

**MONTANA WELL LOG REPORT**

Senate Energy & Telecom Comm. Comm.  
 Exhibit No. 1  
 Date 3.5.13  
 Bill No. SB 243

This well log reports the activities of a licensed Montana well driller, serves as the record of work done within the borehole and casing, and describes the amount of water encountered. This report is compiled electronically from the contents of the Ground Information Center (GWIC) database for this site. Acquiring water rights is the well owner's responsibility and is NOT accomplished by the filing of this report.

Site Name: ~~XXXXXXXXXXXX~~  
 GWIC Id: 265485

**Section 7: Well**

Total Depth: 460  
 Static Water Level: 125  
 Water Temperature:

**Section 1: Well Owner(s)**

1) ~~XXXXXXXXXXXX~~ (MAIL)  
 145 SIGNAL BUTTE RD.  
 MILES CITY MT 59301 [04/24/2012]

**Air Test \***

100 gpm with drill stem set at 460 feet for 0.5 hours.  
 Time of recovery 0.5 hours.  
 Recovery water level 125 feet.  
 Pumping water level     feet.

**Section 2: Location**

Township	Range	Section	Quarter Sections
08N	47E	36	SW¼ SW¼
County			Geocode

CUSTER

Latitude	Longitude	Geomethod	Datum
46.3982	105.79947	NAV-GPS	NAD83
Ground Surface Altitude	Method	Datum	Date
2470	NAV-GPS	NAVD88	4/24/2012
Addition	Block	Lot	

**Bailer Test \***

15 gpm with 55 feet of drawdown after 1 hours.  
 Time of recovery 0.5 hours.  
 Recovery water level 125 feet.  
 Pumping water level     feet.

**Section 3: Proposed Use of Water**

STOCKWATER (1)  
 DOMESTIC (2)

*\* During the well test the discharge rate shall be as uniform as possible. This rate may or may not be the sustainable yield of the well. Sustainable yield does not include the reservoir of the well casing.*

**Section 4: Type of Work**

Drilling Method: ROTARY

**Section 8: Remarks**

**Section 5: Well Completion Date**

Date well completed: Tuesday, April 24, 2012

**Section 9: Well Log**

**Geologic Source**

Unassigned

**Section 6: Well Construction Details**

**Borehole dimensions**

From	To	Diameter
0	78	11
78	460	7

**Casing**

From	To	Diameter	Wall Thickness	Pressure Rating	Joint	Type
-2	78	8	0.25		WELDED	A53B STEEL
10	460	4.5			SPLINE	PVC-SDR 17

**Completion (Perf/Screen)**

From	To	Diameter	# of Openings	Size of Openings	Description
420	460	4.5		.025	FACTORY SLOTTED

**Annular Space (Seal/Grout/Packer)**

From	To	Description	Cont. Fed?
0	78	BENTONITE	
90	410	BENTONITE	
410	420	2 SHALE TRAPS	

From	To	Description
0	34	BROWN SAND
34	39	ROCK
39	63	BROWN SAND
63	65	GRAY SAND (20GPM TDS 3500PPM.)
65	67	COAL
67	70	CLAY
70	74	GRAY SAND
74	94	CLAY
94	118	GRAY SAND (5GPM. TDS 1800PPM.)
118	126	CLAY
126	130	SANDY CLAY
130	135	BLUE SAND
135	138	ROCK
138	165	BLUE SAND
165	167	ROCK

**Driller Certification**

All work performed and reported in this well log is in compliance with the Montana well construction standards. This report is true to the best of my knowledge.

Name: DOUG ASKIN
Company: ASKIN DRILLING
License No: WWC-525
Date: 4/24/2012
Completed:

**MONTANA WELL LOG REPORT**

**Other Options**

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Site Name: ~~SIGNAL BUTTE~~  
GWIC Id: 265485

**Section 7: Well Test Data**

Total Depth: 460  
Static Water Level: 125  
Water Temperature:

**Air Test \***

100 gpm with drill stem set at 460 feet for 0.5 hours.  
Time of recovery 0.5 hours.  
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Pumping water level      feet.

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**Section 8: Remarks**

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Name: DOUG ASKIN  
Company: ASKIN DRILLING  
License No: WWC-525  
Date Completed: 4/24/2012

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410	420	2 SHALE TRAPS	

Site Name: ██████████		
GWIC Id: 265485		
Additional Lithology Records		
From	To	Description
167	177	BLUE SAND (30GPM TDS 1450PPM.)
177	195	CLAY
195	228	GRAY SAND
228	229	CLAY
229	231	COAL
231	316	CLAY
316	318	ROCK
318	330	CLAY
330	332	ROCK
332	420	CLAY
420	450	BLUE SAND (>100GPM. TDS 850PPM.)
450	460	CLAY

## Exhibit 2

### The Relationship of Total Dissolved Solids to Animal Response

TDS (mg/L)	Interpretation of Values
Less than 1,000	Should present no serious problems
1,000 to 3,000	May cause temporary, mild diarrhea in livestock
3,000 to 5,000	Will probably cause diarrhea and temporary refusal of feed. Not recommended for poultry.
5,000 to 7,000	May be used under some conditions. Not recommended for pregnant or lactating animals.
7,000 to 10,000	Unfit for swine and other animals subjected to heat stress or high water loss.
More than 10,000	Not recommended for use by any livestock