

HG Energy, LLC
Roane County, West Virginia
A.B. Smith #122
A.B. Smith #122

Wellbore #1

Design: Wellbore #1

Survey Report - Geographic

04 August, 2015



WV Department of
Environmental Protection

09/04/2015

HP
Survey Report - Geographic



Company: HG Energy, LLC	Local Co-ordinate Reference: Well A.B. Smith #122
Project: Roane County, West Virginia	TVD Reference: WELL @ 1156.0usft (Decker #9)
Site: A.B. Smith #122	MD Reference: WELL @ 1156.0usft (Decker #9)
Well: A.B. Smith #122	North Reference: Grid
Wellbore: Wellbore #1	Survey Calculation Method: Minimum Curvature
Design: Wellbore #1	Database: Compass

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

Site A.B. Smith #122

Site Position:		Northing: 14,056,000.92 usft	Latitude: 38° 42' 24.400 N
From: Lat/Long		Easting: 1,558,181.92 usft	Longitude: 81° 17' 17.800 W
Position Uncertainty: 0.0 usft		Slot Radius: 13-3/16 "	Grid Convergence: -0.18 °

Well A.B. Smith #122

Well Position	+N/-S 0.0 usft	Northing: 14,056,000.92 usft	Latitude: 38° 42' 24.400 N
	+E/-W 0.0 usft	Easting: 1,558,181.92 usft	Longitude: 81° 17' 17.800 W
Position Uncertainty	0.0 usft	Wellhead Elevation: 0.0 usft	Ground Level: 1,148.0 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	7/22/2015	-7.99	66.34	51,905

Design Wellbore #1

Audit Notes:

Version: 1.0	Phase: ACTUAL	Tie On Depth: 0.0
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Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	78.50

Survey Program	Date 8/4/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
500.0	2,660.0	MWD (Wellbore #1)	MWD default	MWD - Standard

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	14,056,000.92	1,558,181.92	38° 42' 24.400 N	81° 17' 17.800 W
500.0	0.00	0.00	500.0	0.0	0.0	14,056,000.92	1,558,181.92	38° 42' 24.400 N	81° 17' 17.800 W
First MWD Survey @ 500' MD / 500' TVD									
588.0	0.22	173.70	588.0	-0.2	0.0	14,056,000.76	1,558,181.93	38° 42' 24.398 N	81° 17' 17.800 W
618.0	0.40	140.48	618.0	-0.3	0.1	14,056,000.62	1,558,182.01	38° 42' 24.397 N	81° 17' 17.799 W
648.0	0.71	118.09	648.0	-0.5	0.3	14,056,000.45	1,558,182.24	38° 42' 24.395 N	81° 17' 17.799 W
678.0	2.30	90.20	678.0	-0.6	1.1	14,056,000.36	1,558,183.00	38° 42' 24.394 N	81° 17' 17.786 W
708.0	3.58	92.80	707.9	-0.6	2.6	14,056,000.31	1,558,184.54	38° 42' 24.394 N	81° 17' 17.767 W
738.0	4.91	89.80	737.9	-0.7	4.8	14,056,000.27	1,558,186.76	38° 42' 24.394 N	81° 17' 17.739 W
768.0	6.32	88.39	767.7	-0.6	7.8	14,056,000.32	1,558,189.70	38° 42' 24.394 N	81° 17' 17.702 W
798.0	7.51	82.40	797.5	-0.3	11.4	14,056,000.63	1,558,193.29	38° 42' 24.397 N	81° 17' 17.656 W
828.0	8.62	79.88	827.2	0.4	15.5	14,056,001.28	1,558,197.45	38° 42' 24.400 N	81° 17' 17.604 W

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Wellbore: Wellbore #1
Design: Wellbore #1

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MD Reference: WELL @ 1156.0usft (Decker #9)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Compass

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
858.0	9.99	75.08	856.8	1.4	20.3	14,056,002.35	1,558,202.17	38° 42' 24.415 N	81° 17' 17.544 W
888.0	11.18	75.39	886.3	2.8	25.6	14,056,003.75	1,558,207.50	38° 42' 24.429 N	81° 17' 17.477 W
918.0	12.51	72.79	915.7	4.5	31.5	14,056,005.45	1,558,213.42	38° 42' 24.446 N	81° 17' 17.403 W
948.0	13.79	71.91	944.9	6.6	38.0	14,056,007.52	1,558,219.92	38° 42' 24.466 N	81° 17' 17.321 W
978.0	14.72	72.08	973.9	8.9	45.0	14,056,009.80	1,558,226.95	38° 42' 24.489 N	81° 17' 17.232 W
1,008.0	15.60	71.07	1,002.9	11.4	52.5	14,056,012.28	1,558,234.39	38° 42' 24.514 N	81° 17' 17.138 W
1,038.0	16.31	71.38	1,031.7	14.0	60.3	14,056,014.94	1,558,242.20	38° 42' 24.540 N	81° 17' 17.040 W
1,068.0	17.28	72.00	1,060.5	16.7	68.5	14,056,017.66	1,558,250.43	38° 42' 24.568 N	81° 17' 16.936 W
1,098.0	18.12	73.27	1,089.0	19.5	77.2	14,056,020.38	1,558,259.13	38° 42' 24.595 N	81° 17' 16.826 W
1,127.0	18.69	74.99	1,116.6	22.0	86.0	14,056,022.88	1,558,267.94	38° 42' 24.620 N	81° 17' 16.715 W
1,157.0	18.91	74.77	1,145.0	24.5	95.4	14,056,025.40	1,558,277.27	38° 42' 24.645 N	81° 17' 16.598 W
1,187.0	19.31	76.18	1,173.3	26.9	104.9	14,056,027.86	1,558,286.78	38° 42' 24.670 N	81° 17' 16.478 W
1,217.0	19.40	75.79	1,201.6	29.3	114.5	14,056,030.27	1,558,296.43	38° 42' 24.694 N	81° 17' 16.356 W
1,247.0	20.19	76.09	1,229.8	31.8	124.4	14,056,032.74	1,558,306.28	38° 42' 24.718 N	81° 17' 16.232 W
1,277.0	20.28	75.48	1,258.0	34.4	134.4	14,056,035.29	1,558,316.34	38° 42' 24.744 N	81° 17' 16.105 W
1,307.0	20.81	75.61	1,286.1	37.0	144.6	14,056,037.91	1,558,326.54	38° 42' 24.770 N	81° 17' 15.976 W
1,337.0	21.39	75.87	1,314.1	39.6	155.1	14,056,040.57	1,558,337.00	38° 42' 24.797 N	81° 17' 15.844 W
1,367.0	21.92	76.89	1,342.0	42.3	165.8	14,056,043.18	1,558,347.76	38° 42' 24.823 N	81° 17' 15.709 W
1,397.0	22.01	77.90	1,369.8	44.7	176.8	14,056,045.63	1,558,358.71	38° 42' 24.848 N	81° 17' 15.571 W
1,427.0	22.71	77.99	1,397.5	47.1	188.0	14,056,048.01	1,558,369.87	38° 42' 24.871 N	81° 17' 15.430 W
1,457.0	23.42	79.71	1,425.1	49.4	199.5	14,056,050.28	1,558,381.41	38° 42' 24.894 N	81° 17' 15.284 W
1,487.0	24.61	81.29	1,452.5	51.4	211.5	14,056,052.29	1,558,393.45	38° 42' 24.915 N	81° 17' 15.133 W
1,517.0	25.72	83.67	1,479.7	53.0	224.2	14,056,053.96	1,558,406.09	38° 42' 24.931 N	81° 17' 14.973 W
1,547.0	26.78	85.39	1,506.6	54.3	237.4	14,056,055.22	1,558,419.30	38° 42' 24.944 N	81° 17' 14.806 W
1,577.0	28.59	86.67	1,533.1	55.3	251.3	14,056,056.18	1,558,433.20	38° 42' 24.954 N	81° 17' 14.631 W
1,607.0	29.39	87.29	1,559.4	56.0	265.8	14,056,056.94	1,558,447.72	38° 42' 24.962 N	81° 17' 14.448 W
1,637.0	30.40	86.98	1,585.4	56.8	280.7	14,056,057.69	1,558,462.66	38° 42' 24.970 N	81° 17' 14.259 W
1,667.0	31.20	86.27	1,611.2	57.7	296.1	14,056,058.60	1,558,477.99	38° 42' 24.979 N	81° 17' 14.066 W
1,697.0	32.61	85.30	1,636.6	58.8	311.9	14,056,059.76	1,558,493.80	38° 42' 24.992 N	81° 17' 13.866 W
1,727.0	33.50	83.89	1,661.8	60.4	328.2	14,056,061.31	1,558,510.09	38° 42' 25.007 N	81° 17' 13.661 W
1,757.0	34.51	81.91	1,686.6	62.5	344.8	14,056,063.38	1,558,526.74	38° 42' 25.028 N	81° 17' 13.451 W
1,787.0	36.19	82.00	1,711.1	64.9	362.0	14,056,065.81	1,558,543.92	38° 42' 25.053 N	81° 17' 13.234 W
1,817.0	36.81	82.00	1,735.2	67.4	379.7	14,056,068.30	1,558,561.59	38° 42' 25.078 N	81° 17' 13.011 W
1,847.0	37.61	82.70	1,759.1	69.8	397.7	14,056,070.71	1,558,579.57	38° 42' 25.102 N	81° 17' 12.784 W
1,877.0	39.02	82.18	1,782.7	72.2	416.1	14,056,073.16	1,558,598.01	38° 42' 25.127 N	81° 17' 12.552 W
1,907.0	40.39	81.47	1,805.7	75.0	435.1	14,056,075.89	1,558,616.98	38° 42' 25.155 N	81° 17' 12.313 W
1,937.0	41.41	80.90	1,828.4	78.0	454.5	14,056,078.90	1,558,636.39	38° 42' 25.185 N	81° 17' 12.068 W
1,967.0	42.60	79.88	1,850.7	81.3	474.3	14,056,082.25	1,558,656.18	38° 42' 25.219 N	81° 17' 11.818 W
1,997.0	44.10	79.49	1,872.5	85.0	494.5	14,056,085.94	1,558,676.44	38° 42' 25.256 N	81° 17' 11.563 W
2,027.0	45.12	78.87	1,893.9	89.0	515.2	14,056,089.89	1,558,697.14	38° 42' 25.296 N	81° 17' 11.302 W
2,057.0	46.62	78.47	1,914.8	93.2	536.3	14,056,094.13	1,558,718.25	38° 42' 25.338 N	81° 17' 11.035 W
2,087.0	48.52	77.50	1,935.0	97.8	558.0	14,056,098.74	1,558,739.90	38° 42' 25.385 N	81° 17' 10.762 W
2,117.0	49.80	77.11	1,954.6	102.8	580.1	14,056,103.73	1,558,762.04	38° 42' 25.435 N	81° 17' 10.483 W
2,147.0	50.60	75.70	1,973.8	108.2	602.5	14,056,109.15	1,558,784.45	38° 42' 25.489 N	81° 17' 10.200 W
2,207.0	49.40	74.68	2,012.4	120.0	647.0	14,056,120.89	1,558,828.88	38° 42' 25.606 N	81° 17' 9.640 W
2,237.0	48.08	74.11	2,032.2	126.0	668.7	14,056,126.96	1,558,850.60	38° 42' 25.667 N	81° 17' 9.368 W
2,267.0	48.08	74.20	2,052.2	132.1	690.2	14,056,133.05	1,558,872.07	38° 42' 25.728 N	81° 17' 9.096 W
2,297.0	48.30	74.51	2,072.2	138.2	711.7	14,056,139.08	1,558,893.61	38° 42' 25.789 N	81° 17' 8.824 W
2,327.0	48.92	74.51	2,092.1	144.2	733.4	14,056,145.09	1,558,915.30	38° 42' 25.848 N	81° 17' 8.551 W
2,357.0	49.09	73.10	2,111.7	150.5	755.1	14,056,151.41	1,558,937.04	38° 42' 25.914 N	81° 17' 8.276 W
2,387.0	49.40	72.70	2,131.3	157.2	776.8	14,056,158.09	1,558,958.76	38° 42' 25.978 N	81° 17' 8.003 W
2,417.0	49.49	72.48	2,150.8	164.0	798.6	14,056,164.91	1,558,980.51	38° 42' 26.046 N	81° 17' 7.728 W
2,447.0	49.80	71.51	2,170.3	171.1	820.3	14,056,171.98	1,559,002.25	38° 42' 26.117 N	81° 17' 7.454 W
2,477.0	50.11	69.97	2,189.6	178.6	842.0	14,056,179.55	1,559,023.93	38° 42' 26.192 N	81° 17' 7.181 W
2,507.0	48.21	67.90	2,209.2	186.8	863.2	14,056,187.70	1,559,045.11	38° 42' 26.274 N	81° 17' 6.904 W

HP
Survey Report - Geographic



Company: HG Energy, LLC	Local Co-ordinate Reference: Well A.B. Smith #122
Project: Roane County, West Virginia	TVD Reference: WELL @ 1156.0usft (Decker #9)
Site: A.B. Smith #122	MD Reference: WELL @ 1156.0usft (Decker #9)
Well: A.B. Smith #122	North Reference: Grid
Wellbore: Wellbore #1	Survey Calculation Method: Minimum Curvature
Design: Wellbore #1	Database: Compass

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
2,537.0	46.18	66.71	2,229.6	195.3	883.5	14,056,196.19	1,559,065.41	38° 42' 26.358 N	81° 17' 6.658 W
2,597.0	41.71	64.55	2,272.8	212.4	921.4	14,056,213.34	1,559,103.34	38° 42' 26.529 N	81° 17' 6.180 W
2,660.0	41.71	64.55	2,319.8	230.4	959.3	14,056,231.35	1,559,141.19	38° 42' 26.708 N	81° 17' 5.703 W

TD @ 2660' MD / 2320' TVD

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
500.0	500.0	0.0	0.0	First MWD Survey @ 500' MD / 500' TVD
2,660.0	2,319.8	230.4	959.3	TD @ 2660' MD / 2320' TVD

Checked By: _____	Approved By: _____	Date: _____
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Environmental Protection

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Roane County, West Virginia

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Wellbore #1

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Well Position	+N-S	0.0 usft	Northing:	14,056,000.92 usft	Latitude:	38° 42' 24.400 N
	+E-W	0.0 usft	Easting:	1,558,181.91 usft	Longitude:	81° 17' 17.800 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	1,148.0 usft

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	IGRF2015	7/22/2015	-7.99	66.34	51.905

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Audit Notes:		Phase:	ACTUAL	Tie On Depth:	0.0
Version:	1.0	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
Vertical Section:		0.0	0.0	0.0	78.50
Survey Program:	DATE: 8/4/2015				
From (usft)	500.0	Survey (Wellbore)	Tool Name	Description	
		2,660.0	MWD default	MWD - Standard	

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MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.0	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.0	0.00	
First MWD Survey @ 500' MD / 500' TVD										
588.0	0.22	173.70	588.0	-0.2	0.0	0.0	0.25	0.2	173.70	
618.0	0.40	140.48	618.0	-0.3	0.1	0.0	0.82	0.3	163.35	
648.0	0.71	118.09	648.0	-0.5	0.3	0.2	1.24	0.6	145.82	
678.0	2.30	90.20	678.0	-0.6	1.1	1.0	5.68	1.2	117.39	
708.0	3.58	92.80	707.9	-0.6	2.6	2.5	4.29	2.7	103.12	
738.0	4.91	89.80	737.9	-0.7	4.8	4.6	4.49	4.9	97.68	
768.0	6.32	88.39	767.7	-0.6	7.8	7.5	4.72	7.8	94.43	
798.0	7.51	82.40	797.5	-0.3	11.4	11.1	4.63	11.4	91.49	
828.0	8.62	79.88	827.2	0.4	15.5	15.3	3.88	15.5	88.68	
858.0	9.99	75.08	856.8	1.4	20.3	20.1	5.24	20.3	85.98	
888.0	11.18	75.39	886.3	2.8	25.6	25.6	3.97	25.7	83.70	
918.0	12.51	72.79	915.7	4.5	31.5	31.8	4.78	31.8	81.83	
948.0	13.79	71.91	944.9	6.6	38.0	38.6	4.32	38.6	80.16	
978.0	14.72	72.08	973.9	8.9	45.0	45.9	3.10	45.9	78.85	
1,008.0	15.60	71.07	1,002.9	11.4	52.5	53.7	3.06	53.7	77.79	
1,038.0	16.31	71.38	1,031.7	14.0	60.3	61.9	2.38	61.9	76.92	
1,068.0	17.28	72.00	1,060.5	16.7	68.5	70.5	3.29	70.5	76.28	
1,098.0	18.12	73.27	1,089.0	19.5	77.2	79.5	3.08	79.6	75.86	
1,127.0	18.99	74.99	1,116.6	22.0	86.0	88.7	2.71	88.8	75.68	
1,157.0	19.81	74.77	1,145.0	24.5	95.4	98.3	0.77	98.5	75.60	
1,187.0	19.99	76.18	1,173.3	26.9	104.9	108.1	2.04	108.3	75.59	
1,217.0	19.99	75.79	1,201.6	29.3	114.5	118.1	0.53	118.2	75.63	
1,247.0	20.00	76.09	1,229.8	31.8	124.4	128.2	2.66	128.4	75.65	
1,277.0	20.28	75.48	1,258.0	34.4	134.4	138.6	0.76	138.7	75.66	

Environmental Protection
 Department
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 MD Reference: WELL @ 1156.0usft (Decker #9)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: Compass

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)
1,307.0	20.81	75.61	1,286.1	37.0	144.6	149.1	1.77	149.3	75.65
1,337.0	21.39	75.87	1,314.1	39.6	155.1	159.9	1.96	160.1	75.66
1,367.0	21.92	76.89	1,342.0	42.3	165.8	170.9	2.17	171.1	75.71
1,397.0	22.01	77.90	1,369.8	44.7	176.8	182.2	1.29	182.4	75.81
1,427.0	22.71	77.99	1,397.5	47.1	188.0	193.6	2.34	193.8	75.94
1,457.0	23.42	79.71	1,425.1	49.4	199.5	205.3	3.26	205.5	76.10
1,487.0	24.61	81.29	1,452.5	51.4	211.5	217.5	4.51	217.7	76.35
1,517.0	25.72	83.67	1,479.7	53.0	224.2	230.2	5.01	230.4	76.69
1,547.0	26.78	85.39	1,506.6	54.3	237.4	243.4	4.35	243.5	77.12
1,577.0	28.59	86.67	1,533.1	55.3	251.3	257.3	6.35	257.3	77.60
1,607.0	29.39	87.29	1,559.4	56.0	265.8	271.6	2.85	271.6	78.10
1,637.0	30.40	86.98	1,585.4	56.8	280.7	286.4	3.41	286.4	78.57
1,667.0	31.20	86.27	1,611.2	57.7	296.1	301.6	2.93	301.6	78.98
1,697.0	32.61	85.30	1,636.6	58.8	311.9	317.4	5.00	317.4	79.32
1,727.0	33.50	83.89	1,661.8	60.4	328.2	333.6	3.92	333.7	79.57
1,757.0	34.51	81.91	1,686.6	62.5	344.8	350.4	5.00	350.4	79.73
1,787.0	36.19	82.00	1,711.1	64.9	362.0	367.7	5.60	367.8	79.84
1,817.0	36.81	82.00	1,735.2	67.4	379.7	385.5	2.07	385.6	79.94
1,847.0	37.61	82.70	1,759.1	69.8	397.7	403.6	3.02	403.7	80.05
1,877.0	39.02	82.18	1,782.7	72.2	416.1	422.1	4.82	422.3	80.15
1,897.0	40.19	81.47	1,805.7	75.0	435.1	441.3	4.81	441.5	80.22
1,917.0	41.51	80.90	1,828.4	78.0	454.5	460.9	3.62	461.1	80.26
1,937.0	42.50	79.88	1,850.7	81.3	474.3	481.0	4.57	481.2	80.27
1,957.0	43.50	79.49	1,872.5	85.0	494.5	501.5	5.08	501.8	80.25
1,977.0	45.14	78.87	1,893.9	89.0	515.2	522.6	3.70	522.8	80.20
1,997.0	46.62	78.47	1,914.8	93.2	536.3	544.1	5.09	544.4	80.14
2,017.0	48.52	77.50	1,935.0	97.8	558.0	566.3	6.77	566.5	80.06

Environmental Protection

AUG 20 2015

Office of Oil and Gas

HP
HG Energy EOW Report



Company: HG Energy, LLC
 Project: Roane County, West Virginia
 Site: A.B. Smith #122
 Well: A.B. Smith #122
 Wellbore: Wellbore #1
 Design: Wellbore #1

Local Co-ordinate Reference: Well A.B. Smith #122
 TVD Reference: WELL @ 1156.0usft (Decker #9)
 MD Reference: WELL @ 1156.0usft (Decker #9)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: Compass

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)
2,117.0	49.80	77.11	1,954.6	102.8	580.1	589.0	4.38	589.2	79.95
2,147.0	50.60	75.70	1,973.8	108.2	602.5	612.0	4.49	612.2	79.82
2,207.0	49.40	74.68	2,012.4	120.0	647.0	657.9	2.39	658.0	79.50
2,237.0	48.08	74.11	2,032.2	126.0	668.7	680.4	4.63	680.5	79.33
2,267.0	48.08	74.20	2,052.2	132.1	690.2	702.6	0.22	702.7	79.16
2,297.0	48.30	74.51	2,072.2	138.2	711.7	724.9	1.06	725.0	79.01
2,327.0	48.92	74.51	2,092.1	144.2	733.4	747.4	2.07	747.4	78.88
2,357.0	49.09	73.10	2,111.7	150.5	755.1	770.0	3.59	770.0	78.73
2,387.0	49.40	72.70	2,131.3	157.2	776.8	792.6	1.44	792.6	78.56
2,417.0	49.49	72.48	2,150.8	164.0	798.6	815.3	0.63	815.3	78.40
2,447.0	49.80	71.51	2,170.3	171.1	820.3	838.0	2.67	838.0	78.22
2,477.0	50.11	69.97	2,189.6	178.6	842.0	860.7	4.06	860.8	78.02
2,507.0	48.21	67.90	2,209.2	186.8	863.2	883.1	8.21	883.2	77.79
2,537.0	46.18	66.71	2,229.6	195.3	883.5	904.7	7.37	904.8	77.54
2,597.0	41.71	64.55	2,272.8	212.4	921.4	945.3	7.86	945.6	77.02
2,660.0	41.71	64.55	2,319.8	230.4	959.3	986.0	0.00	986.6	76.49

TD @ 2660' MD / 2320' TVD

Design Annotations		Local Coordinates		Comment
Measured Depth (usft)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	
500.0	500.0	0.0	0.0	First MWD Survey @ 500' MD / 500' TVD
2,660.0	2,319.8	230.4	959.3	TD @ 2660' MD / 2320' TVD

Checked By: _____ Approved By: _____ Date: _____

RECEIVED
 Office of Oil and Gas
 WV Department of Environmental Protection
 AUG 21 2015

Company Name: HG Energy, LLC
 A.B. Smith #122
 Roane County, West Virginia
 Rig: Decker #9
 Created By: Shane Robbins
 Date: 8/4/2015

A.B. Smith #122
 Roane County, West Virginia
 Q150584 & AM-150507
 Design #1



DESIGN TARGET DETAILS

Name: A.B. Smith #122
 Target A.B. #122
 TVD: 2175.0
 +NLS: 410.0
 +EWJ: 190.3
 Northing: 922.8
 Easting: 15887.4
 Longitude: 81° 17' 12.00 W
 -plan this target center

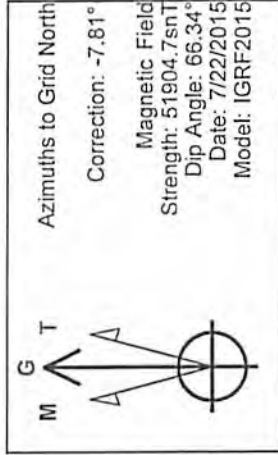
PROJECT DETAILS:

Roane County, West Virginia
 Geodetic System: Universal Transverse Mercator
 Datum: NAD83 West Virginia - HARN
 Ellipsoid: GRS 1980
 System Datum: Mean Sea Level

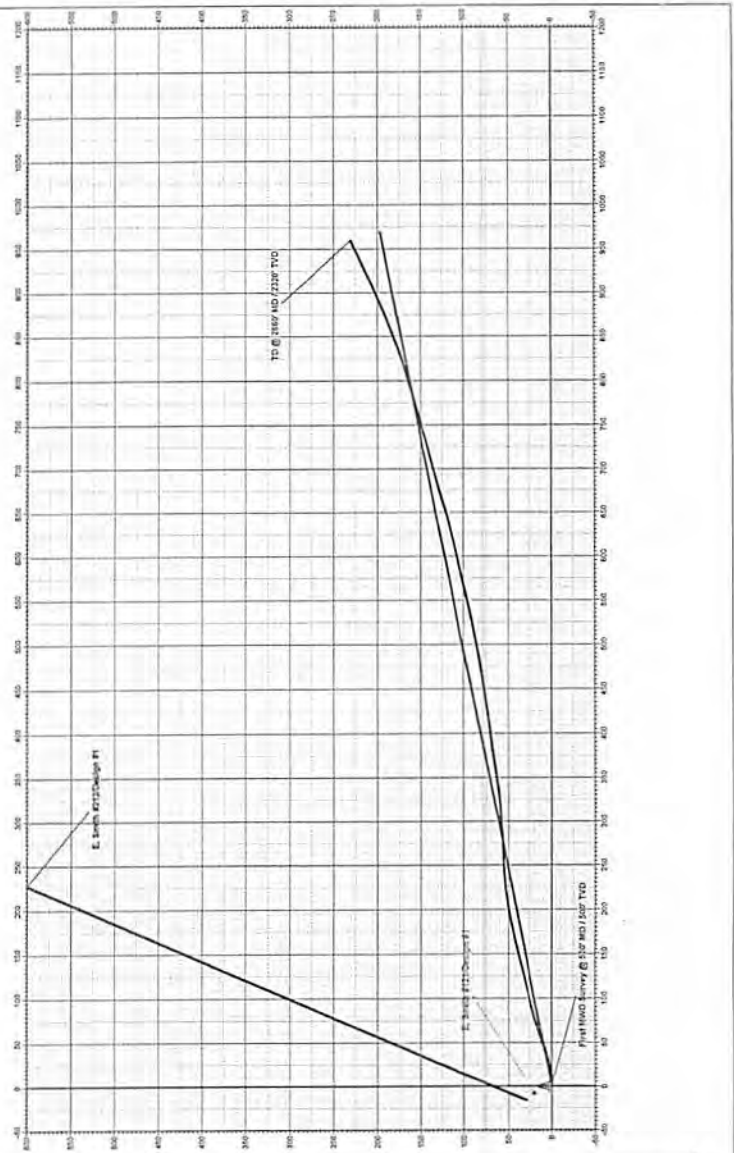
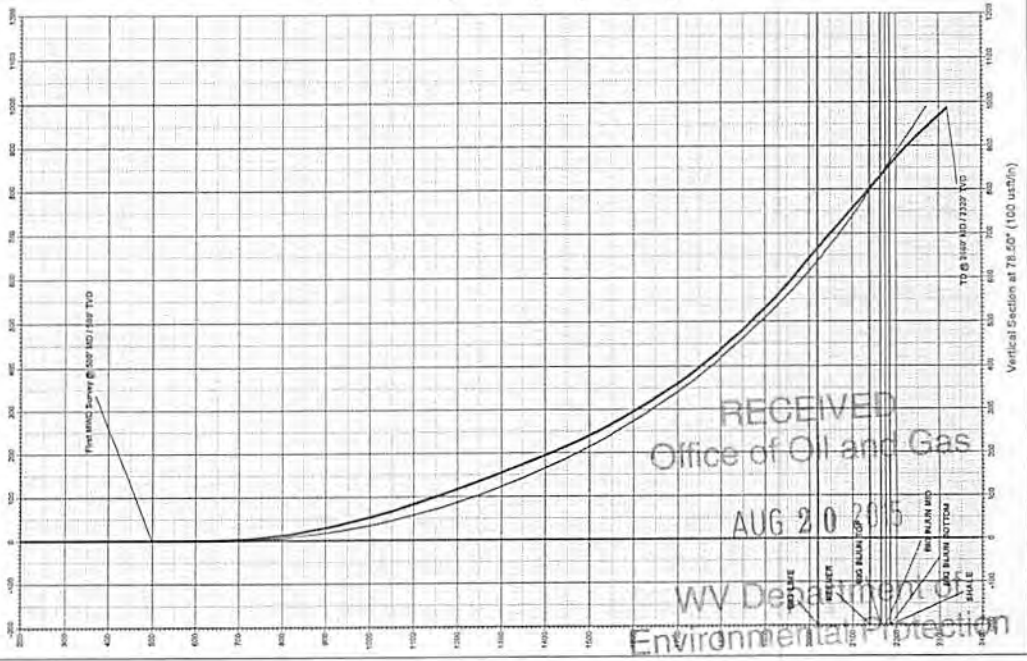
ANNOTATIONS

MD	Inc	AI	TVD	+NLS	+EWJ	Vertical Displacement
600.0	0.0	0.0	600.0	0.0	0.0	First MWD Survey @ 600 MD / 600 TVD
2000.0	41.71	64.69	2318.8	250.4	99.93	TO @ 2000 MD / 2320 TVD

WELL DETAILS: A.B. Smith #122
 1148.0
 Ground Level: 15811.31
 North: 14556052.32
 East: 42 24.00 N
 Longitude: 81° 17' 12.00 W



HG Energy



09/04/2015