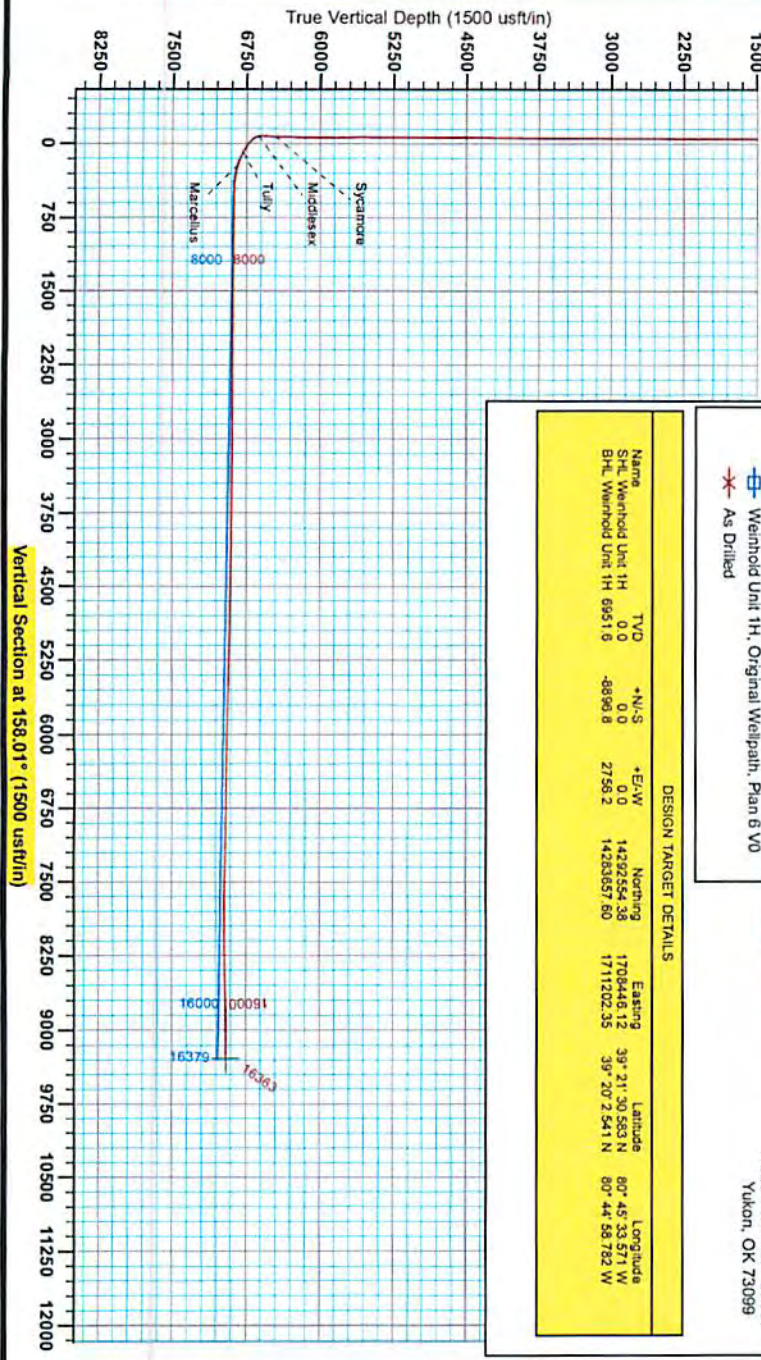




Antero  
Weinhold Unit 1H  
Doddridge County WV  
Northing: 14292554.38  
Easting: 1708446.12  
As Drilled



Vertical Section at 158.01° (1500 usft/in)

**WELL DETAILS: Weinhold Unit 1H**  
 Ground Level: 1135.0  
 +N.S. +E/W Northing Easting  
 0.0 0.0 14292554.38 1708446.12  
 39° 21' 30.5833" N 171° 12' 02.571" W  
 514  
 PROJECT DETAILS: 158.01° Well Path, WV  
 Client: Antero Resources, LLC  
 Geomatics System: Leica  
 Control Station: 160379  
 Zone: Zone 17N (84 W to 17N)  
 Projection: Mean Sea Level

**REFERENCE INFORMATION**  
 Coal Bed Methane Unit 1H, Doddridge County, WV  
 Section 17(2) Reference Station 158.01, 113° 4' 18.17" W  
 Antero Resources, LLC  
 4500 West Virginia Avenue, Charleston, WV 25309  
 (304) 263-1000  
 www.arteroresources.com

**LEGEND**

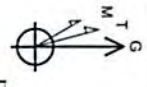
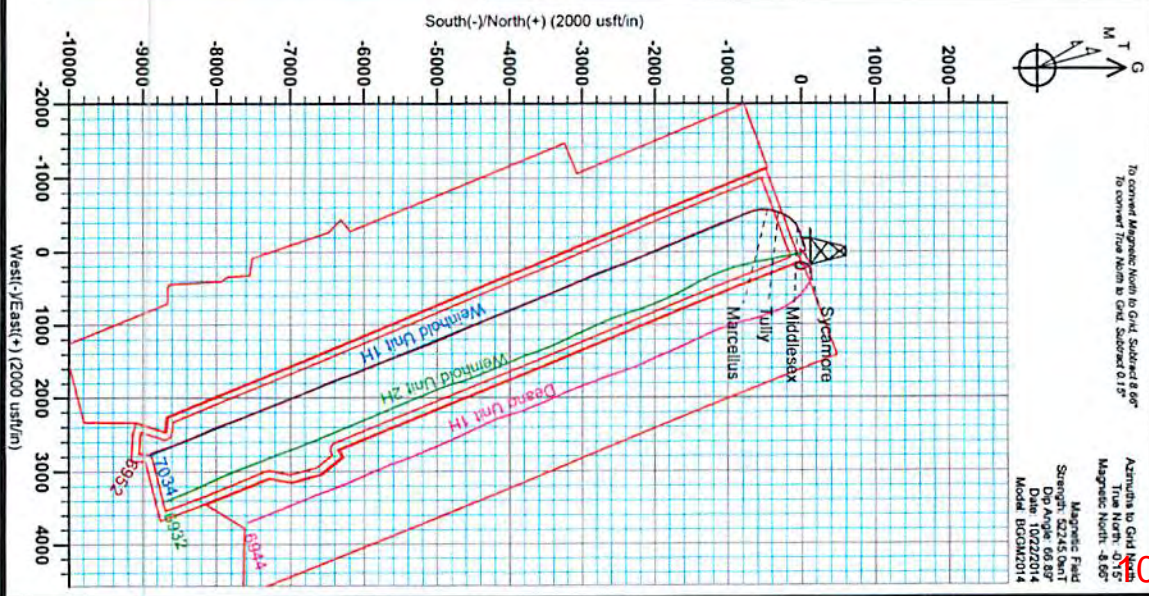
- Weinhold Unit 2H, Original Wellpath, As Drilled V0
- △ Deano Unit 1H, Original Wellpath, As Drilled V0
- Weinhold Unit 1H, Original Wellpath, Plan 6 V0
- \* As Drilled

**DESIGN TARGET DETAILS**

Name	TYD	+N.S.	+E/W	Northing	Easting	Latitude	Longitude
SHL Weinhold Unit 1H	0.0	0.0	0.0	14292554.38	1708446.12	39° 21' 30.5833" N	807° 45' 33.571" W
BHL Weinhold Unit 1H	6951.0	-6890.8	2758.2	14288957.80	1711202.55	39° 20' 2.541" N	807° 44' 58.782" W

Genie Lightfoot  
9:03, January 08 2015  
Scientific Drilling  
11220 N.W. 10th Street  
Yukon, OK 73099

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To convert Magnetic North to Grid, Subtract 8.69°  
 To convert True North to Grid, Subtract 0.15°

Azimuth to Grid North  
 True North: -0.15°  
 Magnetic North: -8.69°

Magnetic Field  
 Strength: 52245.0mT  
 Dip Angle: 69.89°  
 Declination: 8.69°  
 Model: IGRF2014

01/30/2015

17-06495



## Antero

Doddridge County WV  
Melody Pad  
Weinhold Unit 1H  
Original Wellpath

Design: As Drilled

# Gyroscopic Survey Report

08 January, 2015

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10/30/2015



17-06495

Gyroscopic Survey Report



<b>Company:</b> Antero	<b>Local Co-ordinate Reference:</b> Well Weinhold Unit 1H
<b>Project:</b> Doddridge County WV	<b>TVD Reference:</b> Precision 525: GL 1135' + KB 19' @ 1154.0usft
<b>Site:</b> Melody Pad	<b>MD Reference:</b> Precision 525: GL 1135' + KB 19' @ 1154.0usft
<b>Well:</b> Weinhold 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 Feet)	<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>	Melody Pad				
<b>Site Position:</b>		<b>Northing:</b>	14,292,537.54 usft	<b>Latitude:</b>	39° 21' 30.416 N
<b>From:</b>	Map	<b>Easting:</b>	1,708,455.40 usft	<b>Longitude:</b>	80° 45' 33.453 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16"	<b>Grid Convergence:</b>	0.15 °

<b>Well</b>	Weinhold Unit 1H, Marcellus					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	14,292,554.38 usft	<b>Latitude:</b>	39° 21' 30.583 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,708,446.12 usft	<b>Longitude:</b>	80° 45' 33.571 W
<b>Position Uncertainty</b>		2.0 usft	<b>Wellhead Elevation:</b>	1,154.0 usft	<b>Ground Level:</b>	1,135.0 usft

<b>Wellbore</b>	Original Wellpath				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	EGGM2014	10/22/2014	-8.51	66.89	52,245

<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

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	158.01

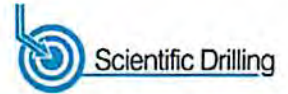
Survey Program	From (usft)	To (usft)	Date	Survey (Wellbore)	Tool Name	Description
	106.0	6,052.0	1/8/2015	Survey #7 Def Gyro to Tangent (Original V	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
	6,102.0	16,363.0		Survey #2 SDI MWD (Original Wellpath)	SDI MWD	Scientific Drilling Intl. MWD - Standard ver 1.0.1

Survey	MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	CL (usft)
	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.0
	106.0	0.18	141.18	106.0	-0.1	0.1	0.2	106.0
	131.0	0.15	138.81	131.0	-0.2	0.2	0.2	25.0
	156.0	0.12	213.03	156.0	-0.2	0.2	0.3	25.0
	181.0	0.04	296.51	181.0	-0.2	0.1	0.3	25.0
	206.0	0.03	90.18	206.0	-0.2	0.1	0.3	25.0
	231.0	0.04	34.75	231.0	-0.2	0.1	0.3	25.0
	256.0	0.09	20.70	256.0	-0.2	0.2	0.3	25.0
	281.0	0.08	218.61	281.0	-0.2	0.2	0.3	25.0
	306.0	0.09	321.58	306.0	-0.2	0.1	0.2	25.0
	331.0	0.13	315.08	331.0	-0.2	0.1	0.2	25.0



17-06495

Gyroscopic Survey Report



<b>Company:</b> Antero	<b>Local Co-ordinate Reference:</b> Well Weinhold Unit 1H
<b>Project:</b> Doddridge County WV	<b>TVD Reference:</b> Precision 525: GL 1135' + KB 19' @ 1154.0usft
<b>Site:</b> Melody Pad	<b>MD Reference:</b> Precision 525: GL 1135' + KB 19' @ 1154.0usft
<b>Well:</b> Weinhold 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)	CL (usft)	
356.0	0.18	349.00	356.0	-0.1	0.1	0.1	25.0	
381.0	0.13	315.79	381.0	-0.1	0.0	0.1	25.0	
406.0	0.02	339.22	406.0	0.0	0.0	0.0	25.0	
431.0	0.06	276.68	431.0	0.0	0.0	0.0	25.0	
456.0	0.18	275.96	456.0	0.0	0.0	0.0	25.0	
481.0	0.25	262.34	481.0	0.0	-0.1	0.0	25.0	
506.0	0.03	285.99	506.0	0.0	-0.2	0.0	25.0	
531.0	0.17	301.44	531.0	0.0	-0.2	-0.1	25.0	
556.0	0.30	306.71	556.0	0.1	-0.3	-0.2	25.0	
581.0	0.68	345.06	581.0	0.2	-0.4	-0.4	25.0	
606.0	1.09	343.09	606.0	0.6	-0.5	-0.8	25.0	
631.0	1.51	341.72	631.0	1.1	-0.7	-1.3	25.0	
656.0	1.90	343.52	656.0	1.9	-0.9	-2.1	25.0	
681.0	2.51	348.90	681.0	2.8	-1.1	-3.0	25.0	
706.0	3.29	349.34	705.9	4.0	-1.4	-4.3	25.0	
731.0	3.93	350.55	730.9	5.6	-1.6	-5.8	25.0	
756.0	4.34	351.06	755.8	7.4	-1.9	-7.6	25.0	
781.0	4.50	352.46	780.7	9.3	-2.2	-9.4	25.0	
806.0	4.87	350.12	805.7	11.3	-2.5	-11.9	25.0	
831.0	5.01	349.92	830.6	13.4	-2.9	-13.5	25.0	
856.0	5.03	349.25	855.5	15.6	-3.3	-15.7	25.0	
881.0	5.04	349.58	880.4	17.7	-3.7	-17.8	25.0	
906.0	5.14	348.64	905.3	19.9	-4.1	-19.9	25.0	
931.0	5.16	349.33	930.2	22.1	-4.5	-22.2	25.0	
956.0	5.06	348.75	955.1	24.3	-5.0	-24.4	25.0	
981.0	4.96	347.06	980.0	26.4	-5.4	-26.5	25.0	
1,006.0	4.45	342.05	1,004.9	28.4	-6.0	-28.6	25.0	
1,031.0	4.32	342.74	1,029.8	30.2	-6.5	-30.5	25.0	
1,056.0	4.28	341.17	1,054.7	32.0	-7.1	-32.3	25.0	
1,081.0	3.71	336.99	1,079.7	33.6	-7.7	-34.1	25.0	
1,106.0	3.47	336.47	1,104.6	35.1	-8.4	-35.6	25.0	
1,131.0	3.27	335.79	1,129.6	36.4	-8.9	-37.1	25.0	
1,156.0	3.16	336.65	1,154.6	37.7	-9.5	-38.5	25.0	
1,181.0	2.76	336.80	1,179.5	38.9	-10.0	-39.8	25.0	
1,206.0	2.43	333.49	1,204.5	39.9	-10.5	-40.9	25.0	
1,231.0	2.34	331.64	1,229.5	40.8	-11.0	-42.0	25.0	
1,256.0	2.17	331.86	1,254.5	41.7	-11.4	-42.9	25.0	
1,281.0	1.94	329.22	1,279.4	42.5	-11.9	-43.8	25.0	
1,306.0	1.78	329.69	1,304.4	43.2	-12.3	-44.6	25.0	
1,331.0	1.61	326.48	1,329.4	43.8	-12.7	-45.4	25.0	
1,356.0	1.47	322.46	1,354.4	44.3	-13.1	-46.0	25.0	
1,381.0	1.23	326.99	1,379.4	44.8	-13.4	-46.6	25.0	
1,406.0	1.26	322.77	1,404.4	45.3	-13.7	-47.1	25.0	
1,431.0	0.99	312.94	1,429.4	45.6	-14.1	-47.6	25.0	

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Gyroscopic Survey Report



<b>Company:</b>	Antero	<b>Local Co-ordinate Reference:</b>	Well Weinhold Unit 1H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 525: GL 1135' + KB 19' @ 1154.0usft
<b>Site:</b>	Melody Pad	<b>MD Reference:</b>	Precision 525: GL 1135' + KB 19' @ 1154.0usft
<b>Well:</b>	Weinhold 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)	CL (usft)
1,456.0	0.89	318.77	1,454.4	45.9	-14.3	-48.0	25.0
1,481.0	0.81	313.18	1,479.4	46.2	-14.6	-48.3	25.0
1,506.0	0.70	312.96	1,504.4	46.4	-14.8	-48.6	25.0
1,531.0	0.57	316.56	1,529.4	46.6	-15.0	-48.9	25.0
1,556.0	0.67	313.16	1,554.4	46.8	-15.2	-49.1	25.0
1,581.0	0.63	312.31	1,579.4	47.0	-15.4	-49.4	25.0
1,606.0	0.52	314.25	1,604.4	47.2	-15.6	-49.6	25.0
1,631.0	0.34	315.46	1,629.4	47.3	-15.8	-49.8	25.0
1,656.0	0.37	313.66	1,654.4	47.4	-15.9	-49.9	25.0
1,681.0	0.34	313.84	1,679.4	47.5	-16.0	-50.0	25.0
1,706.0	0.31	315.45	1,704.4	47.6	-16.1	-50.2	25.0
1,731.0	0.27	320.18	1,729.4	47.7	-16.2	-50.3	25.0
1,756.0	0.17	329.84	1,754.4	47.8	-16.2	-50.4	25.0
1,781.0	0.09	345.80	1,779.4	47.8	-16.2	-50.4	25.0
1,806.0	0.07	29.65	1,804.4	47.9	-16.2	-50.5	25.0
1,831.0	0.18	60.02	1,829.4	47.9	-16.2	-50.5	25.0
1,856.0	0.20	80.11	1,854.4	47.9	-16.1	-50.5	25.0
1,881.0	0.20	79.01	1,879.4	47.9	-16.0	-50.5	25.0
1,906.0	0.12	65.41	1,904.4	48.0	-16.0	-50.5	25.0
1,931.0	0.12	42.15	1,929.4	48.0	-15.9	-50.5	25.0
1,956.0	0.16	58.26	1,954.4	48.0	-15.9	-50.5	25.0
1,981.0	0.13	50.22	1,979.4	48.1	-15.8	-50.5	25.0
2,006.0	0.25	69.26	2,004.4	48.1	-15.8	-50.5	25.0
2,031.0	0.17	42.97	2,029.4	48.2	-15.7	-50.5	25.0
2,056.0	0.16	49.67	2,054.4	48.2	-15.6	-50.5	25.0
2,081.0	0.14	59.80	2,079.4	48.2	-15.6	-50.6	25.0
2,106.0	0.14	43.00	2,104.4	48.3	-15.5	-50.6	25.0
2,131.0	0.12	42.92	2,129.4	48.3	-15.5	-50.6	25.0
2,156.0	0.19	38.17	2,154.4	48.4	-15.4	-50.6	25.0
2,181.0	0.06	49.58	2,179.4	48.4	-15.4	-50.7	25.0
2,206.0	0.10	32.42	2,204.4	48.4	-15.4	-50.7	25.0
2,231.0	0.10	48.66	2,229.4	48.5	-15.4	-50.7	25.0
2,256.0	0.10	338.59	2,254.4	48.5	-15.3	-50.7	25.0
2,281.0	0.14	313.65	2,279.4	48.6	-15.4	-50.8	25.0
2,306.0	0.10	335.88	2,304.4	48.6	-15.4	-50.8	25.0
2,331.0	0.09	302.25	2,329.4	48.6	-15.4	-50.9	25.0
2,356.0	0.15	312.41	2,354.4	48.7	-15.5	-50.9	25.0
2,381.0	0.10	319.41	2,379.4	48.7	-15.5	-51.0	25.0
2,406.0	0.10	286.56	2,404.4	48.7	-15.5	-51.0	25.0
2,431.0	0.15	343.51	2,429.4	48.8	-15.6	-51.0	25.0
2,456.0	0.15	328.43	2,454.4	48.8	-15.6	-51.1	25.0
2,481.0	0.07	264.06	2,479.4	48.8	-15.6	-51.1	25.0
2,506.0	0.16	261.69	2,504.4	48.8	-15.7	-51.2	25.0
2,531.0	0.15	310.62	2,529.4	48.8	-15.7	-51.2	25.0
2,556.0	0.27	250.22	2,554.4	48.9	-15.8	-51.2	25.0

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17-06495

Gyroscopic Survey Report



<b>Company:</b> Antero	<b>Local Co-ordinate Reference:</b> Well Weinhold Unit 1H
<b>Project:</b> Doddridge County WV	<b>TVD Reference:</b> Precision 525: GL 1135' + KB 19' @ 1154.0usft
<b>Site:</b> Melody Pad	<b>MD Reference:</b> Precision 525: GL 1135' + KB 19' @ 1154.0usft
<b>Well:</b> Weinhold 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

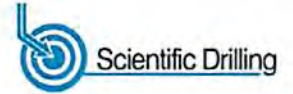
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	CL (usft)
2,581.0	0.16	268.75	2,579.4	48.8	-15.9	-51.2	25.0
2,606.0	0.19	259.86	2,604.4	48.8	-16.0	-51.3	25.0
2,631.0	0.18	278.42	2,629.4	48.8	-16.1	-51.3	25.0
2,656.0	0.36	274.60	2,654.4	48.8	-16.2	-51.3	25.0
2,681.0	0.38	266.79	2,679.4	48.8	-16.4	-51.4	25.0
2,706.0	0.42	276.02	2,704.4	48.8	-16.5	-51.5	25.0
2,731.0	0.43	254.85	2,729.4	48.8	-16.7	-51.5	25.0
2,756.0	0.32	252.52	2,754.4	48.8	-16.9	-51.5	25.0
2,781.0	0.31	301.67	2,779.4	48.8	-17.0	-51.6	25.0
2,806.0	0.37	308.16	2,804.4	48.9	-17.1	-51.7	25.0
2,831.0	0.40	296.76	2,829.4	49.0	-17.3	-51.9	25.0
2,856.0	0.45	262.63	2,854.4	49.0	-17.4	-52.0	25.0
2,881.0	0.49	284.71	2,879.4	49.0	-17.6	-52.0	25.0
2,906.0	0.64	264.07	2,904.4	49.0	-17.9	-52.1	25.0
2,931.0	0.57	261.23	2,929.4	49.0	-18.1	-52.2	25.0
2,956.0	0.54	275.03	2,954.4	49.0	-18.4	-52.3	25.0
2,981.0	0.52	289.35	2,979.4	49.0	-18.6	-52.4	25.0
3,006.0	0.49	278.67	3,004.4	49.1	-18.8	-52.6	25.0
3,031.0	0.49	286.64	3,029.4	49.1	-19.0	-52.7	25.0
3,056.0	0.54	279.83	3,054.4	49.2	-19.2	-52.8	25.0
3,081.0	0.62	285.90	3,079.4	49.2	-19.5	-52.9	25.0
3,106.0	0.75	286.14	3,104.4	49.3	-19.8	-53.1	25.0
3,131.0	0.71	280.25	3,129.3	49.4	-20.1	-53.3	25.0
3,156.0	0.71	277.47	3,154.3	49.4	-20.4	-53.5	25.0
3,181.0	0.74	272.52	3,179.3	49.5	-20.7	-53.6	25.0
3,206.0	0.72	278.46	3,204.3	49.5	-21.0	-53.8	25.0
3,231.0	0.63	276.69	3,229.3	49.5	-21.3	-53.9	25.0
3,256.0	0.70	273.34	3,254.3	49.6	-21.6	-54.1	25.0
3,281.0	0.66	277.88	3,279.3	49.6	-21.9	-54.2	25.0
3,306.0	0.66	275.09	3,304.3	49.6	-22.2	-54.3	25.0
3,331.0	0.63	274.18	3,329.3	49.6	-22.5	-54.4	25.0
3,356.0	0.72	271.19	3,354.3	49.7	-22.8	-54.6	25.0
3,381.0	0.63	277.90	3,379.3	49.7	-23.0	-54.7	25.0
3,406.0	0.62	285.00	3,404.3	49.7	-23.3	-54.8	25.0
3,431.0	0.84	281.80	3,429.3	49.8	-23.6	-55.0	25.0
3,456.0	0.79	277.04	3,454.3	49.9	-24.0	-55.2	25.0
3,481.0	0.85	273.29	3,479.3	49.9	-24.3	-55.4	25.0
3,506.0	0.81	281.59	3,504.3	49.9	-24.7	-55.6	25.0
3,531.0	0.79	277.09	3,529.3	50.0	-25.0	-55.7	25.0
3,556.0	0.75	278.54	3,554.3	50.0	-25.4	-55.9	25.0
3,581.0	0.70	270.26	3,579.3	50.1	-25.7	-56.0	25.0
3,606.0	0.69	268.37	3,604.3	50.1	-26.0	-56.2	25.0
3,631.0	0.63	274.91	3,629.3	50.1	-26.3	-56.3	25.0
3,656.0	0.65	276.86	3,654.3	50.1	-26.5	-56.4	25.0

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Gyroscopic Survey Report



<b>Company:</b>	Antero	<b>Local Co-ordinate Reference:</b>	Well Weinhold Unit 1H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 525: GL 1135' + KB 19' @ 1154.0usft
<b>Site:</b>	Melody Pad	<b>MD Reference:</b>	Precision 525: GL 1135' + KB 19' @ 1154.0usft
<b>Well:</b>	Weinhold 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

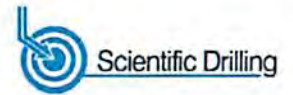
Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	CL (usft)	
3,681.0	0.62	272.51	3,679.3	50.1	-26.8	-56.5	25.0	
3,706.0	0.71	273.42	3,704.3	50.1	-27.1	-56.6	25.0	
3,731.0	0.63	273.90	3,729.3	50.2	-27.4	-56.8	25.0	
3,756.0	0.61	272.32	3,754.3	50.2	-27.7	-56.9	25.0	
3,781.0	0.61	275.40	3,779.3	50.2	-27.9	-57.0	25.0	
3,806.0	0.68	283.55	3,804.3	50.2	-28.2	-57.1	25.0	
3,831.0	0.78	280.42	3,829.3	50.3	-28.5	-57.3	25.0	
3,856.0	0.79	278.81	3,854.3	50.4	-28.9	-57.5	25.0	
3,881.0	0.75	269.98	3,879.3	50.4	-29.2	-57.7	25.0	
3,906.0	0.67	269.23	3,904.3	50.4	-29.5	-57.8	25.0	
3,931.0	0.69	279.59	3,929.3	50.4	-29.8	-57.9	25.0	
3,956.0	0.56	280.38	3,954.3	50.5	-30.1	-58.0	25.0	
3,981.0	0.67	285.96	3,979.3	50.5	-30.3	-58.2	25.0	
4,006.0	0.77	276.65	4,004.3	50.6	-30.6	-58.4	25.0	
4,031.0	0.69	276.76	4,029.3	50.6	-31.0	-58.5	25.0	
4,056.0	0.71	272.62	4,054.3	50.6	-31.3	-58.7	25.0	
4,081.0	0.64	275.37	4,079.3	50.7	-31.6	-58.8	25.0	
4,106.0	0.67	263.85	4,104.3	50.7	-31.8	-58.9	25.0	
4,131.0	0.59	268.03	4,129.3	50.6	-32.1	-59.0	25.0	
4,156.0	0.65	283.52	4,154.3	50.7	-32.4	-59.1	25.0	
4,181.0	0.72	278.61	4,179.3	50.7	-32.7	-59.3	25.0	
4,206.0	0.57	271.18	4,204.3	50.7	-33.0	-59.4	25.0	
4,231.0	0.65	284.34	4,229.3	50.8	-33.2	-59.5	25.0	
4,256.0	0.61	282.52	4,254.3	50.9	-33.5	-59.6	25.0	
4,281.0	0.63	299.55	4,279.3	50.9	-33.7	-59.9	25.0	
4,306.0	0.64	284.78	4,304.3	51.1	-34.0	-60.0	25.0	
4,331.0	0.68	284.16	4,329.3	51.1	-34.3	-60.2	25.0	
4,356.0	0.60	288.53	4,354.3	51.2	-34.5	-60.4	25.0	
4,381.0	0.61	296.68	4,379.3	51.3	-34.8	-60.6	25.0	
4,406.0	0.72	297.94	4,404.3	51.4	-35.0	-60.8	25.0	
4,431.0	0.78	300.83	4,429.3	51.6	-35.3	-61.1	25.0	
4,456.0	0.75	302.44	4,454.3	51.8	-35.6	-61.3	25.0	
4,481.0	0.81	298.09	4,479.3	51.9	-35.9	-61.6	25.0	
4,506.0	0.82	291.85	4,504.2	52.1	-36.2	-61.9	25.0	
4,531.0	0.81	281.39	4,529.2	52.2	-36.6	-62.1	25.0	
4,556.0	0.81	283.19	4,554.2	52.3	-36.9	-62.3	25.0	
4,581.0	0.65	292.29	4,579.2	52.4	-37.2	-62.5	25.0	
4,606.0	0.60	282.08	4,604.2	52.4	-37.5	-62.7	25.0	
4,631.0	0.56	279.61	4,629.2	52.5	-37.7	-62.8	25.0	
4,656.0	0.47	284.20	4,654.2	52.5	-37.9	-62.9	25.0	
4,681.0	0.64	284.73	4,679.2	52.6	-38.2	-63.1	25.0	
4,706.0	0.67	280.46	4,704.2	52.7	-38.4	-63.2	25.0	
4,731.0	0.69	268.88	4,729.2	52.7	-38.7	-63.4	25.0	
4,756.0	0.49	291.09	4,754.2	52.7	-39.0	-63.5	25.0	

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Gyroscopic Survey Report



<b>Company:</b> Antero	<b>Local Co-ordinate Reference:</b> Well Weinhold Unit 1H
<b>Project:</b> Doddridge County WV	<b>TVD Reference:</b> Precision 525: GL 1135' + KB 19' @ 1154.0usft
<b>Site:</b> Melody Pad	<b>MD Reference:</b> Precision 525: GL 1135' + KB 19' @ 1154.0usft
<b>Well:</b> Weinhold 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)	CL (usft)	
4,781.0	0.58	284.68	4,779.2	52.8	-39.2	-63.6	25.0	
4,806.0	0.67	271.95	4,804.2	52.8	-39.5	-63.8	25.0	
4,831.0	0.49	274.80	4,829.2	52.8	-39.7	-63.9	25.0	
4,856.0	0.51	276.73	4,854.2	52.9	-40.0	-64.0	25.0	
4,881.0	0.62	276.13	4,879.2	52.9	-40.2	-64.1	25.0	
4,906.0	0.67	260.17	4,904.2	52.9	-40.5	-64.2	25.0	
4,931.0	0.59	260.77	4,929.2	52.8	-40.7	-64.2	25.0	
4,956.0	0.47	255.39	4,954.2	52.8	-41.0	-64.3	25.0	
4,981.0	0.51	252.94	4,979.2	52.7	-41.2	-64.3	25.0	
5,006.0	0.54	242.20	5,004.2	52.6	-41.4	-64.3	25.0	
5,031.0	0.34	240.10	5,029.2	52.5	-41.6	-64.3	25.0	
5,056.0	0.33	262.79	5,054.2	52.5	-41.7	-64.3	25.0	
5,081.0	0.49	249.99	5,079.2	52.5	-41.9	-64.3	25.0	
5,106.0	0.55	239.20	5,104.2	52.4	-42.1	-64.3	25.0	
5,131.0	0.52	236.81	5,129.2	52.2	-42.3	-64.3	25.0	
5,156.0	0.50	243.59	5,154.2	52.1	-42.5	-64.2	25.0	
5,181.0	0.46	233.98	5,179.2	52.0	-42.6	-64.2	25.0	
5,206.0	0.45	232.17	5,204.2	51.9	-42.8	-64.1	25.0	
5,231.0	0.44	236.08	5,229.2	51.8	-43.0	-64.1	25.0	
5,256.0	0.41	234.03	5,254.2	51.7	-43.1	-64.1	25.0	
5,281.0	0.43	233.46	5,279.2	51.6	-43.3	-64.0	25.0	
5,306.0	0.43	230.16	5,304.2	51.5	-43.4	-64.0	25.0	
5,331.0	0.38	244.09	5,329.2	51.4	-43.5	-63.9	25.0	
5,356.0	0.27	273.86	5,354.2	51.3	-43.7	-63.9	25.0	
5,381.0	0.40	264.48	5,379.2	51.3	-43.8	-64.0	25.0	
5,406.0	0.45	253.11	5,404.2	51.3	-44.0	-64.1	25.0	
5,431.0	0.48	254.88	5,429.2	51.2	-44.2	-64.1	25.0	
5,456.0	0.42	245.59	5,454.2	51.2	-44.4	-64.1	25.0	
5,481.0	0.41	235.19	5,479.2	51.1	-44.5	-64.0	25.0	
5,506.0	0.32	233.62	5,504.2	51.0	-44.7	-64.0	25.0	
5,531.0	0.27	256.60	5,529.2	50.9	-44.8	-64.0	25.0	
5,556.0	0.29	251.12	5,554.2	50.9	-44.9	-64.0	25.0	
5,581.0	0.44	259.02	5,579.2	50.9	-45.1	-64.0	25.0	
5,606.0	0.38	271.77	5,604.2	50.8	-45.2	-64.1	25.0	
5,631.0	0.45	256.34	5,629.2	50.8	-45.4	-64.1	25.0	
5,656.0	0.40	258.60	5,654.2	50.8	-45.6	-64.2	25.0	
5,681.0	0.60	259.15	5,679.2	50.7	-45.8	-64.2	25.0	
5,706.0	0.55	241.83	5,704.2	50.7	-46.0	-64.2	25.0	
5,731.0	0.54	240.30	5,729.2	50.5	-46.2	-64.2	25.0	
5,756.0	0.50	231.23	5,754.2	50.4	-46.4	-64.1	25.0	
5,781.0	0.43	239.95	5,779.2	50.3	-46.6	-64.1	25.0	
5,806.0	0.37	231.33	5,804.2	50.2	-46.7	-64.1	25.0	
5,831.0	0.43	253.40	5,829.2	50.1	-46.9	-64.0	25.0	
5,856.0	0.42	240.45	5,854.2	50.1	-47.1	-64.0	25.0	

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17-06495

Gyroscopic Survey Report



<b>Company:</b> Antero	<b>Local Co-ordinate Reference:</b> Well Weinhold Unit 1H
<b>Project:</b> Doddridge County WV	<b>TVD Reference:</b> Precision 525: GL 1135' + KB 19' @ 1154.0usft
<b>Site:</b> Melody Pad	<b>MD Reference:</b> Precision 525: GL 1135' + KB 19' @ 1154.0usft
<b>Well:</b> Weinhold 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)	CL (usft)
5,881.0	0.36	218.94	5,879.2	49.9	-47.2	-64.0	25.0
5,906.0	0.46	235.52	5,904.2	49.8	-47.3	-63.9	25.0
5,931.0	0.40	212.69	5,929.2	49.7	-47.5	-63.9	25.0
5,956.0	0.52	239.78	5,954.2	49.6	-47.6	-63.8	25.0
5,981.0	0.31	226.72	5,979.2	49.5	-47.8	-63.7	25.0
6,006.0	0.44	248.97	6,004.2	49.4	-47.9	-63.7	25.0
6,031.0	0.47	244.93	6,029.2	49.3	-48.1	-63.7	25.0
6,052.0	0.43	214.86	6,050.2	49.2	-48.2	-63.7	21.0
6,102.0	0.44	229.96	6,100.2	48.9	-48.5	-63.5	50.0
6,146.0	0.34	260.70	6,144.2	48.8	-48.7	-63.5	44.0
6,191.0	1.81	255.94	6,189.2	48.6	-49.5	-63.6	45.0
6,236.0	7.67	254.19	6,234.0	47.6	-53.1	-64.0	45.0
6,281.0	13.08	256.59	6,278.3	45.6	-61.0	-65.1	45.0
6,326.0	18.27	255.82	6,321.6	42.7	-72.8	-66.8	45.0
6,371.0	23.31	251.29	6,363.6	38.1	-88.0	-68.3	45.0
6,416.0	28.41	249.48	6,404.1	31.5	-106.5	-69.1	45.0
6,460.0	33.54	249.45	6,441.8	23.6	-127.7	-69.7	44.0
6,474.0	35.32	249.85	6,453.4	20.8	-135.1	-69.9	14.0
<b>Sycamore</b>							
6,505.0	39.27	250.63	6,478.0	14.5	-152.8	-70.6	31.0
6,550.0	44.64	250.52	6,511.5	4.5	-181.2	-72.0	45.0
6,595.0	49.94	250.33	6,542.0	-6.6	-212.3	-73.4	45.0
6,640.0	53.12	249.86	6,570.0	-18.6	-245.4	-74.6	45.0
6,685.0	57.81	249.36	6,595.5	-31.5	-280.2	-75.7	45.0
6,730.0	62.26	245.73	6,618.0	-46.4	-316.2	-75.3	45.0
6,750.0	62.34	242.37	6,627.3	-54.2	-332.1	-75.3	20.0
<b>Middlesex</b>							
6,774.0	62.55	238.35	6,638.4	-64.7	-350.6	-71.3	45.0
6,819.0	62.27	230.90	6,659.2	-87.8	-383.1	-62.7	45.0
6,864.0	62.88	223.36	6,680.0	-114.9	-412.3	-41.4	45.0
6,909.0	63.45	218.36	6,700.3	-145.3	-438.6	-29.5	45.0
6,954.0	63.94	213.52	6,720.3	-177.9	-462.2	-8.1	45.0
6,999.0	64.38	209.83	6,739.9	-212.4	-483.5	15.9	45.0
7,044.0	65.36	206.90	6,759.0	-248.2	-502.8	41.9	45.0
7,088.0	66.70	202.04	6,776.9	-284.8	-519.5	69.6	44.0
7,116.0	67.96	199.31	6,787.7	-309.0	-528.6	88.6	28.0
<b>Tully</b>							
7,133.0	68.75	197.67	6,793.9	-324.0	-533.6	100.6	17.0
7,178.0	71.01	193.95	6,809.4	-364.6	-545.1	134.0	45.0
7,223.0	73.37	189.76	6,823.2	-406.5	-553.9	169.6	45.0
7,268.0	75.81	186.50	6,835.1	-449.5	-560.0	207.1	45.0
7,276.0	76.08	185.86	6,837.1	-457.2	-560.9	213.9	8.0
<b>Marcellus</b>							
7,313.0	77.35	182.94	6,845.6	-493.1	-563.6	246.2	37.0
7,358.0	79.08	178.11	6,854.8	-537.1	-564.0	286.9	45.0

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Gyroscopic Survey Report



<b>Company:</b> Antero	<b>Local Co-ordinate Reference:</b> Well Weinhold Unit 1H
<b>Project:</b> Doddridge County WV	<b>TVD Reference:</b> Precision 525: GL 1135' + KB 19' @ 1154.0usft
<b>Site:</b> Melody Pad	<b>MD Reference:</b> Precision 525: GL 1135' + KB 19' @ 1154.0usft
<b>Well:</b> Weinhold 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)	CL (usft)
7,402.0	80.94	173.25	6,862.4	-580.3	-560.7	328.1	44.0
7,447.0	81.98	169.26	6,869.1	-624.3	-554.0	371.4	45.0
7,492.0	83.51	164.30	6,874.8	-667.7	-543.8	415.5	45.0
7,537.0	87.85	158.90	6,878.2	-710.3	-529.6	460.3	45.0
7,561.0	90.31	157.63	6,878.6	-732.6	-520.7	484.3	24.0
7,606.0	90.31	156.31	6,878.3	-774.0	-503.1	529.3	45.0
7,696.0	88.90	159.04	6,878.9	-857.2	-468.9	619.3	90.0
7,786.0	88.90	157.54	6,880.7	-940.8	-435.6	709.2	90.0
7,875.0	89.60	159.65	6,881.8	-1,023.7	-403.2	798.2	89.0
7,965.0	89.69	160.79	6,882.4	-1,108.4	-372.7	888.2	90.0
8,055.0	89.87	157.98	6,882.7	-1,192.6	-341.0	978.1	90.0
8,144.0	89.52	157.98	6,883.2	-1,275.1	-307.7	1,067.1	89.0
8,234.0	89.25	157.72	6,884.2	-1,358.4	-273.7	1,157.1	90.0
8,324.0	88.99	158.95	6,885.6	-1,442.1	-240.5	1,247.1	90.0
8,414.0	88.99	156.22	6,887.2	-1,525.3	-206.2	1,337.1	90.0
8,503.0	90.13	154.20	6,887.8	-1,606.0	-168.9	1,426.0	89.0
8,593.0	90.04	158.60	6,887.7	-1,688.5	-132.9	1,515.9	90.0
8,683.0	89.78	160.62	6,887.8	-1,772.9	-101.5	1,605.9	90.0
8,772.0	88.90	159.21	6,888.9	-1,856.4	-71.0	1,694.8	89.0
8,862.0	88.99	154.90	6,890.5	-1,939.3	-35.9	1,784.8	90.0
8,952.0	89.78	158.16	6,891.5	-2,021.8	0.0	1,874.7	90.0
9,042.0	90.31	159.12	6,891.4	-2,105.6	32.7	1,964.7	90.0
9,131.0	90.04	155.61	6,891.1	-2,187.8	67.0	2,054.7	89.0
9,221.0	90.13	158.77	6,891.0	-2,270.7	101.9	2,144.7	90.0
9,311.0	89.87	156.84	6,891.0	-2,354.0	135.9	2,233.7	90.0
9,401.0	90.04	159.74	6,891.1	-2,437.7	169.2	2,323.7	90.0
9,490.0	89.60	162.11	6,891.4	-2,521.8	198.2	2,412.5	89.0
9,580.0	89.96	160.62	6,891.7	-2,607.0	227.0	2,502.4	89.0
9,670.0	89.78	158.16	6,891.9	-2,691.3	258.7	2,592.3	90.0
9,760.0	89.69	156.31	6,892.3	-2,774.3	293.5	2,682.3	90.0
9,849.0	90.22	156.75	6,892.4	-2,855.9	328.9	2,771.3	89.0
9,939.0	90.13	155.70	6,892.1	-2,938.3	365.2	2,861.2	90.0
10,029.0	90.04	155.96	6,892.0	-3,020.4	402.1	2,951.2	90.0
10,118.0	90.13	157.19	6,891.9	-3,102.0	437.5	3,040.2	89.0
10,212.0	89.78	157.37	6,891.9	-3,188.7	473.8	3,134.1	94.0
10,306.0	89.60	156.84	6,892.4	-3,275.3	510.3	3,228.1	94.0
10,400.0	89.52	157.28	6,893.2	-3,361.9	547.0	3,322.1	94.0
10,494.0	88.72	156.49	6,894.6	-3,448.3	583.9	3,416.1	94.0
10,587.0	88.99	157.45	6,896.5	-3,533.9	620.2	3,509.0	93.0
10,681.0	89.78	156.49	6,897.5	-3,620.4	657.0	3,603.0	94.0
10,775.0	88.81	157.98	6,898.6	-3,707.1	693.4	3,697.0	94.0
10,869.0	88.90	157.54	6,900.5	-3,794.1	729.0	3,791.0	94.0
10,963.0	89.08	157.89	6,902.2	-3,881.0	764.6	3,885.0	94.0
11,056.0	89.08	158.77	6,903.7	-3,967.4	798.9	3,978.0	93.0

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Gyroscopic Survey Report



<b>Company:</b>	Antero	<b>Local Co-ordinate Reference:</b>	Well Weinhold Unit 1H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 525: GL 1135' + KB 19' @ 1154.0usft
<b>Site:</b>	Melody Pad	<b>MD Reference:</b>	Precision 525: GL 1135' + KB 19' @ 1154.0usft
<b>Well:</b>	Weinhold 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)	CL (usft)
11,150.0	88.90	158.33	6,905.3	-4,054.9	833.3	4,071.9	94.0
11,243.0	88.72	156.66	6,907.3	-4,140.8	868.9	4,164.9	93.0
11,333.0	89.34	160.09	6,908.8	-4,224.4	902.0	4,254.9	90.0
11,423.0	89.34	158.68	6,909.8	-4,308.7	933.7	4,344.8	90.0
11,512.0	89.34	156.57	6,910.8	-4,391.0	967.6	4,433.8	89.0
11,602.0	89.34	157.45	6,911.9	-4,473.8	1,002.8	4,523.8	90.0
11,692.0	88.81	158.24	6,913.3	-4,557.2	1,036.7	4,613.8	90.0
11,781.0	88.46	154.90	6,915.4	-4,638.8	1,072.1	4,702.7	89.0
11,871.0	88.81	156.13	6,917.6	-4,720.7	1,109.4	4,792.6	90.0
11,960.0	89.08	159.04	6,919.2	-4,802.9	1,143.3	4,881.6	89.0
12,050.0	89.25	157.19	6,920.5	-4,886.4	1,176.8	4,971.6	90.0
12,140.0	88.37	154.99	6,922.4	-4,968.7	1,213.3	5,061.5	90.0
12,230.0	89.25	157.80	6,924.3	-5,051.1	1,249.3	5,151.4	90.0
12,319.0	89.60	160.62	6,925.2	-5,134.3	1,280.9	5,240.4	89.0
12,409.0	88.90	159.74	6,926.4	-5,219.0	1,311.4	5,330.3	90.0
12,499.0	89.08	157.98	6,927.9	-5,302.9	1,343.9	5,420.3	90.0
12,589.0	88.64	159.56	6,929.7	-5,386.8	1,376.4	5,510.3	90.0
12,678.0	88.81	157.89	6,931.7	-5,469.7	1,408.7	5,599.2	89.0
12,768.0	88.11	160.00	6,934.1	-5,553.6	1,441.1	5,689.2	90.0
12,858.0	88.02	160.97	6,937.2	-5,638.4	1,471.1	5,779.1	90.0
12,947.0	88.99	158.51	6,939.5	-5,721.9	1,501.9	5,868.0	89.0
13,037.0	89.34	156.75	6,940.8	-5,805.1	1,536.2	5,958.0	90.0
13,127.0	88.99	157.10	6,942.1	-5,887.9	1,571.4	6,047.6	89.0
13,217.0	89.34	157.80	6,943.4	-5,971.0	1,605.9	6,137.6	90.0
13,306.0	89.34	156.31	6,944.5	-6,052.9	1,640.6	6,226.9	89.0
13,396.0	89.52	162.55	6,945.3	-6,137.2	1,672.2	6,316.8	90.0
13,486.0	89.60	162.38	6,946.0	-6,223.0	1,699.3	6,406.6	90.0
13,575.0	88.72	159.56	6,947.3	-6,307.1	1,728.4	6,495.4	89.0
13,665.0	89.08	158.86	6,949.1	-6,391.2	1,760.3	6,585.4	90.0
13,755.0	89.16	156.66	6,950.5	-6,474.5	1,794.4	6,675.4	90.0
13,845.0	88.90	156.84	6,952.0	-6,557.2	1,829.9	6,765.3	90.0
13,934.0	89.34	157.28	6,953.3	-6,639.1	1,864.6	6,854.3	89.0
14,024.0	89.69	155.78	6,954.1	-6,721.7	1,900.4	6,944.3	90.0
14,114.0	89.34	157.63	6,954.9	-6,804.3	1,936.0	7,034.2	90.0
14,204.0	88.99	157.80	6,956.2	-6,887.6	1,970.1	7,124.2	90.0
14,293.0	89.08	153.94	6,957.7	-6,968.8	2,006.5	7,213.1	89.0
14,383.0	89.08	156.93	6,959.1	-7,050.6	2,043.9	7,303.0	90.0
14,473.0	88.64	159.21	6,960.9	-7,134.1	2,077.5	7,393.0	90.0
14,562.0	88.29	160.00	6,963.3	-7,217.5	2,108.5	7,481.9	89.0
14,652.0	88.99	160.00	6,965.4	-7,302.0	2,139.3	7,571.8	90.0
14,742.0	88.64	158.42	6,967.3	-7,386.2	2,171.2	7,661.8	90.0
14,831.0	90.13	157.54	6,968.3	-7,468.7	2,204.6	7,750.8	89.0
14,921.0	90.31	158.07	6,967.9	-7,552.0	2,238.6	7,840.8	90.0
15,011.0	90.13	158.24	6,967.6	-7,635.5	2,272.1	7,930.8	90.0

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<b>Company:</b>	Antero	<b>Local Co-ordinate Reference:</b>	Well Weinhold Unit 1H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 525: GL 1135' + KB 19' @ 1154.0usft
<b>Site:</b>	Melody Pad	<b>MD Reference:</b>	Precision 525: GL 1135' + KB 19' @ 1154.0usft
<b>Well:</b>	Weinhold 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

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	CL (usft)
15,101.0	89.78	158.60	6,967.6	-7,719.2	2,305.2	8,020.8	90.0
15,190.0	90.13	160.88	6,967.7	-7,802.7	2,336.0	8,109.7	89.0
15,280.0	90.84	161.23	6,966.9	-7,887.8	2,365.2	8,199.6	90.0
15,370.0	90.57	159.30	6,965.8	-7,972.5	2,395.6	8,289.5	90.0
15,460.0	91.36	157.72	6,964.3	-8,056.3	2,428.6	8,379.5	90.0
15,549.0	91.10	153.94	6,962.4	-8,137.4	2,465.0	8,468.4	89.0
15,639.0	91.80	156.93	6,960.1	-8,219.2	2,502.4	8,558.3	90.0
15,729.0	90.57	157.89	6,958.3	-8,302.3	2,536.9	8,648.3	90.0
15,819.0	90.04	156.40	6,957.8	-8,385.2	2,571.9	8,738.2	90.0
15,908.0	91.10	159.74	6,956.9	-8,467.8	2,605.1	8,827.2	89.0
15,998.0	91.80	158.33	6,954.6	-8,551.8	2,637.3	8,917.2	90.0
16,088.0	90.57	160.27	6,952.8	-8,636.0	2,669.1	9,007.1	90.0
16,178.0	90.48	162.46	6,951.9	-8,721.2	2,697.9	9,097.0	90.0
16,268.0	90.13	161.58	6,951.5	-8,806.8	2,725.7	9,186.7	90.0
16,305.0	89.87	161.14	6,951.5	-8,841.9	2,737.5	9,223.7	37.0
16,363.0	89.87	161.14	6,951.6	-8,896.8	2,756.2	9,281.6	58.0

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,474.0	6,453.4	20.8	-135.1	Sycamore
6,750.0	6,627.3	-54.2	-332.1	Middlesex
7,116.0	6,787.7	-309.0	-528.6	Tully
7,276.0	6,837.1	-457.2	-560.9	Marcellus

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