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WV GEOLOGICAL SURVEY  
MORGANTOWN, WV



Zellerback Unit 1H  
Dodridge County WV  
Northing: 14261489.45  
Easting: 1676355.00  
As Drilled

**WELL DETAILS** Zellerback Unit 1H  
Ground Level: 989.0  
Northing Easting Longitude  
0.0 14261489.45 1676355.0098° 16° 24.070 86° 52' 22.841 W

**PROJECT DETAILS:** Doddridge County WV  
Geoidic System: Universal Transverse Mercator (US Survey Foot)  
Datum: NAD 1927 (NADCON CONUS)  
Ellipsoid: Clarke 1866  
Zone: Zone 17N (84°W to 76°W)  
System Datum: Mean Sea Level

**SITE DETAILS:** Zellerback/Amanda Pad  
Site Center: Zellerback Unit 1H  
Site Centre Northing: 14261489.45  
Easting: 1676355.00  
Positional Uncertainty: 0.0  
Convergence: 0.08  
Local North: Grid

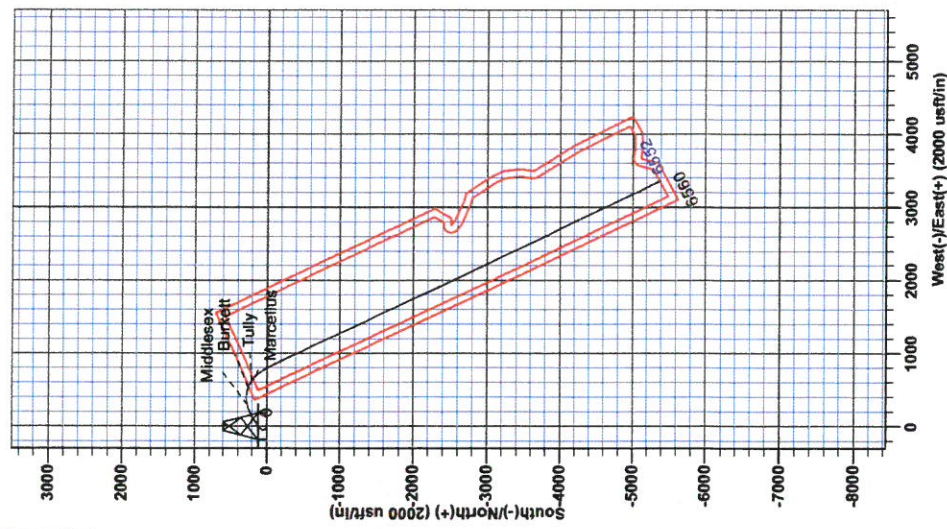


Scientific Drilling

Genie Lightfoot  
18:00, August 21, 2014  
Scientific Drilling  
421 South Eagle Lane  
Oklahoma City, OK 73128

Asimuths to Grid North  
True North: 0.08°  
Magnetic North: -8.49°  
Magnetic Field  
Strength: 52246.5eT  
Dip Angle: 66.88°  
Date: 7/31/2014  
Model: BSGM2014

To convert Magnetic North to Grid, Subtract 8.49°  
To convert True North to Grid, Subtract 0.08°

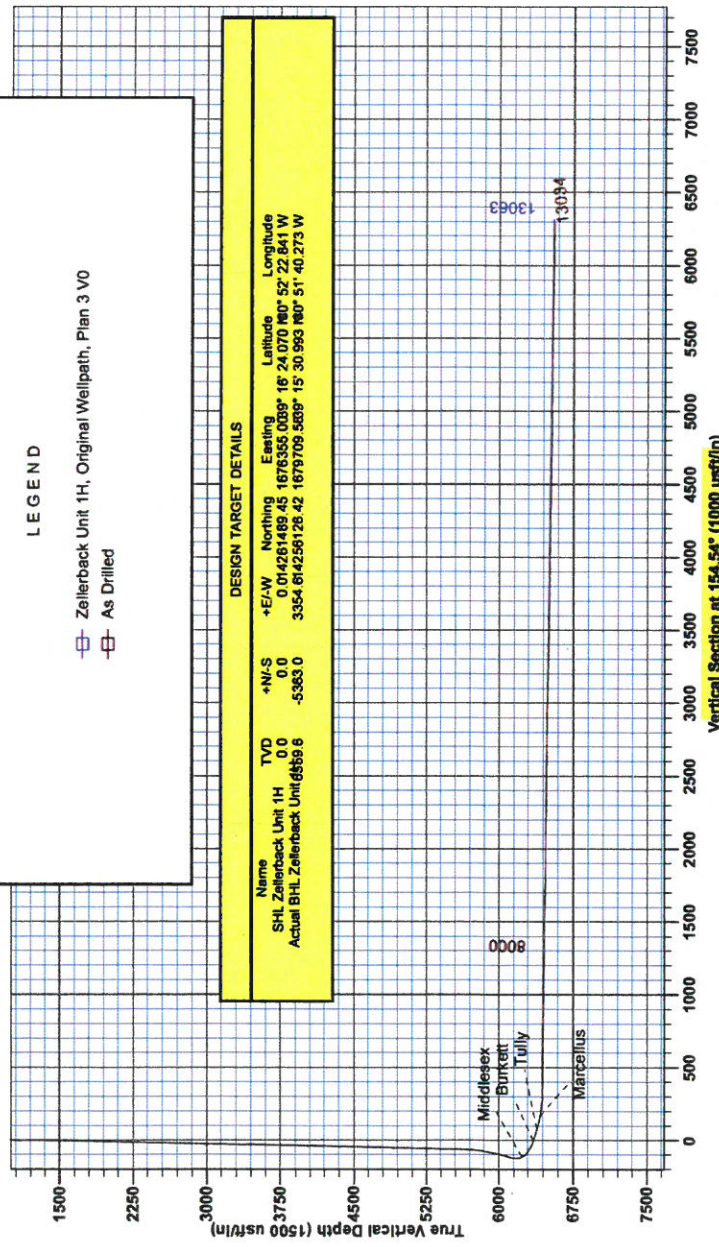


**LEGEND**  
-□- Zellerback Unit 1H, Original Wellpath, Plan 3 VO  
-□- As Drilled

**DESIGN TARGET DETAILS**

Name	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude
SHL Zellerback Unit 1H	0.0	0.0	0.0	14261489.45	1676355.0098°	16° 24.070 86° 52' 22.841 W	
Actual BH-L Zellerback Unit	6869.6	-5383.0	3354.6	14256128.42	1679709.5898°	15° 30.993 86° 51' 40.273 W	

Precision 523: GL 989' ± 19' KB @ 1000.0usft  
989.0





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WV GEOLOGICAL SURVEY  
MORGANTOWN, WV

## **Antero Resources**

**Doddridge County WV  
Zellerback/Amanda Pad  
Zellerback Unit 1H  
Original Wellpath**

**Design: As Drilled**

## **EOW Completion Report**

**21 August, 2014**



**Scientific Drilling**

AUG 31 2015



WV GEOLOGICAL SURVEY  
MORGANTOWN, WV

EOW Completion Report



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Zellerback Unit 1H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 523: GL 989' + 19' KB @ 1008.0usft
<b>Site:</b>	Zellerback/Amanda Pad	<b>MD Reference:</b>	Precision 523: GL 989' + 19' KB @ 1008.0usft
<b>Well:</b>	Zellerback Unit 1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

<b>Project</b>	Doddridge County WV, McClellan District		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Fee	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Zone 17N (84 W to 78 W)		

<b>Site</b>	Zellerback/Amanda Pad				
<b>Site Position:</b>		<b>Northing:</b>	14,261,489.45 usft	<b>Latitude:</b>	39° 16' 24.070 N
<b>From:</b>	Map	<b>Easting:</b>	1,676,355.00 usft	<b>Longitude:</b>	80° 52' 22.841 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16"	<b>Grid Convergence:</b>	0.08 °

<b>Well</b>	Zellerback Unit 1H					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	14,261,489.45 usft	<b>Latitude:</b>	39° 16' 24.070 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,676,355.00 usft	<b>Longitude:</b>	80° 52' 22.841 W
<b>Position Uncertainty</b>		2.0 usft	<b>Wellhead Elevation:</b>	1,008.0 usft	<b>Ground Level:</b>	989.0 usft

<b>Wellbore</b>	Original Wellpath				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	7/31/2014	-8.41	66.86	52,247

<b>Design</b>	As Drilled				
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<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>		<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
		0.0	0.0	0.0	154.54

<b>Survey Program</b>	Date 8/21/2014				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	5,463.6	Survey #1 Gyro to KOP (Original Wellpath)	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper	
5,560.0	13,034.0	Survey #2 MWD (Original Wellpath)	MWD SDI	MWD - Standard ver 1.0.1	

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00
100.0	0.08	169.51	100.0	-0.1	0.0	0.1	0.08
125.0	0.10	256.44	125.0	-0.1	0.0	0.1	0.50
150.0	0.04	125.46	150.0	-0.1	0.0	0.1	0.52
175.0	0.03	117.87	175.0	-0.1	0.0	0.1	0.04
200.0	0.05	95.50	200.0	-0.1	0.0	0.1	0.10
225.0	0.15	85.22	225.0	-0.1	0.1	0.1	0.40
250.0	0.07	120.48	250.0	-0.1	0.1	0.1	0.41
275.0	0.06	108.95	275.0	-0.1	0.1	0.2	0.07
300.0	0.07	89.41	300.0	-0.1	0.2	0.2	0.10
325.0	0.08	91.25	325.0	-0.1	0.2	0.2	0.04

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<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Zellerback Unit 1H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 523: GL 989' + 19' KB @ 1008.0usft
<b>Site:</b>	Zellerback/Amanda Pad	<b>MD Reference:</b>	Precision 523: GL 989' + 19' KB @ 1008.0usft
<b>Well:</b>	Zellerback Unit 1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

**Survey**

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
350.0	0.24	115.00	350.0	-0.2	0.3	0.2	0.68
375.0	0.12	48.01	375.0	-0.2	0.3	0.3	0.89
400.0	0.19	36.03	400.0	-0.1	0.4	0.3	0.31
425.0	0.14	32.26	425.0	0.0	0.4	0.2	0.20
450.0	0.08	344.05	450.0	0.0	0.4	0.2	0.42
475.0	0.24	53.65	475.0	0.0	0.5	0.2	0.90
500.0	0.17	50.90	500.0	0.1	0.5	0.1	0.28
525.0	0.20	51.74	525.0	0.1	0.6	0.1	0.12
550.0	0.13	54.82	550.0	0.2	0.6	0.1	0.28
575.0	0.18	66.70	575.0	0.2	0.7	0.1	0.24
600.0	0.23	42.93	600.0	0.3	0.8	0.1	0.39
625.0	0.06	11.27	625.0	0.3	0.8	0.1	0.73
650.0	0.13	39.58	650.0	0.4	0.8	0.0	0.33
675.0	0.15	6.91	675.0	0.4	0.9	0.0	0.32
700.0	0.15	319.77	700.0	0.5	0.8	-0.1	0.48
725.0	0.19	312.58	725.0	0.5	0.8	-0.1	0.18
750.0	0.22	312.44	750.0	0.6	0.7	-0.2	0.12
775.0	0.18	319.43	775.0	0.6	0.7	-0.3	0.19
800.0	0.14	328.25	800.0	0.7	0.6	-0.4	0.19
825.0	0.16	324.07	825.0	0.8	0.6	-0.4	0.09
850.0	0.12	313.47	850.0	0.8	0.5	-0.5	0.19
875.0	0.14	320.15	875.0	0.8	0.5	-0.5	0.10
900.0	0.06	327.79	900.0	0.9	0.5	-0.6	0.32
925.0	0.09	329.02	925.0	0.9	0.5	-0.6	0.12
950.0	0.18	311.73	950.0	0.9	0.4	-0.7	0.39
975.0	0.19	303.33	975.0	1.0	0.4	-0.7	0.12
1,000.0	0.22	297.21	1,000.0	1.0	0.3	-0.8	0.15
1,025.0	0.19	287.79	1,025.0	1.1	0.2	-0.9	0.18
1,050.0	0.16	289.47	1,050.0	1.1	0.1	-0.9	0.12
1,075.0	0.29	298.25	1,075.0	1.1	0.0	-1.0	0.54
1,100.0	0.41	289.22	1,100.0	1.2	-0.1	-1.1	0.53
1,125.0	0.46	282.78	1,125.0	1.3	-0.3	-1.3	0.28
1,150.0	0.39	279.58	1,150.0	1.3	-0.5	-1.4	0.30
1,175.0	0.52	274.39	1,175.0	1.3	-0.7	-1.5	0.54
1,200.0	0.54	273.89	1,200.0	1.3	-0.9	-1.6	0.08
1,225.0	0.49	281.67	1,225.0	1.4	-1.1	-1.7	0.34
1,250.0	0.46	285.56	1,250.0	1.4	-1.3	-1.8	0.18
1,275.0	0.43	279.94	1,275.0	1.5	-1.5	-2.0	0.21
1,300.0	0.44	283.78	1,300.0	1.5	-1.7	-2.1	0.12
1,325.0	0.44	277.06	1,325.0	1.5	-1.9	-2.2	0.21
1,350.0	0.46	280.04	1,350.0	1.6	-2.1	-2.3	0.12
1,375.0	0.46	286.75	1,375.0	1.6	-2.3	-2.4	0.22
1,400.0	0.44	281.20	1,400.0	1.6	-2.5	-2.5	0.19
1,425.0	0.52	275.93	1,425.0	1.7	-2.7	-2.7	0.37

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ANTHROPOLOGICAL SURVEY  
MORGANTOWN, WV

EOW Completion Report



**Company:** Antero Resources  
**Project:** Doddridge County WV  
**Site:** Zellerback/Amanda Pad  
**Well:** Zellerback Unit 1H  
**Wellbore:** Original Wellpath  
**Design:** As Drilled

**Local Co-ordinate Reference:** Well Zellerback Unit 1H  
**TVD Reference:** Precision 523: GL 989' + 19' KB @ 1008.0usft  
**MD Reference:** Precision 523: GL 989' + 19' KB @ 1008.0usft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
1,450.0	0.49	277.23	1,450.0	1.7	-2.9	-2.8	0.13
1,475.0	0.35	275.70	1,475.0	1.7	-3.1	-2.9	0.56
1,500.0	0.43	284.03	1,500.0	1.8	-3.2	-3.0	0.39
1,525.0	0.56	288.61	1,525.0	1.8	-3.4	-3.1	0.54
1,550.0	0.64	287.09	1,550.0	1.9	-3.7	-3.3	0.33
1,575.0	0.51	285.06	1,575.0	2.0	-3.9	-3.5	0.53
1,600.0	0.58	285.18	1,600.0	2.0	-4.2	-3.6	0.28
1,625.0	0.56	288.80	1,625.0	2.1	-4.4	-3.8	0.16
1,650.0	0.65	291.09	1,650.0	2.2	-4.7	-4.0	0.37
1,675.0	0.71	289.69	1,675.0	2.3	-4.9	-4.2	0.25
1,700.0	0.71	290.52	1,700.0	2.4	-5.2	-4.4	0.04
1,725.0	0.78	292.15	1,725.0	2.5	-5.5	-4.6	0.29
1,750.0	0.84	295.86	1,750.0	2.7	-5.8	-4.9	0.32
1,775.0	0.85	298.37	1,775.0	2.8	-6.2	-5.2	0.15
1,800.0	1.03	301.68	1,800.0	3.0	-6.5	-5.5	0.75
1,825.0	0.82	298.83	1,825.0	3.2	-6.9	-5.9	0.86
1,850.0	0.93	298.72	1,850.0	3.4	-7.2	-6.2	0.44
1,875.0	1.08	298.90	1,875.0	3.6	-7.6	-6.5	0.60
1,900.0	0.90	299.34	1,899.9	3.8	-8.0	-6.9	0.72
1,925.0	1.09	298.83	1,924.9	4.1	-8.4	-7.3	0.76
1,950.0	1.12	299.88	1,949.9	4.3	-8.8	-7.6	0.14
1,975.0	1.09	300.07	1,974.9	4.5	-9.2	-8.0	0.12
2,000.0	1.11	300.43	1,999.9	4.8	-9.6	-8.4	0.08
2,025.0	1.15	299.38	2,024.9	5.0	-10.0	-8.8	0.18
2,050.0	1.21	299.58	2,049.9	5.3	-10.5	-9.3	0.24
2,075.0	1.13	302.12	2,074.9	5.5	-10.9	-9.7	0.38
2,100.0	1.22	299.57	2,099.9	5.8	-11.4	-10.1	0.42
2,125.0	1.13	302.11	2,124.9	6.1	-11.8	-10.5	0.42
2,150.0	1.18	303.08	2,149.9	6.3	-12.2	-11.0	0.21
2,175.0	1.17	299.86	2,174.9	6.6	-12.7	-11.4	0.27
2,200.0	1.11	301.18	2,199.9	6.9	-13.1	-11.8	0.26
2,225.0	1.16	302.12	2,224.9	7.1	-13.5	-12.2	0.21
2,250.0	1.27	301.19	2,249.9	7.4	-14.0	-12.7	0.45
2,275.0	1.18	302.71	2,274.9	7.7	-14.4	-13.1	0.38
2,300.0	1.19	300.30	2,299.9	7.9	-14.9	-13.6	0.20
2,325.0	1.19	302.31	2,324.9	8.2	-15.3	-14.0	0.17
2,350.0	1.19	300.90	2,349.9	8.5	-15.7	-14.4	0.12
2,375.0	1.17	300.05	2,374.9	8.7	-16.2	-14.9	0.11
2,400.0	1.14	303.23	2,399.8	9.0	-16.6	-15.3	0.28
2,425.0	1.19	302.87	2,424.8	9.3	-17.0	-15.7	0.20
2,450.0	1.17	301.17	2,449.8	9.6	-17.5	-16.1	0.16
2,475.0	1.12	300.42	2,474.8	9.8	-17.9	-16.6	0.21
2,500.0	1.18	302.35	2,499.8	10.1	-18.3	-17.0	0.29
2,525.0	1.12	306.56	2,524.8	10.4	-18.7	-17.4	0.41
2,550.0	1.09	299.83	2,549.8	10.6	-19.2	-17.8	0.53

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<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Zellerback Unit 1H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 523: GL 989' + 19' KB @ 1008.0usft
<b>Site:</b>	Zellerback/Amanda Pad	<b>MD Reference:</b>	Precision 523: GL 989' + 19' KB @ 1008.0usft
<b>Well:</b>	Zellerback Unit 1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

**Survey**

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
2,575.0	1.07	300.55	2,574.8	10.9	-19.6	-18.2	0.10
2,600.0	0.88	298.86	2,599.8	11.1	-19.9	-18.6	0.77
2,625.0	0.91	301.11	2,624.8	11.3	-20.3	-18.9	0.18
2,650.0	0.98	300.43	2,649.8	11.5	-20.6	-19.2	0.28
2,675.0	1.04	296.96	2,674.8	11.7	-21.0	-19.6	0.34
2,700.0	1.08	302.26	2,699.8	11.9	-21.4	-20.0	0.42
2,725.0	0.98	298.34	2,724.8	12.1	-21.8	-20.3	0.49
2,750.0	1.01	298.90	2,749.8	12.4	-22.2	-20.7	0.13
2,775.0	1.07	298.18	2,774.8	12.6	-22.6	-21.1	0.25
2,800.0	1.03	298.82	2,799.8	12.8	-23.0	-21.4	0.17
2,825.0	1.04	301.72	2,824.8	13.0	-23.4	-21.8	0.21
2,850.0	1.07	295.40	2,849.8	13.2	-23.8	-22.2	0.48
2,875.0	1.02	297.13	2,874.8	13.4	-24.2	-22.5	0.24
2,900.0	0.99	302.29	2,899.8	13.7	-24.6	-22.9	0.38
2,925.0	1.00	301.15	2,924.8	13.9	-24.9	-23.3	0.09
2,950.0	0.98	295.96	2,949.8	14.1	-25.3	-23.6	0.37
2,975.0	1.10	299.20	2,974.7	14.3	-25.7	-24.0	0.53
3,000.0	1.00	298.52	2,999.7	14.5	-26.1	-24.3	0.40
3,025.0	0.90	298.61	3,024.7	14.7	-26.5	-24.7	0.40
3,050.0	0.95	303.85	3,049.7	14.9	-26.8	-25.0	0.39
3,075.0	0.91	307.15	3,074.7	15.2	-27.2	-25.4	0.27
3,100.0	0.82	300.40	3,099.7	15.4	-27.5	-25.7	0.54
3,125.0	0.82	302.37	3,124.7	15.6	-27.8	-26.0	0.11
3,150.0	0.83	301.09	3,149.7	15.8	-28.1	-26.3	0.08
3,175.0	0.80	301.96	3,174.7	15.9	-28.4	-26.6	0.13
3,200.0	0.79	303.02	3,199.7	16.1	-28.7	-26.9	0.07
3,225.0	0.78	299.20	3,224.7	16.3	-29.0	-27.2	0.21
3,250.0	0.74	308.43	3,249.7	16.5	-29.2	-27.5	0.51
3,275.0	0.76	304.58	3,274.7	16.7	-29.5	-27.7	0.22
3,300.0	0.72	306.69	3,299.7	16.9	-29.8	-28.0	0.19
3,325.0	0.66	301.35	3,324.7	17.0	-30.0	-28.3	0.35
3,350.0	0.77	300.55	3,349.7	17.2	-30.3	-28.5	0.44
3,375.0	0.75	310.59	3,374.7	17.4	-30.6	-28.8	0.54
3,400.0	0.74	299.69	3,399.7	17.6	-30.8	-29.1	0.57
3,425.0	0.74	301.02	3,424.7	17.7	-31.1	-29.4	0.07
3,450.0	0.59	295.47	3,449.7	17.9	-31.3	-29.6	0.65
3,475.0	0.75	304.68	3,474.7	18.0	-31.6	-29.9	0.77
3,500.0	0.78	304.86	3,499.7	18.2	-31.9	-30.1	0.12
3,525.0	0.66	309.84	3,524.7	18.4	-32.1	-30.4	0.54
3,550.0	0.77	298.25	3,549.7	18.6	-32.4	-30.7	0.72
3,575.0	0.72	295.46	3,574.7	18.7	-32.7	-30.9	0.25
3,600.0	0.79	302.83	3,599.7	18.9	-33.0	-31.2	0.48
3,625.0	0.74	308.32	3,624.7	19.1	-33.2	-31.5	0.35
3,650.0	0.79	308.65	3,649.7	19.3	-33.5	-31.8	0.20

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GEOLOGICAL SURVEY  
MORGANTOWN, WV

EOW Completion Report



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Zellerback Unit 1H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 523: GL 989' + 19' KB @ 1008.0usft
<b>Site:</b>	Zellerback/Amanda Pad	<b>MD Reference:</b>	Precision 523: GL 989' + 19' KB @ 1008.0usft
<b>Well:</b>	Zellerback Unit 1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
3,675.0	0.69	310.32	3,674.7	19.5	-33.7	-32.1	0.41
3,700.0	0.82	299.17	3,699.7	19.7	-34.0	-32.4	0.78
3,725.0	0.77	311.68	3,724.7	19.9	-34.3	-32.7	0.72
3,750.0	0.75	311.63	3,749.7	20.1	-34.5	-33.0	0.08
3,775.0	0.81	314.73	3,774.7	20.3	-34.8	-33.3	0.29
3,800.0	0.77	311.38	3,799.7	20.6	-35.0	-33.6	0.24
3,825.0	0.80	312.13	3,824.7	20.8	-35.3	-33.9	0.13
3,850.0	0.75	315.80	3,849.7	21.0	-35.5	-34.3	0.28
3,875.0	0.83	314.67	3,874.7	21.3	-35.8	-34.6	0.33
3,900.0	0.91	323.49	3,899.7	21.6	-36.0	-35.0	0.62
3,925.0	1.03	324.74	3,924.7	21.9	-36.3	-35.4	0.49
3,950.0	1.16	329.50	3,949.7	22.3	-36.5	-35.8	0.63
3,975.0	1.14	332.42	3,974.6	22.7	-36.8	-36.3	0.25
4,000.0	1.21	330.25	3,999.6	23.2	-37.0	-36.9	0.33
4,025.0	1.28	326.56	4,024.6	23.7	-37.3	-37.4	0.43
4,050.0	1.18	328.00	4,049.6	24.1	-37.6	-37.9	0.42
4,075.0	1.12	330.58	4,074.6	24.5	-37.9	-38.4	0.32
4,100.0	1.01	330.03	4,099.6	24.9	-38.1	-38.9	0.44
4,125.0	0.99	330.69	4,124.6	25.3	-38.3	-39.3	0.09
4,150.0	0.92	324.20	4,149.6	25.7	-38.5	-39.7	0.51
4,175.0	0.80	326.16	4,174.6	26.0	-38.7	-40.1	0.49
4,200.0	0.82	317.08	4,199.6	26.3	-39.0	-40.4	0.52
4,225.0	0.78	326.88	4,224.6	26.5	-39.2	-40.8	0.57
4,250.0	0.87	323.31	4,249.6	26.8	-39.4	-41.1	0.41
4,275.0	0.79	326.58	4,274.6	27.1	-39.6	-41.5	0.37
4,300.0	0.73	326.98	4,299.6	27.4	-39.8	-41.8	0.24
4,325.0	0.83	326.58	4,324.6	27.7	-40.0	-42.2	0.40
4,350.0	0.75	326.18	4,349.6	28.0	-40.1	-42.5	0.32
4,375.0	0.63	316.03	4,374.6	28.2	-40.3	-42.8	0.68
4,400.0	0.67	324.20	4,399.6	28.4	-40.5	-43.1	0.40
4,425.0	0.76	332.81	4,424.6	28.7	-40.7	-43.4	0.56
4,450.0	0.82	333.32	4,449.6	29.0	-40.8	-43.7	0.24
4,475.0	0.81	333.79	4,474.6	29.3	-41.0	-44.1	0.05
4,500.0	0.72	330.13	4,499.6	29.6	-41.1	-44.4	0.41
4,525.0	0.84	331.98	4,524.6	29.9	-41.3	-44.8	0.49
4,550.0	0.73	333.14	4,549.6	30.2	-41.5	-45.1	0.44
4,575.0	0.79	324.45	4,574.6	30.5	-41.6	-45.4	0.52
4,600.0	0.76	331.57	4,599.6	30.8	-41.8	-45.8	0.40
4,625.0	0.85	323.62	4,624.6	31.1	-42.0	-46.1	0.57
4,650.0	0.88	324.20	4,649.6	31.4	-42.2	-46.5	0.13
4,675.0	0.88	332.83	4,674.6	31.7	-42.4	-46.9	0.53
4,700.0	0.81	331.41	4,699.6	32.0	-42.6	-47.2	0.29
4,725.0	0.79	332.95	4,724.6	32.3	-42.8	-47.6	0.12
4,750.0	0.80	322.24	4,749.6	32.6	-43.0	-47.9	0.59

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EOW Completion Report



**Company:** Antero Resources  
**Project:** Doddridge County WV  
**Site:** Zellerback/Amanda Pad  
**Well:** Zellerback Unit 1H  
**Wellbore:** Original Wellpath  
**Design:** As Drilled

**Local Co-ordinate Reference:** Well Zellerback Unit 1H  
**TVD Reference:** Precision 523: GL 989' + 19' KB @ 1008.0usft  
**MD Reference:** Precision 523: GL 989' + 19' KB @ 1008.0usft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
4,775.0	0.84	318.33	4,774.6	32.9	-43.2	-48.3	0.28
4,800.0	0.96	326.38	4,799.6	33.2	-43.4	-48.7	0.70
4,825.0	1.00	328.16	4,824.5	33.6	-43.7	-49.1	0.20
4,850.0	0.95	329.09	4,849.5	33.9	-43.9	-49.5	0.21
4,875.0	0.88	333.03	4,874.5	34.3	-44.1	-49.9	0.38
4,900.0	0.79	316.72	4,899.5	34.6	-44.3	-50.3	1.01
4,925.0	0.94	326.07	4,924.5	34.9	-44.5	-50.6	0.82
4,950.0	0.90	323.13	4,949.5	35.2	-44.7	-51.0	0.25
4,975.0	0.96	335.15	4,974.5	35.6	-44.9	-51.4	0.81
5,000.0	0.93	328.22	4,999.5	35.9	-45.1	-51.8	0.47
5,025.0	0.89	331.34	5,024.5	36.3	-45.3	-52.2	0.25
5,050.0	0.81	329.20	5,049.5	36.6	-45.5	-52.6	0.34
5,075.0	0.94	314.16	5,074.5	36.9	-45.8	-53.0	1.05
5,100.0	0.99	325.13	5,099.5	37.2	-46.0	-53.4	0.76
5,125.0	1.21	322.76	5,124.5	37.6	-46.3	-53.8	0.90
5,150.0	0.87	327.20	5,149.5	37.9	-46.6	-54.3	1.40
5,175.0	0.91	324.38	5,174.5	38.3	-46.8	-54.7	0.24
5,200.0	1.12	314.71	5,199.5	38.6	-47.1	-55.1	1.08
5,225.0	1.03	320.03	5,224.5	38.9	-47.4	-55.5	0.54
5,250.0	0.96	315.53	5,249.5	39.3	-47.7	-56.0	0.42
5,275.0	1.12	311.92	5,274.5	39.6	-48.0	-56.4	0.69
5,300.0	1.00	322.89	5,299.5	39.9	-48.3	-56.8	0.94
5,325.0	1.03	318.96	5,324.5	40.3	-48.6	-57.2	0.30
5,350.0	1.27	311.69	5,349.5	40.6	-49.0	-57.7	1.12
5,375.0	1.14	323.61	5,374.5	41.0	-49.3	-58.2	1.13
5,400.0	1.27	325.11	5,399.5	41.4	-49.6	-58.7	0.54
5,425.0	1.13	319.80	5,424.5	41.8	-49.9	-59.3	0.71
5,450.0	1.05	326.01	5,449.5	42.2	-50.2	-59.7	0.57
5,463.6	1.13	326.91	5,463.1	42.4	-50.4	-60.0	0.60
5,560.0	0.75	318.76	5,559.4	43.7	-51.3	-61.5	0.42
5,650.0	1.19	322.97	5,649.4	44.9	-52.3	-63.0	0.49
5,740.0	3.30	18.93	5,739.4	48.1	-52.0	-65.8	3.12
5,770.0	6.16	23.15	5,769.3	50.4	-51.1	-67.5	9.60
5,800.0	8.80	27.37	5,799.0	53.9	-49.4	-69.9	8.98
5,829.0	11.55	32.17	5,827.5	58.3	-46.8	-72.8	9.92
5,859.0	14.42	36.16	5,856.8	63.9	-43.0	-76.2	10.02
5,889.0	17.94	40.82	5,885.6	70.4	-37.8	-79.8	12.50
5,919.0	21.39	44.96	5,913.8	77.8	-30.9	-83.5	12.40
5,949.0	25.17	48.29	5,941.4	85.9	-22.3	-87.1	13.34
5,979.0	28.67	50.13	5,968.1	94.8	-12.0	-90.7	11.99
6,008.0	32.44	51.03	5,993.1	104.1	-0.6	-94.3	13.10
6,038.0	36.76	51.45	6,017.8	114.8	12.7	-98.2	14.42
6,068.0	40.63	52.42	6,041.2	126.3	27.5	-102.3	13.06
6,098.0	44.18	53.52	6,063.3	138.5	43.6	-106.3	12.09



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EOW Completion Report



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Zellerback Unit 1H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 523: GL 989' + 19' KB @ 1008.0usft
<b>Site:</b>	Zellerback/Amanda Pad	<b>MD Reference:</b>	Precision 523: GL 989' + 19' KB @ 1008.0usft
<b>Well:</b>	Zellerback Unit 1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
6,128.0	48.36	54.79	6,084.1	151.2	61.2	-110.2	14.26
6,158.0	52.59	56.17	6,103.2	164.3	80.3	-113.8	14.54
6,188.0	57.13	57.29	6,120.4	177.7	100.8	-117.2	15.44
6,218.0	60.59	59.27	6,135.9	191.2	122.6	-120.0	12.84
6,248.0	61.29	61.73	6,150.5	204.1	145.4	-121.8	7.54
6,277.0	61.85	62.11	6,164.3	216.1	167.9	-123.0	2.25
6,307.0	62.20	64.03	6,178.4	228.1	191.5	-123.6	5.77
6,337.0	62.02	66.75	6,192.4	239.2	215.7	-123.3	8.04
6,367.0	61.97	68.39	6,206.5	249.3	240.1	-121.9	4.83
6,397.0	61.47	71.15	6,220.7	258.4	264.9	-119.4	8.27
6,427.0	61.21	74.67	6,235.1	266.2	290.1	-115.6	10.33
6,429.0	61.21	74.92	6,236.1	266.6	291.8	-115.3	11.12
<b>Middlesex</b>							
6,456.0	61.26	78.35	6,249.1	272.1	314.8	-110.3	11.12
6,486.0	61.20	81.98	6,263.5	276.6	340.7	-103.3	10.61
6,516.0	61.73	86.17	6,277.9	279.3	366.9	-94.5	12.40
6,546.0	62.70	89.33	6,291.8	280.3	393.4	-84.0	9.86
6,576.0	63.93	94.69	6,305.3	279.4	420.2	-71.6	16.48
6,606.0	65.33	98.56	6,318.2	276.3	447.1	-57.2	12.55
6,635.0	66.39	102.12	6,330.0	271.5	473.1	-41.8	11.78
6,665.0	67.69	106.32	6,341.8	264.7	499.9	-24.1	13.60
6,695.0	69.20	110.34	6,352.8	255.9	526.4	-4.8	13.44
6,696.0	69.25	110.48	6,353.1	255.6	527.3	-4.1	14.49
<b>Burkett</b>							
6,725.0	70.83	114.63	6,363.0	245.2	552.4	16.1	14.49
6,755.0	71.58	117.90	6,372.7	232.6	577.9	38.4	10.62
6,785.0	72.02	120.36	6,382.1	218.7	602.8	61.6	7.93
6,802.0	72.27	122.29	6,387.3	210.3	616.6	75.2	10.93
<b>Tully</b>							
6,815.0	72.48	123.77	6,391.2	203.6	627.0	85.7	10.93
6,845.0	72.86	127.32	6,400.2	186.9	650.3	110.8	11.37
6,875.0	73.54	131.62	6,408.8	168.7	672.4	136.8	13.91
6,904.0	74.66	135.87	6,416.8	149.4	692.6	162.9	14.61
6,910.0	75.01	136.66	6,418.4	145.2	696.6	168.4	13.95
<b>Marcellus</b>							
6,934.0	76.46	139.77	6,424.3	127.8	712.1	190.7	13.95
6,964.0	78.98	142.70	6,430.6	105.0	730.4	219.2	12.71
6,994.0	80.48	144.65	6,436.0	81.2	747.9	248.2	8.12
7,028.0	83.33	146.14	6,440.8	53.5	767.0	281.4	9.44
7,095.0	90.17	150.24	6,444.6	-3.3	802.2	347.8	11.90
7,145.0	90.80	149.79	6,444.2	-46.6	827.2	397.7	1.55
7,234.0	90.40	155.87	6,443.2	-125.7	867.9	486.6	6.85
7,324.0	89.13	155.89	6,443.6	-207.9	904.6	576.6	1.41
7,413.0	89.53	155.51	6,444.6	-289.0	941.3	665.5	0.62
7,507.0	88.23	154.51	6,446.5	-374.2	981.0	759.5	1.74

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WV GEOLOGICAL SURVEY  
MORGANTOWN, WV

EOW Completion Report



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Zellerback Unit 1H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 523: GL 989' + 19' KB @ 1008.0usft
<b>Site:</b>	Zellerback/Amanda Pad	<b>MD Reference:</b>	Precision 523: GL 989' + 19' KB @ 1008.0usft
<b>Well:</b>	Zellerback Unit 1H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
7,601.0	88.73	154.52	6,449.0	-459.0	1,021.4	853.5	0.53
7,695.0	90.10	153.59	6,449.9	-543.5	1,062.5	947.5	1.76
7,789.0	89.87	155.15	6,450.0	-628.3	1,103.2	1,041.5	1.68
7,883.0	88.79	155.85	6,451.0	-713.8	1,142.1	1,135.5	1.37
7,977.0	87.66	155.14	6,454.0	-799.3	1,181.1	1,229.4	1.42
8,071.0	88.52	155.93	6,457.1	-884.8	1,220.0	1,323.3	1.24
8,165.0	89.36	155.77	6,458.8	-970.5	1,258.5	1,417.3	0.91
8,259.0	88.46	155.60	6,460.6	-1,056.2	1,297.2	1,511.2	0.97
8,353.0	86.54	154.43	6,464.7	-1,141.3	1,336.8	1,605.1	2.39
8,447.0	87.09	153.98	6,469.9	-1,225.8	1,377.7	1,699.0	0.76
8,537.0	88.49	153.86	6,473.4	-1,306.6	1,417.2	1,788.9	1.56
8,626.0	89.70	152.52	6,474.8	-1,386.0	1,457.3	1,877.9	2.03
8,716.0	89.70	154.58	6,475.3	-1,466.6	1,497.4	1,967.9	2.29
8,806.0	89.67	154.92	6,475.8	-1,548.0	1,535.8	2,057.9	0.38
8,895.0	88.42	154.67	6,477.3	-1,628.5	1,573.7	2,146.9	1.43
8,985.0	88.86	155.12	6,479.4	-1,710.0	1,611.9	2,236.8	0.70
9,075.0	89.53	154.37	6,480.7	-1,791.4	1,650.3	2,326.8	1.12
9,164.0	89.26	155.94	6,481.6	-1,872.1	1,687.7	2,415.8	1.79
9,254.0	89.63	156.32	6,482.5	-1,954.4	1,724.1	2,505.8	0.59
9,344.0	87.99	156.42	6,484.4	-2,036.8	1,760.2	2,595.7	1.83
9,433.0	88.56	155.82	6,487.0	-2,118.2	1,796.2	2,684.6	0.93
9,523.0	89.63	155.53	6,488.5	-2,200.2	1,833.2	2,774.6	1.23
9,612.0	88.56	154.23	6,489.9	-2,280.8	1,871.0	2,863.6	1.89
9,702.0	89.43	153.90	6,491.4	-2,361.7	1,910.4	2,953.6	1.03
9,792.0	87.68	154.14	6,493.7	-2,442.6	1,949.8	3,043.5	1.96
9,881.0	87.82	154.80	6,497.2	-2,522.8	1,988.1	3,132.4	0.76
9,971.0	89.03	154.03	6,499.7	-2,603.9	2,027.0	3,222.4	1.59
10,060.0	88.19	154.71	6,501.8	-2,684.2	2,065.4	3,311.4	1.21
10,150.0	87.15	153.07	6,505.5	-2,764.9	2,105.0	3,401.3	2.16
10,240.0	87.75	153.62	6,509.5	-2,845.3	2,145.4	3,491.2	0.90
10,329.0	88.63	153.21	6,512.3	-2,924.8	2,185.2	3,580.1	1.09
10,419.0	89.87	153.61	6,513.5	-3,005.3	2,225.4	3,670.1	1.45
10,509.0	88.86	154.72	6,514.5	-3,086.3	2,264.7	3,760.1	1.67
10,598.0	89.36	154.17	6,515.9	-3,166.6	2,303.0	3,849.1	0.84
10,688.0	88.66	154.32	6,517.4	-3,247.6	2,342.1	3,939.1	0.80
10,777.0	89.23	154.83	6,519.1	-3,328.0	2,380.4	4,028.0	0.86
10,867.0	88.89	155.17	6,520.5	-3,409.5	2,418.4	4,118.0	0.53
10,957.0	89.97	156.19	6,521.4	-3,491.5	2,455.4	4,208.0	1.65
11,046.0	88.86	155.51	6,522.3	-3,572.7	2,491.9	4,297.0	1.46
11,136.0	87.76	153.93	6,525.0	-3,654.1	2,530.3	4,386.9	2.14
11,226.0	88.62	153.99	6,527.8	-3,734.9	2,569.8	4,476.9	0.96
11,315.0	89.87	153.07	6,529.0	-3,814.6	2,609.4	4,565.9	1.74
11,405.0	88.02	153.60	6,530.7	-3,895.0	2,649.8	4,655.8	2.14
11,495.0	88.12	153.53	6,533.7	-3,975.5	2,689.8	4,745.8	0.14



**Company:** Antero Resources  
**Project:** Doddridge County WV  
**Site:** Zellerback/Amanda Pad  
**Well:** Zellerback Unit 1H  
**Wellbore:** Original Wellpath  
**Design:** As Drilled

**Local Co-ordinate Reference:** Well Zellerback Unit 1H  
**TVD Reference:** Precision 523: GL 989' + 19' KB @ 1008.0usft  
**MD Reference:** Precision 523: GL 989' + 19' KB @ 1008.0usft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Oklahoma District

**Survey**

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
11,584.0	88.79	153.39	6,536.1	-4,055.1	2,729.6	4,834.7	0.77
11,674.0	89.70	153.03	6,537.3	-4,135.4	2,770.2	4,924.7	1.09
11,763.0	89.93	153.93	6,537.6	-4,215.1	2,809.9	5,013.7	1.04
11,853.0	89.50	154.56	6,538.0	-4,296.1	2,849.0	5,103.7	0.85
11,943.0	88.62	155.66	6,539.5	-4,377.8	2,886.9	5,193.6	1.57
12,032.0	89.23	155.58	6,541.2	-4,458.8	2,923.6	5,282.6	0.69
12,122.0	90.10	155.01	6,541.7	-4,540.6	2,961.2	5,372.6	1.16
12,211.0	89.03	155.01	6,542.4	-4,621.2	2,998.8	5,461.6	1.20
12,301.0	89.90	155.82	6,543.2	-4,703.1	3,036.3	5,551.6	1.32
12,391.0	88.82	154.51	6,544.2	-4,784.7	3,074.1	5,641.6	1.89
12,480.0	87.79	155.15	6,546.8	-4,865.3	3,111.9	5,730.5	1.36
12,570.0	88.02	154.76	6,550.1	-4,946.7	3,150.0	5,820.5	0.50
12,659.0	88.53	154.36	6,552.8	-5,027.1	3,188.2	5,909.4	0.73
12,749.0	89.43	154.14	6,554.4	-5,108.1	3,227.3	5,999.4	1.03
12,839.0	88.16	153.96	6,556.3	-5,189.0	3,266.7	6,089.4	1.43
12,928.0	88.79	152.83	6,558.7	-5,268.6	3,306.5	6,178.3	1.45
12,967.0	89.40	152.97	6,559.3	-5,303.3	3,324.3	6,217.3	1.60
13,034.0	90.00	153.21	6,559.6	-5,363.0	3,354.6	6,284.3	0.96

**Design Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/S (usft)	+E/W (usft)	
6,429.0	6,236.1	266.6	291.8	Middlesex
6,696.0	6,353.1	255.6	527.3	Burkett
6,802.0	6,387.3	210.3	616.6	Tully
6,910.0	6,418.4	145.2	696.6	Marcellus

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

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 AUG 31 2015  
 WV GEOLOGICAL SURVEY  
 MORGANTOWN, WV