N00236.001190
ALAMEDA POINT
SSIC NO. 5090.3

CLEAN

Contract No. N62474-88-D-5086

Contract Task Order 260

Navy Remedial Project Manager: George Kikugawa
PRC Installation Coordinator: Duane Balch
Montgomery Watson Remedial Project Manager: Kenneth Leung

NAVAL AIR STATION, ALAMEDA
ALAMEDA, CALIFORNIA

REMEDIAL INVESTIGATION/FEASIBILITY STUDY
DATA TRANSMITTAL MEMORANDUM
SITES 4, 5, 8, 10A, 12, AND 14

FINAL
VOLUME 2 OF 2

Prepared By:

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April 1996

N00236.001190
ALAMEDA POINT
SSIC NO. 5090.3

FINAL
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
DATA TRANSMITTAL MEMORANDUM
SITES 4, 5, 8, 10A, 12, AND 14

DATED 01 APRIL 1996

THIS RECORD CONTAINS MULTIPLE VOLUMES
WHICH HAVE BEEN ENTERED SEPARATELY

VOLUME I OF II IS FILED AS ADMINISTRATIVE
RECORD NO. **N00236.001189**

ATTACHMENT 1

CPT LITHOLOGIC PRINTOUTS

TONTO ENVIRONMENTAL DRILLING

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Engineer MontgomeryWatson
On Site Loc:CPT-S4-01
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/1/94 09:15
Cone Used :339
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	22.22	0.32	1.43	0.02	sandy silt to clayey silt	UNDFND	UNDFD	9	1.4
0.50	1.64	200.66	2.18	1.08	0.07	sand	>90	>48	38	UNDEFINED
0.75	2.46	140.36	1.67	1.19	0.12	sand to silty sand	>90	>48	34	UNDEFINED
1.00	3.28	98.04	0.69	0.70	0.17	sand to silty sand	>90	>48	23	UNDEFINED
1.25	4.10	61.90	0.48	0.78	0.21	sand to silty sand	70-80	44-46	15	UNDEFINED
1.50	4.92	59.60	0.36	0.61	0.26	sand to silty sand	70-80	44-46	14	UNDEFINED
1.75	5.74	41.62	0.38	0.91	0.31	silty sand to sandy silt	50-60	42-44	13	UNDEFINED
2.00	6.56	24.98	0.11	0.43	0.35	silty sand to sandy silt	40-50	38-40	8	UNDEFINED
2.25	7.38	31.96	0.17	0.53	0.40	silty sand to sandy silt	40-50	40-42	10	UNDEFINED
2.50	8.20	21.06	0.09	0.43	0.45	silty sand to sandy silt	<40	36-38	7	UNDEFINED
2.75	9.02	18.02	0.04	0.22	0.50	silty sand to sandy silt	<40	36-38	6	UNDEFINED
3.00	9.84	26.30	0.04	0.14	0.54	silty sand to sandy silt	<40	36-38	8	UNDEFINED
3.25	10.66	16.26	0.06	0.35	0.59	sandy silt to clayey silt	UNDFND	UNDFD	6	1.0
3.50	11.48	21.20	0.35	1.64	0.64	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
3.75	12.30	30.44	0.38	1.24	0.68	sandy silt to clayey silt	UNDFND	UNDFD	12	1.9
4.00	13.12	92.84	1.65	1.78	0.73	silty sand to sandy silt	60-70	42-44	30	UNDEFINED
4.25	13.94	156.08	3.51	2.25	0.77	silty sand to sandy silt	80-90	44-46	50	UNDEFINED
4.50	14.76	167.36	3.65	2.18	0.79	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
4.75	15.58	90.04	1.63	1.81	0.81	silty sand to sandy silt	60-70	40-42	29	UNDEFINED
00	16.40	183.68	3.10	1.69	0.83	sand to silty sand	80-90	44-46	44	UNDEFINED
.25	17.22	161.80	3.68	2.27	0.85	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
5.50	18.04	175.08	4.46	2.55	0.87	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
5.75	18.86	205.90	5.44	2.64	0.89	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
6.00	19.69	266.38	4.96	1.86	0.92	sand to silty sand	>90	44-46	>50	UNDEFINED
6.25	20.51	250.62	4.44	1.77	0.94	sand to silty sand	>90	44-46	>50	UNDEFINED
6.50	21.33	226.36	3.38	1.49	0.96	sand to silty sand	>90	44-46	>50	UNDEFINED
6.75	22.15	250.30	2.76	1.10	0.98	sand	>90	44-46	48	UNDEFINED
7.00	22.97	264.44	2.72	1.03	1.00	sand	>90	44-46	>50	UNDEFINED
7.25	23.79	269.74	3.20	1.19	1.02	sand	>90	44-46	>50	UNDEFINED
7.50	24.61	305.62	2.49	0.81	1.05	sand	>90	44-46	>50	UNDEFINED
7.75	25.43	282.94	3.85	1.36	1.07	sand	>90	44-46	>50	UNDEFINED
8.00	26.25	259.30	3.50	1.35	1.09	sand	>90	44-46	50	UNDEFINED
8.25	27.07	259.64	4.52	1.74	1.11	sand to silty sand	>90	44-46	>50	UNDEFINED
8.50	27.89	264.82	4.84	1.83	1.13	sand to silty sand	>90	44-46	>50	UNDEFINED
8.75	28.71	302.80	2.40	0.79	1.15	sand	>90	44-46	>50	UNDEFINED
9.00	29.53	232.04	1.94	0.83	1.17	sand	80-90	44-46	44	UNDEFINED
9.25	30.35	191.02	2.91	1.52	1.20	sand to silty sand	80-90	42-44	46	UNDEFINED
9.50	31.17	182.24	3.03	1.66	1.22	sand to silty sand	80-90	42-44	44	UNDEFINED
9.75	31.99	231.86	3.28	1.41	1.24	sand to silty sand	80-90	42-44	>50	UNDEFINED
10.00	32.81	250.86	4.53	1.81	1.26	sand to silty sand	80-90	44-46	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

.te: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT-S4-01

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
10.25	33.63	274.60	4.77	1.74	1.28	sand to silty sand	>90	44-46	>50	UNDEFINED
10.50	34.45	247.74	4.48	1.81	1.30	sand to silty sand	80-90	42-44	>50	UNDEFINED
10.75	35.27	170.76	2.00	1.17	1.33	sand to silty sand	70-80	42-44	41	UNDEFINED
11.00	36.09	146.56	3.34	2.28	1.35	silty sand to sandy silt	70-80	40-42	47	UNDEFINED
11.25	36.91	106.06	2.81	2.65	1.37	sandy silt to clayey silt	UNDFND	UNDFD	41	6.9
11.50	37.73	103.82	2.50	2.41	1.39	silty sand to sandy silt	60-70	38-40	33	UNDEFINED
11.75	38.55	99.18	2.45	2.47	1.41	silty sand to sandy silt	60-70	38-40	32	UNDEFINED
12.00	39.37	114.80	2.62	2.28	1.43	silty sand to sandy silt	60-70	40-42	37	UNDEFINED
12.25	40.19	71.10	0.69	0.97	1.45	sand to silty sand	50-60	36-38	17	UNDEFINED
12.50	41.01	111.88	4.55	4.06	1.48	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
12.75	41.83	98.66	3.19	3.24	1.50	sandy silt to clayey silt	UNDFND	UNDFD	38	6.4
13.00	42.65	187.02	7.87	4.21	1.52	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
13.25	43.47	275.42	10.58	3.84	1.54	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
13.50	44.29	329.94	8.79	2.67	1.56	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
13.75	45.11	274.64	6.85	2.49	1.58	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
14.00	45.93	272.86	7.19	2.63	1.61	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
14.25	46.75	275.22	5.05	1.83	1.63	sand to silty sand	80-90	42-44	>50	UNDEFINED
14.50	47.57	283.86	3.62	1.28	1.65	sand	80-90	42-44	>50	UNDEFINED
14.75	48.39	330.64	4.82	1.46	1.67	sand to silty sand	>90	44-46	>50	UNDEFINED
15.00	49.21	319.72	4.23	1.32	1.69	sand	>90	42-44	>50	UNDEFINED
15.25	50.03	229.64	8.16	3.55	1.71	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
[illegible]50	50.85	204.24	6.97	3.41	1.74	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
[illegible].75	51.67	226.70	5.78	2.55	1.76	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
16.00	52.49	284.08	5.99	2.11	1.78	sand to silty sand	80-90	42-44	>50	UNDEFINED
16.25	53.31	244.00	7.62	3.12	1.80	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
16.50	54.13	255.94	8.29	3.24	1.82	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
16.75	54.95	189.62	5.61	2.96	1.84	silty sand to sandy silt	70-80	40-42	>50	UNDEFINED
17.00	55.77	302.76	6.25	2.06	1.86	sand to silty sand	80-90	42-44	>50	UNDEFINED
17.25	56.59	218.28	6.71	3.07	1.89	silty sand to sandy silt	70-80	40-42	>50	UNDEFINED
17.50	57.41	171.42	6.86	4.00	1.91	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
17.75	58.23	342.68	6.40	1.87	1.93	sand to silty sand	>90	42-44	>50	UNDEFINED
18.00	59.06	444.28	5.98	1.35	1.95	sand	>90	44-46	>50	UNDEFINED
18.25	59.88	508.08	4.93	0.97	1.97	sand	>90	44-46	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT-S4-02
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/01/94 11:05
Cone Used :339
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	108.64	1.07	0.98	0.02	sand to silty sand	>90	>48	26	UNDEFINED
0.50	1.64	82.50	1.10	1.33	0.07	silty sand to sandy silt	>90	>48	26	UNDEFINED
0.75	2.46	129.48	0.65	0.51	0.12	sand	>90	>48	25	UNDEFINED
1.00	3.28	83.16	0.42	0.50	0.17	sand to silty sand	80-90	46-48	20	UNDEFINED
1.25	4.10	21.34	0.21	1.01	0.21	sandy silt to clayey silt	UNDFND	UNDFD	8	1.4
1.50	4.92	6.04	0.01	0.17	0.26	sensitive fine grained	UNDFND	UNDFD	3	.3
1.75	5.74	18.90	0.00	0.02	0.31	silty sand to sandy silt	<40	38-40	6	UNDEFINED
2.00	6.56	25.30	0.08	0.31	0.35	silty sand to sandy silt	40-50	38-40	8	UNDEFINED
2.25	7.38	36.02	0.06	0.16	0.40	sand to silty sand	50-60	40-42	9	UNDEFINED
2.50	8.20	32.76	0.04	0.11	0.45	silty sand to sandy silt	40-50	38-40	10	UNDEFINED
2.75	9.02	16.30	0.02	0.13	0.50	silty sand to sandy silt	<40	34-36	5	UNDEFINED
3.00	9.84	26.64	0.19	0.72	0.54	silty sand to sandy silt	<40	36-38	9	UNDEFINED
3.25	10.66	57.30	1.99	3.48	0.59	clayey silt to silty clay	UNDFND	UNDFD	27	3.7
3.50	11.48	131.36	4.55	3.46	0.64	sandy silt to clayey silt	UNDFND	UNDFD	>50	8.7
3.75	12.30	161.78	5.13	3.17	0.68	sandy silt to clayey silt	UNDFND	UNDFD	>50	10.7
4.00	13.12	145.64	5.12	3.51	0.73	sandy silt to clayey silt	UNDFND	UNDFD	>50	9.6
4.25	13.94	157.48	4.70	2.99	0.77	sandy silt to clayey silt	UNDFND	UNDFD	>50	10.4
4.50	14.76	168.90	3.84	2.27	0.79	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
4.75	15.58	175.72	2.14	1.22	0.81	sand to silty sand	80-90	44-46	42	UNDEFINED
00	16.40	153.34	3.09	2.02	0.83	silty sand to sandy silt	80-90	42-44	49	UNDEFINED
.25	17.22	138.22	2.88	2.08	0.85	silty sand to sandy silt	70-80	42-44	44	UNDEFINED
5.50	18.04	161.28	4.35	2.69	0.87	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
5.75	18.86	246.44	3.34	1.36	0.89	sand	>90	44-46	47	UNDEFINED
6.00	19.69	191.42	2.26	1.18	0.92	sand	80-90	44-46	37	UNDEFINED
6.25	20.51	251.50	2.03	0.81	0.94	sand	>90	44-46	48	UNDEFINED
6.50	21.33	248.24	2.08	0.84	0.96	sand	>90	44-46	48	UNDEFINED
6.75	22.15	325.58	2.02	0.62	0.98	gravelly sand to sand	>90	46-48	>50	UNDEFINED
7.00	22.97	353.40	2.65	0.75	1.00	sand	>90	46-48	>50	UNDEFINED
7.25	23.79	240.22	2.55	1.06	1.02	sand	>90	44-46	46	UNDEFINED
7.50	24.61	243.90	2.58	1.06	1.05	sand	>90	44-46	47	UNDEFINED
7.75	25.43	284.58	3.13	1.10	1.07	sand	>90	44-46	>50	UNDEFINED
8.00	26.25	236.18	4.73	2.00	1.09	sand to silty sand	>90	44-46	>50	UNDEFINED
8.25	27.07	179.14	2.11	1.18	1.11	sand to silty sand	80-90	42-44	43	UNDEFINED
8.50	27.89	69.58	1.05	1.51	1.13	silty sand to sandy silt	50-60	38-40	22	UNDEFINED
8.75	28.71	163.44	2.51	1.54	1.15	sand to silty sand	70-80	42-44	39	UNDEFINED
9.00	29.53	186.36	1.83	0.98	1.17	sand	80-90	42-44	36	UNDEFINED
9.25	30.35	189.50	3.55	1.87	1.20	sand to silty sand	80-90	42-44	45	UNDEFINED
9.50	31.17	243.36	4.42	1.82	1.22	sand to silty sand	80-90	44-46	>50	UNDEFINED
9.75	31.99	270.70	3.95	1.46	1.24	sand to silty sand	>90	44-46	>50	UNDEFINED
10.00	32.81	353.90	4.50	1.27	1.26	sand	>90	44-46	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

ote: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT-S4-02

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
10.25	33.63	357.14	5.95	1.67	1.28	sand to silty sand	>90	44-46	>50	UNDEFINED
10.50	34.45	362.00	4.96	1.37	1.30	sand	>90	44-46	>50	UNDEFINED
10.75	35.27	336.14	4.37	1.30	1.33	sand	>90	44-46	>50	UNDEFINED
11.00	36.09	197.80	3.54	1.79	1.35	sand to silty sand	80-90	42-44	47	UNDEFINED
11.25	36.91	77.32	1.92	2.49	1.37	sandy silt to clayey silt	UNDFND	UNDFD	30	5.0
11.50	37.73	90.14	2.59	2.88	1.39	sandy silt to clayey silt	UNDFND	UNDFD	35	5.8
11.75	38.55	138.10	3.94	2.86	1.41	sandy silt to clayey silt	UNDFND	UNDFD	>50	9.0
12.00	39.37	130.76	4.36	3.33	1.43	sandy silt to clayey silt	UNDFND	UNDFD	>50	8.5
12.25	40.19	66.48	0.96	1.44	1.45	silty sand to sandy silt	40-50	36-38	21	UNDEFINED
12.50	41.01	56.18	0.93	1.66	1.48	silty sand to sandy silt	40-50	36-38	18	UNDEFINED
12.75	41.83	52.36	0.97	1.84	1.50	silty sand to sandy silt	40-50	34-36	17	UNDEFINED
13.00	42.65	118.80	4.60	3.87	1.52	clayey silt to silty clay	UNDFND	UNDFD	>50	7.7
13.25	43.47	364.92	4.72	1.29	1.54	sand	>90	44-46	>50	UNDEFINED
13.50	44.29	417.14	0.00	0.00	1.56	undefined	UNDFND	UNDFD	UDF	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT-S4-03
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/01/94 15:40
Cone Used :339
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	159.48	1.08	0.68	0.02	sand	>90	>48	31	UNDEFINED
0.50	1.64	135.58	1.18	0.87	0.07	sand to silty sand	>90	>48	32	UNDEFINED
0.75	2.46	47.00	0.32	0.67	0.12	silty sand to sandy silt	70-80	46-48	15	UNDEFINED
1.00	3.28	12.90	0.12	0.96	0.17	sandy silt to clayey silt	UNDFND	UNDFD	5	.8
1.25	4.10	21.94	0.05	0.22	0.21	silty sand to sandy silt	40-50	40-42	7	UNDEFINED
1.50	4.92	21.38	0.02	0.10	0.26	silty sand to sandy silt	40-50	40-42	7	UNDEFINED
1.75	5.74	20.60	0.03	0.13	0.31	silty sand to sandy silt	<40	38-40	7	UNDEFINED
2.00	6.56	18.26	0.09	0.47	0.35	sandy silt to clayey silt	UNDFND	UNDFD	7	1.1
2.25	7.38	32.76	0.17	0.52	0.40	silty sand to sandy silt	40-50	40-42	10	UNDEFINED
2.50	8.20	35.70	0.53	1.48	0.45	sandy silt to clayey silt	UNDFND	UNDFD	14	2.3
2.75	9.02	106.14	3.66	3.44	0.50	sandy silt to clayey silt	UNDFND	UNDFD	41	7.0
3.00	9.84	108.94	4.47	4.10	0.54	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
3.25	10.66	105.34	3.83	3.63	0.59	sandy silt to clayey silt	UNDFND	UNDFD	40	6.9
3.50	11.48	152.54	6.06	3.97	0.64	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
3.75	12.30	157.46	5.79	3.68	0.68	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
4.00	13.12	186.46	4.85	2.60	0.73	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
4.25	13.94	208.54	4.73	2.27	0.77	silty sand to sandy silt	>90	44-46	>50	UNDEFINED
4.50	14.76	170.38	5.49	3.22	0.79	sandy silt to clayey silt	UNDFND	UNDFD	>50	11.3
4.75	15.58	217.84	3.65	1.67	0.81	sand to silty sand	>90	44-46	>50	UNDEFINED
00	16.40	203.92	2.53	1.24	0.83	sand	80-90	44-46	39	UNDEFINED
..25	17.22	186.50	2.27	1.22	0.85	sand to silty sand	80-90	44-46	45	UNDEFINED
5.50	18.04	189.24	5.04	2.66	0.87	silty sand to sandy silt	80-90	44-46	>50	UNDEFINED
5.75	18.86	206.76	4.07	1.97	0.89	sand to silty sand	80-90	44-46	50	UNDEFINED
6.00	19.69	255.36	2.23	0.87	0.92	sand	>90	44-46	49	UNDEFINED
6.25	20.51	310.16	4.29	1.38	0.94	sand	>90	46-48	>50	UNDEFINED
6.50	21.33	320.56	5.08	1.59	0.96	sand to silty sand	>90	46-48	>50	UNDEFINED
6.75	22.15	367.22	3.35	0.91	0.98	sand	>90	46-48	>50	UNDEFINED
7.00	22.97	361.20	3.76	1.04	1.00	sand	>90	46-48	>50	UNDEFINED
7.25	23.79	296.10	3.77	1.27	1.02	sand	>90	44-46	>50	UNDEFINED
7.50	24.61	230.66	4.17	1.81	1.05	sand to silty sand	80-90	44-46	>50	UNDEFINED
7.75	25.43	197.06	3.82	1.94	1.07	sand to silty sand	80-90	42-44	47	UNDEFINED
8.00	26.25	267.32	5.08	1.90	1.09	sand to silty sand	>90	44-46	>50	UNDEFINED
8.25	27.07	240.08	3.64	1.52	1.11	sand to silty sand	>90	44-46	>50	UNDEFINED
8.50	27.89	235.04	1.78	0.76	1.13	sand	80-90	44-46	45	UNDEFINED
8.75	28.71	192.02	2.23	1.16	1.15	sand	80-90	42-44	37	UNDEFINED
9.00	29.53	201.24	2.62	1.30	1.17	sand to silty sand	80-90	42-44	48	UNDEFINED
9.25	30.35	224.84	2.02	0.90	1.20	sand	80-90	42-44	43	UNDEFINED
9.50	31.17	262.90	2.99	1.14	1.22	sand	>90	44-46	>50	UNDEFINED
9.75	31.99	289.20	3.54	1.23	1.24	sand	>90	44-46	>50	UNDEFINED
10.00	32.81	282.20	5.25	1.86	1.26	sand to silty sand	>90	44-46	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT-S4-03

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr - Dr (%)	PHI (deg.)	SPT N	Su tsf
10.25	33.63	302.56	4.82	1.59	1.28	sand to silty sand	>90	44-46	>50	UNDEFINED
10.50	34.45	345.60	5.78	1.67	1.30	sand to silty sand	>90	44-46	>50	UNDEFINED
10.75	35.27	305.20	3.93	1.29	1.33	sand	>90	44-46	>50	UNDEFINED
11.00	36.09	319.46	4.17	1.31	1.35	sand	>90	44-46	>50	UNDEFINED
11.25	36.91	277.36	4.18	1.51	1.37	sand to silty sand	>90	44-46	>50	UNDEFINED
11.50	37.73	121.96	3.53	2.89	1.39	sandy silt to clayey silt	UNDFND	UNDFD	47	7.9
11.75	38.55	162.84	2.31	1.42	1.41	sand to silty sand	70-80	40-42	39	UNDEFINED
12.00	39.37	155.58	3.48	2.24	1.43	silty sand to sandy silt	70-80	40-42	50	UNDEFINED
12.25	40.19	125.46	1.73	1.38	1.45	sand to silty sand	60-70	40-42	30	UNDEFINED
12.50	41.01	68.94	0.24	0.34	1.48	sand to silty sand	50-60	36-38	17	UNDEFINED
12.75	41.83	86.42	2.89	3.34	1.50	sandy silt to clayey silt	UNDFND	UNDFD	33	5.6
13.00	42.65	214.84	10.54	4.91	1.52	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
13.25	43.47	208.56	10.10	4.85	1.54	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
13.50	44.29	145.44	6.57	4.52	1.56	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
13.75	45.11	301.58	4.37	1.45	1.58	sand to silty sand	>90	42-44	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

(*) overconsolidated or cemented

Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT S5-01
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/08/94 15:30
Cone Used :407
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	294.48	3.19	1.08	0.02	sand	>90	UNDFD	>50	UNDEFINED
0.50	1.64	392.40	3.97	1.01	0.07	sand	>90	>48	>50	UNDEFINED
0.75	2.46	259.80	2.25	0.86	0.12	sand	>90	>48	50	UNDEFINED
1.00	3.28	177.20	1.21	0.69	0.17	sand	>90	>48	34	UNDEFINED
1.25	4.10	110.20	0.59	0.53	0.21	sand	>90	46-48	21	UNDEFINED
1.50	4.92	142.42	0.66	0.46	0.26	sand	>90	>48	27	UNDEFINED
1.75	5.74	122.02	0.64	0.52	0.31	sand	80-90	46-48	23	UNDEFINED
2.00	6.56	81.56	0.28	0.35	0.35	sand to silty sand	70-80	44-46	20	UNDEFINED
2.25	7.38	42.54	0.18	0.43	0.40	sand to silty sand	50-60	40-42	10	UNDEFINED
2.50	8.20	37.28	0.15	0.39	0.45	silty sand to sandy silt	40-50	40-42	12	UNDEFINED
2.75	9.02	33.64	0.11	0.33	0.50	silty sand to sandy silt	40-50	38-40	11	UNDEFINED
3.00	9.84	11.90	0.11	0.88	0.54	sandy silt to clayey silt	UNDFND	UNDFD	5	.7
3.25	10.66	33.62	0.10	0.31	0.59	silty sand to sandy silt	40-50	38-40	11	UNDEFINED
3.50	11.48	52.36	0.29	0.56	0.64	sand to silty sand	50-60	40-42	13	UNDEFINED
3.75	12.30	27.96	0.29	1.03	0.68	silty sand to sandy silt	<40	36-38	9	UNDEFINED
4.00	13.12	13.54	0.18	1.34	0.73	sandy silt to clayey silt	UNDFND	UNDFD	5	.8
4.25	13.94	11.56	0.07	0.62	0.77	sandy silt to clayey silt	UNDFND	UNDFD	4	.7
4.50	14.76	9.82	0.08	0.81	0.79	clayey silt to silty clay	UNDFND	UNDFD	5	.5
4.75	15.58	10.24	0.02	0.17	0.81	sandy silt to clayey silt	UNDFND	UNDFD	4	.6
5.00	16.40	41.24	0.14	0.35	0.83	sand to silty sand	40-50	36-38	10	UNDEFINED
5.25	17.22	42.20	0.19	0.44	0.85	silty sand to sandy silt	40-50	36-38	13	UNDEFINED
5.50	18.04	27.74	0.05	0.17	0.87	silty sand to sandy silt	<40	34-36	9	UNDEFINED
5.75	18.86	23.36	0.05	0.21	0.89	silty sand to sandy silt	<40	32-34	7	UNDEFINED
6.00	19.69	23.40	0.02	0.10	0.92	silty sand to sandy silt	<40	32-34	7	UNDEFINED
6.25	20.51	21.82	0.08	0.37	0.94	silty sand to sandy silt	<40	32-34	7	UNDEFINED
6.50	21.33	9.92	0.04	0.44	0.96	sandy silt to clayey silt	UNDFND	UNDFD	4	.5
6.75	22.15	7.68	0.00	0.05	0.98	sensitive fine grained	UNDFND	UNDFD	4	.4
7.00	22.97	6.66	0.01	0.15	1.00	sensitive fine grained	UNDFND	UNDFD	3	.3
7.25	23.79	6.20	0.01	0.11	1.02	sensitive fine grained	UNDFND	UNDFD	3	.3
7.50	24.61	6.48	0.01	0.15	1.05	sensitive fine grained	UNDFND	UNDFD	3	.3
7.75	25.43	6.76	0.01	0.21	1.07	sensitive fine grained	UNDFND	UNDFD	3	.3
8.00	26.25	9.98	0.03	0.34	1.09	sandy silt to clayey silt	UNDFND	UNDFD	4	.5
8.25	27.07	10.06	0.04	0.41	1.11	sandy silt to clayey silt	UNDFND	UNDFD	4	.5
8.50	27.89	8.80	0.01	0.16	1.13	sensitive fine grained	UNDFND	UNDFD	4	.4
8.75	28.71	11.80	0.01	0.10	1.15	sandy silt to clayey silt	UNDFND	UNDFD	5	.6
9.00	29.53	11.78	0.11	0.90	1.17	sandy silt to clayey silt	UNDFND	UNDFD	5	.6
9.25	30.35	38.22	0.25	0.65	1.20	silty sand to sandy silt	<40	34-36	12	UNDEFINED
9.50	31.17	24.22	0.31	1.29	1.22	sandy silt to clayey silt	UNDFND	UNDFD	9	1.4
9.75	31.99	48.52	0.27	0.55	1.24	sand to silty sand	40-50	36-38	12	UNDEFINED
10.00	32.81	27.76	0.36	1.31	1.26	sandy silt to clayey silt	UNDFND	UNDFD	11	1.7

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

ote: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT S5-01

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr - Dr (%)	PHI (deg.)	SPT N	Su tsf
10.25	33.63	19.16	0.23	1.18	1.28	sandy silt to clayey silt	UNDFND	UNDFD	7	1.1
10.50	34.45	9.34	0.01	0.09	1.30	sensitive fine grained	UNDFND	UNDFD	4	.4
10.75	35.27	8.92	0.01	0.13	1.33	sensitive fine grained	UNDFND	UNDFD	4	.4
11.00	36.09	12.86	0.04	0.35	1.35	sandy silt to clayey silt	UNDFND	UNDFD	5	.7
11.25	36.91	8.68	0.01	0.07	1.37	sensitive fine grained	UNDFND	UNDFD	4	.4
11.50	37.73	8.34	0.01	0.12	1.39	sensitive fine grained	UNDFND	UNDFD	4	.4
11.75	38.55	7.80	0.00	0.06	1.41	sensitive fine grained	UNDFND	UNDFD	4	.3
12.00	39.37	8.40	0.01	0.07	1.43	sensitive fine grained	UNDFND	UNDFD	4	.4
12.25	40.19	10.72	0.01	0.10	1.45	sandy silt to clayey silt	UNDFND	UNDFD	4	.5
12.50	41.01	41.90	0.10	0.25	1.48	sand to silty sand	<40	34-36	10	UNDEFINED
12.75	41.83	60.30	0.25	0.41	1.50	sand to silty sand	40-50	36-38	14	UNDEFINED
13.00	42.65	37.42	0.24	0.63	1.52	silty sand to sandy silt	<40	32-34	12	UNDEFINED
13.25	43.47	18.82	0.38	2.00	1.54	clayey silt to silty clay	UNDFND	UNDFD	9	1.0

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT S5-02
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/09/94 8:15
Cone Used :407
Water table (meters) : 4

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	169.80	2.03	1.20	0.02	sand to silty sand	>90	>48	41	UNDEFINED
0.50	1.64	537.48	5.28	0.98	0.07	sand	>90	>48	>50	UNDEFINED
0.75	2.46	466.60	4.85	1.04	0.12	sand	>90	>48	>50	UNDEFINED
1.00	3.28	340.00	3.16	0.93	0.17	sand	>90	>48	>50	UNDEFINED
1.25	4.10	184.00	1.58	0.86	0.21	sand	>90	>48	35	UNDEFINED
1.50	4.92	34.14	0.37	1.09	0.26	silty sand to sandy silt	50-60	42-44	11	UNDEFINED
1.75	5.74	108.46	1.18	1.09	0.31	sand to silty sand	80-90	46-48	26	UNDEFINED
2.00	6.56	200.66	1.46	0.73	0.35	sand	>90	>48	38	UNDEFINED
2.25	7.38	118.82	1.01	0.85	0.40	sand to silty sand	80-90	44-46	28	UNDEFINED
2.50	8.20	114.78	0.76	0.66	0.45	sand to silty sand	80-90	44-46	27	UNDEFINED
2.75	9.02	51.58	0.41	0.80	0.50	silty sand to sandy silt	50-60	40-42	16	UNDEFINED
3.00	9.84	12.98	0.27	2.10	0.54	clayey silt to silty clay	UNDFND	UNDFD	6	.8
3.25	10.66	2.48	0.07	2.89	0.59	clay	UNDFND	UNDFD	2	.1
3.50	11.48	2.44	0.09	3.63	0.64	clay	UNDFND	UNDFD	2	.1
3.75	12.30	31.96	0.26	0.81	0.68	silty sand to sandy silt	<40	36-38	10	UNDEFINED
4.00	13.12	54.14	0.37	0.68	0.73	sand to silty sand	50-60	38-40	13	UNDEFINED
4.25	13.94	39.62	0.46	1.17	0.77	silty sand to sandy silt	40-50	36-38	13	UNDEFINED
4.50	14.76	10.02	0.31	3.09	0.79	silty clay to clay	UNDFND	UNDFD	6	.6
4.75	15.58	6.14	0.20	3.24	0.81	clay	UNDFND	UNDFD	6	.3
5.00	16.40	4.30	0.11	2.53	0.83	clay	UNDFND	UNDFD	4	.2
5.25	17.22	4.06	0.11	2.70	0.85	clay	UNDFND	UNDFD	4	.2
5.50	18.04	30.88	0.22	0.70	0.87	silty sand to sandy silt	<40	34-36	10	UNDEFINED
5.75	18.86	39.82	0.30	0.74	0.89	silty sand to sandy silt	40-50	36-38	13	UNDEFINED
6.00	19.69	25.42	0.20	0.79	0.92	silty sand to sandy silt	<40	34-36	8	UNDEFINED
6.25	20.51	15.94	0.20	1.28	0.94	sandy silt to clayey silt	UNDFND	UNDFD	6	.9
6.50	21.33	8.74	0.12	1.42	0.96	clayey silt to silty clay	UNDFND	UNDFD	4	.5
6.75	22.15	8.44	0.11	1.32	0.98	clayey silt to silty clay	UNDFND	UNDFD	4	.4
7.00	22.97	8.38	0.15	1.83	1.00	clayey silt to silty clay	UNDFND	UNDFD	4	.4
7.25	23.79	6.98	0.12	1.66	1.02	silty clay to clay	UNDFND	UNDFD	4	.3
7.50	24.61	6.40	0.11	1.77	1.05	silty clay to clay	UNDFND	UNDFD	4	.3
7.75	25.43	5.08	0.12	2.32	1.07	clay	UNDFND	UNDFD	5	.2
8.00	26.25	4.84	0.11	2.21	1.09	undefined	UNDFND	UNDFD	UDF	UNDEFINED
8.25	27.07	5.02	0.11	2.18	1.11	silty clay to clay	UNDFND	UNDFD	3	.2
8.50	27.89	5.50	0.13	2.31	1.13	silty clay to clay	UNDFND	UNDFD	4	.2
8.75	28.71	5.24	0.11	2.01	1.15	silty clay to clay	UNDFND	UNDFD	3	.2
9.00	29.53	5.32	0.10	1.92	1.17	silty clay to clay	UNDFND	UNDFD	3	.2
9.25	30.35	5.38	0.11	1.99	1.20	silty clay to clay	UNDFND	UNDFD	3	.2
9.50	31.17	5.66	0.11	1.94	1.22	silty clay to clay	UNDFND	UNDFD	4	.2
9.75	31.99	5.72	0.10	1.79	1.24	silty clay to clay	UNDFND	UNDFD	4	.2
10.00	32.81	5.74	0.10	1.72	1.26	silty clay to clay	UNDFND	UNDFD	4	.2

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT S5-02

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr - Dr (%)	PHI (deg.)	SPT N	Su tsf
10.25	33.63	5.94	0.10	1.69	1.28	silty clay to clay	UNDFND	UNDFD	4	.2
10.50	34.45	6.38	0.10	1.60	1.30	sensitive fine grained	UNDFND	UNDFD	3	.2
10.75	35.27	6.04	0.10	1.66	1.33	silty clay to clay	UNDFND	UNDFD	4	.2
11.00	36.09	6.00	0.10	1.65	1.35	silty clay to clay	UNDFND	UNDFD	4	.2
11.25	36.91	6.22	0.10	1.65	1.37	silty clay to clay	UNDFND	UNDFD	4	.2
11.50	37.73	6.28	0.10	1.66	1.39	silty clay to clay	UNDFND	UNDFD	4	.2
11.75	38.55	20.36	0.32	1.59	1.41	sandy silt to clayey silt	UNDFND	UNDFD	8	1.2
12.00	39.37	7.02	0.12	1.71	1.43	silty clay to clay	UNDFND	UNDFD	4	.3
12.25	40.19	7.02	0.13	1.85	1.45	silty clay to clay	UNDFND	UNDFD	4	.3
12.50	41.01	6.92	0.12	1.74	1.48	silty clay to clay	UNDFND	UNDFD	4	.3
12.75	41.83	6.68	0.11	1.65	1.50	silty clay to clay	UNDFND	UNDFD	4	.2
13.00	42.65	8.28	0.10	1.27	1.52	clayey silt to silty clay	UNDFND	UNDFD	4	.3
13.25	43.47	8.98	0.12	1.38	1.54	clayey silt to silty clay	UNDFND	UNDFD	4	.4
13.50	44.29	7.08	0.10	1.47	1.56	clayey silt to silty clay	UNDFND	UNDFD	3	.3
13.75	45.11	6.94	0.10	1.49	1.58	undefined	UNDFND	UNDFD	UDF	UNDEFINED
14.00	45.93	8.74	0.08	0.95	1.61	clayey silt to silty clay	UNDFND	UNDFD	4	.4
14.25	46.75	16.64	0.27	1.62	1.63	sandy silt to clayey silt	UNDFND	UNDFD	6	.9
14.50	47.57	9.48	0.19	2.02	1.65	clayey silt to silty clay	UNDFND	UNDFD	5	.4
14.75	48.39	7.76	0.15	1.95	1.67	silty clay to clay	UNDFND	UNDFD	5	.3
15.00	49.21	7.90	0.14	1.81	1.69	silty clay to clay	UNDFND	UNDFD	5	.3
15.25	50.03	7.78	0.14	1.84	1.71	silty clay to clay	UNDFND	UNDFD	5	.3
50	50.85	7.76	0.15	1.89	1.74	silty clay to clay	UNDFND	UNDFD	5	.3
15.75	51.67	7.88	0.15	1.91	1.76	silty clay to clay	UNDFND	UNDFD	5	.3
16.00	52.49	8.14	0.14	1.78	1.78	clayey silt to silty clay	UNDFND	UNDFD	4	.3
16.25	53.31	8.06	0.15	1.83	1.80	clayey silt to silty clay	UNDFND	UNDFD	4	.3
16.50	54.13	8.02	0.14	1.81	1.82	clayey silt to silty clay	UNDFND	UNDFD	4	.3
16.75	54.95	8.00	0.13	1.69	1.84	clayey silt to silty clay	UNDFND	UNDFD	4	.3
17.00	55.77	8.36	0.15	1.78	1.86	clayey silt to silty clay	UNDFND	UNDFD	4	.3
17.25	56.59	8.16	0.15	1.89	1.89	silty clay to clay	UNDFND	UNDFD	5	.3
17.50	57.41	8.56	0.17	2.04	1.91	silty clay to clay	UNDFND	UNDFD	5	.3
17.75	58.23	8.76	0.18	2.02	1.93	silty clay to clay	UNDFND	UNDFD	6	.3
18.00	59.06	10.38	0.24	2.32	1.95	clayey silt to silty clay	UNDFND	UNDFD	5	.4
18.25	59.88	10.42	0.27	2.56	1.97	silty clay to clay	UNDFND	UNDFD	7	.4
18.50	60.70	15.44	0.22	1.40	1.99	sandy silt to clayey silt	UNDFND	UNDFD	6	.7
18.75	61.52	28.06	0.28	1.01	2.02	silty sand to sandy silt	<40	<30	9	UNDEFINED
19.00	62.34	49.22	0.32	0.65	2.04	silty sand to sandy silt	<40	32-34	16	UNDEFINED
19.25	63.16	70.96	0.37	0.52	2.06	sand to silty sand	40-50	34-36	17	UNDEFINED
19.50	63.98	78.02	0.36	0.46	2.08	sand to silty sand	40-50	36-38	19	UNDEFINED
19.75	64.80	84.74	0.61	0.72	2.10	sand to silty sand	50-60	36-38	20	UNDEFINED
20.00	65.62	69.08	0.74	1.07	2.12	silty sand to sandy silt	40-50	34-36	22	UNDEFINED
20.25	66.44	83.30	2.72	3.27	2.14	sandy silt to clayey silt	UNDFND	UNDFD	32	5.3

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT S5-03
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/09/94 10:00
Cone Used :407
Water table (meters) : 4

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	176.82	1.42	0.80	0.02	sand	>90	>48	34	UNDEFINED
0.50	1.64	184.20	1.94	1.05	0.07	sand	>90	>48	35	UNDEFINED
0.75	2.46	179.74	1.10	0.61	0.12	sand	>90	>48	34	UNDEFINED
1.00	3.28	141.44	0.85	0.60	0.17	sand	>90	>48	27	UNDEFINED
1.25	4.10	111.46	0.90	0.81	0.21	sand to silty sand	>90	46-48	27	UNDEFINED
1.50	4.92	72.16	0.45	0.63	0.26	sand to silty sand	70-80	44-46	17	UNDEFINED
1.75	5.74	53.28	0.30	0.56	0.31	sand to silty sand	60-70	42-44	13	UNDEFINED
2.00	6.56	101.16	0.61	0.60	0.35	sand to silty sand	80-90	44-46	24	UNDEFINED
2.25	7.38	173.24	0.90	0.52	0.40	sand	>90	46-48	33	UNDEFINED
2.50	8.20	143.16	0.69	0.48	0.45	sand	80-90	44-46	27	UNDEFINED
2.75	9.02	32.98	0.33	0.99	0.50	silty sand to sandy silt	40-50	38-40	11	UNDEFINED
3.00	9.84	14.80	0.12	0.82	0.54	sandy silt to clayey silt	UNDFND	UNDFD	6	.9
3.25	10.66	66.28	0.26	0.40	0.59	sand to silty sand	60-70	40-42	16	UNDEFINED
3.50	11.48	35.50	0.36	0.42	0.64	sand to silty sand	60-70	42-44	20	UNDEFINED
3.75	12.30	36.36	0.34	0.39	0.68	sand to silty sand	60-70	42-44	21	UNDEFINED
4.00	13.12	83.18	0.36	0.44	0.73	sand to silty sand	60-70	40-42	20	UNDEFINED
4.25	13.94	56.76	0.41	0.73	0.77	sand to silty sand	50-60	38-40	14	UNDEFINED
4.50	14.76	10.26	0.25	2.46	0.79	silty clay to clay	UNDFND	UNDFD	7	.6
4.75	15.58	8.08	0.12	1.47	0.81	clayey silt to silty clay	UNDFND	UNDFD	4	.4
5.00	16.40	5.82	0.04	0.66	0.83	sensitive fine grained	UNDFND	UNDFD	3	.3
5.25	17.22	4.54	0.04	0.83	0.85	sensitive fine grained	UNDFND	UNDFD	2	.2
5.50	18.04	15.40	0.06	0.37	0.87	sandy silt to clayey silt	UNDFND	UNDFD	6	.9
5.75	18.86	45.64	0.17	0.37	0.89	sand to silty sand	40-50	36-38	11	UNDEFINED
6.00	19.69	35.76	0.11	0.31	0.92	silty sand to sandy silt	<40	36-38	11	UNDEFINED
6.25	20.51	23.46	0.16	0.67	0.94	silty sand to sandy silt	<40	32-34	7	UNDEFINED
6.50	21.33	15.68	0.09	0.54	0.96	sandy silt to clayey silt	UNDFND	UNDFD	6	.9
6.75	22.15	10.06	0.05	0.47	0.98	sandy silt to clayey silt	UNDFND	UNDFD	4	.5
7.00	22.97	6.78	0.03	0.43	1.00	sensitive fine grained	UNDFND	UNDFD	3	.3
7.25	23.79	6.92	0.04	0.51	1.02	sensitive fine grained	UNDFND	UNDFD	3	.3
7.50	24.61	6.16	0.02	0.28	1.05	sensitive fine grained	UNDFND	UNDFD	3	.3
7.75	25.43	6.10	0.01	0.24	1.07	sensitive fine grained	UNDFND	UNDFD	3	.3
8.00	26.25	6.18	0.01	0.19	1.09	sensitive fine grained	UNDFND	UNDFD	3	.3
8.25	27.07	6.34	0.02	0.24	1.11	sensitive fine grained	UNDFND	UNDFD	3	.3
8.50	27.89	7.02	0.03	0.48	1.13	sensitive fine grained	UNDFND	UNDFD	3	.3
8.75	28.71	6.36	0.00	0.05	1.15	sensitive fine grained	UNDFND	UNDFD	3	.3
9.00	29.53	6.58	0.01	0.21	1.17	sensitive fine grained	UNDFND	UNDFD	3	.3
9.25	30.35	6.80	0.01	0.12	1.20	sensitive fine grained	UNDFND	UNDFD	3	.3
9.50	31.17	6.52	0.01	0.19	1.22	sensitive fine grained	UNDFND	UNDFD	3	.3
9.75	31.99	6.76	0.01	0.12	1.24	sensitive fine grained	UNDFND	UNDFD	3	.3
10.00	32.81	6.68	0.01	0.14	1.26	sensitive fine grained	UNDFND	UNDFD	3	.3

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT S5-03

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr - Dr (%)	PHI deg.	SPT N	Su tsf
10.25	33.63	6.78	0.02	0.24	1.28	sensitive fine grained	UNDFND	UNDFD	3	.3
10.50	34.45	6.92	0.02	0.31	1.30	sensitive fine grained	UNDFND	UNDFD	3	.3
10.75	35.27	6.80	0.02	0.31	1.33	sensitive fine grained	UNDFND	UNDFD	3	.3
11.00	36.09	6.64	0.03	0.50	1.35	sensitive fine grained	UNDFND	UNDFD	3	.3
11.25	36.91	10.22	0.08	0.76	1.37	sandy silt to clayey silt	UNDFND	UNDFD	4	.5
11.50	37.73	7.24	0.04	0.59	1.39	sensitive fine grained	UNDFND	UNDFD	3	.3
11.75	38.55	7.16	0.04	0.61	1.41	sensitive fine grained	UNDFND	UNDFD	3	.3
12.00	39.37	6.52	0.04	0.56	1.43	sensitive fine grained	UNDFND	UNDFD	3	.2
12.25	40.19	6.32	0.03	0.49	1.45	sensitive fine grained	UNDFND	UNDFD	3	.2
12.50	41.01	6.40	0.02	0.31	1.48	sensitive fine grained	UNDFND	UNDFD	3	.2
12.75	41.83	7.22	0.04	0.61	1.50	sensitive fine grained	UNDFND	UNDFD	3	.3
13.00	42.65	7.20	0.05	0.71	1.52	sensitive fine grained	UNDFND	UNDFD	3	.3
13.25	43.47	7.04	0.05	0.74	1.54	sensitive fine grained	UNDFND	UNDFD	3	.3
13.50	44.29	7.18	0.06	0.77	1.56	sensitive fine grained	UNDFND	UNDFD	3	.3
13.75	45.11	7.32	0.06	0.78	1.58	sensitive fine grained	UNDFND	UNDFD	4	.3
14.00	45.93	7.92	0.05	0.58	1.61	sensitive fine grained	UNDFND	UNDFD	4	.3
14.25	46.75	7.84	0.06	0.75	1.63	sensitive fine grained	UNDFND	UNDFD	4	.3
14.50	47.57	8.18	0.04	0.55	1.65	sensitive fine grained	UNDFND	UNDFD	4	.3
14.75	48.39	9.06	0.02	0.17	1.67	sensitive fine grained	UNDFND	UNDFD	4	.4
15.00	49.21	10.10	0.02	0.18	1.69	sensitive fine grained	UNDFND	UNDFD	5	.4
15.25	50.03	10.02	0.01	0.14	1.71	sensitive fine grained	UNDFND	UNDFD	5	.4
15.50	50.85	14.64	0.12	0.83	1.74	sandy silt to clayey silt	UNDFND	UNDFD	6	.7
15.75	51.67	23.08	0.12	0.53	1.76	silty sand to sandy silt	<40	<30	7	UNDEFINED
16.00	52.49	14.66	0.05	0.33	1.78	sandy silt to clayey silt	UNDFND	UNDFD	6	.7
16.25	53.31	17.82	0.13	0.73	1.80	sandy silt to clayey silt	UNDFND	UNDFD	7	.9
16.50	54.13	14.50	0.16	1.09	1.82	sandy silt to clayey silt	UNDFND	UNDFD	6	.7
16.75	54.95	23.04	0.16	0.68	1.84	silty sand to sandy silt	<40	<30	7	UNDEFINED
17.00	55.77	40.96	1.06	2.58	1.86	sandy silt to clayey silt	UNDFND	UNDFD	16	2.5

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT S5-04
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/08/94 7:45
Cone Used :407
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	231.06	1.40	0.60	0.02	sand	>90	>48	44	UNDEFINED
0.50	1.64	227.68	2.58	1.13	0.07	sand	>90	>48	44	UNDEFINED
0.75	2.46	201.62	1.86	0.92	0.12	sand	>90	>48	39	UNDEFINED
1.00	3.28	167.08	1.33	0.80	0.17	sand	>90	>48	32	UNDEFINED
1.25	4.10	124.90	0.98	0.78	0.21	sand to silty sand	>90	>48	30	UNDEFINED
1.50	4.92	91.88	0.71	0.77	0.26	sand to silty sand	80-90	46-48	22	UNDEFINED
1.75	5.74	66.16	0.49	0.73	0.31	sand to silty sand	70-80	44-46	16	UNDEFINED
2.00	6.56	45.32	0.33	0.74	0.35	silty sand to sandy silt	50-60	42-44	14	UNDEFINED
2.25	7.38	26.58	0.25	0.94	0.40	silty sand to sandy silt	40-50	38-40	8	UNDEFINED
2.50	8.20	20.38	0.24	1.17	0.45	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
2.75	9.02	28.64	0.27	0.96	0.50	silty sand to sandy silt	40-50	38-40	9	UNDEFINED
3.00	9.84	31.98	0.29	0.89	0.54	silty sand to sandy silt	40-50	38-40	10	UNDEFINED
3.25	10.66	58.92	0.47	0.80	0.59	sand to silty sand	50-60	40-42	14	UNDEFINED
3.50	11.48	74.40	0.66	0.88	0.64	sand to silty sand	60-70	40-42	18	UNDEFINED
3.75	12.30	9.20	0.30	3.25	0.68	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.00	13.12	5.42	0.18	3.26	0.73	clay	UNDFND	UNDFD	5	.3
4.25	13.94	4.74	0.14	3.04	0.77	clay	UNDFND	UNDFD	5	.2
4.50	14.76	33.30	0.27	0.82	0.79	silty sand to sandy silt	<40	36-38	11	UNDEFINED
4.75	15.58	36.86	0.34	0.92	0.81	silty sand to sandy silt	40-50	36-38	12	UNDEFINED
5.00	16.40	20.94	0.32	1.54	0.83	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
5.25	17.22	7.68	0.15	2.01	0.85	silty clay to clay	UNDFND	UNDFD	5	.4
5.50	18.04	5.94	0.13	2.11	0.87	silty clay to clay	UNDFND	UNDFD	4	.3
5.75	18.86	4.92	0.11	2.26	0.89	clay	UNDFND	UNDFD	5	.2
6.00	19.69	4.00	0.11	2.71	0.92	clay	UNDFND	UNDFD	4	.1
6.25	20.51	30.44	0.40	1.30	0.94	sandy silt to clayey silt	UNDFND	UNDFD	12	1.9
6.50	21.33	25.48	0.40	1.59	0.96	sandy silt to clayey silt	UNDFND	UNDFD	10	1.6
6.75	22.15	73.80	0.62	0.84	0.98	sand to silty sand	50-60	38-40	18	UNDEFINED
7.00	22.97	32.10	0.61	1.91	1.00	sandy silt to clayey silt	UNDFND	UNDFD	12	2.0
7.25	23.79	15.72	0.45	2.87	1.02	clayey silt to silty clay	UNDFND	UNDFD	8	.9
7.50	24.61	67.36	0.70	1.04	1.05	silty sand to sandy silt	50-60	38-40	22	UNDEFINED
7.75	25.43	106.70	0.78	0.73	1.07	sand to silty sand	60-70	40-42	26	UNDEFINED
8.00	26.25	93.58	0.74	0.79	1.09	sand to silty sand	60-70	40-42	22	UNDEFINED
8.25	27.07	88.04	0.84	0.95	1.11	sand to silty sand	60-70	40-42	21	UNDEFINED
8.50	27.89	60.62	0.79	1.30	1.13	silty sand to sandy silt	50-60	36-38	19	UNDEFINED
8.75	28.71	47.50	0.65	1.36	1.15	silty sand to sandy silt	40-50	36-38	15	UNDEFINED
9.00	29.53	69.28	0.76	1.10	1.17	silty sand to sandy silt	50-60	38-40	22	UNDEFINED
9.25	30.35	60.82	0.84	1.39	1.20	silty sand to sandy silt	40-50	36-38	19	UNDEFINED
9.50	31.17	36.14	0.69	1.91	1.22	sandy silt to clayey silt	UNDFND	UNDFD	14	2.2
9.75	31.99	53.92	0.59	1.09	1.24	silty sand to sandy silt	40-50	36-38	17	UNDEFINED
10.00	32.81	46.10	0.66	1.42	1.26	silty sand to sandy silt	40-50	36-38	15	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT S5-04

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
10.25	33.63	43.68	0.71	1.62	1.28	silty sand to sandy silt	<40	34-36	14	UNDEFINED
10.50	34.45	35.66	0.62	1.73	1.30	sandy silt to clayey silt	UNDFND	UNDFD	14	2.2
10.75	35.27	18.10	0.44	2.44	1.33	clayey silt to silty clay	UNDFND	UNDFD	9	1.0
11.00	36.09	28.06	0.86	3.07	1.35	clayey silt to silty clay	UNDFND	UNDFD	13	1.7
11.25	36.91	30.60	0.85	2.79	1.37	clayey silt to silty clay	UNDFND	UNDFD	15	1.9
11.50	37.73	26.92	0.58	2.16	1.39	sandy silt to clayey silt	UNDFND	UNDFD	10	1.6
11.75	38.55	28.92	0.55	1.89	1.41	sandy silt to clayey silt	UNDFND	UNDFD	11	1.7
12.00	39.37	34.78	0.54	1.54	1.43	sandy silt to clayey silt	UNDFND	UNDFD	13	2.1
12.25	40.19	42.66	0.70	1.64	1.45	silty sand to sandy silt	<40	34-36	14	UNDEFINED
12.50	41.01	57.60	1.34	2.32	1.48	sandy silt to clayey silt	UNDFND	UNDFD	22	3.6
12.75	41.83	57.86	2.07	3.57	1.50	clayey silt to silty clay	UNDFND	UNDFD	28	3.6
13.00	42.65	61.18	1.30	2.12	1.52	sandy silt to clayey silt	UNDFND	UNDFD	23	3.9
13.25	43.47	179.24	1.21	0.68	1.54	sand	70-80	40-42	34	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT S5-05
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/08/94 8:15
Cone Used :407
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	39.72	0.04	0.13	0.02	silty sand to sandy silt	80-90	>48	9	UNDEFINED
0.50	1.64	32.08	0.14	0.44	0.07	silty sand to sandy silt	70-80	46-48	10	UNDEFINED
0.75	2.46	63.80	0.43	0.67	0.12	sand to silty sand	80-90	>48	15	UNDEFINED
1.00	3.28	77.82	0.42	0.54	0.17	sand to silty sand	80-90	46-48	19	UNDEFINED
1.25	4.10	75.14	0.60	0.80	0.21	sand to silty sand	80-90	46-48	18	UNDEFINED
1.50	4.92	84.36	0.31	0.37	0.26	sand to silty sand	80-90	46-48	20	UNDEFINED
1.75	5.74	64.62	0.27	0.42	0.31	sand to silty sand	70-80	44-46	15	UNDEFINED
2.00	6.56	60.50	0.25	0.41	0.35	sand to silty sand	60-70	42-44	14	UNDEFINED
2.25	7.38	43.88	0.29	0.65	0.40	silty sand to sandy silt	50-60	40-42	14	UNDEFINED
2.50	8.20	28.44	0.24	0.83	0.45	silty sand to sandy silt	40-50	38-40	9	UNDEFINED
2.75	9.02	9.36	0.06	0.69	0.50	clayey silt to silty clay	UNDFND	UNDFD	4	.5
3.00	9.84	21.52	0.17	0.81	0.54	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
3.25	10.66	8.48	0.09	1.10	0.59	clayey silt to silty clay	UNDFND	UNDFD	4	.5
3.50	11.48	7.96	0.02	0.25	0.64	sensitive fine grained	UNDFND	UNDFD	4	.4
3.75	12.30	23.28	0.10	0.41	0.68	silty sand to sandy silt	<40	34-36	7	UNDEFINED
4.00	13.12	35.56	0.18	0.49	0.73	silty sand to sandy silt	40-50	36-38	11	UNDEFINED
4.25	13.94	21.66	0.08	0.38	0.77	silty sand to sandy silt	<40	34-36	7	UNDEFINED
4.50	14.76	14.22	0.02	0.12	0.79	sandy silt to clayey silt	UNDFND	UNDFD	5	.8
4.75	15.58	8.26	0.01	0.16	0.81	sensitive fine grained	UNDFND	UNDFD	4	.4
5.00	16.40	31.98	0.27	0.85	0.83	silty sand to sandy silt	<40	36-38	10	UNDEFINED
5.25	17.22	126.80	0.75	0.59	0.85	sand	70-80	42-44	24	UNDEFINED
5.50	18.04	88.20	0.76	0.87	0.87	sand to silty sand	60-70	40-42	21	UNDEFINED
5.75	18.86	175.32	0.92	0.52	0.89	sand	80-90	42-44	34	UNDEFINED
6.00	19.69	168.70	0.85	0.51	0.92	sand	80-90	42-44	32	UNDEFINED
6.25	20.51	86.94	0.69	0.79	0.94	sand to silty sand	60-70	40-42	21	UNDEFINED
6.50	21.33	105.36	0.67	0.64	0.96	sand to silty sand	60-70	40-42	25	UNDEFINED
6.75	22.15	46.56	0.47	1.01	0.98	silty sand to sandy silt	40-50	36-38	15	UNDEFINED
7.00	22.97	25.52	0.31	1.20	1.00	sandy silt to clayey silt	UNDFND	UNDFD	10	1.6
7.25	23.79	45.46	0.63	1.39	1.02	silty sand to sandy silt	40-50	36-38	15	UNDEFINED
7.50	24.61	69.46	0.61	0.88	1.05	sand to silty sand	50-60	38-40	17	UNDEFINED
7.75	25.43	29.72	0.31	1.06	1.07	silty sand to sandy silt	<40	34-36	9	UNDEFINED
8.00	26.25	10.74	0.22	2.01	1.09	clayey silt to silty clay	UNDFND	UNDFD	5	.6
8.25	27.07	8.92	0.04	0.48	1.11	sensitive fine grained	UNDFND	UNDFD	4	.4
8.50	27.89	11.02	0.06	0.58	1.13	sandy silt to clayey silt	UNDFND	UNDFD	4	.6
8.75	28.71	22.82	0.17	0.76	1.15	sandy silt to clayey silt	UNDFND	UNDFD	9	1.4
9.00	29.53	36.00	0.26	0.73	1.17	silty sand to sandy silt	<40	34-36	11	UNDEFINED
9.25	30.35	42.60	1.52	3.56	1.20	clayey silt to silty clay	UNDFND	UNDFD	20	2.7
9.50	31.17	57.76	2.22	3.85	1.22	clayey silt to silty clay	UNDFND	UNDFD	28	3.7
9.75	31.99	42.52	0.73	1.72	1.24	silty sand to sandy silt	<40	34-36	14	UNDEFINED
10.00	32.81	31.94	0.29	0.90	1.26	silty sand to sandy silt	<40	32-34	10	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT S5-05

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr - Dr (%)	PHI deg.	SPT N	Su tsf
10.25	33.63	32.34	0.27	0.83	1.28	silty sand to sandy silt	<40	32-34	10	UNDEFINED
10.50	34.45	36.94	0.36	0.98	1.30	silty sand to sandy silt	<40	34-36	12	UNDEFINED
10.75	35.27	28.98	0.19	0.66	1.33	silty sand to sandy silt	<40	32-34	9	UNDEFINED
11.00	36.09	26.66	0.22	0.83	1.35	silty sand to sandy silt	<40	30-32	9	UNDEFINED
11.25	36.91	25.58	0.20	0.77	1.37	silty sand to sandy silt	<40	30-32	8	UNDEFINED
11.50	37.73	29.08	0.29	1.01	1.39	silty sand to sandy silt	<40	32-34	9	UNDEFINED
11.75	38.55	34.80	0.57	1.65	1.41	sandy silt to clayey silt	UNDFND	UNDFD	13	2.1
12.00	39.37	52.94	1.36	2.57	1.43	sandy silt to clayey silt	UNDFND	UNDFD	20	3.3
12.25	40.19	107.06	2.34	2.19	1.45	silty sand to sandy silt	60-70	38-40	34	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT S5-06
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/08/94 12:30
Cone Used :407
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	272.28	4.07	1.49	0.02	sand to silty sand	>90	UNDFD	>50	UNDEFINED
0.50	1.64	252.50	2.24	0.89	0.07	sand	>90	>48	48	UNDEFINED
0.75	2.46	223.56	1.48	0.66	0.12	sand	>90	>48	43	UNDEFINED
1.00	3.28	169.42	1.27	0.75	0.17	sand	>90	>48	32	UNDEFINED
1.25	4.10	67.70	0.42	0.63	0.21	sand to silty sand	70-80	44-46	16	UNDEFINED
1.50	4.92	101.96	0.42	0.41	0.26	sand	80-90	46-48	20	UNDEFINED
1.75	5.74	92.68	0.40	0.43	0.31	sand to silty sand	80-90	44-46	22	UNDEFINED
2.00	6.56	86.80	0.37	0.43	0.35	sand to silty sand	70-80	44-46	21	UNDEFINED
2.25	7.38	79.90	0.37	0.46	0.40	sand to silty sand	70-80	44-46	19	UNDEFINED
2.50	8.20	66.76	0.32	0.47	0.45	sand to silty sand	60-70	42-44	16	UNDEFINED
2.75	9.02	56.68	0.24	0.43	0.50	sand to silty sand	60-70	40-42	14	UNDEFINED
3.00	9.84	44.02	0.21	0.47	0.54	sand to silty sand	50-60	40-42	11	UNDEFINED
3.25	10.66	53.42	0.24	0.46	0.59	sand to silty sand	50-60	40-42	13	UNDEFINED
3.50	11.48	59.06	0.29	0.50	0.64	sand to silty sand	50-60	40-42	14	UNDEFINED
3.75	12.30	49.22	0.25	0.52	0.68	sand to silty sand	50-60	38-40	12	UNDEFINED
4.00	13.12	28.76	0.25	0.88	0.73	silty sand to sandy silt	<40	36-38	9	UNDEFINED
4.25	13.94	5.42	0.04	0.76	0.77	sensitive fine grained	UNDFND	UNDFD	3	.3
4.50	14.76	14.44	0.22	1.55	0.79	clayey silt to silty clay	UNDFND	UNDFD	7	.9
4.75	15.58	5.60	0.07	1.30	0.81	sensitive fine grained	UNDFND	UNDFD	3	.3
5.00	16.40	27.36	0.15	0.55	0.83	silty sand to sandy silt	<40	34-36	9	UNDEFINED
5.25	17.22	39.70	0.31	0.78	0.85	silty sand to sandy silt	40-50	36-38	13	UNDEFINED
5.50	18.04	29.96	0.13	0.43	0.87	silty sand to sandy silt	<40	34-36	10	UNDEFINED
5.75	18.86	24.64	0.11	0.43	0.89	silty sand to sandy silt	<40	34-36	8	UNDEFINED
6.00	19.69	21.80	0.12	0.54	0.92	silty sand to sandy silt	<40	32-34	7	UNDEFINED
6.25	20.51	13.98	0.08	0.57	0.94	sandy silt to clayey silt	UNDFND	UNDFD	5	.8
6.50	21.33	13.22	0.08	0.61	0.96	sandy silt to clayey silt	UNDFND	UNDFD	5	.8
6.75	22.15	10.26	0.04	0.35	0.98	sandy silt to clayey silt	UNDFND	UNDFD	4	.6
7.00	22.97	7.10	0.01	0.21	1.00	sensitive fine grained	UNDFND	UNDFD	3	.3
7.25	23.79	16.84	0.19	1.14	1.02	sandy silt to clayey silt	UNDFND	UNDFD	6	1.0
7.50	24.61	6.26	0.05	0.73	1.05	sensitive fine grained	UNDFND	UNDFD	3	.3
7.75	25.43	6.72	0.08	1.12	1.07	sensitive fine grained	UNDFND	UNDFD	3	.3
8.00	26.25	6.74	0.08	1.21	1.09	sensitive fine grained	UNDFND	UNDFD	3	.3
8.25	27.07	6.58	0.07	1.13	1.11	sensitive fine grained	UNDFND	UNDFD	3	.3
8.50	27.89	6.44	0.08	1.23	1.13	sensitive fine grained	UNDFND	UNDFD	3	.3
8.75	28.71	6.68	0.08	1.24	1.15	sensitive fine grained	UNDFND	UNDFD	3	.3
9.00	29.53	6.76	0.09	1.37	1.17	sensitive fine grained	UNDFND	UNDFD	3	.3
9.25	30.35	6.46	0.08	1.19	1.20	sensitive fine grained	UNDFND	UNDFD	3	.3
9.50	31.17	5.94	0.06	1.02	1.22	sensitive fine grained	UNDFND	UNDFD	3	.2
9.75	31.99	6.10	0.06	0.94	1.24	sensitive fine grained	UNDFND	UNDFD	3	.2
10.00	32.81	6.42	0.06	0.89	1.26	sensitive fine grained	UNDFND	UNDFD	3	.3

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT S5-06

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
10.25	33.63	6.54	0.06	0.99	1.28	sensitive fine grained	UNDFND	UNDFD	3	.3
10.50	34.45	6.54	0.07	1.11	1.30	sensitive fine grained	UNDFND	UNDFD	3	.3
10.75	35.27	6.18	0.02	0.38	1.33	sensitive fine grained	UNDFND	UNDFD	3	.2
11.00	36.09	6.72	0.01	0.08	1.35	sensitive fine grained	UNDFND	UNDFD	3	.3
11.25	36.91	6.88	-0.00	-0.02	1.37	undefined	UNDFND	UNDFD	UDF	UNDEFINED
11.50	37.73	15.04	0.17	1.10	1.39	sandy silt to clayey silt	UNDFND	UNDFD	6	.8
11.75	38.55	34.58	0.86	2.48	1.41	sandy silt to clayey silt	UNDFND	UNDFD	13	2.1
12.00	39.37	57.12	1.92	3.37	1.43	clayey silt to silty clay	UNDFND	UNDFD	27	3.6
12.25	40.19	55.50	1.87	3.37	1.45	clayey silt to silty clay	UNDFND	UNDFD	27	3.5
12.50	41.01	128.58	2.35	1.83	1.48	silty sand to sandy silt	60-70	40-42	41	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT S5-07
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/08/94 9:45
Cone Used :407
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	48.74	0.76	1.56	0.02	silty sand to sandy silt	>90	>48	16	UNDEFINED
0.50	1.64	120.60	1.16	0.96	0.07	sand to silty sand	>90	>48	29	UNDEFINED
0.75	2.46	120.76	0.82	0.62	0.12	sand	>90	>48	25	UNDEFINED
1.00	3.28	192.80	1.06	0.55	0.17	sand	>90	>48	37	UNDEFINED
1.25	4.10	168.10	1.04	0.62	0.21	sand	>90	>48	32	UNDEFINED
1.50	4.92	101.92	0.77	0.75	0.26	sand to silty sand	80-90	46-48	24	UNDEFINED
1.75	5.74	97.46	0.52	0.53	0.31	sand to silty sand	80-90	44-46	23	UNDEFINED
2.00	6.56	70.54	0.40	0.57	0.35	sand to silty sand	70-80	44-46	17	UNDEFINED
2.25	7.38	72.12	0.36	0.49	0.40	sand to silty sand	70-80	42-44	17	UNDEFINED
2.50	8.20	83.30	0.42	0.51	0.45	sand to silty sand	70-80	42-44	20	UNDEFINED
2.75	9.02	74.78	0.40	0.53	0.50	sand to silty sand	60-70	42-44	18	UNDEFINED
3.00	9.84	65.52	0.37	0.57	0.54	sand to silty sand	60-70	40-42	16	UNDEFINED
3.25	10.66	53.88	0.31	0.58	0.59	sand to silty sand	50-60	40-42	13	UNDEFINED
3.50	11.48	59.54	0.33	0.55	0.64	sand to silty sand	50-60	40-42	14	UNDEFINED
3.75	12.30	58.74	0.32	0.54	0.68	sand to silty sand	50-60	40-42	14	UNDEFINED
4.00	13.12	54.20	0.33	0.61	0.73	sand to silty sand	50-60	38-40	13	UNDEFINED
4.25	13.94	18.78	0.46	2.45	0.77	clayey silt to silty clay	UNDFND	UNDFD	9	1.2
4.50	14.76	12.72	0.30	2.35	0.79	clayey silt to silty clay	UNDFND	UNDFD	6	.7
4.75	15.58	10.94	0.24	2.18	0.81	clayey silt to silty clay	UNDFND	UNDFD	5	.6
5.00	16.40	7.82	0.16	2.02	0.83	silty clay to clay	UNDFND	UNDFD	5	.4
5.25	17.22	21.26	0.19	0.88	0.85	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
5.50	18.04	40.40	0.28	0.70	0.87	silty sand to sandy silt	40-50	36-38	13	UNDEFINED
5.75	18.86	31.00	0.25	0.82	0.89	silty sand to sandy silt	<40	34-36	10	UNDEFINED
6.00	19.69	24.52	0.13	0.54	0.92	silty sand to sandy silt	<40	32-34	8	UNDEFINED
6.25	20.51	15.42	0.11	0.70	0.94	sandy silt to clayey silt	UNDFND	UNDFD	6	.9
6.50	21.33	31.18	0.23	0.73	0.96	silty sand to sandy silt	<40	34-36	10	UNDEFINED
6.75	22.15	26.42	0.25	0.96	0.98	silty sand to sandy silt	<40	32-34	8	UNDEFINED
7.00	22.97	32.88	0.30	0.92	1.00	silty sand to sandy silt	<40	34-36	10	UNDEFINED
7.25	23.79	8.16	0.12	1.41	1.02	clayey silt to silty clay	UNDFND	UNDFD	4	.4
7.50	24.61	5.74	0.06	1.12	1.05	sensitive fine grained	UNDFND	UNDFD	3	.2
7.75	25.43	6.00	0.09	1.55	1.07	sensitive fine grained	UNDFND	UNDFD	3	.3
8.00	26.25	6.42	0.09	1.34	1.09	sensitive fine grained	UNDFND	UNDFD	3	.3
8.25	27.07	6.74	0.10	1.46	1.11	undefined	UNDFND	UNDFD	UDF	UNDEFINED
8.50	27.89	6.48	0.13	1.98	1.13	silty clay to clay	UNDFND	UNDFD	4	.3
8.75	28.71	36.14	0.26	0.72	1.15	silty sand to sandy silt	<40	34-36	12	UNDEFINED
9.00	29.53	26.66	0.43	1.63	1.17	sandy silt to clayey silt	UNDFND	UNDFD	10	1.6
9.25	30.35	21.80	0.33	1.51	1.20	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
9.50	31.17	26.76	0.48	1.79	1.22	sandy silt to clayey silt	UNDFND	UNDFD	10	1.6
9.75	31.99	22.30	0.37	1.67	1.24	sandy silt to clayey silt	UNDFND	UNDFD	9	1.3
10.00	32.81	72.90	0.86	1.18	1.26	silty sand to sandy silt	50-60	38-40	23	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT S5-07

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
10.25	33.63	118.14	1.01	0.85	1.28	sand to silty sand	60-70	40-42	28	UNDEFINED
10.50	34.45	87.04	0.56	0.64	1.30	sand to silty sand	50-60	38-40	21	UNDEFINED
10.75	35.27	38.10	0.35	0.92	1.33	silty sand to sandy silt	<40	34-36	12	UNDEFINED
11.00	36.09	24.94	0.34	1.36	1.35	sandy silt to clayey silt	UNDFND	UNDFD	10	1.5
11.25	36.91	9.52	0.13	1.37	1.37	clayey silt to silty clay	UNDFND	UNDFD	5	.4
11.50	37.73	8.22	0.12	1.45	1.39	clayey silt to silty clay	UNDFND	UNDFD	4	.4
11.75	38.55	7.64	0.11	1.44	1.41	clayey silt to silty clay	UNDFND	UNDFD	4	.3
12.00	39.37	7.64	0.08	1.08	1.43	undefined	UNDFND	UNDFD	UDF	UNDEFINED
12.25	40.19	8.06	0.09	1.13	1.45	clayey silt to silty clay	UNDFND	UNDFD	4	.3
12.50	41.01	7.42	0.08	1.09	1.48	sensitive fine grained	UNDFND	UNDFD	4	.3
12.75	41.83	7.76	0.07	0.88	1.50	sensitive fine grained	UNDFND	UNDFD	4	.3
13.00	42.65	17.30	0.14	0.82	1.52	sandy silt to clayey silt	UNDFND	UNDFD	7	.9
13.25	43.47	25.98	0.49	1.88	1.54	sandy silt to clayey silt	UNDFND	UNDFD	10	1.5
13.50	44.29	67.70	1.12	1.66	1.56	silty sand to sandy silt	40-50	36-38	22	UNDEFINED
13.75	45.11	55.44	1.61	2.91	1.58	sandy silt to clayey silt	UNDFND	UNDFD	21	3.5
14.00	45.93	66.52	2.44	3.67	1.61	clayey silt to silty clay	UNDFND	UNDFD	32	4.2
14.25	46.75	89.12	2.98	3.34	1.63	sandy silt to clayey silt	UNDFND	UNDFD	34	5.7
14.50	47.57	77.70	2.85	3.67	1.65	clayey silt to silty clay	UNDFND	UNDFD	37	4.9

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT-S8-01
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/02/94 15:30
Cone Used :339
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	151.42	0.70	0.46	0.02	sand	>90	>48	29	UNDEFINED
0.50	1.64	178.56	1.54	0.86	0.07	sand	>90	>48	34	UNDEFINED
0.75	2.46	77.32	0.52	0.68	0.12	sand to silty sand	80-90	>48	19	UNDEFINED
1.00	3.28	39.58	0.26	0.66	0.17	silty sand to sandy silt	60-70	44-46	13	UNDEFINED
1.25	4.10	36.68	0.24	0.65	0.21	silty sand to sandy silt	60-70	42-44	12	UNDEFINED
1.50	4.92	70.48	1.08	1.53	0.26	silty sand to sandy silt	70-80	44-46	23	UNDEFINED
1.75	5.74	89.30	0.85	0.95	0.31	sand to silty sand	80-90	44-46	21	UNDEFINED
2.00	6.56	96.88	0.61	0.63	0.35	sand to silty sand	80-90	44-46	23	UNDEFINED
2.25	7.38	90.02	0.54	0.60	0.40	sand to silty sand	70-80	44-46	22	UNDEFINED
2.50	8.20	83.08	0.37	0.45	0.45	sand to silty sand	70-80	42-44	20	UNDEFINED
2.75	9.02	60.30	0.28	0.47	0.50	sand to silty sand	60-70	40-42	14	UNDEFINED
3.00	9.84	20.18	0.23	1.15	0.54	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
3.25	10.66	15.56	0.07	0.43	0.59	sandy silt to clayey silt	UNDFND	UNDFD	6	.9
3.50	11.48	6.92	0.04	0.56	0.64	sensitive fine grained	UNDFND	UNDFD	3	.4
3.75	12.30	54.16	0.32	0.59	0.68	sand to silty sand	50-60	40-42	13	UNDEFINED
4.00	13.12	38.90	0.45	1.15	0.73	silty sand to sandy silt	40-50	36-38	12	UNDEFINED
4.25	13.94	52.66	0.30	0.57	0.77	sand to silty sand	50-60	38-40	13	UNDEFINED
4.50	14.76	17.70	0.21	1.20	0.79	sandy silt to clayey silt	UNDFND	UNDFD	7	1.1
4.75	15.58	7.08	0.04	0.56	0.81	sensitive fine grained	UNDFND	UNDFD	3	.4
00	16.40	7.26	0.02	0.31	0.83	sensitive fine grained	UNDFND	UNDFD	3	.4
.25	17.22	27.12	0.14	0.52	0.85	silty sand to sandy silt	<40	34-36	9	UNDEFINED
5.50	18.04	30.50	0.17	0.56	0.87	silty sand to sandy silt	<40	34-36	10	UNDEFINED
5.75	18.86	12.58	0.04	0.28	0.89	sandy silt to clayey silt	UNDFND	UNDFD	5	.7
6.00	19.69	8.82	0.02	0.23	0.92	sensitive fine grained	UNDFND	UNDFD	4	.5
6.25	20.51	8.50	0.03	0.37	0.94	sensitive fine grained	UNDFND	UNDFD	4	.4
6.50	21.33	12.14	0.03	0.27	0.96	sandy silt to clayey silt	UNDFND	UNDFD	5	.7
6.75	22.15	10.44	0.02	0.22	0.98	sandy silt to clayey silt	UNDFND	UNDFD	4	.6
7.00	22.97	8.34	0.04	0.43	1.00	sensitive fine grained	UNDFND	UNDFD	4	.4
7.25	23.79	8.56	0.02	0.26	1.02	sensitive fine grained	UNDFND	UNDFD	4	.4
7.50	24.61	8.78	0.01	0.15	1.05	sensitive fine grained	UNDFND	UNDFD	4	.4
7.75	25.43	8.46	0.01	0.10	1.07	sensitive fine grained	UNDFND	UNDFD	4	.4
8.00	26.25	9.10	0.02	0.17	1.09	sensitive fine grained	UNDFND	UNDFD	4	.5
8.25	27.07	9.00	0.01	0.08	1.11	sensitive fine grained	UNDFND	UNDFD	4	.4
8.50	27.89	9.44	0.03	0.32	1.13	sensitive fine grained	UNDFND	UNDFD	5	.5
8.75	28.71	5.88	0.06	0.97	1.15	sensitive fine grained	UNDFND	UNDFD	3	.2
9.00	29.53	5.92	0.06	0.98	1.17	sensitive fine grained	UNDFND	UNDFD	3	.2
9.25	30.35	5.98	0.06	0.97	1.20	sensitive fine grained	UNDFND	UNDFD	3	.2
9.50	31.17	5.90	0.04	0.63	1.22	sensitive fine grained	UNDFND	UNDFD	3	.2
9.75	31.99	9.42	0.01	0.10	1.24	sensitive fine grained	UNDFND	UNDFD	5	.5
10.00	32.81	9.70	0.01	0.06	1.26	sensitive fine grained	UNDFND	UNDFD	5	.5

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

te: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT-S8-01

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr - Dr (%)	PHI deg.	SPT N	Su tsf
10.25	33.63	3.90	0.00	0.04	1.28	sensitive fine grained	UNDFND	UNDFD	4	.4
10.50	34.45	3.78	0.03	0.26	1.30	sensitive fine grained	UNDFND	UNDFD	5	.5
10.75	35.27	6.50	0.06	0.91	1.33	sensitive fine grained	UNDFND	UNDFD	3	.2
11.00	36.09	8.44	0.01	0.07	1.35	sensitive fine grained	UNDFND	UNDFD	4	.4
11.25	36.91	9.44	0.00	0.04	1.37	sensitive fine grained	UNDFND	UNDFD	5	.4
11.50	37.73	10.10	0.01	0.06	1.39	sensitive fine grained	UNDFND	UNDFD	5	.5
11.75	38.55	9.62	0.01	0.05	1.41	sensitive fine grained	UNDFND	UNDFD	5	.4
12.00	39.37	8.82	0.01	0.14	1.43	sensitive fine grained	UNDFND	UNDFD	4	.4
12.25	40.19	9.24	0.01	0.13	1.45	sensitive fine grained	UNDFND	UNDFD	4	.4
12.50	41.01	19.60	0.14	0.73	1.48	sandy silt to clayey silt	UNDFND	UNDFD	8	1.1
12.75	41.83	52.74	0.71	1.35	1.50	silty sand to sandy silt	40-50	34-36	17	UNDEFINED
13.00	42.65	66.58	1.87	2.80	1.52	sandy silt to clayey silt	UNDFND	UNDFD	26	4.2
13.25	43.47	91.34	3.37	3.69	1.54	clayey silt to silty clay	UNDFND	UNDFD	44	5.9
13.50	44.29	75.44	3.02	4.00	1.56	clayey silt to silty clay	UNDFND	UNDFD	36	4.8
13.75	45.11	55.80	1.93	3.45	1.58	clayey silt to silty clay	UNDFND	UNDFD	27	3.5
14.00	45.93	124.00	5.70	4.60	1.61	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
14.25	46.75	131.86	4.65	3.53	1.63	sandy silt to clayey silt	UNDFND	UNDFD	>50	8.6
14.50	47.57	102.32	4.14	4.04	1.65	clayey silt to silty clay	UNDFND	UNDFD	49	6.6
14.75	48.39	98.78	5.07	5.13	1.67	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
15.00	49.21	59.82	2.91	4.86	1.69	silty clay to clay	UNDFND	UNDFD	38	3.8
15.25	50.03	43.36	1.76	4.07	1.71	clayey silt to silty clay	UNDFND	UNDFD	21	2.7
50	50.85	116.10	4.72	4.07	1.74	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
15.75	51.67	305.84	4.31	1.41	1.76	sand	>90	42-44	>50	UNDEFINED
16.00	52.49	401.36	4.00	1.00	1.78	sand	>90	44-46	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

PONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT S8-02
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/03/94 14:45
Cone Used :339
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	53.38	0.43	0.80	0.02	silty sand to sandy silt	>90	>48	17	UNDEFINED
0.50	1.64	44.54	0.28	0.62	0.07	silty sand to sandy silt	80-90	>48	14	UNDEFINED
0.75	2.46	26.84	0.14	0.51	0.12	silty sand to sandy silt	50-60	44-46	9	UNDEFINED
1.00	3.28	53.38	0.78	1.46	0.17	silty sand to sandy silt	70-80	46-48	17	UNDEFINED
1.25	4.10	15.68	0.10	0.66	0.21	sandy silt to clayey silt	UNDFND	UNDFD	6	1.0
1.50	4.92	11.42	0.07	0.65	0.26	sandy silt to clayey silt	UNDFND	UNDFD	4	.7
1.75	5.74	20.66	0.12	0.58	0.31	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
2.00	6.56	21.74	0.14	0.63	0.35	silty sand to sandy silt	<40	38-40	7	UNDEFINED
2.25	7.38	29.80	0.22	0.74	0.40	silty sand to sandy silt	40-50	38-40	10	UNDEFINED
2.50	8.20	28.42	0.32	1.12	0.45	sandy silt to clayey silt	UNDFND	UNDFD	11	1.8
2.75	9.02	39.64	0.47	1.19	0.50	silty sand to sandy silt	50-60	40-42	13	UNDEFINED
3.00	9.84	24.20	0.41	1.70	0.54	sandy silt to clayey silt	UNDFND	UNDFD	9	1.5
3.25	10.66	21.04	0.32	1.54	0.59	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
3.50	11.48	5.00	0.14	2.75	0.64	clay	UNDFND	UNDFD	5	.2
3.75	12.30	4.32	0.07	1.68	0.68	sensitive fine grained	UNDFND	UNDFD	2	.2
4.00	13.12	4.92	0.10	2.00	0.73	silty clay to clay	UNDFND	UNDFD	3	.2
4.25	13.94	6.06	0.08	1.29	0.77	sensitive fine grained	UNDFND	UNDFD	3	.3
4.50	14.76	5.40	0.07	1.30	0.79	sensitive fine grained	UNDFND	UNDFD	3	.3
4.75	15.58	10.86	0.16	1.45	0.81	clayey silt to silty clay	UNDFND	UNDFD	5	.6
5.00	16.40	5.40	0.11	2.03	0.83	silty clay to clay	UNDFND	UNDFD	3	.2
5.25	17.22	40.32	0.24	0.60	0.85	silty sand to sandy silt	40-50	36-38	13	UNDEFINED
5.50	18.04	25.22	0.27	1.05	0.87	sandy silt to clayey silt	UNDFND	UNDFD	10	1.6
5.75	18.86	7.28	0.09	1.28	0.89	undefined	UNDFND	UNDFD	UDF	UNDEFINED
6.00	19.69	8.88	0.10	1.10	0.92	clayey silt to silty clay	UNDFND	UNDFD	4	.5
6.25	20.51	11.10	0.11	1.02	0.94	clayey silt to silty clay	UNDFND	UNDFD	5	.6
6.50	21.33	12.56	0.17	1.35	0.96	clayey silt to silty clay	UNDFND	UNDFD	6	.7
6.75	22.15	5.70	0.07	1.24	0.98	sensitive fine grained	UNDFND	UNDFD	3	.2
7.00	22.97	9.06	0.10	1.08	1.00	clayey silt to silty clay	UNDFND	UNDFD	4	.5
7.25	23.79	6.28	0.07	1.04	1.02	sensitive fine grained	UNDFND	UNDFD	3	.3
7.50	24.61	5.90	0.09	1.52	1.05	sensitive fine grained	UNDFND	UNDFD	3	.3
7.75	25.43	5.80	0.08	1.34	1.07	sensitive fine grained	UNDFND	UNDFD	3	.2
8.00	26.25	6.54	0.10	1.61	1.09	silty clay to clay	UNDFND	UNDFD	4	.3
8.25	27.07	5.58	0.09	1.64	1.11	sensitive fine grained	UNDFND	UNDFD	3	.2
8.50	27.89	5.64	0.10	1.83	1.13	silty clay to clay	UNDFND	UNDFD	4	.2
8.75	28.71	5.58	0.10	1.79	1.15	silty clay to clay	UNDFND	UNDFD	4	.2
9.00	29.53	5.66	0.10	1.78	1.17	silty clay to clay	UNDFND	UNDFD	4	.2
9.25	30.35	5.56	0.10	1.88	1.20	silty clay to clay	UNDFND	UNDFD	4	.2
9.50	31.17	5.80	0.11	1.84	1.22	silty clay to clay	UNDFND	UNDFD	4	.2
9.75	31.99	5.84	0.10	1.65	1.24	sensitive fine grained	UNDFND	UNDFD	3	.2
10.00	32.81	5.56	0.10	1.79	1.26	silty clay to clay	UNDFND	UNDFD	4	.2

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT S8-02

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr - Dr (%)	PHI deg.	SPT N	Su tsf
10.25	33.63	5.74	0.10	1.73	1.28	silty clay to clay	UNDFND	UNDFD	4	.2
10.50	34.45	5.34	0.11	1.93	1.30	silty clay to clay	UNDFND	UNDFD	4	.2
10.75	35.27	6.12	0.11	1.76	1.33	silty clay to clay	UNDFND	UNDFD	4	.2
11.00	36.09	6.08	0.10	1.68	1.35	silty clay to clay	UNDFND	UNDFD	4	.2
11.25	36.91	6.10	0.11	1.82	1.37	silty clay to clay	UNDFND	UNDFD	4	.2
11.50	37.73	6.24	0.11	1.84	1.39	silty clay to clay	UNDFND	UNDFD	4	.2
11.75	38.55	6.24	0.10	1.63	1.41	silty clay to clay	UNDFND	UNDFD	4	.2
12.00	39.37	6.42	0.11	1.64	1.43	silty clay to clay	UNDFND	UNDFD	4	.2
12.25	40.19	6.12	0.10	1.68	1.45	silty clay to clay	UNDFND	UNDFD	4	.2
12.50	41.01	6.34	0.10	1.65	1.48	silty clay to clay	UNDFND	UNDFD	4	.2
12.75	41.83	6.44	0.10	1.55	1.50	sensitive fine grained	UNDFND	UNDFD	3	.2
13.00	42.65	6.46	0.11	1.71	1.52	silty clay to clay	UNDFND	UNDFD	4	.2
13.25	43.47	6.56	0.10	1.58	1.54	silty clay to clay	UNDFND	UNDFD	4	.2
13.50	44.29	10.28	0.11	1.07	1.56	clayey silt to silty clay	UNDFND	UNDFD	5	.5
13.75	45.11	88.70	0.65	0.73	1.58	sand to silty sand	50-60	38-40	21	UNDEFINED
14.00	45.93	180.80	1.17	0.65	1.61	sand	70-80	40-42	35	UNDEFINED
14.25	46.75	28.08	0.51	1.81	1.63	sandy silt to clayey silt	UNDFND	UNDFD	11	1.6
14.50	47.57	9.26	0.14	1.54	1.65	clayey silt to silty clay	UNDFND	UNDFD	4	.4
14.75	48.39	7.78	0.10	1.33	1.67	clayey silt to silty clay	UNDFND	UNDFD	4	.3
15.00	49.21	7.58	0.13	1.71	1.69	clayey silt to silty clay	UNDFND	UNDFD	4	.3
15.25	50.03	7.14	0.13	1.79	1.71	silty clay to clay	UNDFND	UNDFD	5	.2
15.50	50.85	6.76	0.13	1.89	1.74	silty clay to clay	UNDFND	UNDFD	4	.2
15.75	51.67	6.82	0.13	1.86	1.76	silty clay to clay	UNDFND	UNDFD	4	.2
16.00	52.49	6.86	0.13	1.92	1.78	silty clay to clay	UNDFND	UNDFD	4	.2
16.25	53.31	7.00	0.13	1.81	1.80	silty clay to clay	UNDFND	UNDFD	4	.2
16.50	54.13	7.18	0.14	1.90	1.82	silty clay to clay	UNDFND	UNDFD	5	.2
16.75	54.95	7.22	0.13	1.86	1.84	silty clay to clay	UNDFND	UNDFD	5	.2
17.00	55.77	7.20	0.12	1.71	1.86	silty clay to clay	UNDFND	UNDFD	5	.2
17.25	56.59	7.22	0.13	1.78	1.89	silty clay to clay	UNDFND	UNDFD	5	.2
17.50	57.41	7.24	0.14	1.90	1.91	silty clay to clay	UNDFND	UNDFD	5	.2
17.75	58.23	7.36	0.13	1.71	1.93	silty clay to clay	UNDFND	UNDFD	5	.2
18.00	59.06	7.50	0.13	1.80	1.95	silty clay to clay	UNDFND	UNDFD	5	.2
18.25	59.88	7.54	0.13	1.77	1.97	silty clay to clay	UNDFND	UNDFD	5	.2

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT S8-03
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/09/94 12:00
Cone Used :407
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	191.88	2.76	1.44	0.02	sand to silty sand	>90	>48	46	UNDEFINED
0.50	1.64	339.22	4.46	1.31	0.07	sand	>90	>48	>50	UNDEFINED
0.75	2.46	239.90	2.76	1.15	0.12	sand	>90	>48	46	UNDEFINED
1.00	3.28	104.72	1.71	1.64	0.17	silty sand to sandy silt	>90	>48	33	UNDEFINED
1.25	4.10	156.54	0.85	0.54	0.21	sand	>90	>48	30	UNDEFINED
1.50	4.92	165.58	0.73	0.44	0.26	sand	>90	>48	32	UNDEFINED
1.75	5.74	105.92	0.50	0.47	0.31	sand	80-90	46-48	20	UNDEFINED
2.00	6.56	64.82	0.40	0.61	0.35	sand to silty sand	60-70	42-44	16	UNDEFINED
2.25	7.38	39.34	0.27	0.69	0.40	silty sand to sandy silt	50-60	40-42	13	UNDEFINED
2.50	8.20	21.60	0.19	0.86	0.45	sandy silt to clayey silt	UNDFND	UNDFD	8	1.4
2.75	9.02	7.82	0.17	2.18	0.50	silty clay to clay	UNDFND	UNDFD	5	.4
3.00	9.84	13.06	0.09	0.68	0.54	sandy silt to clayey silt	UNDFND	UNDFD	5	.8
3.25	10.66	49.40	0.23	0.46	0.59	sand to silty sand	50-60	40-42	12	UNDEFINED
3.50	11.48	63.08	0.26	0.42	0.64	sand to silty sand	50-60	40-42	15	UNDEFINED
3.75	12.30	48.40	0.25	0.52	0.68	sand to silty sand	50-60	38-40	12	UNDEFINED
4.00	13.12	52.96	0.31	0.58	0.73	sand to silty sand	50-60	38-40	13	UNDEFINED
4.25	13.94	16.30	0.33	2.03	0.77	clayey silt to silty clay	UNDFND	UNDFD	8	1.0
4.50	14.76	4.92	0.04	0.78	0.79	sensitive fine grained	UNDFND	UNDFD	2	.2
4.75	15.58	6.62	0.10	1.51	0.81	sensitive fine grained	UNDFND	UNDFD	3	.3
5.00	16.40	37.80	0.17	0.44	0.83	silty sand to sandy silt	40-50	36-38	12	UNDEFINED
5.25	17.22	29.12	0.27	0.93	0.85	silty sand to sandy silt	<40	34-36	9	UNDEFINED
5.50	18.04	8.44	0.13	1.49	0.87	clayey silt to silty clay	UNDFND	UNDFD	4	.4
5.75	18.86	10.06	0.06	0.62	0.89	sandy silt to clayey silt	UNDFND	UNDFD	4	.6
6.00	19.69	14.18	0.11	0.79	0.92	sandy silt to clayey silt	UNDFND	UNDFD	5	.8
6.25	20.51	22.32	0.12	0.54	0.94	silty sand to sandy silt	<40	32-34	7	UNDEFINED
6.50	21.33	66.62	0.24	0.36	0.96	sand to silty sand	50-60	38-40	16	UNDEFINED
6.75	22.15	28.00	0.18	0.64	0.98	silty sand to sandy silt	<40	34-36	9	UNDEFINED
7.00	22.97	3.22	0.05	0.61	1.00	sensitive fine grained	UNDFND	UNDFD	4	.4
7.25	23.79	6.00	0.03	0.42	1.02	sensitive fine grained	UNDFND	UNDFD	3	.3
7.50	24.61	5.74	0.04	0.61	1.05	sensitive fine grained	UNDFND	UNDFD	3	.2
7.75	25.43	5.10	0.02	0.41	1.07	sensitive fine grained	UNDFND	UNDFD	2	.2
8.00	26.25	5.36	0.03	0.57	1.09	sensitive fine grained	UNDFND	UNDFD	3	.2
8.25	27.07	5.14	0.03	0.60	1.11	sensitive fine grained	UNDFND	UNDFD	2	.2
8.50	27.89	5.16	0.05	0.88	1.13	sensitive fine grained	UNDFND	UNDFD	2	.2
8.75	28.71	5.80	0.06	0.98	1.15	sensitive fine grained	UNDFND	UNDFD	3	.2
9.00	29.53	5.32	0.04	0.80	1.17	sensitive fine grained	UNDFND	UNDFD	3	.2
9.25	30.35	5.58	0.05	0.84	1.20	sensitive fine grained	UNDFND	UNDFD	3	.2
9.50	31.17	5.70	0.04	0.78	1.22	sensitive fine grained	UNDFND	UNDFD	3	.2
9.75	31.99	5.64	0.04	0.80	1.24	sensitive fine grained	UNDFND	UNDFD	3	.2
10.00	32.81	5.48	0.05	0.93	1.26	sensitive fine grained	UNDFND	UNDFD	3	.2

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT S8-03

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	sIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr - Dr (%)	PHI deg.	SPT N	Su tsf
21.50	70.54	7.08	0.08	1.18	2.25	sensitive fine grained	UNDFND	UNDFD	3	.2
21.75	71.36	6.98	0.07	1.07	2.27	sensitive fine grained	UNDFND	UNDFD	3	.1
22.00	72.18	7.00	0.08	1.17	2.30	sensitive fine grained	UNDFND	UNDFD	3	.1
22.25	73.00	7.90	0.11	1.43	2.32	clayey silt to silty clay	UNDFND	UNDFD	4	.2
22.50	73.82	8.06	0.10	1.26	2.34	clayey silt to silty clay	UNDFND	UNDFD	4	.2
22.75	74.64	7.96	0.09	1.07	2.36	clayey silt to silty clay	UNDFND	UNDFD	4	.2
23.00	75.46	8.04	0.08	0.99	2.38	clayey silt to silty clay	UNDFND	UNDFD	4	.2
23.25	76.28	8.86	0.14	1.59	2.40	clayey silt to silty clay	UNDFND	UNDFD	4	.2
23.50	77.10	10.36	0.24	2.36	2.42	silty clay to clay	UNDFND	UNDFD	7	.3
23.75	77.92	9.16	0.13	1.40	2.45	clayey silt to silty clay	UNDFND	UNDFD	4	.3
24.00	78.74	51.08	0.19	0.37	2.47	sand to silty sand	<40	30-32	12	UNDEFINED
24.25	79.56	35.70	0.07	0.19	2.49	sand to silty sand	<40	30-32	9	UNDEFINED
24.50	80.38	11.66	0.24	2.09	2.51	clayey silt to silty clay	UNDFND	UNDFD	6	.4
24.75	81.20	9.44	0.07	0.72	2.53	clayey silt to silty clay	UNDFND	UNDFD	5	.3
25.00	82.02	32.38	1.04	3.20	2.55	clayey silt to silty clay	UNDFND	UNDFD	16	1.8

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT S8-04
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/03/94 11:45
Cone Used :339
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr (%)	PHI (deg.)	SPT N	Su tsf
0.25	0.82	144.84	1.66	1.14	0.02	sand to silty sand	>90	>48	36	UNDEFINED
0.50	1.64	285.34	2.17	0.76	0.07	sand	>90	>48	>50	UNDEFINED
0.75	2.46	146.94	1.72	1.17	0.12	sand to silty sand	>90	>48	35	UNDEFINED
1.00	3.28	70.74	0.74	1.04	0.17	sand to silty sand	80-90	46-48	17	UNDEFINED
1.25	4.10	70.42	0.58	0.83	0.21	sand to silty sand	70-80	46-48	17	UNDEFINED
1.50	4.92	111.88	0.64	0.58	0.26	sand	80-90	46-48	21	UNDEFINED
1.75	5.74	68.52	0.73	1.07	0.31	silty sand to sandy silt	70-80	44-46	22	UNDEFINED
2.00	6.56	63.14	0.42	0.66	0.35	sand to silty sand	60-70	42-44	15	UNDEFINED
2.25	7.38	23.78	0.35	1.45	0.40	sandy silt to clayey silt	UNDFND	UNDFD	9	1.5
2.50	8.20	9.06	0.20	2.21	0.45	silty clay to clay	UNDFND	UNDFD	6	.5
2.75	9.02	34.94	0.24	0.67	0.50	silty sand to sandy silt	40-50	38-40	11	UNDEFINED
3.00	9.84	68.84	0.44	0.64	0.54	sand to silty sand	60-70	42-44	16	UNDEFINED
3.25	10.66	49.38	0.65	1.31	0.59	silty sand to sandy silt	50-60	40-42	16	UNDEFINED
3.50	11.48	48.12	0.50	1.03	0.64	silty sand to sandy silt	50-60	38-40	15	UNDEFINED
3.75	12.30	78.86	0.58	0.74	0.68	sand to silty sand	60-70	40-42	19	UNDEFINED
4.00	13.12	55.16	0.42	0.76	0.73	sand to silty sand	50-60	38-40	13	UNDEFINED
4.25	13.94	21.78	0.36	1.63	0.77	sandy silt to clayey silt	UNDFND	UNDFD	8	1.4
4.50	14.76	5.26	0.12	2.33	0.79	silty clay to clay	UNDFND	UNDFD	3	.2
4.75	15.58	9.96	0.22	2.25	0.81	clayey silt to silty clay	UNDFND	UNDFD	5	.6
00	16.40	37.20	0.28	0.75	0.83	silty sand to sandy silt	40-50	36-38	12	UNDEFINED
5.25	17.22	20.76	0.22	1.04	0.85	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
5.50	18.04	12.56	0.16	1.28	0.87	clayey silt to silty clay	UNDFND	UNDFD	6	.7
5.75	18.86	11.86	0.19	1.62	0.89	clayey silt to silty clay	UNDFND	UNDFD	6	.7
6.00	19.69	6.42	0.11	1.68	0.92	silty clay to clay	UNDFND	UNDFD	4	.3
6.25	20.51	6.68	0.12	1.73	0.94	silty clay to clay	UNDFND	UNDFD	4	.3
6.50	21.33	4.72	0.11	2.31	0.96	clay	UNDFND	UNDFD	5	.2
6.75	22.15	5.28	0.13	2.41	0.98	clay	UNDFND	UNDFD	5	.2
7.00	22.97	5.02	0.12	2.45	1.00	clay	UNDFND	UNDFD	5	.2
7.25	23.79	5.40	0.14	2.54	1.02	clay	UNDFND	UNDFD	5	.2
7.50	24.61	5.40	0.15	2.70	1.05	clay	UNDFND	UNDFD	5	.2
7.75	25.43	5.36	0.14	2.62	1.07	clay	UNDFND	UNDFD	5	.2
8.00	26.25	5.16	0.14	2.72	1.09	clay	UNDFND	UNDFD	5	.2
8.25	27.07	5.40	0.14	2.65	1.11	clay	UNDFND	UNDFD	5	.2
8.50	27.89	5.68	0.13	2.36	1.13	silty clay to clay	UNDFND	UNDFD	4	.2
8.75	28.71	5.48	0.13	2.42	1.15	undefined	UNDFND	UNDFD	UDF	UNDEFINED
9.00	29.53	5.68	0.13	2.37	1.17	silty clay to clay	UNDFND	UNDFD	4	.2
9.25	30.35	5.48	0.14	2.48	1.20	clay	UNDFND	UNDFD	5	.2
9.50	31.17	5.96	0.14	2.27	1.22	silty clay to clay	UNDFND	UNDFD	4	.2
9.75	31.99	5.78	0.14	2.36	1.24	silty clay to clay	UNDFND	UNDFD	4	.2
10.00	32.81	5.84	0.13	2.21	1.26	silty clay to clay	UNDFND	UNDFD	4	.2

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT S8-04

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
10.25	33.63	5.70	0.12	2.13	1.28	silty clay to clay	UNDFND	UNDFD	4	.2
10.50	34.45	6.04	0.15	2.48	1.30	silty clay to clay	UNDFND	UNDFD	4	.2
10.75	35.27	10.02	0.22	2.21	1.33	clayey silt to silty clay	UNDFND	UNDFD	6	.5
11.00	36.09	6.84	0.16	2.29	1.35	silty clay to clay	UNDFND	UNDFD	4	.3
11.25	36.91	6.12	0.14	2.23	1.37	silty clay to clay	UNDFND	UNDFD	4	.2
11.50	37.73	7.20	0.13	1.84	1.39	silty clay to clay	UNDFND	UNDFD	6	.3
11.75	38.55	7.38	0.18	2.43	1.41	silty clay to clay	UNDFND	UNDFD	6	.3
12.00	39.37	7.74	0.20	2.61	1.43	silty clay to clay	UNDFND	UNDFD	6	.3
12.25	40.19	7.64	0.20	2.62	1.45	silty clay to clay	UNDFND	UNDFD	6	.3
12.50	41.01	7.74	0.19	2.42	1.48	silty clay to clay	UNDFND	UNDFD	6	.3
12.75	41.83	6.32	0.10	1.53	1.50	sensitive fine grained	UNDFND	UNDFD	3	.2
13.00	42.65	13.56	0.12	0.85	1.52	sandy silt to clayey silt	UNDFND	UNDFD	5	.7
13.25	43.47	12.84	0.12	0.92	1.54	sandy silt to clayey silt	UNDFND	UNDFD	5	.6

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

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Engineer MontgomeryWatson
On Site Loc:CPT S8-04A
Job No. :22738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/10/94 7:45
Cone Used :407
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	279.20	4.04	1.45	0.02	sand to silty sand	>90	UNDFD	>50	UNDEFINED
0.50	1.64	270.86	6.37	2.35	0.07	silty sand to sandy silt	>90	>48	>50	UNDEFINED
0.75	2.46	319.90	2.75	0.86	0.12	sand	>90	>48	>50	UNDEFINED
1.00	3.28	225.16	2.75	1.22	0.17	sand	>90	>48	43	UNDEFINED
1.25	4.10	138.26	1.15	0.83	0.21	sand to silty sand	>90	>48	33	UNDEFINED
1.50	4.92	79.16	1.09	1.38	0.26	silty sand to sandy silt	70-80	44-46	25	UNDEFINED
1.75	5.74	91.18	0.88	0.97	0.31	sand to silty sand	80-90	44-46	22	UNDEFINED
2.00	6.56	135.72	0.76	0.56	0.35	sand	>90	46-48	26	UNDEFINED
2.25	7.38	41.26	0.46	1.11	0.40	silty sand to sandy silt	50-60	40-42	13	UNDEFINED
2.50	8.20	7.52	0.03	0.46	0.45	sensitive fine grained	UNDFND	UNDFD	4	.4
2.75	9.02	6.20	-0.01	-0.09	0.50	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.00	9.84	23.64	0.07	0.31	0.54	silty sand to sandy silt	<40	36-38	8	UNDEFINED
3.25	10.66	67.20	0.36	0.53	0.59	sand to silty sand	60-70	40-42	16	UNDEFINED
3.50	11.48	70.00	0.46	0.66	0.64	sand to silty sand	60-70	40-42	17	UNDEFINED
3.75	12.30	57.20	0.51	0.89	0.68	silty sand to sandy silt	50-60	40-42	18	UNDEFINED
4.00	13.12	59.00	0.42	0.71	0.73	sand to silty sand	50-60	40-42	14	UNDEFINED
4.25	13.94	71.00	0.42	0.59	0.77	sand to silty sand	60-70	40-42	17	UNDEFINED
4.50	14.76	17.40	0.41	2.38	0.79	clayey silt to silty clay	UNDFND	UNDFD	8	1.1
4.75	15.58	5.18	0.20	3.84	0.81	clay	UNDFND	UNDFD	5	.2
0	16.40	4.94	0.16	3.26	0.83	clay	UNDFND	UNDFD	5	.2
.25	17.22	17.56	0.30	1.70	0.85	sandy silt to clayey silt	UNDFND	UNDFD	7	1.1
5.50	18.04	32.42	0.38	1.18	0.87	silty sand to sandy silt	<40	36-38	10	UNDEFINED
5.75	18.86	18.66	0.24	1.29	0.89	sandy silt to clayey silt	UNDFND	UNDFD	7	1.1
6.00	19.69	9.52	0.20	2.10	0.92	clayey silt to silty clay	UNDFND	UNDFD	5	.5
6.25	20.51	7.24	0.19	2.62	0.94	silty clay to clay	UNDFND	UNDFD	5	.4
6.50	21.33	15.48	0.24	1.57	0.96	sandy silt to clayey silt	UNDFND	UNDFD	6	.9
6.75	22.15	5.86	0.18	3.15	0.98	clay	UNDFND	UNDFD	6	.3
7.00	22.97	5.46	0.19	3.49	1.00	clay	UNDFND	UNDFD	5	.2
7.25	23.79	5.62	0.20	3.50	1.02	clay	UNDFND	UNDFD	5	.2
7.50	24.61	5.84	0.20	3.47	1.05	clay	UNDFND	UNDFD	6	.2
7.75	25.43	5.92	0.20	3.41	1.07	clay	UNDFND	UNDFD	6	.2
8.00	26.25	5.76	0.20	3.54	1.09	clay	UNDFND	UNDFD	6	.2
8.25	27.07	5.78	0.21	3.57	1.11	clay	UNDFND	UNDFD	6	.2
8.50	27.89	5.94	0.20	3.44	1.13	clay	UNDFND	UNDFD	6	.2
8.75	28.71	5.92	0.20	3.45	1.15	clay	UNDFND	UNDFD	6	.2
9.00	29.53	6.18	0.19	3.16	1.17	clay	UNDFND	UNDFD	6	.3
9.25	30.35	6.28	0.20	3.20	1.20	clay	UNDFND	UNDFD	6	.3
9.50	31.17	6.16	0.20	3.31	1.22	clay	UNDFND	UNDFD	6	.2
9.75	31.99	6.20	0.21	3.34	1.24	clay	UNDFND	UNDFD	6	.2
10.00	32.81	6.08	0.20	3.27	1.26	clay	UNDFND	UNDFD	6	.2

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

.ote: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

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Engineer MontgomeryWatson On Site Loc:CPT S8-04A

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
10.25	33.63	6.46	0.22	3.34	1.28	clay	UNDFND	UNDFD	6	.3
10.50	34.45	6.78	0.20	3.02	1.30	clay	UNDFND	UNDFD	6	.3
10.75	35.27	7.16	0.24	3.35	1.33	clay	UNDFND	UNDFD	7	.3
11.00	36.09	7.44	0.22	2.96	1.35	clay	UNDFND	UNDFD	7	.3
11.25	36.91	8.84	0.31	3.53	1.37	clay	UNDFND	UNDFD	8	.4
11.50	37.73	7.00	0.23	3.27	1.39	clay	UNDFND	UNDFD	7	.3
11.75	38.55	6.70	0.22	3.30	1.41	clay	UNDFND	UNDFD	6	.3
12.00	39.37	8.00	0.22	2.79	1.43	silty clay to clay	UNDFND	UNDFD	5	.3
12.25	40.19	7.36	0.25	3.35	1.45	clay	UNDFND	UNDFD	7	.3
12.50	41.01	8.66	0.28	3.22	1.48	clay	UNDFND	UNDFD	8	.4
12.75	41.83	8.52	0.19	2.18	1.50	silty clay to clay	UNDFND	UNDFD	5	.4
13.00	42.65	10.76	0.18	1.71	1.52	clayey silt to silty clay	UNDFND	UNDFD	5	.5
13.25	43.47	14.50	0.20	1.38	1.54	sandy silt to clayey silt	UNDFND	UNDFD	6	.8
13.50	44.29	15.76	0.25	1.61	1.56	sandy silt to clayey silt	UNDFND	UNDFD	6	.8
13.75	45.11	23.42	0.71	3.02	1.58	clayey silt to silty clay	UNDFND	UNDFD	11	1.3
14.00	45.93	27.20	0.76	2.81	1.61	clayey silt to silty clay	UNDFND	UNDFD	13	1.6
14.25	46.75	30.80	0.88	2.85	1.63	clayey silt to silty clay	UNDFND	UNDFD	15	1.8
14.50	47.57	41.34	0.91	2.20	1.65	sandy silt to clayey silt	UNDFND	UNDFD	16	2.5
14.75	48.39	90.78	3.32	3.66	1.67	clayey silt to silty clay	UNDFND	UNDFD	43	5.8

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT-S10A-01
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/07/94 12:32
Cone Used :407
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	139.92	1.13	0.81	0.02	sand	>90	>48	27	UNDEFINED
0.50	1.64	183.08	1.20	0.66	0.07	sand	>90	>48	35	UNDEFINED
0.75	2.46	191.76	1.11	0.58	0.12	sand	>90	>48	37	UNDEFINED
1.00	3.28	115.64	1.20	1.03	0.17	sand to silty sand	>90	>48	28	UNDEFINED
1.25	4.10	109.06	0.53	0.48	0.21	sand	>90	46-48	21	UNDEFINED
1.50	4.92	91.62	0.49	0.54	0.26	sand to silty sand	80-90	46-48	22	UNDEFINED
1.75	5.74	72.20	0.43	0.59	0.31	sand to silty sand	70-80	44-46	17	UNDEFINED
2.00	6.56	60.56	0.37	0.61	0.35	sand to silty sand	60-70	42-44	15	UNDEFINED
2.25	7.38	51.10	0.34	0.66	0.40	sand to silty sand	60-70	42-44	12	UNDEFINED
2.50	8.20	45.76	0.31	0.68	0.45	silty sand to sandy silt	50-60	40-42	15	UNDEFINED
2.75	9.02	39.46	0.29	0.73	0.50	silty sand to sandy silt	50-60	40-42	13	UNDEFINED
3.00	9.84	25.58	0.32	1.25	0.54	sandy silt to clayey silt	UNDFND	UNDFD	10	1.6
3.25	10.66	3.92	0.17	4.41	0.59	clay	UNDFND	UNDFD	4	.2
3.50	11.48	1.80	0.12	6.48	0.64	organic material	UNDFND	UNDFD	2	7.7
3.75	12.30	4.54	0.20	4.50	0.68	clay	UNDFND	UNDFD	4	.2
4.00	13.12	3.60	0.14	3.99	0.73	clay	UNDFND	UNDFD	3	.1
4.25	13.94	32.50	0.27	0.82	0.77	silty sand to sandy silt	<40	36-38	10	UNDEFINED
4.50	14.76	43.28	0.34	0.79	0.79	silty sand to sandy silt	40-50	38-40	14	UNDEFINED
4.75	15.58	27.90	0.22	0.78	0.81	silty sand to sandy silt	<40	34-36	9	UNDEFINED
5.00	16.40	18.28	0.18	0.96	0.83	sandy silt to clayey silt	UNDFND	UNDFD	7	1.1
5.25	17.22	10.70	0.14	1.28	0.85	clayey silt to silty clay	UNDFND	UNDFD	5	.6
5.50	18.04	10.36	0.13	1.23	0.87	clayey silt to silty clay	UNDFND	UNDFD	5	.6
5.75	18.86	6.66	0.11	1.69	0.89	silty clay to clay	UNDFND	UNDFD	4	.3
6.00	19.69	4.80	0.11	2.29	0.92	clay	UNDFND	UNDFD	5	.2
6.25	20.51	4.08	0.12	2.92	0.94	clay	UNDFND	UNDFD	4	.1
6.50	21.33	4.26	0.14	3.30	0.96	clay	UNDFND	UNDFD	4	.2
6.75	22.15	27.48	0.24	0.87	0.98	silty sand to sandy silt	<40	34-36	9	UNDEFINED
7.00	22.97	58.90	0.40	0.68	1.00	sand to silty sand	50-60	38-40	14	UNDEFINED
7.25	23.79	9.28	0.37	3.95	1.02	clay	UNDFND	UNDFD	9	.5
7.50	24.61	19.92	0.27	1.36	1.05	sandy silt to clayey silt	UNDFND	UNDFD	8	1.2
7.75	25.43	6.18	0.15	2.50	1.07	silty clay to clay	UNDFND	UNDFD	4	.3
8.00	26.25	4.86	0.15	3.00	1.09	clay	UNDFND	UNDFD	5	.2
8.25	27.07	4.68	0.15	3.17	1.11	clay	UNDFND	UNDFD	4	.2
8.50	27.89	4.86	0.15	3.08	1.13	clay	UNDFND	UNDFD	5	.2
8.75	28.71	18.86	0.22	1.17	1.15	sandy silt to clayey silt	UNDFND	UNDFD	7	1.1
9.00	29.53	73.00	0.58	0.80	1.17	sand to silty sand	50-60	38-40	17	UNDEFINED
9.25	30.35	48.12	0.18	0.38	1.20	sand to silty sand	40-50	36-38	12	UNDEFINED
9.50	31.17	62.84	0.31	0.49	1.22	sand to silty sand	50-60	36-38	15	UNDEFINED
9.75	31.99	66.18	0.33	0.49	1.24	sand to silty sand	50-60	36-38	16	UNDEFINED
10.00	32.81	62.88	0.24	0.39	1.26	sand to silty sand	50-60	36-38	15	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT-S10A-01

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
10.25	33.63	41.18	0.19	0.45	1.28	silty sand to sandy silt	<40	34-36	13	UNDEFINED
10.50	34.45	41.40	1.01	2.43	1.30	sandy silt to clayey silt	UNDFND	UNDFD	16	2.6
10.75	35.27	48.06	1.07	2.22	1.33	sandy silt to clayey silt	UNDFND	UNDFD	18	3.0
11.00	36.09	57.06	1.96	3.44	1.35	clayey silt to silty clay	UNDFND	UNDFD	27	3.6
11.25	36.91	152.78	5.23	3.43	1.37	sandy silt to clayey silt	UNDFND	UNDFD	>50	10.0

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

MONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT-S10A-02
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/07/94 14:35
Cone Used :407
Water table (meters) : 4

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr (%)	PHI (deg.)	SPT N	Su tsf
1.25	3.32	93.64	0.38	0.34	0.02	sand to silty sand	>90	>48	22	UNDEFINED
1.50	4.94	6.32	0.04	0.57	0.37	sensitive fine grained	UNDFND	UNDFD	3	.4
1.75	5.46	14.60	0.01	0.10	0.12	sandy silt to clayey silt	UNDFND	UNDFD	6	.9
2.00	6.28	17.58	0.01	0.04	0.17	silty sand to sandy silt	40-50	40-42	6	UNDEFINED
2.25	7.10	30.68	0.06	0.19	0.21	silty sand to sandy silt	50-60	42-44	10	UNDEFINED
2.50	7.92	42.40	0.15	0.35	0.26	sand to silty sand	60-70	42-44	10	UNDEFINED
2.75	8.74	36.64	0.06	0.16	0.31	sand to silty sand	50-60	40-42	9	UNDEFINED
3.00	9.56	13.48	0.03	0.20	0.35	sandy silt to clayey silt	UNDFND	UNDFD	5	.8
3.25	10.38	11.76	0.04	0.34	0.40	sandy silt to clayey silt	UNDFND	UNDFD	5	.7
3.50	11.20	30.70	0.14	0.46	0.45	silty sand to sandy silt	40-50	38-40	10	UNDEFINED
3.75	12.02	45.68	0.21	0.46	0.50	sand to silty sand	50-60	40-42	11	UNDEFINED
4.00	12.84	16.74	0.14	0.86	0.54	sandy silt to clayey silt	UNDFND	UNDFD	6	1.0
4.25	13.66	29.64	0.11	0.37	0.59	silty sand to sandy silt	<40	36-38	9	UNDEFINED
4.50	14.48	40.48	0.23	0.56	0.64	silty sand to sandy silt	40-50	38-40	13	UNDEFINED
4.75	15.30	30.42	0.21	0.69	0.68	silty sand to sandy silt	<40	36-38	10	UNDEFINED
5.00	16.12	14.08	0.11	0.77	0.73	sandy silt to clayey silt	UNDFND	UNDFD	5	.8
5.25	16.94	6.28	0.02	0.24	0.77	sensitive fine grained	UNDFND	UNDFD	3	.3
5.50	17.76	5.74	0.01	0.11	0.79	sensitive fine grained	UNDFND	UNDFD	3	.3
5.75	18.58	18.38	0.07	0.37	0.81	sandy silt to clayey silt	UNDFND	UNDFD	7	1.1
6.00	19.40	27.64	0.10	0.36	0.83	silty sand to sandy silt	<40	34-36	9	UNDEFINED
6.25	20.22	20.44	0.04	0.19	0.85	silty sand to sandy silt	<40	32-34	7	UNDEFINED
6.50	21.04	8.92	0.02	0.25	0.87	sensitive fine grained	UNDFND	UNDFD	4	.5
6.75	21.86	6.68	0.00	0.07	0.89	sensitive fine grained	UNDFND	UNDFD	3	.3
7.00	22.69	13.38	0.01	0.07	0.92	sandy silt to clayey silt	UNDFND	UNDFD	5	.8
7.25	23.51	6.62	0.01	0.09	0.94	sensitive fine grained	UNDFND	UNDFD	3	.3
7.50	24.33	6.04	0.01	0.22	0.96	sensitive fine grained	UNDFND	UNDFD	3	.3
7.75	25.15	5.90	0.02	0.31	0.98	sensitive fine grained	UNDFND	UNDFD	3	.3
8.00	25.97	5.76	0.02	0.35	1.00	sensitive fine grained	UNDFND	UNDFD	3	.2
8.25	26.79	5.88	0.02	0.36	1.02	sensitive fine grained	UNDFND	UNDFD	3	.3
8.50	27.61	5.98	0.03	0.45	1.05	sensitive fine grained	UNDFND	UNDFD	3	.3
8.75	28.43	6.28	0.04	0.65	1.07	sensitive fine grained	UNDFND	UNDFD	3	.3
9.00	29.25	14.84	0.08	0.53	1.09	sandy silt to clayey silt	UNDFND	UNDFD	6	.8
9.25	30.07	70.00	0.14	0.19	1.11	sand to silty sand	50-60	38-40	17	UNDEFINED
9.50	30.89	145.68	0.48	0.33	1.13	sand	70-80	42-44	28	UNDEFINED
9.75	31.71	204.54	0.95	0.47	1.15	sand	80-90	42-44	39	UNDEFINED
10.00	32.53	221.76	0.87	0.39	1.17	sand	80-90	42-44	42	UNDEFINED
10.25	33.35	124.06	0.89	0.71	1.20	sand to silty sand	70-80	40-42	30	UNDEFINED
10.50	34.17	73.98	0.56	0.76	1.22	sand to silty sand	50-60	38-40	18	UNDEFINED
10.75	34.99	47.42	1.42	2.99	1.24	sandy silt to clayey silt	UNDFND	UNDFD	18	3.0
11.00	35.81	115.92	4.59	3.96	1.26	clayey silt to silty clay	UNDFND	UNDFD	>50	7.6

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT-S10A-02

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr - Dr (%)	PHI deg.	SPT N	Su tsf
10.25	33.63	111.52	3.73	3.35	1.28	sandy silt to clayey silt	UNDFND	UNDFD	43	7.3
10.50	34.45	72.36	2.79	3.35	1.30	clayey silt to silty clay	UNDFND	UNDFD	35	4.6
10.75	35.27	141.32	6.48	4.59	1.33	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT S10A-03
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/07/94 17:00
Cone Used :407
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr (%)	PHI (deg.)	SPT N	Su tsf
0.25	0.82	147.14	0.81	0.55	0.02	sand	>90	>48	23	UNDEFINED
0.50	1.64	208.82	1.37	0.66	0.07	sand	>90	>48	40	UNDEFINED
0.75	2.46	151.14	0.95	0.63	0.12	sand	>90	>48	29	UNDEFINED
1.00	3.28	78.16	0.95	1.22	0.17	silty sand to sandy silt	80-90	46-48	25	UNDEFINED
1.25	4.10	100.60	0.40	0.40	0.21	sand	80-90	46-48	19	UNDEFINED
1.50	4.92	80.88	0.39	0.48	0.26	sand to silty sand	70-80	44-46	19	UNDEFINED
1.75	5.74	68.22	0.25	0.37	0.31	sand to silty sand	70-80	44-46	16	UNDEFINED
2.00	6.56	64.96	0.23	0.35	0.35	sand to silty sand	60-70	42-44	16	UNDEFINED
2.25	7.38	71.48	0.29	0.40	0.40	sand to silty sand	70-80	42-44	17	UNDEFINED
2.50	8.20	60.94	0.25	0.41	0.45	sand to silty sand	60-70	42-44	15	UNDEFINED
2.75	9.02	53.08	0.19	0.36	0.50	sand to silty sand	50-60	40-42	13	UNDEFINED
3.00	9.84	62.50	0.22	0.36	0.54	sand to silty sand	60-70	40-42	15	UNDEFINED
3.25	10.66	51.23	0.27	0.53	0.59	sand to silty sand	50-60	40-42	12	UNDEFINED
3.50	11.48	42.38	0.15	0.35	0.64	sand to silty sand	40-50	38-40	10	UNDEFINED
3.75	12.30	36.36	0.24	0.67	0.68	silty sand to sandy silt	40-50	36-38	12	UNDEFINED
4.00	13.12	11.02	0.15	1.35	0.73	clayey silt to silty clay	UNDFND	UNDFD	5	.6
4.25	13.94	11.58	0.03	0.28	0.77	sandy silt to clayey silt	UNDFND	UNDFD	4	.7
4.50	14.76	30.74	0.11	0.36	0.79	silty sand to sandy silt	<40	36-38	10	UNDEFINED
4.75	15.58	29.24	0.11	0.38	0.81	silty sand to sandy silt	<40	36-38	9	UNDEFINED
5.00	16.40	15.28	0.04	0.24	0.83	sandy silt to clayey silt	UNDFND	UNDFD	6	.9
5.25	17.22	9.00	0.01	0.09	0.85	sensitive fine grained	UNDFND	UNDFD	4	.5
5.50	18.04	9.88	0.01	0.10	0.87	sensitive fine grained	UNDFND	UNDFD	5	.5
5.75	18.86	6.20	0.00	0.03	0.89	sensitive fine grained	UNDFND	UNDFD	3	.3
6.00	19.69	6.12	0.01	0.08	0.92	sensitive fine grained	UNDFND	UNDFD	3	.3
6.25	20.51	19.40	0.06	0.31	0.94	silty sand to sandy silt	<40	30-32	6	UNDEFINED
6.50	21.33	90.96	0.39	0.43	0.96	sand to silty sand	60-70	40-42	22	UNDEFINED
6.75	22.15	145.18	0.91	0.62	0.98	sand	70-80	42-44	28	UNDEFINED
7.00	22.97	76.40	0.23	0.30	1.00	sand to silty sand	50-60	38-40	13	UNDEFINED
7.25	23.79	62.32	0.05	0.09	1.02	sand to silty sand	50-60	38-40	15	UNDEFINED
7.50	24.61	19.58	0.02	0.08	1.05	silty sand to sandy silt	<40	30-32	6	UNDEFINED
7.75	25.43	5.54	0.02	0.32	1.07	sensitive fine grained	UNDFND	UNDFD	3	.2
8.00	26.25	5.22	0.02	0.30	1.09	sensitive fine grained	UNDFND	UNDFD	3	.2
8.25	27.07	4.84	0.02	0.34	1.11	sensitive fine grained	UNDFND	UNDFD	2	.2
8.50	27.89	13.88	0.17	1.20	1.13	sandy silt to clayey silt	UNDFND	UNDFD	5	.8
8.75	28.71	59.62	1.84	3.09	1.15	sandy silt to clayey silt	UNDFND	UNDFD	23	3.8
9.00	29.53	142.80	4.99	3.49	1.17	sandy silt to clayey silt	UNDFND	UNDFD	>50	9.4
9.25	30.35	82.78	3.78	4.57	1.20	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
9.50	31.17	126.54	5.33	4.21	1.22	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
9.75	31.99	200.78	7.20	3.59	1.24	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
10.00	32.81	197.66	3.71	1.88	1.26	sand to silty sand	80-90	42-44	47	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT S10A-03

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
10.25	33.63	211.66	2.15	1.02	1.28	sand	80-90	42-44	41	UNDEFINED
10.50	34.45	138.56	2.21	1.59	1.30	sand to silty sand	70-80	40-42	33	UNDEFINED
10.75	35.27	119.22	2.57	2.16	1.33	silty sand to sandy silt	60-70	40-42	38	UNDEFINED
11.00	36.09	165.16	2.36	1.43	1.35	sand to silty sand	70-80	40-42	40	UNDEFINED
11.25	36.91	188.16	3.39	1.80	1.37	sand to silty sand	80-90	42-44	45	UNDEFINED
11.50	37.73	213.92	1.98	0.92	1.39	sand	80-90	42-44	41	UNDEFINED
11.75	38.55	177.34	1.25	0.71	1.41	sand	70-80	40-42	34	UNDEFINED
12.00	39.37	173.30	1.67	0.97	1.43	sand	70-80	40-42	33	UNDEFINED
12.25	40.19	180.56	2.95	1.64	1.45	sand to silty sand	70-80	40-42	43	UNDEFINED
12.50	41.01	140.42	3.77	2.69	1.48	silty sand to sandy silt	70-80	40-42	45	UNDEFINED
12.75	41.83	99.88	2.17	2.18	1.50	silty sand to sandy silt	60-70	38-40	32	UNDEFINED
13.00	42.65	102.00	3.03	2.97	1.52	sandy silt to clayey silt	UNDFND	UNDFD	39	6.6
13.25	43.47	121.72	5.11	4.20	1.54	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
13.50	44.29	109.94	3.60	3.27	1.56	sandy silt to clayey silt	UNDFND	UNDFD	42	7.1
13.75	45.11	130.12	3.66	2.81	1.58	sandy silt to clayey silt	UNDFND	UNDFD	50	8.5
14.00	45.93	76.12	2.81	3.69	1.61	clayey silt to silty clay	UNDFND	UNDFD	36	4.9
14.25	46.75	50.46	0.75	1.48	1.63	silty sand to sandy silt	40-50	34-36	16	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT S10A-04
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/07/94 15:45
Cone Used :407
Water table (meters) : 4

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	37.50	0.36	0.96	0.02	silty sand to sandy silt	>90	>48	12	UNDEFINED
0.50	1.64	36.70	0.24	0.67	0.07	silty sand to sandy silt	70-80	46-48	12	UNDEFINED
0.75	2.46	24.08	0.14	0.57	0.12	silty sand to sandy silt	50-60	44-46	8	UNDEFINED
1.00	3.28	28.88	0.19	0.64	0.17	silty sand to sandy silt	50-60	42-44	9	UNDEFINED
1.25	4.10	44.76	0.24	0.55	0.21	silty sand to sandy silt	60-70	44-46	14	UNDEFINED
1.50	4.92	66.04	0.32	0.48	0.26	sand to silty sand	70-80	44-46	16	UNDEFINED
1.75	5.74	68.58	0.33	0.48	0.31	sand to silty sand	70-80	44-46	16	UNDEFINED
2.00	6.56	76.12	0.37	0.48	0.35	sand to silty sand	70-80	44-46	18	UNDEFINED
2.25	7.38	56.46	0.35	0.63	0.40	sand to silty sand	60-70	42-44	14	UNDEFINED
2.50	8.20	54.94	0.25	0.46	0.45	sand to silty sand	60-70	40-42	13	UNDEFINED
2.75	9.02	48.26	0.23	0.48	0.50	sand to silty sand	50-60	40-42	12	UNDEFINED
3.00	9.84	26.30	0.27	1.02	0.54	sandy silt to clayey silt	UNDFND	UNDFD	10	1.7
3.25	10.66	23.74	0.22	0.65	0.59	silty sand to sandy silt	40-50	38-40	11	UNDEFINED
3.50	11.48	41.46	0.26	0.62	0.64	silty sand to sandy silt	40-50	38-40	13	UNDEFINED
3.75	12.30	26.16	0.32	1.21	0.68	sandy silt to clayey silt	UNDFND	UNDFD	10	1.6
4.00	13.12	14.02	0.15	1.08	0.73	sandy silt to clayey silt	UNDFND	UNDFD	5	.8
4.25	13.94	41.90	0.25	0.59	0.77	silty sand to sandy silt	40-50	38-40	13	UNDEFINED
4.50	14.76	46.42	0.34	0.74	0.79	silty sand to sandy silt	40-50	38-40	15	UNDEFINED
4.75	15.58	34.46	0.26	0.76	0.81	silty sand to sandy silt	<40	36-38	11	UNDEFINED
5.00	16.40	19.52	0.13	0.69	0.83	sandy silt to clayey silt	UNDFND	UNDFD	7	1.2
5.25	17.22	14.56	0.10	0.70	0.85	sandy silt to clayey silt	UNDFND	UNDFD	6	.9
5.50	18.04	17.28	0.10	0.58	0.87	sandy silt to clayey silt	UNDFND	UNDFD	7	1.0
5.75	18.86	6.82	0.12	1.76	0.89	silty clay to clay	UNDFND	UNDFD	4	.3
6.00	19.69	5.34	0.11	2.11	0.92	silty clay to clay	UNDFND	UNDFD	3	.2
6.25	20.51	5.56	0.12	2.16	0.94	silty clay to clay	UNDFND	UNDFD	4	.2
6.50	21.33	4.92	0.11	2.20	0.96	silty clay to clay	UNDFND	UNDFD	3	.2
6.75	22.15	6.20	0.07	1.16	0.98	sensitive fine grained	UNDFND	UNDFD	3	.3
7.00	22.97	15.88	0.14	0.89	1.00	sandy silt to clayey silt	UNDFND	UNDFD	6	.9
7.25	23.79	82.60	0.40	0.48	1.02	sand to silty sand	60-70	40-42	20	UNDEFINED
7.50	24.61	136.72	0.54	0.40	1.05	sand	70-80	42-44	26	UNDEFINED
7.75	25.43	96.54	0.44	0.45	1.07	sand to silty sand	60-70	40-42	23	UNDEFINED
8.00	26.25	42.94	0.10	0.24	1.09	sand to silty sand	40-50	36-38	10	UNDEFINED
8.25	27.07	24.66	0.19	0.78	1.11	silty sand to sandy silt	<40	32-34	8	UNDEFINED
8.50	27.89	37.62	0.86	2.28	1.13	sandy silt to clayey silt	UNDFND	UNDFD	14	2.4
8.75	28.71	68.06	1.97	2.90	1.15	sandy silt to clayey silt	UNDFND	UNDFD	26	4.4
9.00	29.53	108.82	4.10	3.77	1.17	sandy silt to clayey silt	UNDFND	UNDFD	42	7.1
9.25	30.35	153.92	4.87	3.17	1.20	sandy silt to clayey silt	UNDFND	UNDFD	>50	10.1
9.50	31.17	94.44	3.45	3.65	1.22	sandy silt to clayey silt	UNDFND	UNDFD	36	6.1
9.75	31.99	146.32	3.82	2.61	1.24	silty sand to sandy silt	70-80	40-42	47	UNDEFINED
10.00	32.81	143.82	2.94	2.04	1.26	silty sand to sandy silt	70-80	40-42	46	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT S10A-04

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
10.25	33.63	130.56	2.24	1.71	1.28	silty sand to sandy silt	70-80	40-42	42	UNDEFINED
10.50	34.45	71.00	1.56	2.20	1.30	silty sand to sandy silt	50-60	38-40	23	UNDEFINED
10.75	35.27	141.76	2.74	1.93	1.33	silty sand to sandy silt	70-80	40-42	45	UNDEFINED
11.00	36.09	157.40	3.77	2.40	1.35	silty sand to sandy silt	70-80	40-42	>50	UNDEFINED
11.25	36.91	164.94	2.75	1.67	1.37	sand to silty sand	70-80	40-42	39	UNDEFINED
11.50	37.73	76.18	1.98	2.60	1.39	sandy silt to clayey silt	UNDFND	UNDFD	29	4.9
11.75	38.55	125.82	2.09	1.66	1.41	sand to silty sand	60-70	40-42	30	UNDEFINED
12.00	39.37	139.98	1.95	1.39	1.43	sand to silty sand	70-80	40-42	34	UNDEFINED
12.25	40.19	129.54	1.96	1.51	1.45	sand to silty sand	60-70	40-42	31	UNDEFINED
12.50	41.01	69.42	1.78	2.56	1.48	sandy silt to clayey silt	UNDFND	UNDFD	27	4.4
12.75	41.83	152.22	5.47	3.59	1.50	sandy silt to clayey silt	UNDFND	UNDFD	>50	9.9
13.00	42.65	127.80	3.93	3.08	1.52	sandy silt to clayey silt	UNDFND	UNDFD	49	8.3
13.25	43.47	148.54	4.02	2.71	1.54	silty sand to sandy silt	70-80	40-42	47	UNDEFINED
13.50	44.29	78.58	1.82	2.32	1.56	silty sand to sandy silt	50-60	36-38	25	UNDEFINED
13.75	45.11	65.16	2.60	3.98	1.58	clayey silt to silty clay	UNDFND	UNDFD	31	4.1
14.00	45.93	124.08	4.33	3.49	1.61	sandy silt to clayey silt	UNDFND	UNDFD	48	8.0
14.25	46.75	168.92	7.66	4.54	1.63	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT-S12-01
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/02/94 9:40
Cone Used :339
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	31.44	2.07	2.55	0.02	sandy silt to clayey silt	UNDFND	UNDFD	31	5.4
0.50	1.64	104.80	1.38	1.32	0.07	sand to silty sand	>90	>48	25	UNDEFINED
0.75	2.46	88.26	0.78	0.88	0.12	sand to silty sand	>90	>48	21	UNDEFINED
1.00	3.28	60.40	0.52	0.87	0.17	sand to silty sand	70-80	46-48	14	UNDEFINED
1.25	4.10	92.68	1.62	1.75	0.21	silty sand to sandy silt	80-90	46-48	30	UNDEFINED
1.50	4.92	47.78	0.43	0.91	0.26	silty sand to sandy silt	60-70	42-44	15	UNDEFINED
1.75	5.74	67.60	0.57	0.84	0.31	sand to silty sand	70-80	44-46	16	UNDEFINED
2.00	6.56	103.70	0.67	0.64	0.35	sand to silty sand	80-90	44-46	25	UNDEFINED
2.25	7.38	72.66	0.46	0.63	0.40	sand to silty sand	70-80	42-44	17	UNDEFINED
2.50	8.20	62.54	0.34	0.55	0.45	sand to silty sand	60-70	42-44	15	UNDEFINED
2.75	9.02	58.26	0.32	0.55	0.50	sand to silty sand	60-70	40-42	14	UNDEFINED
3.00	9.84	21.02	0.34	1.62	0.54	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
3.25	10.66	25.22	0.29	1.15	0.59	sandy silt to clayey silt	UNDFND	UNDFD	10	1.6
3.50	11.48	6.56	0.08	1.18	0.64	sensitive fine grained	UNDFND	UNDFD	3	.3
3.75	12.30	21.22	0.24	1.14	0.68	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
4.00	13.12	8.26	0.16	1.89	0.73	clayey silt to silty clay	UNDFND	UNDFD	4	.5
4.25	13.94	24.22	0.15	0.61	0.77	silty sand to sandy silt	<40	34-36	9	UNDEFINED
4.50	14.76	38.58	0.27	0.70	0.79	silty sand to sandy silt	40-50	36-38	12	UNDEFINED
4.75	15.58	17.68	0.14	0.78	0.81	sandy silt to clayey silt	UNDFND	UNDFD	7	1.1
00	16.40	12.82	0.04	0.35	0.83	sandy silt to clayey silt	UNDFND	UNDFD	5	.7
.25	17.22	7.34	0.00	0.05	0.85	sensitive fine grained	UNDFND	UNDFD	4	.4
5.50	18.04	16.08	0.06	0.35	0.87	sandy silt to clayey silt	UNDFND	UNDFD	6	1.0
5.75	18.86	77.26	0.52	0.67	0.89	sand to silty sand	60-70	40-42	19	UNDEFINED
6.00	19.69	36.62	0.53	1.46	0.92	silty sand to sandy silt	<40	36-38	12	UNDEFINED
6.25	20.51	133.60	0.88	0.66	0.94	sand	70-80	42-44	26	UNDEFINED
6.50	21.33	125.60	0.92	0.73	0.96	sand to silty sand	70-80	42-44	30	UNDEFINED
6.75	22.15	87.58	0.63	0.72	0.98	sand to silty sand	60-70	40-42	21	UNDEFINED
7.00	22.97	79.80	0.57	0.72	1.00	sand to silty sand	60-70	40-42	19	UNDEFINED
7.25	23.79	130.00	0.80	0.62	1.02	sand	70-80	42-44	25	UNDEFINED
7.50	24.61	63.32	0.57	0.90	1.05	sand to silty sand	50-60	38-40	15	UNDEFINED
7.75	25.43	55.66	0.47	0.85	1.07	silty sand to sandy silt	40-50	36-38	18	UNDEFINED
8.00	26.25	80.64	0.72	0.89	1.09	sand to silty sand	50-60	38-40	19	UNDEFINED
8.25	27.07	56.96	0.67	1.17	1.11	silty sand to sandy silt	40-50	36-38	18	UNDEFINED
8.50	27.89	66.24	0.56	0.84	1.13	sand to silty sand	50-60	38-40	16	UNDEFINED
8.75	28.71	97.24	0.70	0.72	1.15	sand to silty sand	60-70	40-42	23	UNDEFINED
9.00	29.53	78.40	1.01	1.29	1.17	silty sand to sandy silt	50-60	38-40	25	UNDEFINED
9.25	30.35	47.26	0.50	1.05	1.20	silty sand to sandy silt	40-50	36-38	15	UNDEFINED
9.50	31.17	48.62	0.59	1.20	1.22	silty sand to sandy silt	40-50	36-38	16	UNDEFINED
9.75	31.99	26.58	0.15	0.57	1.24	silty sand to sandy silt	<40	32-34	8	UNDEFINED
10.00	32.81	14.02	0.01	0.05	1.26	sandy silt to clayey silt	UNDFND	UNDFD	5	.8

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

ote: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT-S12-01

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr (%)	PHI deg.	SPT N	Su tsf
10.25	33.63	17.28	0.05	0.31	1.28	sandy silt to clayey silt	UNDFND	UNDFD	7	1.0
10.50	34.45	24.78	0.13	0.53	1.30	silty sand to sandy silt	<40	30-32	9	UNDEFINED
10.75	35.27	55.08	1.01	1.83	1.33	silty sand to sandy silt	40-50	36-38	13	UNDEFINED
11.00	36.09	90.72	3.92	4.32	1.35	clayey silt to silty clay	UNDFND	UNDFD	43	5.9
11.25	36.91	65.34	2.22	3.40	1.37	clayey silt to silty clay	UNDFND	UNDFD	31	4.2
11.50	37.73	47.50	1.13	2.38	1.39	sandy silt to clayey silt	UNDFND	UNDFD	18	3.0
11.75	38.55	239.66	5.15	2.15	1.41	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
12.00	39.37	101.74	4.14	4.07	1.43	clayey silt to silty clay	UNDFND	UNDFD	49	6.6
12.25	40.19	69.60	1.79	2.57	1.45	sandy silt to clayey silt	UNDFND	UNDFD	27	4.4
12.50	41.01	58.68	2.11	3.60	1.48	clayey silt to silty clay	UNDFND	UNDFD	28	3.7
12.75	41.83	83.28	2.66	3.19	1.50	sandy silt to clayey silt	UNDFND	UNDFD	32	5.3
13.00	42.65	247.20	9.43	3.82	1.52	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
13.25	43.47	110.60	3.15	2.85	1.54	sandy silt to clayey silt	UNDFND	UNDFD	42	7.2
13.50	44.29	77.64	2.21	2.85	1.56	sandy silt to clayey silt	UNDFND	UNDFD	30	5.0
13.75	45.11	78.18	1.62	2.07	1.58	silty sand to sandy silt	50-60	36-38	25	UNDEFINED
14.00	45.93	147.02	5.94	4.04	1.61	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
14.25	46.75	127.74	5.96	4.67	1.63	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
14.50	47.57	161.70	6.43	3.98	1.65	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
14.75	48.39	71.28	1.44	2.02	1.67	silty sand to sandy silt	40-50	36-38	23	UNDEFINED
15.00	49.21	104.00	3.65	3.51	1.69	sandy silt to clayey silt	UNDFND	UNDFD	40	6.7
15.25	50.03	196.86	5.13	2.61	1.71	silty sand to sandy silt	70-80	40-42	>50	UNDEFINED
50	50.85	337.20	3.63	1.08	1.74	sand	>90	42-44	>50	UNDEFINED
15.75	51.67	419.44	4.27	1.02	1.76	sand	>90	44-46	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT-S12-02
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/02/94 8:00
Cone Used :339
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	218.98	1.63	0.75	0.02	sand	>90	>48	42	UNDEFINED
0.50	1.64	179.26	1.45	0.81	0.07	sand	>90	>48	34	UNDEFINED
0.75	2.46	144.08	1.21	0.84	0.12	sand	>90	>48	28	UNDEFINED
1.00	3.28	87.46	0.96	1.10	0.17	sand to silty sand	80-90	46-48	21	UNDEFINED
1.25	4.10	107.62	0.77	0.71	0.21	sand to silty sand	>90	46-48	26	UNDEFINED
1.50	4.92	96.96	0.67	0.69	0.26	sand to silty sand	80-90	46-48	23	UNDEFINED
1.75	5.74	79.16	0.41	0.52	0.31	sand to silty sand	70-80	44-46	19	UNDEFINED
2.00	6.56	62.62	0.28	0.44	0.35	sand to silty sand	60-70	42-44	15	UNDEFINED
2.25	7.38	54.72	0.24	0.45	0.40	sand to silty sand	60-70	42-44	13	UNDEFINED
2.50	8.20	49.74	0.25	0.51	0.45	sand to silty sand	50-60	40-42	12	UNDEFINED
2.75	9.02	39.10	0.32	0.81	0.50	silty sand to sandy silt	40-50	38-40	12	UNDEFINED
3.00	9.84	23.08	0.29	1.25	0.54	sandy silt to clayey silt	UNDFND	UNDFD	9	1.5
3.25	10.66	5.88	0.08	1.43	0.59	sensitive fine grained	UNDFND	UNDFD	3	.3
3.50	11.48	23.12	0.15	0.66	0.64	silty sand to sandy silt	<40	36-38	7	UNDEFINED
3.75	12.30	18.38	0.31	1.66	0.68	sandy silt to clayey silt	UNDFND	UNDFD	7	1.1
4.00	13.12	12.72	0.14	1.13	0.73	sandy silt to clayey silt	UNDFND	UNDFD	5	.7
4.25	13.94	32.06	0.20	0.62	0.77	silty sand to sandy silt	<40	36-38	10	UNDEFINED
4.50	14.76	16.64	0.11	0.64	0.79	sandy silt to clayey silt	UNDFND	UNDFD	6	1.0
4.75	15.58	11.36	0.03	0.26	0.81	sandy silt to clayey silt	UNDFND	UNDFD	4	.6
5.00	16.40	7.42	0.00	0.05	0.83	sensitive fine grained	UNDFND	UNDFD	4	.4
5.25	17.22	5.60	0.01	0.14	0.85	sensitive fine grained	UNDFND	UNDFD	3	.3
5.50	18.04	11.10	0.05	0.43	0.87	sandy silt to clayey silt	UNDFND	UNDFD	4	.6
5.75	18.86	63.90	0.43	0.67	0.89	sand to silty sand	50-60	38-40	15	UNDEFINED
6.00	19.69	139.74	0.96	0.69	0.92	sand	70-80	42-44	27	UNDEFINED
6.25	20.51	96.28	0.65	0.68	0.94	sand to silty sand	60-70	40-42	23	UNDEFINED
6.50	21.33	71.16	0.69	0.98	0.96	sand to silty sand	50-60	38-40	17	UNDEFINED
6.75	22.15	94.12	0.69	0.74	0.98	sand to silty sand	60-70	40-42	23	UNDEFINED
7.00	22.97	113.72	0.81	0.71	1.00	sand to silty sand	70-80	40-42	27	UNDEFINED
7.25	23.79	100.38	0.64	0.63	1.02	sand to silty sand	60-70	40-42	24	UNDEFINED
7.50	24.61	72.62	0.54	0.75	1.05	sand to silty sand	50-60	38-40	17	UNDEFINED
7.75	25.43	76.08	0.58	0.77	1.07	sand to silty sand	50-60	38-40	18	UNDEFINED
8.00	26.25	35.20	0.47	1.34	1.09	silty sand to sandy silt	<40	34-36	11	UNDEFINED
8.25	27.07	45.72	0.75	1.64	1.11	silty sand to sandy silt	40-50	36-38	15	UNDEFINED
8.50	27.89	95.92	0.92	0.96	1.13	sand to silty sand	60-70	40-42	23	UNDEFINED
8.75	28.71	91.52	0.84	0.92	1.15	sand to silty sand	60-70	40-42	22	UNDEFINED
9.00	29.53	91.86	0.68	0.74	1.17	sand to silty sand	60-70	38-40	22	UNDEFINED
9.25	30.35	51.80	0.56	1.08	1.20	silty sand to sandy silt	40-50	36-38	17	UNDEFINED
9.50	31.17	37.06	0.33	0.89	1.22	silty sand to sandy silt	<40	34-36	12	UNDEFINED
9.75	31.99	13.76	0.03	0.22	1.24	sandy silt to clayey silt	UNDFND	UNDFD	5	.7
10.00	32.81	61.96	0.78	1.26	1.26	silty sand to sandy silt	40-50	36-38	20	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

FONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT-S12-02

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr - Dr (%)	PHI (deg.)	SPT N	Su tsf
10.25	33.63	36.84	0.46	0.53	1.28	sand to silty sand	50-60	38-40	21	UNDEFINED
10.50	34.45	31.34	0.05	0.16	1.30	silty sand to sandy silt	<40	32-34	10	UNDEFINED
10.75	35.27	12.98	0.02	0.16	1.33	sandy silt to clayey silt	UNDFND	UNDFD	5	.7
11.00	36.09	20.56	0.24	1.19	1.35	sandy silt to clayey silt	UNDFND	UNDFD	3	1.2
11.25	36.91	29.52	0.95	3.21	1.37	clayey silt to silty clay	UNDFND	UNDFD	14	1.8
11.50	37.73	29.78	0.40	1.35	1.39	sandy silt to clayey silt	UNDFND	UNDFD	11	1.8
11.75	38.55	44.38	0.90	2.03	1.41	sandy silt to clayey silt	UNDFND	UNDFD	17	2.8
12.00	39.37	72.64	2.42	3.33	1.43	sandy silt to clayey silt	UNDFND	UNDFD	28	4.6
12.25	40.19	78.62	2.55	3.24	1.45	sandy silt to clayey silt	UNDFND	UNDFD	30	5.0
12.50	41.01	168.50	7.36	4.37	1.48	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
12.75	41.83	262.06	9.23	3.52	1.50	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
13.00	42.65	234.06	7.20	3.08	1.52	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
13.25	43.47	84.90	3.05	3.59	1.54	sandy silt to clayey silt	UNDFND	UNDFD	33	5.4
13.50	44.29	58.54	1.68	2.86	1.56	sandy silt to clayey silt	UNDFND	UNDFD	22	3.7
13.75	45.11	113.32	4.90	4.32	1.58	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
14.00	45.93	183.34	7.85	4.28	1.61	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
14.25	46.75	46.82	1.25	2.68	1.63	sandy silt to clayey silt	UNDFND	UNDFD	18	2.9
14.50	47.57	105.22	3.61	3.43	1.65	sandy silt to clayey silt	UNDFND	UNDFD	40	6.8
14.75	48.39	100.96	3.91	3.87	1.67	clayey silt to silty clay	UNDFND	UNDFD	48	6.5
15.00	49.21	72.22	2.90	4.02	1.69	clayey silt to silty clay	UNDFND	UNDFD	35	4.6
15.25	50.03	110.84	4.93	4.45	1.71	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
50	50.85	381.16	10.95	2.87	1.74	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT-S12-03
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/02/94 11:37
Cone Used :339
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	75.36	0.60	0.80	0.02	sand to silty sand	>90	>48	18	UNDEFINED
0.50	1.64	71.32	0.59	0.83	0.07	sand to silty sand	>90	>48	17	UNDEFINED
0.75	2.46	65.88	0.34	0.52	0.12	sand to silty sand	80-90	>48	16	UNDEFINED
1.00	3.28	90.00	0.50	0.56	0.17	sand to silty sand	80-90	>48	22	UNDEFINED
1.25	4.10	89.08	0.49	0.55	0.21	sand to silty sand	80-90	46-48	21	UNDEFINED
1.50	4.92	80.26	0.36	0.45	0.26	sand to silty sand	70-80	44-46	19	UNDEFINED
1.75	5.74	77.66	0.35	0.45	0.31	sand to silty sand	70-80	44-46	19	UNDEFINED
2.00	6.56	49.94	0.44	0.89	0.35	silty sand to sandy silt	60-70	42-44	16	UNDEFINED
2.25	7.38	59.12	0.26	0.43	0.40	sand to silty sand	60-70	42-44	14	UNDEFINED
2.50	8.20	59.94	0.33	0.55	0.45	sand to silty sand	60-70	42-44	14	UNDEFINED
2.75	9.02	39.36	0.30	0.77	0.50	silty sand to sandy silt	50-60	40-42	13	UNDEFINED
3.00	9.84	8.28	0.09	1.14	0.54	clayey silt to silty clay	UNDFND	UNDFD	4	.5
3.25	10.66	5.52	0.02	0.35	0.59	sensitive fine grained	UNDFND	UNDFD	3	.3
3.50	11.48	10.20	0.13	1.27	0.64	clayey silt to silty clay	UNDFND	UNDFD	5	.6
3.75	12.30	23.80	0.11	0.48	0.68	silty sand to sandy silt	<40	34-36	8	UNDEFINED
4.00	13.12	29.60	0.20	0.69	0.73	silty sand to sandy silt	<40	36-38	9	UNDEFINED
4.25	13.94	13.74	0.11	0.79	0.77	sandy silt to clayey silt	UNDFND	UNDFD	5	.8
4.50	14.76	10.60	0.02	0.19	0.79	sandy silt to clayey silt	UNDFND	UNDFD	4	.6
4.75	15.58	6.26	0.01	0.16	0.81	sensitive fine grained	UNDFND	UNDFD	3	.3
00	16.40	8.60	0.07	0.80	0.83	clayey silt to silty clay	UNDFND	UNDFD	4	.5
5.25	17.22	75.28	0.65	0.86	0.85	sand to silty sand	60-70	40-42	18	UNDEFINED
5.50	18.04	202.96	1.26	0.62	0.87	sand	80-90	44-46	39	UNDEFINED
5.75	18.86	224.86	1.15	0.51	0.89	sand	>90	44-46	43	UNDEFINED
6.00	19.69	207.08	0.98	0.48	0.92	sand	80-90	44-46	40	UNDEFINED
6.25	20.51	171.14	0.83	0.49	0.94	sand	80-90	42-44	33	UNDEFINED
6.50	21.33	72.02	0.66	0.91	0.96	sand to silty sand	50-60	38-40	17	UNDEFINED
6.75	22.15	70.48	0.45	0.64	0.98	sand to silty sand	50-60	38-40	17	UNDEFINED
7.00	22.97	50.42	0.54	1.06	1.00	silty sand to sandy silt	40-50	36-38	16	UNDEFINED
7.25	23.79	56.84	0.55	0.97	1.02	silty sand to sandy silt	50-60	38-40	18	UNDEFINED
7.50	24.61	29.62	0.42	1.43	1.05	sandy silt to clayey silt	UNDFND	UNDFD	11	1.8
7.75	25.43	51.66	0.59	1.14	1.07	silty sand to sandy silt	40-50	36-38	16	UNDEFINED
8.00	26.25	50.72	0.60	1.18	1.09	silty sand to sandy silt	40-50	36-38	16	UNDEFINED
8.25	27.07	34.12	0.47	1.39	1.11	silty sand to sandy silt	<40	34-36	11	UNDEFINED
8.50	27.89	27.26	0.27	0.99	1.13	silty sand to sandy silt	<40	32-34	9	UNDEFINED
8.75	28.71	50.36	0.24	0.48	1.15	sand to silty sand	40-50	36-38	12	UNDEFINED
9.00	29.53	57.78	0.22	0.38	1.17	sand to silty sand	40-50	36-38	14	UNDEFINED
9.25	30.35	98.70	0.31	0.31	1.20	sand	60-70	40-42	19	UNDEFINED
9.50	31.17	60.02	0.25	0.41	1.22	sand to silty sand	40-50	36-38	14	UNDEFINED
9.75	31.99	63.00	0.22	0.35	1.24	sand to silty sand	50-60	36-38	15	UNDEFINED
10.00	32.81	45.04	0.20	0.44	1.26	sand to silty sand	40-50	34-36	11	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

te: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

CONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT-S12-03

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr - Dr (%)	PHI (deg.)	SPT N	Su tsf
10.25	33.63	14.66	0.73	1.74	1.28	silty sand to sandy silt	40	34-36	14	UNDEFINED
10.50	34.45	42.56	0.69	1.63	1.30	silty sand to sandy silt	<40	34-36	14	UNDEFINED
10.75	35.27	54.20	1.31	2.42	1.33	sandy silt to clayey silt	UNDFND	UNDFD	21	3.4
11.00	36.09	22.30	0.31	1.40	1.35	sandy silt to clayey silt	UNDFND	UNDFD	9	1.3
11.25	36.91	14.96	0.05	0.32	1.37	sandy silt to clayey silt	UNDFND	UNDFD	6	.8
11.50	37.73	22.74	0.27	1.17	1.39	sandy silt to clayey silt	UNDFND	UNDFD	9	1.3
11.75	38.55	55.56	0.88	1.59	1.41	silty sand to sandy silt	40-50	36-38	18	UNDEFINED
12.00	39.37	75.38	1.69	2.24	1.43	silty sand to sandy silt	50-60	36-38	24	UNDEFINED
12.25	40.19	92.48	1.87	2.02	1.45	silty sand to sandy silt	50-60	38-40	30	UNDEFINED
12.50	41.01	118.06	3.74	3.17	1.48	sandy silt to clayey silt	UNDFND	UNDFD	45	7.7
12.75	41.83	96.30	2.60	2.70	1.50	sandy silt to clayey silt	UNDFND	UNDFD	37	6.2
13.00	42.65	63.06	2.51	3.98	1.52	clayey silt to silty clay	UNDFND	UNDFD	30	4.0
13.25	43.47	87.02	3.37	3.87	1.54	clayey silt to silty clay	UNDFND	UNDFD	42	5.6
13.50	44.29	93.42	2.48	2.66	1.56	sandy silt to clayey silt	UNDFND	UNDFD	36	6.0
13.75	45.11	166.16	7.95	4.79	1.58	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
14.00	45.93	218.20	10.55	4.83	1.61	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
14.25	46.75	135.76	6.69	4.93	1.63	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
14.50	47.57	66.94	1.74	2.60	1.65	sandy silt to clayey silt	UNDFND	UNDFD	26	4.2
14.75	48.39	108.22	4.43	4.09	1.67	clayey silt to silty clay	UNDFND	UNDFD	>50	7.0
15.00	49.21	254.20	5.93	2.33	1.69	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
15.25	50.03	269.46	8.49	3.15	1.71	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT-S12-04
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/02/94 13:20
Cone Used :339
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	71.70	0.50	0.69	0.02	sand to silty sand	>90	>48	17	UNDEFINED
0.50	1.64	91.84	0.83	0.91	0.07	sand to silty sand	>90	>48	22	UNDEFINED
0.75	2.46	116.04	0.84	0.73	0.12	sand to silty sand	>90	>48	28	UNDEFINED
1.00	3.28	105.86	0.73	0.69	0.17	sand to silty sand	>90	>48	25	UNDEFINED
1.25	4.10	114.28	0.90	0.79	0.21	sand to silty sand	>90	>48	27	UNDEFINED
1.50	4.92	103.68	0.80	0.77	0.26	sand to silty sand	80-90	46-48	25	UNDEFINED
1.75	5.74	85.04	0.39	0.46	0.31	sand to silty sand	70-80	44-46	20	UNDEFINED
2.00	6.56	73.40	0.32	0.44	0.35	sand to silty sand	70-80	44-46	18	UNDEFINED
2.25	7.38	64.66	0.33	0.52	0.40	sand to silty sand	60-70	42-44	15	UNDEFINED
2.50	8.20	54.76	0.29	0.53	0.45	sand to silty sand	60-70	40-42	13	UNDEFINED
2.75	9.02	40.50	0.22	0.54	0.50	silty sand to sandy silt	50-60	40-42	13	UNDEFINED
3.00	9.84	7.12	0.09	1.24	0.54	sensitive fine grained	UNDFND	UNDFD	3	.4
3.25	10.66	14.86	0.06	0.42	0.59	sandy silt to clayey silt	UNDFND	UNDFD	6	.9
3.50	11.48	20.18	0.26	1.27	0.64	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
3.75	12.30	6.94	0.04	0.53	0.68	sensitive fine grained	UNDFND	UNDFD	3	.4
4.00	13.12	32.96	0.13	0.39	0.73	silty sand to sandy silt	<40	36-38	11	UNDEFINED
4.25	13.94	49.30	0.31	0.62	0.77	silty sand to sandy silt	50-60	38-40	16	UNDEFINED
4.50	14.76	22.56	0.11	0.49	0.79	silty sand to sandy silt	<40	34-36	7	UNDEFINED
4.75	15.58	17.44	0.01	0.06	0.81	silty sand to sandy silt	<40	32-34	6	UNDEFINED
5.00	16.40	9.12	0.04	0.46	0.83	sensitive fine grained	UNDFND	UNDFD	4	.5
5.25	17.22	7.24	0.05	0.63	0.85	sensitive fine grained	UNDFND	UNDFD	3	.4
5.50	18.04	12.32	0.08	0.67	0.87	sandy silt to clayey silt	UNDFND	UNDFD	5	.7
5.75	18.86	48.16	0.41	0.85	0.89	silty sand to sandy silt	40-50	38-40	15	UNDEFINED
6.00	19.69	155.28	1.05	0.68	0.92	sand	80-90	42-44	30	UNDEFINED
6.25	20.51	167.48	1.00	0.60	0.94	sand	80-90	42-44	32	UNDEFINED
6.50	21.33	99.68	0.77	0.78	0.96	sand to silty sand	60-70	40-42	24	UNDEFINED
6.75	22.15	68.86	0.53	0.78	0.98	sand to silty sand	50-60	38-40	16	UNDEFINED
7.00	22.97	40.86	0.46	1.14	1.00	silty sand to sandy silt	40-50	36-38	13	UNDEFINED
7.25	23.79	21.44	0.29	1.34	1.02	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
7.50	24.61	16.40	0.20	1.21	1.05	sandy silt to clayey silt	UNDFND	UNDFD	6	1.0
7.75	25.43	30.26	0.15	0.51	1.07	silty sand to sandy silt	<40	34-36	10	UNDEFINED
8.00	26.25	27.24	0.49	1.81	1.09	sandy silt to clayey silt	UNDFND	UNDFD	10	1.7
8.25	27.07	9.04	0.04	0.49	1.11	sensitive fine grained	UNDFND	UNDFD	4	.5
8.50	27.89	11.90	0.04	0.31	1.13	sandy silt to clayey silt	UNDFND	UNDFD	5	.6
8.75	28.71	26.60	0.10	0.39	1.15	silty sand to sandy silt	<40	32-34	8	UNDEFINED
9.00	29.53	18.26	0.04	0.21	1.17	silty sand to sandy silt	<40	30-32	6	UNDEFINED
9.25	30.35	14.62	0.03	0.18	1.20	sandy silt to clayey silt	UNDFND	UNDFD	6	.8
9.50	31.17	33.72	0.02	0.06	1.22	sand to silty sand	<40	34-36	8	UNDEFINED
9.75	31.99	20.36	0.10	0.47	1.24	silty sand to sandy silt	<40	30-32	7	UNDEFINED
10.00	32.81	80.90	2.36	2.92	1.26	sandy silt to clayey silt	UNDFND	UNDFD	31	5.2

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

te: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT-S12-04

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr - Dr (%)	PHI (deg.)	SPT N	Su tsf
10.25	33.63	99.14	3.73	3.77	1.23	clayey silt to silty clay	UNDFND	UNDFD	47	6.4
10.50	34.45	80.46	2.71	3.37	1.30	sandy silt to clayey silt	UNDFND	UNDFD	31	5.2
10.75	35.27	126.56	4.14	3.27	1.33	sandy silt to clayey silt	UNDFND	UNDFD	48	8.3
11.00	36.09	157.68	3.86	2.45	1.35	silty sand to sandy silt	70-80	40-42	>50	UNDEFINED
11.25	36.91	153.34	3.74	2.44	1.37	silty sand to sandy silt	70-80	40-42	49	UNDEFINED
11.50	37.73	141.40	3.20	2.26	1.39	silty sand to sandy silt	70-80	40-42	45	UNDEFINED
11.75	38.55	84.86	2.25	2.65	1.41	sandy silt to clayey silt	UNDFND	UNDFD	33	5.5
12.00	39.37	26.80	0.65	2.42	1.43	sandy silt to clayey silt	UNDFND	UNDFD	10	1.6
12.25	40.19	41.58	0.74	1.78	1.45	sandy silt to clayey silt	UNDFND	UNDFD	16	2.6
12.50	41.01	46.28	1.29	2.78	1.48	sandy silt to clayey silt	UNDFND	UNDFD	13	2.9
12.75	41.83	75.88	2.53	3.33	1.50	sandy silt to clayey silt	UNDFND	UNDFD	29	4.9
13.00	42.65	48.70	0.70	1.44	1.52	silty sand to sandy silt	40-50	34-36	16	UNDEFINED
13.25	43.47	43.30	0.65	1.50	1.54	silty sand to sandy silt	<40	34-36	14	UNDEFINED
13.50	44.29	48.52	2.31	4.76	1.56	silty clay to clay	UNDFND	UNDFD	31	3.0
13.75	45.11	68.44	3.27	4.77	1.58	silty clay to clay	UNDFND	UNDFD	44	4.3
14.00	45.93	103.94	4.15	4.00	1.61	clayey silt to silty clay	UNDFND	UNDFD	50	6.7
14.25	46.75	229.70	12.26	5.34	1.63	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
14.50	47.57	151.16	8.45	5.59	1.65	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
14.75	48.39	140.32	7.35	5.24	1.67	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
15.00	49.21	109.34	5.20	4.75	1.69	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
15.25	50.03	148.24	7.92	5.34	1.71	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
50	50.85	184.78	8.22	4.45	1.74	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
15.75	51.67	252.72	8.24	3.26	1.76	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
16.00	52.49	245.90	5.78	2.35	1.78	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT-S14-01
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :01/31/94 12:10
Cone Used :339
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI (deg.)	SPT N	Su tsf
0.25	0.82	69.72	0.22	0.32	0.02	sand to silty sand	>90	>48	17	UNDEFINED
0.50	1.64	297.98	2.36	0.79	0.07	sand	>90	>48	>50	UNDEFINED
0.75	2.46	149.12	1.90	1.27	0.12	sand to silty sand	>90	>48	36	UNDEFINED
1.00	3.28	21.54	0.70	3.23	0.17	clayey silt to silty clay	UNDFND	UNDFD	10	1.4
1.25	4.10	53.06	0.58	1.09	0.21	silty sand to sandy silt	70-80	44-46	17	UNDEFINED
1.50	4.92	69.50	0.53	0.76	0.26	sand to silty sand	70-80	44-46	17	UNDEFINED
1.75	5.74	15.90	0.20	1.29	0.31	sandy silt to clayey silt	UNDFND	UNDFD	6	1.0
2.00	6.56	5.14	0.05	0.90	0.35	sensitive fine grained	UNDFND	UNDFD	2	.3
2.25	7.38	2.34	0.01	0.51	0.40	sensitive fine grained	UNDFND	UNDFD	1	.1
2.50	8.20	1.48	0.01	0.93	0.45	sensitive fine grained	UNDFND	UNDFD	1	6.8
2.75	9.02	2.20	0.02	0.95	0.50	sensitive fine grained	UNDFND	UNDFD	1	.1
3.00	9.84	2.30	0.04	1.87	0.54	sensitive fine grained	UNDFND	UNDFD	1	.1
3.25	10.66	14.16	0.16	1.13	0.59	sandy silt to clayey silt	UNDFND	UNDFD	5	.9
3.50	11.48	12.60	0.20	1.60	0.64	clayey silt to silty clay	UNDFND	UNDFD	6	.7
3.75	12.30	113.70	0.52	0.46	0.68	sand	70-80	42-44	22	UNDEFINED
4.00	13.12	69.58	0.51	0.57	0.73	sand to silty sand	60-70	40-42	21	UNDEFINED
4.25	13.94	66.16	0.33	0.51	0.77	sand to silty sand	50-60	40-42	16	UNDEFINED
4.50	14.76	60.82	0.31	0.51	0.79	sand to silty sand	50-60	38-40	15	UNDEFINED
4.75	15.58	64.58	0.29	0.45	0.81	sand to silty sand	50-60	40-42	15	UNDEFINED
00	16.40	76.74	0.30	0.40	0.83	sand to silty sand	60-70	40-42	18	UNDEFINED
5.25	17.22	80.92	0.38	0.47	0.85	sand to silty sand	60-70	40-42	19	UNDEFINED
5.50	18.04	51.64	0.29	0.56	0.87	sand to silty sand	40-50	38-40	12	UNDEFINED
5.75	18.86	11.44	0.13	1.17	0.89	clayey silt to silty clay	UNDFND	UNDFD	5	.6
6.00	19.69	12.20	0.11	0.87	0.92	sandy silt to clayey silt	UNDFND	UNDFD	5	.7
6.25	20.51	11.48	0.05	0.41	0.94	sandy silt to clayey silt	UNDFND	UNDFD	4	.6
6.50	21.33	7.14	0.01	0.13	0.96	sensitive fine grained	UNDFND	UNDFD	3	.3
6.75	22.15	7.04	0.02	0.30	0.98	sensitive fine grained	UNDFND	UNDFD	3	.3
7.00	22.97	6.74	0.02	0.34	1.00	sensitive fine grained	UNDFND	UNDFD	3	.3
7.25	23.79	6.80	0.02	0.25	1.02	sensitive fine grained	UNDFND	UNDFD	3	.3
7.50	24.61	14.94	0.07	0.47	1.05	sandy silt to clayey silt	UNDFND	UNDFD	6	.9
7.75	25.43	22.86	0.15	0.67	1.07	silty sand to sandy silt	<40	32-34	7	UNDEFINED
8.00	26.25	57.70	0.21	0.36	1.09	sand to silty sand	40-50	36-38	14	UNDEFINED
8.25	27.07	21.60	0.17	0.80	1.11	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
8.50	27.89	11.16	0.05	0.43	1.13	sandy silt to clayey silt	UNDFND	UNDFD	4	.6
8.75	28.71	27.78	0.13	0.46	1.15	silty sand to sandy silt	<40	32-34	9	UNDEFINED
9.00	29.53	15.82	0.09	0.60	1.17	sandy silt to clayey silt	UNDFND	UNDFD	6	.9
9.25	30.35	7.78	0.02	0.26	1.20	sensitive fine grained	UNDFND	UNDFD	4	.4
9.50	31.17	11.16	0.04	0.40	1.22	sandy silt to clayey silt	UNDFND	UNDFD	4	.6
9.75	31.99	13.86	0.04	0.29	1.24	sandy silt to clayey silt	UNDFND	UNDFD	5	.8
10.00	32.81	10.76	0.02	0.14	1.26	sandy silt to clayey silt	UNDFND	UNDFD	4	.5

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

ote: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT-S14-01

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
10.25	33.63	12.80	0.03	0.23	1.28	sandy silt to clayey silt	UNDFND	UNDFD	5	.7
10.50	34.45	22.64	0.11	0.47	1.30	silty sand to sandy silt	<40	30-32	7	UNDEFINED
10.75	35.27	24.36	0.02	0.09	1.33	silty sand to sandy silt	<40	30-32	8	UNDEFINED
11.00	36.09	20.16	0.30	1.47	1.35	sandy silt to clayey silt	UNDFND	UNDFD	8	1.2
11.25	36.91	48.76	1.99	4.08	1.37	clayey silt to silty clay	UNDFND	UNDFD	23	3.1
11.50	37.73	60.46	2.40	3.97	1.39	clayey silt to silty clay	UNDFND	UNDFD	29	3.8
11.75	38.55	112.94	3.06	2.71	1.41	sandy silt to clayey silt	UNDFND	UNDFD	43	7.3
12.00	39.37	122.26	3.44	2.81	1.43	sandy silt to clayey silt	UNDFND	UNDFD	47	8.0
12.25	40.19	151.46	4.58	3.02	1.45	sandy silt to clayey silt	UNDFND	UNDFD	>50	9.9
12.50	41.01	179.18	4.99	2.78	1.48	silty sand to sandy silt	70-80	40-42	>50	UNDEFINED
12.75	41.83	250.40	4.84	1.93	1.50	sand to silty sand	80-90	42-44	>50	UNDEFINED
13.00	42.65	204.70	2.09	1.02	1.52	sand	80-90	42-44	39	UNDEFINED
13.25	43.47	223.14	3.36	1.51	1.54	sand to silty sand	80-90	42-44	>50	UNDEFINED
13.50	44.29	244.52	3.68	1.50	1.56	sand to silty sand	80-90	42-44	>50	UNDEFINED
13.75	45.11	260.14	2.52	0.97	1.58	sand	80-90	42-44	50	UNDEFINED
14.00	45.93	313.98	2.25	0.72	1.61	sand	>90	42-44	>50	UNDEFINED
14.25	46.75	277.70	3.01	1.08	1.63	sand	80-90	42-44	>50	UNDEFINED
14.50	47.57	291.70	2.31	0.79	1.65	sand	>90	42-44	>50	UNDEFINED
14.75	48.39	299.18	2.81	0.94	1.67	sand	>90	42-44	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT-S12-04
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :02/02/94 13:20
Cone Used :339
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	71.70	0.50	0.69	0.02	sand to silty sand	>90	>48	17	UNDEFINED
0.50	1.64	91.84	0.83	0.91	0.07	sand to silty sand	>90	>48	22	UNDEFINED
0.75	2.46	116.04	0.84	0.73	0.12	sand to silty sand	>90	>48	28	UNDEFINED
1.00	3.28	105.86	0.73	0.69	0.17	sand to silty sand	>90	>48	25	UNDEFINED
1.25	4.10	114.28	0.90	0.79	0.21	sand to silty sand	>90	>48	27	UNDEFINED
1.50	4.92	103.68	0.80	0.77	0.26	sand to silty sand	80-90	46-48	25	UNDEFINED
1.75	5.74	85.04	0.39	0.46	0.31	sand to silty sand	70-80	44-46	20	UNDEFINED
2.00	6.56	73.40	0.32	0.44	0.35	sand to silty sand	70-80	44-46	18	UNDEFINED
2.25	7.38	64.66	0.33	0.52	0.40	sand to silty sand	60-70	42-44	15	UNDEFINED
2.50	8.20	54.76	0.29	0.53	0.45	sand to silty sand	60-70	40-42	13	UNDEFINED
2.75	9.02	40.50	0.22	0.54	0.50	silty sand to sandy silt	50-60	40-42	13	UNDEFINED
3.00	9.84	7.12	0.09	1.24	0.54	sensitive fine grained	UNDFND	UNDFD	3	.4
3.25	10.66	14.86	0.06	0.42	0.59	sandy silt to clayey silt	UNDFND	UNDFD	6	.9
3.50	11.48	20.18	0.26	1.27	0.64	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
3.75	12.30	6.94	0.04	0.53	0.68	sensitive fine grained	UNDFND	UNDFD	3	.4
4.00	13.12	32.96	0.13	0.39	0.73	silty sand to sandy silt	<40	36-38	11	UNDEFINED
4.25	13.94	49.30	0.31	0.62	0.77	silty sand to sandy silt	50-60	38-40	16	UNDEFINED
4.50	14.76	22.56	0.11	0.49	0.79	silty sand to sandy silt	<40	34-36	7	UNDEFINED
4.75	15.58	17.44	0.01	0.06	0.81	silty sand to sandy silt	<40	32-34	6	UNDEFINED
5.00	16.40	9.12	0.04	0.46	0.83	sensitive fine grained	UNDFND	UNDFD	4	.5
5.25	17.22	7.24	0.05	0.63	0.85	sensitive fine grained	UNDFND	UNDFD	3	.4
5.50	18.04	12.32	0.08	0.67	0.87	sandy silt to clayey silt	UNDFND	UNDFD	5	.7
5.75	18.86	48.16	0.41	0.85	0.89	silty sand to sandy silt	40-50	38-40	15	UNDEFINED
6.00	19.69	155.28	1.05	0.68	0.92	sand	80-90	42-44	30	UNDEFINED
6.25	20.51	167.48	1.00	0.60	0.94	sand	80-90	42-44	32	UNDEFINED
6.50	21.33	99.68	0.77	0.78	0.96	sand to silty sand	60-70	40-42	24	UNDEFINED
6.75	22.15	68.86	0.53	0.78	0.98	sand to silty sand	50-60	38-40	16	UNDEFINED
7.00	22.97	40.86	0.46	1.14	1.00	silty sand to sandy silt	40-50	36-38	13	UNDEFINED
7.25	23.79	21.44	0.29	1.34	1.02	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
7.50	24.61	16.40	0.20	1.21	1.05	sandy silt to clayey silt	UNDFND	UNDFD	6	1.0
7.75	25.43	30.26	0.15	0.51	1.07	silty sand to sandy silt	<40	34-36	10	UNDEFINED
8.00	26.25	27.24	0.49	1.81	1.09	sandy silt to clayey silt	UNDFND	UNDFD	10	1.7
8.25	27.07	9.04	0.04	0.49	1.11	sensitive fine grained	UNDFND	UNDFD	4	.5
8.50	27.89	11.90	0.04	0.31	1.13	sandy silt to clayey silt	UNDFND	UNDFD	5	.6
8.75	28.71	26.60	0.10	0.39	1.15	silty sand to sandy silt	<40	32-34	8	UNDEFINED
9.00	29.53	18.26	0.04	0.21	1.17	silty sand to sandy silt	<40	30-32	6	UNDEFINED
9.25	30.35	14.62	0.03	0.18	1.20	sandy silt to clayey silt	UNDFND	UNDFD	6	.8
9.50	31.17	33.72	0.02	0.06	1.22	sand to silty sand	<40	34-36	8	UNDEFINED
9.75	31.99	20.36	0.10	0.47	1.24	silty sand to sandy silt	<40	30-32	7	UNDEFINED
10.00	32.81	80.90	2.36	2.92	1.26	sandy silt to clayey silt	UNDFND	UNDFD	31	5.2

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

te: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT-S12-04

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr - Dr (%)	PHI (deg.	SPT N	Su tsf
10.25	33.63	99.14	3.73	3.77	1.23	clayey silt to silty clay	UNDFND	UNDFD	47	6.4
10.50	34.45	80.46	2.71	3.37	1.30	sandy silt to clayey silt	UNDFND	UNDFD	31	5.2
10.75	35.27	126.56	4.14	3.27	1.33	sandy silt to clayey silt	UNDFND	UNDFD	48	8.3
11.00	36.09	157.68	3.86	2.45	1.35	silty sand to sandy silt	70-80	40-42	>50	UNDEFINED
11.25	36.91	153.34	3.74	2.44	1.37	silty sand to sandy silt	70-80	40-42	49	UNDEFINED
11.50	37.73	141.40	3.20	2.26	1.39	silty sand to sandy silt	70-80	40-42	45	UNDEFINED
11.75	38.55	84.86	2.25	2.65	1.41	sandy silt to clayey silt	UNDFND	UNDFD	33	5.5
12.00	39.37	26.80	0.65	2.42	1.43	sandy silt to clayey silt	UNDFND	UNDFD	10	1.6
12.25	40.19	41.58	0.74	1.78	1.45	sandy silt to clayey silt	UNDFND	UNDFD	16	2.6
12.50	41.01	46.28	1.29	2.78	1.48	sandy silt to clayey silt	UNDFND	UNDFD	13	2.9
12.75	41.83	75.88	2.53	3.33	1.50	sandy silt to clayey silt	UNDFND	UNDFD	29	4.9
13.00	42.65	48.70	0.70	1.44	1.52	silty sand to sandy silt	40-50	34-36	16	UNDEFINED
13.25	43.47	43.30	0.65	1.50	1.54	silty sand to sandy silt	<40	34-36	14	UNDEFINED
13.50	44.29	48.52	2.31	4.76	1.56	silty clay to clay	UNDFND	UNDFD	31	3.0
13.75	45.11	68.44	3.27	4.77	1.58	silty clay to clay	UNDFND	UNDFD	44	4.3
14.00	45.93	103.94	4.15	4.00	1.61	clayey silt to silty clay	UNDFND	UNDFD	50	6.7
14.25	46.75	229.70	12.26	5.34	1.63	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
14.50	47.57	151.16	8.45	5.59	1.65	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
14.75	48.39	140.32	7.35	5.24	1.67	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
15.00	49.21	109.34	5.20	4.75	1.69	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
15.25	50.03	148.24	7.92	5.34	1.71	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
50	50.85	184.78	8.22	4.45	1.74	very stiff fine grained (*)	UNDFND	UNDFD	>50	UNDEFINED
15.75	51.67	252.72	8.24	3.26	1.76	sand to clayey sand (*)	UNDFND	UNDFD	>50	UNDEFINED
16.00	52.49	245.90	5.78	2.35	1.78	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

FONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT-S14-02
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :01/31/94 14:15
Cone Used :339
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	143.18	1.27	0.89	0.02	sand to silty sand	>90	>48	34	UNDEFINED
0.50	1.64	116.74	1.90	1.63	0.07	silty sand to sandy silt	>90	>48	37	UNDEFINED
0.75	2.46	36.48	0.83	0.96	0.12	sand to silty sand	>90	>48	21	UNDEFINED
1.00	3.28	69.00	0.52	0.75	0.17	sand to silty sand	80-90	46-48	17	UNDEFINED
1.25	4.10	26.80	0.32	1.21	0.21	sandy silt to clayey silt	UNDFND	UNDFD	10	1.7
1.50	4.92	2.22	0.08	3.77	0.26	clay	UNDFND	UNDFD	2	.1
1.75	5.74	1.46	0.03	2.25	0.31	sensitive fine grained	UNDFND	UNDFD	1	7.6
2.00	6.56	1.24	0.03	2.77	0.35	organic material	UNDFND	UNDFD	1	.0
2.25	7.38	18.92	0.20	1.03	0.40	sandy silt to clayey silt	UNDFND	UNDFD	7	1.2
2.50	8.20	24.12	0.43	1.80	0.45	sandy silt to clayey silt	UNDFND	UNDFD	9	1.5
2.75	9.02	38.08	0.41	1.09	0.50	silty sand to sandy silt	40-50	38-40	12	UNDEFINED
3.00	9.84	37.04	0.41	1.10	0.54	silty sand to sandy silt	40-50	38-40	12	UNDEFINED
3.25	10.66	13.20	0.36	2.69	0.59	clayey silt to silty clay	UNDFND	UNDFD	6	.8
3.50	11.48	75.98	0.39	0.52	0.64	sand to silty sand	60-70	40-42	18	UNDEFINED
3.75	12.30	56.56	0.33	0.59	0.68	sand to silty sand	50-60	40-42	14	UNDEFINED
4.00	13.12	52.94	0.33	0.63	0.73	sand to silty sand	50-60	38-40	13	UNDEFINED
4.25	13.94	66.08	0.37	0.56	0.77	sand to silty sand	50-60	40-42	16	UNDEFINED
4.50	14.76	69.30	0.40	0.58	0.79	sand to silty sand	50-60	40-42	17	UNDEFINED
4.75	15.58	73.46	0.37	0.51	0.81	sand to silty sand	60-70	40-42	18	UNDEFINED
00	16.40	38.88	0.37	0.95	0.83	silty sand to sandy silt	40-50	36-38	12	UNDEFINED
.25	17.22	9.48	0.16	1.71	0.85	clayey silt to silty clay	UNDFND	UNDFD	5	.5
5.50	18.04	13.14	0.15	1.14	0.87	sandy silt to clayey silt	UNDFND	UNDFD	5	.8
5.75	18.86	9.54	0.09	0.96	0.89	clayey silt to silty clay	UNDFND	UNDFD	5	.5
6.00	19.69	6.72	0.07	1.07	0.92	sensitive fine grained	UNDFND	UNDFD	3	.3
6.25	20.51	5.12	0.05	0.89	0.94	sensitive fine grained	UNDFND	UNDFD	2	.2
6.50	21.33	5.92	0.05	0.87	0.96	sensitive fine grained	UNDFND	UNDFD	3	.3
6.75	22.15	6.98	0.08	1.17	0.98	sensitive fine grained	UNDFND	UNDFD	3	.3
7.00	22.97	24.48	0.14	0.59	1.00	silty sand to sandy silt	<40	32-34	3	UNDEFINED
7.25	23.79	16.76	0.09	0.53	1.02	sandy silt to clayey silt	UNDFND	UNDFD	6	1.0
7.50	24.61	5.02	0.06	1.29	1.05	sensitive fine grained	UNDFND	UNDFD	2	.2
7.75	25.43	10.30	0.11	1.10	1.07	clayey silt to silty clay	UNDFND	UNDFD	5	.5
8.00	26.25	66.04	0.44	0.66	1.09	sand to silty sand	50-60	38-40	16	UNDEFINED
8.25	27.07	57.48	0.33	0.57	1.11	sand to silty sand	40-50	36-38	14	UNDEFINED
8.50	27.89	12.36	0.19	1.51	1.13	clayey silt to silty clay	UNDFND	UNDFD	6	.7
8.75	28.71	14.72	0.12	0.81	1.15	sandy silt to clayey silt	UNDFND	UNDFD	6	.8
9.00	29.53	8.90	0.09	1.02	1.17	clayey silt to silty clay	UNDFND	UNDFD	4	.4
9.25	30.35	9.88	0.06	0.57	1.20	sandy silt to clayey silt	UNDFND	UNDFD	4	.5
9.50	31.17	20.92	0.25	1.19	1.22	sandy silt to clayey silt	UNDFND	UNDFD	8	1.2
9.75	31.99	8.90	0.16	1.84	1.24	clayey silt to silty clay	UNDFND	UNDFD	4	.4
10.00	32.81	8.00	0.08	0.98	1.26	undefined	UNDFND	UNDFD	UDF	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

te: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT-S14-02

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr - Dr (%)	PHI deg.	LPT N	Su tsf
10.25	33.63	21.00	0.22	1.07	1.28	sandy silt to clayey silt	UNDFND	UNDFD	5	1.2
10.50	34.45	30.50	0.33	1.07	1.30	silty sand to sandy silt	<40	32-34	13	UNDEFINED
10.75	35.27	28.18	0.93	3.30	1.33	clayey silt to silty clay	UNDFND	UNDFD	13	1.7
11.00	36.09	48.24	2.24	4.64	1.35	silty clay to clay	UNDFND	UNDFD	21	3.0
11.25	36.91	101.46	3.74	3.69	1.37	sandy silt to clayey silt	UNDFND	UNDFD	39	6.6
11.50	37.73	156.72	4.77	3.05	1.39	sandy silt to clayey silt	UNDFND	UNDFD	>50	10.3
11.75	38.55	279.80	6.20	2.21	1.41	sand to silty sand	>90	44-46	>50	UNDEFINED
12.00	39.37	289.08	5.03	1.74	1.43	sand to silty sand	>90	44-46	>50	UNDEFINED
12.25	40.19	245.72	5.27	2.15	1.45	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
12.50	41.01	173.40	5.57	3.21	1.48	sandy silt to clayey silt	UNDFND	UNDFD	>50	11.4
12.75	41.83	118.70	3.93	3.31	1.50	sandy silt to clayey silt	UNDFND	UNDFD	45	7.7
13.00	42.65	59.36	1.61	2.71	1.52	sandy silt to clayey silt	UNDFND	UNDFD	23	3.7
13.25	43.47	85.70	2.21	2.58	1.54	sandy silt to clayey silt	UNDFND	UNDFD	33	5.5
13.50	44.29	292.02	3.44	1.18	1.56	sand	>90	42-44	>50	UNDEFINED
13.75	45.11	280.00	3.75	1.34	1.58	sand	80-90	42-44	>50	UNDEFINED
14.00	45.93	279.70	2.59	0.93	1.61	sand	80-90	42-44	>50	UNDEFINED
14.25	46.75	268.38	1.65	0.62	1.63	sand	80-90	42-44	>50	UNDEFINED
14.50	47.57	329.18	1.54	0.47	1.65	gravelly sand to sand	>90	44-46	>50	UNDEFINED
14.75	48.39	423.80	2.61	0.62	1.67	gravelly sand to sand	>90	44-46	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson
On Site Loc:CPT-S14-03
Job No. :2738.1203
Tot. Unit Wt. (avg) : 115 pcf

CPT Date :01/31/94 10:05
Cone Used :339
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI (deg.)	SPT N	Su tsf
0.25	0.82	1.54	0.03	2.09	0.02	sensitive fine grained	UNDFND	UNDFD	1	.1
0.50	1.64	66.88	0.39	0.59	0.07	sand to silty sand	>90	>48	16	UNDEFINED
0.75	2.46	235.86	2.32	0.91	0.12	sand	>90	>48	49	UNDEFINED
1.00	3.28	125.20	1.76	1.40	0.17	sand to silty sand	>90	>48	30	UNDEFINED
1.25	4.10	33.28	0.37	1.12	0.21	silty sand to sandy silt	50-60	42-44	11	UNDEFINED
1.50	4.92	14.38	0.28	1.93	0.26	clayey silt to silty clay	UNDFND	UNDFD	7	.9
1.75	5.74	48.64	0.37	0.76	0.31	silty sand to sandy silt	60-70	42-44	16	UNDEFINED
2.00	6.56	62.06	0.36	0.58	0.35	sand to silty sand	60-70	42-44	15	UNDEFINED
2.25	7.38	46.72	0.24	0.52	0.40	sand to silty sand	50-60	40-42	11	UNDEFINED
2.50	8.20	13.66	0.26	1.89	0.45	clayey silt to silty clay	UNDFND	UNDFD	7	.8
2.75	9.02	0.96	0.07	7.65	0.50	undefined	UNDFND	UNDFD	UDF	UNDEFINED
3.00	9.84	1.32	0.06	4.32	0.54	organic material	UNDFND	UNDFD	1	5.1
3.25	10.66	24.50	0.16	0.66	0.59	silty sand to sandy silt	<40	36-38	8	UNDEFINED
3.50	11.48	20.96	0.24	1.16	0.64	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
3.75	12.30	14.12	0.24	1.70	0.68	clayey silt to silty clay	UNDFND	UNDFD	7	.8
4.00	13.12	20.58	0.19	0.91	0.73	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
4.25	13.94	6.42	0.16	2.42	0.77	silty clay to clay	UNDFND	UNDFD	4	.3
4.50	14.76	46.74	0.25	0.53	0.79	sand to silty sand	40-50	38-40	11	UNDEFINED
4.75	15.58	32.80	0.22	0.67	0.81	silty sand to sandy silt	<40	36-38	10	UNDEFINED
00	16.40	25.66	0.16	0.61	0.83	silty sand to sandy silt	<40	34-36	8	UNDEFINED
.25	17.22	49.90	0.27	0.55	0.85	sand to silty sand	40-50	38-40	12	UNDEFINED
5.50	18.04	67.32	0.31	0.46	0.87	sand to silty sand	50-60	38-40	16	UNDEFINED
5.75	18.86	73.20	0.37	0.51	0.89	sand to silty sand	50-60	40-42	18	UNDEFINED
6.00	19.69	70.06	0.32	0.45	0.92	sand to silty sand	50-60	38-40	17	UNDEFINED
6.25	20.51	21.88	0.25	1.16	0.94	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
6.50	21.33	8.04	0.07	0.85	0.96	sensitive fine grained	UNDFND	UNDFD	4	.4
6.75	22.15	8.78	0.08	0.87	0.98	clayey silt to silty clay	UNDFND	UNDFD	4	.5
7.00	22.97	6.48	0.03	0.40	1.00	sensitive fine grained	UNDFND	UNDFD	3	.3
7.25	23.79	6.12	0.01	0.24	1.02	sensitive fine grained	UNDFND	UNDFD	3	.3
7.50	24.61	3.44	0.03	0.88	1.05	sensitive fine grained	UNDFND	UNDFD	2	.1
7.75	25.43	3.92	0.03	0.67	1.07	sensitive fine grained	UNDFND	UNDFD	2	.1
8.00	26.25	10.34	0.07	0.65	1.09	sandy silt to clayey silt	UNDFND	UNDFD	4	.5
8.25	27.07	16.10	0.05	0.28	1.11	sandy silt to clayey silt	UNDFND	UNDFD	6	.9
8.50	27.89	16.10	0.14	0.88	1.13	sandy silt to clayey silt	UNDFND	UNDFD	6	.9
8.75	28.71	12.48	0.04	0.33	1.15	sandy silt to clayey silt	UNDFND	UNDFD	5	.7
9.00	29.53	5.32	0.02	0.43	1.17	sensitive fine grained	UNDFND	UNDFD	3	.2
9.25	30.35	7.14	0.02	0.28	1.20	sensitive fine grained	UNDFND	UNDFD	3	.3
9.50	31.17	8.20	0.03	0.36	1.22	sensitive fine grained	UNDFND	UNDFD	4	.4
9.75	31.99	7.94	0.04	0.51	1.24	sensitive fine grained	UNDFND	UNDFD	4	.4
10.00	32.81	6.38	0.03	0.55	1.26	sensitive fine grained	UNDFND	UNDFD	3	.3

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

.te: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO ENVIRONMENTAL DRILLING

Engineer MontgomeryWatson On Site Loc:CPT-S14-03

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Dr - Dr (%)	PHI deg.	SPT N	Su tsf
10.25	33.63	14.62	0.02	0.14	1.28	sandy silt to clayey silt	UNDFND	UNDFD	6	.8
10.50	34.45	11.04	0.04	0.39	1.30	sandy silt to clayey silt	UNDFND	UNDFD	4	.6
10.75	35.27	11.90	0.05	0.46	1.33	sandy silt to clayey silt	UNDFND	UNDFD	5	.6
11.00	36.09	5.72	0.00	0.07	1.35	sensitive fine grained	UNDFND	UNDFD	3	.2
11.25	36.91	10.94	0.08	0.70	1.37	sandy silt to clayey silt	UNDFND	UNDFD	4	.5
11.50	37.73	33.40	0.09	0.27	1.39	silty sand to sandy silt	<40	32-34	11	UNDEFINED
11.75	38.55	17.38	0.21	1.21	1.41	sandy silt to clayey silt	UNDFND	UNDFD	7	1.0
12.00	39.37	30.54	0.94	3.08	1.43	clayey silt to silty clay	UNDFND	UNDFD	15	1.8
12.25	40.19	30.94	1.14	3.67	1.45	clayey silt to silty clay	UNDFND	UNDFD	15	1.9
12.50	41.01	109.52	3.15	2.88	1.48	sandy silt to clayey silt	UNDFND	UNDFD	42	7.1
12.75	41.83	129.88	3.61	2.78	1.50	sandy silt to clayey silt	UNDFND	UNDFD	50	8.5
13.00	42.65	195.42	5.27	2.70	1.52	silty sand to sandy silt	70-80	42-44	>50	UNDEFINED
13.25	43.47	209.86	5.17	2.46	1.54	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED
13.50	44.29	251.58	6.51	2.59	1.56	silty sand to sandy silt	80-90	42-44	>50	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

CONE PENETRATION RECORD

JOB NO: 276-7176

CONE ID: 339

LOCATION: ALAMEDA NAS

BUBBLE NO.: 359

ENGINEER: MONT. WATSON

PROJECT NO: 2738, 1203

PROJECT: NAS ALAMADA CTO

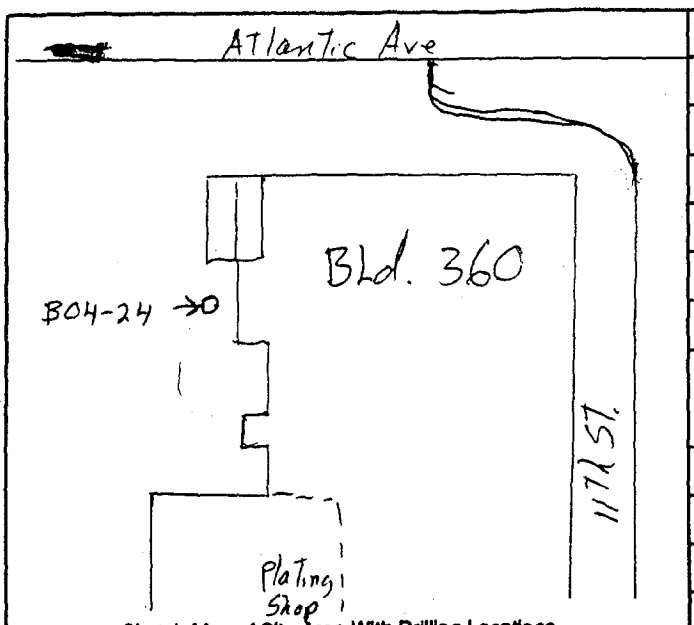
DATE: 1/31/94

FILE NO.	HOLE NO.	LOCATION NAME	PREPUNCH/ BACKFILL	TOTAL DEPTH METERS/FEET	GROUNDWATER DEPTH/ HOLE DEPTH FT	REASON FOR TERMINATION/ COMMENTS
06	1	CPT 514-03	Tremie	13.6 / 44.6	10'	No Rod Support and High Tip / Buckling
07	2	CPT514-01	TREMIE	/ 48.8	10'	Rod Buckling TS 362
08	3	CPT 514-02	TREMIE	48.7	10'	High Rod Buckling TS 472

ATTACHMENT 2

BORING LOGS

SITE 4



Sketch Map of Site Area With Drilling Locations

Boring # B04-24 MW# | Sheet 1 of 1

Project: CTO-0260

Job # 2738.1203 Site: 4

Logged By: WW Proj. Eng: KS Edited By:

Drilling Contractor: Gregg

Drill Rig Type/Method: Mobill M11 HSA.

Drillers Name: Marvin Hoover

Borehole Diam./Drill Bit Type: 6" | Total Depth: 5.5' | Ref. Elev.:

Hammer Wt: 140 Lb Drop: 30"

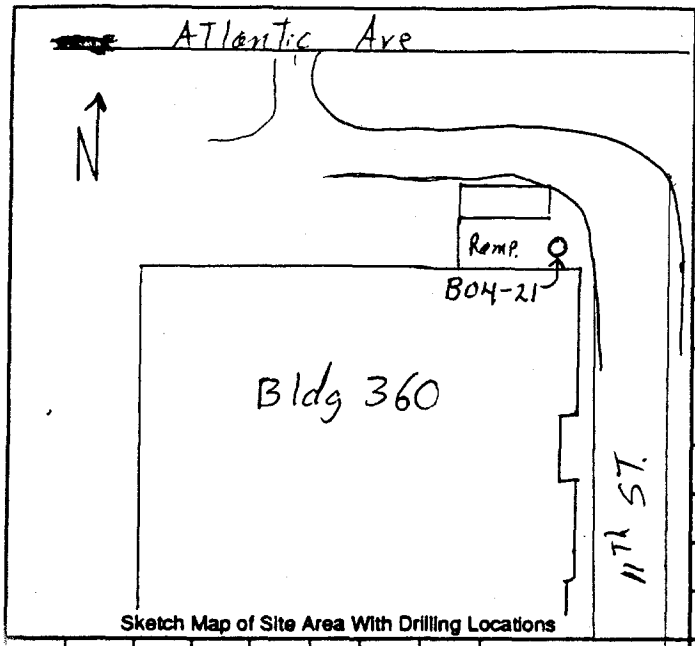
Start Time: 1430 Date: 3/30/94

Completion Time: 1445 Date: 3/30/94

Backfille Time: 1455 Date: 3/30/94

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)	4.8'			
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Recovery	Depth Feet	Graphics	
							Neat Cement Grout				6" Concrete
0.0		6						1440	1	SP	Fine grained Sand (SP), moist, med. dense, dark brown 7.5YR(4/2) Color Change To light brownish gray 10YR 6/2, below 1'
		8									
		15							2		
0.0		6						1442	3		
		10									Fine grained Sand (SP) Saturated below 4.8', med. dense, gray 10YR(5/1)
		21							4		
		4									
0.5		7							5		Silty Sand (SM) very moist To saturated, med. dense black 2.5Y(N 2/) w 10% Silt Sand is fine To med. grained
		10						1445		SM	
									6		
									7		
									8		
									9		
									10		
									11		
									12		

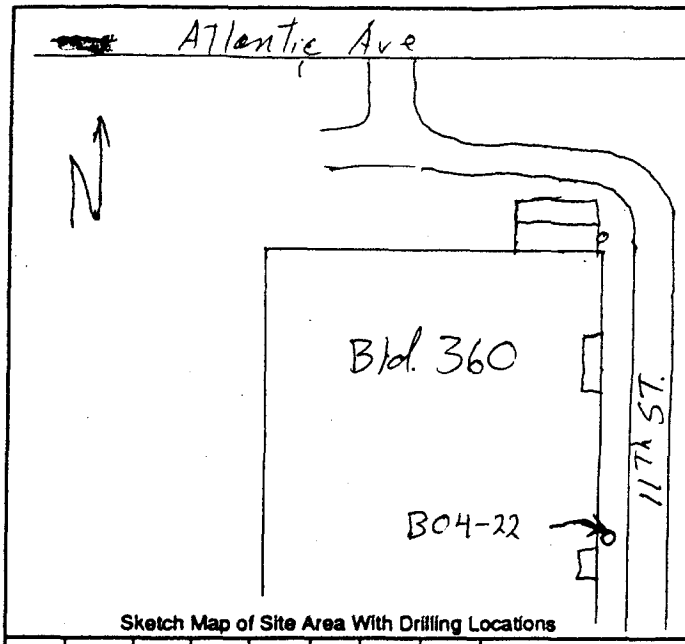


Sketch Map of Site Area With Drilling Locations

Boring #	B04-21 MW#
Sheet	1 of 1
Project:	CTO-0260
Job #	2738.1203
Site:	4
Logged By:	W.W.
Proj. Eng:	KS
Edited By:	
Drilling Contractor:	Gregg
Drill Rig Type/Method:	Hand Auger
Drillers Name:	
Borehole Diam./Drill Bit Type	4"
Total Depth	5.5'
Ref. Elev.	
Hammer Wt:	
Drop:	
Start Time:	1615
Date:	3/30/94
Completion Time:	1630
Date:	3/30/94
Backfille Time:	1645
Date:	3/30/94

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)	5'			
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Recovery	Depth Feet	Graphics	
											6" Concrete
0			↓	↓			Neat Cement Grout →	X 1615	1	SP	
											Fine to med. grained Sand (SP)
									2		moist, light brownish gray
											10YR (6/2)
0			↓	↓				X 1620	3		
											Sand as above
									4		
											Fine to med. grained Sand (SP)
									5	▽	Saturated below 5'
0			↓	↓			↓	X 1630			Dark gray 5Y (4/1)
									6		T.D. = 5.5'
									7		
									8		
									9		
									10		
									11		
									12		

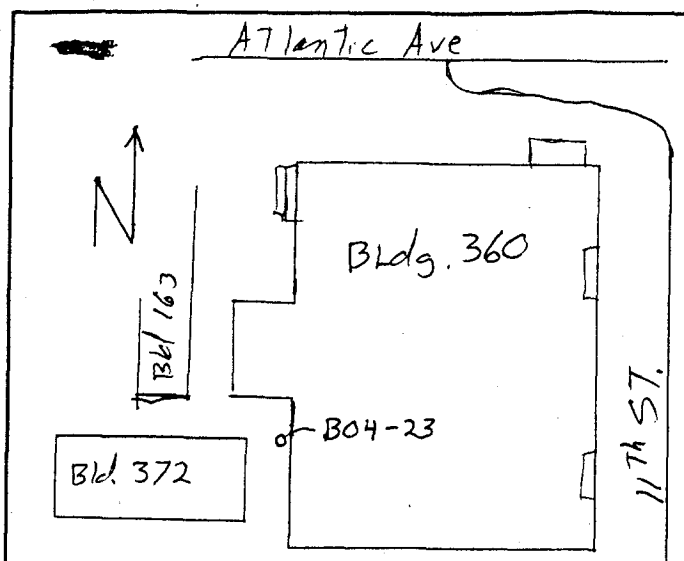


Sketch Map of Site Area With Drilling Locations

Boring # B04-22 MW#	Sheet 1 of 1
Project: CTO-260	
Job # 2738.1203	Site: 4
Logged By: W.W.	Proj. Eng: K S Edited By:
Drilling Contractor: Gregg	
Drill Rig Type/Method: Mobill M11	HSA.
Drillers Name: Marvin Hoover	
Borehole Diam./Drill Bit Type: 6"	Total Depth: 5.5' / Ref. Elev.
Hammer Wt: 140	Drop: 30"
Start Time: 1510	Date: 3/30/94
Completion Time: 1525	Date: 3/30/94
Backfille Time: 1535	Date: 3/30/94

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)	5'			
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample	Recovery	Feet	Graphics	
												6" Concrete
0.0		7					Neat Cement grout	X		1	SP	
		18										Fine to med. grained Sand (SP), moist.
		23								2		Dense, light brownish gray 10YR (6/2)
												Trace sea shells
0.0		5						X		3		
		8									SM	Silty Sand (SM) Very moist, med.
		11								4		dense, black 10YR(2/1)
		6										
0.0		6						X	▽	5		Silty Sand (SM), Saturated below
		6						X	Dup			5', med dense, dark gray 2.5Y(1/4)
										6		TD = 5.5'
										7		
										8		
										9		
										10		
										11		
										12		

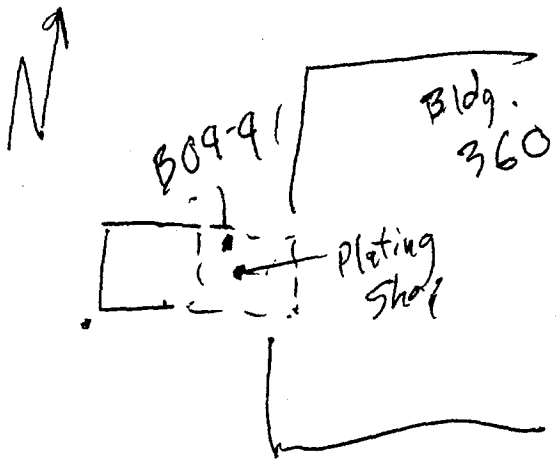


Sketch Map of Site Area With Drilling Locations

Boring # B04-23 MW#	Sheet 1 of 1
Project: CTO-0260	
Job # 2738.1203	Site: 4
Logged By: WW	Proj. Eng: KS	Edited By:
Drilling Contractor: Gregg	
Drill Rig Type/Method: Mobill M11 HSA	
Drillers Name: Marvin Hoover	
Borehole Diam./Drill Bit Type: 6"	Total Depth: 5.5'
	Ref. Elev:
Hammer Wt: 140 Lb	Drop: 30"
Start Time: 1450	Date: 3/30/94
Completion Time: 1505	Date: 3/30/94
Backfille Time: 1520	Date: 3/30/94

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Recovery	Depth Feet	Graphics	
0.0											6" Concrete
		13						1500	1	SP	Fine grained Sand (SP) moist, dense,
		18					Neat Cement Grout	Dup			dark reddish brown 7.5YR(3/2)
		27							2		Color change to light brownish gray
0.0		5									10YR (6/2) below 1.5'
		7							3		
		11									Sand as above, very moist, med.
									4		dense, light brownish gray 10YR(6/2).
0.0		4									
		4							5		Fine grained Sand (SP) very moist to saturated,
		6									loose to med. dense, light brownish gray, 10YR(6/2)
									6		TD = 5.5'
									7		
									8		
									9		
									10		
									11		
									12		



Sketch Map of Site Area With Drilling Locations

Boring # B09-91 MW# | Sheet 1 of 1

Project: Alameda CTO-0260

Job # ~~2738-1404~~ WW Site: 4 2738.1203

Logged By: JEV Proj. Eng: Edited By:

Drilling Contractor: —

Drill Rig Type/Method: Hand Auger

Drillers Name:

Borehole Diam./Drill Bit Type | Total Depth 6.5' | Bed Rock

Hammer Wt: Drop:

Start Time: 1140 Date: 9/1/94

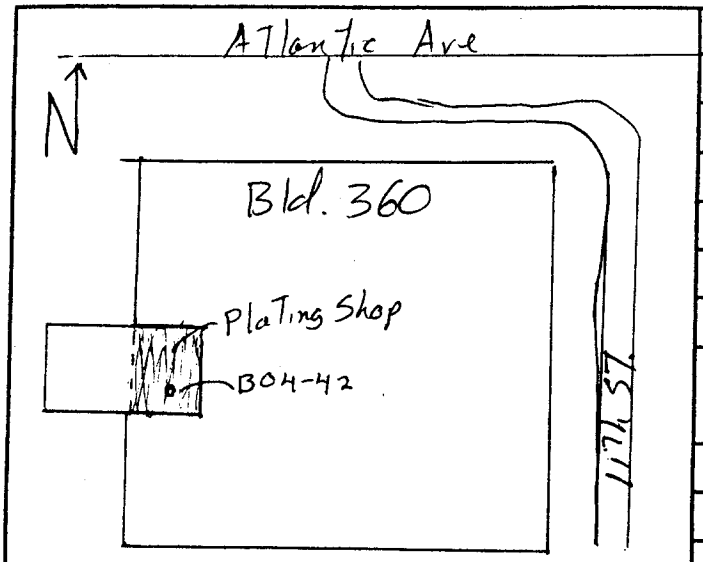
Completion Time: 1305 Date: 9/1/94

Backfill Time: 1370 Date: 9/1/94

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)	•	Casing Type & Size	Annulus Filler	Sample Rec.	Analyses	Depth Feet	
			↓	↓					1145		SAND (SP), lt to dk br, dense, v sl mst, fine-gr, ~~m~~ & high IC.
										1	
										2	
			↓	↓					1220	3	As Above except some clay.
										4	
			↓	↓					1250	5	
			↓	↓					1300		As Above except wet.
			↓	↓					do	6	
										7	TD = 6.5'
										8	
										9	
										10	
										11	
										12	

MP



Sketch Map of Site Area With Drilling Locations

Boring # B04-42MW# Sheet 1 of 1

Project: C70-0260

Job # 2738.1203 Site: 41

Logged By: UPW Proj. Eng: K S Edited By:

Drilling Contractor: Montgomery Watson

Drill Rig Type/Method: Hand Auger

Drillers Name: Wade Weston

Borehole Diam./Drill Bit Type: 4" Total Depth: 5.5' Ref Elev:

Hammer Wt: 20' Drop: 18"

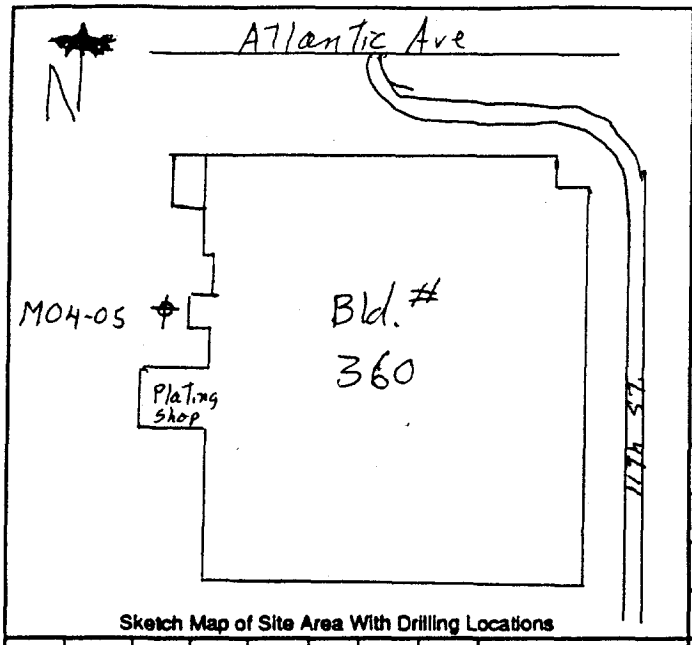
Start Time: 1110 Date: 4/1/94

Completion Time: 1140 Date: 4/1/94

Backfille Time: 1150 Date: 4/1/94

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Recovery	Depth Feet	Graphics	
0.0			↓	↓			Native Material	X	1	SM	Silty Sand (SM), moist, light brownish gray 10YR (6/2), Trace gravel & concrete fragments
0.0			↓	↓				X	3		
									4		Silty Sand, moist to very moist, Gray 5Y (5/1), Trace clay.
0.0			↓	↓				X	5		
									6		TD=5.5'
									7		
									8		
									9		
									10		
									11		
									12		



Sketch Map of Site Area With Drilling Locations

Boring #	MW# MO4-05 Sheet 1 of 2
Project:	CTO-0260
Job #	2738.1203 Site: 4
Logged By:	WW Proj. Eng: KS Edited By:
Drilling Contractor:	Gregg
Drill Rig Type/Method:	Mobil M11 HSA
Drillers Name:	Marvin Hoover
Borehole Diam./Drill Bit Type	8" Total Depth: well 13.5' boring 15' Ref. Elev.
Hammer Wt:	140 Drop: 30"
Start Time:	1045 Date: 3/30/94
Completion Time:	1105 Date: 3/30/94
Backfille Time:	1155 Date: 3/30/94

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)	5.02			
Time	1335			
Date	3/30/94			

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Recovery	Depth Feet	Graphics	
							Neat Cement				8" Concrete slab
		12				Solid			1	SM	Silty Sand (SM) Sand is very fine
		12						Dup			To med. grained, moist, med. dense,
0.0		18					Pellets		2		To dense, Dark grayish brown 10YR
		5							3		(4/2)
		6									
0.0		7							4		Silty Sand (SM) Sand is fine To
											med. grained, very moist To saturated
		4									below 5', med. dense, light brownish
		4							5		gray 10YR 6/2), Trace Sea Shells.
0.0		4									
						Slotted Casing			6		
									7		
							2/12 Sand		8		
		2							9		Silty Sand (SM), Sand is fine To
		4									med. grained, Saturated, loose
0.0		6							10		To med. dense, mottled light brown-
									11		ish gray 10YR (6/2) and yellowish
											brown 10YR (5/4)
									12		

Boring # MW# M04-05 Sheet 2 of 2

Project: CTO-0260

Job # 2738.1203 Site: L-1

PID/OVA	Sampler Type	Blow Counts	Advance	Rcvd (in.)		Casing	Annulus	Sample Rec	Depth Feet	Graph	
									12		
									13	SM	Silty Sand (SM) Sand is fine to med. grained, Saturated, med dense, Yellowish brown 10YR 5/4) with light brownish gray 10YR (6/2) Stainning around poor voids.
		5							14		
		11									
0.0		16							15		
									16		TD Drilled = 13.5' TD Sampled = 15' Well set at 13.5'
									17		
									18		
									19		
									20		
									1		
									2		
									3		
									4		
									5		
									6		
									7		
									8		
									9		
									0		
									1		
									2		

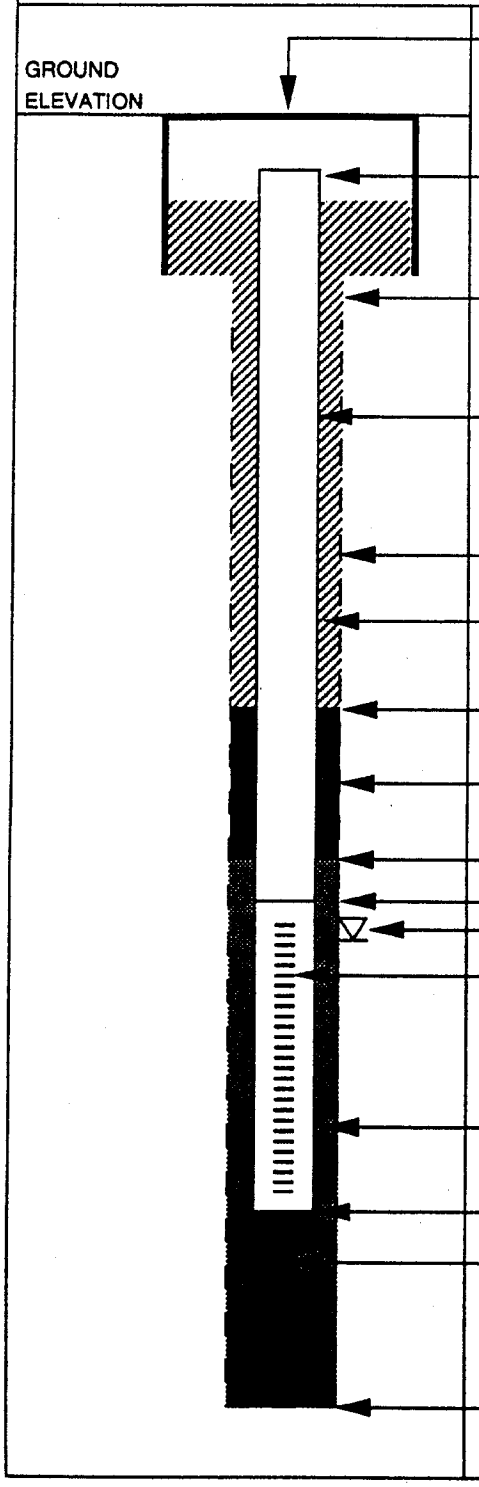
BORING NO. MO4-05

MONITORING WELL SHEET

PROJECT CTO-0260
PROJECT NO. 2738.1203
ELEVATION
FIELD GEOLOGIST LJPW

LOCATION Site H
BORING MO4-05
DATE 3/30/94

DRILLER Gregg - Marvin Hoover
DRILLING METHOD HSA
DEVELOPMENT METHOD Surge, bail, pump



ELEVATION OF GROUND SURFACE:

ELEVATION OF TOP OF WELL CASING:

I.D. OF SURFACE CASING:
TYPE OF SURFACE CASING:

RISER PIPE I.D.: 2"
TYPE OF RISER PIPE: SCH. 40 PVC

BOREHOLE DIAMETER: 8"

TYPE OF BACKFILL: Neat Cement Grout

ELEVATION / DEPTH OF SEAL: 2.5'

TYPE OF SEAL: 3/8 bentonite pellets

DEPTH TOP OF SAND PACK: 3.0'
ELEVATION / DEPTH TOP OF SCREEN: 3.5'
FIRST ENCOUNTERED SATURATED ZONE
TYPE OF SCREEN: SCH 40 PVC
SLOT SIZE x LENGTH 0.010 factory slot
I.D. OF SCREEN 2"

TYPE OF SAND PACK: 2/12 RMC Lone Star Monterey Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 13.5'

ELEVATION / DEPTH BOTTOM OF SAND PACK: 15'

TYPE OF BACKFILL BELOW OBSERVATION WELL: 2/12 Sand

ELEVATION / DEPTH OF HOLE: 15
Drilled to 13.5 - Sampled to 15'

0.39' from TOC to Top of Christie Box

≅ 8.5' of filter pack (saturated)

GROUNDWATER SAMPLING/WELL DEVELOPMENT LOG

Client PRC/Navy
Site Site 4
closest to building — Well number M-04-05
Job number 2738.1203

Total well depth * 13.67
Well diameter 2
Borehole diameter 8

Min number well vol to be purged 3
Vol per ft casing (gal) (0.17)8.74 = 1.49
Vol per ft borehole (gal) (2.55)8.5 = 21.68
(less casing and filter pack)

Date 4/6/94
Static water level (ft)* 4.93
Standing water column (ft) 8.74

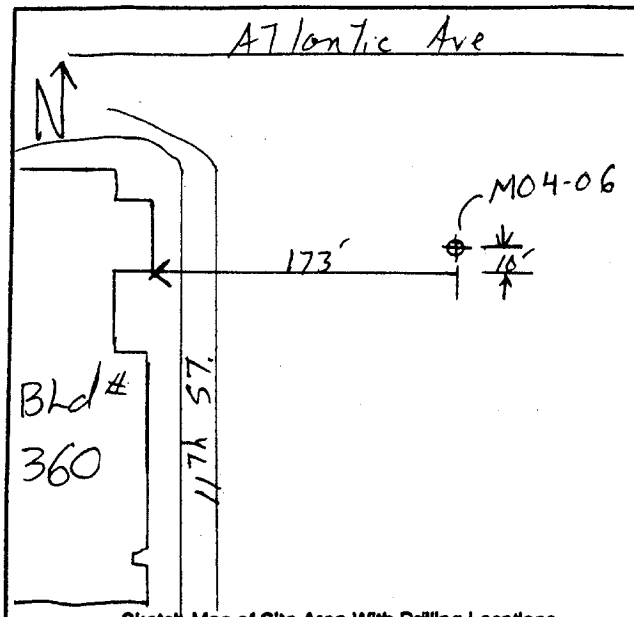
Amt one well vol (gal) 23.17
Total gal to be purged 69.51

Development method Surge, Bail, Pump
Presampling purging method
Sampling method

* All measurements taken from: X Top of casing, ___ Protective casing, ___ Ground level

TIME	AMOUNT PURGED (gal)	FIELD PARAMETERS MEASURED							COMMENTS	FIELD TECHNICIAN
		EC	pH	TEMP °F	TURBIDITY	PID	W.L.	Flow		
1117	—		6.75	65.3		0ppm			1st Bail pH reading	SXJ
1119	—								Begin surge	
1145	—								end surge	
1150	—								Begin bailing	
1157	5	756	6.93	66.4	>200				Turbid, brown, no odor	
1214	10	767	6.88	66.9	>200	0ppm.	10.8		Turbid - Slow recharge, pull off well and go to M-04-07.	
1352	—	—	—	—	—	—	5.96		Begin bailing again	
1355	13	723	7.32	65.4	>200		10.2		Turbid, Brown, no odor.	
1422	17	655	7.24	63.2	>200	0ppm	11.7		Turbid - slow recharge	
1434	18	621	7.85	63.3	>200		11.6		Turbid - Pull off well due to slow recharge	
4/7/94 1514	19	786	6.88	64.8	>200	0ppm.	4.91		Turbid, brown, begin bailing	
1524	23	650	6.51	64.8	>200		bailed dry		Turbid, bailed dry, pull off well.	

MF



Sketch Map of Site Area With Drilling Locations

Boring #	MW# M04-06 Sheet 1 of 2
Project:	CTO-0260
Job #	2738.1203 Site: 4
Logged By:	LJPW Proj. Eng: KXS Edited By:
Drilling Contractor:	Gregg
Drill Rig Type/Method:	Mobill M11 HSA
Drillers Name:	Marvin Hoover
Borehole Diam./Drill Bit Type	8" Total Depth: well = 13.5 boring 15.5 Ref. Elev.
Hammer Wt:	140 Drop: 30"
Start Time:	0900 Date: 3/30/94
Completion Time:	0940 Date: 3/30/94
Backfille Time:	1030 Date: 3/30/94

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)	5.2'			
Time				
Date				

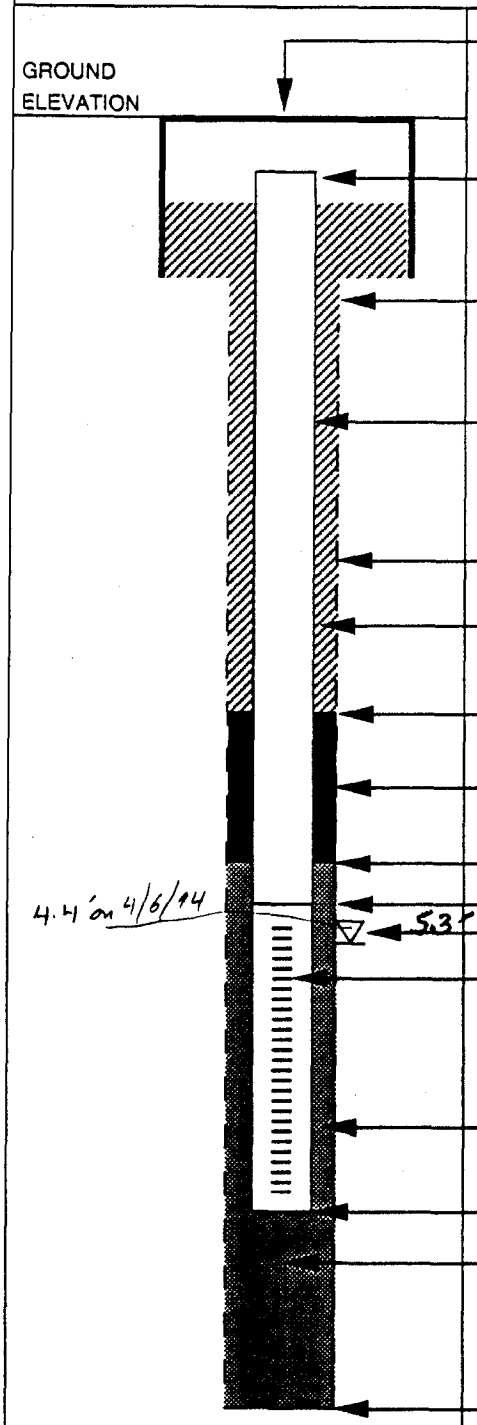
PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Recovery	Depth Feet	Graphics	
										SM	Silty Sand (SM), Sand is fine grained, moist, med. dense, grayish brown 10YR (5/2), Trace Concrete rubble @ surface
		4				Solid Casing	Grout		1		
0.0		5									
		6					Pellets		2		
		4									
		6							3		
0.0		6							4		
		3									Silty Sand (SM), Very moist To saturated, loose, grayish brown 10YR (5/2), Sand is fine grained.
		3							5 ▽		
0.5		3					Sand		6		
						2" Casing	Lone Star		7		
									8	SM	
						SCH 40 PVC	AMC				
0.5		10					2/12		9		Silty Sand (SM), very moist To Saturated, Dense, Yellowish brown 10YR (5/4), Sand is fine To med. grained, Trace rootpoors, lense of Gray 10YR 5/1) Sand.
		11									
		31							10		
						Slotted			11		
									12		

PID/OVA	Sampler Type	Blow Counts	Advance	Rcvd (in.)		Casing	Annulus	Sample Rec	Depth Feet	Graph	Boring # MW# M04-06 Sheet 2 of 2
											Project: CTO-0260
											Job # 2738.1203 Site: 4
									12		
									13	SM	
									14		Silty Sand (SM), Very moist to Saturated, med. dense, yellowish brown 10YR (5/4), Sand is fine to med. grained.
00		8									
		12									
		14							15		
									16		TD = 15.5'
											Well set @ 13.5
									17		Solid Casing = 3.5'
											Slot Casing = 10'
									18		
									19		boring drilled to 14' - sampled to 15.5'
									20		
									1		
									2		
									3		
									4		
									5		
									6		
									7		
									8		
									9		
									0		
									1		
									2		

BORING NO. M04-06

MONITORING WELL SHEET

PROJECT CTO-260	LOCATION Site 4	DRILLER Greg Marvin Hoover
PROJECT NO. 2738.1203	BORING M04-06	DRILLING METHOD H.S.A.
ELEVATION	DATE 3/30/93	DEVELOPMENT METHOD surge, bail, pump
FIELD GEOLOGIST WPW		



ELEVATION OF GROUND SURFACE: _____

ELEVATION OF TOP OF WELL CASING: _____

I.D. OF SURFACE CASING: No casing used

TYPE OF SURFACE CASING: _____

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Sch. 40 PVC

BOREHOLE DIAMETER: 8"

TYPE OF BACKFILL: Cement/Concrete grout to surface

ELEVATION / DEPTH OF SEAL: 2.5'

TYPE OF SEAL: 3/8 bentonite pellets

DEPTH TOP OF SAND PACK: 3'

ELEVATION / DEPTH TOP OF SCREEN: 3.5'

FIRST ENCOUNTERED SATURATED ZONE

TYPE OF SCREEN: Sch 40 PVC

SLOT SIZE x LENGTH -010 factory slot

I.D. OF SCREEN 2"

TYPE OF SAND PACK: 2/12 RMC Lonestar Monterey Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 13.5

ELEVATION / DEPTH BOTTOM OF SAND PACK: 15.5

TYPE OF BACKFILL BELOW OBSERVATION WELL: 2/12 Sand in sample hole

ELEVATION / DEPTH OF HOLE: 15.5

* boring drilled to 14' - sampled to 15.5

0.54' from TOC to Top of Christie Box

≅ 10.5' Filter Pack (saturated)

Flow meter indicates ≅ 1.1 gpm. @ 0853

GROUNDWATER SAMPLING/WELL DEVELOPMENT LOG

Client PRC/Navy
Site Site 4
Well number M-04-06
Job number 2738.1203

Total well depth * 13.67
Well diameter 2
Borehole diameter 8

Min number well vol to be purged 3
Vol per ft casing (gal) (0.17) 9.81 = 1.67
Vol per ft borehole (gal) (2.55) 10.5 = 26.78
(less casing and filter pack)

Date 4/6/94

Static water level (ft)* 3.86
Standing water column (ft) 9.81

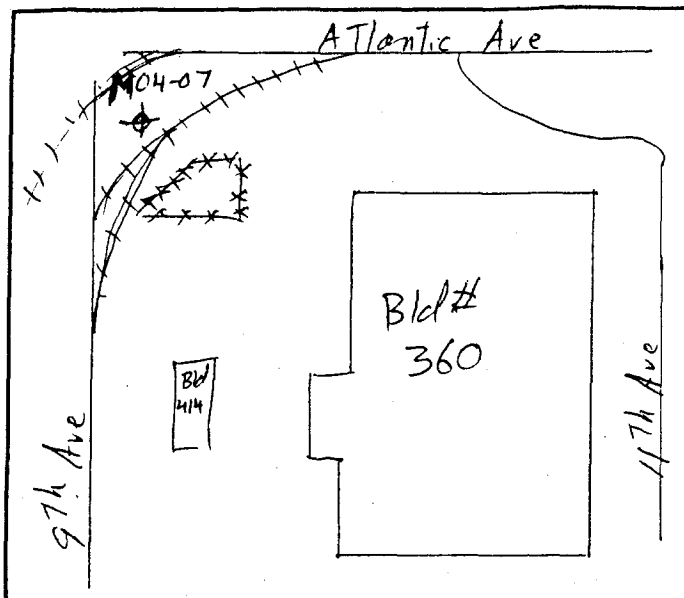
Amt one well vol (gal) 28.45
Total gal to be purged 85.35

Development method Surge, Bail, Pump
Presampling purging method
Sampling method

* All measurements taken from: X Top of casing, ___ Protective casing, ___ Ground level

TIME	AMOUNT PURGED (gal)	FIELD PARAMETERS MEASURED							COMMENTS	FIELD TECHNICIAN
		EC	pH	TEMP °F	TURBIDITY	PID	W.L.	Flow.		
0810	–		7.74			0ppm			1st Bail pH reading	SXJ
0815									Begin surge	
0837									end surge	
0838	2	646	6.89	62.7	>200				Begin bailing, Turbid, Brown, no odor	
0850	10	587	6.96	63.4	>200	0ppm			end bailing, Turbid, Brown, no odor	
0853								1.1	Begin pumping	
0857	17	572	6.91	60.7	>200		11.55	0.66	Turbid, Brown	
0907	22	452	6.83	63.9	>200		11.70	0.56	Turbid, Brown	
0923	31	561	7.06	65.3	>200	0ppm	11.57	0.58	cloudy, less turbid	
1001	54	599	7.05	66.9	98.9		11.95	0.60	cloudy	
1040	75	627	6.99	65.9	51.7	0ppm	12.15	0.61	clearing	
1055	86	647	6.96	64.5	36.6		12.14	0.59	clear – parameters stable	

MF



Sketch Map of Site Area With Drilling Locations

Boring #	MW# M04-07 Sheet 1 of 2
Project:	CTO-0260
Job #	2738.1203 Site: 4
Logged By:	WPW Proj. Eng: KS Edited By:
Drilling Contractor:	Gregg
Drill Rig Type/Method:	Mobil MII HSA.
Drillers Name:	Marvin Hoover
Borehole Diam./Drill Bit Type	8" Total Depth: 13.5 Ref. Elev.
Hammer Wt:	140' Drop: 30"
Start Time:	1230 Date: 3/30/94
Completion Time:	1310 Date: 3/30/94
Backfille Time:	1400 Date: 3/30/94

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)	4.9'			
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Recovery	Depth Feet	Graphics	
											3" Asphalt
0.0		10				2" Solid casing	Grout	1265	1	SP	Sand (SP) moist, Dense, light brownish gray 10YR (6/2) Sand is fine to med. grained, Trace sea shells + root pcors.
		12									
		25							2		
0.0		5					Pellets	1257	3		
		10									Sand (SP) Very moist, Med. dense, Light brownish gray 10YR (6/2), Trace silt, Trace sea shells, saturated @ interface 4.9'.
		15							4		
		1									
1.0		2							5		
		3						1300		SM	Silty Sand (SM) Very moist to saturated. loose, Black 2.5Y (N2), Organic matter common, Trace clay, approx. 20% silt.
									6		
									7		
									8	SP	Sand (SP), Very moist to Saturated, med. dense, yellowish brown 10YR (5/4) with gray 5Y (6/1) staining in root pcors, Trace silt, Sand is fine to med. grained.
						2" Sch 40 Slotted PVC casing	2/12 Rmc Lane Star Sand		9		
0.0		3									
		5							10		
		5									
									11		
									12		Silty Sand SM

Water ▽

Boring # MW# M04-07 Sheet 2 of 2

Project: CTO-0260

Job # 2738.1203 Site: 4

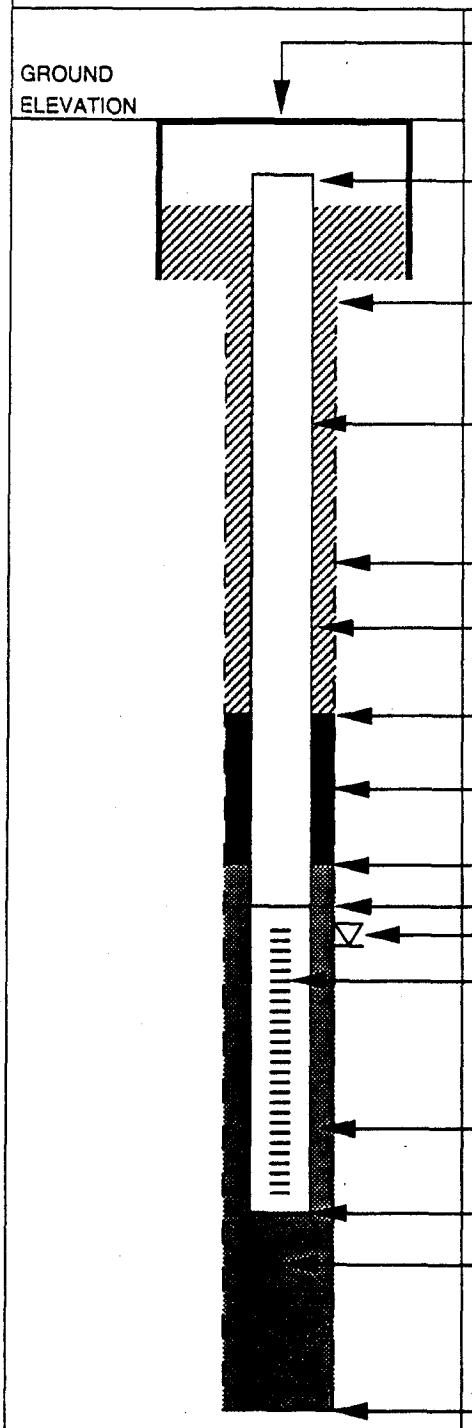
PID/OVA	Sampler Type	Blow Counts	Advance	Rcvd (in.)		Casing	Annulus	Sample Rec	Depth Feet	Graph	
0.0		8							2		Silty Sand (SM) saturated, med dense, light brownish gray 2.5Y (6/2) with gray 5Y (6/1) staining in root pores. approx 5 - 10% silt.
		13									
		12							3		
									4		
									5		TD = 13.5' Well set @ 13.5'
									6		
									7		
									8		
									9		
									0		
									1		
									2		
									3		
									4		
									5		
									6		
									7		
									8		
									9		
									0		
									1		
									2		

BORING NO. M04-07

MONITORING WELL SHEET

Gregg Drilling

PROJECT CTO-260	LOCATION Site 4	DRILLER Marvin Hoover
PROJECT NO. 2738.1203	BORING M04-07	DRILLING METHOD HSA
ELEVATION	DATE 3/30/94	DEVELOPMENT METHOD Surge, bail, pump
FIELD GEOLOGIST WPW		



ELEVATION OF GROUND SURFACE: _____

ELEVATION OF TOP OF WELL CASING: _____

I.D. OF SURFACE CASING: none used

TYPE OF SURFACE CASING: _____

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: SCH 40 PVC

BOREHOLE DIAMETER: 8"

TYPE OF BACKFILL: Cement/Concrete grout

ELEVATION / DEPTH OF SEAL: 2.5'

TYPE OF SEAL: 3/8 bentonite pellets

DEPTH TOP OF SAND PACK: 3'

ELEVATION / DEPTH TOP OF SCREEN: _____

FIRST ENCOUNTERED SATURATED ZONE

TYPE OF SCREEN: SCH 40 PVC

SLOT SIZE x LENGTH 0.010 factory slot

I.D. OF SCREEN 2"

TYPE OF SAND PACK: 2/12 RMC Lone Star Monterey Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 13.5'

ELEVATION / DEPTH BOTTOM OF SAND PACK: 13.5'

TYPE OF BACKFILL BELOW OBSERVATION WELL: N/A

ELEVATION / DEPTH OF HOLE: 13.5'

0.29' from TOC to Top of Christie

≅ 8' of filter pack (saturated)

GROUNDWATER SAMPLING/WELL DEVELOPMENT LOG

Client PRC/Navy
Site Site 4
Well number M-04-07
Job number 2738.1203

Total well depth * 13.64
Well diameter 2
Borehole diameter 8

Min number well vol to be purged 3
Vol per ft casing (gal) (0.17) 8.16 = 1.39
Vol per ft borehole (gal) (2.55) 8 = 20.4
(less casing and filter pack)

Date 4/6/94
Static water level (ft)* 5.48
Standing water column (ft) 8.16

Amt one well vol (gal) 21.79
Total gal to be purged 65.37

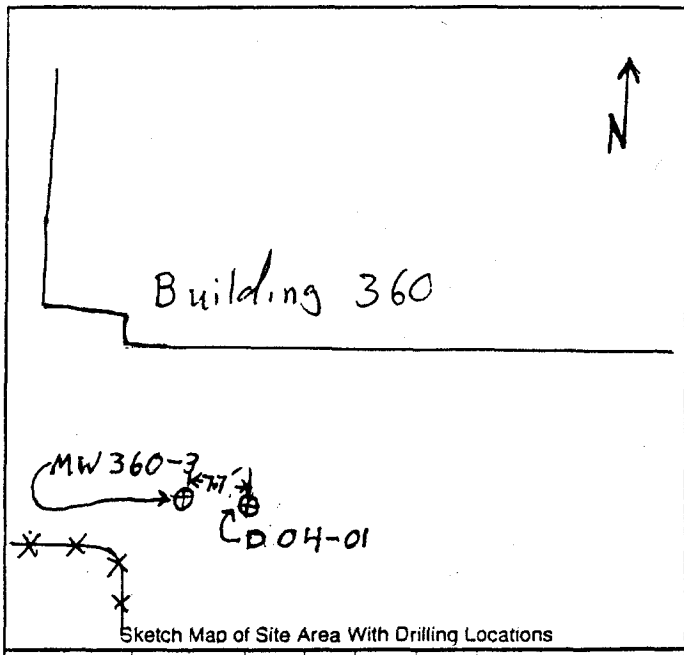
Development method Surge, Bail, pump
Presampling purging method
Sampling method

* All measurements taken from: X Top of casing, ___ Protective casing, ___ Ground level

TIME	AMOUNT PURGED (gal)	FIELD PARAMETERS MEASURED							COMMENTS	FIELD TECHNICIAN
		EC	pH	TEMP	TURBIDITY	PID	W.L.	Flow		
1231	–		7.54	67.6		0ppm			1st bail for pH reading	SXJ
1233	–								Begin surge	
1300	–								end surge	
1304	5	1834	7.88	64.9	>200				Begin bailing, Turbid, brown, no odor	
1323	10	1781	7.56	66.4	>200	0ppm	12.0		end bailing, Turbid, brown, no odor (slow recharge)	
1325	10	–	–	–	–		12.0	–	Begin pumping – minimal recharge, pumped dry.	
1442	–	–	–	–	–		7.45		Return to check W.L.	
4/7/94 1457	11	1676	7.28	68.7	>200	0ppm	5.51		Turbid, no odor, begin bailing	
1505	15	1723	1.17	65.4	>200		bailed dry		Turbid, bailed dry, pull off well	

MF

DO4-01



Sketch Map of Site Area With Drilling Locations

Boring #	MW# DO4-01 Sheet 1 of 6
Project:	CTO-0260
Job #	2738.1203 Site: 4
Logged By:	WPW Proj. Eng: KXS Edited By:
Drilling Contractor:	Water Development Corp.
Drill Rig Type/Method:	
Drillers Name:	Paul Frederiksen
Borehole Diam./Drill Bit Type.	8" HSA To 7' for Casing Temp mud rotary To TD of 101
Total Depth	Well = 96' borings = 101
Ref. Elev.	
Hammer Wt:	140 lb Drop: 30"
Start Time:	0930 Date: 5/12/94
Completion Time:	1440 Date: 5/14/94
Backfill Time:	1715 Date: 5/14/94

	1st Water			
Boring Depth (ft.)	5'			
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Rec. Analyses	Depth Feet		
											6" Concret Pavement
	Sampler →	10							1	SP	fine grained Sand (SP) slightly moist, med-dense, grayish brown 10YR(5/2) To pale brown 10YR 6/3 below
		12				40 PVC →					
		8							2		
		11								SM	Silty Sand (SM) very moist, med-dense light brownish gray 10YR(6/2)
	Spoon	10				Sch			3		
		2								ML	Clayey silt (ML) very moist, firm, greenish gray 5GY(5/1)
		3							4		
	2½" split	4				3"				SP	fine grained Sand (SP) very moist, loose, Very dark gray 10YR (3/1) Trace-5% silt
		4							5	▽	
		3									*Color change @ 5' To grayish brown 10YR (5/2) - saturated below 5'
		1					Neat Cement grout.		6		
		1									
		1							7		
	Continuous Sampler →										fine grained Sand, (SP) saturated, Pale brown 10YR (6/3)
									8		
											fine grained Sand (SP) moist, yellowish brown 10YR(5/4) Trace-5% silt, Trace clay-5% Slightly consolidated.
									9		
									10		
									11		Very fine to fine grained Sand (SP) Saturated below 10', yellowish brown 10YR(5/4)
									12		

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec	Analyses	Depth Feet		Boring # DOH-01 MW# ~~MOH-08~~ Sheet 2 of 6
												Project: CTO-0260
												Job # 2738.1203 Site: 4
										12	SP	Very fine to fine grained sand (SP) saturated, yellowish brown 10YR (5/4) Trace silt.
										13		
										14		
										15		
										16		Very fine to fine grained sand (SP) Saturated, Pale brown 10YR (6/3)
										17		and yellowish brown 10YR (5/4) Trace - 5% silt. Trace Clay
										18		
							Neat Cement Grout			19		
										20		Very fine to fine grained sand (SP) Saturated, light yellowish brown
										21		10YR (6/4), Trace silt
										22		— color change
										23		Very fine to fine grained sand, (SP) Saturated, dark yellowish brown 10YR (4/6), Trace silt,
										24		
										25		Very fine to fine grained sand (SP) Saturated, mottled, light brownish
										26		gray 10YR (6/2) and yellowish
										27		brown 10YR (5/4) Trace silt, Trace clay
										28		Sand As above, slightly consolidated
										29		@ 28' (Packing Shoe).
										30		Very fine to fine grained sand (SP)
										31		Saturated, mottled light brownish gray 10YR (6/2) and yellowish brown
										32		10YR (5/4), Trace silt (Loose)

MF

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Depth Sample Rec / Analyses	Feet	Boring # DCH-01 MW# ~~MW-08~~ Sheet 3 of 6
										Project: CTO-0260
										Job # 2738.1203 Site: 4

Feet	Description
32	SP Very fine To fine grained Sand (SP) very moist To saturated, brown 10YR(5/3), Trace silt.
33	
34	
35	
36	Very fine To fine grained Sand (SP) Saturated, Pale brown 10YR (6/3) Trace - 5% Silt.
37	
38	Sand (SP) Very moist, brown 10YR(5/3) Trace - 5% clay, Trace silt, slightly consolidated,
39	
40	
41	
42	Very fine To fine grained Sand (SP) Saturated, mottled ~~grayish brown~~ light brownish gray 10YR (6/2) and, yellowish brown 10YR (5/4) Trace silt, Trace clay
43	
44	
45	
46	Very fine To fine grained Sand (SP) Saturated, ~~or~~ light brownish gray 10YR 8/2 with yellowish brown 10YR (5/6) mottling, Trace silt To 5%
47	
48	
49	Sand As above
50	Very fine To fine grained Sand (SP) Saturated, light brownish gray with slight yellowish brown 10YR (5/4) mottling, 5% silt.
51	
52	

Neat Cement Grout

MF

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec / Analyses	Depth Feet		Boring # MW# ~~MW-06~~ D04-01 Sheet 4 of 6
											Project: CTO-0260
											Job # 2738.1203 Site: 4
									52	SP	
									53		very fine to fine grained Sand (SP) Saturated, Pale brown 10YR (6/3), Trace silt.
									54		
									55		
									56		Very fine To fine grained Sand (SP) Saturated, light brownish gray 10YR (6/2), Trace silt.
									57		Trace - 5% Clay below 5.5' to 59'
									58		
									59		color change @ 59' to light olive brown 2.5Y (5/3) saturated.
							Neat Cement grout		60		(in shoe) fine grained sand (SP) moist, light olive brown 2.5Y (5/4) Trace silt, Slightly Consolidated.
									61		
									62		
									63		Well sorted fine grained Sand Saturated, Pale brown 10YR (6/3)
									64		
									65		Well sorted fine grained Sand Saturated, Pale brown 10YR (6/3) Trace silt
									66		
change									67		
									68	CL	Silty Clay (CL) very moist, dark greenish gray 5GY (4/1) organic matter common - Traces of wood to 1½" Ø, Trace sand
									69		2.5'
									70		
									71		Well sorted fine grained sand saturated, dark greenish gray 5GY (4/1) Traces of organic matter
									72		

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Depth	Sample Rec.	Analyses	Feet		Boring # ~~D04-01~~ MW# D04-01 Sheet 5 of 6
													Project: CTC-0260
													Job # 2738.1203 Site: 4

Feet		Description
72		Well sorted fine grained Sand, Saturated, gray 5Y(5/1) ~3.5'
73		
74	SC	Clayey Sand (SC) Saturated, greenish gray 5GY(5/1) 10-15% Clay, 5% silt, @75.5 color change To Pale brown
75		*Note Shoe had 3" of Sand to Clay at 10YR(6/3)
76	SP	sand ≈10% clay, moist, gray 5Y(6/1) 3-5% silt, bedding planes visable (1/16). The area is moderate con solidated.
77		
78		
79		?
80		Very fine To fine grained Sand (SP) Saturated, Pale brown 10YR 6/3 Trace silt.
81	SP	
82		
83		Color change @ 83.5' To dark greenish gray 5GY(4/1)
84		
85		Very fine To fine grained sand (SP) Saturated, dark greenish gray 5GY(4/1) Trace silt
86		
87		
88		
89		Very fine To fine grained Sand (SP) Saturated, dark greenish gray 5GY(4/1) Trace silt
90		
91		
92	CL	

Casing: ~10 Slot Screen

Annulus: Neat cement grout; Bentonite slurry seal; 2/12 RMC Lone Star Sand Pack

Sample Rec.: 4; 5; 3

MF

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec	Analyses	Depth Feet		
										92	CL	Silty Clay (CL) moist, dark greenish gray 5G (4/1) 5-10% fine silt, Traces of organic matter. Thin veins of pirite observed
							Sand			93		
							7/12			94	SP	very fine to fine grained Sand (SP) Saturated, dark greenish gray 5GY (4/1)
										95	SC	Clayey Sand (SC) very moist to Saturated dark greenish gray 5GY (4/1)
										96	CL	~~Cla~~ Silty Clay, moist to very moist, dark greenish gray 5G (4/1), Traces of organic matter, approx 10% fine grained silt, Trace Sand
										97		
										98		
										99		
								14		100		Clay as above, moist to very moist, dark greenish gray 5G (4/1), Trace to 10% sand,
										101		
										102		Boring TD on 5/12/94 @ 1930 Hr. Stabalized with heavy drill mud.
										103		* 5/13/94 @ 1900 Hr well set + Tagged @ 93'10" - making the well 2.2' above Target depth. This is due to casings are actually under 10' ranging from 9.65' To 9.95' - making are well set high - Decission To pull cassing & re drill.
										104		
										5		
										6		
										7		* 5/14/94 @ 1440 casing re set @ 96' filter pack surged peter bentonite seal. 5/14/94 @ 1715 well grouted in place.
										8		
										9		
										0		
										1		
										2		

Boring # DO4-01 MW# DO4-01 Sheet 6 of 6

Project: C70-0260

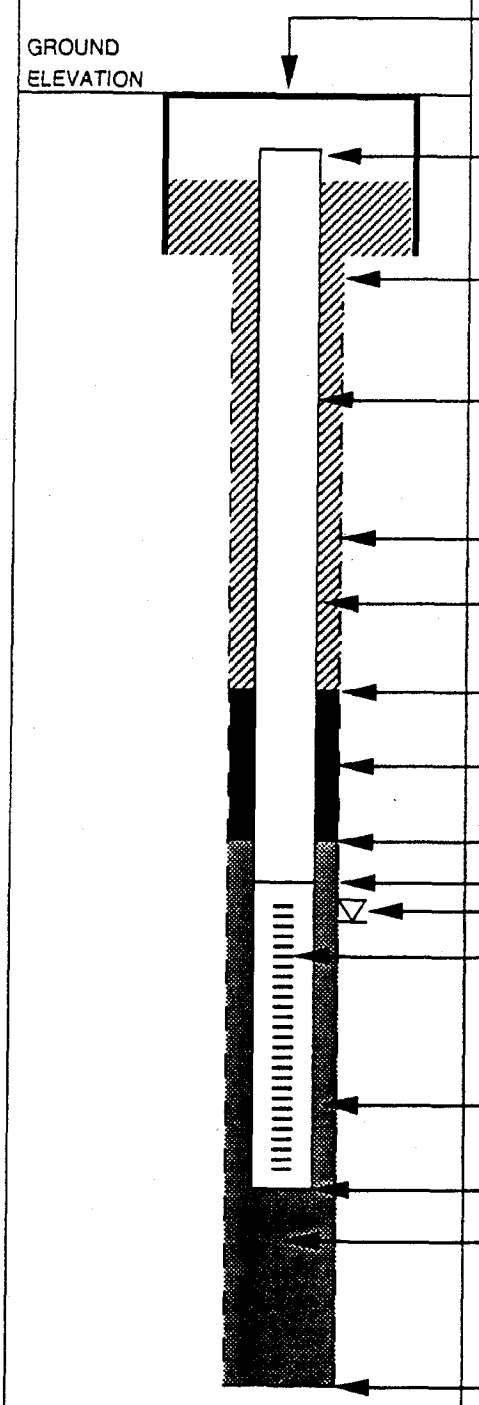
Job # 2738.1203 Site: 4

MF

BORING NO. D04-01

MONITORING WELL SHEET

PROJECT CTO-0260	LOCATION Site 4	DRILLER Water Development / Paul Frederiksen
PROJECT NO. 2738.1203	BORING D04-01	DRILLING METHOD mud rotary
ELEVATION	DATE 5/14/94	DEVELOPMENT METHOD Surg/bail/pump
FIELD GEOLOGIST W.P.W.		



ELEVATION OF GROUND SURFACE: _____

ELEVATION OF TOP OF WELL CASING: _____

I.D. OF SURFACE CASING: N/A

TYPE OF SURFACE CASING: N/A

RISER PIPE I.D.: 3"

TYPE OF RISER PIPE: 3" sch 40 PVC

BOREHOLE DIAMETER: 8"

TYPE OF BACKFILL: Neat Cement grout

ELEVATION / DEPTH OF SEAL: 81

TYPE OF SEAL: bentonite slury seal 3'

DEPTH TOP OF SAND PACK: 84

ELEVATION / DEPTH TOP OF SCREEN: 86'

FIRST ENCOUNTERED SATURATED ZONE

TYPE OF SCREEN: 3" sch 40 PVC

SLOT SIZE x LENGTH 0.010 factory slot

I.D. OF SCREEN 3"

TYPE OF SAND PACK: RMC Lone Star #2/12

ELEVATION / DEPTH BOTTOM OF SCREEN: 96

ELEVATION / DEPTH BOTTOM OF SAND PACK: 96

TYPE OF BACKFILL BELOW OBSERVATION WELL: bentonite/clay

ELEVATION / DEPTH OF HOLE: 101

SITE 5

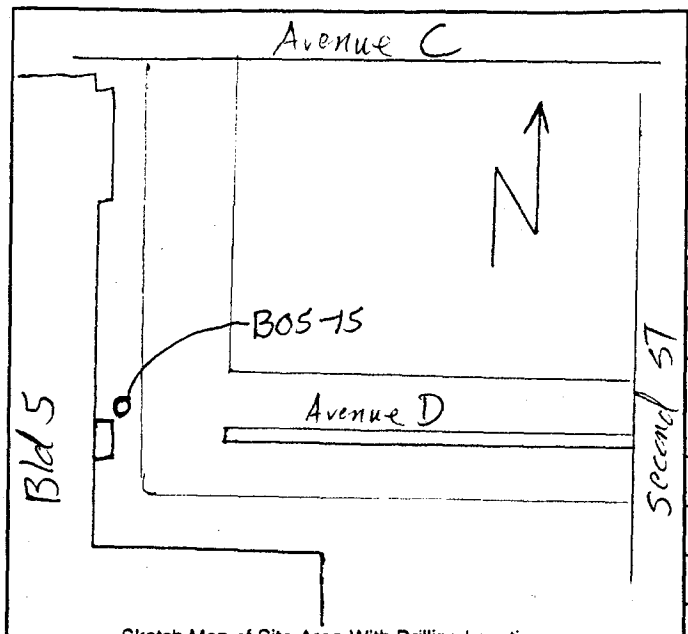
Boring # B05-14 MW#	Sheet 1 of 1
Project: CTO-260	
Job # 2738.1203 Site: 5	
Logged By: Proj. Eng: Edited By:	
Drilling Contractor: Gregg	
Drill Rig Type/Method: Mobile B53- HSA	
Drillers Name: Marvin Hoover	
Borehole Diam./Drill Bit Type 8"	Total Depth 3.0 / Ref. Elev.
Hammer Wt: 140 Drop: 30"	
Start Time: 1445 Date: 3/28/94	
Completion Time: 1500 Date: 3/28/94	
Backfill Time: 1505 Date: 3/28/94	

Sketch Map of Site Area With Drilling Locations

1st Water				
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)		Casing Type & Size	Annulus Filler	Depth: Sample Rec. Analyses	Depth: Feet	
										Concrete to 1 foot
		26	6	6				1445	1	Gravelly sand, GW, yellowish brown loose, damp, gvl to 1/2", med to crs sand
		50	5"						2	
		70	6"	6				1500		
		NR	NR	NR					3	Concrete at 2 1/2 - 3 feet bgs. Refusal - stop drilling. Collected 2 foot sample by hand.
									4	
									5	
									6	
									7	
									8	
									9	
									10	
									11	
									12	

MF



Sketch Map of Site Area With Drilling Locations

Boring # B05-15 MW#	Sheet 1 of 1
Project: CTO-260 - NAS Alameda	
Job # 2738.1203 Site: 5	
Logged By: WW Proj. Eng: KS Edited By:	
Drilling Contractor: Gregg	
Drill Rig Type/Method: Mobile M11 HSA	
Drillers Name: Marvin Hoover	
Borehole Diam./Drill Bit Type: 6¼	Total Depth: 6' / Ref. Elev.
Hammer Wt: 140	Drop: 30"
Start Time: 1400	Date: 3/31/94
Completion Time: 1410	Date: 3/31/94
Backfill Time: 1435	Date: 3/31/94

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Rec.	Analyses	Depth Feet		Description
2 back ground												10" Concrete Slab
0.2		10						X	1405	1	SP	Sand, fine to med grained, moist, med. dense to dense, yellowish brown 10YR 5/4, Trace gravel.
		11								2		
		19										
0.2		3						X	1408	3		
		3										
		5								4		
0.2		3						X	1410	5	SP	Sand, fine to med grained, moist, to very moist, med. dense, light brownish gray (10YR 6/2) below 5'
		5						X	dup			
		6								6		
												TD=6'
										7		
										8		
										9		
										10		
										11		
										12		

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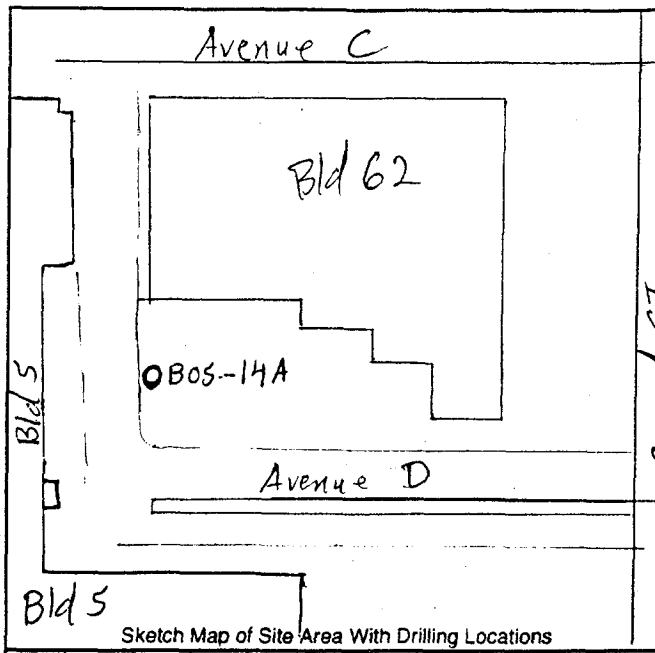

Sketch Map of Site Area With Drilling Locations

Boring # B05-14A MW# | Sheet 1 of 1

Project: CTO-260 NAS Alameda

Job # 2738.1203 Site: 5

Logged By: WW Proj. Eng: KS Edited By:

Drilling Contractor:

Drill Rig Type/Method: Hand Auger

Drillers Name: Wade Weston

Borehole Diam./Drill Bit Type: 4" | Total Depth: 5.5' | Ref. Elev.

Hammer Wt: Drop:

Start Time: 1250 Date: 4/1/94

Completion Time: 1310 Date: 4/1/94

Backfill Time: 1330 Date: 4/1/94

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Rec.	Analyses	Depth Feet		
												11 inch Concrete Slab
0	driven Tube Sampler		↓	↓			grout	X	0 1250 1255 dup	1 2	SP	Sand (SP) moist, Pale brown 10YR 6/3 Sand is fine to med grained.
0			↓	↓				X	1300	3		
										4		
0			↓	↓				X	1310	5		Sand (SP) moist, Pale brown 10YR 6/3, Sand is fine to med. grained
										6		
										7		TD = 5.5'
										8		
										9		
										10		
										11		
										12		

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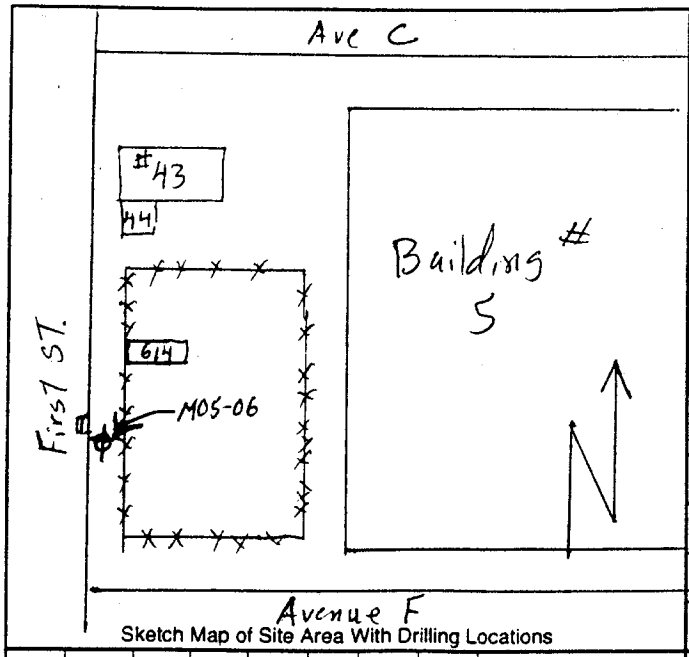


Sketch Map of Site Area With Drilling Locations

Boring #	MW# MOS-06 Sheet 1 of 2
Project:	CTO-0260 - NAS Alameda
Job #	2738.1203 Site: 5
Logged By:	Proj. Eng: KS Edited By:
Drilling Contractor:	Gregg
Drill Rig Type/Method:	Mobile M11 HSA.
Drillers Name:	Marvin Hoover
Borehole Diam./Drill Bit Type	Total Depth
8"	Ref. Elev.
Hammer Wt: 140	Drop: 30"
Start Time: 1550	Date: 3/31/94
Completion Time: 1630	Date: 3/31/94
Backfill Time: 1745	Date: 3/31/94

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Rec. Analyses	Depth Feet	
0.2		4 6 8	18" ↓	12" ↓		Solid Casing			1555 1 2	Asphalt over sand & gravel base rock. SAND (SP), lt br (7.5Y, 6/3), fine-med gr, sl mst, w/ minor gr
0.2		5 6 5	18" ↓	14" ↓			Pellets		1600 3 4	As above, but no gravel.
NR		7 7 8	18" ↓	6"		Slotted Casing			▼ 1605 5 6 7 8	As above, except saturated.
0.2		10 10 10				2" Sch 40 PVC			9 10 11 12	As above, except dk grayish br (10Y, 4/2)

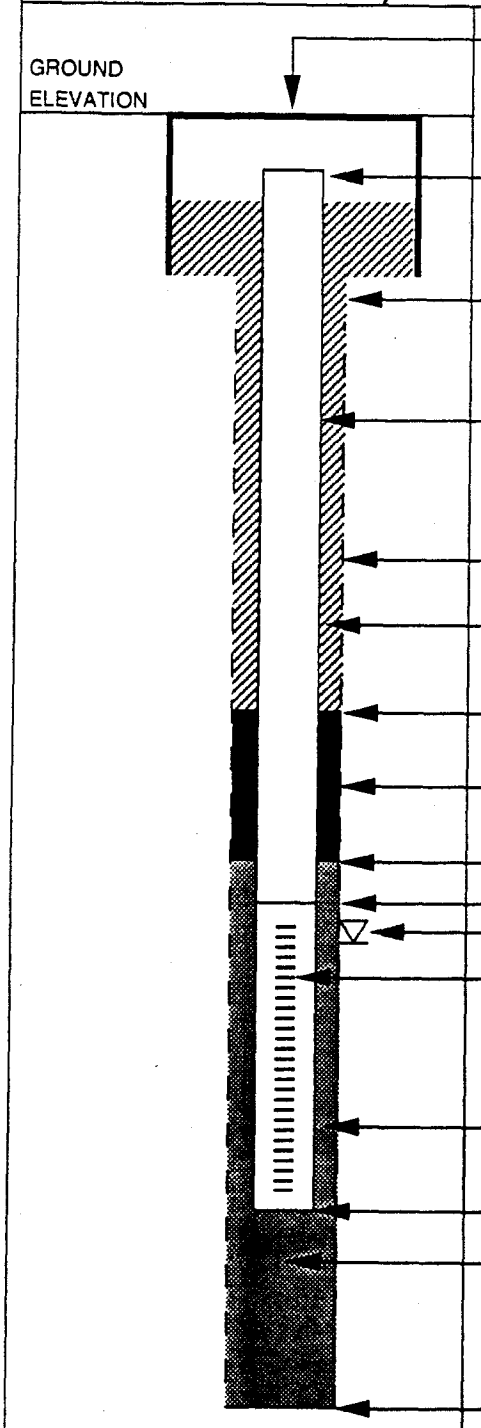
MF

PID/OVA	Sampler Type	Blow Counts	Advance	Rcvd (in.)		Casing	Annulus	Sample Rec	Depth Feet	Graph	Boring # MW# MOS-06 Sheet 2 of 2 / Project: CTO-0260 - NAS Alameda / Job # 2738.1203 Site: 5
		11							12		As above
		12								SP	fine grained Sand (SP)
		16	X	X		X	X		13		
									14		TD 13.5'
									15		
									6		
									7		
									8		
									9		
									0		
									1		
									2		
									3		
									4		
									5		
									6		
									7		
									8		
									9		
									0		
									1		
									2		

BORING NO. M05-06

MONITORING WELL SHEET

PROJECT CTO-260	LOCATION Site 5	DRILLER Marvin Hoover Gregg
PROJECT NO. 2738.1203	BORING M05-06	DRILLING METHOD HSA
ELEVATION	DATE 3/31/94	DEVELOPMENT METHOD Surge, bail, pump
FIELD GEOLOGIST WPW / DEK		



ELEVATION OF GROUND SURFACE: _____

ELEVATION OF TOP OF WELL CASING: _____

I.D. OF SURFACE CASING: _____

TYPE OF SURFACE CASING: _____

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Schedule 40 PVC

BOREHOLE DIAMETER: 8"

TYPE OF BACKFILL: Cement/Concrete grout to surface

ELEVATION / DEPTH OF SEAL: 2

TYPE OF SEAL: 3/8 Bentonite pellets

DEPTH TOP OF SAND PACK: 2.5

ELEVATION / DEPTH TOP OF SCREEN: 3

FIRST ENCOUNTERED SATURATED ZONE

TYPE OF SCREEN: Schedule 40 PVC

SLOT SIZE x LENGTH .010 factory slot

I.D. OF SCREEN 2"

TYPE OF SAND PACK: 2/12 RMC Lonestar Monterey sand.

ELEVATION / DEPTH BOTTOM OF SCREEN: 13

ELEVATION / DEPTH BOTTOM OF SAND PACK: _____

TYPE OF BACKFILL BELOW OBSERVATION WELL: 2/12 sand in sample hole

ELEVATION / DEPTH OF HOLE: 13.5

≅ 9 ft saturated sand pack

pumping @ 2 gpm with minimal draw down.

GROUNDWATER SAMPLING/WELL DEVELOPMENT LOG

Client PRC/Navy
Site Site 5
Well number M-05-06
Job number 2738.1203

Total well depth * 13.08
Well diameter 2
Borehole diameter 8

Min number well vol to be purged 3
Vol per ft casing (gal) (0.17) 8.44 = 1.43
Vol per ft borehole (gal) (2.55) 9 = 22.95
(less casing and filter pack)

Date 4/5/94
Static water level (ft)* 4.64'
Standing water column (ft) 8.44'

Amt one well vol (gal) 24.38
Total gal to be purged 73.14 = 3 well volumes

Development method surge, bail, pump
Presampling purging method
Sampling method

* All measurements taken from: X Top of casing, ___ Protective casing, ___ Ground level

TIME	AMOUNT PURGED (gal)	FIELD PARAMETERS MEASURED							COMMENTS	FIELD TECHNICIAN
		EC	pH	TEMP °F	TURBIDITY	PID				
0929	–		*7.44						Initial pH reading *after calibration	SXJ
0915	–								Begin surge	
0959	–								end surge	
1002	2	3580	8.45	59.6	>200	0ppm			Brown, turbid, no odor - Begin Bailing	
1011	10	3720	8.34	60.1	>200				turbid	
1014	10	–	–	–	–				W.L. @ 6.2' end bailing, begin pumping	
1019	20	3210	8.12	66.8	139.1	0ppm			Cloudy	
1035	55	2990	8.25	67.1	11.75				clear	
1045	70	2280	8.15	66.8	11.43				clear W.L. @ 7.8 - stable	
1052	75	2390	7.89	66.8	7.94	0ppm			clear, parameters stable end pumping	

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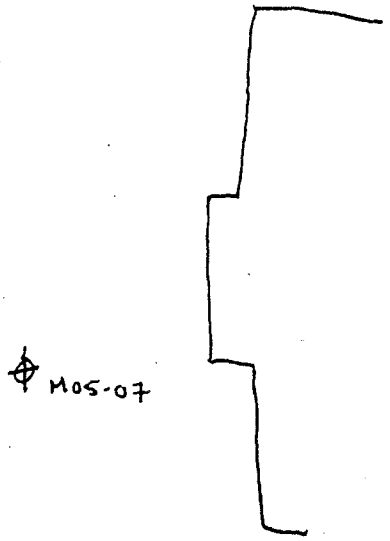


Sketch Map of Site Area With Drilling Locations

Boring #	MW# MO5-07 Sheet 1 of 2
Project:	CTO -260
Job #	2738.1203 Site: 5
Logged By:	DEK Proj. Eng: Edited By:
Drilling Contractor:	GREGG DRILLING
Drill Rig Type/Method:	HSA MOBIL B53
Drillers Name:	MARVIN (BUTCH) HOOVER
Borehole Diam./Drill Bit Type	8" Total Depth 17' Ref. Elev
Hammer Wt:	140 lb Drop: 30"
Start Time:	1000 Date: 3/28/94
Completion Time:	1050 Date: 3/28/94
Backfille Time:	1200 Date: 3/28/94

	1st Water			
Boring Depth (ft.)	9			
Casing Depth (ft.)				
Water Depth (ft.)				
Time	1017			
Date	3.28.94			

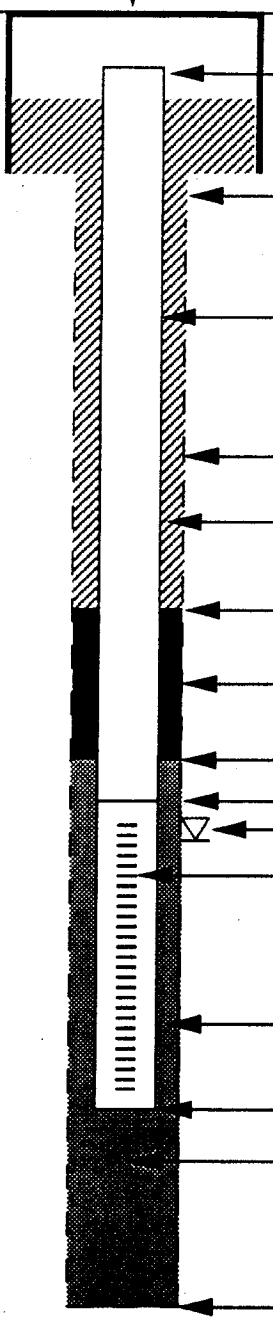
PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Recovery	Depth Feet	Graphics	
											CONCRETE TO 1' bgs
Φ		8						X 1005	1		SM: silty sand, lt brown, loose, moist
		11							2	SM	fine sand = 30%, med sand 30%, well rounded
		50									silt - 40%
Φ		11					GRAVEL	X 1010	3		
		22									SW - sand, lt brown, loose, moist, ~~fine~~
		28				Casing			4	SW	sand to 25%, v. fine sand to 65%
											trace silt/clay to 10%
									5		
Φ		9					Bentonite	X 1015			SM - ~~silty sand~~ sandy silt, dk brown, sat,
		29				Blank			6	SW	moist f. sand to 15%
		49									SW - sand, lt brown, loose, moist
									7		to wet, med sand to 30% coarse sand
											to 60%
									8		
						Slotted Screen					
							SAND #2/16		9		
									10	SW	
Φ		10						X 1020			SW - coarse to med sand, dk green
		11							11		loose, saturated, coarse sand to
		12									40%, med sand to 60%
									12		

PID/OVA	Sampler Type	Blow Counts	Advance	Rcvd (in.)		Casing	Annulus	Sample Rec	Depth Feet	Graph	Boring # MW# mos-07 Sheet 2 of 2
											Project: CTO-260
											Job # 2738.1203 Site: 05
									12	SW	
									13		
						screen slotted	2/4 sand		14		
									15		
3		16									SW, sand, dk green, loose,
		21							16	CL	saturated, med sand to 60%, coarse
		20									sand to 40%
									17		CL - clay, black, stiff, trace
									18		sand-size shell fragments, trace
											silt.
									19		
									20		Materials used:
									1		3½ bags lonestar #2/16 sand
											2½ gallons bentonite 3/8" rolclay
									2		
									3		sand 6-14'
											bentotite 6'-5'
									4		grout 5'-0'
									5		
									6		
									7		
									8		
									9		
									0		
									1		
									2		

BORING NO. MOS-07

MONITORING WELL SHEET

PROJECT CTO 260	LOCATION Site 5	DRILLER M. Hoover
PROJECT NO. 2738.1203	BORING MOS-07	DRILLING METHOD HSA
ELEVATION	DATE 3/28/97	DEVELOPMENT METHOD Surge, bail, pump
FIELD GEOLOGIST DEK		



ELEVATION OF GROUND SURFACE: _____

ELEVATION OF TOP OF WELL CASING: _____

I.D. OF SURFACE CASING: _____

TYPE OF SURFACE CASING: _____

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Sch 40 PVC

BOREHOLE DIAMETER: 8"

TYPE OF BACKFILL: Cement grout grout to surface

ELEVATION / DEPTH OF SEAL: 5

TYPE OF SEAL: 3/8 Bentonite pellets

DEPTH TOP OF SAND PACK: 6

ELEVATION / DEPTH TOP OF SCREEN: 7

FIRST ENCOUNTERED SATURATED ZONE

TYPE OF SCREEN: Sch 40 PVC

SLOT SIZE x LENGTH 0.01

I.D. OF SCREEN 2"

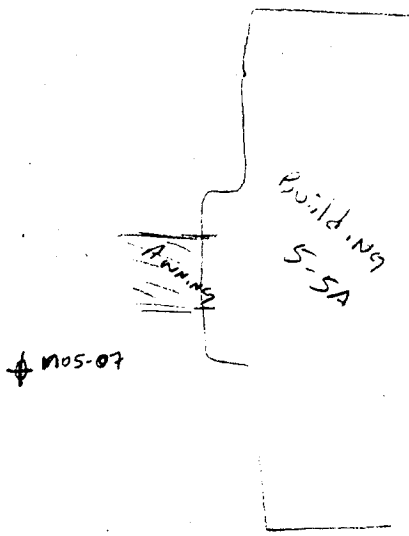
TYPE OF SAND PACK: 2/16 Rmc Lonestar Monterey Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 17

ELEVATION / DEPTH BOTTOM OF SAND PACK: 17

TYPE OF BACKFILL BELOW OBSERVATION WELL: _____

ELEVATION / DEPTH OF HOLE: 17



Sketch Map of Site Area With Drilling Locations

Boring #	MW# MO5-07 Sheet 1 of 2
Project:	CTO - 260
Job #	2738.1203 Site: 5
Logged By:	DEK Proj. Eng: Edited By:
Drilling Contractor:	Gregg
Drill Rig Type/Method:	Mobil B 53
Drillers Name:	Marvin (Butch) Hoover
Borehole Diam./Drill Bit Type	8" Total Depth 17 / Ref. Elev.
Hammer Wt:	140 Drop: 30"
Start Time:	1000 Date: 3/28/94
Completion Time:	Date:
Backfill Time:	Date:

	1st Water			
Boring Depth (ft.)	9.0			
Casing Depth (ft.)				
Water Depth (ft.)				
Time	1010			
Date	3/28/94			

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Rec.	Analyses	Depth Feet		
												Concrete 0'-1 ft bgs
0		8					Grout	SM	1005	1	SM	SM, lt brown, loose, moist, fine to medium sand, well rounded, 7/5% fines
		11						SM		2		
		50						SW	1010			Mod est K
0		11								3	SW	
		22						SW				SW lt brown, loose, moist, fine and v. fine sand, trace silt/clay, mod est K
		28						SW		4		
							Grout					
0		9					Sand Backfill	SM	1015	5	SM	SM, dk brown, soft, moist, trace fine sand, mod est K.
		29						SW				
		49								6		SW, lt brown, loose, moist to wet, med to coarse sand, mod est K
										7		
						Slotted Screen	Sand			8		
												hydrocarbon odor - noted by driller
										9		
0		10						SW		10	SW	SW, dk green, loose, saturated, coarse med sand, high est K.
		11						SW		11		
		12						SW				
										12		

MF

Boring # MW# MOS-07 Sheet 2 of 2

Project: CTO - 260

Job # 2738.1203 Site: 5

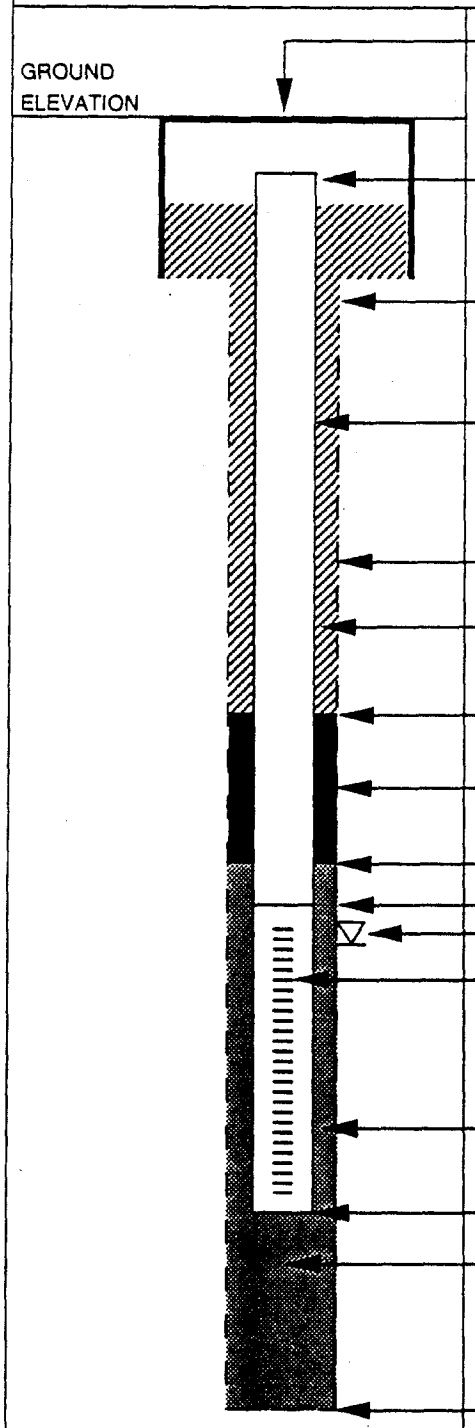
PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec.	Analyses	Depth Feet	
										2	
										3	
										4	
						SLOTTED SCREEN				5	
3		16						SW			SW, dk green, loose, saturated, med and coarse sand, trace silt. highest K.
		21							CL	6	
		20									
									TD	7	CL, blk, soft, moist, trace sand-sized shell fragments, slightly silty
										8	
										9	
										0	Materials used to complete well:
										1	3½ bags of Lonestar #2/16 sand
										2	2½ gallons bentonite 3/8 inch vdclay (dry)
										3	sand - 17'-6'
										4	bentonite -> 6 - 5'
											grout/christy box 5-0'
										5	
										6	
										7	
										8	
										9	
										0	
										1	
										2	

ME

BORING NO. M05-07

MONITORING WELL SHEET

PROJECT CTO 260	LOCATION Site 5	DRILLER Marvin Hoover
PROJECT NO. 2738.1203	BORING M05-07	DRILLING METHOD HSA
ELEVATION	DATE 3/28/94	DEVELOPMENT METHOD Surge, bail, pump
FIELD GEOLOGIST DEK		



ELEVATION OF GROUND SURFACE: _____

ELEVATION OF TOP OF WELL CASING: _____

I.D. OF SURFACE CASING: _____

TYPE OF SURFACE CASING: _____

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Sch 40 PVC

BOREHOLE DIAMETER: 8"

TYPE OF BACKFILL: cement/concrete grout to surface

ELEVATION / DEPTH OF SEAL: 5

TYPE OF SEAL: 3/8 Bentonite pellets

DEPTH TOP OF SAND PACK: 6

ELEVATION / DEPTH TOP OF SCREEN: 7

FIRST ENCOUNTERED SATURATED ZONE

TYPE OF SCREEN: Sch 40 PVC

SLOT SIZE x LENGTH .010 factory seal

I.D. OF SCREEN 2"

TYPE OF SAND PACK: 2/12 RMC Lonestar Monterey Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 17

ELEVATION / DEPTH BOTTOM OF SAND PACK: 17

TYPE OF BACKFILL BELOW OBSERVATION WELL: _____

ELEVATION / DEPTH OF HOLE: 17

TOC is 6.5" below top of Christie Box

≅ 10 ft. saturated sand pack

pumping @ approx. 2 gpm with Grundfos.

GROUNDWATER SAMPLING/WELL DEVELOPMENT LOG

Client PRC/Navy
Site Site 5
Well number M-05-07
Job number 2738.1203

Total well depth * 16.73
Well diameter 2
Borehole diameter 8

Min number well vol to be purged 3
Vol per ft casing (gal) (0.17) 9.84 = 1.67
Vol per ft borehole (gal) (2.55) 10 = 25.5
(less casing and filter pack)

Date 4/5/94
Static water level (ft)* 6.89
Standing water column (ft) 9.84

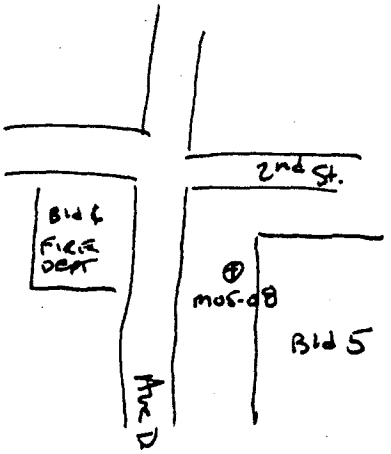
Amt one well vol (gal) 27.17
Total gal to be purged 81.5 gal

Development method Surge, bail, pump
Presampling purging method
Sampling method

* All measurements taken from: X Top of casing, ___ Protective casing, ___ Ground level

TIME	AMOUNT PURGED (gal)	FIELD PARAMETERS MEASURED							COMMENTS	FIELD TECHNICIAN
		EC	pH	TEMP	TURBIDITY	PID				
1138	—		9.06			0ppm			Initial pH reading	SXJ
1140	—								Begin Surge	
1230	—								end Surge	
1233	2	1612	7.12	66.7	>200	0ppm			Turbid, no odor Begin bailing	
1237	15	1945	7.17	66.5	>200				Turbid. end bailing	
1242	15	—	—	—	—	—			Start pump W.L. @ 8.28	
1247	25	1896	6.73	67.6	>200				Cloudy	
1257	45	2220	6.28	68.1	69.6	0ppm			clearing	
1307	65	2370	6.40	67.9	17.22				clear W.L. @ 8.74	
1317	85	2520	6.45	67.7	5.43	0ppm			clear, parameters stable	
									W.L. @ 6.89 100% recovery.	

MF



Sketch Map of Site Area With Drilling Locations

Boring #	MW# MO5-08
Sheet	1 of 2
Project:	CTO - 260
Job #	2738.1203
Site:	5
Logged By:	DEK
Proj. Eng:	
Edited By:	
Drilling Contractor:	GREGG DRILLING
Drill Rig Type/Method:	MOBILE B-53 - HSA
Drillers Name:	MARVIN Hoover
Borehole Diam./Drill Bit Type	8"
Total Depth	16.5'
Ref. Elev	
Hammer Wt:	140 lb
Drop:	30"
Start Time:	1207
Date:	3/28/94
Completion Time:	1240
Date:	3/28/94
Backfille Time:	1305
Date:	3/28/94

	1st Water			
Boring Depth (ft.)	~10'			
Casing Depth (ft.)				
Water Depth (ft.)				
Time	1225			
Date	3/28/94			

PID/OVA ppm	Sampler Type & Depth	Blow Counts / 6 in.	Advance	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Recovery	Depth Feet	Graphics	
											CONCRETE to ½ ft
		31	↓	↓					1	GW	Sandy gravel GW, blk on top, tan
		51	3"					X 1210			color at bottom ½ foot, loose, dry
		NR	NR						2	GW	med sand to 30%, crs sand to 20%
											gvl to 2" diameter
		6						X 1215	3	SW	
Φ		12					Grout				SW, sand, loose, damp, tan color
		14	↓	↓		Blank PVC			4		coarse sand to 25%, med sand to 60%
											trace gvl to 5%, gvl to ½" dia.
									5		trace silt to 5%
Φ		8					Bentonite	X 1217		SW	
		8							6		Aa: slight ↑ in silt. ↓ gvl.
		11	↓	↓							
									7	SW	
						Slotted screen	Sand pack		8		on 4/5/94 @ 1150
								▽			8.58 on 4/7/94 @ 1230 ∴ well development
									9		
										SP	
		8		NR					10		NR - refusal 11½ - 13'
		11		NR							SP, sand, dk green, loose, saturated
		11	↓	NR					11	SP	fine sand to 60%, v. fine sand to 40%
									12		grains composed of quartz, feldspar, &

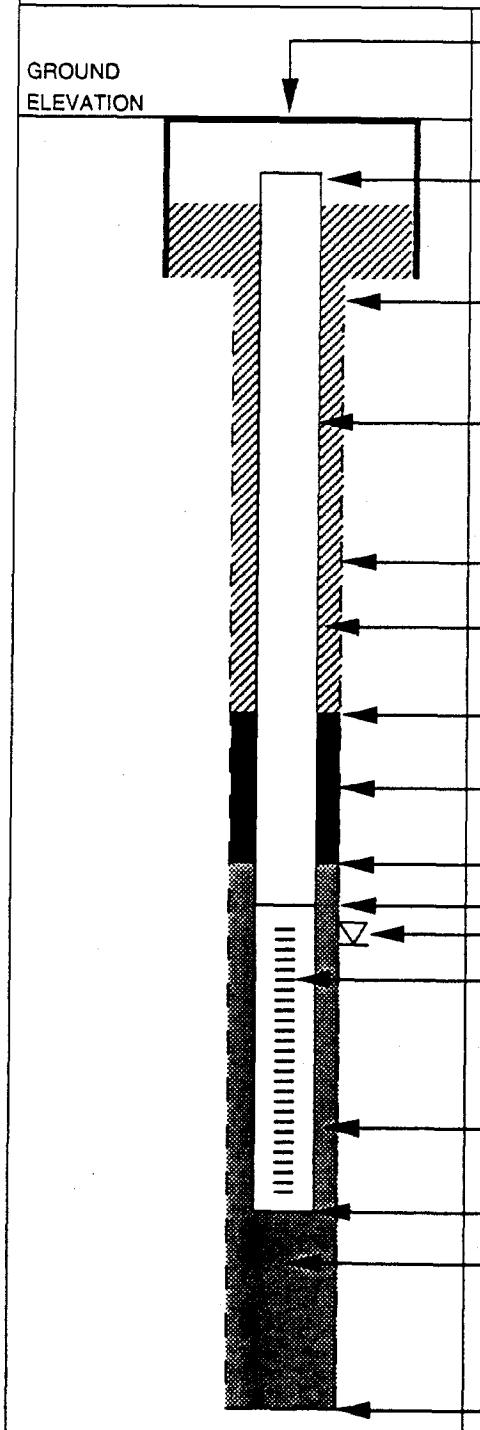
dark minerals

PID/OVA	Sampler Type	Blow Counts	Advance	Rcvd (in.)		Casing	Annulus	Sample Rec	Depth Feet	Graph	Boring # MW# M05-08 Sheet 2 of 2
											Project: CTO 260
											Job # 2738.1203 Site: 05
						Slotted PVC	Sand Pack		12		SP Aa
									13	SP	
									14		
									15	CL	CL, clay, dark blk, stiff,
Φ		6									dry to sl. moist. interbedded
		6							16		Sand (pos. burrows), trace Sand
		10						TD			at bck of sample
									17		
									18		Note: only sampler penetrated
											into clay; clay / borehole
									19		closed from 15' to 17' bgs by
											compaction of HSA-hammer
									20		
									1		
									2		Materials used:
											Screen Slotted 0.01 7' to 15' bgs
									3		Sand pack 6' to 15' bgs
											bentonite 6 to 5' bgs
									4		grout 5 to surface
									5		
									6		
									7		
									8		
									9		
									0		
									1		
									2		

BORING NO. M05-08

MONITORING WELL SHEET

PROJECT CTO 260	LOCATION Site 5	DRILLER Marvin Hoover
PROJECT NO. 2738.1203	BORING M05-08	DRILLING METHOD HSA
ELEVATION	DATE 3/28/94	DEVELOPMENT METHOD Surge, bail, pump
FIELD GEOLOGIST DEK		



ELEVATION OF GROUND SURFACE: _____

ELEVATION OF TOP OF WELL CASING: _____

I.D. OF SURFACE CASING: _____

TYPE OF SURFACE CASING: _____

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Sch 40 PVC

BOREHOLE DIAMETER: 8"

TYPE OF BACKFILL: Cement/Concrete grout to surface

ELEVATION / DEPTH OF SEAL: 5

TYPE OF SEAL: 3/8 Bentonite pellets

DEPTH TOP OF SAND PACK: 6

ELEVATION / DEPTH TOP OF SCREEN: 7

FIRST ENCOUNTERED SATURATED ZONE

TYPE OF SCREEN: Sch 40 PVC

SLOT SIZE x LENGTH .010 factory slot

I.D. OF SCREEN 2"

TYPE OF SAND PACK: 2/12 RMC Lonestar Monterey sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 15

ELEVATION / DEPTH BOTTOM OF SAND PACK: 15

TYPE OF BACKFILL BELOW OBSERVATION WELL: 2/12 sand in sample hole.

ELEVATION / DEPTH OF HOLE: 16.5

8.58 ≅ 0.29' from TOC ≅ 6.5 ft of filter pack turated)

GROUNDWATER SAMPLING/WELL DEVELOPMENT LOG

Client PRC/Navy
Site Site 5
Well number M-05-08
Job number 2738.1203

Total well depth * 14.66
Well diameter 2
Borehole diameter 8

Min number well vol to be purged 3
Vol per ft casing (gal) (0.17) 6.37 = 1.08
Vol per ft borehole (gal) (2.55) 6.5 = 16.58
(less casing and filter pack)

Date 4/7/94
Static water level (ft)* 8.29
Standing water column (ft) 6.37

Amt one well vol (gal) 17.66
Total gal to be purged 53

Development method bail, surge, pump
Presampling purging method
Sampling method

* All measurements taken from: X Top of casing, ___ Protective casing, ___ Ground level

TIME	AMOUNT PURGED (gal)	FIELD PARAMETERS MEASURED							COMMENTS	FIELD TECHNICIAN
		EC	pH	TEMP °F	TURBIDITY	PID	W.L.	Flow		
1235	—		7.21	73.1		0ppm			1st bail, pH reading	SXJ
1240	—								Begin Surge	
1305	—								end Surge	
1306	—								Begin bailing	
1315	10	2740	7.13	72.8	>200	0ppm	8.35		Turbid, brown, slight reducing odor, end bailing	
1322	17	2660	6.99	72.2	>200		9.75	1.48	Turbid, begin pumping	
1334	26	2440	6.49	70.5	44.7	0ppm	9.60	1.31	Clearing	
1346	41	2290	6.34	70.3	3.67		9.65	1.34	Clear	
1358	58	2370	6.76	70.5	2.26		9.67	1.34	Clear, parameters stable, shut off pump	

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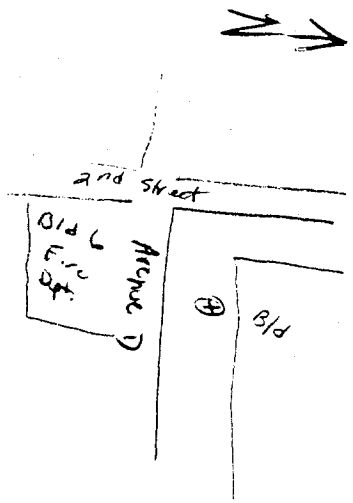


Sketch Map of Site Area With Drilling Locations

Boring #	MW#M05-08 Sheet 1 of 2
Project:	CTO-260
Job #	2738.1203 Site: 5
Logged By:	Proj. Eng: Edited By:
Drilling Contractor:	Gregg
Drill Rig Type/Method:	Mobile B53 - HSA.
Drillers Name:	Marvin Hoover
Borehole Diam./Drill Bit Type	Total Depth 16½
8"	Ref. Elev.
Hammer Wt: 140	Drop: 30"
Start Time: 1207	Date: 3/28/94
Completion Time: 1240	Date: 3/28/94
Backfill Time: 1305	Date: 3/28/94

	1st Water			
Boring Depth (ft.)	10.0			
Casing Depth (ft.)				
Water Depth (ft.)				
Time	1225			
Date	3/28/94			

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Rec. Analyses	Depth Feet		
											Concrete 0 to 6"
		31	↓	↓					1	GW	Sandy gravel, blk on top, tan on bottom
		51	3"					1210			high est K, loose, med to crs sand
		NR	NR						2		gravel to 2" diameter high est K
		6						1215	3	SW	SW tan, loose, damp, coarse/med.
0		12					Grout				sand, trace gvl (~5%) to ½" diam
		14							4		trace silt, high est K
									5		
0		8				Blank	Bentonite	1217		SW	Aa, slight increase in silt and
		8							6		decrease gvl.
		11	↓	↓							
									7		
									8		
									▽		on 4/5/94 @ 1150
									9		8.58 on 4/7/94 @ 1230 well development
						Slotted screen	Sand pack		▼ 10		
		8		No Recovery						SP	No recovery - redrill sample
		11							11		SP, dk green, loose, saturated,
		11	↓								v. fine to fine sand, qtz, feldspar
									12		& dark minerals, high est K

MF

Boring # MW# MW5-08 Sheet 2 of 2

Project: CTO - 260

Job # 2738.1203 Site: 5

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec	Analyses	Feet	
										12	
										13	
										14	
										15	
		6									CL, dk black, stiff, dry to slightly moist, to some sand stringers - vertical maybe burrows, trace of sand at base of sample.
		6								16	
		10								17	
										8	
										9	Note: only sampler penetrated greater than 15 ft, clay compacted w/ hammer
										0	Screen - 15' to 7' (8 ft screen)
										1	Sand pack 15 to 6
											bentonite 6 to 5
										2	grout 5 to surface
										3	
										4	
										5	
										6	
										7	
										8	
										9	
										0	
										1	
										2	

Drilling Mud

Slotted screen

Lonestar #2/16 Sand

MF

Boring #	MW# MOS-09
Sheet	1 of 2
Project:	CTO - 260
Job #	2738 1203
Site:	05
Logged By:	DEK
Proj. Eng:	
Edited By:	
Drilling Contractor:	Gregg Drilling
Drill Rig Type/Method:	Mobile B53 HSA
Drillers Name:	Mr Ruin Hoover
Borehole Diam./Drill Bit Type	8"
Total Depth	15'
Ref. Elev	
Hammer Wt:	140
Drop:	30"
Start Time:	1530
Date:	3/28/94
Completion Time:	1615
Date:	3/28/94
Backfille Time:	1640
Date:	3/28/94

Sketch Map of Site Area With Drilling Locations

	1st Water			
Boring Depth (ft.)	10.5			
Casing Depth (ft.)				
Water Depth (ft.)				
Time	1600			
Date	3/29/94			

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Recovery	Depth Feet	Graphics	
											Concrete flow to 1 ft bgs
		9				8" PVC	Bentonite grout	X	1535 1	SP/GP	SP/GP gravelly sand, dk olive, loose, med sand to 60% gvl to ½" diameter. gvl v. dense @ ≈1½'
		22							2		
		50	2"								
		21						X	1540 3	SP	
		53									SP sand, light tan, loose, moist fin sand to 20%, med sand to 80%, well rounded, feldspar and quartz sand, s. trace silt.
		50	5"						4		
		8					Sand 2/10	X	1545 5	SM	
		28									SM sandy silt, tan, still v. moist trace v. fin sand.
		41							6	GM	
									7	GM	GM, gvlly silt, dk reddish brown gravel to ½" diam.
						Slotted Screen	Hunter		8		
									9	SW	
		5							10	SW	SW, sand, tannish brown, loose, moist to saturated, med sand, tr. gvl
		3								ML	
		4							11		ML - silt, green, v. soft, v. wet
		3							12		

Boring # MW# MO5-09 Sheet 2 of 2

Project: CTO - 260

Job # 2738.1203 Site: 05

PID/OVA	Sampler Type	Blow Counts	Advance	Rcvd (in.)		Casing	Annulus	Sample Rec	Depth Feet	Graph	
ϕ		2	↓	↓		↑	↑		12		mc- silt, green, v. soft, saturated
		1	↓	↓							v. fine sand to 15%.
									13		
ϕ		6	↓	↓		Slotted Screen	Sand			WL	
		7							14		
		9	↓	↓				TD	15	SP	SP, sand, dk green, loose
											saturated fine sand to 75%
											med sand to 15%, silt to 10%
									16		
									17		
									18		
									19		
									20		Materials used
											Screen 5' - 15'
									1		Sand 4' - 15'
											bentonite 3' - 4'
									2		grout 0' - 3'
									3		
									4		
									5		
									6		
									7		
									8		
									9		
									0		
									1		
									2		

Boring #	MW# MO5-09 Sheet 1 of 2
Project:	CTO-260
Job #	2738.1203 Site: 5
Logged By:	DEK Proj. Eng: Edited By:
Drilling Contractor:	GREGG
Drill Rig Type/Method:	MOBILE B53 - HSA
Drillers Name:	MARVIN HOOVER
Borehole Diam./Drill Bit Type	Total Depth 15
8"	Ref. Elev.
Hammer Wt:	140 Drop: 30"
Start Time:	1530 Date: 3/28/94
Completion Time:	1615 Date: 3/28/94
Backfill Time:	1740 Date: 3/28/94

Sketch Map of Site Area With Drilling Locations

	1st Water			
Boring Depth (ft.)	10.5			
Casing Depth (ft.)				
Water Depth (ft.)				
Time	1600			
Date	3/28/94			

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Rec. Analyses	Depth Feet		
		Concrete									Concrete 0 - 1'
		concrete									
		9					Grout	1535	1	SP	Gravelly sand, SP, dk olive, loose
		22									Med sand, gvl to 1/2" diameter
		50	2"						2		high est K.
Ø		21						1540	3	SP	gvl very tight at 2½ inches (hard)
		53					Pack 1.5"				
		50	5"						4		SP, lt tan, loose, moist
											fine to med sand, well sorted
											round to sub-angular sand, tr. silt
Ø		8						1545	5	SM	
		28									SM silt, tan, stiff, v. moist
		41							6		trace v. fine sand, Med est K
										SM	at 6 to 6½ gravelly silt, dk reddish brown
								▽ on 4/5/94	7		gvl. to 1/8" in diameter (pebbles)
						Screen	Sand		8		
									9		
Ø		5						SW/ML	10	SW	SW tannish brown, loose, moist
		3								ML	to wet, trace gvl.
		4							11		ML, green, v. soft, v. wet, homogeneous
		3							12		silt

MF

Boring # MW# [illegible] Sheet 2 of 2

Project: [illegible]

Job # 2738 [illegible] Site: 5

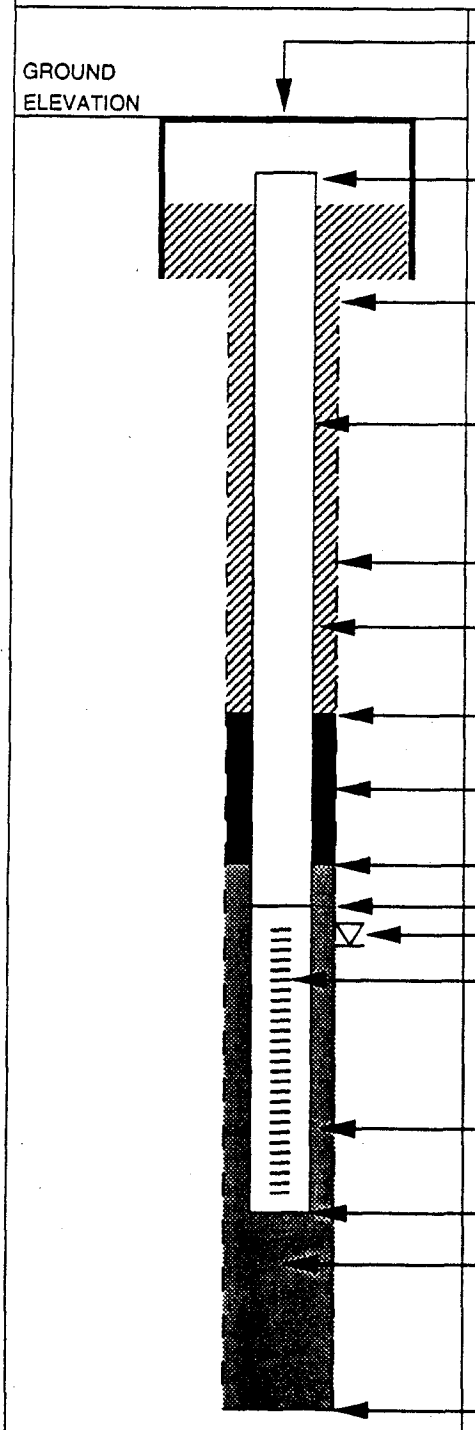
PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec	Analyses	Depth Feet		
Ø		2								12		ML, green, loose, fine sand, [illegible], silty, v. fine sand
		1								13		
		DH										
		6								14	ML	As to 14½ ft [illegible]
Ø		7						ML				
		9						SP		15	SP	SP, tr green, loose, [illegible], slightly, fine sand w/ trace med sand, high [illegible]
										16		
										17		
										18		
										19		Screen - 15-5'
												Sand 15-4
										20		bentonite 4-3
												Grout 3-0
										21		
										22		
										23		
										24		
										25		
										26		
										27		
										28		
										29		
										30		
										31		
										32		

MF

BORING NO. M05-09

MONITORING WELL SHEET

PROJECT CTO 260	LOCATION Site 5	DRILLER Marvin Hoover
PROJECT NO. 2738.1203	BORING M05-09	DRILLING METHOD HSA
ELEVATION	DATE 3/28/94	DEVELOPMENT METHOD Surge, bail, pump
FIELD GEOLOGIST DEK		



ELEVATION OF GROUND SURFACE: _____

ELEVATION OF TOP OF WELL CASING: _____

I.D. OF SURFACE CASING: _____

TYPE OF SURFACE CASING: _____

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Sch 40 PVC

BOREHOLE DIAMETER: 8"

TYPE OF BACKFILL: Cement/Concrete grout to surface

ELEVATION / DEPTH OF SEAL: 3

TYPE OF SEAL: 3/8 Bentonite pellets

DEPTH TOP OF SAND PACK: 4

ELEVATION / DEPTH TOP OF SCREEN: 5

FIRST ENCOUNTERED SATURATED ZONE

TYPE OF SCREEN: Sch 40 PVC

SLOT SIZE x LENGTH .010 factory slot

I.D. OF SCREEN 2"

TYPE OF SAND PACK: 2/12 RMC Lone Star Monterey sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 15

ELEVATION / DEPTH BOTTOM OF SAND PACK: 15

TYPE OF BACKFILL BELOW OBSERVATION WELL: _____

ELEVATION / DEPTH OF HOLE: 15

W.L. 7.10' from top of Christie Box

≅ 8.5 ft of saturated sand pack

pumping at approx 1.5 gpm with 2" Grundfos

GROUNDWATER SAMPLING/WELL DEVELOPMENT LOG

Client PRC/Navy
Site Site 5
Well number M-05-09
Job number 2738.1203

Total well depth * 14.62
Well diameter 2
Borehole diameter 8

Min number well vol to be purged 3
Vol per ft casing (gal) (0.17) 7.94 = 1.35
Vol per ft borehole (gal) (2.55) 8.5 = 21.68
(less casing and filter pack)

Date 4/5/94
Static water level (ft)* 6.68
Standing water column (ft) 7.94

Amt one well vol (gal) 23.03
Total gal to be purged 69.08

Development method Surge, bail, pump
Presampling purging method ___
Sampling method ___

* All measurements taken from: X Top of casing, ___ Protective casing, ___ Ground level

TIME	AMOUNT PURGED (gal)	FIELD PARAMETERS MEASURED							COMMENTS	FIELD TECHNICIAN
		EC	pH	TEMP	TURBIDITY	PID				
1344	—		6.76			0 ppm			Initial pH reading	SXJ
1345	—								Begin Surge	
1413	—								end surge	
1415	2	600	7.14	62.7	>200	0 ppm			Begin Bailing, Turbid, no odor	
1422	15	—	—	—	—				end bailing.	
1433	15	627	6.72	63.9	>200	0 ppm			Start pumping, Turbid, no odor	W.L. @ 11.2
1443	30	675	6.58	63.2	77.5				clearing W.L. @ 11.73	
1453	45	863	6.53	62.8	13.66	0 ppm			clear W.L. @ 11.77	
1503	60	1037	6.57	62.2	13.46				clear W.L. @ 11.87	
1513	75	1178	6.55	62.4	5.52	0 ppm			clear W.L. @ 11.92	
1517	81	1220	6.53	62.3	5.21				clear	
1521	87	1297	6.55	62.2	10.96				clear W.L. @ 11.97	
1527	96	1383	6.54	62.3	5.56	0 ppm			clear W.L. @ 11.98	
1531	102	1409	6.67	62.3	3.81				clear - parameters stable	

MF

Boring #	MW# M05-10
Sheet	1 of 2
Project:	CTO 260
Job #	2738.1203
Site:	05
Logged By:	DEK
Proj. Eng:	
Edited By:	
Drilling Contractor:	Gregg Drilling
Drill Rig Type/Method:	Mobile B-53 HSA
Drillers Name:	Marvin Hoover
Borehole Diam./Drill Bit Type	8"
Total Depth	15½
Ref. Elev	
Hammer Wt:	Pneumatic
Drop:	NA
Start Time:	1500
Date:	3/29/94
Completion Time:	1610
Date:	3/29/94
Backfille Time:	1700
Date:	3/29/94

Sketch Map of Site Area With Drilling Locations

	1st Water			
Boring Depth (ft.)	6.0			
Casing Depth (ft.)				
Water Depth (ft.)				
Time	1540			
Date	3/29/94			

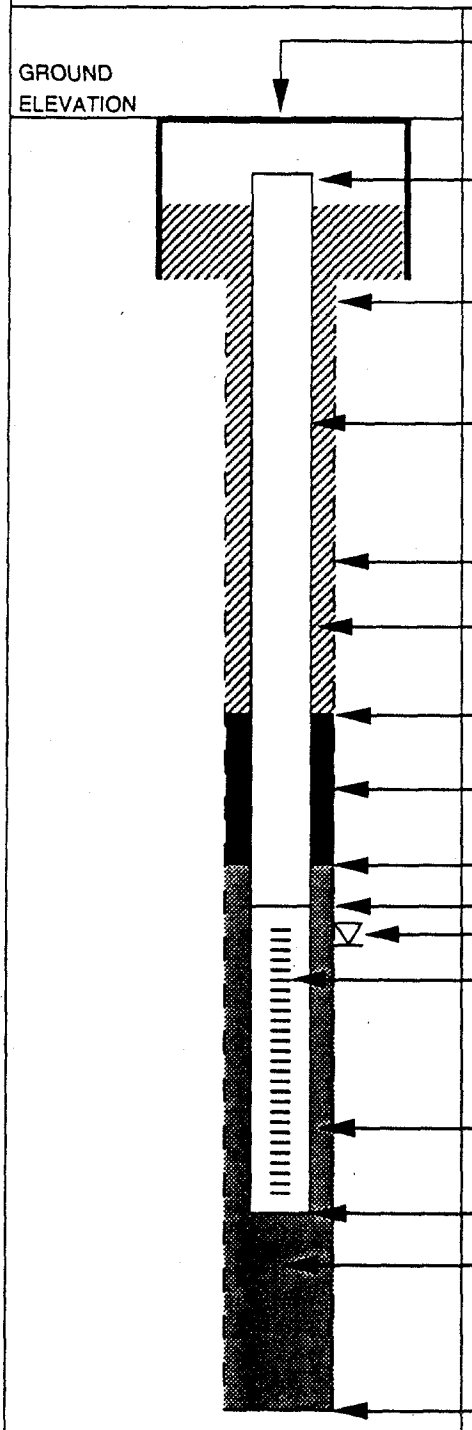
PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Recovery	Depth Feet	Graphics	
		CONCRETE FLOOR									Concrete to 1ft bgs
						Blank Arc	Grout	X 1515	1	SW	SW, sand, dk yellowish orange 10YR 4/6 loose, dry, med sand to 85% trace gvl to 1" diam.
				NR				X 1520	2		
				NR			Bentonite		3	SW	Aa
				NR					4		
								X 1530	5	SM	SM sandy silt, dk yellowish orange 10YR 6/6, loose, dense, fine sand to 25%, trace clay (as blebs)
								X DUP			
							Rod		6		
			Drill Head	Drill Head					7		7.03' on 4/6/94 downhole
						Slotted Screen	Sand 7/12 Morton		8		
									9		
									10		SP, sand, grayish olive 10Y 4/2 loose, saturated, fine sand to 40%, med sand to 50%, slight trace of silt-size material.
									11		
									12		

PID/OVA	Sampler Type	Blow Counts	Advance	Rcvd (in.)		Casing	Annulus	Sample Rec	Depth Feet	Graph	Boring # MW# MO5-10 Sheet 2 of 2
											Project: CTO 260
											Job # 2738.1203 Site: 05
									12	SP	
									13		SP, sand, grayish olive 10Y 4/2
						Slotted Screen	Sand 5/12				loose, saturated, medium-grain
									14	SP	Sand
									15	ML	ML sandy silt, black, loose/soft
									TD		Saturated, fine sand to 30%
									16		
									17		
									18		
									19		
									20		
									1		
									2		
									3		
									4		
									5		
									6		
									7		
									8		
									9		
									0		
									1		
									2		

BORING NO. M05-10

MONITORING WELL SHEET

PROJECT CTO-260	LOCATION Site 5	DRILLER Ted
PROJECT NO. 2738.1203	BORING M05-10	DRILLING METHOD HSA
ELEVATION	DATE 3/29/94	DEVELOPMENT METHOD Surge, bail, pump
FIELD GEOLOGIST DEK		



ELEVATION OF GROUND SURFACE:

ELEVATION OF TOP OF WELL CASING:

I.D. OF SURFACE CASING:

TYPE OF SURFACE CASING:

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Sch 40 PVC

BOREHOLE DIAMETER: 8"

TYPE OF BACKFILL: Cement/Concrete grout to surface

ELEVATION / DEPTH OF SEAL: 4

TYPE OF SEAL: 3/8 Bentonite pellets

DEPTH TOP OF SAND PACK: 5

ELEVATION / DEPTH TOP OF SCREEN:

FIRST ENCOUNTERED SATURATED ZONE

TYPE OF SCREEN: Sch 40 PVC

SLOT SIZE x LENGTH .010 factory slot

I.D. OF SCREEN 2"

TYPE OF SAND PACK: 2/12 RMC Lonestar Monterey sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 15

ELEVATION / DEPTH BOTTOM OF SAND PACK: 15½

TYPE OF BACKFILL BELOW OBSERVATION WELL: 2/12 sand in sample hole

ELEVATION / DEPTH OF HOLE: 15½

0.36' from TOC to Top of Christie box.

≅ 8' of filter pack (saturated)

Indoors - Hand bail

GROUNDWATER SAMPLING/WELL DEVELOPMENT LOG

Client PRC/Navy
Site Site 5
Well number M-05-10
Job number 2738.1203

Total well depth * 14.38
Well diameter 2
Borehole diameter 8

Min number well vol to be purged 3
Vol per ft casing (gal) (0.17) 7.71 = 1.31
Vol per ft borehole (gal) (2.55) 8 = 20.4
(less casing and filter pack)

Date 4/6/94

Static water level (ft)* 6.67
Standing water column (ft) 7.71

Amt one well vol (gal) 21.71
Total gal to be purged 65.13

Development method * Surge, bail, pump
Presampling purging method ___
Sampling method ___

* All measurements taken from: X Top of casing, ___ Protective casing, ___ Ground level

TIME	AMOUNT PURGED (gal)	FIELD PARAMETERS MEASURED							COMMENTS	FIELD TECHNICIAN
		EC	pH	TEMP	TURBIDITY	PID	W.L.	Flow		
1528			8.22	67.2		0ppm			1st bail for pH reading	SXJ
1542	10	292	8.21	68.5	>200				Begin bailing, Turbid, Grey, no odor	
1548	15	294	8.12	68.6	>200	0ppm	6.73		end bailing, Turbid, Grey, no odor	*surge performed during bailing
1555	–	–	–	–	–				Begin pumping.	
1603	28	272	8.02	70.3	>200		8.53	3.42	Turbid, Grey, no odor	
1606	38	251	7.72	70.3	>200	0ppm	8.80	3.40	Turbid	
1612	56	244	7.61	70.2	197.7		8.97	3.35	Turbid	
1616	74	249	7.50	70.3	127.7		8.90	3.63	cloudy	
1620	85	252	7.41	70.3	107.2		8.07	3.60	cloudy - slow pump down	
1625	101	265	7.34	70.3	79.8		7.79	1.67	clearing	
1641	123	269	7.40	69.7	50.0		7.55	1.16	clear - parameters stable	

MF

Well Completion?
5' or 5.5' solid
9.5 or 10' screen

MW# MØ5-1Ø Sheet 1 of 2

ECO - 260

738, 1203 Site: 5

Proj. Eng: Edited By:

Contractor: GREGG

Drill Rig Type/Method:

Drillers Name: Ted

Borehole Diam./Drill Bit Type: 8" Total Depth: 15½ Ref. Elev.

Hammer Wt: NA Drop: NA

Start Time: 1500 Date: 3/29/94

Completion Time: Date:

Backfill Time: Date:

Sketch Map of Site Area With Drilling Locations

	1st Water			
Boring Depth (ft.)	6.0			
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

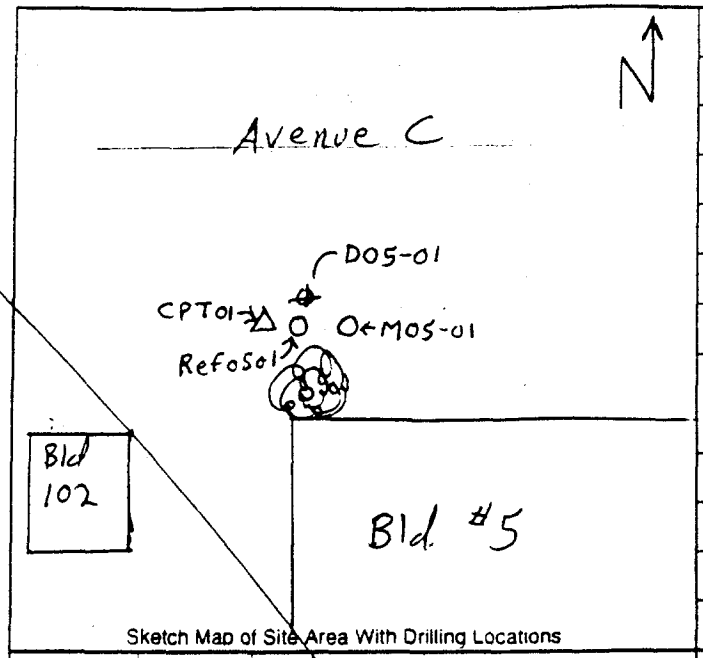
PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Rec.	Analyses	Depth Feet		
												Concrete to 1' foot bgs.
NA								X	1515	1	SW	SW, dk yellowish orange, 10YR 6/6 loose, dry, med sand, gvl to 1" clean sand est K.
NA						Blank	Grout	X	1520	2		
				NR						3		
				NR			Bent chips			4		
								X	1530	5	SM	SM, dk yellowish orange 10YR 6/6 loose, damp, fine sand, tr. clay blebs, mod high est K.
								X	Dup			
										6		
										7		7.03 from Kristy on 4/6/94 Developme
										8		
										9		
Ø						Screen	Sand			10	SP	SP, grayish olive 10Y 4/2, loose saturated, fine and med sand slight trace of silt high est K
										11		
										12		

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec	Analyses	Depth Feet	Description
										12	
										13	
						Slight seep	SAND			14	
ϕ										15	SP, grayish olive LOT 4/2 loose saturated, med sand, high est K
TD			Total Depth							16	ML at 15-15½, blk. silty sand loose, saturated, fine sand mod high est K.
										17	
										18	
										19	
										20	
										21	
										22	
										3	
										4	
										5	
										6	
										7	
										8	
										9	
										0	
										1	
										2	

Boring # MW# MOS-10 Sheet 2 of 2

Project: CTO-2600

Job # 2738.1207 Site: 5



Sketch Map of Site Area With Drilling Locations

Boring #	MW# DO5-01 Sheet 1 of 4
Project:	CTO-0260
Job #	2738.1203 Site: 5
Logged By:	CJPL Proj. Eng: KXS Edited By:
Drilling Contractor:	Water Development Corp
Drill Rig Type/Method:	Mobile B53 HSA To 23' Mudrotary To 70'
Drillers Name:	Paul Frederiksen
Borehole Diam./Drill Bit Type	8" HSA - 12 HSA - Total Depth 70' Ref. Elev.
Hammer Wt:	140LB Drop: 30"
Start Time:	1030 Date: 5/27/94
Completion Time:	1600 Date: 5/31/94
Backfill Time:	1100 Date: 6/1/94

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)	Conductor Casing	Casing Type & Size	Annulus Filler	Sample Rec. Analyses	Depth Feet		
											9" Concrete pavement.
	2½" split spoon	18 19					Concrete		1	FILL	Fill - Sand with gravels to 3/4"Ø, moist
		25 32							2	SP	
									3	SP	Fine grained Sand, (SP) well sorted, moist, pale brown 10YR (6/3)
					Conductor Casing				4		
		10 11 15				Solid Casing			5	GP	Poorly graded gravels with Sand (GP) moist, med. dense, yellowish brown 10YR (5/6) Gravels To 1/2"Ø. 35% sand, Traces silt.
							Cement Grout		6	SP	Well sorted fine grained Sand, Saturated below 6.5', Olive gray 5Y (5/2)
		8 1 1							7		
									8		Very fine To fine grained Sand (SP) Saturated. greenish gray 5GY (5/1) Trace silt, Trace sea shells
					8 5/8" Steel	3" SCH 40 PVC			9		
		3 4 6					Neat		10	CL	Silty Clay, moist, Olive gray 5Y (5/2)
									11	SP	Very fine To fine grained Sand (SP) Saturated, light brownish gray 2.5Y 6/2, Trace chert sands (red)
									12		

oops

Boring # MW# DCS-01 Sheet 2 of 4

Project: CTC-0260

Job # 2738.1203 Site: 5

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)	Conductor Casing	Casing	Annulus	Sample Rec	Analyses	Depth Feet		
	2" Split Spoon Sampler	~~2~~	5				Neat Cement Grout			12		
		~~2~~	5							13	SP	Very fine To fine grained Sand (SP) Saturated, dark greenish gray 5GY(4/1)
		2						Y		14		
		2						Y		15	CL	Silty Clay with Sand (CL) very moist, firm black 5Y(2.5/1) to dark gray 5Y(4/1) Sea shells common, Sand, silt lenses and pockets.
		3						Y		16		
										17		
										18		
										19	SM	Silty Sand (SM). Saturated, loose dark greenish gray 5GY(4/1), 10-15% Silt, sea shells common.
	3	3			8 5/8 #10 Steel Conductor Casing					20		
	4	4										
	3	3								21	CL	Silty Clay (CL) very moist, Firm, dark greenish gray 5GY (4/1), 20-40% fine silt, 5% fine sand, Sea shells common.
	1	1								22		
	1	1										
	5	5				Solid Casing				23		
										24	ML	Clayey Silt with Sand (ML) very moist To saturated (firm) gray 5Y(4/1) Sea shells common, Traces of pyrite.
	2" x 6' continuous core sampler					3" Sch 40 PVC				25		
										26		
										27		Sandy Silt (ML), very moist To Saturated, (firm) dark greenish gray 5GY (4/1) 5-10% Clay, Trace pyrite
										28		
										29		
										30	SM	Silty Sand (SM), Saturated, (loose) dark greenish gray 5GY (4/1) Sand is fine grained.
										31		
										32		

SA
5/27/94
et casing

nued
ctory

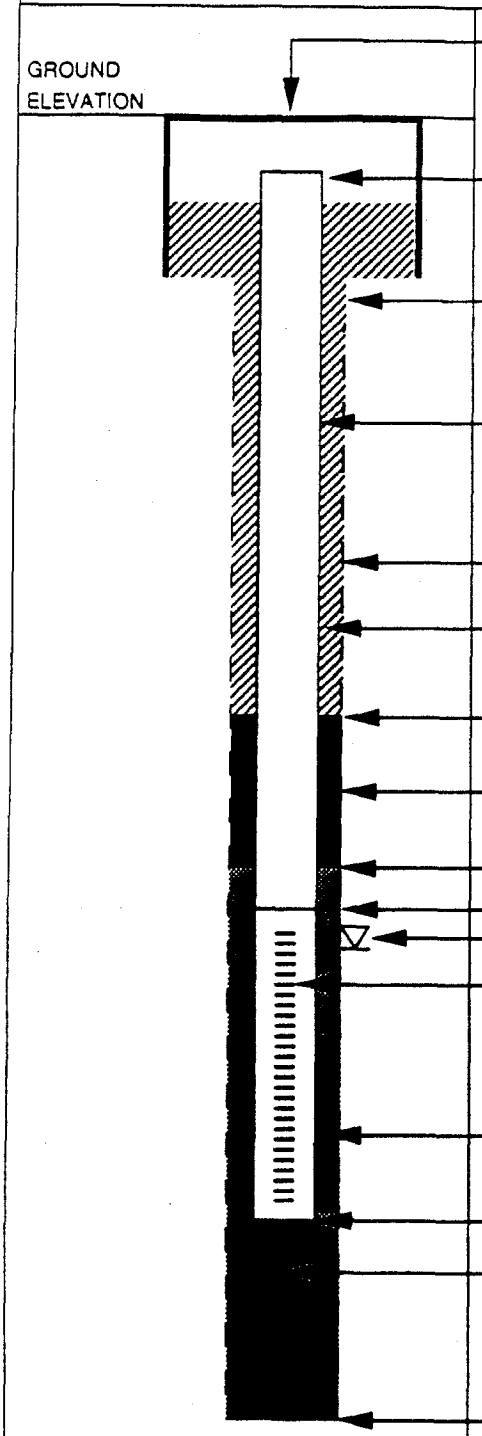
PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)	Casing	Annulus	Sample Rec	Analyses	Depth Feet		Boring # MW#D05-01 Sheet 3 of 4
											Project: CTO-0260
											Job # 2738.1203 Site: 5
				not recovered	3" SCH 40 PVC Solid Casing	Neat Cement Grout			32	SM	
									33		
									34		
									35		
									36		Silty Sand, (SM) Saturated, (loose) dark greenish gray 5GY(4/1), 5% Clay, Trace sea Shells, Strong organic odor (rotten eggs) Trace rootlets
									37		
									38		
									39		
								N	40	ML	Sandy Silt with Clay (ML) very moist to Saturated, dark greenish gray 5G(4/1)
									41		
									42	SP	Fine grained Sand (SP) Saturated, Olive 5Y(5/3) Trace silt to 5%
									43		
									44		
									45		fine grained Sand (SP) Saturated, dark greenish gray 5G(4/1) Trace sea shells, Trace-5% silt.
									46		
									47		
									48		fine grained Sand (SP) Saturated, brown 10YR(5/3), Trace silt.
									49		
									50	SC	Clayey Sand (SC) Very moist to saturated Grayish brown 2.5Y(5/2) 20% Clay, 5% silt, Traces of iron oxide staining
									51	SP	fine grained Sand SP, Saturated, Grayish brown 2.5Y(5/2) Trace silt, iron oxide.
									52		

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Depth Sample Rec	Analyses	Feet	Boring # MW#D05-01 Sheet 4 of 4 / Project: CTO-0260 / Job # 2738.1203 Site: 5
										52	SP
										53	Very fine to fine grained Sand (SP) Saturated, light olive brown 2.5Y (5/3) Trace - 5% Silt. Trace iron oxid Staining
							Neat Cement			54	
						Solid Casing				55	
							Bentonite Slurry			56	Very fine to fine grained Sand SP, Saturated, yellowish brown 10YR (5/4) 10% clay, Trace - 5% silt.
						PVC				57	
						Sch 40				58	
						3"				59	
										60	Very fine to fine grained Sand (SP) Saturated, yellowish brown 10YR (5/4) 5% silt.
						Slot Casing				61	
										62	
						factory				63	
						0.010	Sand			64	Very fine to fine grained Sand (SP) Saturated, grayish brown 10YR (5/2) Trace silt.
						PVC	#2 1/2			65	
						Sch 40				66	
						3"	Hand Stir			67	Very fine to fine grained Sand (SP) Saturated, light brownish gray 10YR (6/2) 5% silt, Trace iron oxid Staining.
							RMC			68	
										69	
										70	TD 70'
										1	
										2	

BORING NO. D05-01

MONITORING WELL SHEET

PROJECT CTO-0260	LOCATION Site 5	DRILLER Water Development
PROJECT NO. 2738.1203	BORING D05-01	DRILLING METHOD HSA To 23' Mud rotary To 70'
ELEVATION	DATE 6/1/94	DEVELOPMENT METHOD
FIELD GEOLOGIST W.P.W		



ELEVATION OF GROUND SURFACE: _____

ELEVATION OF TOP OF WELL CASING: _____

I.D. OF SURFACE CASING: 8 5/8

TYPE OF SURFACE CASING: #10 Steel Conductor Casing

RISER PIPE I.D.: 3"

TYPE OF RISER PIPE: SCH 40 PVC Casing

BOREHOLE DIAMETER: 12" HSA to 23' 8" mud rotary from 23 to 70'

TYPE OF BACKFILL: Neat Cement grout

ELEVATION / DEPTH OF SEAL: 54.5'

TYPE OF SEAL: Bentonite Slury Pumped Through Trimmie

DEPTH TOP OF SAND PACK: 57.5'

ELEVATION / DEPTH TOP OF SCREEN: 60'

FIRST ENCOUNTERED SATURATED ZONE

TYPE OF SCREEN: SCH 40 PVC

SLOT SIZE x LENGTH 0.010 X 10'

I.D. OF SCREEN 3"

TYPE OF SAND PACK: Monterey RMC Lone Star #2/12 Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 70'

ELEVATION / DEPTH BOTTOM OF SAND PACK: 70'

TYPE OF BACKFILL BELOW OBSERVATION WELL: Native undisturbed

ELEVATION / DEPTH OF HOLE: 70'

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec.	Analyses	Depth Feet		Boring # MW# D05-02 Sheet 3 of 4
												Project: CTC-0260
												Job # 2738.1203 Site: 5
										32	ML	Clayey silt (ML) Very moist, Dark greenish gray 5GY(4/1), Sea shells common
										33		
										34		
										35	SM	Silty Sand (SM) Very moist to Saturated, greenish gray 5GY (5/1) Sea shells common, 5% Clay
										36		
						3" Sch 40 PVC Casing	Neat Cement Grout			37	SM/SC	Silty Sand with Clay (SM/SC) Very moist, dark greenish gray 5GY(4/1) est 10-15% silt, 5-10% clay, slightly consolidated.
										38		
										39		Silty Sand with Clay (SM/SC) very moist, Olive gray 5Y 5/2 ~~grading to brown 10YR(5/3)~~ and greenish gray 5GY (5/1) mottled. w.l.
										40		
										41		
										42		Silty Sand/Clayey Sand (SM/SC) Very moist, Olive gray 5Y 5/2 grading to brown 10YR 5/3 below 42'
										43		
										44	SM	Silty Sand (SM) Saturated, Loose to med dense, brown 10YR (5/3) 10% silt, Sand is fine grained.
										45		
										46	SP	Very fine to fine grained Sand (SP) Very moist, yellowish brown 10YR (5/4) 5% silt, Slightly consolidated.
										47		
										48		
										49		
										50		Very fine to fine grained Sand (SP) Very moist to Saturated, yellowish brown 10YR (5/4) 5% silt slightly consolidated.
										51		
										52		

Boring # MW# D05-02 Sheet 2 of 4

Project: CTO-0260

Job # 2738.1203 Site: 5

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)	Conductor Casing	Casing	Annulus	Sample Rec	Analyses	Depth Feet		
										12		
										13	SP	
										14		Clayey Silt with Sand (ML), Very moist, soft to firm, Dark gray N4/ to dark greenish gray 5GY(4/1) below 15.5'; Sea Shells common.
		1								15	ML	
		1										
		3								16		
										17		
										18		
										19		Silty Sand (SM) Saturated, loose, dark greenish gray 5GY(4/1) Seashells common, 5% Clay, Sand is very fine
		3								20	SM	
		2										
KSA		3								21	ML	Clayey Silt with Sand (ML) Very moist, firm, dark greenish gray 5GY(4/1) Trace organic matter, Trace sea shells, Traces of pyrite.
		2								22		
		4										
1		4								23		
12/2/94												
6										24		Clayey Silt (ML), Very moist, dark greenish gray 5GY(4/1) Sand in pockets, Trace sea shells, rootlets Traces of pyrite.
.11										25		
										26		
										27		
										28		
										29		
										30		Clayey Silt, (ML) very moist, dark greenish gray 5GY(4/1), Sand appears in pockets & lenses. Sea shells common. Trace rootlets
										31		
										32		

Conductor Casing

8 3/4 #10 Steel Conductor Casing

Casing

3/4 Sch 40 PVC

Neat Cement Grout

2" x 6' Continuous Core Sampler

Boring # MW# D05-02 Sheet 4 of 4

Project: CTO-026C

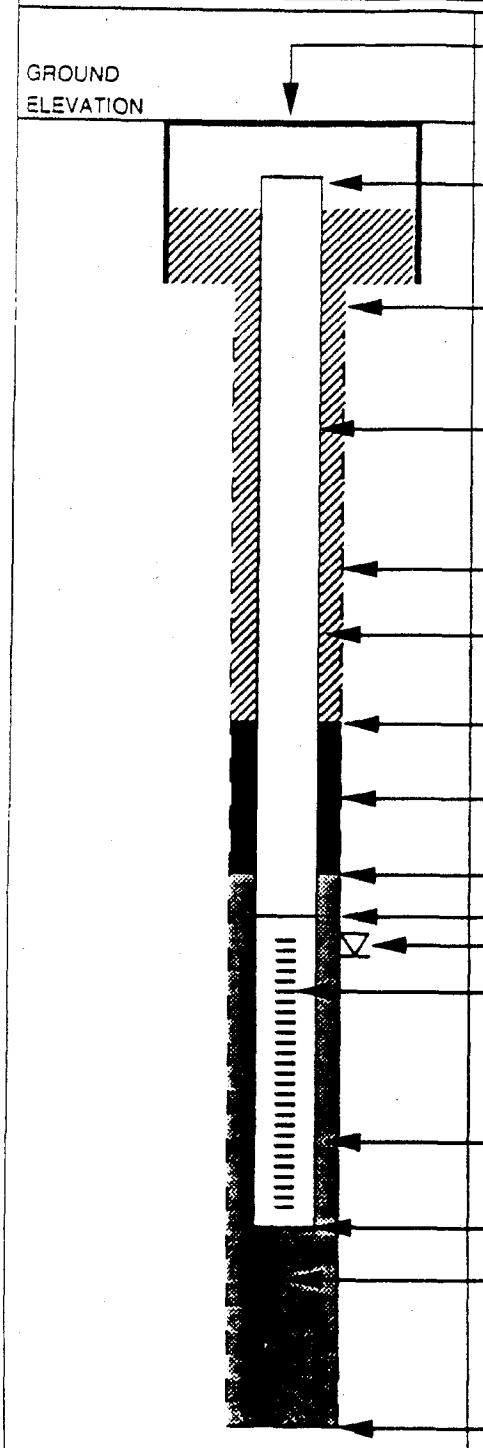
Job # 2738.1203 Site: 5

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec	Analyses	Depth Feet		
										52	SP	Very fine to fine grained Sand (SP) Saturated (loose) yellowish brown 10YR (5/4) Trace silt.
						3" Sch 40 PVC Solid	Bentonite Slurry			53		
										54		
										55		
										56		Very fine to fine grained Sand (SP) Saturated (loose), yellowish brown 10YR (5/4) Trace silt.
										57		
										58		
										59		
						3" Sch 40 PVC 0.01 Factory Slot	Monterey Lone Star #2/12 Sand			60		fine grained Sand (SP) Saturated brown 10YR (5/3) To yellowish brown 10YR (5/4), Trace silt, slight color change below 61' To grayish brown 10YR (5/2).
										61		
										62		
										63		
										64		Very fine To fine grained Sand (SP) Saturated, grayish brown 10YR 5/2 5% silt.
										65		
										66	SM	Silty Sand (SM) moist To very moist. (Very dense) light brownish gray 10YR (6/2) moderatly Consolidated, 10-15% silt.
										67		
										68		Silty Sand (SM) moist, (very dense) light brownish gray 10YR (6/2) 10-15% silt, 5% Clay, moderatly Consolidated.
										69		
	2" X 6' Continuous Core Sampler									70		TD 70' with 5" Tools on 6/2/94 @ 1130
										1		TD @ 67' with 8" Tools on 6/2/94 @ 1:45 Well set @ 67'
										2		

BORING NO. D05-02

MONITORING WELL SHEET

PROJECT CTO-0260	LOCATION Site 5	DRILLER Water Development
PROJECT NO. 2738.1203	BORING D05-02	DRILLING METHOD HSA to 23' mud rotary to 70'
ELEVATION	DATE 6/2/94	DEVELOPMENT METHOD
FIELD GEOLOGIST W.P.W.		



ELEVATION OF GROUND SURFACE: _____

ELEVATION OF TOP OF WELL CASING: _____

I.D. OF SURFACE CASING: 8 5/8

TYPE OF SURFACE CASING: #10 Steel Conductor Casing

RISER PIPE I.D.: 3 inch

TYPE OF RISER PIPE: Sch 40 PVC Casing

BOREHOLE DIAMETER: 12" from surface to 23', 8" from 23 to 67'

TYPE OF BACKFILL: Neat Cement Grout

ELEVATION / DEPTH OF SEAL: 51.5'

TYPE OF SEAL: Bentonite Slury Pumped in place through a tremie pipe

DEPTH TOP OF SAND PACK: 54.5

ELEVATION / DEPTH TOP OF SCREEN: 57'

FIRST ENCOUNTERED SATURATED ZONE

TYPE OF SCREEN: PVC Sch 40

SLOT SIZE x LENGTH 0.010 x 10'

I.D. OF SCREEN 3"

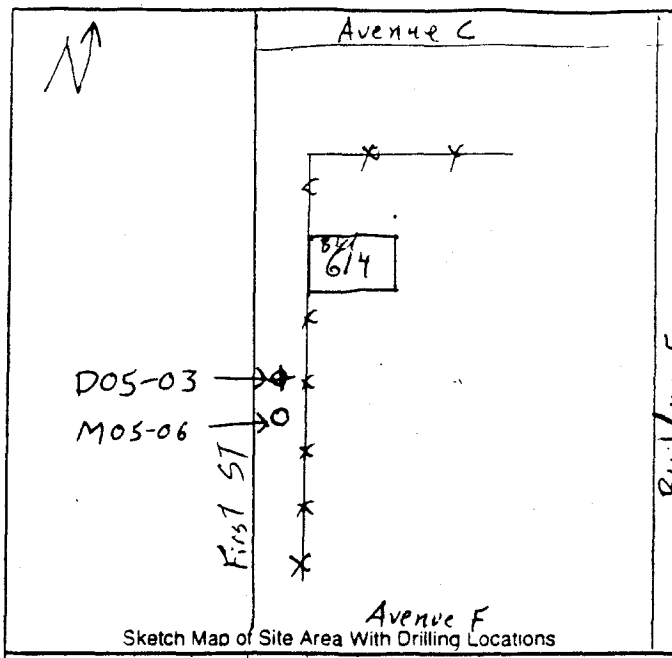
TYPE OF SAND PACK: Monterey Lake Stor #2/12 Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 67

ELEVATION / DEPTH BOTTOM OF SAND PACK: 67'

TYPE OF BACKFILL BELOW OBSERVATION WELL: Native silty sand 5% clay

ELEVATION / DEPTH OF HOLE: Sampled To with 5" Tools 70'



Sketch Map of Site Area With Drilling Locations

Boring # MW# D05-03 **Sheet** 1 **of** 4

Project: L-70-0260

Job # 2738.1203 Site: 5

Logged By: L.J.P.L.J.P.L. / DEK Proj. Eng: KXS Edited By:

Drilling Contractor: Water Development

Drill Rig Type/Method: Mobile B53 HSA To 23', Mud to 70'

Drillers Name: Paul Frederiksen

Borehole Diam./Drill Bit Type: 12" HSA To 23', 8" Mud rotary To 70' — **Total Depth** boring 70' well = 67' — **Ref. Elev.**

Hammer Wt: 140 Lb Drop: 30"

Start Time: 0930 Date: 6/6/94

Completion Time: 12:30 (Boring TD 8") Date: 6/7/94

Backfill Time: 1630 Date: 6/7/94

	~~1st Water~~	4.5'		
Boring Depth (ft.)	70'			
Casing Depth (ft.)	67'			
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)	Conductor Casing	Casing Type & Size	Annulus Filler	Archived Sample Rec.	Analyses	Depth Feet		Description
												3" Asphalt Pavement
							Concrete			1	GM	Silty Gravel (GM) with Sand, yellowish brown 10YR5/4
	Hand Auger to 4.5'									2		Very fine to fine grained Sand (SP) moist, Pale brown 10YR(5/4) - Trace - 5% gravels To 3/4" Ø. Trace silt + Clay
					Conductor Casing					3	SP	
										4		Very fine To fine grained Sand, Saturated below 4.5', Pale brown 10YR(6/3)
	2½" Split Spoon Sampler	7								5		Very fine to fine grained Sand (SP) Saturated, med. dense greenish gray 5GY(5/1) below 5'. Trace gravel silt + clay
		7									color	
		6			Steel Conductor Casing	Solid Casing	Grout			6		
										7		Very fine to fine grained Sand (SP) Saturated, loose to med. dense, Pale brown 10YR(6/3) Trace greenish gray 5GY(5/1) Stainning.
		2								8		
		3										
		7			8 5/8 #10	40 PVC	Cement			9	SP	
										10		Very fine to fine grained Sand, (SP) Saturated, med. dense to dense, gray 5Y(5/1) Trace mica
		11				SCH						
		15				3"	Neat					
		15								11		
										12		

VF

Boring # MW#DOS-03 Sheet 2 of 4

Project: CTO-0260

Job # 2738.1203 Site: 5

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)	Conductor Casing	Casing	Annulus	Archived Sample Rec.	Analyses	Depth Feet		
										12		
										13	SP	* Note 8" of sample appears to be very fine sand that has slutted/heaved into sample -
	HSA.									14	ML	Clayey silt with sand (ML), very moist, soft, dark gray 5Y(4/1) trace organic matter
	2½" Split Spoon Sampler	1 1 4								15		
										16	SM	Silty Sand (SM) saturated loose, dark gray 5Y(4/1), sea shells common approx 10-15% silt, trace clay, sand is very fine to fine grained
										17		
										18		
										19		
										20		Silty Sand (SM) very moist to saturated, loose, dark gray 5Y(4/1) sea shells common, 15-20% silt, strong organic odor trace rootlets
5 ppm					8 5/8 * 10 Steel Conductor Casing	3" SCH 40 PVC Solid Casing				21		
										22		
										23	CL	Silty Clay (CL) very moist, stiff, dark greenish gray 5GY(4/1), trace organic matter.
855										24		* HSA to 23' set 8" steel conductor @ 23' on 6/6/94.
0 ppm	continuous core sampler/mud rotary						Neat Cement Grout.		collected	25	CL	Silty clay CL moist stiff, gray 5Y 5/1, organic layers at 24'-25' and 26' to 27', trace organic-plant debris throughout. v. strong H_2S odor
										26		
										27		
										28		
				No Recovery						29		
	2"x6'									30	CL	CL ha
										31		
										32		

PID/OVA	Sampler Type	Blow Counts	Advance (in)	Rcvd (in)		Casing	Annulus	Sample Rec.	Analyses	Depth Feet		Boring # MW# DOS-03 Sheet 3 of 4
												Project: CTO-0260
												Job # 2738.1203 Site: 5
										32	CL	CL Ag
										33		
								X		34		
								X	collected			
								X		35	SC	SC, sandy shelly clay, soft, black 2.5YR (N2.5/) very moist, erosional? contact at 34.5 ft (between CL & SC), shell fragments to ~½" ϕ, strong H2S odor
										36		
								X	collected		CL	
								X		37		MLCL, sandy clay, dk grey 2.5YR N4/ soft v. moist, fine to med granitic sand
								X				
								X	collected		CL	ML, sandy silt, granitic grey 5G 6/1 fine sand, stiff, damp
								X		39		
										40		CL, sandy clay, dk greenish grey 5G 4/1 v. stiff, dry, H brown mottled throughout, Med Sand ~30%
								X	collected	41	SC	SCSM, clayey sand, dk grey 5Y 4/1 firm, sl. damp, med sand, sand content increases downward
								X				
								X		42		
								X	collected		SC	
								X		43	SM	SM, silty sand, lt olive brown 2.5Y 5/3. Soft, moist, fine sand. saturated at 46½ feet, sand content increases downward
								X				
										44		
										45		
										46		
								X		47		
								X	collected			
								X		48	SM	SM Ag
										49		
										50	SP	SP, sand, brown 10YR 5/3 saturated loose, fine sand, ~ trace silt.
								X		51		
								X		52		

3" SCH 40 PVC Casing

Neat Cement Grout

Boring # MW# D05-03 Sheet 4 of 4

Project: C70-0260

Job # 2738.1203 Site: 5

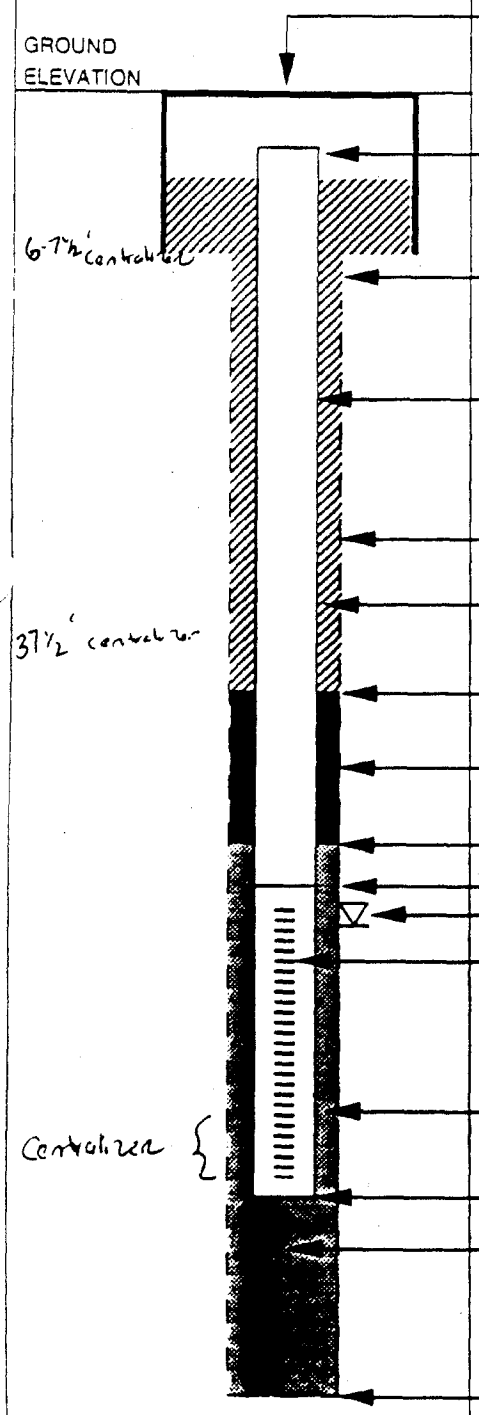
PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec	Analyses	Depth Feet		
						Solid Casing	Bentonite Slurry			52	SP	
										53	SM	Sandy silt, brownish yellow 10YR 6/6 firm, moist, fine to v. fine sand
								X	collected			
								X		54		
						4" PVC						SM Aa, oxidation large (red mottled at ~55-56' dry
										55		
						Sch 40		X	collected			
								X		56		
						3"						
										57		
								X			SM	SM (silty sand) yellowish brown 10YR 5/6
								X	collected	58		loose, saturated, fine sand
						Casing						
										59		SM silty sand, grayish brown 10YR 5/2, loose saturated, fine sand, orange-red mottling
						Slot						
										60		
								X	collected			
						0.010 factory		X		61		
											SM	
										62	SM	SM silty sand olive gray 5Y 5/2, loose saturated
										63		
								X	collected			
								X		64		SM silty sand, gray 5Y 5/1
											SM	med dense, moist to dry, oxidized contact at 63½ feet
										65		
								X	collected		SM	
						3" Sch 40 PVC	Monterey Sand	X		66		SM silty sand, 1F olive gray 5Y 4/2, loose, saturated, fine/med sand [~15% silt]
								X				
								X		67		
										68	SM	SM sandy silt, pale olive 5Y 6/3 stiff, dry, fine/v. fine sand
							Original Layer Silt			69		
										70	TD	Note: will not well @ 57-67 b/c formation is not saturated below 67'
										1		Completed drilling at 1045 with 5" sampling tools
										2		

No Array

BORING NO. DC5-03

MONITORING WELL SHEET

PROJECT CTO-0260	LOCATION Site 5	DRILLER Paul Frederiksen Water Development
PROJECT NO. 27381203	BORING DC5-03	DRILLING METHOD HSA / Mud rotary
ELEVATION	DATE	DEVELOPMENT METHOD
FIELD GEOLOGIST WPW		



ELEVATION OF GROUND SURFACE: _____

ELEVATION OF TOP OF WELL CASING: _____

I.D. OF SURFACE CASING: 8 5/8 #10

TYPE OF SURFACE CASING: ~~PVC blank~~ #10 Steel Conductor Casing

RISER PIPE I.D.: 3-inch

TYPE OF RISER PIPE: SCH 40 PVC Casing

BOREHOLE DIAMETER: 12" from surface to 23' 8" from 23' to 70'

TYPE OF BACKFILL: neat cement grout

ELEVATION / DEPTH OF SEAL: 51.5'

TYPE OF SEAL: Bentonite Slury Pumped in place through Trimmie

DEPTH TOP OF SAND PACK: 54.5'

ELEVATION / DEPTH TOP OF SCREEN: 57'

FIRST ENCOUNTERED SATURATED ZONE

TYPE OF SCREEN: PVC

SLOT SIZE x LENGTH 0.010 10 feet

I.D. OF SCREEN 3-inch

TYPE OF SAND PACK: Lonestar #2/12 Sand

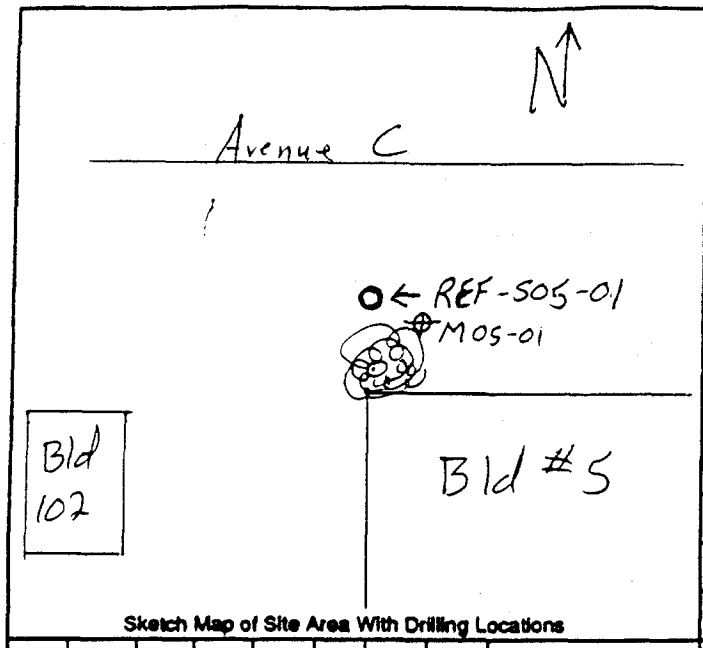
ELEVATION / DEPTH BOTTOM OF SCREEN: 67'

ELEVATION / DEPTH BOTTOM OF SAND PACK: 67'

TYPE OF BACKFILL BELOW OBSERVATION WELL: Native ~~Silty~~ sandy silt (SM) With clay

ELEVATION / DEPTH OF HOLE: 70

REF-SOS-01



Sketch Map of Site Area With Drilling Locations

Boring #	MW#
Sheet	1 of 7
Project:	CTO-0260
Job #	2738.1203 Site: 5
Logged By:	LJPW Proj. Eng: KS Edited By:
Drilling Contractor:	Water Development Corp.
Drill Rig Type/Method:	Mobil B53 HSA To 24' / Mud rotary To 117'
Drillers Name:	Paul Frederiksen
Borehole Diam./Drill Bit Type	8"
Total Depth	117'
Ref Elev	
Hammer Wt:	140 Drop: 30"
Start Time:	1620 Date: 4/27/94
Completion Time:	1800 Date: 5/9/94
Backfill Time:	1930 Date: 5/9/94

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Recovery	Depth Feet	Graphics	
											8" Concrete Slab
		6									fine grained Sand with Gravel,
0.0		6	✓	✓					1	SP	moist, yellowish brown 10yR (5/4)
		12	✓	✓							
		20							2		fine grained Sand (SP) moist, very
		32	✓	✓							dense, light yellowish brown
		10	✓	✓					3		2.5Y (6/3)
		14									
		15	✓	✓					4	SP/SM	Silty Sand with Gravel (SP/SM) moist, med.
		6									dense, yellowish brown 10yR (5/4) 15% gravel
		7							5	SP	To 3/8" Ø.
		10	✓	✓					6		Fine grained Sand (SP) moist, med. dense,
		5									yellowish brown 10yR (5/4) Trace sea shells.
		8									Fine grained Sand (SP) As above. Saturated
0.0	2" Split Spoon Sampler	8	✓	✓					▽ 7		below 7'; Color change To greenish gray
		3									5GY (5/1).
		2							8	ML	Clayey Silt (ML) Very moist To Saturated,
		1	✓	✓							Soft, Greenish gray 5GY (5/1) approx.
		3							9		5% fine Sand.
		6									
		9	✓	✓					10	SP	fine To med. grained Sand (SP), Saturated,
		4									med. dense, greenish gray 5GY
		4							11		(5/1), Trace Silt
		3	✓	✓							
									12		

Neat Cement Grout

Stop for the night @ 12:-

REF-SCS-01

Boring # MW# Sheet 2 of 7

Project: CTO-0260

Job # 2738.1203 Site: 5

PID/OVA	Sampler Type	Blow Counts	Advance	Rcvd (in.)	Conductor Casing	Casing	Annulus	Sample Rec	Depth Feet	Graph	Description
1/28/94		2		No recovery	—				12		
		2								SP	
		2	↓		No recovery				13		
		2							14		Fine To med grained Sand (SP) as above.
	Sampler	2									
		4	↓	↓					15	SM	Silty Sand (SM) Saturated, loose, Very dark gray 2.5Y (N3/) Sea shells common.
		2			Conductor Casing						
		2							16	CL	Silty Clay (CL) Very moist, firm, Dark greenish gray 5GY (4/1).
	Spoon	4	↓	↓							
		1							17	SM	
		4			Steel						
	Split	5	↓	↓					18		Silty Sand (SM), Saturated, loose, Dark gray 5Y (4/1), Sand is fine grained, sea shells common.
		3			#10						
		4							19		
	2"	5	↓	↓	5"						
		4									
		6							20		
		7	↓	↓					21	ML	Clayey Silt with Sand (ML), Saturated, Stiff, dark gray 5Y (4/1).
		2					Neat Cement Grout				
		2							22		Clayey Silt (ML) very moist, firm, dark greenish gray 5GY (4/1) Sea shells ~~+organic~~ ~~matter~~ common, Traces of organic matter.
		3	↓	↓							
nductor		2							23		Trace - 5% Sand.
1/28/94		2									
Stop	↓	5	↓	↓	↓				24	ML	Clayey silt with Sand (ML) Very moist To Saturated, firm, gray 5Y (5/1) Sea shells common.
	↑			No recovery - Broken Shoe					25		
									26	ML	(3" of recovery in shoe) Sandy Silt, Saturated, loose, dark greenish gray 5GY (4/1)
									27		
	Continuous core barrel								28		Traces of concrete in sample from Plug @ bottom of Conductor Casing
			↓	↓					29		(6" of recovery
									30		Sandy Silt with Clay (ML) layered with fine Sand Saturated dark greenish gray 5GY (4/1) Sand lenses x 2" thick.
	2" x 6'								31		
									32		

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec.	Analyses	Depth Feet		Boring # KEF-SC5-C1 MW#	Sheet 3 of 7
												Project: CTC-C 2EC	
												Job # 2738.1203 Site: 5	

Depth Feet		Description
32		
33	ML	Clayey Silt (ML), very moist to saturated, dark greenish gray 5GY(4/1), varying clay from 5-20%, sand from trace to 15%, trace seashells
34		
35	SM	Silty Sand (SM) saturated, dark greenish gray 5GY(4/1), sea shells common.
36	ML/CL	Clayey Silt / Silty Clay (ML/CL) very moist to saturated, dark greenish gray 5GY(4/1), trace to 10% sand, traces of sea shells.
37		
38		
39		
40	ML	~~Clayey silt with sand~~ (U.W.) Sandy Silt with clay, very moist to saturated, dark greenish gray 5GY(
41	SP	fine grained sand, saturated, dark greenish gray 5GY(4/1) trace sea shells trace - 5% silt.
42		fine grained sand (SP) very moist, dark greenish gray 5G(4/1), 5% clay, moderately consolidated (forming plug in sampler).
43		
44		
45		fine grained sand (SP) saturated, light olive brown 2.5Y(5/3)
46		
47		fine grained sand (SP) saturated, light brownish gray 10YR(6/2), trace iron oxid staining
48		
49	SC	
50		Clayey Sand (SC), very moist to satur grayish brown 2.5Y(5/2) clay ve from 10 - 30%, trace silt, trace iron oxid staining.
51		
52		

2" x 6' continuous core sampler

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec	Analyses	Depth Feet		

Boring # REF-SC5-S1 MW# Sheet 4 of 7

Project: CTC - CZEC

Job # 2735.1203 Site: 5

Depth (Feet)		
52	SC	Clayey Sand (SC), very moist, grayish brown 2.5Y (5/2). Clay varying in texture from 10-30%, Trace silt & iron oxid staining. Some areas moderately consolidated. (Plugging shoe of sampler).
53		
54		
55	SP	Fine grained sand (SP) Saturated yellowish brown 10YR (5/4), Trace silt,
56		
57		
58		Very fine to fine grained sand (SP) Very moist to saturated, yellowish brown 10YR (5/4) estimated @ 5-10% Clay, 5% silt, Trace iron oxid staining
59		
60		
61		
62		Very fine to fine grained sand (SP) Saturated, Pale brown 10YR (6/3), Trace silt.
63		
64		
65		
66	SM	Silty Sand, moist, (hard) light brownish gray 10YR (6/2), estimated @ 15-20% silt, 5% Clay. (made plug in shoe of sampler)
67		
68	SP	fine grained sand, saturated, (loose) light brownish gray 10YR (6/2) Trace silt
69		
70		
71		Sand As above.
72		

Log T

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec	Analyses	Depth Feet		
										72	SP	fine grained sand (SP) saturated (loose) light brownish gray 10YR (6/2) 5% silt, Trace Clay
										73		
										74		
										75		
										76		
										77		fine grained Sand As above.
										78		Color Change, fine grained Sand (SP), saturated (loose) greenish gray 5GY (5/1) Trace silt to 5% Sand is very fine to fine grained
										79		
										80		
										81		* 81' to 83' very fine grained material washed away Per driller
										82		
										83		very fine to fine grained sand, saturated (loose) dark greenish
										84	SP	gray 5GY (4/1), Trace silt.
										85		
										86	CL	Clay, moist, (stiff) gray 5Y (5/1) 5-10% silt, 5-10% fine sand.
										87	SP	fine grained sand, saturated, dark greenish gray 5GY (4/1)
										88		fine sands washed away.
										89		
										90	ML/CL	Clayey silt / silty Clay, very moist, dark gray 5Y (4/1)
										91		
										92		

REF-SC5-C1

Boring # MW#

Sheet 5 of 7

Project: C70-0260

Job # 2738.1203 Site: 5

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec	Analyses	Depth Feet		
										92	MY/CL	
										93	SP	Very fine To fine grained Sand SP Saturated, (loose) dark gray 5Y(4/1) 5% silt.
										94		
										95		
										96		
										97		
										8		Very fine To fine grained Sand(SP) Saturated (loose) gray 5Y(5/1) 5% silt,
										9		*note 1" of recovery from 97' to 101'
										100		Sample is washing — very fine grained.
										101		
										102		
										103		Very fine To fine grained sand(SP) Saturated, dark greenish gray 5GY (4/1) Trace-5% silt, Trace Clay
										104		*2' of recovery from?
										105		
										106		Very fine To fine grained Sand (SP) Saturated, dark greenish gray
										107		5GY (4/1) Trace silt.
										108		
										109		
										110		Very fine To fine grained Sand(SP) Saturated, dark greenish gray 5GY
										111		(4/1), Trace silt, Trace clay
										112	CL	

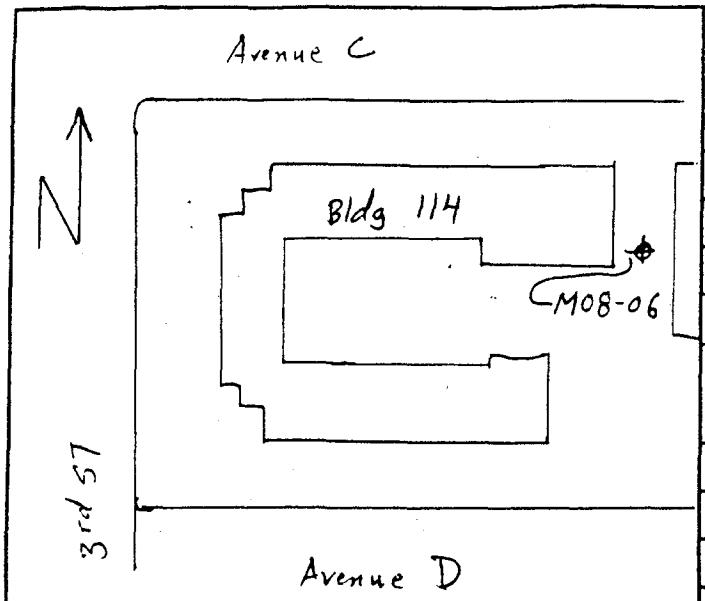
Boring # REF-SCS-C1 MW# Sheet 6 of 7

Project: CTC-026C

Job # 2738.1203 Site: 5

PID/OVA	Sampler Type	Blow Counts	Advance (in)	Rcvd (in)		Casing	Annulus	Sample Rec. / Analyses	Depth Feet		Boring # REF-SC5-C1 MW#	Sheet 7 of 7
											Project: CTO-C2FC	
											Job # 2738 1203 Site: 5	5/9/94
									112	CL	Silty Clay (CL) very moist, (Stiff) greenish gray 5G(5/1) estimated @15% silt, Trace fine sand to 5% Trace organic matter.	
									113			
									114			
									115		Silty Clay (CL) moist to very moist, (Stiff) greenish gray 5G(5/1) est. @15% silt, Trace sand, Trace set Sea shells, Trace organic matter.	
							Neat Cement Grout		116			
									117		TD 117' 6:00 PM on 5/9/94	
									8			
									9			
									0			
									1			
									2			
									3			
									4			
									5			
									6			
									7			
									8			
									9			
									0			
									1			
									2			

SITE 8



Sketch Map of Site Area With Drilling Locations

Boring #	MW# MO8-06 Sheet 1 of 2
Project:	CTO-0260 NAS Alameda
Job #	2738.1203 Site: 8
Logged By:	WPW Proj. Eng: KXS Edited By:
Drilling Contractor:	Gregg
Drill Rig Type/Method:	Mobile M11 HSA
Drillers Name:	Marvin Hoover
Borehole Diam./Drill Bit Type	8" Total Depth 13.5' Ref Elev
Hammer Wt:	140 Drop: 30"
Start Time:	1130 Date: 3/31/94
Completion Time:	1200 Date: 3/31/94
Backfille Time:	1400 Date: 3/31/94

	1st Water			
Boring Depth (ft.)	8			
Casing Depth (ft.)				
Water Depth (ft.)	5			
Time	1310			
Date	3/31/94			

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Recovery	Depth Feet	Graphics	
											Asphalt over sand + gravel base
0.2		7				Solid Casing	Concrete	Post	1	SP	
		13									Fine grained Sand (SP), moist,
		17							2		dense, light brownish gray
							Pellets				10YR (6/2).
0.2		3						1140	3		
		4									
		6							4		Fine grained Sand (SP), very moist
		3									To saturated, med. dense, light
0.2		4				Slot Casing		1145	5		brownish gray 10YR (6/2) Trace
		7									Silt.
									6		
									7		Fine grained Sand (SP), saturated,
						PVC 0.010					loose, yellowish brown 10YR (5/4),
									8		Trace gravels to 3/4" Ø, Trace silt.
2.5		3							9	SL	4" lense of Clay with silt, Trace sand, wet,
		5				4D		dor			Stiff, gray 5Y (5/1)
		7							10	SM	
						SCH					Silty Sand (SM), Sand is fine grained
									11		Saturated, med. dense, dark
											gray 2.5Y (N4).
									12		

Boring # MW# MO8-06 Sheet 2 of 2

Project: CTO-0260 - NAS Alameda

Job # 2738.1203 Site: 8

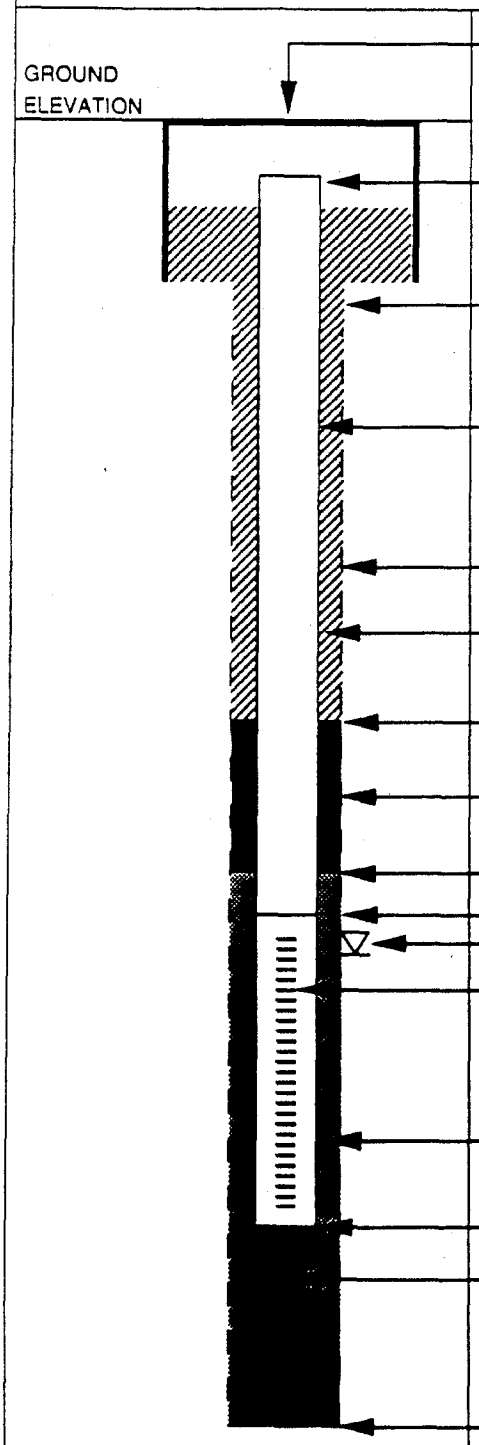
PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec	Analyses	Depth Feet		
25		10								2	SP	Fine grained Sand (SP) Saturated
		10										med. dense, dark gray 5Y(4/1)
		12								3		
										4		TD = 13.5'
												3.5 Solid
										5		10' Screen
										6		
										7		
										8		*@ 1310 ▽ was @ 5'
										9		
										0		
										1		
										2		
										3		
										4		
										5		
										6		
										7		
										8		
										9		
										0		
										1		
										2		

MF

BORING NO. M08-06

MONITORING WELL SHEET

PROJECT CTO260	LOCATION Site 8	DRILLER Gregg Drilling Marvin Hoover
PROJECT NO. 2738.1203	BORING M08-06	DRILLING METHOD HSA
ELEVATION	DATE 3/31/94	DEVELOPMENT METHOD Surge, bail, pump
FIELD GEOLOGIST UPW		



ELEVATION OF GROUND SURFACE: _____

ELEVATION OF TOP OF WELL CASING: _____

I.D. OF SURFACE CASING: N/A

TYPE OF SURFACE CASING: _____

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Sch 40 PVC

BOREHOLE DIAMETER: 8"

TYPE OF BACKFILL: Cement/Concrete grout to surface

ELEVATION / DEPTH OF SEAL: 2.5'

TYPE OF SEAL: 3/8 Bentonite pellets

DEPTH TOP OF SAND PACK: 3.0'

ELEVATION / DEPTH TOP OF SCREEN: 3.5

FIRST ENCOUNTERED SATURATED ZONE

TYPE OF SCREEN: Sch 40 PVC

SLOT SIZE x LENGTH .010 factory Slot

I.D. OF SCREEN 2"

TYPE OF SAND PACK: 2/12 RMC Lonestar Monterey Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 13.5

ELEVATION / DEPTH BOTTOM OF SAND PACK: 13.5

TYPE OF BACKFILL BELOW OBSERVATION WELL: _____

ELEVATION / DEPTH OF HOLE: 13.5

5.25 0.23' TOC to Top of Christi

≅ 8.5 ft of filter

GROUNDWATER SAMPLING/WELL DEVELOPMENT LOG

Client PRC/Navy
Site Site 8
Well number M-08-06
Job number 2738.1203

Total well depth * 13.63
Well diameter 2
Borehole diameter 8

Min number well vol to be purged 3
Vol per ft casing (gal) (0.17) 8.61 = 1.46
Vol per ft borehole (gal) (2.55) 8.5 = 21.68
(less casing and filter pack)

Date 4/7/94
Static water level (ft)* 5.02
Standing water column (ft) 8.61

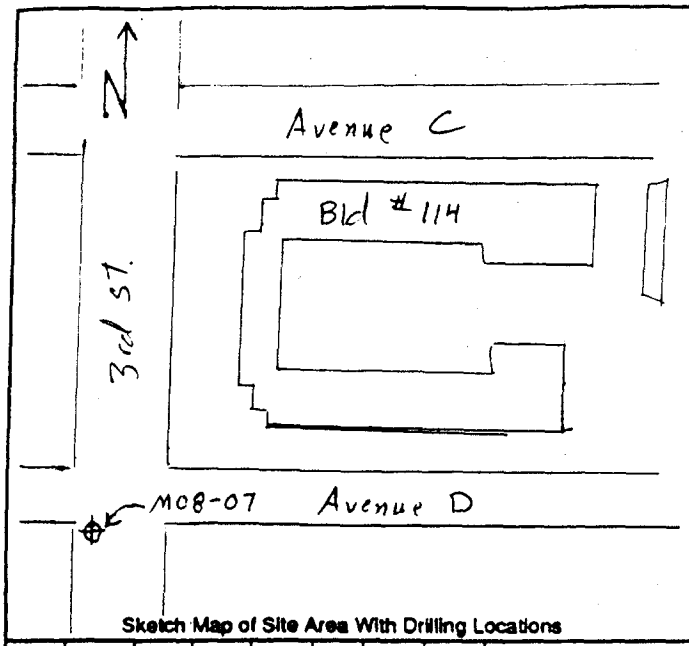
Amt one well vol (gal) 23.14
Total gal to be purged 69.4

Development method bail, Surge, pump
Presampling purging method
Sampling method

* All measurements taken from: X Top of casing, ___ Protective casing, ___ Ground level

TIME	AMOUNT PURGED (gal)	FIELD PARAMETERS MEASURED							COMMENTS	FIELD TECHNICIAN
		EC	pH	TEMP °F	TURBIDITY	PID	W.L.	Flow		
1022	–		6.46	65.3		0ppm			1st bail, pH reading	SXJ
1024	–								Begin Surge	
1046	–								end Surge	
1054	10	8810	6.44	60.4	>200	0ppm			Begin Bailing, Brown, turbid, no odor	
1057	15	6640	6.56	60.5	>200				Brown, turbid, no odor	
1102	–	–	–	–	–		5.62	1.8	Start pump	
1106	27	4320	6.78	63.0	191.1		7.33	2.0	cloudy, light brown	
1113	40	4520	6.61	63.6	15.87	0ppm.	7.87	2.1	clear	
1122	56	4730	6.61	63.6	9.25		9.05	2.1	clear	
1134	79	4650	6.54	63.6	4.87	0ppm.	8.17	2.1	clear, parameters stable, shut off pump.	

MF



Sketch Map of Site Area With Drilling Locations

Boring #	MW# MO8-07 Sheet 1 of 2
Project:	CTO-0260 - NAS Alameda
Job #	2738.1203 Site: 8
Logged By:	WW Proj. Eng: KS Edited By:
Drilling Contractor:	Gregg
Drill Rig Type/Method:	Mobile M11 HSA
Drillers Name:	Marvin Hoover
Borehole Diam./Drill Bit Type	8" Total Depth 13.5' Ref Elev
Hammer Wt:	140 Lb. Drop: 30"
Start Time:	0945 Date: 3/31/94
Completion Time:	1015 Date: 3/31/94
Backfille Time:	1105 Date: 3/31/94

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Recovery	Depth Feet	Graphics	
											Asphalt pavement over sand & gravel base.
0.2		3						X	1	SP	fine to med. grained Sand (SP), moist, loose, yellowish brown 10YR (5/4)
		3									
		4							2		
0.2		3						X			
		3							3		
		3									
									4		
0.2		2									
		2						X	5		fine to med. grained Sand (SP) Very moist to saturated below 5.2', loose, Pale brown 10YR (6/3).
		2							6		
									7		Water level @ 6.6' on 4/7/94 well development.
									8		
									9		
0.2		7									
		11							10		fine to med. grained Sand (SP), Saturated, dense, grayish brown 10YR (5/2).
		12									
									11		
									12		

Boring # MW# MOB-07 Sheet 2 of 2

Project: CTO-260 NAS Alameda

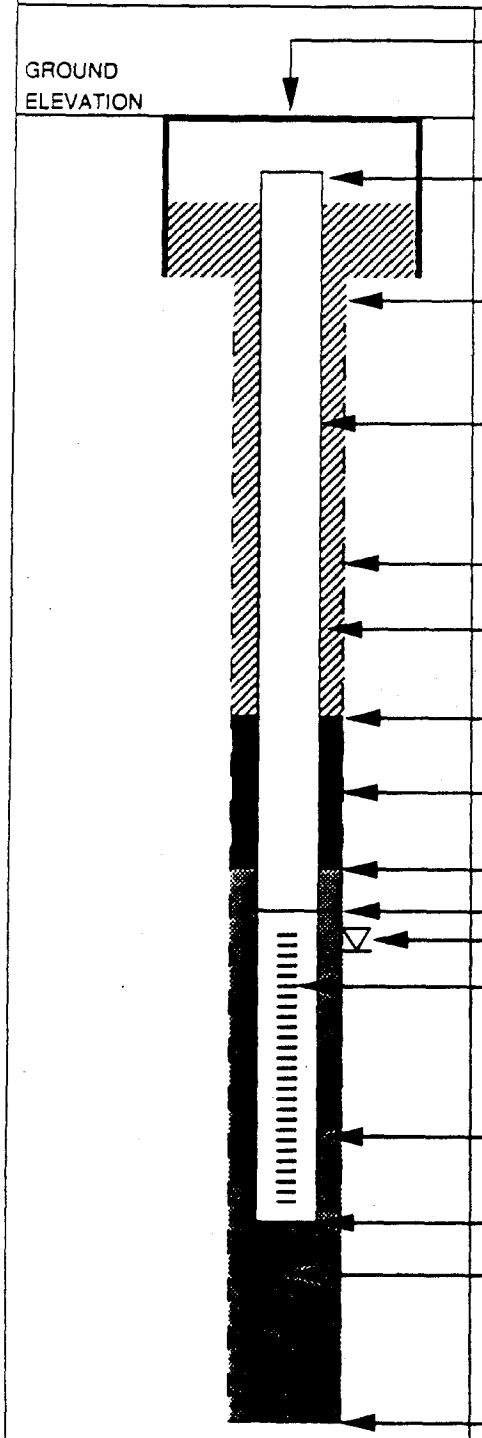
Job # 2738.1203 Site: 8

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec	Analyses	Depth Feet		
0.2		7								12	SP	Sand as above
		11										
		13								13	SM	Silty Sand (SM) Sand is very fine to fine grained, saturated, med. dense Dark gray 2.5Y (N 4/)
										4		
										5		TD 13.5'
												3.5 solid, 10' screen
										6		sand to 3', pellets to 2.5'
												=2.5' Surface Seal
										7		
										8		
										9		
										0		
										1		
										2		
										3		
										4		
										5		
										6		
										7		
										8		
										9		
										0		
										1		
										2		

BORING NO. M08-07

MONITORING WELL SHEET

PROJECT CTO-260	LOCATION Site 8	DRILLER Gregg Drilling Marvin Hoover
PROJECT NO. 2738.1203	BORING M08-07	DRILLING METHOD HSA
ELEVATION	DATE 3/31/94	DEVELOPMENT METHOD Surge, bail, pump
FIELD GEOLOGIST WPW		



ELEVATION OF GROUND SURFACE: _____

ELEVATION OF TOP OF WELL CASING: _____

I.D. OF SURFACE CASING: N/A

TYPE OF SURFACE CASING: _____

RISER PIPE I.D.: 2"

TYPE OF RISER PIPE: Sch 40 PVC

BOREHOLE DIAMETER: 8"

TYPE OF BACKFILL: Cement/Concrete grout to surface

ELEVATION / DEPTH OF SEAL: 2.5

TYPE OF SEAL: 3/8 Bentonite pellets

DEPTH TOP OF SAND PACK: 3

ELEVATION / DEPTH TOP OF SCREEN: 3.5

FIRST ENCOUNTERED SATURATED ZONE

TYPE OF SCREEN: Sch 40 PVC

SLOT SIZE x LENGTH .010 factory slot

I.D. OF SCREEN 2"

TYPE OF SAND PACK: 2/12 RMC Lonestar Monterey sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 13.5

ELEVATION / DEPTH BOTTOM OF SAND PACK: _____

TYPE OF BACKFILL BELOW OBSERVATION WELL: _____

ELEVATION / DEPTH OF HOLE: 13.5

6.6 0.4' TOC to Top of Christie box

≅ 7 feet of filter pack (saturated)

GROUNDWATER SAMPLING/WELL DEVELOPMENT LOG

Page 1 of 1

Client PRC/Navy
Site Site 8
Well number M-08-07
Job number 2738.1203

Total well depth * 13.62
Well diameter 2
Borehole diameter 8

Min number well vol to be purged 3
Vol per ft casing (gal) (0.17) 7.42 = 1.26
Vol per ft borehole (gal) (2.55) 7 = 17.85
(less casing and filter pack)

Date 4/7/94
Static water level (ft)* 6.20'
Standing water column (ft) 7.42

Amt one well vol (gal) 19.11
Total gal to be purged 57.3

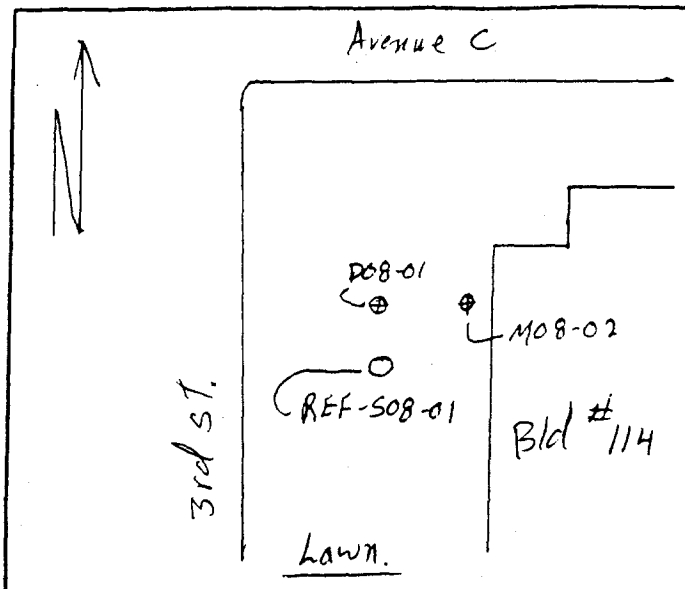
Development method bail, surge, pump
Presampling purging method
Sampling method

* All measurements taken from: X Top of casing, ___ Protective casing, ___ Ground level

TIME	AMOUNT PURGED (gal)	FIELD PARAMETERS MEASURED							COMMENTS	FIELD TECHNICIAN
		EC	pH	TEMP °F	TURBIDITY	PID	W.L.	Flow		
0800	—		7.56	59.3		0ppm			1st bail for pH reading	SXJ
0804	—								begin surge	
0847	—								end surge	
0857	10	539	6.29	61.5	>200	0ppm			Begin bailing, Brown, turbid, no odor	
0904	20	591	6.43	63.4	>200				end bailing, Brown, turbid, no odor	
0918	30	528	6.67	61.4	>200	0ppm		2.2	Begin pumping, turbid	
0926	50	521	6.27	65.1	93.1		7.30	2.0	cloudy, clearing	
0933	60	509	6.24	65.4	55.8	0ppm	7.30	1.4	clearing	
0937	67	460	6.25	65.4	41.7		7.80	1.4	clear - parameters stable	
0958	125	—	—	—	24.2	0ppm	8.90	3.4	(Testing well drawdown) - shut off pump	

MF

REF-SO8-01



Sketch Map of Site Area With Drilling Locations

Boring # REF-SO8-01 MW#	Sheet 1 of 6
Project: CTO-0260 NAS Alameda	
Job # 2738.1203 Site: 8 Bldg 114	
Logged By: WPW Proj. Eng: KXS Edited By:	
Drilling Contractor: Water Development Corp.	
Drill Rig Type/Method: Mobile B53 HSA To 21.5' Mud rotary 21.5 To 110'	
Drillers Name:	
Borehole Diam./Drill Bit Type	Total Depth 110
HSA = 8" / Mud Rotary = 5"	Ref. Elev
Hammer Wt: Drop:	
Start Time: 1150 Date: 4/26/94	
Completion Time: 0900 Date: 5/4/94	
Backfille Time: 1100 Date: 5/4/94	

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)	7			
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Recovery	Depth Feet	Graphics	
							Soil			SM	Silty Sand (SM) moist, very dark grayish brown 10YR (3/2), Rootlets common, Trace gravels + cobbles to 5" Ø.
									1		
									2		
						10 Steel			3	SP	Fine to med. grained Sand (SP) moist, Pale brown 10YR (6/3) Trace rootlets, silt, clay + gravels to 3/8 Ø.
	Sampler						Grout		4		
									5		
						Casing			6		Fine to med. grained Sand (SP), Very moist to Saturated below 7', Pale brown 10YR (6/3), Trace silt to 5%
	Core					Conductor	Neat Cement		7 ▽		
									8		Medium grained Sand (SP) Saturated Pale brown 10YR (6/3) Clam shells common.
	Continuous					7 5/8			9		
									10		Fine to med. grained Sand (SP) Saturated, Pale brown 10YR (6/3) Trace sea shells, Trace silt.
									11		
									12		

REF-SO8-01

Boring # MW# Sheet 2 of 6

Project: CTO-0260- NAS Alameda

Job # 2738.1203 Site: 8

PID/OVA	Sampler Type	Blow Counts	Advance	Rcvd (in.)	647.	Casing	Annulus	Sample Rec	Depth Feet	Graph	
				Box received		Casing			12		Color Change
									13	SP	fine to med grained Sand (SP), Saturated, Olive gray 5Y 5/2) Trace Sea Shells
									14		
									15		Silty Clay / Clayey Silt (CL/ML)
		4 4								CL/ML	moist to very moist, stiff, dark
		6 1				Cased to			16		greenish gray 5GY (4/1) Traces of organic matter, sea shells, Sand.
	Sampler	4 6							17	SP	fine to med grained Sand (SP) Saturated loose, dark greenish gray, 5GY (4/1),
		1 1							18		Sea shells common.
	2" split spoon	2 2							19	SM	Silty Sand (SM) Saturated, (very loose) dark greenish gray 5GY (4/1) Seashells common, Trace Clay increasing with depth
1/26/94		2 2							20	ML	Clayey Silt (ML) moist, firm, very dark gray 5Y (4/1), sea shells common
ing		2							21		Trace To 10% Sand.
13/94		3							22	SM	Silty Sand (SM) Saturated, (loose flowing) dark gray 5Y (4/1)
↓	↑								23		Sea shells common, Trace clay
ud otary									24		
									25	ML	Clayey Silt ML, very moist To saturated dark greenish gray 5GY (4/1), Trace
									26		Sand, Trace organic matter.
									27		Silt is elastic - clay content increases with depth.
									28	ML	grading
									29	CL	Clayey silt / silty Clay (ML/CL) moist, dark greenish gray 5GY (4/1),
									30		Trace sand, sea shells, silt is elastic, clay content increasing
									31		with depth.
									32		

REF-SOB-01

PID/OVA	Sampler Type	Blow Counts	Advance	Rcvd (in.)		Casing	Annulus	Sample Rec	Depth Feet	Graph	Boring # MW#	Sheet 3 of 6
											Project: CTO-0260 - NAS Alameda	
											Job # 2738.1203 Site: 8	

Depth	Graph	Description
32	ML/CL	Clayey Silt / Silty Clay (ML/CL)
33		Very moist, dark greenish gray 5GY (4/1), Trace Sand + sea
34		Shells, silt is elastic
35		
36		Clayey Silt / Silty Clay, very
37		moist, dark greenish gray 5GY (4/1), Trace sand, Trace
38		sea shells, Trace organic matter (like kelp leaves).
39		
40	SM	Silty Sand (SM) very moist to saturated, dark greenish gray 5GY (4/1)
41		Trace Clay.
42	SP/SC	Fine grained Sand (SP) To clayey Sand (SC) ≈5-10% Clay, moist, moderately consolidated, dark greenish gray 5GY (4/1)
43		localized areas of high consolidation to 1½" Ø.
	SM	Silty Sand (SM), Trace clay, saturated, greenish gray
44	SP	Fine grained Sand (SP) very moist, light
45		Olive brown 2.5Y (5/4) 5% Clay.
	SC	Clayey Sand (SC), moist, (Hard)
46		yellowish brown 10YR (5/4) ≈ 15% Clay.
47		Clayey Sand (SC) very moist, light
48		Olive brown 2.5Y (5/3) = 10% Clay, 5% Silt, (looser than above)
49		
50	SC	Clayey Sand (SC) moist, (Hard), light
51		yellowish brown 10YR (6/4)
52	SP	Fine grained Sand (SP) saturated,

Lost

REF-SC8-01

PID/OVA	Sampler Type	Blow Counts	Advance	Rod (in.)		Casing	Annulus	Sample Rec	Depth Feet	Graph	Boring # MW#	Sheet 4 of 6
											Project: CTO-0260 - NAS Alameda	
											Job # 2738.1203 Site: 8	

Depth	Graph	Description
52		Grayish brown 10YR(5/2), Trace Silt To 5%.
53	SP	
54		
55		Fine To med. grained Sand (SP) Saturated, Pale brown 10YR (6/3), Trace silt.
56		
57		
58		
59	SP/SC	Fine to med. grained sand with clay (SP/SC), moist To very moist, (Hard) Pale brown 10YR (6/3) ≈ 5-10% Clay.
60	SP	Fine to med Sand (SP), very moist, pale brown 10YR (6/3) ≈ 5% Clay - 5% silt
61	SP	Fine To med. Sand (SP) moist, (Hard), light yellowish brown 10YR (6/4) Trace clay. (Hard plug @ 63' in shoe of sampler.
62		
63		
64		
65		Fine To med. grained Sand (SP) Saturated, light brownish gray 10YR (6/2),
66		
67		Fine grained Sand (SP) moist, (Hard), light brownish gray 10YR (6/2), 5% Clay, Trace silt, Trace root pores.
68		
69		Fine grained Sand (SP) (Loose) Pale brown 10YR(6/3) Trace silt, Trace clay.
70		
71		
72		

Lost

REF-SCR-01

PID/OVA	Sampler Type	Blow Counts	Advance	Rcvd (in.)		Casing	Annulus	Sample Rec	Depth Feet	Graph	Boring # / MW#	Sheet 5 of 6
											Project: CTO-0260 NAS Alameda	
											Job # 2738.1203 Site: 8	

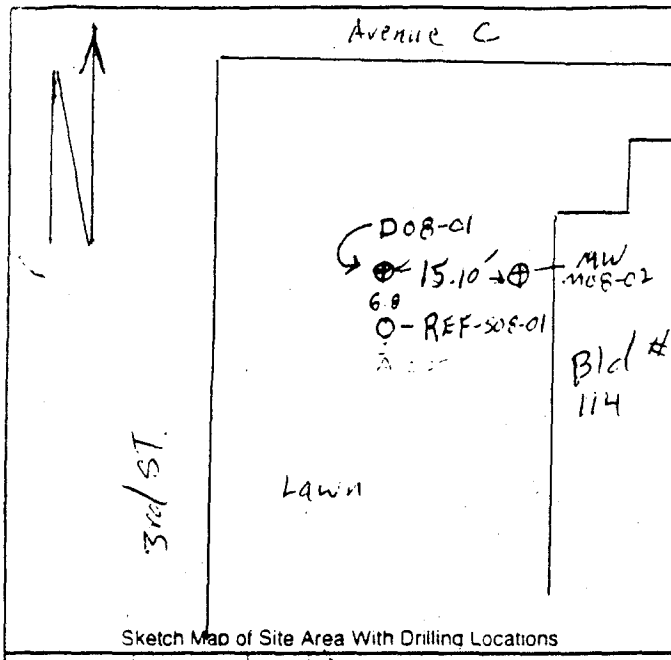
Depth	Graph	Description
72		
73		Fine To med. grained Sand (SP)
74	SP	Saturated (loose), light brownish gray 10YR (6/2), Trace silt
75		
76		Fine To med. grained Sand (SP)
77		Saturated (loose) Pale brown 10YR (6/3) Trace silt.
78		Fine To med. grained Sand SP)
79		Saturated, (loose), Pale brown 10YR (6/3)
80		A 1.5" lense of heavy iron oxide stainning observed @ 79.5', Trace of silt.
81		
82		*(Harder + smooth drilling - Clay Per driller.) - 80-84' run - sampler shoe had 6" of Clay greenish gray 5G (5/1)
83	CL	
84		Clay (CL), moist, (very stiff) greenish gray 5G (5/1), 5% Sand, Trace silt, ~~traces of organic matter~~ w.w.
85		Organic matter + rootlets common
86		Clay (CL), moist, (very stiff) dark
87		greenish gray 5BG (4/1)
88		
89	SP	Fine To med. grained Sand (SP) Saturated, (loose), dark greenish gray 5GY (4/1), Trace silt
90		
91		Sand As above.
92		

Lost

Washed

REF-SC8-C1

PID/OVA	Sampler Type	Blow Counts	Advance	Rcvd (in.)		Casing	Annulus	Sample Rec	Depth Feet	Graph	Boring # MW# Sheet 6 of 6 / Project: CTO-0260 - NAS Alameda / Job # 2738.1203 Site: 8
									92		
									93		Fine To med. grained Sand (SP) Saturated, (Loose), dark greenish gray 5GY (4/1)
			↓	↓			6"		94		
							↓		95		
									96		
			↓	Lost			To Surface		97		Sand as above- Saturated, (Loose) Greenish gray 5GY (5/1)
									98		
							Grout		99	CL	Clay (CL) moist, (Hard), dark greenish gray 5G (4/1), 5-10% Silt, Trace sand
			↓	↓					100		
							Neat Cement		101		
									102		
	Continuous core barrel								103		
									104		Clay as above, moist, (Hard) dark greenish gray 5G (4/1) 5% silt, 5% Sand.
									105		
			↓	↓					106		Clay, very moist, (very stiff) greenish gray 5G (5/1), Sea Shells common, 5-10% Sand, 5% Silt.
									107		
									108		
									109		Clay (CL) moist, (hard), dark greenish gray 5G (4/1), 5% silt, Trace Sand.
	↓		↓	↓			↓		110		
									1		TD = 110'
									2		Grouted To Surface



Sketch Map of Site Area With Drilling Locations

Boring #	MW# DOB-01 **Sheet** 1 **of** 4
Project:	CTC - C266
Job #	2738.1203 Site:
Logged By:	L. Pla' Proj. Eng: KXS Edited By:
Drilling Contractor:	Water Development Corp
Drill Rig Type/Method:	Mobil B53 HSA to 23' Mud rotary to 70'
Drillers Name:	Paul Frederickson
Borehole Diam./Drill Bit Type	8 7/8 - 9" **Total Depth** 70 **Ref. Elev.**
Hammer Wt:	140 LB Drop: 30
Start Time:	1400 Date: 5/17/94
Completion Time:	Date:
Backfill Time:	Date:

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)	8 7/8" Overburden Casing	Casing Type & Size	Annulus Filler	Sample Rec. Analyses	Depth Feet		
		4 4								SM	Silty Sand (SM) moist, loose, dark grayish brown
	Spoon Sample	5 8	↓	↓					1	SP	fine grained Sand (SP) moist, loose Pale brown 10YR (6/3) Trace gravels,
		8 7	↓	↓			Kristy in concrete		2		Trace iron oxid stainings, Trace silt.
		4 3				Casing			3		
		4 6	↓	↓					4		
	2 1/2" Split	6 12	↓	↓		PVC			5		fine grained Sand (SP) moist, med. dense, Pale brown 10YR (6/3) Trace gravels To 3/4" Ø. Trace organic matter
		6 5				40	Grout		6	▽	fine grained Sand (SP) saturated, loose To med dense, light brownish gray 10YR
		5 3	↓	↓		Sch			7		(6/2), Sea shells common. Trace Clay, Trace silt
		2 2	↓	↓		3"	Cement		8	SM	Very fine To fine grained sand with silt (SM), Saturated, Very loose To loose,
		2 1					Neat		9		greenish gray 5GY (5/1) To dark greenish gray 5GY (4/1)
		1	↓	↓					10	CL	Silty Clay, very moist, very soft To soft greenish gray 5GY (5/1)
									11		
									12		

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)	Construction Casing	Casing	Annulus	Sample Rec.	Analyses	Depth Feet		Boring # MW# D-[illegible] Sheet 2 of [illegible]
												Project: CTC - C26C
												Job # 2738.1203 Site: 5
										12		
										13		
										14		Silty Clay, [illegible] moist, very soft, soft, dark gray 5Y 4/1, Trace - 5% Sand,
		1								15	CL	
		1										
		1								16	SM	Silty Sand, [illegible] moist, very loose, dark gray 5Y 4/1, 10-15% silt, Trace Clay 1-5%, Sand is very fine-grained
										17		
										18		
										19		
			WA							20		Silty Sand (SM) Saturated loose dark greenish gray 5GY (4/1) Sea shells common, Trace - 5% Clay,
		4										
		4								21	CL	Silty Clay (CL) very moist, stiff, dark greenish gray 5GY (4/1) 10% fine sand Trace organics
		4								22	SM	Silty Sand (SM) Saturated, loose, 5GY (4/1) Sea shells common & 5% Clay
		6										
		10								23	CL	Silty Clay (CL) very moist, very stiff, dark greenish gray 5G (4/1) ~30% silt, 5% fine sand, Trace sea shells, Trace rootlets Trace pyrite.
						3" SCH 40 PVC Casing	Neat Cement			24		
										25		
										26		
										27		
										28		
										29	CL/ML	Silty Clay / Clayey Silt (CL/ML) Very moist, dark greenish gray 5G (4/1) Trace of sand, sea shells, and rootlets Silt is fine grained slightly elastic, Trace pyrite
										30		
										31		
										32		

HISA 5/11/94

mud today 5/11/94

VE

Boring # MW# DC8-01 Sheet 3 of 4

Project: CTO-0260

Job # 2738.1203 Site: 8

PID/OVA	Sampler Type	Blow Counts	Advance (in)	Rcvd (in)	Casing	Annulus	Sample Hor.	Analyses	Depth Feet		
									32		
									33		
									34	CL/ML	Clayey SILT / SILTY Clay (CL/ML) Very moist, dark greenish gray 5GY(4/1) Trace Sand (approx. 2%) Trace sea shells + organic matter Traces of pyrite.
									35		
									36		
									37		
									38		
									39	ML/CL	Clayey SILT / SILTY Clay, mix of trace moist dark greenish gray 5GY(4/1) 5% very fine sand, Trace sea shells
									40		
									41	SC	Clayey Sand, (SC) moist to very moist, greenish gray 5GY(5/1), Sand is fine grained, slightly consolidated
									42		
									43		
									44		Color Change Clayey Sand, (SC) moist to very moist, yellowish brown 10YR (5/4) 10% to 15% Clay, Trace SILT, Slightly Consolidated (Hard)
									45		
									46		
									47		
									48		Clayey Sand, SC, moist to very moist, Pale brown 10YR (6/3), 10%
									49		
									50		
									51	SP	Fine grained Sand (SP) Saturated light yellowish brown 10YR (6/4) 5% Clay, Trace SILT.
									52		

Casing: 3" SCH 40 PVC

Annulus: Neat Cement Grout

Boring # MW# DCF-01 Sheet 2 of 4

Project: CTC-C 26C

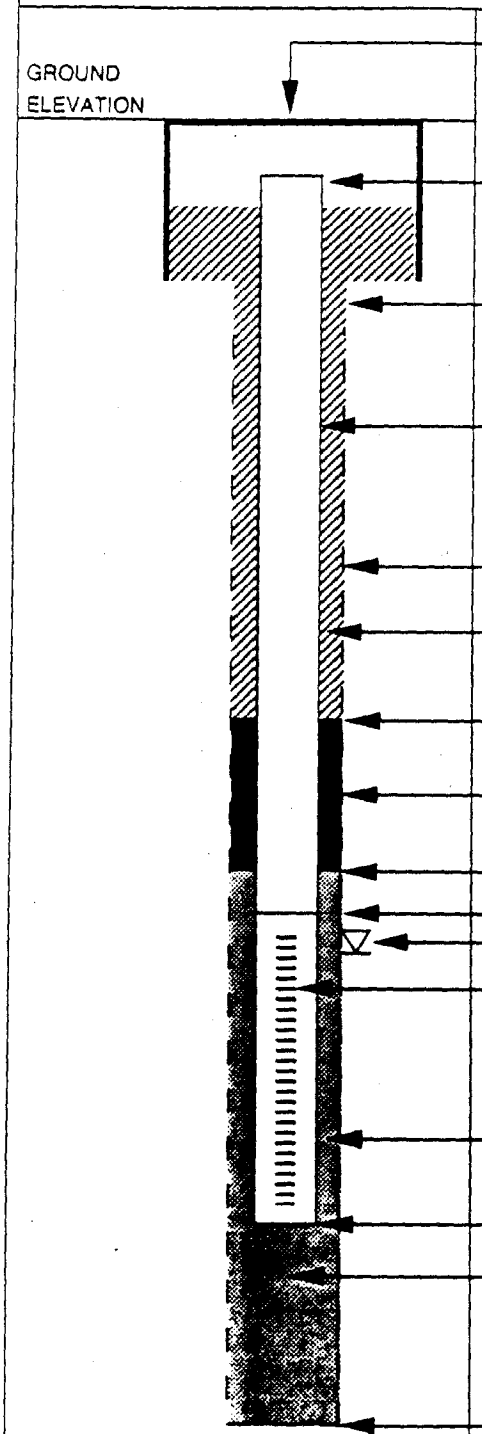
Job # 2736.1203 Site: 2

PID/OVA	Sampler Type	Blow Counts	Advance (in)	Rcvd (in)	Casing	Annulus	Sample Rec / Analyses	Depth Feet		
								52	SP	
					2" Sch 40 PVC Solid Tube	Neat Cement		53		
								54		Fine grained Sand (SP) Saturated, yellowish brown 10YR (5/4) Trace silt.
								55		
								56		Fine grained Sand (SP) Very moist to saturated light brownish gray 10YR (6/2) Trace - 5% Clay Trace silt.
					2" Sch 40 PVC Slotted	Bentonite Chips		57		
								58		
								59		
								60		Fine grained Sand SP, Very moist to saturated, Pale brown 10YR 6/3 Trace - 10% Clay, Trace silt.
								61		Fine grained Sand (SP) Saturated, ~~Pale~~ light brownish gray 10YR 6/2 Trace silt.
								62		
								63		
								64		Very fine to fine grained Sand (SP) Saturated, light brownish gray 10YR (6/2) Trace clay, Trace silt
								65		
								66	SM	Silty Sand (SM) Very moist to saturated, Pale brown 10YR (6/3) Trace - 5% Clay
								67		
								68		~~Fine~~ Very fine to fine grained Sand Very moist to saturated, light brownish gray 2.5Y (6/2) Trace - 5% Clay, Trace - 5% silt, Slightly Consolidated, Trace rootlets.
								69		
								70		TD = 70'
								1		
								2		

BORING NO. DCA-01

MONITORING WELL SHEET

PROJECT C70-0260	LOCATION	DRILLER Paul Frederickson
PROJECT NO. 2738.1203	BORING DCA-01	DRILLING METHOD Mud Rotary
ELEVATION	DATE 5/20/94	DEVELOPMENT METHOD Surg bail pump
FIELD GEOLOGIST L. Pla.		



ELEVATION OF GROUND SURFACE: _____

ELEVATION OF TOP OF WELL CASING: _____

I.D. OF SURFACE CASING: 8 5/8

TYPE OF SURFACE CASING: 8 5/8 #10 Steel Conductor Casing from surface to 23'

RISER PIPE I.D.: 3"

TYPE OF RISER PIPE: 3" Sch 40 PVC

BOREHOLE DIAMETER: _____

TYPE OF BACKFILL: Neat Cement grout

ELEVATION / DEPTH OF SEAL: 55'

TYPE OF SEAL: Bentonite Slurry

DEPTH TOP OF SAND PACK: 58

ELEVATION / DEPTH TOP OF SCREEN: 60

FIRST ENCOUNTERED SATURATED ZONE

TYPE OF SCREEN: 3" Sch 40 PVC

SLOT SIZE x LENGTH 0.01 factory slot

I.D. OF SCREEN 3"

TYPE OF SAND PACK: Monterey Lone Star #2/12 Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 70

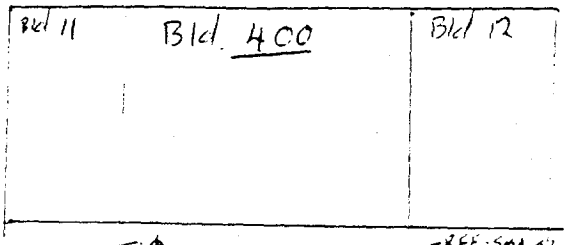
ELEVATION / DEPTH BOTTOM OF SAND PACK: 70

TYPE OF BACKFILL BELOW OBSERVATION WELL: _____

ELEVATION / DEPTH OF HOLE: 70

SITE 10A

Ave F



First St.

Sketch Map of Site Area With Drilling Locations

Boring # MW# DIOA-01 **Sheet** 1 **of** 4

Project: CTC - C26C

Job # 2738.1203 Site: ICA

Logged By: DEK/LWP Proj. Eng: KBS Edited By:

Drilling Contractor: Water Development Corp

Drill Rig Type/Method: B53 HSA to 33' / MUD ROTARY TO

Drillers Name: PAUL FREDERIKSEN

Borehole Diam./Drill Bit Type: HSA = 8" / MUD ROTARY = 8" **Total Depth** 72'

Ref. Elev.

Hammer Wt: 140 lb Drop: 30"

Start Time: 1630 Date: 5-23-94

Completion Time: 1230 Date: 5/26/94

Backfill Time: 1535 Date: 5/26/94

1st Water			
Boring Depth (ft.)			
Casing Depth (ft.)			
Water Depth (ft.)			
Time			
Date			

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)	Casing Type & Size	Annulus Filler	Sample Rec.	Analyses	Depth Feet		Description
			Concrete								Concrete to 6"
		6				Concrete		Box	1	SP	SP, brown 7.5YR 5/4, loose, damp,
		4									fine/med sand, trace Sea shells high K
		4							2		
		7			Casing			Box			SP As above
		10							3	SP	
		12									
		7			Casing				4		SP As above - sand is fining downward
		10									to fine/v. fine grain size.
		10			Casing				5	SP	Saturated at 4.75 feet
		7			PVC			Box			
		9							6		
		8			40	Sand					
		2							7	SP	
		2			SCH	Sand					
		5							8		
		2			3"	Cell					
		3							9		
		5									SP brown 10YR 5/3 loose, saturated
		4					X				fine/v. fine sand, qtz/feldspar
		4					X	Box	10		v. high at K
		5				Neat	X			SP	
		Drill ahead to 15 feet							11		
									12		

Boring # MW# D10A-01 Sheet 2 of 4

Project: CTO - 0260

Job # 2738.1203 Site: 10A

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)	Casing	Annulus	Sample Rec.	Analysis	Depth Feet		Description
			DRILL AHEAD TO 15 FEET						12		
									13		
									14		
		3 3					X X	Box	15	SM	SM silty sand dk gray N4/ loose, saturated, fine/v. fine sand and silt, numerous shells (fragments at 15-16 and whole at 16-16½) mod high est K
		5					X		16		
			DRILL AHEAD TO 20 Feet						17		
									18		
									19		SM As above to 20 Y4m/ft
		4 4				Grout / Cement	X X	Box	20	SM / ML/CL	ML/CL v dk gray 2.5Y N3/ Med stiff, wet moist, plant rootlets throughout Mod low est K.
		6					X		21		
					Solid Casing				22		
						Neat Cement			23	SM	Silty Sand (S/4) Saturated, Olive gray 5Y (5/2), 10% silt,
								B C V E D	24		~~Silty S~~ Silty Sand S/1, Very moist to Saturated, Olive gray 5Y (5/2) with greenish gray 5GY (5/4) staining, 16% silt, Trace - 5% Clay, Trace rootlets.
					4" Sch 40 PVC				25		
									26		
									27		fine grained sand SP, very moist, mottled dark grayish brown 2.5Y (4/2) light olive brown 2.5Y (5/4) and gray 5Y (5/1) 5% silt, 5% Clay, slightly Consolidated
									28		
									29		
									30		Very fine to fine grained sand (SP) Saturated, olive gr. brown 2.5Y (5/4) Trace silt
									31		
									32		

HSA

Mud Rotary

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)	~~Con Bucket~~ ~~Casing~~	Casing	Annulus	Sample Rec	Analysis	Depth Feet		Boring # MW# D10A-01 Sheet 3 of 4
												Project: CTO - 0240
												Job # 2738.1203 Site: LOA
										32		
										33	SP	Very fine to fine grained Sand (SP) Saturated (loose) yellowish brown 10YR 5/4 to 10YR 5/6
										34		
										35		
										36		Very fine to fine grained Sand (SP) Saturated, loose, yellowish brown 10YR (5/4)
										37		
										38		Very fine to fine grained Sand (SP) Vermicist to Saturated, Pale brown 10YR (6/3), Trace Silt, Trace Clay to 5%
										39		
										40		
										41		
										42		
										43		Very fine to fine grained Sand SP Vermicist to Saturated, Pale brown 10YR (6/3) 5% Silt, 5% Clay
										44		
										45		
										46		Sand AA Pale brown 10YR (6/3) to yellowish brown 10YR (5/4) 5% Silt, 5% Clay.
										47		
										48		Very fine to fine grained Sand (SP) Very moist to Saturated, light brownish gray 10YR (6/2) with Iron oxide staining.
										49		
										50		
										51		Very fine to fine grained Sand Saturated brown 10YR (5/3) Trace to 5% Silt.
										52		

3" SCH 40 PVC Solid Casing
Neat Cement and Grout Seal

ME

Boring # MW# D LOA-01 Sheet 4 of 4

Project: CTD-02660

Job # 2736.1203 Site: LOA

PID/OVA	Sampler Type	Blow Counts	Advance (in)	Rcvd (in)	Casing	Annulus	Sample Hold Archived Analyses	Depth Feet		
						Bentonite/Slurry		52		
					3" Sch 40 PVC Solid casing			53		
						Neat Cement		54		Very fine to fine grained Sand (SP) Saturated, (loose) brown 10YR 5/3 Trace med. Sand.
								55		
								56		
								57		
								58		Fine grained sand (SP) Saturated, (loose) brown 10YR (5/3) with iron oxide staining, Trace medium grained sand.
								59		
								60		Fine grained sand (SP) Very moist, light brownish gray 10YR (6/2) 5% Clay Trace silt.
					3" Sch 40 PVC 0.010 Factory Slot Screen			61		Fine grained sand, Saturated, Pale brown 10YR (6/2) Trace silt, Trace clay (loose)
						Sand		62		Sand A.A. clay content increase To 5%.
								63	SP/SC	Fine grained Sand (SP) to Clayey Sand (SC) Very moist, light brownish gray 10YR (6/2) - 5 - 10% Clay - 5% silt (Hard)
								64		
								65	SP	Very fine to fine grained Sand (SP) Saturated, (loose) brown 10YR (5/3) Slight yellowish brown 10YR (5/6) mottling, Trace silt.
						Ring Lane Stn. #2/12		66		
								67		
					3" Sch 40 PVC			68		Very fine to fine grained Sand (SP) Saturated, (loose) brown 10YR (5/3) To yellowish brown 10YR (5/4) Trace silt.
								69		
								70		1100 Hr on 5/26/94 boring TD, 5" Tools
								71		1230 on 5/26 boring TD with 8" Tools
										1535 on 5/26 well is grouted in place.
								72		

BORING NO. D10A-01

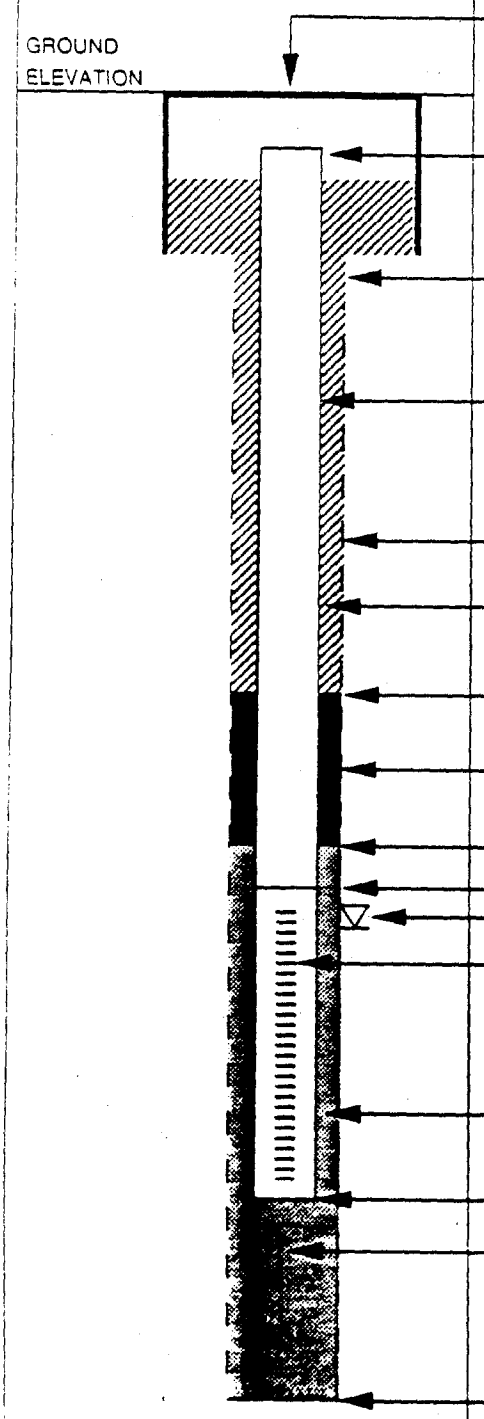
MONITORING WELL SHEET

Water Development Corp

PROJECT CTO-0260
PROJECT NO. 2738.1203
ELEVATION
FIELD GEOLOGIST WPW./DEK

LOCATION Site 10A
BORING D 10A-01
DATE 5/26/94

DRILLER Paul Frederiksen
DRILLING METHOD HSA To 21.5 Mud rotary 21.5 To 70'
DEVELOPMENT METHOD Surge, bail, pump



ELEVATION OF GROUND SURFACE:

ELEVATION OF TOP OF WELL CASING:

I.D. OF SURFACE CASING: 8 5/8

TYPE OF SURFACE CASING: 8 5/8 Steel Conductor Casing from surface To 20' BGS

RISER PIPE I.D.: 3"

TYPE OF RISER PIPE: 3" Sch 40 PVC

BOREHOLE DIAMETER: 8 1/8

TYPE OF BACKFILL: Neat Cement grout

ELEVATION / DEPTH OF SEAL: 54.5

TYPE OF SEAL: Bentonite Slurry

DEPTH TOP OF SAND PACK: 57.5'

ELEVATION / DEPTH TOP OF SCREEN: 60'

FIRST ENCOUNTERED SATURATED ZONE

TYPE OF SCREEN: 3" Sch 40 PVC

SLOT SIZE x LENGTH 0.01 Factory Slot

I.D. OF SCREEN 3"

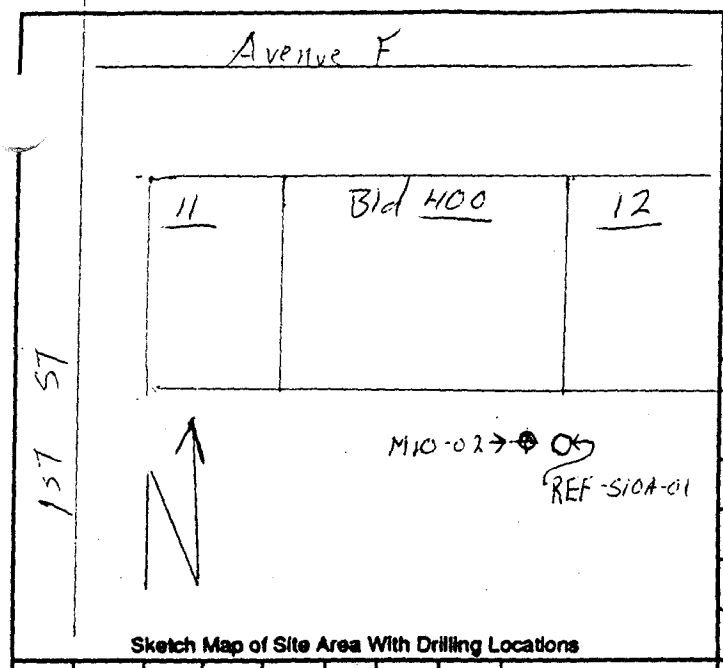
TYPE OF SAND PACK: Monterey Lone Star #2/12 Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 70

ELEVATION / DEPTH BOTTOM OF SAND PACK: 70

TYPE OF BACKFILL BELOW OBSERVATION WELL:

ELEVATION / DEPTH OF HOLE: 70



Sketch Map of Site Area With Drilling Locations

Boring # REF S10A-01 MW#	Sheet 1 of 6
Project: CTO-0260 NAS Alameda	
Job # 2738.1203 Site: 10A	
Logged By: WGJ Proj. Eng: KS Edited By:	
Drilling Contractor: Water Development Corp	
Drill Rig Type/Method: B53 HSA To 33' / Mud Rotary To 98'	
Drillers Name: Paul Frederiksen	
Borehole Diam./Drill Bit Type: HSA = 8" Mud = 8"	Total Depth 98' / Ref Elev
Hammer Wt: 140 lb Drop: 30"	
Start Time: 1040 Date: 4/28	
Completion Time: 0935 Date: 5/11/94	
Backfill Time: 1400 Date: 5/11/94	

	1st Water			
Boring Depth (ft.)	4			
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Recovery	Depth Feet	Graphics	
							Concrete				8" Concrete Slab
		5							1	SP	Fine To med. grained Sand (SP)
		5	✓	✓							moist med. dense, pale brown
		7							2		10YR (6/3).
0.0		12									
		12	✓	✓					3		
		7									
	Sampler	7									Fine To med. grained Sand (SP)
		10	✓	✓					4 ▽		As above. Saturated below 4'
	Split Spoon	5					Neat Cement Grout				
		8							5		
		14	✓	✓							
		3							6		
0.0		4									
		4	✓	✓					7		Fine To med. grained Sand (SP),
	2"	2									Saturated loose, Color change
		2							8		@ 7' To grayish brown 2.5Y (5/2)
		4	✓	✓							
		5							9		
		6									
		4	✓	✓					10		Fine grained Sand (SP), Saturated
		2									loose To med. dense, light olive
		4							11		brown 2.5Y (5/3), Trace -5%
		7	✓	✓							Silt, Trace sea shells
									12		

Boring # REF-SICA-C1 MW# | Sheet 2 of 6

Project: CTO-C260

Job # 2738 1203 Site: 10A

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)	Conductor Casing	Casing	Annulus	Sample Rec	Analyses	Depth Feet		
		4								12		
		4										Color change
		4								13	SP	fine To med grained Sand (SP)
		2										Saturated, loose, dark gray 2.5Y(4/1), Trace silt, Trace sea shells
		2								14		
	Split Spoon Sampler	3										
		3								15		
		6										fine To med grained Sand (SP) Saturated
		3								16		loose, dark gray 2.5Y(4/1) Silt To 5% , sea shells common
		1										
		2								17		
	2" split	2									ML	Sandy Silt (ML) Saturated, Soft,
		1								18		To firm, dark gray 5Y(4/1), Sand
		2										is fine grained. Sea shells common
		4					Neat Cement Grout			19	CL/ML	Clayey Silt/Silty Clay (ML/CL) moist To
		20										very moist, Firm, dark greenish gray
		21								20		5GY (4/1), Trace rootlets, sea shells
		22										common, Trace fine sand
										21	SP	
	Conductor Casing											*Conductor casing set on 4/28/94
										22	SP	with HSA and split spoons
												* Start Mud Rotary drilling on 5/10/94
												with 6" continuous sampler.
										23		
												fine grained Sand (SP), dense,
										24		Saturated, greenish gray 5GY(5/1)
												Trace - 5% Silt, Trace sea shells
										25		Trace rootlets
										26	SM	Silty Sand (SM) Saturated, dark
										27		greenish gray 5GY(4/1), 5% Clay,
												slightly consolidated.
										28		*recovered 26'-27' sample on 27-30' run.
											SP	fine grained sand SP, very moist
										29		To saturated, light olive brown 2.5Y
												(5/3) 5% Silt, Trace Clay
										30		fine grained sand, Saturated, yellowish
												brown 10YR (5/4), lensed with
										31		light brownish gray 10YR (6/2)
										32		

MF

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec.	Analysis	Depth Feet		Boring # REF-SCA-01 MW#	Sheet 3 of 6
												Project: CTC-0266	
												Job # 2738.1203 Site: 10A	

Depth Feet		Description
32		fine grained sand (SP) moist to very moist, yellowish brown 10YR (5/4) - 5% Clay. (Packs up in shoe)
33		
34	SP	
35		fine grained sand (SP) saturated, yellowish brown 10YR(5/4), Trace silt.
36		
37		fine grained sand (SP), saturated, yellowish brown 10YR(5/4) Trace silt.
38		
39		fine grained sand (SP) moist to very moist, yellowish brown 10YR(5/4) 5-10% Clay (Plugging shoe.)
40		
41		fine grained sand (SP) moist to very moist, yellowish brown 10YR(5/4) 5-10% Clay, Some areas slightly consolidated.
42		
43		
44		fine grained sand (SP) moist to very moist, color change to grayish brown 10YR(5/2) below 43.5', 5-10% Clay, Trace silt.
45		
46		
47		fine grained sand (SP) moist, grayish brown 10YR(5/2), 5-10% Clay, moderatly consolidated, Trace iron oxid staining.
48		
49		fine grained sand SP, very moist to saturated, grayish brown 10YR (5/2) (loose) Trace clay, Trace silt.
50		
51		
52		

...ed driller

MF

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec. / Analyses	Depth Feet		Boring # REF-SICA-01 MW#	Sheet 4 of 6
											Project: CTC-C26C	
											Job # 2738.1203 Site: ICA	

Depth		
52		
53	SP	fine grained Sand (SP) very moist to saturated, brown 10YR (5/3). Trace silt.
54		
55		
56		
57	SP	Very fine to fine grained Sand (SP) moist to very moist, light brownish gray 10YR (6/2) 5% silt, Trace Clay, Slightly consolidated.
58		
59		Sand as above
60		
61		
62		
63		Very fine to fine grained Sand (SP) moist to very moist, pale brown 10YR (6/3) 5% Clay, Trace silt.
64		
65		Very fine to fine grained Sand (SP) Saturated, grayish brown 10YR (5/2), Trace silt
66		
67		(in shoe) - fine grained sand (SP), moist, Pale brown 10YR (6/3) moderatly Consolidated, Trace clay.
68		
69		*(1720 Hr - Stop for The night @ 69') *5/11/94 @0740 continue drilling
70		Very fine to fine grained Sand (SP) moist to very moist, Pale brown 10YR (6/3) Trace - 5% Clay, moderatly Consolidated.
71		
72		

MF

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec	Analysis	Depth Feet		
										72	SP	Very fine To fine grained Sand (SP) very moist to saturated, light brownish gray 10YR (6/2) Trace silt.
										73		
										74		
										75		Very fine To fine grained Sand (SP) Saturated, light brownish gray 10YR (6/2) Trace silt to 5%
										76		
										77		
										78		Very fine To fine grained Sand (SP) Very moist To saturated, light brownish gray 10YR (6/2) Trace silt.
										79		
										80		Very fine To fine grained Sand (SP) very moist, light brownish gray 10YR (6/2), Trace silt, Trace clay slightly consolidated.
										81		
										82		
										83		Very fine to fine grained Sand (SP) Saturated, Olive gray 5Y (5/2)
										84		Very fine To fine grained Sand (SP) Saturated, greenish gray 5GY (5/1)
										85		
										86		Very fine to fine grained Sand (SP) moist to very moist, greenish gray 5GY (5/1) slightly consolidated below 86.5
										87	SP	
										88		Very fine To fine grained Sand (SP) Saturated, greenish gray 5GY (5/1) Trace silt.
										89		
										90	CL	Clay (CL) moist to very moist, (very stiff) dark greenish gray 5GY (4/1), Organic matter common, trace - 5% fine Sand, Trace Silt.
										91		
										92		

Boring # REF-SICA-CT MW# Sheet 5 of 6

Project: CTC-0256

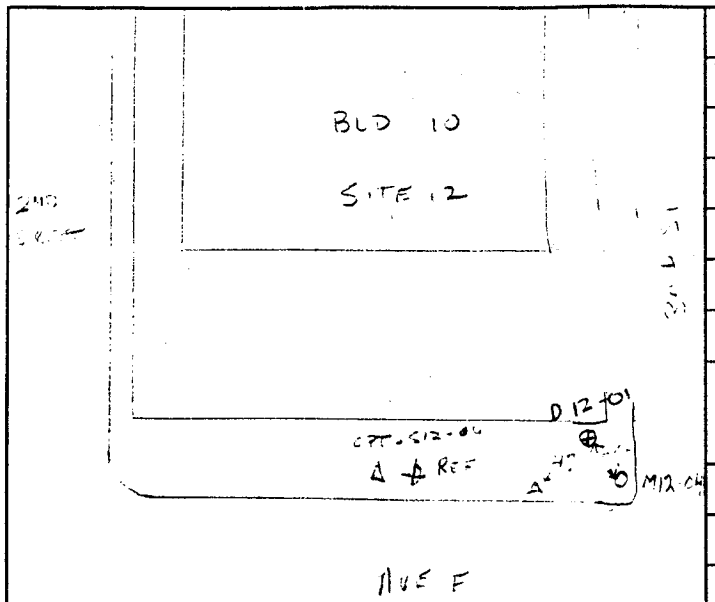
Job # 2738.1203 Site: ICA

MF

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec	Analyses	Depth Feet		Boring # REF-SICA-C1 MW#	Sheet 6 of 6
												Project: CTC-0260	
												Job # 273E.1203 Site: 104	
	Continuous Core						Neat Cement Grout			92	CL	Clay (CL) moist to very moist, dark gray 10YR(4/1) and dark greenish gray 5GY(4/1) mottled, Organic matter common, 5% silt, Trace sand	
										93			
										94			
										95		Clay (CL) moist, dark greenish gray 5GY(4/1), Organic matter common, Trace silt.	
										96			
										97		Clay (CL) moist, dark greenish gray 5GY(4/1), 5-10% elastic silt, Trace Organic matter	
										98		*note 5.5' of sample recovery on The last 4' run.	
										99			
										100		Boring TD @ 0935 on 5/11/94	
										101			
										102			
										103			
										104			
										105			
										106			
										107			
										108			
										109			
										110			
										111			
										112			

MF

SITE 12



Sketch Map of Site Area With Drilling Locations

Boring #	MW# D12-01 Sheet 1 of 4
Project:	CTC-0260
Job #	2738.1203 Site: 12
Logged By:	Proj. Eng: Edited By:
Drilling Contractor:	Water Development Corp
Drill Rig Type/Method:	B53 HSA to 33' / MUD ROTARY TO
Drillers Name:	PAUL FREDERIKSEN
Borehole Diam./Drill Bit Type	Total Depth
HSA = 8" / MUD ROTARY = 5"	Ref. Elev.
Hammer Wt: 140 lb	Drop: 30"
Start Time: 0945	Date: 5-23-94
Completion Time: 0825	Date: 5/25/94
Backfill Time: 1130	Date: 5/25/94

	1st Water			
Boring Depth (ft.)	5.25			
Casing Depth (ft.)	—			
Water Depth (ft.)	—			
Time	10:15			
Date	5/25/94			

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)	Casing Type & Size	Annulus Filler	Sample Rec.	Analyses	Depth Feet		
		NA	HSA Auger		CASING 5" Lubricor			Asphalt			
								GM SW	1	Box	GM, silty gvl, dk greyish brown 2.5 4/2 loose, moist (from core cutter) angular gvl to 2½" diam, fine to coarse sand, s.lt & clay >50%. Mod high est K
									2	Box	SW, gvly sand, pale brown 10YR 6/3, loose, sl. moist/dry, fine/med sand ~10% gvl. high est K
								ARCHIVE	3		
								SW	4		SW well graded sand, pale brown 10YR 6/3 loose, dry; fine med/sand; 0% gvl.
								ARCHIVE	5	Box	
		7 7						SP			SP, poorly graded sand, brown 10YR 5/3 loose, saturated, med/crs sand, qtz feldspar v. high est K.
		10 4/4						SW	6		
		4/3 4/3							7		SW, fine grained sand, olive 5Y 4/3 loose, saturated, v. fine/fine sand qtz/feldspar, ~~[illegible]~~ 10% fines
		2 3							8		
		3 1						SW SW	9		SC, clayey sand dk grey N4/ soft, saturated, fine sand, trace silt Mod low est K
		2 3							10	Box	CL, dk grey N4/ med soft, moist homogeneous clay.
		3 3	DRILL TO 35'						11		
									12		

MF

0', 2.5', 5', 10'

Boring # MW# D12-01 Sheet 2 of 4

Project: CTO-0260

Job # 2738.1203 Site: 12

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)	Conductor Casing	Casing	Annulus	Sample Rec	Analyses	Depth (Feet)	Description
		5								12	
		DRILL AHEAD								13	
										14	
		3		3				X	Box	15 SC	SC clayey sand, dk gray N4,
		3						X			dry, saturated, med sand, trace
		5								16 SC	sea shells, mod low not K.
										17	Note - Material drier at 15½-16 feet
		DRILL AHEAD								18	
										19	
		5						X	Box	20	SP dk greenish gray, 5G 4/1
		5						X		21	loose, saturated, med sand (qtz, feldspar
		6									& blk minerals; trace sea shells
										22	thin clay/silt lenses interbedded (~2" thick)
											[CL dk greenish gray, 5G 4/1, dry, saturated]
			DRILL AHEAD							23	
										24	
			DRILL AHEAD							25	
		6							Box	X	SP, dk greenish gray 5G 4/1, Loose
		6								X	saturated, med sand, trace sea shells
		6								26	w/ Clay lens interbedded w/
											the SP, [CL dk greenish gray 5G 4/1]
										27	
		DRILL AHEAD								28	
										29	
										30	
		4							SP		SP As above.
		3								31	
		3							SC		SC, bluish gray 5B 6/1, soft, wet,
		3							SP	32	fine/med sand, organic layer

~½" thick at contact b/w SP & SC (31 ft)

Boring # MW# D12-01 Sheet 3 of 4

Project: CTO - 0260

Job # 2738.1203 Site: 12

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)	Casing	Annulus	Sample Rec	Analyses	Depth Feet	
SA 5/23/94		4					X	SP3 Box	2	SP, dk greenish gray, 5GY 4/1, loose, saturated, med sand, trace sea shells, high sat K
		5					X	SM	3	
well Stop 5/24/94									4	SM pale olive, 5Y 6/3 med stiff moist, silt w/ trace of med sand, low sat K
									5	
									6	Very fine to fine grained Sand (SP) moist to very moist, light olive brown 2.5Y (5/4) with greenish gray 5GY (6/1) staining in root pores 5% silt, Trace Clay, ~~SS~~ (dense)
									7	
									8	
									9	Very fine to fine grained Sand (SP) Saturated, light olive brown 2.5Y (5/4)
									10	
									11	
									12	
									13	Very fine to fine grained Sand (SP) Saturated, light yellowish brown 10YR (6/4) 1/2" lenses of heavy iron oxid staining common, 5% silt.
									14	
									15	
									16	
									17	fine grained Sand (SP) as above.
									18	
									19	Sand (SP) Very fine to fine grained Saturated, light yellowish brown 10YR (6/4) with iron oxid staining 5% silt, Trace to 5% Clay.
									20	
									21	
									22	

MF

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)	Casing	Annulus	Depth (Feet)	
					3" Sch 40 PVC Slot	Bentonite Slurry / Neat Cement	52	
							53	
							54	Very fine To fine grained Sand (SP) Saturated, brown 10YR (5/3) Trace silt.
							55	
							56	fine grained Sand (SP) moist To very moist, light yellowish brown 10YR (6/4) 5% silt, 5% Clay, Slightly Consolidated. Also Pale brown 10YR (6/3).
							57	
							58	
							59	
							60	Very fine To fine grained Sand (SP) Saturated, grayish brown 10YR (5/2), Trace ~~yellowish brown~~ Trace yellowish brown 10YR (5/4) Trace silt.
							61	
							62	
							63	
							64	
							65	Very fine To fine grained Sand (SP) Saturated, Pale brown 10YR (6/3) Trace silt, To 5%, Trace clay
							66	
							67	
							68	Very fine To fine grained Sand (SP) Saturated, light brownish gray 2.5Y (6/2), 5% silt, Trace clay To 5%, Trace sea shells.
							69	
							70	TD 70'
							71	
							72	

Boring # MW# D12-01 Sheet 4 of 4

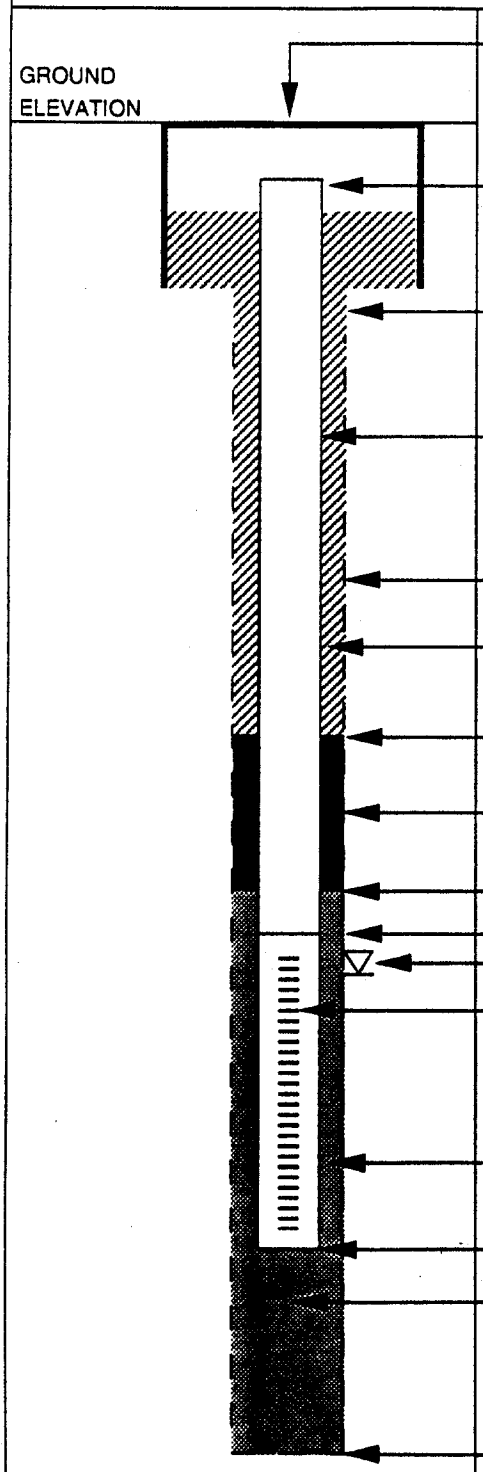
Project: CTO - 0260

Job # 2738.1203 Site: 12

BORING NO. D12-01

MONITORING WELL SHEET

PROJECT CTO-0260	LOCATION S.I.C 12	DRILLER Water Development
PROJECT NO. 2738.1203	BORING D12-01	DRILLING METHOD HSA To 33' Mud rotary To 70
ELEVATION	DATE 5/25/94	DEVELOPMENT METHOD bail/surg/pump
FIELD GEOLOGIST L. Pl.		



ELEVATION OF GROUND SURFACE: _____

ELEVATION OF TOP OF WELL CASING: _____

I.D. OF SURFACE CASING: 8 5/8

TYPE OF SURFACE CASING: a 33' Steel Conductor casing

RISER PIPE I.D.: 3"

TYPE OF RISER PIPE: Sch 40 PVC

12" HSA To 33'

BOREHOLE DIAMETER: 8" Mud rotary To 70'

TYPE OF BACKFILL: Neat cement grout

ELEVATION / DEPTH OF SEAL: 54.5

TYPE OF SEAL: bentonite slury

DEPTH TOP OF SAND PACK: 57.5

ELEVATION / DEPTH TOP OF SCREEN: 60

FIRST ENCOUNTERED SATURATED ZONE

TYPE OF SCREEN: Sch 40 PVC

SLOT SIZE x LENGTH 0.010 factory slot 10'

I.D. OF SCREEN 3"

TYPE OF SAND PACK: Monterey Sand #2/12

ELEVATION / DEPTH BOTTOM OF SCREEN: 70'

ELEVATION / DEPTH BOTTOM OF SAND PACK: 70'

TYPE OF BACKFILL BELOW OBSERVATION WELL: native

ELEVATION / DEPTH OF HOLE: 70'

Bld. 10

Site 12

Sketch Map of Site Area With Drilling Locations

Boring #	MW#
Sheet	of
Project:	
Job #	Site:
Logged By:	Proj. Eng: Edited By:
Drilling Contractor:	
Drill Rig Type/Method:	
Drillers Name:	
Borehole Diam./Drill Bit Type	Total Depth
	Ref. Elev.
Hammer Wt:	Drop:
Start Time:	Date:
Completion Time:	Date:
Backfill Time:	Date:

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)	Casing Type & Size	Casing Type & Size	Annulus Filler	Sample Rec.	Analyses	Depth Feet		
												6" Concrete slab
										1	SP	Fine to med grained Sand (SP), moist, light yellowish brown 2.5Y (6/4)
0.0			Hand Auger							2		
										3		
										4		
										5		
	Split Spoon	4										
0.0		6								6		Fine to med. grained Sand (SP), very moist to saturated below 7', med. dense, yellowish brown, 10YR 5/4, Trace Gravels to 3/4" ø, Trace silt.
		6	✓	✓								
		6								7		
0.0	2.5'	7										
		6	✓	✓						8		
		3										
0.0		3								9		Fine grained Sand (SP), saturated, loose, gray to brown 2.5Y (5/2) Trace silt
		3	✓	✓								
		2								10	ML	Clayey silt (ML) saturated, firm, dark gray, 2.5Y (4/1), 30% Clay, silt is elastic
		3									SP	
		4	✓	✓						11	SM	Sand (SP) saturated, dark gray, 10YR 4/1, 20% fine sand
		1									ML	Silty Sand (SM) saturated, loose, dark gray, 10YR 4/1, 20% clay
		2								12		Clayey silt / silty Clay, very moist, soft, very dark gray 2.5Y

Boring # [illegible] MW# Sheet 2 of 6

Project: C70 [illegible]

Job # 2736.203 Site: 12

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)	Casing	Annulus	Sample Rec	Analyses	Depth Feet		
		2	↓	↓					12	PT	Organic material (Peat), saturated, medium gray 5Y(5/1).
		5								ML	Sand, silt (ML), saturated, from dark gray 5Y
		4							13		
		3	↓	↓						SP	
		3							14		Fine to med grained Sand (SP), Saturated,
		4									loose, dark gray 5Y 4/1, Trace sea shells
		4	↓	↓					15		
		5									
		3							16		
		3	↓	↓							
		2							17	SC	Silty Sand (SM), Saturated, loose, dark gray 5Y 4/1,
		[illegible]							18		sea shells common, approx 25% silt.
		3	↓	↓							1" zone of silty sand with Chert 18"
		4							19	SP	Fine to med grained Sand (SP), Saturated, loose
		4									dark gray 5Y 4/1, Trace sea shells.
		3	↓	↓					20	ML	Clayey silt with sand (ML), very moist dark
		[illegible]									greenish gray 5GY (4/1)
		5							21	SP	
		6	↓	↓							Fine to med grained Sand (SP), Saturated,
		9							22		med dense, gray 5Y (5/1)
		12									
		15	↓	↓					23		
		5									
		5							24		
		4	↓	↓							
		4							25		Fine to med grained sand (SP) saturated,
		4									loose, gray 5Y (5/1), Traces of sea shells,
		5	↓	↓							Trace clayey silt.
		6							26		
		6									
		7	↓	↓					27	CL	Silty Clay with sand (CL) moist, dark gray 5Y (4/1)
		7								SM	Silty Sand (SM), very moist, med dense,
		8							28		black 5Y (2.5/1), Trace clay.
		10	↓	↓							Fine grained silty sand (SM) very moist, med.
		8							29		dense, gray 5Y (5/1) rootpores with iron oxide
		8									staining, common.
		9	↓	↓					30		Silty Sand (SM) very moist, med dense greenish
		8									gray 5GY (5/1), Trace rootlets.
		9							31	SC	
		9	↓	↓							Clayey Sand (SC), moist, med dense, greenish
									32		gray 5GY (5/1), Trace rootlets.

MF

Boring # [illegible] MW# Sheet 3 of 6

Project: CTC-C 266

Job # 2732.1207 Site: 2

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)	Conductor Casing	Casing	Annulus	Sample Rec	Analyses	Depth Feet		Description
		9								32	SC	Clayey Sand (SC) moist, med dense, [illegible] brown 2.5Y (5/2) Trace pores with
		10								33		gray staining, approx. 10-15% Clay,
		12								34		5% silt.
	6"									35		*Casing set on 7/27/94 with H.S.A. *Refusal [illegible]
	CONTINUOUS									36	SP	Clayey Sand (SC), moist, light olive brown 2.5Y (5/3), 5-10% Clay, Trace silt, [illegible]
										37		Fine grained Sand (SP), very moist, light olive brown 2.5Y (5/3), 5% Clay, Trace silt.
										38		
										39		
										40	SC	Clayey Sand (SC) moist, (Hard) gray 5Y (5/1) with yellowish brown type (5/4) staining, estimated @ 10% Clay, sand
										41		is fine grained, moderately consolidated.
										42		
										43		Clayey Sand (SC) moist, pale brown 10YR (6/3), 10% Clay, Trace iron
										44		oxide staining, Sand is fine grained.
										45		
										46		Clayey Sand (SC) moist, Pale brown
										47		10YR (6/3) Trace yellow sh brown 10YR 5/6, staining, Sand is fine
										48		grained.
										49		Clayey Sand, very moist, Pale brown 10YR (6/3), Clay content
										50		decreasing with depth.
										51	SP	fine grained Sand (SP) very moist to saturated, brown 10YR (5/3) Trace Clay, Trace silt.
										52		

MF

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec	Analyses	Depth Feet	
										52	
									SP		
										53	fine to med grained Sand (SP) Saturated, brown 10YR (5/3)
										54	
										55	(Plug in shoe of sampler) - fine sand, slightly moist, Pale brown 10YR (6/3), Sand is highly consolidated.
										56	
										57	fine grained Sand SP, Saturated (loose), Pale brown 10YR (6/3) Trace silt.
										58	* very loose fine sands washed away by drilling fluids, per driller
										59	
										60	fine grained sand (SP), moist Pale brown 10YR (6/3) (Hard) moderatly consolidated @ 60'
										61	
										62	fine grained sand (SP) Saturated (loose) brown 10YR (5/3)
										63	
										64	
										65	fine grained Sand (SP) Saturated (loose) light brownish gray 10YR (6/2) Trace clay, Trace silt.
										66	
										67	fine grained Sand (SP) moist (Hard) light brownish gray 10YR (6/2) moderatley consolidated.
										68	
				No Recovery						69	* the shoe of the 67 to 73' run had a 3" plug of moderatly consolidated sand preventing the soft fine sands from entering the core barrel.
										70	
										71	
										72	

Boring # REF-912-01 MW# Sheet 4 of 6

Project: CTC - C26C

Job # 2736 1203 Site: 12

ME

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec	Analyses	Depth Feet		
										72		
										73	SP	fine grained Sand (SP), Saturated (loose), light olive brown 10YR 5/3 Trace silt.
										74		
										75		
										76		fine sands as above
										77		
										78		fine grained sand (SP) Saturated gray 5Y (5/1)
										79		Color change
										80		fine grained sand (SP) very moist To saturated, greenish gray 5GY (5/1)
										81		
										82		fine grained Sand (SP) Saturated, greenish gray 5GY (5/1)
										83		
										84		fine grained Sand SP, Saturated, (loose) greenish gray 5GY (5/1)
										85		
										86	CL/CH	Clay (CL/CH) moist, dark greenish gray 5GY (4/1), organic matter common
										87		
										88		
										89		
										90		Clay, moist, dark greenish gray 5GY (4/1), Traces of organic matter.
										91		
										92		

Boring # REF-S12-C1 MW# Sheet 5 of 6

Project: CTC-C26C

Job # 2738.1203 Site: 12

MF

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec	Analyses	Depth Feet		
							Grout			92	CL/CH	Clay, moist, very dark gray 5Y(3/1) Trace silt, Trace organic matter.
										93		
										94		
										95		*boring Terminated @ 94' on 5/5/94 @ 1535 Hours. The boring was pressure grouted through a 1 inch pipe from total depth to the surface. Time of completion was 1700 Hrs on 5/5/94.
										6		
										7		
										8		
										9		
										0		
										1		
										2		
										3		
										4		
										5		
										6		
										7		
										8		
										9		
										0		
										1		
										2		

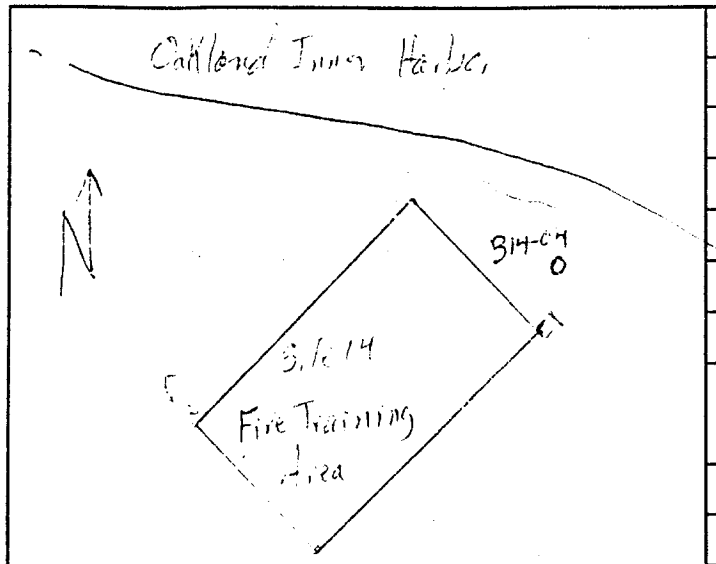
Boring # REF-SB-01 MW# Sheet 6 of 6

Project: CTC-C26C

Job # 2738.1203 Site: 12

MF

SITE 14



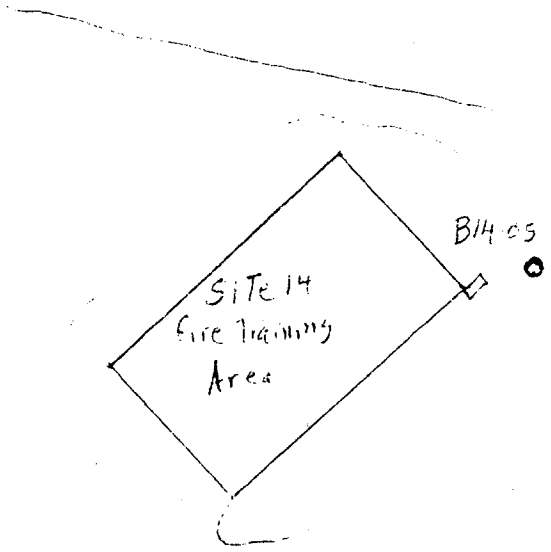
Sketch Map of Site Area With Drilling Locations

Boring # B14-04 MW#	Sheet 1 of 1
Project: CTO-0260 [illegible] Alameda	
Job # 2738.1203	Site: 14
Logged By: WW	Proj. Eng: KS	Edited By:
Drilling Contractor:	
Drill Rig Type/Method: Hand Auger	
Drillers Name:	
Borehole Diam./Drill Bit Type: 4"	Total Depth: 5.5'
	Ref. Elev.
Hammer Wt:	Drop:
Start Time: 0850	Date: 4/1/94
Completion Time: 0910	Date: 4/1/94
Backfill Time: 0940	Date: 4/1/94

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Rec.	Analyses	Depth Feet		
0.0			↓	↓			Native Soil	X	0855	1	SM	Silty Sand (SM) slightly moist, (loose) light brownish gray 10YR(6/2)
										2		
0.0			↓	↓				X	0900	3		
										4	SP	gravely sand with silty moist, grayish brown 10YR(5/2)
			↓	↓				X	0905	5	SM	
			↓	↓			↓	X	Dupe 0910			
										6		TD=5.5'
										7		Boring located on Top of Burm approx 5' above grade.
										8		
										9		
										10		
										11		
										12		

MF



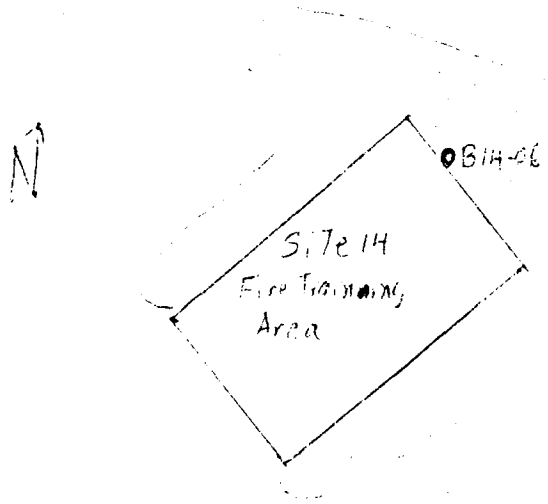
Sketch Map of Site Area With Drilling Locations

Boring # B14-05 MW#	Sheet 1 of 1
Project: CTO-0260	
Job # 2738.1203	Site: 14
Logged By: WW	Proj. Eng: KS Edited By:
Drilling Contractor:	
Drill Rig Type/Method: Hand Auger	
Drillers Name:	
Borehole Diam./Drill Bit Type: 4"	Total Depth: 5.5' / Ref. Elev.
Hammer Wt:	Drop:
Start Time: 0912	Date: 4/1/94
Completion Time: 0925	Date: 4/1/94
Backfill Time: 0935	Date: 4/1/94

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Rec.	Analyses	Depth Feet		
C.C			↓	↓			native soil	X	0915	1	SM	Silty Sand (SM), slightly moist, (loose) light brownish gray 10YR (6/2) Trace gravels, Rootlets common
										2		
C.C			↓	↓				X	0920	3		
										4		Silty Sand Aa. moist, light brownish gray 10YR (6/2)
			↓	↓			↓	X	0925	5		
										6		T.D.=5.5' Boring on Top of burm approx 5' above grade.
										7		
										8		
										9		
										10		
										11		
										12		

MF



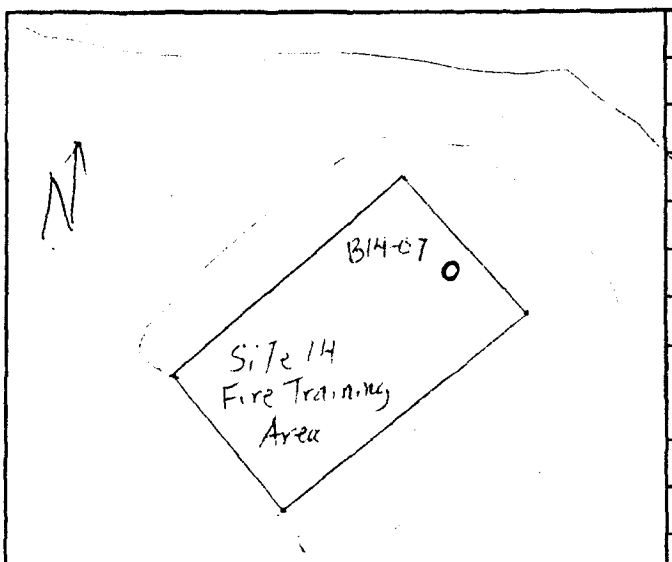
Sketch Map of Site Area With Drilling Locations

Boring # B14-06 MW#	Sheet 1 of 1
Project: CTO-260	
Job # 2738.1203	Site: 14
Logged By: DEK	Proj. Eng: / Edited By:
Drilling Contractor: Gregg	
Drill Rig Type/Method: Simco	HSA, hydraulic push
Drillers Name: Ted	
Borehole Diam./Drill Bit Type: 6"	Total Depth: 6 / Ref. Elev.
Hammer Wt:	Drop:
Start Time: 0930	Date: 3/29/94
Completion Time: 0950	Date: 3/29/94
Backfill Time:	Date:

	1st Water			
Boring Depth (ft.)	4.5			
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Rec.	Analyses	Depth Feet		
												Concrete to 6 inches
1101	1095								0940	1	GM	GM, silty gvl, med yellowish brown 10YR 4, loose, damp, med sand, angular gvl to 1" diameter; med high est K.
880							Neat Cement Grout		0945	3	GM	Aa, olive gray, loose, damp, med sand, angular gvl.
197									0950	5	SP/ML	SP, blk 2.5Y N2/, loose, moist; fine to med sand
										6		ML, yellowish green, v soft, wet to saturated, homogeneous silt strong petroleum odor.
										7		
										8		
										9		
										10		
										11		
										12		

MF

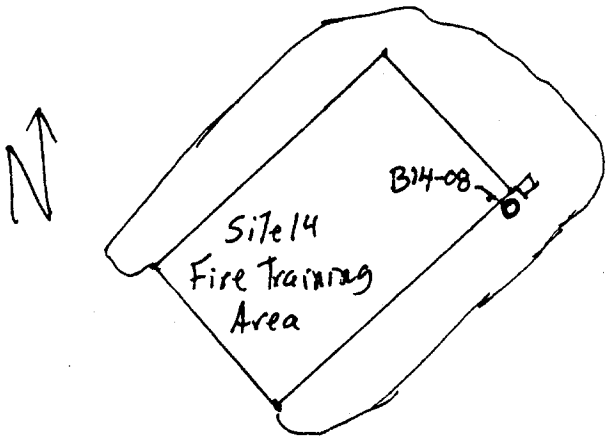


Sketch Map of Site Area With Drilling Locations

Boring # B14-07 MW#	Sheet 1 of 1
Project: CTO-260	
Job # 2738.1203	Site: 14
Logged By:	Proj. Eng: / Edited By:
Drilling Contractor: Gregg	
Drill Rig Type/Method: Simco HSA	
Drillers Name: Ted	
Borehole Diam./Drill Bit Type: 6"	Total Depth: 6 / Ref. Elev:
Hammer Wt: N/A	Drop: N/A
Start Time: 1000	Date: 3/29/94
Completion Time: 1025	Date: 3/29/94
Backfill Time:	Date:

	1st Water			
Boring Depth (ft.)	4.5			
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Rec.	Analyses	Depth Feet		
							Cement/Bent		1005	1	GM	Concrete, GM, blk, loose, dry, fine to med sand, gvl to 1" diameter high at k., stron, diesel odor
2.20										2	?	
4									1015	3	SP & ML	SP, lt green, loose, damp, med sand, gvl, plastic, trace aggregates/gvl. size crumbly rk fragments
							Bent			4		
25									1020	5		ML/CL, Mod yellow brown, lower 5/4 crumbly w/ aggregates, dry silty aggregate. low at k.
										6		
										7		ML, yellowish gray, v. soft, saturated homogeneous silt w/ few clay blebs. (5-6')
										8		
										9		
										10		
										11		
										12		



Sketch Map of Site Area With Drilling Locations

Boring # B14-08 MW#	Sheet 1 of 1
Project: CTO-260	
Job # 2738.1203	Site: 14
Logged By: DEK	Proj. Eng: KS Edited By:
Drilling Contractor: Gregg	
Drill Rig Type/Method: Simco	
Drillers Name: Ted	
Borehole Diam./Drill Bit Type: 6"	Total Depth: 6 / Ref. Elev.
Hammer Wt:	Drop:
Start Time: 1030	Date: 3/29/94
Completion Time: 1045	Date: 3/29/94
Backfill Time: 1130	Date: 3/29/94

	1st Water			
Boring Depth (ft.)	5.5			
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

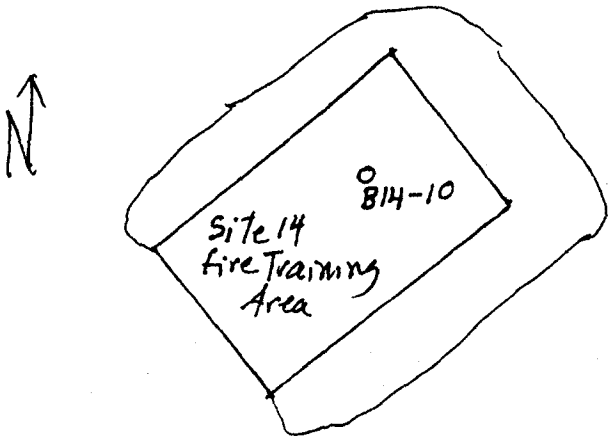
PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Rec.	Analyses	Depth Feet		
		~~Concrete~~										Concrete grass on surface
NA							Neat Cement Grout	X	1032	1	SW	SW pale brown 10YR 6/3, loose, damp, fine sand, trace silt trace gvl. to ~½" diam., high est K.
										2		
NA								X	1035	3	SP	SP, pale brown, 10YR 6/3, loose, moist, med sand, trace silt. silt content increases slightly to ~10% at base of 4'. most high est K.
										4		
NA								X	1041	5		
										6		Ha to 5½ ft. ML, olive gray, 5Y, moist, soft, homogeneous silt.
										7		
										8		
										9		
										10		
										11		
										12		

Sketch Map of Site Area With Drilling Locations

Boring # B14-09 MW#	Sheet 1 of 1
Project: CTO-260	
Job # 2738.1203	Site: 14
Logged By:	Proj. Eng: / Edited By:
Drilling Contractor: Gregg	
Drill Rig Type/Method: Simcoe HSA	
Drillers Name: Ted	
Borehole Diam./Drill Bit Type: 6"	Total Depth: 6 / Ref. Elev:
Hammer Wt: NA	Drop: NA
Start Time: 1120	Date: 3/29/94
Completion Time: 1130	Date: 3/29/94
Backfill Time: 1330	Date: 3/29/94

	1st Water			
Boring Depth (ft.)	5.5			
Casing Depth (ft.)				
Water Depth (ft.)				
Time	1128			
Date	3/29/94			

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Rec.	Analyses	Depth Feet		
							Concrete					Concrete to 6"
NA							Grout	X	1122	1	SP	SP, dk yellowish orange 10YR 6/6, loose, damp, med to coarse sand high est k
										2		
							Neat Cement	X	1124	3	SP / ML	ML, yellowish gray 5Y 7/2, aggregate dry, material breaks into aggregate & silt & gravel
4										4	SP	SP, mod yellow brown 10YR 5/4
4								X	1129	5		loose, moist, high est k, med sand
										6		ML, mod yellow brown, 10YR 5/4 wet/saturated, loose, med sand, trace silt (to ≈ 10%). Mod est k.
										7		
										8		
										9		
										10		
										11		
										12		



Sketch Map of Site Area With Drilling Locations

Boring # B14-10 MW#	Sheet 1 of 1
Project: CTO-260	
Job # 2738.1203	Site: 14
Logged By: DEK	Proj. Eng: / Edited By:
Drilling Contractor: Gregg	
Drill Rig Type/Method: Simcoe HSA	
Drillers Name: Ted	
Borehole Diam./Drill Bit Type: 6"	Total Depth: 6 / Rel. Elev.
Hammer Wt:	Drop:
Start Time: 1105	Date: 3/29/94
Completion Time: 1115	Date: 3/29/94
Backfill Time: 1330	Date: 3/29/94

	1st Water			
Boring Depth (ft.)	4.5			
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Rec.	Analyses	Depth Feet		
							Concrete					Concrete
386								1105		1	SP	SP, med olive brown, 5Y 4/4, loose, damp, fine/med sand, trace silt
										2		
NA							Neat Cement Grout	1109		3	ML	ML, silt aggregate, med olive brown soft, to ~~crumbly~~ crumbly.
										4		
250								1115		5		ML, med yellowish brown, soft, saturated v. strong odor fuel. trace clay blebs, sheen on sampler
										6		TD = 6'
										7		
										8		
										9		
										10		
										11		
										12		

MF

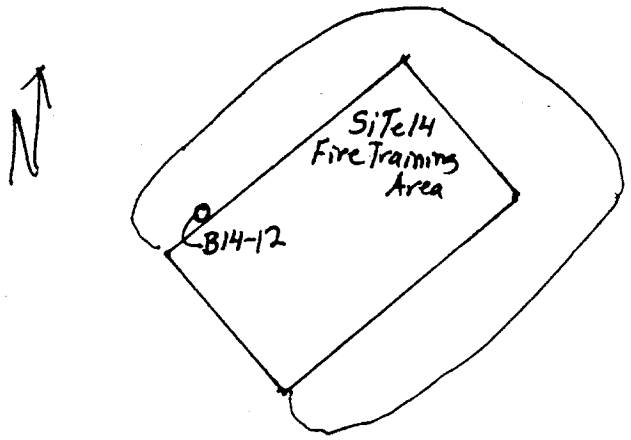
Boring # B14-11 MW#	Sheet 1 of 1
Project: CTO - 260	
Job # 2738.1203 Site: 14	
Logged By: DEK Proj. Eng: KS Edited By:	
Drilling Contractor: Gregg	
Drill Rig Type/Method: Simcoe HSA	
Drillers Name: Ted	
Borehole Diam./Drill Bit Type: 6"	Total Depth 5.5 / Rel. Elev
Hammer Wt: n/a	Drop:
Start Time: 1045	Date: 3/29/94
Completion Time: 1105	Date: 3/29/94
Backfill Time:	Date:

Sketch Map of Site Area With Drilling Locations

	1st Water			
Boring Depth (ft.)	4.5			
Casing Depth (ft.)				
Water Depth (ft.)				
Time	[illegible]			
Date	[illegible]			

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Rec.	Analyses	Depth Feet		
14			↓	↓			Neat Cement Grout →	X	1050	1	SW	Grass covered surface SW, mod yellowish brown 10YR 5/4 loose, dry, med sand, trace fines (~10%), trace sub, angular to ½"
			↓	↓						2	SW	
22			↓	↓				X	1055	3	SP	SW As to 2½ ft SP, dk ~~green~~ olive gray, loose, moist med sand, high est K
			↓	↓						4	SP	
13			↓	↓				X	1059	5	ML	ML, yellowish gray 5Y 7/2, soft v. wet/saturated, homogeneous silt high stress
			↓	↓			↓			6		
										7		
										8		
										9		
										10		
										11		
										12		

B14-12



Sketch Map of Site Area With Drilling Locations

Boring # B14-12 MW#	Sheet 1 of 1
Project: CTO-260	
Job # 2738.1203	Site: 14
Logged By: DEK	Proj. Eng: KS Edited By:
Drilling Contractor: Gregg	
Drill Rig Type/Method: Simcoe	HSA
Drillers Name: Ted	
Borehole Diam./Drill Bit Type: 6"	Total Depth: 5.5 / Ref. Elev:
Hammer Wt: N/A	Drop:
Start Time: 1135	Date: 3/29/94
Completion Time: 1154	Date: 3/29/94
Backfill Time: 1330	Date: 3/29/94

	1st Water			
Boring Depth (ft.)	4.5			
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Rec.	Analyses	Depth Feet		
50							Neat Cement/Grout	X	1140	1	SW	Grass covered surface. SW, tan lt. grey 10YR 7/1 fine sand, loose, dry, med sat k.
521					11				1150	2	SW	GW, med yellowish brown, 10YR 5/4 loose, ~~moist~~ damp, med sand gvl to ½" med high sat k
										3	SM	SM dk yellowish orange 10YR 6/6 v. stiff, dry,
NA								X2		4	SP	SP, dk green, med dense, saturated at 4½ ft, med to crs sand, high sat k.
								X	1155	5	CL	
											SP	
										6		CL. med olive brown, 5Y 4/4, dry v. stiff,
										7		SP, dk green, med dense, saturated loose, med sand, high sat k.
										8		
										9		
										10		
										11		
										12		

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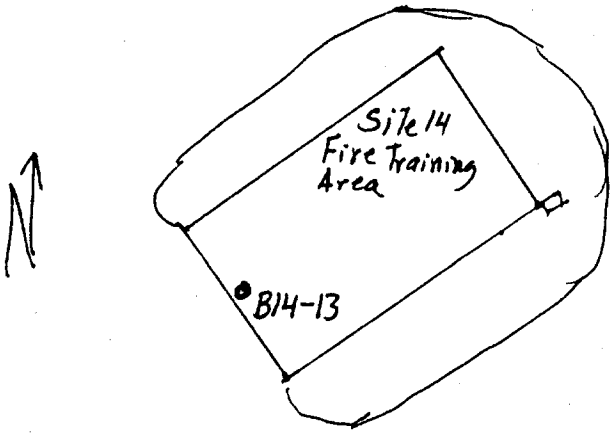


Sketch Map of Site Area With Drilling Locations

Boring # B14-13 MW#	Sheet 1 of 1
Project: CTO-260	
Job # 2738.1203	Site: 14
Logged By: DEK	Proj. Eng: KS / Edited By:
Drilling Contractor: Gregg	
Drill Rig Type/Method: Simcoe HSA	
Drillers Name: Ted	
Borehole Diam./Drill Bit Type: 6"	Total Depth: 6 / Ref. Elev:
Hammer Wt:	Drop:
Start Time: 1200	Date: 3/29/94
Completion Time: 1215	Date: 3/29/94
Backfill Time: 1330	Date: 3/29/94

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Rec.	Analyses	Depth Feet		
250			concrete						1205	1	SM	concrete to 6" SM, dk grayish brown 10YR 4/2, loose, dry, med sand, trace roots/plant
							Neat Cement Grout			2	GM	
									1210	3	SP	GM, mod olive brown, 5Y 4/4 dry med dense, silt w/ angular gravel, high est k.
35										4		
									1215	5		SP olive gray 10Y 4/2, loose, damp med sand, high est k.
16										6		ML, olive gray 10Y 4/2, soft wet, homogeneous silt, mod low est k.
										7		
										8		
										9		
										10		
										11		
										12		

Sketch Map of Site Area With Drilling Locations

Boring # B14-14 MW#	Sheet 1 of 1
Project: CTO-260	
Job # 2738.1203 Site: 14	
Logged By: DEK Proj. Eng: KS Edited By:	
Drilling Contractor: Gregg	
Drill Rig Type/Method: Simcoe HSA	
Drillers Name: Ted	
Borehole Diam./Drill Bit Type: 6"	Total Depth: 6 / Ref. Elev:
Hammer Wt:	Drop:
Start Time: 1220	Date: 3/29/94
Completion Time: 1230	Date: 3/29/94
Backfill Time:	Date:

	1st Water			
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Rec.	Analyses	Depth Feet		Description
			Concrete									Concrete
NA							Neat Cement Grout	X	1225	1	GW	GW, med yellow brown 10YR 5/4 loose, dry, angular sel to ~1/2" med Sand, trace silt, high est K
										2		
2								X	1220	3	SP	SP, olive gray, loose, damp, med Sand, high est K.
								X	DUP			
										4		
2								X	1230	5		SP to 5 ft
								X	DUP		ML	ML. olive gray, med stiff, wet homogeneous silt, w/ slight trace of fine sand. Med est K.
										6		
										7		
										8		
										9		
										10		
										11		
										12		

REF-S14-01

Oakland Inner Harbor

M14-03

REF-S14-01

Bldg 5964

Sketch Map of Site Area With Drilling Locations

Boring #	MW#
Sheet	1 of 6
Project:	CTC-C26C NAS Alameda
Job #	2738 1203
Site:	14
Logged By:	[illegible]
Proj. Eng:	KS
Edited By:	
Drilling Contractor:	Water Development Corp
Drill Rig Type/Method:	Mobile B53 HSA C-22 Mud Rotary 7.95
Drillers Name:	Paul Frederiksen
Borehole Diam./Drill Bit Type	8"
Total Depth	95
Ref. Elev.	
Hammer Wt:	140 lb
Drop:	30"
Start Time:	1350
Date:	4/25/94
Completion Time:	1515
Date:	5/2/94
Backfille Time:	1730
Date:	5/2/94

1st Water				
Boring Depth (ft.)				
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance	Recovered (in.)		Casing Type & Size	Annulus Filler	Sample Recovery	Feet	Graphics	
											3" Asphalt
									1	GM	Silty Gravel (GM) with Sand, moist, med. dense to dense, dark grayish brown 10YR (4/2) gravels to 4" ⌀.
0.0									2		
									3	SP	Very fine to fine grained Sand (SP), moist, med. dense, Pale brown 10YR (6/3), 5-10% Silt, Sea shells common, Saturated below 5'
	Sampler						Grout		4		
0.0									5		
	Core					Casing	Cement		6		Color change to Gray 5Y (5/1)
									7	CL/ML	Silty Clay / Clayey Silt (CL/ML) very moist, dark greenish gray 5GY (4/1)
	Continuous					Steel Conductor	Neat		8		
0.0									9	SP	fine grained Sand (SP), saturated gray N5/, 5% Clay of olive brown 2.5Y (4/3)
									10		
									11		fine grained Sand (SP) saturated gray N5/, Trace clay, olive brown 2.5Y (4/3)
									12		

REF-SI4-C1

Boring # MW# Sheet 2 of 6

Project: CTC-C2EC NAS Alameda

Job # 2738.12C3 Site: 14

PID/OVA	Sampler Type	Blow Counts	Advance	Rcvd (in.)		Casing	Annulus	Sample Rec	Depth Feet	Graph	
									12	SM	Silty Sand (SM), Sand is fine grained, Saturated, dark gray ~~N4/~~ N4/
									13		
	Continuous core sampler		↓	↓		Steel Conductor Casing			14		Fine grained Sand (SP) Saturated, dark gray N4/, Sea shells common.
									15		
									16		
				No recovery					17		(on sampler) Fine grained Sand (SP) Saturated, dark gray N4/.
									18		
									19	SC	Clayey Sand (SC), very moist, dark gray 5Y (4/1), Sand is fine grained, sea shells common approx. 15% Clay, 5-10% silt.
									20		
									21		
Dem 125									22	SM	Silty Sand (SM) Saturated, dark gray 5Y (4/1) Sand is fine grained, Trace clay + sea shells.
									23	ML	Clayey silt with Sand (ML) moist, dark gray 5GY (4/1) Sea shells common.
	Continuous core Sampler								24	SM	Silty Sand (SM), very moist, dark greenish gray 5GY (4/1), Sea shells common, Trace - 5% Clay
									25		
									26		Silty Sand (SM) as above, slightly higher clay content.
									27	ML	Clayey Silt (ML) with sand, very moist, dark greenish gray 5GY (4/1)
									28	SM	
									29		Silty Sand (SM), very moist, dark greenish gray 5GY (4/1), Trace to 10% Clay, Traces of sea shells
									30		
									31		
									32		

Drill 7th and on 12/94

REF-514-01

PID/OVA	Sampler Type	Blow Counts	Advance	Rcvd (in.)		Casing	Annulus	Sample Rec	Depth Feet	Graph	Boring # MW# Sheet 3 of 6
											Project: CTC-0260 NAS Alameda
											Job # 2738.1203 Site: 14

Depth	Graph	Description
32		
33	SM	Silty Sand (S-11), Saturated, dark greenish gray 5GY(4/1), sea shells common, Trace clay, Sand is fine grained.
34		
35		
36		
37	SC	Clayey Sand (SC) moist to very moist, (dense), Olive gray 5Y (5/3) 5-10% Clay, Trace pebbles fragments.
38		Color change @ 38.5' To light yellowish brown 10YR (6/4).
39		
40		grading change
41		Sand (SP) very moist, yellowish brown 10YR (5/4), approx 5% Clay + 5% silt. Sand is fine grained.
42		
43	SP	fine grained Sand (SP), moist to very moist, light brownish gray 10YR (6/2) with yellowish brown 10YR (5/6) (iron oxid) staining, Trace silt, Trace clay, slightly consolidated
44		
45		
46		fine grained Sand (SP) Saturated, Pale brown 10YR (6/3).
47		
48		
49		
50		
51		fine to med. grained Sand Saturated, Pale brown 10YR (6/3).
52		

Start

LOST

REF - S14-C1

PID/OVA	Sampler Type	Blow Counts	Advance	Rcvd (in.)		Casing	Annulus	Sample Rec	Depth Feet	Graph	Boring # MW#	Sheet 4 of 6
											Project: CTO-026C NAS Alameda	
											Job # 2738.1203 Site: 14	

Depth	Graph	Description
52		
53	SP	
54		fine grained Sand (SP), Saturated, grayish brown 10YR (5/2) Trace silt.
55		
56		
57		Fine grained Sand (SP) moist, pale brown 10YR (6/3) with yellowish brown 10YR (5/6) iron oxid staining, trace clay, Trace silt, slightly consolidated.
58		
59		
60		
61		Fine grained Sand (SP) Saturated, light yellowish brown 10YR 6/4
62		
63		fine grained Sand very moist to saturated, pale brown 10YR (6/3) Trace silt, Trace clay, Trace pears.
64		
65		fine grained Sand (SP) very moist, light brownish gray 10YR (6/2) 5% clay, Trace silt.
66		
67		
68		fine grained Sand, Saturated, color change @ 68.5' to greenish gray 5GY 5/1).
69		
70		fine to med Sand (SP), Saturated dark greenish gray 5GY (4/1)
71		
72		

CREF-S14-C1

PID/OVA	Sampler Type	Blow Counts	Advance	Rcvd (in.)		Casing	Annulus	Sample Rec	Depth Feet	Graph	Description
									72		
									73	SP	Fine grained Sand (SP) Saturated dark greenish gray 5Gy (4/1)
									74		
				First					75	SM	Silty Sand (SM) very moist, dark greenish gray 5GY (4/1) Trace Clay, Trace root pores, slightly Consolidated
									76		
									77	SP	Fine grained Sand (SP) Saturated greenish gray 5GY (5/1) To 5BGY (5/1), Trace Silt.
									78		
									79		
									80		Fine grained Sand (SP) Saturated, dark greenish gray 5G (4/1), Trace Silt.
									81		
									82		
									83		Fine grained Sand (SP) very moist, greenish gray 5GY (5/1) 5% Clay, 5% Silt.
									84		
									85	CL	Clay (CL) moist, dark greenish gray 5G (4/1), 15% Silt, 5% Sand, Trace pores.
									86	SP	Fine to med Sand (SP), Saturated, dark greenish gray 5GY (4/1), Trace silt.
									87		
									88	CL	Silty Clay (CL), very moist, dark gray 5Y (4/1), Trace Sand, Trace root pores.
									89		
									90		
									91		Silty Clay (CL) as above.
									92		

Boring # MW# Sheet 5 of 6

Project: CTC-C26C - NAS Alameda

Job # 2738.1203 Site: 14

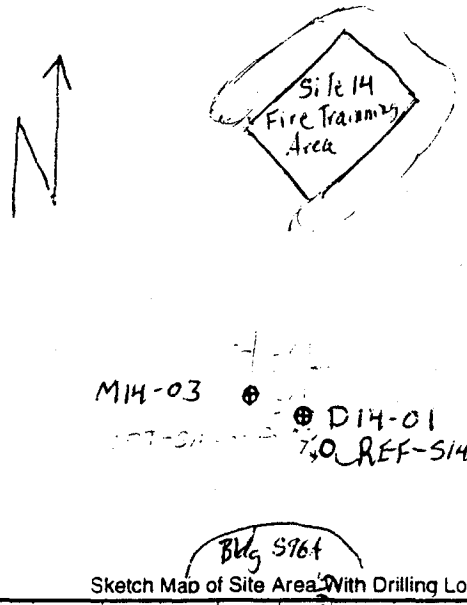
REF-S14-C1

PID/OVA	Sampler Type	Blow Counts	Advance	Rcvd (in.)		Casing	Annulus	Sample Rec	Depth Feet	Graph	Boring # MW#	Sheet 6 of 6
											Project: CTO-0260 NAS Alameda	
											Job # Site:	

Depth Feet	Graph	Description
92		
93	CL	Silty Clay (CL), moist, To very moist, dark greenish gray 5GY (4/1)
94		Trace Sand, Trace organic matter
95		
		TD on 5/2/94 @ 95'
6		
		Neat cement grouted to the surface.
7		
8		
9		
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
0		
1		
2		

D14-01

Oakland Inner Harbor



Sketch Map of Site Area With Drilling Locations

Boring #	MW#D14-01 Sheet 1 of 5
Project:	CTC-CREC
Job #	2738-1203 Site: 14
Logged By:	L. Pli' Proj. Eng: KXS Edited By:
Drilling Contractor:	Water Development Corp
Drill Rig Type/Method:	
Drillers Name:	Paul Frederikson
Borehole Diam./Drill Bit Type	Total Depth 75'
8"	Ref. Elev.
Hammer Wt:	Drop:
Start Time:	0845 Date: 5/17/94
Completion Time:	1445 Date: 5/18/94
Backfill Time:	1730 Date: 5/18/94

	1st Water			
Boring Depth (ft.)	4.6			
Casing Depth (ft.)				
Water Depth (ft.)				
Time				
Date				

PID/OVA	Sampler Type & Depth	Blow Counts / 6 in.	Advance (in.)	Recovered (in.)	Casing Type & Size	Annulus Filler	Sample Rec.	Analyses	Depth Feet		
											3" Asphalt,
		12							1	GM	Silty Gravel (GM) w/ 7% sand,
		14									moist, med. dense to dense, Dark
		16							2		grayish brown 10YR 4/2, gravels to 4" Ø.
		4							3	SP	Very fine to fine grained Sand (SP)
		4									moist, med. dense, Pale brown 10YR
		7							4		(6/3) Trace - 5% silt, Trace sea shells
										▽	Saturated
		5							5		
		6			PVC					SP/SM	Very fine to fine grained sand to silty
		7									Sand, Saturated med. dense, gray 5Y(5/1)
					4"				6		Trace sea shells
					Sch				7		
					40				8		
					3"						
									9	SP	
		3							10		Very fine to fine grained sand (SP)
		4									Saturated, gray N5/, 5% silt,
		7							11		Trace clay, Trace wood organic
											matter + traces of sea shells.
									12		

Boring # MW# D14-01 Sheet 2 of 5

Project: CTO-0260

Job # 2738.1203 Site: 14

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)	Casing	Annulus	Sample Rec.	Analyses	Depth Feet		
									12		
									13	SP	
									14		
		3							15		fine grained sand (SP) well sorted, Saturated, med. dense gray 5Y (5/1) To dark gray N/4, Trace silt, Seashells common.
		6									
		7							16		
					8 7/8" conductor casing				17		
									18		
									19		
5/17/94		4							20	SC	Clayey sand with silt (SC), Very moist to saturated, med. dense, dark greenish gray 5GY (4/1), Sea Shells common.
		6									
		10							21		* Casing set on 5/17/94 @ 21'
5/18/94									22		* 5/18/ 1000 Hr Start drilling with mud 5"b.
									23	SM	
									24		Silty Sand (SM), Very moist to Saturated, dark greenish gray 5GY (4/1), sea shells common, Trace Clay, Sand is very fine to fine grained.
									25		
									26		
									27		
									28		
									29		
									30		Silty Sand (SM) Very moist, dark greenish gray 5GY (4/1) Trace - 10% Clay, Traces of sea shells.
									31		
									32		

MF

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec.	Analyses	Depth Feet		

Boring # MW# D14-01 Sheet 3 of 5

Project: CTO-0260

Job # 2738.1203 Site: 14

Depth Feet		
32		
33		
34	SM	Silty Sand (SM) Saturated, dark greenish gray 5GY (4/1) Trace-Some Clay, Trace Sea Shells
35		
36	SC	Clayey Sand, moist (dense) greenish gray 5GY (5/1) with light olive brown 2.5Y (5/3) mottling, Sand is fine grained, Trace root pores. Trace organic matter. Color Change @ 37.5' To yellowish brown 10YR (5/4) clay content decreasing with depth
37		
38		
39		
40		
41		
42	SP	Fine grained Sand (SP) very moist To saturated, Pale brown 10YR (6/3)
43		
44		
45	SP	Very fine To fine grained Sand (SP) Saturated, yellowish brown 10YR (5/4), Trace Silt.
46		
47		
48		
49		Very fine To fine grained Sand (SP) Saturated, yellowish brown 10YR (5/4) To Pale brown 10YR (6/3) Trace Silt.
50		
51		
52		

MF

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Archived Sample Rec.	Analyses	Depth Feet		
										52		
										53	SP	Very fine To fine grained Sand (SP) Saturated, Pale brown 10YR (6/3) - Trace - 5% Silt.
										54		
										55		
										56		
										57	SP/SC	
										58		Very fine To fine grained Sand SP To clayey Sand (SC) Very moist, yellowish brown 10YR (5/4), 5-10% Clay, Trace Silt.
										59		
										60	SP	fine grained Sand (SP) Saturated, (loose) yellowish brown 10YR (5/4) Trace silt.
										61	SP/SC	fine grained sand (SP) To Clayey Sand (SC) Very moist, slightly consolidated, light yellowish brown 10YR (6/4) ≈ 10% Clay Trace silt.
										62		
										63		
										64		fine grained sand To Very fine sand (SP) Very moist, light brownish gray 10YR (6/2) 5% Silt - 5% Clay, slightly consolidated.
										65		
										66		fine grained sand (SP) Saturated, light brownish gray 10YR (6/2) Trace silt.
										67		Color Change
										68		Very fine to fine grained Sand (SP) Saturated, dark greenish gray 5GY (4/1)
										69		
										70		Very fine To fine grained Sand (SP) Saturated, dark greenish gray 5GY (4/1)
										1		
										2		

Boring # MW#D14-01 Sheet 4 of 5

Project: CTO-0260

Job # 2738.1203 Site: 14

Casing: 0.01 Slot 3" Sch 40 PVC

Annulus: 2/12 Lone Star filter Pack; 3" Sch 40 PVC Solid; bentonite Seal; Neat Cement Seal

PID/OVA	Sampler Type	Blow Counts	Advance (in.)	Rcvd (in.)		Casing	Annulus	Sample Rec	Analyses	Depth Feet		
	from Cu 77.#25					.01 Slot	2/12 Sand			72	SP	
										73		fine grained Sand (SP) Saturated, Dark greenish gray 5GY (4/1)
										74		
										75		
										6		TD boring @ 75 @ 1445
												TD Casing @ 1550
										7		
										8		
										9		
										0		
										1		
										2		
										3		
										4		
										5		
										6		
										7		
										8		
										9		
										0		
										1		
										2		

Boring # MW#D14-01 Sheet 5 of 5

Project: CTO-0260

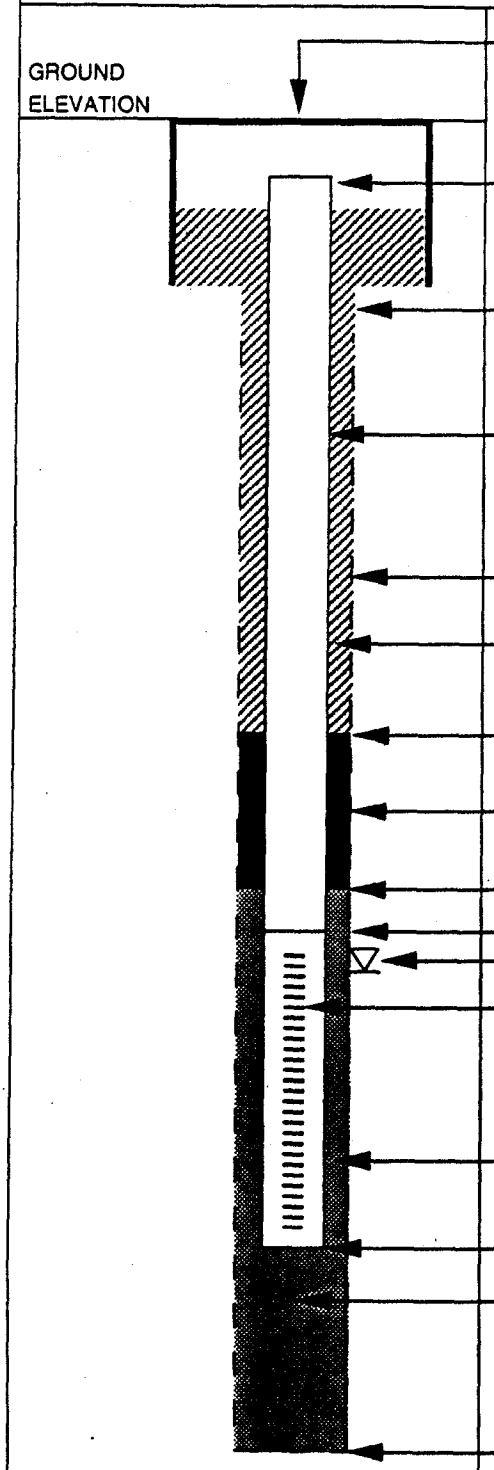
Job # 2738.1203 Site: 14

MF

BORING NO. D14-01

MONITORING WELL SHEET

PROJECT CTO-0260	LOCATION Site 14	DRILLER Paul Frederiksen
PROJECT NO. 2738.1203	BORING D14-01	DRILLING METHOD HSA/mud rotary
ELEVATION	DATE 5/18/94	DEVELOPMENT METHOD surg/bail/pump
FIELD GEOLOGIST W.P.W		



ELEVATION OF GROUND SURFACE: _____

ELEVATION OF TOP OF WELL CASING: _____

I.D. OF SURFACE CASING: 8 5/8

TYPE OF SURFACE CASING: 8 5/8 Steel Conductor Casing from Surface To 21'

RISER PIPE I.D.: 3"

TYPE OF RISER PIPE: 3" Sch 40 PVC

BOREHOLE DIAMETER: 8 5/8 - 9"

TYPE OF BACKFILL: Neat cement grout

ELEVATION / DEPTH OF SEAL: 60'

TYPE OF SEAL: 3' bentonite slury seal

DEPTH TOP OF SAND PACK: 63'

ELEVATION / DEPTH TOP OF SCREEN: 65'

FIRST ENCOUNTERED SATURATED ZONE

TYPE OF SCREEN: 3" Sch 40 PVC

SLOT SIZE x LENGTH 0.010 factory slot

I.D. OF SCREEN 3"

TYPE OF SAND PACK: RMC Lone Star #2/12

ELEVATION / DEPTH BOTTOM OF SCREEN: 75'

ELEVATION / DEPTH BOTTOM OF SAND PACK: 75'

TYPE OF BACKFILL BELOW OBSERVATION WELL: N/A

ELEVATION / DEPTH OF HOLE: 75'

Continue

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ALAMEDA POINT
SSIC NO. 5090.3

ATTACHMENT 3 – SOIL AND GROUNDWATER DETECTION TABLES

REMEDIAL INVESTIGATION/ FEASIBILITY STUDY DATA TRANSMITTAL MEMORANDUM SITES 4, 5, 8, 10A, 12 AND 14

THE ABOVE IDENTIFIED ATTACHMENT HAS MISSING PAGES. IT COULD NOT BE DETERMINED WHETHER THESE PAGES ARE MISSING OR THE DOCUMENT WAS ISSUED WITHOUT THESE PAGES.

QUESTIONS MAY BE DIRECTED TO:

DIANE C. SILVA
RECORDS MANAGEMENT SPECIALIST
NAVAL FACILITIES ENGINEERING COMMAND SOUTHWEST
1220 PACIFIC HIGHWAY
SAN DIEGO, CA 92132

TELEPHONE: (619) 532-3676