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WR-35
Rev. 8/23/13

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

API 47-033-5781 County HARRISON District TEN MILE
Quad SALEM 7.5' Pad Name J.M. FULTZ Field/Pool Name WOLF SUMMIT
Farm name JUNKINS, EARL & BELVA Well Number 238
Operator (as registered with the OOG) H.G. ENERGY LLC
Address 5260 DuPONT ROAD City PARKERSBURG State WV Zip 26101

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,347,315 M Easting 542,632 M
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing 4,347,183 M Easting 542,805 M

Elevation (ft) 1,390' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
N/A

Office of Oil and Gas
JAN 23 2014

Date permit issued 8/28/13 Date drilling commenced 11/14/13 Date drilling ceased 11/21/13
Date completion activities began 12/2/13 Date completion activities ceased 12/5/13
Verbal plugging (Y/N) N Date permission granted _____ Granted by _____

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft None Open mine(s) (Y/N) depths N
Salt water depth(s) ft None Void(s) encountered (Y/N) depths N
Coal depth(s) ft 740'-747' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by: _____

02/28/2014

API 47-033 - 5781 Farm name JUNKINS, EARL & BELVA Well number 238

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	12 1/4"	11 5/8"	30'	Used	LS		Sand In
Surface	8 3/4"	7"	840'	New	LS	64'	Y
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	6 1/2"	4 1/2"	3361'	New	J-55		Y
Tubing							
Packer type and depth set							

Comment Details Circulated Est. 10 bbls to surface on 7" surface cement job. Circulated Est. 10 bbls to surface on 4 1/2" cement job.

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor							
Surface	Reg Neat	215	15.6	1.18	254	Surface	8
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	50:50 Pozmix/ Econo	200/85	14.2/11.8	1.27/2.93	254/250	Surface	8
Tubing							

Drillers TD (ft) 3410' Loggers TD (ft) 3381'
 Deepest formation penetrated Fifth Sand Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 850'

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____
15 Centralizers every 64' from bottom on 4 1/2". Centralizer placed mid string on 7"

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WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS JAN 23 2014

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS WV Department of Environmental Protection

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

API 47-033 - 5781 Farm name JUNKINS, EARL & BELVA Well number 238

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	12/3/13	3184'	3196'	48	Fifth Sand

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
1	12/5/13	10	1625	2190	1484	10,000	317	

Please insert additional pages as applicable.

API 47- 033 - 5781 Farm name JUNKINS, EARL & BELVA Well number 238

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Fifth Sand</u>	<u>3024'-3038'</u> TVD	<u>3182'-3196'</u> MD
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface _____ psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas _____ mcfpd Oil _____ bpd NGL _____ bpd Water _____ bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
Sand/Shale	0	740	0	740	
Pittsburgh Coal	740	747	740	747	
Sand/Shale	747	2090	747	2122	
Big Lime	2090	2170	2122	2212	
Big Injun	2170	2222	2212	2273	
Shale	2222	2625	2273	2735	
Fifty Foot	2625	2646	2735	2758	
Shale	2646	2698	2758	2818	
Sand	2698	2864	2818	3006	
Shale	2864	3024	3006	3182	
Fifth Sand	3024	3038	3182	3196	Drilled directional S 65 degrees E a distance of 729'
Shale	3038	3239	3196	3410	
TD	3239		3410		

Please insert additional pages as applicable.

Drilling Contractor Decker Drilling
Address 11565 State Route 676 City Vincent State OH Zip 45784

Logging Company Weatherford International
Address 777 North River Avenue City Weston State WV Zip 26452

Cementing Company Baker Hughes
Address 2228 Philippi Pike City Clarksburg State WV Zip 26301

Stimulating Company Producers Service Corp.
Address 109 South Graham Street City Zanesville State OH Zip 43701

Please insert additional pages as applicable.

Completed by Boyer Heldman Telephone 304 420 1107
Signature [Signature] Title Operator Date 1/22/14

Submission of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

HG Energy, LLC

Harrison County, West Virginia

J.M. Fultz #238

J.M. Fultz #238

Wellbore #1

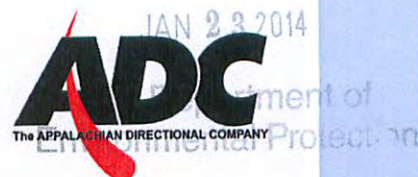
Survey: MWD

DDC Survey Report

11 December, 2013

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02/28/2014



I **Larry Wright**, certify that I am employed by **The Appalachian Directional Drilling Company (ADC)**. That I did on the day(s) of **11/18/13** thru **11/20/13** conduct or supervise the taking of a **MWD Survey** from a depth of **850** feet to a depth of **3410** feet, that the data is true, correct, complete and within the limitations of the tool as set forth by **The Appalachian Directional Drilling Company (ADC)**.; that I am authorized and qualified to make this report; that this survey was conducted at the request of **HG Energy, LLC** for the **J.M. Fultz #238** API No. **47-033-05781** in **Harrison, County WV**; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by **The Appalachian Directional Drilling Company (ADC)**.

Larry Wright

Digitally signed by Larry Wright
DN: cn=Larry Wright, o=The
Directional Drilling Company,
ou=GM of Guidance Services,
email=larryw@directionaldrillers.co
m, c=US
Date: 2013.12.12 16:27:55 -0600

• 1200 Heavy Haul Road • *Morgan Town, WV 26501* •
• *PH 304-777-2310* • *FAX 304-777-2317* •

02/28/2014

DDC
Survey Report - Geographic



Company:	HG Energy, LLC	Local Co-ordinate Reference:	Well J.M. Fultz #238
Project:	Harrison County, West Virginia	TVD Reference:	WELL @ 1393.0usft (Decker #6)
Site:	J.M. Fultz #238	MD Reference:	WELL @ 1393.0usft (Decker #6)
Well:	J.M. Fultz #238	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project	Harrison County, West Virginia		
Map System:	Universal Transverse Mercator	System Datum:	Mean Sea Level
Geo Datum:	NAD83 West Virginia - HARN		
Map Zone:	Zone 17N (84 W to 78 W)		

Site	J.M. Fultz #238				
Site Position:		Northing:	14,262,785.95 usft	Latitude:	39° 16' 26.600 N
From:	Lat/Long	Easting:	1,780,231.74 usft	Longitude:	80° 30' 21.400 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.31 °

Well	J.M. Fultz #238					
Well Position	+N/-S	0.0 usft	Northing:	14,262,785.95 usft	Latitude:	39° 16' 26.600 N
	+E/-W	0.0 usft	Easting:	1,780,231.74 usft	Longitude:	80° 30' 21.400 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	1,385.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/11/2013	-8.64	66.81	52,315

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	119.48	

Survey Program	Date	12/11/2013			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
850.0	3,410.0	MWD (Wellbore #1)			

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
850.0	0.00	0.00	850.0	0.0	0.0	14,262,785.95	1,780,231.74	39° 16' 26.600 N	80° 30' 21.400 W	
TIE IN @ 850' MD / 850' TVD										
900.0	1.90	156.60	900.0	-0.8	0.3	14,262,785.18	1,780,232.06	39° 16' 26.592 N	80° 30' 21.396 W	
930.0	2.50	150.60	930.0	-1.8	0.8	14,262,784.16	1,780,232.58	39° 16' 26.582 N	80° 30' 21.389 W	
960.0	2.40	152.00	959.9	-2.9	1.5	14,262,783.03	1,780,233.20	39° 16' 26.571 N	80° 30' 21.382 W	
990.0	2.60	150.40	989.9	-4.1	2.1	14,262,781.89	1,780,233.83	39° 16' 26.560 N	80° 30' 21.374 W	
1,020.0	3.00	133.70	1,019.9	-5.2	3.0	14,262,780.75	1,780,234.73	39° 16' 26.549 N	80° 30' 21.362 W	
1,050.0	3.90	127.70	1,049.8	-6.4	4.4	14,262,779.59	1,780,236.11	39° 16' 26.537 N	80° 30' 21.345 W	
1,080.0	4.80	119.20	1,079.7	-7.6	6.3	14,262,778.35	1,780,238.01	39° 16' 26.525 N	80° 30' 21.321 W	
1,110.0	5.50	117.70	1,109.6	-8.9	8.6	14,262,777.07	1,780,240.38	39° 16' 26.512 N	80° 30' 21.291 W	
1,140.0	5.90	123.30	1,139.5	-10.4	11.2	14,262,775.56	1,780,242.94	39° 16' 26.497 N	80° 30' 21.258 W	
1,170.0	6.00	117.60	1,169.3	-12.0	13.9	14,262,773.98	1,780,245.62	39° 16' 26.481 N	80° 30' 21.224 W	

DDC
Survey Report



Company:	HG Energy, LLC	Local Co-ordinate Reference:	Well J.M. Fultz #238
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	0.0	0.0	0.0	119.48	

Survey Program	Date	12/11/2013			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
850.0	3,410.0	MWD (Wellbore #1)			

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
TIE IN @ 850' MD / 850' TVD										
850.0	0.00	0.00	850.0	0.0	0.0	0.0	0.00	0.00	0.00	
900.0	1.90	156.60	900.0	-0.8	0.3	0.7	3.80	3.80	0.00	
930.0	2.50	150.60	930.0	-1.8	0.8	1.6	2.14	2.00	-20.00	
960.0	2.40	152.00	959.9	-2.9	1.5	2.7	0.39	-0.33	4.67	
990.0	2.60	150.40	989.9	-4.1	2.1	3.8	0.71	0.67	-5.33	
1,020.0	3.00	133.70	1,019.9	-5.2	3.0	5.2	3.01	1.33	-55.67	
1,050.0	3.90	127.70	1,049.8	-6.4	4.4	6.9	3.23	3.00	-20.00	
1,080.0	4.80	119.20	1,079.7	-7.6	6.3	9.2	3.68	3.00	-28.33	
1,110.0	5.50	117.70	1,109.6	-8.9	8.6	11.9	2.38	2.33	-5.00	

DDC
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Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
1,140.0	5.90	123.30	1,139.5	-10.4	11.2	14.9	2.28	1.33	18.67	
1,170.0	6.00	117.60	1,169.3	-12.0	13.9	18.0	2.00	0.33	-19.00	
1,200.0	5.90	115.60	1,199.1	-13.4	16.7	21.1	0.77	-0.33	-6.67	
1,230.0	5.90	114.00	1,229.0	-14.6	19.5	24.2	0.55	0.00	-5.33	
1,260.0	6.00	114.00	1,258.8	-15.9	22.3	27.2	0.33	0.33	0.00	
1,290.0	5.80	114.70	1,288.7	-17.2	25.1	30.3	0.71	-0.67	2.33	
1,320.0	5.70	117.80	1,318.5	-18.5	27.8	33.3	1.09	-0.33	10.33	
1,350.0	5.70	116.20	1,348.4	-19.9	30.5	36.3	0.53	0.00	-5.33	
1,380.0	5.20	117.50	1,378.2	-21.2	33.0	39.1	1.72	-1.67	4.33	
1,410.0	5.30	116.50	1,408.1	-22.4	35.5	41.9	0.45	0.33	-3.33	
1,440.0	5.60	116.60	1,438.0	-23.7	38.0	44.7	1.00	1.00	0.33	
1,470.0	6.40	114.60	1,467.8	-25.0	40.8	47.9	2.76	2.67	-6.67	
1,500.0	7.60	114.20	1,497.6	-26.5	44.2	51.5	4.00	4.00	-1.33	
1,530.0	8.70	111.40	1,527.3	-28.2	48.1	55.7	3.90	3.67	-9.33	
1,560.0	10.00	111.00	1,556.9	-29.9	52.6	60.5	4.34	4.33	-1.33	
1,590.0	10.90	110.00	1,586.4	-31.8	57.7	65.9	3.06	3.00	-3.33	
1,620.0	11.60	110.30	1,615.8	-33.9	63.2	71.7	2.34	2.33	1.00	
1,650.0	12.40	109.70	1,645.1	-36.0	69.1	77.8	2.70	2.67	-2.00	
1,680.0	13.20	109.60	1,674.4	-38.2	75.3	84.4	2.67	2.67	-0.33	
1,710.0	14.40	109.70	1,703.5	-40.6	82.1	91.4	4.00	4.00	0.33	
1,740.0	15.60	108.20	1,732.5	-43.1	89.4	99.1	4.20	4.00	-5.00	
1,770.0	16.90	107.20	1,761.3	-45.7	97.4	107.3	4.43	4.33	-3.33	
1,800.0	18.20	107.50	1,789.9	-48.4	106.1	116.1	4.34	4.33	1.00	
1,830.0	19.20	110.00	1,818.3	-51.5	115.2	125.6	4.27	3.33	8.33	
1,860.0	19.30	111.50	1,846.7	-55.0	124.4	135.4	1.68	0.33	5.00	
1,890.0	19.20	112.60	1,875.0	-58.7	133.6	145.2	1.25	-0.33	3.67	
1,920.0	19.70	114.20	1,903.3	-62.7	142.7	155.1	2.44	1.67	5.33	
1,950.0	20.10	115.20	1,931.5	-66.9	152.0	165.3	1.75	1.33	3.33	
1,980.0	21.20	116.80	1,959.5	-71.6	161.5	175.8	4.12	3.67	5.33	
2,010.0	22.40	117.40	1,987.4	-76.7	171.4	187.0	4.07	4.00	2.00	
2,040.0	24.00	119.00	2,015.0	-82.2	181.9	198.8	5.73	5.33	5.33	
2,070.0	25.10	119.60	2,042.3	-88.3	192.7	211.2	3.76	3.67	2.00	
2,100.0	25.00	118.90	2,069.4	-94.6	203.8	223.9	1.04	-0.33	-2.33	
2,130.0	25.30	119.30	2,096.6	-100.8	214.9	236.7	1.15	1.00	1.33	
2,160.0	27.10	121.00	2,123.5	-107.4	226.4	249.9	6.50	6.00	5.67	
2,190.0	28.70	122.80	2,150.0	-114.8	238.3	264.0	6.03	5.33	6.00	
2,220.0	30.20	124.00	2,176.1	-123.0	250.6	278.7	5.37	5.00	4.00	
2,250.0	31.10	125.20	2,202.0	-131.6	263.2	293.9	3.63	3.00	4.00	
2,280.0	31.30	124.70	2,227.6	-140.5	275.9	309.4	1.09	0.67	-1.67	
2,310.0	30.70	121.90	2,253.3	-149.0	288.9	324.8	5.21	-2.00	-9.33	
2,340.0	29.50	120.80	2,279.3	-156.9	301.7	339.8	4.40	-4.00	-3.67	
2,370.0	29.10	121.20	2,305.5	-164.4	314.3	354.5	1.48	-1.33	1.33	
2,400.0	29.50	121.50	2,331.6	-172.1	326.8	369.2	1.42	1.33	1.00	
2,430.0	29.80	122.70	2,357.7	-179.9	339.4	384.0	2.22	1.00	4.00	

DDC
Survey Report



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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
2,460.0	30.00	123.70	2,383.7	-188.1	351.9	398.9	1.79	0.67	3.33	
2,490.0	29.70	124.60	2,409.7	-196.5	364.3	413.8	1.80	-1.00	3.00	
2,520.0	29.50	126.00	2,435.8	-205.1	376.4	428.5	2.40	-0.67	4.67	
2,550.0	29.30	125.70	2,461.9	-213.7	388.3	443.2	0.83	-0.67	-1.00	
2,580.0	28.50	124.70	2,488.2	-222.1	400.1	457.6	3.12	-2.67	-3.33	
2,610.0	28.20	123.50	2,514.6	-230.0	411.9	471.8	2.15	-1.00	-4.00	
2,640.0	28.30	124.40	2,541.0	-238.0	423.7	486.0	1.46	0.33	3.00	
2,670.0	28.30	125.00	2,567.4	-246.1	435.4	500.1	0.95	0.00	2.00	
2,700.0	28.30	125.60	2,593.9	-254.3	447.0	514.3	0.95	0.00	2.00	
2,730.0	28.10	126.10	2,620.3	-262.6	458.5	528.4	1.03	-0.67	1.67	
2,760.0	28.30	126.90	2,646.7	-271.0	469.9	542.4	1.43	0.67	2.67	
2,790.0	26.90	125.70	2,673.3	-279.3	481.1	556.2	5.02	-4.67	-4.00	
2,820.0	26.50	125.40	2,700.1	-287.1	492.1	569.6	1.41	-1.33	-1.00	
2,850.0	26.00	125.50	2,727.0	-294.8	502.9	582.8	1.67	-1.67	0.33	
2,880.0	26.00	125.70	2,754.0	-302.4	513.6	595.9	0.29	0.00	0.67	
2,910.0	26.70	126.30	2,780.9	-310.3	524.3	609.1	2.50	2.33	2.00	
2,940.0	26.90	125.90	2,807.7	-318.2	535.3	622.6	0.90	0.67	-1.33	
2,970.0	27.70	124.90	2,834.3	-326.2	546.5	636.3	3.07	2.67	-3.33	
3,000.0	28.40	124.10	2,860.8	-334.2	558.1	650.3	2.65	2.33	-2.67	
3,030.0	27.60	123.10	2,887.3	-342.0	569.8	664.4	3.09	-2.67	-3.33	
3,060.0	26.80	121.10	2,914.0	-349.3	581.5	678.1	4.05	-2.67	-6.67	
3,090.0	26.10	120.00	2,940.8	-356.1	593.0	691.4	2.85	-2.33	-3.67	
3,120.0	25.00	118.10	2,967.9	-362.4	604.3	704.4	4.57	-3.67	-6.33	
3,150.0	23.90	116.60	2,995.2	-368.1	615.3	716.8	4.21	-3.67	-5.00	
3,180.0	23.00	115.20	3,022.7	-373.3	626.0	728.7	3.53	-3.00	-4.67	
3,210.0	22.20	112.70	3,050.4	-378.0	636.6	740.2	4.17	-2.67	-8.33	
3,240.0	21.50	110.40	3,078.3	-382.1	646.9	751.2	3.69	-2.33	-7.67	
3,270.0	20.70	108.10	3,106.2	-385.6	657.1	761.8	3.84	-2.67	-7.67	
3,300.0	19.70	105.70	3,134.4	-388.7	667.0	771.9	4.33	-3.33	-8.00	
3,330.0	18.80	103.60	3,162.7	-391.2	676.6	781.5	3.78	-3.00	-7.00	
3,360.0	18.00	101.70	3,191.2	-393.2	685.8	790.6	3.33	-2.67	-6.33	
TD @ 3410' MD / 3239' TVD										
3,410.0	18.00	101.00	3,238.7	-396.3	701.0	805.3	0.43	0.00	-1.40	

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
850.0	850.0	0.0	0.0	TIE IN @ 850' MD / 850' TVD
3,410.0	3,238.7	-396.3	701.0	TD @ 3410' MD / 3239' TVD

Checked By: _____ Approved By: _____ Date: _____

HG Energy, LLC

Harrison County, West Virginia

J.M. Fultz #238

J.M. Fultz #238

Wellbore #1

Design: Wellbore #1

Survey Report - Geographic

07 January, 2014



02/28/2014

DDC
Survey Report - Geographic



Company:	HG Energy, LLC	Local Co-ordinate Reference:	Well J.M. Fultz #238
Project:	Harrison County, West Virginia	TVD Reference:	WELL @ 1393.0usft (Decker #6)
Site:	J.M. Fultz #238	MD Reference:	WELL @ 1393.0usft (Decker #6)
Well:	J.M. Fultz #238	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
2,850.0	26.00	125.50	2,727.0	-294.8	502.9	14,262,491.15	1,780,734.61	39° 16' 23.658 N	80° 30' 15.024 W
2,880.0	26.00	125.70	2,754.0	-302.4	513.6	14,262,483.50	1,780,745.30	39° 16' 23.582 N	80° 30' 14.888 W
2,910.0	26.70	126.30	2,780.9	-310.3	524.3	14,262,475.67	1,780,756.07	39° 16' 23.504 N	80° 30' 14.752 W
2,940.0	26.90	125.90	2,807.7	-318.2	535.3	14,262,467.70	1,780,767.00	39° 16' 23.425 N	80° 30' 14.613 W
2,970.0	27.70	124.90	2,834.3	-326.2	546.5	14,262,459.73	1,780,778.22	39° 16' 23.345 N	80° 30' 14.471 W
3,000.0	28.40	124.10	2,860.8	-334.2	558.1	14,262,451.74	1,780,789.84	39° 16' 23.265 N	80° 30' 14.324 W
3,030.0	27.60	123.10	2,887.3	-342.0	569.8	14,262,443.95	1,780,801.57	39° 16' 23.188 N	80° 30' 14.175 W
3,060.0	26.80	121.10	2,914.0	-349.3	581.5	14,262,436.66	1,780,813.19	39° 16' 23.115 N	80° 30' 14.028 W
3,090.0	26.10	120.00	2,940.8	-356.1	593.0	14,262,429.87	1,780,824.69	39° 16' 23.047 N	80° 30' 13.882 W
3,120.0	25.00	118.10	2,967.9	-362.4	604.3	14,262,423.58	1,780,836.00	39° 16' 22.985 N	80° 30' 13.739 W
3,150.0	23.90	116.60	2,995.2	-368.1	615.3	14,262,417.87	1,780,847.03	39° 16' 22.928 N	80° 30' 13.599 W
3,180.0	23.00	115.20	3,022.7	-373.3	626.0	14,262,412.66	1,780,857.76	39° 16' 22.875 N	80° 30' 13.463 W
3,210.0	22.20	112.70	3,050.4	-378.0	636.6	14,262,407.97	1,780,868.30	39° 16' 22.828 N	80° 30' 13.329 W
3,240.0	21.50	110.40	3,078.3	-382.1	646.9	14,262,403.87	1,780,878.68	39° 16' 22.787 N	80° 30' 13.197 W
3,270.0	20.70	108.10	3,106.2	-385.6	657.1	14,262,400.31	1,780,888.87	39° 16' 22.752 N	80° 30' 13.068 W
3,300.0	19.70	105.70	3,134.4	-388.7	667.0	14,262,397.29	1,780,898.78	39° 16' 22.721 N	80° 30' 12.942 W
3,330.0	18.80	103.60	3,162.7	-391.2	676.6	14,262,394.79	1,780,908.35	39° 16' 22.696 N	80° 30' 12.820 W
3,360.0	18.00	101.70	3,191.2	-393.2	685.8	14,262,392.71	1,780,917.58	39° 16' 22.675 N	80° 30' 12.703 W
3,410.0	18.00	101.00	3,238.7	-396.3	701.0	14,262,389.67	1,780,932.73	39° 16' 22.644 N	80° 30' 12.511 W

TD @ 3410' MD / 3239' TVD

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,410.0	3,238.7	-396.3	701.0	TD @ 3410' MD / 3239' TVD

Checked By: _____ Approved By: _____ Date: _____



PROJECT DETAILS: Harrison County, West Virginia
 Geodetic System: US State Plane 1927 (Exact solution)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: West Virginia North 4701
 System Datum: Mean Sea Level

Company Name: HG Energy, LLC
 J.M. Fultz #238
 Harrison County, West Virginia
 Rig: Decker #6
 Created By: James Dawson
 Date: 11/20/2013

J.M. Fultz #238
 Harrison County, West Virginia
Q130957 & AM-13911
 Design #1

HG Energy

M G T
 Azimuths to Grid North
 Correction: -8.00°
 Magnetic Field
 Strength: 52328.4snT
 Dip Angle: 66.82°
 Date: 10/31/2013
 Model: IGRF2010

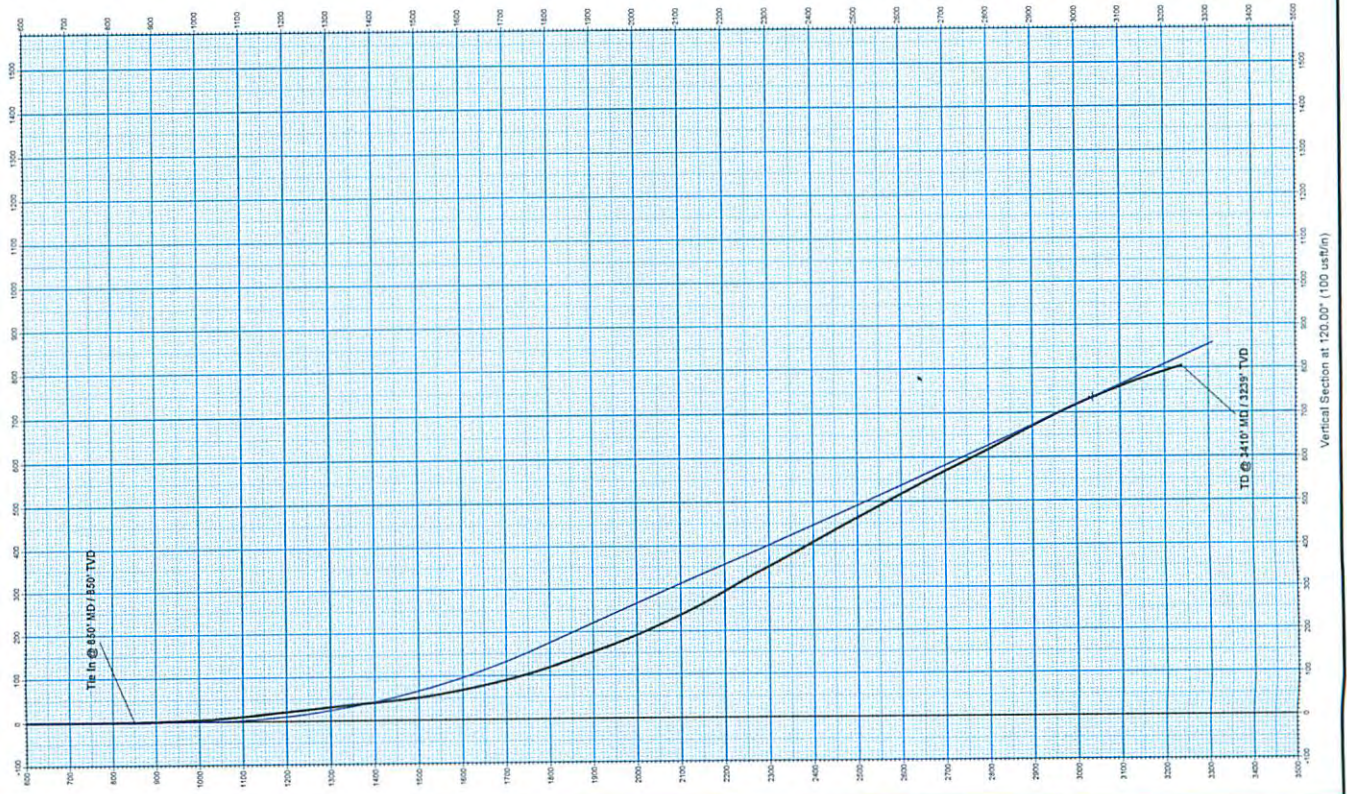
WELL DETAILS: J.M. Fultz #238
 Ground Level: 1355.0
 Easting: 1175250.9
 Northing: 39° 16' 24.00" N
 +N/A +EAW 0.0 0.0
 20581.98 80° 30' 51.00" W

ANNOTATIONS

MD	Inc	AZ	TVD	Vel	Depth	Remarks
3410.0	18.00	101.20	2328.7	701.0	811.6	TD @ 3410' MD / 3239' TVD

DESIGN TARGET DETAILS

Name	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude
Target J.M. Fultz #238 - plan hits target center	3537.0	-357.5	535.5	29163.58	171656.58	39° 16' 23.28" N	80° 30' 13.25" W



Prepared for:
H G Energy



INVOICE #:	16042
WELL NAME:	J M Fultz # 238
STATE & COUNTY:	Harrison,WV
TOWNSHIP/FIELD:	Wolf Summitt
DATE of SERVICE:	12/5/2013
CUSTOMER PO#	

Description	Notes	Amount	U
FLUID PUMP CHARGE 0-3000 PSI MIN CHARGE 4 HRS		1	
BLENDER CHARGE 0-10 BPM		1	
MILEAGE CHARGE PER UNIT ONE WAY	2 Units @ 70 Miles	0	
IC ACID 15%		300	(
PRO HIB II		0.5	(
ACID DELIVERY		2	
PRO CLA LOK (KCL SUBSTITUTE)		20	(
PRO NE-21		10	(
PRO GEL 4		250	
BUFFER I		50	
BUFFER II		50	
BIO CLEAR 750		1	
AP BREAKER		22	
BXL-A		15	(
BXL-10C		15	(
SAND 20/40 OTTAWA		100	(
SAND DELIVERY / TON MILES		350	T
DATA VAN		1	S

Customer Approval: _____