





<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Truman Unit 1H
<b>Project:</b>	Harrison County West Virginia	<b>TVD Reference:</b>	Patterson : Truman 1H 1405 GL + 25 KB @ 1430.0usft
<b>Site:</b>	Cleta / Opie / Maude Pad	<b>MD Reference:</b>	Patterson : Truman 1H 1405 GL + 25 KB @ 1430.0usft
<b>Well:</b>	Truman 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>	Harrison County West Virginia, Harrison County, USA		
<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>	Cleta / Opie / Maude Pad, SHL Cleta Unit 1H				
<b>Site Position:</b>		<b>Northing:</b>	14,243,194.63 usft	<b>Latitude:</b>	39° 13' 20.344 N
<b>From:</b>	Map	<b>Easting:</b>	1,766,859.11 usft	<b>Longitude:</b>	80° 33' 12.736 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.28 °

<b>Well</b>	Truman Unit 1H, Marcellus					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	14,243,222.59 usft	<b>Latitude:</b>	39° 13' 20.625 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,766,773.61 usft	<b>Longitude:</b>	80° 33' 13.822 W
<b>Position Uncertainty</b>		2.0 usft	<b>Wellhead Elevation:</b>	1,430.0 usft	<b>Ground Level:</b>	1,405.0 usft

<b>Wellbore</b>	Original Wellpath
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/27/2014	-8.61	66.76	52,268

<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	308.60

Survey Program	Date	7/31/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
112.0	5,926.0	Survey #3 Gyro to KOP (Original Wellpath)	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper
6,043.0	13,759.0	Survey #4 MWD (Original Wellpath)	MWD SDI	MWD - Standard ver 1.0.1

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	14,243,222.59	1,766,773.61	39° 13' 20.625 N	80° 33' 13.822 W
112.0	0.36	328.93	112.0	0.3	-0.2	14,243,222.89	1,766,773.42	39° 13' 20.628 N	80° 33' 13.824 W
212.0	0.09	17.36	212.0	0.6	-0.3	14,243,223.24	1,766,773.29	39° 13' 20.631 N	80° 33' 13.826 W
312.0	0.18	57.03	312.0	0.8	-0.2	14,243,223.40	1,766,773.44	39° 13' 20.633 N	80° 33' 13.824 W
412.0	0.13	71.71	412.0	0.9	0.1	14,243,223.52	1,766,773.68	39° 13' 20.634 N	80° 33' 13.821 W
512.0	0.15	45.51	512.0	1.1	0.3	14,243,223.65	1,766,773.88	39° 13' 20.635 N	80° 33' 13.818 W
612.0	0.14	25.28	612.0	1.3	0.4	14,243,223.85	1,766,774.03	39° 13' 20.637 N	80° 33' 13.816 W
712.0	0.20	35.09	712.0	1.5	0.6	14,243,224.10	1,766,774.18	39° 13' 20.640 N	80° 33' 13.814 W
812.0	0.26	44.75	812.0	1.8	0.8	14,243,224.41	1,766,774.44	39° 13' 20.643 N	80° 33' 13.811 W



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<b>Well:</b>	Truman 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

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
912.0	0.24	66.19	912.0	2.1	1.2	14,243,224.65	1,766,774.79	39° 13' 20.645 N	80° 33' 13.806 W
1,012.0	0.25	66.98	1,012.0	2.2	1.6	14,243,224.82	1,766,775.18	39° 13' 20.647 N	80° 33' 13.801 W
1,112.0	0.35	97.54	1,112.0	2.3	2.1	14,243,224.87	1,766,775.69	39° 13' 20.647 N	80° 33' 13.795 W
1,212.0	0.28	90.25	1,212.0	2.2	2.6	14,243,224.83	1,766,776.23	39° 13' 20.647 N	80° 33' 13.788 W
1,312.0	0.38	106.16	1,312.0	2.1	3.2	14,243,224.73	1,766,776.80	39° 13' 20.646 N	80° 33' 13.781 W
1,412.0	2.31	195.30	1,412.0	0.1	3.0	14,243,222.70	1,766,776.58	39° 13' 20.626 N	80° 33' 13.784 W
1,512.0	6.49	193.68	1,511.6	-7.3	1.1	14,243,215.26	1,766,774.71	39° 13' 20.552 N	80° 33' 13.808 W
1,612.0	9.52	214.06	1,610.7	-19.7	-4.9	14,243,202.91	1,766,768.74	39° 13' 20.430 N	80° 33' 13.885 W
1,712.0	11.65	224.61	1,709.0	-33.7	-16.6	14,243,188.87	1,766,757.02	39° 13' 20.292 N	80° 33' 14.035 W
1,812.0	12.13	224.90	1,806.8	-48.4	-31.1	14,243,174.24	1,766,742.51	39° 13' 20.148 N	80° 33' 14.220 W
1,912.0	8.01	218.34	1,905.3	-61.3	-42.8	14,243,161.33	1,766,730.77	39° 13' 20.021 N	80° 33' 14.370 W
2,012.0	4.55	244.23	2,004.7	-68.5	-50.7	14,243,154.13	1,766,722.87	39° 13' 19.950 N	80° 33' 14.471 W
2,112.0	3.77	247.45	2,104.4	-71.4	-57.3	14,243,151.15	1,766,716.26	39° 13' 19.921 N	80° 33' 14.555 W
2,212.0	3.28	248.97	2,204.2	-73.7	-63.0	14,243,148.86	1,766,710.56	39° 13' 19.899 N	80° 33' 14.628 W
2,312.0	2.56	250.35	2,304.1	-75.5	-67.8	14,243,147.08	1,766,705.78	39° 13' 19.881 N	80° 33' 14.688 W
2,412.0	2.24	252.48	2,404.0	-76.8	-71.8	14,243,145.74	1,766,701.82	39° 13' 19.868 N	80° 33' 14.739 W
2,512.0	1.83	248.01	2,503.9	-78.0	-75.1	14,243,144.56	1,766,698.47	39° 13' 19.857 N	80° 33' 14.782 W
2,612.0	1.43	244.30	2,603.9	-79.2	-77.7	14,243,143.42	1,766,695.87	39° 13' 19.846 N	80° 33' 14.815 W
2,712.0	1.09	253.88	2,703.9	-80.0	-79.8	14,243,142.61	1,766,693.83	39° 13' 19.838 N	80° 33' 14.841 W
2,812.0	0.84	255.80	2,803.9	-80.4	-81.4	14,243,142.17	1,766,692.20	39° 13' 19.834 N	80° 33' 14.861 W
2,912.0	0.55	231.15	2,903.9	-80.9	-82.5	14,243,141.69	1,766,691.12	39° 13' 19.829 N	80° 33' 14.875 W
3,012.0	0.43	206.39	3,003.9	-81.5	-83.0	14,243,141.05	1,766,690.58	39° 13' 19.823 N	80° 33' 14.882 W
3,112.0	0.43	217.17	3,103.9	-82.2	-83.4	14,243,140.42	1,766,690.19	39° 13' 19.816 N	80° 33' 14.887 W
3,212.0	0.50	206.68	3,203.8	-82.9	-83.8	14,243,139.73	1,766,689.76	39° 13' 19.809 N	80° 33' 14.893 W
3,312.0	0.31	156.85	3,303.8	-83.5	-83.9	14,243,139.09	1,766,689.67	39° 13' 19.803 N	80° 33' 14.894 W
3,412.0	0.30	137.17	3,403.8	-83.9	-83.6	14,243,138.65	1,766,689.96	39° 13' 19.799 N	80° 33' 14.890 W
3,512.0	0.46	165.93	3,503.8	-84.5	-83.4	14,243,138.07	1,766,690.23	39° 13' 19.793 N	80° 33' 14.887 W
3,612.0	4.40	191.40	3,603.7	-88.7	-84.0	14,243,133.92	1,766,689.57	39° 13' 19.752 N	80° 33' 14.895 W
3,712.0	6.90	194.73	3,703.2	-98.2	-86.3	14,243,124.34	1,766,687.29	39° 13' 19.658 N	80° 33' 14.925 W
3,812.0	9.85	196.22	3,802.2	-112.3	-90.2	14,243,110.32	1,766,683.37	39° 13' 19.519 N	80° 33' 14.976 W
3,912.0	12.86	203.49	3,900.2	-130.7	-97.1	14,243,091.89	1,766,676.54	39° 13' 19.337 N	80° 33' 15.064 W
4,012.0	15.85	208.24	3,997.1	-152.9	-108.0	14,243,069.65	1,766,665.64	39° 13' 19.118 N	80° 33' 15.203 W
4,112.0	18.46	216.97	4,092.6	-177.6	-124.0	14,243,044.96	1,766,649.65	39° 13' 18.874 N	80° 33' 15.408 W
4,212.0	19.77	217.44	4,187.1	-203.7	-143.8	14,243,018.89	1,766,629.85	39° 13' 18.618 N	80° 33' 15.662 W
4,312.0	21.91	218.32	4,280.6	-231.8	-165.6	14,242,990.82	1,766,608.00	39° 13' 18.341 N	80° 33' 15.941 W
4,412.0	22.43	220.01	4,373.2	-261.0	-189.4	14,242,961.57	1,766,584.16	39° 13' 18.053 N	80° 33' 16.246 W
4,512.0	22.35	218.59	4,465.6	-290.5	-213.6	14,242,932.09	1,766,560.04	39° 13' 17.763 N	80° 33' 16.554 W
4,612.0	22.72	215.96	4,558.0	-321.0	-236.8	14,242,901.60	1,766,536.84	39° 13' 17.462 N	80° 33' 16.851 W
4,712.0	23.28	214.26	4,650.1	-353.0	-259.2	14,242,869.63	1,766,514.37	39° 13' 17.147 N	80° 33' 17.139 W
4,812.0	23.59	214.27	4,741.8	-385.8	-281.6	14,242,836.77	1,766,491.98	39° 13' 16.824 N	80° 33' 17.425 W
4,912.0	23.80	216.07	4,833.4	-418.7	-304.8	14,242,803.92	1,766,468.83	39° 13' 16.500 N	80° 33' 17.722 W
5,012.0	22.89	214.07	4,925.2	-451.1	-327.5	14,242,771.50	1,766,446.06	39° 13' 16.180 N	80° 33' 18.013 W
5,112.0	23.06	212.63	5,017.3	-483.7	-349.0	14,242,738.90	1,766,424.60	39° 13' 15.859 N	80° 33' 18.288 W
5,212.0	22.88	212.38	5,109.3	-516.6	-370.0	14,242,705.98	1,766,403.63	39° 13' 15.535 N	80° 33' 18.557 W
5,312.0	21.96	207.35	5,201.8	-549.6	-389.0	14,242,672.96	1,766,384.63	39° 13' 15.209 N	80° 33' 18.800 W
5,412.0	22.51	212.27	5,294.3	-582.4	-407.8	14,242,640.16	1,766,365.82	39° 13' 14.886 N	80° 33' 19.041 W
5,512.0	23.75	218.87	5,386.3	-614.3	-430.7	14,242,608.29	1,766,342.95	39° 13' 14.572 N	80° 33' 19.334 W
5,612.0	21.50	218.44	5,478.6	-644.3	-454.7	14,242,578.25	1,766,318.92	39° 13' 14.276 N	80° 33' 19.641 W
5,712.0	18.39	219.27	5,572.6	-670.9	-476.1	14,242,551.68	1,766,297.54	39° 13' 14.014 N	80° 33' 19.915 W
5,812.0	19.87	223.47	5,667.1	-695.5	-497.7	14,242,527.13	1,766,275.86	39° 13' 13.773 N	80° 33' 20.192 W
5,912.0	22.47	226.06	5,760.3	-721.1	-523.2	14,242,501.53	1,766,250.40	39° 13' 13.521 N	80° 33' 20.517 W
5,926.0	22.37	225.26	5,773.3	-724.8	-527.0	14,242,497.80	1,766,246.58	39° 13' 13.484 N	80° 33' 20.566 W
6,043.0	20.33	217.68	5,882.3	-756.6	-555.3	14,242,466.04	1,766,218.34	39° 13' 13.171 N	80° 33' 20.927 W



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<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,137.0	21.28	216.69	5,970.1	-783.2	-575.4	14,242,439.43	1,766,198.16	39° 13' 12.909 N	80° 33' 21.185 W
6,231.0	20.20	220.03	6,058.0	-809.3	-596.1	14,242,413.33	1,766,177.53	39° 13' 12.652 N	80° 33' 21.449 W
6,325.0	21.95	220.73	6,145.8	-835.0	-618.0	14,242,387.59	1,766,155.63	39° 13' 12.399 N	80° 33' 21.729 W
6,420.0	23.49	218.11	6,233.4	-863.4	-641.2	14,242,359.23	1,766,132.36	39° 13' 12.119 N	80° 33' 22.026 W
6,514.0	24.16	220.08	6,319.4	-892.8	-665.2	14,242,329.77	1,766,108.41	39° 13' 11.829 N	80° 33' 22.333 W
6,608.0	25.07	220.89	6,404.8	-922.6	-690.6	14,242,300.00	1,766,082.99	39° 13' 11.536 N	80° 33' 22.658 W
6,702.0	25.52	223.85	6,489.8	-952.3	-717.7	14,242,270.34	1,766,055.92	39° 13' 11.244 N	80° 33' 23.003 W
6,796.0	25.46	222.16	6,574.7	-981.8	-745.3	14,242,240.76	1,766,028.33	39° 13' 10.953 N	80° 33' 23.356 W
6,890.0	25.58	221.16	6,659.5	-1,012.1	-772.2	14,242,210.50	1,766,001.41	39° 13' 10.655 N	80° 33' 23.700 W
6,984.0	26.78	222.00	6,743.9	-1,043.1	-799.7	14,242,179.49	1,765,973.89	39° 13' 10.350 N	80° 33' 24.052 W
7,070.0	29.05	222.58	6,819.8	-1,072.9	-826.8	14,242,149.71	1,765,946.79	39° 13' 10.057 N	80° 33' 24.398 W
<b>Sycamore</b>									
7,078.0	29.26	222.63	6,826.8	-1,075.8	-829.5	14,242,146.84	1,765,944.15	39° 13' 10.028 N	80° 33' 24.432 W
7,110.0	28.70	222.61	6,854.8	-1,087.2	-840.0	14,242,135.43	1,765,933.66	39° 13' 9.916 N	80° 33' 24.566 W
7,141.0	29.34	225.26	6,881.9	-1,098.0	-850.4	14,242,124.61	1,765,923.22	39° 13' 9.810 N	80° 33' 24.699 W
7,173.0	29.81	231.26	6,909.8	-1,108.5	-862.2	14,242,114.11	1,765,911.45	39° 13' 9.706 N	80° 33' 24.849 W
7,204.0	30.57	237.65	6,936.6	-1,117.5	-874.8	14,242,105.07	1,765,898.77	39° 13' 9.618 N	80° 33' 25.011 W
7,235.0	30.78	243.92	6,963.2	-1,125.2	-888.6	14,242,097.36	1,765,884.98	39° 13' 9.542 N	80° 33' 25.187 W
7,267.0	30.76	248.58	6,990.7	-1,131.8	-903.6	14,242,090.77	1,765,870.01	39° 13' 9.478 N	80° 33' 25.378 W
7,298.0	30.96	251.70	7,017.4	-1,137.2	-918.5	14,242,085.37	1,765,855.06	39° 13' 9.425 N	80° 33' 25.568 W
7,326.0	31.11	255.47	7,041.3	-1,141.3	-932.4	14,242,081.29	1,765,841.22	39° 13' 9.385 N	80° 33' 25.744 W
<b>Middlesex</b>									
7,330.0	31.14	256.00	7,044.8	-1,141.8	-934.4	14,242,080.78	1,765,839.21	39° 13' 9.380 N	80° 33' 25.770 W
7,361.0	31.46	258.83	7,071.3	-1,145.3	-950.1	14,242,077.28	1,765,823.50	39° 13' 9.347 N	80° 33' 25.970 W
7,393.0	32.87	263.98	7,098.4	-1,147.8	-966.9	14,242,074.75	1,765,806.67	39° 13' 9.322 N	80° 33' 26.184 W
7,424.0	34.90	269.46	7,124.1	-1,148.8	-984.2	14,242,073.78	1,765,789.43	39° 13' 9.314 N	80° 33' 26.403 W
7,455.0	37.30	274.13	7,149.1	-1,148.2	-1,002.4	14,242,074.38	1,765,771.18	39° 13' 9.320 N	80° 33' 26.635 W
7,487.0	40.00	276.28	7,174.1	-1,146.4	-1,022.3	14,242,076.20	1,765,751.29	39° 13' 9.339 N	80° 33' 26.888 W
7,500.0	41.12	277.33	7,184.0	-1,145.4	-1,030.7	14,242,077.20	1,765,742.89	39° 13' 9.350 N	80° 33' 26.994 W
<b>Burkett</b>									
7,518.0	42.69	278.70	7,197.4	-1,143.7	-1,042.6	14,242,078.88	1,765,730.99	39° 13' 9.367 N	80° 33' 27.145 W
7,545.0	45.62	281.10	7,216.8	-1,140.5	-1,061.1	14,242,082.12	1,765,712.47	39° 13' 9.400 N	80° 33' 27.381 W
<b>Tully</b>									
7,549.0	46.06	281.44	7,219.6	-1,139.9	-1,064.0	14,242,082.68	1,765,709.65	39° 13' 9.405 N	80° 33' 27.416 W
7,581.0	50.20	283.60	7,240.9	-1,134.7	-1,087.2	14,242,087.86	1,765,686.40	39° 13' 9.458 N	80° 33' 27.712 W
7,612.0	53.07	285.17	7,260.2	-1,128.7	-1,110.7	14,242,093.91	1,765,662.86	39° 13' 9.519 N	80° 33' 28.010 W
7,644.0	54.53	287.28	7,279.1	-1,121.5	-1,135.5	14,242,101.13	1,765,638.07	39° 13' 9.591 N	80° 33' 28.325 W
7,675.0	56.18	289.47	7,296.7	-1,113.4	-1,159.7	14,242,109.17	1,765,613.87	39° 13' 9.672 N	80° 33' 28.632 W
7,707.0	58.44	292.71	7,314.0	-1,103.7	-1,184.8	14,242,118.87	1,765,588.76	39° 13' 9.769 N	80° 33' 28.951 W
7,726.0	59.71	294.30	7,323.7	-1,097.2	-1,199.8	14,242,125.37	1,765,573.81	39° 13' 9.834 N	80° 33' 29.140 W
<b>Hamilton</b>									
7,738.0	60.52	295.28	7,329.7	-1,092.9	-1,209.2	14,242,129.73	1,765,564.37	39° 13' 9.878 N	80° 33' 29.260 W
7,769.0	62.60	296.12	7,344.5	-1,081.0	-1,233.8	14,242,141.55	1,765,539.81	39° 13' 9.996 N	80° 33' 29.571 W
7,801.0	65.13	297.44	7,358.6	-1,068.1	-1,259.4	14,242,154.50	1,765,514.17	39° 13' 10.125 N	80° 33' 29.897 W
7,832.0	67.19	299.02	7,371.1	-1,054.7	-1,284.4	14,242,167.91	1,765,489.19	39° 13' 10.259 N	80° 33' 30.213 W
7,858.0	69.14	300.57	7,380.8	-1,042.7	-1,305.4	14,242,179.90	1,765,468.25	39° 13' 10.378 N	80° 33' 30.479 W
<b>Marcellus</b>									
7,864.0	69.59	300.92	7,382.9	-1,039.8	-1,310.2	14,242,182.77	1,765,463.42	39° 13' 10.407 N	80° 33' 30.540 W
7,895.0	72.26	302.09	7,393.0	-1,024.5	-1,335.2	14,242,198.09	1,765,438.44	39° 13' 10.560 N	80° 33' 30.856 W
7,926.0	75.85	304.04	7,401.5	-1,008.2	-1,360.1	14,242,214.35	1,765,413.47	39° 13' 10.722 N	80° 33' 31.173 W
7,958.0	80.52	306.76	7,408.1	-990.1	-1,385.7	14,242,232.49	1,765,387.95	39° 13' 10.902 N	80° 33' 31.496 W
7,989.0	83.34	307.44	7,412.4	-971.6	-1,410.1	14,242,251.00	1,765,363.48	39° 13' 11.086 N	80° 33' 31.806 W



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Truman Unit 1H
<b>Project:</b>	Harrison County West Virginia	<b>TVD Reference:</b>	Patterson : Truman 1H 1405 GL + 25 KB @ 1430.0usft
<b>Site:</b>	Cleta / Opie / Maude Pad	<b>MD Reference:</b>	Patterson : Truman 1H 1405 GL + 25 KB @ 1430.0usft
<b>Well:</b>	Truman 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

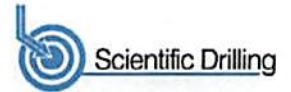
Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,029.0	86.41	308.21	7,416.0	-947.2	-1,441.6	14,242,275.43	1,765,332.01	39° 13' 11.329 N	80° 33' 32.204 W
8,141.0	89.10	307.72	7,420.4	-878.3	-1,529.8	14,242,344.27	1,765,243.79	39° 13' 12.014 N	80° 33' 33.322 W
8,235.0	88.63	306.95	7,422.3	-821.3	-1,604.5	14,242,401.27	1,765,169.06	39° 13' 12.582 N	80° 33' 34.268 W
8,329.0	89.70	310.56	7,423.6	-762.5	-1,677.8	14,242,460.10	1,765,095.78	39° 13' 13.167 N	80° 33' 35.196 W
8,423.0	88.42	310.01	7,425.2	-701.7	-1,749.5	14,242,520.87	1,765,024.09	39° 13' 13.771 N	80° 33' 36.103 W
8,518.0	88.89	309.84	7,427.4	-640.8	-1,822.4	14,242,581.82	1,764,951.25	39° 13' 14.377 N	80° 33' 37.025 W
8,612.0	89.60	309.31	7,428.6	-580.9	-1,894.8	14,242,641.70	1,764,878.81	39° 13' 14.973 N	80° 33' 37.942 W
8,706.0	88.99	307.52	7,429.8	-522.5	-1,968.4	14,242,700.10	1,764,805.16	39° 13' 15.554 N	80° 33' 38.875 W
8,800.0	87.48	306.40	7,432.7	-466.0	-2,043.5	14,242,756.59	1,764,730.09	39° 13' 16.116 N	80° 33' 39.826 W
8,894.0	88.06	306.32	7,436.3	-410.3	-2,119.2	14,242,812.27	1,764,654.45	39° 13' 16.670 N	80° 33' 40.784 W
8,988.0	88.59	306.85	7,439.1	-354.3	-2,194.6	14,242,868.28	1,764,579.00	39° 13' 17.227 N	80° 33' 41.739 W
9,082.0	89.33	308.09	7,440.8	-297.1	-2,269.2	14,242,925.45	1,764,504.41	39° 13' 17.796 N	80° 33' 42.684 W
9,176.0	88.46	308.84	7,442.6	-238.7	-2,342.8	14,242,983.91	1,764,430.83	39° 13' 18.378 N	80° 33' 43.616 W
9,270.0	89.20	309.80	7,444.5	-179.1	-2,415.5	14,243,043.46	1,764,358.12	39° 13' 18.970 N	80° 33' 44.536 W
9,365.0	88.26	310.30	7,446.6	-118.0	-2,488.2	14,243,104.57	1,764,285.42	39° 13' 19.578 N	80° 33' 45.456 W
9,459.0	88.59	310.92	7,449.2	-56.9	-2,559.5	14,243,165.73	1,764,214.09	39° 13' 20.186 N	80° 33' 46.359 W
9,553.0	87.72	309.42	7,452.2	3.7	-2,631.3	14,243,226.33	1,764,142.30	39° 13' 20.789 N	80° 33' 47.268 W
9,647.0	87.51	309.33	7,456.2	63.3	-2,703.9	14,243,285.92	1,764,069.70	39° 13' 21.381 N	80° 33' 48.187 W
9,741.0	86.98	308.74	7,460.7	122.5	-2,776.8	14,243,345.05	1,763,996.77	39° 13' 21.969 N	80° 33' 49.111 W
9,835.0	89.34	308.31	7,463.7	181.0	-2,850.3	14,243,403.56	1,763,923.27	39° 13' 22.551 N	80° 33' 50.041 W
9,930.0	89.97	307.67	7,464.3	239.4	-2,925.2	14,243,462.03	1,763,848.40	39° 13' 23.133 N	80° 33' 50.989 W
10,024.0	89.87	305.45	7,464.4	295.4	-3,000.7	14,243,518.02	1,763,772.90	39° 13' 23.690 N	80° 33' 51.946 W
10,118.0	92.05	306.09	7,462.8	350.4	-3,077.0	14,243,572.96	1,763,696.65	39° 13' 24.237 N	80° 33' 52.912 W
10,212.0	91.64	305.24	7,459.8	405.1	-3,153.3	14,243,627.74	1,763,620.32	39° 13' 24.782 N	80° 33' 53.879 W
10,306.0	92.28	305.84	7,456.6	459.7	-3,229.7	14,243,682.34	1,763,543.88	39° 13' 25.326 N	80° 33' 54.847 W
10,400.0	91.27	308.44	7,453.7	516.5	-3,304.6	14,243,739.06	1,763,468.99	39° 13' 25.890 N	80° 33' 55.795 W
10,494.0	90.20	307.39	7,452.5	574.2	-3,378.8	14,243,796.82	1,763,394.84	39° 13' 26.465 N	80° 33' 56.734 W
10,588.0	88.73	309.46	7,453.3	632.6	-3,452.4	14,243,855.23	1,763,321.20	39° 13' 27.046 N	80° 33' 57.667 W
10,682.0	90.27	310.88	7,454.2	693.3	-3,524.2	14,243,915.86	1,763,249.38	39° 13' 27.649 N	80° 33' 58.576 W
10,776.0	89.20	309.36	7,454.6	753.8	-3,596.1	14,243,976.43	1,763,177.51	39° 13' 28.251 N	80° 33' 59.486 W
10,871.0	88.02	307.55	7,456.9	812.9	-3,670.5	14,244,035.49	1,763,103.14	39° 13' 28.838 N	80° 34' 0.428 W
10,965.0	88.69	308.98	7,459.6	871.1	-3,744.2	14,244,093.68	1,763,029.37	39° 13' 29.417 N	80° 34' 1.362 W
11,058.0	88.22	307.93	7,462.1	928.9	-3,817.0	14,244,151.49	1,762,956.57	39° 13' 29.992 N	80° 34' 2.284 W
11,152.0	88.79	310.37	7,464.6	988.2	-3,889.9	14,244,210.82	1,762,883.70	39° 13' 30.582 N	80° 34' 3.207 W
11,246.0	90.37	312.19	7,465.3	1,050.2	-3,960.5	14,244,272.83	1,762,813.07	39° 13' 31.199 N	80° 34' 4.101 W
11,340.0	88.76	310.05	7,466.0	1,112.0	-4,031.3	14,244,334.64	1,762,742.26	39° 13' 31.813 N	80° 34' 4.997 W
11,435.0	88.83	310.21	7,468.0	1,173.3	-4,104.0	14,244,395.85	1,762,669.64	39° 13' 32.422 N	80° 34' 5.916 W
11,529.0	89.06	310.69	7,469.7	1,234.2	-4,175.5	14,244,456.83	1,762,598.12	39° 13' 33.028 N	80° 34' 6.822 W
11,623.0	89.73	309.58	7,470.7	1,294.8	-4,247.3	14,244,517.42	1,762,526.26	39° 13' 33.631 N	80° 34' 7.732 W
11,717.0	89.16	308.51	7,471.6	1,354.0	-4,320.3	14,244,576.63	1,762,453.26	39° 13' 34.220 N	80° 34' 8.656 W
11,811.0	88.46	307.76	7,473.5	1,412.1	-4,394.3	14,244,634.66	1,762,379.34	39° 13' 34.797 N	80° 34' 9.592 W
11,905.0	88.36	308.31	7,476.2	1,470.0	-4,468.3	14,244,692.55	1,762,305.33	39° 13' 35.373 N	80° 34' 10.529 W
12,000.0	88.42	309.97	7,478.8	1,529.9	-4,541.9	14,244,752.49	1,762,231.68	39° 13' 35.969 N	80° 34' 11.462 W
12,094.0	88.62	311.04	7,481.3	1,590.9	-4,613.4	14,244,813.53	1,762,160.24	39° 13' 36.576 N	80° 34' 12.367 W
12,188.0	88.32	308.90	7,483.8	1,651.3	-4,685.4	14,244,873.89	1,762,088.23	39° 13' 37.176 N	80° 34' 13.278 W
12,282.0	88.59	308.43	7,486.3	1,710.0	-4,758.7	14,244,932.59	1,762,014.86	39° 13' 37.760 N	80° 34' 14.208 W
12,376.0	88.12	307.49	7,489.0	1,767.8	-4,832.8	14,244,990.39	1,761,940.77	39° 13' 38.335 N	80° 34' 15.146 W
12,471.0	87.85	307.41	7,492.3	1,825.5	-4,908.2	14,245,048.12	1,761,865.40	39° 13' 38.909 N	80° 34' 16.100 W
12,565.0	87.55	307.69	7,496.1	1,882.8	-4,982.7	14,245,105.36	1,761,790.94	39° 13' 39.478 N	80° 34' 17.044 W
12,659.0	88.69	308.35	7,499.2	1,940.6	-5,056.7	14,245,163.23	1,761,716.93	39° 13' 40.054 N	80° 34' 17.981 W
12,753.0	89.06	307.75	7,501.0	1,998.6	-5,130.7	14,245,221.15	1,761,642.92	39° 13' 40.630 N	80° 34' 18.918 W
12,847.0	87.96	306.92	7,503.5	2,055.5	-5,205.4	14,245,278.14	1,761,568.21	39° 13' 41.197 N	80° 34' 19.865 W
12,941.0	88.42	306.18	7,506.5	2,111.5	-5,280.9	14,245,334.09	1,761,492.73	39° 13' 41.754 N	80° 34' 20.821 W





Survey Report - Geographic



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Truman Unit 1H
<b>Project:</b>	Harrison County West Virginia	<b>TVD Reference:</b>	Patterson : Truman 1H 1405 GL + 25 KB @ 1430.0usft
<b>Site:</b>	Cleta / Opie / Maude Pad	<b>MD Reference:</b>	Patterson : Truman 1H 1405 GL + 25 KB @ 1430.0usft
<b>Well:</b>	Truman 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										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
13,036.0	88.89	307.22	7,508.7	2,168.3	-5,357.0	14,245,390.85	1,761,416.58	39° 13' 42.319 N	80° 34' 21.785 W	
13,130.0	89.23	310.05	7,510.2	2,226.9	-5,430.4	14,245,449.52	1,761,343.17	39° 13' 42.902 N	80° 34' 22.715 W	
13,224.0	89.46	310.86	7,511.3	2,287.9	-5,502.0	14,245,510.51	1,761,271.65	39° 13' 43.509 N	80° 34' 23.620 W	
13,317.0	89.36	310.33	7,512.3	2,348.4	-5,572.6	14,245,571.02	1,761,201.04	39° 13' 44.110 N	80° 34' 24.515 W	
13,412.0	89.87	310.54	7,512.9	2,410.0	-5,644.9	14,245,632.64	1,761,128.73	39° 13' 44.723 N	80° 34' 25.430 W	
13,506.0	90.44	309.43	7,512.6	2,470.4	-5,716.9	14,245,693.04	1,761,056.71	39° 13' 45.323 N	80° 34' 26.342 W	
13,600.0	89.19	307.58	7,512.9	2,529.0	-5,790.4	14,245,751.56	1,760,983.16	39° 13' 45.905 N	80° 34' 27.274 W	
13,701.0	90.48	309.01	7,513.2	2,591.6	-5,869.7	14,245,814.15	1,760,903.89	39° 13' 46.528 N	80° 34' 28.277 W	
13,759.0	90.48	309.01	7,512.8	2,628.1	-5,914.8	14,245,850.65	1,760,858.83	39° 13' 46.891 N	80° 34' 28.848 W	

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
7,070.0	6,819.8	-1,072.9	-826.8	Sycamore	
7,326.0	7,041.3	-1,141.3	-932.4	Middlesex	
7,500.0	7,184.0	-1,145.4	-1,030.7	Burkett	
7,545.0	7,216.8	-1,140.5	-1,061.1	Tully	
7,726.0	7,323.7	-1,097.2	-1,199.8	Hamilton	
7,858.0	7,380.8	-1,042.7	-1,305.4	Marcellus	

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