

ALPINE DRILLING & ENTERPRISES

Permit Number: #SW _____ Date of Issue: _____ Parcel Identification Number: _____
 Date Started: 1-13-09 Date Completed: 1-13-09 Is well located at approved permit location? ☒ Yes ☐ No
 Legal Description: Seaview Heights Block 2 Lot 5A Well # 1
 Property Owner Name & Address: Susan Curry

Anchorage, Alaska 99516

Borehole Data:		Depth (ft)		Method of Drilling <input checked="" type="checkbox"/> air rotary <input type="checkbox"/> cable tool	
Soil Type, Thickness & Water Strata		From	To		
silty fill w/sand gravel & organics br		0	22	Casing type: <u>steel</u>	
peat br		22	37	Wall Thickness: <u>.025</u> inches	
gravelly sand br		37	43	Diameter: <u>6</u> inches Depth: <u>95</u> feet	
gravelly sand br		43	53	Liner Type: _____	
gravelly sand br		53	80	Diameter: _____ inches Depth: _____ feet	
sandy gravel br H2O		80	93	Casing stickup above ground: <u>2</u> feet	
				Static water level (from ground level): <u>80</u> feet	
				Pumping level: <u>95</u> feet after	
				<u>.5</u> hours pumping <u>4</u> gpm	
				Recovery Rate: <u>4</u> gpm	
				Method of Testing: <u>air lift</u>	
Well Intake Opening Type:					
<input checked="" type="checkbox"/> Open End <input type="checkbox"/> Open Hole					
<input type="checkbox"/> Screened Start _____ feet Stopped _____ feet					
<input type="checkbox"/> Perforations Start _____ feet Stopped _____ feet					
Grout Type: <u>bentonite granules</u> Volume: <u>1bgs</u>					
Depth: _____ Start <u>0</u> feet Stopped <u>2</u> feet					
Pump: Intake Depth _____ feet					
Pump size _____ hp Brand Name _____					
Well Disinfected Upon Completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
Method of Disinfection: <u>chlorine tablets</u>					
Comments:					
Well Driller: <u>Alpine Drilling & Enterprises</u>					
<u>P.O. Box 110496</u>					
<u>Anchorage, AK 99511-0496</u>					

DEPT. OF NATURAL RESOURCES
 DIV. OF MINING, LAND & WATER

NOV 30 2010

DIRECTORS OFFICE
 ANCHORAGE

Attention: The well driller shall provide a well log to the property owner within 30 days of completion and the property owner or the well driller shall provide a well log to the Development Services Department within 60 days of completion.

Well SL-1 Construction Log

Drill date: 1/13/09

Location: Lot 5A Block 2 Seaview Heights Subdivision, Anchorage, Alaska

Property Owner: Susan Curry

Weather: light snow, wind from SE

Method: Air Rotary

Drilling company: Alpine Drilling and Enterprises



Casing type: 6 in. diameter steel without liner

Well intake: Open end

Well use: Monitoring

Development method: Forced air. Duration: 30min.

Contact	Sample ID.	Depth	USCS	Lithologic Description	Additional Lithological Information	Driller or general process remarks	Unit Summary
	S1	5ft	fill	Dark brown silt with some sand and gravel. Plant fragments range from 1-3in in length.			
	S2	10ft	fill	Dark grey silt with some organics.		Land owner estimates fill material to be 10-20 ft. thick	
	S3	15ft	fill	Grey silt with plant material ~1.0in in length.		Driller installs new casing.	
	S4	20ft	fill	Dark brown sand with trace organics.			0(ground level)-22ft Silty fill with sand, gravel, and organics
22ft							
	S5	23ft	PT	Dry dark brown peat containing fine organics without soil aggregates.		Uniform and similar to top soil or 'A-horizon'	
	S6	30ft	PT	Damp dark brown peat with plant fragments and trace silt and sand.	Soil aggregates 2/32in to 1in		
	S7	35ft	PT	Brown peat with some silt and gravel.	Plant material up to 3in long.		
							22-37 ft, Peat
37ft							
	S8	38ft	GP	Moist brown gravel with coarse to medium sand.	50% equant gravels, 11/32in to 1.5in. 40% coarse sand ~1/16in. 10% silt. Perched aquifer?	Driller believes this layer is fully saturated. Driller installs new casing.	37-43ft, Gravel with coarse to medium sand.
43ft							
	S9	45ft	SW	Brown coarse sand with fine to medium gravel.	Coarse sand: 60%, gravel: 40%, sub angular to rounded, and trace silt.		

	S10	50ft	GW	Medium brown medium sand with fine gravel.	Medium sand: 50%, Fine gravel: 40%, Medium gravel: 10%, and trace silt.		43-53ft, Coarse to medium sand with gravel.
53ft							
	S11	55ft	SW	Dry light brown medium sand with trace gravel.		Driller installs new casing.	
	S12	60ft	SW	Dry orange and brown fine to medium sand with trace fine gravel.	Well sorted fine and medium sand.		
	S13	65ft	SW	Damp brown fine to coarse sand.			
	S14	69ft	SW	Dry light brown fine sand with medium sand.			
	S15	75ft	SW	Dry light brown fine sand with trace gravel.		Driller installs new casing.	
	S16	80ft	GW	Damp brown medium gravel with coarse to fine sand.	Equaint rounded grains, 0.50in to 30.75in: 60% with fine to coarse sand: 40%.		53-80ft, Coarse to fine sand with gravel.
80ft							
	S17	87ft	GW	Moist to wet medium brown coarse gravel with coarse sand.	Equaint and rounded grains 0.75in to 1.5in: 65%. Coarse sand: 35%.	Driller installs new casing.	
	S18	93ft	GW	Wet medium brown coarse gravel with sand.	Grains equaint and elongate, 0.50in to 2.0in: 70%. Course sand: 30%.	Drillers estimates flow rate of 4gpm.	80-93ft, Coarse gravel with sand.

Additional information summary:

Depth of hole: ~93 ft

Total amount of casing: 92ft 4in.

Amount of casing above ground: 2ft 7in.

Static water level (top of well): 81ft (sonic measure, 1-14-09 at 2:35 pm)

Well ground level elevation measurements: Relative to sat.: 132ft(1-13)

Barometric GPS: 119ft(1-14), 119ft(1-14)

ALPINE DRILLING & ENTERPRISES

Permit Number: #SW _____ Date of Issue: _____ Parcel Identification Number: _____
 Date Started: 1-14-09 Date Completed: 1-19-09 Is well located at approved permit location? ☒ Yes ☐ No
 Legal Description: Seaview Heights Block 2 Lot 5A Well # 2
 Property Owner Name & Address: Susan Curry

Anchorage, Alaska 99516

Borehole Data:		Depth (ft)		Method of Drilling <input checked="" type="checkbox"/> air rotary <input type="checkbox"/> cable tool	
Soil Type, Thickness & Water Strata	From	To			
silty fill w/sand gravel & organics br	0	37	Casing type: <u>steel</u>		
sandy silt br	37	45	Wall Thickness: <u>.025</u> inches		
peat br	45	62	Diameter: <u>6</u> inches Depth: <u>319</u> feet		
sandy silt br	62	72	Liner Type: _____		
gravelly silty sandy w/coal gr	72	125	Diameter: _____ inches Depth: _____ feet		
silty sand gr	125	210	Casing stickup above ground: <u>2</u> feet		
sandy gravel gr	210	215	Static water level (from ground level): <u>93</u> feet		
silty gravel gr	215	217	Pumping level: <u>319</u> feet after		
silty sandy w/coal gr	217	234	<u>2</u> hours pumping <u>30</u> gpm		
sandy silt gr	234	260	Recovery Rate: <u>30</u> gpm		
gravelly silty sand gr	260	280	Method of Testing: <u>air lift</u>		
silty gravelly sand gr	280	310	Well Intake Opening Type:		
gravelly sand gr	310	317	<input checked="" type="checkbox"/> Open End <input type="checkbox"/> Open Hole <input type="checkbox"/> Screened Start _____ feet Stopped _____ feet <input type="checkbox"/> Perforations Start _____ feet Stopped _____ feet		
			Grout Type: <u>bentonite granules</u> Volume: <u>1bgs</u>		
			Depth: _____ Start <u>0</u> feet Stopped <u>?</u> feet		
			Pump: Intake Depth _____ feet		
			Pump size _____ hp Brand Name _____		
			Well Disinfected Upon Completion? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
			Method of Disinfection: <u>chlorine tablets</u>		
			Comments:		
			Well Driller: <u>Alpine Drilling & Enterprises</u>		
			<u>P.O. Box 110496</u>		
			<u>Anchorage, AK 99511-0496</u>		

DEPT. OF NATURAL RESOURCES
 DIV. OF MINING, LAND & WATER

NOV 5 2010

DIRECTORS OFFICE
 ANCHORAGE

Attention: The well driller shall provide a well log to the property owner within 30 days of completion and the property owner or the well driller shall provide a well log to the Development Services Department within 60 days of completion.

Well SL-2 Construction Log

Drill date(s): 1/14/09, 1/15/09, 1/16/09, 1/19/09

Location: Lot 5A Block 2 Seaview Heights Subdivision, Anchorage, Alaska

Property Owner: Susan Curry

Weather: rain, 37F (1/14); calm-cloudy, light wind, 37F (1/15), calm, 40F (1/16)

Method: Air Rotary

Drilling company: Alpine Drilling and Enterprises

Casing type: 6 in. diameter steel without liner

Well intake: Open end

Well use: Monitoring

Development method: air

Duration: 1hr20min.

LS el 125'

Contact	Sample ID.	Depth	USCS	Lithologic Description	Additional Lithological Information	Driller or general process remarks	Unit summary
	S1	20ft	fill	Dark brown coarse sand with trace silt and gravel.	5% fine gravel, 90% coarse sand, 5% silt	Driller installs new casing.	
	S2	25ft	fill	Dark black organics.	Plant fragment ~0.5in in length.		
	S3	30ft	fill	Dark black organics.	Plant material 1-2in in length.		
	S4	35ft	fill	Brown organics 2-4in in length	Plant material 2-4in in length.		0(ground level)-37ft Organic fill
37ft							
	S5	40ft	SM	Wet grey coarse sand with silt.	Coarse sand 80%, Silt: 20%.	Driller installs new casing. Perched aquifer observed after installation of new casing.	37-45ft, Coarse sand and silt.
45ft							
	S6	55ft	PT	Dry black fine organics.			
	S7	58ft	PT	Dry black peat with very fine organics.			

	S8	60ft	PT	Dark brown intact piece of S7, ~1in. in diameter		Driller installs new casing.	
							45-62ft, Peat
62ft							
	S9	62ft	ML	Medium grey fine silt with some sand.	Silt: 90%. Medium sand: 10%. Fine aggregates .25-.5in. diameter. Trace volcanic ash.		
	S10	65ft	ML	Wet light grey silt with sand.	Silt: 85%, Medium sand: 15%. Trace Clay. Aggregates 1.0-1.5in. diameter.		
	S11	70ft	ML	Damp medium grey medium sand.	Medium sand: 85%, Silt: 15%.		62-72ft, Silt with sand.
72ft							
	S12	74ft	SW	Dry to damp brown coarse sand with fine gravel.	Sand: 90%, fine gravel, 0.25-0.5in.: 10%		
	S13	78ft	SW	Grey coarse sand with gravel.	Sand: 90%, Large gravel: 0.5-0.75in		
	S14	80ft	SW	Dry orange brown fine to medium sand.	Fine sand: 90%, Med. Sand: 10%.	New casing install.	
	S15	85ft	SW	Moist slight orange brown medium sand.			
	S16	88ft	SW	Brown coarse sand with trace gravel.			
	S17	96ft	SW	Brown coarse sand with gravel.	Fine gravel, 0.25in.: 5%		



S18	100ft	SW	Wet light orange and brown coarse sand with gravel.	Sand: 93%, Silt: 5%, Fine gravel 2%	Driller installs new casing.
S19	105ft	SW	Wet orange and brown coarse sand with silt and trace gravel.	Sand: 90%, Silt: 5%, Gravel, up to 2.0in diameter, trace.	
S20	109ft	SW	Wet dark grey medium sand with silt.	Sand: 90% Silt: 10%.	
S21	115ft	SW	Dry dark grey medium sand with silt.	Sand: 85%, Silt ~5%, Trace coal fragments.	At this depth it takes ~20sec for cuttings to be ejected.
S22	120ft	SW	Wet dark grey coarse sand with silt and gravel.	Sand: 75%, Silt: 20% Fine gravels, 0.25in.: 5%.	Driller installs new casing.

**72-125ft,
Sand with
silt, gravel,
and coal
fragments.**


125ft



S23	127ft	SW	Wet light grey fine sand with silt.	Sand: 80%, Silt: 30%.	
S24	131ft	ML	Dark grey fine sand with silt.	Sand: 70%, Silt: 30%.	
S25	134ft	SM	Light grey fine sand with silt and trace gravel.	Sand: 70%, Silt: 30%	
S26	136ft	ML	Wet light grey fine sand with silt.	Sand: 60%, Silt: 40%	One piece of organic matter found in sample. Driller installs new casing at ~140ft.
S27	145ft	ML	Wet light grey fine sand with silt.	Sand: 70%, Silt: 30% Trace 0.125in. diameter coal.	New drill day: 1-15. Driller had to pull drill rods and replace rotary bit with check valve because of overnight silt seepage into bit

S28	150ft	SM	Wet light grey medium sand with silt.	Sand: 70%, Silt: 30%.	
S29	155ft	SM	Light grey medium sand with silt and trace fine coal gravel.	Sand: 70%, Silt: 30%.	
S30	158ft	ML	Light grey fine sand with silt.	Sand: 70%, Silt: 30%	Driller installs new casing at ~160ft.
S31	166ft	ML	Grey fine sand with silt.	Sand: 70%, Silt: 30%	Heaving at 170ft-difficult time extracting material. Cuttings become more silt-rich. Casing (added) and drill rods advanced quickly to 180ft.
S32	195ft	ML	Grey fine sand with silt.	Sand: 70%, Silt: 30%	Driller believes material is nearly all silt. Driller installs new casing.
S33	200ft	ML	Grey fine sand with silt.	Sand: 70%, Silt: 30%	New drill day:1-16. Driller moved cuttings from W1 to W2 cuttings to create a NE trending debris barrier against drill water runoff on home owner lawn.
S34	205ft	ML	Grey fine sand with silt.	Sand: 50%, Silt: 50%	125-210ft Fine sand with silt.
210ft 					
S35	210ft	SW	Wet grey coarse sand with gravel and silt.	Coarse sand: 65%, Gravel, up to 0.25in.: 20%, Silt: 15%.	210-212ft, Sand with gravel and silt.
212ft 					
S36	212ft	GW	Wet grey fine gravel with trace silt and trace coarse sand.	Gravel, 0.25-0.5in.	

215ft	S37	215ft	SW	Wet grey coarse sand with gravel.	Sand: 80%, Gravel up to 0.25in. diameter: 20%.	Perched aquifer encountered	212-215ft, Gravel with sand.
217ft	S38	217ft	GP	Grey gravel with silt.	Gravel up to 1.0in.: 90%, Silt: 20%.	Driller water throughput estimate: 40-50gpm.	215-217ft, Gravel with silt.
	S39	219ft		Single 1in piece of coal.		Driller installs new casing.	
	S40	226ft	GP	Grey fine sand with coal.	Sand: 85% Coal: 15% up to 1.5in	Estimated water throughput: 5gpm.	
234ft	S41	230ft	SW	Grey fine sand with silt.	Fine sand: 50%, silt: 30% coal: 10%		217-234ft, Fine sand with silt and coal.
	S42	240ft	ML	Grey silt with fine sand.	Silt: 60%, Fine sand: 40%	Driller installs new casing.	
260ft	S43	250ft	ML	Grey silt with fine sand.	Silt: 60%, Fine sand: 40%	Driller installs new casing ~160ft.	234-260ft, Silt with fine sand.
	S44	270ft	SW	Grey fine to medium sand with coal gravel and silt.	Sand: 75%, Gravel up to 1in.: 5%, Silt: 20%		
280ft	S45	275ft	SW	Grey medium sand with silt and coal.	Sand: 60%, Silt: 35%, Fine coal: 5%.		260ft-280ft, Medium sand with silt, gravel, and coal.

S46	280ft	ML	Grey medium sand with silt.	Sand: 60%, Silt: 40%.	Driller installs new casing.	
S47	300ft	ML	Grey medium sand with silt.	Sand: 60%, Silt: 40%.	Driller installs new casing.	
S48	305ft	ML	Grey silt with fine sand.	Silt: 80%, Fine sand: 20%.		
S49	310ft	GW	Grey gravel with silt and trace sand.	Gravel up to 0.5in.: 80%, Silt: 20%.		280-310ft, Medium sand with gravel and silt.
310ft 						
S50	314ft	SW	Grey coarse sand with gravel.	Sand: 80%, Gravel up to 0.75in.: 20%.	Water. Initial well development began at 11:00am. Throughput at this location is estimated to 40gpm.	
S51	317ft	GW	Dark grey coarse sand and gravel. Biased sample because of well development and gravel retention.		Final well development began at 11:40am. Final water throughput estimate is 30 gpm.	310-317ft, Coarse sand and gravel.

Additional information summary:

Total amount of casing: 320ft

Amount of casing above ground: 3ft

Static water level(top of well): 109ft (sonic measure, 1-19-09)

Well ground level elevation measurements: Barometric GPS: 128+/-2ft (1-15-09)

77243

Certified Drilling Log



OWNER OF LAND: MOA
 ADDRESS: Lucy Street - SL-3
 LEGAL DESCRIPTION: Tract 8A of Westpark School Add
 DATE: 10/17/13
 PERMIT NUMBER: _____ DATE OF ISSUE: _____
 TAX IDENTIFICATION NUMBER: _____

Is well located at approved permit location: ☒ Yes ☐ No

Method of Drilling: ☒ air rotary ☐ cable tool

Depth of Well: 130ft

Casing Type: steel Wall thickness .250 inches

Diameter: 6 inches, depth 130ft feet

Liner type none

Static Water Level: 113.8 feet

Recovery Rate 3 ☒ gpm ☐ gph

Method of Testing Pump test

Well Intake Opening Type: ☒ open end ☐ open hole

☐ Screened Start _____ feet Stopped _____

☐ Perforations Start _____ feet Stopped _____

Grout Type: Bentonite chips Volume: 50 lbs

Depth: from 0 feet, to 20 feet

Well Disinfected Upon Completion: ☒ yes ☐ no

Method of Disinfection: Chlorine 50 ppm

Comments:

Well # 1

Sand Lake Area Watershed Study

Test pump was set at 128. Well was pumped at 3 gpm until clear with 100% drawdown.

Bore Hole Data

Depth

From To

0 2

2 4

4 18

18 27

27 78

78 84

84 120

120 126

126 128

128 131

Casing stickup

overburden

Sand gravel w/ cobbles

Sand & gravel wet

Sand & gravel

Sand w/ gravel

Sand and gravel

Sand w/ gravel

Tight Silty sand

Sand w/ gravel wet

Drillers Name: Cole Sullivan

ATTENTION: It is the responsibility of the property owner to submit a copy of the well log to the proper authority.
 Municipality of Anchorage: Department of Health & Human Services and/or Department of Environmental Conservation.
 MatSu Borough: Department of Environmental Conservation.

Well SL-3 Construction Log

Start Date: 10/17/2013

End Date: 10/18/2013

Location: Westpark School Addition TR 8A, Anchorage, Alaska. Approximately 60 ft east of intersection of Sky Mountain Lane and Lucy Street

Property Owner: Municipality of Anchorage - Anchorage School District

Weather: Clear, wind from the SE

Method: Dual-Air Rotary

Drilling Company: Sullivan Water Wells

Well Finish: open end

Casing Type: .25" thick steel

Casing Stick-up: 2'

Well use: Monitoring

Logged by: Dale Patrick and Rebecca Reyes

L.S. el 133 (132.79)

Contact	Sample ID	Depth of sample (ft)	USCS	Lithologic Description	Additional Lithologic Information	Driller or general process Remarks	Unit Summary
		0 - 5	SW	Angular to sub-rounded gravels with coarse to fine sands. Pale gray.	Gravel: 70 % Sand: 30%		Grains range from .05 to .75 inches. Grains are dry.
		5 - 10	SW	Coarse to medium sand, with sub-angular to rounded gravels.	Sand: 80% Gravel: 20%		0 (ground level) to 10 ft: Well graded sands with gravels decreasing with depth.
10 ft.							
		10 - 20	SW	Moist, brown medium to fine sand. Gravel is sub-angular to rounded.	Sand: 85% Gravel: 15%		10-20 ft: Moist, brown sand with gravel and silt
20 ft.							
		20 - 56	SW	Moist, well graded gravelly sand. Angular to sub-rounded gravel.	Sand: 60% Gravel: 40%		
		56 - 58	GW	Dry dark brown medium-grained sand, angular to sub-rounded gravels	Gravel: 60% Sand: 40%		

		58 - 70	SW	Moist, dark brown mostly fine sand, gravels mostly rounded	Sand: 85% Gravel: 15%		
		70 - 80	SW	Predominantly fine sands. Angular gravels. Damp and brown.	Sand: 65% Gravel: 35%		
		80 - 85	SW	Well graded sand, damp, loose. Yellow brown	Sand: 100% No gravel		
		85 - 110	SW	Well graded very coarse to medium sand. Sub-rounded to sub-angular gravels. Dry	Sand: 70% Gravel: 30%		
		110 - 120	SW	Dark brown moist sand, very coarse to fine. Subangular to subround gravel. Sparse coal fragments	Sand: 85% Gravel: 15%		
		120 - 124	SW	Very coarse to fine sand. Gray, wet sub-angular gravel. Spurts of H ₂ O.	Sand: 75% Gravel: 25%		20-126 ft: Well graded sands and gravels. Wet sediments throughout.
124							
		124 - 126	SW	Wet, subangular medium to fine sands with sub-angular gravel. Poorly sorted grains.	Sand: 80% Gravel: 20%		124-126 ft: Wet, subangular sands with subangular gravel.
126							
		126 - 129*	GW	Well graded gravels. H ₂ O.	Gravel: 80% Sand: 20%	* 131' below top of casing	126-129 ft: Well graded gravels. Aquifer

Notes: Static Water Level = 113.8 ft (from top of casing).

Per discussion with driller, their log is based on the feel of the drill rig going through each interval.

Well SL-4 Construction Log

Start Date: 10/18/2013

End Date: 10/29/2013

Location: Westpark School Addition TR 8A, Anchorage, Alaska. Approximately 60 ft. east of intersection of Sky Mountain Lane and Lucy Street

Property Owner: Municipality of Anchorage - Anchorage School District

Weather: Clear, wind from the SE

Method: Dual - Air Rotary

Drilling Company: Sullivan Water Wells

Well Finish: open end

Casing Type: 0.25" thick steel

Casing Stick-up: 2'

Well use: Monitoring

Logged by: Dale Patrick and Rebecca Reyes

LS el 133 (132.51)

Contact	Sample ID	Depth (ft.)	USCS	Lithologic Description	Additional Lithologic Information	Driller or general process Remarks	Unit Summary
	SL-4-1	0 - 8	GW	Coarse to fine sands. Subangular gravels (0.05" to 0.5"). Pale gray.	Gravel: 70% Sand: 30%		
	SL-4-2	8 - 22	SP	Damp, coarse sand. Gravel is sub-angular to rounded (0.05" to 0.75"). Light brown.	Sand: 80% Gravel: 20%		
	SL-4-3	22 - 29	SW	Sand with Gravel. Medium to fine sand – poorly graded. Damp, sub-angular to rounded gravel (0.05" to 1"); Dark brown.	Sand: 90% Gravel: 10%		
	SL-4-4	29 - 33	SW	Gravelly sand. Sand is very coarse to medium. Gravel is angular to sub-rounded (0.15" to 1"). Light brown.	Sand: 65% Gravel: 35%		

	SL-4-5	33 - 42	SW	Damp, packed sand. Sand is very coarse to medium. Trace amounts of fine gravel. Light brown.	Sand: 97% Gravel: 3%		
	SL-4-6	42 - 62	GW	Sandy gravel. Gravel is sub-angular to rounded (0.05" to 0.9"). Sand is very coarse to medium. Light brown.	Gravel: 50% Sand: 50%		
	SL-4-7	62 - 74	SP	Sand with gravel. Sand is very coarse to medium. Gravel is angular to sub-rounded (0.05" to 0.5"). Light brown.	Sand: 93% Gravel: 7%		
	SL-4-8	74 - 85	SP	Sand with gravel. Sand is coarse to medium – poorly graded. Gravel is sub-rounded to rounded with very fine pebbles (0.05" to 0.5"). Brown.	Sand: 95% Gravel: 5%		
	SL-4-9	85 - 99	SW	Gravelly sand. Sand is very coarse to medium. Gravel is angular to sub-rounded (0.05" to 1"). Well graded. Light brown.	Sand: 75% Gravel: 25%		
	SL-4-10	99 - 109	SP	Sand with gravel. Sand is mostly medium with some very	Sand: 97% Gravel: 3%		

				coarse to coarse sand Gravel is sub-rounded (0.25" to 1"). Poorly graded. Damp. Brown.			
	SL-4-11	109 - 116	GW	Sandy gravel. Gravel is sub-angular to sub-rounded, up to 1". Sand is mostly very coarse, some medium to coarse. Light brown.	Gravel: 60% Sand: 40%		
	SL-4-12	116 - 135	SP	Gravelly sand. Sand is very coarse to fine. Gravel is sub-angular to sub-rounded, up to 0.75". Poorly graded. Light brown.	Sand: 95% Gravel : 5%		
	SL-4-13	135 - 141	SW	Gravelly sand. Sand is very fine to coarse. Gravel is sub-angular to angular, up to 0.75". Well graded. Interval is wet. Color change - dark gray.	Sand: 70% Gravel: 30%		Sand and gravel mixture that is poorly sorted. Gravel is generally less than 1" in diameter and the majority is sub-angular to angular. Sands are very coarse to very fine.
141							
	SL-4-14	141 - 146	CL	Silty. Damp. Medium gray.	Silt: 80% Clay: 20%		
	SL-4-15	146 - 165	CL	Sandy silt. Wet. Silt. Very fine sand present. Medium gray.	Silt: 80% Sand: 10% Clay: 10%		Confining silt layer. Clay increases with depth.
165							
	SL-4-16	165 - 187	SM	Sand. Sand is coarse to fine. Silt present.	Sand: 90% Silt: 10%		

				Wet. Dark gray.			
	SL-4-17	187 - 225	SW	Gravelly sand. Sand is very coarse to fine. Gravel is sub-angular to rounded (0.05" to 0.75"). Well graded. Lots of water. Color change – light gray.	Sand: 70% Gravel: 30%		
	SL-4-18	225 - 233	GW	Gravelly sand. Sand is very coarse to fine. Gravel is sub-angular to rounded, up to 0.75". Well graded. Color change – dark gray.	Sand: 65% Gravel: 35%		20% gravel fragments = vein quartz or granitic rock, with trace felsic rock fragments.
	SL-4-19	233 - 242	SP	Sand. Coarse to fine. Poorly graded. Dark gray.	Sand: 100%		
	SL-4-20	242 - 312	SW	Gravelly sand. Sand is very coarse to fine. Gravel is up to 1". Trace coal is present. Wet. Dark gray.	Sand: 85% Gravel: 15%		
	SL-4-21	312 - 335	SW	Gravelly sand. Sand is very coarse to fine. Gravel is angular to sub-rounded, up to 1". Wet. Dark gray.	Sand: 75% Gravel: 25%		10% gravel fragments = vein quartz or granitic rock, with trace felsic rock fragments.
	SL-4-22	335 - 370	SP	Sand. Fine-grained sand, some medium sand. Poorly graded. Wet. Dark gray.	Sand: 95% Silt: 5%		Sand and gravel mixtures with increasing amounts of silt with depth. Unit is saturated throughout.

370							
	SL-4-23	370 - 398	SW	Silty sand. Sands are coarse to fine. Trace gravels. Wet. Color change – medium gray.	Sand: 68% Silt: 31% Gravel: 1%		
	SL-4-24	398 - 414	SM	Silty sand. Sands are fine-grained. Wet. Color change – dark gray.	Sand: 80% Silt: 20%		Silty sands. Enough silt to act as semi-confining layer.
414							
	SL-4-25	414 - 416*	GW	Sandy gravel. Sand is mostly fine grained. Gravel is angular to sub-rounded, up to 1". Wet. Likely deep aquifer. Dark gray.	Gravel: 60% Sand: 40%	*418' from top of casing	Sandy gravel with much water under pressure. Likely deepest aquifer in area.

Notes: Total drill depth = 422', backed to 416'. Static water level = 112.9' (from top of casing).
Per discussion with driller, their log is based on the feel of the drill rig going through each interval.

Pump Data:	
15 min @ 30 gpm	SWL = 113.1'
30 min @ 30 gpm	SWL = 113.1'
45 min @ 30 gpm	SWL = 113.1'

77244

Certified Drilling Log



OWNER OF LAND: MOA
 ADDRESS: Lucy Street - SL - 4
 LEGAL DESCRIPTION Tract 8A of Westpark School Add.
 DATE: 10/18/13
 PERMIT NUMBER: _____ DATE OF ISSUE: _____
 TAX IDENTIFICATION NUMBER _____

Is well located at approved permit location: ☒ Yes ☐ No

Method of Drilling: ☒ air rotary ☐ cable tool

Depth of Well: 416ft

Casing Type: steel Wall thickness .025 inches

Diameter: 6 inches, depth 416 feet

Liner type See below

Static Water Level: 112.9 feet

Recovery Rate 30+ ☒ gpm ☐ gph

Method of Testing Pump test

Well Intake Opening Type: ☒ open end ☐ open hole

☐ Screened Start _____ feet Stopped _____

☒ Perforations Start 195 feet Stopped 202

Grout Type: Bentonite chips Volume: 100lbs

Depth: from 0 feet, to 40 feet

Well Disinfected Upon Completion: ☒ yes ☐ no

Method of Disinfection: Chlorine 50ppm

Comments:

Well # 2

Sand Lake Area Watershed Study

Casing perforated 195' -202'

Before perforating, pumped 30gpm with submersible

Pump for 10 hrs with 0.2 feet of drawdown.

Installed 411' of 2" pvc and 5' of 0.010 slot screen with
Silica sand and grout. Installed 193' of 2" pvc with 5' of
0.010 slot screen with silica sand and grout to surface.

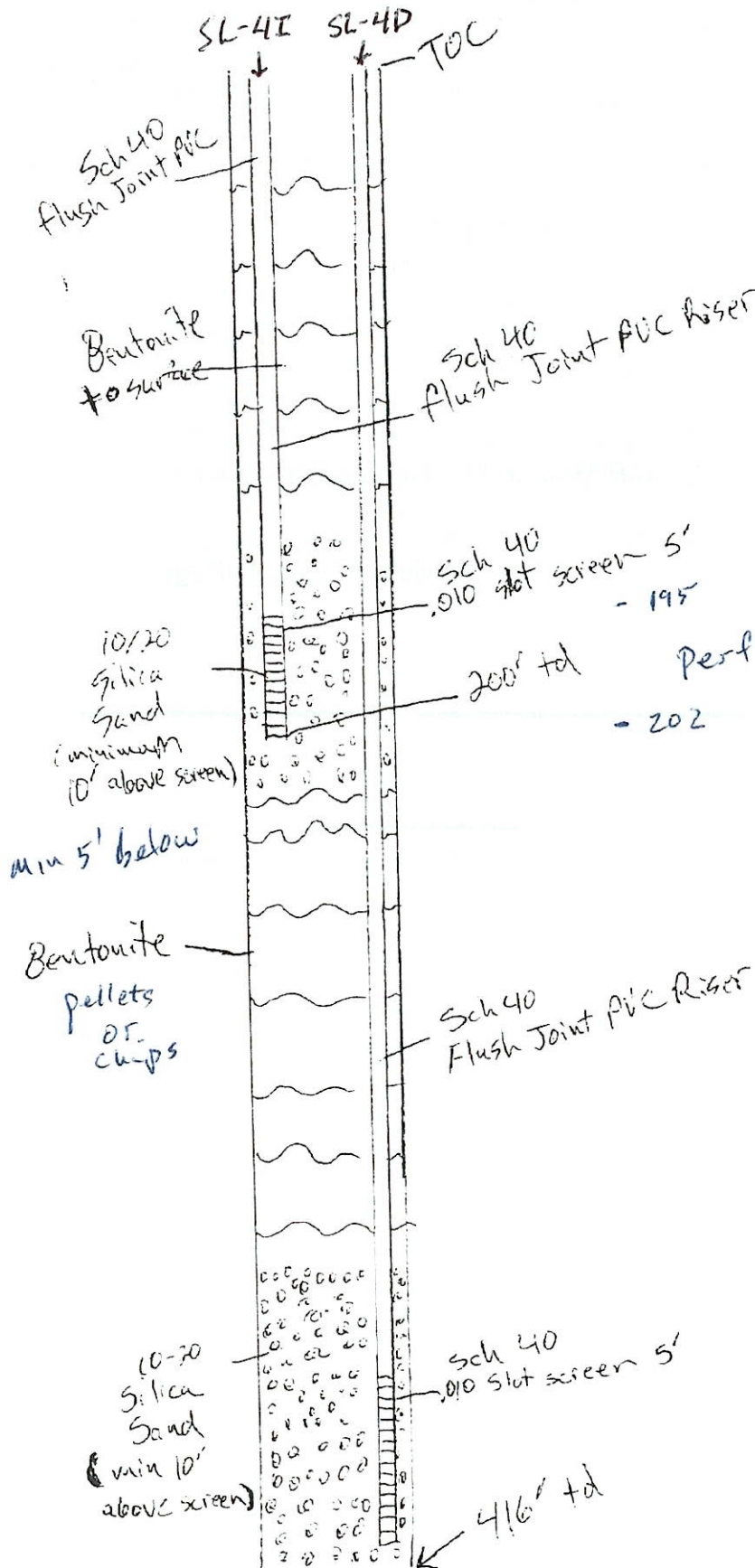
Bore Hole Data		
Depth		
From	To	
0	2	Casing stickup
2	4	overburden
4	18	Sand gravel w/ cobbles
18	27	Sand & gravel wet
27	78	Sand & gravel
78	84	Sand w/ gravel
84	120	Sand & gravel
120	132	Bleeding hardpan
132	162	Clay & silt
162	168	Sand
168	207	Sand w/ gravel
207	217	Sand gravel w/ clay
217	220	Clay silt & gravel
220	232	Sand & gravel
232	240	Sand
240	242	Sand w/ gravel
242	301	Silty sand and gravel
301	318	Silt and gravel
318	330	Sand and gravel
330	368	Silt and sand
368	371	Clay and gravel
371	394	Sand and gravel
394	414	Silt and sand
414	425	Silt and sand w/ gravel (wet) bottom 9' heaving

Drillers Name: Cole Sullivan

ATTENTION: It is the responsibility of the property owner to submit a copy of the well log to the proper authority.
 Municipality of Anchorage: Department of Health & Human Services and/or Department of Environmental Conservation.
 MatSu Borough: Department of Environmental Conservation.

Sand Lake Monitoring Well

10-29-13



342-8597

Well SL-4 Construction Log

Start Date: 10/18/2013

End Date: 10/29/2013

Location: Westpark School Addition TR 8A, Anchorage, Alaska. Approximately 60 ft. east of intersection of Sky Mountain Lane and Lucy Street

Property Owner: Municipality of Anchorage - Anchorage School District

Weather: Clear, wind from the SE

Method: Dual - Air Rotary

Drilling Company: Sullivan Water Wells

Well Finish: open end

Casing Type: 0.25" thick steel

Casing Stick-up: 2'

Well use: Monitoring

Logged by: Dale Patrick and Rebecca Reyes

Contact	Sample ID	Depth (ft.)	USCS	Lithologic Description	Additional Lithologic Information	Driller or general process Remarks	Unit Summary
	SL-4-1	0 - 8	GW	Coarse to fine sands. Subangular gravels (0.05" to 0.5"). Pale gray.	Gravel: 70% Sand: 30%		
	SL-4-2	8 - 22	SP	Damp, coarse sand. Gravel is sub-angular to rounded (0.05" to 0.75"). Light brown.	Sand: 80% Gravel: 20%		
	SL-4-3	22 - 29	SW	Sand with Gravel. Medium to fine sand – poorly graded. Damp, sub-angular to rounded gravel (0.05" to 1"); Dark brown.	Sand: 90% Gravel: 10%		
	SL-4-4	29 - 33	SW	Gravelly sand. Sand is very coarse to medium. Gravel is angular to sub-rounded (0.15" to 1"). Light brown.	Sand: 65% Gravel: 35%		

	SL-4-5	33 - 42	SW	Damp, packed sand. Sand is very coarse to medium. Trace amounts of fine gravel. Light brown.	Sand: 97% Gravel: 3%		
	SL-4-6	42 - 62	GW	Sandy gravel. Gravel is sub-angular to rounded (0.05" to 0.9"). Sand is very coarse to medium. Light brown.	Gravel: 50% Sand: 50%		
	SL-4-7	62 - 74	SP	Sand with gravel. Sand is very coarse to medium. Gravel is angular to sub-rounded (0.05" to 0.5"). Light brown.	Sand: 93% Gravel: 7%		
	SL-4-8	74 - 85	SP	Sand with gravel. Sand is coarse to medium – poorly graded. Gravel is sub-rounded to rounded with very fine pebbles (0.05" to 0.5"). Brown.	Sand: 95% Gravel: 5%		
	SL-4-9	85 - 99	SW	Gravelly sand. Sand is very coarse to medium. Gravel is angular to sub-rounded (0.05" to 1"). Well graded. Light brown.	Sand: 75% Gravel: 25%		
	SL-4-10	99 - 109	SP	Sand with gravel. Sand is mostly medium with some very	Sand: 97% Gravel: 3%		

				coarse to coarse sand Gravel is sub-rounded (0.25" to 1"). Poorly graded. Damp. Brown.			
	SL-4-11	109 - 116	GW	Sandy gravel. Gravel is sub-angular to sub-rounded, up to 1". Sand is mostly very coarse, some medium to coarse. Light brown.	Gravel: 60% Sand: 40%		
	SL-4-12	116 - 135	SP	Gravelly sand. Sand is very coarse to fine. Gravel is sub-angular to sub-rounded, up to 0.75". Poorly graded. Light brown.	Sand: 95% Gravel : 5%		
	SL-4-13	135 - 141	SW	Gravelly sand. Sand is very fine to coarse. Gravel is sub-angular to angular, up to 0.75". Well graded. Interval is wet. Color change - dark gray.	Sand: 70% Gravel: 30%		Sand and gravel mixture that is poorly sorted. Gravel is generally less than 1" in diameter and the majority is sub-angular to angular. Sands are very coarse to very fine.
141							
	SL-4-14	141 - 146	CL	Silty. Damp. Medium gray.	Silt: 80% Clay: 20%		
	SL-4-15	146 - 165	CL	Sandy silt. Wet. Silt. Very fine sand present. Medium gray.	Silt: 80% Sand: 10% Clay: 10%		Confining silt layer. Clay increases with depth.
165							
	SL-4-16	165 - 187	SM	Sand. Sand is coarse to fine. Silt present.	Sand: 90% Silt: 10%		

				Wet. Dark gray.			
	SL-4-17	187 - 225	SW	Gravelly sand. Sand is very coarse to fine. Gravel is sub-angular to rounded (0.05" to 0.75"). Well graded. Lots of water. Color change – light gray.	Sand: 70% Gravel: 30%		
	SL-4-18	225 - 233	GW	Gravelly sand. Sand is very coarse to fine. Gravel is sub-angular to rounded, up to 0.75". Well graded. Color change – dark gray.	Sand: 65% Gravel: 35%		20% gravel fragments = vein quartz or granitic rock, with trace felsic rock fragments.
	SL-4-19	233 - 242	SP	Sand. Coarse to fine. Poorly graded. Dark gray.	Sand: 100%		
	SL-4-20	242 - 312	SW	Gravelly sand. Sand is very coarse to fine. Gravel is up to 1". Trace coal is present. Wet. Dark gray.	Sand: 85% Gravel: 15%		
	SL-4-21	312 - 335	SW	Gravelly sand. Sand is very coarse to fine. Gravel is angular to sub-rounded, up to 1". Wet. Dark gray.	Sand: 75% Gravel: 25%		10% gravel fragments = vein quartz or granitic rock, with trace felsic rock fragments.
	SL-4-22	335 - 370	SP	Sand. Fine-grained sand, some medium sand. Poorly graded. Wet. Dark gray.	Sand: 95% Silt: 5%		Sand and gravel mixtures with increasing amounts of silt with depth. Unit is saturated throughout.

370							
	SL-4-23	370 - 398	SW	Silty sand. Sands are coarse to fine. Trace gravels. Wet. Color change – medium gray.	Sand: 68% Silt: 31% Gravel: 1%		
	SL-4-24	398 - 414	SM	Silty sand. Sands are fine-grained. Wet. Color change – dark gray.	Sand: 80% Silt: 20%		Silty sands. Enough silt to act as semi-confining layer.
414							
	SL-4-25	414 - 416*	GW	Sandy gravel. Sand is mostly fine grained. Gravel is angular to sub-rounded, up to 1". Wet. Likely deep aquifer. Dark gray.	Gravel: 60% Sand: 40%	*418' from top of casing	Sandy gravel with much water under pressure. Likely deepest aquifer in area.

Notes: Total drill depth = 422', backed to 416'. Static water level = 112.9' (from top of casing).
Per discussion with driller, their log is based on the feel of the drill rig going through each interval.

Pump Data:	
15 min @ 30 gpm	SWL = 113.1'
30 min @ 30 gpm	SWL = 113.1'
45 min @ 30 gpm	SWL = 113.1'

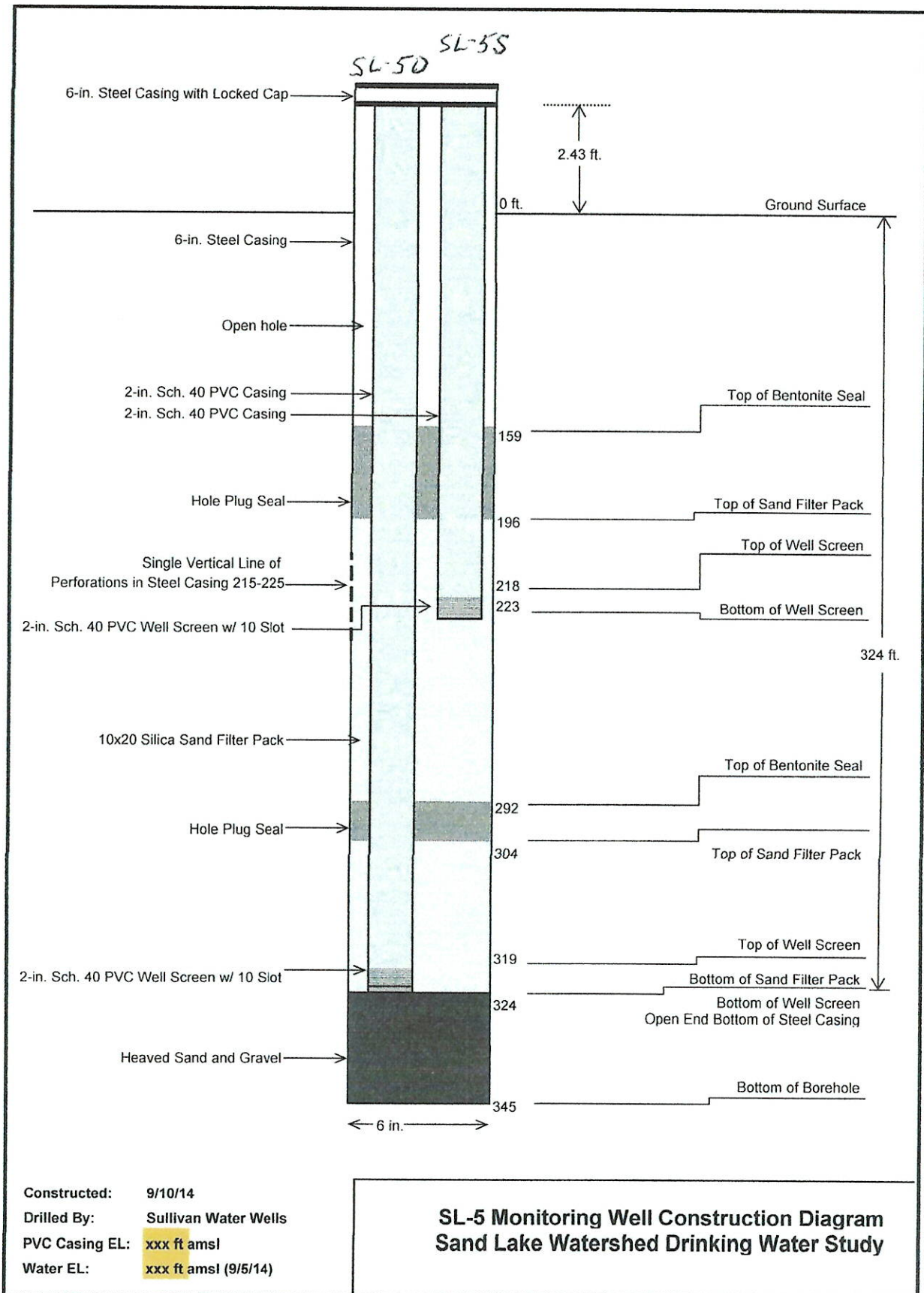
WELL LOG

SAND LAKE PROJECT

Well ID:	SL-5	Drill Method:	Dual Rotary 6" steel casing with 4.5" hammer bit
Owner:	MOA Real Estate Services	Casing:	6" steel, open bottom, single vertical perf 215-225' bgs
Date Started:	8/12/2014	Completion:	2-2" PVC wells shallow and deep (SL-5S and SL-5D)
Date Completed:	9/10/14	Static WL:	164.03' btc
Drilled by:	Cole Sullivan, Sullivan Water Wells	Stick up:	2.43'
Logged by:	Rebecca Reyes, Molly Reeves, UAA	Legal: Southwest Anchorage School site, Tract 2 L-5 elev. 185'	
Location:	1640361.880, 2609845.949 Approximate - still needs to be surveyed, NAD 1983 State Plane AK 4		

Sample ID	Depth (ft)	USCS	Lithologic Description	Additional Information	Unit Summary
SL-5-1	0 - 10	SW	Very coarse sand to silt. Subangular to round gravels, up to 1". Brown.	Sand: 70% Gravel: 30%	Vadose Zone
SL-5-2	10 - 20	SW	Coarse sand to silt. Subangular to subround gravels, up to 0.75". Brown.	Sand: 95% Gravel: 5%	
SL-5-3	20 - 30	SW	Very coarse sand to silt. Subangular to subround gravels, up to 0.75". Brown.	Sand: 90% Gravel: 10%	
SL-5-4	30 - 38	ML	Silt with some clay. Subangular to subround gravels, up to 0.75". Brown.	Silt: 80% Gravel: 15% Clay: 5%	
SL-5-5	38 - 40	ML	Silt with clay. Subround gravels. Brown.	Silt: 60% Clay: 39% Gravel: 1%	
SL-5-6	40 - 50	ML	Silt with clay to medium sand. Subangular to subround gravels, up to 0.75". Brown.	Silt: 60% Sand: 20% Gravel: 15% Clay: 2%	
SL-5-7	50 - 60	ML	Silt, with very fine sand. Subround gravels. Color change - tan.	Silt: 90% Sand: 9% Gravel: 1%	
SL-5-8	60 - 70	ML	Silt, with very fine sand. Subround gravels. Color change - dark tan.	Silt: 94% Sand: 6% Gravel: 1%	
SL-5-9	70 - 80	SM	Very fine sand and silt. Color change - brown.	Sand: 70% Silt: 30%	
SL-5-10	80 - 90	SW	Fine sand to silt. Clay. Subround to round gravels, up to 0.125". Color change - medium brown.	Sand: 89% Silt: 8% Clay: 2% Gravel: 1%	
SL-5-11	90 - 100	SP	Fine sand to very fine sand. Color change - dark brown.	Sand: 100%	
SL-5-12	100 - 110	SM	Fine sand to silt. Dark brown.	Sand: 75% Silt: 25%	
SL-5-13	110 - 120	SP	Fine to very fine sand. Dark brown.	Sand: 100%	
SL-5-14	120 - 130	SP	Fine sand and silt. Dark brown.	Sand: 95% Silt: 5%	
SL-5-15	130 - 135	SW	Coarse to fine sand. Subround gravel (up to 0.75"). Dark brown.	Sand: 95% Gravel: 5%	
SL-5-16	135 - 140	SP	Fine to very fine sand. Few gravels. Dark brown.	Sand: 98% Gravel: 2%	
SL-5-17	140 - 150	SP	Very fine sand and silt. Dark brown.	Sand: 95% Silt: 5%	
SL-5-18	150 - 160	SP	Very fine sand. Light brown.	Sand: 100%	
SL-5-19	160 - 170	SM	Very fine sand and silt. Dark brown.	Sand: 85% Silt: 15%	
SL-5-20	170 - 175	SM	Very fine sand and silt. Dark brown.	Sand: 80% Silt: 20%	
SL-5-21	175 - 180	SP	Fine sand to silt. Subangular to subround gravel (up to 0.75"). Dark brown.	Sand: 78% Silt: 15% Gravel: 7%	
SL-5-22	180 - 188	SP	Fine sand to silt. Subround gravel (up to 1"). Dark Brown.	Sand: 60% Silt: 10% Gravel: 30%	
SL-5-23	188 - 190	SW	Very coarse sand to silt. Subround gravel (up to 0.75"). Dark brown.	Sand: 85% Silt: 10% Gravel: 5%	
SL-5-24	190 - 198	GM	Subround gravel (up to 0.75"). Very coarse to very fine sand and silt. Dark brown.	Gravel: 50% Sand: 35% Silt: 15%	
SL-5-25	198 - 200	GW	Subround gravel (up to 0.75") with very coarse sand. Dark brown.	Gravel: 90% Sand: 10%	

SL-5-26	200 - 202	GM	Subround gravel (up to 0.75"). Very coarse sand to silt. Fine coal present. Dark brown. H2O.	Gravel: 55% Sand: 30% Silt: 15%	Shallow Aquifer
SL-5-27	202 - 210	SW	Coarse to fine sand and silt. Subround gravel (up to 1"). Fine coal present. Color change - Dark gray. H2O.	Sand: 60% Gravel: 30% Silt: 10%	
SL-5-28	210 - 215	SP	Medium to fine sand. Fine coal present. Dark gray. H2O.	Sand: 100%	
SL-5-29	215 - 220	SP	Medium to fine sand. Subround gravel (up to 0.75"). Fine coal present. Dark gray. H2O.	Sand: 97% Gravel: 3%	
SL-5-30	220 - 230	SP	Coarse to very fine sand and silt. Subround gravel (up to 1"). Dark gray. H2O.	Sand: 55% Gravel: 40% Silt: 5%	
SL-5-31	230 - 240	SW	Very coarse to very fine sand and silt. Subround gravel (up to 0.5"). Dark gray. H2O.	Sand: 75% Gravel: 20% Silt: 5%	
SL-5-32	240 - 250	SW	Very coarse to very fine sand and silt. Subround gravel (up to 1"). Fine coal present. Dark gray. H2O.	Sand: 65% Gravel: 20% Silt: 15%	Silty Sand
SL-5-33	250 - 260	SP	Fine sand to silt. Fine to coarse coal present. Dark gray. H2O.	Sand: 92% Silt: 5% Coal: 3%	
SL-5-34	260 - 270	SW	Medium to very fine sand and silt. Fine to very fine coal. Dark gray. H2O.	Sand: 95% Silt: 5%	
SL-5-35	270 - 280	SP	Fine sand to silt. Coal present. Dark gray. H2O.	Sand: 95% Silt: 5%	
SL-5-36	280 - 290	SW	Medium sand to silt. Fine coal present. Subangular to subround gravel (up to 0.5"). Dark gray. H2O.	Sand: 94% Silt: 5% Gravel: 1%	
SL-5-37	290 - 300	SP	Very fine sand to silt. Very coarse to very fine coal. Dark gray. H2O.	Sand: 85% Silt: 5% Coal: 10%	
SL-5-38	300 - 310	SP	Fine sand to silt. 0.25" to very fine coal. Dark gray. H2O.	Sand: 90% Silt: 5% Coal: 5%	
SL-5-39	310 - 320	SW	Coarse sand to silt. Coal up to 0.75". Dark gray. H2O.	Sand: 80% Silt: 5% Coal: 15%	
SL-5-40	320 - 325	SW	Medium sand to very fine sand and silt. Subangular to round gravel, up to 0.75". Dark gray. H2O.	Sand: 80% Gravel: 15% Silt: 5%	Deep Aquifer
SL-5-41	325 - 338	GW	Subangular to round gravel, up to 1". Very coarse sand to silt. Dark gray. H2O.	Gravel: 70% Sand: 30% Silt: 5%	
SL-5-42	338 - 340	GW	Very coarse sand to very fine sand and silt. Subangular to round gravel, up to 1". Coal, up to 0.5". Dark gray. H2O.	Gravel: 60% Sand: 40% Silt: 5%	



Certified Drilling Log

DOC CO dba

**BILL & COLE**

BILL & GUY SULLIVAN WATER WELLS

P.O. Box 670269, Chugiak, AK 99567

688-2759

OWNER OF LAND: Municipality of Anchorage

ADDRESS: PO BOX 196650 Anchorage, AK 99519

LEGAL DESCRIPTION Kincaid Estates Tract 10 SL-6S

DATE: 3-2-16

PERMIT NUMBER: _____ DATE OF ISSUE: _____

TAX IDENTIFICATION NUMBER _____

Is well located at approved permit location: ☐ Yes ☐ No

Method of Drilling: ☒ air rotary ☐ cable tool

Depth of Well: 84'

Casing Type: **Steel** Wall thickness **.250** inches

Diameter: 6 inches, depth 84 feet

Liner type _____

Static Water Level: 53.66 feet

Recovery Rate 2-5  gpm  gph

Method of Testing	Air
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Well Intake Opening Type: ☒ open end ☐ open hole

☐ Screened Start feet Stopped

<input checked="" type="checkbox"/>	Perforations	Start	56	feet	Stopped	64'
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Grout Type: Bentonite Volume: 50 lbs

Depth: from 2 feet, to 42 feet

Well Disinfected Upon Completion: ☒ yes ☐ no

Method of Disinfection: Chlorine 50 PPM

Comments:

2" Liner was installed per attached well construction diagram.

53.66 BTOC

Static 56.33' on May 12, 2016 after casing stickup was cut down to 2'.

Bore Hole Data

[illegible]

Casing Stickup

Overburden

Silty w/ Sand

Silty w/ Sand Damp

Silty w/ Sand

Organics Roots Etc

Silty Sand & Gravel

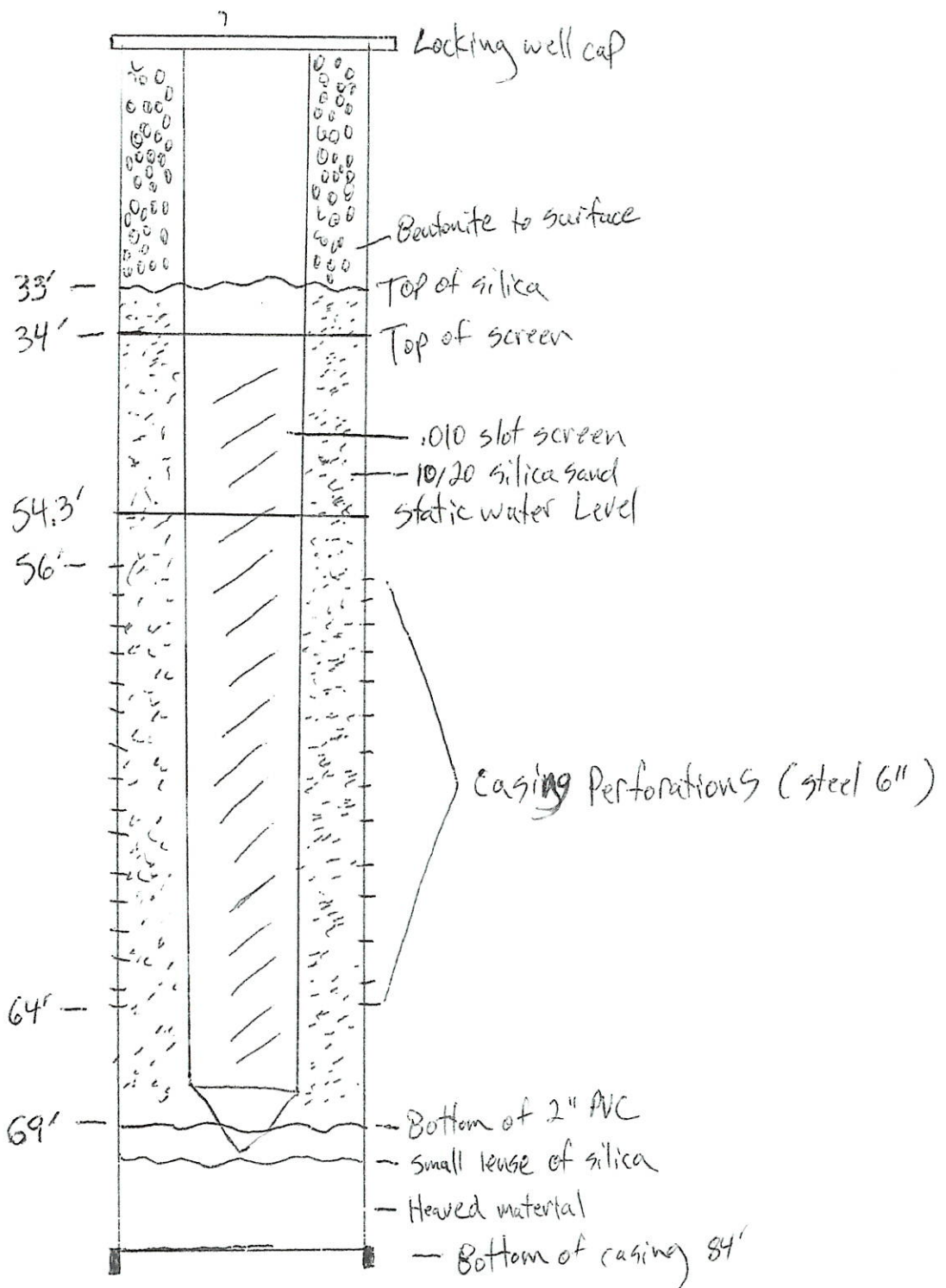
Sand w/ Some Gravel - Water

Silty Sandy Gray

Drillers Name: Cole Sullivan

ATTENTION: It is the responsibility of the property owner to submit a copy of the well log to the proper authority.

Sullivan Water Wells
J. A. Manter Consulting
As built of SL-65 Monitoring well
Kinkaid Estates Tract 10
West Park Drive
4-27-16



Well SL-6S Construction Log

Drill Date: March 2, 2016

Location: Kincaid Estates Tract 10. (South Pond and Westpark Drive)

Property Owner: Municipality of Anchorage

Weather: Cloudy, light snow

Method: Air rotary

Drilling Company: Sullivan Water Wells

Casing Type: 6" diameter steel

Well Intake: Open end

Well use: Monitoring

Depth: 84'

Sample ID.	Depth	USCS	Lithologic Description	Additional Lithologic Information	Driller remarks	Unit Summary
0						
S1	24	SM	Sandy Silt, with some gravel. Moist	Organics from 32' to 34'		Sandy Silt
32						
34						Organic fill
S2	50	SW	Dry, coarse sand.			
S3	54	GW	Coarse sand with gravel			
Obs.	59	GW	Wet, some water. Coarse sand with gravel.			Sand and Gravel
60						
S4	70	SM	Silty, fine sand			
S5	72	SM	Silty, coarse sand			
S6	75	SW	Silty, coarse sand	Coal fragments		
S7	78	SW	Silty, fine sand	Coal fragments		
S8	80	SW	Silty, fine sand	Coal fragments		Silty Sand

Certified Drilling Log

DOC CO dba

**BILL & COLE**

BILL & GUY SULLIVAN WATER WELLS

P.O. Box 670269, Chuqyak, AK 99567

688-2759

OWNER OF LAND: Municipality of Anchorage

ADDRESS: PO BOX 196650 Anchorage, AK 99519

LEGAL DESCRIPTION Kincaid Estates Tract 10 SL-6D

DATE: 2-25-16

PERMIT NUMBER: 2016-02 DATE OF ISSUE:

TAX IDENTIFICATION NUMBER

Is well located at approved permit location: ☒ Yes ☐ No

Method of Drilling: ☒ air rotary ☐ cable tool

Depth of Well: 255

Casing Type: Steel Wall thickness .250 inches

Diameter: 6 inches, depth 255 feet

Liner type

Static Water Level: 71.54 feet

Recovery Rate 400+ ☒ gpm ☐ gph

Method of Testing Air

Well Intake Opening Type: ☒ open end ☐ open hole

☒ Screened Start feet Stopped

Perforations Start _____ feet Stopped _____

Grout Type: _____ Volume: _____

Depth: from _____ feet, to _____ feet

Well Disinfected Upon Completion: ☒ yes ☐ no

Method of Disinfection: Chlorine 50 PPM

Comments:

SEE ATTACHMENT FOR SCREEN COMPLETION AND
ASBUILT OF WELL

100 Slot Screen on bottom, 60 Slot Screen on top with 3' riser and packer.

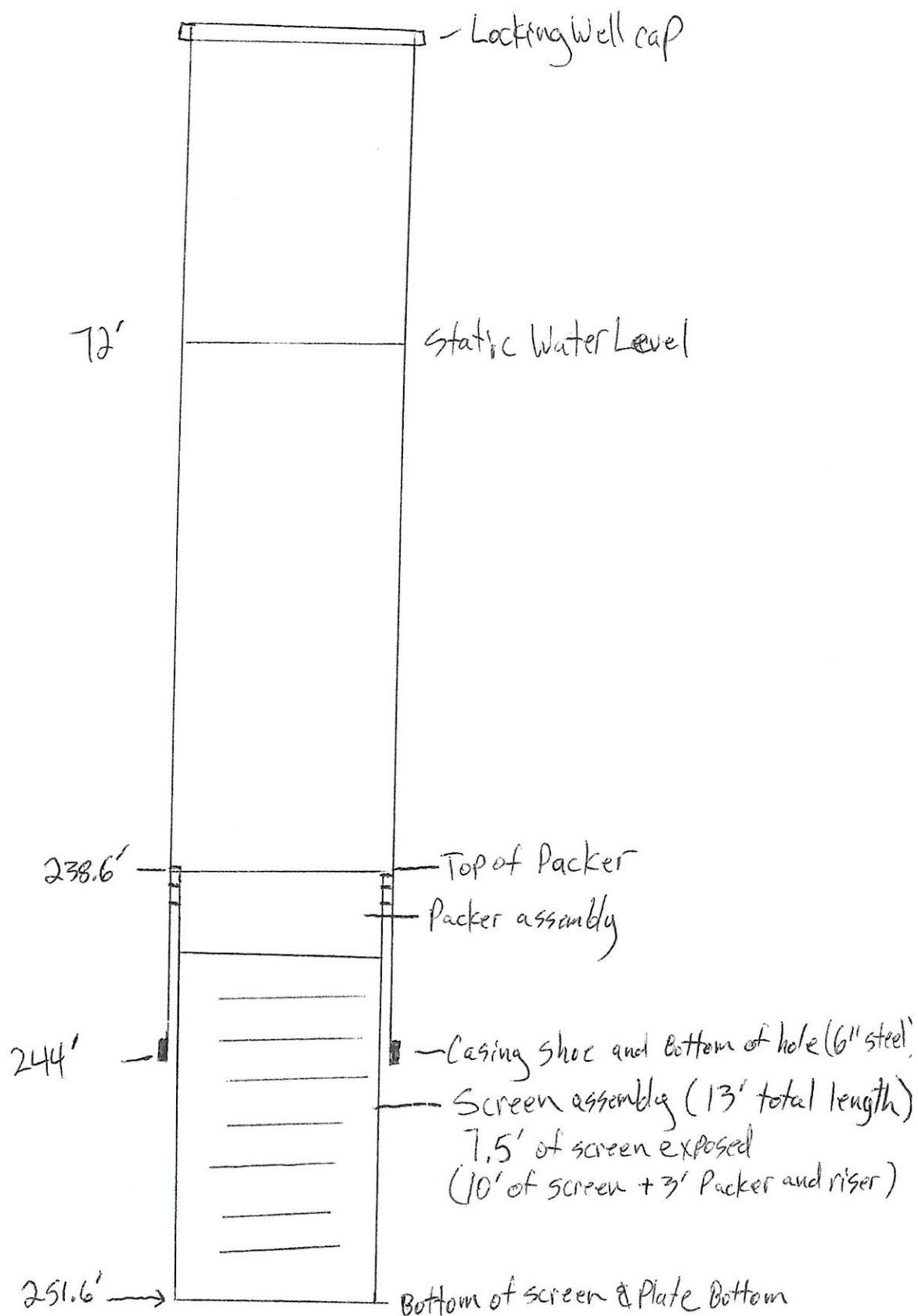
Static 71.54' on May 12, 2016 after casing stickup was cut down to 2'.

ATTENTION: It is the responsibility of the property owner to ensure that the property is properly maintained and that all applicable codes and regulations are followed. For more information, please contact the Municipality of Anchorage: Department of Health & Human Services or MatSu Borough: Department of Environmental Conservation.

[illegible]

Drillers Name: Cole Sullivan

Sullivan Water Wells
J.A. Munter Consulting
As Built of SL-6D
Kinkaid Estates Tract 10
West Park Drive
2-25-16



Well SL-6D Construction Log

Drill Date: February 25, 2016

Location: Kincaid Estates Tract 10. (South Pond and Westpark Drive)

Property Owner: Municipality of Anchorage

Weather: Cloudy, moderate winds

Method: Air rotary

Drilling Company: Sullivan Water Wells

Casing Type: 6" diameter steel

Well Intake: Open end

Well use: Monitoring

Depth: 255

Sample ID.	Depth	USCS	Lithologic Description	Additional Lithologic Information	Driller remarks	Unit Summary
S1	4	ML	Silty, fine sand			
S2	24	SM	Sandy Silt	75% silt, 20% fine sand, 5% clay, 5% gravel		Sand and Silt 0-30
S3	34	Fill	Wood, vegetation, gravel, moist	Fill		
S4	44	GW	Coarse sand with gravel	95% sand, 5% gravel		
S5	50	GW	Coarse sand with gravel	95% sand, 5% gravel		
S6	54	GW	Very coarse sand with gravel	50% sand, 50% gravel		
S7	60	GW	Coarse sand with gravel	90% sand, 10% gravel		Sand and Gravel 30-80
S8	73	SW	Medium coarse sand. Wet	90% sand, 10% silt		
S9	94	ML	Dark, fine sandy gray silt	60% silt, 40% sand		
S10	100	SM	Dark gray, silty, fine sand	70% sand, 30% silt		
S11	114	SM	Brown, silty sand. Wet.	Coal Layer		
S12	120	SM	Sandy Silt. Wet			

S13	134	SM	Gray and brown very fine, sandy silt			Sand and Silt
S14	140	SM	Wet, sandy silt. Occasional gravel			
S15	180	SM	Gravelly silt with sand		Producing water 20 gpm	
S16	182	SM	Gravelly silt with sand		Producing water 20 gpm	Silt with sand and gravel
S17	190	GM	Loose gravel with silt.		Water stopped	
S18	195	SM	Silty, gravelly sand	30% silt, 30% gravel, 40% sand		
S19	200	GM	Gravel with silt. Water		10-15 gpm	
S20	204	GM	Gravel with water and coarse sand with silt		Sample missing some gravel	
S21	214	GM	Gravel with water and coarse sand with silt		Better sample. Sieve was on extender	
S22	215	SW	Gravel with water, coarse sand with silt			
S23	218	SW	Coarse to fine sand with silt and gravel			
S24	234	SM	Silty, fine sand			
S25	240	GM	Silty sand and gravel		50-100 gpm	
S26	254	GW	Sandy Gravel with cobbles			
S27	284	GW	Sandy Gravel with cobbles			Sand and gravel with silt