

103.02739

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: 5/17/13
API #: 49-103-02739

Farm name: JOHN RUSH Operator Well No.: 404-3H
LOCATION: Elevation: 1450 Quadrangle: PINE GROVE 9.5'
District: CENTER County: WETZEL
Latitude: Feet South of Deg. Min. Sec.
Longitude: Feet West of Deg. Min. Sec.

Company:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
HFG ENERGY, LLC 5260 DUPONT ROAD PARKERSBURG, WV 26101	20" CASING	40'	40'	N/A
Agent: MIKE KIRSCH	4 1/4" H-40			GRAVEL IN
Inspector: DEREK HAUGHT				
Date Permit Issued: 02/06/2012	13 3/8" CASING	1486.6	1486.6	Cement to SURFACE
Date Well Work Commenced: 04/30/12	5 1/2" J-55			1250SKS
Date Well Work Completed: 01/10/2013				
Verbal Plugging:	9 5/8" CASING	3530'	3530'	Cement to SURFACE
Date Permission granted on:	40" J-55			1245SKS
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input checked="" type="checkbox"/>				
Total Vertical Depth (ft): 7552.36'	5 1/2" CASING	12,384'	12,384'	Cement to SURFACE
Total Measured Depth (ft): 12,592'	20" P-110			1999SKS
Fresh Water Depth (ft.): 190', 490'				
Salt Water Depth (ft.): 1,490'	2 3/8" TUBING	N/A	7750.64'	N/A
Is coal being mined in area (N/Y)? N	4 1/4" L-80			
Coal Depths (ft.): 985', 1080', 1219'				
Void(s) encountered (N/Y) Depth(s) N				

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

Producing formation Marcellus Pay zone depth (ft) 7,504 TVD
Gas: Initial open flow 12.4 MCF/d Oil: Initial open flow 192 Bbl/d
Final open flow 11.0 MCF/d Final open flow 144 Bbl/d
Time of open flow between initial and final tests 24 Hours
Static rock Pressure 3,200 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

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.

DCW for Josh Hinton
Signature

7-12-13
Date

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JUL 20 2015

WS 7/29/15
J.L. 5/26/15
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OK AL 7/27/15

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 REAL TIME GAMMA RAY LOGS WHILE DRILLING VIA THE 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 Summary Sheet

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

Formations Encountered: Surface	Top Depth		Bottom Depth
BIG LIME	2432'	—	2503
BIG INJUN	2503'	—	2724
GORDON STRAY	3288'	—	3319
GORDON	3319	—	3340
TULLY	7659	—	7704
HAMILTON	7704	—	7991
MARCELLUS	7991	—	

Received
Office of Oil & Gas
JUL 28 2015



HG Energy John Rush 404-N-3H Gyro+MWD Off to 12592ft Survey Geodetic Report (Def Survey)

Report Date: July 26, 2012 - 03:53 PM
Client: HG Energy
Field: WV Wetzel County (NAD 27)
Structure / Block: HG Energy John Rush 404 Pad / John Rush 404-N-3H
Well: John Rush 404-N-3H
Borehole: Original Borehole
LWD / ADP: Unknown / Unknown
Survey Name: HG Energy John Rush 404-N-3H Gyro+MWD Off to 12592ft
Survey Date: July 06, 2012
Tilt / AHD / DMI / ERD Ratio: 284.247 * / 6640.078 ft / 6.430 / 0.747
Coordinate Reference System: NAD83 West Virginia State Plane, Northern Zone, US Feet
Location Lat / Long: N 39° 30' 41.60665", W 80° 33' 15.98749"
Location Grid N/E/E: N 406913.443 m/E, E 1679400.079 m/S
CRS Grid Convergence Angle: -0.7256 *
Grid Scale Factor: 0.85904078

Survey / DLS Computations: Minimum Curvature / Lub/mid
Vertical Section Azimuth: 311.861 * (Grid North)
Vertical Section Origin: 0 000 F, 0 000 S
TVD Reference Datum: KB
TVD Reference Elevation: 1470.000 ft above MSL
Sealed / Ground Elevation: 1453.000 ft above MSL
Magnetic Declination: -8.656 *
Total Gravity Field Strength: 989.0974 mgn (0.8 based)
Total Magnetic Field Strength: 52684.054 nT
Magnetic Dip Angle: 67.232 *
Declination Date: July 06, 2012
Magnetic Declination Model: IGRM 2012
North Reference: Grid North
Grid Convergence Used: -0.7256 *
Total Corr Mag North->Grid North: -7.6321 *

Local Coord Referenced To: Wet Head

Table with columns: Comments, HD (ft), Incl (°), Azim Grid (°), TVD (ft), TVDSS (ft), VSEC (ft), NS (ft), EW (ft), DLS (ft/100ft), Northing (ft), Easting (ft), Latitude (N/S * **), Longitude (E/W * **). Rows include data points from 104.00 to 6749.00 ft depth.

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103-02739

Comments	MD (ft)	Incl (°)	Atm Grid (ft)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	D.S. (ft/100ft)	Northng (ft/100ft)	Eastng (ft/100ft)	LatNode (N-S)	Longitude (W-E)
	6913.00	22.31	8.20	6903.36	6333.36	15.07	64.13	27.18	8.21	406367.67	1670487.22	N 39 38 42.44	W 80 38 15.63
	7076.00	20.28	12.22	6900.27	6300.27	29.63	60.61	32.19	9.91	406394.05	1670482.22	N 39 38 42.71	W 80 38 15.57
	6839.00	34.91	13.63	6913.87	5443.87	45.33	112.78	39.87	10.45	407028.22	1670482.71	N 39 38 43.03	W 80 38 15.48
	7003.00	42.04	16.77	6963.95	6403.95	62.92	151.13	59.25	11.50	407064.57	1670510.29	N 39 38 43.41	W 80 38 15.35
	7068.00	46.46	21.94	7009.47	6399.47	70.52	192.18	64.73	7.85	407195.61	1670524.77	N 39 38 43.81	W 80 38 15.17
	7120.00	49.05	26.37	7052.85	6382.85	62.33	233.65	64.27	8.49	407147.08	1670544.30	N 39 38 44.23	W 80 38 14.93
	7193.00	49.63	22.62	7096.30	5626.30	104.03	276.16	193.78	9.19	407185.58	1670563.01	N 39 38 44.65	W 80 38 14.69
	7258.00	43.12	12.65	7141.21	5071.21	124.56	318.41	113.54	10.27	407291.83	1670576.57	N 39 38 45.07	W 80 38 14.53
	7320.00	43.01	0.60	7187.97	5717.97	148.89	301.28	124.95	3.18	407274.70	1670584.53	N 39 38 45.49	W 80 38 14.43
	7382.00	44.71	359.72	7232.72	5762.72	172.04	403.89	128.37	11.37	407317.41	1670588.40	N 39 38 45.92	W 80 38 14.39
	7446.00	46.74	349.32	7277.46	5807.46	206.10	449.47	173.03	12.05	407362.89	1670593.97	N 39 38 46.38	W 80 38 14.46
	7508.00	50.68	342.25	7318.44	5848.44	240.01	494.82	112.44	10.58	407407.93	1670597.47	N 39 38 46.81	W 80 38 14.61
	7571.00	54.40	336.33	7356.77	5885.77	282.01	541.22	94.71	0.70	407454.63	1670594.74	N 39 38 47.27	W 80 38 14.85
	7636.00	59.05	331.69	7392.30	5922.30	333.30	590.01	70.80	0.31	407503.42	1670596.64	N 39 38 47.75	W 80 38 15.18
	7702.00	62.45	326.63	7423.07	5953.07	392.51	637.26	42.24	0.27	407552.37	1670592.23	N 39 38 48.22	W 80 38 15.63
	7764.00	66.80	324.57	7451.00	6031.00	448.50	685.73	9.69	7.57	407602.14	1670489.73	N 39 38 48.68	W 80 38 15.95
	7827.00	72.21	321.89	7473.15	6003.15	466.37	732.97	-25.64	0.47	407653.37	1670434.43	N 39 38 49.15	W 80 38 16.41
	7891.00	78.89	310.21	7490.14	6020.14	567.31	789.58	-64.84	8.49	407703.85	1670365.20	N 39 38 49.61	W 80 38 16.92
	7954.00	78.37	318.07	7503.56	6033.56	628.43	828.78	-105.61	2.81	407740.17	1670354.54	N 39 38 50.06	W 80 38 17.45
	8017.00	78.00	316.70	7515.64	6045.64	694.07	872.20	-147.31	2.27	407785.65	1670312.74	N 39 38 50.61	W 80 38 17.99
	8081.00	80.83	313.28	7527.12	6057.12	762.70	918.83	-191.85	0.10	407830.21	1670268.20	N 39 38 51.34	W 80 38 18.57
	8144.00	81.61	312.57	7536.70	6068.70	815.01	959.23	-237.44	1.81	407872.62	1670222.62	N 39 38 51.96	W 80 38 19.16
	8207.00	84.41	308.57	7544.97	6074.97	877.51	999.89	-284.83	7.71	407913.27	1670176.13	N 39 38 51.75	W 80 38 19.77
	8270.00	87.25	308.17	7548.65	6078.65	940.18	1038.02	-334.63	5.00	407951.49	1670125.20	N 39 38 52.12	W 80 38 20.41
	8333.00	90.42	300.63	7550.78	6078.78	1000.99	1074.04	-382.60	6.30	407987.42	1670078.57	N 39 38 52.47	W 80 38 21.08
	8396.00	92.31	294.93	7552.93	6076.93	1055.10	1109.11	-438.63	1.55	408022.49	1670031.24	N 39 38 52.81	W 80 38 21.76
	8459.00	93.79	305.81	7550.32	6083.32	1126.64	1145.69	-491.34	2.68	408058.06	1670018.73	N 39 38 53.17	W 80 38 22.43
	8522.00	90.85	305.48	7549.54	6078.54	1190.26	1181.76	-541.70	0.39	408095.13	1670016.31	N 39 38 53.52	W 80 38 23.08
	8585.00	90.48	303.68	7548.92	6078.92	1252.60	1217.61	-593.63	2.87	408130.63	1670006.45	N 39 38 53.89	W 80 38 23.75
	8648.00	90.45	301.55	7548.41	6076.41	1316.01	1251.49	-646.69	3.38	408164.83	1670013.39	N 39 38 54.19	W 80 38 24.43
	8711.00	90.36	300.18	7547.95	6077.95	1378.69	1283.76	-700.77	2.18	408197.15	1670019.22	N 39 38 54.51	W 80 38 25.13
	8775.00	90.59	299.03	7547.41	6077.41	1439.64	1315.67	-756.25	0.66	408228.04	1670033.84	N 39 38 54.81	W 80 38 25.84
	8838.00	90.60	290.79	7545.72	6070.72	1501.17	1348.63	-810.97	0.35	408260.24	1670045.12	N 39 38 55.12	W 80 38 26.55
	8902.00	90.48	288.89	7543.06	6078.06	1562.69	1378.22	-860.77	1.49	408291.58	1670059.32	N 39 38 55.42	W 80 38 27.27
	8965.00	90.79	284.95	7545.28	6075.28	1625.12	1409.07	-912.82	0.51	408322.63	1670083.18	N 39 38 55.71	W 80 38 27.97
	9029.00	90.85	287.01	7544.82	6074.82	1679.43	1438.14	-978.19	1.67	408352.64	1670081.81	N 39 38 56.01	W 80 38 28.70
	9093.00	90.68	289.07	7543.99	6073.99	1740.74	1469.67	-1034.44	1.81	408383.32	1670425.66	N 39 38 56.30	W 80 38 29.42
	9156.00	90.41	289.72	7543.44	6073.44	1811.30	1500.69	-1093.33	1.07	408413.64	1670378.78	N 39 38 56.60	W 80 38 30.13
	9219.00	90.87	290.13	7543.24	6073.24	1871.89	1531.23	-1143.33	1.18	408444.44	1670315.78	N 39 38 56.89	W 80 38 30.82
	9282.00	90.81	292.01	7542.87	6072.87	1933.64	1562.33	-1198.01	2.21	408475.68	1670282.10	N 39 38 57.20	W 80 38 31.53
	9345.00	90.65	301.89	7542.32	6072.32	1994.45	1594.28	-1251.15	1.90	408507.60	1670208.86	N 39 38 57.50	W 80 38 32.21
	9408.00	90.38	301.60	7541.88	6071.88	2056.51	1627.36	-1304.75	0.43	408543.70	1670155.36	N 39 38 57.83	W 80 38 32.90
	9473.00	90.68	303.28	7541.35	6071.35	2118.71	1661.24	-1357.88	2.37	408574.68	1670102.28	N 39 38 58.15	W 80 38 33.69
	9538.00	90.62	303.51	7540.57	6070.57	2182.04	1696.40	-1411.29	0.52	408609.61	1670048.84	N 39 38 58.49	W 80 38 34.27
	9598.00	90.63	304.51	7539.63	6069.63	2244.07	1731.79	-1463.61	1.50	408645.04	1670006.62	N 39 38 58.84	W 80 38 34.65
	9658.00	90.72	305.02	7538.73	6068.73	2306.06	1766.50	-1516.79	2.22	408681.04	1670004.34	N 39 38 59.19	W 80 38 35.02
	9722.00	90.69	305.37	7537.86	6067.86	2367.71	1804.79	-1566.17	0.89	408718.06	1670003.97	N 39 38 59.65	W 80 38 35.27
	9784.00	90.99	307.48	7537.07	6067.07	2431.44	1841.64	-1618.05	3.43	408754.87	1670004.05	N 39 38 59.99	W 80 38 36.01
	9844.00	90.58	307.11	7536.24	6066.24	2494.26	1878.10	-1667.57	0.86	408792.43	1670004.78	N 39 38 60.27	W 80 38 37.55
	9910.00	90.69	308.23	7535.63	6065.63	2557.10	1914.81	-1718.02	1.76	408831.63	1670004.12	N 39 38 60.57	W 80 38 38.20
	9973.00	91.55	306.03	7534.85	6064.85	2619.92	1951.69	-1768.04	2.65	408872.59	1670004.82	N 39 37 1.02	W 80 38 38.85
	10036.00	89.63	303.31	7534.58	6064.58	2682.48	1992.60	-1817.66	5.38	408915.92	1670004.49	N 39 37 1.37	W 80 38 39.51
	10099.00	83.03	301.34	7534.06	6064.06	2744.84	2029.26	-1870.80	3.13	408953.60	1670004.05	N 39 37 1.70	W 80 38 40.29
	10163.00	83.24	299.82	7533.12	6063.12	2807.33	2068.36	-1926.27	4.06	408991.68	1670003.89	N 39 37 2.01	W 80 38 42.81
	10225.00	80.14	298.69	7532.48	6062.48	2869.75	2098.13	-1980.65	1.50	409030.45	1670004.51	N 39 37 2.26	W 80 38 44.81
	10289.00	80.27	297.00	7532.23	6062.23	2928.92	2117.61	-2026.36	2.63	409069.33	1670004.70	N 39 37 2.59	W 80 38 42.33
	10351.00	80.17	295.66	7534.99	6064.99	2983.66	2145.43	-2092.86	2.29	409068.72	1670003.30	N 39 37 2.85	W 80 38 43.08
	10414.00	80.70	296.87	7535.03	6065.03	3050.31	2172.60	-2148.50	1.44	409068.30	1670003.07	N 39 37 3.11	W 80 38 43.78
	10479.00	80.65	297.28	7535.42	6065.42	3119.14	2202.32	-2207.51	1.44	409115.63	1670002.67	N 39 37 3.39	W 80 38 44.75
	10542.00	89.69	293.09	7535.64	6065.64	3174.39	2232.02	-2263.06	2.72	409145.33	1670001.12	N 39 37 3.65	W 80 38 45.24
	10606.00	88.62	301.38	7536.22	6066.22	3229.10	2264.29	-2318.38	3.74	409177.51	1670001.80	N 39 37 3.99	W 80 38 45.80
	10669.00	80.31	305.32	7536.20	6066.20	3283.43	2298.89	-2370.69	0.35	409212.33	1670003.16	N 39 37 4.33	W 80 38 46.63
	10733.00	90.69	306.38	7535.70	6065.70	3343.10	2330.31	-2422.87	1.76	409249.81	1670003.32	N 39 37 4.63	W 80 38 47.30
	10797.00	90.52	305.38	7535.03	6065.03	3402.78	2373.80	-2474.73	1.63	409287.16	1670003.48	N 39 37 5.05	W 80 38 47.87
	10860.00	80.89	305.82	7534.25	6064.25	3464.41	2416.80	-2525.63	1.08	409323.60	1670003.27	N 39 37 5.41	W 80 38 48.63
	10923.00	81.63	306.83	7533.20	6063.20	3528.14	2467.89	-2576.82	1.57	409361.16	1670003.58	N 39 37 5.77	W 80 38 49.29
	10986.00	81.24	308.42	7531.95	6061.95	3614.97	2488.37	-2626.46	2.44	409399.87	1670003.72	N 39 37 6.16	W 80 38 49.99
	11049.00	89.16	307.05	7531.72	6061.72	3677.82	2524.83	-2676.80	3.93	409438.22	1670003.00	N 39 37 6.62	W 80 38 50.57
	11112.00	80.82	306.16	7531.83	6061.83	3740.85	2563.37	-2726.21	2.69	409476.66	1670003.89	N 39 37 6.90	W 80 38 51.22
	11176.00	80.82	306.65	7531.02	6061.02	3804.48	2602.33	-2776.08	2.07	409515.62	1670003.23	N 39 37 7.27	W 80 38 51.87

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	HS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ° ' ")	Longitude (E/W ° ° ' ")
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Survey Type: Oct Survey

Survey Error Model: ISCVSA Rev 0 *** 3-D 95.000% Confidence 2.7053 sigma
 Survey Program:

Description	MD From (ft)	MD To (ft)	EQU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	20.000		Act 6 1/8	30.000	SLB_FREE GYRO-Depth Only	Original Borehole / IIS Energy John Rush 404-N-3H Gyro+MWD
	20.000	6048.000		Act 6 1/8	30.000	SLB_FREE GYRO	Original Borehole / IIS Energy John Rush 404-N-3H Gyro+MWD
	6048.000	12512.000		Act 6 1/8	30.000	SLB_MWD-STD	Original Borehole / IIS Energy John Rush 404-N-3H Gyro+MWD
	12512.000	12592.000		Act 6 1/8	30.000	SLB_BURST+TRFID	Original Borehole / IIS Energy John Rush 404-N-3H Gyro+MWD

Stage	# of Perfs	Total Acid (gal)	Total Water (bbl)	Total Sand (lbs)	Total Slurry (bbl)	Pad Vol (bbl)	100 Mesh (lbs)	40/70 Mesh (lbs)	20/40 Mesh (lbs)	30/50 Mesh (lbs)	40/70 R/C (lbs)
1	N/A	1,000	7,645	408,700	8,028	1,207	73,700	300,000	35,000		
2	50	1,000	8,330	365,300	8,895	1,234	52,700	248,900	63,700		
3	50	1,000	10,219	361,200	10,811	1,511	52,700	248,900	59,600		
4	50	1,000	8,510	345,200	9,095	1,511	52,700	248,900	43,600		
5	50	2,000	10,648	377,200	11,315	1,300	3,800	293,600	79,800		
6	50	1,000	8,354	392,600	8,975	1,540	78,500	248,900	65,200		
7	50	1,000	9,338	416,300	10,009	1,511	79,200	248,900	88,200		
8	50	1,000	8,343	329,000	8,911	1,511	72,000	203,800	53,200		
9	50	1,000	8,173	377,100	8,767	1,511	72,000	248,900	56,200		
10	50	1,000	7,917	385,800	8,523	1,511	72,000	248,900		39,000	25,900
11	50	1,000	8,360	393,000	9,005	1,511	72,000	201,600		119,400	
12	50	1,000	9,227	395,900	9,852	1,356	72,200	201,600		122,100	
13	50	1,000	8,157	313,800	8,684	1,368	72,200	201,600		40,000	
14	50	1,000	7,698	376,600	8,287	1,347	75,000	201,600		100,000	
15	50	1,000	8,720	359,400	9,322	1,310	73,700	201,600		84,100	
TOTAL / AVG	700	16,000	129,639	5,597,100	138,419	21,239	974,400	3,547,700	544,500	504,600	25,900

Perforating Detail

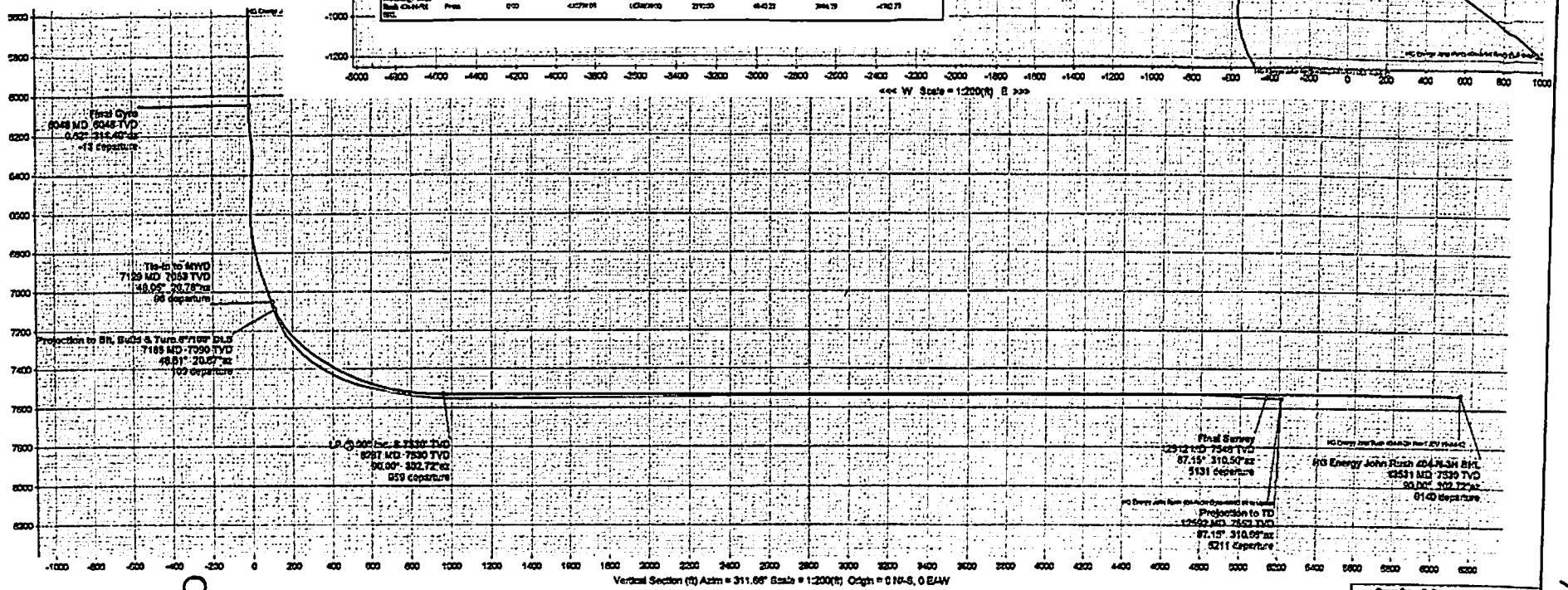
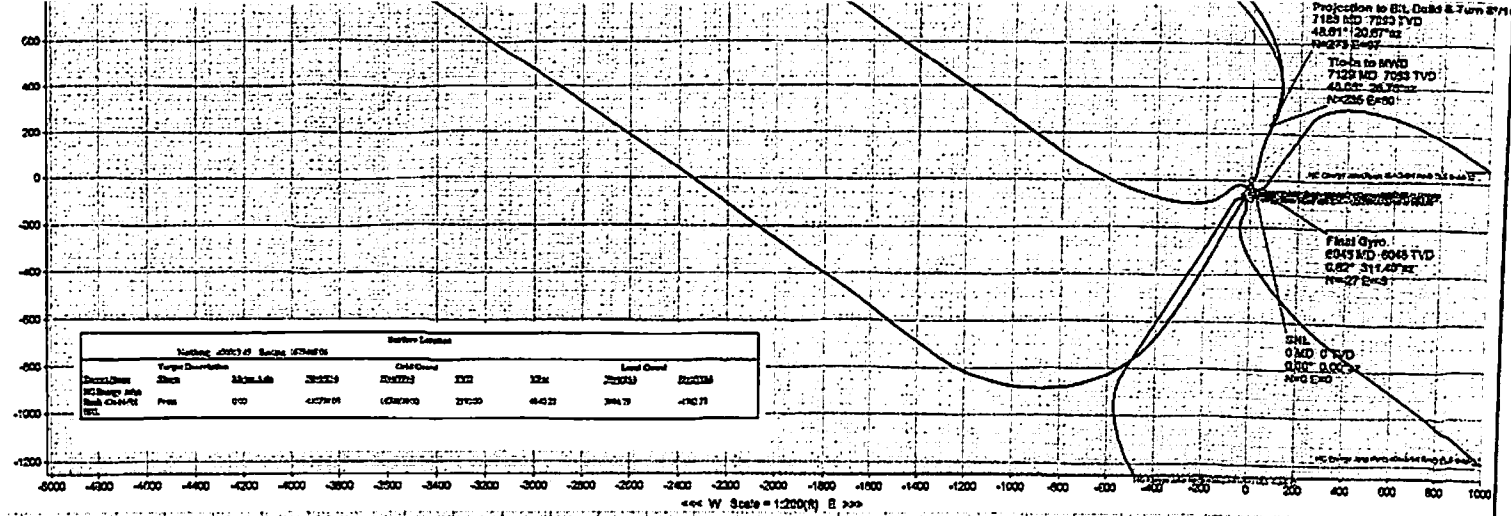
Stage 1	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method	Stage 15	1st Cluster	2nd Cluster	3rd Cluster
Plug Setting Depth	12284	N/A	N/A	N/A	N/A	RDV	Plug Setting Depth	8315	8260-61	8210-11
N/A										
Stage 2	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method				
Plug Setting Depth	12160-61	12110-11	12060-61	12010-11	11960-61	TCP				
N/A										
Stage 3	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method				
Plug Setting Depth	11910	11860-61	11810-11	11760-61	11710-11	PD				
N/A										
Stage 4	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method				
Plug Setting Depth	11610	11560-61	11510-11	11460-61	11410-11	PD				
N/A										
Stage 5	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method				
Plug Setting Depth	11310	11262-63	11210-11	11160-61	11110-11	PD				
N/A										
Stage 6	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method				
Plug Setting Depth	11010	10960-61	10910-11	10860-61	10810-11	PD				
N/A										
Stage 7	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method				
Plug Setting Depth	10710	10660-61	10610-11	10560-61	10510-11	PD				
N/A										
Stage 8	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method				
Plug Setting Depth	10410	10360-61	10310-11	10260-61	10210-11	PD				
N/A										
Stage 9	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method				
Plug Setting Depth	10110	10060-61	10008-09	9960-61	9910-11	PD				
N/A										
Stage 10	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method				
Plug Setting Depth	9810	9760-61	9710-11	9660-61	9610-11	PD				
N/A										
Stage 11	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method				
Plug Setting Depth	9510	9460-61	9410-11	9360-61	9310-11	PD				
N/A										
Stage 12	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method				
Plug Setting Depth	9210	9160-61	9110-11	9060-61	9010-11	PD				
N/A										
Stage 13	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method				
Plug Setting Depth	8910	8860-61	8810-11	8760-61	8710-11	PD				
N/A										
Stage 14	1st Cluster	2nd Cluster	3rd Cluster	4th Cluster	5th Cluster	Perf Method				
Plug Setting Depth	8620	8560-61	8510-11	8460-61	8410-11	PD				

103.02739

IP (psi)	ISIP (psi)	1 Min SIP (psi)	2 Min SIP (psi)	5 Min SIP (psi)	ATP (psi)	Avg Rate (bbl/min)	PUMP DOWN (bbl)
N/A	N/A	N/A	N/A	N/A	7,297	74	N/A
6,094	5,359	4,960	4,613	4,227	8,330	79	-
5,356	4,124	3,736	3,604	3,438	7,778	72	300
5,382	4,410	3,963	3,798	3,486	6,903	75	242
5,482	4,012	3,786	3,638	3,462	6,633	64	223
5,468	4,113	3,747	3,570	3,344	6,965	73	-
5,146	4,160	3,792	3,632	3,433	7,181	81	211
4,995	4,299	3,902	3,693	3,423	6,790	81	245
5,435	4,525	4,019	3,812	3,535	7,017	81	167
5,331	4,527	3,979	3,843	3,529	6,937	79	141
5,214	3,891	3,521	3,374	3,182	7,332	79	136
5,209	3,720	3,423	3,327	3,193	6,645	77	115
5,223	3,886	3,370	3,228	3,078	7,254	74	98
5,310	4,725	4,104	3,820	3,451	6,713	75	76
5,304	4,042	3,657	3,481	3,292	6,589	76	61
5,354	4,271	3,847	3,674	3,434	7,091	76	2,015

Cluster	5th Cluster	Perf Method
D-11	80E0-61	PD

Received
Office of Oil & Gas
JUL 23 2015



Drawn By: S. Stewart
 Date Checked: July 16, 2015 10:07:22 AM
 Checked By:
 Approved By:
 Approved Date:

Received
 Office of Oil & Gas
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HG Energy



WELL		FIELD		STRUCTURE	
John Rush 404-N-3H		WV/Westcal County (WAD 27)		Planner 63	

Assigned Formation	Top	Date	Surface Location	Address	1-800-Number
Model: 0001.0112	Top: 4131 Base: 4377	DATE: MAR 04 2013 TIME: 09:43:37	N 24 W 41.00' E 12 W 13.15'	WAD 27, W. Virginia Dept. of Highways, Martinsburg, WV Post Office Box 407140 Martinsburg, WV 26004-0140	800 855 5519 West Virginia Dept. of Highways Martinsburg, WV 26004-0140
Well ID:	Well Depth:	Well Type:	Well Status:	Well Completion:	Well Production:
0001.0112	4377	IS	Active	0.000000	0.000000

Legend

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