



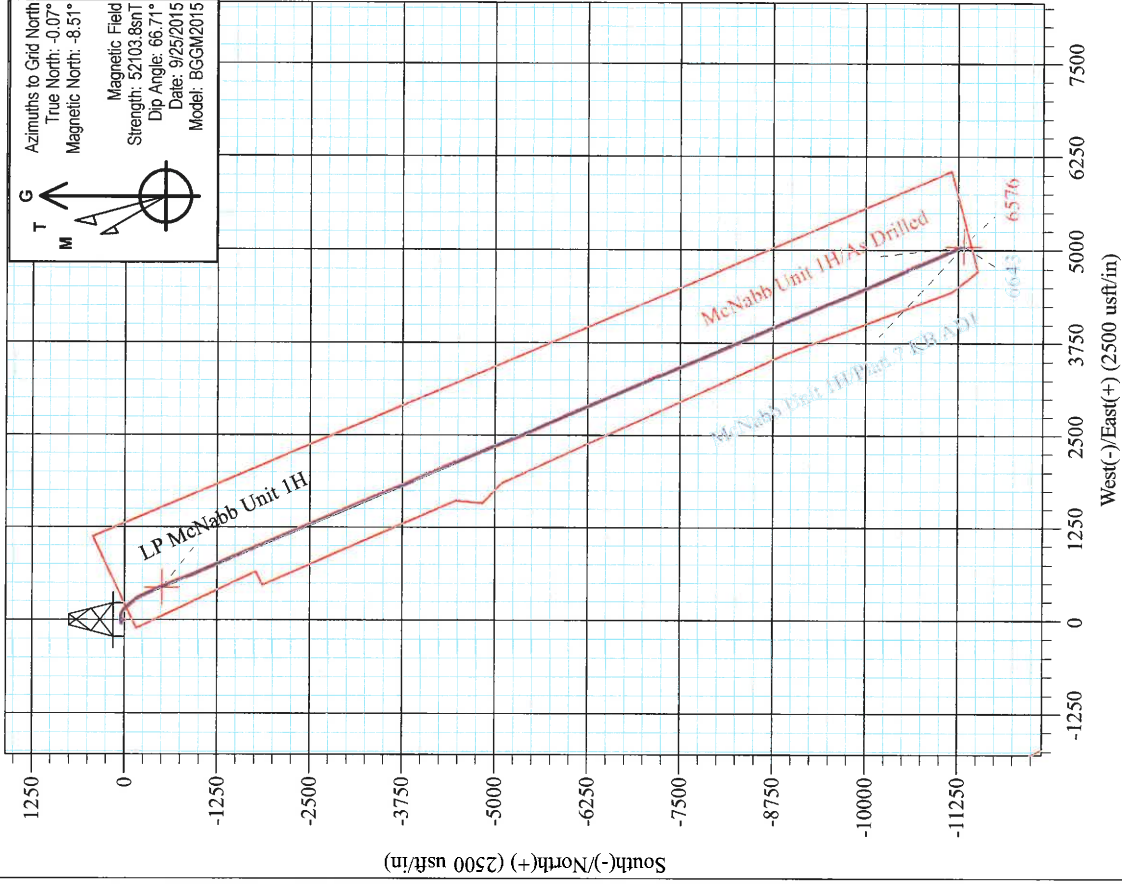
Mackay Pad - Caldwell/Greenback/McNabb  
 McNabb Unit 1H  
 Plan 7 KB ADJ  
 Precision 523: 1099' GL + 19' KB @ 1118.0usft  
 Ritchie County WV

PROJECT DETAILS:  
 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



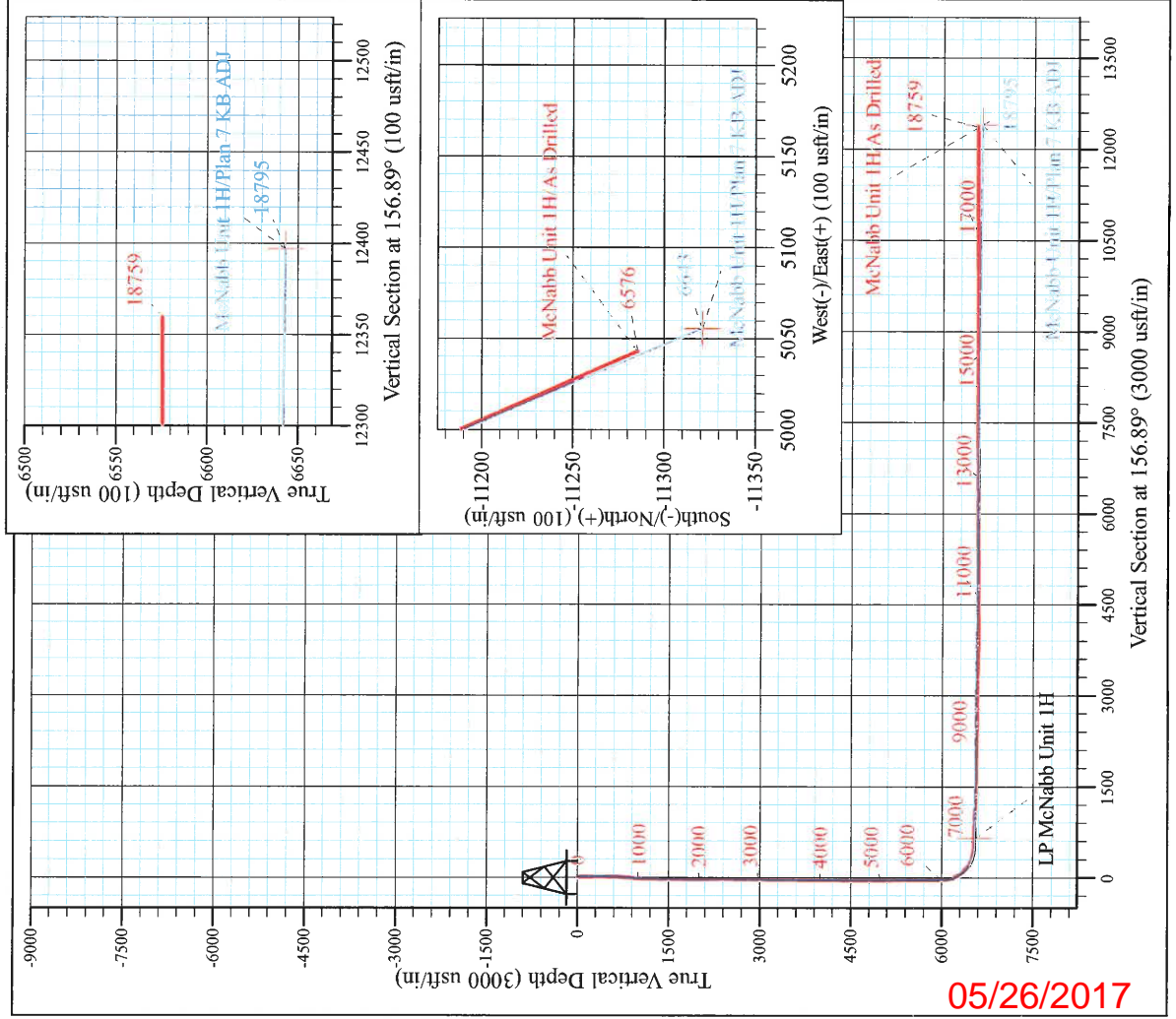
WELL DETAILS: McNabb Unit 1H SHL

+N/-S	+E/-W	Northing	Latitude	Longitude
0.0	0.0	14248724.43	39° 14' 17.938 N	80° 53' 49.780 W



Shane Rhodes  
 9-04, October 21 2015  
 Scientific Drilling International  
 124 Vista Drive  
 Charteroi, PA 15022

McNabb Unit 1H  
 Approx. BHL  
 39° 12' 26.287 N 80° 52' 45.856 W





<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well McNabb Unit 1H
<b>Project:</b>	Ritchie County WV	<b>TVD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Site:</b>	Mackay Pad - Caldwell/Greenback/McNabb	<b>MD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Well:</b>	McNabb 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>	Antero NE

<b>Project</b>	Ritchie County WV, Ritchie County WV, WV North		
<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>	Mackay Pad - Caldwell/Greenback/McNabb				
<b>Site Position:</b>		<b>Northing:</b>	14,248,714.78 usft	<b>Latitude:</b>	39° 14' 17.843 N
<b>From:</b>	Map	<b>Easting:</b>	1,669,496.15 usft	<b>Longitude:</b>	80° 53' 50.274 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.06 °

<b>Well</b>	McNabb Unit 1H, Marcellus					
<b>Well Position</b>	<b>+N-S</b>	0.0 usft	<b>Northing:</b>	14,248,724.43 usft	<b>Latitude:</b>	39° 14' 17.938 N
	<b>+E-W</b>	0.0 usft	<b>Easting:</b>	1,669,534.98 usft	<b>Longitude:</b>	80° 53' 49.780 W
<b>Position Uncertainty</b>		2.0 usft	<b>Wellhead Elevation:</b>	1,118.0 usft	<b>Ground Level:</b>	1,099.0 usft

<b>Wellbore</b>	Original Wellpath				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2015	9/25/2015	-8.44	66.71	52,104

<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	156.90

<b>Survey Program</b>	<b>Date</b>	10/21/2015			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
106.0	5,675.0	Survey #6 Final Gyro (Original Wellpath)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
5,708.0	18,759.0	Survey #7 SDI MWD (Original Wellpath)	SDI MWD	Scientific Drilling Intl. MWD - Standard ver 1.0.1	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N-S (usft)</b>	<b>+E-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
106.0	0.22	135.05	106.0	-0.1	0.1	0.2	0.21	0.21	0.00	
<b>First SDI Gyro @ 106 MD</b>										
131.0	0.25	136.31	131.0	-0.2	0.2	0.3	0.12	0.12	5.04	
156.0	0.18	120.15	156.0	-0.3	0.3	0.4	0.37	-0.28	-64.64	
181.0	0.23	130.64	181.0	-0.3	0.4	0.4	0.25	0.20	41.96	
206.0	0.24	136.63	206.0	-0.4	0.4	0.5	0.11	0.04	23.96	
231.0	0.24	136.62	231.0	-0.5	0.5	0.6	0.00	0.00	-0.04	
256.0	0.21	146.41	256.0	-0.6	0.6	0.7	0.19	-0.12	39.16	
281.0	0.18	166.41	281.0	-0.6	0.6	0.8	0.30	-0.12	80.00	



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well McNabb Unit 1H
<b>Project:</b>	Ritchie County WV	<b>TVD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Site:</b>	Mackay Pad - Caldwell/Greenback/McNabb	<b>MD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Well:</b>	McNabb 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>	Antero NE

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
306.0	0.21	167.79	306.0	-0.7	0.6	0.9	0.12	0.12	5.52	
331.0	0.24	158.89	331.0	-0.8	0.6	1.0	0.18	0.12	-35.60	
356.0	0.21	161.25	356.0	-0.9	0.7	1.1	0.13	-0.12	9.44	
381.0	0.20	164.85	381.0	-1.0	0.7	1.2	0.07	-0.04	14.40	
406.0	0.21	159.10	406.0	-1.1	0.7	1.3	0.09	0.04	-23.00	
431.0	0.20	187.29	431.0	-1.2	0.7	1.4	0.40	-0.04	112.76	
456.0	0.24	195.94	456.0	-1.2	0.7	1.4	0.21	0.16	34.60	
481.0	0.27	200.78	481.0	-1.4	0.7	1.5	0.15	0.12	19.36	
506.0	0.26	209.09	506.0	-1.5	0.6	1.6	0.16	-0.04	33.24	
531.0	0.36	217.87	531.0	-1.6	0.6	1.7	0.44	0.40	35.12	
556.0	0.32	224.81	556.0	-1.7	0.5	1.7	0.23	-0.16	27.76	
581.0	0.33	268.55	581.0	-1.7	0.3	1.7	0.97	0.04	174.96	
606.0	0.89	309.74	606.0	-1.6	0.1	1.5	2.71	2.24	164.76	
631.0	1.53	320.57	631.0	-1.2	-0.2	1.0	2.71	2.56	43.32	
656.0	2.11	322.29	656.0	-0.6	-0.7	0.3	2.33	2.32	6.88	
681.0	2.78	326.71	681.0	0.3	-1.3	-0.8	2.78	2.68	17.68	
706.0	3.08	326.98	705.9	1.3	-2.0	-2.0	1.20	1.20	1.08	
731.0	3.43	328.26	730.9	2.5	-2.8	-3.4	1.43	1.40	5.12	
756.0	3.95	329.20	755.8	3.9	-3.6	-5.0	2.09	2.08	3.76	
781.0	4.30	329.02	780.8	5.5	-4.6	-6.8	1.40	1.40	-0.72	
806.0	4.38	330.26	805.7	7.1	-5.5	-8.7	0.49	0.32	4.96	
831.0	4.78	332.42	830.6	8.8	-6.5	-10.7	1.74	1.60	8.64	
856.0	4.82	332.07	855.5	10.7	-7.4	-12.8	0.20	0.16	-1.40	
881.0	4.91	332.49	880.4	12.6	-8.4	-14.9	0.39	0.36	1.68	
906.0	4.91	332.78	905.3	14.5	-9.4	-17.0	0.10	0.00	1.16	
931.0	4.71	332.51	930.3	16.3	-10.4	-19.1	0.81	-0.80	-1.08	
956.0	4.34	331.62	955.2	18.1	-11.3	-21.1	1.51	-1.48	-3.56	
981.0	4.03	331.42	980.1	19.7	-12.2	-22.9	1.24	-1.24	-0.80	
1,006.0	3.59	331.09	1,005.1	21.1	-13.0	-24.5	1.76	-1.76	-1.32	
1,031.0	3.37	331.99	1,030.0	22.5	-13.7	-26.0	0.91	-0.88	3.60	
1,056.0	3.16	330.68	1,055.0	23.7	-14.4	-27.5	0.89	-0.84	-5.24	
1,081.0	2.87	332.07	1,079.9	24.9	-15.0	-28.8	1.20	-1.16	5.56	
1,106.0	2.56	333.24	1,104.9	25.9	-15.5	-29.9	1.26	-1.24	4.68	
1,131.0	2.28	333.42	1,129.9	26.9	-16.0	-31.0	1.12	-1.12	0.72	
1,156.0	2.03	336.45	1,154.9	27.7	-16.4	-31.9	1.10	-1.00	12.12	
1,181.0	1.96	336.22	1,179.8	28.5	-16.8	-32.8	0.28	-0.28	-0.92	
1,206.0	1.66	332.72	1,204.8	29.2	-17.1	-33.6	1.28	-1.20	-14.00	
1,231.0	1.40	337.54	1,229.8	29.8	-17.4	-34.3	1.16	-1.04	19.28	
1,256.0	1.21	332.45	1,254.8	30.3	-17.6	-34.8	0.89	-0.76	-20.36	
1,281.0	1.11	337.78	1,279.8	30.8	-17.8	-35.3	0.59	-0.40	21.32	
1,306.0	0.83	330.81	1,304.8	31.2	-18.0	-35.8	1.21	-1.12	-27.88	
1,331.0	0.67	328.87	1,329.8	31.5	-18.2	-36.1	0.65	-0.64	-7.76	
1,356.0	0.61	331.86	1,354.8	31.7	-18.3	-36.4	0.27	-0.24	11.96	



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well McNabb Unit 1H
<b>Project:</b>	Ritchie County WV	<b>TVD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Site:</b>	Mackay Pad - Caldwell/Greenback/McNabb	<b>MD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Well:</b>	McNabb 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>	Antero NE

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
1,381.0	0.51	327.88	1,379.8	31.9	-18.4	-36.6	0.43	-0.40	-15.92	
1,406.0	0.56	326.81	1,404.8	32.1	-18.6	-36.8	0.20	0.20	-4.28	
1,431.0	0.49	325.37	1,429.8	32.3	-18.7	-37.1	0.28	-0.28	-5.76	
1,456.0	0.48	330.35	1,454.8	32.5	-18.8	-37.3	0.17	-0.04	19.92	
1,481.0	0.38	318.13	1,479.8	32.6	-18.9	-37.4	0.54	-0.40	-48.88	
1,506.0	0.36	314.12	1,504.8	32.8	-19.0	-37.6	0.13	-0.08	-16.04	
1,531.0	0.29	305.04	1,529.8	32.8	-19.1	-37.7	0.35	-0.28	-36.32	
1,556.0	0.32	298.69	1,554.8	32.9	-19.3	-37.8	0.18	0.12	-25.40	
1,581.0	0.28	291.93	1,579.8	33.0	-19.4	-37.9	0.21	-0.16	-27.04	
1,606.0	0.24	293.66	1,604.8	33.0	-19.5	-38.0	0.16	-0.16	6.92	
1,631.0	0.27	288.32	1,629.8	33.1	-19.6	-38.1	0.15	0.12	-21.36	
1,656.0	0.25	294.11	1,654.8	33.1	-19.7	-38.2	0.13	-0.08	23.16	
1,681.0	0.27	286.32	1,679.8	33.1	-19.8	-38.2	0.16	0.08	-31.16	
1,706.0	0.26	288.73	1,704.8	33.2	-19.9	-38.3	0.06	-0.04	9.64	
1,731.0	0.22	282.53	1,729.8	33.2	-20.0	-38.4	0.19	-0.16	-24.80	
1,756.0	0.23	267.19	1,754.8	33.2	-20.1	-38.4	0.24	0.04	-61.36	
1,781.0	0.19	273.37	1,779.8	33.2	-20.2	-38.5	0.18	-0.16	24.72	
1,806.0	0.24	247.52	1,804.8	33.2	-20.3	-38.5	0.43	0.20	-103.40	
1,831.0	0.19	246.87	1,829.8	33.2	-20.4	-38.5	0.20	-0.20	-2.60	
1,856.0	0.20	241.69	1,854.8	33.1	-20.4	-38.5	0.08	0.04	-20.72	
1,881.0	0.16	244.35	1,879.8	33.1	-20.5	-38.5	0.16	-0.16	10.64	
1,906.0	0.20	235.88	1,904.8	33.0	-20.6	-38.5	0.19	0.16	-33.88	
1,931.0	0.14	247.38	1,929.8	33.0	-20.6	-38.5	0.27	-0.24	46.00	
1,956.0	0.24	211.86	1,954.8	32.9	-20.7	-38.4	0.60	0.40	-142.08	
1,981.0	0.15	250.12	1,979.8	32.9	-20.8	-38.4	0.61	-0.36	153.04	
2,006.0	0.23	243.82	2,004.8	32.9	-20.8	-38.4	0.33	0.32	-25.20	
2,031.0	0.21	247.26	2,029.8	32.8	-20.9	-38.4	0.10	-0.08	13.76	
2,056.0	0.19	243.75	2,054.8	32.8	-21.0	-38.4	0.09	-0.08	-14.04	
2,081.0	0.18	247.68	2,079.8	32.8	-21.1	-38.4	0.06	-0.04	15.72	
2,106.0	0.26	215.20	2,104.8	32.7	-21.1	-38.4	0.58	0.32	-129.92	
2,131.0	0.16	248.69	2,129.8	32.6	-21.2	-38.3	0.62	-0.40	133.96	
2,156.0	0.19	250.13	2,154.8	32.6	-21.3	-38.3	0.12	0.12	5.76	
2,181.0	0.21	241.77	2,179.8	32.6	-21.4	-38.3	0.14	0.08	-33.44	
2,206.0	0.15	234.82	2,204.8	32.5	-21.4	-38.3	0.25	-0.24	-27.80	
2,231.0	0.26	235.17	2,229.8	32.5	-21.5	-38.3	0.44	0.44	1.40	
2,256.0	0.20	267.82	2,254.8	32.4	-21.6	-38.3	0.57	-0.24	130.60	
2,281.0	0.20	243.33	2,279.8	32.4	-21.7	-38.3	0.34	0.00	-97.96	
2,306.0	0.12	221.91	2,304.8	32.4	-21.7	-38.3	0.39	-0.32	-85.68	
2,331.0	0.14	240.36	2,329.8	32.3	-21.8	-38.3	0.18	0.08	73.80	
2,356.0	0.20	283.14	2,354.8	32.3	-21.8	-38.3	0.54	0.24	171.12	
2,381.0	0.24	260.41	2,379.8	32.3	-21.9	-38.4	0.38	0.16	-90.92	
2,406.0	0.22	246.41	2,404.8	32.3	-22.0	-38.4	0.24	-0.08	-56.00	
2,431.0	0.34	262.98	2,429.8	32.3	-22.2	-38.4	0.57	0.48	66.28	



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well McNabb Unit 1H
<b>Project:</b>	Ritchie County WV	<b>TVD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Site:</b>	Mackay Pad - Caldwell/Greenback/McNabb	<b>MD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Well:</b>	McNabb 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>	Antero NE

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,456.0	0.28	272.91	2,454.8	32.3	-22.3	-38.4	0.32	-0.24	39.72
2,481.0	0.31	283.05	2,479.8	32.3	-22.4	-38.5	0.24	0.12	40.56
2,506.0	0.33	284.80	2,504.8	32.3	-22.6	-38.6	0.09	0.08	7.00
2,531.0	0.32	279.10	2,529.8	32.4	-22.7	-38.7	0.14	-0.04	-22.80
2,556.0	0.36	273.38	2,554.8	32.4	-22.8	-38.7	0.21	0.16	-22.88
2,581.0	0.35	266.21	2,579.8	32.4	-23.0	-38.8	0.18	-0.04	-28.68
2,606.0	0.42	277.83	2,604.8	32.4	-23.2	-38.9	0.42	0.28	46.48
2,631.0	0.49	277.94	2,629.8	32.4	-23.4	-39.0	0.28	0.28	0.44
2,656.0	0.51	280.93	2,654.8	32.4	-23.6	-39.1	0.13	0.08	11.96
2,681.0	0.51	280.95	2,679.8	32.5	-23.8	-39.2	0.00	0.00	0.08
2,706.0	0.60	288.80	2,704.8	32.6	-24.0	-39.4	0.47	0.36	31.40
2,731.0	0.65	287.23	2,729.8	32.6	-24.3	-39.5	0.21	0.20	-6.28
2,756.0	0.68	285.95	2,754.8	32.7	-24.6	-39.7	0.13	0.12	-5.12
2,781.0	0.71	287.02	2,779.8	32.8	-24.8	-39.9	0.13	0.12	4.28
2,806.0	0.81	291.05	2,804.8	32.9	-25.2	-40.1	0.45	0.40	16.12
2,831.0	0.80	288.21	2,829.8	33.0	-25.5	-40.4	0.16	-0.04	-11.36
2,856.0	0.89	289.11	2,854.8	33.2	-25.8	-40.6	0.36	0.36	3.60
2,881.0	0.90	285.15	2,879.8	33.3	-26.2	-40.9	0.25	0.04	-15.84
2,906.0	0.92	288.73	2,904.8	33.4	-26.6	-41.1	0.24	0.08	14.32
2,931.0	0.89	288.64	2,929.8	33.5	-27.0	-41.4	0.12	-0.12	-0.36
2,956.0	0.92	287.12	2,954.8	33.6	-27.3	-41.7	0.15	0.12	-6.08
2,981.0	0.96	293.38	2,979.8	33.8	-27.7	-41.9	0.44	0.16	25.04
3,006.0	0.90	287.79	3,004.8	33.9	-28.1	-42.2	0.43	-0.24	-22.36
3,031.0	0.98	291.78	3,029.8	34.1	-28.5	-42.5	0.41	0.32	15.96
3,056.0	0.92	289.75	3,054.8	34.2	-28.9	-42.8	0.28	-0.24	-8.12
3,081.0	0.92	287.84	3,079.7	34.3	-29.3	-43.1	0.12	0.00	-7.64
3,106.0	0.94	282.46	3,104.7	34.4	-29.7	-43.3	0.36	0.08	-21.52
3,131.0	0.93	288.71	3,129.7	34.5	-30.0	-43.6	0.41	-0.04	25.00
3,156.0	0.94	287.01	3,154.7	34.7	-30.4	-43.8	0.12	0.04	-6.80
3,181.0	0.86	284.65	3,179.7	34.8	-30.8	-44.1	0.35	-0.32	-9.44
3,206.0	0.88	295.00	3,204.7	34.9	-31.2	-44.3	0.63	0.08	41.40
3,231.0	0.74	292.54	3,229.7	35.1	-31.5	-44.6	0.58	-0.56	-9.84
3,256.0	0.76	292.21	3,254.7	35.2	-31.8	-44.8	0.08	0.08	-1.32
3,281.0	0.75	294.14	3,279.7	35.3	-32.1	-45.1	0.11	-0.04	7.72
3,306.0	0.72	294.44	3,304.7	35.4	-32.4	-45.3	0.12	-0.12	1.20
3,331.0	0.73	289.32	3,329.7	35.6	-32.7	-45.5	0.26	0.04	-20.48
3,356.0	0.78	293.52	3,354.7	35.7	-33.0	-45.8	0.30	0.20	16.80
3,381.0	0.75	295.39	3,379.7	35.8	-33.3	-46.0	0.16	-0.12	7.48
3,406.0	0.75	293.12	3,404.7	35.9	-33.6	-46.2	0.12	0.00	-9.08
3,431.0	0.75	293.09	3,429.7	36.1	-33.9	-46.5	0.00	0.00	-0.12
3,456.0	0.73	293.50	3,454.7	36.2	-34.2	-46.7	0.08	-0.08	1.64
3,481.0	0.71	292.98	3,479.7	36.3	-34.5	-46.9	0.08	-0.08	-2.08
3,506.0	0.72	296.30	3,504.7	36.5	-34.8	-47.2	0.17	0.04	13.28
3,531.0	0.65	291.72	3,529.7	36.6	-35.0	-47.4	0.36	-0.28	-18.32



Scientific Drilling International  
Survey Report



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well McNabb Unit 1H
<b>Project:</b>	Ritchie County WV	<b>TVD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Site:</b>	Mackay Pad - Caldwell/Greenback/McNabb	<b>MD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Well:</b>	McNabb 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>	Antero NE

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
3,556.0	0.70	292.48	3,554.7	36.7	-35.3	-47.6	0.20	0.20	3.04	
3,581.0	0.73	297.74	3,579.7	36.8	-35.6	-47.8	0.29	0.12	21.04	
3,606.0	0.73	291.86	3,604.7	37.0	-35.9	-48.1	0.30	0.00	-23.52	
3,631.0	0.71	292.92	3,629.7	37.1	-36.2	-48.3	0.10	-0.08	4.24	
3,656.0	0.75	291.54	3,654.7	37.2	-36.5	-48.5	0.17	0.16	-5.52	
3,681.0	0.76	291.87	3,679.7	37.3	-36.8	-48.8	0.04	0.04	1.32	
3,706.0	0.75	296.20	3,704.7	37.5	-37.1	-49.0	0.23	-0.04	17.32	
3,731.0	0.77	295.88	3,729.7	37.6	-37.4	-49.2	0.08	0.08	-1.28	
3,756.0	0.75	294.31	3,754.7	37.7	-37.7	-49.5	0.12	-0.08	-6.28	
3,781.0	0.69	295.73	3,779.7	37.9	-37.9	-49.7	0.25	-0.24	5.68	
3,806.0	0.74	298.39	3,804.7	38.0	-38.2	-50.0	0.24	0.20	10.64	
3,831.0	0.71	296.71	3,829.7	38.2	-38.5	-50.2	0.15	-0.12	-6.72	
3,856.0	0.69	293.78	3,854.7	38.3	-38.8	-50.4	0.16	-0.08	-11.72	
3,881.0	0.70	296.78	3,879.7	38.4	-39.1	-50.7	0.15	0.04	12.00	
3,906.0	0.64	297.60	3,904.7	38.6	-39.3	-50.9	0.24	-0.24	3.28	
3,931.0	0.63	297.75	3,929.7	38.7	-39.6	-51.1	0.04	-0.04	0.60	
3,956.0	0.64	299.01	3,954.7	38.8	-39.8	-51.3	0.07	0.04	5.04	
3,981.0	0.63	293.85	3,979.7	38.9	-40.1	-51.5	0.23	-0.04	-20.64	
4,006.0	0.60	297.94	4,004.7	39.1	-40.3	-51.7	0.21	-0.12	16.36	
4,031.0	0.58	301.24	4,029.7	39.2	-40.5	-51.9	0.16	-0.08	13.20	
4,056.0	0.44	304.22	4,054.7	39.3	-40.7	-52.1	0.57	-0.56	11.92	
4,081.0	0.42	293.10	4,079.7	39.4	-40.9	-52.3	0.34	-0.08	-44.48	
4,106.0	0.44	295.39	4,104.7	39.5	-41.0	-52.4	0.11	0.08	9.16	
4,131.0	0.40	292.81	4,129.7	39.5	-41.2	-52.5	0.18	-0.16	-10.32	
4,156.0	0.33	299.45	4,154.7	39.6	-41.4	-52.7	0.33	-0.28	26.56	
4,181.0	0.38	305.04	4,179.7	39.7	-41.5	-52.8	0.24	0.20	22.36	
4,206.0	0.32	303.71	4,204.7	39.8	-41.6	-52.9	0.24	-0.24	-5.32	
4,231.0	0.26	307.33	4,229.7	39.9	-41.7	-53.0	0.25	-0.24	14.48	
4,256.0	0.28	317.87	4,254.7	39.9	-41.8	-53.1	0.21	0.08	42.16	
4,281.0	0.28	300.35	4,279.7	40.0	-41.9	-53.2	0.34	0.00	-70.08	
4,306.0	0.23	326.36	4,304.7	40.1	-42.0	-53.3	0.50	-0.20	104.04	
4,331.0	0.24	352.03	4,329.7	40.2	-42.0	-53.4	0.42	0.04	102.68	
4,356.0	0.17	350.96	4,354.7	40.3	-42.0	-53.5	0.28	-0.28	-4.28	
4,381.0	0.19	349.99	4,379.7	40.3	-42.0	-53.6	0.08	0.08	-3.88	
4,406.0	0.19	2.58	4,404.7	40.4	-42.0	-53.7	0.17	0.00	50.36	
4,431.0	0.17	11.79	4,429.7	40.5	-42.0	-53.7	0.14	-0.08	36.84	
4,456.0	0.15	28.85	4,454.7	40.6	-42.0	-53.8	0.21	-0.08	68.24	
4,481.0	0.18	43.20	4,479.7	40.6	-42.0	-53.8	0.20	0.12	57.40	
4,506.0	0.17	63.54	4,504.7	40.7	-41.9	-53.8	0.25	-0.04	81.36	
4,531.0	0.18	69.62	4,529.7	40.7	-41.8	-53.8	0.08	0.04	24.32	
4,556.0	0.18	71.82	4,554.7	40.7	-41.8	-53.8	0.03	0.00	8.80	
4,581.0	0.17	90.37	4,579.7	40.7	-41.7	-53.8	0.23	-0.04	74.20	
4,606.0	0.21	69.53	4,604.7	40.8	-41.6	-53.8	0.32	0.16	-83.36	



Scientific Drilling International  
Survey Report



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well McNabb Unit 1H
<b>Project:</b>	Ritchie County WV	<b>TVD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Site:</b>	Mackay Pad - Caldwell/Greenback/McNabb	<b>MD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Well:</b>	McNabb 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>	Antero NE

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,631.0	0.19	77.05	4,629.7	40.8	-41.5	-53.8	0.13	-0.08	30.08	
4,656.0	0.19	58.57	4,654.7	40.8	-41.4	-53.8	0.24	0.00	-73.92	
4,681.0	0.18	59.15	4,679.7	40.9	-41.4	-53.8	0.04	-0.04	2.32	
4,706.0	0.19	59.97	4,704.7	40.9	-41.3	-53.8	0.04	0.04	3.28	
4,731.0	0.27	82.24	4,729.7	40.9	-41.2	-53.8	0.47	0.32	89.08	
4,756.0	0.27	77.99	4,754.7	40.9	-41.1	-53.8	0.08	0.00	-17.00	
4,781.0	0.27	68.70	4,779.7	41.0	-41.0	-53.8	0.17	0.00	-37.16	
4,806.0	0.28	52.69	4,804.7	41.0	-40.9	-53.8	0.31	0.04	-64.04	
4,831.0	0.30	80.10	4,829.7	41.1	-40.8	-53.8	0.56	0.08	109.64	
4,856.0	0.32	67.07	4,854.7	41.1	-40.6	-53.8	0.29	0.08	-52.12	
4,881.0	0.32	83.66	4,879.7	41.2	-40.5	-53.7	0.37	0.00	66.36	
4,906.0	0.26	75.27	4,904.7	41.2	-40.4	-53.7	0.29	-0.24	-33.56	
4,931.0	0.32	93.46	4,929.7	41.2	-40.3	-53.7	0.44	0.24	72.76	
4,956.0	0.30	88.44	4,954.7	41.2	-40.1	-53.6	0.13	-0.08	-20.08	
4,981.0	0.34	78.77	4,979.7	41.2	-40.0	-53.6	0.27	0.16	-38.68	
5,006.0	0.31	83.63	5,004.7	41.2	-39.8	-53.6	0.16	-0.12	19.44	
5,031.0	0.27	80.26	5,029.7	41.2	-39.7	-53.5	0.17	-0.16	-13.48	
5,056.0	0.29	77.95	5,054.7	41.3	-39.6	-53.5	0.09	0.08	-9.24	
5,081.0	0.30	76.02	5,079.7	41.3	-39.5	-53.5	0.06	0.04	-7.72	
5,106.0	0.25	84.02	5,104.7	41.3	-39.4	-53.4	0.25	-0.20	32.00	
5,131.0	0.33	94.24	5,129.7	41.3	-39.2	-53.4	0.38	0.32	40.88	
5,156.0	0.33	89.99	5,154.7	41.3	-39.1	-53.3	0.10	0.00	-17.00	
5,181.0	0.34	84.69	5,179.7	41.3	-38.9	-53.3	0.13	0.04	-21.20	
5,206.0	0.34	87.47	5,204.7	41.3	-38.8	-53.2	0.07	0.00	11.12	
5,231.0	0.35	92.53	5,229.7	41.3	-38.6	-53.2	0.13	0.04	20.24	
5,256.0	0.29	86.06	5,254.7	41.3	-38.5	-53.1	0.28	-0.24	-25.88	
5,281.0	0.34	78.11	5,279.7	41.3	-38.4	-53.1	0.27	0.20	-31.80	
5,306.0	0.28	92.12	5,304.7	41.4	-38.2	-53.0	0.38	-0.24	56.04	
5,331.0	0.26	76.64	5,329.7	41.4	-38.1	-53.0	0.30	-0.08	-61.92	
5,356.0	0.26	95.26	5,354.7	41.4	-38.0	-53.0	0.34	0.00	74.48	
5,381.0	0.25	89.06	5,379.7	41.4	-37.9	-52.9	0.12	-0.04	-24.80	
5,406.0	0.30	105.41	5,404.7	41.4	-37.8	-52.9	0.37	0.20	65.40	
5,431.0	0.28	91.42	5,429.7	41.3	-37.7	-52.8	0.29	-0.08	-55.96	
5,456.0	0.31	108.65	5,454.7	41.3	-37.5	-52.7	0.37	0.12	68.92	
5,481.0	0.16	96.75	5,479.6	41.3	-37.4	-52.7	0.63	-0.60	-47.60	
5,506.0	0.38	92.99	5,504.6	41.3	-37.3	-52.6	0.88	0.88	-15.04	
5,531.0	0.31	90.05	5,529.6	41.3	-37.2	-52.5	0.29	-0.28	-11.76	
5,556.0	0.32	109.05	5,554.6	41.3	-37.0	-52.5	0.42	0.04	76.00	
5,581.0	0.36	115.51	5,579.6	41.2	-36.9	-52.4	0.22	0.16	25.84	
5,606.0	0.24	82.57	5,604.6	41.2	-36.8	-52.3	0.82	-0.48	-131.76	
5,631.0	0.27	67.91	5,629.6	41.2	-36.7	-52.3	0.29	0.12	-58.64	
5,656.0	0.24	66.99	5,654.6	41.2	-36.6	-52.3	0.12	-0.12	-3.68	
5,675.0	0.47	133.20	5,673.6	41.2	-36.5	-52.2	2.28	1.21	348.47	

Last SDI Gyro @ 5675 MD



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well McNabb Unit 1H
<b>Project:</b>	Ritchie County WV	<b>TVD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Site:</b>	Mackay Pad - Caldwell/Greenback/McNabb	<b>MD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Well:</b>	McNabb 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>	Antero NE

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,708.0	0.34	144.71	5,706.6	41.0	-36.3	-52.0	0.46	-0.39	34.88
<b>First SDI MWD @ 5708 MD</b>									
5,738.0	0.23	152.67	5,736.6	40.9	-36.2	-51.8	0.39	-0.37	26.53
5,768.0	0.41	150.52	5,766.6	40.8	-36.1	-51.7	0.60	0.60	-7.17
5,798.0	0.37	128.56	5,796.6	40.6	-36.0	-51.5	0.51	-0.13	-73.20
5,828.0	0.33	150.47	5,826.6	40.5	-35.9	-51.3	0.46	-0.13	73.03
5,858.0	0.14	181.38	5,856.6	40.4	-35.9	-51.2	0.74	-0.63	103.03
5,888.0	0.50	59.63	5,886.6	40.4	-35.7	-51.2	1.95	1.20	-405.83
5,917.0	3.72	61.18	5,915.6	40.9	-34.8	-51.3	11.10	11.10	5.34
5,947.0	8.05	63.93	5,945.5	42.3	-32.1	-51.5	14.46	14.43	9.17
5,977.0	12.55	64.43	5,975.0	44.6	-27.2	-51.7	15.00	15.00	1.67
6,007.0	16.19	67.26	6,004.0	47.7	-20.4	-51.9	12.35	12.13	9.43
6,037.0	19.16	73.72	6,032.6	50.7	-11.9	-51.2	11.85	9.90	21.53
6,067.0	21.22	81.75	6,060.8	52.8	-1.8	-49.3	11.50	6.87	26.77
6,097.0	23.37	85.65	6,088.5	54.0	9.6	-46.0	8.70	7.17	13.00
6,127.0	23.96	87.58	6,116.0	54.8	21.6	-41.9	3.25	1.97	6.43
6,157.0	26.04	94.50	6,143.2	54.5	34.2	-36.7	11.95	6.93	23.07
6,187.0	28.96	101.25	6,169.8	52.6	47.9	-29.5	14.22	9.73	22.50
6,207.0	30.67	105.13	6,187.2	50.3	57.6	-23.7	12.88	8.53	19.42
<b>Sycamore @ 6207</b>									
6,217.0	31.56	106.93	6,195.7	48.9	62.6	-20.4	12.88	8.93	17.96
6,247.0	33.73	111.34	6,221.0	43.5	77.8	-9.5	10.73	7.23	14.70
6,276.0	35.68	115.79	6,244.8	36.9	92.9	2.5	11.02	6.72	15.34
6,306.0	37.30	120.74	6,269.0	28.5	108.6	16.4	11.20	5.40	16.50
6,336.0	38.38	125.68	6,292.6	18.4	124.0	31.7	10.72	3.60	16.47
6,366.0	39.30	129.99	6,316.0	6.8	138.9	48.2	9.52	3.07	14.37
6,396.0	41.23	133.63	6,338.9	-6.1	153.3	65.7	10.14	6.43	12.13
6,406.0	42.10	134.32	6,346.4	-10.7	158.1	71.9	9.83	8.69	6.89
<b>Middlesex @ 6406</b>									
6,426.0	43.85	135.63	6,361.0	-20.3	167.7	84.5	9.83	8.75	6.55
6,455.0	46.62	136.46	6,381.4	-35.2	182.0	103.8	9.77	9.55	2.86
6,485.0	49.88	136.76	6,401.4	-51.4	197.4	124.7	10.89	10.87	1.00
6,515.0	53.83	137.84	6,419.9	-68.8	213.4	147.0	13.47	13.17	3.60
6,545.0	57.80	138.91	6,436.8	-87.3	229.9	170.5	13.56	13.23	3.57
6,575.0	60.89	140.91	6,452.1	-107.1	246.5	195.2	11.79	10.30	6.67
6,591.0	61.94	141.63	6,459.7	-118.0	255.3	208.7	7.64	6.56	4.47
<b>Burkett @ 6591</b>									
6,605.0	62.86	142.24	6,466.2	-127.8	262.9	220.7	7.64	6.58	4.39
6,634.0	65.28	143.81	6,478.9	-148.6	278.6	246.0	9.66	8.34	5.41
6,664.0	67.88	146.88	6,490.8	-171.3	294.2	273.0	12.78	8.67	10.23
6,672.0	68.75	147.97	6,493.8	-177.5	298.2	280.3	16.74	10.88	13.68
<b>Tully @ 6672</b>									
6,694.0	71.18	150.92	6,501.3	-195.3	308.7	300.8	16.74	11.04	13.39
6,724.0	74.50	153.27	6,510.2	-220.7	322.2	329.4	13.36	11.07	7.83





<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well McNabb Unit 1H
<b>Project:</b>	Ritchie County WV	<b>TVD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Site:</b>	Mackay Pad - Caldwell/Greenback/McNabb	<b>MD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Well:</b>	McNabb 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>	Antero NE

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
6,754.0	77.47	154.90	6,517.4	-246.8	334.9	358.4	11.22	9.90	5.43	
6,770.0	77.84	154.88	6,520.9	-261.0	341.5	374.0	2.30	2.30	-0.13	
<b>MRCL_HOT @ 6770</b>										
6,784.0	78.16	154.86	6,523.8	-273.4	347.3	387.7	2.30	2.30	-0.13	
6,814.0	80.82	154.49	6,529.2	-300.0	359.9	417.2	8.95	8.87	-1.23	
6,844.0	84.14	154.67	6,533.2	-326.9	372.7	446.9	11.08	11.07	0.60	
6,874.0	86.44	155.35	6,535.6	-354.0	385.3	476.8	7.99	7.67	2.27	
6,905.0	88.22	156.26	6,537.1	-382.2	398.0	507.8	6.45	5.74	2.94	
6,938.0	88.85	156.36	6,537.9	-412.5	411.3	540.7	1.93	1.91	0.30	
6,994.0	88.62	157.41	6,539.2	-463.9	433.3	596.7	1.92	-0.41	1.88	
7,084.0	87.51	156.96	6,542.2	-546.9	468.1	686.7	1.33	-1.23	-0.50	
7,173.0	88.02	158.06	6,545.7	-629.0	502.1	775.6	1.36	0.57	1.24	
7,263.0	88.69	158.53	6,548.3	-712.6	535.4	865.5	0.91	0.74	0.52	
7,348.0	88.56	157.91	6,550.3	-791.5	566.9	950.5	0.75	-0.15	-0.73	
7,438.0	88.29	158.16	6,552.8	-874.9	600.6	1,040.4	0.41	-0.30	0.28	
7,528.0	87.76	157.63	6,555.9	-958.3	634.4	1,130.4	0.83	-0.59	-0.59	
7,618.0	88.77	156.14	6,558.6	-1,041.0	669.8	1,220.3	2.00	1.12	-1.66	
7,709.0	89.37	156.92	6,560.1	-1,124.5	706.0	1,311.3	1.08	0.66	0.86	
7,797.0	89.00	156.20	6,561.3	-1,205.2	741.0	1,399.3	0.92	-0.42	-0.82	
7,886.0	88.73	155.66	6,563.1	-1,286.4	777.3	1,488.3	0.68	-0.30	-0.61	
7,976.0	89.27	157.11	6,564.7	-1,368.9	813.3	1,578.2	1.72	0.60	1.61	
8,066.0	89.10	156.41	6,565.9	-1,451.6	848.8	1,668.2	0.80	-0.19	-0.78	
8,156.0	89.67	157.48	6,566.9	-1,534.4	884.1	1,758.2	1.35	0.63	1.19	
8,245.0	89.54	156.89	6,567.5	-1,616.4	918.6	1,847.2	0.68	-0.15	-0.66	
8,335.0	89.57	156.49	6,568.2	-1,699.1	954.2	1,937.2	0.45	0.03	-0.44	
8,424.0	89.00	158.45	6,569.3	-1,781.3	988.3	2,026.2	2.29	-0.64	2.20	
8,514.0	88.66	158.05	6,571.2	-1,864.8	1,021.6	2,116.2	0.58	-0.38	-0.44	
8,603.0	89.64	157.78	6,572.5	-1,947.3	1,055.1	2,205.1	1.14	1.10	-0.30	
8,692.0	88.70	156.21	6,573.8	-2,029.2	1,089.9	2,294.1	2.06	-1.06	-1.76	
8,782.0	87.48	154.99	6,576.8	-2,111.1	1,127.0	2,384.0	1.92	-1.36	-1.36	
8,871.0	89.13	155.07	6,579.4	-2,191.8	1,164.6	2,473.0	1.86	1.85	0.09	
8,961.0	89.16	157.29	6,580.7	-2,274.1	1,200.9	2,562.9	2.47	0.03	2.47	
9,050.0	90.11	157.91	6,581.3	-2,356.4	1,234.9	2,651.9	1.27	1.07	0.70	
9,140.0	89.91	157.25	6,581.3	-2,439.6	1,269.2	2,741.9	0.77	-0.22	-0.73	
9,229.0	89.44	156.81	6,581.8	-2,521.5	1,303.9	2,830.9	0.72	-0.53	-0.49	
9,319.0	89.30	155.83	6,582.8	-2,603.9	1,340.1	2,920.9	1.10	-0.16	-1.09	
9,409.0	90.11	157.27	6,583.3	-2,686.5	1,375.9	3,010.9	1.84	0.90	1.60	
9,498.0	89.74	157.83	6,583.4	-2,768.7	1,409.9	3,099.9	0.75	-0.42	0.63	
9,587.0	87.96	156.49	6,585.2	-2,850.7	1,444.4	3,188.9	2.50	-2.00	-1.51	
9,677.0	88.33	157.27	6,588.1	-2,933.5	1,479.7	3,278.8	0.96	0.41	0.87	
9,767.0	87.96	155.94	6,591.0	-3,016.0	1,515.4	3,368.8	1.53	-0.41	-1.48	
9,856.0	89.77	157.79	6,592.8	-3,097.9	1,550.4	3,457.7	2.91	2.03	2.08	
9,946.0	89.81	157.49	6,593.1	-3,181.1	1,584.6	3,547.7	0.34	0.04	-0.33	



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well McNabb Unit 1H
<b>Project:</b>	Ritchie County WV	<b>TVD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Site:</b>	Mackay Pad - Caldwell/Greenback/McNabb	<b>MD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Well:</b>	McNabb 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>	Antero NE

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,035.0	90.18	157.30	6,593.1	-3,263.2	1,618.8	3,636.7	0.47	0.42	-0.21
10,125.0	88.53	156.62	6,594.1	-3,346.1	1,654.0	3,726.7	1.98	-1.83	-0.76
10,214.0	89.07	157.15	6,596.0	-3,427.9	1,689.0	3,815.7	0.85	0.61	0.60
10,304.0	89.50	157.25	6,597.1	-3,510.9	1,723.9	3,905.7	0.49	0.48	0.11
10,393.0	90.14	158.24	6,597.4	-3,593.2	1,757.6	3,994.7	1.32	0.72	1.11
10,483.0	89.91	158.76	6,597.3	-3,677.0	1,790.5	4,084.6	0.63	-0.26	0.58
10,572.0	90.51	156.16	6,597.0	-3,759.2	1,824.7	4,173.6	3.00	0.67	-2.92
10,662.0	90.65	157.62	6,596.1	-3,841.9	1,860.0	4,263.6	1.63	0.16	1.62
10,751.0	89.88	155.93	6,595.7	-3,923.7	1,895.1	4,352.6	2.09	-0.87	-1.90
10,841.0	89.95	155.47	6,595.8	-4,005.7	1,932.1	4,442.6	0.52	0.08	-0.51
10,930.0	90.05	156.03	6,595.8	-4,086.9	1,968.7	4,531.6	0.64	0.11	0.63
11,019.0	90.35	155.74	6,595.5	-4,168.1	2,005.0	4,620.6	0.47	0.34	-0.33
11,109.0	89.34	157.20	6,595.7	-4,250.6	2,041.0	4,710.6	1.97	-1.12	1.62
11,198.0	89.54	156.95	6,596.6	-4,332.6	2,075.6	4,799.6	0.36	0.22	-0.28
11,288.0	89.38	156.59	6,597.5	-4,415.3	2,111.1	4,889.6	0.44	-0.18	-0.40
11,377.0	89.38	156.31	6,598.4	-4,496.9	2,146.7	4,978.5	0.31	0.00	-0.31
11,467.0	90.55	156.92	6,598.5	-4,579.5	2,182.4	5,068.5	1.47	1.30	0.68
11,556.0	91.86	158.68	6,596.6	-4,661.9	2,216.0	5,157.5	2.46	1.47	1.98
11,646.0	90.99	156.30	6,594.4	-4,745.6	2,249.0	5,247.4	1.05	-0.97	-0.42
11,736.0	89.85	157.75	6,593.7	-4,829.0	2,282.7	5,337.4	1.41	-1.27	-0.61
11,825.0	90.05	158.20	6,593.8	-4,911.5	2,316.1	5,426.4	0.55	0.22	0.51
11,915.0	91.47	159.03	6,592.6	-4,995.3	2,348.9	5,516.4	1.83	1.58	0.92
12,004.0	90.89	157.34	6,590.8	-5,077.9	2,381.9	5,605.3	2.01	-0.65	-1.90
12,094.0	89.11	157.44	6,590.8	-5,161.0	2,416.5	5,695.3	1.98	-1.98	0.11
12,183.0	92.13	158.02	6,589.8	-5,243.4	2,450.3	5,784.3	3.46	3.39	0.65
12,273.0	90.79	156.96	6,587.5	-5,326.5	2,484.7	5,874.2	1.90	-1.49	-1.18
12,362.0	89.58	156.26	6,587.2	-5,408.1	2,520.0	5,963.2	1.57	-1.36	-0.79
12,452.0	90.29	156.16	6,587.3	-5,490.5	2,556.3	6,053.2	0.80	0.79	-0.11
12,541.0	87.97	154.53	6,588.7	-5,571.4	2,593.5	6,142.2	3.19	-2.61	-1.83
12,631.0	88.71	155.86	6,591.3	-5,653.0	2,631.2	6,232.1	1.69	0.82	1.48
12,720.0	91.03	156.05	6,591.5	-5,734.3	2,667.5	6,321.1	2.62	2.61	0.21
12,810.0	90.89	155.05	6,590.0	-5,816.2	2,704.7	6,411.0	1.12	-0.16	-1.11
12,899.0	90.42	156.25	6,589.0	-5,897.3	2,741.4	6,500.0	1.45	-0.53	1.35
12,989.0	89.21	156.34	6,589.2	-5,979.7	2,777.6	6,590.0	1.35	-1.34	0.10
13,079.0	88.51	155.95	6,591.0	-6,062.0	2,814.0	6,680.0	0.89	-0.78	-0.43
13,168.0	92.00	157.85	6,590.6	-6,143.8	2,848.9	6,769.0	4.46	3.92	2.13
13,258.0	91.63	157.26	6,587.8	-6,227.0	2,883.2	6,858.9	0.77	-0.41	-0.66
13,347.0	91.57	157.33	6,585.3	-6,309.0	2,917.6	6,947.9	0.10	-0.07	0.08
13,437.0	90.39	156.71	6,583.8	-6,391.9	2,952.7	7,037.9	1.48	-1.31	-0.69
13,526.0	90.46	156.75	6,583.1	-6,473.7	2,987.9	7,126.8	0.09	0.08	0.04
13,616.0	89.92	155.83	6,582.8	-6,556.1	3,024.0	7,216.8	1.19	-0.60	-1.02
13,705.0	89.48	154.85	6,583.3	-6,636.9	3,061.2	7,305.8	1.21	-0.49	-1.10
13,794.0	91.16	156.98	6,582.8	-6,718.2	3,097.5	7,394.8	3.05	1.89	2.39
13,884.0	91.43	157.35	6,580.7	-6,801.1	3,132.4	7,484.8	0.51	0.30	0.41



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well McNabb Unit 1H
<b>Project:</b>	Ritchie County WV	<b>TVD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Site:</b>	Mackay Pad - Caldwell/Greenback/McNabb	<b>MD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Well:</b>	McNabb 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>	Antero NE

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,973.0	89.85	157.34	6,579.7	-6,883.2	3,166.7	7,573.7	1.78	-1.78	-0.01
14,062.0	89.82	156.69	6,580.0	-6,965.2	3,201.4	7,662.7	0.73	-0.03	-0.73
14,152.0	88.67	156.55	6,581.2	-7,047.8	3,237.2	7,752.7	1.29	-1.28	-0.16
14,241.0	88.44	156.36	6,583.4	-7,129.3	3,272.7	7,841.7	0.34	-0.26	-0.21
14,331.0	89.38	157.33	6,585.1	-7,212.1	3,308.1	7,931.7	1.50	1.04	1.08
14,420.0	90.86	157.31	6,585.0	-7,294.2	3,342.4	8,020.7	1.66	1.66	-0.02
14,510.0	89.99	157.92	6,584.3	-7,377.4	3,376.7	8,110.7	1.18	-0.97	0.68
14,599.0	89.78	157.74	6,584.5	-7,459.8	3,410.2	8,199.7	0.31	-0.24	-0.20
14,689.0	90.89	158.10	6,583.9	-7,543.2	3,444.1	8,289.6	1.30	1.23	0.40
14,778.0	89.62	157.50	6,583.6	-7,625.6	3,477.7	8,378.6	1.58	-1.43	-0.67
14,868.0	89.55	157.42	6,584.2	-7,708.7	3,512.2	8,468.6	0.12	-0.08	-0.09
14,957.0	89.18	156.83	6,585.2	-7,790.7	3,546.8	8,557.6	0.78	-0.42	-0.66
15,047.0	92.11	158.60	6,584.2	-7,874.0	3,580.9	8,647.6	3.80	3.26	1.97
15,136.0	90.69	157.16	6,582.0	-7,956.4	3,614.4	8,736.5	2.27	-1.60	-1.62
15,226.0	89.28	156.08	6,582.0	-8,039.0	3,650.1	8,826.5	1.97	-1.57	-1.20
15,315.0	89.15	156.11	6,583.2	-8,120.4	3,686.2	8,915.5	0.15	-0.15	0.03
15,405.0	89.11	155.62	6,584.6	-8,202.5	3,723.0	9,005.5	0.55	-0.04	-0.54
15,494.0	89.65	156.69	6,585.6	-8,283.9	3,759.0	9,094.5	1.35	0.61	1.20
15,584.0	89.45	156.72	6,586.3	-8,366.5	3,794.6	9,184.5	0.22	-0.22	0.03
15,673.0	90.05	156.78	6,586.7	-8,448.3	3,829.7	9,273.5	0.68	0.67	0.07
15,763.0	90.09	155.91	6,586.6	-8,530.8	3,865.8	9,363.5	0.97	0.04	-0.97
15,852.0	90.12	156.41	6,586.4	-8,612.2	3,901.8	9,452.5	0.56	0.03	0.56
15,942.0	90.39	156.02	6,586.0	-8,694.5	3,938.1	9,542.5	0.53	0.30	-0.43
16,032.0	90.35	155.67	6,585.4	-8,776.6	3,974.9	9,632.4	0.39	-0.04	-0.39
16,121.0	90.02	156.92	6,585.1	-8,858.1	4,010.7	9,721.4	1.45	-0.37	1.40
16,211.0	90.19	157.46	6,585.0	-8,941.1	4,046.6	9,811.4	0.63	0.19	0.60
16,300.0	90.22	157.33	6,584.6	-9,023.2	4,079.8	9,900.4	0.15	0.03	-0.15
16,389.0	90.32	157.24	6,584.2	-9,105.3	4,114.1	9,989.4	0.15	0.11	-0.10
16,479.0	90.45	157.03	6,583.6	-9,188.3	4,149.1	10,079.4	0.27	0.14	-0.23
16,568.0	90.49	156.43	6,582.9	-9,270.0	4,184.3	10,168.4	0.68	0.04	-0.67
16,658.0	90.12	156.37	6,582.4	-9,352.5	4,220.3	10,258.4	0.42	-0.41	-0.07
16,748.0	90.72	157.47	6,581.8	-9,435.3	4,255.6	10,348.4	1.39	0.67	1.22
16,837.0	90.93	157.18	6,580.5	-9,517.4	4,289.9	10,437.4	0.40	0.24	-0.33
16,926.0	90.39	158.62	6,579.4	-9,599.9	4,323.4	10,526.4	1.73	-0.61	1.62
17,016.0	89.58	157.52	6,579.5	-9,683.3	4,357.0	10,616.4	1.52	-0.90	-1.22
17,105.0	90.49	157.71	6,579.4	-9,765.6	4,390.9	10,705.3	1.04	1.02	0.21
17,195.0	89.88	157.25	6,579.1	-9,848.8	4,425.3	10,795.3	0.85	-0.68	-0.51
17,284.0	89.58	156.97	6,579.5	-9,930.8	4,460.0	10,884.3	0.46	-0.34	-0.31
17,374.0	90.89	156.72	6,579.2	-10,013.5	4,495.4	10,974.3	1.48	1.46	-0.28
17,463.0	90.62	156.11	6,578.0	-10,095.1	4,531.0	11,063.3	0.75	-0.30	-0.69
17,553.0	90.66	156.01	6,577.0	-10,177.3	4,567.5	11,153.3	0.12	0.04	-0.11
17,642.0	90.92	155.64	6,575.8	-10,258.5	4,603.9	11,242.3	0.51	0.29	-0.42
17,732.0	89.15	156.79	6,575.7	-10,340.9	4,640.2	11,332.3	2.35	-1.97	1.28



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well McNabb Unit 1H
<b>Project:</b>	Ritchie County WV	<b>TVD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Site:</b>	Mackay Pad - Caldwell/Greenback/McNabb	<b>MD Reference:</b>	Precision 523: 1099' GL + 19' KB @ 1118.0usft
<b>Well:</b>	McNabb 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>	Antero NE

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
17,821.0	89.35	156.93	6,576.9	-10,422.7	4,675.2	11,421.3	0.27	0.22	0.16
17,911.0	90.39	157.01	6,577.1	-10,505.5	4,710.4	11,511.3	1.16	1.16	0.09
18,000.0	90.15	156.49	6,576.7	-10,587.3	4,745.5	11,600.3	0.64	-0.27	-0.58
18,090.0	89.88	156.03	6,576.6	-10,669.7	4,781.8	11,690.3	0.59	-0.30	-0.51
18,179.0	90.35	158.10	6,576.5	-10,751.6	4,816.4	11,779.2	2.39	0.53	2.33
18,269.0	90.29	157.92	6,576.0	-10,835.1	4,850.1	11,869.2	0.21	-0.07	-0.20
18,358.0	89.98	157.38	6,575.7	-10,917.4	4,884.0	11,958.2	0.70	-0.35	-0.61
18,448.0	89.95	157.02	6,575.8	-11,000.4	4,918.9	12,048.2	0.40	-0.03	-0.40
18,538.0	89.92	156.97	6,575.9	-11,083.2	4,954.0	12,138.2	0.06	-0.03	-0.06
18,627.0	90.12	156.15	6,575.9	-11,164.9	4,989.4	12,227.2	0.95	0.22	-0.92
18,694.0	90.15	156.21	6,575.7	-11,226.2	5,016.5	12,294.2	0.10	0.04	0.09
<b>Last SDI MWD @ 18694 MD</b>									
18,759.0	90.15	156.21	6,575.5	-11,285.6	5,042.7	12,359.2	0.00	0.00	0.00
<b>Projection Tob Bit @ 18759 MD / 6575 TVD</b>									

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,207.0	6,187.2	Sycamore @ 6207		0.00	
6,406.0	6,346.4	Middlesex @ 6406		0.00	
6,591.0	6,459.7	Burkett @ 6591		0.00	
6,672.0	6,493.8	Tully @ 6672		0.00	
6,770.0	6,520.9	MRCL_HOT @ 6770		0.00	

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
106.0	106.0	-0.1	0.1	First SDI Gyro @ 106 MD
5,675.0	5,673.6	41.2	-36.5	Last SDI Gyro @ 5675 MD
5,708.0	5,706.6	41.0	-36.3	First SDI MWD @ 5708 MD
18,694.0	6,575.7	-11,226.2	5,016.5	Last SDI MWD @ 18694 MD
18,759.0	6,575.5	-11,285.6	5,042.7	Projection Tob Bit @ 18759 MD / 6575 TVD

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