







Unified Soil Classification System (USCS)

PRIMARY DIVISIONS		SYMBOL	DESCRIPTIONS		
COARSE GRAINED SOILS Sands & Gravels, Over 50% retained on #200 sieve	GRAVELS Over 50% of coarse material retained on #4 sieve	CLEAN GRAVEL Less than 5% passing #200 sieve	GW Well graded gravel, many different particle sizes, little or no fines		
		GRAVEL WITH FINES	GP Poorly graded, few different particle sizes, little or no fines		
			GM Silty gravels, gravel-sand-silt mixtures		
		GC Clayey gravels, gravel-sand-clay mixtures	SAND Over 50% of coarse material passed #4 sieve	CLEAN SANDS Less than 5% passing #200 sieve	SW Well graded gravel, many different particle sizes, little or no fines
	SAND WITH FINES			SP Poorly graded, few different particle sizes, little or no fines	
		SM Silty gravels, gravel-sand-silt mixtures			
	SC Clayey gravels, gravel-sand-clay mixtures	FINE GRAINED SOILS Sils & Clays, Over 50% passing the #200 sieve		SILTS AND CLAYS Liquid limit is less than 50 %	ML Inorganic silts, slight to no plasticity
					CL Inorganic clays, low to moderate plasticity
	OL Organic silts and clays of low plasticity				
	MH Inorganic silts, moderate to high plasticity	SILTS AND CLAYS Liquid limit is more than 50 %	CH Inorganic clays, high plasticity, fat clays	OH Organic silts and clays of high plasticity	
PT Peat and other highly organic soils					

<p>Soil Samples</p> <p> Disturbed, bag, bulk, or grab sample</p> <p> Standard penetration split spoon sample</p> <p> Cuttings</p> <p> Continuous-Core Sample</p>	<p>Field Measurements</p> <p> Water Level Observed During Drilling</p> <p>PID Photoionization Detector</p> <p>ppmv Parts Per Million by Volume</p> <p> End of Boring (E.O.B)</p> <p>Note: Blows per foot is the number of blows used to drive a split-spoon (2" OD) sampler through the last 12 inches of an 18-inch sampling attempt. One blow is a 30-inch fall of a 140-pound hammer.</p> <p>Note: The line separating strata on the logs represents approximate boundaries only. The actual transition may be gradual. No warranty is provided as to the continuity of the strata between exploration locations. Logs represent the soil section observed at the exploration location on the date of exploration only.</p>
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ExplorationLogLegend.pub

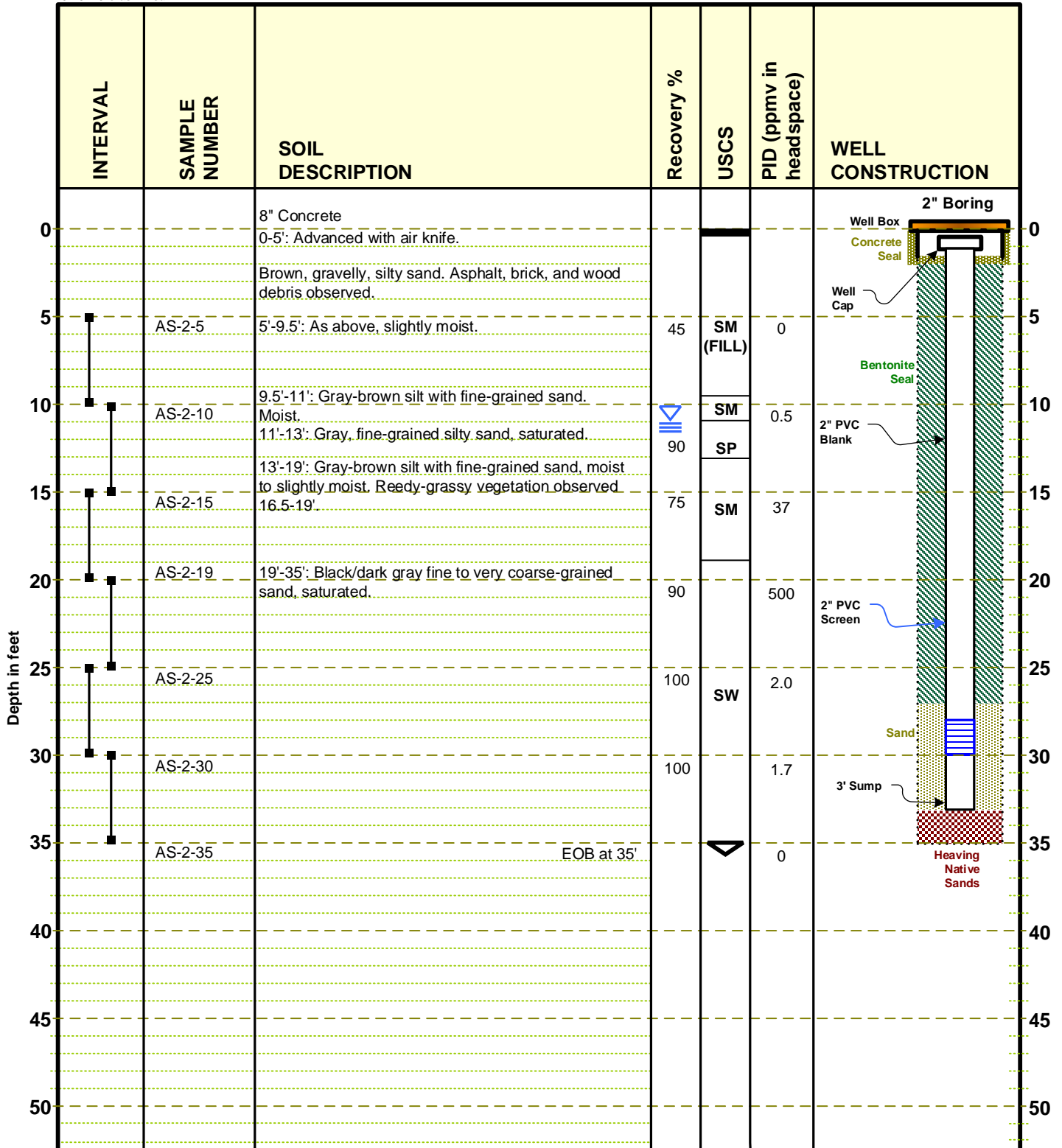


Exploration Log Legend

INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		8" Concrete Surface Boring advanced with air knife.				
0-3'		Brown, silty sand with rounded gravel and cobbles, slightly moist.			0	
3'-8.5'	SVE-1-5	Brown silty sand with gravel, slightly moist.		SM		
8.5'-9'	SVE-1-9	As above, gray discoloration and strong petroleum odor.			88	
		E.O.B. at 9 feet				
10						
15						
20						
25						
30						

Drilling Method: Air Knife	Date: 4/11/2019	Other Information: 4"-diameter soil-vapor extraction well.
Drilling Company: ESN	Weather: Cool, Overcast, Windy	
Boring Diameter: Eight Inches	Page 1 of 1	
Logged By: Zak Wall		

	Boring/Well Log Boeing Field Chevron 10805 Pacific Hwy S Tukwila, WA	SVE-1
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Drilling Method: Direct Push	Date: 4/10/2019	Other Information: Due to heaving sand, well was set at a depth of 33 feet below the ground surface. Boring advanced with 2" direct push, then over-drilled with 5" auger.
Drilling Company: ESN	Weather: Overcast, Cool	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Zak Wall		

	Boring/Well Log Boeing Field Chevron 10805 Pacific Hwy S Tukwila, WA	AS-2
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		8" Concrete Surface 0-5': Advanced with air knife. See boring log for AS-2 for soil information.				
5						
10		Groundwater at 11'				
15		E.O.B. at 16 feet				
20						
25						
30	Depth in feet					30

Drilling Method: Direct-Push	Date: 4/10/2019	Other Information:
Drilling Company: ESN	Weather: Cool, Overcast, Windy	
Boring Diameter: Four Inches	Page 1 of 1	
Logged By: Zak Wall		

	<p>Boring/Well Log Boeing Field Chevron 10805 Pacific Hwy S Tukwila, WA</p>	<p>AS-1</p>
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		8" Concrete Surface				
0-5'		Advanced with air knife. Brown, silty sand with rounded gravel, slightly moist.			2.1	
5'	TW-3-5	8"-thick layer of weak concrete encountered at 2.5'		SM		
5'-9'		Gravelly, very silty, medium-grained sand, very moist.	50		151	
9'	TW-3-9	E.O.B. at 9 feet				
10						
15						
20						
25						
30						

Drilling Method: Direct-Push	Date: 4/11/2019	Other Information:
Drilling Company: ESN	Weather: Cool, Overcast, Windy	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Zak Wall		

	Boring/Well Log Boeing Field Chevron 10805 Pacific Hwy S Tukwila, WA	TW-3
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		8" Concrete Surface				
0-5'		Advanced with air knife. Brown, silty sand with rounded gravel, slightly moist. Angular concrete debris throughout.			0	
5	TW-2-5	8" PVC pipe obstructing hole at 4 feet. Moved 2 feet north. 5'-9': As above, poor recovery.	<5	SM	0	
10		E.O.B. at 9 feet				
15						
20						
25						
30						

Drilling Method: Direct-Push	Date: 4/11/2019	Other Information:
Drilling Company: ESN	Weather: Cool, Overcast, Windy	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Zak Wall		

	Boring/Well Log Boeing Field Chevron 10805 Pacific Hwy S Tukwila, WA	TW-2
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		8" Concrete Surface				
0-5	TW-1-5	Advanced with air knife. Brown, silty sand with rounded gravel, slightly moist.		SM	0	
5-9		Brown, medium to coarse-grained silty sand with trace rounded gravel, moist.	40		0	
9	TW-1-9	Wet at 9'		▽		
		E.O.B. at 9 feet				
10						
15						
20						
25						
30						

Drilling Method: Direct-Push	Date: 4/11/2019	Other Information:
Drilling Company: ESN	Weather: Cool, Overcast, Windy	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Zak Wall		

	Boring/Well Log Boeing Field Chevron 10805 Pacific Hwy S Tukwila, WA	TW-1
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION	
0		Surface: Topsoil				2" Boring Backfilled with Bentonite	
0-5.5'		0-5.5': Well-graded SILTY GRAVEL with sand (Fill); brown, moist.	10	GM			
5					0.0		
5.5-9.5'		5.5-9.5': SILTY SAND; fine grain; dark-gray, moist.	80	SM			
9.5-12'	GLB-1-1025 16-10	9.5-12': Well-graded SAND; medium to coarse grain; dark-gray, moist.		SW			
12-13'		12-13': SILT with clay; brown-gray, wet.	100	ML			
13-14'	GLB-1-1025 16-13.5	13-14': Well-graded SAND; medium to coarse grain; dark-gray, wet.		SW	0.0		
14-16'		14-16': SILT; gray-brown, moist, some organics.	100	ML	0.0		
16-17'		16-17': Organic matter					
17-19'		17-19': SILT; gray-brown, moist, some organics.	100				0.0
19-19.5'	GLB-1-1025 16-20	19-19.5': SILT with sand; fine grain; dark-gray, wet.		SW	0.0		
19.5-30'		19.5-30': Well-graded SAND; medium to coarse grain; dark-gray, wet.	100				
25	GLB-1-1025 16-25				0.0		
30	GLB-1-1025 16-30				0.0		

Drilling Method: Direct-Push	Date: 10/25/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Cloudy, Cool	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Zak Wall		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	GLB-1
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Topsoil				2" Boring Backfilled with Bentonite
0-4.5'		Well-graded SILTY GRAVEL with sand (Fill); gray-brown, wet.	25	GM		
4.5-5'		SILT with sand; gray, wet.		ML		
5-6.5'		SILT with sand and gravel (slough); wet.				
6.5-7'		SILTY SAND; medium to coarse grain; gray.	80	SM	0.0	
7-8.5'		Well-graded SAND; medium to coarse grain; dark-gray, moist.		SW		
8.5-10'	GLB-2-1025 16-10	SILTY SAND; fine grain; dark-gray, moist, stiff.	80	SM	0.0	
10-12'		SILTY SAND; medium grain; gray-brown, wet.			0.0	
12-13.5'		SILT with clay and sand; wet.	100			
13.5-19.5'	GLB-2-1025 16-15	SILT with clay; gray-brown, moist, some organics.				
15-16'		Wet lens @ 16'	90	ML		
16-20'	GLB-2-1025 16-20				0.1	
19.5-30'		Well-graded SAND; medium to coarse grain; dark-gray, wet. 2" thick silt lens with organics @ 22.5'; dark-gray.	100			
20-25'	GLB-2-1025 16-25			SW	0.0	
25-30'	GLB-2-1025 16-30		100		0.0	

Drilling Method: Direct-Push	Date: 10/25/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Cloudy, Cool	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Zak Wall		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	GLB-2
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Landscape gravel				2" Boring Backfilled with Bentonite
0-6'		Well-graded SILTY GRAVEL with sand (Fill); brown, moist, loose.	20	GM	0.0	
5		6-8.5': SILT with sand; gray, wet.	60	ML	0.0	
8.5-12.5'	GLB-3-20161025-10	SILTY SAND; medium to coarse grain; dark-gray, wet.		SM	0.0	
12.5-15'		SILT; trace sand; gray, moist, few organics.	100		0.0	
15		Wet lens @ 14-14.5"			0.0	
15-19'		SILT; trace sand; gray-brown, no odor, moist, some organics.	80	ML	0.0	
20		19-20': Well-graded SAND; medium to coarse grain; dark-gray, wet.			0.4	
20-25'		Well-graded SAND; medium to coarse grain; dark-gray, petroleum odor, wet.	100		2.1	
25		25-30': Well-graded SAND; medium to coarse grain; dark-gray to black, petroleum odor, wet.		SW	3.4	
30		30-35': Same as above, no petroleum odor.	100		0.3	
					0.0	

Drilling Method: Direct-Push	Date: 10/25/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Cloudy, Cool	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Zak Wall		

	<p>Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington</p>	GLB-3
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Landscape gravel				2" Boring Backfilled with Bentonite
0-6.5'		Well-graded SILTY GRAVEL with sand (Fill); brown, no odor, moist.	60	GM	0.0	
6.5-9.5'		SILTY SAND; fine grain; gray, moist.	80	SM		
9.5-10.5'	GLB-4-102516-10	SILT with sand; gray, wet.	80	ML	0.0	
10.5-14.5'		SILTY SAND; fine grain, gray, wet.	100	SM	0.0	
14.5-15'	GLB-4-102516-15	SILT; trace fine grain sand; gray-green, no odor, moist.	100	ML	0.0	
15-16'		SILTY SAND; fine grain; gray, wet.	100	SM		
16-17'		SILT with sand; brown.	100	ML	0.0	
17-20'		SILTY SAND; fine grain; gray, wet.	100	SM		
20-35'	GLB-4-102516-20 GLB-4-102516-21	Well-graded SAND; medium to coarse grain; dark-gray, petroleum odor, strongest at 27.5', wet.	100		1.1	
25-27.5'	GLB-4-102516-25			SP	.0	
27.5-30'	GLB-4-102516-30 GLB-4-102516-35		100		1.0 0.0 0.0	

Drilling Method: Direct-Push	Date: 10/25/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Cloudy, Cool	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Zak Wall		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	GLB-4
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Concrete Air Knife to 6'				2" Boring Backfilled with Bentonite
0-5'	GLB-5-102416-3	Well-graded SILTY GRAVEL with sand (Fill); brown, no odor, moist.	40	GM	0.0	
5-8'		SILTY SAND; fine grain; brown, no odor, moist.	80	SM	0.1	
8-9'	GLB-5-9	Well-graded SAND; medium grain; brown to dark-gray, moist.		SW	0.1	
10-13'	GLB-5-12	SILTY SAND; fine grain; gray-brown, wet.		SM	0.2	
13-14.5'		SILT; gray-brown, moist, some organics.	90			
@ 14.5'		SILT with sand; wet.				
15-18.5'	GLB-5-15	SILT with clay; brown-gray, moist, some organics.	80	ML	0.2	
18.5-25'	GLB-5-20	Well-graded SAND; medium to coarse grain; dark-gray, wet.		SW	0.2	
25'	GLB-5-25		100		0.2	
		E.O.B. at 25 feet				

Drilling Method: Direct-Push	Date: 10/27/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Overcast, Cool	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Zak Wall		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	GLB-5
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Asphalt Air Knife to 6'				2" Boring Backfilled with Bentonite
0-5'	GLB-6-102416-3	0-5': Well-graded SILTY GRAVEL with sand (Fill); brown, moist.	40	GM	0.0	
5-7'		5-7': SILTY SAND; fine grain; brown, no odor, moist.		SM	0.1	
7-8'	GLB-6-8	7-8': Well-graded SAND; medium grain; brown-gray, no odor, moist.	70		0.2	
10-11.5'	GLB-6-10	10-11.5': Well-graded SAND; medium to coarse grain; dark-gray, no odor, wet.		SW	35.4	
11.5-12'		11.5-12': SILTY SAND; fine grain; gray, wet.		SM		
12-16'		12-16': SILT with sand; gray, wet, some organics.	80			
15-16'	GLB-6-15			ML	0.3	
16-18.5'		16-18.5': SILT with clay; brown-gray, grading to dark-gray sand @ 19'.	80			
19-30'	GLB-6-20	19-30': Well-graded SAND; medium to coarse grain; dark-gray, no odor, wet.			0.2	
25-26'	GLB-6-25			SW	0.1	
30'	GLB-6-30		100		0.0	

Drilling Method: Direct-Push	Date: 10/27/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Overcast, Cool	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Zak Wall		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	GLB-6
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Asphalt Air Knife to 6'				2" Boring Backfilled with Bentonite
0-6'	GLB-7-102416-3	Well-graded SILTY GRAVEL with sand (Fill); brown, moist.		GM	0.0	
6-20'		No recovery, pushing a rock.	0			
20-21'	GLB-7-102616-20	Well-graded SAND; medium to coarse grain; dark-gray, petroleum odor, wet.	0		12.2	E.O.B. at 35 feet
21-25'	GLB-7-102616-22		60	SW	23.8	
25-26'					3.5	
26-27'					3.5	
27-30'	GLB-7-102616-30 GLB-7-102616-35		100		1.9 0.0	

Drilling Method: Direct-Push	Date: 10/26/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Rain, Cool	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Zak Wall		

	<p>Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington</p>	GLB-7
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Concrete; 8" Air Knife to 6'				2" Boring Backfilled with Bentonite
	GLB-8-20161021-3	0-4.5': Well-graded SILTY GRAVEL with sand (Fill); brown, moist.		GM	0.0	
	GLB-8-20161021-6	4.5-5.5': SILT with sand; brown, moist.		ML	0.0	
		5.5-10': SILTY SAND; brown, moist.	50	SM	0.1	
		10-13': SILTY SAND; medium grain; dark-gray, wet.				
	GLB-8-20161024-11		90	ML	0.0	
	GLB-8-20161024-15	13-18': SILT with sand; brown, moist, some wood and organics.				
	GLB-8-20161024-18	18-19': SILTY SAND; gray.	90	SM	0.1	
	GLB-8-20161024-25	19-25': Well-graded SAND; medium to coarse grain; dark-gray, wet.	100	SW	0.0	
		E.O.B. at 25 feet				

Drilling Method: Direct-Push	Date: 10/24/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Overcast, Cool	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Zak Wall		

	<p>Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington</p>	GLB-8
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Asphalt Air Knife to 6'				2" Boring Backfilled with Bentonite
0-6'	GLB-9-102416-3	Well-graded SILTY GRAVEL with sand (Fill); brown, wet.		GM	0.0	
5		Poor recovery; same as above	10		0.0	
10	GLB-9-102616-10	Poor recovery; same as above	20		0.0	
15		Poor recovery; same as above	0			
20		20-35': Well-graded SAND; medium to coarse grain; dark-gray, petroleum odor, wet.	100			
20-25'	GLB-9-102616-23			SW	25.6	
25-30'	GLB-9-102616-25		100		8.2	
30	GLB-9-102616-30 GLB-9-102616-35				0.1 0.0	

Drilling Method: Direct-Push	Date: 10/26/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Rain, Cool	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Zak Wall		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	GLB-9
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Concrete; 7" Air Knife to 6'				2" Boring Backfilled with Bentonite
0-6'	GLB-10-20161021-3	Well-graded SILTY GRAVEL with sand (Fill); brown, moist.		GM	0.0	
6-7'		Well-graded SAND with silt; medium to coarse grain; brown, wet.	▽	SW	0.0	
7-9.5'		SILT; brown-gray, moist.		ML		
9.5-10'		Well-graded SAND; medium to coarse grain; dark-gray, wet.				
10-12.5'		Well-graded SAND; medium grain; brown, wet.		SW	0.0	
12.5-14.5'	GLB-10-20161024-12	SILT; gray, no odor, moist.		ML	0.0	
14.5-15'		SILTY SAND; dark-gray, wet.		SM		
15-18'		SILT; brown-gray, slight petroleum odor, moist, some wood.		ML		
18-25'	GLB-10-20161024-20	Well-graded SAND; medium to coarse grain; dark-gray, slight petroleum odor @20', wet.			5.8	
25-30'	GLB-10-20161024-25	Well-graded SAND; medium to coarse grain; dark-gray to black, no odor, wet.		SW	0.0	
30	GLB-10-20161024-30	E.O.B. at 30 feet			0.0	

Drilling Method: Direct-Push	Date: 10/24/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Partly Cloudy, Cool	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Zak Wall		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	GLB-10
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Aspault/Concrete; 7" Air Knife to 6'				2" Boring Backfilled with Bentonite
0-5'	GLB-11-102416-3	Well-graded SILTY GRAVEL with sand (Fill); brown, moist.	50	GM	0.0	
5-12'	GLB-11-102616-7	Well-graded SAND with silt; fine to medium grain; brown, moist to wet @7.5'.	70	SW	0.2	
12-14'		Laminated SILT with sand (moist) and SILTY SAND (wet); fine grain; gray.	100	ML/SM		
14-17.5'	GLB-11-102616-15	SILT with sand; brown-gray, some organics.			0.0	
17.5-18.5'	GLB-11-102616-18	SILTY SAND; fine grain; gray, wet.		SM	0.0	
18.5-30'	GLB-11-102616-23	Well-graded SAND; medium to coarse grain; dark-gray, wet.	100	SW	0.0	
30'	GLB-11-102616-30		100		0.0	

Drilling Method: Direct-Push	Date: 10/26/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Rain, Cool	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Zak Wall		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	GLB-11
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Concrete; 4" Air Knife to 6'				2" Boring Backfilled with Bentonite
		4"-3': SAND with concrete debris.		GM		
	GLB-12-20161021-3	3-4.5': GRAVELY SAND with silt; gray, moist.			0.0	
		4.5': PEA GRAVEL		GP		
5		5.5': Wood and concrete debris; slight petroleum odor.			0.0	
	GLB-12-20161021-6	6-8': SILT with sand; gray.		ML		
		8-10': GRAVELY SAND; coarse grain; globes of silt;	25			
		gray, petroleum odor.		SM	9.5	
10		10-14': SILTY SAND; fine grain; wet.		SM		
	GLB-12-20161024-10		90			
		14-18': SILT with sand; brown-gray, odor, moist, some			0.3	
	GLB-12-20161024-14	wood.		ML		
15		18-30': Well-graded SAND; medium to coarse grain;	100		0.2	
	GLB-12-20161024-18	dark-gray, no odor, wet.				
20			0			
				SW	0.1	
	GLB-12-20161024-25					
25			100			
	GLB-12-20161024-30				0.0	
30		E.O.B. at 30 feet				

Drilling Method: Direct-Push	Date: 10/24/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Overcast, Cool	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Zak Wall		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	GLB-12
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Concrete; 6" Air Knife to 3'				2" Boring Backfilled with Bentonite
	GLB-13-20161021-3	6"-3': Angular GRAVEL with sand (Fill); medium grain; brown, no odor, some debris.		GW		
		3-3.5': SILT; few sand; brown.		ML	0.0	
5	GLB-13-20161021-6	3.5-7': SILTY SAND; fine grain; brown, no odor, moist.			0.0	
		7-12': SILTY SAND; medium grain; brown-gray, moist to wet @10'.	75	SM	0.0	
10	GLB-13-102516-11	12-16': SILT; gray-brown, moist, some organics. @13': Layer of SAND ; fine grain; wet.			0.1	
		16-17.5': SILTY with sand; gray, no odor, wet.	100	ML	0.3	
15	GLB-13-102516-15	17.5-30': Well-graded SAND; medium to coarse grain; dark-gray, wet.			0.2	
			100		0.1	
20	GLB-13-102516-20				0.1	
			100	SW	0.0	
25	GLB-13-102516-25				0.0	
			100		0.0	
30	GLB-13-102516-30	E.O.B. at 30 feet			0.0	

Drilling Method: Direct-Push	Date: 10/25/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Overcast, Cool	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Zak Wall		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	GLB-13
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Concrete; 6" Air Knife to 6'				2" Boring Backfilled with Bentonite
		6"-2.5': Angular GRAVEL with cobbles and sand (Fill).		GW		
	GLB-14-20161024-3	2.5-10': SILTY SAND; fine to medium grain; brown, no odor, moist.			0.0	
5	GLB-14-20161024-6				0.0	
	GLB-14-20161024-10	10-12.5': SILTY SAND; medium to coarse grain; wet.	75	SM	0.0	
	GLB-14-20161024-12.5	12.5-14.5': SILT with sand; gray-brown, moist.	100		0.0	
	GLB-14-20161024-17	14.5-17': SILT with sand; gray, moist.		ML		
	GLB-14-20161024-17	17-35': Well-graded SAND; medium to coarse grain; dark-gray, strong petroleum odor 17-20', slight odor at 21' (decreasing with depth), wet.	100		250	
	GLB-14-20161024-22		90	SW	2.8	
	GLB-14-20161024-25				0.0	
30	GLB-14-20161024-30	E.O.B. at 35 feet	60		0.0	

Drilling Method: Direct-Push	Date: 10/24/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Overcast, Cool	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Zak Wall		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	GLB-14
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Concrete; 8" Air Knife to 6'				2" Boring Backfilled with Bentonite
		8"-2': Well-graded GRAVELY SAND with cobbles (Fill).	60	SW		
		2-9': SILTY SAND with gravel; fine to medium grain sand; brown, no odor, moist.				
5	GLB-14-20161024-5		80	SM	0.0	
	GLB-15-20161024-9	9-12': Well-graded SAND; fine to medium grain; dark-gray, strong petroleum, odor moist to wet @ 10'.		SW	25	
	GLB-15-20161024-12	12-14': SILT with sand; gray, wet.	100	ML	7.8	
		14-16': Well-graded SAND; fine to medium grain; dark-gray, wet.		SW	30	
		16-18': SILT with clay and sand; brown, moist.	100	ML		
	GLB-15-20161024-18	18-30': Well-graded SAND; medium to coarse grain; dark-gray, wet.			68.7	
			100	SW	21.0	
	GLB-15-20161024-25				3.1	
			100			
	GLB-15-20161024-30				0.1	
30		E.O.B. at 30 feet				

Drilling Method: Direct-Push	Date: 10/24/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Overcast, Cool	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Zak Wall		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	GLB-15
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Asphalt Air Knife to 6'				2" Boring Backfilled with Bentonite
	GLB-16-20161024-3				0.0	
5	GLB-16-20161024-6	5-12': SILTY SAND; fine to medium grain; brown, no odor, moist to wet @ 9'.	80	SM	0.0	
	GLB-16-20161024-9				0.0	
10	GLB-16-20161024-12	12-13.5': SILT with sand; gray-orange(oxidized), moist. 13.5-14.5': SILTY SAND; fine grain; gray, wet. 14.5-15': SAND; medium grain; dark-gray, wet.	100	ML SM SP	0.0	
15	GLB-16-20161024-16 GLB-FD-20161024-1	15-17.5': SILT with sand; brown, slight petroleum odor, moist, some wood.	100	ML	17.2	
20	GLB-16-20161024-20	17.5-25': Well-graded SAND; medium to coarse grain; dark-gray, wet.			20.3	
25	GLB-16-20161024-25	E.O.B. at 25 feet	90	SW	0.0	
30						

Drilling Method: Direct-Push	Date: 10/24/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Overcast, Cool	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Zak Wall		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	GLB-16
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Concrete: 6" Air Knife to 6'				2" Boring Backfilled with Bentonite
0-5		6"-10.5': SILTY SAND; fine grain; brown, no odor, moist.	30			
5	GLB-17-5			SM	0.0	
5-10			65			
10	GLB-17-10	Wet @ 10'. 10.5-13': Laminated SILT with clay, CLAY with silt, and SILT with sand; fine grain; gray, no odor, wet, some organics (11-11.5').		ML/CL	0.0	
10-15		13-15.5': SILTY SAND; fine grain; dark-gray, no odor, wet.		SM		
15	GLB-17-15	15.5-17.5': SILT with clay; gray-brown, no odor, wet, some organics.		ML	0.0	
15-20		17.5-30': Well-graded SAND; fine to medium grain turning medium to coarse grain with depth; dark-gray, no odor, wet.	100		0.0	
20	GLB-17-18					
20-25			100	SW	0.0	
25	GLB-17-23					
25-30			100			
30	GLB-17-28				0.0	

Drilling Method: Direct-Push	Date: 11/21/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Cloudy, Cold	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Karis Vandehey		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	GLB-17
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Concrete: 12" Air Knife to 6'				2" Boring Backfilled with Bentonite
		1-3': Well-graded SILTY GRAVEL with sand (Fill); gray, no odor, moist.	50	GM		
		3-12.5': SILTY SAND; fine grain; gray, no odor, moist.				
5	GLB-18-5				13.3	
			30	SM		
10	GLB-18-10	Wet @ 10'.			22.5	
			80			
		12.5-16.5': Laminated SILT with clay and CLAY with silt; brown-gray, no odor, moist, some organics.		ML/CL	17.3	
15	GLB-18-14					
			100		20.5	
		16.5-35': Well-graded SAND few silt; fine to medium grain turning medium to coarse grain with depth; dark-gray, petroleum odor (16.5-30'), wet.				
20	GLB-18-17					
			100	SW	18.5	
25	GLB-18-22					
			100			
30	GLB-18-30 GLB-18-35	Slight petroleum odor @ 35'.	100		33.9 16.9	

Drilling Method: Direct-Push	Date: 11/18/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Cloudy, Cool	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Karis Vandehey		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	GLB-18
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Concrete: 18" Air Knife to 6'				2" Boring Backfilled with Bentonite
		18"-5': Well-graded SILTY GRAVEL with sand (Fill); gray, no odor, moist, brick debris.	5	GM		
5	GLB-19-5	5-6': SILTY SAND; fine grain; gray, no odor, moist. 6-10': No Recovery. Wet @ 6'.	25	SM ?	4.7	
10	GLB-19-10	10-11': Well-graded SAND with silt; fine grain; dark-gray, no odor, wet. 11-13': Laminated SILT with sand (moist) and SILTY SAND (wet); fine grain; gray. 13-15.5': Well-graded SAND with silt; fine grain; dark-gray, petroleum odor, wet.	75	SW ML/SM SW	26.3	
15	GLB-19-15				5.7	
	GLB-19-16	15.5-18': Laminated SILT with clay and CLAY with silt; brown-gray, no odor, moist, some organics..	75	ML/CL	16.5	
	GLB-19-18				35.8	
20		18-30': Well-graded SAND; fine to medium grain turning medium to coarse grain with depth; dark-gray, petroleum odor decreasing with depth, wet.	100	SW		
25	GLB-19-25				38.4	
30	GLB-19-30		100		12.8	

Drilling Method: Direct-Push	Date: 11/18/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Cloudy, Cool	
Boring Diameter: Two Inches	Page 1 of 1	
Logged By: Karis Vandehey		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	GLB-19
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Concrete				
0-6'		Well-graded SILTY GRAVEL with sand (Fill); brown, no odor, moist.	70	GM		
6-7.5'		SILTY SAND; fine grain; brown-gray, no odor, moist.	50	SM		
7.5-10'		No recovery.		?		
10-11'	MW-22-11	SILTY SAND; fine grain; brown-gray, no odor, wet.	90	SM		
11-13'		SILTY SAND; fine grain; gray, no odor, wet.		ML		
13-14'		SILT; gray-brown, moist, some organics. E.O.B. at 14 feet				
15						
20						
25						
30						

Drilling Method: Direct-Push	Date: 11/17/2016	Other Information: DOE Tag BJR-939 Sch. 80, 10 slot screen 11/18/16: H2O @ 10' prior to development.
Drilling Company: ESN Northwest	Weather: Cloudy, Cool	
Boring Diameter: 3.5 Inches	Page 1 of 1	
Logged By: Karis Vandehey		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	MW-22
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Concrete				
0-5'		Well-graded SILTY GRAVEL with sand (Fill); brown, no odor, moist.	75	GM	0.0	
5-15'		No recovery.	0	?		
10			5			
15-18'	MW-23-16	Laminated SILT with sand and SILTY SAND; fine grain; gray, petroleum odor @17', wet.	100	ML/SM	0.0	
18-19.5'		Laminated SILT with clay and CLAY with silt; brown, petroleum odor, wet, some organics.		ML/CL		
19.5-20'	MW-23-20	Well-graded SAND; fine to medium grain; dark-gray, petroleum odor, wet.		SW	74.0	
		E.O.B. at 20 feet				
20						
25						
30						

Drilling Method: Direct-Push/HSA	Date: 11/17/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Cloudy, Cool	DOE Tag BJR-940
Boring Diameter: Eight Inches	Page 1 of 1	Sch. 40, 10 slot screen
Logged By: Karis Vandehey		11/18/16: H2O @ 10.5' prior to development.

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	MW-23
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Landscape Gravel (6") over Asphalt (6")				
1-7'		Well-graded SILTY GRAVEL with sand (Fill); brown, no odor, moist.	60	GM	0.0	
7-10'		No recovery.	30	?	0.0	
10-12'		Laminated CLAY with silt and SILT with sand; fine grain; gray, no odor, moist to wet.	75	ML/CL	0.0	
12-14'		No recovery.				
	MW-24-12	E.O.B. at 14 feet				



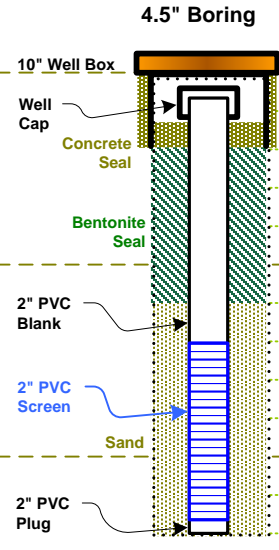
Drilling Method: Direct-Push	Date: 11/21/2016	Other Information: DOE Tag BJR-907 Sch. 80, 10 slot screen 11/21/16: H2O @ 12.5' prior to development.
Drilling Company: ESN Northwest	Weather: Cloudy, Cool	
Boring Diameter: 3.5 Inches	Page 1 of 1	
Logged By: Karis Vandehey		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	MW-24
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Concrete				<p>3.5" Boring</p> <p>10" Well Box Well Cap</p> <p>Concrete Seal</p> <p>Bentonite Seal</p> <p>1" PVC Blank</p> <p>Sand</p> <p>1" PVC Screen</p> <p>1" PVC Plug</p>
1-4'		Well-graded SILTY GRAVEL with sand (Fill); brown, no odor, moist.	60	GM		
4-7'		Well-graded SAND with silt; fine to medium grain; brown, no odor, moist to wet @6.5'.		SM		
7-10'		No recovery.	75	?		
10-12'	MW-25-11	Laminated SILT with sand (moist) and SILTY SAND (wet); fine grain; brown and oxidized 10-10.5' then gray, no odor.	60	ML/SM	5.2	
12-14'		No recovery.				
		E.O.B. at 14 feet				
15						
20						
25						
30						

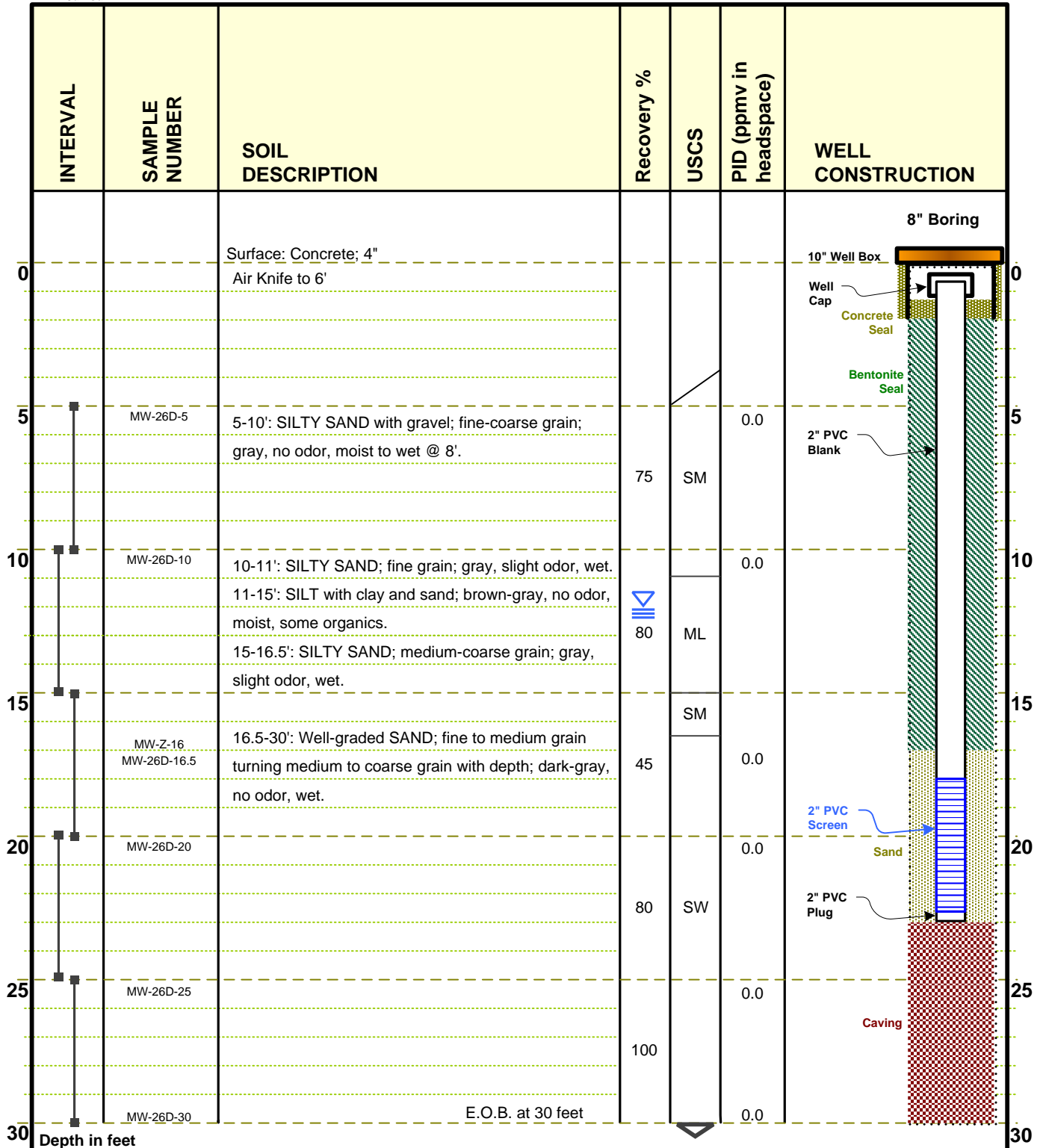
Drilling Method: Direct-Push	Date: 11/18/2016	Other Information: DOE Tag BJR-936 Sch. 80, 10 slot screen 11/21/16: H2O @ 10' prior to development.
Drilling Company: ESN Northwest	Weather: Cloudy, Cool	
Boring Diameter: 3.5 Inches	Page 1 of 1	
Logged By: Karis Vandehey		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	MW-25
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0 5 10 15 20 25 30		Surface: Concrete; 4" Air Knife to 6' No samples collected. See MW-26D for soil information. E.O.B. at 12 feet				



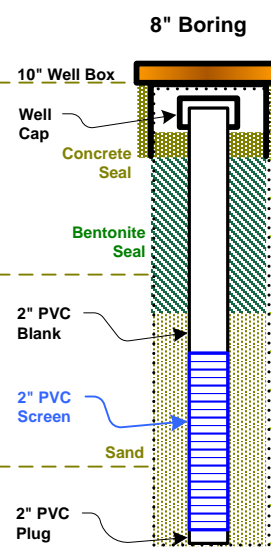
Drilling Method: Direct Push	Date: 11/21/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Cloudy, Cool	DOE Tag BJR-906
Boring Diameter: 4.5 Inches	Page 1 of 1	Sch. 40, 10 slot screen
Logged By: Karis Vandehey		11/21/16: H2O @ 9' prior to development.

	<p>Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington</p>	<p>MW-26S</p>
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Drilling Method: Direct-Push/HSA	Date: 11/17/2016	Other Information: DOE Tag BJR-938 Sch. 40, 10 slot screen 11/21/16: H2O @ 12' prior to development.
Drilling Company: ESN Northwest	Weather: Cloudy, Cool	
Boring Diameter: Eight Inches	Page 1 of 1	
Logged By: Karis Vandehey		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	MW-26D
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0 5 10 15 20 25 30		Surface: Concrete; 4" Air Knife to 6' No samples collected. See MW-27D for soil information. E.O.B. at 12 feet				



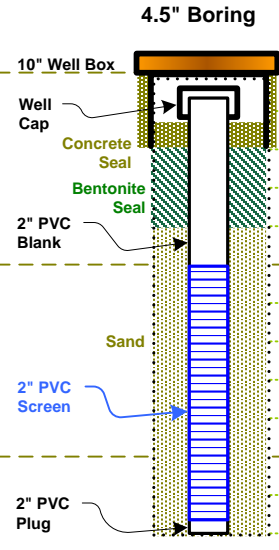
Drilling Method: HSA	Date: 11/21/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Cloudy, Cool	DOE Tag BJR-902
Boring Diameter: Eight Inches	Page 1 of 1	Sch. 40, 10 slot screen
Logged By: Karis Vandehey		11/21/16: H2O @ 8.5' prior to development.

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	MW-27S
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Concrete; 4" Air Knife to 6'				
6"-7'		GRAVELY SAND; medium-coarse grain; brown-gray, no odor, moist.		SW		
7-7.5'	MW-27D-5	SILTY SAND; fine grain; brown (oxidized), no odor, wet. No recovery.	50	SM	0.0	
10-11'	MW-27D-10	SILTY SAND; fine grain; dark-gray, no odor, wet.			0.0	
11-12.5'		Laminated SILT with clay and CLAY with silt; brown-gray, no odor, moist, some organics.	60	ML/ CL		
12.5-14'		Laminated SILT with sand and CLAY with silt; gray, no odor, wet.				
14-30'	MW-27D-15 MW-27D-20 MW-V	Well-graded SAND; fine to medium grain turning medium to coarse grain with depth; dark-gray, no odor, wet.	20		0.0	
20-25'	MW-27D-20 MW-V			SW	0.0	
25-30'	MW-27D-25				0.0	Casing
30	MW-27D-30	E.O.B. at 30 feet			0.0	

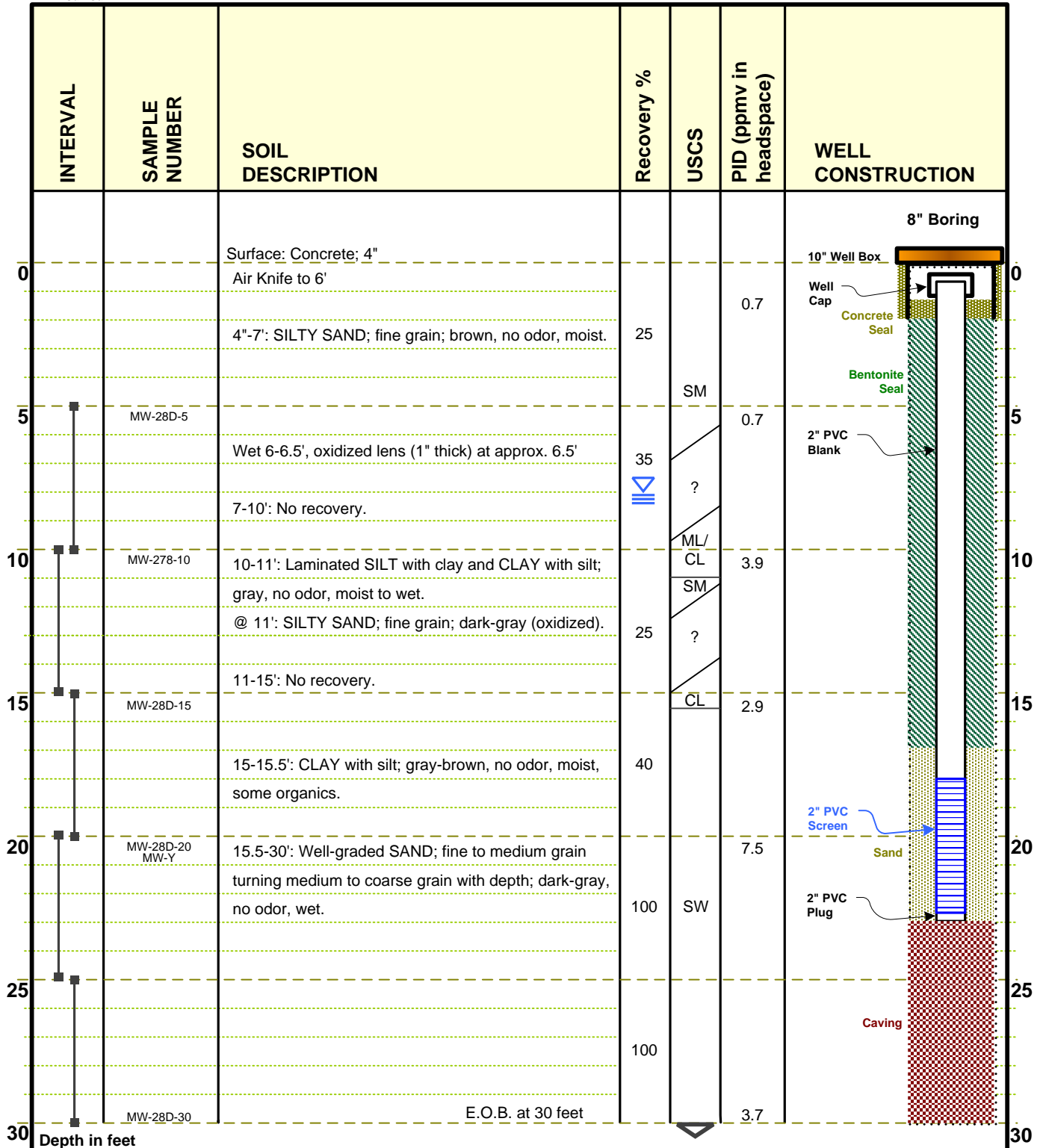
Drilling Method: Direct-Push/HSA	Date: 11/21/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Cloudy, Cool	DOE Tag BJR-901
Boring Diameter: Eight Inches	Page 1 of 1	Sch. 40, 10 slot screen
Logged By: Karis Vandehey		11/21/16: H2O @ 13' prior to development.

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	MW-27D
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0 5 10 15 20 25 30		Surface: Concrete; 4" Air Knife to 6' No samples collected. See MW-28D for soil information. E.O.B. at 12 feet				

Drilling Method: Direct Push	Date: 11/18/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Cloudy, Cool	DOE Tag BJR-935
Boring Diameter: 4.5 Inches	Page 1 of 1	Sch. 40, 10 slot screen
Logged By: Karis Vandehey		11/18/16: H2O @ 9'.

	<p>Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington</p>	<p>MW-28S</p>
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Drilling Method: Direct-Push/HSA	Date: 11/18/2016	Other Information: DOE Tag BJR-937 Sch. 40, 10 slot screen 11/18/16: H2O @ 13'.
Drilling Company: ESN Northwest	Weather: Cloudy, Cool	
Boring Diameter: Eight Inches	Page 1 of 1	
Logged By: Karis Vandehey		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	MW-28D
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Concrete, Airknife to 6'				
	GLVP-1-102416-3	0-7.5": Well-graded SILTY GRAVEL with sand (Fill); brown, moist.		GM	0.0	
5	GLVP-1-102516-7				0.0	
		E.O.B. at 7 feet				
10						
15						
20						
25						
30						

Drilling Method: Airknife, Hand Auger	Date: 10/25/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Cloudy, Cool	
Boring Diameter: 4 inches	Page 1 of 1	
Logged By: Zak Wall		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	GLVP-1
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INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0		Surface: Concrete, Airknife to 5'				
	GLVP-2-102416-3	0-5': Well-graded SILTY SAND and GRAVEL with sand (Fill); brown, moist.			0.0	
5		5'-9.5': Gray-brown SILTY SAND, fine-to-medium-grained, moist.		SM	0.0	
	GLVP-2-102516-7.5	9.5'-10': Dark gray coarse-grained SAND with SILT, saturated.		SP		
10		E.O.B. at 10 feet				
15						
20						
25						
30						

Drilling Method: Airknife, Hand Auger	Date: 10/25/2016	Other Information:
Drilling Company: ESN Northwest	Weather: Cloudy, Cool	
Boring Diameter: 4 inches	Page 1 of 1	
Logged By: Zak Wall		

	Boring Boeing Field Chevron 10805 East Marginal Way South Seattle, Washington	GLVP-2
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0			Roots and landscaping debris in cuttings		SM		
2			Dark gray, slightly silty sand				
3		EW-1-5	No Odor	100			
3							
2		EW-1-10	Slight Odor	100			
2							
2							
10		EW-1-15	Wet at 13 feet Silt layer, dark gray at 14 to 14.5 feet	100	ML		
15							
6		EW-1-20	Coarse wet black sand	100	SP		
4							
8							
3		EW-1-24	Coarse black sand	100			
4							
5			End of Boring at 24.5 feet				
25							
30							

Drilling Method: HSA	Date: 3/17/08	Other Information: 300 LB hammer, 3 inch sampler
Drilling Company: Cascade Drilling	Weather: Overcast, Rain	
Boring Diameter: 8-inches	Page 1 of 1	
Logged By: R. Roberts		

	Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA	EW-1
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0			No samples to 9 feet		SM		
1							
1		EW-2-10	Dark brown, silty fine sand	100			
1			No Odor				
1							
1		EW-2-14	Silt	100	ML		
3							
3							
3		EW-2-20	Wet black sand	100			
1			Slight Odor				
4							
9		EW-2-24	Coarse black sand				
12			End of Boring at 24.5 feet	100	▼		

Drilling Method: HSA	Date: 3/17/08	Other Information:
Drilling Company: Cascade Drilling	Weather: Overcast, Rain	
Boring Diameter: 8-inches	Page 1 of 1	
Logged By: R. Roberts		

	Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA	EW-2
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0			No samples to 9 feet		SM		
1		EW-3-10	Dark brown, silty fine sand	100			
2							
2		EW-3-15	Clayey silt	100	ML		
2							
2							
4		EW-3-20	Coarse wet black sand	100	SP		
5							
6							
			Odor at 18 to 20 feet				
			No Odor at 20.5 to 23 feet				
			End of Boring at 23 feet		▼		

30 Depth in feet 30

Drilling Method: HSA	Date: 3/17/08	Other Information:
Drilling Company: Cascade Drilling	Weather: Overcast, Rain	
Boring Diameter: 8-inches	Page 1 of 1	
Logged By: R. Roberts		

	Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA	EW-3
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0			No samples to 9 feet		SM		
3				100			
3		EW-4-10	Light brown sand (with wood fragments) No Odor				
3							
3							
3							
15							
3				100			
3		EW-4-15	Black silty sand (with wood fragments) No Silt layer, No Odor				
3							
20					SP		
4				100			
6		EW-4-20	Coarse black sand				
12							
			End of Boring at 23 feet				
25							
30							

Drilling Method: HSA	Date: 3/17/08	Other Information:
Drilling Company: Cascade Drilling	Weather: Overcast, Rain	
Boring Diameter: 8-inches	Page 1 of 1	
Logged By: R. Roberts		

	Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA	EW-4
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0			Sand, gravel and cobbles in cuttings		SM		
5							
10		EW-5-10	Cobbles and sand with asphalt (Fill) No Odor	5			
15		EW-5-15	Silt Dark Gray-Black wet Sand	100	ML		
20		EW-5-20	Dark Gray-Black wet Sand Moderate Odor	100	SP		
25		EW-5-23	End of Boring at 23 feet	90			
30	Depth in feet						

Drilling Method: HSA	Date: 3/17/08	Other Information:
Drilling Company: Cascade Drilling	Weather: Overcast, Rain	
Boring Diameter: 8-inches	Page 1 of 1	
Logged By: R. Roberts		

	Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA	EW-5
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0			6 inch concrete		SM		
1			Dark gray silty sand in cuttings				
1							
1							
1		EW-6-10	Dark gray silty fine sand	100			
1			Slight Odor				
1							
2					ML		
3		EW-6-15	Silty clay	100			
3			Dark gray silty fine sand				
3			Slight Odor				
3					SP		
6							
6		EW-6-20	Coarse black sand	100			
10							
10			Gas Odor				
8							
10		EW-6-24	Same as above	90			
12			End of Boring at 24.5 feet				

Drilling Method: HSA	Date: 3/18/08	Other Information:
Drilling Company: Cascade Drilling	Weather: Overcast, Rain	
Boring Diameter: 8-inches	Page 1 of 1	
Logged By: R. Roberts		

	Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA	EW-6
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0			6 inch concrete				
			Dark gray sand with gravel and cobbles in cuttings		SM		
6 6 8		EW-7-10	Dark gray gravelly sand	70		No Odor	
2 2 2		EW-7-15	Clayey silt Dark gray silty fine sand	100	ML		
4 5 6		EW-7-20	Wet, coarse, dark gray sand	100	SP	Odor	
5 6 13		EW-7-25	End of Boring at 25.5 feet	100		No Odor	
30							

Drilling Method: HSA	Date: 3/18/08	Other Information:
Drilling Company: Cascade Drilling	Weather: Overcast, Rain	
Boring Diameter: 8-inches	Page 1 of 1	
Logged By: R. Roberts		

	Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA	EW-7
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0			Sand, gravel, cobbles in cuttings		SM		<p>8" Dia. Seal 2" Dia. Boring</p> <p>Well Box Locking Well Cap</p> <p>Concrete Seal</p> <p>Bentonite Seal</p> <p>2" PVC Blank</p> <p>10/20 Sand</p> <p>2" 0.020 Slot PVC Well Screen</p> <p>Backfill to 23 feet</p>
50/6		EW-8-10	Dark gray gravelly sand with cobble in sample No Odor	30			
			No Odor at 14 feet				
3/3/3		EW-8-15	Dark gray gravelly sand with odor at 14.5 feet Sandy silt, brown, with organics	100	ML		
			Odor at 19 feet				
3/4/5		EW-8-20	Dark gray, wet coarse sand	100			
3/4/4		EW-8-25	Same as above No Odor at 25 feet	100			
30	Depth in feet						

Drilling Method: HSA	Date: 3/18/08	Other Information:
Drilling Company: Cascade Drilling	Weather: Overcast, Rain	
Boring Diameter: 8-inches	Page 1 of 1	
Logged By: R. Roberts		

	Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA	EW-8
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0			6 inch concrete				
			Sand, gravel, cobbles in cuttings		SM		
5							
11							
9		EW-9-10	Wet gray gravely sand	100			
8							
			Gray sandy silt and fine sand				
2							
2		EW-9-15	Peaty brown silt	80	ML		
2							
20			Black coarse sand, odor 15.5 to 20 feet		SP		
5							
5		EW-9-20		90			
5							
25			End of Boring at 25.5 feet				
5							
6		EW-9-25	No Odor	100			
6							
30							

Drilling Method: HSA	Date: 3/18/08	Other Information:
Drilling Company: Cascade Drilling	Weather: Overcast, Rain	
Boring Diameter: 8-inches	Page 1 of 1	
Logged By: R. Roberts		

	Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA	EW-9
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0					SM		
5			Silty Sand				
10			Moderate Odor, Wet				
15			Silt with organics		ML		
20			Coarse wet black sand Coarse black sand	100	SP		
25			End of Boring at 26 feet				
30							

Drilling Method: HSA	Date: 4/19/06	Other Information: Soils logged by Urban Redevelopment
Drilling Company: NW Probe	Weather: Overcast, Rain	
Boring Diameter: 8-inches	Page 1 of 1	
Logged By: J. Funderburk		

	Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA	IP-3
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0					SM		
5			Silty Sand Strong Odor, Wet				
10							
15			Silt with organics		ML		
20			Coarse wet black sand Strong Odor	100	SP	3480	
25			Coarse black sand End of Boring at 24 feet No Odor			530	
30							

Drilling Method: HSA	Date: 4/19/06	Other Information: Soils logged by Urban Redevelopment
Drilling Company: NW Probe	Weather: Overcast, Rain	
Boring Diameter: 8-inches	Page 1 of 1	
Logged By: J. Funderburk		

	Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA	IP-4
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0					SM		
5			Silty Sand				
10			Moderate Odor, Wet				
15			Silt with organics		ML		
20			Coarse wet black sand	100	SP	5000	
25			Strong Odor 19-22 feet			286	
26			End of Boring at 26 feet				
26			No Odor				
30							

Drilling Method: HSA	Date: 4/26/06	Other Information: Soils logged by Urban Redevelopment
Drilling Company: NW Probe	Weather: Overcast, Rain	
Boring Diameter: 8-inches	Page 1 of 1	
Logged By: J. Funderburk		

	Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA	IP-5
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0					SM		<p>8" Dia. Seal 2" Dia. Boring</p> <p>Well Box Locking Well Cap</p> <p>Bentonite Seal</p> <p>2" SS Blank</p> <p>10/20 Sand</p> <p>2" 0.020 Slot SS Well Screen</p>
5			Gravelly Fill				
10							
15			Silt with organics		ML		
20			Coarse wet black sand	100	SP		
25			End of Boring at 24 feet				
30							

Drilling Method: HSA	Date: 8/4/06	Other Information: Soils logged by Urban Redevelopment
Drilling Company: Cascade	Weather: Overcast, Rain	
Boring Diameter: 8-inches	Page 1 of 1	
Logged By: J. Funderburk		

	<p>Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA</p>	<p>IP-6</p>
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0					SM		
6 7 6			Black Sand with Gravel			7.5	
2 2 2			Peaty Clay Silt		CL	4.1	
6 13 13			Strong Odor 18 to 19 feet	100	ML SP	1500 3000 390 300	
		IP7-22	Coarse wet black sand			5	
			End of Boring at 24.5 feet				
30							

Drilling Method: HSA	Date: 8/4/06	Other Information:
Drilling Company: Cascade	Weather: Overcast, Rain	
Boring Diameter: 8-inches	Page 1 of 1	
Logged By: R. Roberts		

	Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA	IP-7
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0			Asphalt				
			Old asphalt layer at 3 feet				
5			Vacuum extract to 10.5 feet by APS Water at 10 feet				
10			Light brown wet silt Dark gray wet silt (grades to clayey silt)	100	ML	0.0	
15		MW 18-15	No Odor		CL		
20		MW 18-20	Wet dark gray sand End of Boring at 20 feet	100	SP	0.0	
25							
30							

Drilling Method: Probe, Vacuum	Date: 4/16/2008	Other Information:
Drilling Company: NW Probe, APS	Weather: Overcast, Rain	
Boring Diameter: 8-inches, 2-inches	Page 1 of 1	
Logged By: R. Roberts		

	Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA	MW-18
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0			Asphalt				<p>8" Dia. Seal 2" Dia. Boring</p> <p>Well Box Locking Well Cap Concrete Seal Bentonite Seal</p> <p>1" PVC Blank 10/20 Sand 1" 0.020 Slot PVC Well Screen</p>
			Old asphalt layer at 2 feet				
5							
			Vacuum extract to 10.5 feet by APS				
10							
			Light gray silt and clay		ML	0.0	
15		MW 19-15		100			
			Wet black sand		SP	0.0	
20		MW 19-20		100			
			End of Boring at 20 feet				
25							
30							

Drilling Method: Probe, Vacuum	Date: 4/16/2008	Other Information:
Drilling Company: NW Probe, APS	Weather: Overcast, Rain	
Boring Diameter: 8-inches, 2-inches	Page 1 of 1	
Logged By: R. Roberts		

	Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA	MW-19
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0			Asphalt				
			Old asphalt layer at 2 feet				
5			Vacuum extract to 10.5 feet by APS				
10							
15			Silt with wood fibers		ML	0.0	
		MW 20-16	No Odor	25			
			Fine black/gray sand at 15.5 feet		SP	0.0	
			Coarse Black Sand with wood fragments				
20		MW 20-20	No Odor	100			
			End of Boring at 20 feet				
25							
30							


Drilling Method: Probe, Vacuum	Date: 4/16/2008	Other Information:
Drilling Company: NW Probe, APS	Weather: Overcast, Rain	
Boring Diameter: 8-inches, 2-inches	Page 1 of 1	
Logged By: R. Roberts		

	Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA	MW-20
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0			Asphalt				
			Old asphalt layer at 3 feet				
5			Clay at 8 feet				
			Vacuum extract to 9.5 feet by APS				
10			Wet gray silt		ML		
			Grades to silty clay				
			Gray clay	100	CL		
			No Odor				
15		MW 21-17	Gray clay			0.0	
			Wet black sand				
20		MW 21-20	Wet black sand	100	SP	0.0	
			No Odor				
			End of Boring at 22 feet				
25							
30							


Drilling Method: Probe, Vacuum	Date: 4/16/2008	Other Information: Well casing is at a slight angle due to non-vertical pothole from 0 to 10 feet. Therefore, groundwater depth measurements may be inaccurate.
Drilling Company: NW Probe, APS	Weather: Overcast, Rain	
Boring Diameter: 8-inches, 2-inches	Page 1 of 1	
Logged By: R. Roberts		

	Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA	MW-21
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION	
0					SM		No Well	
5			Silty Sand No Odors					
10						0		
15			Silt with organics		ML			
20			Coarse wet black sand Slight Odor	100	SP	65		
25			Coarse black sand End of Boring at 24 feet No Odor			0		
30	Depth in feet							30


Drilling Method: HSA	Date: 4/18/06	Other Information: Soils logged by Urban Redevelopment
Drilling Company: NW Probe	Weather: Overcast, Rain	
Boring Diameter: 8-inches	Page <u>1</u> of <u>1</u>	
Logged By: J. Funderburk		

	Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA	P-1
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0					SM		No Well
5			Silty Sand No Odors				
10						0	
15			Silt with organics		ML		
20			Coarse wet black sand Strong Odor 18 to 22 feet		SP	1800 960	
25			End of Boring at 24 feet Less Odor				
30							


Drilling Method: HSA	Date: 4/18/06	Other Information: Soils logged by Urban Redevelopment
Drilling Company: NW Probe	Weather: Overcast, Rain	
Boring Diameter: 8-inches	Page 1 of 1	
Logged By: J. Funderburk		

	Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA	P-2
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0					SM		No Well
5			Silty Sand No Odors				
10						0	
15			Silt with organics		ML		
20			Coarse wet black sand Strong Odor 19 to 22 feet		SP	5000	
25			End of Boring at 24 feet Less Odor			286	
30							

Drilling Method: HSA	Date: 4/18/06	Other Information: Soils logged by Urban Redevelopment
Drilling Company: NW Probe	Weather: Overcast, Rain	
Boring Diameter: 8-inches	Page 1 of 1	
Logged By: J. Funderburk		

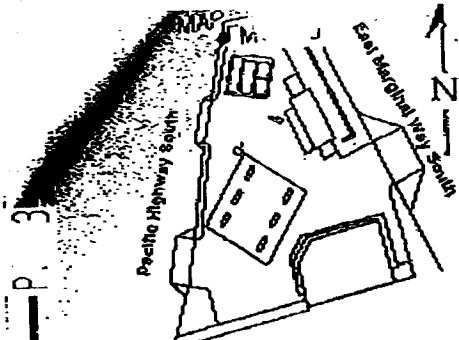
	Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA	P-5
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BLOWS/6 inches	INTERVAL	SAMPLE NUMBER	SOIL DESCRIPTION	Recovery %	USCS	PID (ppmv in headspace)	WELL CONSTRUCTION
0					SM		No Well
5			Silty Sand No Odors				
10						0	
15			Silt with organics		ML		
20			Coarse wet black sand Strong Odor 18 to 22 feet		SP	4000	
25			End of Boring at 24 feet Less Odor			40	
30							

Drilling Method: HSA	Date: 4/18/06	Other Information: Soils logged by Urban Redevelopment
Drilling Company: NW Probe	Weather: Overcast, Rain	
Boring Diameter: 8-inches	Page 1 of 1	
Logged By: J. Funderburk		

	Boring/Well Log Boeing Field Chevron 10805 East Marginal Way South Tukwila, WA	P-8
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No. 1966 P. 3
 2006 8:51AM Northwest Regional Office



PACIFIC ENVIRONMENTAL GROUP, INC.

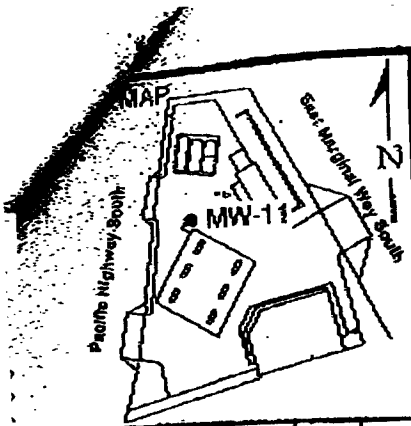
WELL NO.: MW-10
PAGE 1 OF 1

PROJECT NO. 520-132.1B
 LOGGED BY: MM
 DRILLER: HAYES
 DRILLING METHOD: HSA
 SAMPLING METHOD: SPLIT SPOON
 CASING TYPE: SCH 40 PVC
 SLOT SIZE: 0.020"
 GRAVEL PACK: 10x 20 SAND

CLIENT: CHEVRON
 DATE DRILLED: 9/3/97
 LOCATION: E Marginal Way S, Tukwila
 HOLE DIAMETER: 8"
 HOLE DEPTH: 21.5'
 WELL DIAMETER: 2"
 WELL DEPTH: 20'
 CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
				2		[Hatched pattern]	SC	PLANTER: bark surface.
	Mst	2	8	4		[Hatched pattern]		CLAYEY SAND: very dark brown; 30% fines; very fine sand; trace organics; loose; no hydrocarbon odor.
				6		[Hatched pattern]		
				8		[Dotted pattern]	SP	SAND: very dark brown; trace fines; fine sand; loose no hydrocarbon odor. CLAY: dark olive gray; high plasticity; abundant organics; trace iron oxide staining; firm; no hydrocarbon odor.
				10		[Dotted pattern]		
	Wt	3	5	*12		[Hatched pattern]	CH	SAND: very dark gray; 5% fines; very fine to fine sand; dense; no hydrocarbon odor.
				14		[Hatched pattern]		
				16		[Dotted pattern]	SP	
				18		[Dotted pattern]		
	Wt	0	49	20		[Dotted pattern]		
				22		[Dotted pattern]		
				24				
				26				
				28				
				30				
				32				
				34				
				36				
				38				
				40				
				42				
				44				

BOTTOM OF BORING AT 21.5'



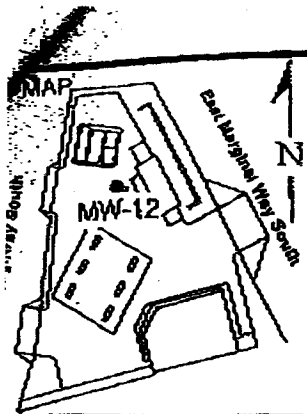
PACIFIC ENVIRONMENTAL GROUP, INC.

WELL NO.: MW-11
PAGE 1 OF 1

PROJECT NO. 520-132.1B
 LOGGED BY: MM
 DRILLER: HAYES
 DRILLING METHOD: HSA
 SAMPLING METHOD: SPLIT SPOON
 CASING TYPE: SCH 40 PVC
 SLOT SIZE: 0.020"
 GRAVEL PACK: 10x 20 SAND

CLIENT: CHEVRON
 DATE DRILLED: 9/3/97
 LOCATION: E Marginal Way S, Tukwila
 HOLE DIAMETER: 8"
 HOLE DEPTH: 21.5'
 WELL DIAMETER: 2"
 WELL DEPTH: 20'
 CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
	Dp	0	11	2			SP	CONCRETE: surface
	Wt	0	>50	20	11.5 - 13.0			SAND: dark grayish brown; trace fines; very fine to line sand; 5% gravel; medium dense; no hydrocarbon odor.
				20	13.0 - 20.0			@ 11.5': no sample recovery; gravel. @ 13': no sample recovery.
				20	20.0 - 21.5			@ 20.0': as above; black; 5% fines; fine sand; dense; no hydrocarbon odor.
				21.5				BOTTOM OF BORING AT 21.5'



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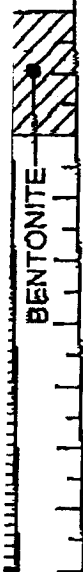
WELL NO.: MW-12
PAGE 1 OF 1

PROJECT NO. 520-132.1B
 LOGGED BY: MM
 DRILLER: HAYES
 DRILLING METHOD: HSA
 SAMPLING METHOD: SPLIT SPOON
 CASING TYPE: SCH 40 PVC
 SLOT SIZE: 0.020"
 GRAVEL PACK: 10x 20 SAND

CLIENT: CHEVRON
 DATE DRILLED: 9/3/97
 LOCATION: E Marginal Way S, Tukwila
 HOLE DIAMETER: 8"
 HOLE DEPTH: 21.5'
 WELL DIAMETER: 2"
 WELL DEPTH: 20'
 CASING STICKUP: NA

DEPTH (FEET)	RECOVERY SAMPLE INTERVAL	GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
0			SM	CONCRETE: surface
2			SM	SILTY SAND: dark brown; 30% fines; very fine sand; loose; gravel and cobbles above 4 feet; no hydrocarbon odor.
4			SM	
6			SM	
8			SM	
10			SM	@ 9.0': as above; black; 10% fines; very fine sand; loose; no hydrocarbon odor.
12			CL	
14			CH	CLAY: gray; moderate to high plasticity; abundant organics; firm; no hydrocarbon odor.
16			CH	@ 16.0': as above.
18			CH	
20			SP	SAND: black; trace fines; very fine to fine sand; trace coarse sand; dense; no hydrocarbon odor.
21.5			SP	BOTTOM OF BORING AT 21.5'

DEPTH (FEET)	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)
0			
4	Dp	0	8
10	Wp	0	6
14	Wt	0	3
20	Wl	0	41





BORING LOG B1/MW13

(Page 1 of 1)

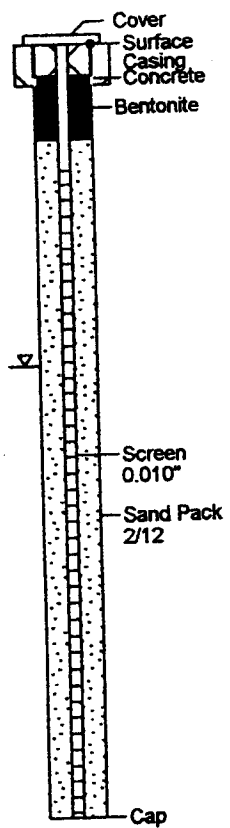
Date Drilled: : 07/16/04
 Drilling Co.: : Cascade Drilling, Inc.
 Drilling Method: : Hollow stem auger
 Sampling Method: : 140lb Split spoon
 Borehole Diameter: : 8"
 Casing Diameter: : 2"
 Location N-S :
 Location E-W :
 Total Depth: : 24'
 First GW Depth: : 10'

Project No.: : 31200
 Site: : Boeing Field Chevron, Seattle, WA
 Logged By: : John H. McCorde
 Reviewed By: : John K. Meyer, R.G., LHG.
 Signature: :

Depth (ft)	Blow Count	OVM/PIID (ppmv)	Sample	Column	USCS	Sample Condition <input checked="" type="checkbox"/> No Recovery <input type="checkbox"/> Sampled Interval <input checked="" type="checkbox"/> Described Sample <input checked="" type="checkbox"/> Preserved Sample	Water Levels ▽ After Completion ▽ During Drilling 07/16/04
						DESCRIPTION	

0						Cleared by air knife to 8 feet by Cascade
5	50/4	320	<input checked="" type="checkbox"/>		SP	SAND: Poorly Graded, fine- to medium-grained, brown, moist, with rounded gravel
10	11/14 14	20	<input checked="" type="checkbox"/>			CLAYEY-SILT: gray to brown, very wet, with some fine-grained sand
15	6/7 12	20	<input checked="" type="checkbox"/>		SW/ML	CLAYEY-SILT: gray to brown, wet, with organics
20	22/50 6	0	<input checked="" type="checkbox"/>			CLAYEY-SILT: gray to brown, saturated, with fine-grained sand
25					SW	SAND: Well Graded, very fine- to coarse-grained, gray, saturated

Well: MW13
 Elev.:



10-18-2004 F:\31200-Boeing Field Chevron\31200B1\MW13.bor

ENVIRONMENTAL SOLUTIONS, INC.

BORING LOG B2/MW14

(Page 1 of 1)

31200
 : Boeing Field Chevron, Seattle, WA
 : John H. McCorkle
 : John K. Meyer, R.G., L.H.G.

Date Drilled: : 07/16/04
 Drilling Co.: : Cascade Drilling, Inc.
 Drilling Method: : Hollow stem auger
 Sampling Method: : 140lb Split spoon
 Borehole Diameter: : 8"
 Casing Diameter: : 2"
 Location N-S :
 Location E-W :
 Total Depth: : 24'
 First GW Depth: : 10'

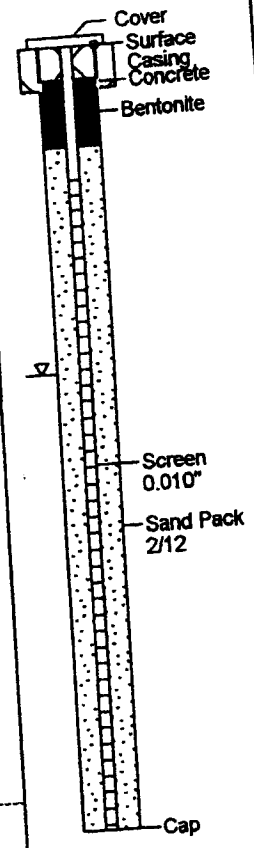
Blow Count	OVMPID (ppmv)	Sample	Column	USCS	DESCRIPTION
------------	---------------	--------	--------	------	-------------

Sample Condition
 No Recovery
 Sampled Interval
 Described Sample
 Preserved Sample

Water Levels
 ▽ After Completion
 ▽ During Drilling 07/16/04

Well: MW14
 Elev.:

0					Cleared by air knife to 5 feet by Cascade
5	50/0				No recovery - Driller hit refusal at 5 feet Driller noted gravels between 9 and 10 feet
10	11/16/20				SANDY-SILT: gray to dark brown, wet, very fine- to fine-grained sand, strong odor
15	23/50/6			SM/ML	CLAYEY-SILT: gray to dark brown, very wet
20	15/21/22				No recovery
25	32/50/6			SP	SAND: Poorly Graded, fine- to medium-grained, dark gray, moist, with silt
30					
35					
40					



10-19-2004 E:\31200-Boeing Field Chevron\31200B2\MW14 bor



BORING LOG B1/MW15

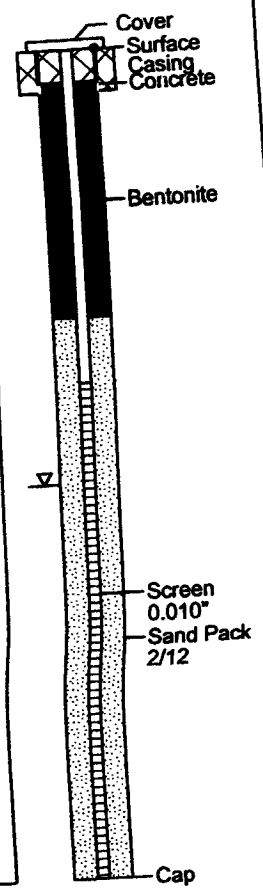
(Page 1 of 1)

Date Drilled: 08/26/05
 Drilling Co.: Cascade Drilling, Inc.
 Drilling Method: 6" Hollow stem auger
 Sampling Method: 18" SS/140lb hammer
 Borehole Diameter: 10"
 Casing Diameter: 2"
 Location N-S: Mid central west planter
 Location E-W:
 Total Depth: 25'
 First GW Depth: 13'

Project No.: 31200
 Site: Boeing Field Chevron, Seattle, WA
 Logged By: John H. McCorkle
 Reviewed By: Heather K. Vick, R.G., LHG.
 Signature:

Depth (ft)	Blow Count	OVN/PIPD (ppmv)	Sample	Column	USCS	Sample Condition	Water Levels
						No Recovery Sampled Interval Described Sample Preserved Sample	After Completion During Drilling 08/26/05

Well: MW15
 Elev.:



Depth (ft)	Blow Count	OVN/PIPD (ppmv)	Sample	Column	USCS	Description
0						Cleared by air knife to 4 feet by Cascade
27.2	1 2 2		[Sampled Interval]		SP	SAND, poorly graded, brown to gray; very fine- to fine-grained with silt; moist
0.7	2 2 2		[Sampled Interval]		SP	SAND, poorly graded; brown to gray; very fine- to fine-grained, with silt and some gravel; wet
12.6	2 2 2		[Sampled Interval]		SP	SAND, poorly graded, brown to gray, with silt and clay; saturated
7.9	3 4 7		[Sampled Interval]		SP	SAND, poorly graded, dark gray, very fine-grained with silt and some organics (wood debris); wet
-	2 8		[Sampled Interval]		SP	SAND, poorly graded, dark gray; very fine- to medium-grained; with silt, saturated

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BORING LOG B2/MW16

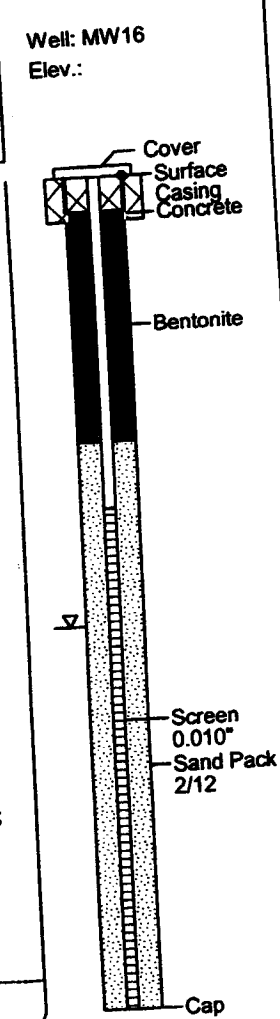
(Page 1 of 1)

Date Drilled: : 08/26/05
 Drilling Co.: : Cascade Drilling, Inc.
 Drilling Method: : 6" Hollow stem auger
 Sampling Method: : 18" SS/140lb hammer
 Borehole Diameter: : 10"
 Casing Diameter: : 2"
 Location N-S : Side of NW planter
 Location E-W :
 Total Depth: : 25'
 First GW Depth: : 13.5'

Project No.: : 31200
 Site: : Boeing Field Chevron, Seattle, WA
 Logged By: : John H. McCorkle
 Reviewed By: : Heather K. Vick, R.G., L.HG.
 Signature: :

Depth (ft)	Blow Count	OVM/PIID (ppmv)	Sample	Column	USCS	Sample Condition	Water Levels
						<ul style="list-style-type: none"> No Recovery Sampled Interval Described Sample Preserved Sample 	<ul style="list-style-type: none"> After Completion During Drilling 08/26/05

Depth (ft)	Blow Count	OVM/PIID (ppmv)	Sample	Column	USCS	DESCRIPTION
0						Cleared by air knife to 3.5 feet by Cascade
0 - 3.5	3 4 3	0.0			SM	Silty SAND, dark gray; very fine- to fine grained, with gravel, moist
3.5 - 8.5	2 2 2	0.0			SM	Silty SAND, dark gray; very fine- to fine-grained, with gravel; very wet
8.5 - 13.5	1 2 1	0.0			SM	Silty SAND, dark gray to dark brown; very fine- to fine-grained, with clay and organics; saturated
13.5 - 20	3 4 12	0.0			SP	SAND, poorly graded, dark gray; very fine- to medium grained with silt; very wet
20 - 25	4 8	0.0			SP	SAND, poorly graded, dark gray; very fine- to medium grained; with silt; very wet



12-28-2005 F:\31200-Boeing Field Chevron\31200B2\MW16.bor



BORING LOG B12/MW17

(Page 1 of 1)

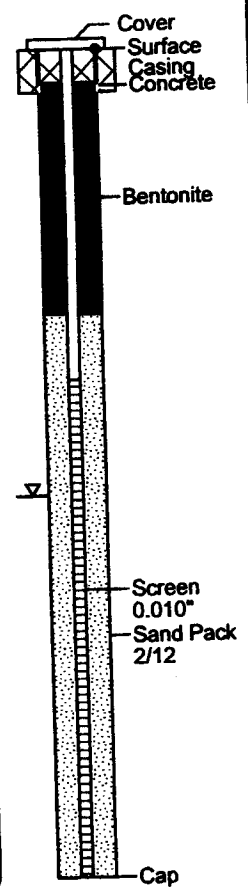
Date Drilled: : 08/26/05
 Drilling Co.: : Cascade Drilling, Inc.
 Drilling Method: : 6" Hollow stem auger
 Sampling Method: : 18" SS/140lb hammer
 Borehole Diameter: : 10"
 Casing Diameter: : 2"
 Location N-S : Side of NW planter
 Location E-W :
 Total Depth: : 25'
 First GW Depth: : 13.5'

Project No.: : 31200
 Site: : Boeing Field Chevron, Seattle, WA
 Logged By: : John H. McCorkle
 Reviewed By: : Heather K. Vick, R.G., L.HG.
 Signature: : _____

Depth (ft)	Blow Count	OVM/PID (ppmv)	Sample	Column	USCS	Sample Condition	Water Levels
						No Recovery Sampled Interval Described Sample Preserved Sample	After Completion During Drilling 08/26/05

Well: MW17
 Elev.: _____

Depth (ft)	Blow Count	OVM/PID (ppmv)	Sample	Column	USCS	DESCRIPTION
0						Cleared by air knife to 8.5 feet by Cascade
0 - 8.5					SP	Cuttings: SAND, poorly graded, light brown, fine- to coarse-grained, with gravel; moist
8.5 - 10	3 4 5	0.0	█		SP	SAND, light brown; very fine- to fine-grained, moist
10 - 15	2 3 2	0.0	█		ML	SILT, light brown, with sand and clay; wet
15 - 20	5 6	4.4	█		SP	SAND, poorly graded, dark gray, very fine- to medium grained with silt; saturated
20 - 25	11 12	-	█		SP	SAND, poorly graded, dark gray, very fine- to coarse-grained; with silt; saturated



12-28-2005 F:\31200-Boeing Field Chevron\31200B2\MW17.bor

PROJECT EAST MARGINAL WAY CHEVRON

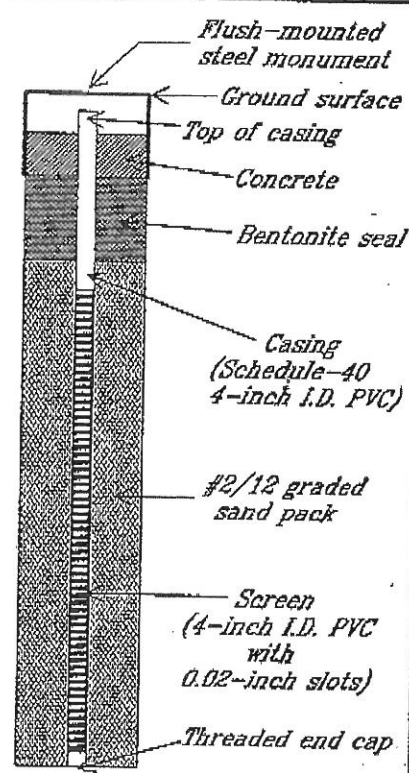
W.O. W 6774

WELL NO. B-4/MW-4

Elevation reference: 100.00 feet Well completed: 07 June 1990
 Ground surface elevation: 101.36 feet Casing elevation: 101.03 feet

AS-BUILT DESIGN

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	HEAD SPACE	GROUND WATER	TESTING
0	Asphalt and base course.						
0 - 4	Medium dense, moist, greenish-tan, silty, fine SAND with gravel.		S-1	13	352		8015 8020
4 - 10	Loose, moist, dark gray, silty, fine SAND; petroleum hydrocarbon-like odor.		S-2	9	28		8015 8020
10 - 15	becomes very loose with fine sandy SILT interbeds		S-3	2	6	▼ 6/27/90	
15 - 30	Boring terminated at approximately 15 feet.						



LEGEND

I 2-inch O.D. split-spoon sample

▼ Static groundwater level 27 June 1990



RITTENHOUSE-ZEMAN & ASSOCIATES, INC.
 Geotechnical & Environmental Consultants
 1400 140th Ave NE
 Bellevue, Washington 98005

Drilling started: 07 June 1990

Drilling completed: 07 June 1990

Logged by: TJP

PROJECT EAST MARGINAL WAY CHEVRON

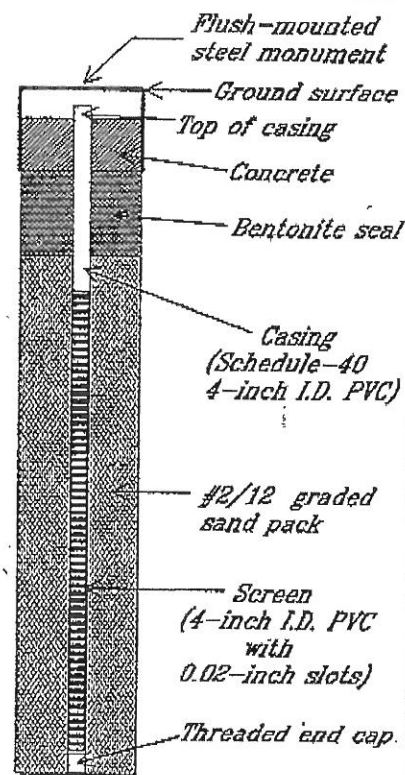
W.O. W 6774

WELL NO. B-6/MW-5

Elevation reference: 100.00 feet Well completed: 07 June 1990
 Ground surface elevation: 101.55 feet Casing elevation: 101.07 feet

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	HEAD SPACE	GROUND WATER
0	Asphalt and base course.					
0 - 4	Very dense, moist, yellowish-brown, silty, fine SAND with gravel.		S-1	73	4	
4 - 10	Medium dense, moist, dark brown, silty, fine SAND.		S-2	19	5	
10 - 15	Loose, wet to saturated, dark gray-brown, silty fine SAND with some fine sandy SILT laminae and some organics (peaty).		S-3	5	5	6/27/90
15 - 30	Boring terminated at approximately 15 feet.					

AS-BUILT DESIGN



TESTING

8015
8020
8015
8020

LEGEND

I 2-inch O.D. split-spoon sample

▼ Static groundwater level 6/27/90 27 June 1990



RITTENHOUSE-ZEMAN & ASSOCIATES, INC.
 Geotechnical & Environmental Consultants
 1400 140th Ave NE
 Bellevue, Washington 98005

Drilling started: 07 June 1990


Drilling completed: 07 June 1990

Logged by: TJP


PROJECT *EAST MARGINAL WAY CHEVRON*


W.O. *W 6774*

WELL NO. *B-9*

Elevation reference: <i>100.00 feet</i>		Well completed:					AS-BUILT DESIGN		TESTING
Ground surface elevation:		Casing elevation:							
DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	HEAD SPACE	GROUND WATER	<i>No Well Installed.</i>		
0	<i>Surface, bare ground</i>								8015 8020
	<i>Moist, dark brown, silty, fine SAND with gravel; and some cobbles (Fill)</i>								
	<i>Loose, wet, tan, silty, fine SAND with gravel and some organics; slight hydrocarbon-like odor.</i>		<i>S-1</i>	<i>5</i>	<i>549</i>		8015 8020		
5	<i>Loose, moist; dark gray, silty, fine SAND; trace gravel; slight hydrocarbon-like odor.</i>								
	<i>Decreasing silt content with petroleum hydrocarbon-like odor.</i>		<i>S-2</i>	<i>9</i>	<i>4000+</i>		8015 8020		
10	<i>Medium dense, wet to saturated, dark gray, silty, fine SAND interbedded with fine, sandy SILT with some organics (peaty)</i>		<i>S-3</i>	<i>15</i>	<i>18</i>				
15	<i>Boring terminated at approximately 14 feet.</i>								
20									
25									
30									

LEGEND

 2-inch O.D. split-spoon sample

 Observed groundwater level (ATD = at time of drilling)



RITTENHOUSE-ZEMAN & ASSOCIATES, INC.
 Geotechnical & Environmental Consultants
 1400 140th Ave NE
 Bellevue, Washington 98005

Drilling started: *08 June 1990*

Drilling completed: *08 June 1990*

Logged by: *TJP*


PROJECT *EAST MARGINAL WAY CHEVRON*

W.O. *W 6774*


WELL NO. *B-10*


Elevation reference: *100.00 feet* Well completed:
 Ground surface elevation: Casing elevation:

AS-BUILT DESIGN

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	HEAD SPACE	GROUND WATER	TESTING
0	Surface: bare ground. Moist, brown, silty, fine SAND with gravel and some cobbles (Fill)						
5	Very dense, moist, dark brown, silty, fine SAND with gravel. (cobble at 3 feet; blow count probably not representative of soil)		S-1	50/6"	4		
10	Medium dense, moist, dark gray, silty fine SAND with petroleum hydrocarbon like odor.		S-2	11	5000+		8015 8020
15	Medium stiff, saturated, dark gray, fine, sandy SILT with some organics; some silty fine SAND interbeds. Becomes grayish-tan.		S-3	5	211	 ATD	8015 8020
15	Boring terminated at approximately 14 feet.						
20							
25							
30							

LEGEND

 2-inch O.D. split-spoon sample

 Observed groundwater level (ATD = at time of drilling)



RITTENHOUSE-ZEMAN & ASSOCIATES, INC.
 Geotechnical & Environmental Consultants
 1400 140th Ave NE
 Bellevue, Washington 98005

Drilling started: *08 June 1990*

Drilling completed: *08 June 1990*

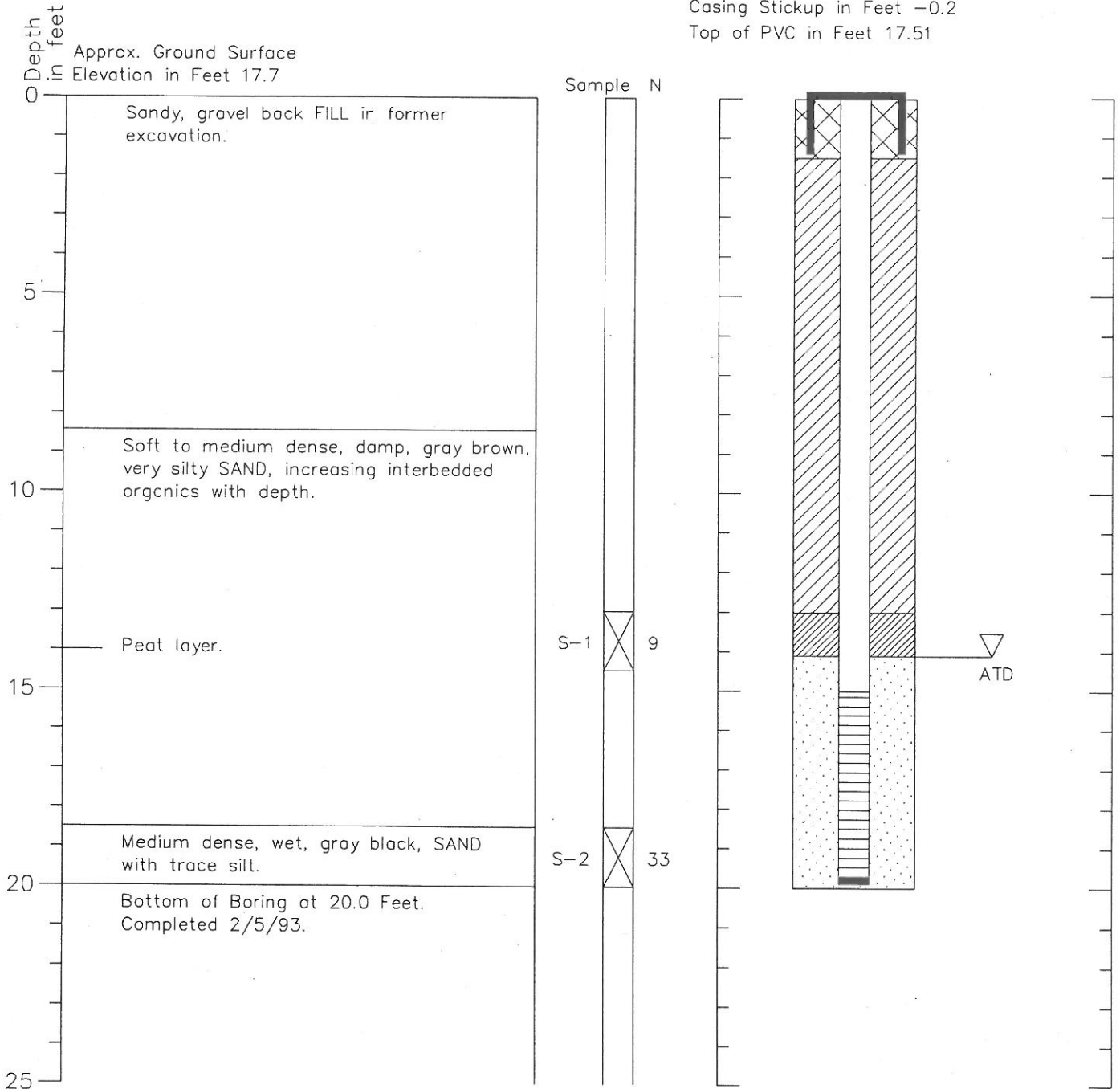
Logged by: *TJP*

Boring Log and Construction Data for Monitoring Well MW-2R

Geologic Log

Monitoring Well Design

Casing Stickup in Feet -0.2
Top of PVC in Feet 17.51



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

HARTCROWSER

J-3076-01

2/93

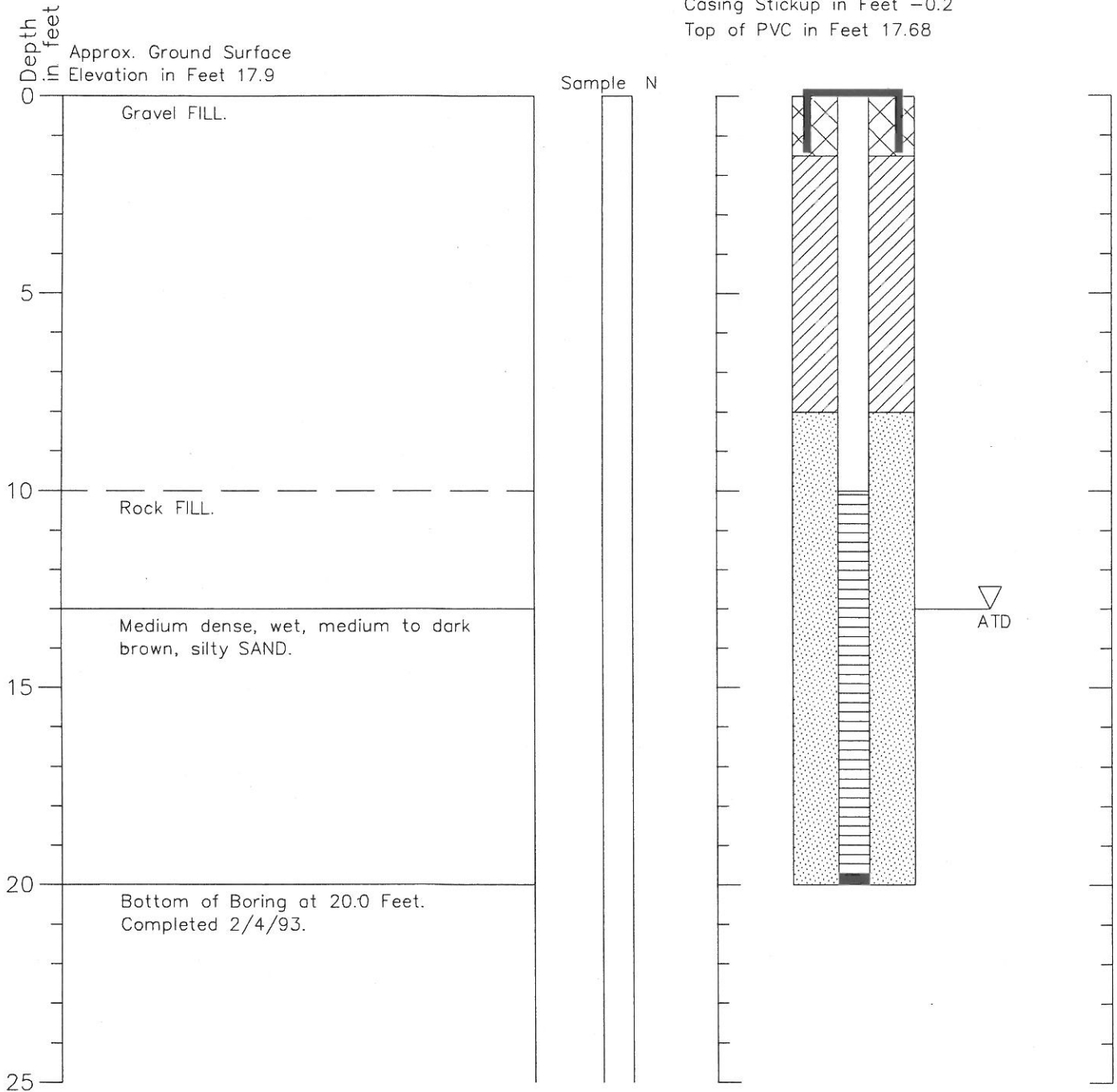
Figure A-2

Boring Log and Construction Data for Monitoring Well MW-3R

Geologic Log

Monitoring Well Design

Casing Stickup in Feet -0.2
Top of PVC in Feet 17.68



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

HARTCROWSER

J-3076-01

2/93

Figure A-3

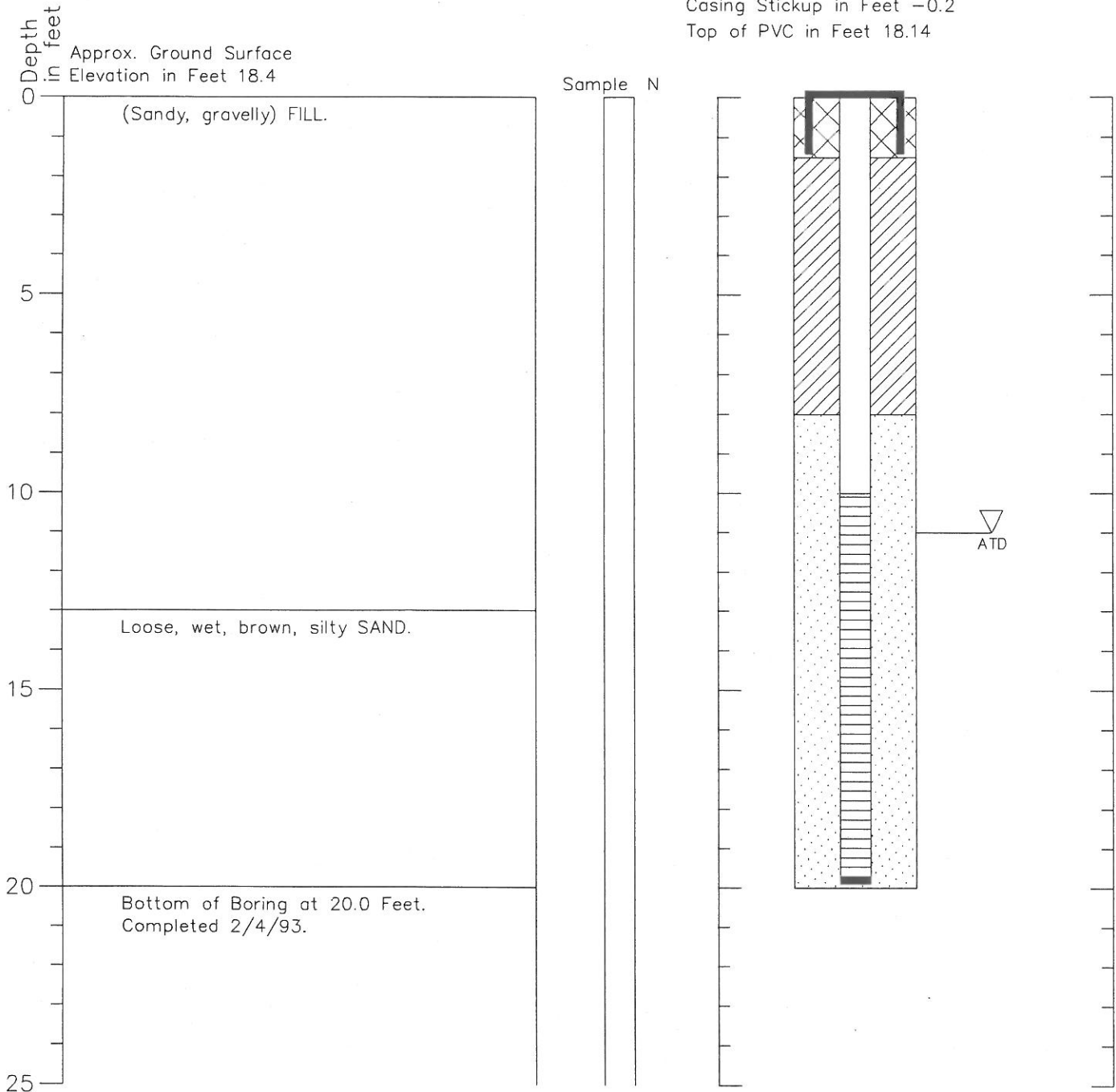
Boring Log and Construction Data for Monitoring Well MW-4R

Geologic Log

Monitoring Well Design

Casing Stickup in Feet -0.2

Top of PVC in Feet 18.14



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

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2/93

Figure A-4

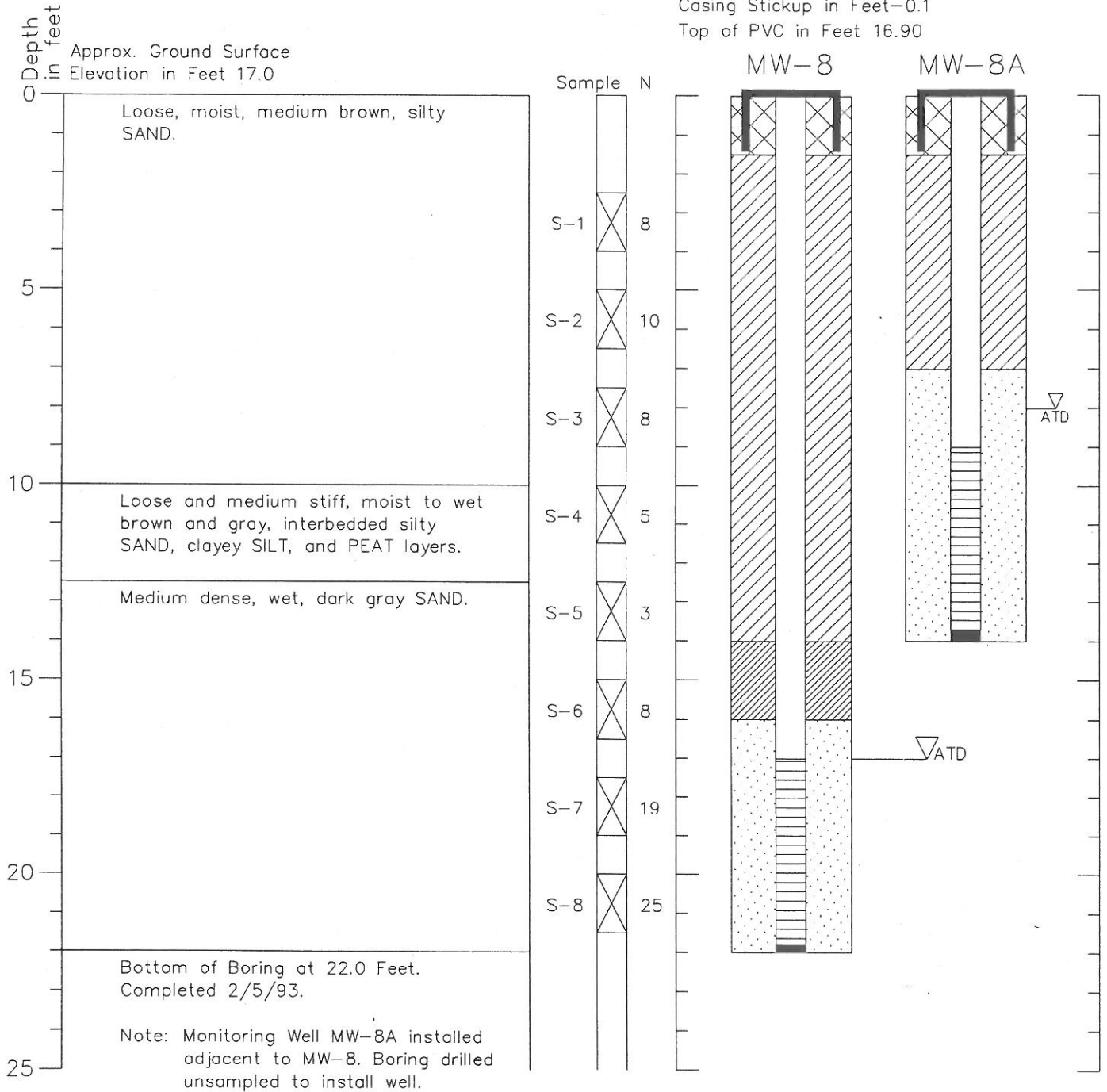
Boring Log and Construction Data for Monitoring Well MW-8 and MW-8A

Geologic Log

Monitoring Well Design

Casing Stickup in Feet - 0.1

Top of PVC in Feet 16.90



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

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2/93

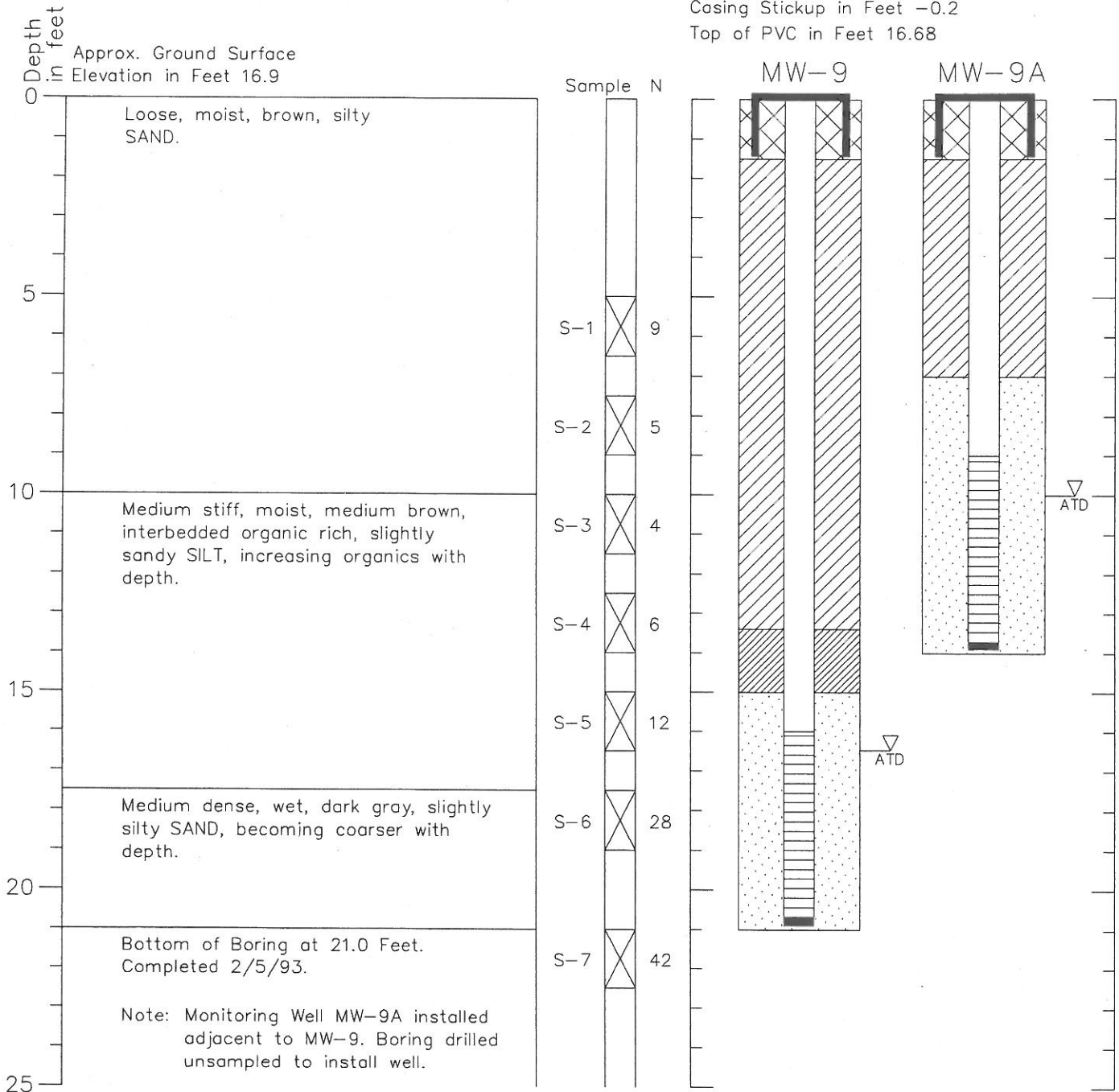
Figure A-5

Boring Log and Construction Data for Monitoring Well MW-9 and MW-9A

Geologic Log

Monitoring Well Design

Casing Stickup in Feet -0.2
Top of PVC in Feet 16.68



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

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J-3067-01

2/93

Figure A-6