



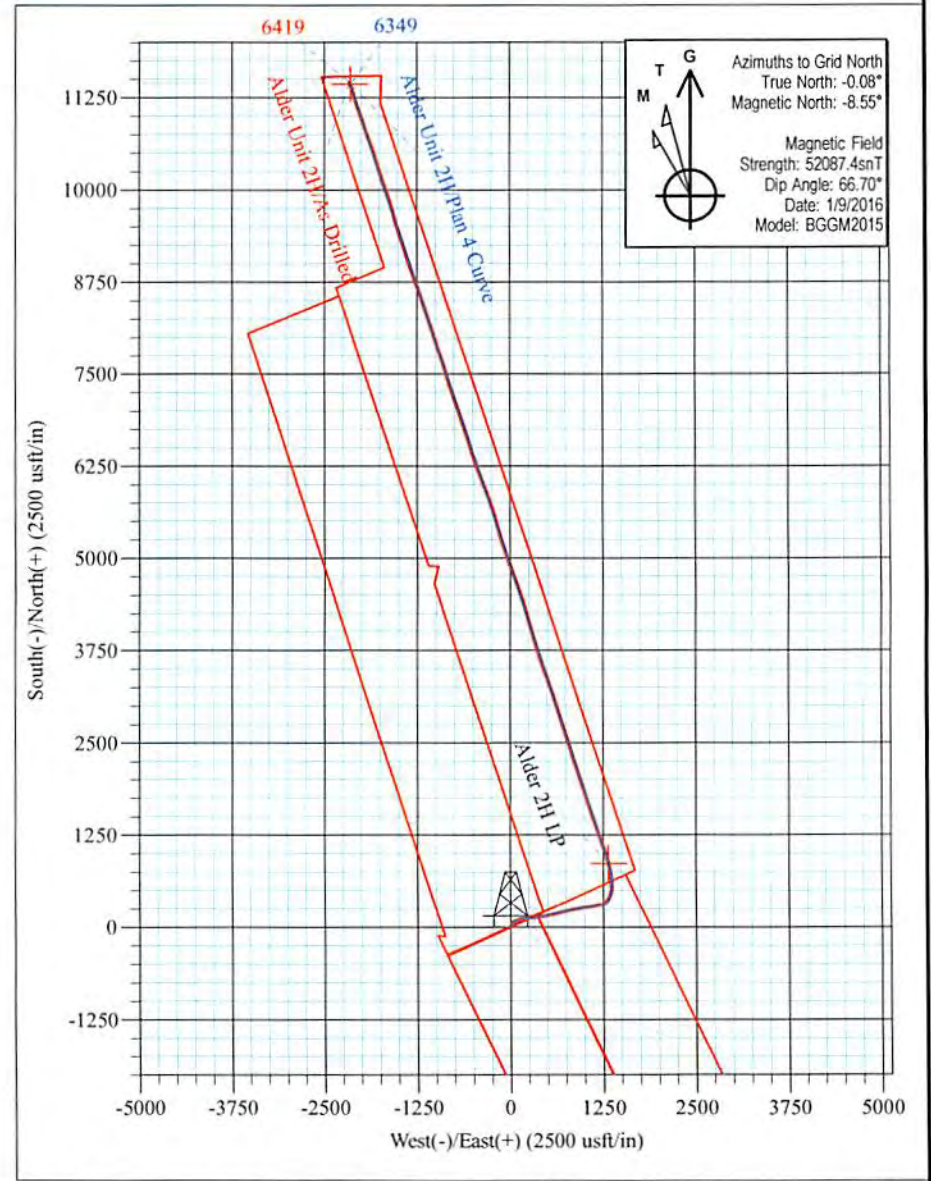
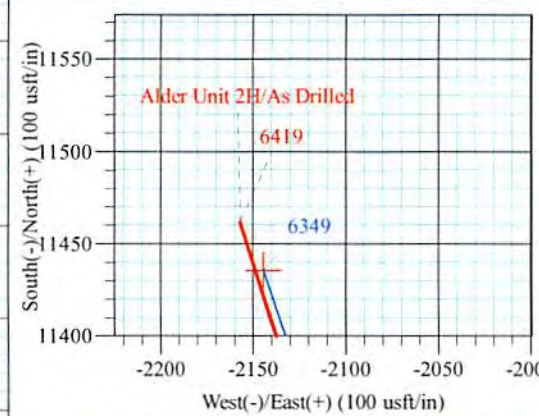
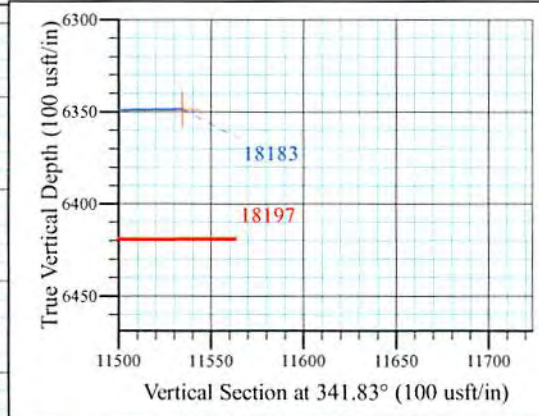
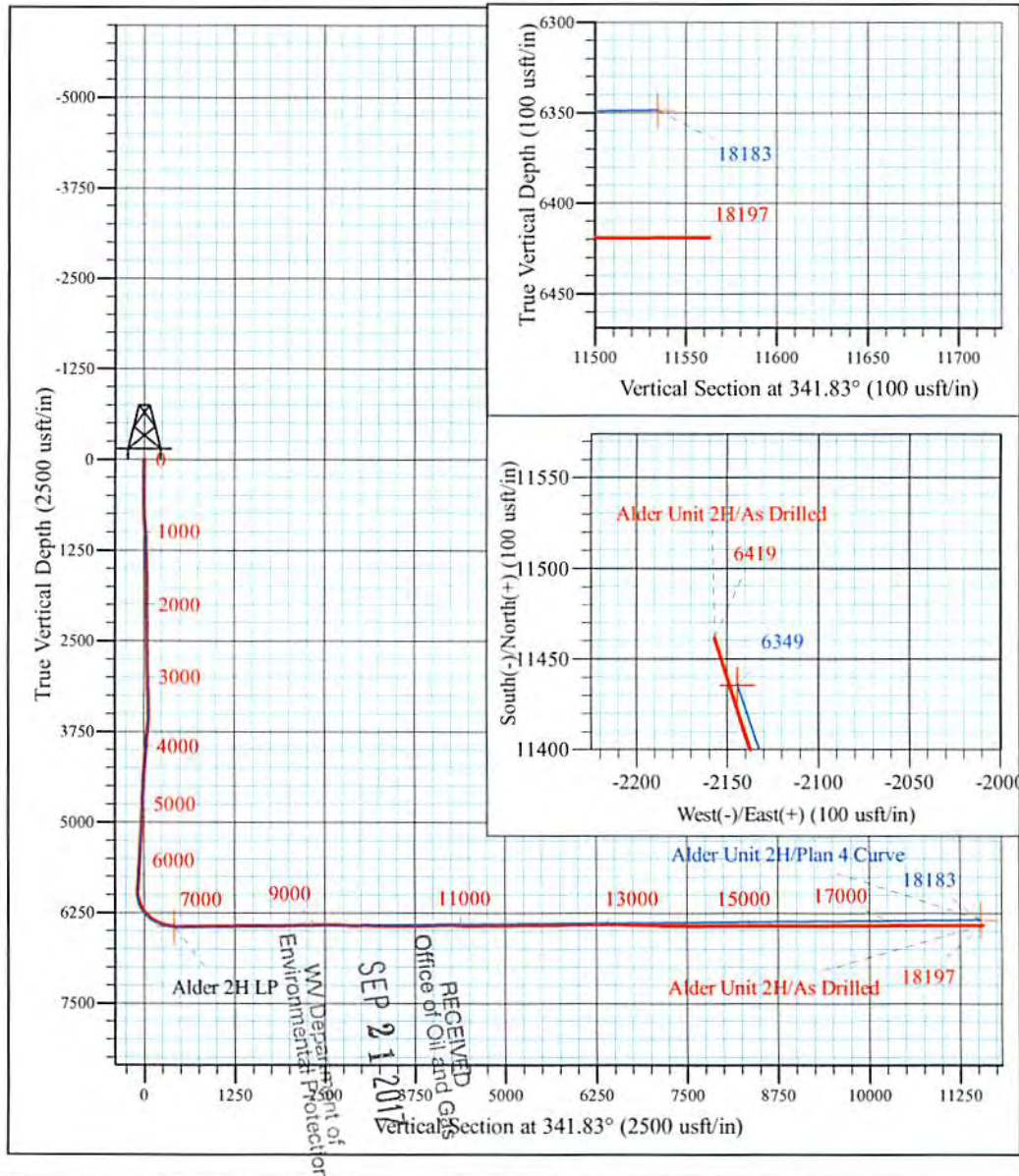
Dotson Holland Pad: Alder/Amanda/Murphy/Zellerback
 Alder Unit 2H
 Plan 4 Curve
 Precision 523: 989' GL + 19' KB @ 1008.0usft
 Doddridge County WV

PROJECT DETAILS:
 Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: Zone 17N (84 W to 78 W)
 System Datum: Mean Sea Level



WELL DETAILS: Alder Unit 2H SHL

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	14261470.56	1676361.71	39° 16' 23.883 N	80° 52' 22.756 W



Azimuths to Grid North
 True North: -0.08°
 Magnetic North: -8.55°
 Magnetic Field
 Strength: 52087.4snT
 Dip Angle: 66.70°
 Date: 1/9/2016
 Model: BGGM2015

Alder Unit 2H
 Approx. BHL
 39° 18' 17.242 N 80° 52' 50.000 W

Shane Rhodes
 12:27, February 02 2016
 Scientific Drilling International
 124 Vista Drive
 Charleroi, PA 15022

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Survey Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Alder Unit 2H
Project:	Doddridge County WW	TVD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Site:	Dotson Holland Pad: Alder/Amanda/Murphy/Zellerback	MD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Well:	Alder Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Project	Doddridge County WW, McClellan District		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Zone 17N (84 W to 78 W)		

Site	Dotson Holland Pad: Alder/Amanda/Murphy/Zellerback, Site Center: Murphy Unit 1H				
Site Position:		Northing:	14,261,441.71 usft	Latitude:	39° 16' 23.598 N
From:	Map	Easting:	1,676,370.19 usft	Longitude:	80° 52' 22.648 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.08 °

Well	Alder Unit 2H, Marcellus					
Well Position	+N/-S	0.0 usft	Northing:	14,261,470.56 usft	Latitude:	39° 16' 23.883 N
	+E/-W	0.0 usft	Easting:	1,676,361.71 usft	Longitude:	80° 52' 22.756 W
Position Uncertainty		2.0 usft	Wellhead Elevation:	1,008.0 usft	Ground Level:	989.0 usft

Wellbore	Original Wellpath				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2015	12/12/2015	-8.47	66.71	52,096
	BGGM2015	1/9/2016	-8.47	66.70	52,087

Design	As Drilled				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0		341.83

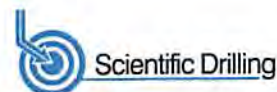
Survey Program	Date	2/2/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	6,014.0	Survey #6 - Final Def Gyro (Original Wellp	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
6,039.0	18,197.0	Survey #7 - SDI MWD (Original Wellpath)	SDI MWD	Scientific Drilling Intl. MWD - Standard ver 1.0	

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Survey	WV Department of Environmental Protection									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.17	55.04	100.0	0.1	0.1	0.0	0.17	0.17	0.00	
125.0	0.17	76.80	125.0	0.1	0.2	0.1	0.26	0.00	87.04	
150.0	0.12	15.25	150.0	0.1	0.2	0.1	0.62	-0.20	-246.20	
175.0	0.25	53.27	175.0	0.2	0.3	0.1	0.69	0.52	152.08	
200.0	0.24	25.61	200.0	0.3	0.3	0.2	0.47	-0.04	-110.64	
225.0	0.19	11.70	225.0	0.4	0.4	0.2	0.29	-0.20	-55.64	
250.0	0.12	41.95	250.0	0.4	0.4	0.3	0.42	-0.28	121.00	



Scientific Drilling International
Survey Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Alder Unit 2H
Project:	Doddridge County WV	TVD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Site:	Dotson Holland Pad: Alder/Amanda/Murphy/Zellerback	MD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Well:	Alder Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
275.0	0.10	24.01	275.0	0.5	0.4	0.3	0.16	-0.08	-71.76	
300.0	0.19	61.69	300.0	0.5	0.5	0.3	0.51	0.36	150.72	
325.0	0.22	355.31	325.0	0.6	0.5	0.4	0.90	0.12	-265.52	
350.0	0.17	25.90	350.0	0.7	0.5	0.5	0.45	-0.20	122.36	
375.0	0.24	25.61	375.0	0.7	0.6	0.5	0.28	0.28	-1.16	
400.0	0.37	22.29	400.0	0.9	0.6	0.6	0.52	0.52	-13.28	
425.0	0.25	22.29	425.0	1.0	0.7	0.7	0.48	-0.48	0.00	
450.0	0.13	22.20	450.0	1.1	0.7	0.8	0.48	-0.48	-0.36	
475.0	0.22	20.30	475.0	1.1	0.7	0.9	0.36	0.36	-7.60	
500.0	0.41	39.11	500.0	1.3	0.8	0.9	0.86	0.76	75.24	
525.0	0.44	25.83	525.0	1.4	0.9	1.1	0.41	0.12	-53.12	
550.0	0.69	22.31	550.0	1.6	1.0	1.2	1.01	1.00	-14.08	
575.0	0.89	23.54	575.0	2.0	1.1	1.5	0.80	0.80	4.92	
600.0	1.09	17.08	600.0	2.4	1.3	1.8	0.91	0.80	-25.84	
625.0	1.26	17.14	625.0	2.8	1.4	2.3	0.68	0.68	0.24	
650.0	1.43	17.81	650.0	3.4	1.6	2.7	0.68	0.68	2.68	
675.0	1.99	16.60	675.0	4.1	1.8	3.3	2.24	2.24	-4.84	
700.0	2.21	21.66	699.9	5.0	2.1	4.1	1.15	0.88	20.24	
723.9	2.69	24.51	723.9	5.9	2.5	4.8	2.07	2.00	11.90	
749.4	3.03	21.73	749.3	7.1	3.0	5.8	1.44	1.33	-10.91	
774.8	3.67	23.30	774.7	8.5	3.6	6.9	2.54	2.52	6.18	
798.9	3.84	20.48	798.7	9.9	4.2	8.1	1.04	0.71	-11.71	
824.4	4.38	21.37	824.1	11.6	4.8	9.5	2.14	2.12	3.50	
849.8	4.68	22.11	849.4	13.5	5.6	11.1	1.20	1.18	2.91	
875.0	4.95	22.23	874.5	15.5	6.4	12.7	1.07	1.07	0.48	
899.2	5.04	23.16	898.7	17.4	7.2	14.3	0.50	0.37	3.83	
924.6	5.25	23.56	924.0	19.5	8.1	16.0	0.84	0.83	1.58	
949.8	5.32	24.43	949.0	21.6	9.0	17.7	0.42	0.28	3.46	
974.0	5.36	23.99	973.2	23.7	10.0	19.4	0.24	0.16	-1.81	
999.4	4.82	24.50	998.5	25.7	10.9	21.0	2.13	-2.13	2.01	
1,024.7	4.74	26.40	1,023.7	27.6	11.8	22.6	0.70	-0.32	7.52	
1,049.1	4.56	25.82	1,048.0	29.4	12.7	24.0	0.76	-0.74	-2.37	
1,074.2	4.23	24.58	1,073.0	31.1	13.5	25.4	1.37	-1.32	-4.95	
1,099.2	3.98	26.71	1,097.9	32.7	14.3	26.7	1.17	-1.00	8.53	
1,124.3	3.50	26.24	1,123.0	34.2	15.0	27.8	1.92	-1.91	-1.8	
1,149.9	3.42	25.41	1,148.6	35.6	15.7	28.9	0.37	-0.31	-3.24	
1,174.6	3.16	26.42	1,173.2	36.9	16.3	30.0	1.08	-1.05	4.09	
1,183.0	3.14	26.48	1,181.6	37.3	16.5	30.3	0.24	-0.24	0.72	
1,199.4	2.87	28.88	1,198.0	38.1	16.9	30.9	1.81	-1.64	14.61	
1,223.8	2.83	27.78	1,222.3	39.1	17.5	31.7	0.28	-0.16	-4.51	
1,249.7	2.66	29.42	1,248.2	40.2	18.1	32.6	0.72	-0.66	6.32	
1,274.5	2.39	29.04	1,273.0	41.2	18.6	33.3	1.09	-1.09	-1.54	

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Survey Report



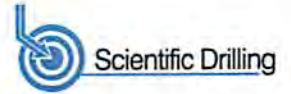
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Project:	Doddridge County WV	TVD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Site:	Dotson Holland Pad: Alder/Amanda/Murphy/Zellerback	MD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Well:	Alder Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,298.2	2.29	29.05	1,296.6	42.0	19.1	34.0	0.42	-0.42	0.04
1,324.2	2.12	30.70	1,322.7	42.9	19.6	34.6	0.70	-0.65	6.33
1,349.8	2.06	29.20	1,348.3	43.7	20.0	35.3	0.32	-0.23	-5.86
1,374.4	1.85	36.96	1,372.8	44.4	20.5	35.8	1.37	-0.85	31.58
1,399.5	1.69	31.59	1,397.9	45.0	20.9	36.3	0.92	-0.64	-21.36
1,423.7	1.45	32.60	1,422.1	45.6	21.3	36.7	1.00	-0.99	4.18
1,449.2	1.29	32.62	1,447.6	46.1	21.6	37.1	0.63	-0.63	0.08
1,474.8	1.24	34.93	1,473.2	46.6	21.9	37.4	0.28	-0.20	9.03
1,499.0	1.23	34.27	1,497.4	47.0	22.2	37.7	0.07	-0.04	-2.73
1,524.9	1.24	37.35	1,523.3	47.5	22.5	38.1	0.26	0.04	11.87
1,549.5	1.19	34.68	1,547.9	47.9	22.8	38.4	0.31	-0.20	-10.85
1,574.1	1.01	37.85	1,572.4	48.3	23.1	38.6	0.77	-0.73	12.92
1,599.3	0.99	32.50	1,597.6	48.6	23.4	38.9	0.38	-0.08	-21.23
1,624.6	0.88	33.96	1,623.0	49.0	23.6	39.2	0.44	-0.43	5.76
1,649.9	0.78	28.21	1,648.3	49.3	23.8	39.4	0.51	-0.40	-22.75
1,674.0	0.89	20.81	1,672.3	49.6	23.9	39.7	0.64	0.46	-30.73
1,699.5	0.88	29.71	1,697.9	50.0	24.1	40.0	0.54	-0.04	34.82
1,724.1	0.91	23.99	1,722.4	50.3	24.3	40.2	0.38	0.12	-23.33
1,748.7	0.82	14.76	1,747.1	50.6	24.4	40.5	0.67	-0.36	-37.41
1,774.1	0.69	21.96	1,772.5	51.0	24.5	40.8	0.63	-0.51	28.35
1,799.7	0.80	10.25	1,798.1	51.3	24.6	41.1	0.73	0.43	-45.72
1,823.9	0.70	18.29	1,822.3	51.6	24.7	41.3	0.60	-0.41	33.21
1,849.3	0.74	19.84	1,847.7	51.9	24.8	41.6	0.18	0.16	6.10
1,874.9	0.58	13.64	1,873.2	52.2	24.9	41.8	0.69	-0.63	-24.29
1,899.8	0.67	7.11	1,898.1	52.4	24.9	42.1	0.46	0.36	-26.18
1,924.4	0.56	10.21	1,922.8	52.7	24.9	42.3	0.47	-0.45	12.58
1,948.6	0.63	7.40	1,946.9	52.9	25.0	42.5	0.31	0.29	-11.65
1,973.9	0.64	14.57	1,972.3	53.2	25.0	42.8	0.32	0.04	28.26
1,999.1	0.42	15.19	1,997.4	53.4	25.1	43.0	0.88	-0.87	2.47
2,023.6	0.42	358.86	2,021.9	53.6	25.1	43.1	0.49	0.00	-66.57
2,049.4	0.31	7.99	2,047.8	53.8	25.1	43.3	0.48	-0.43	35.35
2,074.1	0.44	337.71	2,072.4	53.9	25.1	43.4	0.94	0.53	-122.99
2,099.5	0.41	0.93	2,097.8	54.1	25.1	43.6	0.68	-0.12	91.31
2,124.9	0.58	353.92	2,123.2	54.3	25.0	43.8	0.71	0.67	-27.58
2,149.1	0.39	338.53	2,147.4	54.5	25.0	44.0	0.95	-0.79	-63.62
2,175.0	0.55	358.22	2,173.3	54.7	25.0	44.2	0.87	0.62	76.14
2,199.1	0.46	344.05	2,197.4	55.0	24.9	44.4	0.64	-0.37	-58.75
2,224.5	0.45	349.41	2,222.8	55.2	24.9	44.6	0.17	-0.04	21.08
2,249.8	0.39	10.63	2,248.1	55.3	24.9	44.8	0.66	-0.24	83.97
2,274.6	0.53	341.44	2,272.9	55.5	24.9	45.0	1.08	0.56	-117.75
2,298.6	0.56	342.14	2,297.0	55.7	24.8	45.2	0.13	0.12	2.91
2,324.6	0.50	334.95	2,322.9	56.0	24.7	45.5	0.34	-0.23	-27.66
2,348.8	0.34	351.03	2,347.1	56.1	24.7	45.6	0.82	-0.66	66.61

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Survey Report



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Project:	Doddridge County WV	TVD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Site:	Dotson Holland Pad: Alder/Amanda/Murphy/Zellerback	MD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Well:	Alder Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,369.2	0.41	339.50	2,367.5	56.3	24.6	45.8	0.50	0.34	-56.41
2,374.5	0.44	346.26	2,372.8	56.3	24.6	45.8	1.11	0.57	128.03
2,399.4	0.39	324.18	2,397.7	56.5	24.5	46.0	0.67	-0.20	-88.53
2,424.3	0.41	320.54	2,422.6	56.6	24.4	46.2	0.13	0.08	-14.62
2,449.1	0.38	332.15	2,447.4	56.7	24.3	46.3	0.34	-0.12	46.87
2,474.0	0.38	313.62	2,472.4	56.9	24.2	46.5	0.49	0.00	-74.24
2,499.3	0.41	303.44	2,497.6	57.0	24.1	46.6	0.30	0.12	-40.35
2,524.2	0.31	293.26	2,522.5	57.1	24.0	46.7	0.48	-0.40	-40.90
2,549.0	0.32	297.53	2,547.3	57.1	23.8	46.8	0.10	0.04	17.20
2,573.9	0.32	300.51	2,572.2	57.2	23.7	46.9	0.07	0.00	11.97
2,598.7	0.42	297.87	2,597.0	57.3	23.6	47.0	0.41	0.40	-10.64
2,624.0	0.52	295.75	2,622.3	57.3	23.4	47.2	0.40	0.40	-8.39
2,648.9	0.56	293.17	2,647.2	57.4	23.2	47.4	0.19	0.16	-10.37
2,673.3	0.57	298.34	2,671.6	57.6	23.0	47.5	0.21	0.04	21.19
2,698.5	0.64	299.18	2,696.8	57.7	22.7	47.7	0.28	0.28	3.33
2,723.2	0.62	292.05	2,721.6	57.8	22.5	47.9	0.33	-0.08	-28.77
2,750.0	0.60	295.60	2,748.3	57.9	22.2	48.1	0.16	-0.07	13.27
2,773.2	0.58	297.81	2,771.5	58.0	22.0	48.3	0.13	-0.09	9.55
2,800.0	0.56	349.89	2,798.3	58.2	21.9	48.5	1.86	-0.07	193.89
2,824.9	0.96	29.65	2,823.2	58.5	21.9	48.8	2.57	1.61	159.87
2,850.0	1.66	43.62	2,848.3	59.0	22.3	49.1	3.04	2.78	55.55
2,874.9	2.32	47.22	2,873.1	59.6	22.9	49.4	2.70	2.66	14.50
2,899.6	3.13	51.08	2,897.8	60.3	23.8	49.9	3.36	3.28	15.61
2,924.6	3.53	53.35	2,922.8	61.2	25.0	50.4	1.69	1.60	9.09
2,949.3	4.36	52.73	2,947.4	62.2	26.3	50.9	3.36	3.36	-2.51
2,974.0	5.00	53.73	2,972.0	63.4	27.9	51.6	2.62	2.59	4.05
2,998.9	5.93	54.89	2,996.9	64.8	29.9	52.3	3.75	3.72	4.65
3,023.7	6.21	55.82	3,021.5	66.3	32.0	53.0	1.20	1.13	3.76
3,048.4	7.08	56.98	3,046.0	67.9	34.4	53.8	3.56	3.52	4.69
3,073.4	7.65	58.59	3,070.8	69.6	37.1	54.6	2.43	2.28	6.45
3,098.0	7.94	59.42	3,095.3	71.3	40.0	55.3	1.26	1.18	3.36
3,124.8	8.91	59.02	3,121.7	73.3	43.3	56.2	3.64	3.63	-1.50
3,149.8	9.13	59.37	3,146.4	75.3	46.7	57.0	0.91	0.88	1.40
3,174.6	10.02	60.37	3,170.8	77.4	50.3	57.9	3.66	3.60	4.04
3,199.8	10.38	61.03	3,195.6	79.6	54.2	58.7	1.50	1.43	2.52
3,227.0	10.85	62.26	3,222.5	82.0	58.6	59.6	1.91	1.72	1.91
3,250.1	11.45	64.20	3,245.0	84.0	62.6	60.3	3.07	2.61	8.42
3,274.1	12.21	67.46	3,268.6	86.0	67.1	60.8	4.21	3.16	3.65
3,298.6	12.78	69.11	3,292.5	87.9	72.0	61.1	2.74	2.32	6.72
3,324.7	13.36	70.60	3,318.0	90.0	77.5	61.3	2.57	2.22	5.77
3,350.1	14.56	72.15	3,342.5	91.9	83.3	61.4	4.96	4.74	6.13
3,375.0	15.16	72.43	3,366.6	93.9	89.4	61.3	2.42	2.41	1.12

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Scientific Drilling International
Survey Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Alder Unit 2H
Project:	Doddridge County WV	TVD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Site:	Dotson Holland Pad: Alder/Amanda/Murphy/Zellerback	MD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Well:	Alder Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
3,398.4	15.84	71.74	3,389.2	95.8	95.4	61.3	3.01	2.90	-2.95	
3,424.9	16.08	71.51	3,414.6	98.1	102.3	61.3	0.94	0.91	-0.87	
3,449.5	16.38	70.92	3,438.3	100.3	108.8	61.4	1.39	1.22	-2.40	
3,474.7	16.90	70.34	3,462.5	102.7	115.6	61.5	2.16	2.06	-2.30	
3,499.8	17.50	68.01	3,486.4	105.3	122.5	61.9	3.65	2.40	-9.31	
3,525.1	17.97	68.77	3,510.5	108.2	129.7	62.3	2.07	1.86	3.01	
3,548.8	18.49	72.36	3,533.0	110.6	136.7	62.5	5.21	2.19	15.13	
3,573.8	19.09	75.31	3,556.7	112.9	144.4	62.2	4.49	2.40	11.80	
3,599.1	19.74	78.37	3,580.5	114.8	152.6	61.5	4.77	2.57	12.09	
3,624.6	20.56	80.95	3,604.5	116.4	161.2	60.3	4.75	3.22	10.13	
3,649.6	21.16	83.11	3,627.8	117.6	170.1	58.7	3.90	2.40	8.65	
3,674.8	21.82	85.01	3,651.3	118.6	179.3	56.7	3.79	2.61	7.52	
3,698.3	22.31	85.24	3,673.0	119.3	188.0	54.7	2.13	2.09	0.98	
3,725.0	23.36	84.99	3,697.6	120.2	198.3	52.3	3.95	3.93	-0.94	
3,748.6	23.86	84.98	3,719.3	121.0	207.8	50.2	2.11	2.11	-0.04	
3,773.9	25.10	84.71	3,742.3	122.0	218.2	47.8	4.93	4.91	-1.07	
3,799.2	26.16	84.84	3,765.1	122.9	229.1	45.4	4.20	4.20	0.51	
3,824.1	26.11	84.76	3,787.5	123.9	240.0	42.9	0.25	-0.20	-0.32	
3,850.0	27.44	84.83	3,810.6	125.0	251.6	40.3	5.14	5.14	0.27	
3,875.1	28.10	84.72	3,832.8	126.1	263.3	37.7	2.64	2.63	-0.44	
3,898.6	26.45	84.18	3,853.7	127.1	274.0	35.3	7.09	-7.02	-2.30	
3,923.7	26.42	82.67	3,876.2	128.4	285.1	33.1	2.68	-0.12	-6.01	
3,948.4	25.31	81.62	3,898.4	129.9	295.8	31.1	4.87	-4.50	-4.26	
3,973.9	25.65	81.42	3,921.4	131.5	306.7	29.3	1.37	1.33	-0.78	
3,999.3	25.03	81.49	3,944.3	133.1	317.4	27.5	2.45	-2.45	0.28	
4,024.1	25.18	81.43	3,966.8	134.6	327.8	25.7	0.61	0.60	-0.24	
4,048.9	23.30	81.20	3,989.5	136.2	337.9	24.0	7.57	-7.57	-0.93	
4,073.9	24.61	81.29	4,012.3	137.7	347.9	22.4	5.24	5.24	0.36	
4,099.2	25.12	81.26	4,035.2	139.3	358.4	20.6	2.02	2.02	-0.12	
4,123.5	24.17	80.83	4,057.4	140.9	368.4	19.0	3.97	-3.90	-1.77	
4,149.8	24.87	80.43	4,081.3	142.7	379.2	17.3	2.73	2.66	-1.52	
4,174.5	25.46	80.90	4,103.6	144.4	389.6	15.7	2.53	2.39	1.91	
4,198.7	25.70	81.08	4,125.4	146.0	399.9	14.1	1.04	0.99	0.74	
4,224.5	25.94	80.70	4,148.7	147.8	411.0	12.3	1.13	0.93	-1.47	
4,248.7	26.00	80.93	4,170.4	149.5	421.4	10.6	0.48	0.25	0.95	
4,273.4	26.19	80.88	4,192.6	151.2	432.2	8.9	0.77	0.77	-0.20	
4,298.9	26.72	80.73	4,215.5	153.0	443.4	7.1	2.09	2.08	-0.59	
4,324.9	26.71	80.15	4,238.7	155.0	454.9	5.4	1.00	-0.04	-2.23	
4,349.7	26.54	80.09	4,260.8	156.9	465.9	3.8	0.69	-0.69	-0.24	
4,373.3	27.54	80.05	4,281.8	158.7	476.4	2.3	4.24	4.24	-0.17	
4,398.7	25.91	78.91	4,304.5	160.8	487.6	0.7	6.72	-6.41	-4.49	
4,425.0	26.02	78.27	4,328.1	163.1	498.9	-0.6	1.15	0.42	-2.44	
4,450.1	26.04	77.86	4,350.7	165.4	509.7	-1.8	0.72	0.08	-1.63	

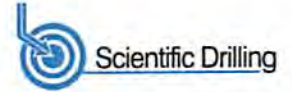
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Scientific Drilling International
Survey Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Alder Unit 2H
Project:	Doddridge County WV	TVD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Site:	Dotson Holland Pad: Alder/Amanda/Murphy/Zellerback	MD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Well:	Alder Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,473.1	27.15	77.61	4,371.3	167.6	519.8	-2.9	4.85	4.83	-1.09
4,498.1	26.63	76.93	4,393.6	170.1	530.8	-3.9	2.41	-2.07	-2.71
4,523.5	26.92	76.92	4,416.3	172.7	542.0	-5.0	1.14	1.14	-0.04
4,550.0	27.18	77.38	4,439.9	175.3	553.7	-6.1	1.26	0.98	1.74
4,575.0	26.96	77.11	4,462.1	177.8	564.8	-7.2	1.01	-0.88	-1.08
4,599.5	27.33	77.06	4,484.0	180.3	575.7	-8.2	1.51	1.51	-0.20
4,624.1	27.26	77.01	4,505.8	182.9	586.7	-9.2	0.30	-0.28	-0.20
4,648.5	28.11	77.27	4,527.4	185.4	597.7	-10.3	3.52	3.49	1.07
4,673.9	26.95	77.21	4,549.9	188.0	609.2	-11.4	4.56	-4.56	-0.24
4,699.3	26.54	79.02	4,572.6	190.3	620.4	-12.6	3.59	-1.61	7.12
4,723.9	26.37	79.88	4,594.6	192.3	631.1	-14.1	1.71	-0.69	3.50
4,749.3	25.64	79.45	4,617.5	194.3	642.1	-15.6	2.96	-2.87	-1.69
4,774.0	25.10	78.48	4,639.7	196.4	652.5	-16.9	2.77	-2.19	-3.94
4,799.3	24.37	77.45	4,662.8	198.6	662.8	-18.0	3.35	-2.88	-4.07
4,824.7	23.74	76.45	4,685.9	200.9	672.9	-19.0	2.96	-2.48	-3.94
4,850.1	23.54	75.10	4,709.2	203.4	682.8	-19.7	2.27	-0.79	-5.32
4,873.2	23.76	74.90	4,730.4	205.8	691.7	-20.2	1.01	0.95	-0.87
4,898.4	24.09	75.24	4,753.5	208.4	701.6	-20.7	1.42	1.31	1.35
4,924.7	24.51	75.25	4,777.4	211.2	712.1	-21.4	1.60	1.60	0.04
4,948.9	24.52	74.80	4,799.4	213.8	721.8	-21.9	0.77	0.04	-1.86
4,973.3	24.98	75.10	4,821.6	216.4	731.6	-22.5	1.95	1.88	1.23
4,999.9	25.10	75.17	4,845.6	219.3	742.5	-23.2	0.46	0.45	0.26
5,024.6	25.02	75.05	4,868.1	222.0	752.7	-23.8	0.38	-0.32	-0.48
5,049.4	25.58	75.72	4,890.4	224.7	762.9	-24.4	2.54	2.26	2.71
5,073.8	25.87	77.98	4,912.4	227.1	773.2	-25.3	4.19	1.19	9.26
5,099.7	25.88	78.85	4,935.7	229.4	784.3	-26.6	1.47	0.04	3.36
5,124.9	25.83	79.02	4,958.4	231.5	795.1	-28.0	0.35	-0.20	0.67
5,149.5	25.73	80.03	4,980.6	233.4	805.6	-29.4	1.83	-0.41	4.11
5,174.1	25.30	80.16	5,002.8	235.3	816.0	-30.9	1.76	-1.75	0.53
5,200.1	24.56	79.40	5,026.3	237.2	826.8	-32.5	3.11	-2.85	-2.93
5,223.4	24.69	78.95	5,047.6	239.0	836.4	-33.7	0.98	0.56	-1.92
5,249.4	24.89	79.07	5,071.1	241.1	847.0	-35.1	0.80	0.77	0.46
5,274.9	24.69	78.91	5,094.3	243.1	857.5	-36.4	0.83	-0.78	-0.66
5,299.1	24.21	77.96	5,116.3	245.1	867.3	-37.6	2.57	-1.99	-3.99
5,324.5	24.55	78.80	5,139.4	247.3	877.6	-38.7	1.91	1.34	3.33
5,348.9	24.94	79.76	5,161.6	249.2	887.7	-40.1	2.29	1.60	3.99
5,373.6	24.58	79.81	5,184.1	251.0	897.9	-41.5	1.46	-1.46	0.20
5,399.9	24.09	79.37	5,208.0	252.9	908.5	-43.0	1.99	-1.87	-1.68
5,424.7	24.27	80.10	5,230.6	254.8	918.5	-44.4	1.41	0.73	2.94
5,448.7	24.25	80.39	5,252.5	256.4	928.2	-45.8	0.50	-0.08	1.21
5,474.6	23.92	80.14	5,276.2	258.2	938.7	-47.4	1.33	-1.27	-0.96
5,498.9	23.89	80.02	5,298.3	259.9	948.3	-48.8	0.24	-0.12	-0.50

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Scientific Drilling International
Survey Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Alder Unit 2H
Project:	Doddridge County WV	TVD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Site:	Dotson Holland Pad: Alder/Amanda/Murphy/Zellerback	MD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Well:	Alder Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,524.1	24.22	80.42	5,321.4	261.7	958.5	-50.3	1.46	1.31	1.58
5,549.6	23.56	79.77	5,344.7	263.4	968.6	-51.8	2.79	-2.59	-2.55
5,574.7	23.18	79.30	5,367.7	265.2	978.4	-53.1	1.69	-1.52	-1.88
5,598.5	23.32	79.34	5,389.7	267.0	987.7	-54.3	0.59	0.59	0.17
5,624.9	23.23	79.52	5,413.8	268.9	997.9	-55.7	0.44	-0.34	0.68
5,649.6	22.35	78.87	5,436.6	270.7	1,007.3	-56.9	3.70	-3.56	-2.63
5,674.2	22.54	79.35	5,459.4	272.5	1,016.5	-58.1	1.07	0.77	1.95
5,698.7	23.39	79.66	5,481.9	274.2	1,025.9	-59.4	3.51	3.48	1.27
5,724.0	23.40	79.49	5,505.2	276.0	1,035.8	-60.7	0.27	0.04	-0.67
5,749.4	22.85	79.15	5,528.5	277.9	1,045.6	-62.0	2.23	-2.17	-1.34
5,775.0	23.74	78.87	5,552.1	279.8	1,055.6	-63.3	3.50	3.47	-1.09
5,799.7	24.42	78.84	5,574.6	281.8	1,065.5	-64.5	2.75	2.75	-0.12
5,824.0	23.80	78.38	5,596.7	283.7	1,075.2	-65.7	2.67	-2.56	-1.90
5,850.1	23.78	78.44	5,620.6	285.8	1,085.5	-66.9	0.12	-0.08	0.23
5,874.4	24.11	79.34	5,642.8	287.7	1,095.1	-68.1	2.03	1.36	3.71
5,900.0	24.21	79.78	5,666.2	289.6	1,105.5	-69.5	0.80	0.39	1.71
5,925.0	23.57	79.85	5,689.1	291.4	1,115.4	-71.0	2.56	-2.56	0.28
5,949.7	24.10	80.47	5,711.7	293.1	1,125.3	-72.4	2.37	2.15	2.51
5,974.6	25.25	80.97	5,734.3	294.8	1,135.5	-74.0	4.70	4.63	2.01
5,999.0	25.64	81.28	5,756.3	296.4	1,145.9	-75.7	1.69	1.60	1.27
6,014.0	25.63	81.35	5,769.9	297.4	1,152.3	-76.8	0.21	-0.07	0.47
6,039.0	26.25	81.55	5,792.3	299.0	1,163.1	-78.6	2.51	2.48	0.80
First SDI MWD @ 6039									
6,069.0	26.51	80.76	5,819.2	301.1	1,176.3	-80.8	1.46	0.87	-2.63
6,099.0	26.46	80.29	5,846.0	303.3	1,189.5	-82.8	0.72	-0.17	-1.57
6,129.0	27.24	79.74	5,872.8	305.6	1,202.8	-84.7	2.73	2.60	-1.83
6,159.0	26.63	78.78	5,899.5	308.1	1,216.2	-86.5	2.50	-2.03	-3.20
6,188.0	26.17	79.50	5,925.5	310.6	1,228.8	-88.1	1.93	-1.59	2.48
6,218.0	26.01	77.07	5,952.5	313.3	1,241.8	-89.6	3.60	-0.53	-8.10
6,248.0	26.08	72.33	5,979.4	316.7	1,254.4	-90.2	6.94	0.23	-15.80
6,278.0	26.79	62.18	6,006.3	321.9	1,266.7	-89.2	15.23	2.37	-33.83
6,308.0	28.28	51.09	6,032.9	329.5	1,278.2	-85.5	17.77	4.97	-36.97
6,338.0	29.56	43.00	6,059.2	339.4	1,288.8	-79.4	13.71	4.27	-26.97
6,367.0	30.28	41.09	6,084.3	350.1	1,298.5	-72.2	4.12	2.48	-6.59
6,397.0	31.23	37.41	6,110.1	362.0	1,308.2	-64.0	7.03	3.17	-12.27
6,427.0	32.79	32.76	6,135.5	375.0	1,317.3	-54.5	9.72	5.20	-15.50
6,457.0	34.57	28.78	6,160.5	389.3	1,325.8	-43.5	9.45	5.93	-13.27
6,487.0	36.49	24.41	6,184.9	404.9	1,333.6	-31.1	10.61	6.40	-14.57
6,517.0	38.67	22.29	6,208.7	421.7	1,340.8	-17.4	8.45	7.27	-7.07
6,547.0	41.13	19.17	6,231.7	439.7	1,347.6	-2.5	10.57	8.20	-10.40
6,575.0	43.87	16.50	6,252.4	457.7	1,353.4	12.8	11.72	9.79	-9.53
Middlesex @ 6575									
6,577.0	44.07	16.32	6,253.8	459.0	1,353.8	14.0	11.72	9.91	-9.02

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Scientific Drilling International
Survey Report



Company: Antero Resources
Project: Doddridge County WV
Site: Dotson Holland Pad:
 Alder/Amanda/Murphy/Zellerback
Well: Alder Unit 2H
Wellbore: Original Wellpath
Design: As Drilled

Local Co-ordinate Reference: Well Alder Unit 2H
TVD Reference: Precision 523: 989' GL + 19' KB @ 1008.0usft
MD Reference: Precision 523: 989' GL + 19' KB @ 1008.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Antero NE

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
6,607.0	46.51	12.24	6,274.9	479.7	1,359.1	32.0	12.63	8.13	-13.60	
6,636.0	49.22	9.58	6,294.4	500.8	1,363.1	50.8	11.56	9.34	-9.17	
6,666.0	51.99	5.13	6,313.4	523.8	1,366.1	71.7	14.72	9.23	-14.83	
6,696.0	55.38	1.72	6,331.2	547.9	1,367.5	94.2	14.54	11.30	-11.37	
6,726.0	59.05	359.29	6,347.4	573.1	1,367.7	118.0	14.00	12.23	-8.10	
6,756.0	62.30	357.83	6,362.1	599.3	1,367.0	143.1	11.63	10.83	-4.87	
6,761.0	62.55	357.72	6,364.4	603.7	1,366.9	147.4	5.34	4.96	-2.22	
Burket @ 6761										
6,786.0	63.79	357.17	6,375.7	626.0	1,365.9	168.8	5.34	4.97	-2.20	
6,815.0	66.86	355.96	6,387.8	652.3	1,364.3	194.3	11.24	10.59	-4.17	
6,835.0	69.13	354.46	6,395.3	670.8	1,362.7	212.4	13.32	11.35	-7.52	
Tully @ 6835										
6,845.0	70.27	353.72	6,398.8	680.1	1,361.8	221.5	13.32	11.40	-7.35	
6,875.0	73.45	351.60	6,408.1	708.4	1,358.1	249.5	12.55	10.60	-7.07	
6,905.0	75.68	350.10	6,416.1	736.9	1,353.5	278.1	8.86	7.43	-5.00	
6,934.0	76.96	349.01	6,423.0	764.6	1,348.4	306.0	5.72	4.40	-3.77	
Marcellus @ 6934										
6,935.0	77.00	348.97	6,423.2	765.6	1,348.2	307.0	5.72	4.41	-3.75	
6,965.0	78.47	348.37	6,429.6	794.3	1,342.5	336.1	5.28	4.90	-2.00	
6,995.0	80.11	347.73	6,435.1	823.1	1,336.4	365.4	5.65	5.47	-2.13	
7,025.0	82.22	346.98	6,439.7	852.1	1,329.9	394.9	7.45	7.03	-2.50	
7,055.0	85.73	345.59	6,442.9	881.1	1,322.8	424.6	12.57	11.70	-4.63	
7,083.0	89.50	342.38	6,444.1	907.9	1,315.1	452.6	17.68	13.46	-11.46	
7,100.0	90.74	341.62	6,444.0	924.1	1,309.8	469.6	8.56	7.29	-4.47	
7,173.0	91.78	342.07	6,442.4	993.4	1,287.1	542.5	1.55	1.42	0.62	
7,262.0	91.02	341.12	6,440.2	1,077.9	1,259.0	631.5	1.37	-0.85	-1.07	
7,352.0	91.13	340.62	6,438.6	1,162.9	1,229.5	721.5	0.57	0.12	-0.56	
7,442.0	90.87	340.88	6,437.0	1,247.8	1,199.8	811.5	0.41	-0.29	0.29	
7,531.0	90.46	339.60	6,436.0	1,331.6	1,169.8	900.4	1.51	-0.46	-1.44	
7,621.0	90.29	340.81	6,435.4	1,416.3	1,139.3	990.4	1.36	-0.19	1.34	
7,710.0	90.56	340.23	6,434.7	1,500.2	1,109.6	1,079.3	0.72	0.30	-0.65	
7,800.0	90.53	342.19	6,433.8	1,585.4	1,080.6	1,169.3	2.18	-0.03	2.18	
7,889.0	90.86	342.28	6,432.8	1,670.1	1,053.5	1,258.3	0.38	0.37	0.10	
7,979.0	91.23	342.55	6,431.1	1,755.9	1,026.3	1,348.3	0.51	0.41	0.30	
8,068.0	89.42	340.43	6,430.6	1,840.3	998.0	1,437.3	3.13	-2.03	-2.38	
8,158.0	89.80	341.51	6,431.2	1,925.4	968.7	1,527.3	1.27	0.42	1.20	
8,247.0	89.90	341.01	6,431.5	2,009.6	940.1	1,616.3	0.57	0.11	-0.56	
8,337.0	90.67	341.28	6,431.0	2,094.8	911.0	1,706.3	0.91	0.86	0.30	
8,426.0	90.10	341.44	6,430.4	2,179.1	882.6	1,795.3	0.67	-0.64	0.18	
8,515.0	90.27	343.18	6,430.1	2,263.9	855.5	1,884.3	1.96	0.19	1.96	
8,605.0	91.11	343.16	6,429.1	2,350.1	829.5	1,974.2	0.93	0.93	-0.02	
8,694.0	91.44	342.81	6,427.1	2,435.1	803.4	2,063.2	0.54	0.37	-0.39	
8,784.0	91.41	341.68	6,424.8	2,520.8	776.0	2,153.2	1.26	-0.03	-1.26	

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Survey Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Alder Unit 2H
Project:	Doddridge County WV	TVD Reference:	Precision 523; 989' GL + 19' KB @ 1008.0usft
Site:	Dotson Holland Pad: Alder/Amanda/Murphy/Zellerback	MD Reference:	Precision 523; 989' GL + 19' KB @ 1008.0usft
Well:	Alder Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,873.0	91.11	343.43	6,422.9	2,605.7	749.3	2,242.1	1.99	-0.34	1.97
8,963.0	90.13	342.52	6,421.9	2,691.8	723.0	2,332.1	1.49	-1.09	-1.01
9,052.0	90.54	342.73	6,421.4	2,776.7	696.4	2,421.1	0.52	0.46	0.24
9,142.0	89.87	342.93	6,421.1	2,862.7	669.8	2,511.1	0.78	-0.74	0.22
9,231.0	89.87	342.79	6,421.3	2,947.7	643.6	2,600.1	0.16	0.00	-0.16
9,321.0	89.83	341.75	6,421.5	3,033.5	616.2	2,690.1	1.16	-0.04	-1.16
9,410.0	89.43	341.76	6,422.1	3,118.0	588.3	2,779.0	0.45	-0.45	0.01
9,500.0	89.57	340.91	6,422.9	3,203.2	559.5	2,869.0	0.96	0.16	-0.94
9,589.0	90.61	340.25	6,422.7	3,287.2	529.9	2,958.0	1.38	1.17	-0.74
9,679.0	89.97	341.24	6,422.3	3,372.1	500.2	3,048.0	1.31	-0.71	1.10
9,769.0	89.50	339.99	6,422.7	3,457.0	470.4	3,138.0	1.48	-0.52	-1.39
9,858.0	88.52	341.19	6,424.2	3,541.0	440.8	3,226.9	1.74	-1.10	1.35
9,948.0	89.06	341.46	6,426.1	3,626.2	412.0	3,316.9	0.67	0.60	0.30
10,037.0	89.80	342.92	6,427.0	3,710.9	384.8	3,405.9	1.84	0.83	1.64
10,127.0	90.10	341.62	6,427.1	3,796.7	357.4	3,495.9	1.48	0.33	-1.44
10,217.0	90.71	343.67	6,426.4	3,882.6	330.5	3,585.9	2.38	0.68	2.28
10,306.0	91.18	344.04	6,425.0	3,968.0	305.8	3,674.8	0.67	0.53	0.42
10,396.0	90.10	344.15	6,424.0	4,054.6	281.1	3,764.7	1.21	-1.20	0.12
10,485.0	89.57	342.30	6,424.2	4,139.8	255.4	3,853.7	2.16	-0.60	-2.08
10,575.0	89.93	342.91	6,424.6	4,225.7	228.5	3,943.7	0.79	0.40	0.68
10,664.0	90.81	344.06	6,424.0	4,311.0	203.2	4,032.7	1.63	0.99	1.29
10,754.0	90.37	341.56	6,423.1	4,397.0	176.6	4,122.6	2.82	-0.49	-2.78
10,844.0	90.81	341.44	6,422.2	4,482.3	148.1	4,212.6	0.51	0.49	-0.13
10,933.0	89.46	340.76	6,422.0	4,566.5	119.2	4,301.6	1.70	-1.52	-0.76
11,023.0	89.73	340.93	6,422.6	4,651.5	89.7	4,391.6	0.35	0.30	0.19
11,112.0	89.97	340.16	6,422.9	4,735.4	60.1	4,480.6	0.91	0.27	-0.87
11,202.0	90.27	339.57	6,422.7	4,819.9	29.1	4,570.5	0.74	0.33	-0.66
11,291.0	89.77	342.02	6,422.6	4,904.0	-0.2	4,659.5	2.81	-0.56	2.75
11,381.0	89.80	341.00	6,423.0	4,989.3	-28.7	4,749.5	1.13	0.03	-1.13
11,470.0	89.66	340.34	6,423.4	5,073.3	-58.2	4,838.5	0.76	-0.16	-0.74
11,560.0	89.73	341.49	6,423.9	5,158.4	-87.6	4,928.5	1.28	0.08	1.28
11,649.0	90.13	340.96	6,424.0	5,242.6	-116.3	5,017.5	0.75	0.45	-0.60
11,739.0	91.24	345.78	6,422.9	5,328.8	-142.0	5,107.4	5.50	1.23	5.36
11,829.0	89.80	343.16	6,422.1	5,415.5	-166.1	5,197.3	3.32	-1.60	-2.91
11,918.0	91.61	346.89	6,421.0	5,501.5	-189.1	5,286.1	4.66	2.03	4.19
12,008.0	90.70	343.99	6,419.2	5,588.6	-211.7	5,375.9	3.38	-1.01	-3.22
12,097.0	90.37	341.20	6,418.3	5,673.5	-238.3	5,464.9	3.16	-0.37	-3.13
12,187.0	90.23	340.01	6,417.9	5,758.4	-268.2	5,554.9	1.33	-0.16	-1.32
12,277.0	90.74	339.80	6,417.1	5,842.9	-299.1	5,644.8	0.61	0.57	-0.23
12,366.0	90.87	338.87	6,415.9	5,926.1	-330.5	5,733.7	1.06	0.15	-1.04
12,456.0	90.50	338.60	6,414.8	6,010.0	-363.2	5,823.6	0.51	-0.41	-0.30
12,545.0	91.51	340.47	6,413.2	6,093.4	-394.3	5,912.5	2.39	1.13	2.10
12,635.0	91.81	340.13	6,410.6	6,178.1	-424.6	6,002.4	0.50	0.33	-0.38

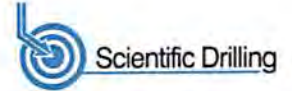
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Scientific Drilling International
Survey Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Alder Unit 2H
Project:	Doddridge County WV	TVD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Site:	Dotson Holland Pad: Alder/Amanda/Murphy/Zellerback	MD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Well:	Alder Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,724.0	91.07	341.18	6,408.4	6,262.0	-454.1	6,091.4	1.44	-0.83	1.18
12,814.0	90.71	341.40	6,407.0	6,347.3	-483.0	6,181.4	0.47	-0.40	0.24
12,903.0	90.64	341.37	6,405.9	6,431.6	-511.4	6,270.3	0.09	-0.08	-0.03
12,993.0	89.83	342.62	6,405.6	6,517.2	-539.2	6,360.3	1.65	-0.90	1.39
13,082.0	90.23	342.63	6,405.5	6,602.1	-565.8	6,449.3	0.45	0.45	0.01
13,172.0	88.75	343.79	6,406.3	6,688.3	-591.7	6,539.3	2.09	-1.64	1.29
13,261.0	88.82	342.43	6,408.2	6,773.4	-617.6	6,628.3	1.53	0.08	-1.53
13,351.0	87.47	341.22	6,411.1	6,858.9	-645.7	6,718.2	2.01	-1.50	-1.34
13,440.0	87.94	341.42	6,414.7	6,943.1	-674.1	6,807.1	0.57	0.53	0.22
13,530.0	88.38	342.15	6,417.6	7,028.6	-702.3	6,897.1	0.95	0.49	0.81
13,619.0	89.49	341.29	6,419.2	7,113.1	-730.2	6,986.1	1.58	1.25	-0.97
13,709.0	88.21	341.60	6,421.0	7,198.4	-758.8	7,076.0	1.46	-1.42	0.34
13,798.0	87.20	340.61	6,424.6	7,282.5	-787.6	7,165.0	1.59	-1.13	-1.11
13,888.0	87.84	342.13	6,428.5	7,367.7	-816.3	7,254.9	1.83	0.71	1.69
13,977.0	90.80	345.73	6,429.5	7,453.2	-840.9	7,343.8	5.24	3.33	4.04
14,067.0	89.22	342.88	6,429.5	7,539.8	-865.3	7,433.7	3.62	-1.76	-3.17
14,156.0	90.09	342.88	6,430.1	7,624.9	-891.5	7,522.7	0.98	0.98	0.00
14,246.0	88.78	339.73	6,431.0	7,710.1	-920.3	7,612.6	3.79	-1.46	-3.50
14,335.0	90.66	342.27	6,431.4	7,794.3	-949.3	7,701.6	3.55	2.11	2.85
14,425.0	90.02	341.60	6,430.9	7,879.8	-977.2	7,791.6	1.03	-0.71	-0.74
14,514.0	90.39	341.20	6,430.5	7,964.2	-1,005.6	7,880.6	0.61	0.42	-0.45
14,604.0	90.19	342.45	6,430.1	8,049.7	-1,033.7	7,970.6	1.41	-0.22	1.39
14,694.0	90.96	342.22	6,429.2	8,135.4	-1,061.0	8,060.6	0.89	0.86	-0.26
14,783.0	90.70	342.84	6,427.9	8,220.3	-1,087.7	8,149.6	0.76	-0.29	0.70
14,873.0	89.05	341.76	6,428.1	8,306.0	-1,115.1	8,239.6	2.19	-1.83	-1.20
14,962.0	89.66	341.30	6,429.1	8,390.5	-1,143.2	8,328.6	0.86	0.69	-0.52
15,052.0	89.82	339.61	6,429.5	8,475.3	-1,173.4	8,418.5	1.89	0.18	-1.88
15,141.0	90.39	340.03	6,429.3	8,558.8	-1,204.1	8,507.5	0.80	0.64	0.47
15,231.0	91.23	340.96	6,428.1	8,643.6	-1,234.1	8,597.5	1.39	0.93	1.03
15,321.0	91.03	341.14	6,426.3	8,728.7	-1,263.3	8,687.4	0.30	-0.22	0.20
15,410.0	90.03	341.47	6,425.5	8,813.0	-1,291.9	8,776.4	1.18	-1.12	0.37
15,499.0	89.29	342.92	6,426.0	8,897.8	-1,319.1	8,865.4	1.83	-0.83	1.63
15,589.0	89.56	342.19	6,426.9	8,983.6	-1,346.0	8,955.4	0.86	0.30	-0.81
15,678.0	89.46	341.64	6,427.7	9,068.2	-1,373.7	9,044.4	0.63	-0.11	-0.65
15,768.0	90.23	340.89	6,427.9	9,153.4	-1,402.6	9,134.4	1.19	0.86	-0.85
15,858.0	90.13	342.54	6,427.6	9,238.9	-1,430.8	9,224.4	1.84	-0.11	1.15
15,947.0	90.53	342.04	6,427.1	9,323.7	-1,457.9	9,313.4	0.72	0.45	-0.56
16,037.0	90.73	341.16	6,426.1	9,409.1	-1,486.3	9,403.4	1.00	0.22	-0.96
16,126.0	89.39	341.73	6,426.0	9,493.4	-1,514.6	9,492.4	1.64	-1.51	0.64
16,216.0	89.93	344.37	6,426.6	9,579.5	-1,540.8	9,582.3	2.99	0.60	2.93
16,305.0	90.53	344.51	6,426.2	9,665.3	-1,564.7	9,671.2	0.69	0.67	0.16
16,395.0	90.40	344.19	6,425.5	9,751.9	-1,589.0	9,761.2	0.38	-0.14	-0.36

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Scientific Drilling International
Survey Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Alder Unit 2H
Project:	Doddridge County WV	TVD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Site:	Dotson Holland Pad: Alder/Amanda/Murphy/Zellerback	MD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Well:	Alder Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
16,484.0	90.06	342.24	6,425.1	9,837.1	-1,614.7	9,850.1	2.22	-0.38	-2.19	
16,574.0	90.26	342.04	6,424.9	9,922.8	-1,642.3	9,940.1	0.31	0.22	-0.22	
16,663.0	90.66	340.64	6,424.1	10,007.1	-1,670.8	10,029.1	1.64	0.45	-1.57	
16,752.0	89.56	340.95	6,424.0	10,091.1	-1,700.1	10,118.1	1.28	-1.24	0.35	
16,842.0	89.59	341.21	6,424.6	10,176.3	-1,729.2	10,208.1	0.29	0.03	0.29	
16,932.0	90.33	342.60	6,424.7	10,261.8	-1,757.2	10,298.1	1.75	0.82	1.54	
17,021.0	91.10	342.84	6,423.6	10,346.8	-1,783.6	10,387.1	0.91	0.87	0.27	
17,111.0	90.77	342.11	6,422.1	10,432.6	-1,810.7	10,477.0	0.89	-0.37	-0.81	
17,200.0	90.85	341.86	6,420.9	10,517.2	-1,838.2	10,566.0	0.29	0.09	-0.28	
17,290.0	90.60	341.13	6,419.7	10,602.6	-1,866.8	10,656.0	0.86	-0.28	-0.81	
17,380.0	90.43	340.08	6,418.9	10,687.5	-1,896.7	10,746.0	1.18	-0.19	-1.17	
17,469.0	90.50	339.32	6,418.2	10,770.9	-1,927.6	10,834.9	0.86	0.08	-0.85	
17,559.0	89.59	340.17	6,418.1	10,855.4	-1,958.7	10,924.9	1.38	-1.01	0.94	
17,648.0	89.46	341.10	6,418.9	10,939.3	-1,988.2	11,013.9	1.06	-0.15	1.04	
17,738.0	89.96	342.27	6,419.3	11,024.8	-2,016.5	11,103.9	1.41	0.56	1.30	
17,827.0	90.10	342.23	6,419.3	11,109.5	-2,043.6	11,192.8	0.16	0.16	-0.04	
17,917.0	90.23	341.59	6,419.0	11,195.1	-2,071.6	11,282.8	0.73	0.14	-0.71	
18,007.0	89.76	342.42	6,419.0	11,280.6	-2,099.4	11,372.8	1.06	-0.52	0.92	
18,096.0	90.03	342.21	6,419.2	11,365.4	-2,126.4	11,461.8	0.38	0.30	-0.24	
18,133.0	90.06	342.50	6,419.2	11,400.7	-2,137.6	11,498.8	0.79	0.08	0.78	
Last SDI MWD @ 18133										
18,197.0	90.06	342.50	6,419.1	11,461.7	-2,156.9	11,562.8	0.00	0.00	0.00	
Projection To Bit @ 18197 MD / 6419 TVD										

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,575.0	6,252.4	Middlesex @ 6575		0.00	
6,761.0	6,364.4	Burket @ 6761		0.00	
6,835.0	6,395.3	Tully @ 6835		0.00	
6,934.0	6,423.0	Marcellus @ 6934		0.00	

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,039.0	5,792.3	299.0	1,163.1	First SDI MWD @ 6039
18,133.0	6,419.2	11,400.7	-2,137.6	Last SDI MWD @ 18133
18,197.0	6,419.1	11,461.7	-2,156.9	Projection To Bit @ 18197 MD / 6419 TVD

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