

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

Well Operator's Report of Well Work

Farm name: Todd and Christopher Van Fosson Operator Well No.: HR 470

LOCATION: Elevation: 669' Quadrangle: Liverpool WV 7.5'

District: Ravenswood County: Jackson  
Latitude: 4497' Feet South of 38 Deg. 57 Min. 30 Sec.  
Longitude 3102' 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>	20"	19'	19'	N/A
Agent: <u>Marc Scholl</u>	13 3/8"	83'	83'	73cuft CTS
Inspector: <u>Jamie Stevens</u>	9 5/8"	633'	633'	300 ft3 CTS
Date Permit Issued:	7"	2414'	2414	517 ft3 CTS
Date Well Work Commenced: <u>10/10/12</u>	4.5"	7905'	7905	115 ft3
Date Well Work Completed: <u>12/11/12</u>				
Verbal Plugging:	Gamma Log from (3470'MD(kop) - 4460'MD, 4103(Land)			
Date Permission granted on:	Ran Gyro Log from (3450' - Surface)			
Rotary x Cable Rig				
Total Depth (feet): <u>7964'TMD, 4103'TVD</u>				
Fresh Water Depth (ft.): <u>30', 140'</u>				
Salt Water Depth (ft.): <u>1280' (wat/crude), 1650', 1700'</u>				
Is coal being mined in area (N/Y)? <u>N</u>				
Coal Depths (ft.): <u>N/A</u>				

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OPEN FLOW DATA

Producing formation Lower Huron Shale Pay zone depth (ft) 4432'MD- 7964 'MD  
4072'TVD - 4103' TVD

Gas: Initial open flow 200 MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow >1.5 MMCF/d Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests 72 Hours  
Static rock Pressure 1240 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

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: \_\_\_\_\_  
By: President  
Date: 2/20/2013



	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6	Stage 7	Stage 8
Max P	5530	5588	5755	5758	5618	5901	5947	6033
Avg P	4992	5295	5595	5657	5548	5451	5816	5883
Max R	57.6	53.6	52.4	46.7	44.7	45.3	48.4	41.0
Avg R	51.4	45.1	46.1	43.2	43.7	45.0	42.3	34.6
5 Min		2855	3299	N/A	N/A	3132	2794	2813
	Stage 9	Stage 10	Stage 11	Stage 12	Stage 13	Stage 14	Stage 15	Stage 16
Max P	5867	5604	5806	5961	5950	4986	5585	5960
Avg P	5606	5014	5498	5835	5796	4923	5489	5862
Max R	54.0	103.0	103.3	102.6	106.0	103.0	103.0	91.2
Avg R	44.6	90.6	99.5	92.8	102.0	101.0	101.0	83.3
5 Min	2553	N/A	N/A	2034	N/A	N/A	2412	2200

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