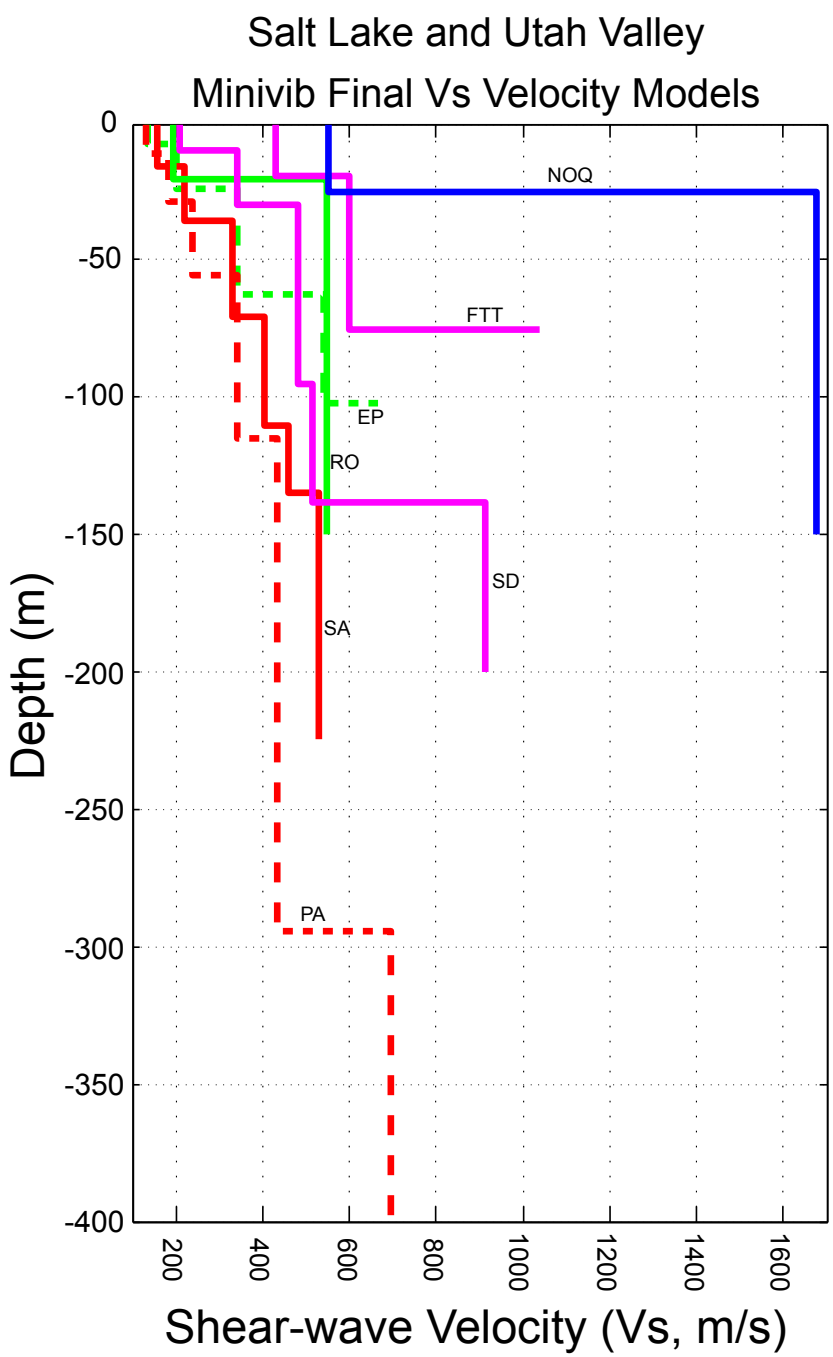


Figure 8

Saltair

Depth(m)	Vs(m/s)
0	160
16	160
16	220
36	220
36	330
70	330
70	400
110	400
110	460
135	460
135	530
225	530

Siesta Drive

Depth	Vs
0	210
10	210
10	340
30	340
30	480
95	480
95	515
138	515
138	914
200	914

River Oaks

Depth	Vs
0	195
20	195
20	550
150	550

FTT

Depth	Vs
0	430
19	430
19	600
75	600
75	1040

NOQ

Depth	Vs
0	550
25	550
25	1675
150	1675

Provo Airport

Depth	Vs
0	130
11	130
11	185
29	185
29	240
55	240
55	340
115	340
115	435
295	435
295	695
420	695

Exchange Park

Depth	Vs
0	135
8	135
8	200
24	200
24	340
62	340
62	540
102	540
102	665

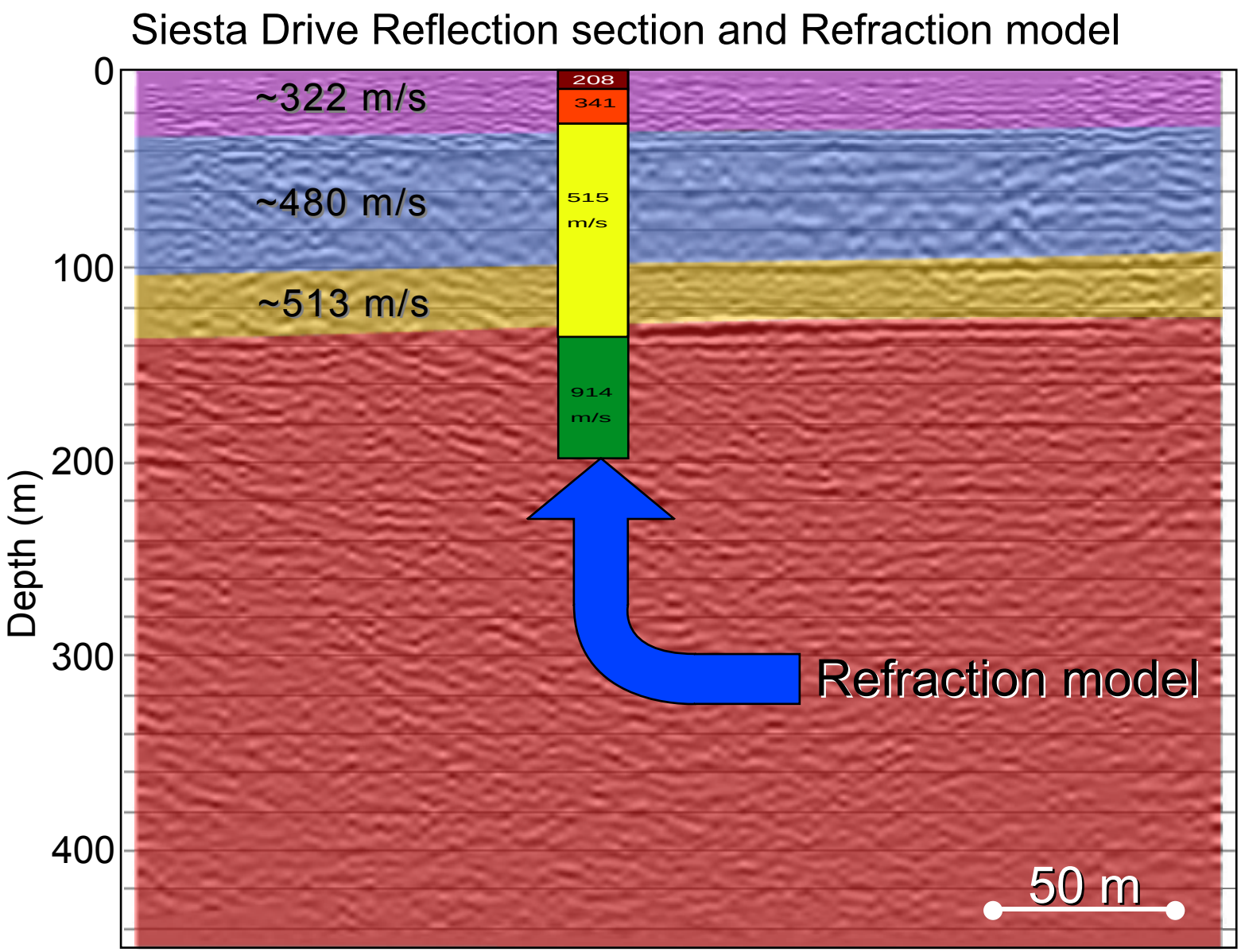

Siesta Drive Reflection section and Refraction model
0
100
200
300
400
Depth (m)
~322 m/s
~480 m/s
~513 m/s
208
341
515
m/s
914
m/s
Refraction model
50 m

Figure 9b

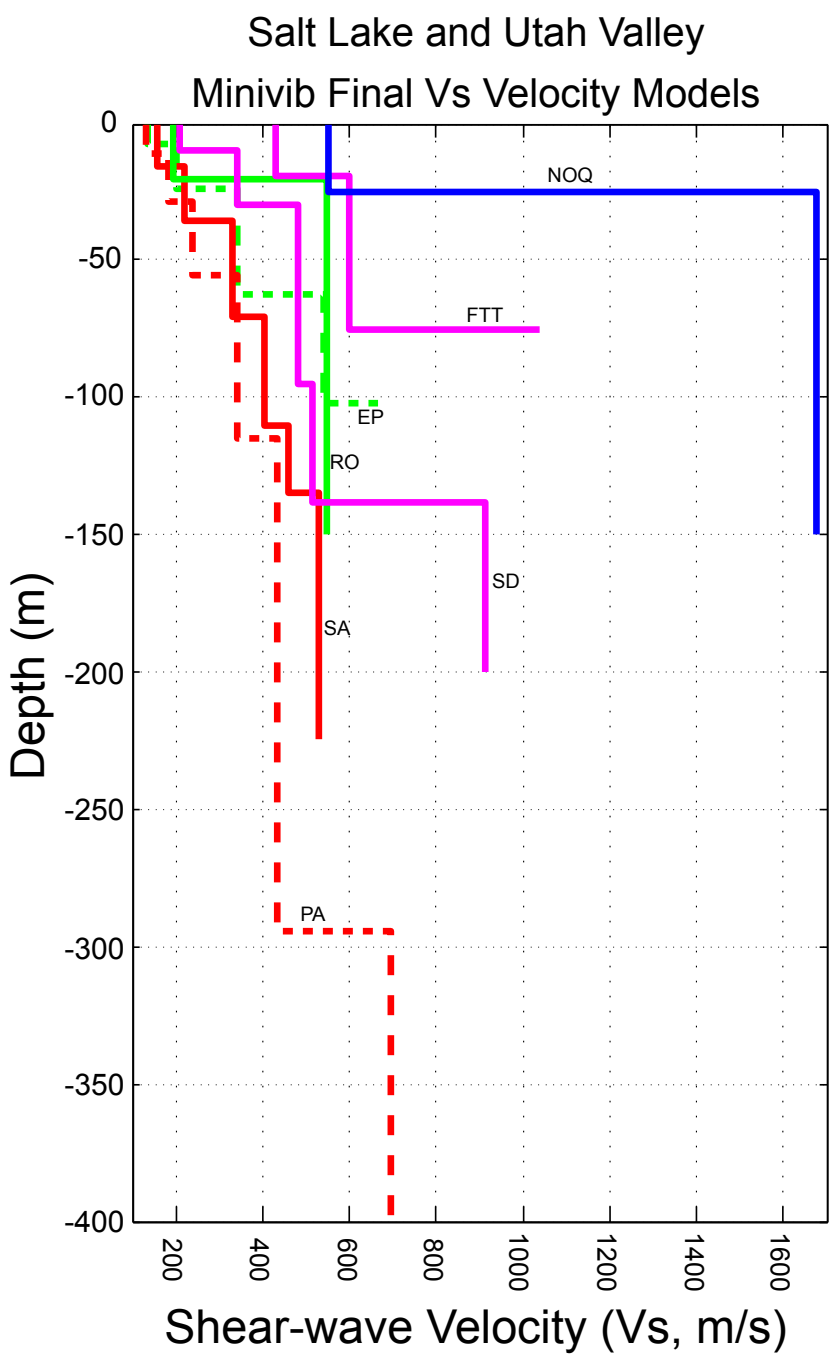


Figure 8

Saltair

Depth(m)	Vs(m/s)
0	160
16	160
16	220
36	220
36	330
70	330
70	400
110	400
110	460
135	460
135	530
225	530

Siesta Drive

Depth	Vs
0	210
10	210
10	340
30	340
30	480
95	480
95	515
138	515
138	914
200	914

River Oaks

Depth	Vs
0	195
20	195
20	550
150	550

FTT

Depth	Vs
0	430
19	430
19	600
75	600
75	1040

NOQ

Depth	Vs
0	550
25	550
25	1675
150	1675

Provo Airport

Depth	Vs
0	130
11	130
11	185
29	185
29	240
55	240
55	340
115	340
115	435
295	435
295	695
420	695

Exchange Park

Depth	Vs
0	135
8	135
8	200
24	200
24	340
62	340
62	540
102	540
102	665

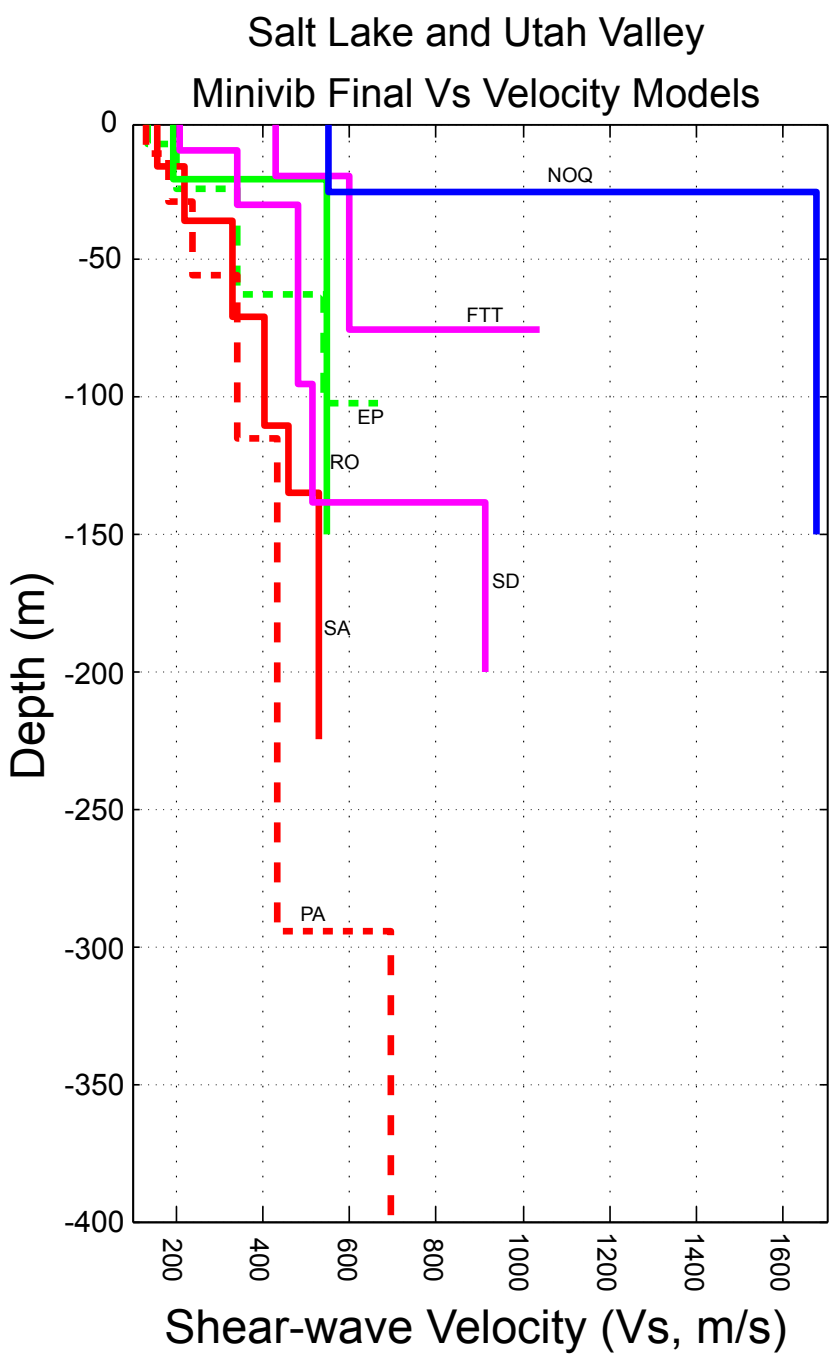


Figure 8

Saltair

Depth(m)	Vs(m/s)
0	160
16	160
16	220
36	220
36	330
70	330
70	400
110	400
110	460
135	460
135	530
225	530

Siesta Drive

Depth	Vs
0	210
10	210
10	340
30	340
30	480
95	480
95	515
138	515
138	914
200	914

River Oaks

Depth	Vs
0	195
20	195
20	550
150	550

FTT

Depth	Vs
0	430
19	430
19	600
75	600
75	1040

NOQ

Depth	Vs
0	550
25	550
25	1675
150	1675

Provo Airport

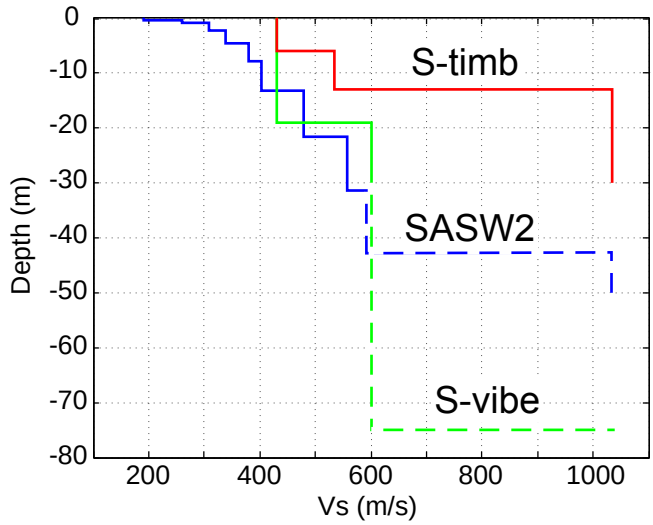
Depth	Vs
0	130
11	130
11	185
29	185
29	240
55	240
55	340
115	340
115	435
295	435
295	695
420	695

Exchange Park

Depth	Vs
0	135
8	135
8	200
24	200
24	340
62	340
62	540
102	540
102	665

a

b



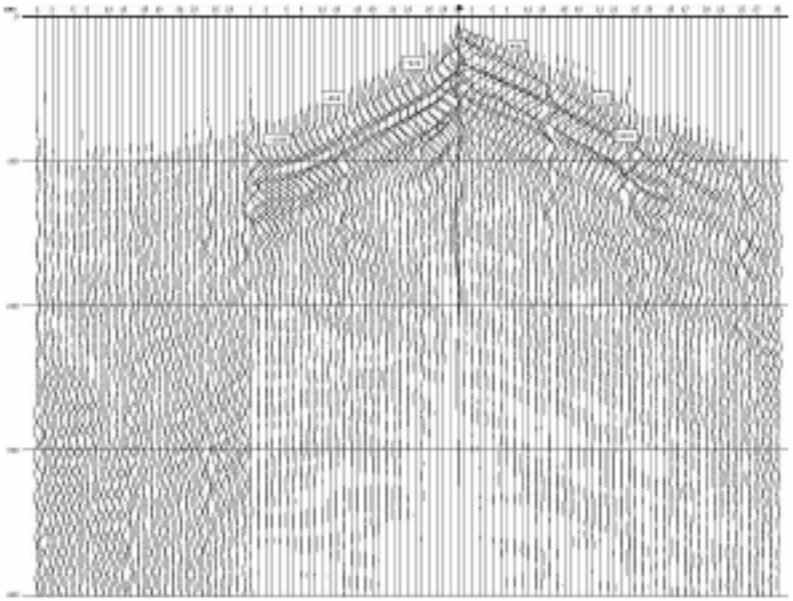
FTT S-timber model

Depth (m)	S-vel (m/s)
0.0	430
6.0	430
6.0	535
13.0	535
13.0	1035
30.0	1035

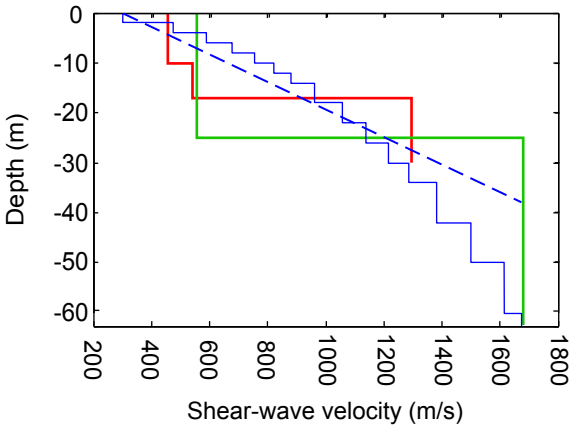
Method	Vs30(m/s)
S-timb	690
S-vibe	480
SASW2	432

Figure 20

a



b



red=S-timber Vs30=660 m/s
green=S-minivib Vs30=620 m/s
blue=theoretical exp. Vs30=760 m/s
blue dash=theoretical lin. Vs30=670 m/s

NOQ S-timber model

Depth (m)	S-vel (m/s)
0.0	450
10.0	450
10.0	535
17.0	535
17.0	1290
30.0	1290

c

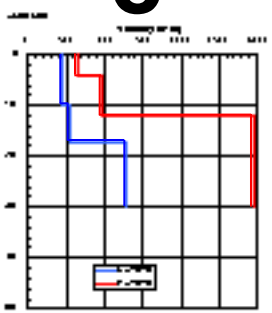


Figure 21

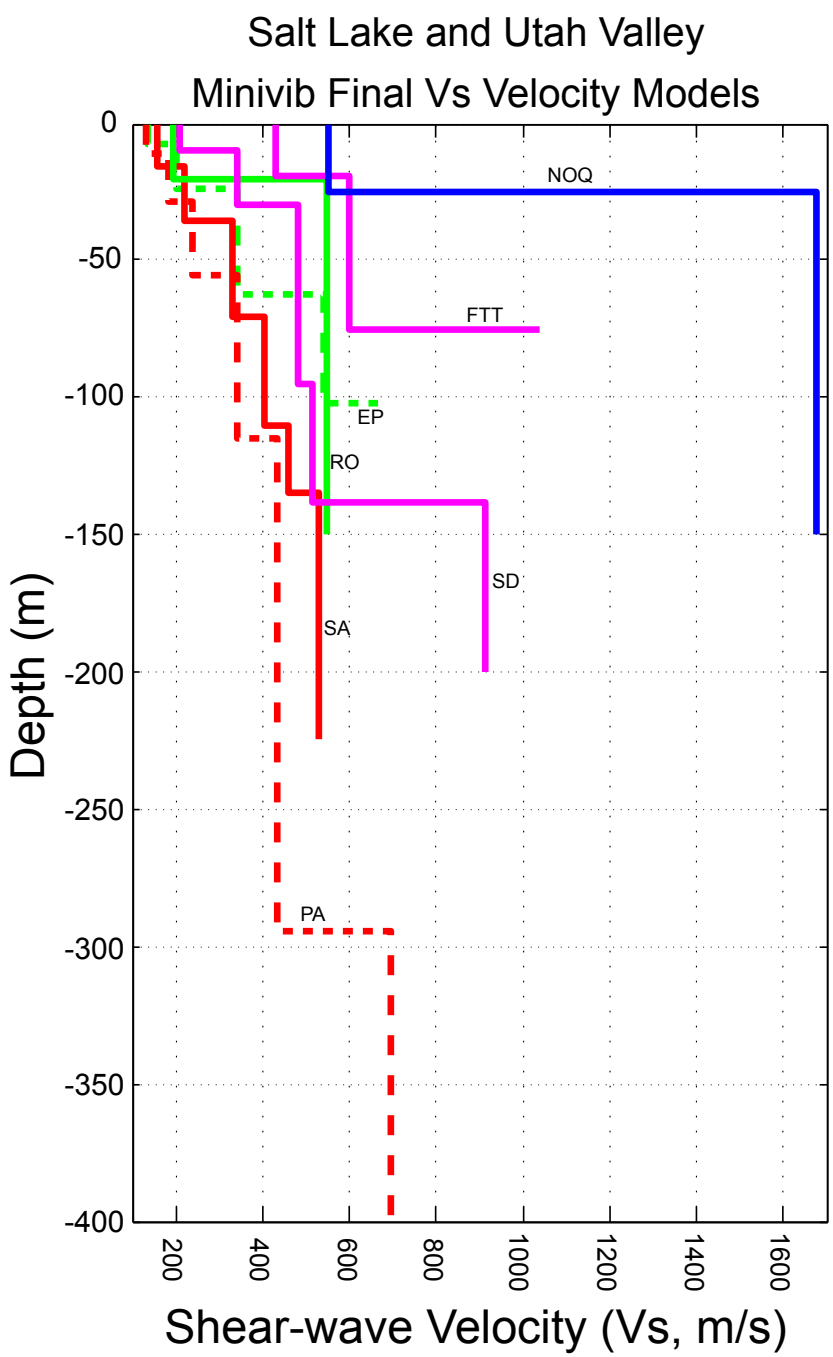


Figure 8

Saltair

Depth(m)	Vs(m/s)
0	160
16	160
16	220
36	220
36	330
70	330
70	400
110	400
110	460
135	460
135	530
225	530

Siesta Drive

Depth	Vs
0	210
10	210
10	340
30	340
30	480
95	480
95	515
138	515
138	914
200	914

River Oaks

Depth	Vs
0	195
20	195
20	550
150	550

FTT

Depth	Vs
0	430
19	430
19	600
75	600
75	1040

NOQ

Depth	Vs
0	550
25	550
25	1675
150	1675

Provo Airport

Depth	Vs
0	130
11	130
11	185
29	185
29	240
55	240
55	340
115	340
115	435
295	435
295	695
420	695

Exchange Park

Depth	Vs
0	135
8	135
8	200
24	200
24	340
62	340
62	540
102	540
102	665

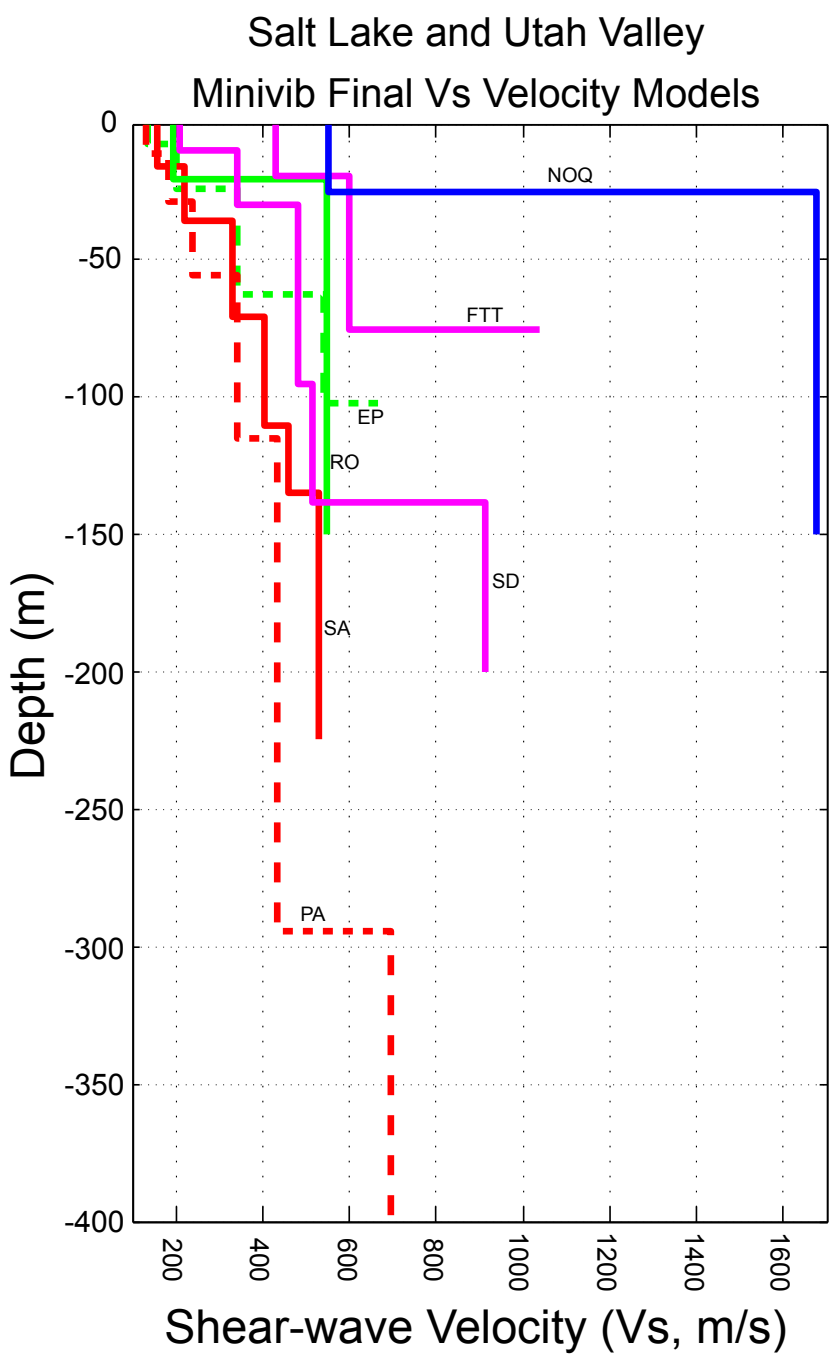


Figure 8

Saltair

Depth(m)	Vs(m/s)
0	160
16	160
16	220
36	220
36	330
70	330
70	400
110	400
110	460
135	460
135	530
225	530

Siesta Drive

Depth	Vs
0	210
10	210
10	340
30	340
30	480
95	480
95	515
138	515
138	914
200	914

River Oaks

Depth	Vs
0	195
20	195
20	550
150	550

FTT

Depth	Vs
0	430
19	430
19	600
75	600
75	1040

NOQ

Depth	Vs
0	550
25	550
25	1675
150	1675

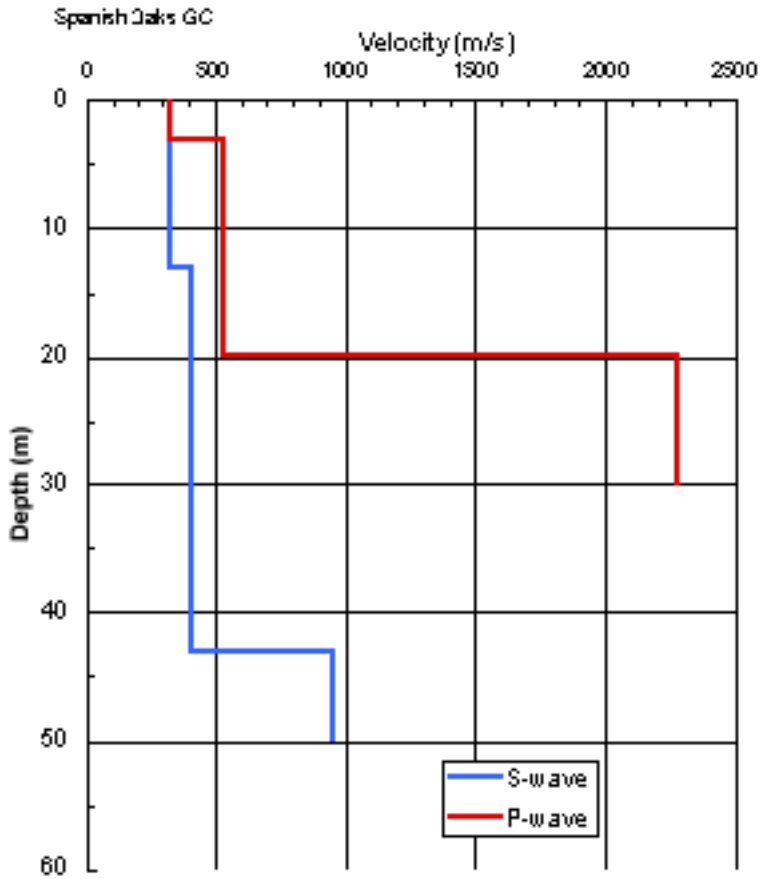
Provo Airport

Depth	Vs
0	130
11	130
11	185
29	185
29	240
55	240
55	340
115	340
115	435
295	435
295	695
420	695

Exchange Park

Depth	Vs
0	135
8	135
8	200
24	200
24	340
62	340
62	540
102	540
102	665

a



b

Site: Spanish Oaks GC, Spanish Fork, UT

S-vel (m/s)	Depth (m)	P-vel (m/s)	Depth (m)
325	0.0	**325**	0.0
325	13.0	**325**	3.0
410	13.0	**535**	3.0
410	43.0	**535**	20.0
955	43.0	2275	20.0
955	50.0	2275	30.0

Vs30 = 370 m/s NEHRP class C

c

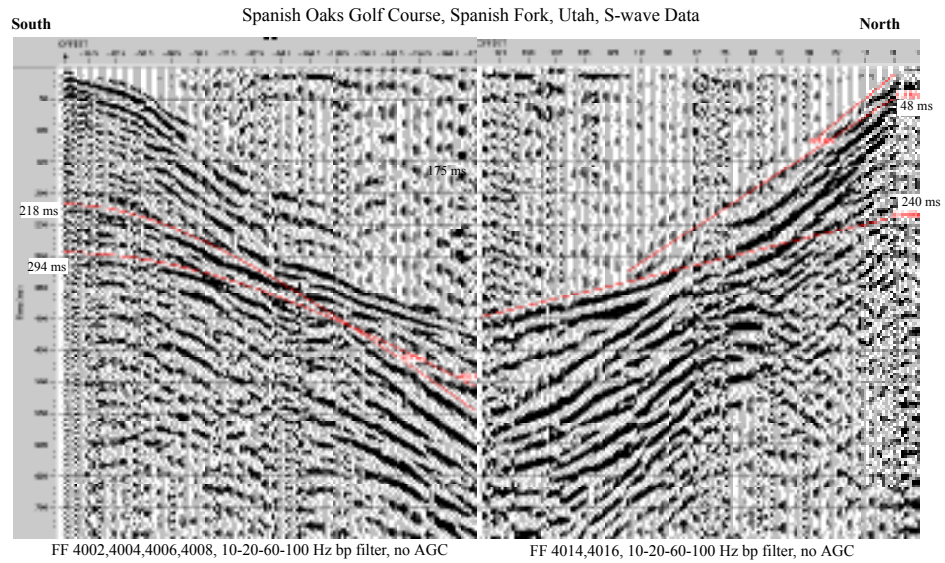
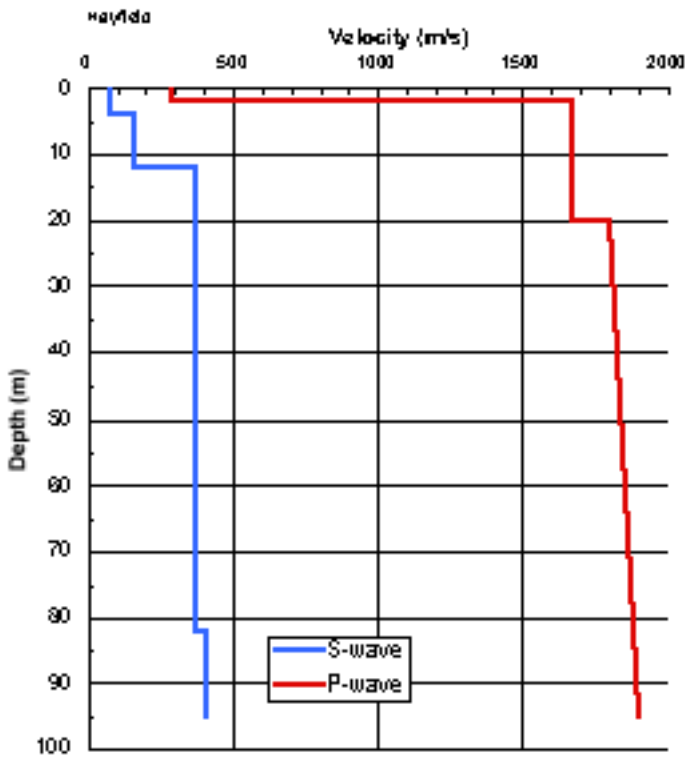


Figure 15

a



b

Site: Hayfield near Airport, Spanish Fork, UT

S-vel (m/s)	Depth (m)	P-vel (m/s)	Depth (m)
78	0.0	**285**	0.0
78	4.0	**285**	2.0
160	4.0	**1670**	2.0
160	12.0	**1670**	20.0
370	12.0	1800	20.0
370	82.0	1900	95.0
410	82.0		
410	95.0		

Unreversed profile Vs30 = 200 m/s NEHRP class D

Layer not observed from south end

c

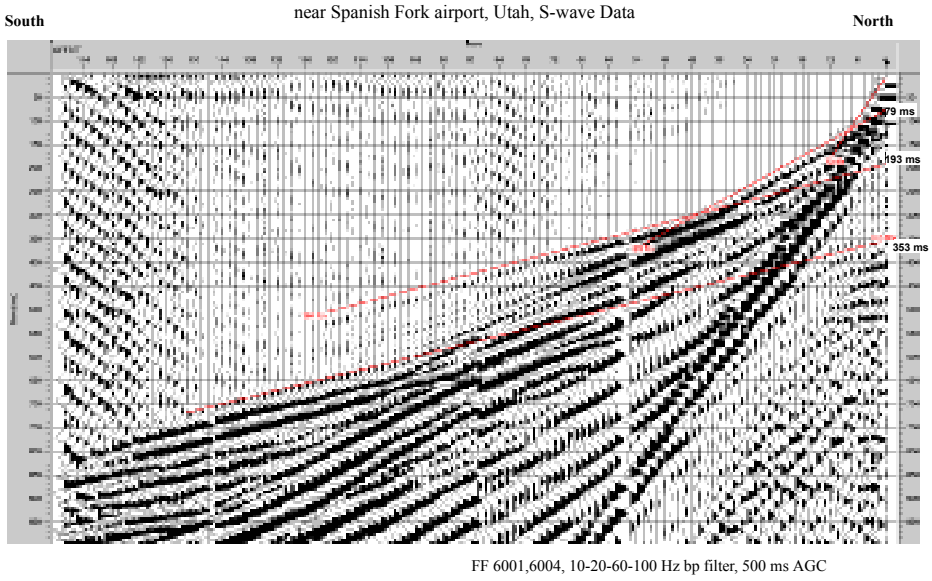
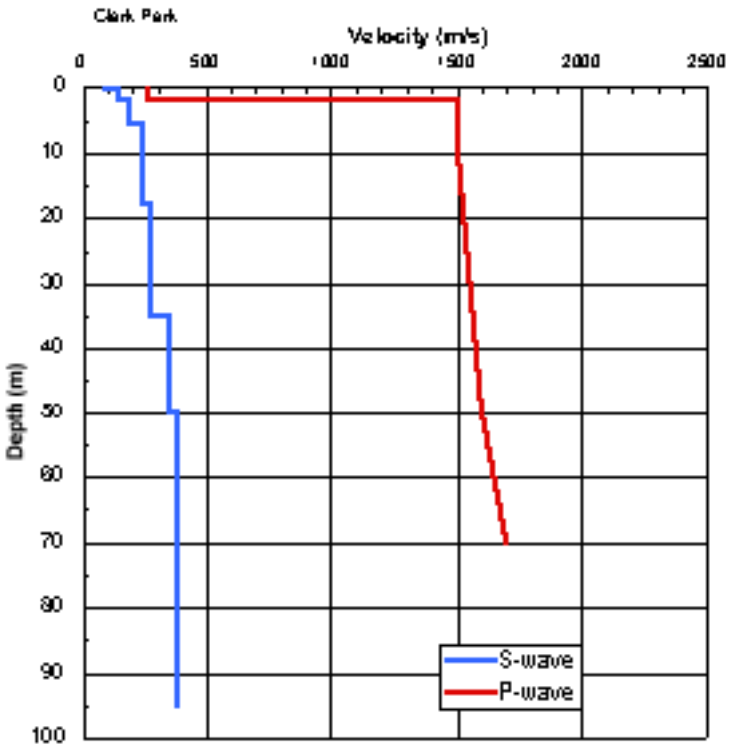


Figure 18

a

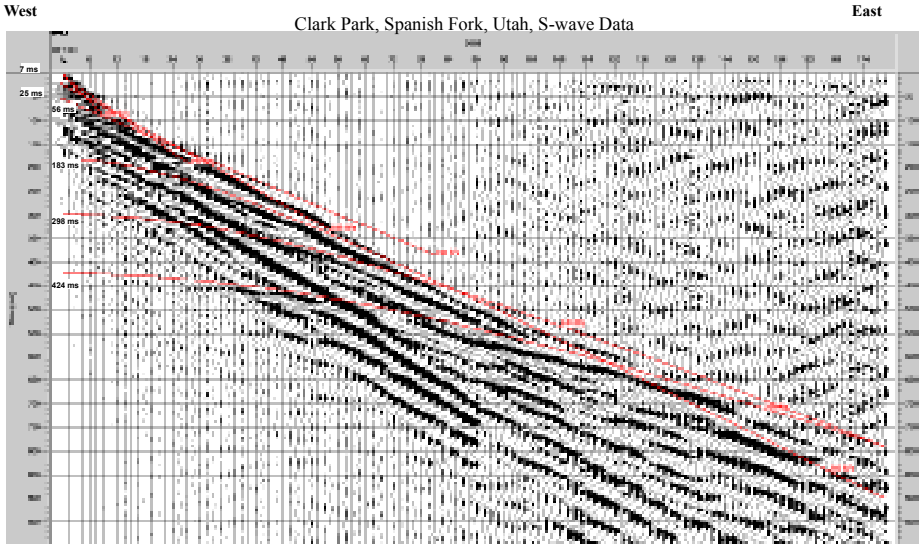


b

Site: Clark Park, Spanish Fork, UT

S-vel (m/s)	Depth (m)	P-vel (m/s)	Depth (m)
85	0.0	**260**	0.0
85	0.5	**260**	2.0
140	0.5	**1510**	2.0
140	2.0	**1510**	10.0
185	2.0	**1600**	**50.0**
185	5.5	**1700**	**70.0**
240	5.5		
240	18.0		
275	18.0	Vs30 = 230 m/s NEHRP class D	
275	35.0	**Suggested by reflection data**	
340	35.0	**Data from reflections only**	
340	50.0		
380	50.0		
380	95.0		

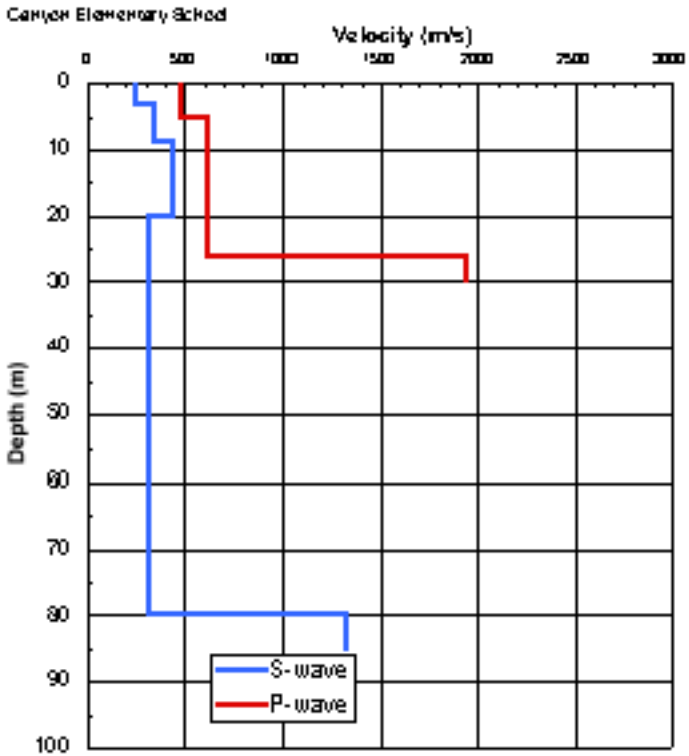
c



FF 5009,5012, 10-20-60-100 Hz bp filter, no AGC, 2-11-06

Figure 17

a



b

Site: Canyon Elementary, Spanish Fork, UT

S-vel (m/s)	Depth (m)	P-vel (m/s)	Depth (m)
250	0.0	480	0.0
250	3.0	480	5.0
340	3.0	615	5.0
340	9.0	615	26.0
445	9.0	1945	26.0
445	20.0	1945	30.0
325	20.0		
325	80.0		
1325	80.0		
1325	85.0		

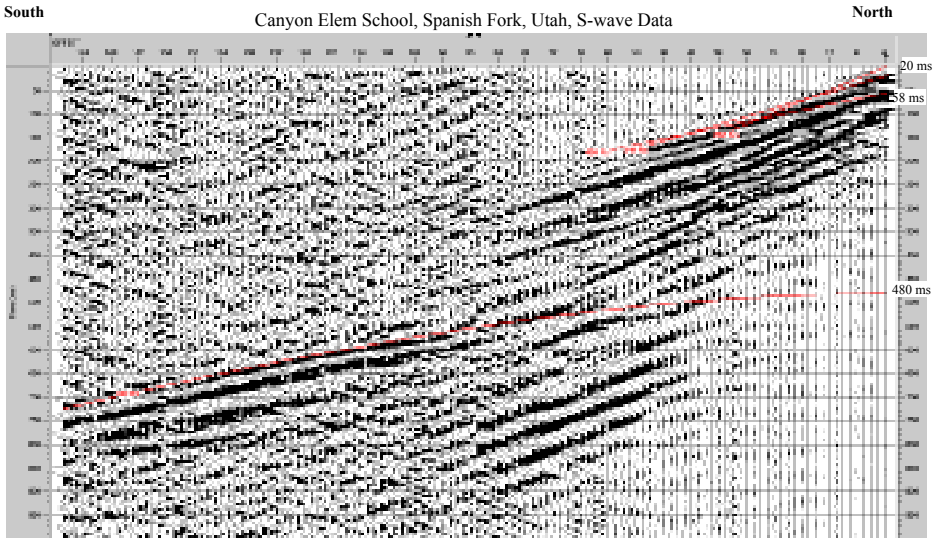
Vs30 = 350 m/s NEHRP class D

Possible strong site resonance at about 1.0 Hz (based on reflection time from rock)

S-wave velocity estimated - no control and assuming it's bedrock

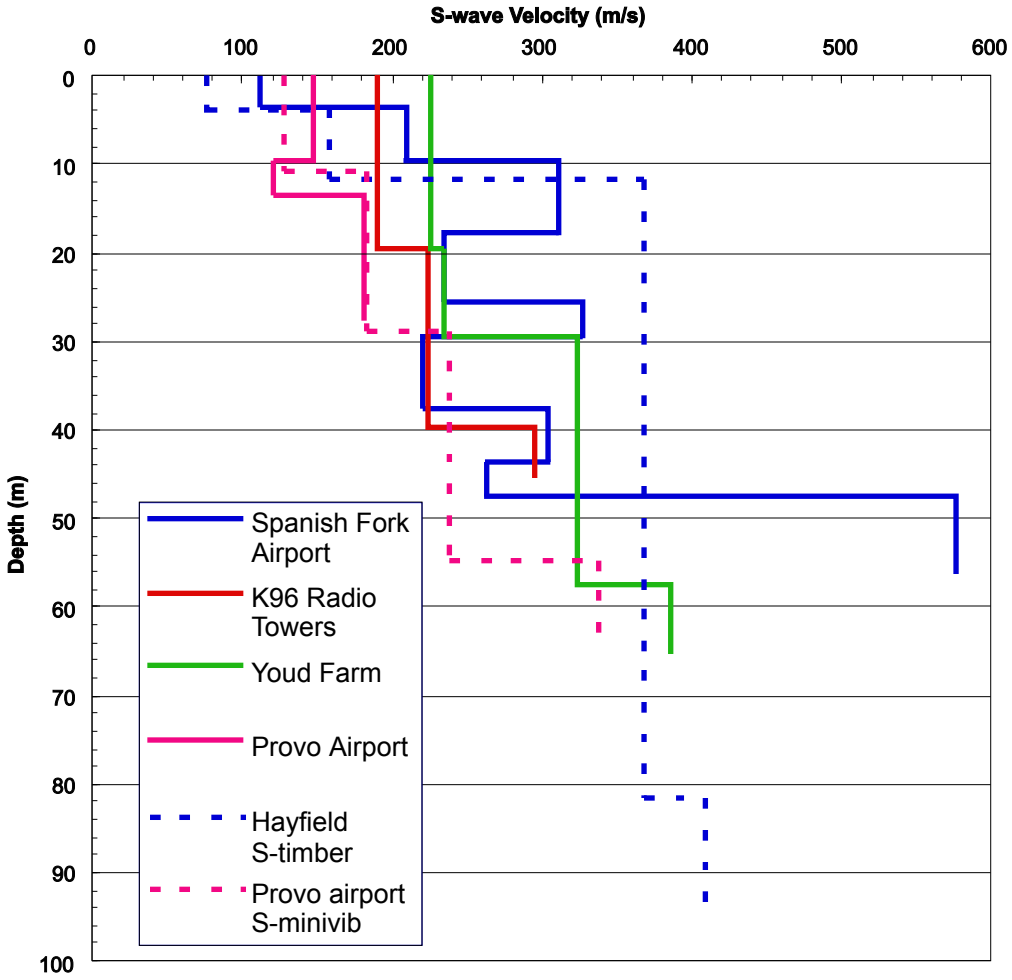
S-wave velocity estimated by assuming a velocity that fits with reflection velocity from 80 m deep layer

c



FF 3012-3013, 10-20-60-100 Hz bp filter, no AGC.

Figure 16



K96

Depth (m)	S vel (m/s)
0	192
20	192
20	227
40	227
40	297
46	297

Provo

Depth (m)	S vel (m/s)
0	150
10	150
10	124
14	124
14	184
28	184

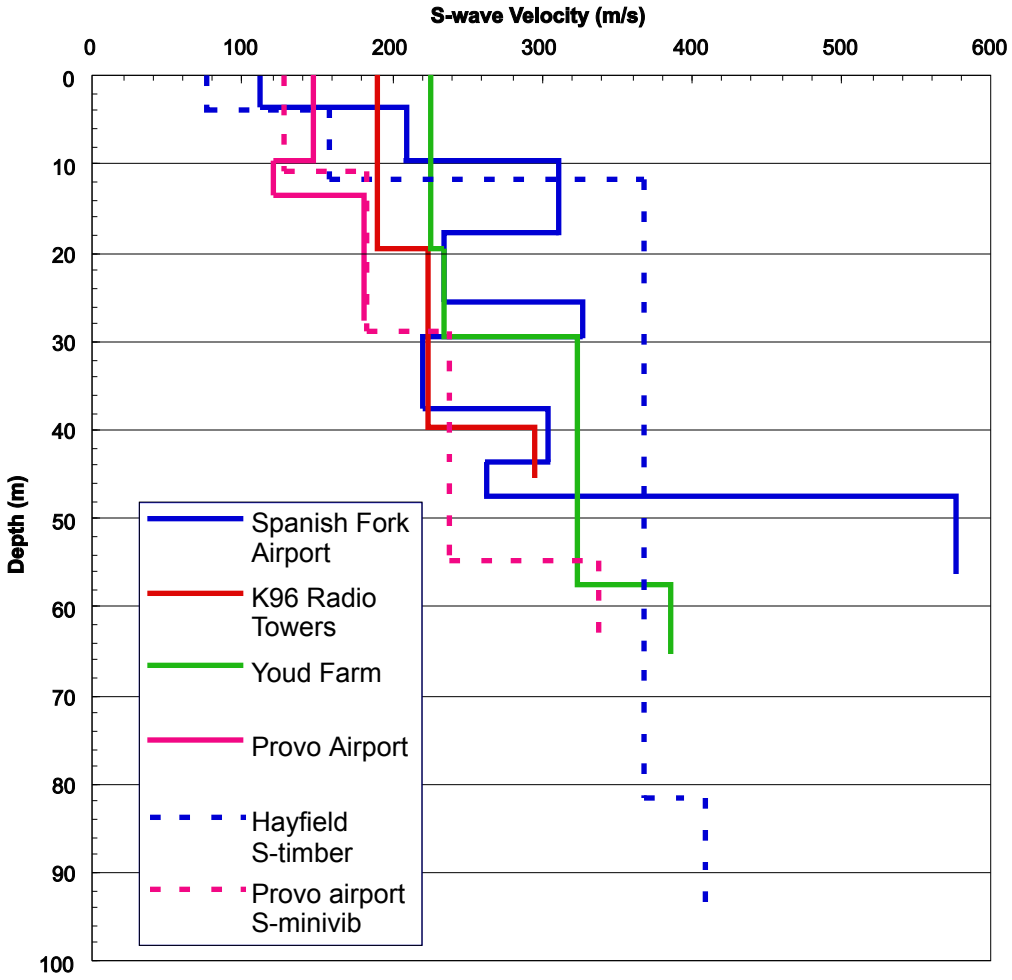
Sfairport

Depth (m)	S vel (m/s)
0	114
4	114
4	212
10	212
10	314
18	314
18	237
26	237
26	330
30	330
30	223
38	223
38	306
44	306
44	266
48	266
48	579
56.6	579

Youd

Depth (m)	S vel (m/s)
0	229
20	229
20	236
30	236
30	326
58	326
58	388
65.8	388

Figure 19



K96

Depth (m)	S vel (m/s)
0	192
20	192
20	227
40	227
40	297
46	297

Provo

Depth (m)	S vel (m/s)
0	150
10	150
10	124
14	124
14	184
28	184

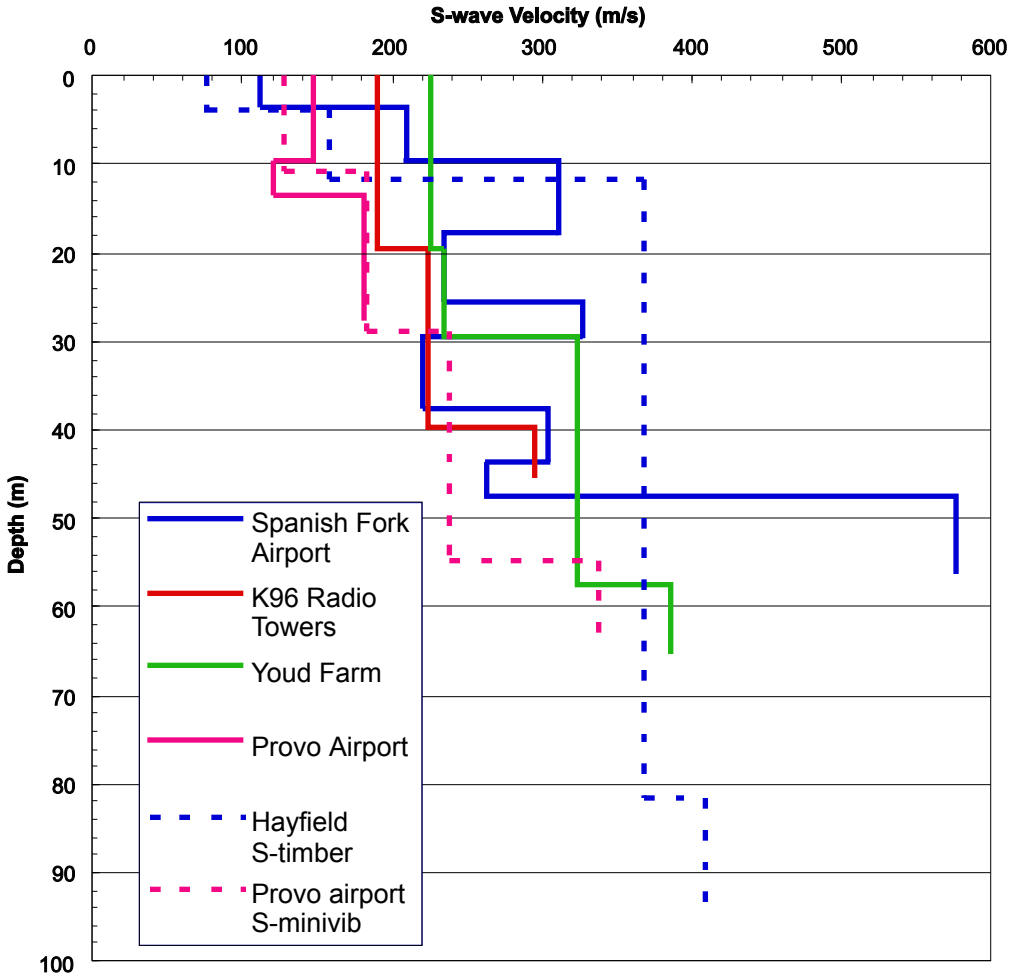
Sfairport

Depth (m)	S vel (m/s)
0	114
4	114
4	212
10	212
10	314
18	314
18	237
26	237
26	330
30	330
30	223
38	223
38	306
44	306
44	266
48	266
48	579
56.6	579

Youd

Depth (m)	S vel (m/s)
0	229
20	229
20	236
30	236
30	326
58	326
58	388
65.8	388

Figure 19



K96

Depth (m)	S vel (m/s)
0	192
20	192
20	227
40	227
40	297
46	297

Provo

Depth (m)	S vel (m/s)
0	150
10	150
10	124
14	124
14	184
28	184

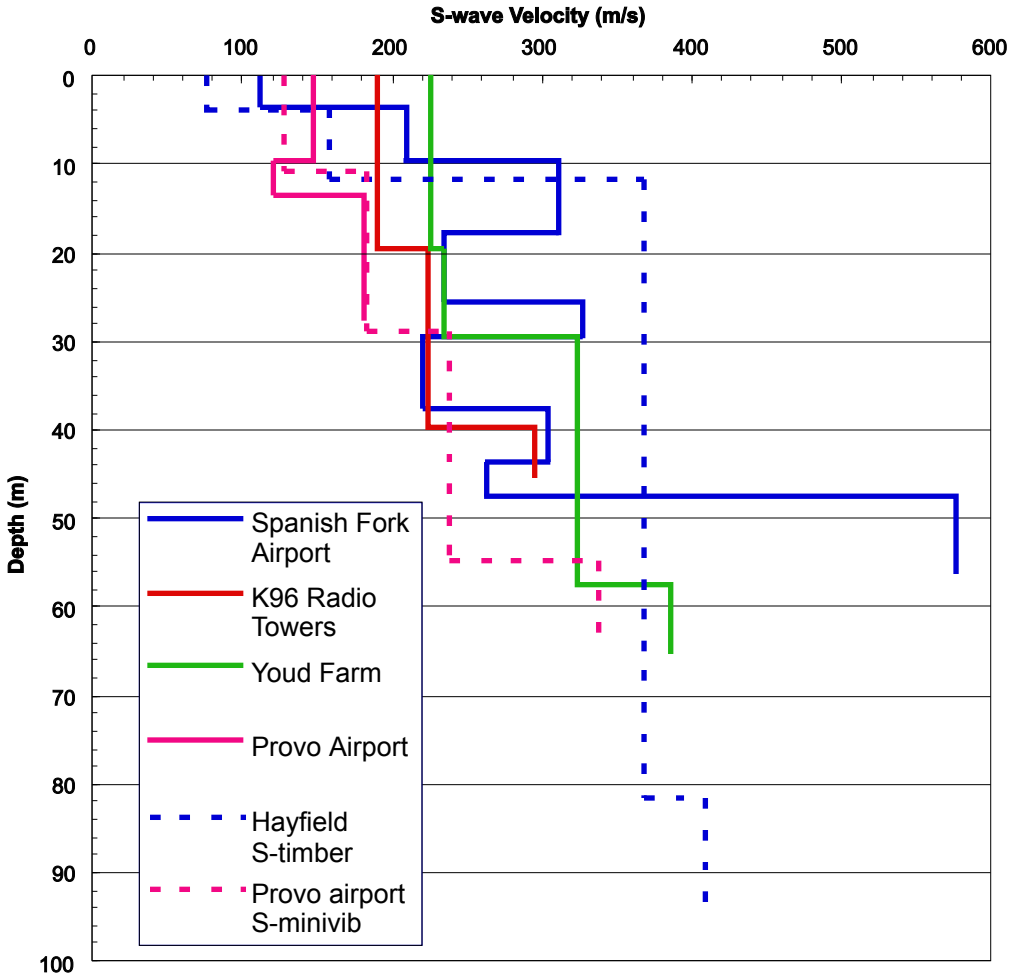
Sfairport

Depth (m)	S vel (m/s)
0	114
4	114
4	212
10	212
10	314
18	314
18	237
26	237
26	330
30	330
30	223
38	223
38	306
44	306
44	266
48	266
48	579
56.6	579

Youd

Depth (m)	S vel (m/s)
0	229
20	229
20	236
30	236
30	326
58	326
58	388
65.8	388

Figure 19



K96

Depth (m)	S vel (m/s)
0	192
20	192
20	227
40	227
40	297
46	297

Provo

Depth (m)	S vel (m/s)
0	150
10	150
10	124
14	124
14	184
28	184

Sfairport

Depth (m)	S vel (m/s)
0	114
4	114
4	212
10	212
10	314
18	314
18	237
26	237
26	330
30	330
30	223
38	223
38	306
44	306
44	266
48	266
48	579
56.6	579

Youd

Depth (m)	S vel (m/s)
0	229
20	229
20	236
30	236
30	326
58	326
58	388
65.8	388

Figure 19

SITE #1

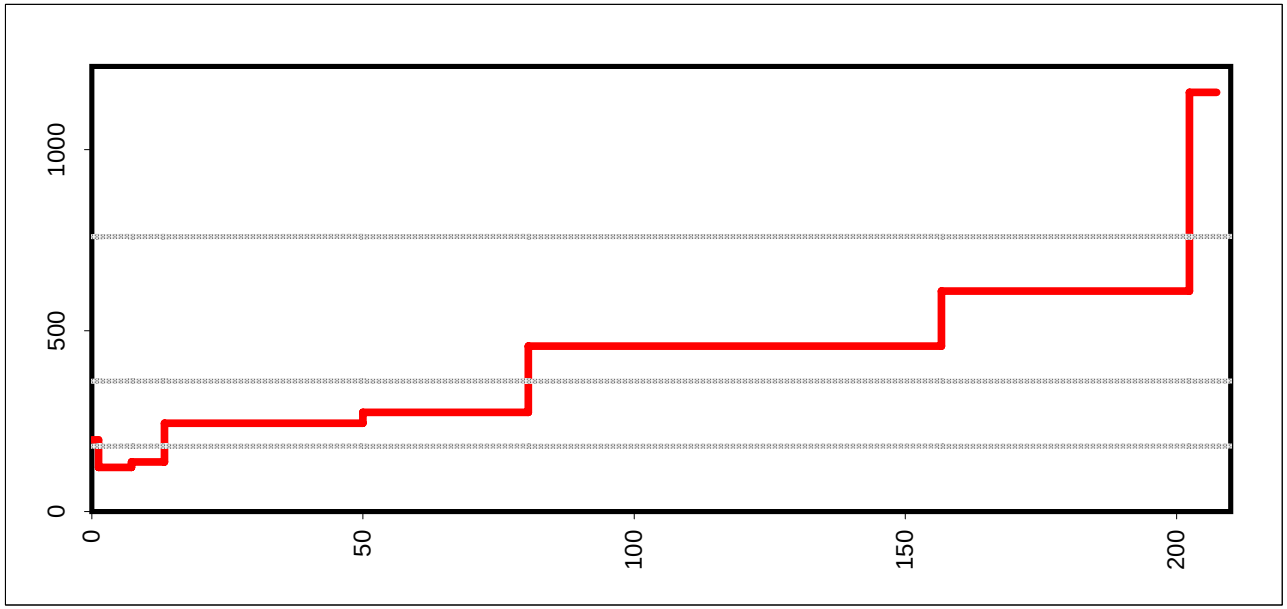
# of Layers	Thickness (m)	Vp (m/s)	Vs (m/s)	Poisson's
1	1.2	370.6	198.1	0.3
2	6.1	1585.0	121.9	0.497
3	6.1	1585.0	137.2	0.4962
4	36.6	1585.0	243.8	0.4879
5	30.5	1585.0	274.3	0.4846
6	76.2	1585.0	457.2	0.4546
7	45.7	1585.0	609.6	0.4132
8	55555	2166.9	1158.2	0.3

Lat	40°50'54.00"N
Long	111°55'36.00"W

from	to	Vs (m/s)
0.0	1.2	198.1
1.2	7.3	121.9
7.3	13.4	137.2
13.4	50.0	243.8
50.0	80.5	274.3
80.5	156.7	457.2
156.7	202.4	609.6
202.4	203.4	1158.2

from	to	Vs (m/s)	thickness	Vsi
0.0	1.2	198.1	1.2192	0.006154
1.2	7.3	121.9	6.096	0.05
7.3	13.4	137.2	6.096	0.044444
13.4	30.0	243.8	16.5888	0.068031
			30	0.16863

177.9045 **Vs30 (m/s)**



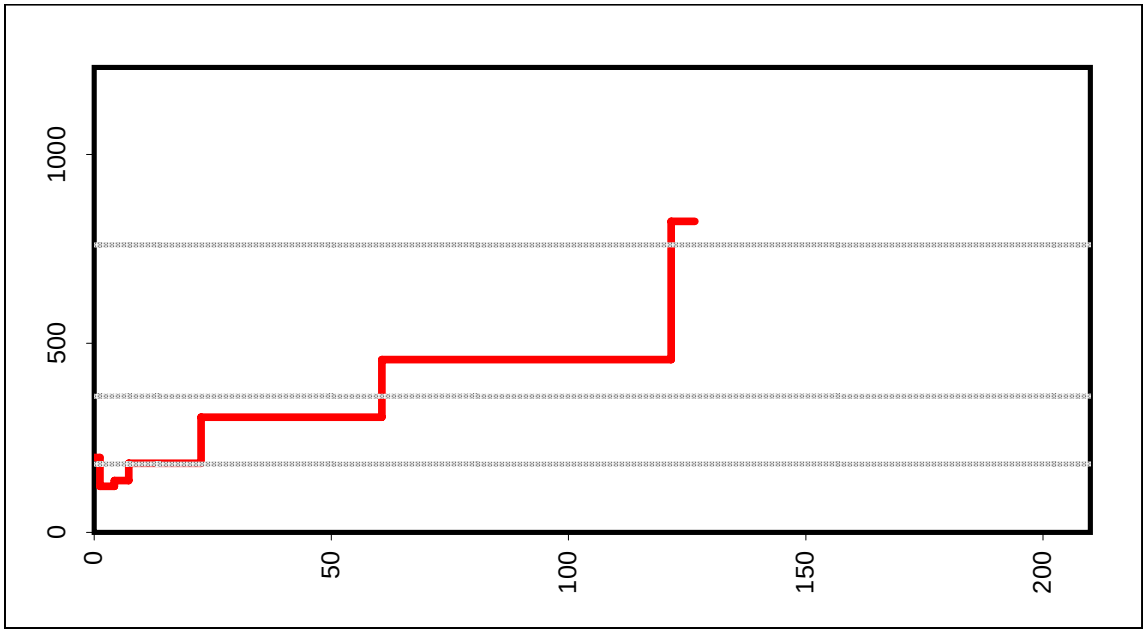
SITE #2

# of Layers	Thickness (m)	Vp (m/s)	Vs (m/s)	Poisson's	Lat	40°58'43.00"N
1	1.2	370.6	198.1	0.3	Long	111°53'56.00"W
2	3.0	1585.0	121.9	0.497		
3	3.0	1585.0	137.2	0.4962		
4	15.2	1585.0	182.9	0.4953		
5	38.1	1585.0	304.8	0.4808		
6	61.0	1585.0	457.2	0.4546		
7	55555	1585.0	823.0	0.3154		

from	to	Vs (m/s)
0.0	1.2	198.1
1.2	4.3	121.9
4.3	7.3	137.2
7.3	22.6	182.9
22.6	60.7	304.8
60.7	121.6	457.2
121.6	122.6	823.0

from	to	Vs (m/s)	thickness	Vsi
0.0	1.2	198.1	1.2192	0.006154
1.2	4.3	121.9	3.048	0.025
4.3	7.3	137.2	3.048	0.022222
7.3	22.6	182.9	15.24	0.083333
22.6	60.7	304.8	38.1	0.125
			60.6552	0.261709

231.7655 **Vs30 (m/s)**

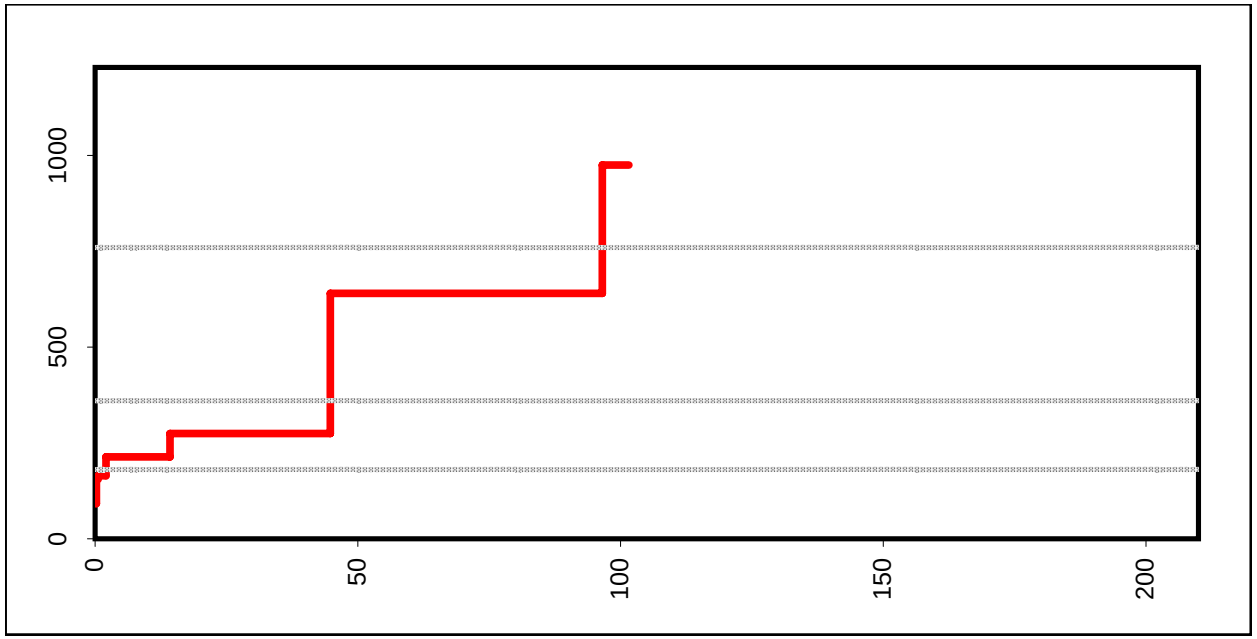


SITE #3

# of Layers	Thickness (m)	Vp (m/s)	Vs (m/s)	Poisson's	Lat	40°28'38.00"N
1	0.2	171.1	91.4	0.3	Long	111°55'6.00"W
2	0.3	290.8	155.4	0.3		
3	1.5	307.9	164.6	0.3		
4	12.2	1585.0	213.4	0.4908		
5	30.5	1585.0	274.3	0.4846		
6	51.8	1585.0	640.1	0.4026		
7	55555	1824.7	975.4	0.3		

from	to	Vs (m/s)
0.0	0.2	91.4
0.2	0.5	155.4
0.5	2.1	164.6
2.1	14.3	213.4
14.3	44.7	274.3
44.7	96.6	640.1
96.6	97.6	975.4

from	to	Vs (m/s)	thickness	Vsi
0.0	0.2	91.4	0.24384	0.002667
0.2	0.5	155.4	0.3048	0.001961
0.5	2.1	164.6	1.524	0.009259
2.1	14.3	213.4	12.192	0.057143
14.3	44.7	274.3	30.48	0.111111



44.74464 0.182141 245.6598 **Vs30 (m/s)**

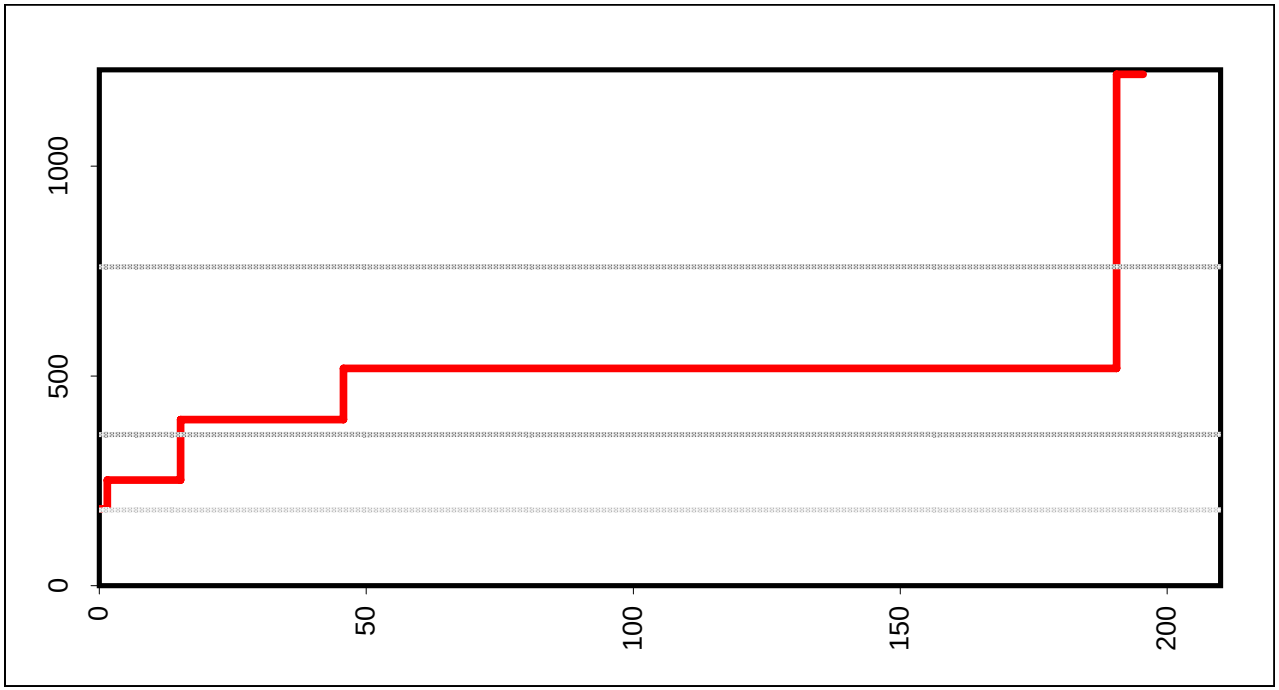
SITE #4

# of Layers	Thickness (m)	Vp (m/s)	Vs (m/s)	Poisson's	Lat	40°38'31.40"N
1	1.5	342.1	182.9	0.3	Long	111°58'19.60"W
2	13.7	470.4	251.5	0.3		
3	30.5	741.3	396.2	0.3		
4	144.8	1585.0	518.2	0.4402		
5	55555	2280.9	1219.2	0.3		

from	to	Vs (m/s)
0	1.524	182.9
1.524	15.24	251.5
15.24	45.72	396.2
45.72	190.5	518.2
190.5	191.5	1219.2

from	to	Vs (m/s)	thickness	Vsi
0	1.524	182.9	1.524	0.008333
1.524	15.24	251.5	13.716	0.054545
15.24	45.72	396.2	30.48	0.076923
45.72				0.139802

327.0343 **Vs30 (m/s)**

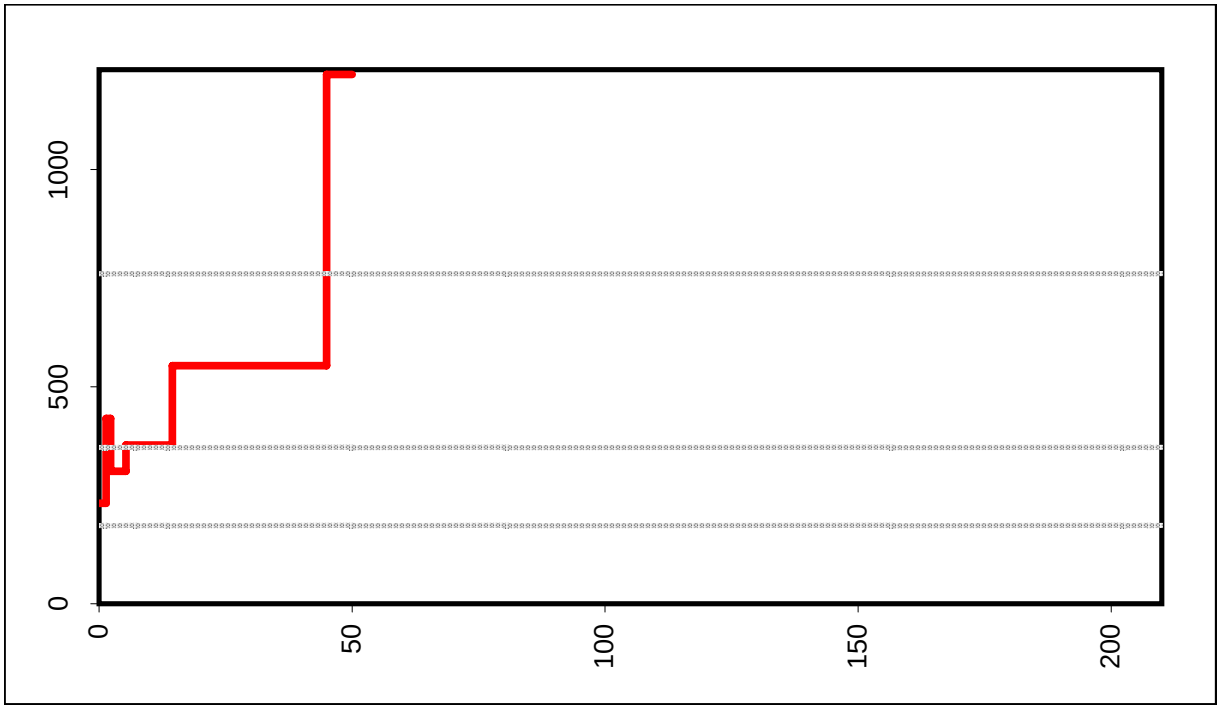


SITE #5

# of Layers	Thickness (m)	Vp (m/s)	Vs (m/s)	Poisson's	Lat	40°39'17.00"N
1	1.4	433.4	231.6	0.3	Long	112° 6'34.00"W
2	0.9	798.3	426.7	0.3		
3	3.0	513.2	304.8	0.3		
4	9.1	684.3	365.8	0.3		
5	30.5	1026.4	548.6	0.3		
6	55555	2280.9	1219.2	0.3		

from	to	Vs (m/s)
0.0	1.4	231.6
1.4	2.3	426.7
2.3	5.3	304.8
5.3	14.5	365.8
14.5	45.0	548.6
45.0	46.0	1219.2

from	to	Vs (m/s)	thickness	Vsi
0.0	1.4	231.6	1.3716	0.005921
1.4	2.3	426.7	0.9144	0.002143
2.3	5.3	304.8	3.048	0.01
5.3	14.5	365.8	9.144	0.025
14.5	45.0	548.6	30.48	0.055556



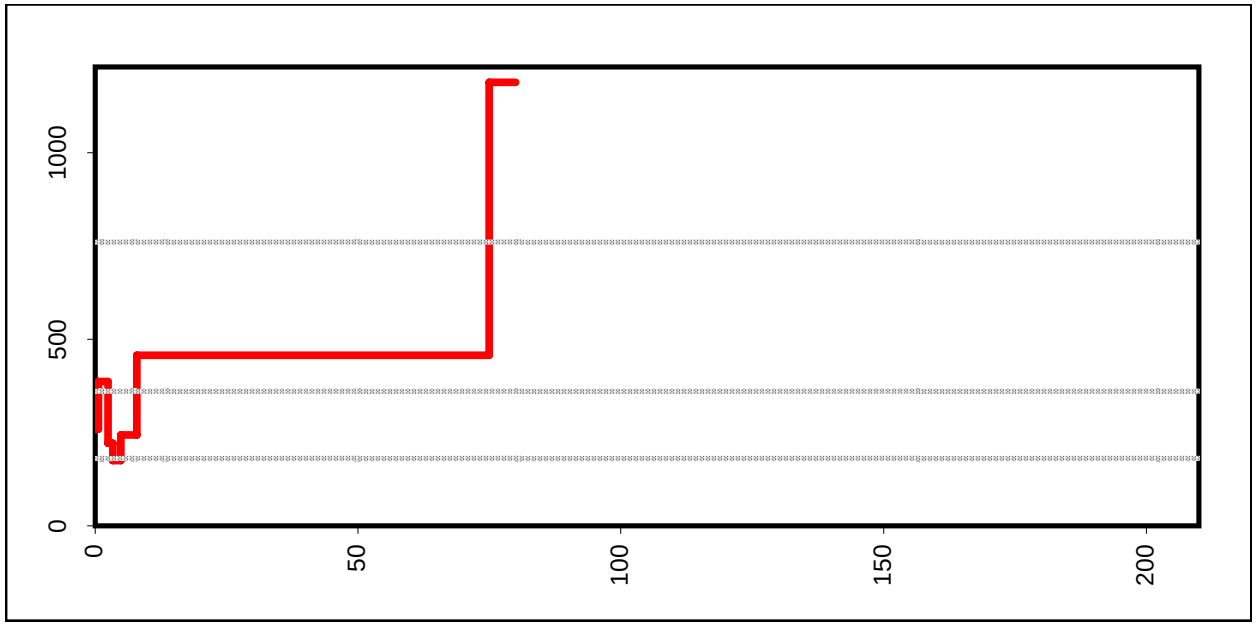
44.958 0.098619 455.8735 **Vs30 (m/s)**

SITE #6

# of Layers	Thickness (m)	Vp (m/s)	Vs (m/s)	Poisson's	Lat	40°38'19.00"N
1	0.6	484.7	259.1	0.3	Long	111°48'27.00"W
2	1.8	724.2	387.1	0.3		
3	0.9	413.4	221.0	0.3		
4	1.5	327.9	175.3	0.3		
5	3.0	456.2	243.8	0.3		
6	67.1	1585.0	457.2	0.4546		
7	55555	2223.9	1188.7	0.3		

from	to	Vs (m/s)
0.0	0.6	259.1
0.6	2.4	387.1
2.4	3.4	221.0
3.4	4.9	175.3
4.9	7.9	243.8
7.9	75.0	457.2
75.0	76.0	1188.7

from	to	Vs (m/s)	thickness	Vsi
0.0	0.6	259.1	0.6096	0.002353
0.6	2.4	387.1	1.8288	0.004724
2.4	3.4	221.0	0.9144	0.004138
3.4	4.9	175.3	1.524	0.008696
4.9	7.9	243.8	3.048	0.0125
7.9	75.0	457.2	67.056	0.146667
74.9808	0.179078	418.7056	**Vs30 (m/s)**	

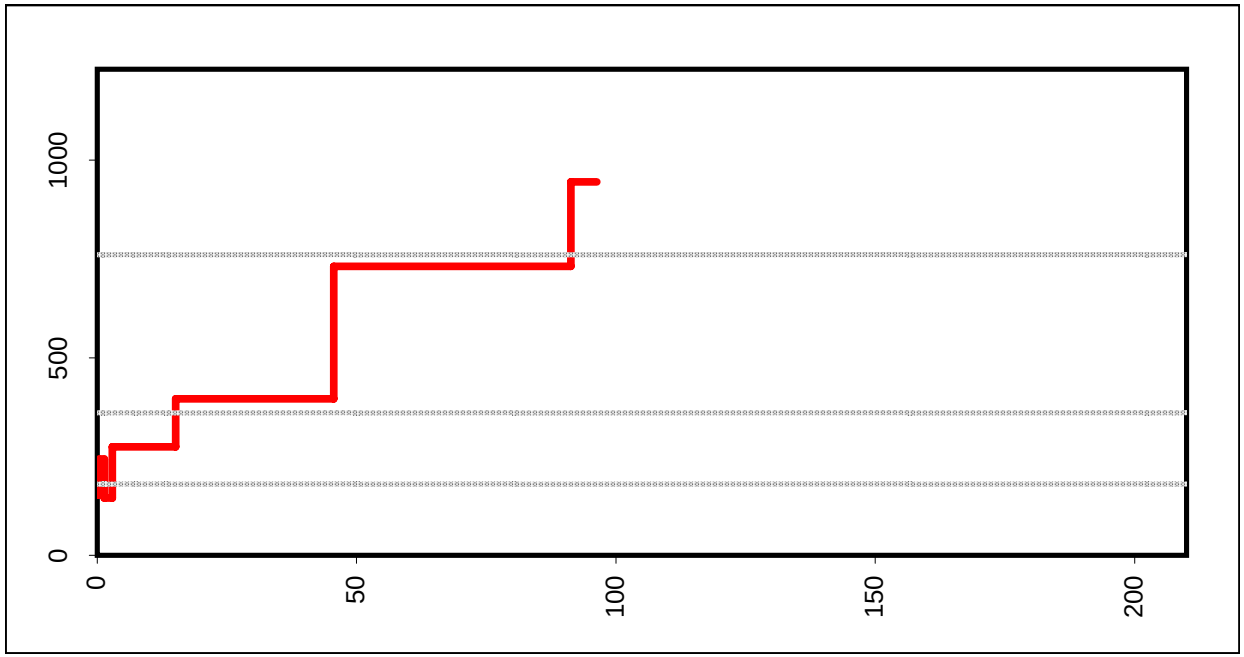


SITE #7

# of Layers	Thickness (m)	Vp (m/s)	Vs (m/s)	Poisson's	Lat	40°33'4.00"N
1	0.5	342.1	152.4	0.3	Long	112° 3'5.00"W
2	0.9	456.2	243.8	0.3		
3	1.5	270.8	144.8	0.3		
4	12.2	370.6	274.3	0.3		
5	30.5	855.3	396.2	0.3		
6	45.7	1585.0	731.5	0.3647		
7	55555	1767.7	944.9	0.3		

from	to	Vs (m/s)
0.0	0.5	152.4
0.5	1.4	243.8
1.4	2.9	144.8
2.9	15.1	274.3
15.1	45.6	396.2
45.6	91.3	731.5
91.3	92.3	944.9

from	to	Vs (m/s)	thickness	Vsi
0.0	0.5	152.4	0.4572	0.003
0.5	1.4	243.8	0.9144	0.00375
1.4	2.9	144.8	1.524	0.010526
2.9	15.1	274.3	12.192	0.044444
15.1	45.6	396.2	30.48	0.076923



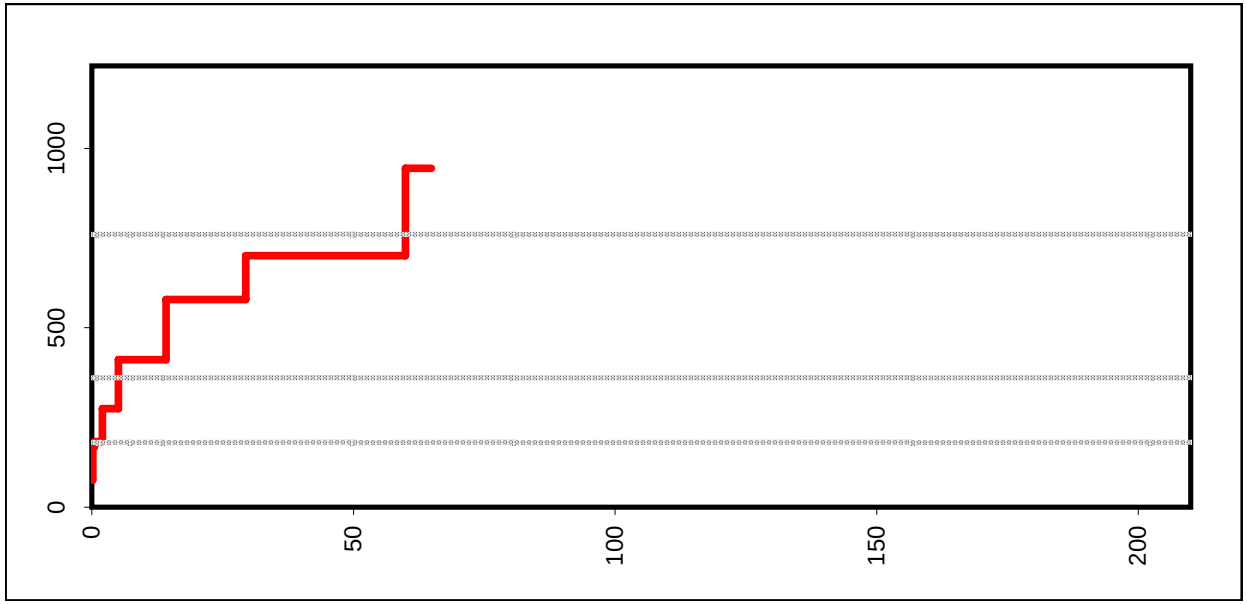
45.5676	0.138644	328.6666	**Vs30 (m/s)**

SITE #8

# of Layers	Thickness (m)	Vp (m/s)	Vs (m/s)	Poisson's	Lat	40°37'19.00"N
1	0.2	142.6	76.2	0.3	Long	111°47'13.00"W
2	0.3	313.6	167.6	0.3		
3	1.5	342.1	182.9	0.3		
4	3.0	513.2	274.3	0.3		
5	9.1	769.8	411.5	0.3		
6	15.2	1083.4	579.1	0.3		
7	30.5	1311.5	701.0	0.3		
8	55555	1767.7	944.9	0.3		

from	to	Vs (m/s)
0.0	0.2	76.2
0.2	0.5	167.6
0.5	2.0	182.9
2.0	5.1	274.3
5.1	14.2	411.5
14.2	29.4	579.1
29.4	59.9	701.0
59.9	60.9	944.9

from	to	Vs (m/s)	thickness	Vsi
0.0	0.2	76.2	0.18288	0.0024
0.2	0.5	167.6	0.3048	0.001818
0.5	2.0	182.9	1.524	0.008333
2.0	5.1	274.3	3.048	0.011111
5.1	14.2	411.5	9.144	0.022222
14.2	29.4	579.1	15.24	0.026316
29.4	59.9	701.0	30.48	0.043478
59.92368	0.115679	518.0174	**Vs30 (m/s)**	

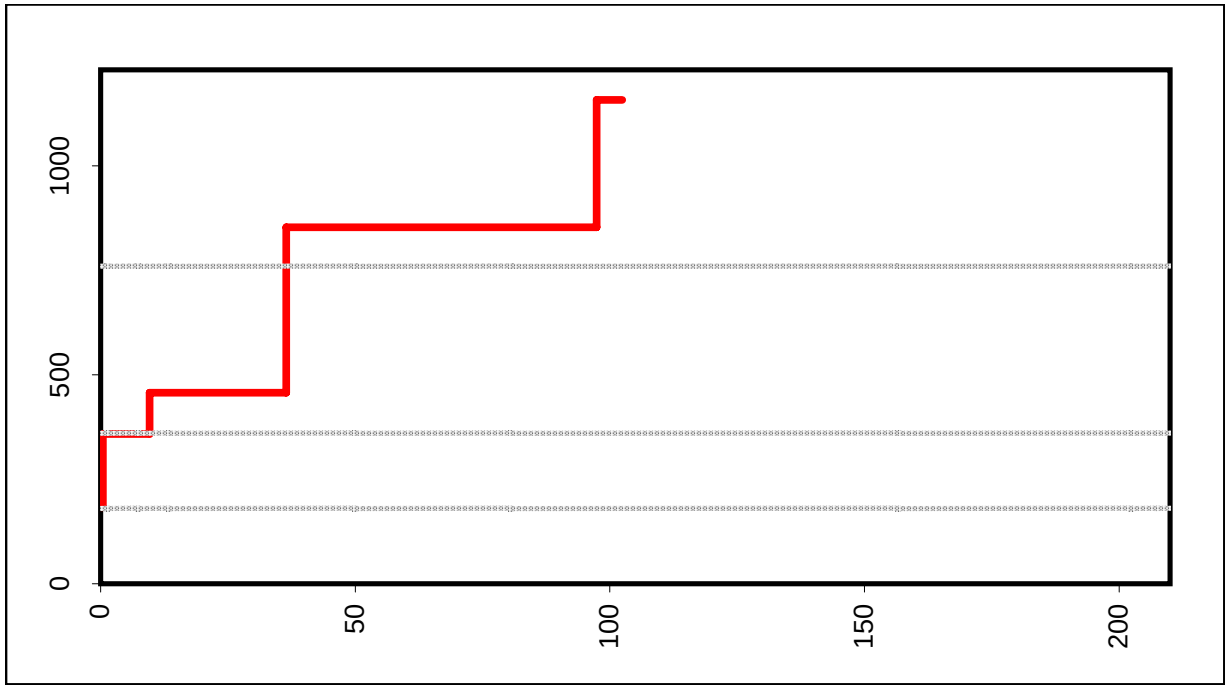


SITE #9

# of Layers	Thickness (m)	Vp (m/s)	Vs (m/s)	Poisson's	Lat	40°41'11.00"N
1	0.5	342.1	182.9	0.3	Long	112° 5'7.00"W
2	9.1	670.0	358.1	0.3		
3	20.7	855.3	457.2	0.3		
4	6.1	1585.0	457.2	0.4546		
5	61.0	1596.6	853.4	0.3		
6	55555	2166.9	1158.2	0.3		

from	to	Vs (m/s)
0.0	0.5	182.9
0.5	9.6	358.1
9.6	30.3	457.2
30.3	36.4	457.2
36.4	97.4	853.4
97.4	98.4	1158.2

from	to	Vs (m/s)	thickness	Vsi
0.0	0.5	182.9	0.4572	0.0025
0.5	9.6	358.1	9.144	0.025532
9.6	30.3	457.2	20.7264	0.045333
30.3276	0.073365	413.3783	**Vs30 (m/s)**	

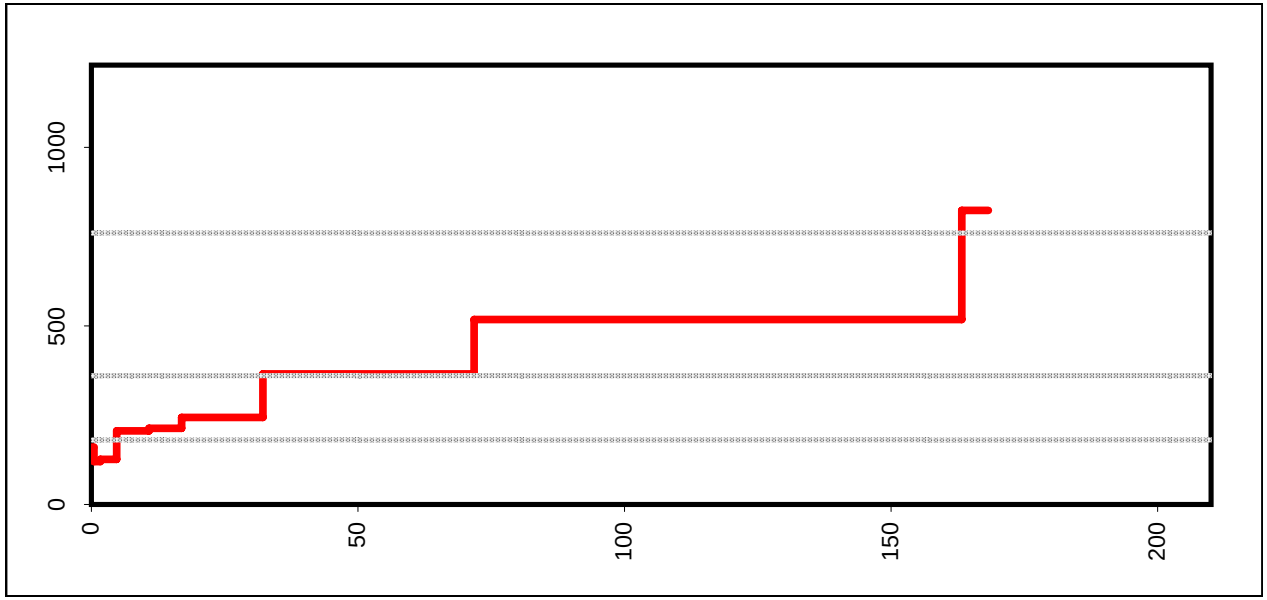


SITE #10

# of Layers	Thickness (m)	Vp (m/s)	Vs (m/s)	Poisson's	Lat	40°45'26.00"N
1	0.5	299.4	160.0	0.3	Long	112° 1'38.00"W
2	1.2	225.2	120.4	0.3		
3	3.0	1585.0	126.5	0.4968		
4	6.1	1585.0	205.7	0.4914		
5	6.1	1585.0	213.4	0.4908		
6	15.2	1585.0	243.8	0.4879		
7	39.6	1585.0	365.8	0.4719		
8	91.4	1585.0	518.2	0.4402		
9	55555	1585.0	823.0	0.3154		

from	to	Vs (m/s)
0.0	0.5	160.0
0.5	1.7	120.4
1.7	4.7	126.5
4.7	10.8	205.7
10.8	16.9	213.4
16.9	32.2	243.8
32.2	71.8	365.8
71.8	163.2	518.2
163.2	164.2	823.0

from	to	Vs (m/s)	thickness	Vsi
0.0	0.5	160.0	0.4572	0.002857
0.5	1.7	120.4	1.2192	0.010127
1.7	4.7	126.5	3.048	0.024096
4.7	10.8	205.7	6.096	0.02963
10.8	16.9	213.4	6.096	0.028571
16.9	32.2	243.8	15.24	0.0625



32.1564 0.157781 203.8038 **Vs30 (m/s)**

SITE #11

# of Layers	Thickness (m)	Vp (m/s)	Vs (m/s)	Poisson's	Lat	40°37'55.00"N
1	0.3	182.5	97.5	0.3	Long	111°59'58.00"W
2	0.5	342.1	182.9	0.3		
3	0.8	484.7	259.1	0.3		
4	3.0	513.2	274.3	0.3		
5	7.6	570.2	304.8	0.3		
6	7.6	798.3	426.7	0.3		
7	7.6	1585.0	365.8	0.4719		
8	30.5	1585.0	487.7	0.4477		
9	61.0	1743.5	609.6	0.4304		
10	55555	2223.9	1188.7	0.3		

from	to	Vs (m/s)
0.0	0.3	97.5
0.3	0.8	182.9
0.8	1.5	259.1
1.5	4.6	274.3
4.6	12.2	304.8
12.2	19.8	426.7
19.8	27.4	365.8
27.4	57.9	487.7
57.9	118.9	609.6
118.9	119.9	1188.7

from	to	Vs (m/s)	thickness	Vsi
0.0	0.3	97.5	0.3048	0.003125
0.3	0.8	182.9	0.4572	0.0025
0.8	1.5	259.1	0.762	0.002941
1.5	4.6	274.3	3.048	0.011111
4.6	12.2	304.8	7.62	0.025
12.2	19.8	426.7	7.62	0.017857
19.8	27.4	365.8	7.62	0.020833
27.4	57.9	487.7	30.48	0.0625
57.912	0.145868	397.0171	**Vs30 (m/s)**