

WELL DRILLER'S REPORT

State of Utah

Division of Water Rights

For additional space, use "Additional Well Data Form" and attach

Well Identification

Change Application: a37313 (75-661)

WIN: 434816

Owner

Note any changes

Town of Brian Head
P.O. Box 65
Brian Head UT 84719

Contact Person/Engineer: ADVANCED ENVIRONMENTAL ENGINEERING

Well Location

Note any changes

DAVE LORE 801-200-2528
801-773-3155

S 568 E 2182 from the W4 corner of section 02, Township 36S, Range 9W, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation, local well #)

Drillers Activity

Start Date: MAY 12 - 2011 Completion Date: NOV. 01 - 12

Check all that apply: New Repair Deepen Clean Replace Public Nature of Use: _____
If a replacement well, provide location of new well. _____ feet north/south and _____ feet east/west of the existing well.

DEPTH (feet) FROM TO		BOREHOLE DIAMETER (in)	DRILLING METHOD	DRILLING FLUID
0	6'	34"	ROTARY	
0	115	28"	MUD ROTARY	BENTONITE / POLYMER
115	750	23"	MUD ROTARY	BENTONITE / POLYMER
750	1502	14 3/4"	MUD ROTARY	BENTONITE / POLYMER

Well Log

DEPTH (feet) FROM TO	WATER	PERMEABLE High Low	UNCONSOLIDATED							CONSOLIDATED		DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistency, water bearing, odor, fracturing, mineralogy, texture, degree of weathering, hardness, water quality, etc.)
			CLAY	SAND	GRAVEL	COBBLES	BOULDER	ROCK TYPE	COLOR			
0	5										BLACK	
5	15	x	x	x	x					LOOSE ROCK	BLACK	YELLOW SAND
15	30	x	x				x	x				
30	65	x	x				x	x				
65	93	x	x						x	LOVA		VARY HARD FRACTURED
93	96	x	x				x	x			BLACK & WHITE	
96	112	x	x						x	LOVA	BLACK	HARD
112	129	x	x						x	LOVA	RED BROWN	VERY HARD
129	135			x					x		"	CLAY IS TAN ORANGE
135	146			x					x		"	" ORANGE

Static Water Level

Date 11-28-11 Water Level 137 feet Flowing? Yes No
 Method of Water Level Measurement CHAPER If Flowing, Capped Pressure _____ PSI
 Point to Which Water Level Measurement was Referenced TOP OF CASING Elevation -
 Height of Water Level reference point above ground surface 2' feet Temperature 41 degrees C F

NOV 21 2012
 ORDER COPY

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		<input checked="" type="checkbox"/> SCREEN	<input type="checkbox"/> PERFORATIONS	<input type="checkbox"/> OPEN BOTTOM
FROM	TO	CASING TYPE AND MATERIAL/GRADE	WALL THICK (in)	NOMINAL DIAM. (in)	FROM	TO	SCREEN SLOT SIZE OR PERF SIZE (in)	SCREEN DIAM. OR PERF LENGTH (in)	SCREEN TYPE OR NUMBER PERF (per round/interval)
0	6'	A53 GRADE B	.375	30"	520	600	.050	16"	304 STAINLESS STEEL
0	115	A53 GRADE B	.312	24"	705	745	.050	16"	304 STAINLESS STEEL
+2	520	A53 GRADE B	.312	16"	735	745	BLANK	8 5/8"	304 STAINLESS STEEL SCREEN
600	705	A53 GRADE B	.312	16"	745	805	.030	8 5/8"	304 STAINLESS STEEL
0	175	A53 GRADE B	.250	4 1/2"	805	1200	BLANK	8 5/8"	304 STAINLESS STEEL
0	518	A53 GRADE B	.250	5 9/16"	1200	1470	.050	8 5/8"	304 STAINLESS STEEL
					1470	1480	BLANK	8 5/8"	

Well Head Configuration: STEEL PLATE Access Port Provided? Yes No
 Casing Joint Type: BUTT WELD Perforator Used: STAINLESS STEEL 304
 Was a Surface Seal Installed? Yes No Depth of Surface Seal: 115 feet Drive Shoe? Yes No
 Surface Seal Material Placement Method: PUMPED 50/50 TO BOTTOM BACK TO SURFACE
 Was a temporary surface casing used? Yes No If yes, depth of casing: 6" feet diameter: 30 inches THIS CASING WAS REMOVED 2012

DEPTH (feet)		SURFACE SEAL / INTERVAL SEAL / FILTER PACK / PACKER INFORMATION		
FROM	TO	SEAL MATERIAL, FILTER PACK and PACKER TYPE and DESCRIPTION	Quantity of Material Used (if applicab)	GROUT DENSITY (lbs./gal., # bag mix, gal./sack etc.)
0	6	CEMENT & BENTONITE HOLE PLUG	36 CUBIC FEET	
0	115	50/50 SAND CEMENT	11 CUBIC YARDS	18.40 lbs
560	750	3/8 ROUND PERL GRAVEL	45 CUBIC YARDS	
740	1476	12 - 20 SILICA SAND	16 CUBIC YARDS	
95	113	3/8 BENTONITE HOLE PLUG	13 CUBIC FEET	
PLACED 10 BARRELL HONEY BENTONITE DRILLING FLUID - OUT SIDE UP INTO 24" CASING				

Well Development and Well Yield Test Information

DATE	METHOD	YIELD	Units Check One		DRAWDOWN (ft)	TIME PUMPED (hrs & min)
			GPM	CFS		
Sept. Oct. 11	AIR DEVELOPMENT	600	x		380	46 Ws
10-14 = 10-22-11	TEST PUMP	1163	x		326	184 Ws
10-18 = 20-12	WELL DEVELOPMENT	825	x		304.40	45.25

Pump (Permanent)


Pump Description: _____ Horsepower: _____ Pump Intake Depth: _____ feet
 Approximate Maximum Pumping Rate: _____ Well Disinfected upon Completion? Yes No

Comments

Description of construction activity, additional materials used, problems encountered, extraordinary Circumstances, abandonment procedures. Use additional well data form for more space.
PERL GRAVEL WAS EXTRACTED FROM SURFACE TO 560 FEET. THE SCREEN WAS COLLAPSED FROM 524' TO 540' SCREEN SIZE DISTORTED OR UNDERSIZED FROM 540' TO 560' SCREEN WAS SWAGGED FROM 522' TO 542' AND 304 STEEL PATCHES WERE PLACED FROM 518.7' TO 527.5' THE SWAGGING TOOL WAS UNABLE TO GO BELOW 541' 6 3/4". INSTALLED TEST PUMP TO 495' TEST RESULTS WERE SAME AS TEST PUMP 2011

Well Driller Statement

This well was drilled and constructed under my supervision, according to applicable rules and regulations, and this report is complete and correct to the best of my knowledge and belief.

Name GRIMSHAW DRILLING License No. 240
 Signature  Date Nov. 14 - 2012

Construction Information

DEPTH (feet)		CASING			DEPTH (feet)		<input checked="" type="checkbox"/> SCREEN	<input type="checkbox"/> PERFORATIONS	<input type="checkbox"/> OPEN BOTTOM
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							ACCESS TUBES		

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Name GRIMSHAW DRILLING License No. 240
 Signature Date NOV. 14 - 2012
(Person, Firm, or Corporation - Print or Type)
(Licensed Well Driller)

WELL DRILLER'S REPORT ADDITIONAL DATA FORM

State of Utah
Division of Water Rights

Page 2 of 3

Well Identification

Change Application: a37313 (75-661)

Owner

Note any changes

Town of Brian Head
P.O. Box 65
Brian Head UT 84719

Contact Person/Engineer: _____

Well Location

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S 568 E 2182 from the W4 corner of section 02, Township 36S, Range 9W, SL B&M

Location Description: (address, proximity to buildings, landmarks, ground elevation, local well #)

Well Log		WATER	PERMEABILITY		UNCONSOLIDATED					CONSOLIDATED		ROCK TYPE	COLOR	DESCRIPTION AND REMARKS (e.g., relative %, grain size, sorting, angularity, bedding, grain composition density, plasticity, shape, cementation, consistency, water bearing, odor, fracturing, mineralogy, texture, degree of weathering, hardness, water quality, etc.)
			High	Low	CLAY	SILT	SAND	GRAVEL	COBBLES	BOULDER	OTHER			
DEPTH (feet)	FROM	TO												
146	148				X								ORANGE	
148	174				X						X	LOAM RED BROWN	CLAY ORANGE	ISOM FORMATION
174	179	X	X								X	LOAM	RED BROWN & BLK	
179	193	X	X								X	LOAM	BLACK RED BROWN	VERY HARD
193	227	X	X								X	LOAM & QUARTZ	"	" "
227	393	X	X								X	LOAM	"	" "
393	489	X	X								X	LOAM	BLACK	MED HARD
489	509	X	X								X	LOAM	RED BLACK	VERY HARD
509	547	X	X								X	LOAM	BLACK	" "
547	551	X	X								X	LOAM	BLACK	HARD FRACTURED
551	582	X	X								X	LOAM	BLACK	VERY HARD FRACTURED
582	596	X	X								X	LOAM	RED BROWN	HARD
596	609	X	X								X	LOAM	RED	
609	699	X	X								X	LOAM	RED, BROWN & BLACK	HARD
699	788	X	X								X	LOAM	" " "	HARD BRITTLE
788	790	X	X								X	LOAM	RED, BROWN & BLACK	SOME WHITE BIG FRACTURE
790	857										X	MUDSTONE	WHITE, TAN	CLARON FORMATION
857	879										X	MUDSTONE	WHITE	HARDER
879	886										X	MUDSTONE	RED	
886	927										X	MUDSTONE	WHITE	
927	931										X	MUDSTONE	WHITE	HARDER FRACTURED

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			High	Low	CLAY	SAND	GRAVEL	COBBLES	BOULDER	OTHER				
DEPTH (feet)	FROM	TO												
931	1206										X	MUDSTONE	WHITE	CLARON FORMATION
1206	1210	X	X								X	MUDSTONE	ORANGE	FRACTURED BROKEN HARD
1210	1246	X	X								X	MUDSTONE	YELLOW, WHITE & GRAY	FRACTURED
1246	1263	X	X								X	MUDSTONE	ORANGE	FRACTURED HARD
1263	1294	X	X								X	MUDSTONE	ORANGE	VARY HARD FRACTURED
1294	1302	X	X								X	MUDSTONE	ORANGE	HARD
1302	1308	X	X								X	MUDSTONE	ORANGE	HARD FRACTURED BIG FLUID LOSE
1308	1314	X	X								X	MUDSTONE	ORANGE	
1314	1322	X	X								X	MUDSTONE	ORANGE	FRACTURED BIG FLUID LOSE
1322	1330	X	X								X	CONGLOMERATE	WHITE TAN	FRACTURED (GRAND CASTLE FORMATION)
1330	1333										X	CONGLOMERATE	"	"
1333	1338	X	X								X	CONGLOMERATE	"	" FRACTURED
1338	1354										X	CONGLOMERATE	"	"
1354	1440	X	X								X	CONGLOMERATE	"	" FRACTURED
1440	1480										X	CONGLOMERATE	"	"
1480	1502										X	MUDSTONE	ORANGE RED	CLARON FORMATION