



Frontier 22: GL 1053 + KB 25 @ 1078.0 uart  
Gr. 1053.0

**Sheep Run Unit 1H**  
Doddridge County WV  
Northing: 14247194.04  
Easting: 1685668.92  
As Drilled



WELL DETAILS		Sheep Run Unit 1H	
+N/-S	+E/-W	Northing	Longitude
0.0	0.0	14247194.04	1053.0
		Easting	Latitude
		1685668.92	38° 14' 2.575 180° 50' 24.683 W

Genie Lightfoot  
15-42, June 01 2015  
Scientific Drilling  
11220 NW 10th Street  
Yukon OK 73099

**SITE DETAILS:** Fritz Pad: Hayden/Washington/Sheep/Hileman

Site Center: Hayden 1H  
Site Centre Northing: 14247222.50  
Easting: 1685696.44

Positional Uncertainty: 2.0  
Contours: 0.10  
Local North: Grid

**PROJECT DETAILS:** Doddridge County WV

Geodetic System: Universal Transverse Mercator (US Survey Feet)  
Datum: NAD 1927 (NADCON CONUS)  
Ellipsoid: Clarke 1866  
Zone: Zone 17N (84 W to 78 W)  
System Datum: Mean Sea Level

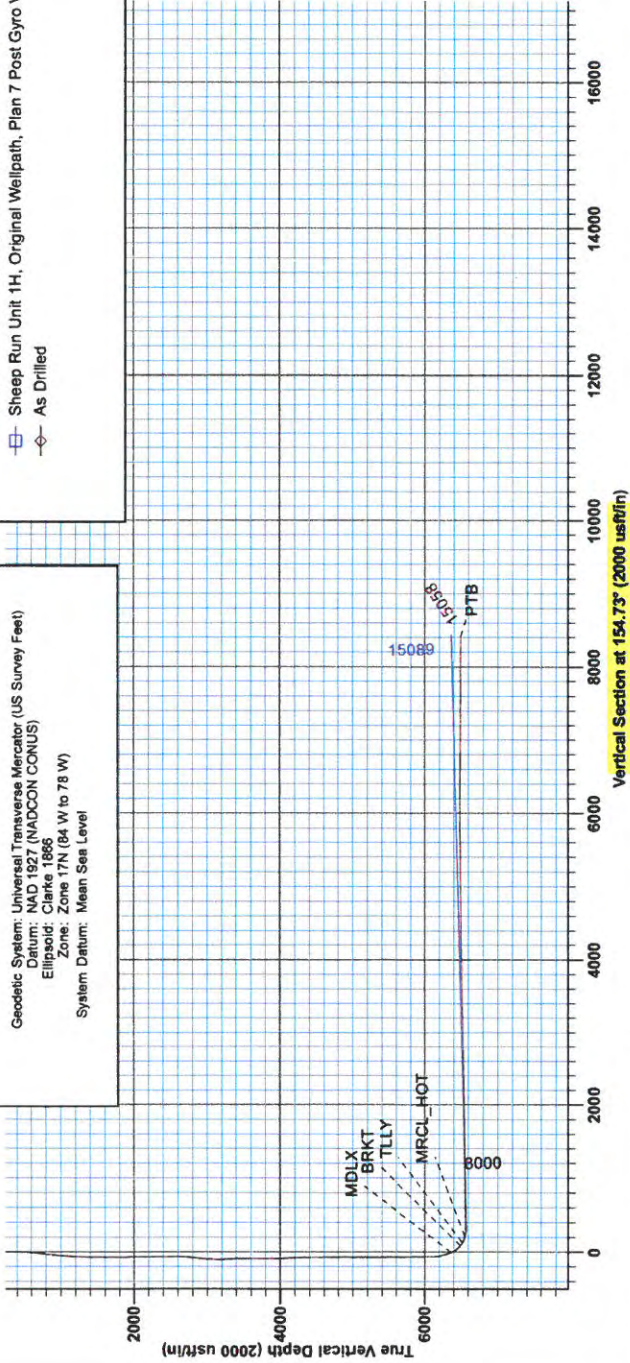
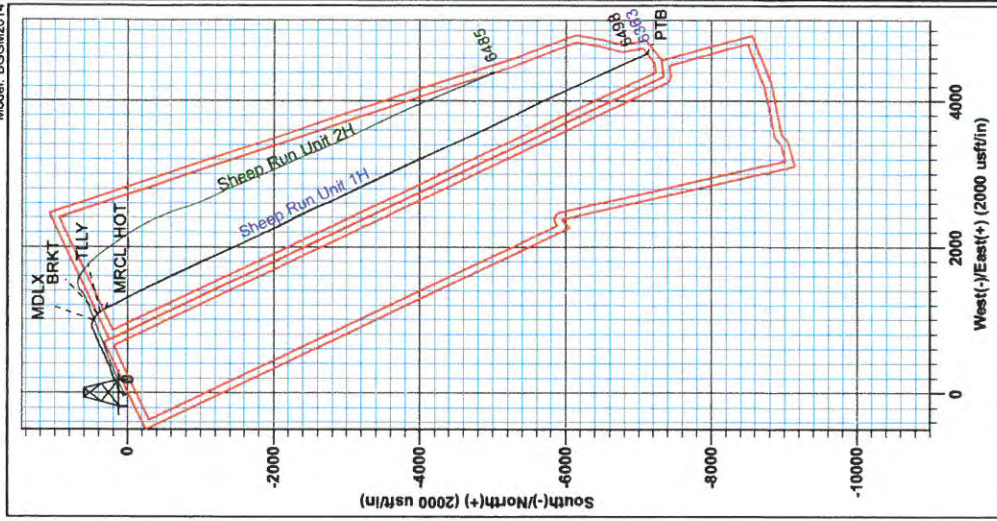
**LEGEND**

- Sheep Run Unit 2H, Original Wellpath, As Drilled V0
- - - Sheep Run Unit 1H, Original Wellpath, Plan 7 Post Gyro V0
- As Drilled

To convert Magnetic North to Grid, Subtract 8.54°  
To convert True North to Grid, Subtract 0.10°



Azimuths to Grid North  
True North: -0.10°  
Magnetic North: -8.54°  
Magnetic Field  
Strength: 52125.2a nT  
Dip Angle: 66.76°  
Date: 5/5/2015  
Model: BGGM2014





## **Antero**

**Doddridge County WV  
Fritz Pad: Hayden/Washington/Sheep/Hileman  
Sheep Run Unit 1H  
Original Wellpath**

**Design: As Drilled**

## **EOW Completion Report**

**01 June, 2015**







EOW Completion Report



<b>Company:</b>	Antero	<b>Local Co-ordinate Reference:</b>	Well Sheep Run Unit 1H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Frontier 22: GL 1053' + KB 25' @ 1078.0usft
<b>Site:</b>	Fritz Pad: Hayden/Washington/Sheep/Hileman	<b>MD Reference:</b>	Frontier 22: GL 1053' + KB 25' @ 1078.0usft
<b>Well:</b>	Sheep Run 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>	Fritz Pad: Hayden/Washington/Sheep/Hileman				
<b>Site Position:</b>		<b>Northing:</b>	14,247,222.50 usft	<b>Latitude:</b>	39° 14' 2.856 N
<b>From:</b>	Map	<b>Easting:</b>	1,685,696.44 usft	<b>Longitude:</b>	80° 50' 24.332 W
<b>Position Uncertainty:</b>	2.0 usft	<b>Slot Radius:</b>	13-3/16"	<b>Grid Convergence:</b>	0.10 °

<b>Well</b>	Sheep Run Unit 1H, Marcellus					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	14,247,194.04 usft	<b>Latitude:</b>	39° 14' 2.575 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,685,668.92 usft	<b>Longitude:</b>	80° 50' 24.683 W
<b>Position Uncertainty</b>		2.0 usft	<b>Wellhead Elevation:</b>	1,078.0 usft	<b>Ground Level:</b>	1,053.0 usft

<b>Wellbore</b>	Original Wellpath				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	5/5/2015	-8.44	66.76	52,125

<b>Design</b>	As Drilled				
<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	154.73

Survey Program		Date			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
25.0	5,441.0	Survey #6 Def KOP Gyro (Original Wellpa	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
5,576.0	15,058.0	Survey #7 SDI 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
25.0	0.10	141.29	25.0	0.0	0.0	0.0	0.40
50.0	0.21	141.29	50.0	-0.1	0.1	0.1	0.44
75.0	0.31	141.29	75.0	-0.2	0.1	0.2	0.40
100.0	0.41	140.52	100.0	-0.3	0.2	0.3	0.40
125.0	0.34	126.72	125.0	-0.4	0.3	0.5	0.46
150.0	0.34	128.99	150.0	-0.5	0.5	0.6	0.05
175.0	0.31	135.47	175.0	-0.6	0.6	0.8	0.19
200.0	0.19	117.40	200.0	-0.6	0.6	0.9	0.57
225.0	0.18	123.06	225.0	-0.7	0.7	0.9	0.08
250.0	0.23	132.50	250.0	-0.7	0.8	1.0	0.24



EOW Completion Report



**Company:** Antero  
**Project:** Doddridge County WV  
**Site:** Fritz Pad: Hayden/Washington/Sheep/Hileman  
**Well:** Sheep Run Unit 1H  
**Wellbore:** Original Wellpath  
**Design:** As Drilled

**Local Co-ordinate Reference:** Well Sheep Run Unit 1H  
**TVD Reference:** Frontier 22: GL 1053' + KB 25' @ 1078.0usft  
**MD Reference:** Frontier 22: GL 1053' + KB 25' @ 1078.0usft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)
275.0	0.24	120.52	275.0	-0.8	0.9	1.1	0.20
300.0	0.22	100.67	300.0	-0.8	1.0	1.2	0.33
325.0	0.22	126.78	325.0	-0.9	1.0	1.2	0.40
350.0	0.24	110.18	350.0	-0.9	1.1	1.3	0.28
375.0	0.03	175.27	375.0	-0.9	1.2	1.4	0.92
400.0	0.31	304.96	400.0	-0.9	1.1	1.3	1.32
425.0	0.77	297.61	425.0	-0.8	0.9	1.1	1.86
450.0	1.25	295.55	450.0	-0.6	0.5	0.8	1.93
475.0	1.88	300.21	475.0	-0.3	-0.1	0.2	2.57
500.0	2.13	301.56	500.0	0.2	-0.8	-0.5	1.02
525.0	2.80	310.50	524.9	0.8	-1.7	-1.4	3.08
550.0	3.23	318.48	549.9	1.7	-2.6	-2.7	2.40
575.0	4.01	322.58	574.9	3.0	-3.6	-4.2	3.29
600.0	4.57	326.93	599.8	4.5	-4.7	-6.1	2.59
625.0	5.19	329.01	624.7	6.3	-5.8	-8.2	2.58
650.0	5.93	331.13	649.6	8.4	-7.0	-10.6	3.07
675.0	6.63	333.84	674.4	10.8	-8.3	-13.3	3.04
700.0	7.37	336.45	699.2	13.6	-9.6	-16.4	3.22
725.0	7.90	339.29	724.0	16.7	-10.8	-19.7	2.60
750.0	8.00	342.38	748.8	19.9	-11.9	-23.1	1.76
775.0	7.92	344.01	773.5	23.2	-12.9	-26.5	0.96
800.0	7.61	346.71	798.3	26.5	-13.8	-29.9	1.91
825.0	7.31	347.15	823.1	29.7	-14.5	-33.0	1.22
850.0	7.01	347.69	847.9	32.7	-15.2	-36.1	1.23
875.0	6.42	348.83	872.7	35.6	-15.8	-38.9	2.42
900.0	6.03	349.63	897.6	38.2	-16.3	-41.5	1.60
925.0	5.71	350.10	922.5	40.7	-16.8	-44.0	1.29
950.0	5.31	351.64	947.3	43.1	-17.1	-46.3	1.71
975.0	4.94	350.80	972.2	45.3	-17.5	-48.4	1.51
1,000.0	4.50	351.70	997.2	47.4	-17.8	-50.4	1.78
1,025.0	4.29	353.42	1,022.1	49.3	-18.0	-52.2	0.99
1,050.0	4.04	354.18	1,047.0	51.1	-18.2	-54.0	1.02
1,075.0	3.67	355.18	1,072.0	52.7	-18.4	-55.5	1.50
1,100.0	3.52	355.08	1,096.9	54.3	-18.5	-57.0	0.60
1,125.0	3.17	357.87	1,121.9	55.8	-18.6	-58.4	1.54
1,150.0	2.89	356.16	1,146.8	57.1	-18.7	-59.6	1.18
1,175.0	2.68	0.13	1,171.8	58.3	-18.7	-60.7	1.14
1,200.0	2.52	1.61	1,196.8	59.4	-18.7	-61.7	0.69
1,225.0	2.36	5.44	1,221.8	60.5	-18.6	-62.7	0.91
1,250.0	1.88	2.78	1,246.7	61.4	-18.6	-63.5	1.96
1,275.0	1.63	4.21	1,271.7	62.2	-18.5	-64.1	1.02
1,300.0	1.49	5.51	1,296.7	62.8	-18.5	-64.7	0.58
1,325.0	1.37	4.36	1,321.7	63.5	-18.4	-65.3	0.49
1,350.0	1.17	8.60	1,346.7	64.0	-18.4	-65.7	0.88





EOW Completion Report



**Company:** Antero  
**Project:** Doddridge County WV  
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**Wellbore:** Original Wellpath  
**Design:** As Drilled

**Local Co-ordinate Reference:** Well Sheep Run Unit 1H  
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**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)
1,375.0	0.98	10.64	1,371.7	64.5	-18.3	-66.1	0.78
1,400.0	0.91	14.62	1,396.7	64.9	-18.2	-66.4	0.38
1,425.0	0.73	24.33	1,421.7	65.2	-18.1	-66.7	0.91
1,450.0	0.58	19.22	1,446.7	65.5	-18.0	-66.9	0.64
1,475.0	0.55	16.81	1,471.7	65.7	-17.9	-67.1	0.15
1,500.0	0.35	20.42	1,496.7	65.9	-17.8	-67.2	0.81
1,525.0	0.31	26.83	1,521.7	66.0	-17.8	-67.3	0.22
1,550.0	0.34	11.86	1,546.7	66.2	-17.7	-67.4	0.36
1,575.0	0.33	36.81	1,571.7	66.3	-17.7	-67.5	0.58
1,600.0	0.22	49.65	1,596.7	66.4	-17.6	-67.5	0.50
1,625.0	0.26	41.60	1,621.7	66.5	-17.5	-67.6	0.21
1,650.0	0.34	74.13	1,646.7	66.5	-17.4	-67.6	0.74
1,675.0	0.27	91.74	1,671.7	66.5	-17.3	-67.6	0.46
1,700.0	0.29	115.36	1,696.7	66.5	-17.2	-67.5	0.47
1,725.0	0.45	134.15	1,721.7	66.4	-17.0	-67.3	0.80
1,750.0	0.47	113.60	1,746.7	66.3	-16.9	-67.2	0.66
1,775.0	0.40	128.02	1,771.7	66.2	-16.7	-67.0	0.52
1,800.0	0.47	134.73	1,796.7	66.1	-16.6	-66.8	0.35
1,825.0	0.39	141.60	1,821.7	65.9	-16.4	-66.7	0.38
1,850.0	0.45	138.62	1,846.7	65.8	-16.3	-66.5	0.26
1,875.0	0.40	131.48	1,871.7	65.7	-16.2	-66.3	0.29
1,900.0	0.39	131.20	1,896.7	65.6	-16.1	-66.1	0.04
1,925.0	0.33	138.03	1,921.7	65.5	-15.9	-66.0	0.29
1,950.0	0.44	123.22	1,946.7	65.3	-15.8	-65.8	0.59
1,975.0	0.46	123.69	1,971.7	65.2	-15.7	-65.7	0.08
2,000.0	0.38	128.38	1,996.7	65.1	-15.5	-65.5	0.35
2,025.0	0.49	144.87	2,021.7	65.0	-15.4	-65.3	0.66
2,050.0	0.44	132.66	2,046.7	64.8	-15.3	-65.1	0.44
2,075.0	0.40	130.54	2,071.7	64.7	-15.1	-65.0	0.17
2,100.0	0.36	138.96	2,096.7	64.6	-15.0	-64.8	0.27
2,125.0	0.52	137.37	2,121.7	64.5	-14.9	-64.6	0.64
2,150.0	0.48	131.35	2,146.7	64.3	-14.7	-64.4	0.26
2,175.0	0.43	131.75	2,171.7	64.2	-14.6	-64.3	0.20
2,200.0	0.45	140.81	2,196.7	64.0	-14.4	-64.1	0.29
2,225.0	0.40	135.75	2,221.7	63.9	-14.3	-63.9	0.25
2,250.0	0.42	134.32	2,246.7	63.8	-14.2	-63.7	0.09
2,275.0	0.28	126.23	2,271.7	63.7	-14.1	-63.6	0.59
2,300.0	0.38	129.38	2,296.7	63.6	-14.0	-63.5	0.41
2,325.0	0.31	126.95	2,321.7	63.5	-13.8	-63.3	0.29
2,350.0	0.42	132.04	2,346.7	63.4	-13.7	-63.2	0.46
2,375.0	0.38	142.70	2,371.7	63.3	-13.6	-63.0	0.34
2,400.0	0.38	125.69	2,396.7	63.1	-13.5	-62.9	0.45
2,425.0	0.41	132.42	2,421.7	63.0	-13.3	-62.7	0.22
2,450.0	0.51	125.32	2,446.7	62.9	-13.2	-62.5	0.46
2,475.0	0.45	129.35	2,471.7	62.8	-13.0	-62.3	0.28



EOW Completion Report



**Company:** Antero  
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**Well:** Sheep Run Unit 1H  
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**Local Co-ordinate Reference:** Well Sheep Run Unit 1H  
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Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
2,500.0	0.39	130.55	2,496.7	62.7	-12.9	-62.2	0.24
2,525.0	0.34	131.88	2,521.7	62.6	-12.8	-62.0	0.20
2,550.0	0.44	117.44	2,546.7	62.5	-12.6	-61.9	0.56
2,575.0	0.49	116.45	2,571.7	62.4	-12.4	-61.7	0.20
2,600.0	0.61	102.10	2,596.7	62.3	-12.2	-61.6	0.73
2,625.0	1.26	59.73	2,621.7	62.4	-11.8	-61.5	3.63
2,650.0	2.33	40.71	2,646.6	62.9	-11.3	-61.7	4.84
2,675.0	3.93	33.05	2,671.6	64.0	-10.5	-62.4	6.60
2,700.0	5.27	30.00	2,696.5	65.8	-9.4	-63.5	5.45
2,725.0	6.46	29.23	2,721.4	68.0	-8.2	-65.0	4.77
2,750.0	7.38	27.47	2,746.2	70.6	-6.7	-66.7	3.78
2,775.0	8.05	20.80	2,771.0	73.7	-5.4	-68.9	4.47
2,800.0	8.77	18.22	2,795.7	77.1	-4.2	-71.5	3.25
2,825.0	9.65	19.38	2,820.4	80.9	-2.9	-74.4	3.60
2,850.0	10.11	23.57	2,845.0	84.9	-1.3	-77.3	3.41
2,875.0	10.39	26.03	2,869.6	88.9	0.6	-80.2	2.08
2,900.0	10.72	29.69	2,894.2	93.0	2.7	-82.9	2.99
2,925.0	11.25	33.30	2,918.7	97.1	5.2	-85.5	3.47
2,950.0	11.50	35.57	2,943.3	101.1	8.0	-88.0	2.05
2,975.0	12.02	38.97	2,967.7	105.2	11.1	-90.4	3.46
3,000.0	12.49	42.67	2,992.2	109.2	14.5	-92.5	3.66
3,025.0	12.77	45.99	3,016.6	113.1	18.4	-94.4	3.11
3,050.0	12.92	49.19	3,040.9	116.8	22.5	-96.1	2.91
3,075.0	12.73	52.20	3,065.3	120.3	26.8	-97.4	2.78
3,100.0	12.51	55.08	3,089.7	123.6	31.1	-98.5	2.67
3,125.0	12.16	58.93	3,114.1	126.5	35.6	-99.2	3.57
3,150.0	12.02	61.02	3,138.6	129.1	40.2	-99.6	1.84
3,175.0	11.86	63.42	3,163.0	131.5	44.7	-99.8	2.09
3,200.0	11.85	68.01	3,187.5	133.6	49.4	-99.8	3.77
3,225.0	11.66	71.96	3,212.0	135.4	54.2	-99.3	3.31
3,250.0	11.72	74.76	3,236.5	136.8	59.0	-98.5	2.28
3,275.0	11.88	76.74	3,260.9	138.1	64.0	-97.6	1.74
3,300.0	12.34	79.37	3,285.4	139.2	69.1	-96.3	2.87
3,325.0	12.80	81.20	3,309.8	140.1	74.5	-94.9	2.43
3,350.0	13.47	80.83	3,334.1	141.0	80.1	-93.3	2.70
3,375.0	14.05	79.81	3,358.4	142.0	86.0	-91.7	2.51
3,400.0	14.37	77.87	3,382.6	143.2	92.0	-90.2	2.29
3,425.0	14.70	74.61	3,406.8	144.7	98.1	-88.9	3.53
3,450.0	14.88	71.13	3,431.0	146.5	104.2	-88.0	3.63
3,475.0	15.26	68.27	3,455.1	148.8	110.3	-87.5	3.34
3,500.0	15.47	65.29	3,479.3	151.4	116.4	-87.2	3.27
3,525.0	15.84	64.08	3,503.3	154.3	122.4	-87.3	1.97
3,550.0	16.01	63.02	3,527.4	157.3	128.6	-87.4	1.35
3,575.0	16.14	61.93	3,551.4	160.5	134.7	-87.7	1.31





EOW Completion Report



**Company:** Antero  
**Project:** Doddridge County WV  
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**Well:** Sheep Run Unit 1H  
**Wellbore:** Original Wellpath  
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**Local Co-ordinate Reference:** Well Sheep Run Unit 1H  
**TVD Reference:** Frontier 22: GL 1053' + KB 25' @ 1078.0usft  
**MD Reference:** Frontier 22: GL 1053' + KB 25' @ 1078.0usft  
**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)
3,600.0	16.19	60.84	3,575.4	163.9	140.8	-88.1	1.23
3,625.0	16.19	60.78	3,599.4	167.3	146.9	-88.6	0.07
3,650.0	15.93	60.59	3,623.4	170.7	153.0	-89.0	1.06
3,675.0	15.86	61.23	3,647.5	174.0	158.9	-89.5	0.75
3,700.0	16.15	62.48	3,671.5	177.2	165.0	-89.8	1.80
3,725.0	16.32	64.13	3,695.5	180.4	171.3	-90.0	1.97
3,750.0	16.52	64.88	3,719.5	183.4	177.6	-90.0	1.17
3,775.0	16.60	65.17	3,743.5	186.4	184.1	-90.0	0.46
3,800.0	16.80	65.27	3,767.4	189.4	190.6	-89.9	0.81
3,825.0	16.91	65.32	3,791.3	192.5	197.2	-89.9	0.44
3,850.0	16.97	64.77	3,815.2	195.5	203.8	-89.8	0.68
3,875.0	17.19	64.98	3,839.1	198.7	210.5	-89.8	0.91
3,900.0	17.46	65.95	3,863.0	201.8	217.2	-89.7	1.58
3,925.0	17.55	67.69	3,886.9	204.7	224.1	-89.4	2.12
3,950.0	17.92	68.89	3,910.7	207.5	231.2	-89.0	2.08
3,975.0	18.06	69.76	3,934.4	210.3	238.4	-88.4	1.21
4,000.0	18.22	69.63	3,958.2	213.0	245.7	-87.7	0.66
4,025.0	18.28	69.83	3,981.9	215.7	253.1	-87.0	0.35
4,050.0	18.21	70.16	4,005.7	218.3	260.4	-86.3	0.50
4,075.0	18.52	70.87	4,029.4	221.0	267.9	-85.5	1.53
4,100.0	18.60	71.60	4,053.1	223.5	275.4	-84.6	0.98
4,125.0	18.83	73.00	4,076.8	226.0	283.0	-83.5	2.02
4,150.0	19.03	74.27	4,100.4	228.3	290.8	-82.3	1.83
4,175.0	19.28	75.66	4,124.1	230.4	298.7	-80.8	2.08
4,200.0	19.36	76.92	4,147.6	232.3	306.8	-79.2	1.70
4,225.0	19.37	77.12	4,171.2	234.2	314.9	-77.4	0.27
4,250.0	19.39	76.40	4,194.8	236.1	322.9	-75.7	0.96
4,275.0	19.32	75.46	4,218.4	238.1	331.0	-74.0	1.28
4,300.0	19.10	71.40	4,242.0	240.5	338.8	-72.8	5.41
4,325.0	19.04	68.78	4,265.6	243.2	346.5	-72.0	3.43
4,350.0	19.23	66.45	4,289.3	246.4	354.1	-71.6	3.15
4,375.0	19.37	64.87	4,312.9	249.8	361.6	-71.5	2.16
4,400.0	19.53	63.83	4,336.4	253.4	369.1	-71.6	1.53
4,425.0	19.86	62.99	4,360.0	257.1	376.7	-71.7	1.74
4,450.0	20.10	63.51	4,383.5	261.0	384.3	-72.0	1.19
4,475.0	19.85	62.76	4,407.0	264.8	391.9	-72.2	1.43
4,500.0	19.63	62.53	4,430.5	268.7	399.4	-72.5	0.93
4,525.0	19.52	62.96	4,454.0	272.6	406.9	-72.8	0.73
4,550.0	19.65	63.64	4,477.6	276.3	414.3	-73.0	1.05
4,575.0	19.54	64.26	4,501.1	280.0	421.9	-73.1	0.94
4,600.0	19.74	64.92	4,524.7	283.6	429.5	-73.1	1.19
4,625.0	19.82	66.14	4,548.2	287.1	437.2	-73.0	1.68
4,650.0	19.65	68.23	4,571.7	290.4	444.9	-72.7	2.90
4,675.0	19.59	69.64	4,595.3	293.4	452.8	-72.0	1.91



EOW Completion Report



**Company:** Antero  
**Project:** Doddridge County WV  
**Site:** Fritz Pad: Hayden/Washington/Sheep/Hileman  
**Well:** Sheep Run Unit 1H  
**Wellbore:** Original Wellpath  
**Design:** As Drilled

**Local Co-ordinate Reference:** Well Sheep Run Unit 1H  
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**MD Reference:** Frontier 22: GL 1053' + KB 25' @ 1078.0usft  
**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)
4,700.0	19.57	70.20	4,618.9	296.3	460.6	-71.3	0.75
4,725.0	19.52	70.47	4,642.4	299.1	468.5	-70.5	0.41
4,750.0	19.53	70.63	4,666.0	301.9	476.4	-69.6	0.22
4,775.0	19.40	70.54	4,689.5	304.7	484.3	-68.8	0.53
4,800.0	19.22	69.19	4,713.1	307.5	492.0	-68.0	1.93
4,825.0	18.93	68.00	4,736.8	310.5	499.6	-67.5	1.94
4,850.0	18.94	66.63	4,760.4	313.6	507.1	-67.1	1.78
4,875.0	18.81	66.54	4,784.1	316.8	514.5	-66.9	0.53
4,900.0	18.37	65.66	4,807.8	320.1	521.8	-66.7	2.09
4,925.0	18.12	65.10	4,831.5	323.3	528.9	-66.6	1.22
4,950.0	18.07	64.10	4,855.3	326.6	535.9	-66.6	1.26
4,975.0	17.93	63.68	4,879.0	330.0	542.9	-66.7	0.76
5,000.0	17.49	63.06	4,902.9	333.5	549.7	-66.9	1.91
5,025.0	17.83	62.70	4,926.7	336.9	556.4	-67.1	1.43
5,050.0	18.35	62.85	4,950.4	340.5	563.3	-67.4	2.09
5,075.0	18.62	62.86	4,974.2	344.1	570.4	-67.7	1.08
5,100.0	17.94	61.92	4,997.9	347.7	577.3	-68.0	2.96
5,125.0	17.60	62.58	5,021.7	351.3	584.1	-68.3	1.58
5,150.0	17.15	64.43	5,045.6	354.6	590.8	-68.5	2.85
5,175.0	16.89	65.77	5,069.5	357.7	597.4	-68.4	1.88
5,200.0	16.51	64.78	5,093.4	360.7	603.9	-68.4	1.90
5,225.0	16.73	63.84	5,117.4	363.8	610.4	-68.4	1.39
5,250.0	17.55	63.70	5,141.3	367.0	617.0	-68.5	3.28
5,275.0	18.21	63.00	5,165.1	370.5	623.8	-68.7	2.78
5,300.0	18.47	62.75	5,188.8	374.1	630.8	-69.0	1.09
5,325.0	18.23	62.27	5,212.5	377.7	637.8	-69.3	1.13
5,350.0	17.89	62.31	5,236.3	381.3	644.7	-69.6	1.36
5,375.0	17.51	61.80	5,260.1	384.9	651.4	-70.0	1.64
5,400.0	17.31	62.63	5,284.0	388.4	658.0	-70.3	1.28
5,425.0	17.57	65.00	5,307.8	391.7	664.7	-70.4	3.03
5,441.0	17.44	66.85	5,323.1	393.6	669.1	-70.3	3.57
5,576.0	16.47	66.81	5,452.2	409.1	705.3	-68.9	0.72
5,673.0	15.98	64.85	5,545.3	420.2	730.1	-68.3	0.76
5,769.0	15.35	67.26	5,637.8	430.7	753.7	-67.7	0.94
5,866.0	16.89	69.35	5,730.9	440.7	778.8	-66.0	1.70
5,961.0	19.73	70.94	5,821.1	450.8	806.8	-63.2	3.04
6,057.0	18.42	62.44	5,911.9	463.1	835.6	-62.1	3.20
6,127.0	16.56	57.74	5,978.6	473.5	853.9	-63.7	3.33
6,153.0	15.98	58.84	6,003.6	477.3	860.1	-64.5	2.53
6,185.0	15.76	60.87	6,034.4	481.7	867.6	-65.3	1.87
6,217.0	16.49	67.01	6,065.1	485.6	875.6	-65.4	5.79
6,249.0	18.20	70.59	6,095.7	489.1	884.5	-64.7	6.30
6,282.0	19.53	74.66	6,126.9	492.2	894.7	-63.2	5.67
6,314.0	20.35	80.78	6,157.0	494.5	905.3	-60.8	7.00





EOW Completion Report



**Company:** Antero  
**Project:** Doddridge County WV  
**Site:** Fritz Pad: Hayden/Washington/Sheep/Hileman  
**Well:** Sheep Run Unit 1H  
**Wellbore:** Original Wellpath  
**Design:** As Drilled

**Local Co-ordinate Reference:** Well Sheep Run Unit 1H  
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**Survey Calculation Method:** Minimum Curvature  
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Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
6,346.0	20.01	89.14	6,187.0	495.5	916.3	-57.0	9.07
6,378.0	20.09	97.85	6,217.1	494.9	927.2	-51.7	9.33
6,410.0	21.04	104.25	6,247.1	492.7	938.2	-45.0	7.62
6,442.0	22.10	108.59	6,276.8	489.4	949.5	-37.2	5.98
6,474.0	23.85	110.92	6,306.3	485.1	961.2	-28.4	6.16
6,506.0	25.71	114.46	6,335.3	479.9	973.6	-18.4	7.43
6,538.0	28.53	117.37	6,363.8	473.5	986.7	-7.0	9.74
6,545.0	29.19	118.21	6,369.9	472.0	989.7	-4.3	11.12
<b>MDLX</b>							
6,570.0	31.60	120.96	6,391.5	465.7	1,000.7	6.0	11.12
6,602.0	34.75	123.15	6,418.3	456.4	1,015.5	20.8	10.53
6,634.0	39.64	126.76	6,443.8	445.3	1,031.4	37.6	16.73
6,666.0	45.98	130.97	6,467.2	431.6	1,048.2	57.1	21.73
6,698.0	52.29	135.10	6,488.2	415.1	1,065.9	79.6	21.99
6,705.0	53.68	135.92	6,492.4	411.1	1,069.8	84.9	21.91
<b>BRKT</b>							
6,729.0	58.47	138.53	6,505.8	396.5	1,083.3	103.9	21.91
6,757.0	62.59	142.95	6,519.6	377.6	1,098.7	127.5	20.12
<b>TLLY</b>							
6,762.0	63.34	143.70	6,521.8	374.1	1,101.4	131.9	20.12
6,794.0	68.13	146.76	6,535.0	350.1	1,118.0	160.7	17.32
6,819.0	72.99	148.07	6,543.3	330.2	1,130.7	184.0	20.06
6,851.0	78.85	151.91	6,551.1	303.4	1,146.2	214.9	21.70
<b>MRCL_HOT</b>							
6,883.0	80.82	153.76	6,556.7	275.4	1,160.6	246.4	8.38
6,915.0	82.36	154.28	6,561.4	246.9	1,174.4	278.1	5.07
6,947.0	84.12	154.23	6,565.2	218.3	1,188.2	309.9	5.50
6,979.0	88.08	153.55	6,567.3	189.6	1,202.3	341.8	12.56
7,011.0	90.17	153.51	6,567.8	161.0	1,216.5	373.8	6.53
7,043.0	90.24	153.31	6,567.7	132.4	1,230.9	405.7	0.66
7,075.0	91.51	152.54	6,567.2	103.9	1,245.4	437.7	4.64
7,172.0	92.04	152.19	6,564.2	18.0	1,290.4	534.6	0.65
7,269.0	91.78	151.85	6,561.0	-67.6	1,335.9	631.4	0.44
7,364.0	91.24	152.65	6,558.5	-151.7	1,380.1	726.3	1.02
7,460.0	90.20	151.46	6,557.3	-236.5	1,425.1	822.2	1.65
7,556.0	90.34	153.46	6,556.8	-321.6	1,469.5	918.1	2.09
7,652.0	90.27	154.45	6,556.3	-407.8	1,511.6	1,014.1	1.03
7,749.0	90.47	154.42	6,555.7	-495.3	1,553.5	1,111.1	0.21
7,845.0	90.81	154.52	6,554.6	-582.0	1,594.8	1,207.1	0.37
7,942.0	90.61	154.42	6,553.4	-669.5	1,636.6	1,304.1	0.23
8,037.0	89.93	155.14	6,553.0	-755.4	1,677.1	1,399.1	1.04
8,134.0	89.77	153.62	6,553.2	-842.9	1,719.1	1,496.1	1.58
8,230.0	90.20	155.23	6,553.3	-929.5	1,760.5	1,592.1	1.74
8,325.0	90.71	155.47	6,552.5	-1,015.8	1,800.1	1,687.1	0.59
8,422.0	91.84	155.25	6,550.3	-1,104.0	1,840.6	1,784.0	1.19



EOW Completion Report



**Company:** Antero  
**Project:** Doddridge County WV  
**Site:** Fritz Pad: Hayden/Washington/Sheep/Hileman  
**Well:** Sheep Run Unit 1H  
**Wellbore:** Original Wellpath  
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Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
8,518.0	90.87	155.66	6,548.1	-1,191.3	1,880.4	1,880.0	1.10
8,613.0	90.54	155.30	6,546.9	-1,277.7	1,919.8	1,975.0	0.51
8,710.0	90.10	154.30	6,546.4	-1,365.5	1,961.1	2,072.0	1.13
8,805.0	91.04	154.49	6,545.4	-1,451.1	2,002.2	2,167.0	1.01
8,900.0	90.44	154.88	6,544.2	-1,537.0	2,042.8	2,262.0	0.75
8,995.0	91.34	155.73	6,542.7	-1,623.3	2,082.5	2,356.9	1.30
9,092.0	92.45	154.90	6,539.5	-1,711.4	2,123.0	2,453.9	1.43
9,188.0	91.75	155.54	6,536.0	-1,798.5	2,163.2	2,549.8	0.99
9,284.0	91.04	155.41	6,533.6	-1,885.8	2,203.0	2,645.8	0.75
9,380.0	91.68	155.08	6,531.4	-1,972.9	2,243.2	2,741.7	0.75
9,476.0	91.44	153.06	6,528.8	-2,059.2	2,285.2	2,837.7	2.12
9,572.0	90.77	152.78	6,526.9	-2,144.7	2,328.9	2,933.6	0.76
9,668.0	89.66	153.02	6,526.5	-2,230.2	2,372.6	3,029.6	1.18
9,763.0	90.57	153.52	6,526.4	-2,315.0	2,415.3	3,124.5	1.09
9,859.0	92.04	154.90	6,524.2	-2,401.4	2,457.1	3,220.5	2.10
9,956.0	92.01	154.58	6,520.7	-2,489.1	2,498.5	3,317.5	0.33
10,052.0	91.78	156.35	6,517.6	-2,576.4	2,538.3	3,413.4	1.86
10,149.0	91.58	157.13	6,514.7	-2,665.4	2,576.6	3,510.3	0.83
10,245.0	90.84	157.20	6,512.7	-2,753.9	2,613.8	3,606.2	0.77
10,341.0	90.00	153.87	6,512.0	-2,841.3	2,653.6	3,702.2	3.58
10,437.0	91.21	152.75	6,511.0	-2,927.0	2,696.7	3,798.1	1.72
10,533.0	91.11	154.32	6,509.0	-3,013.0	2,739.5	3,894.1	1.64
10,629.0	91.14	153.51	6,507.1	-3,099.2	2,781.7	3,990.0	0.84
10,725.0	90.97	152.78	6,505.4	-3,184.8	2,825.0	4,086.0	0.78
10,821.0	91.04	155.22	6,503.7	-3,271.1	2,867.1	4,182.0	2.54
10,915.0	90.70	155.21	6,502.3	-3,356.4	2,906.5	4,275.9	0.36
11,011.0	89.73	155.03	6,501.9	-3,443.5	2,946.9	4,371.9	1.03
11,108.0	90.91	155.85	6,501.4	-3,531.7	2,987.2	4,468.9	1.48
11,205.0	91.04	155.12	6,499.7	-3,619.9	3,027.5	4,565.9	0.76
11,301.0	90.37	155.36	6,498.5	-3,707.1	3,067.7	4,661.9	0.74
11,397.0	90.71	152.86	6,497.6	-3,793.5	3,109.6	4,757.9	2.63
11,493.0	91.71	154.04	6,495.6	-3,879.3	3,152.5	4,853.8	1.61
11,589.0	91.45	155.80	6,493.0	-3,966.2	3,193.1	4,949.8	1.85
11,686.0	90.37	156.61	6,491.4	-4,055.0	3,232.3	5,046.7	1.39
11,782.0	90.17	155.50	6,491.0	-4,142.7	3,271.2	5,142.7	1.17
11,878.0	89.73	155.45	6,491.0	-4,230.0	3,311.1	5,238.7	0.46
11,974.0	90.60	156.31	6,490.8	-4,317.7	3,350.3	5,334.7	1.27
12,070.0	90.13	156.45	6,490.2	-4,405.6	3,388.8	5,430.6	0.51
12,166.0	89.66	155.31	6,490.3	-4,493.2	3,428.0	5,526.6	1.28
12,261.0	92.02	155.14	6,488.9	-4,579.5	3,467.8	5,621.6	2.49
12,357.0	91.21	155.11	6,486.2	-4,666.5	3,508.2	5,717.6	0.84
12,454.0	90.67	156.01	6,484.6	-4,754.8	3,548.3	5,814.5	1.08
12,550.0	90.50	156.15	6,483.7	-4,842.6	3,587.2	5,910.5	0.23
12,647.0	89.73	153.41	6,483.5	-4,930.3	3,628.6	6,007.5	2.93





EOW Completion Report



<b>Company:</b> Antero	<b>Local Co-ordinate Reference:</b> Well Sheep Run Unit 1H
<b>Project:</b> Doddridge County WV	<b>TVD Reference:</b> Frontier 22: GL 1053' + KB 25' @ 1078.0usft
<b>Site:</b> Fritz Pad: Hayden/Washington/Sheep/Hileman	<b>MD Reference:</b> Frontier 22: GL 1053' + KB 25' @ 1078.0usft
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<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)
12,743.0	89.80	154.00	6,483.9	-5,016.4	3,671.1	6,103.5	0.62
12,839.0	90.20	154.55	6,483.9	-5,102.9	3,712.7	6,199.5	0.71
12,935.0	88.56	154.71	6,484.9	-5,189.6	3,753.9	6,295.5	1.72
13,031.0	88.86	153.50	6,487.1	-5,275.9	3,795.8	6,391.4	1.30
13,127.0	89.56	151.97	6,488.4	-5,361.3	3,839.8	6,487.4	1.75
13,223.0	89.53	152.04	6,489.2	-5,446.0	3,884.8	6,583.2	0.08
13,320.0	89.67	153.10	6,489.8	-5,532.1	3,929.5	6,680.2	1.10
13,415.0	90.27	156.53	6,489.9	-5,618.1	3,969.9	6,775.2	3.67
13,511.0	89.90	157.02	6,489.7	-5,706.3	4,007.8	6,871.1	0.64
13,606.0	89.36	155.68	6,490.3	-5,793.3	4,045.9	6,966.1	1.52
13,702.0	89.19	154.50	6,491.6	-5,880.4	4,086.3	7,062.0	1.24
13,797.0	89.60	154.36	6,492.6	-5,966.1	4,127.3	7,157.0	0.46
13,893.0	90.67	155.51	6,492.3	-6,053.0	4,168.0	7,253.0	1.64
13,990.0	90.70	155.12	6,491.2	-6,141.1	4,208.5	7,350.0	0.40
14,086.0	89.87	155.03	6,490.7	-6,228.2	4,249.0	7,446.0	0.87
14,181.0	88.32	152.93	6,492.2	-6,313.6	4,290.6	7,541.0	2.75
14,277.0	90.07	154.47	6,493.6	-6,399.6	4,333.1	7,637.0	2.43
14,374.0	89.97	152.73	6,493.5	-6,486.5	4,376.3	7,733.9	1.80
14,469.0	91.11	154.23	6,492.6	-6,571.5	4,418.7	7,828.9	1.98
14,525.0	89.90	155.11	6,492.1	-6,622.1	4,442.6	7,884.9	2.67
14,565.0	91.14	156.24	6,491.8	-6,658.5	4,459.1	7,924.9	4.19
14,660.0	90.54	156.36	6,490.4	-6,745.5	4,497.3	8,019.8	0.64
14,756.0	87.99	157.87	6,491.6	-6,833.9	4,534.6	8,115.7	3.09
14,851.0	88.89	156.25	6,494.2	-6,921.4	4,571.6	8,210.6	1.95
14,948.0	89.16	155.43	6,495.8	-7,009.9	4,611.3	8,307.6	0.89
15,002.0	89.03	155.32	6,496.7	-7,059.0	4,633.8	8,361.6	0.32
15,058.0	89.03	155.32	6,497.6	-7,109.8	4,657.2	8,417.6	0.00

PTB

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,545.0	6,369.9	472.0	989.7	MDLX
6,705.0	6,492.4	411.1	1,069.8	BRKT
6,757.0	6,519.6	377.6	1,098.7	TLLY
6,851.0	6,551.1	303.4	1,146.2	MRCL_HOT
15,058.0	6,497.6	-7,109.8	4,657.2	PTB

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