



Actual Wellpath Report

Remo Unit 1H AWP Proj: 20112'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Tyler County, WV	Well	Remo Unit 1H
Field	Tyler	Wellbore	Remo Unit 1H AWB
Facility	Ferrell North 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	9/14/2019 at 8:15:36 PM
Convergence at slot	0.05° East	Database/Source file	WA_MPL_EasternUS_Defn/Remo_Unit_1H_AWP_Proj_20112_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	45.53	-0.83	1663420.00	14333968.81	39°28'20.860"N	80°55'06.550"W
Facility Reference Pt			1663420.83	14333923.30	39°28'20.410"N	80°55'06.540"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	787.00ft
Horizontal Reference Pt	Slot	H&P 519 (RKB) to Mean Sea Level	787.00ft
Vertical Reference Pt	H&P 519 (RKB)	H&P 519 (RKB) to Ground Level at Slot (Slot #06)	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	341.03°

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Area	Tyler County, WV		Well	Remo Unit 1H
Field	Tyler		Wellbore	Remo Unit 1H AWP
Facility	Ferrell North Pad			

WELLPATH DATA (229 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	250.780	0.00	0.00	0.00	0.00	1663420.00	14333968.81	39°28'20.860"N	80°55'06.550"W	0.00	0.000	0.00	0.00	0.00	
30.00	0.000	250.780	30.00	0.00	0.00	0.00	1663420.00	14333968.81	39°28'20.860"N	80°55'06.550"W	0.00	0.000	0.00	0.00	0.00	
40.00	0.340	250.780	40.00	0.00	-0.01	-0.03	1663419.98	14333968.80	39°28'20.860"N	80°55'06.550"W	0.03	250.780	3.40	3.40	-1092.20	Gyrodata MS Gyro <17-1/2">(40'-305')
65.00	0.330	238.090	65.00	-0.02	-0.07	-0.16	1663419.84	14333968.74	39°28'20.859"N	80°55'06.552"W	0.17	245.589	0.30	-0.04	-50.76	
90.00	0.360	243.490	90.00	-0.04	-0.15	-0.29	1663419.71	14333968.67	39°28'20.859"N	80°55'06.554"W	0.32	243.424	0.18	0.12	21.60	
115.00	0.310	245.930	115.00	-0.06	-0.21	-0.42	1663419.58	14333968.61	39°28'20.858"N	80°55'06.555"W	0.47	243.795	0.21	-0.20	9.76	
140.00	0.320	253.840	140.00	-0.06	-0.26	-0.55	1663419.45	14333968.56	39°28'20.857"N	80°55'06.557"W	0.61	245.181	0.18	0.04	31.64	
165.00	0.310	247.420	165.00	-0.06	-0.30	-0.68	1663419.32	14333968.51	39°28'20.857"N	80°55'06.559"W	0.74	246.194	0.15	-0.04	-25.68	
190.00	0.340	255.900	190.00	-0.06	-0.34	-0.82	1663419.19	14333968.47	39°28'20.857"N	80°55'06.560"W	0.89	247.097	0.23	0.12	33.92	
215.00	0.400	247.480	215.00	-0.06	-0.40	-0.97	1663419.04	14333968.42	39°28'20.856"N	80°55'06.562"W	1.05	247.751	0.32	0.24	-33.68	
240.00	0.440	256.660	240.00	-0.06	-0.45	-1.14	1663418.86	14333968.36	39°28'20.856"N	80°55'06.565"W	1.23	248.425	0.31	0.16	36.72	
265.00	0.290	254.240	265.00	-0.04	-0.49	-1.30	1663418.71	14333968.32	39°28'20.855"N	80°55'06.567"W	1.39	249.259	0.60	-0.60	-9.68	
290.00	0.330	268.880	290.00	-0.02	-0.51	-1.43	1663418.57	14333968.30	39°28'20.855"N	80°55'06.568"W	1.52	250.379	0.35	0.16	58.56	
305.00	0.440	271.620	305.00	0.02	-0.51	-1.53	1663418.47	14333968.31	39°28'20.855"N	80°55'06.570"W	1.61	251.608	0.74	0.73	18.27	
420.00	0.140	338.250	419.99	0.31	-0.37	-2.02	1663417.98	14333968.45	39°28'20.856"N	80°55'06.576"W	2.06	259.755	0.35	-0.26	57.94	WFT EM <12-1/4">(305')(420'-2557')
512.00	1.020	264.120	511.99	0.61	-0.35	-2.88	1663417.12	14333968.47	39°28'20.857"N	80°55'06.587"W	2.90	263.165	1.08	0.96	-80.58	
604.00	3.280	279.170	603.92	2.04	-0.01	-6.29	1663413.71	14333968.80	39°28'20.860"N	80°55'06.630"W	6.29	269.913	2.51	2.46	16.36	
697.00	5.490	281.440	696.64	5.54	1.30	-13.28	1663406.73	14333970.11	39°28'20.873"N	80°55'06.719"W	13.34	275.578	2.38	2.38	2.44	
789.00	6.830	271.960	788.11	9.73	2.36	-23.06	1663396.95	14333971.17	39°28'20.884"N	80°55'06.844"W	23.18	275.836	1.82	1.46	-10.30	
881.00	8.130	259.800	879.33	12.67	1.39	-34.93	1663385.08	14333970.21	39°28'20.874"N	80°55'06.995"W	34.96	272.282	2.22	1.41	-13.22	
979.00	9.560	248.540	976.17	13.38	-2.81	-49.33	1663370.69	14333966.00	39°28'20.833"N	80°55'07.179"W	49.41	266.736	2.28	1.46	-11.49	
1074.00	11.420	243.370	1069.58	11.78	-9.92	-65.08	1663354.95	14333958.90	39°28'20.763"N	80°55'07.380"W	65.83	261.337	2.19	1.96	-5.44	
1168.00	13.640	239.330	1161.34	8.29	-19.74	-82.93	1663337.10	14333949.08	39°28'20.666"N	80°55'07.608"W	85.25	256.611	2.54	2.36	-4.30	
1263.00	15.940	235.460	1253.19	2.52	-32.85	-103.32	1663316.73	14333935.97	39°28'20.536"N	80°55'07.868"W	108.42	252.360	2.63	2.42	-4.07	
1358.00	16.480	230.370	1344.41	-5.74	-48.85	-124.44	1663295.61	14333919.99	39°28'20.378"N	80°55'08.137"W	133.69	248.569	1.60	0.57	-5.36	
1453.00	15.070	225.390	1435.84	-15.84	-66.11	-143.61	1663276.45	14333902.73	39°28'20.208"N	80°55'08.382"W	158.10	245.280	2.06	-1.48	-5.24	
1548.00	14.110	225.630	1527.77	-26.15	-82.89	-160.68	1663259.38	14333885.96	39°28'20.042"N	80°55'08.600"W	180.80	242.714	1.01	-1.01	0.25	
1642.00	13.790	233.640	1619.01	-34.41	-97.54	-177.90	1663242.18	14333871.31	39°28'19.898"N	80°55'08.820"W	202.88	241.264	2.08	-0.34	8.52	
1737.00	16.310	241.000	1710.75	-40.12	-110.72	-198.69	1663221.39	14333858.13	39°28'19.767"N	80°55'09.085"W	227.46	240.870	3.32	2.65	7.75	
1832.00	17.360	243.370	1801.68	-44.34	-123.54	-223.03	1663197.07	14333845.32	39°28'19.641"N	80°55'09.395"W	254.96	241.016	1.32	1.11	2.49	

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Area	Tyler County, WV		Well	Remo Unit 1H
Field	Tyler		Wellbore	Remo Unit 1H AWB
Facility	Ferrell North Pad			

WELLPATH DATA (229 stations)																
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(US ft)	(US ft)			(ft)	(°)	(°/100ft)	(°/100ft)	(°/100ft)	
1926.00	16.980	239.190	1891.49	-49.02	-136.86	-247.35	1663172.75	14333832.01	39°28'19.510"N	80°55'09.706"W	282.69	241.044	1.37	-0.40	-4.45	
2021.00	16.570	235.160	1982.45	-55.57	-151.71	-270.38	1663149.73	14333817.17	39°28'19.363"N	80°55'10.000"W	310.04	240.704	1.30	-0.43	-4.24	
2115.00	17.180	233.810	2072.41	-63.35	-167.56	-292.59	1663127.53	14333801.32	39°28'19.207"N	80°55'10.283"W	337.17	240.201	0.77	0.65	-1.44	
2210.00	17.170	232.540	2163.17	-71.95	-184.37	-315.04	1663105.08	14333784.51	39°28'19.041"N	80°55'10.569"W	365.03	239.663	0.39	-0.01	-1.34	
2304.00	16.110	229.510	2253.23	-81.13	-201.28	-335.98	1663084.16	14333767.61	39°28'18.874"N	80°55'10.837"W	391.66	239.075	1.46	-1.13	-3.22	
2399.00	15.500	228.930	2344.64	-90.74	-218.18	-355.57	1663064.57	14333750.72	39°28'18.707"N	80°55'11.087"W	417.17	238.467	0.66	-0.64	-0.61	
2494.00	15.220	232.030	2436.25	-99.58	-234.19	-374.97	1663045.18	14333734.72	39°28'18.549"N	80°55'11.334"W	442.10	238.013	0.91	-0.29	3.26	
2557.00	14.910	232.250	2497.09	-104.88	-244.24	-387.90	1663032.26	14333724.67	39°28'18.450"N	80°55'11.499"W	458.39	237.803	0.50	-0.49	0.35	
2663.00	15.210	232.050	2599.44	-113.79	-261.14	-409.65	1663010.52	14333707.78	39°28'18.283"N	80°55'11.777"W	485.80	237.483	0.29	0.28	-0.19	WFT EM <8-3/4">(2557)(2663-3328')
2757.00	15.310	231.410	2690.13	-121.97	-276.47	-429.07	1662991.10	14333692.46	39°28'18.131"N	80°55'12.025"W	510.43	237.205	0.21	0.11	-0.68	
2852.00	17.230	233.150	2781.32	-130.50	-292.73	-450.14	1662970.05	14333676.20	39°28'17.971"N	80°55'12.293"W	536.95	236.964	2.08	2.02	1.83	
2947.00	17.240	231.540	2872.06	-139.52	-309.92	-472.42	1662947.78	14333659.02	39°28'17.801"N	80°55'12.578"W	565.00	236.734	0.50	0.01	-1.69	
3044.00	16.470	229.220	2964.89	-149.42	-327.84	-494.09	1662926.12	14333641.10	39°28'17.624"N	80°55'12.854"W	592.96	236.434	1.05	-0.79	-2.39	
3138.00	16.730	232.140	3054.97	-158.76	-344.85	-514.86	1662905.35	14333624.10	39°28'17.456"N	80°55'13.119"W	619.68	236.186	0.93	0.28	3.11	
3233.00	17.220	233.910	3145.84	-167.32	-361.53	-537.02	1662883.20	14333607.43	39°28'17.292"N	80°55'13.402"W	647.37	236.051	0.75	0.52	1.86	
3328.00	17.250	231.830	3236.57	-176.09	-378.51	-559.45	1662860.77	14333590.45	39°28'17.124"N	80°55'13.688"W	675.47	235.919	0.65	0.03	-2.19	
3425.00	16.430	236.420	3329.41	-184.28	-394.99	-582.19	1662838.05	14333573.98	39°28'16.961"N	80°55'13.978"W	703.54	235.845	1.61	-0.85	4.73	BH AT Curve <8-1/2">(3328)(3425-20087')
3519.00	16.240	238.690	3419.62	-190.45	-409.17	-604.50	1662815.75	14333559.80	39°28'16.821"N	80°55'14.263"W	729.96	235.907	0.71	-0.20	2.41	
3614.00	16.140	233.220	3510.86	-197.32	-423.98	-626.42	1662793.83	14333545.00	39°28'16.675"N	80°55'14.543"W	756.42	235.909	1.61	-0.11	-5.76	
3708.00	15.650	236.860	3601.27	-204.42	-438.74	-647.51	1662772.76	14333530.25	39°28'16.529"N	80°55'14.812"W	782.15	235.879	1.18	-0.52	3.87	
3803.00	16.170	228.510	3692.64	-212.63	-454.51	-668.15	1662752.13	14333514.49	39°28'16.374"N	80°55'15.075"W	808.08	235.774	2.47	0.55	-8.79	
3897.00	15.640	230.920	3783.04	-222.00	-471.17	-687.79	1662732.49	14333497.83	39°28'16.209"N	80°55'15.326"W	833.70	235.587	0.90	-0.56	2.56	
3992.00	14.490	228.640	3874.78	-230.93	-487.10	-706.65	1662713.64	14333481.91	39°28'16.052"N	80°55'15.566"W	858.26	235.421	1.36	-1.21	-2.40	
4086.00	15.530	227.150	3965.57	-240.50	-503.43	-724.70	1662695.59	14333465.59	39°28'15.891"N	80°55'15.797"W	882.40	235.214	1.18	1.11	-1.59	
4181.00	16.120	233.120	4056.97	-249.71	-519.99	-744.58	1662675.73	14333449.03	39°28'15.727"N	80°55'16.050"W	908.18	235.071	1.82	0.62	6.28	
4275.00	16.230	233.050	4147.25	-257.78	-535.72	-765.51	1662654.80	14333433.31	39°28'15.572"N	80°55'16.318"W	934.35	235.015	0.12	0.12	-0.07	
4370.00	16.210	234.010	4238.47	-265.76	-551.49	-786.85	1662633.47	14333417.54	39°28'15.416"N	80°55'16.590"W	960.87	234.974	0.28	-0.02	1.01	
4464.00	16.210	234.150	4328.73	-273.41	-566.89	-808.10	1662612.23	14333402.16	39°28'15.264"N	80°55'16.861"W	987.11	234.950	0.04	0.00	0.15	
4559.00	16.130	234.820	4419.98	-280.94	-582.26	-829.64	1662590.70	14333386.79	39°28'15.113"N	80°55'17.136"W	1013.57	234.938	0.21	-0.08	0.71	
4653.00	16.310	235.240	4510.23	-288.18	-597.30	-851.15	1662569.19	14333371.75	39°28'14.964"N	80°55'17.410"W	1039.82	234.940	0.23	0.19	0.45	



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Field	Tyler		Wellbore	Remo Unit 1H AWB
Facility	Ferrell North Pad			

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4748.00	16.140	234.890	4601.45	-295.48	-612.50	-872.91	1662547.44	14333356.56	39°28'14.814"N	80°55'17.688"W	1066.37	234.944	0.21	-0.18	-0.37	
4842.00	16.350	235.700	4691.70	-302.61	-627.47	-894.53	1662525.83	14333341.59	39°28'14.666"N	80°55'17.964"W	1092.66	234.952	0.33	0.22	0.66	
4937.00	16.350	236.440	4782.86	-309.51	-642.40	-916.72	1662503.65	14333326.67	39°28'14.519"N	80°55'18.247"W	1119.40	234.979	0.22	0.00	0.78	
5031.00	16.390	238.100	4873.05	-315.81	-656.72	-939.00	1662481.38	14333312.35	39°28'14.378"N	80°55'18.531"W	1145.87	235.032	0.50	0.04	1.77	
5126.00	16.420	235.010	4964.18	-322.52	-671.51	-961.38	1662459.00	14333297.58	39°28'14.232"N	80°55'18.817"W	1172.68	235.067	0.92	0.03	-3.25	
5220.00	16.300	236.220	5054.37	-329.55	-686.46	-983.23	1662437.16	14333282.63	39°28'14.084"N	80°55'19.095"W	1199.16	235.079	0.38	-0.13	1.29	
5315.00	16.240	239.980	5145.57	-335.51	-700.52	-1005.82	1662414.59	14333268.58	39°28'13.945"N	80°55'19.364"W	1225.72	235.144	1.11	-0.06	3.96	
5409.00	16.580	241.870	5235.74	-340.16	-713.42	-1029.03	1662391.39	14333255.68	39°28'13.818"N	80°55'19.680"W	1252.14	235.267	0.67	0.36	2.01	
5504.00	15.780	249.120	5326.99	-342.75	-724.41	-1053.05	1662367.38	14333244.69	39°28'13.710"N	80°55'19.986"W	1278.16	235.475	2.29	-0.84	7.63	
5598.00	19.650	274.230	5416.64	-336.94	-727.81	-1080.80	1662339.63	14333241.30	39°28'13.676"N	80°55'20.340"W	1303.01	236.044	9.02	4.12	26.71	
5693.00	20.940	295.630	5505.87	-318.70	-719.28	-1112.08	1662308.36	14333249.83	39°28'13.761"N	80°55'20.739"W	1324.42	237.106	7.89	1.36	22.53	
5787.00	25.220	302.660	5592.34	-291.19	-701.19	-1144.11	1662276.35	14333267.90	39°28'13.940"N	80°55'21.147"W	1341.89	238.497	5.41	4.55	7.48	
5882.00	31.000	312.640	5676.15	-253.75	-673.66	-1179.20	1662241.28	14333295.43	39°28'14.212"N	80°55'21.594"W	1358.06	240.261	7.82	6.08	10.51	
5976.00	36.380	317.480	5754.34	-206.85	-636.68	-1215.88	1662204.61	14333332.39	39°28'14.578"N	80°55'22.061"W	1372.49	242.362	6.39	5.72	5.15	
6071.00	44.290	315.380	5826.71	-151.03	-592.23	-1258.29	1662162.22	14333376.82	39°28'15.018"N	80°55'22.602"W	1390.69	244.795	8.45	8.33	-2.21	
6166.00	50.880	316.190	5890.75	-87.62	-541.97	-1307.15	1662113.38	14333427.06	39°28'15.515"N	80°55'23.224"W	1415.05	247.480	6.97	6.94	0.85	
6200.00†	53.294	318.075	5911.64	-63.10	-522.31	-1325.39	1662095.15	14333446.71	39°28'15.709"N	80°55'23.457"W	1424.59	248.492	8.34	7.10	5.55	Middlesex: 6200' MD
6260.00	57.620	321.130	5945.66	-17.10	-484.67	-1357.38	1662063.17	14333484.34	39°28'16.082"N	80°55'23.864"W	1441.31	250.350	8.34	7.21	5.09	
6355.00	66.140	326.350	5990.42	62.83	-417.11	-1406.74	1662013.83	14333551.87	39°28'16.750"N	80°55'24.493"W	1467.28	253.484	10.19	8.97	5.49	
6385.00†	68.199	327.053	6002.06	89.62	-394.00	-1421.92	1661998.65	14333574.97	39°28'16.978"N	80°55'24.686"W	1475.50	254.512	7.19	6.86	2.34	Burkett: 6385' MD
6444.00†	72.256	328.380	6022.01	143.64	-347.07	-1451.56	1661969.03	14333621.88	39°28'17.442"N	80°55'25.064"W	1492.48	256.553	7.19	6.88	2.25	Tully: 6444' MD
6449.00	72.600	328.490	6023.52	148.29	-343.01	-1454.06	1661966.53	14333625.94	39°28'17.482"N	80°55'25.095"W	1493.97	256.727	7.19	6.88	2.19	
6511.00†	74.805	329.343	6040.92	206.47	-292.05	-1484.77	1661935.82	14333676.88	39°28'17.986"N	80°55'25.487"W	1513.22	258.872	3.79	3.56	1.38	Marcellus POE: 6511' MD
6544.00	75.980	329.790	6049.24	237.77	-264.51	-1500.95	1661919.66	14333704.40	39°28'18.259"N	80°55'25.693"W	1524.08	260.005	3.79	3.56	1.35	
6638.00	82.650	333.020	6066.67	328.78	-183.46	-1545.10	1661875.52	14333785.43	39°28'19.060"N	80°55'26.255"W	1555.96	263.229	7.86	7.10	3.44	
6732.00	90.460	335.010	6072.31	421.83	-99.18	-1586.17	1661834.47	14333869.68	39°28'19.893"N	80°55'26.777"W	1589.27	266.422	8.57	8.31	2.12	
6827.00	91.170	332.350	6070.96	516.03	-14.04	-1628.29	1661792.37	14333954.78	39°28'20.735"N	80°55'27.314"W	1628.35	269.506	2.90	0.75	-2.80	
6921.00	89.940	331.660	6070.05	608.86	68.95	-1672.41	1661748.27	14334037.74	39°28'21.556"N	80°55'27.875"W	1673.83	272.361	1.50	-1.31	-0.73	
7016.00	89.510	334.040	6070.50	702.89	153.48	-1715.75	1661704.94	14334122.23	39°28'22.392"N	80°55'28.427"W	1722.60	275.112	2.55	-0.45	2.51	
7111.00	89.910	341.610	6070.99	797.67	241.39	-1751.58	1661669.12	14334210.10	39°28'23.261"N	80°55'28.883"W	1768.14	277.847	7.98	0.42	7.97	

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Remo Unit 1H AWP Proj: 20112'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Tyler County, WV	Well	Remo Unit 1H
Field	Tyler	Wellbore	Remo Unit 1H AWP
Facility	Ferrell North Pad		

WELLPATH DATA (229 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
7205.00	91.320	342.450	6069.98	891.65	330.79	-1780.58	1661640.14	14334299.47	39°28'24.145"N	80°55'29.252"W	1811.05	280.524	1.75	1.50	0.89	
7311.00	89.970	341.950	6068.78	997.61	431.71	-1812.98	1661607.75	14334400.35	39°28'25.142"N	80°55'29.664"W	1863.67	283.394	1.36	-1.27	-0.47	
7406.00	90.000	341.020	6068.81	1092.61	521.79	-1843.15	1661577.59	14334490.39	39°28'26.033"N	80°55'30.048"W	1915.58	285.807	0.98	0.03	-0.98	
7500.00	90.060	340.070	6068.76	1186.61	610.42	-1874.46	1661546.30	14334578.99	39°28'26.909"N	80°55'30.446"W	1971.35	288.038	1.01	0.06	-1.01	
7595.00	89.780	338.920	6068.89	1281.57	699.40	-1907.73	1661513.04	14334667.93	39°28'27.789"N	80°55'30.869"W	2031.90	290.134	1.25	-0.29	-1.21	
7689.00	89.750	338.210	6069.28	1375.48	786.90	-1942.08	1661478.70	14334755.40	39°28'28.654"N	80°55'31.307"W	2095.45	292.057	0.76	-0.03	-0.76	
7784.00	89.880	339.180	6069.58	1470.40	875.40	-1976.60	1661444.20	14334843.87	39°28'29.529"N	80°55'31.746"W	2161.78	293.888	1.03	0.14	1.02	
7878.00	89.630	338.530	6069.99	1564.33	963.07	-2010.51	1661410.30	14334931.50	39°28'30.396"N	80°55'32.177"W	2229.27	295.595	0.74	-0.27	-0.69	
7973.00	89.910	338.210	6070.37	1659.23	1051.38	-2045.53	1661375.30	14335019.78	39°28'31.269"N	80°55'32.623"W	2299.91	297.203	0.45	0.29	-0.34	
8067.00	89.680	338.230	6070.72	1753.11	1138.67	-2080.40	1661340.43	14335107.03	39°28'32.132"N	80°55'33.067"W	2371.64	298.693	0.27	-0.27	0.02	
8162.00	89.690	335.350	6071.26	1847.84	1225.97	-2117.84	1661303.01	14335194.30	39°28'32.995"N	80°55'33.543"W	2447.09	300.066	3.03	0.03	-3.03	
8256.00	90.060	337.200	6071.46	1941.51	1312.03	-2155.66	1661265.21	14335280.31	39°28'33.846"N	80°55'34.025"W	2523.54	301.326	2.01	0.39	1.97	
8351.00	90.060	337.910	6071.36	2036.34	1399.83	-2191.93	1661228.95	14335368.08	39°28'34.714"N	80°55'34.486"W	2600.78	302.563	0.75	0.00	0.75	
8445.00	90.030	338.310	6071.29	2130.22	1487.05	-2226.97	1661193.92	14335455.27	39°28'35.576"N	80°55'34.932"W	2677.82	303.733	0.43	-0.03	0.43	
8540.00	89.970	340.080	6071.29	2225.16	1575.85	-2260.72	1661160.19	14335544.03	39°28'36.454"N	80°55'35.362"W	2755.75	304.879	1.86	-0.06	1.86	
8634.00	90.060	343.740	6071.27	2319.14	1665.19	-2289.90	1661131.02	14335633.34	39°28'37.337"N	80°55'35.733"W	2831.34	306.024	3.89	0.10	3.89	
8729.00	90.120	347.180	6071.12	2413.84	1757.13	-2313.75	1661107.19	14335725.24	39°28'38.246"N	80°55'36.036"W	2905.33	307.214	3.62	0.06	3.62	
8823.00	90.120	345.240	6070.92	2507.45	1848.42	-2336.15	1661084.79	14335816.49	39°28'39.149"N	80°55'36.321"W	2978.97	308.352	2.06	0.00	-2.06	
8918.00	90.400	343.050	6070.49	2602.30	1939.80	-2362.10	1661058.85	14335907.84	39°28'40.052"N	80°55'36.651"W	3056.53	309.393	2.32	0.29	-2.31	
9012.00	90.120	340.960	6070.06	2696.28	2029.20	-2391.14	1661029.82	14335997.20	39°28'40.936"N	80°55'37.020"W	3136.11	310.319	2.24	-0.30	-2.22	
9106.00	90.370	341.260	6069.66	2790.28	2118.13	-2421.57	1660999.40	14336086.10	39°28'41.815"N	80°55'37.407"W	3217.22	311.176	0.42	0.27	0.32	
9201.00	89.780	341.010	6069.54	2885.28	2208.03	-2452.29	1660968.70	14336175.96	39°28'42.704"N	80°55'37.798"W	3299.87	312.000	0.67	-0.62	-0.26	
9295.00	90.340	343.380	6069.44	2979.26	2297.52	-2481.03	1660939.97	14336265.41	39°28'43.588"N	80°55'38.164"W	3381.44	312.801	2.59	0.60	2.52	
9390.00	90.860	345.980	6068.44	3074.05	2389.13	-2506.13	1660914.88	14336356.99	39°28'44.494"N	80°55'38.483"W	3462.46	313.631	2.79	0.55	2.74	
9484.00	90.180	347.890	6067.59	3167.54	2480.69	-2527.38	1660893.64	14336448.51	39°28'45.399"N	80°55'38.753"W	3541.39	314.466	2.16	-0.72	2.03	
9579.00	90.550	348.540	6066.98	3261.79	2573.68	-2546.78	1660874.25	14336541.46	39°28'46.318"N	80°55'38.999"W	3620.76	315.301	0.79	0.39	0.68	
9673.00	90.710	346.700	6065.95	3355.16	2665.49	-2566.93	1660854.11	14336633.23	39°28'47.226"N	80°55'39.255"W	3700.53	316.079	1.96	0.17	-1.96	
9768.00	90.520	345.070	6064.93	3449.81	2757.61	-2590.09	1660830.95	14336725.32	39°28'48.136"N	80°55'39.550"W	3783.25	316.794	1.73	-0.20	-1.72	
9862.00	90.770	343.140	6063.87	3543.67	2848.01	-2615.84	1660805.22	14336815.68	39°28'49.030"N	80°55'39.877"W	3867.01	317.433	2.07	0.27	-2.05	
9957.00	90.770	342.280	6062.60	3638.62	2938.71	-2644.07	1660777.00	14336906.34	39°28'49.927"N	80°55'40.236"W	3953.11	318.021	0.91	0.00	-0.91	

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #06
Area	Tyler County, WV		Well	Remo Unit 1H
Field	Tyler		Wellbore	Remo Unit 1H AWP
Facility	Ferrell North Pad			

WELLPATH DATA (229 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
10051.00	90.650	341.980	6061.43	3732.59	3028.16	-2672.91	1660748.17	14338995.76	39°28'50.811"N	80°55'40.603"W	4039.09	318.566	0.34	-0.13	-0.32	
10146.00	90.580	339.950	6060.41	3827.58	3117.96	-2703.89	1660717.20	14337085.52	39°28'51.699"N	80°55'40.997"W	4127.07	319.068	2.14	-0.07	-2.14	
10240.00	90.430	339.450	6059.58	3921.55	3206.12	-2736.50	1660684.60	14337173.64	39°28'52.570"N	80°55'41.412"W	4215.17	319.518	0.56	-0.16	-0.53	
10335.00	90.400	336.970	6058.89	4016.43	3294.32	-2771.76	1660649.35	14337261.81	39°28'53.442"N	80°55'41.861"W	4305.25	319.924	2.61	-0.03	-2.61	
10429.00	90.430	335.680	6058.21	4110.11	3380.40	-2809.51	1660611.63	14337347.86	39°28'54.293"N	80°55'42.342"W	4395.50	320.270	1.37	0.03	-1.37	
10524.00	90.580	336.580	6057.38	4204.75	3467.27	-2847.95	1660573.20	14337434.70	39°28'55.152"N	80°55'42.831"W	4486.96	320.601	0.96	0.16	0.95	
10618.00	90.460	336.140	6056.52	4298.44	3553.38	-2885.64	1660535.52	14337520.77	39°28'56.004"N	80°55'43.311"W	4577.49	320.921	0.49	-0.13	-0.47	
10713.00	90.520	335.210	6055.71	4393.02	3639.94	-2924.77	1660496.41	14337607.30	39°28'56.860"N	80°55'43.809"W	4669.42	321.217	0.98	0.06	-0.98	
10807.00	90.340	333.960	6055.01	4486.42	3724.84	-2965.11	1660456.09	14337692.16	39°28'57.699"N	80°55'44.323"W	4760.92	321.479	1.34	-0.19	-1.33	
10901.00	90.430	334.490	6054.37	4579.76	3809.49	-3005.98	1660415.23	14337776.77	39°28'58.536"N	80°55'44.843"W	4852.64	321.724	0.57	0.10	0.56	
10996.00	90.340	335.200	6053.74	4674.20	3895.48	-3046.36	1660374.86	14337862.73	39°28'59.386"N	80°55'45.357"W	4945.21	321.974	0.75	-0.09	0.75	
11090.00	89.780	338.160	6053.64	4767.92	3981.79	-3083.57	1660337.67	14337949.00	39°29'00.239"N	80°55'45.831"W	5036.17	322.245	3.20	-0.60	3.15	
11185.00	89.260	340.820	6054.43	4862.87	4070.75	-3116.85	1660304.40	14338037.93	39°29'01.119"N	80°55'46.255"W	5126.97	322.560	2.85	-0.55	2.80	
11280.00	90.280	345.430	6054.81	4957.78	4161.64	-3144.42	1660276.85	14338128.78	39°29'02.017"N	80°55'46.605"W	5215.99	322.926	4.97	1.07	4.85	
11374.00	90.580	348.870	6054.11	5051.23	4253.27	-3165.32	1660255.95	14338220.37	39°29'02.923"N	80°55'46.871"W	5301.84	323.343	3.67	0.32	3.66	
11469.00	90.340	346.040	6053.35	5145.62	4345.99	-3185.95	1660235.33	14338313.06	39°29'03.840"N	80°55'47.133"W	5388.68	323.756	2.99	-0.25	-2.98	
11563.00	90.310	346.750	6052.81	5239.20	4437.35	-3208.06	1660213.23	14338404.38	39°29'04.743"N	80°55'47.414"W	5475.56	324.134	0.76	-0.03	0.76	
11658.00	90.680	347.980	6051.99	5333.62	4530.04	-3228.84	1660192.46	14338497.04	39°29'05.659"N	80°55'47.678"W	5562.98	324.520	1.35	0.39	1.29	
11752.00	90.250	345.260	6051.23	5427.16	4621.48	-3250.59	1660170.72	14338588.44	39°29'06.563"N	80°55'47.955"W	5650.17	324.879	2.93	-0.46	-2.89	
11847.00	91.110	345.590	6050.10	5521.87	4713.41	-3274.50	1660146.82	14338680.33	39°29'07.472"N	80°55'48.259"W	5739.21	325.212	0.97	0.91	0.35	
11941.00	90.310	341.030	6048.94	5615.77	4803.42	-3301.48	1660119.84	14338770.31	39°29'08.362"N	80°55'48.602"W	5828.61	325.499	4.92	-0.85	-4.85	
12035.00	90.680	339.820	6048.12	5709.75	4891.98	-3332.98	1660088.37	14338858.83	39°29'09.237"N	80°55'49.003"W	5919.48	325.733	1.35	0.39	-1.29	
12130.00	90.250	340.890	6047.35	5804.74	4981.45	-3364.91	1660056.44	14338948.26	39°29'10.122"N	80°55'49.409"W	6011.44	325.961	1.21	-0.45	1.13	
12224.00	90.310	339.650	6046.89	5898.73	5069.93	-3396.64	1660024.72	14339036.71	39°29'10.996"N	80°55'49.813"W	6102.57	326.180	1.32	0.06	-1.32	
12319.00	90.180	337.100	6046.49	5993.62	5158.23	-3431.65	1659989.73	14339124.98	39°29'11.869"N	80°55'50.259"W	6195.45	326.365	2.69	-0.14	-2.68	
12413.00	90.430	336.520	6045.99	6087.37	5244.64	-3468.67	1659952.73	14339211.35	39°29'12.723"N	80°55'50.730"W	6287.91	326.520	0.67	0.27	-0.62	
12508.00	90.310	337.440	6045.37	6182.12	5332.07	-3505.81	1659915.60	14339298.74	39°29'13.588"N	80°55'51.203"W	6381.36	326.675	0.98	-0.13	0.97	
12602.00	90.340	336.980	6044.84	6275.91	5418.73	-3542.23	1659879.20	14339385.37	39°29'14.445"N	80°55'51.667"W	6473.79	326.827	0.49	0.03	-0.49	
12697.00	90.180	335.850	6044.41	6370.60	5505.79	-3580.23	1659841.21	14339472.40	39°29'15.305"N	80°55'52.150"W	6567.48	326.965	1.20	-0.17	-1.19	
12791.00	90.250	335.770	6044.06	6464.21	5591.54	-3618.75	1659802.70	14339558.11	39°29'16.153"N	80°55'52.641"W	6660.38	327.090	0.11	0.07	-0.09	

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Tyler County, WV	Well	Remo Unit 1H
Field	Tyler	Wellbore	Remo Unit 1H AWB
Facility	Ferrell North Pad		

WELLPATH DATA (229 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
12886.00	90.120	338.260	6043.75	6558.97	5678.99	-3655.85	1659765.62	14339645.52	39°29'17.018"N	80°55'53.113"W	6753.97	327.229	2.62	-0.14	2.62	
12980.00	90.120	339.120	6043.55	6652.89	5766.56	-3690.01	1659731.48	14339733.06	39°29'17.884"N	80°55'53.548"W	6846.12	327.385	0.91	0.00	0.91	
13075.00	90.220	339.280	6043.27	6747.84	5855.37	-3723.74	1659697.76	14339821.83	39°29'18.761"N	80°55'53.977"W	6939.13	327.546	0.20	0.11	0.17	
13169.00	90.000	340.230	6043.09	6841.82	5943.56	-3756.27	1659665.24	14339909.99	39°29'19.633"N	80°55'54.391"W	7031.03	327.708	1.04	-0.23	1.01	
13264.00	90.220	342.940	6042.91	6936.81	6033.69	-3786.28	1659635.25	14340000.08	39°29'20.524"N	80°55'54.773"W	7123.29	327.891	2.86	0.23	2.85	
13358.00	90.060	344.410	6042.68	7030.70	6123.89	-3812.70	1659608.84	14340090.25	39°29'21.416"N	80°55'55.109"W	7213.79	328.094	1.57	-0.17	1.56	
13453.00	90.310	345.700	6042.37	7125.47	6215.68	-3837.20	1659584.35	14340182.00	39°29'22.323"N	80°55'55.421"W	7304.70	328.311	1.38	0.26	1.36	
13547.00	90.150	345.430	6041.99	7219.17	6306.71	-3860.63	1659560.92	14340272.99	39°29'23.223"N	80°55'55.719"W	7394.53	328.527	0.33	-0.17	-0.29	
13642.00	90.520	345.330	6041.44	7313.89	6398.63	-3884.61	1659536.96	14340364.88	39°29'24.132"N	80°55'56.024"W	7485.50	328.738	0.40	0.39	-0.11	
13736.00	90.550	344.220	6040.56	7407.69	6489.33	-3909.29	1659512.28	14340455.54	39°29'25.029"N	80°55'56.338"W	7575.88	328.934	1.18	0.03	-1.18	
13831.00	90.490	345.220	6039.70	7502.49	6580.96	-3934.32	1659487.26	14340547.14	39°29'25.934"N	80°55'56.656"W	7667.33	329.128	1.05	-0.06	1.05	
13925.00	90.370	344.430	6038.99	7596.28	6671.68	-3958.93	1659462.66	14340637.82	39°29'26.831"N	80°55'56.969"W	7757.86	329.315	0.85	-0.13	-0.84	
14020.00	90.550	343.500	6038.23	7691.15	6762.98	-3985.17	1659436.43	14340729.08	39°29'27.734"N	80°55'57.303"W	7849.81	329.491	1.00	0.19	-0.98	
14115.00	90.460	342.170	6037.39	7786.10	6853.74	-4013.21	1659408.41	14340819.81	39°29'28.631"N	80°55'57.660"W	7942.27	329.649	1.40	-0.09	-1.40	
14209.00	90.490	340.850	6036.61	7880.09	6942.89	-4043.01	1659378.61	14340908.91	39°29'29.512"N	80°55'58.039"W	8034.28	329.787	1.40	0.03	-1.40	
14304.00	90.520	340.560	6035.78	7975.08	7032.55	-4074.40	1659347.23	14340998.54	39°29'30.399"N	80°55'58.439"W	8127.58	329.914	0.31	0.03	-0.31	
14398.00	90.400	340.480	6035.02	8069.07	7121.16	-4105.75	1659315.90	14341087.12	39°29'31.275"N	80°55'58.838"W	8219.99	330.034	0.15	-0.13	-0.09	
14493.00	90.490	339.940	6034.28	8164.06	7210.55	-4137.91	1659283.75	14341176.47	39°29'32.158"N	80°55'59.247"W	8313.51	330.150	0.58	0.09	-0.57	
14588.00	90.460	339.740	6033.50	8259.04	7299.73	-4170.65	1659251.02	14341265.61	39°29'33.040"N	80°55'59.664"W	8407.16	330.259	0.21	-0.03	-0.21	
14682.00	90.400	338.870	6032.79	8352.99	7387.66	-4203.87	1659217.82	14341353.51	39°29'33.909"N	80°56'00.087"W	8500.00	330.358	0.93	-0.06	-0.93	
14777.00	90.800	340.510	6031.80	8447.96	7476.74	-4236.84	1659184.86	14341442.56	39°29'34.790"N	80°56'00.507"W	8593.75	330.461	1.78	0.42	1.73	
14871.00	90.430	340.330	6030.79	8541.95	7565.30	-4268.34	1659153.37	14341531.08	39°29'35.665"N	80°56'00.908"W	8686.34	330.568	0.44	-0.39	-0.19	
14966.00	90.460	340.150	6030.05	8636.93	7654.71	-4300.46	1659121.27	14341620.45	39°29'36.549"N	80°56'01.316"W	8780.00	330.672	0.19	0.03	-0.19	
15060.00	90.460	340.550	6029.29	8730.92	7743.23	-4332.07	1659089.67	14341708.93	39°29'37.424"N	80°56'01.719"W	8872.68	330.775	0.43	0.00	0.43	
15155.00	91.570	340.780	6027.61	8825.91	7832.86	-4363.52	1659058.24	14341798.53	39°29'38.310"N	80°56'02.119"W	8966.26	330.879	1.19	1.17	0.24	
15249.00	91.260	340.390	6025.29	8919.87	7921.48	-4394.75	1659027.01	14341887.12	39°29'39.187"N	80°56'02.517"W	9058.90	330.979	0.53	-0.33	-0.41	
15344.00	91.540	341.330	6022.97	9014.84	8011.20	-4425.89	1658995.89	14341976.80	39°29'40.074"N	80°56'02.913"W	9152.48	331.081	1.03	0.29	0.99	
15438.00	90.460	341.670	6021.33	9108.83	8100.33	-4455.71	1658966.08	14342065.89	39°29'40.955"N	80°56'03.293"W	9244.93	331.186	1.20	-1.15	0.36	
15533.00	90.550	342.000	6020.49	9203.81	8190.59	-4485.33	1658936.47	14342156.12	39°29'41.847"N	80°56'03.670"W	9338.31	331.294	0.36	0.09	0.35	
15627.00	90.490	341.730	6019.64	9297.80	8279.92	-4514.59	1658907.23	14342245.41	39°29'42.730"N	80°56'04.042"W	9430.72	331.399	0.29	-0.06	-0.29	

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Remo Unit 1H AWP Proj: 20112'

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #06
Area	Tyler County, WV		Well	Remo Unit 1H
Field	Tyler		Wellbore	Remo Unit 1H AWB
Facility	Ferrell North Pad			

WELLPATH DATA (229 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
15722.00	90.770	342.430	6018.59	9392.78	8370.30	-4543.81	1658878.01	14342335.76	39°29'43.624"N	80°56'04.414"W	9524.09	331.505	0.79	0.29	0.74	
15816.00	91.140	343.660	6017.03	9486.70	8460.20	-4571.22	1658850.62	14342425.62	39°29'44.512"N	80°56'04.763"W	9616.19	331.617	1.37	0.39	1.31	
15911.00	91.170	344.200	6015.11	9581.56	8551.47	-4597.51	1658824.33	14342516.85	39°29'45.415"N	80°56'05.097"W	9709.01	331.736	0.57	0.03	0.57	
16005.00	91.260	344.800	6013.12	9675.37	8642.03	-4622.63	1658799.23	14342607.38	39°29'46.310"N	80°56'05.417"W	9800.69	331.858	0.65	0.10	0.64	
16100.00	91.260	343.650	6011.03	9770.20	8733.43	-4648.45	1658773.42	14342698.74	39°29'47.213"N	80°56'05.745"W	9893.48	331.975	1.21	0.00	-1.21	
16194.00	88.950	338.640	6010.86	9864.16	8822.35	-4678.82	1658743.07	14342787.63	39°29'48.092"N	80°56'06.132"W	9986.25	332.061	5.87	-2.46	-5.33	
16289.00	88.950	337.530	6012.60	9959.02	8910.47	-4714.27	1658707.63	14342875.71	39°29'48.963"N	80°56'06.583"W	10080.72	332.118	1.17	0.00	-1.17	
16384.00	89.600	339.000	6013.80	10053.89	8998.71	-4749.44	1658672.47	14342963.91	39°29'49.836"N	80°56'07.031"W	10175.16	332.175	1.69	0.68	1.55	
16478.00	88.950	338.700	6014.99	10147.82	9086.37	-4783.35	1658638.57	14343051.54	39°29'50.702"N	80°56'07.463"W	10268.52	332.236	0.76	-0.69	-0.32	
16573.00	89.750	339.670	6016.07	10242.76	9175.16	-4817.11	1658604.83	14343140.29	39°29'51.580"N	80°56'07.893"W	10362.82	332.300	1.32	0.84	1.02	
16667.00	89.600	341.120	6016.60	10336.75	9263.71	-4848.65	1658573.30	14343228.80	39°29'52.456"N	80°56'08.294"W	10455.89	332.372	1.55	-0.16	1.54	
16762.00	89.540	340.750	6017.31	10431.75	9353.49	-4879.68	1658542.28	14343318.55	39°29'53.343"N	80°56'08.689"W	10549.84	332.449	0.39	-0.06	-0.39	
16856.00	89.600	342.290	6018.02	10525.74	9442.64	-4909.47	1658512.50	14343407.67	39°29'54.224"N	80°56'09.068"W	10642.67	332.529	1.64	0.06	1.64	
16951.00	89.630	344.140	6018.66	10620.66	9533.59	-4936.91	1658485.08	14343498.58	39°29'55.124"N	80°56'09.418"W	10736.03	332.623	1.95	0.03	1.95	
17046.00	89.540	342.780	6019.35	10715.57	9624.65	-4963.95	1658458.05	14343589.60	39°29'56.024"N	80°56'09.762"W	10829.35	332.717	1.43	-0.09	-1.43	
17140.00	89.660	340.490	6020.00	10809.56	9713.86	-4993.56	1658428.44	14343678.77	39°29'56.906"N	80°56'10.139"W	10922.21	332.794	2.44	0.13	-2.44	
17235.00	89.970	338.230	6020.31	10904.51	9802.75	-5027.05	1658394.97	14343767.63	39°29'57.784"N	80°56'10.565"W	11016.59	332.850	2.40	0.33	-2.38	
17329.00	90.150	336.300	6020.21	10998.31	9889.45	-5063.37	1658358.66	14343854.29	39°29'58.641"N	80°56'11.028"W	11110.31	332.888	2.06	0.19	-2.05	
17424.00	90.430	333.670	6019.73	11092.77	9975.53	-5103.54	1658318.51	14343940.34	39°29'59.493"N	80°56'11.539"W	11205.23	332.905	2.78	0.29	-2.77	
17518.00	89.570	333.320	6019.73	11185.95	10059.64	-5145.49	1658276.58	14344024.42	39°30'00.324"N	80°56'12.074"W	11299.23	332.910	0.99	-0.91	-0.37	
17613.00	89.510	337.310	6020.49	11280.46	10145.94	-5185.16	1658236.93	14344110.68	39°30'01.177"N	80°56'12.579"W	11394.12	332.930	4.20	-0.06	4.20	
17707.00	89.600	340.030	6021.22	11374.37	10233.49	-5219.34	1658202.76	14344198.20	39°30'02.043"N	80°56'13.014"W	11487.64	332.977	2.90	0.10	2.89	
17801.00	89.630	341.790	6021.85	11468.36	10322.32	-5250.08	1658172.03	14344286.99	39°30'02.921"N	80°56'13.406"W	11580.74	333.041	1.87	0.03	1.87	
17896.00	89.690	343.090	6022.42	11563.33	10412.89	-5278.74	1658143.38	14344377.52	39°30'03.816"N	80°56'13.770"W	11674.48	333.118	1.37	0.06	1.37	
17990.00	89.570	344.170	6023.03	11657.23	10503.07	-5305.24	1658116.90	14344467.67	39°30'04.708"N	80°56'14.108"W	11766.91	333.201	1.16	-0.13	1.15	
18085.00	89.630	345.030	6023.69	11752.04	10594.66	-5330.46	1658091.68	14344559.22	39°30'05.613"N	80°56'14.429"W	11860.05	333.292	0.91	0.06	0.91	
18179.00	89.540	346.260	6024.37	11845.73	10685.72	-5353.77	1658068.38	14344650.25	39°30'06.513"N	80°56'14.725"W	11951.88	333.388	1.31	-0.10	1.31	
18273.00	89.600	345.330	6025.07	11939.41	10776.84	-5376.83	1658045.33	14344741.33	39°30'07.414"N	80°56'15.019"W	12043.70	333.484	0.99	0.06	-0.99	
18368.00	89.940	345.140	6025.46	12034.15	10868.71	-5401.05	1658021.13	14344833.16	39°30'08.322"N	80°56'15.327"W	12136.72	333.576	0.41	0.36	-0.20	
18462.00	90.000	345.170	6025.51	12127.91	10959.57	-5425.13	1657997.05	14344923.98	39°30'09.220"N	80°56'15.633"W	12228.82	333.664	0.07	0.06	0.03	

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #06
Area	Tyler County, WV		Well	Remo Unit 1H
Field	Tyler		Wellbore	Remo Unit 1H AWB
Facility	Ferrell North Pad			

WELLPATH DATA (229 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
18557.00	89.940	344.760	6025.56	12222.68	11051.32	-5449.77	1657972.42	14345015.69	39°30'10.127"N	80°56'15.947"W	12322.00	333.751	0.44	-0.06	-0.43	
18651.00	90.030	344.080	6025.58	12316.52	11141.86	-5475.02	1657947.18	14345106.20	39°30'11.022"N	80°56'16.268"W	12414.38	333.831	0.73	0.10	-0.72	
18746.00	89.940	341.980	6025.60	12411.45	11232.72	-5502.75	1657919.47	14345197.02	39°30'11.921"N	80°56'16.621"W	12508.17	333.900	2.21	-0.09	-2.21	
18840.00	90.000	341.030	6025.65	12505.45	11321.86	-5532.56	1657889.66	14345286.13	39°30'12.802"N	80°56'17.000"W	12601.34	333.957	1.01	0.06	-1.01	
18935.00	89.940	341.810	6025.70	12600.45	11411.91	-5562.83	1657859.40	14345376.14	39°30'13.692"N	80°56'17.386"W	12695.54	334.013	0.82	-0.06	0.82	
19029.00	90.000	342.680	6025.75	12694.42	11501.43	-5591.50	1657830.75	14345465.63	39°30'14.577"N	80°56'17.751"W	12788.58	334.073	0.93	0.06	0.93	
19124.00	90.060	342.410	6025.70	12789.39	11592.06	-5619.99	1657802.27	14345556.22	39°30'15.473"N	80°56'18.113"W	12882.55	334.135	0.29	0.06	-0.28	
19219.00	90.000	341.060	6025.65	12884.38	11682.27	-5649.77	1657772.50	14345646.40	39°30'16.365"N	80°56'18.492"W	12976.72	334.191	1.42	-0.06	-1.42	
19313.00	90.030	340.720	6025.63	12978.38	11771.09	-5680.54	1657741.74	14345735.18	39°30'17.243"N	80°56'18.884"W	13070.08	334.239	0.36	0.03	-0.36	
19408.00	89.970	340.310	6025.63	13073.38	11860.65	-5712.23	1657710.07	14345824.70	39°30'18.128"N	80°56'19.288"W	13164.52	334.284	0.44	-0.06	-0.43	
19502.00	89.940	339.620	6025.70	13167.36	11948.96	-5744.43	1657677.88	14345912.98	39°30'19.001"N	80°56'19.698"W	13258.06	334.324	0.73	-0.03	-0.73	
19597.00	89.940	338.760	6025.80	13262.31	12037.76	-5778.18	1657644.14	14346001.74	39°30'19.879"N	80°56'20.128"W	13352.72	334.359	0.91	0.00	-0.91	
19691.00	89.940	337.950	6025.90	13356.21	12125.13	-5812.86	1657609.48	14346089.06	39°30'20.743"N	80°56'20.569"W	13446.49	334.387	0.86	0.00	-0.86	
19786.00	89.910	336.820	6026.02	13451.01	12212.83	-5849.39	1657572.97	14346176.74	39°30'21.610"N	80°56'21.035"W	13541.36	334.408	1.19	-0.03	-1.19	
19880.00	89.940	337.850	6026.15	13544.82	12299.57	-5885.61	1657536.76	14346263.44	39°30'22.467"N	80°56'21.496"W	13635.24	334.428	1.10	0.03	1.10	
19975.00	89.970	336.860	6026.22	13639.62	12387.24	-5922.18	1657500.20	14346351.08	39°30'23.334"N	80°56'21.962"W	13730.11	334.448	1.04	0.03	-1.04	
20069.00	89.970	336.470	6026.27	13733.35	12473.55	-5959.42	1657462.98	14346437.36	39°30'24.187"N	80°56'22.436"W	13824.04	334.463	0.41	0.00	-0.41	
20087.00	89.910	336.350	6026.29	13751.29	12490.05	-5966.62	1657455.78	14346453.85	39°30'24.350"N	80°56'22.528"W	13842.03	334.466	0.75	-0.33	-0.67	
20112.00	89.910	336.350	6026.33	13776.20	12512.95	-5976.65	1657445.75	14346476.74	39°30'24.577"N	80°56'22.656"W	13867.02	334.469	0.00	0.00	0.00	Projected MD at TD: 20112'

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Remo Unit 1H AWP Proj: 20112'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Tyler County, WV	Well	Remo Unit 1H
Field	Tyler	Wellbore	Remo Unit 1H AWB
Facility	Ferrell North Pad		

HOLE & CASING SECTIONS - Ref Wellbore: Remo Unit 1H AWB Ref Wellpath: Remo Unit 1H AWP Proj: 20112'									
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	-0.20	-0.40
17.5in Open Hole	110.00	394.00	284.00	110.00	393.99	-0.20	-0.40	-0.42	-1.98
13.375in Casing Surface	30.00	394.00	364.00	30.00	393.99	0.00	0.00	-0.42	-1.98
12.25in Open Hole	394.00	2635.00	2241.00	393.99	2572.42	-0.42	-1.98	-256.64	-403.87
9.625in Casing Intermediate	30.00	2635.00	2605.00	30.00	2572.42	0.00	0.00	-256.64	-403.87
8.75in Open Hole	2635.00	3428.00	793.00	2572.42	3332.29	-256.64	-403.87	-395.46	-582.90
8.5in Open Hole	3428.00	20112.00	16684.00	3332.29	6026.33	-395.46	-582.90	12512.95	-5976.65
5.5in Casing Production	30.00	20112.00	20082.00	30.00	6026.33	0.00	0.00	12512.95	-5976.65

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Remo Unit 1H - POE - Rev-1	6017.00	-388.68	-1434.34	1661986.24	14333580.29	39°28'17.031"N	80°55'24.844"W	point
Remo Unit 1H - BHL - Rev-1	6055.00	12515.12	-5965.78	1657456.62	14346478.91	39°30'24.598"N	80°56'22.517"W	point
Remo Unit 1H - LP - Rev-1	6055.00	-191.37	-1552.90	1661867.73	14333777.52	39°28'18.982"N	80°55'26.354"W	point

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Actual Wellpath Report

Remo Unit 1H AWP Proj: 20112'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Tyler County, WV	Well	Remo Unit 1H
Field	Tyler	Wellbore	Remo Unit 1H AWB
Facility	Ferrell North Pad		

WELLPATH COMPOSITION - Ref Wellbore: Remo Unit 1H AWB Ref Wellpath: Remo Unit 1H AWP Proj: 20112'				
Start MD (ft)	End MD (ft)	Positional Uncertainty Model	Log Name/Comment	Wellbore
30.00	305.00	Gyrodatta standard - Drop gyro or Multi-shot	01 Gyrodatta MS Gyro <17-1/2">(40'-305')	Remo Unit 1H AWB
305.00	2557.00	OWSG MWD rev2 + HRGM	02 WFT EM <12-1/4">(305')(420'-2557')	Remo Unit 1H AWB
2557.00	3328.00	OWSG MWD rev2 + HRGM	03 WFT EM <8-3/4">(2557')(2663'-3328')	Remo Unit 1H AWB
3328.00	20087.00	BHI AutoTrak Curve (Short)	04 BH AT Curve <8-1/2">(3328')(3425'-20087')	Remo Unit 1H AWB
20087.00	20112.00	Blind Drilling (std)	Projection to bit	Remo Unit 1H AWB

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Actual Wellpath Report

Remo Unit 1H AWP Proj: 20112'

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #06
Area	Tyler County, WV	Well	Remo Unit 1H
Field	Tyler	Wellbore	Remo Unit 1H AWB
Facility	Ferrell North Pad		

COMMENTS

Wellpath general comments

API: 47-095-02578-0000

BHI Job #: 110008763A

Rig: H&P 519

Duration: 09/08/2019-09/12/2019

Gyrodata MS Gyro <17-1/2">(40'-305')

WFT EM <12-1/4">(305')(420'-2557')

WFT EM <8-3/4">(2557')(2663'-3328')

BH AT Curve <8-1/2">(3328')(3425'-20087')

Middlesex: 6200' MD

Burkett: 6385' MD

Tully: 6444' MD

Marcellus POE: 6511' MD

Projected MD at TD: 20112'

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Office of Coal Mine Safety
SEP 24 2020
WV Dept of Environmental Protection
Environmental Protection Division