

WR-35  
Rev (9-11)

State of West Virginia  
Department of Environmental Protection  
Office of Oil and Gas  
Well Operator's Report of Well Work

DATE: January 21, 2013  
API #: 47-103-2641

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Farm name: LS Hoyt Operator Well No.: 402 1H

LOCATION: Elevation: 1428' Quadrangle: Pine Grove 7.5'

District: Grant County: Wetzel  
Latitude: \_\_\_\_\_ Feet South of \_\_\_\_\_ Deg. \_\_\_\_\_ Min. \_\_\_\_\_ Sec.  
Longitude \_\_\_\_\_ Feet West of \_\_\_\_\_ Deg. \_\_\_\_\_ Min. \_\_\_\_\_ Sec.

JUL 26 2013

WV Department of  
Environmental Protection

Company: HG Energy, LLC

Address:	Casing & Tubing	Used in drilling:	Left in well	Cement fill up Cu. Ft.
<u>5260 Dupont Road, Parkersburg, WV</u>	<u>20" casing</u>			
Agent: <u>Mike Kirsch</u>	<u>94#, H-40</u>	<u>40'</u>	<u>40'</u>	<u>N/A - Drilled in</u>
Inspector: <u>Derek Haught</u>				
Date Permit Issued: <u>5/6/2011</u>	<u>13 3/8" casing</u>			
Date Well Work Commenced: <u>9/01/2011</u>	<u>54.5#, J-55</u>	<u>1,370'</u>	<u>1,370'</u>	<u>Cement to Surface</u>
Date Well Work Completed: <u>11/30/2012</u>				<u>1,172 sacks</u>
Verbal Plugging:	<u>9 5/8" casing</u>	<u>3,449'</u>	<u>3,449'</u>	<u>Cement to Surface</u>
Date Permission granted on:	<u>40#, J-55</u>			<u>1,220 sacks</u>
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input checked="" type="checkbox"/>				
Total Vertical Depth (ft): <u>7,362' 7,743'</u>	<u>5 1/2" casing</u>	<u>14,002'</u>	<u>14,002'</u>	<u>Cement to Surface</u>
Total Measured Depth (ft): <u>14,048'</u>	<u>20#, P-110</u>			<u>1,960 sacks</u>
Fresh Water Depth (ft.): <u>160', 440'</u>				
Salt Water Depth (ft.): <u>1940'</u>	<u>2 3/8" tubing</u>			
Is coal being mined in area (N/Y)? <u>N</u>	<u>4.7#, L-80</u>	<u>NA</u>	<u>7,512'</u>	<u>NA</u>
Coal Depths (ft.): <u>936', 1033', 1172'</u>				
Void(s) encountered (N/Y) Depth(s) <u>N, NA</u>				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation Marcellus Pay zone depth (ft) 7,362'  
Gas: Initial open flow 11,800 MCF/d Oil: Initial open flow 158 Bbl/d  
Final open flow 9,000 MCF/d Final open flow 105 Bbl/d  
Time of open flow between initial and final tests 24 Hours  
Static rock Pressure 3,360 psig (surface pressure) after 24 Hours

Second producing formation N/A 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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I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Diane White  
Signature

2-27-13  
Date

09/27/2013

Were core samples taken? Yes \_\_\_\_\_ No X

Were cuttings caught during drilling? Yes X No \_\_\_\_\_

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list Yes, Real time Gamma Ray  
Log while drilling, via MWD tool. Also mud logs.

**NOTE: IN THE AREA BELOW 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 THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.**

Perforated Intervals, Fracturing, or Stimulating:

---See Attached Sheet---

Plug Back Details Including Plug Type and Depth(s):

Formations Encountered: \_\_\_\_\_ Top Depth / \_\_\_\_\_ Bottom Depth  
Surface:

<u>TVD Tops:</u>	<u>Bottom</u>
Big Lime - 2420	2490
Big Injun - 2490	2712
Gordon Stray - 3276	3307
Gordon - 3307	3328
Tully - 7310	7334
Hamilton - 7334	7405
Marcellus - 7405	7457 ?
	7433

40/70

LS Hoyt 402 #311 Pile Summary

Stage	# of Piles	Total Acid (gal)	Total Water (bbbl)	Total Sand (lbs)	Total Slurry (bbbl)	Ped Vol (bbbl)	100 Mesh (lbs)	30/50 Mesh (lbs)	40/70 Mesh RCS (lbs)	BDP (psi)	ISIP (psi)	5 Min SIP (psi)	10 Min SIP (psi)	15 Min SIP (psi)	ATP (psi)	Avg Rate (ft3/min)	PUMP DOWN (bbbl)
1	RDV	1,000	8,097	393,600	8,574	1,486	73,700	299,700	20,200	N/A	3,849	3,838	3,877	3,147	7,018	61	61
2	60	1,000	9,935	393,600	9,791	1,487	73,700	299,700	20,200	N/A	3,607	3,609	3,613	3,174	7,295	61	61
3	60	1,000	7,619	347,600	8,006	1,487	92,600	255,200	-	5,052	4,539	3,946	3,721	3,394	6,954	75	470
4	60	1,000	5,175	415,600	8,701	1,475	85,700	299,700	20,200	N/A	4,263	3,710	3,523	3,244	7,107	77	415
5	60	1,000	7,959	339,500	8,291	1,511	92,700	246,500	-	5,243	4,209	3,625	3,600	3,293	6,969	78	372
6	60	1,000	8,437	351,500	8,797	1,529	86,300	266,200	-	5,561	5,083	4,504	4,268	3,898	6,995	78	670
7	60	1,000	8,066	393,600	8,532	1,543	73,700	299,700	20,200	5,060	4,077	4,000	3,758	3,354	7,297	80	360
8	60	1,000	8,168	403,000	8,625	1,559	89,100	299,700	20,200	5,115	5,396	5,022	4,710	4,203	6,962	83	360
9	60	1,000	7,553	393,600	8,383	1,549	89,100	299,700	20,200	5,232	3,791	3,888	3,255	3,140	7,031	78	224
10	60	1,000	8,280	393,600	8,733	1,646	73,700	299,700	20,200	5,052	4,585	4,152	3,800	3,452	7,083	75	207
11	60	1,000	7,503	393,600	7,950	1,532	73,700	299,700	20,200	5,060	5,945	4,341	4,066	3,652	6,945	75	261
12	60	1,000	8,688	280,700	8,996	1,561	63,400	197,600	20,200	5,674	4,002	3,446	3,692	3,120	6,916	71	366
13	60	1,000	8,171	393,600	8,659	1,580	73,700	299,700	20,200	5,933	3,500	3,446	3,446	3,226	6,789	73	283
14	60	1,000	7,613	396,000	8,059	1,591	73,700	299,700	20,200	5,933	4,488	4,055	3,659	3,487	6,760	73	203
15	60	1,000	7,377	340,200	7,772	1,487	73,700	266,500	-	5,530	5,109	4,854	4,029	3,653	6,681	75	208
16	60	1,000	7,893	244,100	7,845	1,569	73,700	170,400	-	5,233	4,519	4,128	3,936	3,671	7,265	78	225
17	60	1,000	7,501	394,200	7,939	1,511	74,000	300,000	20,200	5,531	4,249	4,257	3,611	3,329	6,785	79	400
18	60	1,000	8,033	393,900	8,033	1,530	73,700	300,000	20,200	5,282	4,515	4,281	4,043	3,650	6,811	78	142
19	60	1,000	7,512	393,500	8,073	1,511	73,700	300,000	20,200	5,137	4,244	3,833	3,634	3,329	6,689	81	119
20	60	1,000	7,486	403,700	8,012	1,511	73,700	299,700	30,300	4,913	3,525	3,639	3,534	3,218	6,642	84	82
TOTAL / AVG	1,140	20,000	558,159	7,460,500	165,912	20,593	1,512,100	5,559,400	346,400	5,933	4,406	3,948	3,764	3,443	6,953	77	6,262

Perforating Detail

Stage	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method
Stage 1	13972	N/A	N/A	N/A	N/A	RDV
Stage 2	13972	13972-72	13972-72	13972-22	13980-82	PD
Stage 3	13530-32	13530-32	13400-62	13430-32	13390-92	PD
Stage 4	12290-92	13340-42	13190-92	13140-42	13100-02	PD
Stage 5	15000-02	12946-46	12900-02	12850-52	12810-12	PD
Stage 6	12710-12	12660-62	12610-12	12560-62	12520-22	PD
Stage 7	12420-22	12370-72	12320-22	12270-72	12230-32	PD
Stage 8	12130-32	12080-82	12030-32	11980-82	11940-42	PD
Stage 9	11840-42	11788-90	11740-42	11690-92	11650-52	PD
Stage 10	11550-52	11500-02	11450-52	11400-02	11360-62	PD
Stage 11	10700-02	10655-67	10610-21	10565-77	10520-31	PD
Stage 12	10432	10380-82	10330-32	10280-82	10232-34	PD
Stage 13	9940-42	9890-92	9840-42	9790-92	9740-42	PD
Stage 14	9000-02	8950-52	8900-02	8850-52	8800-02	PD
Stage 15	8562	8512	8462	8412	8362	PD