

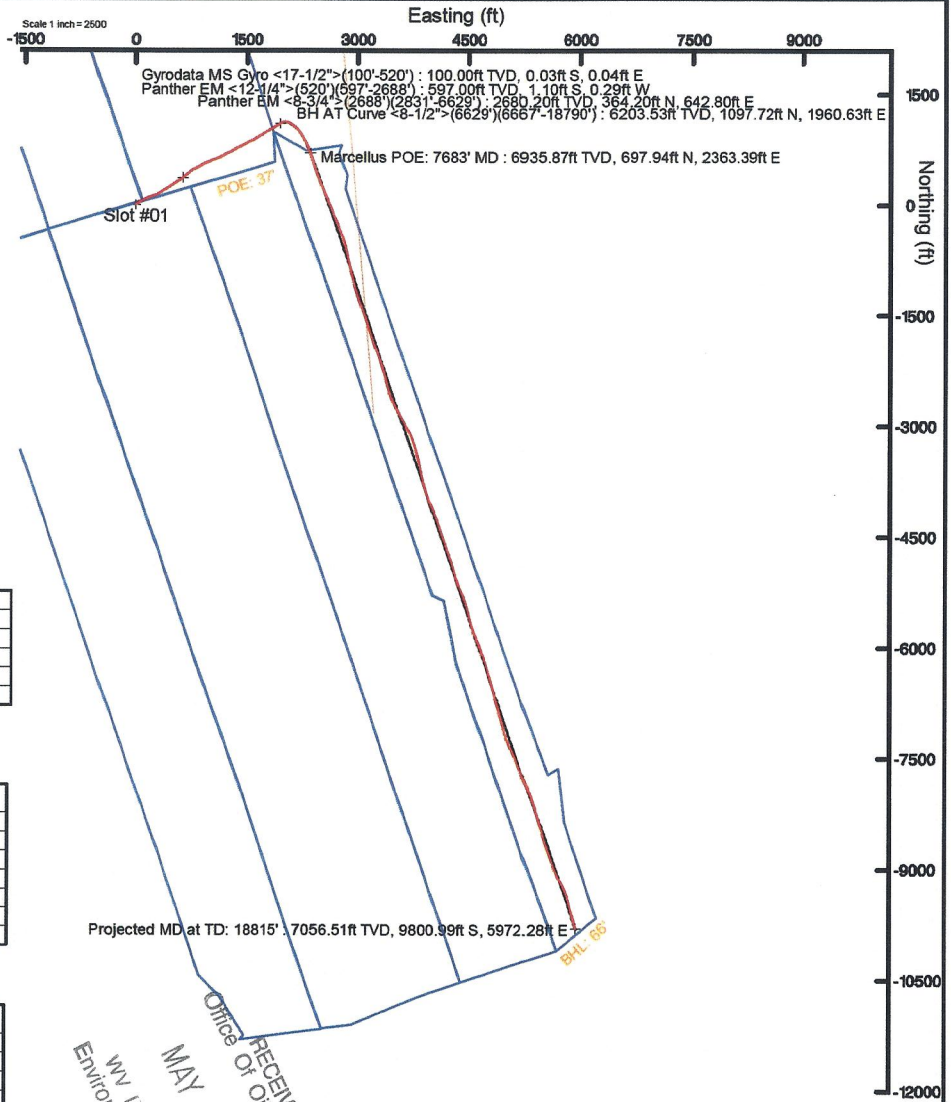
ANTERO RESOURCES CORPORATION

Location: Wetzel County, WV
 Field: Wetzel
 Facility: Gadd Pad

Slot: Slot #01
 Well: Keystone Unit 3H
 Wellbore: Keystone Unit 3H PWB



API: 47-103-03222-0000
 BHI Job #: 109538711
 Rig: Frontier 22
 Duration: 12/18/2018-12/23/2018



Plot reference wellpath is Keystone Unit 3H PWP Rev-A.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to Frontier 22 (RKB)	North Reference: Grid north
Measured depths are referenced to Frontier 22 (RKB)	Scale: True distance
Frontier 22 (RKB) to Mean Sea Level: 1246.5 feet	Depths are in feet
Mean Sea Level to Mud line (At Slot: Slot #01): -1222 feet	Created by: delaset on 2019-01-02
Coordinates are in feet referenced to Slot	Database: WA_MPL_EasternUS_Defn

Gyrodata MS Gyro <17-1/2">(100'-520') : 0.08° Inc, 100.00ft MD, 100.00ft TVD, 0.04ft VS

Panther EM <12-1/4">(520')(597'-2688') : 0.64° Inc, 597.00ft MD, 597.00ft TVD, 0.95ft VS

Panther EM <8-3/4">(2688')(2831'-6629') : 21.04° Inc, 2831.00ft MD, 2680.20ft TVD, -135.59ft VS

BH AT Curve <8-1/2">(6629')(6667'-18790') : 23.40° Inc, 6667.00ft MD, 6203.53ft TVD, -401.14ft VS

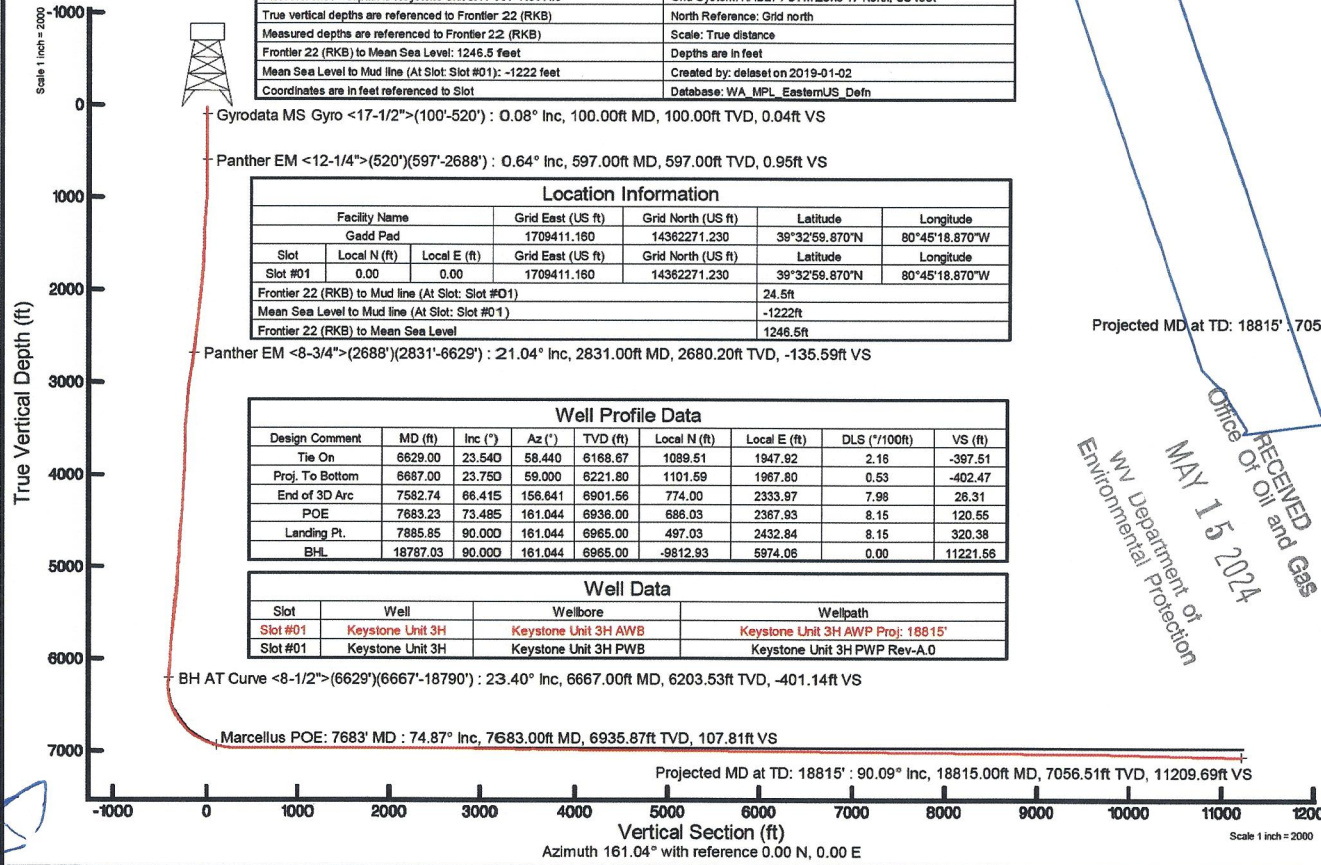
Marcellus POE: 7683' MD : 74.87° Inc, 7683.00ft MD, 6935.87ft TVD, 107.81ft VS

Projected MD at TD: 18815' : 90.09° Inc, 18815.00ft MD, 7056.51ft TVD, 11209.69ft VS

Location Information					
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
Gadd Pad	1709411.160	14362271.230	39°32'59.870"N	80°45'18.870"W	
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Longitude
Slot #01	0.00	0.00	1709411.160	14362271.230	39°32'59.870"N 80°45'18.870"W
Frontier 22 (RKB) to Mud line (At Slot: Slot #01)			24.5ft		
Mean Sea Level to Mud line (At Slot: Slot #01)			-1222ft		
Frontier 22 (RKB) to Mean Sea Level			1246.5ft		

Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	8629.00	23.540	58.440	6168.87	1089.51	1947.92	2.16	-397.51
Proj. To Bottom	6687.00	23.750	59.000	6221.80	1101.59	1967.80	0.53	-402.47
End of 3D Arc	7582.74	66.415	156.641	6901.56	774.00	2333.97	7.98	26.31
POE	7683.23	73.485	161.044	6936.00	686.03	2367.93	8.15	120.55
Landing Pt.	7885.85	90.000	161.044	6965.00	497.03	2432.84	8.15	320.38
BHL	18787.03	90.000	161.044	6965.00	-9812.93	5974.06	0.00	11221.56

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #01	Keystone Unit 3H	Keystone Unit 3H AWP	Keystone Unit 3H AWP Proj: 18815'
Slot #01	Keystone Unit 3H	Keystone Unit 3H PWB	Keystone Unit 3H PWP Rev-A.0



N GRID
 TRUE
 MAG
 W E

User specified (HDGM) Dip: 66.71° Field: 52112 nT
 Magnetic North is 7.65 degrees West of True North (at 12/17/2018)
 Grid North is 0.16 degrees East of True North
 To correct azimuth from True to Grid subtract 0.16 degrees
 To correct azimuth from Magnetic to Grid subtract 7.81 degrees



Actual Wellpath Report

Keystone Unit 3H AWP Proj: 18815'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Wetzel County, WV	Well	Keystone Unit 3H
Field	Wetzel	Wellbore	Keystone Unit 3H AWB
Facility	Gadd Pad		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Delaset
Scale	0.999605	Report Generated	1/2/2019 at 2:23:59 PM
Convergence at slot	0.16° East	Database/Source file	WA_MPL_EasternUS_Defn/Keystone_Unit_3H_AWP_Proj_18815_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	1709411.16	14362271.23	39°32'59.870"N	80°45'18.870"W
Facility Reference Pt			1709411.16	14362271.23	39°32'59.870"N	80°45'18.870"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Frontier 22 (RKB) to Facility Vertical Datum	24.50ft
Horizontal Reference Pt	Slot	Frontier 22 (RKB) to Mean Sea Level	1246.50ft
Vertical Reference Pt	Frontier 22 (RKB)	Frontier 22 (RKB) to Mud Line at Slot (Slot #01)	24.50ft
MD Reference Pt	Frontier 22 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	161.04°

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Actual Wellpath Report

Keystone Unit 3H AWP Proj: 18815'
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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01	
Area	Wetzel County, WV	Well	Keystone Unit 3H	
Field	Wetzel	Wellbore	Keystone Unit 3H AWB	
Facility	Gadd Pad			

WELLPATH DATA (234 stations) † = interpolated/extrapolated station																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
0.00†	0.000	127.370	0.00	0.00	0.00	0.00	1709411.16	14362271.23	39°32'59.870"N	80°45'18.870"W	0.00	0.000	0.00	0.00	0.00	
24.50	0.000	127.370	24.50	0.00	0.00	0.00	1709411.16	14362271.23	39°32'59.870"N	80°45'18.870"W	0.00	0.000	0.00	0.00	0.00	
100.00	0.080	127.370	100.00	0.04	-0.03	0.04	1709411.20	14362271.20	39°32'59.870"N	80°45'18.869"W	0.05	127.370	0.11	0.11	168.70	Gyrodata MS Gyro <17-1/2">(100'-520')
125.00	0.030	176.600	125.00	0.06	-0.05	0.06	1709411.22	14362271.18	39°32'59.870"N	80°45'18.869"W	0.07	131.180	0.26	-0.20	196.92	
150.00	0.150	111.610	150.00	0.09	-0.07	0.09	1709411.25	14362271.16	39°32'59.869"N	80°45'18.869"W	0.11	127.903	0.56	0.48	-259.96	
175.00	0.180	114.120	175.00	0.14	-0.10	0.15	1709411.31	14362271.13	39°32'59.869"N	80°45'18.868"W	0.18	122.015	0.12	0.12	10.04	
200.00	0.110	115.410	200.00	0.18	-0.12	0.21	1709411.37	14362271.11	39°32'59.869"N	80°45'18.867"W	0.24	120.097	0.28	-0.28	5.16	
225.00	0.110	133.710	225.00	0.22	-0.15	0.25	1709411.41	14362271.08	39°32'59.869"N	80°45'18.867"W	0.29	120.823	0.14	0.00	73.20	
250.00	0.210	162.330	250.00	0.29	-0.21	0.28	1709411.44	14362271.02	39°32'59.868"N	80°45'18.866"W	0.35	126.674	0.50	0.40	114.48	
275.00	0.150	130.640	275.00	0.36	-0.27	0.32	1709411.48	14362270.96	39°32'59.867"N	80°45'18.866"W	0.42	130.617	0.46	-0.24	-126.76	
300.00	0.170	147.180	300.00	0.43	-0.33	0.36	1709411.52	14362270.90	39°32'59.867"N	80°45'18.865"W	0.49	131.856	0.20	0.08	66.16	
325.00	0.110	155.760	325.00	0.49	-0.38	0.39	1709411.55	14362270.85	39°32'59.866"N	80°45'18.865"W	0.55	133.899	0.25	-0.24	34.32	
350.00	0.190	160.920	350.00	0.55	-0.44	0.42	1709411.58	14362270.79	39°32'59.866"N	80°45'18.865"W	0.61	136.519	0.32	0.32	20.64	
375.00	0.210	155.040	375.00	0.64	-0.52	0.45	1709411.61	14362270.71	39°32'59.865"N	80°45'18.864"W	0.69	139.152	0.11	0.08	-23.52	
400.00	0.130	179.260	400.00	0.71	-0.59	0.47	1709411.63	14362270.64	39°32'59.864"N	80°45'18.864"W	0.76	141.489	0.42	-0.32	96.88	
425.00	0.250	198.780	425.00	0.78	-0.67	0.45	1709411.61	14362270.56	39°32'59.863"N	80°45'18.864"W	0.81	145.967	0.54	0.48	78.08	
450.00	0.180	223.400	450.00	0.84	-0.75	0.41	1709411.57	14362270.48	39°32'59.863"N	80°45'18.865"W	0.86	151.452	0.46	-0.28	98.48	
475.00	0.140	233.550	475.00	0.87	-0.80	0.36	1709411.52	14362270.43	39°32'59.862"N	80°45'18.865"W	0.87	155.884	0.20	-0.16	40.60	
500.00	0.220	240.140	500.00	0.89	-0.84	0.29	1709411.45	14362270.39	39°32'59.862"N	80°45'18.866"W	0.89	160.889	0.33	0.32	26.36	
520.00	0.210	257.610	520.00	0.89	-0.87	0.22	1709411.38	14362270.36	39°32'59.861"N	80°45'18.867"W	0.90	165.639	0.33	-0.05	87.35	
597.00	0.640	241.590	597.00	0.95	-1.10	-0.29	1709410.87	14362270.13	39°32'59.859"N	80°45'18.874"W	1.14	194.936	0.57	0.56	-20.81	Panther EM <12-1/4">(520')(597'-2688')
688.00	0.550	92.650	687.99	1.19	-1.36	-0.30	1709410.86	14362269.87	39°32'59.857"N	80°45'18.874"W	1.40	192.592	1.26	-0.10	-163.67	
778.00	3.010	68.220	777.94	1.23	-0.51	2.32	1709413.48	14362270.72	39°32'59.865"N	80°45'18.840"W	2.38	102.326	2.80	2.73	-27.14	
873.00	5.860	65.470	872.65	0.64	2.43	9.05	1709420.21	14362273.66	39°32'59.894"N	80°45'18.754"W	9.37	74.958	3.01	3.00	-2.89	
967.00	9.260	57.080	965.82	-1.65	8.54	19.77	1709430.92	14362279.76	39°32'59.954"N	80°45'18.617"W	21.53	66.644	3.79	3.62	-8.93	
1061.00	13.360	53.830	1057.98	-6.69	19.06	34.89	1709446.04	14362290.28	39°33'00.057"N	80°45'18.424"W	39.76	61.352	4.41	4.36	-3.46	
1156.00	16.270	53.530	1149.81	-13.94	33.45	54.46	1709465.60	14362304.67	39°33'00.199"N	80°45'18.174"W	63.91	58.438	3.06	3.06	-0.32	
1250.00	19.040	60.520	1239.38	-20.71	48.83	78.40	1709489.53	14362320.04	39°33'00.350"N	80°45'17.867"W	92.36	58.085	3.71	2.95	7.44	
1345.00	22.290	66.300	1328.27	-25.03	63.70	108.40	1709519.52	14362334.91	39°33'00.497"N	80°45'17.484"W	125.73	59.559	4.04	3.42	6.08	
1439.00	25.170	68.420	1414.31	-27.41	78.22	143.32	1709554.42	14362349.42	39°33'00.639"N	80°45'17.038"W	163.28	61.374	3.19	3.06	2.26	



Actual Wellpath Report

Keystone Unit 3H AWP Proj: 18815'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Wetzel County, WV	Well	Keystone Unit 3H
Field	Wetzel	Wellbore	Keystone Unit 3H AWB
Facility	Gadd Pad		

WELLPATH DATA (234 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
1532.00	27.560	68.810	1497.63	-29.16	93.28	181.77	1709592.86	14362364.47	39°33'00.787"N	80°45'16.546"W	204.31	62.836	2.58	2.57	0.42	
1627.00	27.130	67.020	1582.02	-31.53	109.68	222.21	1709633.28	14362380.86	39°33'00.948"N	80°45'16.030"W	247.80	63.730	0.98	-0.45	-1.88	
1721.00	26.810	64.770	1665.80	-35.35	127.08	261.12	1709672.17	14362398.26	39°33'01.119"N	80°45'15.532"W	290.40	64.049	1.14	-0.34	-2.39	
1815.00	25.380	62.170	1750.22	-40.77	145.52	298.11	1709709.15	14362416.70	39°33'01.300"N	80°45'15.059"W	331.73	63.981	1.95	-1.52	-2.77	
1909.00	24.280	60.940	1835.53	-47.26	164.32	332.82	1709743.85	14362435.48	39°33'01.485"N	80°45'14.616"W	371.17	63.724	1.29	-1.17	-1.31	
2004.00	24.020	58.920	1922.21	-54.75	183.78	366.45	1709777.47	14362454.94	39°33'01.677"N	80°45'14.185"W	409.96	63.365	0.91	-0.27	-2.13	
2099.00	24.910	59.290	2008.68	-62.88	203.98	400.22	1709811.22	14362475.13	39°33'01.875"N	80°45'13.754"W	449.20	62.993	0.95	0.94	0.39	
2193.00	25.040	57.390	2093.90	-71.61	224.81	433.99	1709844.98	14362495.96	39°33'02.080"N	80°45'13.322"W	488.77	62.615	0.86	0.14	-2.02	
2287.00	25.670	57.550	2178.84	-81.05	246.46	467.93	1709878.91	14362517.59	39°33'02.293"N	80°45'12.888"W	528.87	62.224	0.67	0.67	0.17	
2381.00	23.510	54.890	2264.31	-91.02	268.17	500.45	1709911.42	14362539.29	39°33'02.507"N	80°45'12.472"W	567.78	61.815	2.58	-2.30	-2.83	
2476.00	22.390	56.280	2351.79	-100.90	289.11	531.01	1709941.95	14362560.23	39°33'02.713"N	80°45'12.081"W	604.61	61.433	1.31	-1.18	1.46	
2570.00	22.940	57.980	2438.53	-109.60	308.77	561.43	1709972.37	14362579.87	39°33'02.906"N	80°45'11.692"W	640.73	61.191	0.91	0.59	1.81	
2664.00	22.550	57.700	2525.22	-117.90	328.11	592.20	1710003.12	14362599.21	39°33'03.097"N	80°45'11.299"W	677.02	61.011	0.43	-0.41	-0.30	
2688.00	22.540	57.680	2547.39	-120.02	333.03	599.97	1710010.89	14362604.13	39°33'03.145"N	80°45'11.199"W	686.20	60.967	0.05	-0.04	-0.08	
2831.00	21.040	49.960	2680.20	-135.59	364.20	642.80	1710053.70	14362635.29	39°33'03.452"N	80°45'10.651"W	738.81	60.465	2.26	-1.05	-5.40	Panther EM <8-3/4">(2688')(2831'-6629')
2925.00	20.300	53.990	2768.15	-146.44	384.65	668.91	1710079.80	14362655.72	39°33'03.653"N	80°45'10.317"W	771.62	60.100	1.71	-0.79	4.29	
3019.00	23.690	50.660	2855.30	-157.81	406.21	696.71	1710107.60	14362677.28	39°33'03.866"N	80°45'09.962"W	806.48	59.756	3.84	3.61	-3.54	
3114.00	26.300	48.730	2941.40	-172.44	432.20	727.30	1710138.17	14362703.26	39°33'04.122"N	80°45'09.570"W	846.02	59.279	2.88	2.75	-2.03	
3208.00	27.440	54.930	3025.26	-186.36	458.38	760.68	1710171.54	14362729.43	39°33'04.380"N	80°45'09.143"W	888.12	58.927	3.22	1.21	6.60	
3302.00	27.960	61.930	3108.51	-195.86	481.20	797.86	1710208.71	14362752.24	39°33'04.604"N	80°45'08.668"W	931.74	58.905	3.50	0.55	7.45	
3396.00	22.910	63.080	3193.37	-201.89	499.87	833.65	1710244.48	14362770.90	39°33'04.788"N	80°45'08.210"W	972.03	59.052	5.40	-5.37	1.22	
3496.00	21.370	59.020	3286.00	-208.38	518.06	866.63	1710277.44	14362789.09	39°33'04.967"N	80°45'07.789"W	1009.67	59.129	2.17	-1.54	-4.06	
3589.00	23.500	56.300	3371.96	-216.63	537.07	896.58	1710307.39	14362808.09	39°33'05.154"N	80°45'07.405"W	1045.14	59.077	2.55	2.29	-2.92	
3684.00	23.570	62.140	3459.07	-224.39	556.46	929.14	1710339.93	14362827.47	39°33'05.344"N	80°45'06.989"W	1083.03	59.083	2.45	0.07	6.15	
3777.00	23.670	70.630	3544.30	-227.40	571.35	963.20	1710373.98	14362842.35	39°33'05.491"N	80°45'06.554"W	1119.90	59.325	3.66	0.11	9.13	
3872.00	24.170	69.830	3631.14	-227.95	584.38	999.44	1710410.21	14362855.38	39°33'05.618"N	80°45'06.091"W	1157.75	59.685	0.63	0.53	-0.84	
3967.00	22.510	67.220	3718.37	-229.57	598.13	1034.47	1710445.22	14362869.12	39°33'05.753"N	80°45'05.643"W	1194.94	59.964	2.06	-1.75	-2.75	
4061.00	22.380	67.950	3805.25	-231.73	611.81	1067.65	1710478.38	14362882.80	39°33'05.888"N	80°45'05.219"W	1230.52	60.185	0.33	-0.14	0.78	
4155.00	23.080	66.740	3891.95	-234.08	625.81	1101.16	1710511.88	14362896.79	39°33'06.025"N	80°45'04.791"W	1266.57	60.390	0.90	0.74	-1.29	
4249.00	21.140	59.580	3979.05	-238.83	641.67	1132.71	1710543.42	14362912.64	39°33'06.181"N	80°45'04.387"W	1301.84	60.469	3.53	-2.06	-7.62	



Actual Wellpath Report

Keystone Unit 3H AWP Proj: 18815'
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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #01
Area	Wetzel County, WV		Well	Keystone Unit 3H
Field	Wetzel		Wellbore	Keystone Unit 3H AWB
Facility	Gadd Pad			

WELLPATH DATA (234 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
4344.00	21.390	61.740	4067.58	-245.03	658.55	1162.75	1710573.44	14362929.51	39°33'06.347"N	80°45'04.003"W	1336.29	60.474	0.87	0.26	2.27	
4438.00	23.160	61.480	4154.56	-250.87	675.49	1194.09	1710604.77	14362946.45	39°33'06.514"N	80°45'03.603"W	1371.91	60.503	1.89	1.88	-0.28	
4532.00	23.760	64.600	4240.80	-256.07	692.44	1227.44	1710638.11	14362963.39	39°33'06.680"N	80°45'03.176"W	1409.28	60.571	1.47	0.64	3.32	
4627.00	24.580	64.520	4327.47	-260.46	709.15	1262.56	1710673.22	14362980.10	39°33'06.844"N	80°45'02.727"W	1448.09	60.678	0.86	0.86	-0.08	
4722.00	22.690	61.090	4414.50	-265.87	726.51	1296.44	1710707.09	14362997.45	39°33'07.015"N	80°45'02.294"W	1486.13	60.734	2.46	-1.99	-3.61	
4817.00	23.100	56.070	4502.02	-273.85	745.77	1327.95	1710738.58	14363016.70	39°33'07.205"N	80°45'01.891"W	1523.03	60.682	2.10	0.43	-5.28	
4911.00	21.940	57.330	4588.85	-282.77	765.54	1358.03	1710768.65	14363036.47	39°33'07.399"N	80°45'01.506"W	1558.94	60.589	1.34	-1.23	1.34	
5005.00	21.230	64.650	4676.28	-288.83	782.31	1388.20	1710798.81	14363053.23	39°33'07.564"N	80°45'01.121"W	1593.46	60.597	2.96	-0.76	7.79	
5095.00	21.060	67.020	4760.22	-291.78	795.60	1417.82	1710828.41	14363066.52	39°33'07.695"N	80°45'00.742"W	1625.79	60.701	0.97	-0.19	2.63	
5195.00	22.970	63.070	4852.93	-295.74	811.46	1451.76	1710862.34	14363082.36	39°33'07.850"N	80°45'00.308"W	1663.15	60.797	2.42	1.91	-3.95	
5289.00	25.620	61.230	4938.60	-301.75	829.55	1485.93	1710896.50	14363100.45	39°33'08.028"N	80°44'59.871"W	1701.81	60.827	2.93	2.82	-1.96	
5383.00	25.920	64.800	5023.25	-307.45	848.08	1522.34	1710932.89	14363118.97	39°33'08.210"N	80°44'59.406"W	1742.63	60.878	1.68	0.32	3.80	
5478.00	21.820	65.300	5110.11	-311.47	864.30	1557.18	1710967.72	14363135.19	39°33'08.370"N	80°44'58.961"W	1780.96	60.968	4.32	-4.32	0.53	
5573.00	21.910	62.160	5198.28	-315.97	879.96	1588.89	1710999.42	14363150.84	39°33'08.524"N	80°44'58.555"W	1816.29	61.022	1.23	0.09	-3.31	
5667.00	23.860	57.780	5284.88	-323.04	898.29	1620.49	1711031.01	14363169.16	39°33'08.704"N	80°44'58.151"W	1852.81	60.999	2.75	2.07	-4.66	
5763.00	25.850	59.810	5371.99	-331.57	919.17	1655.01	1711065.52	14363190.03	39°33'08.909"N	80°44'57.710"W	1893.13	60.953	2.26	2.07	2.11	
5857.00	25.130	60.440	5456.84	-339.23	939.32	1690.09	1711100.58	14363210.18	39°33'09.108"N	80°44'57.261"W	1933.58	60.935	0.82	-0.77	0.67	
5952.00	22.500	58.430	5543.74	-346.92	958.79	1723.13	1711133.60	14363229.64	39°33'09.299"N	80°44'56.839"W	1971.92	60.907	2.90	-2.77	-2.12	
6047.00	22.620	59.170	5631.47	-354.64	977.67	1754.30	1711164.77	14363248.51	39°33'09.485"N	80°44'56.440"W	2008.34	60.869	0.32	0.13	0.78	
6142.00	24.010	56.400	5718.72	-363.28	997.73	1786.09	1711196.54	14363268.57	39°33'09.682"N	80°44'56.034"W	2045.87	60.812	1.86	1.46	-2.92	
6236.00	21.520	59.900	5805.39	-371.45	1016.96	1816.94	1711227.38	14363287.79	39°33'09.871"N	80°44'55.639"W	2082.19	60.764	3.01	-2.65	3.72	
6330.00	21.690	65.540	5892.80	-376.45	1032.81	1847.67	1711258.10	14363303.63	39°33'10.027"N	80°44'55.246"W	2116.74	60.796	2.22	0.18	6.00	
6424.00	22.530	62.100	5979.89	-380.91	1048.43	1879.40	1711289.82	14363319.24	39°33'10.181"N	80°44'54.840"W	2152.06	60.845	1.64	0.89	-3.66	
6519.00	22.890	58.310	6067.53	-387.81	1066.65	1911.21	1711321.61	14363337.46	39°33'10.360"N	80°44'54.434"W	2188.71	60.834	1.59	0.38	-3.99	
6614.00	23.320	57.840	6154.91	-396.18	1086.36	1942.85	1711353.24	14363357.16	39°33'10.554"N	80°44'54.029"W	2225.95	60.788	0.49	0.45	-0.49	
6629.00	23.540	58.440	6168.67	-397.51	1089.51	1947.92	1711358.30	14363360.31	39°33'10.585"N	80°44'53.964"W	2231.91	60.781	2.16	1.47	4.00	
6667.00	23.400	55.860	6203.53	-401.14	1097.72	1960.63	1711371.01	14363368.51	39°33'10.666"N	80°44'53.802"W	2247.01	60.756	2.73	-0.37	-6.79	BH AT Curve <8-1/2">(6629)(6667-18790)
6707.00	22.550	59.130	6240.35	-404.80	1106.11	1973.79	1711384.16	14363376.90	39°33'10.748"N	80°44'53.633"W	2262.59	60.734	3.83	-2.13	8.17	
6755.00	22.200	68.260	6284.75	-407.14	1114.20	1990.11	1711400.48	14363384.98	39°33'10.828"N	80°44'53.425"W	2280.79	60.757	7.27	-0.73	19.02	
6802.00	22.690	78.320	6328.21	-406.42	1119.32	2007.24	1711417.61	14363390.11	39°33'10.878"N	80°44'53.206"W	2298.24	60.854	8.23	1.04	21.40	



Actual Wellpath Report

Keystone Unit 3H AWP Proj: 18815'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Wetzel County, WV	Well	Keystone Unit 3H
Field	Wetzel	Wellbore	Keystone Unit 3H AWB
Facility	Gadd Pad		

WELLPATH DATA (234 stations) † = interpolated/extrapolated station																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
6850.00	23.370	87.790	6372.40	-402.51	1121.56	2025.83	1711436.19	14363392.35	39°33'10.899"N	80°44'52.968"W	2315.58	61.030	7.84	1.42	19.73	
6897.00	23.970	97.970	6415.46	-395.49	1120.60	2044.61	1711454.96	14363391.39	39°33'10.889"N	80°44'52.729"W	2331.56	61.274	8.78	1.28	21.66	
6945.00	25.320	106.940	6459.10	-385.05	1116.25	2064.09	1711474.43	14363387.04	39°33'10.846"N	80°44'52.480"W	2346.59	61.596	8.28	2.81	18.69	
6992.00	27.450	115.360	6501.22	-371.59	1108.68	2083.50	1711493.84	14363379.47	39°33'10.771"N	80°44'52.233"W	2360.12	61.981	9.15	4.53	17.91	
7040.00	29.580	121.610	6543.41	-354.70	1097.73	2103.60	1711513.92	14363368.53	39°33'10.662"N	80°44'51.977"W	2372.79	62.443	7.63	4.44	13.02	
7087.00	30.900	124.860	6584.01	-336.00	1084.75	2123.38	1711533.70	14363355.55	39°33'10.533"N	80°44'51.724"W	2384.41	62.939	4.47	2.81	6.91	
7135.00	33.260	129.740	6624.69	-314.79	1069.29	2143.62	1711553.93	14363340.09	39°33'10.379"N	80°44'51.467"W	2395.51	63.489	7.30	4.92	10.17	
7182.00	36.610	134.080	6663.22	-291.28	1051.29	2163.61	1711573.91	14363322.10	39°33'10.201"N	80°44'51.212"W	2405.50	64.085	8.87	7.13	9.23	
7229.00	40.380	137.400	6700.00	-264.83	1030.32	2183.99	1711594.29	14363301.15	39°33'09.993"N	80°44'50.953"W	2414.83	64.744	9.14	8.02	7.06	
7276.00	44.480	141.380	6734.69	-235.36	1006.24	2204.59	1711614.87	14363277.07	39°33'09.755"N	80°44'50.691"W	2423.37	65.467	10.42	8.72	8.47	
7279.00†	44.734	141.601	6736.83	-233.37	1004.59	2205.90	1711616.18	14363275.42	39°33'09.738"N	80°44'50.674"W	2423.88	65.515	9.90	8.45	7.35	Middlesex: 7279' MD
7322.00	48.410	144.560	6766.38	-203.67	979.62	2224.63	1711634.91	14363250.46	39°33'09.491"N	80°44'50.436"W	2430.77	66.234	9.90	8.55	6.88	
7369.00	51.850	147.580	6796.51	-168.83	949.69	2244.74	1711655.01	14363220.54	39°33'09.195"N	80°44'50.180"W	2437.37	67.068	8.82	7.32	6.43	
7417.00	55.260	149.300	6825.02	-131.15	916.79	2264.93	1711675.19	14363187.65	39°33'08.869"N	80°44'49.923"W	2443.44	67.963	7.67	7.10	3.58	
7439.00†	57.042	150.526	6837.28	-113.22	900.98	2274.09	1711684.35	14363171.85	39°33'08.712"N	80°44'49.807"W	2446.07	68.387	9.33	8.10	5.57	Burkett: 7439' MD
7464.00	59.080	151.860	6850.50	-92.32	882.39	2284.31	1711694.56	14363153.27	39°33'08.528"N	80°44'49.677"W	2448.81	68.879	9.33	8.15	5.34	
7491.00†	60.703	153.551	6864.05	-69.21	861.63	2295.02	1711705.27	14363132.52	39°33'08.323"N	80°44'49.541"W	2451.43	69.422	8.09	6.01	6.26	Tully: 7491' MD
7512.00	61.980	154.830	6874.12	-50.92	845.04	2303.04	1711713.28	14363115.94	39°33'08.159"N	80°44'49.439"W	2453.18	69.851	8.09	6.08	6.09	
7559.00	65.880	156.500	6894.77	-8.90	806.58	2320.42	1711730.66	14363077.49	39°33'07.778"N	80°44'49.219"W	2456.61	70.833	8.89	8.30	3.59	
7607.00	69.640	157.860	6912.94	35.42	765.63	2337.64	1711747.87	14363036.56	39°33'07.373"N	80°44'49.001"W	2459.83	71.865	8.26	7.83	2.83	
7654.00	73.220	159.580	6927.90	79.93	724.12	2353.80	1711764.03	14362995.07	39°33'06.962"N	80°44'48.796"W	2462.67	72.900	8.37	7.62	3.66	
7683.00†	74.875	160.181	6935.87	107.81	697.94	2363.39	1711773.61	14362968.90	39°33'06.703"N	80°44'48.674"W	2464.29	73.547	6.04	5.71	2.07	Marcellus POE: 7683' MD
7702.00	75.960	160.570	6940.66	126.19	680.62	2369.57	1711779.79	14362951.58	39°33'06.532"N	80°44'48.596"W	2465.38	73.974	6.04	5.71	2.05	
7749.00	78.570	162.720	6951.02	172.03	637.12	2384.00	1711794.21	14362908.10	39°33'06.102"N	80°44'48.413"W	2467.66	75.038	7.12	5.55	4.57	
7797.00	81.040	164.770	6959.51	219.21	591.77	2397.22	1711807.42	14362862.76	39°33'05.653"N	80°44'48.246"W	2469.18	76.133	6.64	5.15	4.27	
7860.00	87.200	164.090	6965.97	281.74	531.43	2414.03	1711824.23	14362802.45	39°33'05.056"N	80°44'48.034"W	2471.83	77.585	9.84	9.78	-1.08	
7892.00	89.720	163.400	6966.83	313.69	500.72	2422.98	1711833.18	14362771.76	39°33'04.752"N	80°44'47.921"W	2474.18	78.324	8.16	7.87	-2.16	
7986.00	90.250	162.120	6966.85	407.65	410.95	2450.84	1711861.03	14362682.02	39°33'03.864"N	80°44'47.568"W	2485.06	80.481	1.47	0.56	-1.36	
8081.00	90.400	157.150	6966.31	502.59	321.92	2483.89	1711894.07	14362593.02	39°33'02.984"N	80°44'47.149"W	2504.66	82.616	5.23	0.16	-5.23	
8175.00	89.420	154.830	6966.46	596.21	236.06	2522.14	1711932.30	14362507.19	39°33'02.134"N	80°44'46.664"W	2533.16	84.653	2.68	-1.04	-2.47	



Actual Wellpath Report

Keystone Unit 3H AWP Proj: 18815'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Wetzel County, WV	Well	Keystone Unit 3H
Field	Wetzel	Wellbore	Keystone Unit 3H AWB
Facility	Gadd Pad		

WELLPATH DATA (234 stations)																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
8270.00	91.480	159.440	6965.71	690.96	148.55	2559.04	1711969.18	14362419.72	39°33'01.268"N	80°44'46.196"W	2563.35	86.678	5.31	2.17	4.85	
8365.00	89.910	157.380	6964.56	785.84	60.23	2593.99	1712004.12	14362331.44	39°33'00.394"N	80°44'45.753"W	2594.69	88.670	2.73	-1.65	-2.17	
8459.00	89.970	158.400	6964.66	879.70	-26.85	2629.37	1712039.49	14362244.39	39°32'59.533"N	80°44'45.305"W	2629.51	90.585	1.09	0.06	1.09	
8553.00	89.940	159.290	6964.73	973.63	-114.52	2663.29	1712073.40	14362156.76	39°32'58.665"N	80°44'44.875"W	2665.75	92.462	0.95	-0.03	0.95	
8648.00	90.520	157.750	6964.35	1068.53	-202.92	2698.08	1712108.17	14362068.39	39°32'57.791"N	80°44'44.434"W	2705.70	94.301	1.73	0.61	-1.62	
8742.00	90.180	156.760	6963.78	1162.33	-289.60	2734.42	1712144.49	14361981.74	39°32'56.933"N	80°44'43.973"W	2749.71	96.046	1.11	-0.36	-1.05	
8838.00	90.310	157.440	6963.37	1258.10	-378.04	2771.77	1712181.84	14361893.34	39°32'56.058"N	80°44'43.500"W	2797.44	97.767	0.72	0.14	0.71	
8932.00	89.880	161.270	6963.21	1352.04	-465.98	2804.91	1712214.96	14361805.43	39°32'55.188"N	80°44'43.080"W	2843.35	99.432	4.10	-0.46	4.07	
9028.00	90.150	166.510	6963.18	1447.89	-558.18	2831.54	1712241.58	14361713.27	39°32'54.276"N	80°44'42.743"W	2886.03	101.152	5.47	0.28	5.46	
9122.00	90.000	167.280	6963.06	1541.40	-649.73	2852.85	1712262.88	14361621.76	39°32'53.370"N	80°44'42.474"W	2925.90	102.830	0.83	-0.16	0.82	
9217.00	90.580	167.810	6962.58	1635.78	-742.49	2873.34	1712283.36	14361529.03	39°32'52.453"N	80°44'42.216"W	2967.72	104.489	0.83	0.61	0.56	
9312.00	90.150	167.980	6961.98	1730.10	-835.38	2893.26	1712303.27	14361436.18	39°32'51.534"N	80°44'41.965"W	3011.45	106.105	0.49	-0.45	0.18	
9406.00	89.940	166.660	6961.90	1823.53	-927.09	2913.90	1712323.90	14361344.51	39°32'50.627"N	80°44'41.705"W	3057.82	107.649	1.42	-0.22	-1.40	
9500.00	88.280	166.770	6963.36	1917.06	-1018.56	2935.49	1712345.49	14361253.08	39°32'49.723"N	80°44'41.433"W	3107.18	109.136	1.77	-1.77	0.12	
9594.00	90.280	165.720	6964.54	2010.66	-1109.85	2957.84	1712367.83	14361161.82	39°32'48.820"N	80°44'41.151"W	3159.21	110.567	2.40	2.13	-1.12	
9689.00	90.400	160.500	6963.98	2105.56	-1200.72	2985.43	1712395.41	14361070.99	39°32'47.921"N	80°44'40.802"W	3217.84	111.910	5.50	0.13	-5.49	
9783.00	90.430	159.660	6963.30	2199.55	-1289.09	3017.46	1712427.42	14360982.65	39°32'47.047"N	80°44'40.396"W	3281.28	113.133	0.89	0.03	-0.89	
9879.00	90.620	158.330	6962.42	2295.48	-1378.70	3051.87	1712461.81	14360893.07	39°32'46.160"N	80°44'39.960"W	3348.84	114.311	1.40	0.20	-1.39	
9974.00	89.570	158.670	6962.26	2390.38	-1467.09	3086.68	1712496.62	14360804.72	39°32'45.286"N	80°44'39.519"W	3417.60	115.422	1.16	-1.11	0.36	
10068.00	89.600	162.070	6962.94	2484.36	-1555.61	3118.26	1712528.18	14360716.23	39°32'44.410"N	80°44'39.119"W	3484.75	116.513	3.62	0.03	3.62	
10162.00	89.260	162.950	6963.88	2578.32	-1645.26	3146.50	1712556.42	14360626.62	39°32'43.523"N	80°44'38.762"W	3550.69	117.604	1.00	-0.36	0.94	
10257.00	89.230	162.360	6965.13	2673.28	-1735.93	3174.82	1712584.72	14360535.98	39°32'42.626"N	80°44'38.404"W	3618.42	118.669	0.62	-0.03	-0.62	
10352.00	89.720	159.800	6966.00	2768.27	-1825.79	3205.62	1712615.51	14360446.16	39°32'41.737"N	80°44'38.014"W	3689.11	119.664	2.74	0.52	-2.69	
10447.00	89.140	157.040	6966.94	2863.15	-1914.12	3240.56	1712650.43	14360357.87	39°32'40.863"N	80°44'37.571"W	3763.65	120.569	2.97	-0.61	-2.91	
10541.00	89.110	157.490	6968.38	2956.94	-2000.80	3276.88	1712686.74	14360271.22	39°32'40.005"N	80°44'37.111"W	3839.42	121.407	0.48	-0.03	0.48	
10636.00	88.620	159.560	6970.26	3051.82	-2089.19	3311.65	1712721.50	14360182.87	39°32'39.131"N	80°44'36.670"W	3915.58	122.246	2.24	-0.52	2.18	
10731.00	89.320	162.710	6971.97	3146.79	-2179.06	3342.36	1712752.20	14360093.04	39°32'38.242"N	80°44'36.281"W	3989.95	123.102	3.40	0.74	3.32	
10826.00	89.230	163.730	6973.17	3241.72	-2270.00	3369.78	1712779.61	14360002.13	39°32'37.342"N	80°44'35.935"W	4063.05	123.966	1.08	-0.09	1.07	
10921.00	89.260	165.980	6974.42	3336.49	-2361.69	3394.60	1712804.41	14359910.48	39°32'36.435"N	80°44'35.621"W	4135.32	124.827	2.37	0.03	2.37	
11015.00	90.180	166.460	6974.88	3430.10	-2452.98	3416.99	1712826.80	14359819.22	39°32'35.532"N	80°44'35.339"W	4206.30	125.674	1.10	0.98	0.51	



Actual Wellpath Report

Keystone Unit 3H AWP Proj: 18815'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Wetzel County, WV	Well	Keystone Unit 3H
Field	Wetzel	Wellbore	Keystone Unit 3H AWB
Facility	Gadd Pad		

WELLPATH DATA (234 stations)																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
11110.00	90.280	162.300	6974.50	3524.92	-2544.45	3442.56	1712852.36	14359727.79	39°32'34.628"N	80°44'35.016"W	4280.83	126.469	4.38	0.11	-4.38	
11205.00	89.200	156.000	6974.93	3619.82	-2633.18	3476.36	1712886.14	14359639.09	39°32'33.750"N	80°44'34.587"W	4361.05	127.142	6.73	-1.14	-6.63	
11300.00	89.200	150.740	6976.26	3713.93	-2718.07	3518.92	1712928.69	14359554.24	39°32'32.910"N	80°44'34.047"W	4446.43	127.683	5.54	0.00	-5.54	
11394.00	88.860	150.280	6977.85	3806.33	-2799.88	3565.19	1712974.93	14359472.46	39°32'32.100"N	80°44'33.460"W	4533.20	128.144	0.61	-0.36	-0.49	
11488.00	89.140	154.270	6979.49	3899.20	-2883.06	3608.90	1713018.63	14359389.32	39°32'31.277"N	80°44'32.905"W	4619.11	128.620	4.25	0.30	4.24	
11583.00	89.510	151.410	6980.61	3993.21	-2967.57	3652.26	1713061.97	14359304.84	39°32'30.440"N	80°44'32.354"W	4705.90	129.095	3.04	0.39	-3.01	
11677.00	89.230	150.990	6981.65	4085.82	-3049.93	3697.54	1713107.24	14359222.51	39°32'29.625"N	80°44'31.779"W	4793.11	129.518	0.54	-0.30	-0.45	
11771.00	89.140	156.570	6982.98	4179.02	-3134.22	3739.05	1713148.73	14359138.25	39°32'28.791"N	80°44'31.253"W	4878.92	129.971	5.94	-0.10	5.94	
11865.00	89.260	161.930	6984.30	4272.93	-3222.08	3772.34	1713182.01	14359050.43	39°32'27.921"N	80°44'30.831"W	4961.09	130.502	5.70	0.13	5.70	
11959.00	89.320	164.360	6985.46	4366.86	-3312.03	3799.59	1713209.25	14358960.51	39°32'27.031"N	80°44'30.486"W	5040.48	131.078	2.59	0.06	2.59	
12054.00	89.380	165.910	6986.54	4461.60	-3403.84	3823.96	1713233.61	14358868.74	39°32'26.123"N	80°44'30.179"W	5119.46	131.673	1.63	0.06	1.63	
12148.00	89.290	167.470	6987.63	4555.14	-3495.31	3845.60	1713255.24	14358777.31	39°32'25.219"N	80°44'29.906"W	5196.71	132.268	1.66	-0.10	1.66	
12242.00	90.950	170.400	6987.43	4648.23	-3587.55	3863.64	1713273.27	14358685.11	39°32'24.307"N	80°44'29.679"W	5272.40	132.878	3.58	1.77	3.12	
12335.00	90.680	166.990	6986.11	4740.38	-3678.72	3881.87	1713291.49	14358593.97	39°32'23.405"N	80°44'29.450"W	5348.07	133.461	3.68	-0.29	-3.67	
12430.00	89.260	163.890	6986.16	4835.09	-3770.66	3905.74	1713315.36	14358502.07	39°32'22.496"N	80°44'29.148"W	5428.87	133.992	3.59	-1.49	-3.26	
12525.00	89.230	161.910	6987.41	4930.03	-3861.44	3933.67	1713343.27	14358411.32	39°32'21.598"N	80°44'28.795"W	5512.22	134.469	2.08	-0.03	-2.08	
12619.00	89.540	158.640	6988.42	5024.00	-3949.91	3965.39	1713374.98	14358322.89	39°32'20.722"N	80°44'28.393"W	5596.98	134.888	3.49	0.33	-3.48	
12713.00	89.200	158.030	6989.46	5117.89	-4037.26	4000.09	1713409.67	14358235.57	39°32'19.858"N	80°44'27.954"W	5683.33	135.265	0.74	-0.36	-0.65	
12807.00	88.740	157.240	6991.15	5211.71	-4124.18	4035.86	1713445.41	14358148.69	39°32'18.998"N	80°44'27.500"W	5770.35	135.620	0.97	-0.49	-0.84	
12902.00	89.140	159.420	6992.90	5306.58	-4212.44	4070.93	1713480.47	14358060.46	39°32'18.125"N	80°44'27.056"W	5858.08	135.979	2.33	0.42	2.29	
12996.00	90.060	161.940	6993.56	5400.56	-4301.14	4102.02	1713511.56	14357971.80	39°32'17.247"N	80°44'26.662"W	5943.60	136.357	2.85	0.98	2.68	
13091.00	90.800	161.310	6992.85	5495.56	-4391.29	4131.97	1713541.49	14357881.68	39°32'16.355"N	80°44'26.284"W	6029.65	136.743	1.02	0.78	-0.66	
13185.00	88.980	161.300	6993.03	5589.55	-4480.33	4162.10	1713571.61	14357792.68	39°32'15.475"N	80°44'25.902"W	6115.26	137.109	1.94	-1.94	-0.01	
13280.00	88.460	161.680	6995.15	5684.52	-4570.39	4192.25	1713601.75	14357702.65	39°32'14.584"N	80°44'25.521"W	6201.89	137.471	0.68	-0.55	0.40	
13375.00	89.720	162.060	6996.66	5779.50	-4660.66	4221.81	1713631.29	14357612.42	39°32'13.691"N	80°44'25.147"W	6288.52	137.829	1.39	1.33	0.40	
13470.00	90.120	160.280	6996.79	5874.50	-4750.57	4252.47	1713661.94	14357522.54	39°32'12.801"N	80°44'24.759"W	6375.85	138.167	1.92	0.42	-1.87	
13564.00	89.510	161.360	6997.09	5968.49	-4839.35	4283.35	1713692.81	14357433.80	39°32'11.923"N	80°44'24.368"W	6462.69	138.488	1.32	-0.65	1.15	
13659.00	89.290	164.350	6998.09	6063.43	-4930.12	4311.35	1713720.80	14357343.07	39°32'11.025"N	80°44'24.014"W	6549.33	138.831	3.16	-0.23	3.15	
13754.00	90.520	163.770	6998.25	6158.29	-5021.46	4337.44	1713746.88	14357251.76	39°32'10.121"N	80°44'23.684"W	6635.39	139.180	1.43	1.29	-0.61	
13848.00	90.090	158.900	6997.75	6252.26	-5110.49	4367.51	1713776.94	14357162.77	39°32'09.241"N	80°44'23.304"W	6722.52	139.482	5.20	-0.46	-5.18	



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Wetzel County, WV	Well	Keystone Unit 3H
Field	Wetzel	Wellbore	Keystone Unit 3H AWB
Facility	Gadd Pad		

WELLPATH DATA (234 stations)																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
13943.00	89.720	156.640	6997.90	6347.10	-5198.42	4403.45	1713812.86	14357074.87	39°32'08.371"N	80°44'22.848"W	6812.78	139.733	2.41	-0.39	-2.38	
14037.00	89.320	157.790	6998.69	6440.89	-5285.08	4439.85	1713849.25	14356988.24	39°32'07.513"N	80°44'22.387"W	6902.49	139.967	1.30	-0.43	1.22	
14132.00	89.200	160.670	6999.92	6535.82	-5373.89	4473.54	1713882.92	14356899.47	39°32'06.634"N	80°44'21.960"W	6992.23	140.224	3.03	-0.13	3.03	
14227.00	89.540	164.500	7000.96	6630.76	-5464.51	4501.96	1713911.34	14356808.88	39°32'05.738"N	80°44'21.601"W	7080.15	140.516	4.05	0.36	4.03	
14322.00	89.480	165.730	7001.78	6725.52	-5556.32	4526.36	1713935.73	14356717.11	39°32'04.830"N	80°44'21.293"W	7166.64	140.833	1.30	-0.06	1.29	
14417.00	89.600	164.310	7002.54	6820.28	-5648.09	4550.92	1713960.27	14356625.38	39°32'03.922"N	80°44'20.983"W	7253.40	141.140	1.50	0.13	-1.49	
14511.00	89.480	161.370	7003.29	6914.22	-5737.89	4578.65	1713987.99	14356535.61	39°32'03.034"N	80°44'20.632"W	7340.80	141.411	3.13	-0.13	-3.13	
14606.00	89.450	158.830	7004.18	7009.20	-5827.21	4610.98	1714020.31	14356446.33	39°32'02.150"N	80°44'20.223"W	7430.85	141.646	2.67	-0.03	-2.67	
14701.00	88.980	159.820	7005.48	7104.15	-5916.08	4644.52	1714053.83	14356357.50	39°32'01.271"N	80°44'19.798"W	7521.40	141.866	1.15	-0.49	1.04	
14795.00	89.510	162.350	7006.72	7198.13	-6004.99	4674.98	1714084.29	14356268.62	39°32'00.391"N	80°44'19.412"W	7610.21	142.099	2.75	0.56	2.69	
14889.00	89.660	159.640	7007.40	7292.12	-6093.85	4705.59	1714114.88	14356179.79	39°31'59.512"N	80°44'19.025"W	7699.20	142.325	2.89	0.16	-2.88	
14983.00	89.850	160.740	7007.80	7386.11	-6182.29	4737.45	1714146.73	14356091.39	39°31'58.637"N	80°44'18.622"W	7788.72	142.537	1.19	0.20	1.17	
15076.00	89.780	160.890	7008.10	7479.11	-6270.12	4768.01	1714177.28	14356003.59	39°31'57.768"N	80°44'18.235"W	7877.08	142.749	0.18	-0.08	0.16	
15173.00	89.750	162.300	7008.50	7576.10	-6362.16	4798.63	1714207.89	14355911.59	39°31'56.858"N	80°44'17.848"W	7968.94	142.975	1.45	-0.03	1.45	
15267.00	89.750	163.730	7008.91	7670.04	-6452.05	4826.09	1714235.34	14355821.73	39°31'55.969"N	80°44'17.501"W	8057.31	143.204	1.52	0.00	1.52	
15361.00	89.260	164.910	7009.72	7763.88	-6542.55	4851.49	1714260.73	14355731.27	39°31'55.073"N	80°44'17.180"W	8145.06	143.442	1.36	-0.52	1.26	
15456.00	89.260	165.410	7010.95	7858.63	-6634.37	4875.82	1714285.05	14355639.49	39°31'54.165"N	80°44'16.873"W	8233.38	143.687	0.53	0.00	0.53	
15550.00	89.290	165.160	7012.14	7952.36	-6725.28	4899.70	1714308.92	14355548.61	39°31'53.266"N	80°44'16.571"W	8320.85	143.925	0.27	0.03	-0.27	
15645.00	89.010	164.470	7013.55	8047.14	-6816.96	4924.58	1714333.79	14355456.98	39°31'52.359"N	80°44'16.257"W	8409.66	144.156	0.78	-0.29	-0.73	
15739.00	89.290	166.590	7014.94	8140.84	-6907.96	4948.06	1714357.26	14355366.01	39°31'51.459"N	80°44'15.961"W	8497.25	144.387	2.27	0.30	2.26	
15834.00	89.600	164.620	7015.87	8235.53	-6999.97	4971.68	1714380.87	14355274.04	39°31'50.549"N	80°44'15.663"W	8585.87	144.616	2.10	0.33	-2.07	
15929.00	89.290	163.300	7016.79	8330.40	-7091.26	4997.93	1714407.10	14355182.78	39°31'49.646"N	80°44'15.331"W	8675.56	144.824	1.43	-0.33	-1.39	
16023.00	89.320	161.280	7017.93	8424.36	-7180.80	5026.52	1714435.68	14355093.28	39°31'48.760"N	80°44'14.970"W	8765.26	145.008	2.15	0.03	-2.15	
16118.00	89.290	158.830	7019.08	8519.34	-7270.09	5058.92	1714468.07	14355004.03	39°31'47.877"N	80°44'14.559"W	8857.02	145.168	2.58	-0.03	-2.58	
16212.00	90.490	156.850	7019.26	8613.18	-7357.14	5094.37	1714503.51	14354917.01	39°31'47.016"N	80°44'14.110"W	8948.75	145.300	2.46	1.28	-2.11	
16306.00	89.320	154.350	7019.41	8706.75	-7442.73	5133.20	1714542.33	14354831.45	39°31'46.169"N	80°44'13.618"W	9041.24	145.406	2.94	-1.24	-2.66	
16401.00	89.320	156.790	7020.54	8801.30	-7529.21	5172.49	1714581.59	14354745.00	39°31'45.313"N	80°44'13.120"W	9134.75	145.511	2.57	0.00	2.57	
16496.00	89.050	157.990	7021.89	8896.10	-7616.90	5209.00	1714618.10	14354657.35	39°31'44.445"N	80°44'12.657"W	9227.73	145.633	1.29	-0.28	1.26	
16590.00	90.310	159.830	7022.42	8990.03	-7704.60	5242.83	1714651.91	14354569.69	39°31'43.577"N	80°44'12.229"W	9319.23	145.765	2.37	1.34	1.96	
16685.00	90.030	156.960	7022.14	9084.92	-7792.91	5277.80	1714686.87	14354481.41	39°31'42.703"N	80°44'11.786"W	9411.95	145.892	3.04	-0.29	-3.02	



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Wetzel County, WV	Well	Keystone Unit 3H
Field	Wetzel	Wellbore	Keystone Unit 3H AWB
Facility	Gadd Pad		

WELLPATH DATA (234 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
16780.00	89.690	157.840	7022.37	9179.72	-7880.62	5314.31	1714723.36	14354393.74	39°31'41.836"N	80°44'11.323"W	9505.05	146.006	0.99	-0.36	0.93	
16874.00	89.080	159.540	7023.38	9273.63	-7968.18	5348.47	1714757.51	14354306.21	39°31'40.969"N	80°44'10.890"W	9596.77	146.129	1.92	-0.65	1.81	
16969.00	89.970	161.080	7024.17	9368.62	-8057.62	5380.47	1714789.50	14354216.80	39°31'40.084"N	80°44'10.485"W	9688.90	146.267	1.87	0.94	1.62	
17063.00	89.320	163.280	7024.75	9462.59	-8147.10	5409.24	1714818.25	14354127.36	39°31'39.199"N	80°44'10.121"W	9779.32	146.418	2.44	-0.69	2.34	
17158.00	89.880	165.410	7025.41	9557.43	-8238.57	5434.87	1714843.87	14354035.93	39°31'38.294"N	80°44'09.798"W	9869.75	146.588	2.32	0.59	2.24	
17253.00	89.380	164.020	7026.02	9652.23	-8330.21	5459.91	1714868.91	14353944.33	39°31'37.388"N	80°44'09.482"W	9960.07	146.758	1.55	-0.53	-1.46	
17347.00	89.230	163.550	7027.16	9746.11	-8420.46	5486.16	1714895.14	14353854.11	39°31'36.495"N	80°44'09.150"W	10049.98	146.915	0.52	-0.16	-0.50	
17442.00	88.890	165.900	7028.72	9840.90	-8512.09	5511.18	1714920.16	14353762.52	39°31'35.589"N	80°44'08.834"W	10140.45	147.079	2.50	-0.36	2.47	
17536.00	89.320	166.030	7030.19	9934.54	-8603.27	5533.98	1714942.94	14353671.37	39°31'34.687"N	80°44'08.547"W	10229.42	147.249	0.48	0.46	0.14	
17631.00	87.940	160.860	7032.46	10029.39	-8694.27	5561.03	1714969.98	14353580.41	39°31'33.787"N	80°44'08.205"W	10320.63	147.396	5.63	-1.45	-5.44	
17726.00	89.290	159.870	7034.76	10124.35	-8783.72	5592.94	1715001.88	14353491.00	39°31'32.902"N	80°44'07.801"W	10413.20	147.513	1.76	1.42	-1.04	
17821.00	88.090	158.860	7036.93	10219.28	-8872.60	5626.41	1715035.34	14353402.15	39°31'32.023"N	80°44'07.377"W	10506.16	147.620	1.65	-1.26	-1.06	
17916.00	89.020	159.690	7039.33	10314.21	-8961.42	5660.02	1715068.93	14353313.36	39°31'31.144"N	80°44'06.952"W	10599.19	147.724	1.31	0.98	0.87	
18010.00	89.230	154.680	7040.76	10407.95	-9048.03	5696.45	1715105.35	14353226.79	39°31'30.287"N	80°44'06.490"W	10691.88	147.806	5.33	0.22	-5.33	
18106.00	89.170	152.600	7042.11	10503.14	-9134.03	5739.07	1715147.95	14353140.82	39°31'29.435"N	80°44'05.949"W	10787.37	147.858	2.17	-0.06	-2.17	
18200.00	87.910	153.580	7044.50	10596.20	-9217.82	5781.60	1715190.46	14353057.06	39°31'28.606"N	80°44'05.410"W	10880.95	147.903	1.70	-1.34	1.04	
18295.00	87.940	155.380	7047.94	10690.52	-9303.50	5822.50	1715231.35	14352971.42	39°31'27.758"N	80°44'04.891"W	10975.27	147.960	1.89	0.03	1.89	
18389.00	90.280	163.990	7049.40	10784.38	-9391.55	5855.09	1715263.93	14352883.40	39°31'26.887"N	80°44'04.478"W	11067.22	148.059	9.49	2.49	9.16	
18484.00	88.490	164.920	7050.42	10879.20	-9483.06	5880.55	1715289.38	14352791.93	39°31'25.982"N	80°44'04.157"W	11158.38	148.197	2.12	-1.88	0.98	
18578.00	88.310	164.460	7053.05	10972.98	-9573.69	5905.36	1715314.18	14352701.33	39°31'25.085"N	80°44'03.844"W	11248.50	148.332	0.53	-0.19	-0.49	
18672.00	88.610	163.660	7055.57	11066.81	-9664.05	5931.16	1715339.97	14352611.02	39°31'24.192"N	80°44'03.518"W	11338.98	148.461	0.91	0.32	-0.85	
18767.00	90.150	163.340	7056.60	11161.72	-9755.12	5958.14	1715366.94	14352519.97	39°31'23.291"N	80°44'03.177"W	11430.75	148.585	1.66	1.62	-0.34	
18790.00	90.090	162.720	7056.55	11184.70	-9777.12	5964.86	1715373.65	14352497.98	39°31'23.073"N	80°44'03.092"W	11453.02	148.613	2.71	-0.26	-2.70	
18815.00	90.090	162.720	7056.51	11209.69	-9800.99	5972.28	1715381.07	14352474.12	39°31'22.837"N	80°44'02.998"W	11477.27	148.644	0.00	0.00	0.00	Projected MD at TD: 18815'



Actual Wellpath Report

Keystone Unit 3H AWP Proj: 18815'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Wetzel County, WV	Well	Keystone Unit 3H
Field	Wetzel	Wellbore	Keystone Unit 3H AWB
Facility	Gadd Pad		

HOLE & CASING SECTIONS - Ref Wellbore: Keystone Unit 3H AWB Ref Wellpath: Keystone Unit 3H AWP Proj: 18815'									
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
20in Conductor	24.50	104.50	80.00	24.50	104.50	0.00	0.00	-0.04	0.05
17.5in Open Hole	104.50	547.90	443.40	104.50	547.90	-0.04	0.05	-0.91	0.09
13.375in Casing Surface	24.50	547.90	523.40	24.50	547.90	0.00	0.00	-0.91	0.09
12.25in Open Hole	547.90	2738.90	2191.00	547.90	2594.50	-0.91	0.09	343.70	616.02
9.625in Casing Intermediate	24.50	2738.90	2714.40	24.50	2594.50	0.00	0.00	343.70	616.02
8.75in Open Hole	2738.90	6687.00	3948.10	2594.50	6221.91	343.70	616.02	1102.05	1967.20
8.5in Open Hole	6687.00	18815.00	12128.00	6221.91	7056.51	1102.05	1967.20	-9800.99	5972.28
5.5in Casing Production	24.50	18815.00	18790.50	24.50	7056.51	0.00	0.00	-9800.99	5972.28

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Keystone Unit 3H POE Rev-4	6936.00	686.03	2367.93	1711778.15	14362956.98	39°33'06.585"N	80°44'48.617"W	point
Keystone Unit 3H BHL Rev-4	6965.00	-9812.93	5974.06	1715382.85	14352462.19	39°31'22.719"N	80°44'02.976"W	point
Keystone Unit 3H LP Rev-4	6965.00	497.04	2432.84	1711843.03	14362768.07	39°33'04.716"N	80°44'47.795"W	point



Actual Wellpath Report

Keystone Unit 3H AWP Proj: 18815'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Wetzel County, WV	Well	Keystone Unit 3H
Field	Wetzel	Wellbore	Keystone Unit 3H AWB
Facility	Gadd Pad		

WELLPATH COMPOSITION - Ref Wellbore: Keystone Unit 3H AWB Ref Wellpath: Keystone Unit 3H AWP Proj: 18815'				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
24.50	520.00	Gyrodata standard - Drop gyro or Multi-shot	01 Gyrodata MS Gyro <17-1/2">(100'-520')	Keystone Unit 3H AWB
520.00	2688.00	ISCWSA MWD, Rev. 4 (Standard)	02 Panther EM <12-1/4">(520')(597'-2688')	Keystone Unit 3H AWB
2688.00	6629.00	ISCWSA MWD, Rev. 4 (Standard)	03 Panther EM <8-3/4">(2688')(2831'-6629')	Keystone Unit 3H AWB
6629.00	18790.00	BHI AutoTrak Curve (Short)	04 BH AT Curve <8-1/2">(6629')(6667'-18790')	Keystone Unit 3H AWB
18790.00	18815.00	Blind Drilling (std)	Projection to bit	Keystone Unit 3H AWB



Actual Wellpath Report

Keystone Unit 3H AWP Proj: 18815'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Wetzel County, WV	Well	Keystone Unit 3H
Field	Wetzel	Wellbore	Keystone Unit 3H AWB
Facility	Gadd Pad		

COMMENTS
<p>Wellpath general comments API: 47-103-03222-0000 BHI Job #: 109538711 Rig: Frontier 22 Duration: 12/18/2018-12/23/2018 Gyrodata MS Gyro <17-1/2">(100'-520') Panther EM <12-1/4">(520')(597'-2688') Panther EM <8-3/4">(2688')(2831'-6629') BH AT Curve <8-1/2">(6629')(6667'-18790') Middlesex: 7279' MD Burkett: 7439' MD Tully: 7491' MD Marcellus POE: 7683' MD Projected MD at TD: 18815'</p>

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Environmental Protection