

# ANTERO RESOURCES CORPORATION

Location: Ritchie County, WV  
 Field: Ritchie  
 Facility: Bison Pad

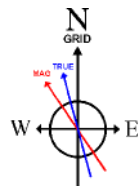
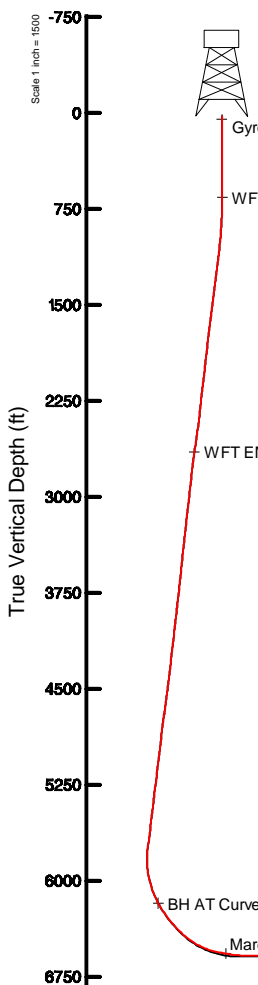
Slot: Slot #12  
 Well: Waco Unit 2H  
 Wellbore: Waco Unit 2H PWB

Plot reference wellpath is Waco Unit 2H PWP Rev-A.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to H&P 519 (RKB)	North Reference: Grid north
Measured depths are referenced to H&P 519 (RKB)	Scale: True distance
H&P 519 (RKB) to Mean Sea Level: 1250.5 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot: Slot #12): -1220.5 feet	Created by: delaset on 2018-11-19
Coordinates are in feet referenced to Slot	Database: WA_MPL_EasternUS_Defn

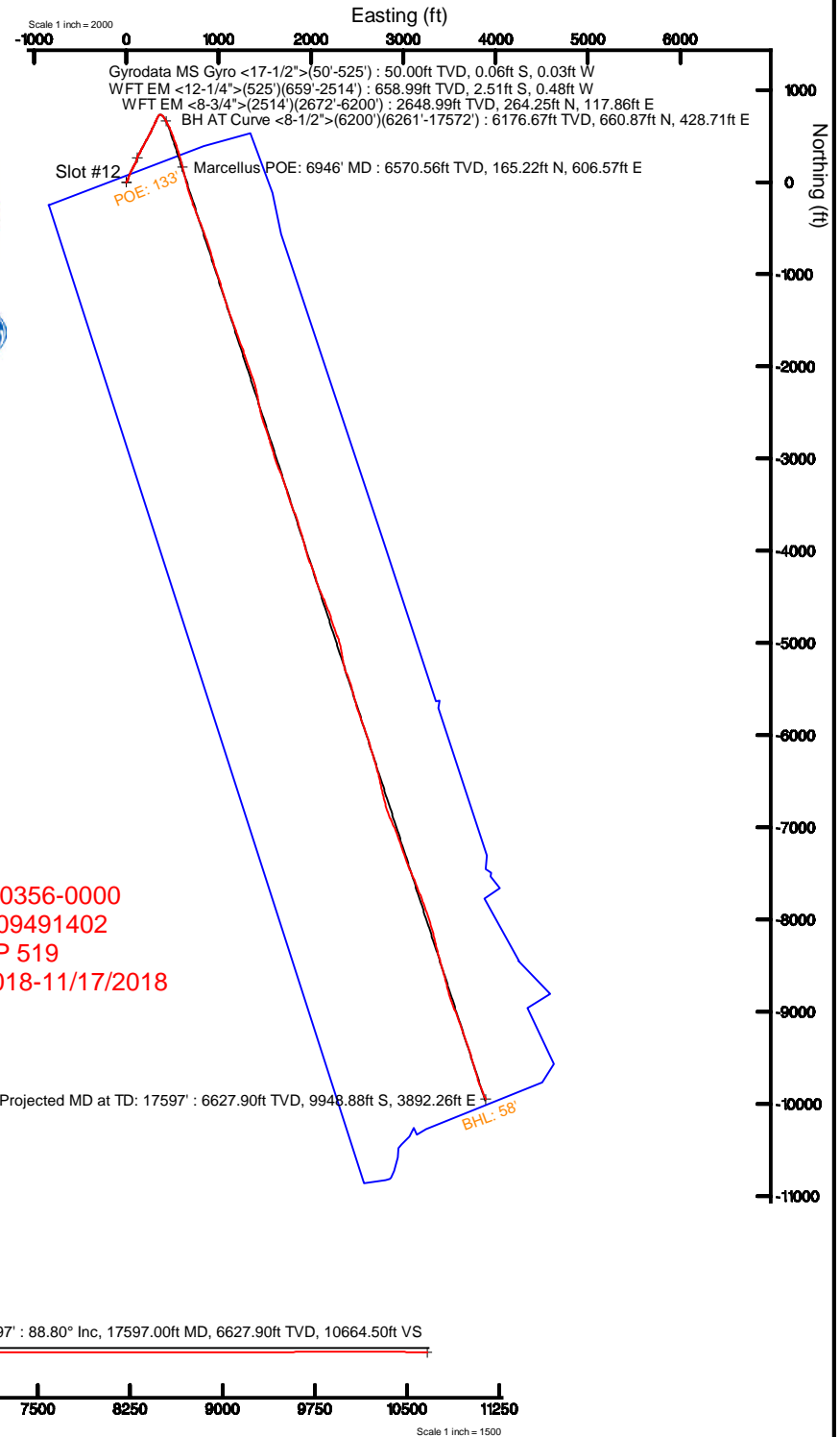
Location Information					
Facility Name		Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Bison Pad		1668323.988	14269435.805	39°17'42.740"N	80°54'04.890"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Longitude
Slot #12	1.06	40.09	1668364.067	14269436.860	39°17'42.750"N 80°54'04.380"W
H&P 519 (RKB) to Ground level (At Slot: Slot #12)				30ft	
Mean Sea Level to Ground level (At Slot: Slot #12)				-1220.5ft	
H&P 519 (RKB) to Mean Sea Level				1250.5ft	

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #12	Waco Unit 2H	Waco Unit 2H A/W/B	Waco Unit 2H AWP Proj: 17597
Slot #12	Waco Unit 2H	Waco Unit 2H PWB	Waco Unit 2H PWP Rev-A.0

Well Profile Data							
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	VS (ft)
Tie On	6200.00	24.230	149.530	6122.19	684.58	415.01	-523.04
Proj. To Bottom	6275.00	29.540	153.400	6189.06	654.76	431.10	-489.71
End of 3D Arc	6559.57	45.903	162.413	6413.56	493.41	493.86	-316.86
POE	6874.21	74.218	162.018	6569.00	236.47	576.42	-46.98
Landing Pt.	7049.57	90.000	162.018	6593.00	71.77	629.88	126.17
BHL	17596.22	90.000	162.018	6593.00	-9959.73	3885.79	10672.82



User specified (HDGM) Dip: 66.40° Field: 51826 nT  
 Magnetic North is 7.67 degrees West of True North (at 09/Nov/2018)  
 Grid North is 0.06 degrees East of True North  
 To correct azimuth from True to Grid subtract 0.06 degrees  
 To correct azimuth from Magnetic to Grid subtract 7.73 degrees



API: 47-085-10356-0000  
 BHI Job #: 109491402  
 Rig: H&P 519  
 Duration: 11/13/2018-11/17/2018

Projected MD at TD: 17597' : 6627.90ft TVD, 9948.88ft S, 3892.26ft E

Projected MD at TD: 17597' : 88.80° Inc, 17597.00ft MD, 6627.90ft TVD, 10664.50ft VS

Vertical Section (ft)  
 Azimuth 162.02° with reference 0.00 N, 0.00 E



# Actual Wellpath Report

Waco Unit 2H AWP Proj: 17597'

Page 1 of 11



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Ritchie County, WV	Well	Waco Unit 2H
Field	Ritchie	Wellbore	Waco Unit 2H AWB
Facility	Bison Pad		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Delaset
Scale	0.999601	Report Generated	19/Nov/2018 at 11:33
Convergence at slot	0.06° East	Database/Source file	WA_MPL_EasternUS_Defn/Waco_Unit_2H_AWP_Proj_17597_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	1.06	40.09	1668364.07	14269436.86	39°17'42.750"N	80°54'04.380"W
Facility Reference Pt			1668323.99	14269435.81	39°17'42.740"N	80°54'04.890"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM			
Calculation method	Minimum curvature	H&P 519 (RKB) to Facility Vertical Datum	30.00ft
Horizontal Reference Pt	Slot	H&P 519 (RKB) to Mean Sea Level	1250.50ft
Vertical Reference Pt	H&P 519 (RKB)	H&P 519 (RKB) to Ground Level at Slot (Slot #12)	30.00ft
MD Reference Pt	H&P 519 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	162.02°



# Actual Wellpath Report

Waco Unit 2H AWP Proj: 17597'

Page 2 of 11



## REFERENCE WELLPATH IDENTIFICATION

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Area	Ritchie County, WV	Well	Waco Unit 2H
Field	Ritchie	Wellbore	Waco Unit 2H AWB
Facility	Bison Pad		

## WELLPATH DATA (222 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	207.510	0.00	0.00	0.00	0.00	1668364.07	14269436.86	39°17'42.750"N	80°54'04.380"W	0.00	0.000	0.00	0.00	0.00	
30.00	0.000	207.510	30.00	0.00	0.00	0.00	1668364.07	14269436.86	39°17'42.750"N	80°54'04.380"W	0.00	0.000	0.00	0.00	0.00	
50.00	0.370	207.510	50.00	0.05	-0.06	-0.03	1668364.04	14269436.80	39°17'42.749"N	80°54'04.380"W	0.06	207.510	1.85	1.85	-762.45	Gyrodata MS Gyro <17-1/2">(50'-525')
75.00	0.380	209.480	75.00	0.16	-0.20	-0.11	1668363.96	14269436.66	39°17'42.748"N	80°54'04.381"W	0.23	208.226	0.07	0.04	7.88	
100.00	0.370	213.580	100.00	0.26	-0.34	-0.19	1668363.87	14269436.52	39°17'42.747"N	80°54'04.382"W	0.39	209.594	0.11	-0.04	16.40	
125.00	0.220	209.800	125.00	0.35	-0.45	-0.26	1668363.80	14269436.41	39°17'42.746"N	80°54'04.383"W	0.52	210.231	0.60	-0.60	-15.12	
150.00	0.180	198.520	150.00	0.41	-0.53	-0.30	1668363.77	14269436.33	39°17'42.745"N	80°54'04.384"W	0.61	209.444	0.22	-0.16	-45.12	
175.00	0.210	185.290	175.00	0.48	-0.61	-0.31	1668363.75	14269436.25	39°17'42.744"N	80°54'04.384"W	0.69	207.261	0.22	0.12	-52.92	
200.00	0.190	199.350	200.00	0.56	-0.70	-0.33	1668363.73	14269436.16	39°17'42.743"N	80°54'04.384"W	0.77	205.563	0.21	-0.08	56.24	
225.00	0.190	189.820	225.00	0.63	-0.78	-0.35	1668363.71	14269436.08	39°17'42.742"N	80°54'04.385"W	0.85	204.506	0.13	0.00	-38.12	
250.00	0.220	184.890	250.00	0.71	-0.86	-0.36	1668363.70	14269436.00	39°17'42.741"N	80°54'04.385"W	0.94	202.880	0.14	0.12	-19.72	
275.00	0.300	183.300	275.00	0.81	-0.98	-0.37	1668363.69	14269435.88	39°17'42.740"N	80°54'04.385"W	1.05	200.867	0.32	0.32	-6.36	
300.00	0.280	185.360	300.00	0.93	-1.10	-0.38	1668363.68	14269435.76	39°17'42.739"N	80°54'04.385"W	1.17	199.096	0.09	-0.08	8.24	
325.00	0.320	185.340	325.00	1.05	-1.23	-0.39	1668363.67	14269435.63	39°17'42.738"N	80°54'04.385"W	1.30	197.721	0.16	0.16	-0.08	
350.00	0.330	185.480	350.00	1.18	-1.38	-0.41	1668363.66	14269435.49	39°17'42.736"N	80°54'04.385"W	1.43	196.513	0.04	0.04	0.56	
375.00	0.380	191.420	375.00	1.32	-1.53	-0.43	1668363.64	14269435.33	39°17'42.735"N	80°54'04.386"W	1.59	195.750	0.25	0.20	23.76	
400.00	0.400	193.950	400.00	1.47	-1.69	-0.47	1668363.60	14269435.17	39°17'42.733"N	80°54'04.386"W	1.76	195.457	0.11	0.08	10.12	
425.00	0.410	200.320	424.99	1.61	-1.86	-0.52	1668363.55	14269435.00	39°17'42.732"N	80°54'04.387"W	1.93	195.613	0.18	0.04	25.48	
450.00	0.440	181.170	449.99	1.77	-2.04	-0.55	1668363.51	14269434.82	39°17'42.730"N	80°54'04.387"W	2.12	195.164	0.58	0.12	-76.60	
475.00	0.560	210.910	474.99	1.94	-2.24	-0.62	1668363.45	14269434.62	39°17'42.728"N	80°54'04.388"W	2.33	195.409	1.13	0.48	118.96	
500.00	0.580	200.860	499.99	2.12	-2.47	-0.73	1668363.34	14269434.39	39°17'42.726"N	80°54'04.389"W	2.57	196.404	0.41	0.08	-40.20	
525.00	0.570	199.830	524.99	2.32	-2.70	-0.81	1668363.25	14269434.16	39°17'42.723"N	80°54'04.390"W	2.82	196.755	0.06	-0.04	-4.12	
659.00	0.850	34.290	658.99	2.24	-2.51	-0.48	1668363.59	14269434.35	39°17'42.725"N	80°54'04.386"W	2.55	190.825	1.05	0.21	-123.54	WFT EM <12-1/4">(525')(659'-2514')
752.00	2.360	33.080	751.95	0.61	-0.33	0.95	1668365.02	14269436.53	39°17'42.747"N	80°54'04.368"W	1.01	109.236	1.62	1.62	-1.30	
844.00	4.180	30.300	843.79	-2.81	4.15	3.68	1668367.75	14269441.01	39°17'42.791"N	80°54'04.333"W	5.55	41.569	1.99	1.98	-3.02	
938.00	6.130	28.970	937.41	-8.52	11.50	7.84	1668371.90	14269448.35	39°17'42.864"N	80°54'04.280"W	13.92	34.286	2.08	2.07	-1.41	
1033.00	7.930	23.810	1031.69	-16.87	21.93	12.94	1668377.00	14269458.78	39°17'42.967"N	80°54'04.215"W	25.47	30.545	2.01	1.89	-5.43	
1127.00	8.980	20.540	1124.67	-27.44	34.74	18.13	1668382.19	14269471.58	39°17'43.093"N	80°54'04.149"W	39.18	27.568	1.23	1.12	-3.48	
1222.00	9.240	16.230	1218.47	-39.55	49.00	22.87	1668386.93	14269485.84	39°17'43.234"N	80°54'04.088"W	54.08	25.017	0.77	0.27	-4.54	
1316.00	8.280	20.050	1311.38	-51.12	62.61	27.30	1668391.35	14269499.44	39°17'43.368"N	80°54'04.032"W	68.30	23.558	1.19	-1.02	4.06	



# Actual Wellpath Report

Waco Unit 2H AWP Proj: 17597'

Page 3 of 11



## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Ritchie County, WV	Well	Waco Unit 2H
Field	Ritchie	Wellbore	Waco Unit 2H AWB
Facility	Bison Pad		

## WELLPATH DATA (222 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
1411.00	9.050	23.040	1405.29	-62.15	75.91	32.57	1668396.62	14269512.74	39°17'43.500"N	80°54'03.965"W	82.60	23.221	0.94	0.81	3.15	
1506.00	9.290	19.120	1499.08	-73.90	90.03	38.00	1668402.05	14269526.85	39°17'43.639"N	80°54'03.895"W	97.72	22.886	0.70	0.25	-4.13	
1600.00	9.710	23.830	1591.79	-85.86	104.45	43.69	1668407.74	14269541.27	39°17'43.782"N	80°54'03.823"W	113.22	22.699	0.94	0.45	5.01	
1695.00	10.690	27.300	1685.29	-98.03	119.61	50.97	1668415.02	14269556.42	39°17'43.932"N	80°54'03.730"W	130.02	23.081	1.22	1.03	3.65	
1789.00	9.550	30.450	1777.82	-109.34	134.08	58.92	1668422.96	14269570.88	39°17'44.075"N	80°54'03.629"W	146.45	23.723	1.35	-1.21	3.35	
1884.00	8.780	29.890	1871.61	-119.44	147.16	66.53	1668430.57	14269583.96	39°17'44.204"N	80°54'03.532"W	161.50	24.327	0.82	-0.81	-0.59	
1978.00	9.300	24.350	1964.45	-129.86	160.30	73.23	1668437.27	14269597.09	39°17'44.334"N	80°54'03.446"W	176.23	24.554	1.08	0.55	-5.89	
2072.00	9.170	25.150	2057.23	-140.94	174.00	79.55	1668443.58	14269610.79	39°17'44.469"N	80°54'03.366"W	191.32	24.569	0.19	-0.14	0.85	
2167.00	10.350	31.910	2150.85	-151.97	188.09	87.28	1668451.31	14269624.88	39°17'44.608"N	80°54'03.267"W	207.36	24.892	1.73	1.24	7.12	
2261.00	9.200	31.480	2243.49	-162.29	201.67	95.67	1668459.69	14269638.45	39°17'44.742"N	80°54'03.160"W	223.21	25.378	1.23	-1.22	-0.46	
2356.00	7.520	20.400	2337.48	-172.10	213.98	101.80	1668465.82	14269650.75	39°17'44.864"N	80°54'03.082"W	236.96	25.443	2.44	-1.77	-11.66	
2450.00	8.920	16.290	2430.51	-182.95	226.74	105.99	1668470.01	14269663.51	39°17'44.990"N	80°54'03.029"W	250.29	25.053	1.61	1.49	-4.37	
2514.00	10.320	17.830	2493.61	-191.70	236.96	109.13	1668473.16	14269673.72	39°17'45.091"N	80°54'02.989"W	260.88	24.729	2.22	2.19	2.41	
2672.00	10.580	17.630	2648.99	-214.97	264.25	117.86	1668481.88	14269701.01	39°17'45.361"N	80°54'02.877"W	289.35	24.037	0.17	0.16	-0.13	WFT EM <8-3/4">(2514')(2672'-6200')
2766.00	8.870	23.670	2741.64	-227.40	279.12	123.38	1668487.40	14269715.87	39°17'45.507"N	80°54'02.807"W	305.17	23.848	2.12	-1.82	6.43	
2860.00	9.010	31.540	2834.50	-237.59	292.03	130.14	1668494.16	14269728.77	39°17'45.635"N	80°54'02.721"W	319.72	24.020	1.31	0.15	8.37	
2955.00	9.350	29.150	2928.28	-247.67	305.11	137.79	1668501.81	14269741.85	39°17'45.764"N	80°54'02.623"W	334.78	24.305	0.54	0.36	-2.52	
3049.00	9.090	27.440	3021.07	-258.08	318.37	144.94	1668508.94	14269755.10	39°17'45.895"N	80°54'02.532"W	349.81	24.477	0.40	-0.28	-1.82	
3144.00	8.970	26.500	3114.89	-268.63	331.66	151.70	1668515.70	14269768.38	39°17'46.026"N	80°54'02.446"W	364.70	24.579	0.20	-0.13	-0.99	
3238.00	8.670	22.890	3207.78	-279.22	344.74	157.72	1668521.73	14269781.46	39°17'46.156"N	80°54'02.369"W	379.11	24.585	0.67	-0.32	-3.84	
3333.00	9.220	30.640	3301.63	-289.66	357.89	164.39	1668528.39	14269794.60	39°17'46.285"N	80°54'02.284"W	393.83	24.671	1.39	0.58	8.16	
3427.00	9.260	31.660	3394.41	-299.54	370.80	172.20	1668536.19	14269807.51	39°17'46.413"N	80°54'02.185"W	408.83	24.910	0.18	0.04	1.09	
3526.00	8.840	29.020	3492.18	-309.89	384.23	180.07	1668544.06	14269820.94	39°17'46.546"N	80°54'02.084"W	424.34	25.110	0.60	-0.42	-2.67	
3620.00	8.610	26.800	3585.09	-319.81	396.83	186.74	1668550.74	14269833.53	39°17'46.670"N	80°54'01.999"W	438.57	25.201	0.43	-0.24	-2.36	
3715.00	8.300	24.630	3679.06	-329.90	409.41	192.81	1668556.80	14269846.11	39°17'46.794"N	80°54'01.922"W	452.54	25.218	0.47	-0.33	-2.28	
3809.00	9.030	27.060	3771.98	-340.11	422.15	198.99	1668562.98	14269858.84	39°17'46.920"N	80°54'01.843"W	466.70	25.238	0.87	0.78	2.59	
3904.00	8.820	26.000	3865.83	-350.62	435.33	205.58	1668569.56	14269872.02	39°17'47.050"N	80°54'01.759"W	481.43	25.278	0.28	-0.22	-1.12	
3998.00	9.390	30.520	3958.65	-360.88	448.42	212.63	1668576.61	14269885.10	39°17'47.180"N	80°54'01.669"W	496.27	25.369	0.97	0.61	4.81	
4093.00	9.660	30.770	4052.34	-371.27	461.94	220.64	1668584.62	14269898.62	39°17'47.313"N	80°54'01.567"W	511.93	25.531	0.29	0.28	0.26	
4187.00	9.440	28.520	4145.04	-381.78	475.49	228.36	1668592.33	14269912.16	39°17'47.447"N	80°54'01.469"W	527.48	25.653	0.46	-0.23	-2.39	



# Actual Wellpath Report

Waco Unit 2H AWP Proj: 17597'

Page 4 of 11



## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Ritchie County, WV	Well	Waco Unit 2H
Field	Ritchie	Wellbore	Waco Unit 2H AWB
Facility	Bison Pad		

## WELLPATH DATA (222 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
4282.00	9.320	26.880	4238.77	-392.60	489.20	235.56	1668599.53	14269925.86	39°17'47.583"N	80°54'01.377"W	542.96	25.711	0.31	-0.13	-1.73	
4376.00	8.810	26.110	4331.59	-403.16	502.45	242.16	1668606.13	14269939.11	39°17'47.713"N	80°54'01.293"W	557.76	25.733	0.56	-0.54	-0.82	
4471.00	10.120	30.180	4425.30	-413.95	516.20	249.56	1668613.53	14269952.85	39°17'47.849"N	80°54'01.198"W	573.36	25.802	1.55	1.38	4.28	
4565.00	10.560	27.550	4517.77	-425.50	530.98	257.70	1668621.66	14269967.62	39°17'47.995"N	80°54'01.095"W	590.21	25.889	0.69	0.47	-2.80	
4660.00	10.530	25.640	4611.17	-437.88	546.52	265.48	1668629.44	14269983.16	39°17'48.149"N	80°54'00.996"W	607.59	25.909	0.37	-0.03	-2.01	
4754.00	10.840	23.400	4703.54	-450.73	562.37	272.71	1668636.67	14269999.01	39°17'48.305"N	80°54'00.903"W	625.01	25.870	0.55	0.33	-2.38	
4849.00	9.950	24.240	4796.98	-463.51	578.06	279.63	1668643.58	14270014.69	39°17'48.460"N	80°54'00.815"W	642.14	25.815	0.95	-0.94	0.88	
4943.00	9.120	28.230	4889.68	-474.68	592.03	286.48	1668650.44	14270028.65	39°17'48.598"N	80°54'00.728"W	657.70	25.823	1.13	-0.88	4.24	
5037.00	9.620	27.220	4982.43	-485.37	605.57	293.60	1668657.55	14270042.19	39°17'48.732"N	80°54'00.637"W	672.99	25.865	0.56	0.53	-1.07	
5132.00	9.210	24.840	5076.15	-496.54	619.53	300.42	1668664.37	14270056.14	39°17'48.870"N	80°54'00.550"W	688.53	25.870	0.60	-0.43	-2.51	
5226.00	9.370	24.860	5168.91	-507.67	633.30	306.80	1668670.75	14270069.91	39°17'49.006"N	80°54'00.469"W	703.70	25.848	0.17	0.17	0.02	
5321.00	9.850	22.450	5262.58	-519.53	647.83	313.16	1668677.10	14270084.43	39°17'49.150"N	80°54'00.388"W	719.55	25.799	0.66	0.51	-2.54	
5415.00	8.920	24.980	5355.32	-530.98	661.87	319.30	1668683.24	14270098.46	39°17'49.288"N	80°54'00.309"W	734.86	25.754	1.08	-0.99	2.69	
5510.00	9.020	21.990	5449.16	-542.08	675.45	325.20	1668689.14	14270112.04	39°17'49.422"N	80°54'00.234"W	749.66	25.709	0.50	0.11	-3.15	
5604.00	9.260	28.690	5541.97	-552.91	688.92	331.59	1668695.53	14270125.50	39°17'49.555"N	80°54'00.153"W	764.56	25.703	1.16	0.26	7.13	
5699.00	10.100	27.920	5635.62	-563.96	702.98	339.16	1668703.09	14270139.56	39°17'49.694"N	80°54'00.056"W	780.52	25.756	0.89	0.88	-0.81	
5793.00	11.430	28.180	5727.96	-576.14	718.47	347.42	1668711.35	14270155.05	39°17'49.847"N	80°53'59.951"W	798.06	25.806	1.42	1.41	0.28	
5840.00	9.730	38.860	5774.16	-581.54	725.67	352.11	1668716.04	14270162.24	39°17'49.919"N	80°53'59.891"W	806.59	25.884	5.51	-3.62	22.72	
5887.00	8.830	62.310	5820.57	-584.32	730.44	357.80	1668721.72	14270167.01	39°17'49.966"N	80°53'59.819"W	813.37	26.098	8.21	-1.91	49.89	
5934.00	9.730	87.730	5866.97	-583.86	732.28	364.97	1668728.89	14270168.85	39°17'49.984"N	80°53'59.727"W	818.19	26.492	8.85	1.91	54.09	
5982.00	11.370	105.780	5914.17	-580.13	731.15	373.58	1668737.49	14270167.72	39°17'49.972"N	80°53'59.618"W	821.06	27.064	7.64	3.42	37.60	
6029.00	14.580	122.040	5959.98	-573.02	726.75	383.05	1668746.97	14270163.32	39°17'49.929"N	80°53'59.498"W	821.52	27.793	10.28	6.83	34.60	
6076.00	15.480	137.530	6005.39	-562.77	718.98	392.31	1668756.22	14270155.55	39°17'49.852"N	80°53'59.380"W	819.05	28.619	8.73	1.91	32.96	
6124.00	18.360	146.420	6051.31	-549.66	707.96	400.82	1668764.72	14270144.53	39°17'49.743"N	80°53'59.272"W	813.55	29.517	8.05	6.00	18.52	
6171.00	21.610	149.640	6095.48	-534.07	694.32	409.29	1668773.19	14270130.90	39°17'49.608"N	80°53'59.164"W	805.97	30.519	7.30	6.91	6.85	
6200.00	24.230	149.530	6122.19	-523.04	684.58	415.01	1668778.91	14270121.16	39°17'49.512"N	80°53'59.092"W	800.55	31.225	9.04	9.03	-0.38	
6261.00	29.150	150.340	6176.67	-496.25	660.87	428.71	1668792.61	14270097.46	39°17'49.277"N	80°53'58.918"W	787.74	32.972	8.09	8.07	1.33	BH AT Curve <8-1/2">(6200')(6261'-17572')
6308.00	32.300	150.830	6217.07	-472.72	639.95	440.50	1668804.39	14270076.55	39°17'49.070"N	80°53'58.768"W	776.90	34.541	6.72	6.70	1.04	
6356.00	35.550	151.090	6256.89	-446.43	616.53	453.50	1668817.39	14270053.14	39°17'48.839"N	80°53'58.603"W	765.36	36.337	6.78	6.77	0.54	
6403.00	38.540	154.180	6294.40	-418.50	591.38	466.49	1668830.37	14270028.00	39°17'48.590"N	80°53'58.438"W	753.22	38.267	7.49	6.36	6.57	



# Actual Wellpath Report

Waco Unit 2H AWP Proj: 17597'  
Page 5 of 11



## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Ritchie County, WV	Well	Waco Unit 2H
Field	Ritchie	Wellbore	Waco Unit 2H AWB
Facility	Bison Pad		

## WELLPATH DATA (222 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
6451.00	40.750	156.550	6331.36	-388.09	563.54	479.24	1668843.11	14270000.18	39°17'48.315"N	80°53'58.276"W	739.76	40.378	5.58	4.60	4.94	
6498.00	42.540	158.790	6366.49	-356.95	534.65	491.09	1668854.96	14269971.30	39°17'48.029"N	80°53'58.126"W	725.97	42.568	4.95	3.81	4.77	
6542.00†	44.913	160.566	6398.28	-326.57	506.13	501.64	1668865.51	14269942.79	39°17'47.747"N	80°53'57.992"W	712.61	44.745	6.07	5.39	4.04	Middlesex: 6542' MD
6546.00	45.130	160.720	6401.11	-323.74	503.46	502.58	1668866.45	14269940.12	39°17'47.721"N	80°53'57.980"W	711.38	44.950	6.07	5.43	3.85	
6593.00	49.860	160.390	6432.86	-289.11	470.80	514.12	1668877.98	14269907.47	39°17'47.398"N	80°53'57.834"W	697.12	47.518	10.08	10.06	-0.70	
6640.00	53.920	159.910	6461.86	-252.16	436.03	526.68	1668890.53	14269872.71	39°17'47.054"N	80°53'57.675"W	683.74	50.379	8.68	8.64	-1.02	
6687.00	58.300	160.400	6488.06	-213.17	399.34	539.91	1668903.76	14269836.04	39°17'46.691"N	80°53'57.507"W	671.55	53.512	9.36	9.32	1.04	
6730.00†	62.680	161.174	6509.23	-175.77	364.01	552.22	1668916.06	14269800.72	39°17'46.342"N	80°53'57.351"W	661.40	56.608	10.31	10.19	1.80	Burkett: 6730' MD
6735.00	63.190	161.260	6511.51	-171.32	359.79	553.65	1668917.50	14269796.51	39°17'46.300"N	80°53'57.333"W	660.29	56.982	10.31	10.19	1.72	
6782.00	68.960	163.340	6530.56	-128.38	318.88	566.69	1668930.53	14269755.61	39°17'45.896"N	80°53'57.167"W	650.25	60.633	12.93	12.28	4.43	
6814.00†	72.212	164.769	6541.20	-98.22	289.86	574.98	1668938.81	14269726.61	39°17'45.609"N	80°53'57.062"W	643.91	63.246	11.00	10.16	4.46	Tully: 6814' MD
6829.00	73.740	165.420	6545.59	-83.90	276.00	578.67	1668942.50	14269712.75	39°17'45.472"N	80°53'57.016"W	641.12	64.501	11.00	10.19	4.34	
6876.00	77.700	165.520	6557.18	-38.44	231.92	590.09	1668953.92	14269668.69	39°17'45.036"N	80°53'56.871"W	634.03	68.544	8.43	8.43	0.21	
6924.00	79.390	166.400	6566.71	8.49	186.28	601.50	1668965.33	14269623.07	39°17'44.585"N	80°53'56.727"W	629.69	72.792	3.95	3.52	1.83	
6946.00†	80.481	166.522	6570.56	30.08	165.22	606.57	1668970.40	14269602.02	39°17'44.376"N	80°53'56.662"W	628.67	74.763	4.99	4.96	0.56	Marcellus POE: 6946' MD
6971.00	81.720	166.660	6574.43	54.70	141.20	612.30	1668976.12	14269578.00	39°17'44.139"N	80°53'56.590"W	628.37	77.014	4.99	4.96	0.55	
7019.00	83.520	166.620	6580.59	102.15	94.89	623.30	1668987.12	14269531.71	39°17'43.681"N	80°53'56.451"W	630.48	81.344	3.75	3.75	-0.08	
7066.00	85.720	165.490	6585.00	148.82	49.48	634.58	1668998.39	14269486.32	39°17'43.232"N	80°53'56.308"W	636.50	85.542	5.26	4.68	-2.40	
7114.00	87.660	164.900	6587.77	196.67	3.15	646.82	1669010.63	14269440.01	39°17'42.774"N	80°53'56.153"W	646.83	89.721	4.22	4.04	-1.23	
7161.00	89.690	164.430	6588.86	243.60	-42.16	659.25	1669023.05	14269394.72	39°17'42.326"N	80°53'55.995"W	660.59	93.659	4.43	4.32	-1.00	
7208.00	89.570	163.970	6589.16	290.57	-87.38	672.04	1669035.84	14269349.51	39°17'41.879"N	80°53'55.833"W	677.70	97.408	1.01	-0.26	-0.98	
7303.00	89.880	162.640	6589.62	385.54	-178.38	699.33	1669063.12	14269258.56	39°17'40.979"N	80°53'55.487"W	721.73	104.309	1.44	0.33	-1.40	
7398.00	90.030	159.840	6589.69	480.52	-268.32	729.88	1669093.66	14269168.65	39°17'40.090"N	80°53'55.100"W	777.64	110.184	2.95	0.16	-2.95	
7493.00	89.540	157.850	6590.05	575.37	-356.91	764.17	1669127.93	14269080.09	39°17'39.214"N	80°53'54.665"W	843.41	115.035	2.16	-0.52	-2.09	
7588.00	89.380	157.080	6590.94	670.06	-444.65	800.57	1669164.32	14268992.38	39°17'38.346"N	80°53'54.203"W	915.77	119.049	0.83	-0.17	-0.81	
7682.00	89.320	158.830	6592.01	763.82	-531.77	835.85	1669199.58	14268905.30	39°17'37.485"N	80°53'53.756"W	990.67	122.465	1.86	-0.06	1.86	
7777.00	89.510	160.710	6592.98	858.74	-620.90	868.70	1669232.42	14268816.20	39°17'36.604"N	80°53'53.339"W	1067.78	125.555	1.99	0.20	1.98	
7871.00	89.350	163.420	6593.91	952.72	-710.32	897.64	1669261.35	14268726.82	39°17'35.720"N	80°53'52.973"W	1144.69	128.355	2.89	-0.17	2.88	
7966.00	89.820	165.160	6594.60	1047.64	-801.77	923.36	1669287.06	14268635.41	39°17'34.815"N	80°53'52.647"W	1222.88	130.968	1.90	0.49	1.83	
8060.00	90.150	163.080	6594.63	1141.57	-892.18	949.08	1669312.77	14268545.04	39°17'33.922"N	80°53'52.321"W	1302.59	133.230	2.24	0.35	-2.21	





# Actual Wellpath Report

Waco Unit 2H AWP Proj: 17597'

Page 6 of 11



REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #12
Area	Ritchie County, WV		Well	Waco Unit 2H
Field	Ritchie		Wellbore	Waco Unit 2H AWB
Facility	Bison Pad			

WELLPATH DATA (222 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
8155.00	89.880	161.000	6594.60	1236.57	-982.54	978.37	1669342.05	14268454.71	39°17'33.028"N	80°53'51.950"W	1386.58	135.122	2.21	-0.28	-2.19	
8249.00	89.450	161.970	6595.15	1330.56	-1071.67	1008.22	1669371.88	14268365.62	39°17'32.147"N	80°53'51.571"W	1471.39	136.747	1.13	-0.46	1.03	
8344.00	89.540	164.460	6595.99	1425.53	-1162.62	1035.65	1669399.30	14268274.71	39°17'31.248"N	80°53'51.224"W	1557.00	138.306	2.62	0.09	2.62	
8438.00	89.570	164.380	6596.72	1519.44	-1253.16	1060.90	1669424.54	14268184.20	39°17'30.352"N	80°53'50.904"W	1641.92	139.749	0.09	0.03	-0.09	
8533.00	89.600	161.900	6597.41	1614.42	-1344.07	1088.45	1669452.08	14268093.33	39°17'29.454"N	80°53'50.555"W	1729.52	140.999	2.61	0.03	-2.61	
8627.00	89.380	159.280	6598.24	1708.37	-1432.71	1119.68	1669483.30	14268004.72	39°17'28.577"N	80°53'50.159"W	1818.34	141.992	2.80	-0.23	-2.79	
8722.00	89.260	158.760	6599.37	1803.24	-1521.41	1153.69	1669517.30	14267916.06	39°17'27.700"N	80°53'49.728"W	1909.37	142.827	0.56	-0.13	-0.55	
8816.00	89.320	159.840	6600.54	1897.12	-1609.33	1186.92	1669550.51	14267828.17	39°17'26.831"N	80°53'49.306"W	1999.68	143.590	1.15	0.06	1.15	
8911.00	89.510	160.620	6601.51	1992.07	-1698.73	1219.05	1669582.63	14267738.81	39°17'25.947"N	80°53'48.899"W	2090.87	144.336	0.85	0.20	0.82	
9005.00	89.320	159.500	6602.47	2086.01	-1787.09	1251.10	1669614.67	14267650.49	39°17'25.073"N	80°53'48.493"W	2181.50	145.005	1.21	-0.20	-1.19	
9100.00	90.370	162.190	6602.72	2180.98	-1876.82	1282.27	1669645.83	14267560.80	39°17'24.186"N	80°53'48.097"W	2273.03	145.658	3.04	1.11	2.83	
9195.00	89.510	161.460	6602.82	2275.98	-1967.07	1311.91	1669675.45	14267470.57	39°17'23.294"N	80°53'47.722"W	2364.42	146.299	1.19	-0.91	-0.77	
9289.00	89.450	159.920	6603.68	2369.94	-2055.78	1342.99	1669706.51	14267381.90	39°17'22.416"N	80°53'47.328"W	2455.57	146.844	1.64	-0.06	-1.64	
9384.00	89.480	161.240	6604.56	2464.91	-2145.37	1374.57	1669738.09	14267292.35	39°17'21.531"N	80°53'46.927"W	2547.95	147.352	1.39	0.03	1.39	
9478.00	89.320	166.120	6605.55	2558.84	-2235.55	1400.98	1669764.48	14267202.21	39°17'20.639"N	80°53'46.593"W	2638.26	147.925	5.19	-0.17	5.19	
9573.00	89.600	170.670	6606.44	2653.22	-2328.58	1420.08	1669783.58	14267109.22	39°17'19.719"N	80°53'46.351"W	2727.44	148.623	4.80	0.29	4.79	
9668.00	89.690	168.320	6607.03	2747.40	-2421.98	1437.40	1669800.89	14267015.85	39°17'18.796"N	80°53'46.132"W	2816.40	149.312	2.48	0.09	-2.47	
9762.00	90.610	165.740	6606.79	2841.03	-2513.57	1458.49	1669821.98	14266924.30	39°17'17.890"N	80°53'45.865"W	2906.07	149.876	2.91	0.98	-2.74	
9857.00	89.880	161.610	6606.38	2935.97	-2604.72	1485.19	1669848.66	14266833.19	39°17'16.989"N	80°53'45.527"W	2998.39	150.309	4.41	-0.77	-4.35	
9951.00	89.850	161.000	6606.60	3029.97	-2693.76	1515.32	1669878.78	14266744.18	39°17'16.109"N	80°53'45.145"W	3090.72	150.641	0.65	-0.03	-0.65	
10046.00	88.920	162.150	6607.62	3124.95	-2783.88	1545.35	1669908.79	14266654.09	39°17'15.218"N	80°53'44.765"W	3184.04	150.965	1.56	-0.98	1.21	
10141.00	89.110	163.930	6609.25	3219.92	-2874.73	1573.05	1669936.49	14266563.28	39°17'14.320"N	80°53'44.414"W	3276.98	151.313	1.88	0.20	1.87	
10235.00	89.350	163.040	6610.52	3313.88	-2964.85	1599.77	1669963.20	14266473.20	39°17'13.429"N	80°53'44.075"W	3368.91	151.650	0.98	0.26	-0.95	
10330.00	89.660	159.420	6611.34	3408.85	-3054.78	1630.33	1669993.74	14266383.31	39°17'12.539"N	80°53'43.688"W	3462.61	151.911	3.82	0.33	-3.81	
10425.00	89.170	157.060	6612.31	3503.63	-3143.00	1665.55	1670028.94	14266295.13	39°17'11.667"N	80°53'43.241"W	3557.03	152.080	2.54	-0.52	-2.48	
10519.00	88.740	161.040	6614.02	3597.47	-3230.75	1699.14	1670062.53	14266207.41	39°17'10.799"N	80°53'42.815"W	3650.32	152.259	4.26	-0.46	4.23	
10614.00	88.860	162.870	6616.01	3692.45	-3321.05	1728.56	1670091.94	14266117.14	39°17'09.906"N	80°53'42.443"W	3743.97	152.504	1.93	0.13	1.93	
10708.00	88.800	161.120	6617.93	3786.42	-3410.43	1757.61	1670120.97	14266027.80	39°17'09.023"N	80°53'42.074"W	3836.69	152.735	1.86	-0.06	-1.86	
10803.00	90.090	160.650	6618.85	3881.40	-3500.18	1788.72	1670152.07	14265938.08	39°17'08.135"N	80°53'41.680"W	3930.75	152.931	1.45	1.36	-0.49	
10898.00	89.080	159.050	6619.54	3976.32	-3589.36	1821.44	1670184.78	14265848.94	39°17'07.253"N	80°53'41.265"W	4025.07	153.094	1.99	-1.06	-1.68	



# Actual Wellpath Report

Waco Unit 2H AWP Proj: 17597'

Page 7 of 11



## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Ritchie County, WV	Well	Waco Unit 2H
Field	Ritchie	Wellbore	Waco Unit 2H AWB
Facility	Bison Pad		

## WELLPATH DATA (222 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
10992.00	88.740	161.440	6621.33	4070.26	-3677.81	1853.21	1670216.53	14265760.53	39°17'06.379"N	80°53'40.863"W	4118.33	153.257	2.57	-0.36	2.54	
11087.00	89.050	162.900	6623.16	4165.23	-3768.22	1882.29	1670245.60	14265670.15	39°17'05.485"N	80°53'40.494"W	4212.19	153.457	1.57	0.33	1.54	
11182.00	89.200	164.940	6624.61	4260.17	-3859.49	1908.60	1670271.90	14265578.92	39°17'04.583"N	80°53'40.161"W	4305.63	153.687	2.15	0.16	2.15	
11276.00	89.380	165.670	6625.78	4354.00	-3950.41	1932.44	1670295.73	14265488.04	39°17'03.684"N	80°53'39.859"W	4397.73	153.933	0.80	0.19	0.78	
11371.00	89.750	162.270	6626.50	4448.93	-4041.70	1958.67	1670321.95	14265396.78	39°17'02.781"N	80°53'39.527"W	4491.29	154.144	3.60	0.39	-3.58	
11465.00	89.690	158.360	6626.96	4542.87	-4130.19	1990.33	1670353.59	14265308.33	39°17'01.906"N	80°53'39.125"W	4584.74	154.271	4.16	-0.06	-4.16	
11560.00	89.630	160.620	6627.52	4637.77	-4219.16	2023.61	1670386.86	14265219.39	39°17'01.026"N	80°53'38.704"W	4679.35	154.377	2.38	-0.06	2.38	
11655.00	90.060	162.430	6627.78	4732.76	-4309.26	2053.71	1670416.95	14265129.33	39°17'00.136"N	80°53'38.322"W	4773.62	154.518	1.96	0.45	1.91	
11749.00	89.940	160.140	6627.78	4826.75	-4398.28	2083.87	1670447.10	14265040.34	39°16'59.255"N	80°53'37.940"W	4866.97	154.649	2.44	-0.13	-2.44	
11844.00	89.910	155.610	6627.90	4921.48	-4486.26	2119.64	1670482.86	14264952.40	39°16'58.385"N	80°53'37.486"W	4961.80	154.711	4.77	-0.03	-4.77	
11939.00	90.520	156.720	6627.55	5015.98	-4573.16	2158.03	1670521.23	14264865.54	39°16'57.526"N	80°53'36.999"W	5056.77	154.738	1.33	0.64	1.17	
12033.00	90.340	159.780	6626.84	5109.76	-4660.45	2192.86	1670556.04	14264778.28	39°16'56.663"N	80°53'36.558"W	5150.58	154.802	3.26	-0.19	3.26	
12128.00	90.280	163.160	6626.33	5204.74	-4750.51	2223.04	1670586.22	14264688.25	39°16'55.772"N	80°53'36.175"W	5244.93	154.922	3.56	-0.06	3.56	
12223.00	90.400	160.070	6625.76	5299.72	-4840.65	2253.00	1670616.16	14264598.15	39°16'54.881"N	80°53'35.796"W	5339.28	155.041	3.26	0.13	-3.25	
12317.00	90.340	158.040	6625.16	5393.59	-4928.44	2286.60	1670649.75	14264510.40	39°16'54.013"N	80°53'35.370"W	5433.05	155.111	2.16	-0.06	-2.16	
12412.00	90.370	166.160	6624.57	5488.51	-5018.76	2315.78	1670678.91	14264420.11	39°16'53.120"N	80°53'35.000"W	5527.28	155.230	8.55	0.03	8.55	
12506.00	90.310	171.920	6624.01	5581.77	-5111.01	2333.64	1670696.77	14264327.91	39°16'52.208"N	80°53'34.774"W	5618.56	155.459	6.13	-0.06	6.13	
12601.00	90.680	170.140	6623.19	5675.59	-5204.84	2348.45	1670711.58	14264234.11	39°16'51.280"N	80°53'34.587"W	5710.13	155.715	1.91	0.39	-1.87	
12696.00	90.740	160.110	6622.01	5770.32	-5296.53	2372.80	1670735.92	14264142.46	39°16'50.374"N	80°53'34.279"W	5803.74	155.868	10.56	0.06	-10.56	
12790.00	90.090	158.940	6621.33	5864.22	-5384.59	2405.68	1670768.79	14264054.43	39°16'49.503"N	80°53'33.862"W	5897.55	155.926	1.42	-0.69	-1.24	
12885.00	90.150	162.670	6621.13	5959.19	-5474.29	2436.91	1670800.00	14263964.77	39°16'48.616"N	80°53'33.466"W	5992.19	156.003	3.93	0.06	3.93	
12980.00	90.090	166.340	6620.93	6054.08	-5565.82	2462.29	1670825.37	14263873.27	39°16'47.711"N	80°53'33.145"W	6086.15	156.136	3.86	-0.06	3.86	
13074.00	90.370	164.810	6620.55	6147.90	-5656.85	2485.70	1670848.77	14263782.28	39°16'46.811"N	80°53'32.849"W	6178.89	156.279	1.65	0.30	-1.63	
13169.00	89.910	160.620	6620.32	6242.87	-5747.54	2513.92	1670876.98	14263691.62	39°16'45.915"N	80°53'32.491"W	6273.28	156.376	4.44	-0.48	-4.41	
13263.00	88.520	159.170	6621.61	6336.79	-5835.80	2546.23	1670909.28	14263603.40	39°16'45.042"N	80°53'32.082"W	6367.09	156.428	2.14	-1.48	-1.54	
13358.00	89.600	161.460	6623.17	6431.73	-5925.23	2578.22	1670941.26	14263514.01	39°16'44.158"N	80°53'31.676"W	6461.86	156.485	2.66	1.14	2.41	
13452.00	89.600	161.360	6623.82	6525.72	-6014.32	2608.19	1670971.21	14263424.95	39°16'43.277"N	80°53'31.296"W	6555.51	156.555	0.11	0.00	-0.11	
13547.00	89.690	163.520	6624.41	6620.71	-6104.89	2636.85	1670999.86	14263334.42	39°16'42.381"N	80°53'30.933"W	6650.01	156.639	2.28	0.09	2.27	
13642.00	89.720	162.840	6624.90	6715.69	-6195.82	2664.34	1671027.34	14263243.52	39°16'41.482"N	80°53'30.585"W	6744.40	156.731	0.72	0.03	-0.72	
13736.00	89.630	163.790	6625.43	6809.66	-6285.86	2691.33	1671054.31	14263153.52	39°16'40.592"N	80°53'30.243"W	6837.79	156.822	1.02	-0.10	1.01	





# Actual Wellpath Report

Waco Unit 2H AWP Proj: 17597

Page 8 of 11



## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Ritchie County, WV	Well	Waco Unit 2H
Field	Ritchie	Wellbore	Waco Unit 2H AWB
Facility	Bison Pad		

## WELLPATH DATA (222 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
13831.00	89.720	165.040	6625.97	6904.57	-6377.37	2716.85	1671079.83	14263062.05	39°16'39.687"N	80°53'29.920"W	6931.96	156.925	1.32	0.09	1.32	
13925.00	89.720	166.650	6626.43	6998.36	-6468.51	2739.84	1671102.80	14262970.95	39°16'38.786"N	80°53'29.629"W	7024.83	157.044	1.71	0.00	1.71	
14020.00	89.720	167.080	6626.90	7093.02	-6561.02	2761.42	1671124.38	14262878.47	39°16'37.871"N	80°53'29.356"W	7118.46	157.175	0.45	0.00	0.45	
14114.00	89.720	167.360	6627.35	7186.63	-6652.69	2782.22	1671145.17	14262786.84	39°16'36.965"N	80°53'29.093"W	7211.04	157.305	0.30	0.00	0.30	
14209.00	89.630	165.990	6627.89	7281.31	-6745.13	2804.11	1671167.05	14262694.44	39°16'36.051"N	80°53'28.816"W	7304.78	157.426	1.45	-0.09	-1.44	
14303.00	89.970	159.720	6628.22	7375.26	-6834.91	2831.81	1671194.74	14262604.69	39°16'35.164"N	80°53'28.465"W	7398.32	157.495	6.68	0.36	-6.67	
14398.00	89.940	156.590	6628.30	7470.03	-6923.07	2867.15	1671230.07	14262516.56	39°16'34.292"N	80°53'28.017"W	7493.30	157.503	3.29	-0.03	-3.29	
14492.00	89.940	155.590	6628.40	7563.52	-7009.01	2905.25	1671268.15	14262430.66	39°16'33.442"N	80°53'27.534"W	7587.27	157.486	1.06	0.00	-1.06	
14587.00	90.090	158.870	6628.37	7658.18	-7096.59	2942.01	1671304.90	14262343.12	39°16'32.576"N	80°53'27.068"W	7682.26	157.483	3.46	0.16	3.45	
14682.00	90.220	161.850	6628.11	7753.13	-7186.05	2973.94	1671336.81	14262253.69	39°16'31.691"N	80°53'26.663"W	7777.13	157.518	3.14	0.14	3.14	
14776.00	90.220	162.040	6627.75	7847.13	-7275.42	3003.07	1671365.94	14262164.35	39°16'30.808"N	80°53'26.294"W	7870.85	157.571	0.20	0.00	0.20	
14871.00	90.220	160.170	6627.39	7942.11	-7365.30	3033.84	1671396.69	14262074.51	39°16'29.919"N	80°53'25.904"W	7965.66	157.613	1.97	0.00	-1.97	
14965.00	90.150	156.950	6627.08	8035.93	-7452.78	3068.19	1671431.03	14261987.07	39°16'29.054"N	80°53'25.469"W	8059.64	157.624	3.43	-0.07	-3.43	
15060.00	89.940	156.700	6627.01	8130.54	-7540.12	3105.58	1671468.40	14261899.77	39°16'28.190"N	80°53'24.995"W	8154.63	157.615	0.34	-0.22	-0.26	
15155.00	89.880	158.300	6627.16	8225.24	-7627.88	3141.93	1671504.74	14261812.04	39°16'27.322"N	80°53'24.534"W	8249.63	157.613	1.69	-0.06	1.68	
15249.00	89.970	159.140	6627.28	8319.08	-7715.47	3176.05	1671538.84	14261724.48	39°16'26.456"N	80°53'24.102"W	8343.61	157.626	0.90	0.10	0.89	
15344.00	89.940	159.470	6627.36	8413.97	-7804.34	3209.62	1671572.40	14261635.65	39°16'25.577"N	80°53'23.676"W	8438.57	157.645	0.35	-0.03	0.35	
15439.00	89.850	160.500	6627.53	8508.91	-7893.60	3242.13	1671604.90	14261546.42	39°16'24.695"N	80°53'23.264"W	8533.49	157.671	1.09	-0.09	1.08	
15533.00	89.880	161.750	6627.75	8602.90	-7982.55	3272.54	1671635.30	14261457.51	39°16'23.815"N	80°53'22.879"W	8627.32	157.708	1.33	0.03	1.33	
15628.00	89.880	163.280	6627.95	8697.89	-8073.16	3301.08	1671663.83	14261366.94	39°16'22.919"N	80°53'22.517"W	8721.98	157.761	1.61	0.00	1.61	
15723.00	89.880	165.640	6628.15	8792.80	-8164.68	3326.53	1671699.27	14261275.46	39°16'22.015"N	80°53'22.195"W	8816.33	157.833	2.48	0.00	2.48	
15817.00	89.850	167.250	6628.37	8886.52	-8256.05	3348.56	1671711.29	14261184.12	39°16'21.111"N	80°53'21.916"W	8909.28	157.923	1.71	-0.03	1.71	
15912.00	89.880	164.810	6628.60	8981.28	-8348.24	3371.50	1671734.21	14261091.97	39°16'20.200"N	80°53'21.626"W	9003.34	158.008	2.57	0.03	-2.57	
16006.00	89.850	164.320	6628.82	9075.18	-8438.85	3396.51	1671759.22	14261001.40	39°16'19.304"N	80°53'21.309"W	9096.73	158.076	0.52	-0.03	-0.52	
16101.00	89.910	164.090	6629.02	9170.11	-8530.26	3422.37	1671785.07	14260910.02	39°16'18.400"N	80°53'20.982"W	9191.19	158.139	0.25	0.06	-0.24	
16196.00	90.400	165.670	6628.76	9264.99	-8621.97	3447.15	1671809.84	14260818.35	39°16'17.493"N	80°53'20.668"W	9285.54	158.208	1.74	0.52	1.66	
16290.00	91.080	165.180	6627.54	9358.82	-8712.93	3470.80	1671833.48	14260727.42	39°16'16.594"N	80°53'20.369"W	9378.79	158.280	0.89	0.72	-0.52	
16385.00	90.710	165.510	6626.06	9453.64	-8804.83	3494.84	1671857.50	14260635.56	39°16'15.685"N	80°53'20.065"W	9473.06	158.351	0.52	-0.39	0.35	
16479.00	90.710	159.280	6624.89	9547.59	-8894.38	3523.25	1671885.90	14260546.05	39°16'14.800"N	80°53'19.705"W	9566.78	158.390	6.63	0.00	-6.63	
16574.00	90.770	158.600	6623.67	9642.44	-8983.02	3557.39	1671920.03	14260457.44	39°16'13.923"N	80°53'19.272"W	9661.77	158.396	0.72	0.06	-0.72	



# Actual Wellpath Report

Waco Unit 2H AWP Proj: 17597'

Page 9 of 11



## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Ritchie County, WV	Well	Waco Unit 2H
Field	Ritchie	Wellbore	Waco Unit 2H AWB
Facility	Bison Pad		

## WELLPATH DATA (222 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
16669.00	90.680	159.580	6622.47	9737.31	-9071.76	3591.29	1671953.91	14260368.74	39°16'13.046"N	80°53'18.843"W	9756.75	158.403	1.04	-0.09	1.03	
16763.00	90.710	159.970	6621.33	9831.23	-9159.96	3623.78	1671986.40	14260280.58	39°16'12.174"N	80°53'18.431"W	9850.72	158.416	0.42	0.03	0.41	
16858.00	90.400	160.720	6620.41	9926.19	-9249.42	3655.73	1672018.33	14260191.15	39°16'11.289"N	80°53'18.026"W	9945.66	158.434	0.85	-0.33	0.79	
16953.00	90.340	161.440	6619.79	10021.17	-9339.28	3686.54	1672049.12	14260101.32	39°16'10.401"N	80°53'17.636"W	10040.55	158.459	0.76	-0.06	0.76	
17047.00	89.880	161.880	6619.61	10115.17	-9428.51	3716.11	1672078.69	14260012.14	39°16'09.518"N	80°53'17.261"W	10134.41	158.489	0.68	-0.49	0.47	
17142.00	89.510	163.020	6620.12	10210.16	-9519.08	3744.76	1672107.32	14259921.60	39°16'08.623"N	80°53'16.898"W	10229.18	158.526	1.26	-0.39	1.20	
17237.00	89.320	164.390	6621.09	10305.11	-9610.26	3771.41	1672133.97	14259830.46	39°16'07.721"N	80°53'16.561"W	10323.79	158.573	1.46	-0.20	1.44	
17332.00	88.950	163.390	6622.52	10400.05	-9701.52	3797.77	1672160.31	14259739.24	39°16'06.819"N	80°53'16.227"W	10418.37	158.622	1.12	-0.39	-1.05	
17427.00	88.830	159.420	6624.36	10495.01	-9791.52	3828.05	1672190.58	14259649.27	39°16'05.929"N	80°53'15.844"W	10513.22	158.647	4.18	-0.13	-4.18	
17522.00	88.800	156.990	6626.33	10589.77	-9879.71	3863.31	1672225.83	14259561.12	39°16'05.057"N	80°53'15.397"W	10608.19	158.643	2.56	-0.03	-2.56	
17572.00	88.800	157.440	6627.37	10639.58	-9925.79	3882.67	1672245.18	14259515.05	39°16'04.601"N	80°53'15.151"W	10658.17	158.636	0.90	0.00	0.90	
17597.00	88.800	157.440	6627.90	10664.50	-9948.88	3892.26	1672254.77	14259491.98	39°16'04.373"N	80°53'15.030"W	10683.16	158.633	0.00	0.00	0.00	Projected MD at TD: 17597'

## HOLE & CASING SECTIONS - Ref Wellbore: Waco Unit 2H AWB Ref Wellpath: Waco Unit 2H AWP Proj: 17597'

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	30.00	110.00	80.00	30.00	110.00	0.00	0.00	-0.39	-0.23
17.5in Open Hole	110.00	561.10	451.10	110.00	561.09	-0.39	-0.23	-2.93	-0.88
13.375in Casing Surface	30.00	561.10	531.10	30.00	561.09	0.00	0.00	-2.93	-0.88
12.25in Open Hole	561.10	2578.20	2017.10	561.09	2556.76	-2.93	-0.88	247.96	112.67
9.625in Casing Intermediate	30.00	2578.20	2548.20	30.00	2556.76	0.00	0.00	247.96	112.67
8.75in Open Hole	2578.20	6275.00	3696.80	2556.76	6188.84	247.96	112.67	654.85	432.13
8.5in Open Hole	6275.00	17597.00	11322.00	6188.84	6627.90	654.85	432.13	-9948.88	3892.26
5.5in Casing Production	30.00	17597.00	17567.00	30.00	6627.90	0.00	0.00	-9948.88	3892.26



# Actual Wellpath Report

Waco Unit 2H AWP Proj: 17597'

Page 10 of 11



## REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Ritchie County, WV	Well	Waco Unit 2H
Field	Ritchie	Wellbore	Waco Unit 2H AWB
Facility	Bison Pad		

## TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Waco Unit 2H POE Rev-2	6569.00	236.47	576.42	1668940.26	14269673.24	39°17'45.081"N	80°53'57.045"W	point
Waco Unit 2H BHL Rev-2	6593.00	-9959.73	3885.79	1672248.30	14259481.13	39°16'04.266"N	80°53'15.112"W	point
Waco Unit 2H LP Rev-2	6593.00	71.77	629.88	1668993.69	14269508.60	39°17'43.452"N	80°53'56.367"W	point

## WELLPATH COMPOSITION - Ref Wellbore: Waco Unit 2H AWB Ref Wellpath: Waco Unit 2H AWP Proj: 17597'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
30.00	525.00	Gyrodata standard - Drop gyro or Multi-shot	01_Gyrodata MS Gyro <17-1/2">(50'-525')	Waco Unit 2H AWB
525.00	2514.00	ISCWSA MWD, Rev. 4 (Standard)	02_WFT EM <12-1/4">(525')(659'-2514')	Waco Unit 2H AWB
2514.00	6200.00	ISCWSA MWD, Rev. 4 (Standard)	03_WFT EM <8-3/4">(2514')(2672'-6200')	Waco Unit 2H AWB
6200.00	17572.00	BHI AutoTrak Curve (Short)	04_BH AT Curve <8-1/2">(6200')(6261'-17572')	Waco Unit 2H AWB
17572.00	17597.00	Blind Drilling (std)	Projection to bit	Waco Unit 2H AWB



# Actual Wellpath Report

Waco Unit 2H AWP Proj: 17597'

Page 11 of 11



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #12
Area	Ritchie County, WV	Well	Waco Unit 2H
Field	Ritchie	Wellbore	Waco Unit 2H AWB
Facility	Bison Pad		

COMMENTS
<p><b>Wellpath general comments</b> API: 47-085-10356-0000 BHI Job #: 109491402 Rig: H&amp;P 519 Duration: 11/13/2018-11/17/2018 Gyrodata MS Gyro &lt;17-1/2"&gt;(50'-525') WFT EM &lt;12-1/4"&gt;(525')(659'-2514') WFT EM &lt;8-3/4"&gt;(2514')(2672'-6200') BH AT Curve &lt;8-1/2"&gt;(6200')(6261'-17572') Middlesex: 6542' MD Burkett: 6730' MD Tully: 6814' MD Marcellus POE: 6946' MD Projected MD at TD: 17597'</p>