

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas

Well Operator's Report of Well Work

Farm name: Dwight & Lori Anderson Operator Well No.: HR 456

LOCATION: Elevation: 644' Quadrangle: Liverpool WV 7.5'

District: Ravenswood County: Jackson
Latitude: 9964 Feet South of 38 Deg. 57 Min. 30 Sec.
Longitude 3693 Feet West of 81 Deg. 35 Min. 00 Sec.

Company: Hard Rock Exploration

	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Address: <u>1244 Martins Branch Road</u> <u>Charleston WV, 25312</u>				
Agent: <u>Marc Scholl</u>	20"	25	25	N/A
Inspector: <u>Jamie Stevens</u>	13 3/8"	84	84	135ft3 CTS
Date Permit Issued: <u>8/30/11</u>	9 5/8"	603	603	300 ft3 CTS
Date Well Work Commenced: <u>1/12/12</u>	7"	2374	2374	516 ft3 CTS
Date Well Work Completed: <u>1/31/12</u>	4.5"	7231	7231	130 ft3
Verbal Plugging:	Ran Gamma Log from KOP(3439' - 4093'TVD)			
Date Permission granted on:				
Rotary x Cable Rig				
Total Depth (feet): <u>7312'TMD, 4112'TVD</u>				
Fresh Water Depth (ft.): <u>40'</u>				
Salt Water Depth (ft.): <u>1074', 1683'</u>				
Is coal being mined in area (N/Y)? <u>N</u>				
Coal Depths (ft.): <u>N/A</u>				

OPEN FLOW DATA

Producing formation Lower Huron Shale Pay zone depth (ft) 4035'MD- 7312 'MD
3963'TVD - 4112' TVD

Gas: Initial open flow trace MCF/d Oil: Initial open flow Bbl/d
Final open flow 1500+ MCF/d Final open flow Bbl/d
Time of open flow between initial and final tests 72 Hours
Static rock Pressure psig (surface pressure) after Hours

Second producing formation Pay zone depth (ft)
Gas: Initial open flow MCF/d Oil: Initial open flow Bbl/d
Final open flow MCF/d Final open flow Bbl/d
Time of open flow between initial and final tests Hours
Static rock Pressure psig (surface pressure) after Hours

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NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Signed: [Signature]
By: Prep Agent
Date: 3/30/2012

<u>Formation:</u>	<u>Top:</u>	<u>Bottom:</u>
Soil, Sand, Shale	0	1645
Salt Sand	1645	1850
Lime	1850	1890
Injun	1890	1935
Shale	1935	2310
Coffee Shale	2310	2330
Devonian Shale	2330	4112
Lower Huron Section	4020	4112

All depths shown As TVD

01/23/12. Run total of 168jts of R-3 4.5" 11.6ppf N80 casing to depth of 7231'. Run a 14 stg Packers Plus completion system. ND BOP and flange up 10k valve. RU Baker cmt crew and start pumping N2 with toe sub balls and pressure casing up to 3000psi. Shut down and hold pressure for 15 - 20 min. Start pumping N2 and pressure up to 3450psi to open shoe. Pumped total of 128k scf N2. RD N2 equipment and RU to 4X7 annulus. Dump squeeze with 100sx mixed at 15ppg. Follow cmt with 3bbl water.

	Sleeve	Sleeve Size	Packers
Stage 1	P/O Shoe	N/A	7058
Stage 2	6924	1.375	6835
Stage 3	6701	1.625	6613
Stage 4	6520	1.750	6390
Stage 5	6297	1.875	6167
Stage 6	6074	2.000	5902
Stage 7	5768	2.125	5679
Stage 8	5545	2.375	5456
Stage 9	5364	2.500	5233
Stage 10	5099	2.750	4968
Stage 11	4834	2.875	4745
Stage 12	4611	3.125	4523
Stage 13	4389	3.250	4258
Stage 14	4166	3.500	4035
Anchor			2687

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01/30/12 - 1/31/12 MIRU Baker Stim crew. Start pumping half rate and work rate up to 101k scf/min as pressure allowed. Pump total of 1MM scf N2. Drop ball for Stg 2 and wait 10 min. Start pumping at 20k scf/min, and land ball and open sleeve at 4762psi. Up rate and pump total of 1MM scf N2. Shut down and drop ball for Stg 3. Wait 10min. Repeat process for Stgs 3- 14.

	Stg 1	Stg 2	Stg 3	Stg 4	Stg 5	Stg 6	Stg 7
Max P	5972	5893	6096	5579	5652	5357	5193
Avg P	5658	5802	5902	5524	5545	5310	5162
Max R	102.8	103.4	102.4	108.0	112.0	111.3	106.0
Avg R	97.2	101.9	86.8	106.0	109.0	109.9	105.0
5 min	2180	2247	N/A	N/A	2275	2254	2298
	Stg 8	Stg 9	Stg 10	Stg 11	Stg 12	Stg 13	Stg 14
Max P	5192	4877	4717	4508	4704	4317	3967
Avg P	5149	4838	4681	4415	4672	4277	3945
Max R	111.9	108.0	105.0	107.0	108.0	107.0	104.0
Avg R	109.0	106	104.0	104.0	106.0	105.0	103.0
5 min	2295	N/A	2064	1936	2007	1861	1855

09/14/2012