

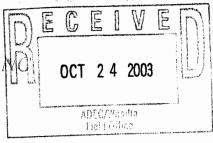
# STATE OF ALASKA 29907 DEPARTMENT OF NATURAL RESOURCES DIVISION OF MINING, LAND & WATER Alaska Hydrologic Survey

## WATER WELL LOG Revised 08/18/2016

Drilling Started:// Comple		eted: <u>9</u> /_	23 / 2003 Pump Install://			
City/Borough S	ubdivisi	on	Block	Lot	Property Owner Name & Address	
Matanuska-Susitna Borough	R CREEK S	SPRINGS	2	30	Clearwater Utilities/ Northridge Construction ,	
Well location: Latitude 61.6105614  Meridian S Township 018		ge_001E	Section		le149.222778 W1/4 of _SW1/4 of _NW1/4 of _NE1/4	
BOREHOLE DATA: (from ground surface) Suggest T.M. Hanna's hydrogeologic classification system* https://my.ngwa.org/NC			stem* AAD pth	Drilling me Well use:	thod: Air rotary, Cable tool, Other Public supply, Domestic, Reinjection, Hydrofracking cial, Observation/Monitoring, Test/Exploratory, Cooling,	
Silty Gravel		From 0	<u>To</u> 17		/Agriculture, ☐Grounding, ☐Recharge/Aquifer Storage, ☐Geothermal Exploration, ☐Other	
Sandy Gravel		<del>0</del> 17	58	Fluids used	·	
•					ole: 170ft Casing stickup:ft	
Sandy Silty Gravel Wet		58	93		e: inches	
Silty Sandy Clayey Gravel- \	/vei	93	128	_	meter: inches Casing depth: 144 ft	
Water Sand- Little Gravel		128	143		Depth: ft Diameter:inches	
Sandy Silty Gravel Wet		143	161		E TO 144 FT e opening type: ☐ Open end,☐Open hole, ☐Other	
Silty Gravel		161	168		e:, Screen mesh size:	
					rt:ft, Screen stop:ft, Perforated ☐Yes ■ No	
					description: Perf from: ft, Perf	
					_ft, Perf from: ft, Perf to: ft	
					ked ■Yes ■No Gravel start: ft , Gravel stop: ft	
				Note:	a (france to a set a section). AC	
					er (from top of casing): 46 ft on// Artesian well evel & yield: feet after hours at 230 _ gpm	
				Method of		
				Developme	ent method: Duration:	
					rate: gpm	
					: Volume	
Include description or sketch of well loo	cation (inc	lude road	names,		mft, Toft	
buildings, etc.):	,			Final pump intake depth: ft Model:  Pump size: hp Brand name:		
					isinfected upon completion? Yes No	
					disinfection:	
				Was water	quality tested? Yes No	
				Water qual	ity parameters tested:	
				Well driller	name:	
					name: ACE WATER WELL DRILLING	
			•		dress:	
North			North	Phone num	State: <u>AK</u> Zip:	
AS 41.08.020(b)(4) and AAC 11 AAC copy of the well log be submitted to th					nature:	
Resources within 45 days of well cor	npletion.	Well logs				
be submitted using the online well log available at:	reporting	system		Anchorage N	Municipal Code 15.55.060(I) and North Pole Ordinance 13.32.030(D) require	
https://dnr.alaska.gov/welts/				within 30 da	of this well log be submitted to the Development Services Department/City ys of well completion.	
OR email electronic well logs to				City Permit I Date of Issu	Number: e:/	
dnr.water.reports@alaska.gov				Parcel Ident	ification Number:	

## ACE WATER WELL DRILLI

P.O. Box 877149 8124 W. Tia Terrace Wasilla, Ak. 99687 aceh2o@mtaonline.net



(907) 357-7987 fax

(907) 376-7987

(907) 354-1398 cell

Well Owner: Northridge Construction LLC Use of Well: Community

Location: Silver Creek Springs Community Well #1 within 18N01E35 S1/2E1/2SW1/4NW1/4NE1/4

Date of Completion:

09-23-03

Job # 03-146

Drilling Method: Air Rotary

Size of Casing: 6"

Depth of hole:

159 feet

Cased to: 144 feet

Static Water Level:

46 feet

below/above land surface.

Finish of Well ( ) Open End ( X) Grout/Seal

(X) Screen/Liner

( ) Perforated

Describe screen, seal, or perforation: 3 x 5 foot #60 slot screen assembly with K-packer,5 foot Riser, 1 foot Tail pipe and end cap. 4 bags #8 Bentonite, 50# each grout seal.

Well Pumping Test at 230 Gallons per () hour (X) minute.

Suggested Pump setting depth: 135 feet from top of casing.

Method of disinfection: Chlorine tablets

Depth in feet from casing	Details of Formations/size/color/ etc				
top					
0 to 2 feet	Casing stick up				
2 to 19 feet	Silty gravel				
19 to 60 feet	Sandy gravel				
60 to 95 feet	Sandy, silty gravel – wet				
95 to 130 feet	Silty, sandy, clayey gravel – wet				
130 to 145 feet	Water sand – little gravel				
145 to 163 feet	Sandy, silty gravel – wet				
163 to 170 feet	Silty gravel				

Driller Signature

Date: 10.9-03

Alanka Rini Opaninappina (de

> Phone (907) 745-0222 Fax (907) 746-0222 alkim Progestica com

29907 Hole.

> P.O. Box 2749 Salmer Alaska 99648

February 1, 2005 Ms. Wendy Tatlow Alaska Division of Mining, Land, and Water 550 West 7<sup>th</sup> Avenue, Suite 1020 Anchorage, Alaska 99501-3562

RE: Silver Creek Springs Community Water System Water Rights Application LAS 24713 DEPARTMENT OF NATURAL RESOURCES DIV. OF MINING, LAND & WATER

FEB 1 1 2005

OIRECTOR'S OFFICE ANCHORAGE

Dear Ms. Tatlow:

Based on my conversation with Roy Ireland, DMLW, and Kirby Branham, Clearwater Utilities, LCC, on December 28, 2004, Alaska Rim Engineering, Inc. conducted a pumping test on the well serving the Silver Creek Springs Community Water System on December 29 and 30. Water levels were also measured at the church well located within Silver Creek Springs Subdivision and the Colony Middle School Well located across East Colony School Drive. We have enclosed a drawing indicating the location and elevation of the well casings. All drawdown measurements were taken relative to the top of the well casings at the individual wells. We have provided a pumping test report the Silver Springs Well and the results of monitoring the water level in the two monitoring wells.

The Silver Creek Springs Community Water System well was pumped for 24 hours at an average rate of 163 per minute as shown on the pumping test documentation for the well. The initial water level in the well prior to the test was 49 feet below the top of the easing. The water level for this well was 114 feet after 24 hours, a drawdown of 65 feet. The well water level recovered to 49 feet after 9 hours 15 minutes.

The initial water level in the church well was 52 feet below the top of the casing. After 24 hours of pumping the Silver Creek Springs Community Water System well, the level in the church well was 55 feet, a drawdown of 3 feet. The well recovered to 52 feet after 9 hours 15 minutes.

The initial water level in the Colony Middle School well was 47 feet. After 24 hours of pumping the Silver Creek Springs Community Water System well, the level in the school well was 55 feet, a drawdown of 5 feet. The well recovered to 52 feet after 9 hours 15 minutes.

The Silver Creek Springs Community Water System well was pumped at an average rate of 163 gallons per minute. This is 1.63 times the design peak flow of the well of 100 gallons per minute for the subdivision. We believe that the Silver Creek Springs

Community Water System well will have a minimal affect on the other two wells used for the test and any other wells located in the immediate area located in the same aquifer.

We have also included a drawing indicating the direction of groundwater flow based on the static elevations in the three wells using graphical methods. You will note that the direction of flow is generally west southwest.

We trust that the above information is sufficient for issuance of the water rights for the Silver Creek Springs Community Water System well, as it demonstrates that the well, when pumped at design peak flow, will have little impact on neighboring wells in the same aquifer

On January 31, 2005, Kyle Cherry of my staff briefly discussed the test procedures and results with Roy Ireland. Mr. Ireland felt he would be able to conduct his review of the aquifer with the information we are presenting to you.

If there are any questions or you require further information, please contact me.

Sincerely,

ALASKA RIM ENGINEERING, INC.

Charles A. Leet, P.E. Project Manager

ENCL: Well Location Drawing Pumping Test Reports (3)

Graphical Determination of Direction of Groundwater Flow

CC: Roy Ireland DNR/DMLW

Kirby Branham

Alaska Rim File No. 03-00150

Conducted By: Alaska Rim Engineering

Owner: Location: Northridge Construction Silver Creek Spring: Well # 1

Well Information:

Total Depth:

159 Depth of Casing: 144 feet

Screen From

Casing Size: 6" Screen Diameter:

Remarks:

Screen Slot: #60

Pump Information

Intake Depth:

Pump Size:

Air Line Depth:

Static Water Level: 49 Average Discharge: 163 GPM During Pumping Test

Pump On

Time: 1445

Date: 12/29/04

Pump Off: Time:1445 Date: 12/30/04

V211077				Date: 12/	
Time	Water Level		Flow GPM	Remarks:	
	1445	49	185	8,599,100 initial meter reading	
	1455	92	185	in the second se	
	1505	96	182		
	1515	98	175		
	1525	100	175		
	1535	101	175		
	1545	102	175		
	1555	102	175		
	1605	103	174		
	1615	104	174		
	1625	104	174		
	1635	105	172		
	1645	105	171		
	1745	107	170		
	1845	106	170		
	1945	109	170		
	2045	110	170		
	2145	111	170		
	2245	111	170		
	2345	112	170		
	45	112	170		
	145	112	170		
	245	113	170		
	345	113	170		
	445	114	170		
	545	114	170		
	645	114	170		
	745	114	171		
	845	114	170		
	945	114	170		
	1045	114	170		
	1145	114	170		
	1245	114	170		
	1345	114	168		
	1445	114	168	EL VE	
		-1.474	100	Final Reading: 8,833,400	

Alaska Rim Engineering, Inc.

Engineers....Planners....Surveyors

Conducted By: Alaska Rim Engineering

Owner:

Northridge Construction

Location:

Silver Creek Spring: Well # 1

Well Information:

Pump Information

Total Depth: 159 Depth of Casing: 144 feet

Screen From

Screen Slot: #60

To

Casing Size: 6" Screen Diameter:

Remarks:

Pump Size:

Air Line Depth:

Intake Depth:

Static Water Level: 49 Average Discharge: 163 GPM During Pumping Test

Pump On

Time: 1445

Date: 12/29/04

Pump Off: Time:1445 Date: 12/30/04

				Date, 12/30	116
Time		/ater Level	Flow GPM	Remarks:	
RECO					
	1455	73			
	1505	69			
	1530	66			
	1545	63			
	1600	61			
	1615	60			
	1630	59			
	1645	58			
	1700	58			
	1800	56			
	1900	55			
	2100	53			
	2200	52			
	2300				
	2400	50 49			
		100.00			

Conducted By: Alaska Rim Engineering, Inc. Owner: Mat-Su School District

MSBSD Middle School adjacent to Colony High School (Used as Monitoring Well) Location:

Well Information:

Total Depth: Depth of Casing Casing Size: 6" Screen Diameter: Remarks:

Screen From Screen Slot #

To

Pump Information

2400

47

Intake Depth: Static Water Level:

Pump Size: Average Discharge:

Air Line Depth:

Pump On

Mar. 17 (17)	Time: 1445		Date: 12/29/04	Pump Off:	T1000000000	10.5 E.5.40 (1 are exist assume	
Time	Wa	iter Level	Flow GPM	Pump Off: Time:1445 Date: 12/3 Remarks:			
	1445	47		riemans,			
	1455	47					
	1505	47					
	1515	47					
	1525	47					
	1535	47					
	1545	47					
	1615	47					
	1645	47					
	1745	48					
	1845	48					
	1945	48					
	2045	49					
	2145	49					
	2245	49					
	2345	50					
	45						
	145	50					
	245	50					
	345	50					
		50					
	445	50					
	545	50					
	645	51					
	745	51					
	845	51					
	945	51					
	1045	51					
	1145	51					
	1245	51					
	1345	52					
	1445	52					
Recover	ry	52					
	1500	52					
	1525	52					
	1545	52					
	1600	51					
	1615	51					
	1630	51					
	1645	51					
	1700	51					
	1800						
	1900	50					
		50					
	2100	50					
	2200	50					
	2300	46					
	STATIO						

Conducted by:

Alaska Rim Engineering, Inc.

Owner:

LDS Church

Location:

Across from Colony High School (Used as Monitoring Well)

Well Information:

Total Depth:

Depth of Casing

Screen From

Casing Size: 6"

Remarks:

Screen Diameter:

Screen Slot:

Pump Information

Intake Depth: Static Water Level:

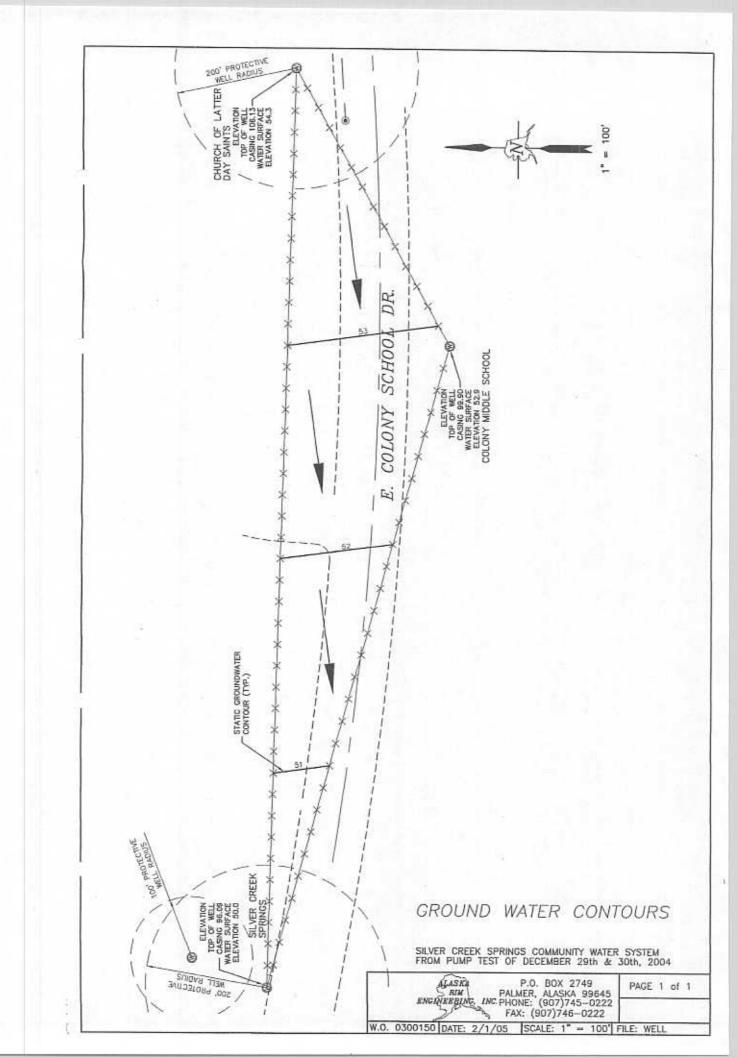
Pump Size: Average Discharge:

Air Line Depth:

Pump On

Time		Time: 1445 Water Level	Date: 12/29/04 Flow GPM	Pump Off:	Time:1445	Date: 12/30/04
	1445			Remarks:		
	1455					
	1505	52				
	1515					
	1525	52				
	1535	52				
	1545	52				
	1615	52				
	1645	53				
	1745	52				
	1845	52				
	1945	52				
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	2145	52				
	2245	52				
	2345	52				
	45	52				
	145	52				
	245	52				
	345	52				
	445	52				
	545	52				
	645	52				
	745	52				
	845	52				
	945	52				
	1045	55				
	1145	55				
	1245	55				
	1345	55				
	1445	55				
ecovery						
THE RESERVE OF THE PARTY.	1600	54				
	1800	53				
	2100	53				
	2400	52				

Engineers Planners Surveyors



24713 uplate

29907

## PENN JERSEY DRILLING INC ABC PUMP & WELL SUPPLY HC 34, BOX 2201 WASILLA, ALASKA 99654-9604 (907)892-7206

		, · · · · · · · · · · · · · · · · · · ·		
NAME: DAVE NORTO	ON .	DATE: OCTOBE	ER 8, 2003	•
LOCATION: ACROSS	FROM COLONY	CHOOLRE: C-232-003	33 - ENGINEER CHUCK	
ONE: (4-HOUR FI	(DA	R FLOW TEST	WELL DEPTH: 159' TOP OF SCREEN: 138 STATIC WATER LEVEL: PUMP SET @ 114'	' 110'
	50GPM:	Testing done at ever	ry 10 Minutes the first hou	r
TIME: WSL-DE	PTH	TIME:	WSL-DEPTH	•
12:20 PM 110	* FLAT	-(BROKE SUCTION)		
B.) Pumping @ then every one half he 1:00 pm 110	our.	Testing done at ever	ry 10 Minutes the first hou	r
**LOWERED PUMP TO C.) Pumping @ then every one half he 2:00 PM 130	GPM: our, then every		ry 10 Minutes the first hou	r

#### PENN JERSEY DRILLING INC ABC PUMP & WELL SUPPLY HC 34, BOX 2201 WASILLA, ALASKA 99654-9604 (907)892-7206

PAGE 2

NAME:I	AVE NORTON	<del></del>	DATE	OCTOBER	8. 2003	
LOCATION	: ACROSS FROM	COLONY S	CHOOLRE:			
	Ņ		R FLOW			
ONE: (4-F	OUR FLOW	TEST)			PUMP SET @ 135'	
	@ 280 ne half hour.	GPM:	Testing dor	ne at every	10 Minutes the first	hour
TIME:	WSL-DEPTH	!	TIME:		WSL-DEPTH	
2:30 PM	130' FLA	T - (BROK	E SUCTION)		· · · · · · · · · · · · · · · · · · ·	
		<u> </u>				
then every o	@ <u>265</u> ne half hour. 130' FLA	: :			10 Minutes the first	hour
	g @ <u>250</u> ne half hour, th			ne at every	10 Minutes the first	t hour
•	130' FLA	,				
3:00 PM	130' "	BUT KE	PT UP 250_G	- м		
3:10 PM		<del></del>				
3:20 PM					·	
<u></u>		(BROK	E SUCTION)		· · · · · · · · · · · · · · · · · · ·	
		-	& GPM			
		<del>:-</del> :				
	•	<del></del> :				
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PAGE 3

PENN JERSEY DRILLING INC ABC PUMP & WELL SUPPLY HC 34, BOX 2201 WASILLA, ALASKA 99654-9604 (907)892-7206 Far 812-6278

NAME: DAVE NORTON	DATE: OCTO	
LOCATION: ACROSS- FROM C	OLONY SCHOOL RE:	hle
W	ATER FLOW TES (DATA:CHARTS)	T Rob Schachle
ONE: (4-HOUR FLOW T	EST)	PUMP SET @ 135'
A.) Pumping @230 then every one half hour.	GPM: Testing done at eve	ery 10 Minutes the first hour
TIME: WSL-DEPTH	TIME:	WSL-DEPTH
3:30 PM 130' FLAT  3:40 PM 130' FLAT	- (BROKE SUCTION) BUT KEPT UP 230 GPM	
B.) Pumping @ 230 then every one half hour.	GPM: Testing done at eve	ery 10 Minutes the first hour
3:50 PM 130' FLAT 4:00 PM 130' FLAT	4:10 PM 4:20 PM	130' FLAT "
C.) Pumping @230 then every one half hour, then	GPM: Testing done at even n every hour.	ery 10 Minutes the first hour
4:40 PM 130' " "BU 4:50 PM 130' " " 5:00 PM 130' " "	-(BROKE SUCTI <u>ON)</u> T KEPT UP 230 GPM	
5:10 PM 130' " " 5:20 PM 130' " " 5:30 PM 130' " " 1	DDOWN OVERTON	
BUT KE	BROKE SUCTION PT UP AT 30 GPM	· · · · · · · · · · · · · · · · · · ·