

ANTERO RESOURCES CORPORATION

Location: Tyler County, WV
 Field: Tyler
 Facility: Sine Pad

Slot: Slot #09
 Well: Winchester Unit 1H ST01
 Wellbore: Winchester Unit 1H ST01 PWB

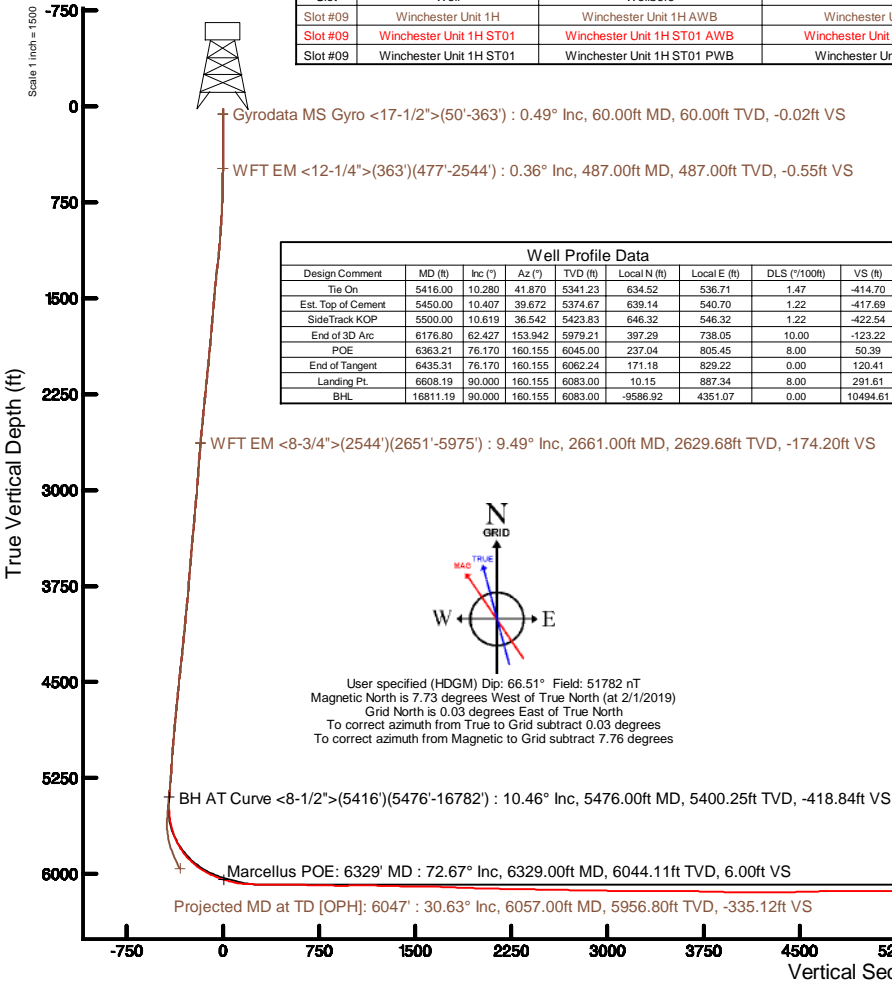
Plot reference wellpath is Winchester Unit 1H ST01 PWP Rev-B.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to Patterson 342 (RKB)	North Reference: Grid north
Measured depths are referenced to Patterson 342 (RKB)	Scale: True distance
Patterson 342 (RKB) to Mean Sea Level: 824 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot: Slot #09): -799 feet	Created by: delaset on 2019-02-12
Coordinates are in feet referenced to Slot	Database: WA_MPL_EasternUS_Defn

Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude		
Sine Pad	1652653.868	14313061.080	39°24'54.210"N	80°57'24.020"W		
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot #09	-2.01	29.83	1652683.682	14313059.071	39°24'54.190"N	80°57'23.640"W
Comment	Winchester Unit 1H					
Patterson 342 (RKB) to Ground level (At Slot: Slot #09)	25ft					
Mean Sea Level to Ground level (At Slot: Slot #09)	-799ft					
Patterson 342 (RKB) to Mean Sea Level	824ft					

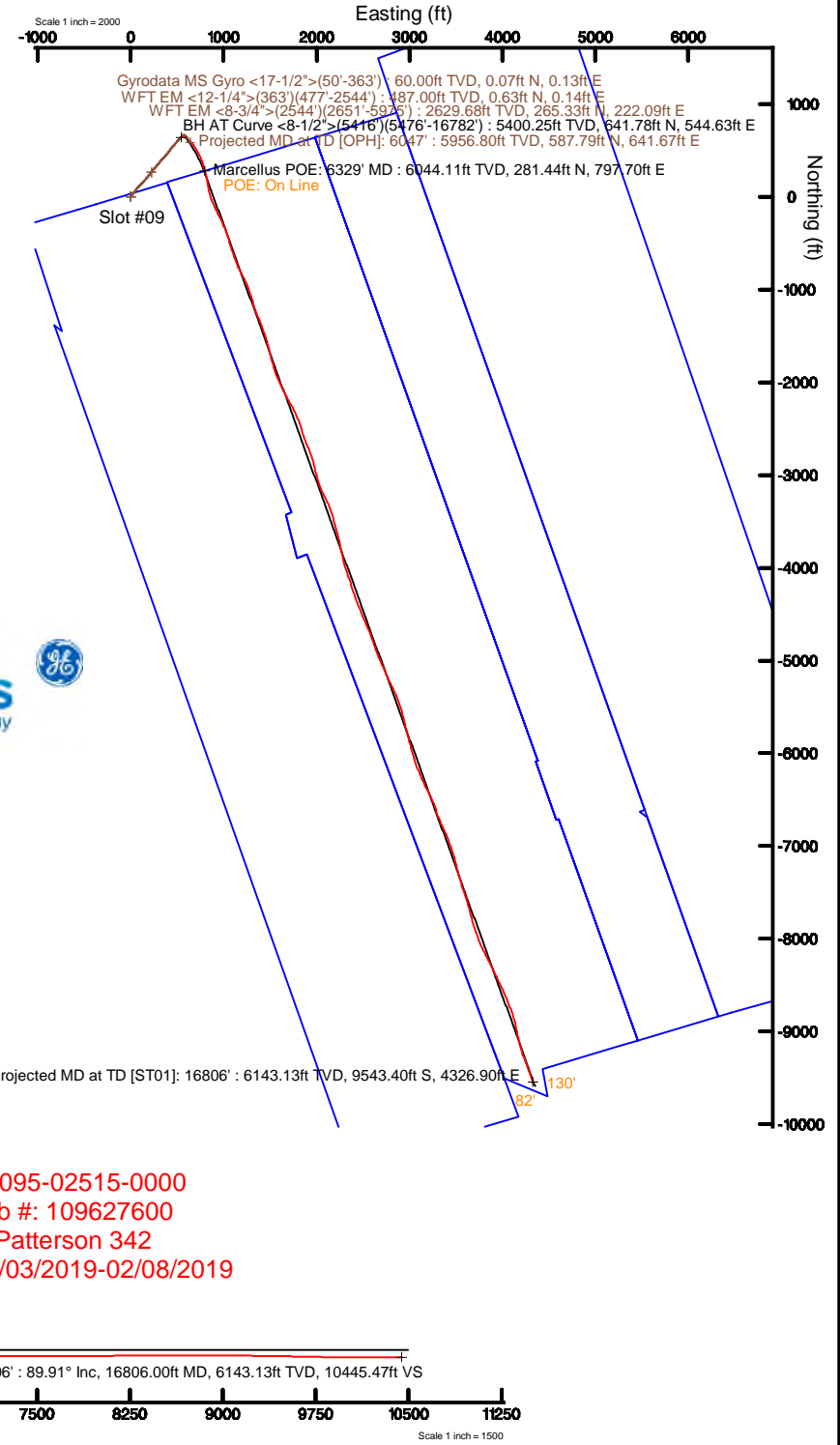
Well Data

Slot	Well	Wellbore	Wellpath
Slot #09	Winchester Unit 1H	Winchester Unit 1H AWB	Winchester Unit 1H AWP Proj: 6047
Slot #09	Winchester Unit 1H ST01	Winchester Unit 1H ST01 AWB	Winchester Unit 1H ST01 AWP Proj: 16806
Slot #09	Winchester Unit 1H ST01	Winchester Unit 1H ST01 PWB	Winchester Unit 1H ST01 PWP Rev-B.0



Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	5416.00	10.280	41.870	5341.23	634.52	536.71	1.47	-414.70
Est. Top of Cement	5450.00	10.407	39.672	5374.67	639.14	540.70	1.22	-417.69
SideTrack KOP	5500.00	10.619	36.542	5423.83	646.32	546.32	1.22	-422.54
End of 3D Arc	6176.80	62.427	153.942	5979.21	397.29	738.05	10.00	-123.22
POE	6363.21	76.170	160.155	6045.00	237.04	805.45	8.00	50.39
End of Tangent	6435.31	76.170	160.155	6062.24	171.18	829.22	0.00	120.41
Landing Pt.	6608.19	90.000	160.155	6083.00	10.15	887.34	8.00	291.61
BHL	16811.19	90.000	160.155	6083.00	-9586.92	4351.07	0.00	10494.61





Actual Wellpath Report

Winchester Unit 1H ST01 AWP Proj: 16806'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #09
Area	Tyler County, WV	Well	Winchester Unit 1H ST01
Field	Tyler	Wellbore	Winchester Unit 1H ST01 AWB
Facility	Sine Pad	Sidetrack from	Winchester Unit 1H AWP Proj: 6047' at 5416.00 MD

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Delaset
Scale	0.999600	Report Generated	2/12/2019 at 10:44:19 AM
Convergence at slot	0.03° East	Database/Source file	WA_MPL_EasternUS_Defn/Winchester_Unit_1H_ST01_AWP_Proj_16806_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-2.01	29.83	1652683.68	14313059.07	39°24'54.190"N	80°57'23.640"W
Facility Reference Pt			1652653.87	14313061.08	39°24'54.210"N	80°57'24.020"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Patterson 342 (RKB) to Facility Vertical Datum	25.00ft
Horizontal Reference Pt	Slot	Patterson 342 (RKB) to Mean Sea Level	824.00ft
Vertical Reference Pt	Patterson 342 (RKB)	Patterson 342 (RKB) to Ground Level at Slot (Slot #09)	25.00ft
MD Reference Pt	Patterson 342 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	160.16°



Actual Wellpath Report

Winchester Unit 1H ST01 AWP Proj: 16806'
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Area	Tyler County, WV	Well	Winchester Unit 1H ST01
Field	Tyler	Wellbore	Winchester Unit 1H ST01 AWB
Facility	Sine Pad	Sidetrack from	Winchester Unit 1H AWP Proj: 6047' at 5416.00 MD

WELLPATH DATA (207 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	62.610	0.00	0.00	0.00	0.00	1652683.68	14313059.07	39°24'54.190"N	80°57'23.640"W	0.00	0.000	0.00	0.00	0.00	
25.00	0.000	62.610	25.00	0.00	0.00	0.00	1652683.68	14313059.07	39°24'54.190"N	80°57'23.640"W	0.00	0.000	0.00	0.00	0.00	
60.00	0.490	62.610	60.00	-0.02	0.07	0.13	1652683.81	14313059.14	39°24'54.191"N	80°57'23.638"W	0.15	62.610	1.40	1.40	178.89	Gyrodata MS Gyro <17-1/2">(50'-363')
85.00	0.480	72.970	85.00	-0.03	0.15	0.33	1652684.01	14313059.22	39°24'54.191"N	80°57'23.636"W	0.36	65.608	0.35	-0.04	41.44	
110.00	0.420	60.650	110.00	-0.04	0.22	0.51	1652684.19	14313059.30	39°24'54.192"N	80°57'23.634"W	0.56	66.175	0.45	-0.24	-49.28	
135.00	0.280	54.240	135.00	-0.07	0.30	0.64	1652684.32	14313059.38	39°24'54.193"N	80°57'23.632"W	0.71	64.435	0.58	-0.56	-25.64	
160.00	0.070	127.900	160.00	-0.07	0.33	0.70	1652684.38	14313059.40	39°24'54.193"N	80°57'23.631"W	0.77	64.646	1.08	-0.84	294.64	
185.00	0.050	298.610	185.00	-0.07	0.33	0.70	1652684.38	14313059.40	39°24'54.193"N	80°57'23.631"W	0.77	65.003	0.48	-0.08	682.84	
210.00	0.090	325.990	210.00	-0.10	0.35	0.68	1652684.36	14313059.42	39°24'54.193"N	80°57'23.631"W	0.76	62.892	0.20	0.16	109.52	
235.00	0.070	314.860	235.00	-0.13	0.38	0.66	1652684.34	14313059.45	39°24'54.194"N	80°57'23.632"W	0.76	60.322	0.10	-0.08	-44.52	
260.00	0.090	292.500	260.00	-0.16	0.39	0.63	1652684.31	14313059.47	39°24'54.194"N	80°57'23.632"W	0.74	57.991	0.15	0.08	-89.44	
285.00	0.060	284.910	285.00	-0.18	0.40	0.60	1652684.28	14313059.48	39°24'54.194"N	80°57'23.632"W	0.72	55.966	0.13	-0.12	-30.36	
310.00	0.050	281.540	310.00	-0.19	0.41	0.58	1652684.26	14313059.48	39°24'54.194"N	80°57'23.633"W	0.71	54.535	0.04	-0.04	-13.48	
335.00	0.090	322.190	335.00	-0.21	0.43	0.55	1652684.23	14313059.50	39°24'54.194"N	80°57'23.633"W	0.70	52.274	0.25	0.16	162.60	
360.00	0.070	328.400	360.00	-0.25	0.46	0.53	1652684.21	14313059.53	39°24'54.195"N	80°57'23.633"W	0.70	49.431	0.09	-0.08	24.84	
373.00	0.070	316.360	373.00	-0.26	0.47	0.52	1652684.21	14313059.54	39°24'54.195"N	80°57'23.633"W	0.70	48.145	0.11	0.00	-92.62	
487.00	0.360	288.210	487.00	-0.55	0.63	0.14	1652683.82	14313059.70	39°24'54.196"N	80°57'23.638"W	0.65	12.098	0.26	0.25	-24.69	WFT EM <12-1/4">(363')(477'-2544')
598.00	1.060	20.860	597.99	-1.54	1.70	0.17	1652683.85	14313060.77	39°24'54.207"N	80°57'23.638"W	1.71	5.701	1.02	0.63	83.47	
690.00	3.050	34.440	689.93	-3.62	4.51	1.86	1652685.54	14313063.58	39°24'54.235"N	80°57'23.616"W	4.88	22.363	2.21	2.16	14.76	
783.00	4.670	37.800	782.71	-7.09	9.55	5.58	1652689.26	14313068.61	39°24'54.284"N	80°57'23.569"W	11.06	30.294	1.76	1.74	3.61	
876.00	6.020	38.750	875.31	-11.65	16.34	10.95	1652694.63	14313075.41	39°24'54.351"N	80°57'23.500"W	19.67	33.826	1.45	1.45	1.02	
973.00	8.060	41.910	971.57	-17.52	25.37	18.68	1652702.35	14313084.43	39°24'54.441"N	80°57'23.402"W	31.50	36.360	2.14	2.10	3.26	
1068.00	9.560	41.220	1065.45	-24.49	36.26	28.32	1652711.99	14313095.32	39°24'54.548"N	80°57'23.279"W	46.01	37.995	1.58	1.58	-0.73	
1163.00	10.630	38.840	1158.97	-32.87	49.02	39.02	1652722.68	14313108.07	39°24'54.674"N	80°57'23.143"W	62.65	38.519	1.21	1.13	-2.51	
1258.00	10.690	31.140	1252.34	-42.97	63.39	49.07	1652732.73	14313122.43	39°24'54.816"N	80°57'23.014"W	80.16	37.745	1.50	0.06	-8.11	
1353.00	11.300	34.420	1345.60	-53.95	78.61	58.89	1652742.55	14313137.65	39°24'54.967"N	80°57'22.889"W	98.22	36.839	0.92	0.64	3.45	
1448.00	10.270	40.490	1438.92	-63.58	92.73	69.65	1652753.30	14313151.76	39°24'55.106"N	80°57'22.752"W	115.97	36.911	1.61	-1.08	6.39	
1542.00	9.950	42.820	1531.46	-71.46	105.05	80.61	1652764.26	14313164.08	39°24'55.228"N	80°57'22.612"W	132.42	37.499	0.55	-0.34	2.48	
1637.00	10.170	45.280	1625.00	-78.76	116.98	92.15	1652775.79	14313176.00	39°24'55.346"N	80°57'22.465"W	148.91	38.229	0.51	0.23	2.59	
1732.00	11.280	44.420	1718.34	-86.32	129.51	104.61	1652788.25	14313188.53	39°24'55.470"N	80°57'22.306"W	166.49	38.928	1.18	1.17	-0.91	



Actual Wellpath Report

Winchester Unit 1H ST01 AWP Proj: 16806'
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #09
Area	Tyler County, WV	Well	Winchester Unit 1H ST01
Field	Tyler	Wellbore	Winchester Unit 1H ST01 AWB
Facility	Sine Pad	Sidetrack from	Winchester Unit 1H AWP Proj: 6047' at 5416.00 MD

WELLPATH DATA (207 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
1827.00	12.150	44.400	1811.36	-94.70	143.29	118.11	1652801.74	14313202.31	39°24'55.606"N	80°57'22.134"W	185.70	39.497	0.92	0.92	-0.02	
1922.00	12.110	44.050	1904.24	-103.43	157.60	132.03	1652815.66	14313216.61	39°24'55.747"N	80°57'21.957"W	205.60	39.955	0.09	-0.04	-0.37	
2016.00	11.810	42.100	1996.20	-112.30	171.82	145.34	1652828.96	14313230.83	39°24'55.888"N	80°57'21.787"W	225.05	40.226	0.54	-0.32	-2.07	
2111.00	11.580	41.510	2089.23	-121.44	186.18	158.17	1652841.79	14313245.17	39°24'56.029"N	80°57'21.624"W	244.30	40.351	0.27	-0.24	-0.62	
2206.00	11.690	40.730	2182.27	-130.74	200.61	170.77	1652854.39	14313259.60	39°24'56.172"N	80°57'21.463"W	263.45	40.407	0.20	0.12	-0.82	
2300.00	11.220	39.340	2274.40	-140.11	214.90	182.78	1652866.39	14313273.88	39°24'56.313"N	80°57'21.310"W	282.12	40.383	0.58	-0.50	-1.48	
2396.00	10.610	36.970	2368.67	-149.73	229.18	194.02	1652877.62	14313288.16	39°24'56.454"N	80°57'21.167"W	300.28	40.250	0.79	-0.64	-2.47	
2490.00	10.060	36.580	2461.14	-159.01	242.69	204.12	1652887.72	14313301.66	39°24'56.588"N	80°57'21.038"W	317.12	40.066	0.59	-0.59	-0.41	
2554.00	9.770	37.360	2524.18	-165.04	251.50	210.74	1652894.34	14313310.47	39°24'56.675"N	80°57'20.953"W	328.12	39.962	0.50	-0.45	1.22	
2661.00	9.490	41.430	2629.68	-174.20	265.33	222.09	1652905.68	14313324.29	39°24'56.811"N	80°57'20.809"W	346.01	39.931	0.69	-0.26	3.80	WFT EM <8-3/4">(2544')(2651'-5975')
2756.00	9.010	38.670	2723.44	-181.85	277.00	231.92	1652915.51	14313335.97	39°24'56.927"N	80°57'20.683"W	361.27	39.937	0.69	-0.51	-2.91	
2850.00	8.480	34.350	2816.35	-189.75	288.47	240.43	1652924.01	14313347.43	39°24'57.040"N	80°57'20.575"W	375.53	39.810	0.90	-0.56	-4.60	
2945.00	8.420	46.820	2910.33	-196.61	299.02	249.45	1652933.04	14313357.97	39°24'57.144"N	80°57'20.460"W	389.41	39.836	1.93	-0.06	13.13	
3045.00	9.650	41.240	3009.09	-203.56	310.33	260.32	1652943.90	14313369.28	39°24'57.256"N	80°57'20.321"W	405.06	39.991	1.51	1.23	-5.58	
3140.00	9.450	34.570	3102.77	-211.95	322.74	269.99	1652953.57	14313381.68	39°24'57.379"N	80°57'20.198"W	420.78	39.915	1.18	-0.21	-7.02	
3235.00	9.930	38.980	3196.42	-220.73	335.53	279.57	1652963.14	14313394.47	39°24'57.505"N	80°57'20.076"W	436.74	39.802	0.93	0.51	4.64	
3329.00	10.660	42.830	3288.91	-228.92	348.21	290.58	1652974.15	14313407.14	39°24'57.630"N	80°57'19.935"W	453.52	39.845	1.07	0.78	4.10	
3424.00	10.240	40.320	3382.33	-237.15	361.09	302.02	1652985.58	14313420.02	39°24'57.757"N	80°57'19.790"W	470.74	39.909	0.65	-0.44	-2.64	
3519.00	10.160	41.090	3475.83	-245.43	373.84	312.99	1652996.54	14313432.76	39°24'57.883"N	80°57'19.650"W	487.57	39.937	0.17	-0.08	0.81	
3614.00	9.660	39.480	3569.41	-253.56	386.31	323.56	1653007.12	14313445.23	39°24'58.007"N	80°57'19.515"W	503.91	39.949	0.60	-0.53	-1.69	
3709.00	10.460	45.600	3662.95	-261.22	398.50	334.79	1653018.34	14313457.41	39°24'58.127"N	80°57'19.372"W	520.47	40.035	1.40	0.84	6.44	
3803.00	10.190	43.930	3755.43	-268.44	410.45	346.66	1653030.20	14313469.36	39°24'58.245"N	80°57'19.221"W	537.26	40.184	0.43	-0.29	-1.78	
3898.00	10.990	41.530	3848.81	-276.49	423.28	358.49	1653042.03	14313482.19	39°24'58.372"N	80°57'19.070"W	554.70	40.262	0.96	0.84	-2.53	
3993.00	10.610	38.850	3942.13	-285.37	436.87	369.98	1653053.52	14313495.77	39°24'58.506"N	80°57'18.923"W	572.49	40.261	0.66	-0.40	-2.82	
4088.00	11.480	41.170	4035.37	-294.50	450.80	381.69	1653065.22	14313509.69	39°24'58.644"N	80°57'18.774"W	590.69	40.254	1.03	0.92	2.44	
4183.00	10.940	39.410	4128.56	-303.69	464.88	393.64	1653077.16	14313523.77	39°24'58.783"N	80°57'18.622"W	609.15	40.256	0.67	-0.57	-1.85	
4278.00	10.390	36.340	4221.92	-313.07	478.75	404.44	1653087.96	14313537.63	39°24'58.920"N	80°57'18.484"W	626.71	40.190	0.83	-0.58	-3.23	
4373.00	10.880	36.100	4315.28	-322.86	492.89	414.80	1653098.31	14313551.77	39°24'59.060"N	80°57'18.352"W	644.21	40.082	0.52	0.52	-0.25	
4468.00	10.780	34.830	4408.59	-333.02	507.43	425.15	1653108.66	14313566.30	39°24'59.203"N	80°57'18.220"W	662.00	39.958	0.27	-0.11	-1.34	
4563.00	10.860	37.550	4501.90	-342.98	521.82	435.68	1653119.19	14313580.68	39°24'59.345"N	80°57'18.086"W	679.79	39.859	0.54	0.08	2.86	



Actual Wellpath Report

Winchester Unit 1H ST01 AWP Proj: 16806'
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REFERENCE WELLPATH IDENTIFICATION

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Area	Tyler County, WV	Well	Winchester Unit 1H ST01
Field	Tyler	Wellbore	Winchester Unit 1H ST01 AWB
Facility	Sine Pad	Sidetrack from	Winchester Unit 1H AWP Proj: 6047' at 5416.00 MD

WELLPATH DATA (207 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
4657.00	11.340	42.720	4594.15	-352.01	535.63	447.35	1653130.85	14313594.49	39°24'59.482"N	80°57'17.937"W	697.87	39.868	1.18	0.51	5.50	
4752.00	11.300	40.010	4687.30	-360.99	549.62	459.67	1653143.17	14313608.47	39°24'59.620"N	80°57'17.780"W	716.51	39.907	0.56	-0.04	-2.85	
4847.00	10.950	39.540	4780.51	-370.26	563.71	471.40	1653154.89	14313622.55	39°24'59.759"N	80°57'17.630"W	734.84	39.904	0.38	-0.37	-0.49	
4942.00	11.030	42.170	4873.77	-379.12	577.40	483.24	1653166.73	14313636.24	39°24'59.894"N	80°57'17.479"W	752.94	39.927	0.53	0.08	2.77	
5037.00	10.400	43.310	4967.12	-387.26	590.38	495.23	1653178.71	14313649.21	39°25'00.023"N	80°57'17.326"W	770.58	39.991	0.70	-0.66	1.20	
5132.00	9.040	43.830	5060.75	-394.44	602.00	506.28	1653189.75	14313660.83	39°25'00.137"N	80°57'17.186"W	786.59	40.063	1.43	-1.43	0.55	
5227.00	8.460	42.090	5154.64	-401.04	612.57	516.13	1653199.60	14313671.40	39°25'00.242"N	80°57'17.060"W	801.02	40.116	0.67	-0.61	-1.83	
5321.00	8.950	44.410	5247.56	-407.47	622.93	525.88	1653209.35	14313681.75	39°25'00.344"N	80°57'16.936"W	815.22	40.171	0.64	0.52	2.47	
5416.00	10.280	41.870	5341.23	-414.70	634.52	536.71	1653220.18	14313693.33	39°25'00.459"N	80°57'16.798"W	831.07	40.226	1.47	1.40	-2.67	
5476.00	10.460	53.000	5400.25	-418.84	641.78	544.63	1653228.10	14313700.60	39°25'00.530"N	80°57'16.697"W	841.73	40.319	3.35	0.30	18.55	BH AT Curve <8-1/2">(5416')(5476'-16782')
5524.00	10.110	61.240	5447.48	-420.78	646.43	551.81	1653235.27	14313705.24	39°25'00.576"N	80°57'16.605"W	849.92	40.485	3.15	-0.73	17.17	
5571.00	10.210	83.060	5493.76	-420.49	648.92	559.56	1653243.02	14313707.73	39°25'00.601"N	80°57'16.506"W	856.86	40.771	8.14	0.21	46.43	
5618.00	11.180	101.990	5539.96	-417.16	648.48	568.16	1653251.61	14313707.29	39°25'00.596"N	80°57'16.397"W	862.16	41.223	7.72	2.06	40.28	
5665.00	13.750	116.890	5585.86	-410.68	645.00	577.60	1653261.05	14313703.82	39°25'00.562"N	80°57'16.277"W	865.82	41.844	8.72	5.47	31.70	
5712.00	17.210	122.040	5631.15	-401.14	638.79	588.48	1653271.92	14313697.60	39°25'00.501"N	80°57'16.138"W	868.54	42.653	7.91	7.36	10.96	
5759.00	21.170	122.640	5675.53	-388.94	630.52	601.52	1653284.97	14313689.34	39°25'00.419"N	80°57'15.972"W	871.43	43.652	8.44	8.43	1.28	
5807.00	25.280	126.420	5719.63	-373.53	619.75	617.08	1653300.51	14313678.57	39°25'00.312"N	80°57'15.774"W	874.57	44.876	9.10	8.56	7.87	
5854.00	29.730	132.930	5761.32	-354.81	605.85	633.70	1653317.13	14313664.67	39°25'00.175"N	80°57'15.562"W	876.71	46.287	11.41	9.47	13.85	
5901.00	34.480	138.850	5801.13	-332.04	587.88	651.00	1653334.42	14313646.71	39°24'59.997"N	80°57'15.342"W	877.15	47.917	12.11	10.11	12.60	
5948.00	39.010	143.510	5838.79	-305.45	565.95	668.56	1653351.98	14313624.79	39°24'59.780"N	80°57'15.118"W	875.94	49.752	11.31	9.64	9.91	
5995.00	43.760	146.950	5874.05	-275.43	540.42	686.24	1653369.64	14313599.27	39°24'59.528"N	80°57'14.893"W	873.48	51.779	11.20	10.11	7.32	
6042.00	48.050	149.370	5906.75	-242.42	511.74	704.02	1653387.41	14313570.60	39°24'59.244"N	80°57'14.667"W	870.35	53.987	9.85	9.13	5.15	
6063.00†	50.136	150.761	5920.50	-226.80	497.98	711.93	1653395.33	14313556.86	39°24'59.108"N	80°57'14.566"W	868.81	55.028	11.12	9.93	6.62	Middlesex: 6063' MD
6090.00	52.840	152.430	5937.31	-205.91	479.40	721.98	1653405.37	14313538.28	39°24'58.925"N	80°57'14.438"W	866.65	56.415	11.12	10.02	6.18	
6137.00	56.550	155.310	5964.47	-167.80	444.97	738.84	1653422.23	14313503.86	39°24'58.584"N	80°57'14.223"W	862.49	58.942	9.34	7.89	6.13	
6185.00	61.390	157.760	5989.21	-126.76	407.24	755.19	1653438.57	14313466.15	39°24'58.211"N	80°57'14.015"W	858.00	61.664	10.99	10.08	5.10	
6232.00	65.990	159.990	6010.04	-84.66	367.95	770.36	1653453.73	14313426.88	39°24'57.823"N	80°57'13.822"W	853.72	64.469	10.67	9.79	4.74	
6235.00†	66.205	160.153	6011.25	-81.92	365.37	771.29	1653454.66	14313424.30	39°24'57.797"N	80°57'13.810"W	853.46	64.652	8.70	7.15	5.42	Burkett: 6235' MD
6279.00	69.370	162.480	6027.89	-41.20	326.79	784.33	1653467.70	14313385.73	39°24'57.416"N	80°57'13.645"W	849.68	67.381	8.70	7.19	5.29	
6300.00†	70.793	163.397	6035.04	-21.48	307.92	790.12	1653473.48	14313366.87	39°24'57.229"N	80°57'13.571"W	848.00	68.709	7.92	6.77	4.37	Tully: 6300' MD



Actual Wellpath Report

Winchester Unit 1H ST01 AWP Proj: 16806'
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #09
Area	Tyler County, WV	Well	Winchester Unit 1H ST01
Field	Tyler	Wellbore	Winchester Unit 1H ST01 AWB
Facility	Sine Pad	Sidetrack from	Winchester Unit 1H AWP Proj: 6047' at 5416.00 MD

WELLPATH DATA (207 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
6326.00	72.560	164.510	6043.22	3.15	284.20	796.94	1653480.30	14313343.16	39°24'56.995"N	80°57'13.484"W	846.10	70.373	7.92	6.80	4.28	
6329.00†	72.672	164.669	6044.11	6.00	281.44	797.70	1653481.06	14313340.40	39°24'56.968"N	80°57'13.474"W	845.89	70.567	6.28	3.72	5.30	Marcellus POE: 6329' MD
6374.00	74.360	167.030	6056.88	48.93	239.60	808.25	1653491.60	14313298.58	39°24'56.554"N	80°57'13.340"W	843.01	73.488	6.28	3.75	5.25	
6421.00	79.010	167.880	6067.70	94.29	194.97	818.17	1653501.53	14313253.96	39°24'56.113"N	80°57'13.214"W	841.08	76.597	10.05	9.89	1.81	
6468.00	82.900	169.610	6075.09	140.17	149.46	827.23	1653510.58	14313208.47	39°24'55.663"N	80°57'13.099"W	840.62	79.759	9.04	8.28	3.68	
6515.00	86.890	170.420	6079.27	186.28	103.36	835.34	1653518.69	14313162.39	39°24'55.207"N	80°57'12.996"W	841.71	82.946	8.66	8.49	1.72	
6563.00	89.230	168.330	6080.90	233.63	56.22	844.19	1653527.53	14313115.27	39°24'54.741"N	80°57'12.884"W	846.06	86.190	6.53	4.87	-4.35	
6610.00	89.200	162.840	6081.54	280.40	10.72	855.88	1653539.22	14313069.79	39°24'54.292"N	80°57'12.735"W	855.95	89.283	11.68	-0.06	-11.68	
6658.00	89.320	159.010	6082.16	328.38	-34.63	871.56	1653554.90	14313024.45	39°24'53.843"N	80°57'12.535"W	872.25	92.276	7.98	0.25	-7.98	
6752.00	89.780	155.030	6082.90	422.22	-121.15	908.25	1653591.57	14312937.97	39°24'52.988"N	80°57'12.069"W	916.30	97.598	4.26	0.49	-4.23	
6847.00	89.200	152.280	6083.75	516.59	-206.28	950.41	1653633.71	14312852.88	39°24'52.147"N	80°57'11.532"W	972.53	102.245	2.96	-0.61	-2.89	
6941.00	88.800	156.400	6085.39	610.08	-290.97	991.10	1653674.38	14312768.21	39°24'51.309"N	80°57'11.014"W	1032.93	106.362	4.40	-0.43	4.38	
7035.00	88.370	159.400	6087.71	703.96	-378.03	1026.45	1653709.72	14312681.19	39°24'50.449"N	80°57'10.564"W	1093.85	110.218	3.22	-0.46	3.19	
7129.00	88.770	164.010	6090.06	797.87	-467.23	1055.94	1653739.19	14312592.03	39°24'49.567"N	80°57'10.189"W	1154.69	113.868	4.92	0.43	4.90	
7224.00	89.820	163.730	6091.23	892.67	-558.48	1082.33	1653765.57	14312500.82	39°24'48.665"N	80°57'09.854"W	1217.92	117.294	1.14	1.11	-0.29	
7319.00	90.490	159.690	6090.97	987.61	-648.66	1112.13	1653795.37	14312410.67	39°24'47.773"N	80°57'09.474"W	1287.48	120.253	4.31	0.71	-4.25	
7414.00	90.990	156.820	6089.74	1082.54	-736.88	1147.32	1653830.54	14312322.48	39°24'46.901"N	80°57'09.027"W	1363.58	122.711	3.07	0.53	-3.02	
7509.00	88.340	151.100	6090.30	1176.94	-822.20	1189.01	1653872.21	14312237.21	39°24'46.058"N	80°57'08.496"W	1445.59	124.664	6.64	-2.79	-6.02	
7603.00	88.430	155.280	6092.95	1270.18	-906.04	1231.38	1653914.56	14312153.40	39°24'45.229"N	80°57'07.957"W	1528.79	126.345	4.45	0.10	4.45	
7698.00	88.460	160.130	6095.53	1365.03	-993.88	1267.39	1653950.57	14312065.59	39°24'44.361"N	80°57'07.499"W	1610.61	128.103	5.10	0.03	5.11	
7793.00	88.830	162.090	6097.77	1459.99	-1083.73	1298.14	1653981.30	14311975.77	39°24'43.472"N	80°57'07.107"W	1691.05	129.856	2.10	0.39	2.06	
7888.00	90.430	163.160	6098.39	1554.89	-1174.39	1326.51	1654009.65	14311885.15	39°24'42.576"N	80°57'06.747"W	1771.67	131.519	2.03	1.68	1.13	
7981.00	88.250	158.560	6099.46	1647.85	-1262.22	1356.99	1654040.12	14311797.36	39°24'41.708"N	80°57'06.359"W	1853.27	132.928	5.47	-2.34	-4.95	
8076.00	87.690	157.820	6102.83	1742.73	-1350.36	1392.26	1654075.38	14311709.25	39°24'40.837"N	80°57'05.910"W	1939.55	134.125	0.98	-0.59	-0.78	
8171.00	87.880	160.280	6106.50	1837.64	-1439.01	1426.20	1654109.31	14311620.64	39°24'39.960"N	80°57'05.478"W	2026.03	135.256	2.60	0.20	2.59	
8265.00	88.030	162.560	6109.85	1931.55	-1528.04	1456.13	1654139.22	14311531.64	39°24'39.080"N	80°57'05.098"W	2110.74	136.381	2.43	0.16	2.43	
8360.00	88.490	166.080	6112.74	2026.24	-1619.45	1481.79	1654164.87	14311440.27	39°24'38.177"N	80°57'04.771"W	2195.07	137.542	3.74	0.48	3.71	
8455.00	88.620	166.040	6115.13	2120.71	-1711.63	1504.67	1654187.74	14311348.13	39°24'37.266"N	80°57'04.480"W	2278.96	138.682	0.14	0.14	-0.04	
8549.00	89.080	163.950	6117.02	2214.35	-1802.40	1529.00	1654212.06	14311257.40	39°24'36.368"N	80°57'04.171"W	2363.57	139.692	2.28	0.49	-2.22	
8643.00	89.420	160.850	6118.25	2308.26	-1891.98	1557.41	1654240.47	14311167.85	39°24'35.483"N	80°57'03.810"W	2450.53	140.540	3.32	0.36	-3.30	



Actual Wellpath Report

Winchester Unit 1H ST01 AWP Proj: 16806'
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #09
Area	Tyler County, WV	Well	Winchester Unit 1H ST01
Field	Tyler	Wellbore	Winchester Unit 1H ST01 AWB
Facility	Sine Pad	Sidetrack from	Winchester Unit 1H AWP Proj: 6047' at 5416.00 MD

WELLPATH DATA (207 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
8738.00	88.460	155.850	6120.01	2403.16	-1980.23	1592.44	1654275.49	14311079.64	39°24'34.610"N	80°57'03.364"W	2541.10	141.195	5.36	-1.01	-5.26	
8833.00	88.740	155.180	6122.33	2497.82	-2066.66	1631.81	1654314.83	14310993.24	39°24'33.756"N	80°57'02.863"W	2633.23	141.706	0.76	0.29	-0.71	
8927.00	88.860	151.910	6124.30	2591.16	-2150.79	1673.67	1654356.68	14310909.15	39°24'32.924"N	80°57'02.330"W	2725.26	142.111	3.48	0.13	-3.48	
9022.00	89.230	150.880	6125.88	2685.04	-2234.18	1719.14	1654402.13	14310825.79	39°24'32.100"N	80°57'01.752"W	2819.04	142.423	1.15	0.39	-1.08	
9116.00	88.890	152.940	6127.43	2778.05	-2317.09	1763.40	1654446.37	14310742.91	39°24'31.280"N	80°57'01.188"W	2911.78	142.727	2.22	-0.36	2.19	
9211.00	89.230	157.800	6128.98	2872.67	-2403.41	1802.97	1654485.93	14310656.63	39°24'30.427"N	80°57'00.685"W	3004.51	143.124	5.13	0.36	5.12	
9306.00	88.950	163.490	6130.49	2967.62	-2492.99	1834.44	1654517.38	14310567.08	39°24'29.541"N	80°57'00.285"W	3095.19	143.653	6.00	-0.29	5.99	
9400.00	89.660	161.440	6131.64	3061.53	-2582.61	1862.76	1654545.69	14310477.50	39°24'28.655"N	80°56'59.924"W	3184.30	144.198	2.31	0.76	-2.18	
9495.00	90.680	158.040	6131.35	3156.51	-2671.72	1895.65	1654578.57	14310388.42	39°24'27.774"N	80°56'59.506"W	3275.91	144.643	3.74	1.07	-3.58	
9589.00	89.230	156.080	6131.43	3250.37	-2758.28	1932.28	1654615.19	14310301.90	39°24'26.919"N	80°56'59.040"W	3367.76	144.987	2.59	-1.54	-2.09	
9684.00	89.350	166.290	6132.61	3345.22	-2848.08	1962.88	1654645.77	14310212.14	39°24'26.031"N	80°56'58.651"W	3458.97	145.426	10.75	0.13	10.75	
9779.00	89.290	167.730	6133.73	3439.53	-2940.64	1984.23	1654667.11	14310119.61	39°24'25.116"N	80°56'58.379"W	3547.47	145.990	1.52	-0.06	1.52	
9874.00	89.720	164.640	6134.56	3533.99	-3032.88	2006.91	1654689.79	14310027.41	39°24'24.204"N	80°56'58.091"W	3636.76	146.507	3.28	0.45	-3.25	
9968.00	89.510	159.260	6135.19	3627.91	-3122.22	2036.03	1654718.89	14309938.11	39°24'23.321"N	80°56'57.721"W	3727.42	146.891	5.73	-0.22	-5.72	
10063.00	89.350	153.620	6136.13	3722.67	-3209.26	2073.98	1654756.83	14309851.10	39°24'22.461"N	80°56'57.238"W	3821.09	147.127	5.94	-0.17	-5.94	
10158.00	87.850	152.870	6138.45	3816.94	-3294.06	2116.73	1654799.56	14309766.34	39°24'21.622"N	80°56'56.694"W	3915.53	147.276	1.77	-1.58	-0.79	
10252.00	89.050	160.950	6141.00	3910.68	-3380.42	2153.55	1654836.37	14309680.01	39°24'20.768"N	80°56'56.225"W	4008.12	147.500	8.69	1.28	8.60	
10347.00	89.570	166.250	6142.15	4005.47	-3471.52	2180.36	1654863.17	14309588.95	39°24'19.868"N	80°56'55.885"W	4099.44	147.868	5.61	0.55	5.58	
10442.00	90.030	163.520	6142.48	4100.13	-3563.22	2205.13	1654887.93	14309497.28	39°24'18.961"N	80°56'55.570"W	4190.36	148.248	2.91	0.48	-2.87	
10536.00	89.780	165.720	6142.63	4193.84	-3653.85	2230.06	1654912.85	14309406.69	39°24'18.066"N	80°56'55.253"W	4280.63	148.603	2.36	-0.27	2.34	
10630.00	89.660	167.960	6143.09	4287.20	-3745.37	2251.46	1654934.24	14309315.20	39°24'17.161"N	80°56'54.981"W	4370.00	148.989	2.39	-0.13	2.38	
10725.00	90.550	168.250	6142.92	4381.28	-3838.33	2271.04	1654953.81	14309222.28	39°24'16.242"N	80°56'54.732"W	4459.87	149.388	0.99	0.94	0.31	
10819.00	91.820	166.380	6140.98	4474.53	-3930.01	2291.68	1654974.44	14309130.64	39°24'15.336"N	80°56'54.470"W	4549.37	149.753	2.40	1.35	-1.99	
10914.00	92.030	163.150	6137.78	4569.15	-4021.61	2316.62	1654999.37	14309039.08	39°24'14.430"N	80°56'54.153"W	4641.13	150.056	3.41	0.22	-3.40	
11009.00	90.250	159.520	6135.89	4664.10	-4111.58	2347.01	1655029.75	14308949.15	39°24'13.541"N	80°56'53.766"W	4734.29	150.281	4.25	-1.87	-3.82	
11104.00	90.180	163.130	6135.54	4759.06	-4201.56	2377.43	1655060.15	14308859.20	39°24'12.651"N	80°56'53.379"W	4827.55	150.497	3.80	-0.07	3.80	
11198.00	91.170	161.700	6134.43	4852.98	-4291.16	2405.82	1655088.54	14308769.64	39°24'11.766"N	80°56'53.018"W	4919.56	150.723	1.85	1.05	-1.52	
11293.00	89.970	157.310	6133.48	4947.94	-4380.12	2439.08	1655121.78	14308680.71	39°24'10.886"N	80°56'52.595"W	5013.43	150.889	4.79	-1.26	-4.62	
11388.00	90.090	158.230	6133.43	5042.86	-4468.06	2475.02	1655157.70	14308592.81	39°24'10.017"N	80°56'52.138"W	5107.76	151.016	0.98	0.13	0.97	
11483.00	90.740	157.780	6132.75	5137.79	-4556.14	2510.59	1655193.27	14308504.76	39°24'09.146"N	80°56'51.686"W	5202.06	151.144	0.83	0.68	-0.47	



Actual Wellpath Report

Winchester Unit 1H ST01 AWP Proj: 16806'
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #09
Area	Tyler County, WV	Well	Winchester Unit 1H ST01
Field	Tyler	Wellbore	Winchester Unit 1H ST01 AWB
Facility	Sine Pad	Sidetrack from	Winchester Unit 1H AWP Proj: 6047' at 5416.00 MD

WELLPATH DATA (207 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
11578.00	90.220	155.870	6131.95	5232.62	-4643.46	2547.98	1655230.64	14308417.47	39°24'08.283"N	80°56'51.210"W	5296.60	151.245	2.08	-0.55	-2.01	
11672.00	89.350	159.240	6132.30	5326.51	-4730.33	2583.86	1655266.50	14308330.64	39°24'07.424"N	80°56'50.753"W	5390.02	151.355	3.70	-0.93	3.59	
11767.00	90.280	161.280	6132.61	5421.50	-4819.74	2615.95	1655298.58	14308241.27	39°24'06.540"N	80°56'50.345"W	5483.89	151.509	2.36	0.98	2.15	
11862.00	89.880	159.160	6132.48	5516.49	-4909.13	2648.09	1655330.71	14308151.91	39°24'05.657"N	80°56'49.937"W	5577.81	151.657	2.27	-0.42	-2.23	
11956.00	89.780	156.830	6132.76	5610.42	-4996.28	2683.31	1655365.91	14308064.80	39°24'04.795"N	80°56'49.489"W	5671.24	151.761	2.48	-0.11	-2.48	
12051.00	89.780	155.930	6133.12	5705.21	-5083.32	2721.37	1655403.96	14307977.80	39°24'03.935"N	80°56'49.004"W	5765.93	151.837	0.95	0.00	-0.95	
12146.00	90.220	156.490	6133.12	5799.98	-5170.24	2759.69	1655442.27	14307890.91	39°24'03.075"N	80°56'48.517"W	5860.66	151.908	0.75	0.46	0.59	
12241.00	89.750	154.140	6133.14	5894.64	-5256.56	2799.37	1655481.92	14307804.63	39°24'02.222"N	80°56'48.012"W	5955.49	151.963	2.52	-0.49	-2.47	
12335.00	90.370	155.010	6133.05	5988.19	-5341.45	2839.72	1655522.26	14307719.77	39°24'01.383"N	80°56'47.499"W	6049.39	152.003	1.14	0.66	0.93	
12429.00	89.780	158.000	6132.92	6081.99	-5427.65	2877.19	1655559.72	14307633.61	39°24'00.530"N	80°56'47.022"W	6143.09	152.072	3.24	-0.63	3.18	
12524.00	90.030	163.720	6133.08	6176.94	-5517.36	2908.33	1655590.84	14307543.93	39°23'59.644"N	80°56'46.626"W	6236.96	152.205	6.03	0.26	6.02	
12618.00	90.030	166.120	6133.03	6270.61	-5608.11	2932.78	1655615.29	14307453.21	39°23'58.746"N	80°56'46.315"W	6328.68	152.393	2.55	0.00	2.55	
12713.00	90.310	166.770	6132.75	6365.04	-5700.47	2955.05	1655637.54	14307360.89	39°23'57.834"N	80°56'46.032"W	6420.87	152.598	0.74	0.29	0.68	
12808.00	89.510	165.200	6132.90	6459.54	-5792.64	2978.05	1655660.54	14307268.76	39°23'56.922"N	80°56'45.740"W	6513.33	152.792	1.85	-0.84	-1.65	
12902.00	89.970	165.960	6133.33	6553.12	-5883.67	3001.46	1655683.94	14307177.76	39°23'56.023"N	80°56'45.443"W	6605.03	152.972	0.95	0.49	0.81	
12997.00	90.310	164.510	6133.09	6647.75	-5975.53	3025.67	1655708.14	14307085.94	39°23'55.115"N	80°56'45.135"W	6697.89	153.145	1.57	0.36	-1.53	
13091.00	89.910	162.180	6132.91	6741.59	-6065.58	3052.61	1655735.07	14306995.93	39°23'54.224"N	80°56'44.792"W	6790.41	153.285	2.51	-0.43	-2.48	
13185.00	90.180	158.910	6132.84	6835.58	-6154.20	3083.92	1655766.36	14306907.34	39°23'53.348"N	80°56'44.394"W	6883.66	153.384	3.49	0.29	-3.48	
13280.00	89.970	156.760	6132.71	6930.50	-6242.18	3119.75	1655802.18	14306819.40	39°23'52.479"N	80°56'43.938"W	6978.37	153.445	2.27	-0.22	-2.26	
13375.00	91.050	155.790	6131.87	7025.27	-6329.14	3157.98	1655840.39	14306732.47	39°23'51.619"N	80°56'43.452"W	7073.25	153.483	1.53	1.14	-1.02	
13469.00	89.260	151.360	6131.61	7118.62	-6413.30	3199.80	1655882.19	14306648.35	39°23'50.787"N	80°56'42.920"W	7167.22	153.484	5.08	-1.90	-4.71	
13564.00	89.820	155.850	6132.38	7212.97	-6498.37	3242.02	1655924.40	14306563.31	39°23'49.946"N	80°56'42.383"W	7262.19	153.486	4.76	0.59	4.73	
13659.00	89.820	161.810	6132.68	7307.91	-6586.92	3276.31	1655958.67	14306474.80	39°23'49.070"N	80°56'41.947"W	7356.74	153.554	6.27	0.00	6.27	
13753.00	91.080	160.500	6131.94	7401.88	-6675.87	3306.67	1655989.02	14306385.88	39°23'48.191"N	80°56'41.561"W	7449.92	153.650	1.93	1.34	-1.39	
13848.00	89.600	154.870	6131.37	7496.75	-6763.72	3342.72	1656025.06	14306298.07	39°23'47.323"N	80°56'41.102"W	7544.65	153.701	6.13	-1.56	-5.93	
13943.00	89.570	154.800	6132.06	7591.34	-6849.70	3383.12	1656065.44	14306212.13	39°23'46.473"N	80°56'40.588"W	7639.62	153.715	0.08	-0.03	-0.07	
14037.00	89.080	158.570	6133.17	7685.14	-6936.00	3420.31	1656102.62	14306125.86	39°23'45.619"N	80°56'40.115"W	7733.48	153.751	4.04	-0.52	4.01	
14132.00	89.570	162.000	6134.29	7780.12	-7025.41	3452.35	1656134.65	14306036.48	39°23'44.735"N	80°56'39.708"W	7827.85	153.830	3.65	0.52	3.61	
14227.00	90.000	164.750	6134.65	7874.96	-7116.43	3479.53	1656161.82	14305945.50	39°23'43.836"N	80°56'39.362"W	7921.54	153.944	2.93	0.45	2.89	
14321.00	90.980	166.150	6133.84	7968.56	-7207.41	3503.15	1656185.42	14305854.56	39°23'42.936"N	80°56'39.062"W	8013.66	154.078	1.82	1.04	1.49	



Actual Wellpath Report

Winchester Unit 1H ST01 AWP Proj: 16806'
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #09
Area	Tyler County, WV	Well	Winchester Unit 1H ST01
Field	Tyler	Wellbore	Winchester Unit 1H ST01 AWB
Facility	Sine Pad	Sidetrack from	Winchester Unit 1H AWP Proj: 6047' at 5416.00 MD

WELLPATH DATA (207 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
14416.00	90.890	165.100	6132.29	8063.11	-7299.42	3526.73	1656208.99	14305762.58	39°23'42.027"N	80°56'38.763"W	8106.75	154.212	1.11	-0.09	-1.11	
14510.00	91.450	162.600	6130.37	8156.89	-7389.69	3552.87	1656235.12	14305672.35	39°23'41.135"N	80°56'38.430"W	8199.41	154.322	2.72	0.60	-2.66	
14604.00	89.850	161.070	6129.31	8250.84	-7478.99	3582.17	1656264.41	14305583.09	39°23'40.252"N	80°56'38.058"W	8292.60	154.407	2.35	-1.70	-1.63	
14699.00	89.660	163.380	6129.71	8345.77	-7569.45	3611.17	1656293.40	14305492.66	39°23'39.357"N	80°56'37.689"W	8386.72	154.496	2.44	-0.20	2.43	
14794.00	89.750	164.260	6130.20	8440.57	-7660.68	3637.64	1656319.86	14305401.47	39°23'38.456"N	80°56'37.353"W	8480.48	154.600	0.93	0.09	0.93	
14888.00	89.850	165.850	6130.53	8534.22	-7751.50	3661.88	1656344.09	14305310.69	39°23'37.558"N	80°56'37.045"W	8572.93	154.714	1.69	0.11	1.69	
14983.00	90.550	164.060	6130.20	8628.89	-7843.24	3686.54	1656368.74	14305218.98	39°23'36.651"N	80°56'36.731"W	8666.43	154.825	2.02	0.74	-1.88	
15078.00	91.600	160.910	6128.41	8723.78	-7933.81	3715.12	1656397.31	14305128.45	39°23'35.756"N	80°56'36.368"W	8760.56	154.908	3.49	1.11	-3.32	
15173.00	89.720	156.940	6127.32	8818.73	-8022.42	3749.27	1656431.45	14305039.87	39°23'34.880"N	80°56'35.934"W	8855.30	154.951	4.62	-1.98	-4.18	
15267.00	89.720	154.990	6127.78	8912.47	-8108.27	3787.55	1656469.71	14304954.06	39°23'34.031"N	80°56'35.447"W	8949.28	154.962	2.07	0.00	-2.07	
15362.00	89.660	152.750	6128.29	9006.89	-8193.55	3829.39	1656511.53	14304868.81	39°23'33.188"N	80°56'34.915"W	9044.25	154.950	2.36	-0.06	-2.36	
15456.00	89.510	153.110	6128.97	9100.14	-8277.25	3872.17	1656554.29	14304785.14	39°23'32.360"N	80°56'34.371"W	9138.19	154.929	0.41	-0.16	0.38	
15551.00	89.050	154.140	6130.17	9194.51	-8362.36	3914.36	1656596.47	14304700.08	39°23'31.519"N	80°56'33.834"W	9233.16	154.916	1.19	-0.48	1.08	
15646.00	89.110	154.750	6131.69	9289.03	-8448.05	3955.34	1656637.43	14304614.42	39°23'30.672"N	80°56'33.312"W	9328.14	154.911	0.65	0.06	0.64	
15740.00	89.050	155.400	6133.20	9382.65	-8533.28	3994.95	1656677.03	14304529.22	39°23'29.829"N	80°56'32.809"W	9422.13	154.913	0.69	-0.06	0.69	
15834.00	89.200	156.830	6134.64	9476.40	-8619.22	4033.00	1656715.07	14304443.31	39°23'28.979"N	80°56'32.325"W	9516.10	154.925	1.53	0.16	1.52	
15928.00	88.950	157.620	6136.16	9570.26	-8705.88	4069.39	1656751.43	14304356.69	39°23'28.123"N	80°56'31.862"W	9610.01	154.947	0.88	-0.27	0.84	
16023.00	88.800	160.700	6138.02	9665.22	-8794.64	4103.17	1656785.21	14304267.97	39°23'27.245"N	80°56'31.432"W	9704.73	154.988	3.25	-0.16	3.24	
16117.00	88.740	166.080	6140.04	9759.01	-8884.66	4130.03	1656812.05	14304177.98	39°23'26.355"N	80°56'31.091"W	9797.67	155.069	5.72	-0.06	5.72	
16212.00	89.170	168.560	6141.77	9853.25	-8977.32	4150.88	1656832.89	14304085.36	39°23'25.439"N	80°56'30.826"W	9890.50	155.185	2.65	0.45	2.61	
16306.00	89.570	167.760	6142.81	9946.33	-9069.31	4170.16	1656852.17	14303993.40	39°23'24.530"N	80°56'30.581"W	9982.12	155.307	0.95	0.43	-0.85	
16401.00	90.620	165.710	6142.65	10040.70	-9161.77	4191.96	1656873.96	14303900.98	39°23'23.616"N	80°56'30.305"W	10075.25	155.414	2.42	1.11	-2.16	
16495.00	89.540	160.110	6142.52	10134.55	-9251.59	4219.57	1656901.56	14303811.20	39°23'22.728"N	80°56'29.954"W	10168.41	155.483	6.07	-1.15	-5.96	
16590.00	89.780	159.230	6143.08	10229.54	-9340.67	4252.58	1656934.55	14303722.16	39°23'21.848"N	80°56'29.534"W	10263.16	155.521	0.96	0.25	-0.93	
16685.00	90.150	158.270	6143.14	10324.51	-9429.21	4287.01	1656968.97	14303633.66	39°23'20.972"N	80°56'29.096"W	10358.01	155.551	1.08	0.39	-1.01	
16782.00	89.910	162.400	6143.09	10421.49	-9520.53	4319.64	1657001.59	14303542.37	39°23'20.069"N	80°56'28.681"W	10454.65	155.595	4.26	-0.25	4.26	
16806.00	89.910	162.400	6143.13	10445.47	-9543.40	4326.90	1657008.84	14303519.50	39°23'19.843"N	80°56'28.589"W	10478.48	155.611	0.00	0.00	0.00	Projected MD at TD [ST01]: 16806'



Actual Wellpath Report

Winchester Unit 1H ST01 AWP Proj: 16806'
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #09
Area	Tyler County, WV	Well	Winchester Unit 1H ST01
Field	Tyler	Wellbore	Winchester Unit 1H ST01 AWB
Facility	Sine Pad	Sidetrack from	Winchester Unit 1H AWP Proj: 6047' at 5416.00 MD

HOLE & CASING SECTIONS - Ref Wellbore: Winchester Unit 1H ST01 AWB Ref Wellpath: Winchester Unit 1H ST01 AWP Proj: 16806'

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	25.00	105.00	80.00	25.00	105.00	0.00	0.00	0.21	0.48
17.5in Open Hole	105.00	385.80	280.80	105.00	385.80	0.21	0.48	0.48	0.51
13.375in Casing Surface	25.00	385.80	360.80	25.00	385.80	0.00	0.00	0.48	0.51
12.25in Open Hole	385.80	2635.70	2249.90	385.80	2604.73	0.48	0.51	262.16	219.35
9.625in Casing Intermediate	25.00	2635.70	2610.70	25.00	2604.73	0.00	0.00	262.16	219.35
8.75in Open Hole	2635.70	5416.00	2780.30	2604.73	5341.23	262.16	219.35	634.52	536.71
8.5in Open Hole	5416.00	16806.00	11390.00	5341.23	6143.13	634.52	536.71	-9543.40	4326.90
5.5in Casing Production	25.00	16806.00	16781.00	25.00	6143.13	0.00	0.00	-9543.40	4326.90

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Winchester Unit 1H ST01 - POE - Rev-2	6045.00	237.04	805.45	1653488.81	14313296.02	39°24'56.529"N	80°57'13.376"W	point
Winchester Unit 1H ST01 - BHL - Rev-2	6083.00	-9586.92	4351.07	1657033.00	14303476.00	39°23'19.413"N	80°56'28.282"W	point
Winchester Unit 1H ST01 - LP - Rev-2	6083.00	10.15	887.34	1653570.66	14313069.22	39°24'54.286"N	80°57'12.334"W	point



Actual Wellpath Report

Winchester Unit 1H ST01 AWP Proj: 16806'
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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #09
Area	Tyler County, WV	Well	Winchester Unit 1H ST01
Field	Tyler	Wellbore	Winchester Unit 1H ST01 AWB
Facility	Sine Pad	Sidetrack from	Winchester Unit 1H AWP Proj: 6047' at 5416.00 MD

WELLPATH COMPOSITION - Ref Wellbore: Winchester Unit 1H ST01 AWB Ref Wellpath: Winchester Unit 1H ST01 AWP Proj: 16806'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	373.00	Gyrodatta standard - Drop gyro or Multi-shot	01_Gyrodatta MS Gyro <17-1/2">(50'-363')	Winchester Unit 1H AWB
373.00	2554.00	ISCWSA MWD, Rev. 4 (Standard)	02_WFT EM <12-1/4">(363')(477'-2544')	Winchester Unit 1H AWB
2554.00	5416.00	ISCWSA MWD, Rev. 4 (Standard)	03_WFT EM <8-3/4">(2544')(2651'-5975')	Winchester Unit 1H AWB
5416.00	16782.00	BHI AutoTrak Curve (Short)	04_BH AT Curve <8-1/2">(5416')(5476'-16782')	Winchester Unit 1H ST01 AWB
16782.00	16806.00	Blind Drilling (std)	Projection to bit	Winchester Unit 1H ST01 AWB



Actual Wellpath Report

Winchester Unit 1H ST01 AWP Proj: 16806'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #09
Area	Tyler County, WV	Well	Winchester Unit 1H ST01
Field	Tyler	Wellbore	Winchester Unit 1H ST01 AWB
Facility	Sine Pad	Sidetrack from	Winchester Unit 1H AWP Proj: 6047' at 5416.00 MD

COMMENTS
<p>Wellpath general comments API: 47-095-02515-0000 BHI Job #: 109627600 Rig: Patterson 342 Duration: 02/03/2019-02/08/2019 Gyrodata MS Gyro <17-1/2">(50'-363') WFT EM <12-1/4">(363')(477'-2544') WFT EM <8-3/4">(2544')(2651'-5975') Projected MD at TD [OPH]: 6047' BH AT Curve <8-1/2">(5416')(5476'-16782') Middlesex: 6063' MD Burkett: 6235' MD Tully: 6300' MD Marcellus POE: 6329' MD Projected MD at TD [ST01]: 16806'</p>