

DRILLING LOG OF WELL NO. MW1-A

Project/Location: River Terrace RV Park / DOT & PF ROW Soldotna, AK Total Depth of Hole (feet BGS): 52
 Boring Location (Northing/Easting): 5026.4642 / 5038.0771 Ground Elevation (feet above): _____
 _____ Inner casing elevation (feet AMSL): 71.03
 Date Started/Finished: 10.07.97/16.07.97 Groundwater Depth (feet): _____
 Drilling Company: Hughes Drilling, Inc. During Drilling (BGS) (11.07.97): 38.5 ▽
 Driller/Geologist: G. Wilson / B. Ackman After development (BTOC) (22.07.97): 14.58 ▽

ELEVATION DEPTH	WELL COMPLETION DIAGRAM	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	SAMPLE NUMBER SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	FID/ PID (ppm)	COMMENTS	
gs elevation			ground surface (gs)						
1			0'-0.5' GRAVELLY SAND: brownish-gray gravelly sand; 40% gravel, 40% sand, 20% fines; dry, (Fill)	5			0	Well completed with a steel flush-mount, protective casing, and concrete monument. Soil description from MW-1 in field logbook (Appendix A).	
2			5.0	5'-7' GRAVELLY SAND: brownish-gray gravelly sand; 40% gravel, 40% sand, 20% fines; moist, (Fill)	002SL	3			0
3			7.0			4			
4									
5									
6									
7									
8									
9									
10			10'-12' SILTY SAND AND GRAVEL: brownish-gray silty gravel; 40% gravel, 30% sand, 30% fine; maximum clast diameter	003SL	18		0	Elevation: Top of Screen 61.59 feet AMSL	
11			12.0 4 cm; moist		24			Photo: R1F4	
12					33				
13					16				
14									
15								Elevation: Water Level (7/22/97) 56.45 feet AMSL	



DRILLING LOG OF WELL NO. MW1-A

Project/Location: River Terrace RV Park / DOT & PF ROW Soldotna, AK Total Depth of Hole (feet BGS): 52

ELEVATION DEPTH	WELL COMPLETION DIAGRAM	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	SAMPLE NUMBER	SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	FID/ PID (ppm)	COMMENTS		
								SAMPLE / HOLE			
16			15'-17' GRAVELLY SILT AND CLAY: dark gray gravelly silt and clay; 20% gravel, 30% sand, 50% fines; maximum clast diameter 2 cm; moist	004SL		3 8 8 10		0	Photo: R1F5 Elevation: Bottom of Screen 51.59 feet AMSL		
17			17.0								
18											
19											
20					20'-22' GRAVELLY SANDY SILT AND CLAY: dark gray, gravelly silty sand and clay; 5% gravel, 5% sand, 90% fines; maximum clast diameter 1 cm; moist	005SL		3 6 6 4			1
21											
22											
23											
24											
25					25'-27' GRAVELLY SILT AND CLAY: very dark gray gravelly silt and clay; 30% gravel, 10% sand, 60% fines; maximum clast diameter 1 cm; moist	006SL		8 16 29 34			8
26											
27											
28											
29											
30			30'-32' GRAVELLY SILT AND CLAY: same as above	007SL		10 3 17 28		35	Photo: R1F6		
31											
32											
33											
34											
35			35'-37' GRAVELLY SILT AND CLAY: same as above			16 18		40			
36											



DRILLING LOG OF WELL NO. MW1-A

Project/Location: River Terrace RV Park / DOT & PF ROW Soldotna, AK Total Depth of Hole (feet BGS): 52

ELEVATION DEPTH	WELL COMPLETION DIAGRAM	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	SAMPLE NUMBER	SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	FID/ PID (ppm)	COMMENTS	
								SAMPLE / HOLE		
37			37.0	008SL		19 23			Photo: R1F7 009SL Fixed-base laboratory	
38										
39										
40			40.0							
41			40'-42' GRAVELLY SILT AND CLAY: same as above with gravel clasts up to 7 cm	009SL	18 39 15 12	90				
42			42.0							
43										
44										
45			45.0							
46			45'-47' GRAVELLY SILT AND CLAY: same as above	010SL	7 12 17 17	20				
47	47.0									
48										
49										
50	50.0									
51	45'-47' GRAVELLY SILT AND CLAY: same as above; 20% gravel, 10% sand, 70% fines	011SL	3 17 29 19	0						
52	52.0									
53										
54										
55										
56										
57										



DRILLING LOG OF WELL NO. MW-1B

Project/Location: River Terrace RV Park / DOT & PF ROW Soldotna, AK Total Depth of Hole (feet BGS): 16
 Boring Location (Northing/Easting): 5029.8894 / 5041.3769 Ground Elevation (feet above): 71.6
 Date Started/Finished: 15.07.97/15.07.97 Inner casing elevation (feet AMSL): _____
 Drilling Company: Hughes Drilling, Inc. Groundwater Depth (feet): _____
 Driller/Geologist: G. Wilson / B. Ackman During Drilling (BGS) (): _____
 After development (BTOC) (): _____

ELEVATION DEPTH	WELL COMPLETION DIAGRAM	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	SAMPLE NUMBER	SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	FID/ PID (ppm)	COMMENTS	
gs elevation 71.6			ground surface (gs)							
1			0.5 0'-0.5' GRAVELLY SAND: brownish-gray gravelly sand; 40% gravel, 40% sand, 20% fines; dry, (Fill)					NR	Soil description from MW-1 in field logbook (Appendix A).	
2										
3										
4										
5			5.0 5'-7' GRAVELLY SAND: brownish-gray gravelly sand; 40% gravel, 40% sand, 20% fines; moist, (Fill)					NR	Soil description from MW-1 in field logbook (Appendix A).	
6										
7			7.0							
8										
9										
10			10.0 10'-12' SILTY SAND AND GRAVEL: brownish-gray silty gravel; 40% gravel, 30% sand, 30% fine; maximum clast diameter 5 cm; moist					NR		
11										
12			12.0							
13										
14			14.0 14'-16' SILT AND CLAY							
15										



DRILLING LOG OF WELL NO. MW-1B

Project/Location: River Terrace RV Park / DOT & PF ROW Soldotna, AK Total Depth of Hole (feet BGS): 16

ELEVATION DEPTH	WELL COMPLETION DIAGRAM	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	SAMPLE NUMBER	SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	FID/ PID (ppm)	COMMENTS
								SAMPLE / HOLE	
16			16.0					NR	
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									



DRILLING LOG OF WELL NO. MW-1C (S) & (D)

Project/Location: River Terrace RV Park / DOT & PF ROW Soldotna, AK Total Depth of Hole (feet BGS): 45
 Boring Location (Northing/Easting): 5017.9792(S) 5018.1414(D) / 5031.7997(S) 5031.6787(D) Ground Elevation (feet above): _____
 _____ Inner casing elevation (feet AMSL): 71.08(S) 71.32 (D)
 Date Started/Finished: 15.07.97/15.07.97 Groundwater Depth (feet): _____
 Drilling Company: Hughes Drilling, Inc. During Drilling (BGS) (16.07.97): 31.7 ▽
 Driller/Geologist: G. Wilson / B. Ackman After development (BTOC) (22.07.97): 14.52 ▽

ELEVATION DEPTH	WELL COMPLETION DIAGRAM	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	SAMPLE NUMBER SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	FID/ PID (ppm)	COMMENTS	
gs elevation			ground surface (gs)						
1		0.5	0'-0.5' GRAVELLY SAND: brownish-gray gravelly sand; 40% gravel, 40% sand, 20% fines; dry, (Fill)					<p>Completed as a nested pair of two screens. Wells completed with steel, flush-mount, and concrete pad.</p> <p>No soil samples collected.</p> <p>Soil descriptions from 0'-7' bgs and 16'-45' bgs taken from log of MW-1.</p> <p>Soil description from 10'-16' bgs taken from log of MW-1B. Elevation: Top of Screen (S) 66.73 feet AMSL</p> <p>Elevation: Bottom of Screen (S) 56.73 feet AMSL</p>	
2									
3									
4									
5			5.0	5'-7' GRAVELLY SAND: brownish-gray gravelly sand; 40% gravel, 40% sand, 20% fines; small asphalt clasts; moist, (Fill)					
6									
7			7.0						
8									
9									
10			10.0	10'-12' SAND AND GRAVEL: brown silty sand gravel; 40% gravel, 30% sand, 30% fines; maximum clast diameter 5 cm; fairly tight; moist					
11									
12			12.0	12'-16' SANDY, GRAVELLY SILT/CLAY: dark gray to black gravelly silt/clay; 30% gravel, 20% sand, 50% fines; maximum clast diameter 4 cm; very tight and dense; moist					
13									
14									
15									



DRILLING LOG OF WELL NO. MW-1C (S) & (D)

Project/Location: River Terrace RV Park / DOT & PF ROW Soldotna, AK Total Depth of Hole (feet BGS): 45

ELEVATION DEPTH	WELL COMPLETION DIAGRAM	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	SAMPLE NUMBER SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	FID/ PID (ppm)	SAMPLE / HOLE	COMMENTS
16			16.0						Elevation: Water Level (D) 7/22/97 56.80 feet AMSL
17			17.0						
18									
19									
20			20.0						
21									
22			22.0						
23									
24									
25			25.0						
26									
27									
28									
29			29.0						
30			30.0						
31									
32			32.0						
33									
34									
35			35.0					Elevation: Top of Screen (D) 36.59 feet AMSL	
36									



DRILLING LOG OF WELL NO. MW-1C (S) & (D)

Project/Location: River Terrace RV Park / DOT & PF ROW Soldotna, AK Total Depth of Hole (feet BGS): 45

ELEVATION DEPTH	WELL COMPLETION DIAGRAM	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	SAMPLE NUMBER SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	FID/ PID (ppm)	COMMENTS
37			37.0					
38								
39								
40			40.0	40'-42' GRAVELLY SILT AND CLAY: same as above with gravel clasts up to 7cm				
41			42.0					
42								
43								
44								
45			45.0					Elevation: Bottom of Screen (D) 26.59 feet AMSL
46								
47								
48								
49								
50								
51								
52								
53								
54								
55								
56								
57								



DRILLING LOG OF WELL NO. MW-2

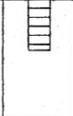
Project/Location: River Terrace RV Park / DOT & PF ROW Soldotna, AK Total Depth of Hole (feet BGS): 17
 Boring Location (Northing/Easting): 5060.9655 / 4980.0637 Ground Elevation (feet above): _____
 Date Started/Finished: 13.07.97/13.07.97 Inner casing elevation (feet AMSL): 71.35
 Drilling Company: Hughes Drilling, Inc. Groundwater Depth (feet): _____
 Driller/Geologist: G. Wilson / B. Ackman During Drilling (BGS) (13.07.97): 13.48 ▽
 After development (BTOC) (22.07.97): 13.38 ▾

ELEVATION DEPTH	WELL COMPLETION DIAGRAM	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	SAMPLE NUMBER SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	FID/ PID (ppm)	COMMENTS			
gs elevation			ground surface (gs)								
1			0'-0.5' SAND : brown sandy Fill; 20% gravel, 60% sand, 20% fines; maximum clast diameter 3 cm; moist, (Fill)	12			0	Well completed with a steel, flush-mount, protective casing and concrete foundation.			
2			3	4	5	5.0	5'-7' SANDY GRAVEL : brown sandy gravel Fill; 40% gravel, 40% sand, 20% fines; maximum clast diameter 4 cm; moist, (Fill)	013 SL	6 14 14 14	20	013 SL Fixed-base laboratory
6			7	7.0	10'-12' SANDY GRAVEL : brown/gray/rust sandy gravel Fill; 40% gravel, 40% sand, 20% fines; maximum clast diameter 5 cm, (Fill)	014 SL	6 5 4 2	15	Elevation: Top of Screen 60.50 feet AMSL Photo: R1 F10		
9			10	10.0	12.0	15.0				Elevation: Water Level (7/22/97) 57.97 feet AMSL	



DRILLING LOG OF WELL NO. MW-2

Project/Location: River Terrace RV Park / DOT & PF ROW Soldotna, AK Total Depth of Hole (feet BGS): 17

ELEVATION DEPTH	WELL COMPLETION DIAGRAM	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	SAMPLE NUMBER	BLOW COUNT	RECOVERY (inches)	FID/ PID (ppm)	COMMENTS
				SAMPLE INTERVAL			SAMPLE / HOLE	
16.0			15'-16' SANDY GRAVEL : brown sandy gravel; maximum clast diameter 3 cm; wet	015 SL	5 7		10	Elevation: Bottom of Screen 55.50 feet AMSL gradational contact between sandy gravel and silt/clay at 16' Photo: R2 F1, F2, F3
17.0			16'-17' SANDY, GRAVELLY SILT/CLAY : gray sandy and gravelly silt/clay; 10% gravel, 20% sand, 70% fines; maximum clast diameter 1 cm; moist	016 SL	10 12		2	
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
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33								
34								
35								
36								





LOG OF BORING MW-3A

River Terrace
RV Park
Soil Borings
Soldotna, AK

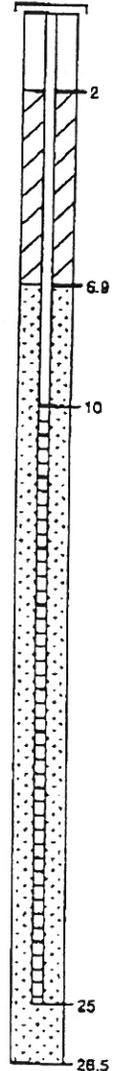
Location : River Terrace
Date Completed : 6/31/98
Drilling Contractor : Hughes Drilling
Drilling Method : Hollow-stem auger

Hole Diameter : 4 1/4"
Sampling Method : Split-Spoon
Hart Crowser Rep. : S. Rog

Project Number: A-8514-01

Well: MW-3A

Depth in Feet	DESCRIPTION	GRAPHIC	USCS	Sample Recovery	Sample Number	PID ppmV
0	Light Brown Silty SAND with Gravel (SM) Dry to Moist, loose Rounded to subrounded gravel 1 inch diameter.		SM			
5	Brown Silty SAND with Gravel (SM) Moist, loose Rounded to subrounded gravel 1 to 3 inch diameter.		SM		MW 3A, 5-6.5'	0
	Gray to Brown Sandy SILT (ML) Moist, medium dense Rounded to subrounded gravel 1 to 2 inch diameter. Iron oxide noted in sample.		ML			
10	Dark Gray Sandy SILT (ML) Moist, medium dense Rounded to subrounded gravel 0.5 to 1 inch diameter. Some sand partings with trace amounts of water noted.		ML		MW 3A, 10-11.5'	1
15	Dark Gray Clayey/Sandy SILT with Gravel (ML) Moist Rounded to subrounded gravel 1 inch diameter.		ML		MW 3A, 15-16.5'	0
20	Sample not recovered from 20 to 21.5'				MW 3A, 20-21.5'	0
25	Dark Gray Gravelly SILT (ML) Moist, very dense Rounded to subrounded gravel 1 to 2 inch diameter.		ML		MW 3A, 25-26.5'	0
30	Groundwater not encountered in the monitoring well during installation.					



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LOG OF BORING MW-4A

River Terrace RV Park Soil Boings, Soldotna, AK Project Number: A-8514-01	Location : River Terrace Date Completed : 6/30/98 Drilling Contractor : Hughes Drilling Drilling Method : Hollow-stem auger	Hole Diameter : 4 1/4" Sampling Method : Split-Spoon Hart Crowser Rep. : S. Rog
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Depth in Feet	DESCRIPTION	GRAPHIC	USCS	Sample Recovery	Sample Number	PID ppmV	PCE ug/Kg	Well: MW-4A
0	Brown Silty SAND with Gravel (SM) - Fill Dry to Moist, loose Rounded to subrounded gravel 1 to 3 inch diameter.		SM					
5	Organic root odor noted in sample.				MW 4A, 5-6.5'	0		
	Contact between native ground and fill estimated at 7' bgs.							
10	Brown Sandy SILT with Gravel Wet, Soft Rounded to subrounded gravel 1 to 2 inch diameter.		ML		MW 4A, 10-11.5'	5		
15	Dark Gray Sandy SILT with Gravel (ML) - Till Moist, very dense Rounded to subrounded gravel 1 to 2 inch diameter.		ML		MW 4A, 15-16.5'	0	12	
20								

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DRILLING LOG OF WELL NO. MW-5

Project/Location: River Terrace RV Park / DOT & PF ROW Soldotna, AK Total Depth of Hole (feet BGS): 12
 Boring Location (Northing/Easting): 4852.2548 / 5065.1022 Ground Elevation (feet above): _____
 Inner casing elevation (feet AMSL): 47.54
 Date Started/Finished: 19.07.97/19.07.97 Groundwater Depth (feet): _____
 Drilling Company: Hughes Drilling, Inc. During Drilling (BGS) (19.07.97): 2.5 ▽
 Driller/Geologist: B. Hughes / B. Ackman After development (BTOC) (22.07.97): 2.37 ▽

ELEVATION DEPTH	WELL COMPLETION DIAGRAM	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	SAMPLE NUMBER SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	FID/ PID (ppm)	COMMENTS		
gs elevation			ground surface (gs)							
1			0'-0.5' GRAVELLY SAND: gray gravelly sand; 40% gravel, 50% sand, 10% fines; maximum clast diameter 2 cm; moist	51			NF	Elevation: Top of Screen 47.48 feet AMSL Well completed with a steel, flush-mount, protective casing, and concrete foundation.		
2			2'-6' SAND: gray sand; 10% gravel, 80% sand, 10% fines; maximum clast diameter 0.5 cm; moist	052 SL	2 3 7 2		NF	Elevation: Water Level (7/22/97) 45.17 feet AMSL		
3					053 SL	2 1 1		NF	sand becomes saturated around 4' Photo: R4 F17	
4									Elevation: Bottom of Screen 42.48 feet AMSL	
5						054 SL	2 3 3		053 SL Fixed-base laboratory for TOC	
6					6'-8' SAND AND GRAVEL: brown and gray sand and gravel; 40% gravel, 45% sand, 15% fines; maximum clast diameter 2 cm; saturated		2		NF	Photo: R4 F18
7										
8										
9										
10					10'-12' SILT/CLAY: dark gray sandy and gravelly silt and clay; 20% gravel, 10% sand, 70% fines; maximum clast diameter 4 cm; very dense	055 SL	8 10 11 7		NF	Photo: R4 F21
11										
12										



DRILLING LOG OF WELL NO. MW-6

Project/Location: River Terrace RV Park / DOT & PF ROW Soldotna, AK Total Depth of Hole (feet BGS): 10
 Boring Location (Northing/Easting): 4879.4657 / 5023.5870 Ground Elevation (feet above): _____
 _____ Inner casing elevation (feet AMSL): 47.42
 Date Started/Finished: 20.07.97/20.07.97 Groundwater Depth (feet): _____
 Drilling Company: Hughes Drilling, Inc. During Drilling (BGS) (NR): _____ ▽
 Driller/Geologist: / B. Ackman After development (BTOC) (22.07.97): 2.29 ▽

ELEVATION DEPTH	WELL COMPLETION DIAGRAM	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	SAMPLE NUMBER SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	FID/ PID (ppm)	SAMPLE / HOLE	COMMENTS	
gs elevation			<i>ground surface (gs)</i>							
1			0'-4' SAND : gray sand; 5% gravel, 90% sand, 5% fines; maximum clast diameter 0.5 cm; saturated	56			NF		Well completed with a steel, flush-mount, protective casing, and concrete pad.	
2										
3						057 SL	2		NF	Elevation: Water Level (7/22/97) 45.13 feet AMSL
4			4.0				2			
5					4'-6' SAND : gray gravelly sand; 40% gravel, 50% sand, 10% fines; subrounded clasts, maximum diameter 3 cm; saturated	058 SL/059 SL	7		NF	Elevation: Top of Screen 43.33 feet AMSL
6			6.0				11			058, 059 SL Fixed-base laboratory
7						060 SL	3		NF	
8			8.0				3			
9					8'-9' SAND : gray sand; 0% gravel, 90% sand, 10% fines; saturated	061 SL	17		NF	
10			9.0		9'-10' SILTY, GRAVELLY CLAY : dark gray silty gravelly clay; 20% gravel, 20 % sand, 60% fines; maximum clast diameter 2 cm; moist	062 SL	24		NF	Elevation: Bottom of Screen 38.33 feet AMSL 062 SL Fixed-base laboratory (TOC)
11	10.0									
12										
13										
14										
15										



DRILLING LOG OF WELL NO. MW-7

Project/Location: River Terrace RV Park / DOT & PF ROW Soldotna, AK Total Depth of Hole (feet BGS): 10

Boring Location (Northing/Easting): 4865.6113 / 5044.0025 Ground Elevation (feet above): _____

Inner casing elevation (feet AMSL): 47.36

Date Started/Finished: 20.07.97/21.07.97 Groundwater Depth (feet): _____

Drilling Company: Hughes Drilling, Inc. During Drilling (BGS) (NR): _____ ▾

Driller/Geologist: B. Hughes / B. Ackman After development (BTOC) (22.07.97): 2.21 ▾

ELEVATION DEPTH	WELL COMPLETION DIAGRAM	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	SAMPLE NUMBER SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	FID/ PID (ppm)	COMMENTS
gs elevation			ground surface (gs)					
0.5			0'-0.5' SAND ; brownish gray sand; 5% gravel, 90% sand, 5% fines; maximum clast diameter 1 cm; moist	63			NF	
2.0			2'-4' SAND ; brownish gray silty sand; 0% gravel, 90% sand, 10% fines; saturated	064 SL	1 1 4 4		NF	Elevation: Water Level (7/22/97) 45.15 feet AMSL
4.0			4'-8' GRAVELLY SAND ; gray gravely sand; 20% gravel, 70% sand, 10% fines; maximum clast diameter 3 cm; saturated	065 SL	7 2 2 2		NF	Elevation: Top of Screen 43.64 feet AMSL Photos: R4 F22, F23
8.0			8'-9' SANDY GRAVEL ; brownish-gray sandy gravel; 50% gravel, 40% sand, 10% fines; maximum clast diameter 3 cm; saturated	066 SL	3 10 12 12		NF	
9.0			9'-10' GRAVELLY, SILTY CLAY ; dark gray gravelly and sandy silt/clay; 20% gravel, 20% sand, 60% fines; moist	067 SL	3 3		NF	
10.0				068 SL	10 17		NF	Elevation: Bottom of Screen 38.64 feet AMSL 067 SL Fixed-base laboratory





LOG OF BORING MW-8

River Terrace RV Park Soil Borings	Location : River Terrace	Hole Diameter : 4 1/4"
Soldotna, AK	Date Completed : 8/1/98	Sampling Method : Split-Spoon
Project Number: A-8514-01	Drilling Contractor : Hughes Drilling	Hart Crowser Rep. : S. Rog
	Drilling Method : Hollow-stem auger	

Depth in Feet	DESCRIPTION	GRAPHIC	USCS	Sample Recovery	Sample Number	PID ppmV	PCE ug/Kg	Well: MW-8
0	Brown Gravelly SAND _i (SP) - Fill Moist Rounded to subrounded gravel 1 to 2 inch diameter. Organics noted in sample.		SP					
5	Gray SAND Wet Layer of rocks noted between 7 and 8' bgs.		SP		MW 8, 5-6.5'	0.4		
10	Dark Gray Gravelly SILT (ML) Dry to Moist, dense Rounded to subrounded gravel 1 inch diameter.		ML		MW 8, 10-11.5'	2	< 3	
15								

09-15-1998 H.M.S.I. Soil Boring MW-8 bor



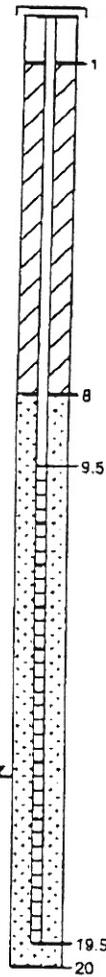
LOG OF BORING MW-9

River Terrace
RV Park
Soil Borings
Soldotna, AK

Location : River Terrace
Date Completed : 6/30/98
Drilling Contractor : Hughes Drilling
Drilling Method : Hollow-stem auger
Hole Diameter : 4 1/4"
Sampling Method : Split-Spoon
Hart Crowser Rep : S. Rog

Project Number: A-8514-01

Depth in Feet	DESCRIPTION	GRAPHIC	USCS	Sample Recovery	Sample Number	PID ppmV	PCE ug/Kg	Well: MW-9
0	Brown Gravelly SAND (SP) - Fill Moist, loose Rounded to subrounded gravel 1 to 2 inch diameter.	[Pattern]	SP	[X]				
5	Organic root odor noted in sample. Contact between native ground and fill estimated at 8.5' bgs.	[Pattern]	SP	[X]	MW 9, 5-6.5'	1		
10	Brown Silty SAND (SM) Wet, loose Organics noted in the sample.	[Pattern]	SM	[X]	MW 9, 10-11.5'	3		
15	Gray to Brown Silty SAND with Gravel (SM) Moist to Wet, loose Organics noted in Sample along with slight Septic odor.	[Pattern]	SM	[X]				
15	Brownish Gray to Gray Sand (SP) with Gravel Wet, loose Rounded to subrounded gravel 1 inch diameter. Silt layers present in sample with Iron Oxide staining.	[Pattern]	SP	[X]	MW 9, 15-16.5'	2	11	
20	Dark Gray Sandy SILT with Gravel (ML) - Till Moist, very dense Rounded to subrounded gravel 1 to 2 inch diameter.	[Pattern]	ML	[X]	MW 9, 20-21.5'	2	4	
25								



09-15-1998 11:18:51 AM Soil Borings MW-9 bor



LOG OF BORING MW-10

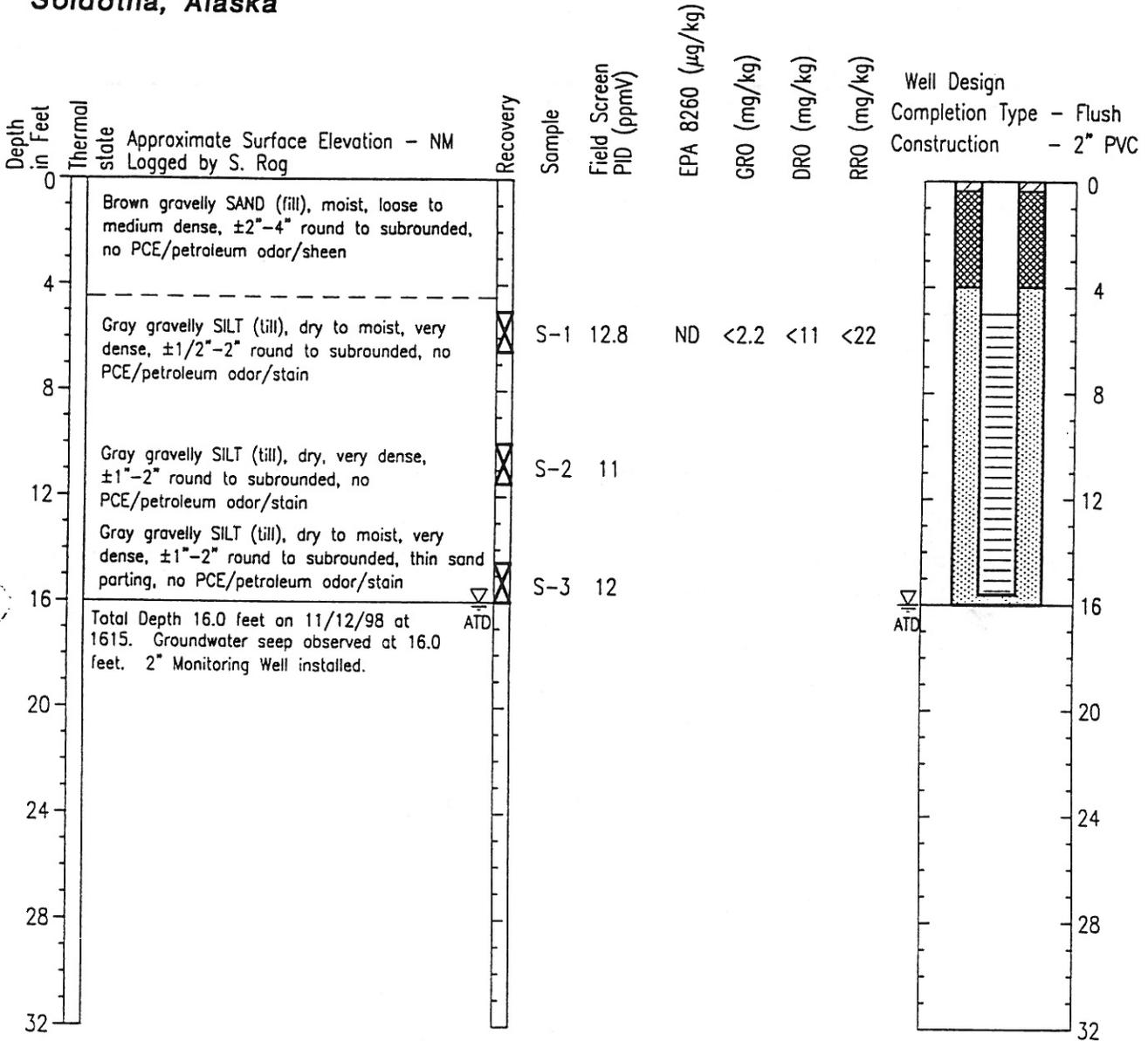
River Terrace RV Park Soil Bolmgs	Location : River Terrace	Hole Diameter : 4 1/4"
Soldotna, AK	Date Completed : 8/1/98	Sampling Method : Split-Spoon
Project Number: A-8514-01	Drilling Contractor : Hughes Drilling	Hart Crowser Rep. : S. Rog
	Drilling Method : Hollow-stem auger	

Depth in Feet	DESCRIPTION	GRAPHIC	USCS	Sample Recovery	Sample Number	PID ppmV	PCE ug/Kg	Well: MW-10
0	Brown Sandy GRAVEL (GP) - Fill Dry to Moist, loose Rounded to subrounded gravel 1 to 3 inch diameter.		GP					
5	Brown Sandy SILT (ML) Moist, soft Organics noted in sample. Iron Oxide staining in sample. Layer of rocks noted approximately 9.5' bgs.		ML		MW 10, 5-6.5'	1		
10	Gray SAND with Gravel (SP) Wet Rounded to subrounded gravel 1 to 2 inch diameter.		SP		MW 10, 10-11.5'	3		
15	Dark Gray Gravelly SILT (ML) - Till Dry to Moist, dense Rounded to subrounded gravel 1 to 2 inch diameter.		ML		MW 10, 15-16.5'	2	< 2	
20								

09-15-1998 H:\0514\AS08Boring\mw10 bor

Boring Log and Well Construction Data for MW-11 (SB-5)

River Terrace RV Park
Soldotna, Alaska



1. Soil descriptions are interpretative and actual changes may be gradual.
2. Water level is for date indicated and may vary with time of year. (ATD-At Time of Drilling)
3. Refer to Figure A1 for key to exploration logs.
4. NA = Not Analyzed
5. ND = Not Detected
6. NM = Not Measured

HARTCROWSER

A-8514 1/99

FIGURE A6

DRILLING LOG OF WELL NO. MW12

Project/Location: ADOT & PF ROW / Soldotna, Alaska
 boring Location: ADOT & PF ROW Between River Terrace RV Park
and Kenai River Bridge No. 671.
 Date Started/Finished: 10-29-98 @1355 / 10-29-98 @1430
 Drilling Company: Hughes Drilling
 Driller/Geologist: Bob Hughes / Craig Carlson CPG#8903

Total Depth of Hole (feet BGS): 8
 Ground Elevation (feet above MSL): 48.0
 Inner casing elevation (ft. above MSL): 47.83
 Groundwater Depth (feet BGS):
 During Drilling: 5
 After development: 5

ELEVATION DEPTH	WELL COMPLETION DIAGRAM	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	SAMPLE NUMBER	SAMPLE INTERVAL	BLOW COUNT	RECOVERY (%)	FID/ PID (ppm)	SAMPLE / HOLE	COMMENTS
gs elevation 48.0 ft			ground surface (gs)							
1			Brown (10YR5/3) f. sandy silt, little c-f gravel, roots, moist, (ML-SP)	015SL	8 4 4 6	100	0	Drilling conducted with a CME-45 skid-mount drill rig equipped with hollow stem ugers. Monitoring well constructed of 2" ID, PVC, with 5-foot, 0.010-inch slot screen. Monitoring well completed at-grade. Development conducted on 10-29- with a bailer.		
2			Grayish brown silt, little to trace clay, moist (ML)							
2			Brown (10YR5/3) f. sand, trace m. sand and silt, moist, (SP)							
3			Same as above, (SP)	016SL	4 5 5 4	100	0.8			
3			Grayish brown silt, moist, (ML)							
4			Brown f-m sand, trace silt and clay, moist, (SP)	017SL	3 3 3 9	100	10			
4			Brown silt, trace clay and f-m sand, moist, (ML)							
5			Brown f-m sand, trace silt and clay, moist (SP)							
6			Grayish brown f. sandy silt, saturated, (ML-SP)	018SL	5 13 14 27	100	25			
6			Brown f-m sand, little silt, saturated, (SP)							
7	Same as above									
8	Brown f-m sand and c. gravel, some cobbles, little c. sand and f-m gravel, saturated (SP-GP)									
8			End of Boring @8.0'.							
9										
10										



ADOT & PF ROW INVESTIGATION – River Terrace Project

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chawell2

DRILLING LOG OF WELL NO. MW13

Project/Location: ADOT & PF ROW / Soldotna, Alaska
 Boring Location: ADOT & PF ROW @ River Terrace RV Park,
Beneath Kenai River Bridge No. 671.
 Date Started/Finished: 12-07-98 @1200 / 12-07-98 @1400
 Drilling Company: Hughes Drilling
 Driller/Geologist: Pat / Jackie Donley

Total Depth of Hole (feet BGS): 15.0
 Ground Elevation (feet above MSL): 48.0
 Inner casing elevation (ft. above MSL): 47.7
 Groundwater Depth (feet BGS):
 During Drilling: 11.8 ▾
 After development: 11.8 ▾

ELEVATION DEPTH	WELL COMPLETION DIAGRAM	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	SAMPLE NUMBER SAMPLE INTERVAL	BLOW COUNT	RECOVERY (%)	FID/ PID (ppm) SAMPLE / HOLE	COMMENTS		
gs elevation 48.0 ft.			ground surface (gs)							
1	<p>Concrete</p> <p>Bentonite Chips</p> <p>Natural Formation</p>		(0-2.5') Sample collected off the augers - Grayish brown, sandy, silty gravel, frozen, to gravel (40%), f-m sand (40%), and silt (20%), dry, maximum grain size 4 cm., rounded.				1.0	Drilling conducted with a Simco 2400 drill rig. Augers were advanced to 10 feet bgs. Monitoring well constructed of 1.25" steel riser with 5-foot steel screen was pushed to a depth of 15 feet bgs. Monitoring well was completed as flush-mount.		
2			(2.5-5.0') Same as above, observed from auger cuttings.				1.0			
3										
4										
5										
6						4				
7						3	100		0.4	
8						4				
9										
10					(10.7-11.0') F. silty sand, Very well sorted, laminated, tight, moist	4				0.6
11			(11.0-11.5') Gravelly med. sand, moist, well sorted, loose	20	45					
12				22						
13										
14										
15										
16			End of Boring @ 10.0' for auger drilling. Monitoring well was hydraulically driven beyond augers to a depth of 15.0' BGS.							
17										
18										



ADOT & PF ROW INVESTIGATION – River Terrace Project

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chwell2

DRILLING LOG OF WELL NO. MW14

Project/Location: ADOT & PF ROW / Soldotna, Alaska
 Drilling Location: ADOT & PF ROW @ River Terrace RV Park
 and Sterling Hwy.
 Date Started/Finished: 10-28-98 @0630 / 10-28-98 @1015
 Drilling Company: Hughes Drilling
 Driller/Geologist: Pat / Craig Carlson CPG#8903

Total Depth of Hole (feet BGS): 22.0
 Ground Elevation (feet above MSL): 71.7
 Inner casing elevation (ft. above MSL): 71.48
 Groundwater Depth (feet BGS):
 During Drilling: 14 ▾
 After development: 14 ▾

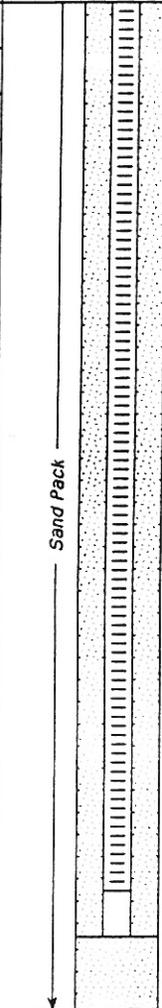
ELEVATION DEPTH	WELL COMPLETION DIAGRAM	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	SAMPLE NUMBER SAMPLE INTERVAL	BLOW COUNT	RECOVERY (%)	FID/ PID (ppm)	COMMENTS
gs elevation 71.7 ft			ground surface (gs)					
1	Concrete		Brown (10YR5/3) silt and c-f angular gravel to cobbles, frozen at surface, grading to silt, little clay, moist, (ML-GW to ML)	17 5 2 2	100	0	Drilling conducted with a CME-75 drill rig equipped with hollow stem augers. Monitoring well constructed of 2" ID, PVC, with 10-foot, 0.010-inch slot screen. Monitoring well completed at-grade. Development conducted on 10-29-98 with a bailer.	
2			Brown (10YR5/3) silt, some c-f gravel and cobbles (angular), little c-f sand, trace clay, dry to moist, (ML)	5 9 11 10	100	0		
3			Same as above except gravel and cobbles are angular to subrounded, moist to dry, (ML)	7 6 5 5	100	0		
4			Same as above except gravel and cobbles are angular to subrounded, moist to dry, (ML)	4 6 8 10	75	0		
5			Brown (10YR5/3) c-f sand with some silt and c-f gravel, grading to silty f. sand, some c-m sand and c-f gravel and cobbles, moist to dry, (SW to SW-ML)	4 5 8 10	25	1		
6	Bentonite Chips		Same as above. (SW-ML)					
7								
8								
9	Sand Pack							
10								

ADOT & PF ROW INVESTIGATION – River Terrace Project

DRILLING LOG OF WELL NO. MW14

Project: River Terrace Project

Total Depth of Hole (feet BGS): 22.0

ELEVATION DEPTH	WELL COMPLETION DIAGRAM	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	SAMPLE NUMBER	SAMPLE INTERVAL	BLOW COUNT	RECOVERY (%)	FID/ PID (ppm)	COMMENTS		
								SAMPLE / HOLE			
11			Brown (10YR5/3) silty c-f sand and gravel, some clay, moist to wet, (SW/GW-ML)			3 8 8	8	3.5			
12			Brown (10YR5/3) sandy silt, some c-f gravel and small cobbles, moist, (ML-SP)			4 3 4 7	100	0			
14			Brown (10YR5/3) c-f sand, gravel and small cobbles, little fines, saturated, (SW-GW)			3 3 8 10	100	5.5			
15			Dark gray (10YR4/1) silt, some clay, little c-f sand and gravel (Till), v. stiff, Moist, (ML)								
16			Same as above, moist, (ML)								
17			Same as above, moist, v. stiff, (ML)					3 8 10 14	100	0	
19			Same as above, moist, v. stiff, (ML)					4 8 7 9	100	20	
20			Same as above, (ML)								
21			Same as above, (ML)					4 8 12	100	6.5	
22					End of Boring @ 22.0'.						



ADOT & PF ROW INVESTIGATION – River Terrace Project

ecology and environment, inc.

chwell2

DRILLING LOG OF WELL NO. MW15 (Attempted)

Project/Location: ADOT & PF ROW / Soldotna, Alaska

Total Depth of Hole (feet BGS): 10.0

Boring Location: ADOT & PF ROW @ River Terrace RV Park,

Ground Elevation (feet above MSL): 48.0 (est)

Beneath Kenai River Bridge No. 671.

Inner casing elevation (ft. above MSL): NA

Date Started/Finished: 12-07-98 @1600 / 12-07-98 @1700

Groundwater Depth (feet BGS):

Drilling Company: Hughes Drilling

During Drilling: _____ ▾

Driller/Geologist: Pat / Jackie Donley

After development: NA ▾

ELEVATION DEPTH	WELL COMPLETION DIAGRAM	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	SAMPLE NUMBER SAMPLE INTERVAL	BLOW COUNT	RECOVERY (%)	FID/ PID (ppm)	COMMENTS
gs elevation 48.0 ft.			ground surface (gs)					
1		•••••	(0-2.5') Sample collected off the augers - Brown, sand (40%) and gravel (40%), with silt (20%), loose, dry, poorly sorted. Refusal at 2.5' bgs due to a boulder or construction debris. Move drill rig 2' to the west and redrill.				22	Drilling conducted with a Simko 2400 drill rig. Augers were advanced to 10 feet bgs before refusal. Well location could not be moved due to the lack of a suitable alternate site. Generated 1/2 of 55 gallon drum of soil.
2		•••••						
3		•••••						
4		•••••						
5		•••••	(5.0-6.5') Same as above, loose, dry. Collected from a split-spoon.	9				
6		•••••		9	18		34	
7		•••••		15				
8								
9								
10			Refusal due to a boulder or backfill debris.					
11			End of Boring @ 10.0'. Boring abandoned due to refusal, groundwater was not encountered. Area reconnaissance showed no alternative location for placement of the well due to interference from the bridge and the terrain slope.					
12								
13								
14								
15								

ADOT & PF ROW INVESTIGATION – River Terrace Project

BRISTOL

ENVIRONMENTAL & ENGINEERING SERVICES CORPORATION

LOG OF MONITORING WELL : MW-15

(Page 1 of 3)

Project No: 20019
Project: River Terrace RV Park

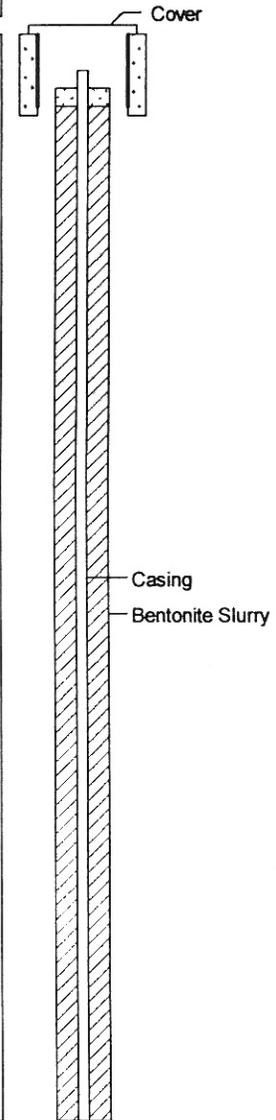
Client: ADEC

Location: Soldotna, AK

Date Completed : 6/23/99
Drilled By : Hughes Drilling/Gary Wilson
Diam./Drill Method : 8" HSA
Equipment Used : CME-75
Logged By : Scott Ruth

Sample Method : 24" Split Spoon
Well Casing : 2" PVC
Well Screen : 10'-2" PVC .010 slot
Sand Pack : 10-20 Silica
Annulus Seal : Bentonite Chips/slurry

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
0			COBBLES (90%) with silt (5%) and sand (v.fine-medium, 5%), very dark gray (5YR3/1), damp		0		3	<p>Well: MW-15 Collar: 71.39</p>
			SAND (v.fine-medium) with gravel (20%) and silt (30%), 5YR3/1, damp		0		4	
							3	
							2	
							3	
			SAND (v.fine-medium) with gravel (20%) and silt (30%), 5YR3/1, damp		0		3	
							3	
							3	
			SAND with silt (30%) and cobbles (10%), 5YR3/1 saturated		0		2	
5							11	
			SAND (fine-coarse) with gravel (5%), 5YR3/1, moist		0		18	
							22	
			SAND with silt (20%) and cobbles (40%), 5YR3/1, moist		0		22	
							19	
							24	
			Lithology same as above		0		28	
							8	
							12	
10			Lithology same as above, 1" layer at 10' of SAND with silt (50%), dark reddish brown (2.5YR3/4), damp		0		21	
							25	
							11	
							24	
							33	
							38	
			SAND (fine-medium) with silt (30%) and cobbles (20%), 5YR3/1, damp to moist. Wet in 2" interval above underlying (13-14') silt		0		14	
							19	
			SILT with trace gravel, very dark gray (GLE3/), damp		0		11	
							11	
			Lithology same as above		0		7	
15							9	



Well Installation Notes:
Flush mount well, cover set in cement.

BRISTOL

ENVIRONMENTAL & ENGINEERING SERVICES CORPORATION

LOG OF MONITORING WELL : MW-15

(Page 2 of 3)

Project No: 20019
Project: River Terrace RV Park

Date Completed : 6/23/99
Drilled By : Hughes Drilling/Gary Wilson
Diam./Drill Method : 8" HSA
Equipment Used : CME-75
Logged By : Scott Ruth

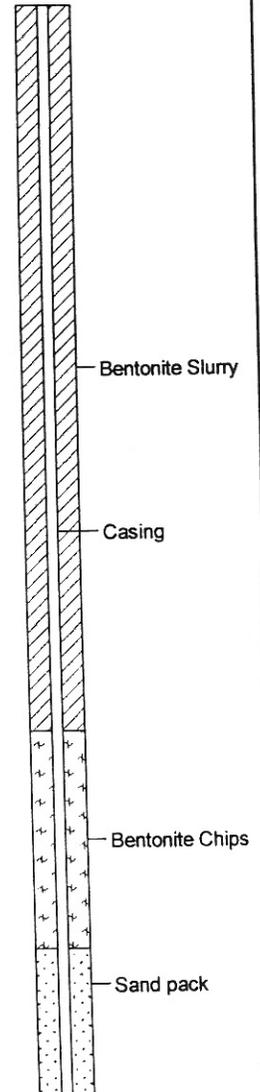
Sample Method : 24" Split Spoon
Well Casing : 2" PVC
Well Screen : 10'-2" PVC .010 slot
Sand Pack : 10-20 Silica
Annulus Seal : Bentonite Chips/slurry

Client: ADEC

Location: Seldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
15			Lithology same as above		0		11	
			Lithology same as above		0		11	
			Lithology same as above		0		8	
			Lithology same as above		0		11	
			Lithology same as above		0		12	
			Lithology same as above		0		21	
			Lithology same as above		0		5	
			Lithology same as above		0		8	
			Lithology same as above		0		11	
20			Lithology same as above		0		13	
			Lithology same as above		0		4	
			Lithology same as above, bottom of sample saturated (~1/2")		0		6	
			Lithology same as above, bottom of sample saturated (~1/2")		0		6	
			Lithology same as above, bottom of sample saturated (~1/2")		0		12	
			Lithology same as above, bottom of sample saturated (~1/2")		0		4	
			Lithology same as above, bottom of sample saturated (~1/2")		0		18	
			Lithology same as above, bottom of sample saturated (~1/2")		0		16	
			Lithology same as above, bottom of sample saturated (~1/2")		0		13	
			Lithology same as above, not wet, more cobbles and boulder pieces (20%)		0		8	
25			Lithology same as above, not wet, more cobbles and boulder pieces (20%)		0		11	
			Lithology same as above, not wet, more cobbles and boulder pieces (20%)		0		12	
			Lithology same as above, not wet, more cobbles and boulder pieces (20%)		0		14	
			Lithology same as above		0		9	
			Lithology same as above		0		21	
			Lithology same as above		0		22	
			Lithology same as above		0		19	
			Lithology same as above		0		3	
30			Lithology same as above		0		18	
			Lithology same as above		0		30	
			Lithology same as above		0		36	

Well: MW-15
Collar: 71.39



Well Installation Notes:
Flush mount well, cover set in cement.

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BRISTOL

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LOG OF MONITORING WELL : MW-15

(Page 3 of 3)

Project No: 20019
Project: River Terrace RV Park

Date Completed : 6/23/99
Drilled By : Hughes Drilling/Gary Wilson
Diam./Drill Method : 8" HSA
Equipment Used : CME-75
Logged By : Scott Ruth

Sample Method : 24" Split Spoon
Well Casing : 2" PVC
Well Screen : 10'-2" PVC .010 slot
Sand Pack : 10-20 Silica
Annulus Seal : Bentonite Chips/slurry

Client: ADEC

Location: Soldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
30			Lithology same as above	99RT012SL	0		7 14 16 17	<p>Well: MW-15 Collar: 71.39</p> <p>Sand pack Screen (.010)</p>
			Lithology same as above		0		8 17 17 18	
			Lithology same as above				11 15	
35			SAND (v.fine-fine) with silt (30%), no color change, saturated	99RT013SL	0		37 62	
			Lithology same as above		0		24 30 29 17	
			Lithology same as above				11	
			Lithology same as above		0		19	
			SAND (v.fine-fine) with silt (50%), wet, not saturated				18	
40			SILT, GLEY3/, damp				50+	
			END OF BORING at 40.5'					

Well Installation Notes:
Flush mount well, cover set in cement.

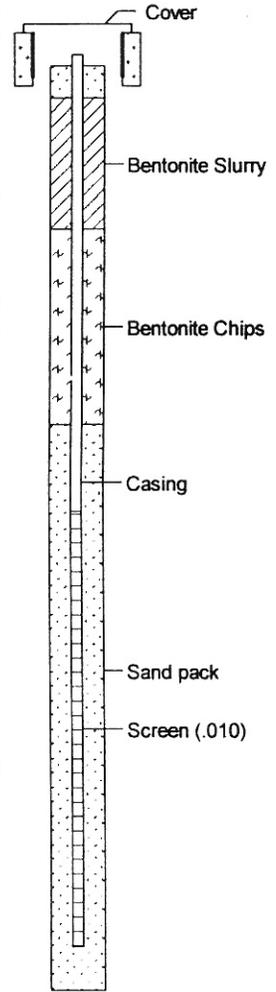
Project No: 20019
 Project: River Terrace RV Park

Date Completed : 6/22/99
 Drilled By : Hughes Drilling/Gary Wilson
 Diam./Drill Method : 8" HSA
 Equipment Used : CME-75
 Logged By : Scott Ruth

Sample Method : 24" Split Spoon
 Well Casing : 2" PVC
 Well Screen : 10'-2" PVC .010 slot
 Sand Pack : 10-20 Silica
 Annulus Seal : Bentonite Chips/slurry

Client: ADEC
 Location: Soldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
0			COBBLES (90%) with v.fine-coarse sand, very dark gray (5YR3/1), damp					
5			COBBLES (60%) with v.fine-coarse sand, 5YR3/1, damp					
10			COBBLES (50%) with v.coarse sand, 5YR3/1, damp	99RT001SL	0		10 17 26 23	
15			Lithology as above, trace silt moist at 16'		0		70 80 75 63	
20			GRAVEL (60%) with fine-medium sand, 5YR3/1, saturated		0		11 8	
			SILT with gravel (10%) and sand (30%, v.fine-fine), dark grayish brown (2.5Y4/2), moist				9 11	
			SILT, very dark gray (GLEYS 3/), damp					
			END OF BORING at 22'					
25								



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Well Installation Notes:
 Flush mount well, cover set in cement.

BRISTOL

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LOG OF MONITORING WELL : MW-17

(Page 1 of 2)

Project No: 20019
Project: River Terrace RV Park

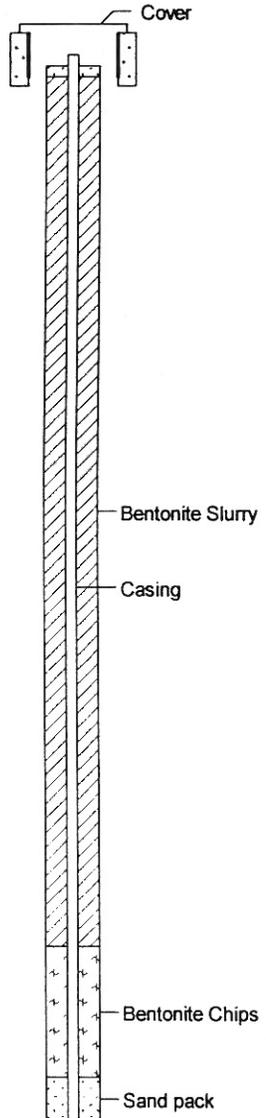
Date Completed : 6/24/99
Drilled By : Hughes Drilling/Gary Wilson
Diam./Drill Method : 8" HSA
Equipment Used : CME-75
Logged By : Scott Ruth

Sample Method : 24" Split Spoon
Well Casing : 2" PVC
Well Screen : 10'-2" PVC .010 slot
Sand Pack : 10-20 Silica
Annulus Seal : Bentonite Chips/slurry

Client: ADEC

Location: Soldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
0			SAND (v.fine-v.coarse) with cobbles (30%), very dark gray (5YR3/1), damp					
5					0		12 16 19 20	
10			Lithology as above, moist to wet		0		15 17 24 19	
15			SILT, trace cobbles, very dark gray (GLEY3), damp	99RT014SL	0		4 7 8 8	
20				99RT015SL	0		3 7 7 11	
25								



Well Installation Notes:
Flush mount well, cover set in cement.

BRISTOL

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SERVICES CORPORATION

LOG OF MONITORING WELL : MW-17

(Page 2 of 2)

Project No: 20019
Project: River Terrace RV Park

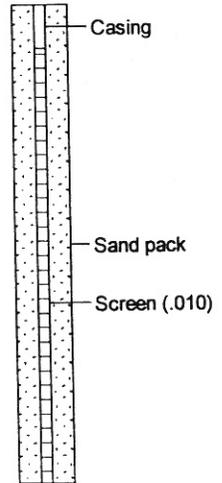
Date Completed : 6/24/99
Drilled By : Hughes Drilling/Gary Wilson
Diam./Drill Method : 8" HSA
Equipment Used : CME-75
Logged By : Scott Ruth

Sample Method : 24" Split Spoon
Well Casing : 2" PVC
Well Screen : 10'-2" PVC .010 slot
Sand Pack : 10-20 Silica
Annulus Seal : Bentonite Chips/slurry

Client: ADEC
Location: Soldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
25			No recovery. Rock obstruction.		NA		6 13 12 12 6 5 9 12 20	
			SILT, trace cobbles, GLEY3/, damp	99RT016SL	0		5 11 15 23 12 21 27 32	
30					0		10 9	
			SAND (v.fine-medium) with silt (30%), no color change, saturated	99RT017SL	0		16 27	
35			SILT, trace cobbles, GLEY3/, damp		0			
			END OF BORING at 36'					
40								
45								
50								

Well: MW-17
Collar: 70.39



01-25-2000 C:\MTECH5\RIVER\MW-17 BOR

Well Installation Notes:
Flush mount well, cover set in cement.

BRISTOL
ENVIRONMENTAL & ENGINEERING
SERVICES CORPORATION

LOG OF MONITORING WELL : MW-18

(Page 1 of 3)

Project No: 20019
 Project: River Terrace RV Park

Date Completed : 6/24/99
 Drilled By : Hughes Drilling/Gary Wilson
 Diam./Drill Method : 8" HSA
 Equipment Used : CME-75
 Logged By : Scott Ruth

Sample Method : 24" Split Spoon
 Well Casing : 2" PVC
 Well Screen : 10'-2" PVC .010 slot
 Sand Pack : 10-20 Silica
 Annulus Seal : Bentonite Chips/slurry

Client: ADEC

Location: Soldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
0			SAND, v.fine-v.coarse, gray (5YR6/1), dry				3	<p>Well: MW-18 Collar: 67.94</p>
			Lithology as above w/ organics, reddish brown (5YR4/3), damp		0		7	
			SILT with sand (v.fine, 30%) and cobbles (20%), very dark gray (5YR3/1), damp				7	
			SILT with sand (v.fine-fine, 10%) and organics, trace cobbles, 5YR3/1, moist to wet 3-4 feet.		0		3	
							3	
							2	
							1	
							1	
							1	
5			SILT with sand (v.fine, 10%) and cobbles (2%), dark reddish gray (5YR4/2), damp to moist		0		3	
			Lithology as above				5	
							5	
							4	
							6	
							9	
							11	
			SILT with sand (v.fine, 10%), mottled gray (5YR4/1), strong brown (7.5YR4/6), and very dark gray (7.5YR3/1), damp		0		4	
							10	
							12	
10			Lithology as above, 10% cobbles, dark greenish gray (GLEY3/10Y), damp		0		15	
							5	
							8	
							12	
			Lithology as above, very dark gray (GLEY3/10GY)		0		15	
							5	
							11	
							12	
							15	
			SILT, trace cobbles, very dark gray (GLEY3/), damp	99RT018SL	0		4	
15							9	

01-25-2000 C:\MTECHSRIVER\MW-18 BOR

Well Installation Notes
 Flush mount well, cover set in cement.
 Borehole narrows inward from 34'-36'

BRISTOL
ENVIRONMENTAL & ENGINEERING
SERVICES CORPORATION

LOG OF MONITORING WELL : MW-18

(Page 2 of 3)

Project No: 20019
 Project: River Terrace RV Park

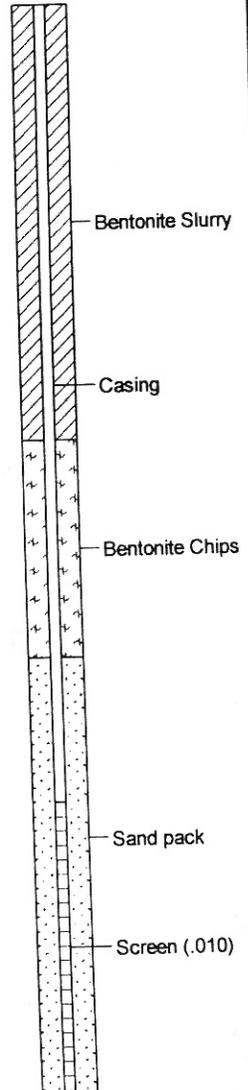
Date Completed : 6/24/99
 Drilled By : Hughes Drilling/Gary Wilson
 Diam./Drill Method : 8" HSA
 Equipment Used : CME-75
 Logged By : Scott Ruth

Sample Method : 24" Split Spoon
 Well Casing : 2" PVC
 Well Screen : 10'-2" PVC .010 slot
 Sand Pack : 10-20 Silica
 Annulus Seal : Bentonite Chips/slurry

Client: ADEC
 Location: Soldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
15			SILT, trace cobbles, GLEY3/, damp	99RT018SL	0		9	
			SAND (v.fine) with silt (20%), GLEY3/, saturated	99RT019SL	0		10	
			SILT, trace cobbles, GLEY3/, damp				3	
			Lithology as above, moist from 19'-20'				7	
					1		8	
							10	
							3	
							6	
							10	
							13	
20			Lithology as above		2		8	
							9	
							15	
			Only slough in sampler		NA		18	
							5	
							10	
							13	
							16	
			SILT, trace cobbles, GLEY3/, damp	99RT020SL	2		8	
25							13	
			Lithology as above		2		13	
							17	
							10	
					2		14	
							16	
							21	
			Lithology as above		4		4	
							12	
							14	
30							15	

Well: MW-18
 Collar: 67.94



Well Installation Notes:
 Flush mount well, cover set in cement.
 Borehole narrows inward from 34'-36'

01-25-2000 C:\MTECH\SRIVER\MW-18 BOR

BRISTOL

ENVIRONMENTAL & ENGINEERING
SERVICES CORPORATION

LOG OF MONITORING WELL : MW-18

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Project No: 20019
Project: River Terrace RV Park

Client: ADEC

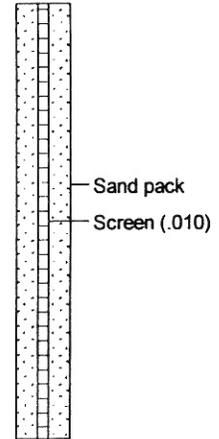
Location: Soldotna, AK

Date Completed : 6/24/99
Drilled By : Hughes Drilling/Gary Wilson
Diam./Drill Method : 8" HSA
Equipment Used : CME-75
Logged By : Scott Ruth

Sample Method : 24" Split Spoon
Well Casing : 2" PVC
Well Screen : 10'-2" PVC .010 slot
Sand Pack : 10-20 Silica
Annulus Seal : Bentonite Chips/slurry

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
30			Lithology as above	99RT021SL	3		5	
							16	
			~5" (starting at 31.5') is SAND (v.fine-fine) with silt (30%), wet. Bottom 1" in spoon is SILT, trace cobbles, GLEY3/, damp. Sample 5" sand layer				22	
			SILT, trace cobbles, GLEY/, damp		2		68	
							4	
							13	
							19	
							27	
							4	
35				99RT022SL	2		10	
							17	
							33	
			END OF BORING at 36'					
40								
45								

Well: MW-18
Collar: 67.94



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Well Installation Notes:
Flush mount well, cover set in cement.
Borehole narrows inward from 34-36'

BRISTOL

ENVIRONMENTAL & ENGINEERING
SERVICES CORPORATION

LOG OF MONITORING WELL : MW-19

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Project No: 20019
Project: River Terrace RV Park

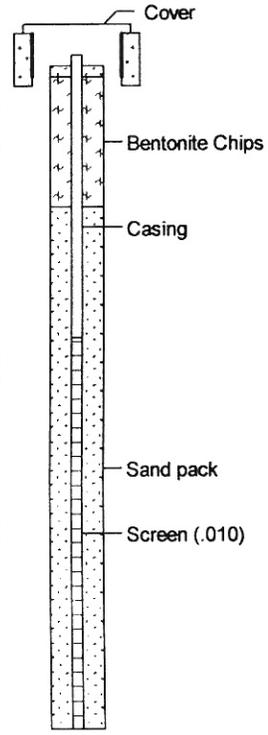
Date Completed : 6/25/99
Drilled By : Hughes Drilling/Gary Wilson
Diam./Drill Method : 8" HSA
Equipment Used : CME-75
Logged By : Scott Ruth

Sample Method : 24" Split Spoon
Well Casing : 2" PVC
Well Screen : 10'-2" PVC .010 slot
Sand Pack : 10-20 Silica
Annulus Seal : Bentonite Chips/slurry

Client: ADEC

Location: Soldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
0			SAND (fine-coarse) with silt (5%) and cobbles (5%), dark brown (7.5YR3/2), moist	99RT23SL	1		3	Well: MW-19 Collar: 58.38
			Lithology as above		4		3	
			Lithology as above		8		5	
			Lithology as above, moist to wet		No Sample		3	
			Lithology as above		No Sample		4	
			SAND (v.fine) with silt (40%), dark greenish gray (GLEY 4/N), wet		4		2	
			No sample, rock in sampler		No Sample		2	
			SILT with sand (v.fine-fine, 40%), GLEY4/N, some wood pieces, wet		No Sample		4	
			Lithology as above		4		2	
					No Sample		1	
					No Sample		2	
					No Sample		2	
					No Sample		3	
					No Sample		3	
			END OF BORING at 16'		No Sample		3	



01-25-2000 C:\MTECH\5RIVER\MW-19 BOR

Well Installation Notes:
Flush mount well, cover set in cement
* Samples 99RT026SL, 99RT027SL (QC), and 99RT028SL (QA) taken from 12'-14' sample interval

BRISTOL

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SERVICES CORPORATION

LOG OF MONITORING WELL : MW-20

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Project No: 20019
Project: River Terrace RV Park

Date Completed : 6/25/99
Drilled By : Hughes Drilling/Gary Wilson
Diam./Drill Method : 8" HSA
Equipment Used : CME-75
Logged By : Scott Ruth

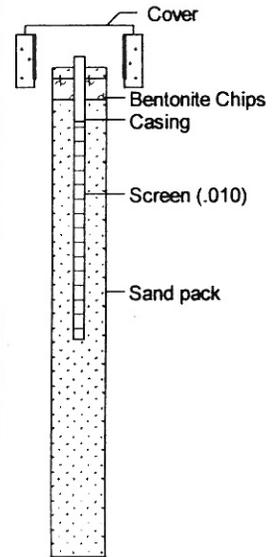
Sample Method : 24" Split Spoon
Well Casing : 2" PVC
Well Screen : 5'-2" PVC .010 slot
Sand Pack : 10-20 Silica
Annulus Seal : Bentonite Chips/slurry

Client: ADEC

Location: Soldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
0			SAND (v.fine-v.coarse) with silt (30%) and cobbles (20%), brown (7.5YR4/2), spoon saturated					
5				* See note	4		9 12 20 12	
10			SILT, trace cobbles, very dark gray (GLE Y3/), damp	99RT032SL	1		7 14 20 22	
15			END OF BORING at 12'					
20								
25								

Well: MW-20
Collar: 47.11



Well Installation Notes:
Flush mount well, cover set in cement.

*Samples 99RT029SL, 99RT030SL (QC), and 99RT031SL (QA) taken from 5'-7' interval

C:\MTECH5\RV\VERT\MW-20 BOR

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SERVICES CORPORATION

LOG OF MONITORING WELL : MW-21

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Project No: 20019
Project: River Terrace RV Park

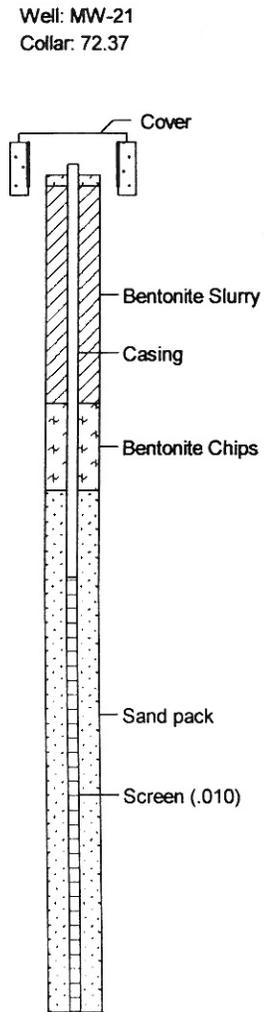
Date Completed : 8/31/99
Drilled By : Hughes Drilling
Diam./Drill Method : 8" HSA
Equipment Used : CME-75
Logged By : Scott Ruth

Sample Method : 24" Split Spoon
Well Casing : 2" PVC
Well Screen : 10'-2" PVC .010 slot
Sand Pack : 10-20 Silica
Annulus Seal : Bentonite Chips/slurry

Client: ADEC

Location: Soldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
0			COBBLES (70%, to 2" diameter) with v.fine-coarse sand, very dark gray (5YR3/1), damp					
			Lithology as above, approximately 90% cobbles, damp					
5			SAND, v.fine, with cobbles (10%), 5YR3/1, damp					
10			SAND (v.fine-v.coarse) with cobbles (20%) to 1.5" diameter, 5YR3/1, damp		0		6 10 13 19	
15			SAND (v.fine-v.coarse) with cobbles (20%) to 1.5", 5YR3/1, moist at 15-15.5', wet at 15.5' bgs	99RT35SL	0		9 9 9 11	
20			SILT, trace cobbles to 1/2" diameter, very dark gray (GLEY 3/), damp		0		7 7 8 10	
			END OF BORING at 22'					
25								



Well Installation Notes:
Flush mount well, cover set in cement.

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LOG OF MONITORING WELL : MW-22

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Project No: 20019
 Project: River Terrace RV Park

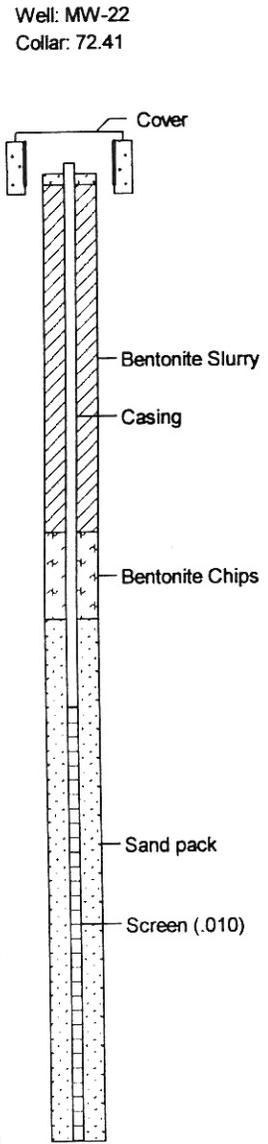
Date Completed : 8/31/99
 Drilled By : Hughes Drilling
 Diam./Drill Method : 8" HSA
 Equipment Used : CME-75
 Logged By : Scott Ruth

Sample Method : 24" Split Spoon
 Well Casing : 2" PVC
 Well Screen : 10'-2" PVC .010 slot
 Sand Pack : 10-20 Silica
 Annulus Seal : Bentonite Chips/slurry

Client: ADEC

Location: Soldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
0			COBBLES (80%) with v.fine-coarse sand, very dark gray (5YR3/1), damp					
5			COBBLES (95%) to 3" diameter with sand (v.fine-coarse), 5YR3/1, damp					
10			COBBLES (50%) to 1" diameter, with sand (v.fine), dark gray (7.5YR4/1), damp					
15			COBBLES (50%) to 2" diameter, with sand (fine-medium), 5YR3/1, damp to moist		0		4 7 17 25	
20			SAND (v.fine-v.coarse) with silt (20%) and cobbles (10%) to 3" diameter, 5YR3/1, damp to moist from 15-16.5', moist to very moist from 16.5-17'		0		10 24 27 26	
25			COBBLES (40%), with sand (v.fine-v.coarse, 40%) and silt (20%), 5YR3/1, moist to very moist, saturated (entire spoon)	99RT034SL	0		12 17 16 25	
25			END OF BORING at 23'					



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Well Installation Notes:
 Flush mount well, cover set in cement.

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LOG OF MONITORING WELL : MW-23

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Project No: 20019
 Project: River Terrace RV Park

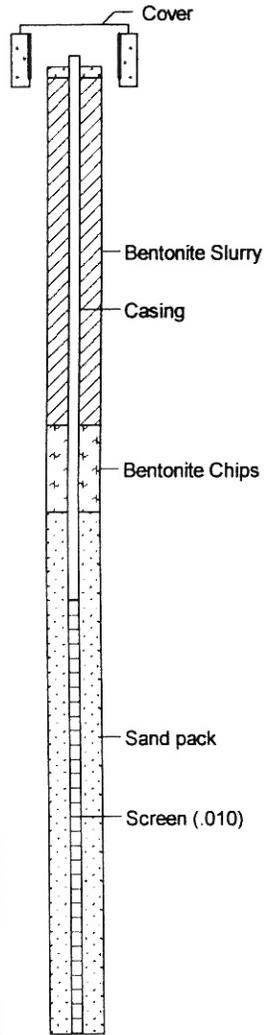
Date Completed : 8/31/99
 Drilled By : Hughes Drilling
 Diam./Drill Method : 8" HSA
 Equipment Used : CME-75
 Logged By : Scott Ruth

Sample Method : 24" Split Spoon
 Well Casing : 2" PVC
 Well Screen : 10'-2" PVC .010 slot
 Sand Pack : 10-20 Silica
 Annulus Seal : Bentonite Chips/slurry

Client: ADEC

Location: Soldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
0			COBBLES (80%) and v.fine-coarse sand, very dark gray (5YR3/1), damp					
5								
10			COBBLES (50%) and v.fine-coarse sand, 5YR3/1, damp					
10			COBBLES (50%) to 3" diameter with sand (fine-medium), 5YR3/1, damp		0		16 27 33 36	
15			Lithology as above		0		10 18 20 28	
20			COBBLES (90%) to 3" diameter with sand (fine-medium), 5YR3/1, wet at 19'					
20			GRAVEL (to 1" dia) with sand (v.fine-fine, 10%) and silt (10%), 5YR3/1, damp	99RT033SL	0		7 7	
20			SILT with sand (v.fine-fine, 30%) and gravel (10%), very dark gray (GLEY3/), damp				6 7	
25			END OF BORING at 23'					



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Well Installation Notes:
 Flush mount well, cover set in cement.

BRISTOL

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LOG OF MONITORING WELL : MW-24

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Project No: 20019
Project: River Terrace RV Park

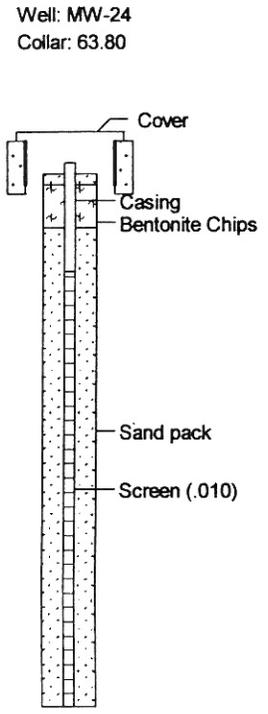
Date Completed : 9/1/99
Drilled By : Hughes Drilling
Diam./Drill Method : 8" HSA
Equipment Used : CME-75
Logged By : Scott Ruth

Sample Method : 24" Split Spoon
Well Casing : 2" PVC
Well Screen : 10'-2" PVC .010 slot
Sand Pack : 10-20 Silica
Annulus Seal : Bentonite Chips/slurry

Client: ADEC

Location: Soldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
0			SAND (v.fine-coarse) with cobbles (20%) to 1/2" diameter and silt (10%), very dark gray (5YR3/1), damp					
5				99RT036SL	0		1 1 2 1	
10			SILT, trace cobbles to 1/2" diameter, 1/4" sand seam (v.fine-fine) at 11.5', very dark gray (GLEY 3/), damp					
15					0		3 8 12 17	
13			END OF BORING at 13'					
20								
25								



Well Installation Notes:
Flush mount well, cover set in cement.

BRISTOL

ENVIRONMENTAL & ENGINEERING
SERVICES CORPORATION

LOG OF MONITORING WELL : MW-25

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Project No: 20019
Project: River Terrace RV Park

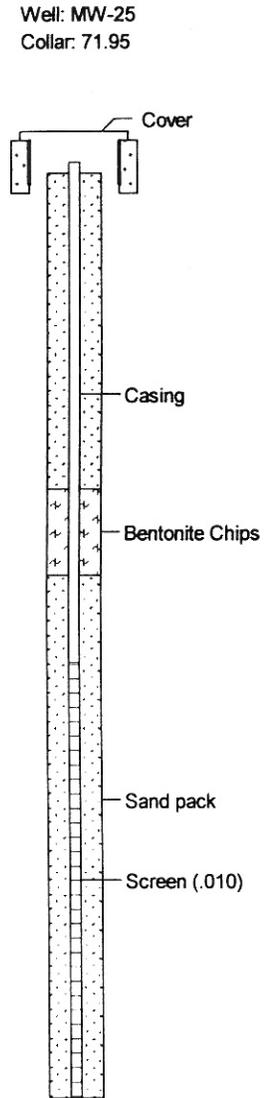
Date Completed : 9/1/99
Drilled By : Hughes Drilling
Diam./Drill Method : 8" HSA
Equipment Used : CME-75
Logged By : Scott Ruth

Sample Method : 24" Split Spoon
Well Casing : 2" PVC
Well Screen : 10'-2" PVC .010 slot
Sand Pack : 10-20 Silica
Annulus Seal : Bentonite Chips/slurry

Client: ADEC

Location: Soldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
0			COBBLES (80%) to 3" diameter, with v.fine-coarse sand, very dark gray (5YR3/1), damp					
10			Lithology as above		0		13 60+ NA NA	
15			Lithology as above		0		7 22 23 21	
20			SAND (v.fine-v.coarse) with silt (50%), trace cobbles, 5YR3/1. Moist from 20-20.5'. Wet 20.5-21. From 21-22': SILT, v.dark gray (GLE Y3/) trace cobbles, damp	99RT037SL	0		12 6 6 10	
			END OF BORING at 22.'					
25								



Well Installation Notes:
Flush mount well, cover set in cement.

BRISTOL

ENVIRONMENTAL & ENGINEERING
SERVICES CORPORATION

LOG OF MONITORING WELL : MW-26

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Project No: 20019
Project: River Terrace RV Park

Date Completed : 9/2/99
Drilled By : Hughes Drilling
Diam./Drill Method : 8" HSA
Equipment Used : CME-75
Logged By : Scott Ruth

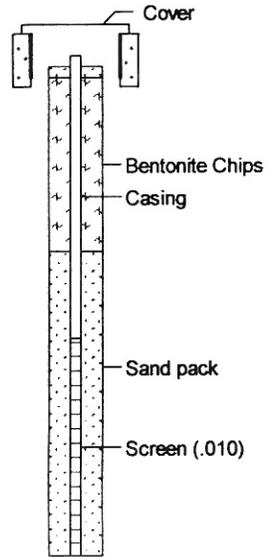
Sample Method : 24" Split Spoon
Well Casing : 2" PVC
Well Screen : 5'-2" PVC .010 slot
Sand Pack : 10-20 Silica
Annulus Seal : Bentonite Chips/slurry

Client: ADEC

Location: Soldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
0			SAND (fine-coarse) with silt (15%), trace cobbles to 1/2" diameter, very dark gray (5YR3/1), wet at 6.75 feet					
5				99RT038SL	0		4 3 3 2	
10			SILT, trace cobbles to 1" diameter, very dark gray (GLE Y 3/), damp		0		6 6 7 10	
12			END OF BORING at 12'					
15								
20								
25								

Well: MW-26
Collar: 59.46



Well Installation Notes:
Flush mount well, cover set in cement.

BRISTOL

ENVIRONMENTAL & ENGINEERING
SERVICES CORPORATION

LOG OF MONITORING WELL : MW-27

(Page 1 of 1)

Project No: 20019
Project: River Terrace RV Park

Date Completed : 11/4/99
Drilled By : Hughes Drilling
Diam./Drill Method : Driven
Equipment Used : Sledge Hammer
Logged By : Scott Ruth

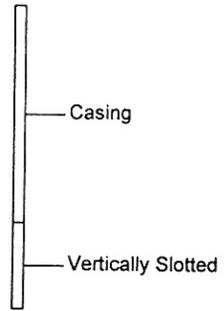
Sample Method : NA
Well Casing : 5'-1.5" ID Iron Pipe
Well Screen : 2'-1.5" ID Slotted S.Steel
Sand Pack : NA
Annulus Seal : NA

Client: ADEC

Location: Soldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Blow Count	Notes
0							
5				NA	NA	NA	
7			END OF BORING at 7'				
10							
15							
20							
25							

Well: MW-27
Collar: 47.94



04-26-2000 C:\MTECH\SRIVER\MW-27 BOR

Installed with sledge hammer
No soil samples were collected

BRISTOL

ENVIRONMENTAL & ENGINEERING
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LOG OF MONITORING WELL : MW-28

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Project No: 20019
Project: River Terrace RV Park

Date Completed : 11/2/99
Drilled By : Hughes Drilling
Diam./Drill Method : 8" HSA
Equipment Used : CME-75
Logged By : Scott Ruth

Sample Method : 24" Split Spoon
Well Casing : NA
Well Screen : NA
Sand Pack : NA
Annulus Seal : NA

Client: ADEC

Location: Soldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
0			Asphalt to 3" bgs. COBBLES (40%) with sand (40%, fine-medium) and silt (20%), brown, damp, FILL					Well: MW-28 Collar: 70.24
5								
10			Lithology as above.	99RT042SL	5		3 3 2 3 2 1 2 2 3	
15					4			
20			END OF BORING at 18'					
25								

Well Installation Notes:

Temporary monitoring well
Water sample 99-RT-69-GW collected from hydropunch at 14' to 18'
Collar elevation is the elevation of the road pavement

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LOG OF MONITORING WELL : MW-30

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Project No: 20019
 Project: River Terrace RV Park

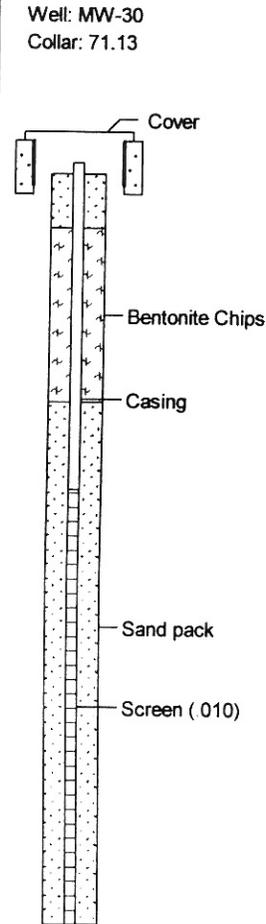
Date Completed : 11/5/99
 Drilled By : Hughes Drilling
 Diam./Drill Method : 8" HSA
 Equipment Used : CME-75
 Logged By : Scott Ruth

Sample Method : 24" Split Spoon
 Well Casing : 2" PVC
 Well Screen : 10'-2" PVC .010 slot
 Sand Pack : 10-20 Silica
 Annulus Seal : Bentonite Chips/slurry

Client: ADEC

Location: Soldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
0			SAND (60%, v.fine-v.coarse) with gravel (20%) and silt (20%), trace cobbles, very dark gray (5YR3/1), damp					
5			COBBLES (40%) with sand (30%, v.fine-v.coarse), silt (20%), and gravel (10%), damp					
10			SILT, trace cobbles, very dark gray (GLEY3/), dry	99RT054SL	4		3 7 7 12	
15							5 6 9 0	
20			END OF BORING at 20'					
25								



01-18-2000 C:\WTECH5\VERT\MW-30 BOR

Well Installation Notes
 Flush mount well, cover set in cement.
 Last 6" of split spoon not driven for 18'-20' interval

BRISTOL

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SERVICES CORPORATION

LOG OF MONITORING WELL : MW-31

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Project No: 20019
Project: River Terrace RV Park

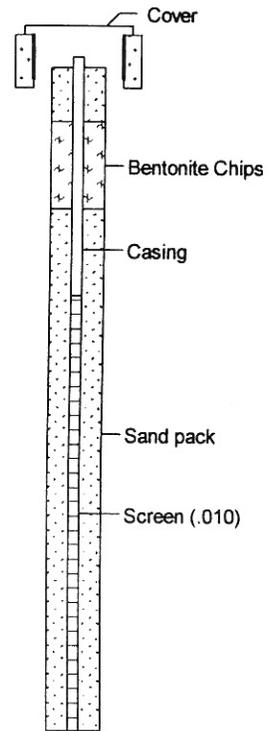
Date Completed : 11/3/99
Drilled By : Hughes Drilling
Diam./Drill Method : 8" HSA
Equipment Used : CME-75
Logged By : Scott Ruth

Sample Method : 24" Split Spoon
Well Casing : 2" PVC
Well Screen : 10'-2" PVC .010 slot
Sand Pack : 10-20 Silica
Annulus Seal : Bentonite Chips/slurry

Client: ADEC

Location: Soldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
0			SAND (fine) with cobbles (30%) and silt (30%), very dark gray (5YR3/1), damp					
5			Returns of cobbles to 3-4"					
10			Lithology as above, damp				1 9 19 0	
15			COBBLES (40%) with sand (30%) and silt (30%), saturated SILT, trace cobbles, very dark gray (GLEY3/1), damp	99RT048SL			7 6 7 12	
18			END OF BORING at 18'					
20								
25								



01-18-2000 C:\MTECHSR\VERT\MW-31 BOR

Well Installation Notes

Flush mount well, cover set in cement.
Last 6" of split spoon not driven for 12-14' interval

Project No: 20019
 Project: River Terrace RV Park

Date Completed : 11/3/99
 Drilled By : Hughes Drilling
 Diam./Drill Method : 8" HSA
 Equipment Used : CME-75
 Logged By : Scott Ruth

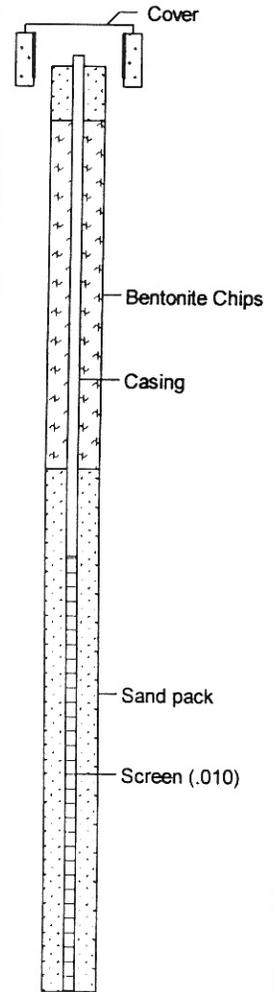
Sample Method : 24" Split Spoon
 Well Casing : 2" PVC
 Well Screen : 10'-2" PVC .010 slot
 Sand Pack : 10-20 Silica
 Annulus Seal : Bentonite Chips/slurry

Client: ADEC

Location: Soldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
0			COBBLES, 1-3" diameter, damp					
5			SAND (50%, fine) with cobbles (30%) and silt (20%), very dark gray (5YR3/1), damp					
10								
15								
20			SAND (40%, fine-v.coarse) with cobbles (20%), gravel (20%), and silt (20%), 5YR3/1, saturated	99RT049SL	10		10 41 46+ 0	
25			SILT, damp					
			END OF BORING at 23.5'					

Well: MW-32
 Collar: 76.09



Well Installation Notes:
 Flush mount well, cover set in cement.

BRISTOL

ENVIRONMENTAL & ENGINEERING
SERVICES CORPORATION

LOG OF MONITORING WELL : MW-33

(Page 1 of 1)

Project No: 20019
Project: River Terrace RV Park

Date Completed : 11/4/99
Drilled By : Hughes Drilling
Diam./Drill Method : 8" HSA
Equipment Used : CME-75
Logged By : Scott Ruth

Sample Method : Auger Cuttings
Well Casing : NA
Well Screen : NA
Sand Pack : NA
Annulus Seal : NA

Client: ADEC

Location: Soldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
0			SAND (v.fine-medium, 40%) with gravel (30%), cobbles (20%), and silt (10%), very dark gray (5YR3/1), damp					
5					2		NA	
10			END OF BORING at 10'					
15								
20								
25								

Well Installation Notes:

No monitoring well was installed at MW-33. An attempt was made to install a well at an angle, but the attempt was unsuccessful.

Soil sample 99-RT-053-SL collected from auger cuttings at approximately 7' bgs.

BRISTOL

ENVIRONMENTAL & ENGINEERING
SERVICES CORPORATION

LOG OF BORING : MW-34

(Page 1 of 1)

Project No: 20019
Project: River Terrace RV Park

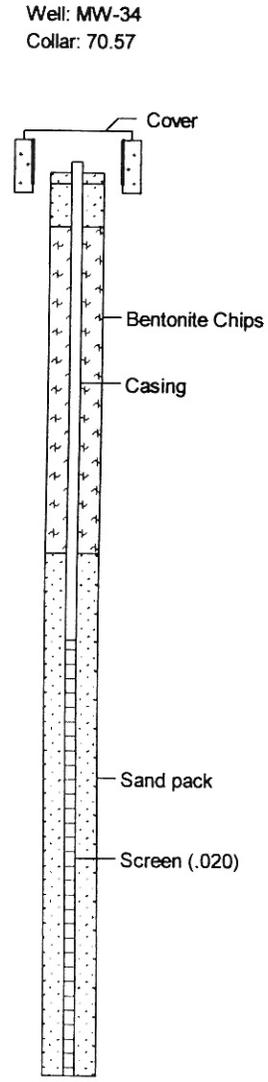
Date Completed : 1/13/00
Drilled By : Hughes Drilling
Diam./Drill Method : 8" HSA
Equipment Used : CME-75
Logged By : Scott Ruth

Sample Method : 24" Split Spoon
Well Casing : 2" PVC
Well Screen : 10'-2" PVC .020 slot
Sand Pack : 10-20 Silica
Annulus Seal : Bentonite Chips

Client: ADEC

Location: Soldotna, AK

Feet	GRAPHIC	USCS	DESCRIPTION	Lab I.D.	PID (Units)	Sample Interval	Blow Count	Notes
0			SAND (40%, fine) with cobbles (30%) and silt (30%), very dark grey (5YR3/1), damp					
5								
10			GRAVEL (30%) with sand (30%, fine-coarse), silt (30%), and cobbles (10%), 5YR3/1, damp	00RT01SL	1		13 23 27 30	
15			Lithology as above, very moist	00RT03SL	1		8 17 16 17	
			Lithology as above, wet					
20			SILT with trace gravel, very dark gray (GLEY3/1), damp	00RT04SL	3		8 6 6 10	
			END OF BORING at 21.5'					
25								



01-18-2000 C:\MTECH5\RYVERT\MW34 BOR

Well Installation Notes
Flush mount well, cover set in cement
Duplicate sample 00-RT-02-SL collected from 10-12' bgs.

Soil Boring Logs

DRILLING LOG OF WELL NO. SB-1

Project/Location: River Terrace RV Park / DOT & PF ROW Soldotna, AK Total Depth of Hole (feet BGS): 52
 Boring Location (Northing/Easting): 5054.4954(S) 5054.3359(D) / 4974.0079(S) 4973.9915(D) Ground Elevation (feet above): _____
 _____ Inner casing elevation (feet AMSL): 71.43(S) 71.47(D)
 Date Started/Finished: 13.07.97/14.07.97 Groundwater Depth (feet): _____
 Drilling Company: Hughes Drilling, Inc. During Drilling (BGS) (NR): _____ ▽
 Driller/Geologist: G. Wilson / B. Ackman After development (BTOC) (): 34.56 ▽

ELEVATION DEPTH	WELL COMPLETION DIAGRAM	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	SAMPLE NUMBER SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	FID/ PID (ppm)	COMMENTS		
gs elevation			ground surface (gs)							
1			0.5' 0'-0.5' SILTY SAND: brown silty sand, maximum clast diameter 0.5 cm, moist, (Fill)	17			0	Completion as nested pair of two screens. Wells completed with steel, flush-mount and concrete pad. Photo: R2 F7		
2			0.5'-2' SANDY GRAVEL: brownish-gray sandy gravel, maximum clast diameter 6 cm, moist, (Fill)	018 SL	1		1			
3			2'-12' SANDY GRAVEL: brownish-gray sandy gravel; 75% gravel, 20% sand, 5% finessome subrounded clasts; maximum clast diameter 6 cm; moist, (Fill)	019 SL	8		0	Photo: R2 F8		
4										
5						020 SL	12		0	Photo: R2 F8
6							22			
7							25			
8						020 SL	5			
9							7			
10							10		0	Photo: R2 F10
11							11			
12						022 SL	5			
13							4		0	
14							4			
15							3			Photo: R2 F11
						023 SL	4		2	One large clast of asphalt-like sand and gravel with diesel odor and FID 40 ppm. Sample taken from basic soil and not asphalt-like clast. Photo: R2 F12
							6			slight diesel odor
							8			
						024 SL	6		5	
							9			Photo: R2 F13
							10			diesel odor at ~14', no odor 15'16'
							10			
						025 SL	3		0	
							2			



DRILLING LOG OF WELL NO. SB-1

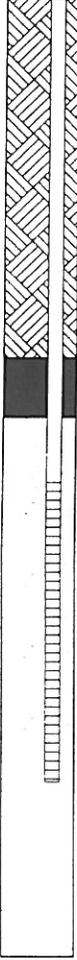
Project/Location: River Terrace RV Park / DOT & PF ROW Soldotna, AK Total Depth of Hole (feet BGS): 52

ELEVATION DEPTH	WELL COMPLETION DIAGRAM	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	SAMPLE NUMBER	SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	FID/ PID (ppm)	COMMENTS			
								SAMPLE / HOLE				
16			16.0			2			Photo: R2F14			
17			16'-19' SANDY GRAVEL: brownish-gray sandy gravel; 50% gravel, 40% sand, 10% fines; maximum clast diameter 3 cm; saturated	026 SL	2	2	1		1	Photo: R2F15		
18						1				slight diesel odor 18'-19'		
19			19.0			027 SL				2	sand-clay contact at 19' Photo: R2 F16	
20			19'-22' SANDY AND GRAVELLY SILT/CLAY: dark gray sandy and gravelly silt/clay; 10% gravel, 10% sand, 80% fines; maximum clast diameter 1 cm; moist	028 SL						0		
21						029 SL					0	Photos: R2 F17, F18 029 SL Fixed-base laboratory, %solids and grain size only.
22			22.0									
23												
24												
25			25.0									
26			25'-37' SANDY AND GRAVELLY SILT/CLAY: dark gray to black sandy and gravelly silt/clay; 30% gravel, 20% sand, 50% fines; rounded clasts with maximum diameter 4 cm; very dense and compacted; moist	030 SL			9			6		
27							8					
28							13					
29					15							
30									Elevation: Top of Screen (S) 42.18 feet AMSL			
31				031 SL/032 SL		3			one thin (~1 cm) wet layer			
32						6			031 SL Fixed-base laboratory			
33						11			032 SL Duplicate sample			
34						18						
35									Elevation: Bottom of Screen (S) 37.18 feet AMSL			
36				032 SL		10			Elevation Water (D) (7/22/97)			
						14			32			



DRILLING LOG OF WELL NO. SB-1

Project/Location: River Terrace RV Park / DOT & PF ROW Soldotna, AK Total Depth of Hole (feet BGS): 52

ELEVATION DEPTH	WELL COMPLETION DIAGRAM	GRAPHIC LOG	SOIL/ROCK DESCRIPTION	SAMPLE NUMBER	SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	FID/ PID (ppm)	COMMENTS			
								SAMPLE / HOLE				
37			40'-52' SANDY AND GRAVELLY SILT/CLAY : dark gray to black sandy and gravelly silt/clay; 30% gravel, 30% sand, 40% fines; maximum clast diameter 7 cm; moist			24			36.91 feet AMSL Elevation: Top of Screen (D) 27.40 feet AMSL Elevation: Bottom of Casing (D) 22.40 feet AMSL			
38												
39												
40												
41							034 SL			4		35
42										6		
43										23		
44										23		
45												
46							035 SL			5		15
47						11						
48						15						
49						18						
50												
51				036 SL/037 SL		7		20				
52						9						
53						12						
54						17						
55												
56												
57												



JOB NO: 20019 PROJECT: River Terrace RV Park CLIENT: ADEC
 LOGGED BY: JSR DATE: 6/22/99 DRILLER: GW COMPANY: Hughes
 DRILL METHOD: Hollow Stem Auger RIG: CME 75 BORING SIZE: 8 inch
 CASING: NA FILTER PACK: NA OVER CASING: NA
 SCREEN: NA
 TOTAL DEPTH (WELL): 27 feet DEPTH TO GROUNDWATER: 24.5 feet DATE: 6/22/99
 NOTES: _____

DEPTH FEET	BLOWS	INTERVAL	Core/Run Recovery	Time (military)	SOIL DESCRIPTION	PID (UNITS)	DEPTH FEET
0					COBBLES (60%) with fine-coarse sand, v. dark gray (5YR3/1), damp		0
5	8-13-15-19	I	75%	1510	Lithology as above	0	5
10	12-17-26-31	I	80%	1520	Lithology as above, damp to moist	0	10
15	10-8-10-10	I	80%	1530	14-17' SILT, trace gravel, v. dark gray (GLEYS 3/), damp, wet slough in top of split spoon Sample #: 99-RT-002-SL (8260B, 5035, AK102, AK103)	0	15
20	6-10-10-14	I	20%	1545	Lithology as above Sample #: 99-RT-003-SL (8260B, 5035)	0	20

(continued)

JOB NO: 20019 PROJECT: River Terrace RV Park CLIENT: ADEC
 LOGGED BY: JSR DATE: 6/22/99 DRILLER: GW COMPANY: Hughes
 DRILL METHOD: Hollow Stem Auger RIG: CME 75 BORING SIZE: 8 inch
 CASING: NA FILTER PACK: NA OVER CASING: NA
 SCREEN: NA
 TOTAL DEPTH (WELL): 27 feet DEPTH TO GROUNDWATER: 24.5 feet DATE: 6/22/99
 NOTES: _____

DEPTH FEET	BLOWS	INTERVAL	INTERVAL	INTERVAL	SOIL DESCRIPTION	PID (UNITS)	DEPTH FEET
25	12-9-20-18		60%	1603	Lithology as above Sample #: 99-RT-004-SL (8260B, 5035, AK102, AK103)	0	25
30					Total Depth 27 ft.		30

Sample Interval

Sample Interval Submitted for Laboratory Analysis

JOB NO: 20019 PROJECT: River Terrace RV Park CLIENT: ADEC
 LOGGED BY: JSR DATE: 6/22/99 DRILLER: GW COMPANY: Hughes
 DRILL METHOD: Hollow Stem Auger RIG: CME 75 BORING SIZE: 8 inch
 CASING: NA FILTER PACK: NA OVER CASING: NA
 SCREEN: NA
 TOTAL DEPTH (WELL): 27 feet DEPTH TO GROUNDWATER: 23.0 feet DATE: 6/22/99
 NOTES: _____

DEPTH FEET	BLOWS	INTERVAL	Core/Run Recovery	Time (military)	SOIL DESCRIPTION	PID (UNITS)	DEPTH FEET
0					COBBLES (60%) with fine-coarse sand, v. dark gray (5YR3/1), damp		0
5	11-14-13-10	I	80%	1652	5-6.5' SAND (70%), fine-coarse, gravely, (5YR3/1), damp to moist 6.5-7' SAND, fine-med., 5YR3/1, damp to moist	0	5
10	11-15-15-27	I	100%	1700	Lithology as 6.5' with tr. gravel beginning at approximately 10'	0	10
15	9-8-9-13	I	20%	1718	Lithology as above with cobbles (20%) beginning at approximately 15' Sample #: 99-RT-005-SL (8260B, 5035, AK102, AK103)	0	15
20	5-12-13-14	I	15%	1730	Lithology as above Sample #: 99-RT-006-SL (8260B, 5035)	0	20

(continued)

JOB NO: 20019 PROJECT: River Terrace RV Park CLIENT: ADEC
 LOGGED BY: JSR DATE: 6/22/99 DRILLER: GW COMPANY: Hughes
 DRILL METHOD: Hollow Stem Auger RIG: CME 75 BORING SIZE: 8 inch
 CASING: NA FILTER PACK: NA OVER CASING: NA
 SCREEN: NA
 TOTAL DEPTH (WELL): 27 feet DEPTH TO GROUNDWATER: 23.0 feet DATE: 6/22/99
 NOTES:

DEPTH FEET	BLOWS	INTERVAL	INTERVAL	INTERVAL	SOIL DESCRIPTION	PID (UNITS)	DEPTH FEET
25	10-17-11-15		15%	1745	Beginning at approximately 25', SILT, tr. cobbles, v. dark gray (GLEYS 3/), damp Sample #: 99-RT-007-SL (8260B, 5035, AK102, AK103)	0	25
30					Total Depth 27 ft.		30

 Sample Interval
 Sample Interval Submitted for Laboratory Analysis



LOG OF BORING SB-2B

River Terrace
RV Park
Soil Borings

Location : River Terrace Hole Diameter : 4 1/4"
 Date Completed : 6/30/98 Sampling Method : Split-Spoon
 Drilling Contractor : Hughes Drilling Hart Crowser Rep. : S. Rog
 Drilling Method : Hollow-stem auger

Soldotna, AK

Project Number: A-8514-01

Depth in Feet	DESCRIPTION	GRAPHIC	USCS	Sample Recovery	Sample Number	PID ppmV	PCE ug/Kg
0	Brown SAND with Gravel (SP) - Fill Moist, loose to medium dense Rounded to subrounded gravel 2 inch diameter.						
5							
10	Wet hollow stem auger cuttings noted at 18' bgs.						
15							
20							
25	Contact between native ground and fill estimated at 29' bgs.						
30							
35	Dark gray Sandy SILT with Gravel (ML) - Till Moist, Very dense Rounded to subrounded gravel 1 inch diameter.		ML	<input checked="" type="checkbox"/>	SB 2B, 30-31.5'	5	580
40				<input checked="" type="checkbox"/>	SB 2B, 35-36.5' SB 2BD, 35-36.5'	12	410 720

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LOG OF BORING SB-3A

River Terrace

RV Park

Soil Borings

Soldotna, AK

Project Number: A-8514-01

Location : River Terrace
 Date Completed : 6/29/98
 Drilling Contractor : Hughes Drilling
 Drilling Method : Hollow-stem auger

Hole Diameter : 4 1/4"
 Sampling Method : Split-Spoon
 Hart Crowser Rep. : S. Rog

Depth in Feet	DESCRIPTION	GRAPHIC	USCS	Sample Recovery	Sample Number	PID ppmV	PCE ug/Kg		
0	Brown SAND with Gravel (SP) - Fill Moist, loose to medium dense Rounded to subrounded gravel 2 inch diameter		SP						
5									
10									
15									
19	Native ground noted at 19' bgs								
20	Dark gray Gravelly SILT with Sand (ML) - Till Moist, very dense Rounded to subrounded gravel 1 inch diameter				ML	<input checked="" type="checkbox"/>	SB3A, 20-21.5'	26	33
22.5						<input checked="" type="checkbox"/>	SB3A, 22.5-24'	26	39
25	Moderate PCE odor noted in the spoon between 25.0 and 26.5 feet bgs					<input checked="" type="checkbox"/>	SB3A, 25-26.5'	56	10,000
30						<input checked="" type="checkbox"/>	SB3A, 30-31.5' SB3AD, 30-31.5'	64	15,000 20,000
35						<input checked="" type="checkbox"/>	SB3A, 35-36.5'	1	310
40									

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LOG OF BORING SB-3B

River Terrace
RV Park
Soil Borings

Location : River Terrace
Date Completed : 6/29/98
Drilling Contractor : Hughes Drilling
Drilling Method : Hollow-stem auger

Hole Diameter : 4 1/4"
Sampling Method : Split-Spoon
Hart Crowser Rep. : S. Rog

Soldotna, AK

Project Number: A-8514-01

Depth in Feet	DESCRIPTION	GRAPHIC	USCS	Sample Recovery	Sample Number	PID ppmV	PCE ug/Kg						
0	Brown SAND with Gravel (SP) - Fill Moist, loose to medium dense Rounded to subrounded gravel 2 to 3 inch diameter.		SP										
5													
10													
15	Wet hollow stem auger cuttings noted at 18' bgs.												
	Contact between native ground and fill estimated at 19' bgs.												
20	Dark gray Gravelly SiLT with Sand (ML) - Till Moist, very dense Rounded to subrounded gravel 1inch diameter.								ML	<input checked="" type="checkbox"/>	SB 3B, 20-21.5'	0.18	43
	SB 3BD, 20-21.5'											100	
	SB 3C, 20-21.5'										1	18	
	SB 3CD, 20-21.5'								12				
25									ML	<input checked="" type="checkbox"/>	SB 3C, 25-26.5'	0.15	12
30													

09-14-1998 f:\BS14\SoilBoring\sb3b bor

DRILLING LOG OF BORING NO. SB4

Site / Location: ADOT & PF ROW / Soldotna, Alaska

Total Depth of Hole (feet BGS): 30.0

Ground Elevation (feet above MSL): 71.7 (approx.)

Boring Location: ADOT & PF ROW @ River Terrace RV Park

Refusal at (feet BGS): _____

Drilling Company: Hughes Drilling

Date Started: 10-28-98 @1130

Driller/Geologist: Pat / Craig Carlson CPG#8903

Date Finished: 10-28-98 @1530

gs elevation 71.7 ft.	DEPTH	GRAPHIC LOG	SOIL / ROCK DESCRIPTION	SAMPLE NUMBER	SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	Head Space Readings [ppm]		COMMENTS
								Fid/Pid		
	1		Brown (10YR 5/3) silt, little clay and c-f gravel, trace c-f sand, frozen, (ML)			18				Drilling conducted with a CME-75 drill rig equipped with Hollow-Stem augers. Borehole banded with bentonite slurry.
	2		Gray (10YR 3/1) to brown c-f sand, little silt, trace clay and c-f gravel, frozen, (SP)			9	24			
70	3		Brown (10YR 5/3) c-f sand, some c-f gravel (subrounded), little silt, moist, (SP)			4				
	4		Same as above except with small cobbles also. Wet from 4-4.2', moist for remainder of the sample (SP)			7	24	0		
	5					8				
	6					9				
	7		Brown (10YR5/3) c-f sand, little c-f gravel, trace fines and small cobbles, moist (SP)	005SL		6	24	2.5		
	8					12				
65	9					18				
	10		Brown (10YR5/3) m-c sand, trace fine sand and c-f gravel, moist, (SW-SP)			10	24	0.2		
	11					15				
	12		Brown c-f sand and gravel, trace fines, moist, (SP-GP)			7	24	1.4		
						9				
60						12				
						3	24	1.8	V. difficult drilling from 10-12 feet bgs with gravel and cobbles.	
						14				
						23				
						15				



ADOT & PF ROW INVESTIGATION – River Terrace Project

ecology and environment, inc.

CHIBORE2

DRILLING LOG OF BORING NO. SB4

Project: Soldotna, Alaska

Total Depth of Hole (feet BGS): 30.0

DEPTH	GRAPHIC LOG	SOIL / ROCK DESCRIPTION	SAMPLE NUMBER	SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	Head Space Readings [ppm] Fid/Pid	COMMENTS
		Same as above grading to silt, some c-f sand and gravel, little clay, moist, (Till), (SP-ML)						
13		Dark gray (10YR5/1) silt, little f. sand and c-f gravel, trace clay, moist, Till, (ML)			5 8 8 9	24	0.8	
14		Dark gray (10YR5/1) silt, little f. sand and c-f gravel, moist, v. stiff, (ML)			4 7 10 10	24	0.4	
15								
16		Same as above, moist (ML)						
17			006SL		3 6 7 10	24	2.5	
18		Same as above, moist (ML)						
19					10 20 15 15	6	2.8	
20		Same as above except with a sandy silt, wet to saturated zone from 20-20.2 feet bgs, (ML-SW)						
21					4 10 13 16	16	10	
22		Dark gray (10YR5/1) silt, little clay and c-f sand and gravel, moist, grading at the shoe to a f. sandy silt, soft, moist, (ML to ML-SW)						
23					4 10 11 13	24	40	
24		Dark gray (10YR5/1) silt, little clay and c-f gravel, trace sand and cobbles, moist, (ML)						
25			007SL		6 7 10 15	24	64	
26								



ADOT & PF ROW INVESTIGATION – River Terrace Project

ecology and environment, inc.

CHTBOR2

DRILLING LOG OF BORING NO. SB4

Project: Soldotna, Alaska

Total Depth of Hole (feet BGS): 30.0

DEPTH	GRAPHIC LOG	SOIL / ROCK DESCRIPTION	SAMPLE NUMBER	SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	Head Space Readings [ppm] Fid/Pid	COMMENTS
27		Same as above with a saturated fracture at 27.5 feet bgs, moist, very stiff, (ML)			9 12 12 15	24	28	
28		Same as above w/o fractures, moist, (ML)						
29			008SL		4 4 9 14	24	50	
30		End of Boring @ 30.0'						
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								



ADOT & PF ROW INVESTIGATION – River Terrace Project

ecology and environment, inc.

DRILLING LOG OF BORING NO. SB5

Site / Location: ADOT & PF ROW / Soldotna, Alaska

Total Depth of Hole (feet BGS): 4

Ground Elevation (feet above MSL): 71.5 (approx.)

Boring Location: ADOT & PF ROW @ River Terrace RV Park

Refusal at (feet BGS): _____

Drilling Company: Hughes Drilling

Date Started: 10-28-98 @1620

Driller/Geologist: Pat / Craig Carlson CPG#8903

Date Finished: 10-28-98 @1710

gs elevation 71.5 ft.	DEPTH	GRAPHIC LOG	SOIL / ROCK DESCRIPTION	SAMPLE NUMBER	SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	Head Space	COMMENTS
								Readings (ppm)	
								Fid/Pid	
70	1		Brown (10YR 5/3) silt, some clay and c-f sand and gravel, moist to wet, grading to silty c-f sand, little gravel, trace clay, moist, (ML to SW-ML)			7 5 3	24	0	Drilling conducted with a CME-75 drill rig equipped with Hollow-Stem augers. Borehole abandoned with bentonite slurry
	2		Brown (10YR 5/3) silt, some sand and gravel, little clay, moist to wet, (ML-SP) Note: Encountered blue foam in the shoe at 4 ft. bgs. Will move over 2 ft. south and try a sample from 4 feet in second attempt at SB5	009SL		5 3 2	24	1.2	
	4		End of Boring 5 @ 4.0'						
65	5		Moved over to second attempt for SB5, and no recovery was noted in the split-spoon collected from 2-4 feet bgs. Split-spoon then advanced from 3-5 feet bgs, and again blue foam was noted at 3.5 feet bgs. Augers were gently advanced at location of second attempt and refusal was noted at 6 feet bgs (probable water main). Both SB5 holes were abandoned with bentonite slurry and rig moved on to location SB6.						
60	6								
	7								
	8								
	9								
	10								
	11								
	12								



ADOT & PF ROW INVESTIGATION – River Terrace Project

ecology and environment, inc.

DRILLING LOG OF BORING NO. SB6

Site / Location: ADOT & PF ROW / Soldotna, Alaska Total Depth of Hole (feet BGS): 30.0
 Boring Location: ADOT & PF ROW @ River Terrace RV Park Ground Elevation (feet above MSL): 71.6 (approx.)
 Drilling Company: Hughes Drilling Refusal at (feet BGS): _____
 Driller/Geologist: Pat / Craig Carlson CPG#8903 Date Started: 10-28-98 @1725
 Date Finished: 10-29-98 @0930

gs elevation 71.6 ft.	DEPTH	GRAPHIC LOG	SOIL / ROCK DESCRIPTION	SAMPLE NUMBER	SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	Head Space Readings [ppm]		COMMENTS
								Fid	Pid	
	1		Graysih brown c-f sand and gravel, trace fines and cobbles, frozen, (SP-GP)			3				Drilling conducted with a CME-75 drill rig equipped with Hollow-Stem Augers. Borehole abandoned with bentonite slurry
			Brown (10YR5/3) silt, little c-f gravel, trace c-f sand and clay, moist, (ML)			4	24	0		
70	2		Grayish brown silty c-f sand, little f-m gravel (subrounded), moist, (SP-ML)			7				
			Same as above, (SP-ML)			7				
	3					4				
						7	24	0		
	4					8				
						9				
	5		Brown (10YR5/3) sandy silt, little clay and c-f gravel, trace cobbles, moist, (ML-SP)			3	24	0.1		
	6									
65	7		Brown c-f sand and gravel, some cobbles (subrounded), trace fines, moist, (SP-GP)			6				
						11	24	1.1		
	8		Same as above, moist (SP-GP)			12				
						16				
	9					6				
						11	24	1.2		
	10		Brown silty c-f sand, little c-f gravel and cobbles, moist, (SP-ML)			15				
						21				
	11			010SL		9	24	2		
60						21				
	12					31				

DRILLING LOG OF BORING NO. SB6

Project: Soldotna, Alaska

Total Depth of Hole (feet BGS): 30.0

DEPTH	GRAPHIC LOG	SOIL / ROCK DESCRIPTION	SAMPLE NUMBER	SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	Head Space Readings [ppm]	Fid/Pid	COMMENTS
13		Same as above (SP-ML)			15 23 30 34	24	0		EOB 10/28/98, begin at 14.0' at 0730 on 10/29/98
14		Same as above, moist (SP-ML)							
15		Dark gray (10YR5/1) silt, little clay and c-f gravel, trace c-f sand and small cobbles, moist, (ML)			6 8 10 13	24	40		
16		Same as above (ML)							
17		Same as above (ML)			2 8 8 10	24	40		
18		Same as above, moist, (ML)							
19		Same as above, moist, (ML)		011SL	3 6 7 11	24	140		
20		Same as above, moist, (ML)							
21		Same as above, moist, (ML)			3 4 9 10	24	80		
22		Gray (10YR5/1) silt, little clay, c. gravel and cobbles, trace c-f sand, moist, grading to silt and cobbles, some c. gravel, trace c-f sand, moist, (ML to ML-GW)							
23	Same as above, moist, (ML)		012SL	5 10 15 24	24	100			
24	Same as above, changing at 25.5 ft bgs to silt, little clay and f. gravel, trace c-f sand and m-c gravel, moist, (ML-GW to ML)								
25	Same as above, changing at 25.5 ft bgs to silt, little clay and f. gravel, trace c-f sand and m-c gravel, moist, (ML-GW to ML)			5 9 11 14	24	10			
26									



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CHIBORE2

DRILLING LOG OF BORING NO. SB6

Project: Soldotna, Alaska

Total Depth of Hole (feet BGS): 30.0

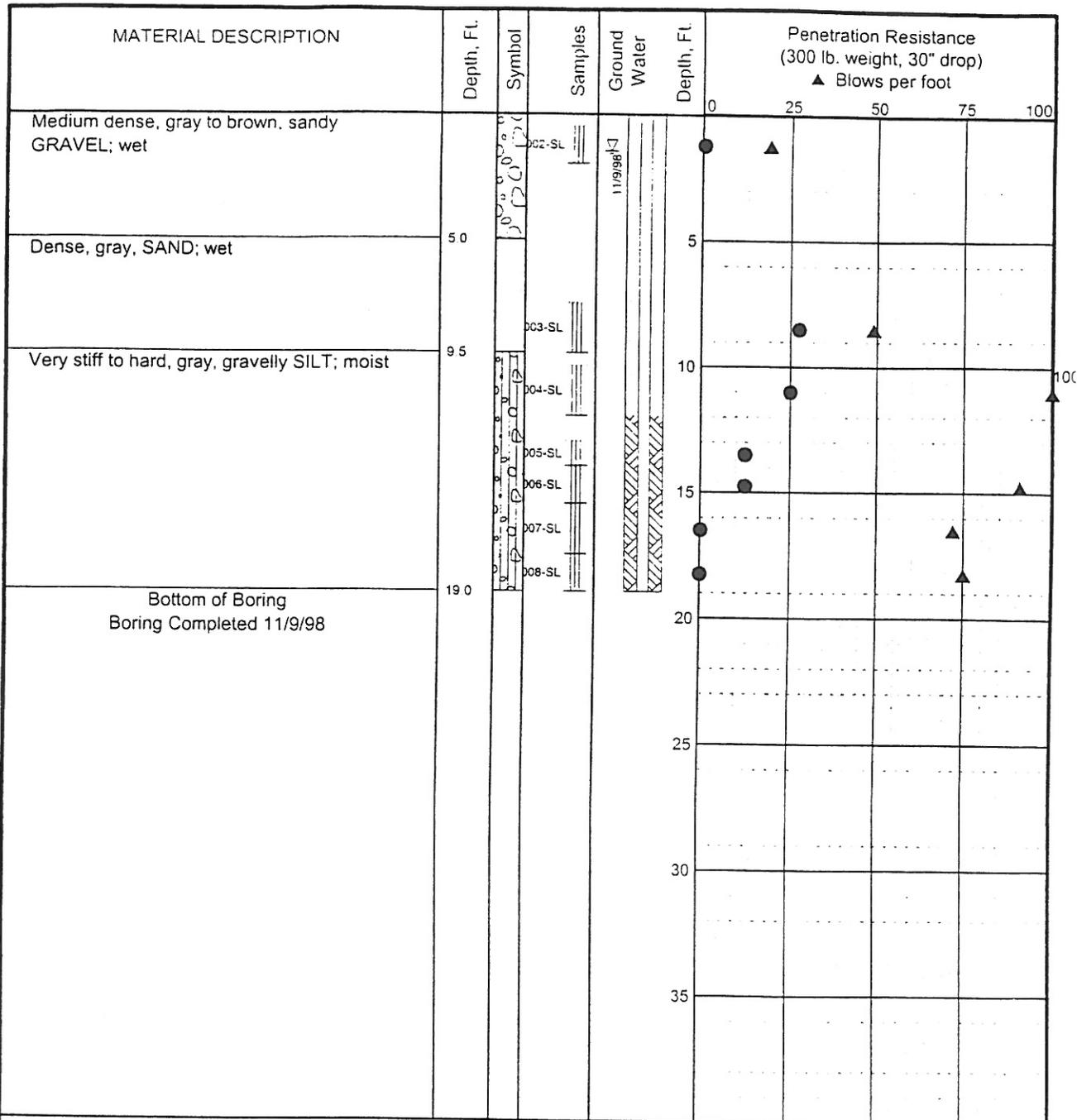
DEPTH	GRAPHIC LOG	SOIL / ROCK DESCRIPTION	SAMPLE NUMBER	SAMPLE INTERVAL	BLOW COUNT	RECOVERY (inches)	Head Space Readings [ppm]	COMMENTS
							Fid/Pid	
45		Dark gray (10YR5/1) silt, some c-f gravel (subrounded), little clay, trace c-f sand, moist, (ML)			5	24	6.8	
27		8			12			
28		Same as above, moist, (ML)	013SL		4	24	140	
29		4			6			
30	End of Boring @ 30.0'							
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								



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CHTBORE2



LEGEND

- Sample Not Recovered
- ⊥ 2" O.D. Split Spoon Sample
- ⊥ 3" O.D. Split Spoon Sample
- ▨ Isolation casing driven into undisturbed soils
- ▨ Solid Casing and Annular Sealant
- ▨ Well Screen and Filter Sand
- ▨ Cuttings Backfill
- ▽ Ground Water Level ATD
- ▽ Static Ground Water Level
- PID Reading (ppm)

NOTES

1. The stratification lines represent the approximate boundaries between soil types, and the transition may be gradual
2. The discussion in the text of this report is necessary for a proper understanding of the nature of subsurface materials
3. Water level, if indicated above, is for the date specified and may vary
4. USC letter symbol based on visual classification
5. Sample number edited for Boring Log, see Table 1 for full sample number

Kenai River Bridge, No. 671
Soldotna, Alaska

LOG OF BORING B1

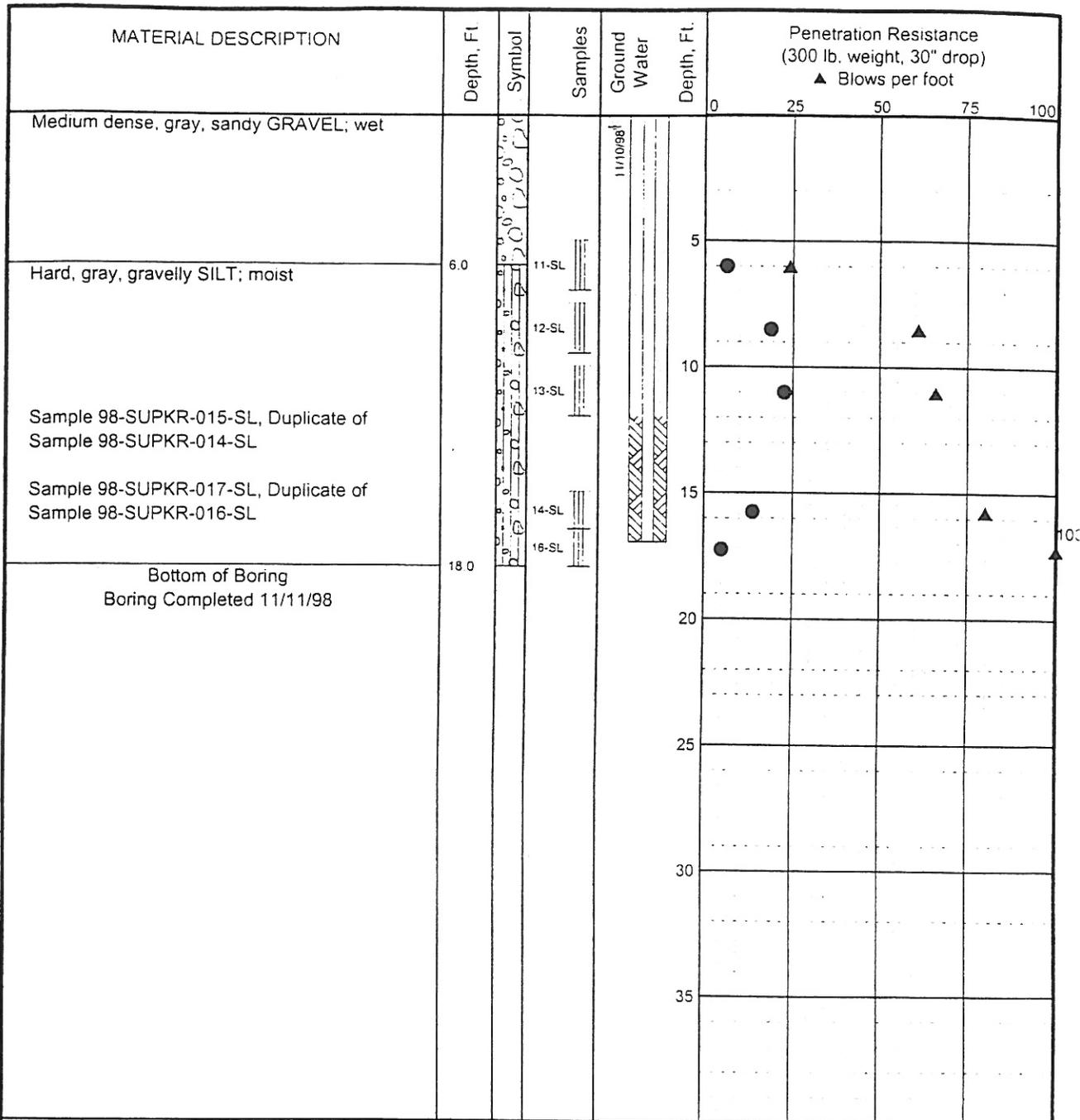
February 1999

Y-5998

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Fig. 3

MASTER LOG Y-5998 GPJ SHAN WIL GDT 2/5/99



LEGEND

- Sample Not Recovered
- ⊥ 2" O.D. Split Spoon Sample
- ⊥ 3" O.D. Split Spoon Sample
- ▣ Isolation casing driven into undisturbed soils
- ▣ Solid Casing and Annular Sealant
- ▣ Well Screen and Filter Sand
- ▣ Cuttings Backfill
- ⊥ Ground Water Level ATD
- ⊥ Static Ground Water Level
- PID Reading (ppm)

NOTES

1. The stratification lines represent the approximate boundaries between soil types, and the transition may be gradual
2. The discussion in the text of this report is necessary for a proper understanding of the nature of subsurface materials
3. Water level, if indicated above, is for the date specified and may vary
4. USC letter symbol based on visual classification
5. Sample number edited for Boring Log, see Table 1 for full sample number

Kenai River Bridge, No. 671
Soldotna, Alaska

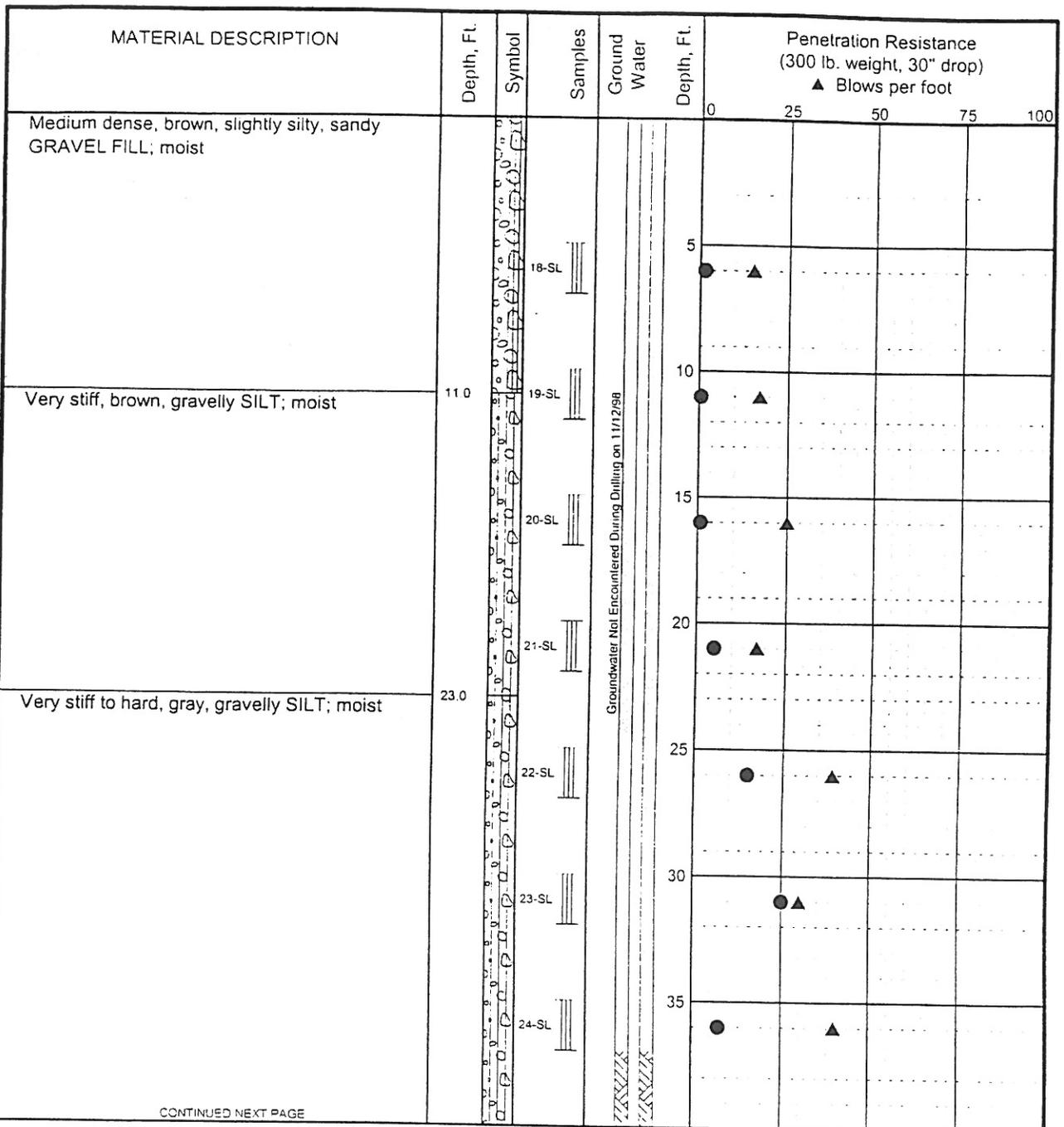
LOG OF BORING B2

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Fig. 4

MASTER LOG: Y-5998 CPJ SHAN WIL GDT 2/5/99



LEGEND

- Sample Not Recovered
- ⊥ 2" O.D. Split Spoon Sample
- ≡ 3" O.D. Split Spoon Sample
- ▣ Isolation casing driven into undisturbed soils
- ▤ Solid Casing and Annular Sealant
- ▥ Well Screen and Filter Sand
- ▧ Cuttings Backfill
- ▽ Ground Water Level ATD
- ∇ Static Ground Water Level
- PID Reading (ppm)

NOTES

- 1 The stratification lines represent the approximate boundaries between soil types, and the transition may be gradual
- 2 The discussion in the text of this report is necessary for a proper understanding of the nature of subsurface materials
- 3 Water level, if indicated above, is for the date specified and may vary
- 4 USC letter symbol based on visual classification
- 5 Sample number edited for Boring Log, see Table 1 for full sample number

Kenai River Bridge, No. 671
Soldotna, Alaska

LOG OF BORING B3

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Fig. 5
Sheet 1 of 2

MASTER LOG Y-5998 GPJ SHAN WIL G01 2/5/99

MATERIAL DESCRIPTION	Depth, Ft.	Symbol	Samples	Ground Water	Depth, Ft.	Penetration Resistance (300 lb. weight, 30" drop) ▲ Blows per foot				
						0	25	50	75	100
Bottom of Boring Boring Completed 11/12/98	41.5		2.5-SL		0	●	▲			
					45					
					50					
					55					
					60					
					65					
					70					
					75					

Groundwater Not Encountered During Drilling on 11/12/98

LEGEND

- Sample Not Recovered
- ⊥ 2" O.D. Split Spoon Sample
- III 3" O.D. Split Spoon Sample
- Isolation casing driven into undisturbed soils
- Solid Casing and Annular Sealant
- Well Screen and Filter Sand
- Cuttings Backfill
- ▽ Ground Water Level ATD
- ▼ Static Ground Water Level
- PID Reading (ppm)

NOTES

1. The stratification lines represent the approximate boundaries between soil types, and the transition may be gradual.
2. The discussion in the text of this report is necessary for a proper understanding of the nature of subsurface materials.
3. Water level, if indicated above, is for the date specified and may vary.
4. USC letter symbol based on visual classification.
5. Sample number edited for Boring Log, see Table 1 for full sample number.

Kenai River Bridge, No. 671
Soldotna, Alaska

LOG OF BORING B3

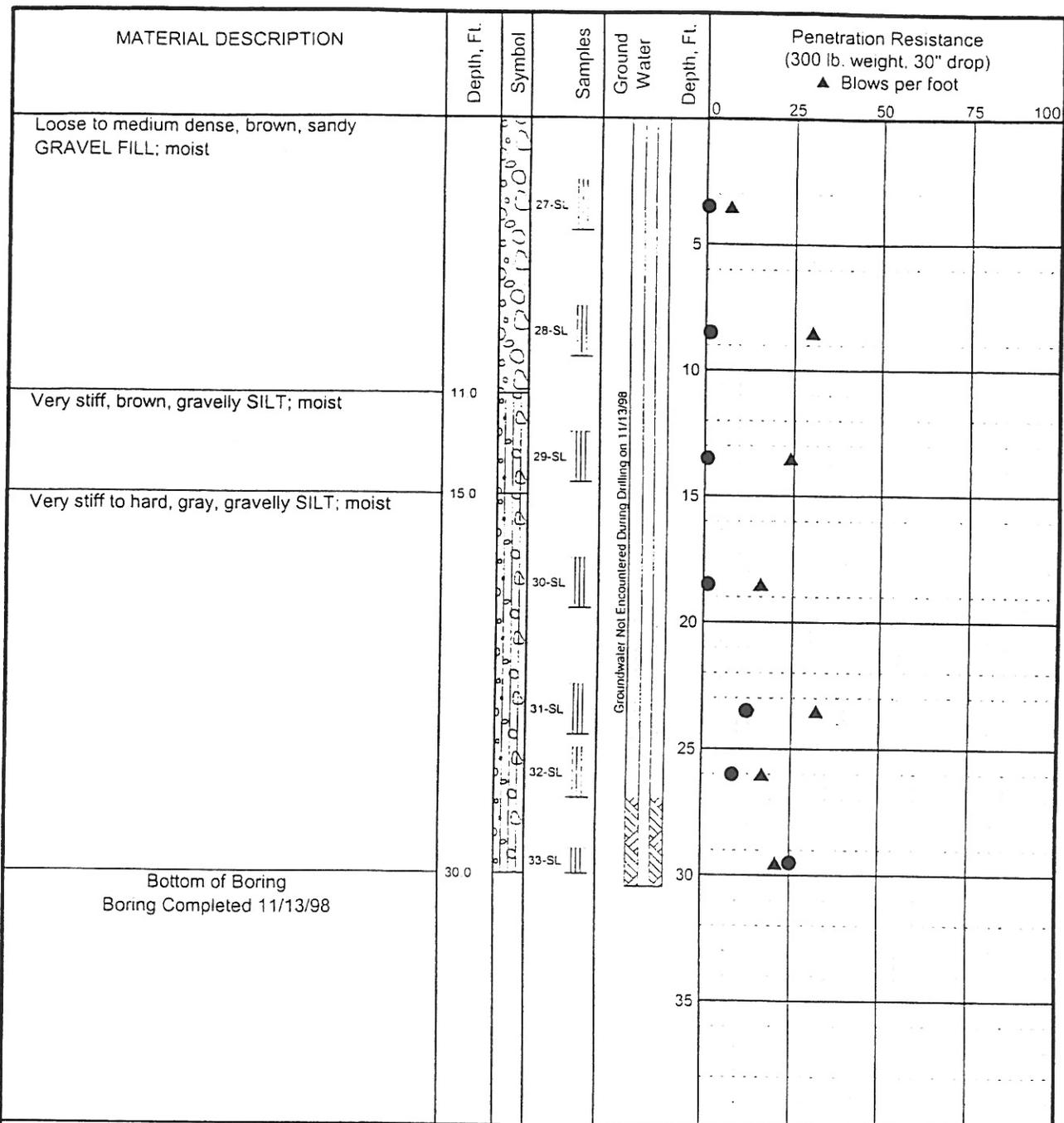
February 1999

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Fig. 5
Sheet 2 of 2

MASTER LOG: Y-5998 G/FJ SHAN WIL GDT 2/5/99



LEGEND

- Sample Not Recovered
- ⊞ 2" O.D. Split Spoon Sample
- ⊞ 3" O.D. Split Spoon Sample
- ⊞ Isolation casing driven into undisturbed soils
- ⊞ Solid Casing and Annular Sealant
- ⊞ Well Screen and Filter Sand
- ⊞ Cuttings Backfill
- ⊞ Ground Water Level ATD
- ⊞ Static Ground Water Level
- PID Reading (ppm)

NOTES

- 1 The stratification lines represent the approximate boundaries between soil types, and the transition may be gradual
- 2 The discussion in the text of this report is necessary for a proper understanding of the nature of subsurface materials.
- 3 Water level, if indicated above, is for the date specified and may vary.
- 4 USC letter symbol based on visual classification
- 5 Sample number edited for Boring Log, see Table 1 for full sample number

Kenai River Bridge, No. 671
Soldotna, Alaska

LOG OF BORING B4

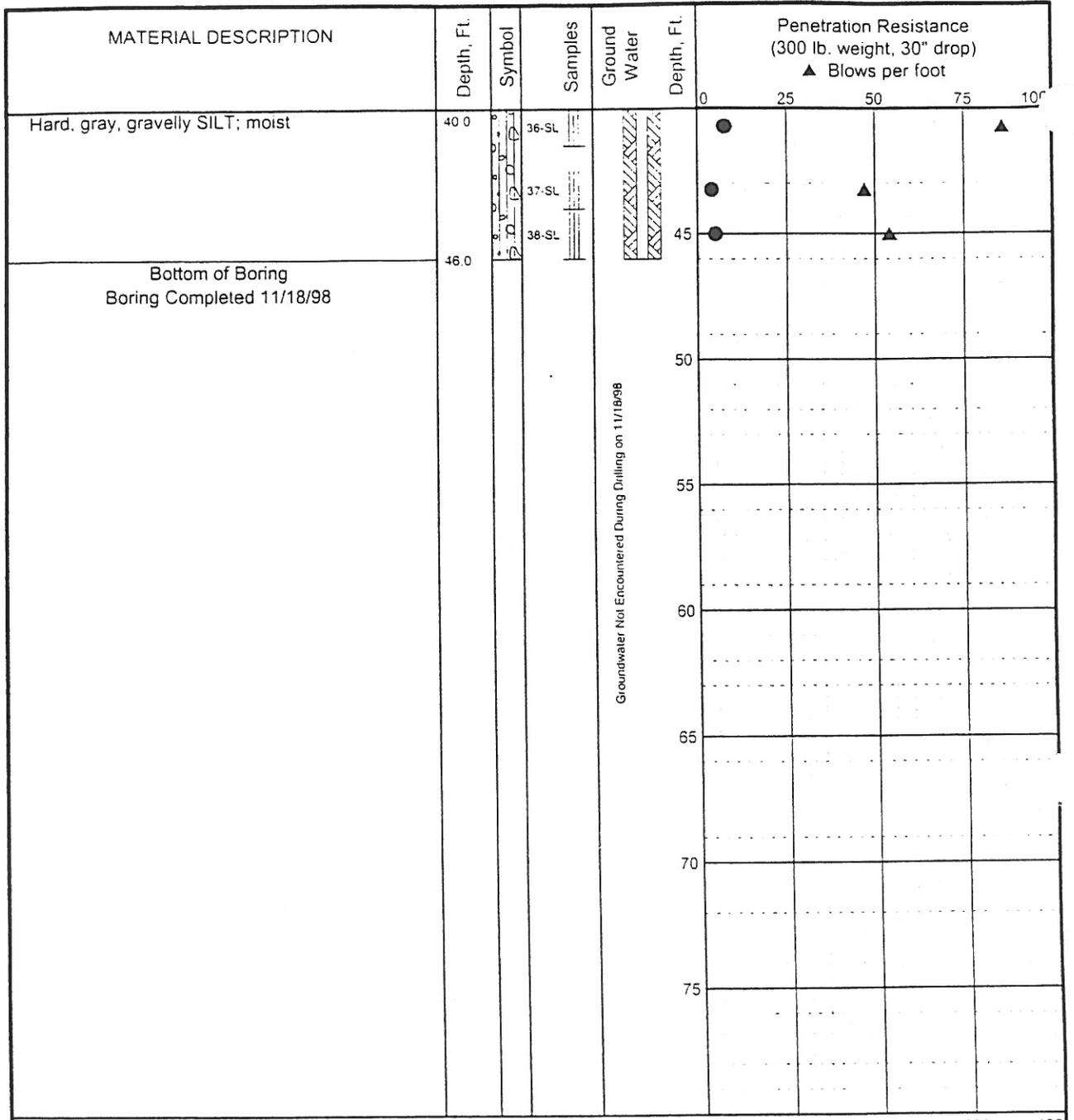
February 1999

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Fig. 6

MASTER LOG Y-5998 GPJ SHAN WIL GDT 2/5/99



LEGEND

- Sample Not Recovered
- 2" O.D. Split Spoon Sample
- 3" O.D. Split Spoon Sample
- Isolation casing driven into undisturbed soils
- Solid Casing and Annular Sealant
- Well Screen and Filter Sand
- Cuttings Backfill
- Ground Water Level ATD
- Static Ground Water Level

● PID Reading (ppm)

NOTES

- 1 The stratification lines represent the approximate boundaries between soil types, and the transition may be gradual
- 2 The discussion in the text of this report is necessary for a proper understanding of the nature of subsurface materials
- 3 Water level, if indicated above, is for the date specified and may vary
- 4 USC letter symbol based on visual classification.
- 5 Sample number edited for Boring Log, see Table 1 for full sample number

Kenai River Bridge, No. 671
Soldotna, Alaska

LOG OF BORING B5

February 1999 Y-59c

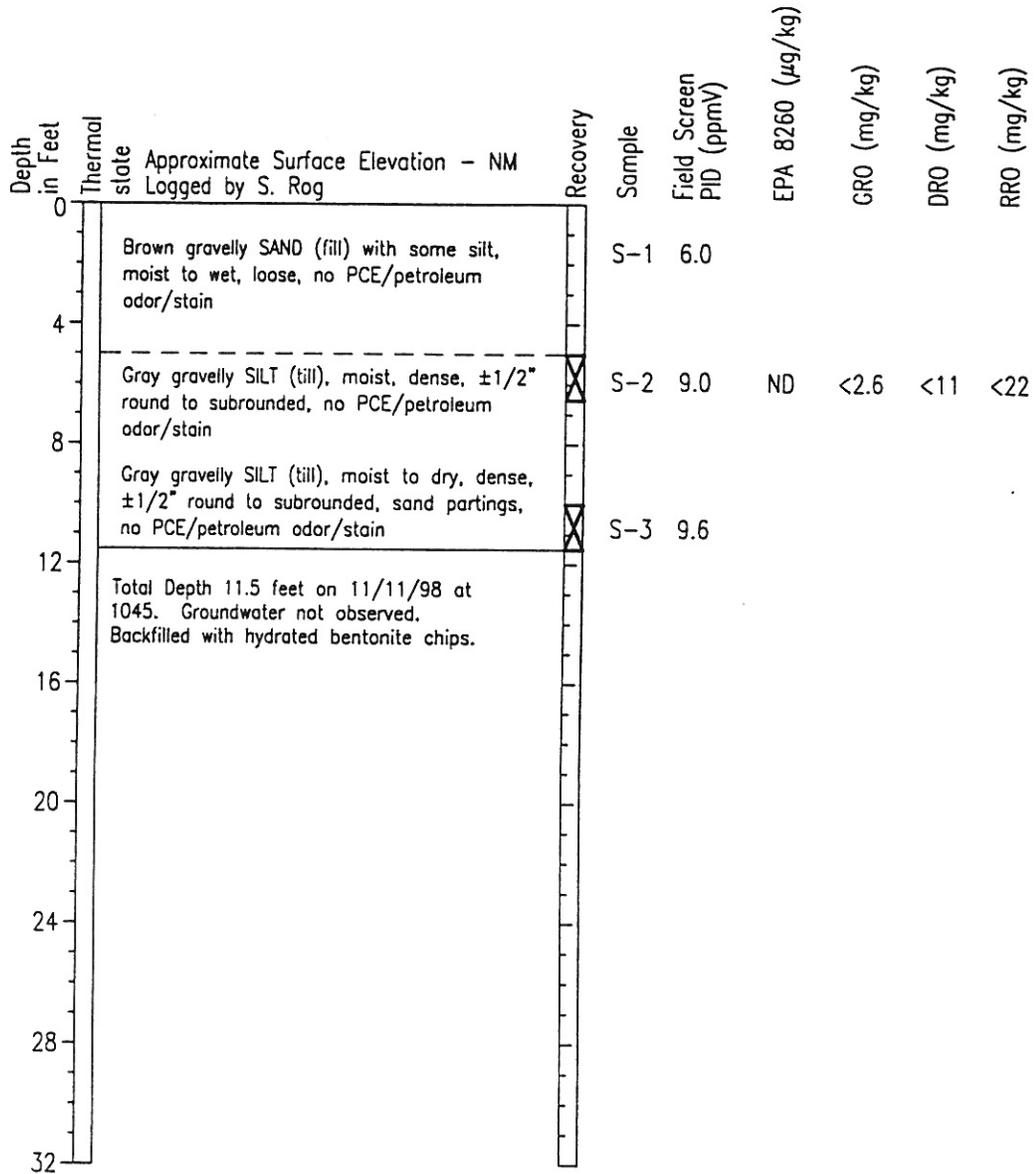
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Fig. 7
Sheet 2 of 2

MASTER LOG Y-5998.GPJ SJIAH WIL GDT 2/5/99

Boring Log Data for SB-4

River Terrace RV Park
Soldotna, Alaska



1. Soil descriptions are interpretative and actual changes may be gradual.
2. Refer to Figure A1 for key to exploration logs.
3. NA = Not Analyzed
4. ND = Not Detected
5. NM = Not Measured



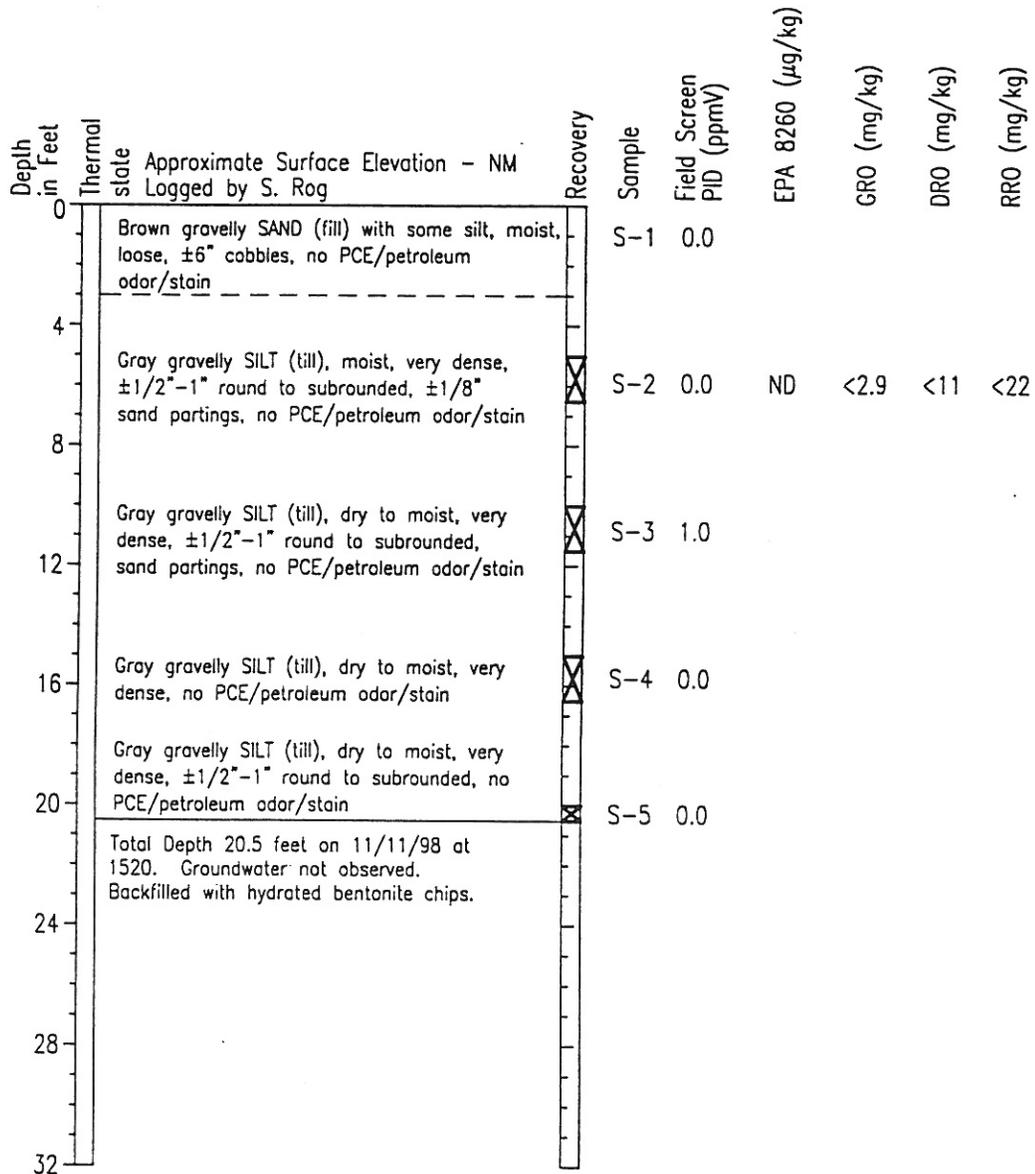
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FIGURE A5

Boring Log Data for SB-6

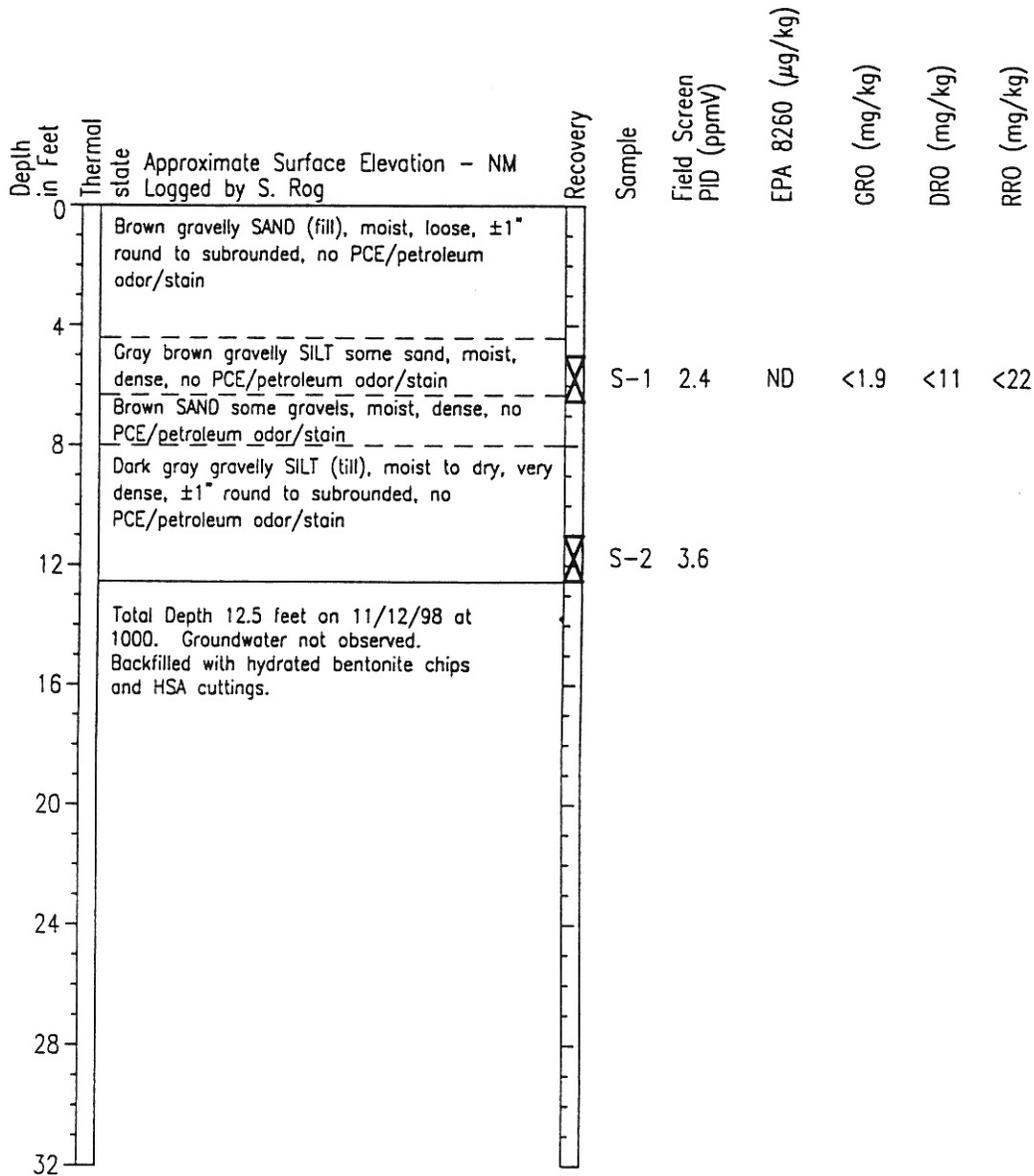
River Terrace RV Park
Soldotna, Alaska



1. Soil descriptions are interpretative and actual changes may be gradual.
2. Refer to Figure A1 for key to exploration logs.
3. NA = Not Analyzed
4. ND = Not Detected
5. NM = Not Measured

Boring Log Data for SLB-1

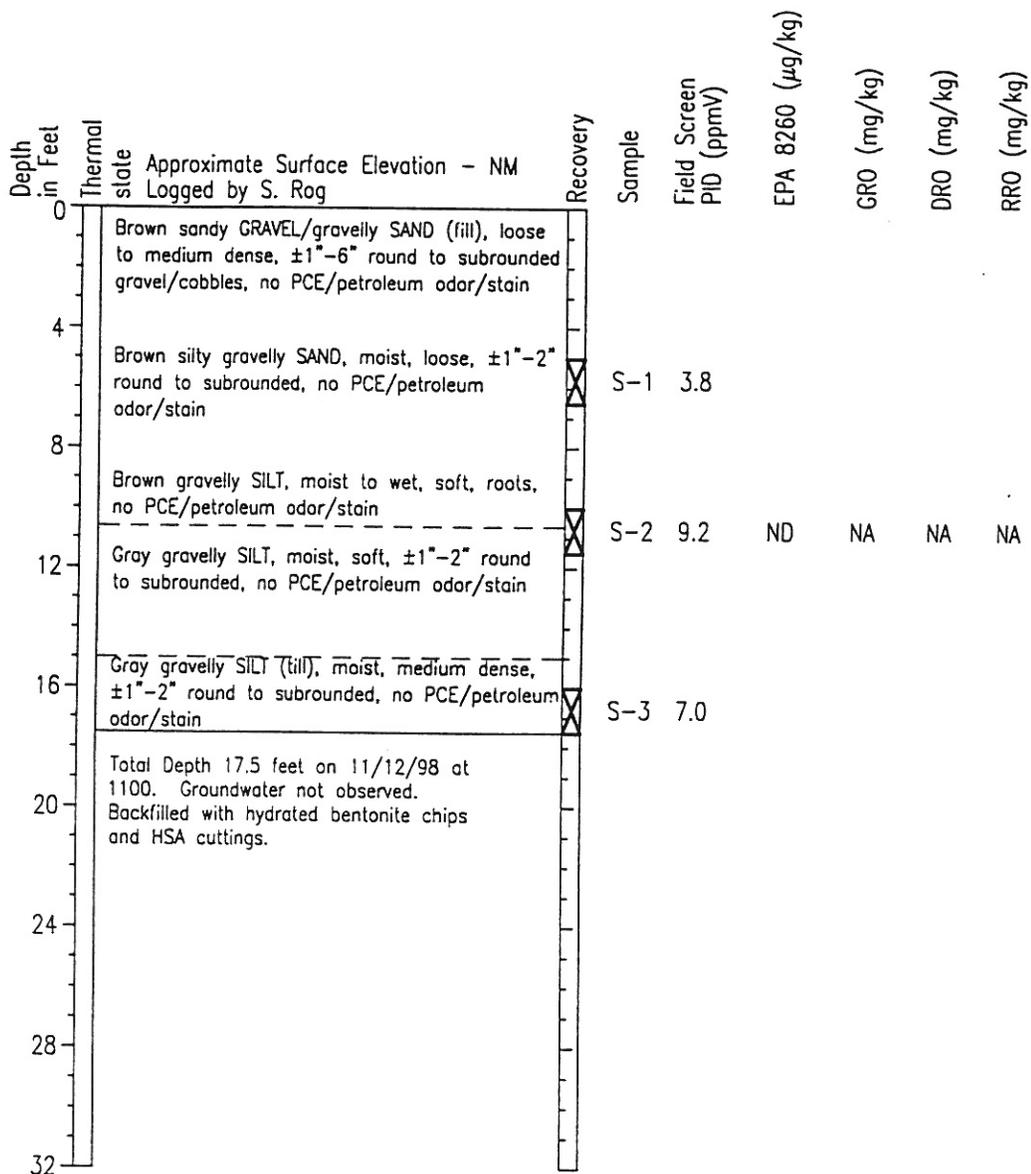
River Terrace RV Park
Soldotna, Alaska



1. Soil descriptions are interpretative and actual changes may be gradual.
2. Refer to Figure A1 for key to exploration logs.
3. NA = Not Analyzed
4. ND = Not Detected
5. NM = Not Measured

Boring Log Data for SLB-2

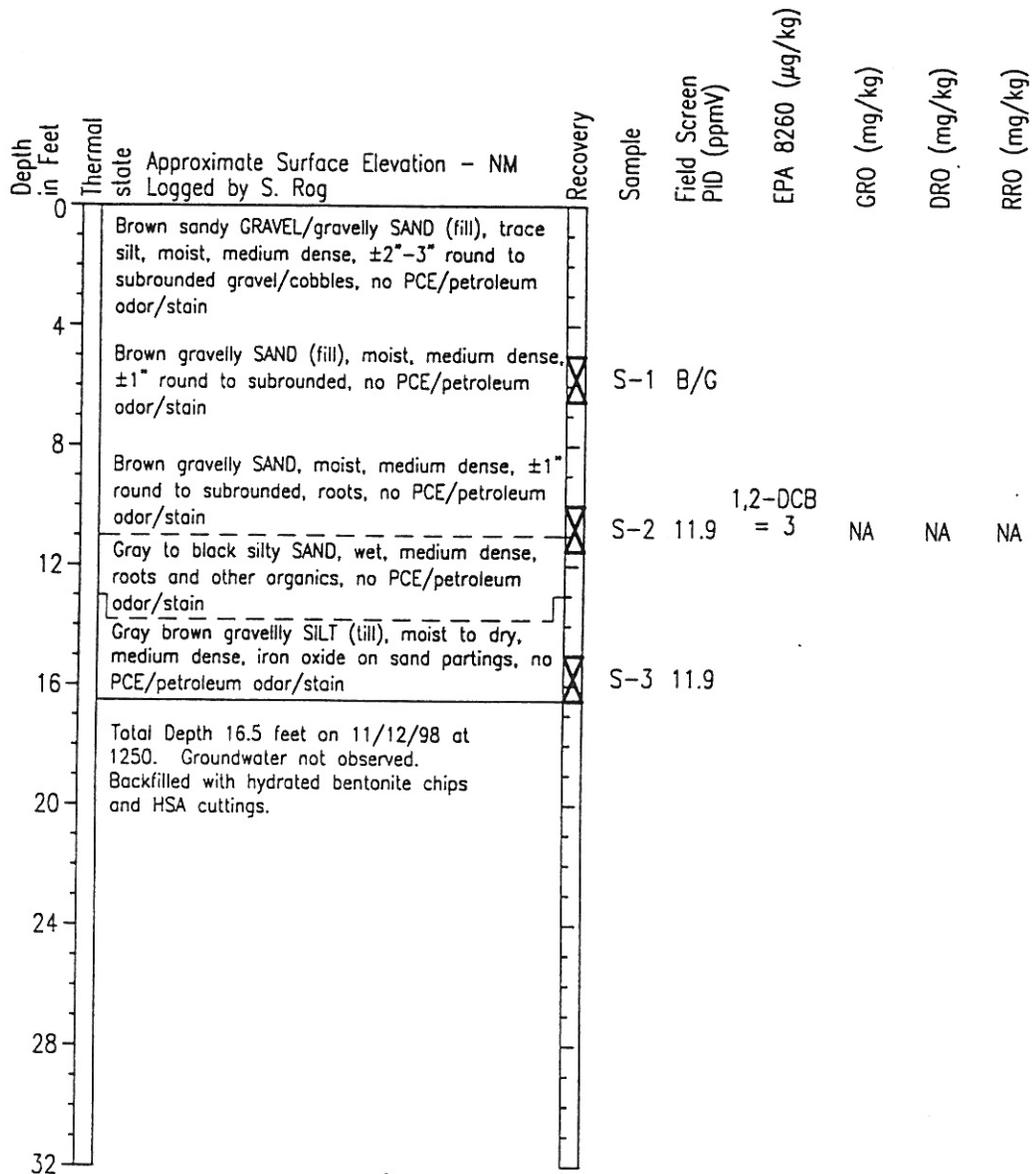
River Terrace RV Park
Soldotna, Alaska



1. Soil descriptions are interpretative and actual changes may be gradual.
2. Refer to Figure A1 for key to exploration logs.
3. NA = Not Analyzed
4. ND = Not Detected
5. NM = Not Measured

Boring Log Data for SLB-3

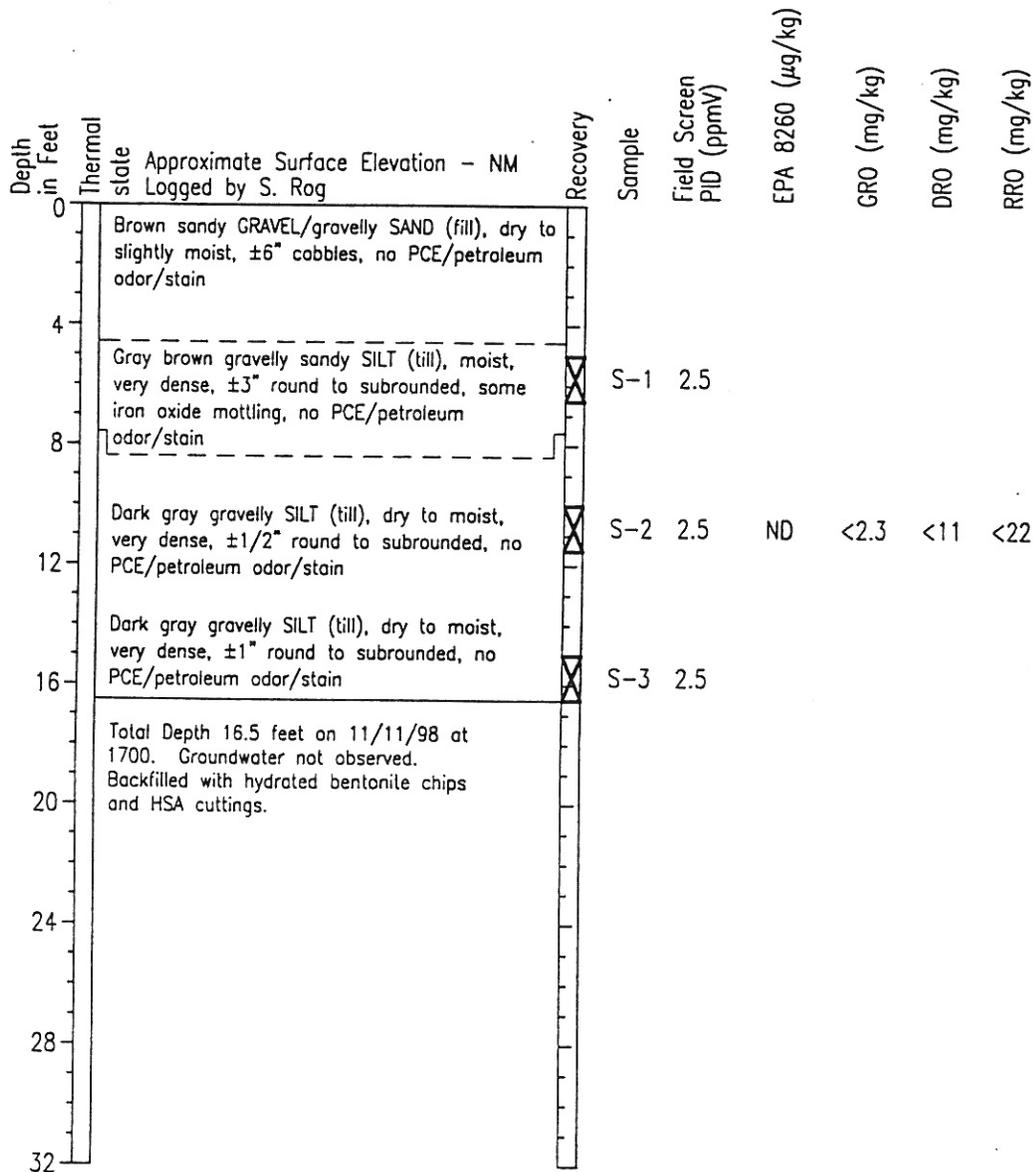
River Terrace RV Park
Soldotna, Alaska



1. Soil descriptions are interpretative and actual changes may be gradual.
2. Refer to Figure A1 for key to exploration logs.
3. NA = Not Analyzed
4. ND = Not Detected
5. NM = Not Measured
6. 1,2-DCB = 1,2-Dichlorobenzene

Boring Log Data for SLB-4

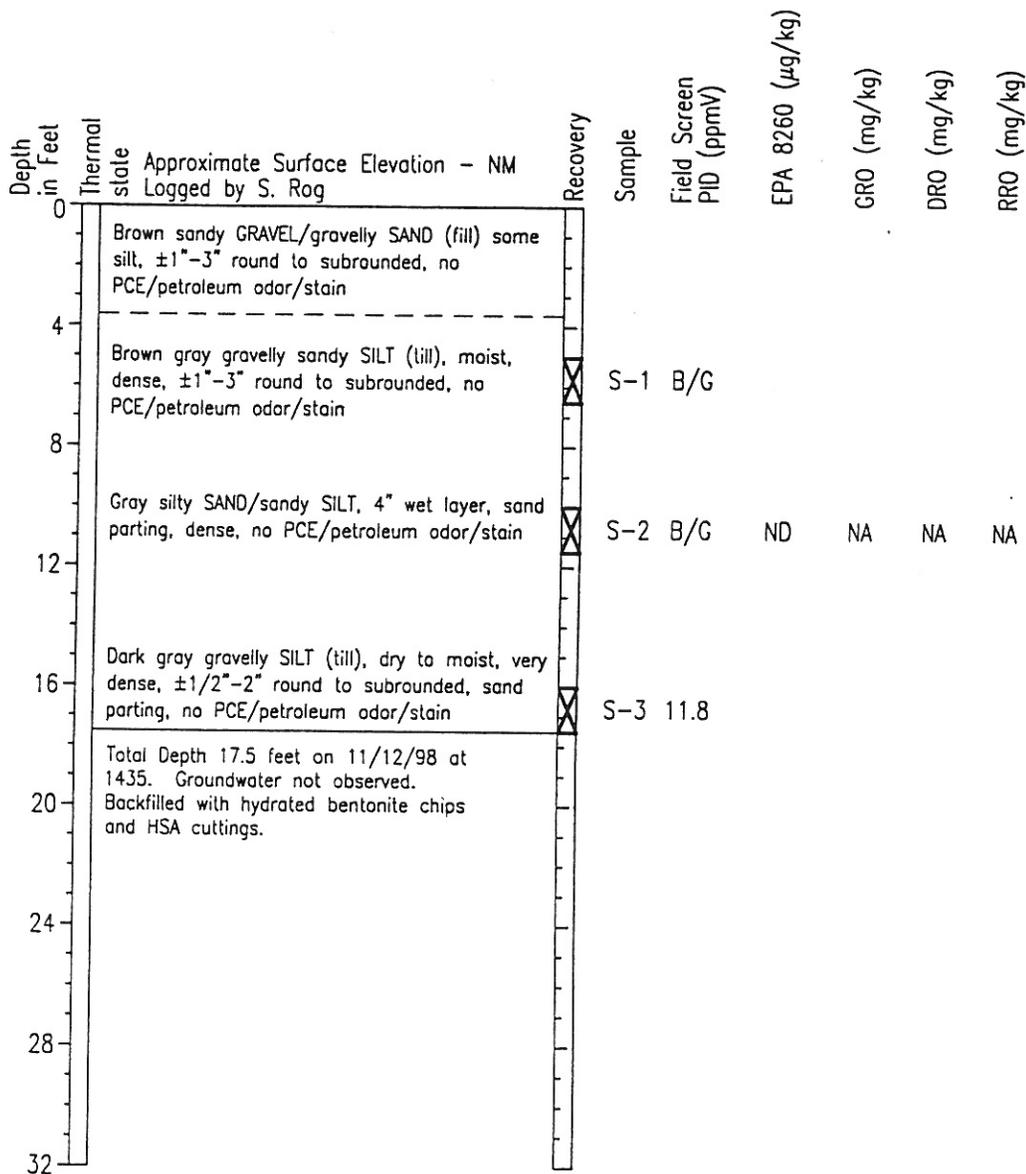
River Terrace RV Park
Soldotna, Alaska



1. Soil descriptions are interpretative and actual changes may be gradual.
2. Refer to Figure A1 for key to exploration logs.
3. NA = Not Analyzed
4. ND = Not Detected
5. NM = Not Measured

Boring Log Data for SLB-5

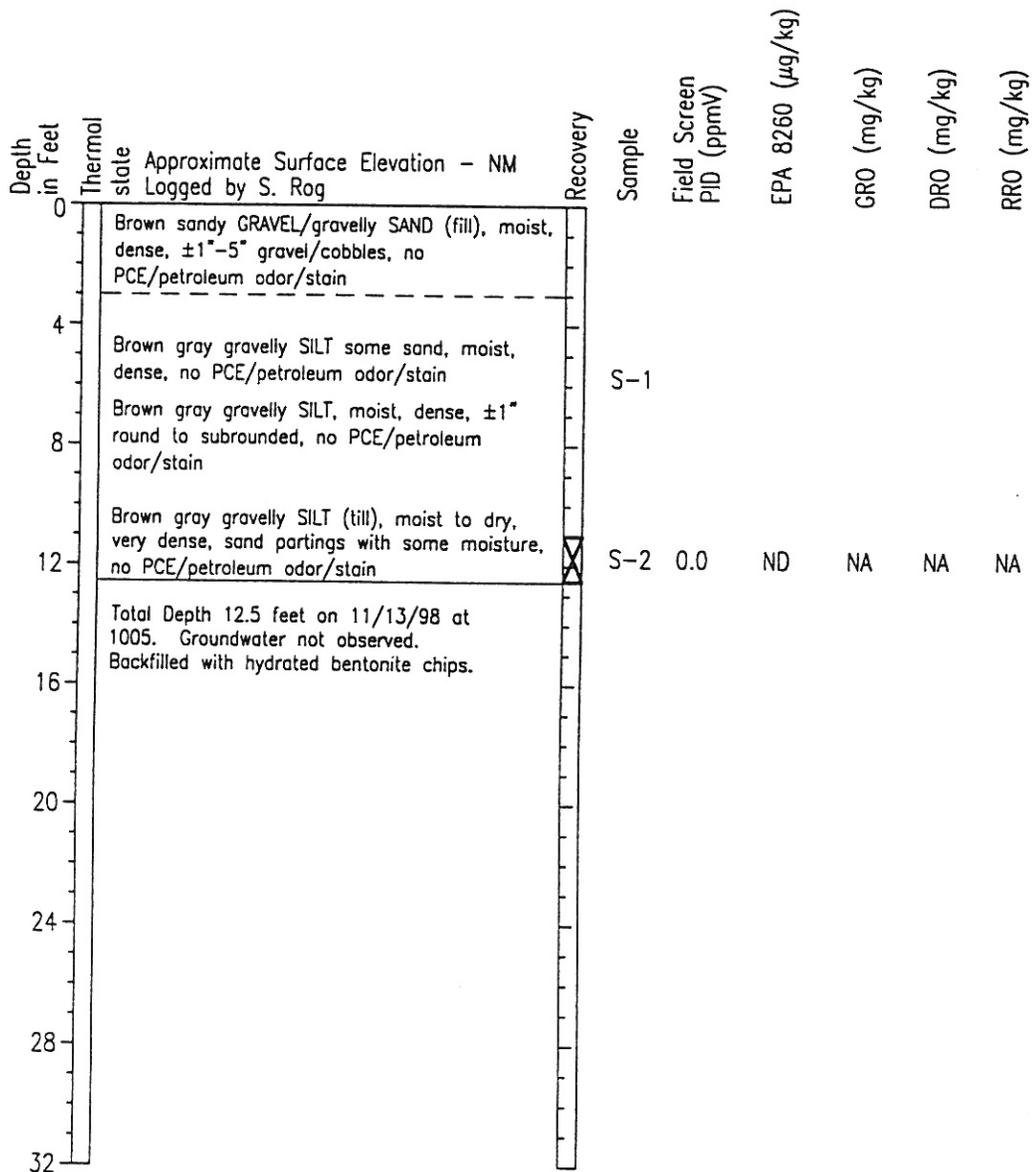
River Terrace RV Park
Soldotna, Alaska



1. Soil descriptions are interpretative and actual changes may be gradual.
2. Refer to Figure A1 for key to exploration logs.
3. NA = Not Analyzed
4. ND = Not Detected
5. NM = Not Measured

Boring Log Data for SLB-6

River Terrace RV Park
Soldotna, Alaska



1. Soil descriptions are interpretative and actual changes may be gradual.
2. Refer to Figure A1 for key to exploration logs.
3. NA = Not Analyzed
4. ND = Not Detected
5. NM = Not Measured



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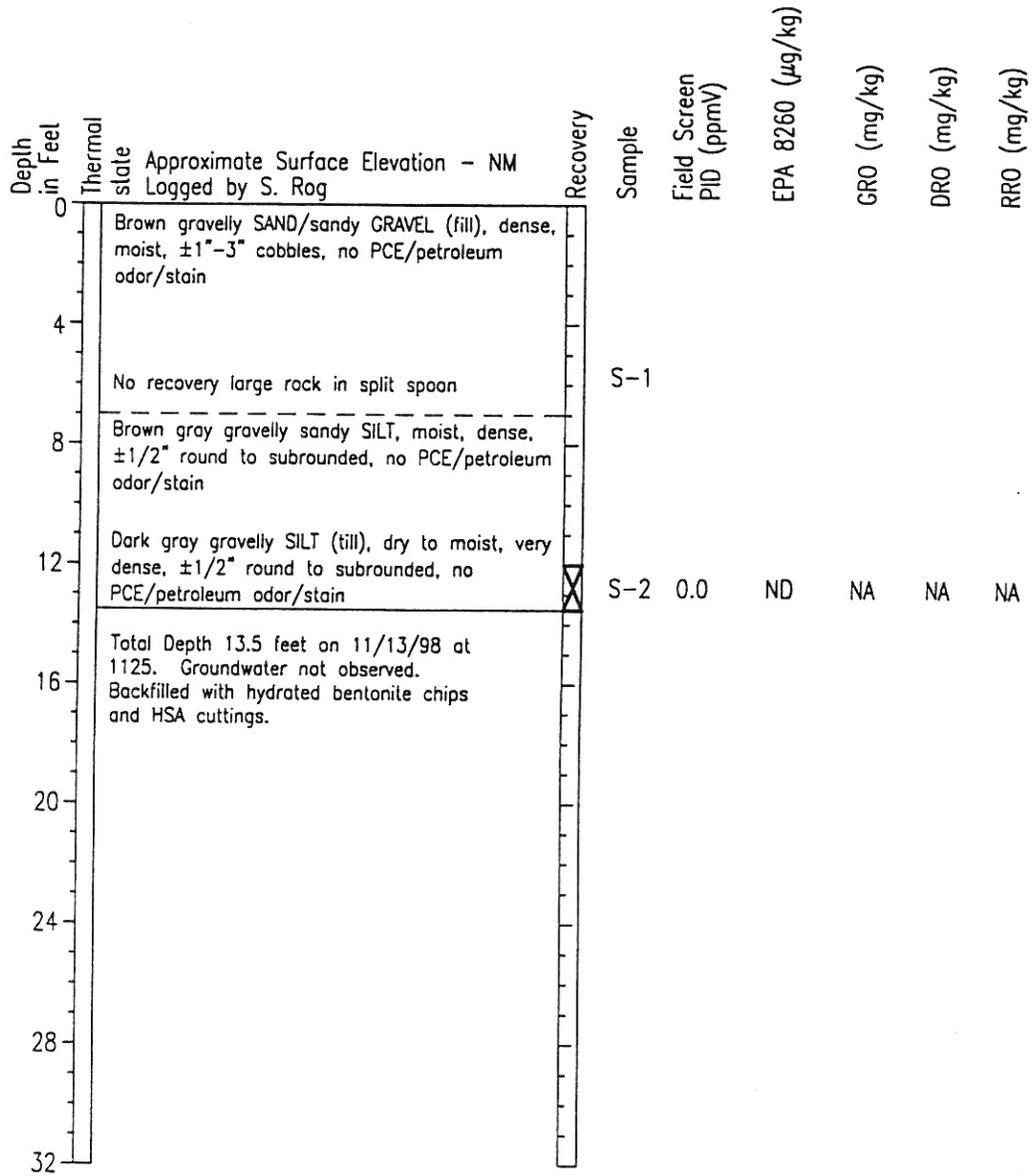
A-8514

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FIGURE A13

Boring Log Data for SLB-7

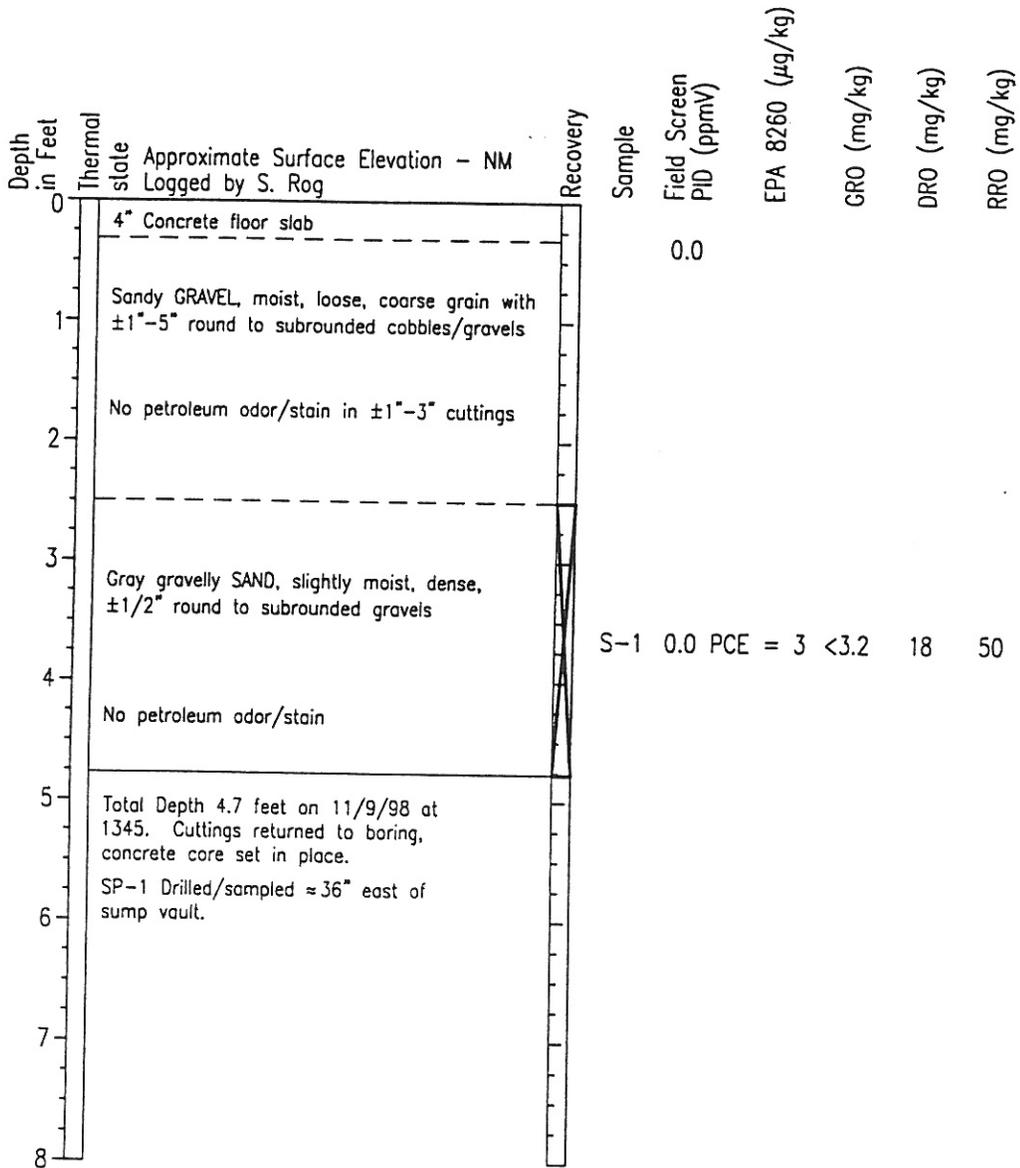
River Terrace RV Park
Soldotna, Alaska



1. Soil descriptions are interpretative and actual changes may be gradual.
2. Refer to Figure A1 for key to exploration logs.
3. NA = Not Analyzed
4. ND = Not Detected
5. NM = Not Measured

Boring Log Data for SP-1

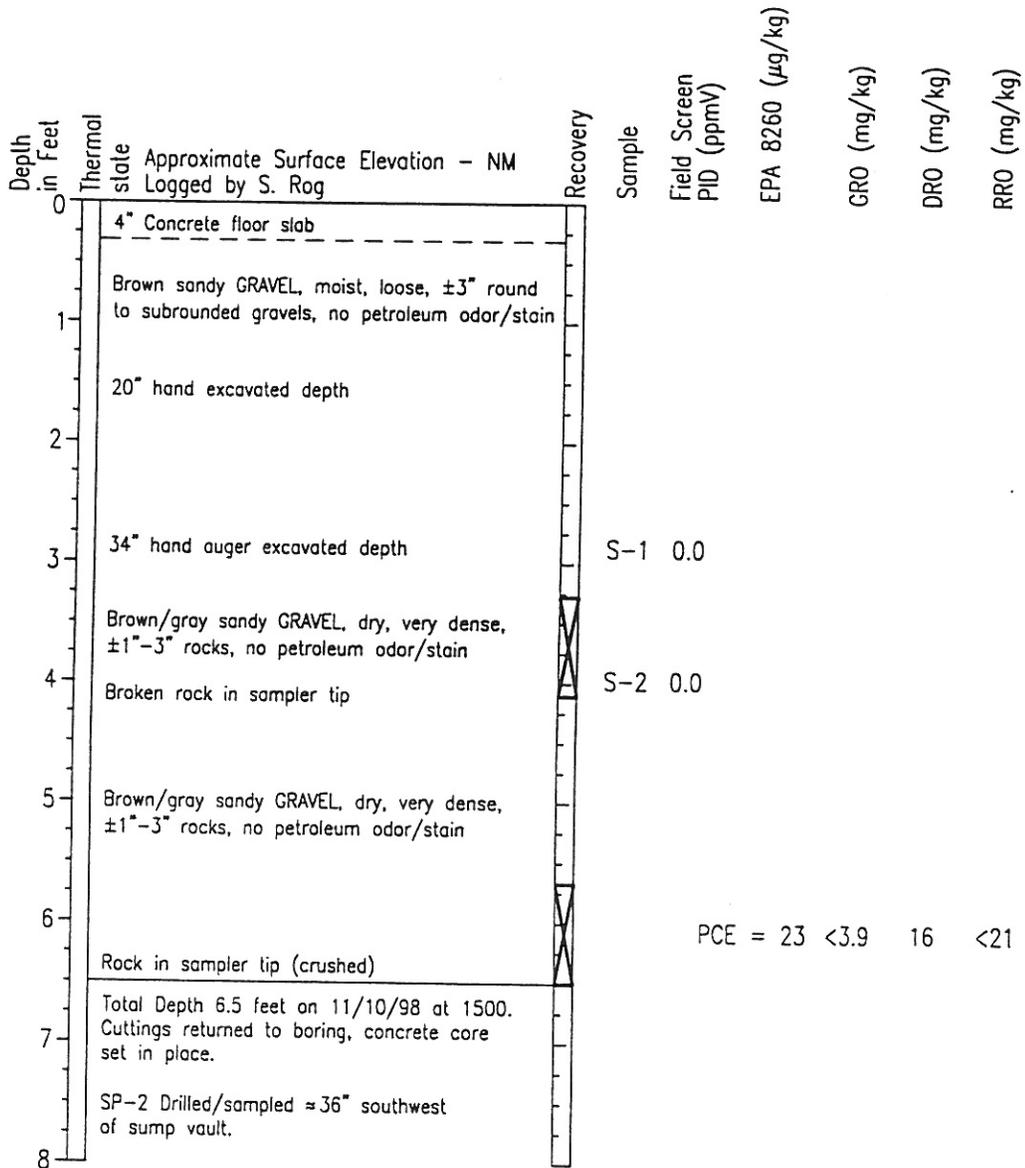
River Terrace RV Park
Soldotna, Alaska



1. Soil descriptions are interpretative and actual changes may be gradual.
2. Refer to Figure A1 for key to exploration logs.
3. NA = Not Analyzed
4. ND = Not Detected
5. NM = Not Measured

Boring Log Data for SP-2

River Terrace RV Park
Soldotna, Alaska



1. Soil descriptions are interpretative and actual changes may be gradual.
2. Refer to Figure A1 for key to exploration logs.
3. NA = Not Analyzed
4. ND = Not Detected
5. NM = Not Measured



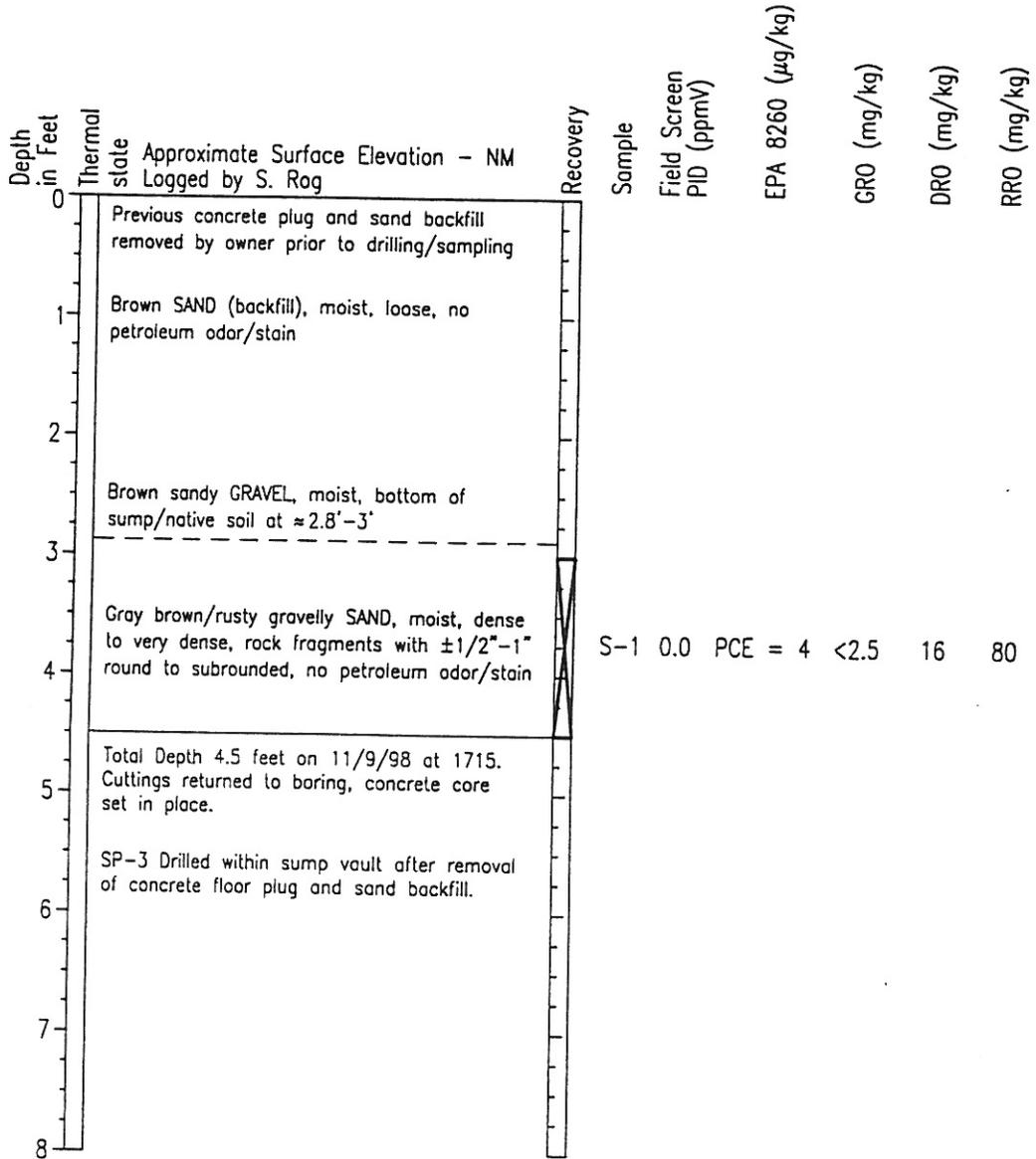
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FIGURE A3

Boring Log Data for SP-3

River Terrace RV Park
Soldotna, Alaska



1. Soil descriptions are interpretative and actual changes may be gradual.
2. Refer to Figure A1 for key to exploration logs.
3. NA = Not Analyzed
4. ND = Not Detected
5. NM = Not Measured



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FIGURE A4

