APPENDIX B

Supporting Data for Fate and Transport Modeling Parameters

TABLES

TABLE B-1
Summary of Physical Testing Results - Soil Classification Properties
Hitachi Global Storage Technologies, Inc.
San Jose, California

					Atterberg Limits		Grain Size Distribution (wt. percent)							
					Liquid	Plasticity	%	Sand Size			%	Fines		%
Sample No.	**Boring Number**	**Depth (feet bgs)**	**Stratigraphic Unit**	**Soil Type (1)**	Limit	Index	**Gravel**	Coarse	Medium	Fine	**Sand**	Silt	Clay	**Fines**
EW-1-6.5-7	EW-1	7.0	Vadose	ML/SM	22	7	**0**	0	4	47	**50**	37	13	**50**
EW-1-10-10.5	EW-1	10.5	Vadose	CL	29	18	**0**	0	0	9	**9**	67	23	**91**
EW-1-21.5-22	EW-1	22.0	Vadose	CL/SC	29	16	**0**	0	3	37	**40**	41	20	**60**
EW-1-32-32.5	EW-1	32.5	A Aquifer	SM	19	NP	**0**	0	18	58	**76**	17	7	**24**
EW-1-37-37.5	EW-1	37.5	A/B Aquitard	CL	44	23	**0**	0	0	4	**4**	70	26	**96**
EW-6-17-17.5	EW-6	17.5	Vadose	ML	35	NP	**0**	0	2	19	**21**	53	27	**79**
EW-8-33.5-34	EW-8	34.0	A Aquifer	ML/SM	10	NP	**0**	0	7	53	**60**	30	10	**40**
EW-8-37-37.5	EW-8	37.5	A/B Aquitard	CL	44	25	**0**	0	0	5	**5**	63	32	**95**
EW-10-8-8.5	EW-10	8.5	Vadose	ML/SM	24	NP	**0**	0	8	50	**58**	29	13	**42**
EW-10-16-16.5	EW-10	16.5	Vadose	CL	31	16	**0**	0	0	2	**2**	73	24	**98**
EW-10-22.5-23	EW-10	23.0	Vadose	CL	29	11	**0**	0	0	29	**29**	51	19	**71**
EW-10-35-35.5	EW-10	35.5	A Aquifer	SM	20	NP	**0**	0	14	66	**80**	14	5	**20**
EW-10-36-36.5	EW-10	36.5	A/B Aquitard	CL	28	11	**0**	0	4	19	**24**	54	22	**76**
EW-15-11-11.5	EW-15	11.5	Vadose	ML/SM	13	NP	**0**	0	12	51	**62**	27	11	**38**
EW-15-19-19.5	EW-15	19.5	Vadose	CL	31	19	**0**	0	0	16	**16**	55	29	**84**
EW-15-23-23.5	EW-15	23.5	Vadose	CL	31	18	**0**	0	2	21	**22**	54	24	**78**
EW-15-34.5-35	EW-15	35.0	A Aquifer	ML	29	NP	**0**	0	2	11	**12**	67	21	**88**
EW-15-37-37.5	EW-15	37.5	A/B Aquitard	CL	40	21	**0**	0	0	2	**2**	61	37	**98**

Notes:
Methodologies for particle size and Atterberg Limits were ASTM D4464M/D422 and ASTM D4318, respectively.
(1) Unified Soil Classification System (UCSC) soil classification
NP = Non-Plastic
ML = Sandy Silt
SM = Silty Sand
CL = Clay
SC = Clayey Sand

TABLE B-2
Summary of Physical Testing Results - Physical Properties
Hitachi Global Storage Technologies, Inc.
San Jose, California

Sample No.	Boring Number	Depth (feet bgs)	Soil Type	Moisture Content (% wt.)	Dry Bulk Density (g/cc)	POROSITY				Sample Orientation	Hydraulic Conductivity (1) (cm/s)	Permeability to Air (millidarcy)
						Total (% Vb)	Effective (% Vb)	Air-Filled (% Vb)	Water-Filled (% Vb)			
EW-1-6.5-7	EW-1	7.0	ML/SM	11	1.58	41	--	23	18	V	--	--
EW-1-10-10.5	EW-1	10.5	CL	24	1.57	41	--	4	38	V	--	--
EW-1-21.5-22	EW-1	22.0	CL/SC	18	1.75	35	--	3	32	V	--	--
EW-1-32-32.5	EW-1	32.5	SM	23	1.76	43	31	--	--	H	4.1 x 10-5	--
EW-1-37-37.5	EW-1	37.5	CL	27	1.67	45	13	--	--	V	9.1 x 10-7	--
EW-6-17-17.5	EW-6	17.5	ML	22	1.65	39	--	2	37	V	--	--
EW-8-33.5-34	EW-8	34.0	ML/SM	24	1.47	41	34	--	--	V	--	--
EW-8-37-37.5	EW-8	37.5	CL	34	1.35	46	15	--	--	V	--	--
EW-10-8-8.5	EW-10	8.5	ML/SM	9	1.57	42	--	28	14	V	--	1,138
EW-10-16-16.5	EW-10	16.5	CL	26	1.53	43	--	0.03	0.39	V	--	0.215
EW-10-22.5-23	EW-10	23.0	CL	21	1.59	41	--	0.08	0.33	V	--	0.086
EW-10-35-35.5	EW-10	35.5	SM	25	1.48	40	33	--	--	H	1.0 x 10-3	--
EW-10-36-36.5	EW-10	36.5	CL	36	1.28	41	14	--	--	V	1.1 x 10-6	--
EW-15-11-11.5	EW-15	11.5	ML/SM	8	1.63	39	--	0.26	0.13	V	--	--
EW-15-19-19.5	EW-15	19.5	CL	20	1.61	40	--	0.08	0.32	V	--	--
EW-15-23-23.5	EW-15	23.5	CL	23	1.66	38	--	0.01	0.38	V	--	--
EW-15-34.5-35	EW-15	35.0	ML	34	1.51	45	19	--	--	H	5.5 x 10-6	--
EW-15-37-37.5	EW-15	37.5	CL	40	1.29	43	10	--	--	V	8.8 x 10-7	--

Notes:
Methodology for Physical Properties Data: ASTM D2216, API RP40, ASTM D425M, ASTM D5084.
(1) Permeability to water and conductivity measured at saturated conditions.
(2) Sample Orientation: H = horizontal; V = vertical.
(3) Effective Porosity = no pore fluids in place; all interconnected pore channels; Air Filled = pore channels not occupied by pore fluids; ASTM D425M
(4) Water = 0.9981 grams/cubic centimeter (g/cc)
Vb = Bulk Volume, cc
ML = Sandy Silt
SM = Silty Sand
CL = Clay
SC = Clayey Sand

TABLE B-3
Summary of Soil Analytical Results - Total Organic Carbon
Hitachi Global Storage Technologies, Inc.
San Jose, California

Sample No.	Boring Number	Depth (feet bgs)	Stratigraphic Unit	Soil Type	Total Organic Carbon (mg/kg)
EW-1-32-32.5	EW-1	32.5	A Aquifer	SM	820
EW-1-37-37.5	EW-1	37.5	A/B Aquitard	CL	4,450
EW-8-33.5-34	EW-8	34.0	A Aquifer	ML\SM	2,150
EW-8-37-37.5	EW-8	37.5	A/B Aquitard	CL	7,100
EW-10-35-35.5	EW-10	35.5	A Aquifer	SM	1,650
EW-10-36-36.5	EW-10	36.5	A/B Aquitard	CL	3,450
EW-15-34.5-35	EW-15	35.0	A Aquifer	ML	3,250
EW-15-37-37.5	EW-15	37.5	A/B Aquitard	CL	4,950

Notes:

1) Analyzed using the Walkley Black method.
2) mg/kg = milligrams per kilogram, or parts per million

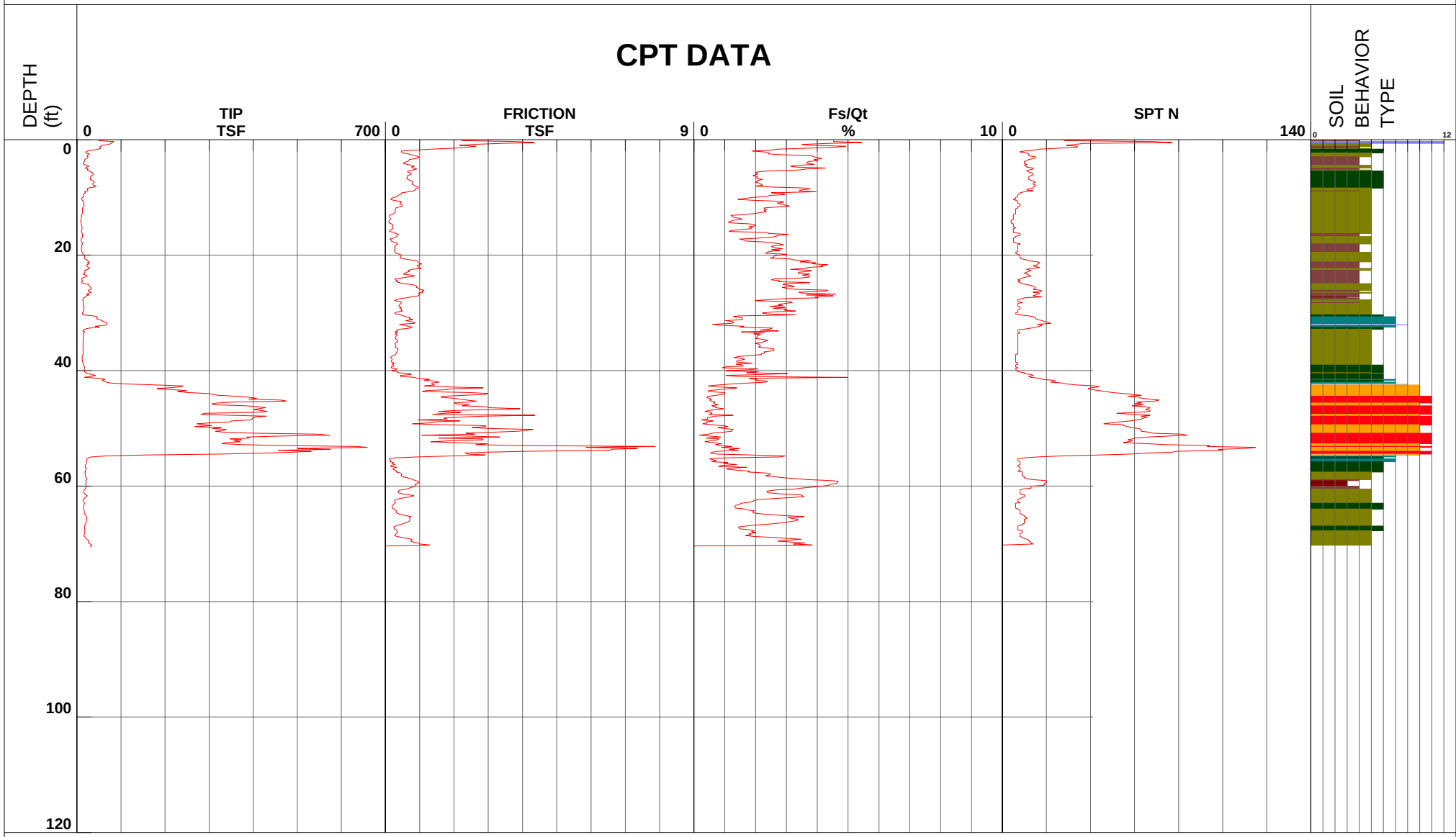
ML = Sandy Silt
SM = Silty Sand
CL = Clay
SC = Clayey Sand

FIGURES

CPT RESULTS

Environ

Location	Hitachi/GST	Operator	ML-CW	Filename	SDF(845).cpt
Job Number	0311903E	Cone Number	DSG0705	GPS	
Hole Number	CPT-01	Date and Time	4/18/2007 7:08:00 AM	Maximum Depth	70.54 ft
Water Table Depth	28.00 ft				



1 - sensitive fine grained	4 - silty clay to clay	7 - silty sand to sandy silt	10 - gravelly sand to sand
2 - organic material	5 - clayey silt to silty clay	8 - sand to silty sand	11 - very stiff fine grained (*)
3 - clay	6 - sandy silt to clayey silt	9 - sand	12 - sand to clayey sand (*)

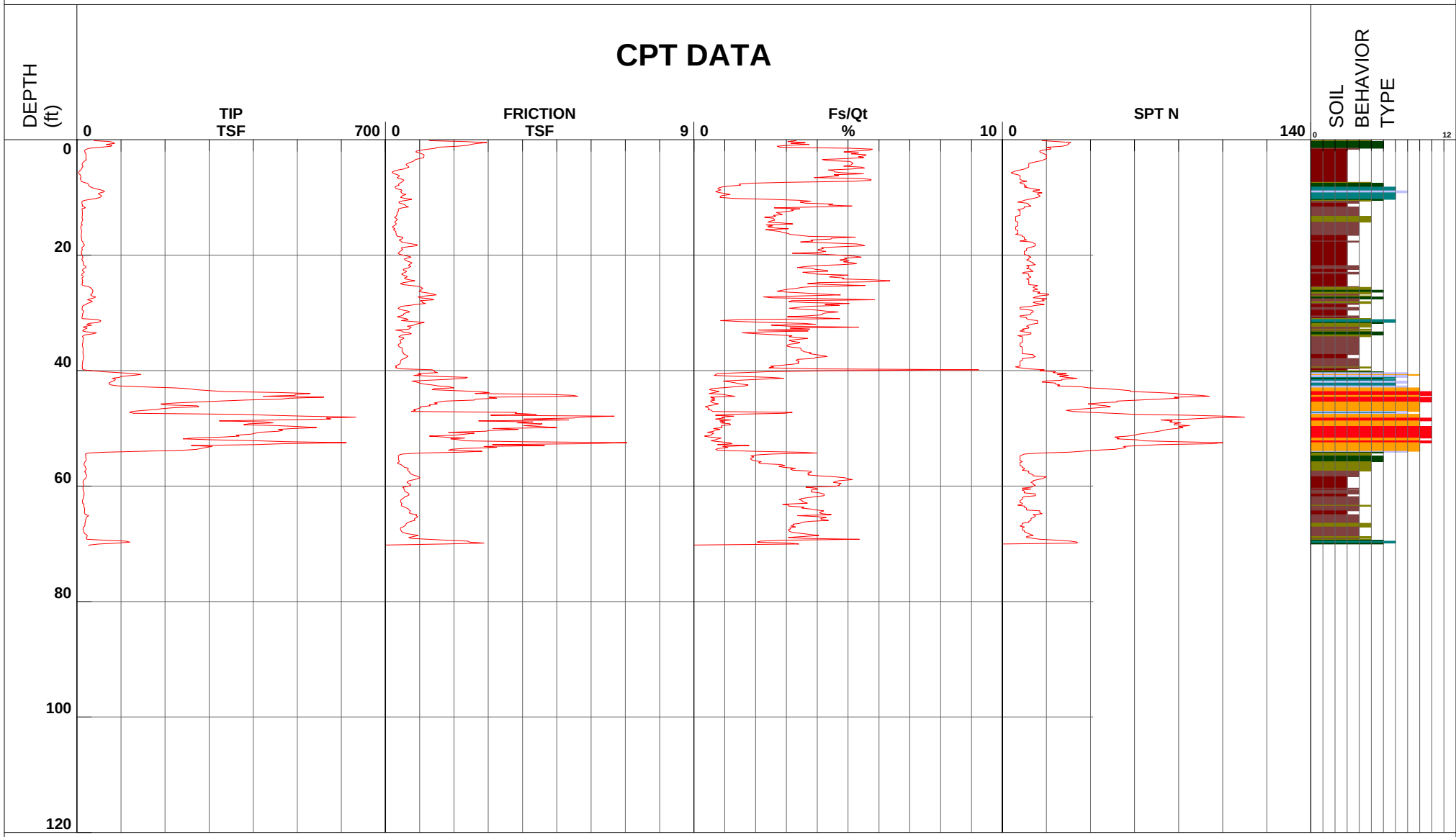
Depth Increment

*Soil behavior type and SPT based on data from UBC-1983

Environ

Location	Hitachi/GST	Operator	ML-CW	Filename	SDF(844).cpt
Job Number	0311903E	Cone Number	DSG0705	GPS	
Hole Number	CPT-02	Date and Time	4/17/2007 1:05:40 PM	Maximum Depth	70.37 ft
Water Table Depth	28.00 ft				

CPT DATA



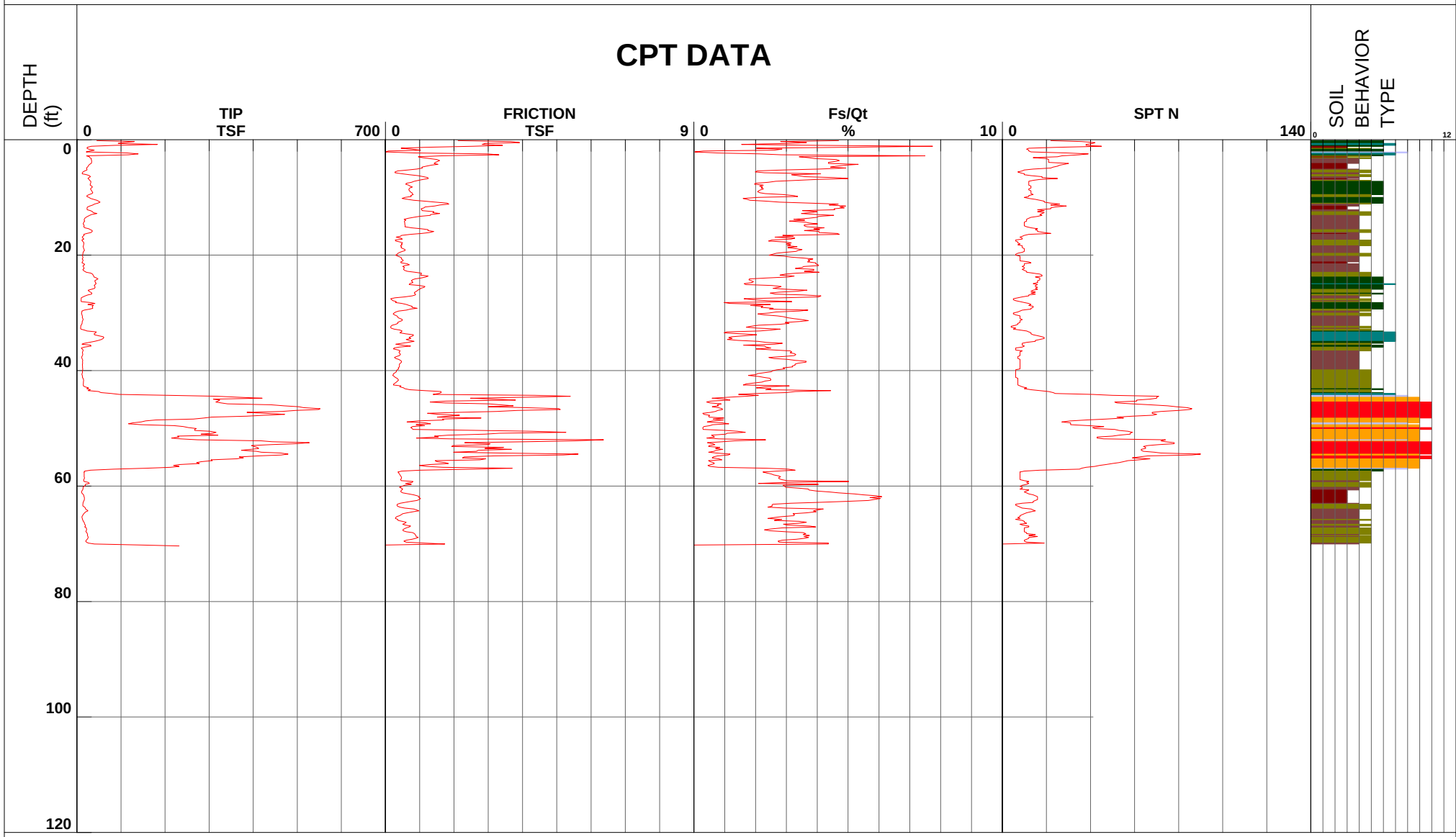
- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (*)
- 12 - sand to clayey sand (*)

Depth Increment

*Soil behavior type and SPT based on data from UBC-1983

Environ

Location	Hitachi/GST	Operator	ML-CW	Filename	SDF(850).cpt
Job Number	0311903E	Cone Number	DSG0705	GPS	
Hole Number	CPT-03	Date and Time	4/19/2007 7:52:34 AM	Maximum Depth	70.37 ft
Water Table Depth	31.00 ft				



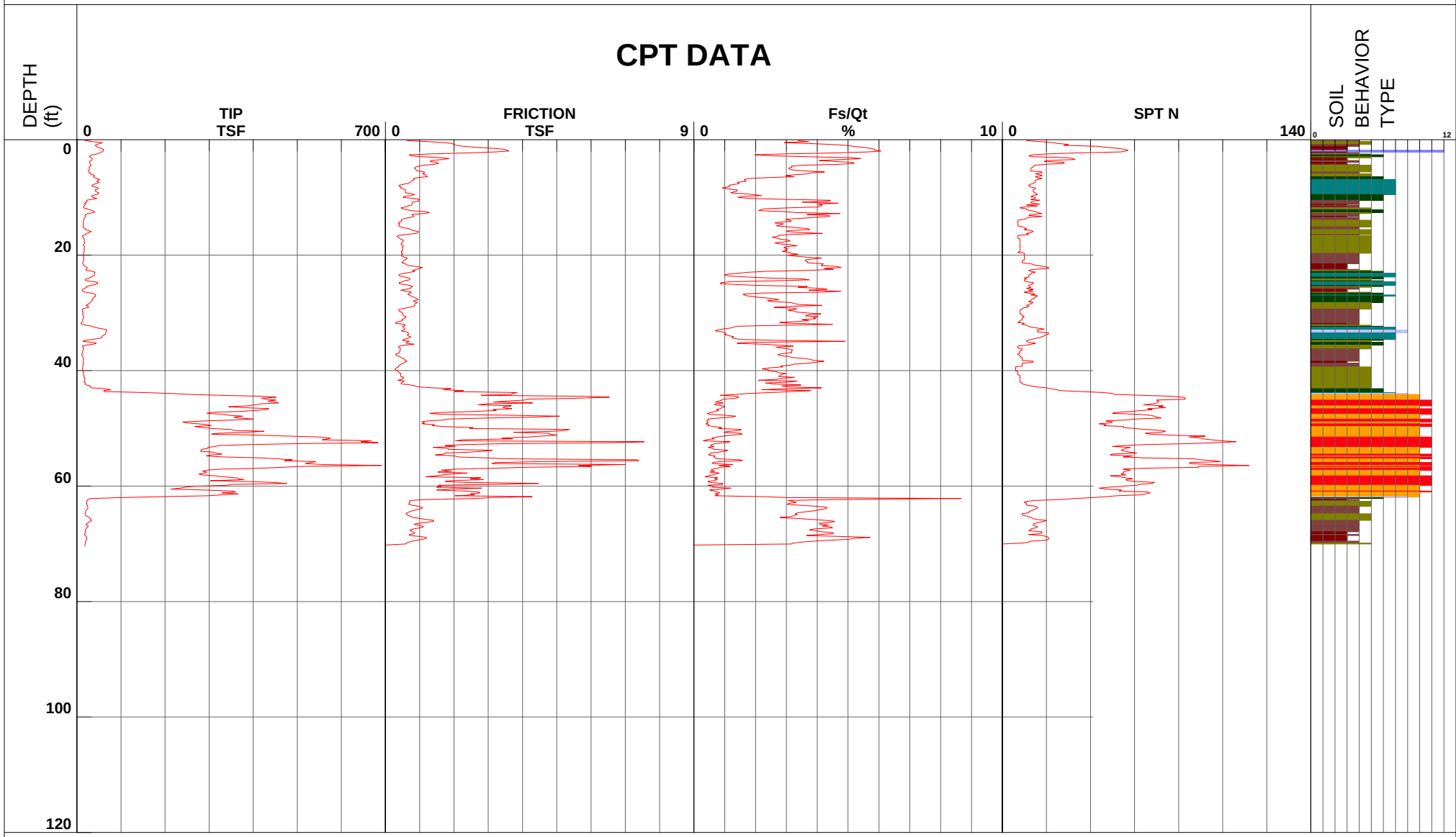
1 - sensitive fine grained	4 - silty clay to clay	7 - silty sand to sandy silt	10 - gravelly sand to sand
2 - organic material	5 - clayey silt to silty clay	8 - sand to silty sand	11 - very stiff fine grained (*)
3 - clay	6 - sandy silt to clayey silt	9 - sand	12 - sand to clayey sand (*)

Depth Increment

*Soil behavior type and SPT based on data from UBC-1983

Environ

Location	Hitachi/GST	Operator	ML-CW	Filename	SDF(849).cpt
Job Number	0311903E	Cone Number	DSG0705	GPS	
Hole Number	CPT-04	Date and Time	4/18/2007 3:37:53 PM	Maximum Depth	70.37 ft
Water Table Depth	31.00 ft				



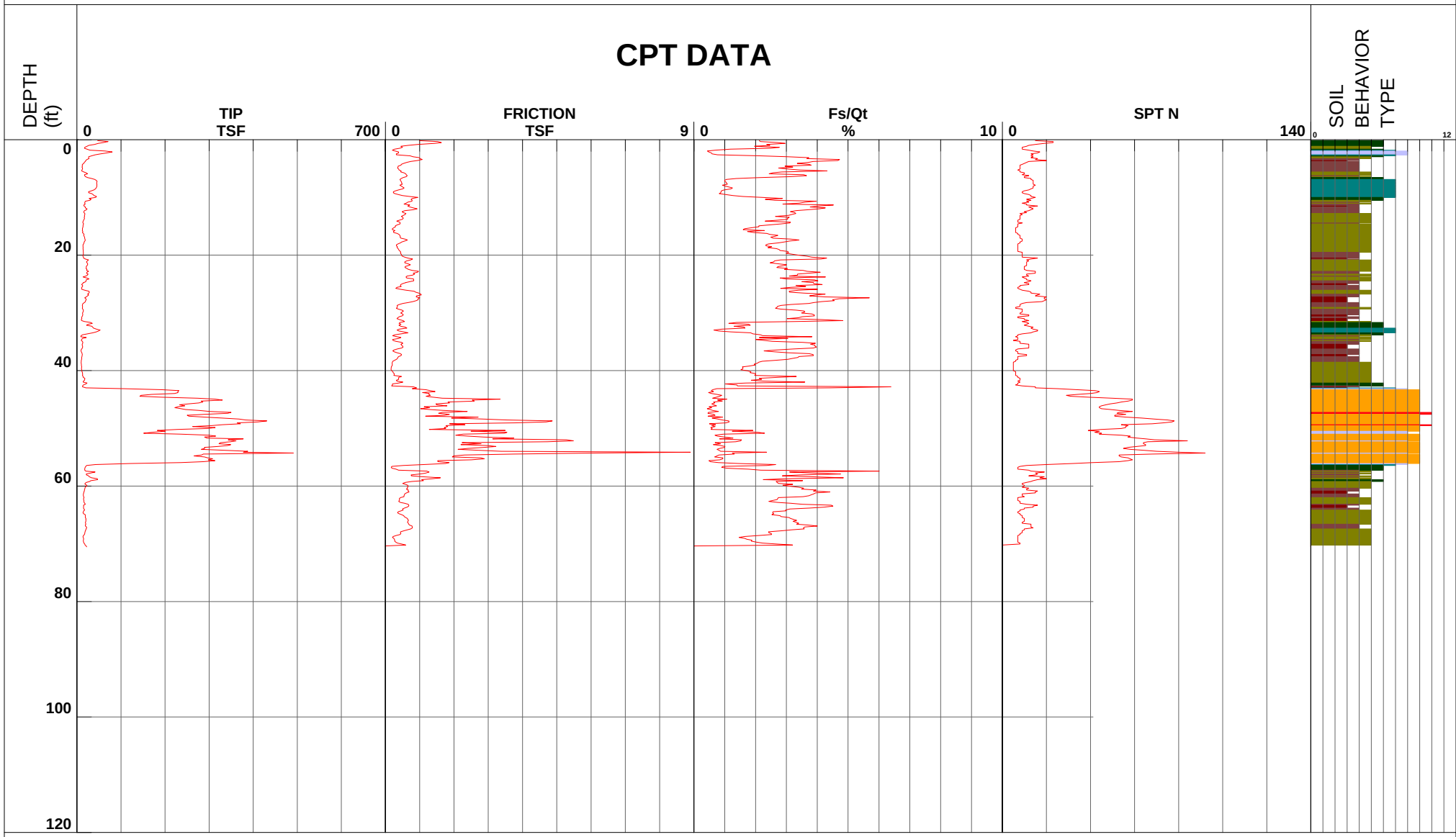
1 - sensitive fine grained	4 - silty clay to clay	7 - silty sand to sandy silt	10 - gravelly sand to sand
2 - organic material	5 - clayey silt to silty clay	8 - sand to silty sand	11 - very stiff fine grained (*)
3 - clay	6 - sandy silt to clayey silt	9 - sand	12 - sand to clayey sand (*)

Depth Increment

*Soil behavior type and SPT based on data from UBC-1983

Environ

Location	Hitachi/GST	Operator	ML-CW	Filename	SDF(848).cpt
Job Number	0311903E	Cone Number	DSG0705	GPS	
Hole Number	CPT-05	Date and Time	4/18/2007 1:49:43 PM	Maximum Depth	70.54 ft
Water Table Depth	28.00 ft				



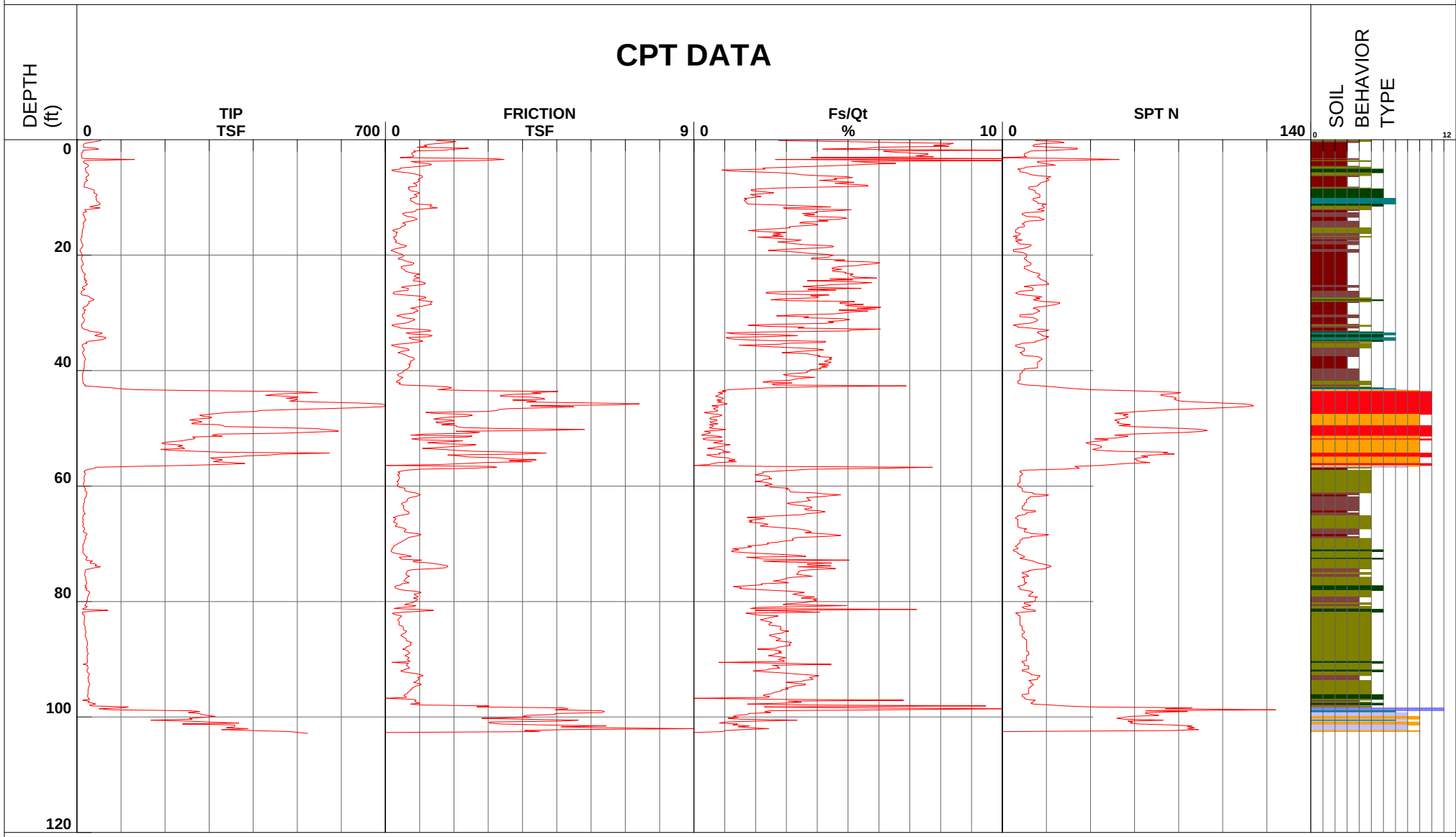
1 - sensitive fine grained	4 - silty clay to clay	7 - silty sand to sandy silt	10 - gravelly sand to sand
2 - organic material	5 - clayey silt to silty clay	8 - sand to silty sand	11 - very stiff fine grained (*)
3 - clay	6 - sandy silt to clayey silt	9 - sand	12 - sand to clayey sand (*)

Depth Increment

*Soil behavior type and SPT based on data from UBC-1983

Environ

Location	Hitachi/GST	Operator	ML-CW	Filename	SDF(843).cpt
Job Number	0311903E	Cone Number	DSG0705	GPS	
Hole Number	CPT-06	Date and Time	4/17/2007 8:58:10 AM	Maximum Depth	102.85 ft
Water Table Depth	28.00 ft				



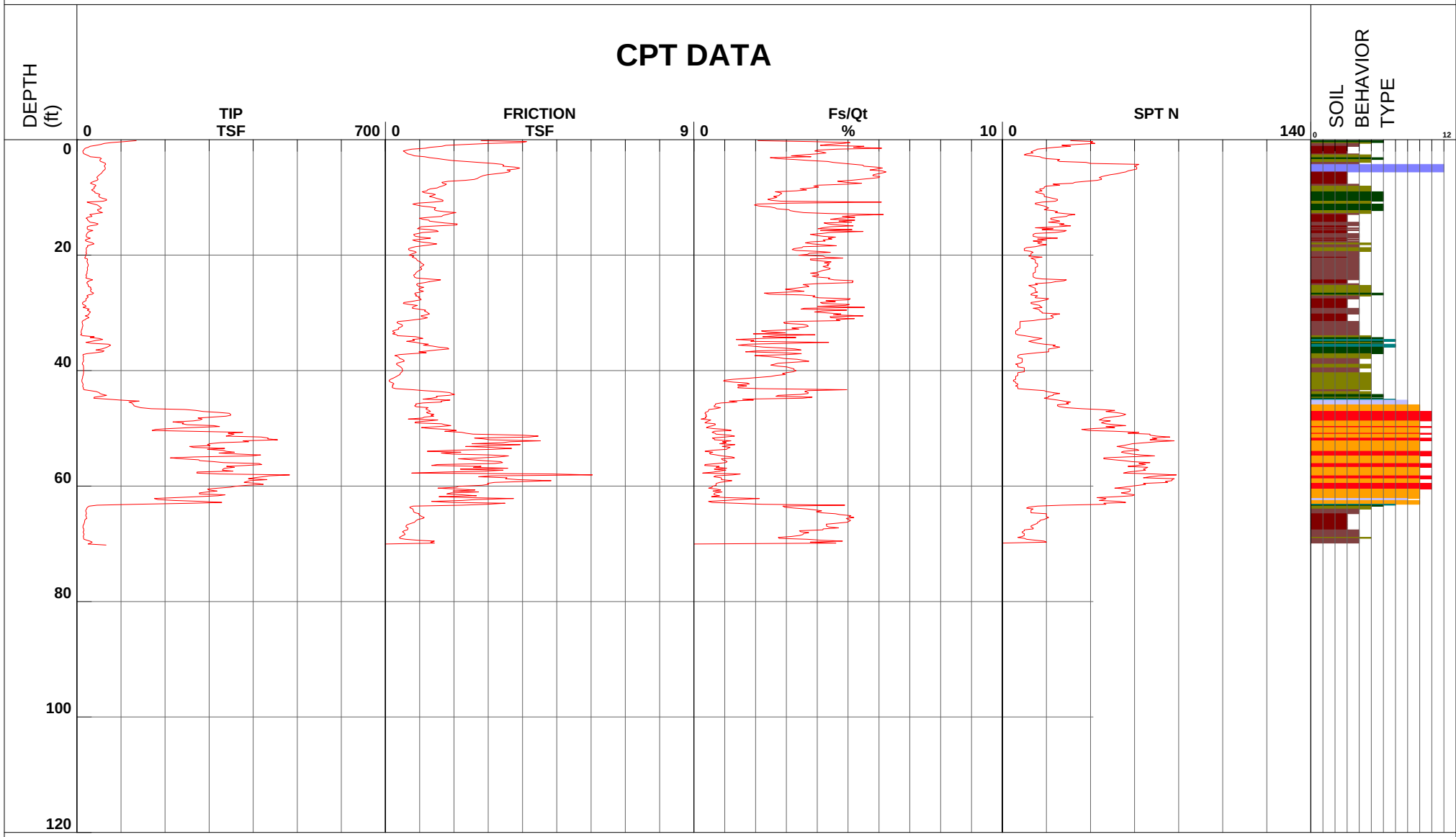
- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (*)
- 12 - sand to clayey sand (*)

Depth Increment

*Soil behavior type and SPT based on data from UBC-1983

Environ

Location	Hitachi/GST	Operator	ML-CW	Filename	SDF(847).cpt
Job Number	0311903E	Cone Number	DSG0705	GPS	
Hole Number	CPT-07	Date and Time	4/18/2007 10:57:39 AM	Maximum Depth	70.21 ft
Water Table Depth	28.00 ft				



- 1 - sensitive fine grained
- 2 - organic material
- 3 - clay
- 4 - silty clay to clay
- 5 - clayey silt to silty clay
- 6 - sandy silt to clayey silt
- 7 - silty sand to sandy silt
- 8 - sand to silty sand
- 9 - sand
- 10 - gravelly sand to sand
- 11 - very stiff fine grained (*)
- 12 - sand to clayey sand (*)

Depth Increment

*Soil behavior type and SPT based on data from UBC-1983

BORING LOGS

ENVIRON 6001 Shellmound Street, Suite 700, Emeryville, CA 94608		Boring Number: **EW-1**	
Contractor: **Gregg Drilling, Inc.**	Driller: **Sean Rakow**	Project Number: **03-11903E**	
Drilling Method: **Hollow Stem Auger**		Location: **San Jose, California**	
Rig Type: **CME 95 Hollow Stem Auger Drill Rig**		Project Name: **Hitachi GST**	
Sampling Method: **Continuous Core by California Split Spoon**		Date(s): **4/26/2007**	
Well Construction Details		Logged By: **N. Markman**	Checked By: **R. Russell**
Blank Casing (feet): 0 to 17	4-inch Sch. 40 PVC	GS Elevation: **189.325 ft. MSL**	
Screen (feet): 17 to 37	0.020 Slot Sch. 40 PVC		
Annular Fill (feet): 0 to 2	Concrete	Northing: **1914308.71**	Easting: **6182409.26**
2 to 13	Bentonite Grout		
13 to 15	Bentonite Pellets	Total Depth: **37.5 feet**	Borehole Dia.: **10 inches**
15 to 37.5	Monterey Sand # 3		

Depth (ft)	Core Interval	Soil Sample Interval	Soil Sample I.D. Number	Graphic Log	Material Description	Well Construction
					GRAVEL (FILL)	
1					**CLAYEY SILT with sand (ML), DARK YELLOWISH BROWN (10YR 4/6)**; moist, low plasticity with medium toughness by hand roll test, large concrete debris, trace organics (0% gravel, 15% sand, 85% fines).	
2						
3						
4						
5					**SANDY SILT (ML), DARK YELLOWISH BROWN (10YR 4/6)**; moist, very fine to fine sand (0% gravel, 50% sand, 50% fines).	
6						
7			EW-1-6.5-7.0			
8					**SILT with sand (ML), DARK YELLOWISH BROWN (10YR 4/6)**; moist, trace gravel (0.25" maximum diameter) (0% gravel, 20% sand, 80% fines).	
9						
10			EW-1-10.0-10.5		**SILTY CLAY (CL), OLIVE BROWN (2.5Y 4/3)**; moist, mottled with iron oxide staining (0% gravel, 10% sand, 90% fines).	
11						
12						
13						
14						
15						
16						
17						
18						
19						

Sample Graphics

- Hand Auger
- No Recovery
- Soil Sample for Physical Testing
- Core Recovery

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ENVIRON

6001 Shellmound Street, Suite 700, Emeryville, CA 94608

Boring No.: **EW-1** | Project No.: **03-11903E**

Project Name: **Hitachi GST, San Jose, California**

Date(s): **4/26/2007**

Depth (ft)	Core Interval	Soil Sample Interval	Soil Sample I.D. Number	Graphic Log	Material Description	Well Construction
21						
22			EW-1-21.5-22.0		**SANDY CLAY (CL), DARK YELLOWISH BROWN (10YR 4/3)**; moist, very fine to fine sand (0% gravel, 40% sand, 60% fines).	
23					**SILTY CLAY (CL), OLIVE BROWN (2.5Y 4/3)**; moist, mottled with iron oxide staining (0% gravel, 10% sand, 90% fines).	
24						
25					**SANDY CLAYEY SILT (ML), DARK OLIVE BROWN (2.5Y 3/3)**; moist (0% gravel, 35% sand, 65% fines).	
26						
27					At 26.5 feet bgs: saturated.	
28					**SILTY CLAY (CL), DARK GRAYISH BROWN (2.5YR 4/2)**; soft, moist, iron oxide staining (0% gravel, 5% sand, 95% fines).	
29						
30						
31						
32			EW-1-32.0-32.5		**SILTY FINE SAND (SM), VERY DARK GRAYISH BROWN (10YR 3/2)**; saturated (0% gravel, 75% sand, 25% fines).	
33						
34					**SILTY CLAY (CL), DARK GRAY (10YR 4/1)**; moist, iron oxide staining, meduim plasticity and toughness by hand roll test (0% gravel, 5% sand, 95% fines).	
35						
36						
37			EW-1-37.0-37.5			
38					End of boring at 37.5 feet bgs.	
39					Extraction well installed 4/26/2007.	
40						
41						
42						
43						
44						
45						
46						

Sample Graphics

- Hand Auger
- No Recovery
- Soil Sample for Physical Testing
- Core Recovery

DRAFT

ENVIRON 6001 Shellmound Street, Suite 700, Emeryville, CA 94608		Boring Number: **EW-2**	
Contractor: **Gregg Drilling, Inc.**	Driller: **Sean Rakow**	Project Number: **03-11903E**	
Drilling Method: **Hollow Stem Auger**		Location: **San Jose, California**	
Rig Type: **CME 95 Hollow Stem Auger Drill Rig**		Project Name: **Hitachi GST**	
Sampling Method: **Continuous Core by California Split Spoon**		Date(s): **4/24/2007**	
Well Construction Details		Logged By: **N. Markman**	Checked By: **R. Russell**
Blank Casing (feet): 0 to 17 — 4-inch Sch. 40 PVC		GS Elevation: **187.915 ft. MSL**	
Screen (feet): 17 to 37 — 0.020 Slot Sch. 40 PVC			
Annular Fill (feet): 0 to 2 — Concrete		Northing: **1914333.35**	Easting: **6182435.10**
2 to 13 — Bentonite Grout			
13 to 15 — Bentonite Pellets		Total Depth: **39.0 feet**	Borehole Dia.: **10 inches**
15 to 37.5 — Monterey Sand # 3			

Depth (ft)	Core Interval	Soil Sample Interval	Soil Sample I.D. Number	Graphic Log	Material Description	Well Construction
					GRAVEL (FILL)	
1					**CLAYEY SILT with sand (ML), DARK YELLOWISH BROWN (10YR 4/4)**; moist, fine sand, trace gravel and organics (0% gravel, 20% sand, 80% fines).	
2						
3						
4						
5					At 5.0 feet: increasing gravel.	
6					**SANDY SILT (ML), DARK YELLOWISH BROWN (10YR 4/4)**; moist, very fine to fine sand (0% gravel, 50% sand, 50% fines).	
7						
8						
9					**CLAYEY SILT (ML), DARK YELLOWISH BROWN (10YR 4/4)**; moist, iron oxide staining, low plasticity and toughness by hand roll test, very fine sand (0% gravel, 5% sand, 95% fines).	
10						
11						
12					**SILTY CLAY (CL), GRAYISH BROWN (2.5Y 5/2)**; moist, mottled with iron oxide staining (0% gravel, 10% sand, 90% fines).	
13						
14						
15						
16					**CLAYEY SILT with sand (ML), OLIVE BROWN (2.5Y 4/3)**; moist, low plasticity with low toughness by hand roll test, very fine to fine sand (0% gravel, 25% sand, 75% fines).	
17						
18						
19						

Sample Graphics: Hand Auger; No Recovery; Core Recovery

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ENVIRON

6001 Shellmound Street, Suite 700, Emeryville, CA 94608

Boring No.: **EW-2** | Project No.: **03-11903E**

Project Name: **Hitachi GST, San Jose, California**

Date(s): **4/24/2007**

Depth (ft)	Core Interval	Soil Sample Interval	Soil Sample I.D. Number	Graphic Log	Material Description	Well Construction
21, 22, 23, 24						
25, 26					**CLAYEY SILT (ML), DARK OLIVE BROWN (2.5Y 3/3)**; soft, saturated (0% gravel, 10% sand, 90% fines).	
27, 28, 29, 30					**SILTY CLAY (CL), DARK GRAYISH BROWN (10YR 4/2)**; moist, variegated staining, medium plasticity and toughness by hand roll test (0% gravel, 0% sand, 100% fines).	
31, 32					**SAND with silt (SP-SM), VERY DARK BROWN (10YR 2/2)**; saturated (0% gravel, 85% sand, 15% fines).	
33, 34, 35, 36, 37					**SILTY CLAY (CL), DARK GRAYISH BROWN (10YR 4/3)**; moist (0% gravel, 5% sand, 95% fines).	
38, 39					**SANDY SILT (ML), DARK BROWN (10YR 3/3)**; moist, very fine to fine sand (0% gravel, 35% sand, 65% fines).	
40, 41, 42, 43, 44, 45, 46					End of boring at 39.0 feet bgs. Extraction well installed 4/24/2007.	

Sample Graphics: Hand Auger; No Recovery; Core Recovery

DRAFT

ENVIRON 6001 Shellmound Street, Suite 700, Emeryville, CA 94608		Boring Number: **EW-3**	
Contractor: **Gregg Drilling, Inc.**	Driller: **Sean Rakow**	Project Number: **03-11903E**	
Drilling Method: **Hollow Stem Auger**		Location: **San Jose, California**	
Rig Type: **CME 95 Hollow Stem Auger Drill Rig**		Project Name: **Hitachi GST**	
Sampling Method: **Continuous Core by California Split Spoon**		Date(s): **4/27/2007**	
Well Construction Details		Logged By: **N. Markman**	Checked By: **R. Russell**
Blank Casing (feet): 0 to 16	4-inch Sch. 40 PVC	GS Elevation: **188.375 ft. MSL**	
Screen (feet): 16 to 36	0.020 Slot Sch. 40 PVC		
Annular Fill (feet): 0 to 2	Concrete	Northing: **1914357.35**	Easting: **6182460.09**
2 to 12	Bentonite Grout		
12 to 14	Bentonite Pellets	Total Depth: **36.5 feet**	Borehole Dia.: **10 inches**
14 to 36.5	Monterey Sand # 3		

Depth (ft)	Core Interval	Soil Sample Interval	Soil Sample I.D. Number	Graphic Log	Material Description	Well Construction
					GRAVEL (FILL)	
1					**SILTY CLAY with sand (CL), OLIVE BROWN (2.5Y 4/4)**; moist, very fine sand, trace gravel (0% gravel, 15% sand, 85% fines).	
2						
3						
4						
5						
6						
7					**SILTY SAND (SM), DARK OLIVE BROWN (2.5Y 3/3)**; moist, very fine to fine sand (5% gravel, 75% sand, 20% fines).	
8						
9						
10						
11					**SILTY CLAY (CL), DARK YELLOWISH BROWN (10YR 4/6)**; moist, variegated staining, trace gravel (0.25" maximum diameter) (0% gravel, 10% sand, 90% fines).	
12						
13						
14						
15						
16					**SILTY CLAY (CL), OLIVE BROWN (2.5Y 4/3)**; moist, mottled with iron oxide staining (0% gravel, 5% sand, 95% fines).	
17						
18						
19						

Sample Graphics Hand Auger; No Recovery; Core Recovery

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ENVIRON

6001 Shellmound Street, Suite 700, Emeryville, CA 94608

Boring No.: **EW-3** | Project No.: **03-11903E**

Project Name: **Hitachi GST, San Jose, California**

Date(s): **4/27/2007**

Depth (ft)	Core Interval	Soil Sample Interval	Soil Sample I.D. Number	Graphic Log	Material Description	Well Construction
21						
22						
23					**SANDY SILT to SILTY SAND (ML/SM), DARK YELLOWISH BROWN (10YR 4/3)**; moist, very fine to fine sand (0% gravel, 40% sand, 60% fines).	
24						
25					**SILTY CLAY (CL), DARK GRAYISH BROWN (10YR 4/2)**; moist, mottled with iron oxide staining (0% gravel, 0% sand, 100% fines).	
26						
27						
28						
29						
30						
31					**SILTY SAND (SM), OLIVE BROWN (2.5Y 4/4)**; saturated, very fine to medium sand (0% gravel, 65% sand, 35% fines).	
32						
33					**SILTY CLAY (CL), DARK GRAYISH BROWN (2.5Y 4/2)**; moist, iron oxide staining, meduim plasticity and toughness by hand roll test (0% gravel, 0% sand, 100% fines).	
34						
35						
36						
37					End of boring at 36.5 feet bgs.	
38					Extraction well installed 4/27/2007.	
39						
40						
41						
42						
43						
44						
45						
46						

Sample Graphics

Hand Auger

No Recovery

Core Recovery

DRAFT

ENVIRON 6001 Shellmound Street, Suite 700, Emeryville, CA 94608		Boring Number: **EW-4**	
Contractor: **Gregg Drilling, Inc.**	Driller: **Sean Rakow**	Project Number: **03-11903E**	
Drilling Method: **Hollow Stem Auger**		Location: **San Jose, California**	
Rig Type: **CME 95 Hollow Stem Auger Drill Rig**		Project Name: **Hitachi GST**	
Sampling Method: **Continuous Core by California Split Spoon**		Date(s): **4/24/2007**	
Well Construction Details		Logged By: **N. Markman**	Checked By: **R. Russell**
Blank Casing (feet): 0 to 17	4-inch Sch. 40 PVC	GS Elevation: **190.535 ft. MSL**	
Screen (feet): 17 to 37	0.020 Slot Sch. 40 PVC		
Annular Fill (feet): 0 to 2	Concrete	Northing: **1914271.98**	Easting: **6182420.92**
2 to 13	Bentonite Grout		
13 to 15	Bentonite Pellets	Total Depth: **40.0 feet**	Borehole Dia.: **10 inches**
15 to 37.5	Monterey Sand # 3		

Depth (ft)	Core Interval	Soil Sample Interval	Soil Sample I.D. Number	Graphic Log	Material Description	Well Construction
					GRAVEL (FILL)	
1					**CLAYEY SILT (ML), DARK BROWN (10YR 3/3)**; moist, low to medium plasticity with medium toughness by hand roll test, trace gravel (maximum length 1.0") (0% gravel, 10% sand, 90% fines).	
2						
3						
4						
5						
6						
7						
8					**SANDY SILT (ML/SM), BROWN (10YR 4/3)**; moist, very fine to fine sand (0% gravel, 40% sand, 60% fines).	
9						
10						
11						
12					**SILTY CLAY (CL), GRAYISH BROWN (2.5Y 5/2)**; moist, meduim plasticity and toughness by hand roll test (0% gravel, 15% sand, 85% fines).	
13						
14					**SANDY SILT (ML), OLIVE BROWN (2.5Y 4/4)**; moist (0% gravel, 35% sand, 65% fines).	
15						
16						
17					**SILTY CLAY (CL), GRAYISH BROWN (2.5Y 5/2)**; moist, low to medium plasticity, variegated staining (0% gravel, 5% sand, 95% fines).	
18						
19						

Sample Graphics: Hand Auger; No Recovery; Core Recovery

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ENVIRON

6001 Shellmound Street, Suite 700, Emeryville, CA 94608

Boring No.: **EW-4** | Project No.: **03-11903E**

Project Name: **Hitachi GST, San Jose, California**

Date(s): **4/24/2007**

Depth (ft)	Core Interval	Soil Sample Interval	Soil Sample I.D. Number	Graphic Log	Material Description	Well Construction
21, 22, 23						
24					**SANDY SILT (ML), OLIVE BROWN (2.5Y 4/3)**; moist (0% gravel, 25% sand, 75% fines).	
25, 26					**CLAYEY SILT (ML), DARK YELLOWISH BROWN (10YR 3/4)**; moist, very fine sand (0% gravel, 10% sand, 90% fines).	
27, 28					**SANDY SILT (ML), DARK YELLOWISH BROWN (10YR 3/4)**; moist, soft, iron oxide staining, very fine sand (0% gravel, 25% sand, 75% fines).	
29, 30, 31, 32					**SILTY CLAY with sand (CL), DARK GRAYISH BROWN (2.5Y 4/2)**; moist (0% gravel, 25% sand, 75% fines). At 31.0 feet bgs: saturated.	
33, 34, 35					**SAND with silt (SP-SM), VERY DARK BROWN (10YR 2/2)**; saturated (0% gravel, 90% sand, 10% fines).	
36, 37, 38, 39, 40					**SILTY CLAY (CL), OLIVE BROWN (2.5Y 4/3)**; moist, iron oxide staining, meduim plasticity with high toughness by hand roll test (0% gravel, 0% sand, 100% fines).	
41, 42, 43, 44, 45, 46					End of boring at 40.0 feet bgs. Extraction well installed 4/24/2007.	

Sample Graphics: Hand Auger; No Recovery; Core Recovery

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ENVIRON 6001 Shellmound Street, Suite 700, Emeryville, CA 94608		Boring Number: **EW-5**	
Contractor: **Gregg Drilling, Inc.**	Driller: **Sean Rakow**	Project Number: **03-11903E**	
Drilling Method: **Hollow Stem Auger**		Location: **San Jose, California**	
Rig Type: **CME 95 Hollow Stem Auger Drill Rig**		Project Name: **Hitachi GST**	
Sampling Method: **Continuous Core by California Split Spoon**		Date(s): **4/27/2007**	
Well Construction Details		Logged By: **N. Markman**	Checked By: **R. Russell**
Blank Casing (feet): 0 to 16.5	4-inch Sch. 40 PVC	GS Elevation: **188.985 ft. MSL**	
Screen (feet): 16.5 to 36.5	0.020 Slot Sch. 40 PVC		
Annular Fill (feet): 0 to 2	Concrete	Northing: **1914295.01**	Easting: **6182446.29**
2 to 12.5	Bentonite Grout		
12.5 to 14.5	Bentonite Pellets	Total Depth: **38.0 feet**	Borehole Dia.: **10 inches**
14.5 to 37	Monterey Sand # 3		

Depth (ft)	Core Interval	Soil Sample Interval	Soil Sample I.D. Number	Graphic Log	Material Description	Well Construction
					GRAVEL (FILL)	
1					**CLAYEY SILT with sand (ML), DARK YELLOWISH BROWN (10YR 4/4)**; moist, very fine sand, trace gravel (0% gravel, 25% sand, 75% fines).	
2						
3						
4					**SANDY SILT (SC-SM), DARK YELLOWISH BROWN (10YR 4/6)**; moist, very fine to fine sand (0% gravel, 30% sand, 80% fines).	
5						
6						
7						
8					**SILT with sand (ML), OLIVE BROWN (2.5Y 4/4)**; moist (0% gravel, 25% sand, 75% fines).	
9						
10						
11						
12					**SILTY CLAY (CL), DARK GRAYISH BROWN (2.5Y 4/2)**; moist, mottled with iron oxide staining, low to medium plasticity with low toughness by hand roll test (0% gravel, 10% sand, 90% fines).	
13						
14						
15						
16						
17						
18						
19						

Sample Graphics Hand Auger; No Recovery; Core Recovery

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ENVIRON

6001 Shellmound Street, Suite 700, Emeryville, CA 94608

Boring No.: **EW-5** | Project No.: **03-11903E**

Project Name: **Hitachi GST, San Jose, California**

Date(s): **4/27/2007**

Depth (ft)	Core Interval	Soil Sample Interval	Soil Sample I.D. Number	Graphic Log	Material Description	Well Construction
21						
22						
23					**SILTY CLAY (CL), OLIVE BROWN (2.5Y 4/3)**; moist, mottled with iron oxide staining (0% gravel, 10% sand, 90% fines).	
24						
25						
26						
27						
28						
29						
30					**CLAYEY SILT (ML), DARK OLIVE BROWN (2.5Y 3/3)**; saturated, very fine sand (0% gravel, 10% sand, 90% fines).	
31						
32						
33					**SILTY SAND (SM), VERY DARK BROWN (10YR 2/2)**; saturated (0% gravel, 85% sand, 15% fines).	
34					At 33 feet: thin grey laminae.	
35					**SILTY CLAY (CL), VERY DARK GRAY (2.5Y 3/1)**; moist (0% gravel, 0% sand, 100% fines).	
36						
37					**SILTY CLAY (CL), DARK GRAY (10YR 4/1)**; moist, iron oxide staining, meduim plasticity and toughness by hand roll test (0% gravel, 0% sand, 100% fines).	
38						
39					End of boring at 38.0 feet bgs.	
					Extraction well installed 4/27/2007.	
40						
41						
42						
43						
44						
45						
46						

Sample Graphics

Hand Auger

No Recovery

Core Recovery

DRAFT

ENVIRON 6001 Shellmound Street, Suite 700, Emeryville, CA 94608		Boring Number: **EW-6**	
Contractor: **Gregg Drilling, Inc.**	Driller: **Sean Rakow**	Project Number: **03-11903E**	
Drilling Method: **Hollow Stem Auger**		Location: **San Jose, California**	
Rig Type: **CME 95 Hollow Stem Auger Drill Rig**		Project Name: **Hitachi GST**	
Sampling Method: **Continuous Core by California Split Spoon**		Date(s): **4/24/2007**	
Well Construction Details		Logged By: **N. Markman**	Checked By: **R. Russell**
Blank Casing (feet): 0 to 17 — 4-inch Sch. 40 PVC		GS Elevation: **188.915 ft. MSL**	
Screen (feet): 17 to 37 — 0.020 Slot Sch. 40 PVC			
Annular Fill (feet): 0 to 2 — Concrete		Northing: **1914320.22**	Easting: **6182471.74**
2 to 13 — Bentonite Grout			
13 to 15 — Bentonite Pellets		Total Depth: **37.5 feet**	Borehole Dia.: **10 inches**
15 to 37.5 — Monterey Sand # 3			

Depth (ft)	Core Interval	Soil Sample Interval	Soil Sample I.D. Number	Graphic Log	Material Description	Well Construction
					GRAVEL (FILL)	
1					**CLAYEY SILT (ML), DARK YELLOWISH BROWN (10YR 4/6)**; moist, low plasticity with medium toughness by hand roll test, trace organics (0% gravel, 15% sand, 85% fines).	
2						
3					From 2.5 to 5.0 feet: concrete debris.	
4						
5					**SANDY SILT (ML/SM), DARK YELLOWISH BROWN (10YR 4/6)**; moist, very fine to fine sand (0% gravel, 40% sand, 60% fines).	
6						
7						
8						
9						
10						
11					**SANDY SILT (ML), OLIVE BROWN (2.5Y 4/4)**; moist (0% gravel, 30% sand, 70% fines).	
12					**SILT with sand (ML), BROWN (10YR 4/3)**; moist, very fine to fine sand (0% gravel, 20% sand, 80% fines).	
13						
14						
15						
16						
17			EW-6-17.0-17.5			
18						
19						

Sample Graphics: Hand Auger; No Recovery; Soil Sample for Physical Testing; Core Recovery

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ENVIRON

6001 Shellmound Street, Suite 700, Emeryville, CA 94608

Boring No.: **EW-6** | Project No.: **03-11903E**

Project Name: **Hitachi GST, San Jose, California**

Date(s): **4/24/2007**

Depth (ft)	Core Interval	Soil Sample Interval	Soil Sample I.D. Number	Graphic Log	Material Description	Well Construction
21						
22					**SANDY SILT (ML\SM), BROWN (10YR 4/3)**; moist, very fine to fine sand (0% gravel, 40% sand, 60% fines). At 22.8 feet: saturated.	
23						
24						
25						
26						
27					**SILTY SAND (SM), DARK OLIVE BROWN (2.5Y 3/3)**; saturated (0% gravel, 85% sand, 15% fines).	
28						
29					**SILTY CLAY (CL), DARK GRAYISH BROWN (2.5YR 5/2)**; moist (0% gravel, 5% sand, 95% fines).	
30						
31						
32					**SAND with silt (SP-SM), VERY DARK BROWN (10YR 2/2)**; saturated (0% gravel, 90% sand, 10% fines).	
33						
34					**SILTY CLAY (CL), VERY DARK GRAYISH BROWN (2.5Y 3/2)**; moist, iron oxide staining, meduim plasticity and toughness by hand roll test (0% gravel, 0% sand, 100% fines).	
35						
36						
37						
38					End of boring at 37.5 feet bgs.	
39					Extraction well installed 4/25/2007.	
40						
41						
42						
43						
44						
45						
46						

Sample Graphics

- Hand Auger
- No Recovery
- Soil Sample for Physical Testing
- Core Recovery

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ENVIRON 6001 Shellmound Street, Suite 700, Emeryville, CA 94608		Boring Number: **EW-7**	
Contractor: **Gregg Drilling, Inc.**	Driller: **Sean Rakow**	Project Number: **03-11903E**	
Drilling Method: **Hollow Stem Auger**		Location: **San Jose, California**	
Rig Type: **CME 95 Hollow Stem Auger Drill Rig**		Project Name: **Hitachi GST**	
Sampling Method: **Continuous Core by California Split Spoon**		Date(s): **4/25/2007**	
Well Construction Details		Logged By: **N. Markman**	Checked By: **R. Russell**
Blank Casing (feet): 0 to 16 — 4-inch Sch. 40 PVC		GS Elevation: **189.250 ft. MSL**	
Screen (feet): 16 to 36 — 0.020 Slot Sch. 40 PVC			
Annular Fill (feet): 0 to 2 — Concrete		Northing: **1914344.24**	Easting: **6182496.33**
2 to 12 — Bentonite Grout			
12 to 14 — Bentonite Pellets		Total Depth: **36.5 feet**	Borehole Dia.: **10 inches**
14 to 36.5 — Monterey Sand # 3			

Depth (ft)	Core Interval	Soil Sample Interval	Soil Sample I.D. Number	Graphic Log	Material Description	Well Construction
					GRAVEL (FILL)	
1					**CLAYEY SILT with sand (ML), DARK YELLOWISH BROWN (10YR 4/4)**; moist, very fine sand (0% gravel, 20% sand, 80% fines).	
2						
3						
4						
5						
6						
7					**SANDY SILT (ML), DARK YELLOWISH BROWN (10YR 3/6)**; moist, very fine to fine sand (0% gravel, 30% sand, 70% fines).	
8						
9						
10						
11					**CLAY with silt (CL), OLIVE BROWN (2.5Y 4/4)**; moist, low plasticity with medium toughness by hand roll test, trace gravel/hard nodules (0% gravel, 10% sand, 90% fines).	
12						
13						
14						
15						
16						
17					**CLAYEY SILT (ML),** moist, very fine to fine sand, variegated coloring (0% gravel, 10% sand, 90% fines).	
18						
19						

Sample Graphics: Hand Auger; No Recovery; Core Recovery

DRAFT

ENVIRON

6001 Shellmound Street, Suite 700, Emeryville, CA 94608

Boring No.: **EW-7** | Project No.: **03-11903E**

Project Name: **Hitachi GST, San Jose, California**

Date(s): **4/25/2007**

Depth (ft)	Core Interval	Soil Sample Interval	Soil Sample I.D. Number	Graphic Log	Material Description	Well Construction
21, 22					**SANDY SILT (ML/SM), DARK YELLOWISH BROWN (10YR 3/6)**; moist, very fine to fine sand (0% gravel, 40% sand, 60% fines).	
23, 24, 25					**CLAYEY SILT with sand (ML),** moist, very fine to fine sand, variegated coloring (0% gravel, 20% sand, 80% fines).	
26, 27, 28					**SANDY SILT (ML), DARK OLIVE BROWN (2.5Y 3/3)**; very fine to fine sand (0% gravel, 30% sand, 70% fines).	
29, 30					**CLAY with silt (CL), DARK GRAYISH BROWN (2.5YR 4/2)**; moist, trace organics, iron oxide staining, low plasticity and toughness by hand roll test (0% gravel, 5% sand, 95% fines).	
31, 32, 33					**SAND with silt (SP-SM), VERY DARK BROWN (10YR 2/2)**; saturated (0% gravel, 90% sand, 10% fines).	
34, 35, 36					**SILTY CLAY (CL), VERY DARK GRAYISH BROWN (2.5Y 3/2)**; moist, iron oxide staining, meduim plasticity and toughness by hand roll test (0% gravel, 0% sand, 100% fines).	
37, 38, 39, 40, 41, 42, 43, 44, 45, 46					End of boring at 36.5 feet bgs. Extraction well installed 4/30/2007.	

Sample Graphics

Hand Auger

No Recovery

Core Recovery

DRAFT

ENVIRON 6001 Shellmound Street, Suite 700, Emeryville, CA 94608		Boring Number: **EW-8**	
Contractor: **Gregg Drilling, Inc.**	Driller: **Sean Rakow**	Project Number: **03-11903E**	
Drilling Method: **Hollow Stem Auger**		Location: **San Jose, California**	
Rig Type: **CME 95 Hollow Stem Auger Drill Rig**		Project Name: **Hitachi GST**	
Sampling Method: **Continuous Core by California Split Spoon**		Date(s): **4/25/2007**	
Well Construction Details		Logged By: **N. Markman**	Checked By: **R. Russell**
Blank Casing (feet): 0 to 17 — 4-inch Sch. 40 PVC		GS Elevation: **191.110 ft. MSL**	
Screen (feet): 17 to 37 — 0.020 Slot Sch. 40 PVC			
Annular Fill (feet): 0 to 2 — Concrete		Northing: **1914234.39**	Easting: **6182433.20**
2 to 13 — Bentonite Grout			
13 to 15 — Bentonite Pellets		Total Depth: **37.5 feet**	Borehole Dia.: **10 inches**
15 to 37.5 — Monterey Sand # 3			

Depth (ft)	Core Interval	Soil Sample Interval	Soil Sample I.D. Number	Graphic Log	Material Description	Well Construction
					GRAVEL (FILL)	
1					**SILTY CLAY (CL), VERY DARK BROWN (10YR 2/2)**; moist, low to medium plasticity by hand roll test (0% gravel, 5% sand, 95% fines).	
2						
3					At 3.0 feet bgs: Trench sands present in cuttings.	
4						
5						
6						
7					**SILTY CLAY (CL), DARK YELLOWISH BROWN (10YR 4/4)**; moist, very fine to fine sand (0% gravel, 15% sand, 85% fines).	
8						
9					**SILT with sand (ML), YELLOWISH BROWN (10YR 5/6)**; moist (0% gravel, 25% sand, 75% fines).	
10						
11						
12						
13					**SILTY CLAY (CL), OLIVE BROWN (2.5YR 4/4)**; moist, low plasticity and toughness (0% gravel, 10% sand, 90% fines).	
14						
15						
16						
17						
18					**CLAYEY SILT (ML), OLIVE BROWN (2.5YR 4/4)**; moist, very fine sand, trace organics, mottled (0% gravel, 10% sand, 90% fines).	
19						

Sample Graphics: Hand Auger; No Recovery; Soil Sample for Physical Testing; Core Recovery

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