

WR-35
Rev (5-01)

DATE: 9/16/13
API #: 47-087-04717

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

Well Operator's Report of Well Work

Farm name: Kelly Family Revocable Operator Well No.: HR 434

LOCATION: Elevation: 751 Quadrangle: Peniel WV 7.5'

District: Curtis County: Roane
Latitude: 8420' Feet South of 38 Deg. 50 Min. 00 Sec.
Longitude 3054' Feet West of 81 Deg. 27 Min. 30 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>	<u>13 3/8"</u>	<u>30'</u>	<u>30'</u>	<u>N/A</u>
Inspector: <u>Ed Gainer</u>	<u>9 5/8"</u>	<u>683'</u>	<u>683'</u>	<u>348 ft3 CTS</u>
Date Permit Issued: <u>6/19/12</u>	<u>7"</u>	<u>2455'</u>	<u>2455'</u>	<u>564ft3 CTS</u>
Date Well Work Commenced: <u>3/14/13</u>	<u>4.5"</u>	<u>6956'</u>	<u>6956'</u>	<u>120 ft3</u>
Date Well Work Completed: <u>8/19/13</u>				
Verbal Plugging:				
Date Permission granted on:	<u>Gamma Log from (3700' - 4660' MD)</u>			
Rotary x Cable Rig	<u>Ran Gyro Log from (3629' - Surface) - KOP 3705'</u>			
Total Depth (feet): <u>7051'TMD, 4317'TVD</u>				
Fresh Water Depth (ft.): <u>80'</u>				
Salt Water Depth (ft.): <u>825', 1730'</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) 4217' MD - 7951' MD
4136' TVD - 4317' TVD

Gas: Initial open flow MCF/d Oil: Initial open flow Bbl/d
Final open flow 1.2 MMCF/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

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: President
Date: 9/16/2013

10/11/2013

Formation:	Top:	Bottom:
Soil/Sand/Shale	0	1588
Salt Sand	1588	1838
Big Lime	1838	1942
Big Injun	1942	2000
Shale	2000	2363
Coffee Shale	2363	2378
Devonian Shale	2378	4317
Lower Huron Section	4158	4317

All depths shown As TVD

04/20/13 Start running casing at 7:45am. Run total of 154 jts of R-3 4.5" 11.6ppf casing with 12 stg Packers Plus system to depth of 6956' KB.

04/25/13 RU N2 and start pumping after pressure test at 3500 scf/min and walk up to 10k scf/min and then to 15k scf/min. Reached a max pressure of approx. 2600 psi before leveling off at high rate – backside rate shut off after reaching approx 2100-2200 psi. Shut down after pumping approx. 180-190k scf N2

05/21/13 MIRU Nabors cmt crew. Start pumping 4- 5 bbls cmt on 4.5" annulus followed with .25bbl water and wait for approx. 1 hr for cmt to develop some strength. Continue pumping cmt (8 bbl @ 15.2 ppg, 8 bbl @ 15.2 ppg, 5 bbl @ 15.2 ppg, 3 bbl water). Shut well in.

NOTE: THERE ARE NO PERFORATED INTERVALS IN THIS STYLE OF COMPLETION. THE PACKERS WILL SERVE AS STAGE ISOLATION AND THE BALL ACTIVATED MECHANICAL SLEEVES SERVE AS THE MEANS OF COMMUNICATION FROM WELLBORE TO FORMATION. ALL DEPTHS ARE INDICATED BELOW.

Stage	Sleeve	Sleeve ID	Ball Size	Packer
1	6956.00	Shoe	N/A	6810.54
2	6719.50	2.000	2.125	6578.70
3	643.56	2.125	2.250	6347.06
4	6212.02	2.250	2.375	6115.42
5	6024.38	2.375	2.500	5883.58
6	5748.54	2.500	2.625	5607.84
7	5472.60	2.625	2.750	5376.00
8	5240.76	2.750	2.875	5144.26
9	5009.22	2.875	3.000	4912.62
10	4777.58	3.000	3.250	4680.98
11	4545.84	3.250	3.500	4449.24
12	4314.00	3.500	3.750	4217.40
Anchor				2928.00

08/16/13 MIRU Nabors frac crew. Pressure test lines, 630 psi wellhead pressure. Start pumping at 30k scf/min on Stg 1 and up rate to 50k scf/min, and pump total of 450k scf N2. Back rate down and drop 2.125" ball for Stg 2. Pump ball to sleeve with N2 at 20k scf. Land ball at 130k scf. Continue pumping and open sleeve at 3566 psi. Up rate and pump total of 1MM scf N2. Back rate down and drop 2.25" ball for Stg 3. Pump ball to sleeve with N2 at 22k scf/min, land ball at 145k scf, and open sleeve at 3612 psi (immediately after landing ball sleeve opened). Up rate and pump total of 1MM scf N2. Shut down and load balls. Drop 2.375" ball for Stg 4. Start pumping ball to sleeve with N2 at 20k scf/min. Land ball and open sleeve at 3552 psi. Up rate and pump total of 1MM scf N2. Repeat process for Stages 5 – 12.

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
Max P		5720	5771	5673	5734	5475
Avg P		5565	5304	5012	5343	5192
Max R		101.0	103.0	104.0	102.0	105.0
Avg R		83.3	100.0	101.0	99.0	101.0
Shut In			2194-5min			2064-5min
	Stage 7	Stage 8	Stage 9	Stage 10	Stage 11	Stage 12
Max P	4977	5191	5711	5787	5638	3941
Avg P	4873	4410	5674	5748	5580	3772
Max R	108.0	103.0	94.0	82.0	102.0	104.0
Avg R	107.0	89.0	90.6	81.0	98.0	102.0
Shut In			2346-5min	2336-5min		1876-5min