



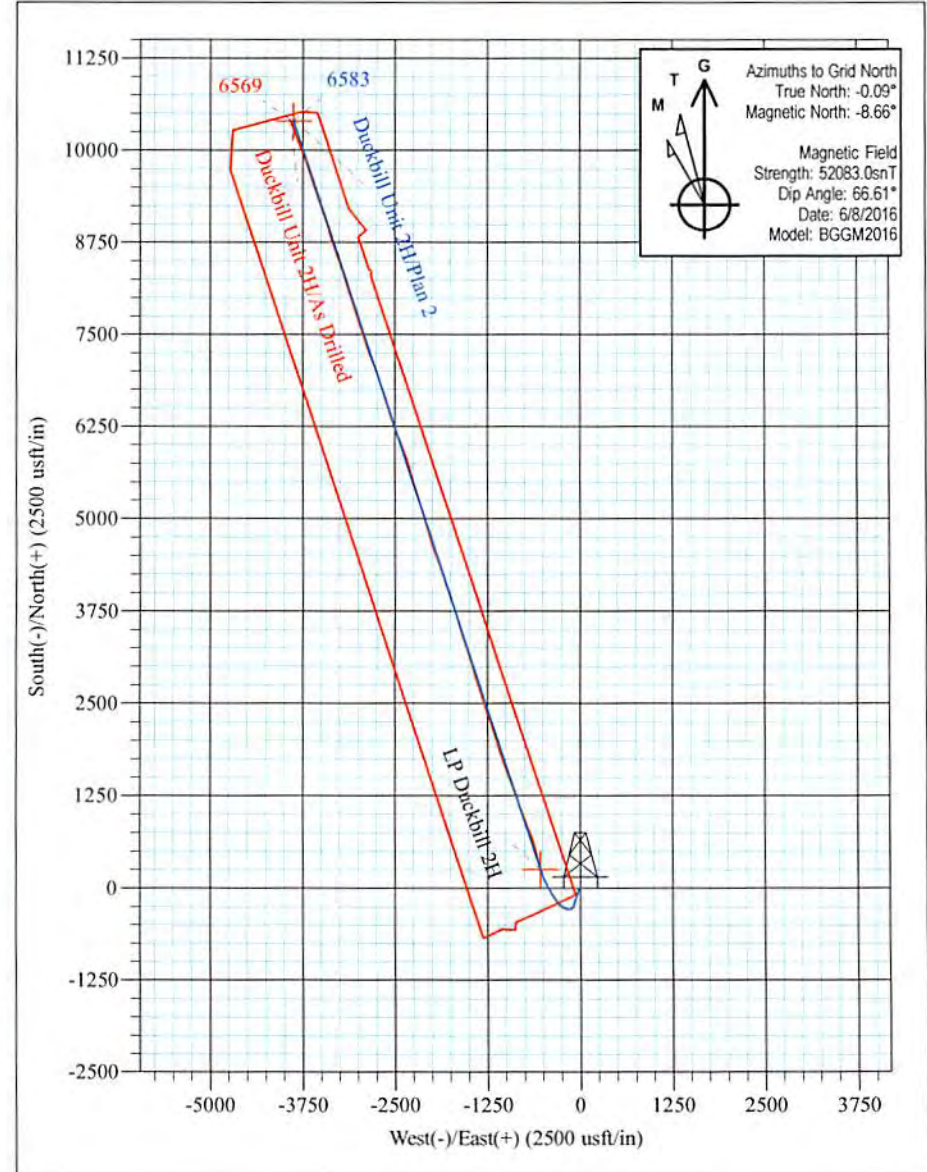
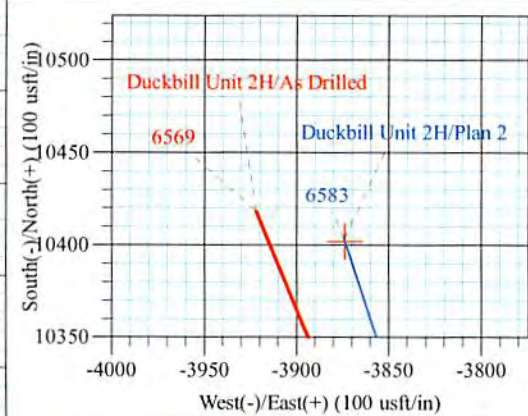
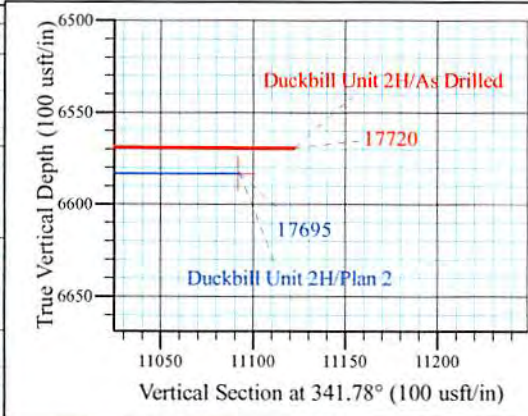
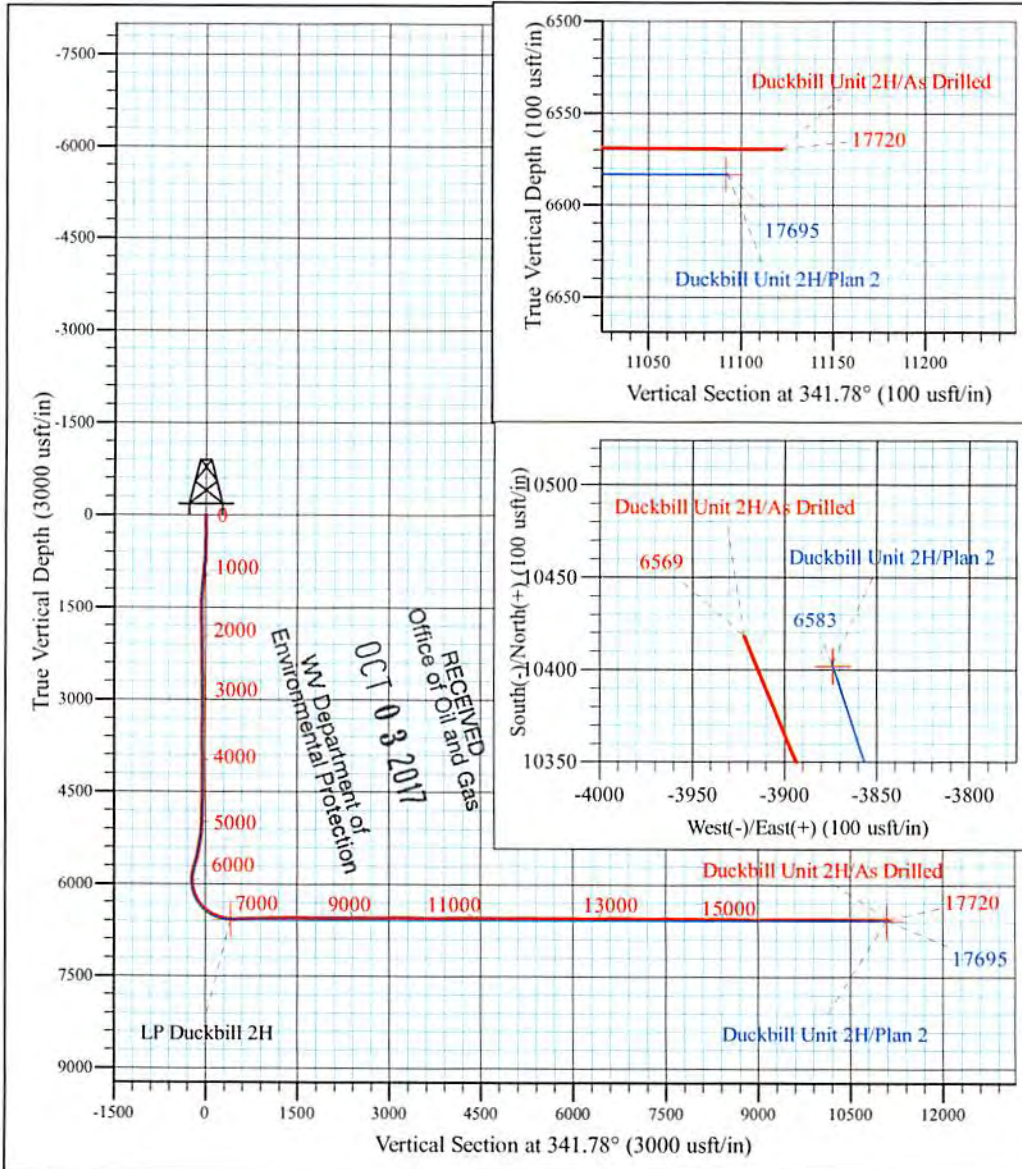
Vogt: Seaborn/Violet/Tulip/Marks
 Duckbill Unit 2H
 Plan 2
 PD 525: 1112' GL + 19' KB @ 1131.0usft
 Doddridge County WV

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: **Duckbill Unit 2H SHL**

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	14262926.12	1679349.76	39° 16' 38.232 N	80° 51' 44.718 W



Duckbill Unit 2H
Approx. BHL
 39° 18' 21.300 N 80° 52' 34.429W

Shane Rhodes
 8:49, June 21 2016
 Scientific Drilling International
 124 Vista Drive
 Charleroi, PA 15022



Antero Resources

Doddridge County WV
Vogt: Seaborn/Violet/Tulip/Marks
Duckbill Unit 2H

Original Wellpath

Design: As Drilled

Survey Report - Geographic

21 June, 2016



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Company:	Antero Resources	Local Co-ordinate Reference:	Well Duckbill Unit 2H
Project:	Doddridge County WV	TVD Reference:	PD 525: 1112' GL + 19' KB @ 1131.0usft
Site:	Vogt; Seaborn/Violet/Tulip/Marks	MD Reference:	PD 525: 1112' GL + 19' KB @ 1131.0usft
Well:	Duckbill Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Project	Doddridge County WV, 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	Vogt; Seaborn/Violet/Tulip/Marks, Site: Seaborn 2H				
Site Position:		Northing:	14,262,941.51 usft	Latitude:	39° 16' 38.384 N
From:	Map	Easting:	1,679,373.00 usft	Longitude:	80° 51' 44.422 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.09 °

Well	Duckbill Unit 2H, Marcellus					
Well Position	+N/-S	0.0 usft	Northing:	14,262,926.11 usft	Latitude:	39° 16' 38.232 N
	+E/-W	0.0 usft	Easting:	1,679,349.76 usft	Longitude:	80° 51' 44.718 W
Position Uncertainty		2.0 usft	Wellhead Elevation:	1,131.0 usft	Ground Level:	1,112.0 usft

Wellbore	Original Wellpath				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2016	6/8/2016	-8.58	66.61	52,083

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	341.78	

Survey Program	Date	6/21/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	5,578.4	Survey #5 - Final KOP Gyro (Original Well)	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper	
5,637.0	17,720.0	Survey #6 SDI MWD (Original Wellpath)	SDI MWD	Scientific Drilling Intl. MWD - Standard ver 1.0.1	

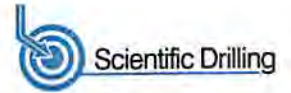
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	14,262,926.11	1,679,349.76	39° 16' 38.232 N	80° 51' 44.718 W
100.0	0.17	294.63	100.0	0.1	-0.1	14,262,926.18	1,679,349.62	39° 16' 38.233 N	80° 51' 44.719 W
125.0	0.14	254.95	125.0	0.1	-0.2	14,262,926.18	1,679,349.56	39° 16' 38.233 N	80° 51' 44.720 W
150.0	0.19	275.25	150.0	0.1	-0.3	14,262,926.18	1,679,349.49	39° 16' 38.233 N	80° 51' 44.721 W
175.0	0.18	265.95	175.0	0.1	-0.3	14,262,926.18	1,679,349.41	39° 16' 38.233 N	80° 51' 44.722 W
200.0	0.38	247.26	200.0	0.0	-0.5	14,262,926.15	1,679,349.29	39° 16' 38.232 N	80° 51' 44.723 W
225.0	0.21	265.66	225.0	0.0	-0.6	14,262,926.11	1,679,349.17	39° 16' 38.232 N	80° 51' 44.725 W
250.0	0.25	256.37	250.0	0.0	-0.7	14,262,926.09	1,679,349.07	39° 16' 38.232 N	80° 51' 44.726 W
275.0	0.15	252.28	275.0	0.0	-0.8	14,262,926.07	1,679,348.99	39° 16' 38.232 N	80° 51' 44.727 W
300.0	0.11	290.46	300.0	0.0	-0.8	14,262,926.07	1,679,348.94	39° 16' 38.232 N	80° 51' 44.728 W
325.0	0.10	161.33	325.0	-0.1	-0.8	14,262,926.06	1,679,348.98	39° 16' 38.231 N	80° 51' 44.728 W

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Scientific Drilling International

Survey Report - Geographic



Company:	Antero Resources	Local Co-ordinate Reference:	Well Duckbill Unit 2H
Project:	Doddridge County WV	TVD Reference:	PD 525: 1112' GL + 19' KB @ 1131.0usft
Site:	Vogt: Seaborn/Violet/Tulip/Marks	MD Reference:	PD 525: 1112' GL + 19' KB @ 1131.0usft
Well:	Duckbill 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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
350.0	0.20	271.02	350.0	-0.1	-0.9	14,262,926.04	1,679,348.88	39° 16' 38.231 N	80° 51' 44.729 W	
375.0	0.35	262.83	375.0	-0.1	-1.0	14,262,926.03	1,679,348.76	39° 16' 38.231 N	80° 51' 44.730 W	
400.0	0.53	255.11	400.0	-0.1	-1.2	14,262,925.99	1,679,348.58	39° 16' 38.231 N	80° 51' 44.733 W	
425.0	0.82	238.42	425.0	-0.2	-1.4	14,262,925.87	1,679,348.31	39° 16' 38.230 N	80° 51' 44.736 W	
450.0	1.71	235.68	450.0	-0.6	-1.9	14,262,925.56	1,679,347.85	39° 16' 38.227 N	80° 51' 44.742 W	
475.0	1.94	232.45	475.0	-1.0	-2.6	14,262,925.09	1,679,347.21	39° 16' 38.222 N	80° 51' 44.750 W	
500.0	2.54	229.52	500.0	-1.6	-3.3	14,262,924.48	1,679,346.45	39° 16' 38.216 N	80° 51' 44.760 W	
525.0	2.74	228.75	524.9	-2.4	-4.2	14,262,923.72	1,679,345.58	39° 16' 38.208 N	80° 51' 44.771 W	
550.0	3.07	227.90	549.9	-3.2	-5.1	14,262,922.88	1,679,344.64	39° 16' 38.200 N	80° 51' 44.783 W	
575.0	3.80	225.11	574.9	-4.3	-6.2	14,262,921.85	1,679,343.55	39° 16' 38.190 N	80° 51' 44.797 W	
600.0	4.39	222.97	599.8	-5.6	-7.4	14,262,920.56	1,679,342.31	39° 16' 38.177 N	80° 51' 44.812 W	
625.0	4.99	219.51	624.7	-7.1	-8.8	14,262,919.02	1,679,340.97	39° 16' 38.162 N	80° 51' 44.829 W	
650.0	5.42	217.82	649.6	-8.9	-10.2	14,262,917.25	1,679,339.55	39° 16' 38.144 N	80° 51' 44.848 W	
675.0	5.83	214.74	674.5	-10.8	-11.7	14,262,915.28	1,679,338.11	39° 16' 38.125 N	80° 51' 44.866 W	
700.0	6.00	214.02	699.3	-13.0	-13.1	14,262,913.15	1,679,336.65	39° 16' 38.104 N	80° 51' 44.885 W	
725.0	6.44	209.14	724.2	-15.3	-14.5	14,262,910.84	1,679,335.24	39° 16' 38.081 N	80° 51' 44.903 W	
750.0	6.59	208.12	749.0	-17.8	-15.9	14,262,908.35	1,679,333.88	39° 16' 38.057 N	80° 51' 44.920 W	
775.0	6.66	206.09	773.9	-20.3	-17.2	14,262,905.78	1,679,332.56	39° 16' 38.031 N	80° 51' 44.937 W	
800.0	6.79	204.54	798.7	-23.0	-18.4	14,262,903.14	1,679,331.31	39° 16' 38.005 N	80° 51' 44.953 W	
825.0	6.72	202.40	823.5	-25.7	-19.6	14,262,900.44	1,679,330.14	39° 16' 37.978 N	80° 51' 44.968 W	
850.0	6.83	201.08	848.4	-28.4	-20.7	14,262,897.70	1,679,329.05	39° 16' 37.951 N	80° 51' 44.982 W	
875.0	6.90	200.21	873.2	-31.2	-21.8	14,262,894.91	1,679,328.00	39° 16' 37.924 N	80° 51' 44.995 W	
900.0	6.77	198.14	898.0	-34.0	-22.7	14,262,892.10	1,679,327.02	39° 16' 37.896 N	80° 51' 45.007 W	
925.0	6.79	197.71	922.8	-36.8	-23.6	14,262,889.29	1,679,326.11	39° 16' 37.868 N	80° 51' 45.019 W	
950.0	6.81	197.52	947.6	-39.6	-24.5	14,262,886.47	1,679,325.21	39° 16' 37.840 N	80° 51' 45.031 W	
975.0	6.90	197.01	972.5	-42.5	-25.4	14,262,883.62	1,679,324.33	39° 16' 37.812 N	80° 51' 45.042 W	
1,000.0	6.83	196.13	997.3	-45.4	-26.3	14,262,880.75	1,679,323.48	39° 16' 37.784 N	80° 51' 45.053 W	
1,025.0	6.88	195.60	1,022.1	-48.2	-27.1	14,262,877.88	1,679,322.66	39° 16' 37.755 N	80° 51' 45.063 W	
1,050.0	6.85	196.09	1,046.9	-51.1	-27.9	14,262,875.01	1,679,321.85	39° 16' 37.727 N	80° 51' 45.074 W	
1,075.0	6.39	193.23	1,071.8	-53.9	-28.6	14,262,872.22	1,679,321.11	39° 16' 37.700 N	80° 51' 45.083 W	
1,100.0	6.00	191.52	1,096.6	-56.5	-29.2	14,262,869.59	1,679,320.53	39° 16' 37.673 N	80° 51' 45.090 W	
1,125.0	5.40	189.01	1,121.5	-59.0	-29.7	14,262,867.14	1,679,320.09	39° 16' 37.649 N	80° 51' 45.096 W	
1,150.0	5.10	188.30	1,146.4	-61.2	-30.0	14,262,864.88	1,679,319.74	39° 16' 37.627 N	80° 51' 45.101 W	
1,175.0	4.59	189.22	1,171.3	-63.3	-30.3	14,262,862.80	1,679,319.42	39° 16' 37.606 N	80° 51' 45.105 W	
1,200.0	4.24	187.91	1,196.2	-65.2	-30.6	14,262,860.89	1,679,319.14	39° 16' 37.588 N	80° 51' 45.108 W	
1,225.0	3.84	190.48	1,221.2	-67.0	-30.9	14,262,859.15	1,679,318.86	39° 16' 37.570 N	80° 51' 45.112 W	
1,250.0	3.61	192.66	1,246.1	-68.6	-31.2	14,262,857.56	1,679,318.53	39° 16' 37.555 N	80° 51' 45.116 W	
1,275.0	3.42	195.80	1,271.1	-70.0	-31.6	14,262,856.08	1,679,318.16	39° 16' 37.540 N	80° 51' 45.121 W	
1,300.0	3.28	198.92	1,296.0	-71.4	-32.0	14,262,854.68	1,679,317.72	39° 16' 37.526 N	80° 51' 45.126 W	
1,325.0	3.12	201.78	1,321.0	-72.7	-32.5	14,262,853.38	1,679,317.24	39° 16' 37.513 N	80° 51' 45.133 W	
1,350.0	2.23	203.91	1,346.0	-73.8	-33.0	14,262,852.30	1,679,316.79	39° 16' 37.503 N	80° 51' 45.138 W	
1,375.0	1.94	209.87	1,370.9	-74.6	-33.4	14,262,851.49	1,679,316.38	39° 16' 37.495 N	80° 51' 45.144 W	
1,400.0	1.48	217.31	1,395.9	-75.3	-33.8	14,262,850.86	1,679,315.97	39° 16' 37.488 N	80° 51' 45.149 W	
1,425.0	1.34	219.52	1,420.9	-75.7	-34.2	14,262,850.38	1,679,315.59	39° 16' 37.484 N	80° 51' 45.154 W	
1,450.0	1.22	223.00	1,445.9	-76.2	-34.5	14,262,849.96	1,679,315.22	39° 16' 37.479 N	80° 51' 45.158 W	
1,475.0	1.15	220.43	1,470.9	-76.5	-34.9	14,262,849.58	1,679,314.88	39° 16' 37.476 N	80° 51' 45.163 W	
1,500.0	1.08	222.31	1,495.9	-76.9	-35.2	14,262,849.21	1,679,314.56	39° 16' 37.472 N	80° 51' 45.167 W	
1,525.0	0.74	250.28	1,520.9	-77.1	-35.5	14,262,848.98	1,679,314.25	39° 16' 37.470 N	80° 51' 45.171 W	
1,550.0	0.61	267.11	1,545.9	-77.2	-35.8	14,262,848.92	1,679,313.96	39° 16' 37.469 N	80° 51' 45.174 W	
1,575.0	0.44	265.01	1,570.9	-77.2	-36.0	14,262,848.91	1,679,313.73	39° 16' 37.469 N	80° 51' 45.177 W	
1,600.0	0.43	264.64	1,595.9	-77.2	-36.2	14,262,848.89	1,679,313.55	39° 16' 37.469 N	80° 51' 45.180 W	
1,625.0	0.59	273.78	1,620.9	-77.2	-36.4	14,262,848.89	1,679,313.32	39° 16' 37.469 N	80° 51' 45.183 W	
1,650.0	0.52	278.42	1,645.9	-77.2	-36.7	14,262,848.91	1,679,313.08	39° 16' 37.469 N	80° 51' 45.186 W	
1,675.0	0.52	285.57	1,670.9	-77.2	-36.9	14,262,848.96	1,679,312.86	39° 16' 37.469 N	80° 51' 45.188 W	
1,700.0	0.50	281.37	1,695.9	-77.1	-37.1	14,262,849.01	1,679,312.65	39° 16' 37.470 N	80° 51' 45.191 W	

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Scientific Drilling International
Survey Report - Geographic



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Well:	Duckbill Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

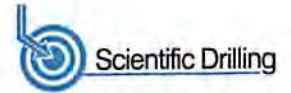
Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
1,725.0	0.59	291.36	1,720.9	-77.0	-37.3	14,262,849.08	1,679,312.42	39° 16' 37.471 N	80° 51' 45.194 W	
1,750.0	0.53	287.28	1,745.9	-77.0	-37.6	14,262,849.16	1,679,312.19	39° 16' 37.472 N	80° 51' 45.197 W	
1,775.0	0.47	269.40	1,770.9	-76.9	-37.8	14,262,849.20	1,679,311.98	39° 16' 37.472 N	80° 51' 45.200 W	
1,800.0	0.55	285.83	1,795.9	-76.9	-38.0	14,262,849.23	1,679,311.76	39° 16' 37.472 N	80° 51' 45.202 W	
1,825.0	0.48	282.52	1,820.9	-76.8	-38.2	14,262,849.28	1,679,311.54	39° 16' 37.473 N	80° 51' 45.205 W	
1,850.0	0.50	290.72	1,845.9	-76.8	-38.4	14,262,849.34	1,679,311.34	39° 16' 37.473 N	80° 51' 45.208 W	
1,875.0	0.46	293.82	1,870.9	-76.7	-38.6	14,262,849.42	1,679,311.14	39° 16' 37.474 N	80° 51' 45.210 W	
1,900.0	0.46	290.06	1,895.9	-76.6	-38.8	14,262,849.50	1,679,310.96	39° 16' 37.475 N	80° 51' 45.213 W	
1,925.0	0.35	305.41	1,920.9	-76.5	-39.0	14,262,849.58	1,679,310.80	39° 16' 37.476 N	80° 51' 45.215 W	
1,950.0	0.14	329.71	1,945.9	-76.5	-39.0	14,262,849.65	1,679,310.72	39° 16' 37.476 N	80° 51' 45.216 W	
1,975.0	0.32	343.36	1,970.9	-76.4	-39.1	14,262,849.74	1,679,310.69	39° 16' 37.477 N	80° 51' 45.216 W	
2,000.0	0.50	340.68	1,995.9	-76.2	-39.1	14,262,849.91	1,679,310.63	39° 16' 37.479 N	80° 51' 45.217 W	
2,025.0	0.39	343.78	2,020.9	-76.0	-39.2	14,262,850.10	1,679,310.57	39° 16' 37.481 N	80° 51' 45.218 W	
2,050.0	0.40	339.35	2,045.9	-75.9	-39.2	14,262,850.26	1,679,310.52	39° 16' 37.483 N	80° 51' 45.218 W	
2,075.0	0.46	347.42	2,070.9	-75.7	-39.3	14,262,850.44	1,679,310.46	39° 16' 37.484 N	80° 51' 45.219 W	
2,100.0	0.44	351.24	2,095.9	-75.5	-39.3	14,262,850.63	1,679,310.43	39° 16' 37.486 N	80° 51' 45.219 W	
2,125.0	0.45	345.90	2,120.9	-75.3	-39.4	14,262,850.82	1,679,310.39	39° 16' 37.488 N	80° 51' 45.220 W	
2,150.0	0.53	355.69	2,145.9	-75.1	-39.4	14,262,851.03	1,679,310.36	39° 16' 37.490 N	80° 51' 45.220 W	
2,175.0	0.64	347.77	2,170.9	-74.8	-39.4	14,262,851.28	1,679,310.32	39° 16' 37.493 N	80° 51' 45.221 W	
2,200.0	0.49	342.14	2,195.9	-74.6	-39.5	14,262,851.52	1,679,310.25	39° 16' 37.495 N	80° 51' 45.221 W	
2,225.0	0.55	342.11	2,220.9	-74.4	-39.6	14,262,851.74	1,679,310.19	39° 16' 37.497 N	80° 51' 45.222 W	
2,250.0	0.39	341.51	2,245.9	-74.2	-39.6	14,262,851.93	1,679,310.12	39° 16' 37.499 N	80° 51' 45.223 W	
2,275.0	0.44	347.04	2,270.9	-74.0	-39.7	14,262,852.11	1,679,310.07	39° 16' 37.501 N	80° 51' 45.224 W	
2,300.0	0.62	7.78	2,295.9	-73.8	-39.7	14,262,852.33	1,679,310.07	39° 16' 37.503 N	80° 51' 45.224 W	
2,325.0	0.64	358.88	2,320.9	-73.5	-39.7	14,262,852.61	1,679,310.09	39° 16' 37.506 N	80° 51' 45.224 W	
2,350.0	0.62	4.42	2,345.9	-73.2	-39.7	14,262,852.88	1,679,310.09	39° 16' 37.508 N	80° 51' 45.224 W	
2,375.0	0.68	355.31	2,370.9	-72.9	-39.7	14,262,853.16	1,679,310.09	39° 16' 37.511 N	80° 51' 45.224 W	
2,400.0	0.72	357.62	2,395.9	-72.6	-39.7	14,262,853.47	1,679,310.07	39° 16' 37.514 N	80° 51' 45.224 W	
2,425.0	0.77	358.04	2,420.9	-72.3	-39.7	14,262,853.79	1,679,310.06	39° 16' 37.517 N	80° 51' 45.224 W	
2,450.0	0.87	356.39	2,445.9	-72.0	-39.7	14,262,854.15	1,679,310.04	39° 16' 37.521 N	80° 51' 45.224 W	
2,475.0	0.92	358.61	2,470.9	-71.6	-39.7	14,262,854.54	1,679,310.02	39° 16' 37.525 N	80° 51' 45.224 W	
2,500.0	0.97	355.49	2,495.9	-71.2	-39.8	14,262,854.95	1,679,310.00	39° 16' 37.529 N	80° 51' 45.225 W	
2,525.0	1.17	351.63	2,520.8	-70.7	-39.8	14,262,855.42	1,679,309.94	39° 16' 37.534 N	80° 51' 45.225 W	
2,550.0	1.05	349.89	2,545.8	-70.2	-39.9	14,262,855.89	1,679,309.87	39° 16' 37.538 N	80° 51' 45.226 W	
2,575.0	1.19	354.05	2,570.8	-69.7	-40.0	14,262,856.38	1,679,309.80	39° 16' 37.543 N	80° 51' 45.227 W	
2,600.0	1.01	353.17	2,595.8	-69.3	-40.0	14,262,856.86	1,679,309.75	39° 16' 37.548 N	80° 51' 45.228 W	
2,625.0	1.24	346.48	2,620.8	-68.8	-40.1	14,262,857.34	1,679,309.66	39° 16' 37.553 N	80° 51' 45.229 W	
2,650.0	1.16	347.50	2,645.8	-68.3	-40.2	14,262,857.85	1,679,309.54	39° 16' 37.558 N	80° 51' 45.230 W	
2,675.0	1.15	349.69	2,670.8	-67.8	-40.3	14,262,858.34	1,679,309.44	39° 16' 37.562 N	80° 51' 45.232 W	
2,700.0	1.23	348.33	2,695.8	-67.3	-40.4	14,262,858.85	1,679,309.34	39° 16' 37.567 N	80° 51' 45.233 W	
2,725.0	1.35	348.60	2,720.8	-66.7	-40.5	14,262,859.40	1,679,309.23	39° 16' 37.573 N	80° 51' 45.234 W	
2,750.0	1.16	349.98	2,745.8	-66.2	-40.6	14,262,859.94	1,679,309.13	39° 16' 37.578 N	80° 51' 45.236 W	
2,775.0	1.23	349.82	2,770.8	-65.7	-40.7	14,262,860.45	1,679,309.03	39° 16' 37.583 N	80° 51' 45.237 W	
2,800.0	1.30	352.64	2,795.8	-65.1	-40.8	14,262,861.00	1,679,308.95	39° 16' 37.589 N	80° 51' 45.238 W	
2,825.0	1.25	352.26	2,820.8	-64.6	-40.9	14,262,861.55	1,679,308.88	39° 16' 37.594 N	80° 51' 45.239 W	
2,850.0	1.22	349.44	2,845.8	-64.0	-41.0	14,262,862.08	1,679,308.79	39° 16' 37.599 N	80° 51' 45.240 W	
2,875.0	0.74	347.22	2,870.8	-63.6	-41.1	14,262,862.50	1,679,308.71	39° 16' 37.604 N	80° 51' 45.241 W	
2,900.0	0.55	358.90	2,895.8	-63.3	-41.1	14,262,862.78	1,679,308.67	39° 16' 37.606 N	80° 51' 45.241 W	
2,925.0	0.59	354.05	2,920.8	-63.1	-41.1	14,262,863.03	1,679,308.65	39° 16' 37.609 N	80° 51' 45.242 W	
2,950.0	0.62	348.47	2,945.8	-62.8	-41.1	14,262,863.29	1,679,308.61	39° 16' 37.611 N	80° 51' 45.242 W	
2,975.0	0.67	338.51	2,970.8	-62.6	-41.2	14,262,863.56	1,679,308.53	39° 16' 37.614 N	80° 51' 45.243 W	
3,000.0	0.66	337.80	2,995.8	-62.3	-41.3	14,262,863.82	1,679,308.42	39° 16' 37.617 N	80° 51' 45.245 W	
3,025.0	0.55	343.53	3,020.8	-62.0	-41.4	14,262,864.07	1,679,308.34	39° 16' 37.619 N	80° 51' 45.246 W	
3,050.0	0.22	37.21	3,045.8	-61.9	-41.4	14,262,864.23	1,679,308.33	39° 16' 37.621 N	80° 51' 45.246 W	
3,075.0	0.04	33.50	3,070.8	-61.8	-41.4	14,262,864.27	1,679,308.36	39° 16' 37.621 N	80° 51' 45.245 W	

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Survey Report - Geographic



Company:	Antero Resources	Local Co-ordinate Reference:	Well Duckbill Unit 2H
Project:	Doddridge County WV	TVD Reference:	PD 525: 1112' GL + 19' KB @ 1131.0usft
Site:	Vogt: Seaborn/Violet/Tulip/Marks	MD Reference:	PD 525: 1112' GL + 19' KB @ 1131.0usft
Well:	Duckbill 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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
3,100.0	0.23	136.05	3,095.8	-61.9	-41.4	14,262,864.24	1,679,308.40	39° 16' 37.621 N	80° 51' 45.245 W	
3,125.0	0.72	168.05	3,120.8	-62.1	-41.3	14,262,864.05	1,679,308.47	39° 16' 37.619 N	80° 51' 45.244 W	
3,150.0	1.23	154.43	3,145.8	-62.5	-41.1	14,262,863.66	1,679,308.62	39° 16' 37.615 N	80° 51' 45.242 W	
3,175.0	1.36	157.13	3,170.8	-63.0	-40.9	14,262,863.14	1,679,308.85	39° 16' 37.610 N	80° 51' 45.239 W	
3,200.0	1.40	159.39	3,195.7	-63.5	-40.7	14,262,862.58	1,679,309.07	39° 16' 37.604 N	80° 51' 45.236 W	
3,225.0	1.40	157.59	3,220.7	-64.1	-40.5	14,262,862.01	1,679,309.30	39° 16' 37.599 N	80° 51' 45.233 W	
3,250.0	1.37	156.02	3,245.7	-64.7	-40.2	14,262,861.46	1,679,309.54	39° 16' 37.593 N	80° 51' 45.230 W	
3,275.0	1.20	155.52	3,270.7	-65.2	-40.0	14,262,860.95	1,679,309.77	39° 16' 37.588 N	80° 51' 45.228 W	
3,300.0	0.99	155.05	3,295.7	-65.6	-39.8	14,262,860.51	1,679,309.97	39° 16' 37.584 N	80° 51' 45.225 W	
3,325.0	1.04	160.54	3,320.7	-66.0	-39.6	14,262,860.10	1,679,310.13	39° 16' 37.580 N	80° 51' 45.223 W	
3,350.0	1.07	162.03	3,345.7	-66.4	-39.5	14,262,859.67	1,679,310.28	39° 16' 37.576 N	80° 51' 45.221 W	
3,375.0	0.92	170.22	3,370.7	-66.9	-39.4	14,262,859.25	1,679,310.39	39° 16' 37.571 N	80° 51' 45.220 W	
3,400.0	0.90	177.41	3,395.7	-67.3	-39.3	14,262,858.85	1,679,310.43	39° 16' 37.567 N	80° 51' 45.219 W	
3,425.0	0.90	176.63	3,420.7	-67.7	-39.3	14,262,858.46	1,679,310.45	39° 16' 37.564 N	80° 51' 45.219 W	
3,450.0	1.00	174.99	3,445.7	-68.1	-39.3	14,262,858.05	1,679,310.48	39° 16' 37.560 N	80° 51' 45.219 W	
3,475.0	0.85	172.22	3,470.7	-68.5	-39.2	14,262,857.65	1,679,310.52	39° 16' 37.556 N	80° 51' 45.218 W	
3,500.0	0.64	185.99	3,495.7	-68.8	-39.2	14,262,857.33	1,679,310.53	39° 16' 37.552 N	80° 51' 45.218 W	
3,525.0	0.90	165.33	3,520.7	-69.1	-39.2	14,262,857.00	1,679,310.57	39° 16' 37.549 N	80° 51' 45.217 W	
3,550.0	0.85	161.68	3,545.7	-69.5	-39.1	14,262,856.63	1,679,310.68	39° 16' 37.546 N	80° 51' 45.216 W	
3,575.0	0.88	160.82	3,570.7	-69.8	-39.0	14,262,856.27	1,679,310.80	39° 16' 37.542 N	80° 51' 45.214 W	
3,600.0	0.66	168.25	3,595.7	-70.2	-38.9	14,262,855.95	1,679,310.89	39° 16' 37.539 N	80° 51' 45.213 W	
3,625.0	0.59	167.47	3,620.7	-70.4	-38.8	14,262,855.68	1,679,310.95	39° 16' 37.536 N	80° 51' 45.213 W	
3,650.0	0.55	170.81	3,645.7	-70.7	-38.8	14,262,855.44	1,679,311.00	39° 16' 37.534 N	80° 51' 45.212 W	
3,675.0	0.40	159.59	3,670.7	-70.9	-38.7	14,262,855.24	1,679,311.05	39° 16' 37.532 N	80° 51' 45.211 W	
3,700.0	0.43	139.75	3,695.7	-71.0	-38.6	14,262,855.09	1,679,311.14	39° 16' 37.530 N	80° 51' 45.210 W	
3,725.0	0.26	148.50	3,720.7	-71.1	-38.5	14,262,854.97	1,679,311.23	39° 16' 37.529 N	80° 51' 45.209 W	
3,750.0	0.16	188.05	3,745.7	-71.2	-38.5	14,262,854.88	1,679,311.25	39° 16' 37.528 N	80° 51' 45.209 W	
3,775.0	0.13	124.77	3,770.7	-71.3	-38.5	14,262,854.83	1,679,311.27	39° 16' 37.528 N	80° 51' 45.209 W	
3,800.0	0.18	234.64	3,795.7	-71.3	-38.5	14,262,854.79	1,679,311.26	39° 16' 37.527 N	80° 51' 45.209 W	
3,825.0	0.07	155.35	3,820.7	-71.4	-38.5	14,262,854.76	1,679,311.24	39° 16' 37.527 N	80° 51' 45.209 W	
3,850.0	0.14	269.78	3,845.7	-71.4	-38.5	14,262,854.74	1,679,311.21	39° 16' 37.527 N	80° 51' 45.209 W	
3,875.0	0.16	264.74	3,870.7	-71.4	-38.6	14,262,854.74	1,679,311.15	39° 16' 37.527 N	80° 51' 45.210 W	
3,900.0	0.31	281.44	3,895.7	-71.4	-38.7	14,262,854.75	1,679,311.04	39° 16' 37.527 N	80° 51' 45.211 W	
3,925.0	0.22	275.17	3,920.7	-71.3	-38.8	14,262,854.77	1,679,310.93	39° 16' 37.527 N	80° 51' 45.213 W	
3,950.0	0.31	274.41	3,945.7	-71.3	-38.9	14,262,854.78	1,679,310.82	39° 16' 37.527 N	80° 51' 45.214 W	
3,975.0	0.36	296.59	3,970.7	-71.3	-39.1	14,262,854.82	1,679,310.68	39° 16' 37.528 N	80° 51' 45.216 W	
4,000.0	0.44	292.20	3,995.7	-71.2	-39.2	14,262,854.89	1,679,310.52	39° 16' 37.528 N	80° 51' 45.218 W	
4,025.0	0.67	304.03	4,020.7	-71.1	-39.5	14,262,855.01	1,679,310.31	39° 16' 37.529 N	80° 51' 45.221 W	
4,050.0	0.81	8.02	4,045.7	-70.9	-39.5	14,262,855.26	1,679,310.21	39° 16' 37.532 N	80° 51' 45.222 W	
4,075.0	1.25	316.28	4,070.7	-70.5	-39.7	14,262,855.64	1,679,310.05	39° 16' 37.536 N	80° 51' 45.224 W	
4,100.0	1.21	319.48	4,095.7	-70.1	-40.1	14,262,856.03	1,679,309.69	39° 16' 37.540 N	80° 51' 45.229 W	
4,125.0	1.29	317.61	4,120.7	-69.7	-40.4	14,262,856.44	1,679,309.33	39° 16' 37.544 N	80° 51' 45.233 W	
4,150.0	1.28	317.20	4,145.7	-69.3	-40.8	14,262,856.86	1,679,308.95	39° 16' 37.548 N	80° 51' 45.238 W	
4,175.0	1.27	316.25	4,170.6	-68.9	-41.2	14,262,857.26	1,679,308.57	39° 16' 37.552 N	80° 51' 45.243 W	
4,200.0	0.93	322.69	4,195.6	-68.5	-41.5	14,262,857.62	1,679,308.25	39° 16' 37.555 N	80° 51' 45.247 W	
4,225.0	0.35	357.38	4,220.6	-68.3	-41.6	14,262,857.86	1,679,308.13	39° 16' 37.558 N	80° 51' 45.248 W	
4,250.0	0.38	346.12	4,245.6	-68.1	-41.7	14,262,858.02	1,679,308.10	39° 16' 37.559 N	80° 51' 45.249 W	
4,275.0	0.33	351.13	4,270.6	-67.9	-41.7	14,262,858.17	1,679,308.07	39° 16' 37.561 N	80° 51' 45.249 W	
4,300.0	0.50	9.11	4,295.6	-67.8	-41.7	14,262,858.35	1,679,308.08	39° 16' 37.563 N	80° 51' 45.249 W	
4,325.0	0.64	21.80	4,320.6	-67.5	-41.6	14,262,858.58	1,679,308.15	39° 16' 37.565 N	80° 51' 45.248 W	
4,350.0	0.69	27.85	4,345.6	-67.3	-41.5	14,262,858.85	1,679,308.27	39° 16' 37.567 N	80° 51' 45.247 W	
4,375.0	0.82	36.10	4,370.6	-67.0	-41.3	14,262,859.12	1,679,308.44	39° 16' 37.570 N	80° 51' 45.244 W	
4,400.0	1.64	55.69	4,395.6	-66.6	-40.9	14,262,859.47	1,679,308.85	39° 16' 37.577 N	80° 51' 45.239 W	
4,425.0	1.88	56.57	4,420.6	-66.2	-40.3	14,262,859.90	1,679,309.48	39° 16' 37.582 N	80° 51' 45.231 W	
4,450.0	1.98	57.70	4,445.6	-65.8	-39.6	14,262,860.35	1,679,310.19	39° 16' 37.582 N	80° 51' 45.222 W	

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Survey Report - Geographic



Company:	Antero Resources	Local Co-ordinate Reference:	Well Duckbill Unit 2H
Project:	Doddridge County WV	TVD Reference:	PD 525: 1112' GL + 19' KB @ 1131.0usft
Site:	Vogt: Seaborn/Violet/Tulip/Marks	MD Reference:	PD 525: 1112' GL + 19' KB @ 1131.0usft
Well:	Duckbill Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

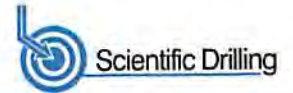
Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,475.0	1.81	48.69	4,470.6	-65.3	-38.9	14,262,860.85	1,679,310.85	39° 16' 37.587 N	80° 51' 45.214 W
4,500.0	1.90	42.06	4,495.6	-64.7	-38.3	14,262,861.41	1,679,311.43	39° 16' 37.593 N	80° 51' 45.206 W
4,525.0	1.81	38.84	4,520.6	-64.1	-37.8	14,262,862.03	1,679,311.95	39° 16' 37.599 N	80° 51' 45.200 W
4,550.0	1.75	42.27	4,545.6	-63.5	-37.3	14,262,862.62	1,679,312.46	39° 16' 37.605 N	80° 51' 45.193 W
4,575.0	0.92	51.82	4,570.5	-63.1	-36.9	14,262,863.03	1,679,312.87	39° 16' 37.609 N	80° 51' 45.188 W
4,600.0	0.67	48.96	4,595.5	-62.9	-36.6	14,262,863.25	1,679,313.14	39° 16' 37.611 N	80° 51' 45.185 W
4,625.0	0.68	56.49	4,620.5	-62.7	-36.4	14,262,863.42	1,679,313.37	39° 16' 37.613 N	80° 51' 45.182 W
4,650.0	0.39	123.21	4,645.5	-62.7	-36.2	14,262,863.46	1,679,313.57	39° 16' 37.613 N	80° 51' 45.179 W
4,675.0	0.87	180.03	4,670.5	-62.9	-36.1	14,262,863.22	1,679,313.64	39° 16' 37.611 N	80° 51' 45.178 W
4,700.0	0.98	177.93	4,695.5	-63.3	-36.1	14,262,862.82	1,679,313.65	39° 16' 37.607 N	80° 51' 45.178 W
4,725.0	1.11	181.55	4,720.5	-63.8	-36.1	14,262,862.36	1,679,313.65	39° 16' 37.602 N	80° 51' 45.178 W
4,750.0	1.56	182.01	4,745.5	-64.3	-36.1	14,262,861.78	1,679,313.63	39° 16' 37.596 N	80° 51' 45.178 W
4,775.0	1.80	183.62	4,770.5	-65.1	-36.2	14,262,861.05	1,679,313.59	39° 16' 37.589 N	80° 51' 45.179 W
4,800.0	1.88	182.10	4,795.5	-65.9	-36.2	14,262,860.25	1,679,313.55	39° 16' 37.581 N	80° 51' 45.179 W
4,825.0	2.09	184.02	4,820.5	-66.7	-36.3	14,262,859.38	1,679,313.50	39° 16' 37.573 N	80° 51' 45.180 W
4,850.0	2.39	184.63	4,845.5	-67.7	-36.3	14,262,858.41	1,679,313.43	39° 16' 37.563 N	80° 51' 45.181 W
4,875.0	2.44	187.29	4,870.4	-68.8	-36.4	14,262,857.36	1,679,313.32	39° 16' 37.553 N	80° 51' 45.182 W
4,900.0	2.42	187.61	4,895.4	-69.8	-36.6	14,262,856.31	1,679,313.18	39° 16' 37.542 N	80° 51' 45.184 W
4,925.0	2.44	186.64	4,920.4	-70.9	-36.7	14,262,855.26	1,679,313.05	39° 16' 37.532 N	80° 51' 45.186 W
4,950.0	2.26	186.26	4,945.4	-71.9	-36.8	14,262,854.24	1,679,312.94	39° 16' 37.522 N	80° 51' 45.187 W
4,975.0	2.18	184.80	4,970.4	-72.8	-36.9	14,262,853.28	1,679,312.84	39° 16' 37.512 N	80° 51' 45.189 W
5,000.0	2.47	186.77	4,995.3	-73.8	-37.0	14,262,852.27	1,679,312.74	39° 16' 37.502 N	80° 51' 45.190 W
5,025.0	3.56	189.20	5,020.3	-75.1	-37.2	14,262,850.97	1,679,312.55	39° 16' 37.489 N	80° 51' 45.192 W
5,050.0	4.56	192.85	5,045.2	-76.9	-37.6	14,262,849.23	1,679,312.21	39° 16' 37.472 N	80° 51' 45.197 W
5,075.0	5.18	189.86	5,070.1	-79.0	-38.0	14,262,847.15	1,679,311.79	39° 16' 37.452 N	80° 51' 45.202 W
5,100.0	5.77	191.24	5,095.0	-81.3	-38.4	14,262,844.81	1,679,311.36	39° 16' 37.429 N	80° 51' 45.208 W
5,125.0	6.79	193.40	5,119.9	-84.0	-39.0	14,262,842.14	1,679,310.77	39° 16' 37.402 N	80° 51' 45.215 W
5,150.0	7.68	194.05	5,144.7	-87.0	-39.7	14,262,839.08	1,679,310.02	39° 16' 37.372 N	80° 51' 45.225 W
5,175.0	8.11	193.89	5,169.4	-90.4	-40.6	14,262,835.75	1,679,309.19	39° 16' 37.339 N	80° 51' 45.235 W
5,200.0	8.90	192.84	5,194.2	-94.0	-41.4	14,262,832.15	1,679,308.34	39° 16' 37.303 N	80° 51' 45.246 W
5,225.0	9.98	193.07	5,218.8	-98.0	-42.3	14,262,828.15	1,679,307.42	39° 16' 37.264 N	80° 51' 45.258 W
5,250.0	10.51	193.02	5,243.4	-102.3	-43.3	14,262,823.82	1,679,306.41	39° 16' 37.221 N	80° 51' 45.271 W
5,275.0	10.98	195.09	5,268.0	-106.8	-44.5	14,262,819.30	1,679,305.28	39° 16' 37.176 N	80° 51' 45.285 W
5,300.0	11.75	198.36	5,292.5	-111.5	-45.9	14,262,814.59	1,679,303.86	39° 16' 37.130 N	80° 51' 45.304 W
5,325.0	11.81	200.08	5,317.0	-116.3	-47.6	14,262,809.77	1,679,302.18	39° 16' 37.082 N	80° 51' 45.325 W
5,350.0	11.70	201.60	5,341.5	-121.1	-49.4	14,262,805.01	1,679,300.37	39° 16' 37.035 N	80° 51' 45.348 W
5,375.0	12.06	202.32	5,365.9	-125.9	-51.3	14,262,800.23	1,679,298.44	39° 16' 36.988 N	80° 51' 45.373 W
5,400.0	12.32	202.82	5,390.4	-130.8	-53.3	14,262,795.36	1,679,296.42	39° 16' 36.940 N	80° 51' 45.399 W
5,425.0	12.21	201.53	5,414.8	-135.7	-55.3	14,262,790.44	1,679,294.41	39° 16' 36.891 N	80° 51' 45.424 W
5,450.0	12.47	200.84	5,439.2	-140.7	-57.3	14,262,785.46	1,679,292.48	39° 16' 36.842 N	80° 51' 45.449 W
5,475.0	13.44	200.60	5,463.6	-145.9	-59.3	14,262,780.22	1,679,290.50	39° 16' 36.790 N	80° 51' 45.474 W
5,500.0	14.21	199.57	5,487.8	-151.5	-61.3	14,262,774.61	1,679,288.45	39° 16' 36.735 N	80° 51' 45.500 W
5,525.0	14.58	198.27	5,512.1	-157.4	-63.3	14,262,768.73	1,679,286.43	39° 16' 36.677 N	80° 51' 45.526 W
5,550.0	15.03	198.50	5,536.2	-163.4	-65.3	14,262,762.67	1,679,284.42	39° 16' 36.617 N	80° 51' 45.552 W
5,575.0	16.26	198.16	5,560.3	-169.8	-67.5	14,262,756.27	1,679,282.30	39° 16' 36.554 N	80° 51' 45.579 W
5,578.4	16.31	197.59	5,563.6	-170.8	-67.8	14,262,755.35	1,679,282.01	39° 16' 36.545 N	80° 51' 45.583 W
5,637.0	18.61	196.65	5,619.5	-187.6	-72.9	14,262,738.55	1,679,276.84	39° 16' 36.379 N	80° 51' 45.649 W
First SDI MWD @ 5637									
5,726.0	19.92	197.35	5,703.5	-215.6	-81.5	14,262,710.48	1,679,268.25	39° 16' 36.101 N	80° 51' 45.759 W
5,771.0	18.93	195.99	5,745.9	-230.0	-85.8	14,262,696.14	1,679,263.95	39° 16' 35.959 N	80° 51' 45.814 W
5,816.0	17.97	195.26	5,788.6	-243.7	-89.8	14,262,682.46	1,679,260.00	39° 16' 35.824 N	80° 51' 45.864 W
5,861.0	18.04	215.90	5,831.4	-256.0	-95.8	14,262,670.14	1,679,253.96	39° 16' 35.702 N	80° 51' 45.941 W
5,906.0	19.60	231.63	5,874.1	-266.3	-105.6	14,262,659.80	1,679,243.95	39° 16' 35.600 N	80° 51' 46.069 W
5,950.0	20.40	245.81	5,915.4	-274.0	-118.6	14,262,652.08	1,679,231.16	39° 16' 35.525 N	80° 51' 46.231 W
5,995.0	21.58	256.67	5,957.5	-279.2	-133.8	14,262,646.95	1,679,215.95	39° 16' 35.474 N	80° 51' 46.425 W

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Scientific Drilling International
Survey Report - Geographic



Company:	Antero Resources	Local Co-ordinate Reference:	Well Duckbill Unit 2H
Project:	Doddridge County WV	TVD Reference:	PD 525: 1112' GL + 19' KB @ 1131.0usft
Site:	Vogt: Seaborn/Violet/Tulip/Marks	MD Reference:	PD 525: 1112' GL + 19' KB @ 1131.0usft
Well:	Duckbill 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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
6,040.0	22.60	268.86	5,999.2	-281.2	-150.5	14,262,644.87	1,679,199.24	39° 16' 35.453 N	80° 51' 46.638 W	
6,085.0	23.43	276.40	6,040.6	-280.4	-168.1	14,262,645.70	1,679,181.70	39° 16' 35.462 N	80° 51' 46.861 W	
6,130.0	24.18	285.91	6,081.8	-276.9	-185.8	14,262,649.22	1,679,163.94	39° 16' 35.497 N	80° 51' 47.087 W	
6,175.0	24.87	288.83	6,122.7	-271.3	-203.6	14,262,654.80	1,679,146.12	39° 16' 35.552 N	80° 51' 47.313 W	
6,219.0	25.92	293.62	6,162.5	-264.5	-221.2	14,262,661.64	1,679,128.55	39° 16' 35.620 N	80° 51' 47.537 W	
6,264.0	27.83	302.05	6,202.6	-255.0	-239.1	14,262,671.16	1,679,110.63	39° 16' 35.715 N	80° 51' 47.764 W	
6,309.0	31.13	308.57	6,241.8	-242.1	-257.1	14,262,683.99	1,679,092.62	39° 16' 35.842 N	80° 51' 47.993 W	
6,354.0	34.57	314.90	6,279.6	-225.8	-275.3	14,262,700.27	1,679,074.47	39° 16' 36.003 N	80° 51' 48.224 W	
6,399.0	38.20	319.93	6,315.9	-206.2	-293.3	14,262,719.94	1,679,056.46	39° 16' 36.198 N	80° 51' 48.453 W	
6,444.0	41.78	323.57	6,350.3	-183.5	-311.2	14,262,742.66	1,679,038.60	39° 16' 36.423 N	80° 51' 48.679 W	
6,488.0	45.88	326.32	6,382.1	-158.5	-328.6	14,262,767.61	1,679,021.13	39° 16' 36.670 N	80° 51' 48.901 W	
6,497.0	46.79	326.47	6,388.3	-153.1	-332.2	14,262,773.03	1,679,017.52	39° 16' 36.723 N	80° 51' 48.947 W	
Middlesex @ 6497										
6,533.0	50.44	327.05	6,412.1	-130.5	-347.0	14,262,795.62	1,679,002.72	39° 16' 36.947 N	80° 51' 49.135 W	
6,578.0	54.05	326.98	6,439.6	-100.7	-366.4	14,262,825.46	1,678,983.36	39° 16' 37.242 N	80° 51' 49.381 W	
6,623.0	57.75	327.27	6,464.9	-69.4	-386.6	14,262,856.75	1,678,963.13	39° 16' 37.552 N	80° 51' 49.637 W	
6,668.0	61.89	328.76	6,487.5	-36.4	-407.2	14,262,889.74	1,678,942.54	39° 16' 37.878 N	80° 51' 49.899 W	
6,696.0	64.19	330.28	6,500.2	-14.9	-419.9	14,262,911.25	1,678,929.89	39° 16' 38.091 N	80° 51' 50.059 W	
Burket @ 6696										
6,713.0	65.60	331.18	6,507.4	-1.4	-427.4	14,262,924.68	1,678,922.36	39° 16' 38.224 N	80° 51' 50.155 W	
6,758.0	68.72	334.10	6,524.8	35.4	-446.4	14,262,961.51	1,678,903.32	39° 16' 38.589 N	80° 51' 50.396 W	
6,764.0	69.24	334.43	6,527.0	40.4	-448.9	14,262,966.55	1,678,900.89	39° 16' 38.639 N	80° 51' 50.427 W	
Tully @ 6764										
6,802.0	72.58	336.49	6,539.4	73.1	-463.8	14,262,999.22	1,678,885.98	39° 16' 38.962 N	80° 51' 50.616 W	
6,847.0	75.57	337.20	6,551.8	112.9	-480.8	14,263,039.00	1,678,868.97	39° 16' 39.355 N	80° 51' 50.832 W	
6,865.0	76.32	337.96	6,556.1	129.0	-487.4	14,263,055.14	1,678,862.31	39° 16' 39.515 N	80° 51' 50.916 W	
Marcellus @ 6865										
6,892.0	77.46	339.09	6,562.3	153.5	-497.1	14,263,079.61	1,678,852.69	39° 16' 39.757 N	80° 51' 51.038 W	
6,937.0	78.97	340.52	6,571.5	194.8	-512.3	14,263,120.95	1,678,837.48	39° 16' 40.166 N	80° 51' 51.231 W	
6,982.0	82.71	341.97	6,578.6	236.9	-526.6	14,263,163.01	1,678,823.20	39° 16' 40.582 N	80° 51' 51.411 W	
7,041.0	90.34	345.26	6,582.2	293.3	-543.1	14,263,219.46	1,678,806.61	39° 16' 41.141 N	80° 51' 51.621 W	
7,068.0	91.86	347.05	6,581.7	319.6	-549.6	14,263,245.67	1,678,800.15	39° 16' 41.400 N	80° 51' 51.703 W	
7,158.0	93.30	346.36	6,577.6	407.1	-570.3	14,263,333.17	1,678,779.48	39° 16' 42.265 N	80° 51' 51.965 W	
7,248.0	92.60	344.06	6,573.0	494.0	-593.2	14,263,420.07	1,678,756.53	39° 16' 43.125 N	80° 51' 52.255 W	
7,338.0	90.64	344.55	6,570.4	580.6	-617.6	14,263,506.67	1,678,732.20	39° 16' 43.982 N	80° 51' 52.563 W	
7,427.0	90.98	339.44	6,569.2	665.2	-645.1	14,263,591.28	1,678,704.70	39° 16' 44.818 N	80° 51' 52.911 W	
7,517.0	91.85	338.83	6,567.0	749.2	-677.1	14,263,675.35	1,678,672.66	39° 16' 45.650 N	80° 51' 53.317 W	
7,607.0	91.04	339.52	6,564.7	833.3	-709.1	14,263,759.44	1,678,640.67	39° 16' 46.482 N	80° 51' 53.722 W	
7,696.0	91.81	339.32	6,562.5	916.6	-740.4	14,263,842.73	1,678,609.40	39° 16' 47.306 N	80° 51' 54.119 W	
7,786.0	90.46	339.83	6,560.7	1,000.9	-771.8	14,263,927.06	1,678,577.99	39° 16' 48.140 N	80° 51' 54.516 W	
7,875.0	90.73	339.05	6,559.8	1,084.3	-803.0	14,264,010.38	1,678,546.74	39° 16' 48.965 N	80° 51' 54.912 W	
7,965.0	90.59	339.89	6,558.7	1,168.5	-834.6	14,264,094.66	1,678,515.18	39° 16' 49.799 N	80° 51' 55.312 W	
8,055.0	89.82	341.12	6,558.4	1,253.4	-864.6	14,264,179.50	1,678,485.15	39° 16' 50.638 N	80° 51' 55.693 W	
8,144.0	90.42	340.23	6,558.2	1,337.4	-894.1	14,264,263.48	1,678,455.69	39° 16' 51.469 N	80° 51' 56.066 W	
8,234.0	89.85	340.19	6,558.0	1,422.1	-924.5	14,264,348.17	1,678,425.22	39° 16' 52.306 N	80° 51' 56.452 W	
8,324.0	90.62	340.20	6,557.6	1,506.7	-955.0	14,264,432.84	1,678,394.73	39° 16' 53.144 N	80° 51' 56.838 W	
8,413.0	89.98	340.52	6,557.2	1,590.5	-984.9	14,264,516.66	1,678,364.82	39° 16' 53.973 N	80° 51' 57.217 W	
8,503.0	89.25	340.73	6,557.8	1,675.4	-1,014.8	14,264,601.56	1,678,334.96	39° 16' 54.813 N	80° 51' 57.596 W	
8,593.0	89.42	339.68	6,558.8	1,760.1	-1,045.3	14,264,686.24	1,678,304.48	39° 16' 55.651 N	80° 51' 57.982 W	
8,683.0	89.53	341.69	6,559.7	1,845.0	-1,075.0	14,264,771.16	1,678,274.72	39° 16' 56.491 N	80° 51' 58.359 W	
8,772.0	90.37	342.53	6,559.7	1,929.7	-1,102.4	14,264,855.86	1,678,247.38	39° 16' 57.329 N	80° 51' 58.705 W	
8,862.0	90.94	342.61	6,558.7	2,015.6	-1,129.3	14,264,941.72	1,678,220.42	39° 16' 58.178 N	80° 51' 59.046 W	
8,952.0	89.96	342.42	6,558.0	2,101.4	-1,156.4	14,265,027.56	1,678,193.38	39° 16' 59.027 N	80° 51' 59.389 W	
9,041.0	91.18	340.72	6,557.1	2,185.9	-1,184.5	14,265,111.98	1,678,165.25	39° 16' 59.863 N	80° 51' 59.745 W	

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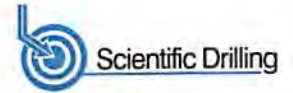


Company:	Antero Resources	Local Co-ordinate Reference:	Well Duckbill Unit 2H
Project:	Doddridge County WV	TVD Reference:	PD 525: 1112' GL + 19' KB @ 1131.0usft
Site:	Vogt: Seaborn/Violet/Tulip/Marks	MD Reference:	PD 525: 1112' GL + 19' KB @ 1131.0usft
Well:	Duckbill Unit 2H	North Reference:	Grid
Wellbore:	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
9,131.0	90.07	340.73	6,556.1	2,270.8	-1,214.2	14,265,196.93	1,678,135.54	39° 17' 0.703 N	80° 52' 0.121 W	
9,220.0	89.83	340.49	6,556.2	2,354.8	-1,243.8	14,265,280.88	1,678,105.99	39° 17' 1.534 N	80° 52' 0.496 W	
9,310.0	89.73	341.26	6,556.6	2,439.8	-1,273.3	14,265,365.92	1,678,076.51	39° 17' 2.375 N	80° 52' 0.869 W	
9,400.0	90.50	343.10	6,556.4	2,525.5	-1,300.8	14,265,451.59	1,678,048.97	39° 17' 3.222 N	80° 52' 1.218 W	
9,490.0	91.82	343.27	6,554.6	2,611.6	-1,326.8	14,265,537.73	1,678,022.94	39° 17' 4.074 N	80° 52' 1.548 W	
9,580.0	91.01	342.39	6,552.3	2,697.6	-1,353.4	14,265,623.69	1,677,996.38	39° 17' 4.925 N	80° 52' 1.884 W	
9,669.0	89.87	342.11	6,551.6	2,782.3	-1,380.5	14,265,708.45	1,677,969.24	39° 17' 5.763 N	80° 52' 2.228 W	
9,759.0	91.21	342.76	6,550.8	2,868.1	-1,407.7	14,265,794.24	1,677,942.08	39° 17' 6.612 N	80° 52' 2.572 W	
9,849.0	89.57	342.96	6,550.2	2,954.1	-1,434.2	14,265,880.24	1,677,915.56	39° 17' 7.463 N	80° 52' 2.907 W	
9,938.0	89.50	342.92	6,550.9	3,039.2	-1,460.3	14,265,965.32	1,677,889.45	39° 17' 8.304 N	80° 52' 3.238 W	
10,028.0	88.42	342.37	6,552.5	3,125.1	-1,487.1	14,266,051.21	1,677,862.61	39° 17' 9.154 N	80° 52' 3.578 W	
10,118.0	88.56	341.26	6,554.9	3,210.6	-1,515.2	14,266,136.68	1,677,834.53	39° 17' 9.999 N	80° 52' 3.934 W	
10,208.0	89.46	340.82	6,556.5	3,295.7	-1,544.5	14,266,221.79	1,677,805.30	39° 17' 10.841 N	80° 52' 4.304 W	
10,298.0	90.40	343.18	6,556.6	3,381.3	-1,572.3	14,266,307.37	1,677,777.49	39° 17' 11.688 N	80° 52' 4.656 W	
10,387.0	90.34	343.38	6,556.0	3,466.5	-1,597.9	14,266,392.61	1,677,751.88	39° 17' 12.531 N	80° 52' 4.980 W	
10,477.0	91.31	343.39	6,554.7	3,552.7	-1,623.6	14,266,478.84	1,677,726.15	39° 17' 13.384 N	80° 52' 5.306 W	
10,567.0	90.20	343.05	6,553.5	3,638.9	-1,649.6	14,266,565.00	1,677,700.17	39° 17' 14.236 N	80° 52' 5.635 W	
10,656.0	91.28	343.04	6,552.4	3,724.0	-1,675.5	14,266,650.12	1,677,674.22	39° 17' 15.078 N	80° 52' 5.964 W	
10,746.0	89.06	340.87	6,552.1	3,809.6	-1,703.4	14,266,735.69	1,677,646.35	39° 17' 15.925 N	80° 52' 6.317 W	
10,836.0	89.36	340.08	6,553.3	3,894.4	-1,733.5	14,266,820.50	1,677,616.27	39° 17' 16.764 N	80° 52' 6.698 W	
10,926.0	90.20	340.28	6,553.7	3,979.1	-1,764.0	14,266,905.17	1,677,585.75	39° 17' 17.602 N	80° 52' 7.085 W	
11,016.0	90.07	341.97	6,553.5	4,064.2	-1,793.1	14,266,990.33	1,677,556.64	39° 17' 18.444 N	80° 52' 7.453 W	
11,105.0	89.97	342.81	6,553.4	4,149.0	-1,820.0	14,267,075.16	1,677,529.71	39° 17' 19.283 N	80° 52' 7.794 W	
11,195.0	90.14	341.77	6,553.4	4,234.8	-1,847.4	14,267,160.89	1,677,502.34	39° 17' 20.131 N	80° 52' 8.141 W	
11,285.0	90.20	341.02	6,553.1	4,320.1	-1,876.1	14,267,246.18	1,677,473.62	39° 17' 20.975 N	80° 52' 8.505 W	
11,374.0	89.97	338.93	6,553.0	4,403.7	-1,906.6	14,267,329.80	1,677,443.15	39° 17' 21.802 N	80° 52' 8.891 W	
11,464.0	89.53	339.78	6,553.4	4,487.9	-1,938.3	14,267,414.02	1,677,411.42	39° 17' 22.635 N	80° 52' 9.293 W	
11,554.0	90.04	342.12	6,553.7	4,573.0	-1,967.7	14,267,499.08	1,677,382.04	39° 17' 23.477 N	80° 52' 9.666 W	
11,644.0	91.05	341.25	6,552.8	4,658.4	-1,996.0	14,267,584.52	1,677,353.76	39° 17' 24.322 N	80° 52' 10.024 W	
11,733.0	90.27	343.31	6,551.8	4,743.2	-2,023.1	14,267,669.28	1,677,326.68	39° 17' 25.161 N	80° 52' 10.367 W	
11,823.0	90.21	343.39	6,551.4	4,829.4	-2,048.9	14,267,755.51	1,677,300.89	39° 17' 26.013 N	80° 52' 10.693 W	
11,913.0	88.90	344.14	6,552.1	4,915.8	-2,074.0	14,267,841.92	1,677,275.73	39° 17' 26.868 N	80° 52' 11.012 W	
12,002.0	89.87	343.51	6,553.1	5,001.3	-2,098.8	14,267,927.39	1,677,250.94	39° 17' 27.714 N	80° 52' 11.326 W	
12,092.0	90.71	343.15	6,552.6	5,087.5	-2,124.6	14,268,013.60	1,677,225.12	39° 17' 28.566 N	80° 52' 11.653 W	
12,182.0	88.27	343.78	6,553.4	5,173.8	-2,150.2	14,268,099.87	1,677,199.51	39° 17' 29.420 N	80° 52' 11.977 W	
12,272.0	88.73	343.48	6,555.8	5,260.1	-2,175.6	14,268,186.19	1,677,174.16	39° 17' 30.274 N	80° 52' 12.298 W	
12,361.0	89.44	343.18	6,557.2	5,345.3	-2,201.1	14,268,271.44	1,677,148.63	39° 17' 31.117 N	80° 52' 12.621 W	
12,451.0	89.74	342.79	6,557.9	5,431.4	-2,227.5	14,268,357.50	1,677,122.29	39° 17' 31.968 N	80° 52' 12.955 W	
12,541.0	90.41	341.20	6,557.7	5,517.0	-2,253.3	14,268,443.09	1,677,094.48	39° 17' 32.815 N	80° 52' 13.307 W	
12,631.0	89.81	343.53	6,557.6	5,602.7	-2,282.5	14,268,528.85	1,677,067.21	39° 17' 33.663 N	80° 52' 13.653 W	
12,721.0	90.62	343.73	6,557.2	5,689.1	-2,307.9	14,268,615.20	1,677,041.85	39° 17' 34.517 N	80° 52' 13.974 W	
12,810.0	88.97	343.89	6,557.5	5,774.6	-2,332.7	14,268,700.67	1,677,017.03	39° 17' 35.363 N	80° 52' 14.288 W	
12,900.0	88.67	340.99	6,559.4	5,860.3	-2,359.9	14,268,786.45	1,676,989.89	39° 17' 36.211 N	80° 52' 14.632 W	
12,990.0	89.51	338.43	6,560.8	5,944.7	-2,391.1	14,268,870.84	1,676,958.69	39° 17' 37.046 N	80° 52' 15.027 W	
13,079.0	90.62	337.72	6,560.7	6,027.3	-2,424.3	14,268,953.40	1,676,925.45	39° 17' 37.863 N	80° 52' 15.449 W	
13,169.0	90.72	339.89	6,559.7	6,111.2	-2,456.8	14,269,037.31	1,676,892.92	39° 17' 38.693 N	80° 52' 15.861 W	
13,259.0	90.11	339.96	6,559.0	6,195.7	-2,487.7	14,269,121.84	1,676,862.03	39° 17' 39.529 N	80° 52' 16.253 W	
13,349.0	90.68	340.00	6,558.4	6,280.3	-2,518.5	14,269,206.39	1,676,831.22	39° 17' 40.366 N	80° 52' 16.643 W	
13,438.0	89.64	341.92	6,558.2	6,364.4	-2,547.6	14,269,290.52	1,676,802.18	39° 17' 41.198 N	80° 52' 17.011 W	
13,528.0	89.71	342.41	6,558.7	6,450.1	-2,575.1	14,269,376.19	1,676,774.62	39° 17' 42.046 N	80° 52' 17.360 W	
13,618.0	90.51	342.20	6,558.5	6,535.8	-2,602.5	14,269,461.93	1,676,747.27	39° 17' 42.894 N	80° 52' 17.707 W	
13,707.0	89.51	342.80	6,558.5	6,620.7	-2,629.3	14,269,546.81	1,676,720.50	39° 17' 43.733 N	80° 52' 18.046 W	
13,797.0	90.18	342.28	6,558.7	6,706.6	-2,656.3	14,269,632.67	1,676,693.50	39° 17' 44.583 N	80° 52' 18.388 W	
13,887.0	90.68	341.29	6,558.0	6,792.0	-2,684.4	14,269,718.15	1,676,665.37	39° 17' 45.431 N	80° 52' 18.744 W	
13,976.0	90.21	343.01	6,557.4	6,876.7	-2,711.7	14,269,802.86	1,676,638.09	39° 17' 46.279 N	80° 52' 19.090 W	



Scientific Drilling International
Survey Report - Geographic



Company:	Antero Resources	Local Co-ordinate Reference:	Well Duckbill Unit 2H
Project:	Doddridge County WV	TVD Reference:	PD 525: 1112' GL + 19' KB @ 1131.0usft
Site:	Vogt: Seaborn/Violet/Tulip/Marks	MD Reference:	PD 525: 1112' GL + 19' KB @ 1131.0usft
Well:	Duckbill 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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
14,066.0	88.71	341.76	6,558.2	6,962.5	-2,738.9	14,269,888.63	1,676,610.86	39° 17' 47.115 N	80° 52' 19.435 W	
14,156.0	88.73	340.84	6,560.2	7,047.7	-2,767.8	14,269,973.86	1,676,582.01	39° 17' 47.958 N	80° 52' 19.800 W	
14,245.0	89.54	339.99	6,561.6	7,131.6	-2,797.6	14,270,057.70	1,676,552.18	39° 17' 48.787 N	80° 52' 20.178 W	
14,335.0	90.38	338.78	6,561.6	7,215.8	-2,829.3	14,270,141.94	1,676,520.49	39° 17' 49.621 N	80° 52' 20.580 W	
14,425.0	90.28	340.03	6,561.1	7,300.1	-2,860.9	14,270,226.18	1,676,488.84	39° 17' 50.454 N	80° 52' 20.981 W	
14,515.0	89.84	340.62	6,561.0	7,384.8	-2,891.2	14,270,310.93	1,676,458.53	39° 17' 51.292 N	80° 52' 21.366 W	
14,604.0	88.13	341.31	6,562.6	7,468.9	-2,920.2	14,270,395.04	1,676,429.51	39° 17' 52.125 N	80° 52' 21.733 W	
14,694.0	88.83	340.94	6,565.0	7,554.1	-2,949.4	14,270,480.17	1,676,400.41	39° 17' 52.967 N	80° 52' 22.102 W	
14,784.0	90.14	342.53	6,565.8	7,639.5	-2,977.6	14,270,565.63	1,676,372.20	39° 17' 53.812 N	80° 52' 22.460 W	
14,873.0	91.49	342.38	6,564.5	7,724.4	-3,004.4	14,270,650.48	1,676,345.38	39° 17' 54.651 N	80° 52' 22.799 W	
14,963.0	90.14	342.37	6,563.2	7,810.1	-3,031.6	14,270,736.24	1,676,318.13	39° 17' 55.500 N	80° 52' 23.145 W	
15,053.0	89.54	343.01	6,563.5	7,896.1	-3,058.4	14,270,822.17	1,676,291.35	39° 17' 56.350 N	80° 52' 23.484 W	
15,143.0	90.24	342.64	6,563.7	7,982.0	-3,085.0	14,270,908.15	1,676,264.78	39° 17' 57.200 N	80° 52' 23.820 W	
15,232.0	87.93	341.89	6,565.1	8,066.8	-3,112.1	14,270,992.90	1,676,237.67	39° 17' 58.039 N	80° 52' 24.164 W	
15,322.0	88.17	341.33	6,568.1	8,152.1	-3,140.5	14,271,078.26	1,676,209.29	39° 17' 58.883 N	80° 52' 24.523 W	
15,412.0	89.04	341.46	6,570.3	8,237.4	-3,169.2	14,271,163.53	1,676,180.59	39° 17' 59.727 N	80° 52' 24.887 W	
15,501.0	89.47	339.33	6,571.5	8,321.2	-3,199.0	14,271,247.36	1,676,150.73	39° 18' 0.556 N	80° 52' 25.266 W	
15,591.0	91.15	340.52	6,571.0	8,405.8	-3,229.9	14,271,331.88	1,676,119.84	39° 18' 1.392 N	80° 52' 25.657 W	
15,680.0	90.78	341.21	6,569.5	8,489.8	-3,259.1	14,271,415.95	1,676,090.67	39° 18' 2.224 N	80° 52' 26.027 W	
15,770.0	90.35	342.89	6,568.6	8,575.5	-3,286.8	14,271,501.57	1,676,062.94	39° 18' 3.071 N	80° 52' 26.378 W	
15,860.0	90.68	341.50	6,567.8	8,661.1	-3,314.3	14,271,587.25	1,676,035.42	39° 18' 3.918 N	80° 52' 26.727 W	
15,949.0	90.35	343.23	6,567.0	8,745.9	-3,341.3	14,271,672.06	1,676,008.46	39° 18' 4.757 N	80° 52' 27.069 W	
16,039.0	90.58	342.85	6,566.3	8,832.0	-3,367.6	14,271,758.14	1,675,982.20	39° 18' 5.609 N	80° 52' 27.401 W	
16,129.0	89.74	343.24	6,566.0	8,918.1	-3,393.8	14,271,844.23	1,675,955.96	39° 18' 6.460 N	80° 52' 27.734 W	
16,218.0	89.74	342.64	6,566.4	9,003.2	-3,419.9	14,271,929.31	1,675,929.85	39° 18' 7.302 N	80° 52' 28.064 W	
16,308.0	90.18	340.65	6,566.5	9,088.6	-3,448.2	14,272,014.73	1,675,901.51	39° 18' 8.147 N	80° 52' 28.424 W	
16,398.0	90.85	340.20	6,565.7	9,173.4	-3,478.4	14,272,099.52	1,675,871.36	39° 18' 8.986 N	80° 52' 28.806 W	
16,488.0	89.74	341.79	6,565.2	9,258.5	-3,507.7	14,272,184.61	1,675,842.05	39° 18' 9.827 N	80° 52' 29.177 W	
16,577.0	89.98	342.47	6,565.4	9,343.2	-3,535.0	14,272,269.32	1,675,814.74	39° 18' 10.665 N	80° 52' 29.523 W	
16,667.0	90.92	341.57	6,564.7	9,428.8	-3,562.8	14,272,354.92	1,675,786.96	39° 18' 11.512 N	80° 52' 29.875 W	
16,757.0	89.67	342.80	6,564.3	9,514.5	-3,590.3	14,272,440.60	1,675,759.43	39° 18' 12.360 N	80° 52' 30.224 W	
16,846.0	88.60	340.72	6,565.6	9,599.0	-3,618.2	14,272,525.11	1,675,731.58	39° 18' 13.196 N	80° 52' 30.577 W	
16,936.0	89.20	341.23	6,567.3	9,684.1	-3,647.5	14,272,610.18	1,675,702.24	39° 18' 14.037 N	80° 52' 30.949 W	
17,026.0	89.67	340.80	6,568.2	9,769.2	-3,676.8	14,272,695.28	1,675,672.97	39° 18' 14.879 N	80° 52' 31.320 W	
17,115.0	90.55	339.76	6,568.1	9,852.9	-3,706.8	14,272,779.06	1,675,642.94	39° 18' 15.708 N	80° 52' 31.701 W	
17,205.0	90.75	337.55	6,567.0	9,936.8	-3,739.6	14,272,862.87	1,675,610.18	39° 18' 16.537 N	80° 52' 32.116 W	
17,295.0	89.71	338.56	6,566.7	10,020.2	-3,773.2	14,272,946.35	1,675,576.55	39° 18' 17.363 N	80° 52' 32.543 W	
17,385.0	89.74	339.51	6,567.1	10,104.3	-3,805.4	14,273,030.39	1,675,544.35	39° 18' 18.194 N	80° 52' 32.951 W	
17,474.0	89.10	341.80	6,568.0	10,188.2	-3,834.9	14,273,114.35	1,675,514.87	39° 18' 19.025 N	80° 52' 33.325 W	
17,564.0	89.88	340.18	6,568.8	10,273.3	-3,864.2	14,273,199.44	1,675,485.56	39° 18' 19.866 N	80° 52' 33.696 W	
17,654.0	89.84	337.48	6,569.0	10,357.2	-3,896.7	14,273,283.36	1,675,453.06	39° 18' 20.697 N	80° 52' 34.108 W	
Last SDI MWD @ 17654										
17,720.0	89.84	337.48	6,569.2	10,418.2	-3,922.0	14,273,344.32	1,675,427.78	39° 18' 21.300 N	80° 52' 34.429 W	
Projection To Bit @ 17220 MD / 6569 TVD										

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Survey Report - Geographic



Company:	Antero Resources	Local Co-ordinate Reference:	Well Duckbill Unit 2H
Project:	Doddridge County WV	TVD Reference:	PD 525: 1112' GL + 19' KB @ 1131.0usft
Site:	Vogt: Seaborn/Violet/Tulip/Marks	MD Reference:	PD 525: 1112' GL + 19' KB @ 1131.0usft
Well:	Duckbill Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
6,497.0	6,388.3	Middlesex @ 6497		0.00		
6,696.0	6,500.2	Burket @ 6696		0.00		
6,764.0	6,527.0	Tully @ 6764		0.00		
6,865.0	6,556.1	Marcellus @ 6865		0.00		

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
5,637.0	5,619.5	-187.6	-72.9	First SDI MWD @ 5637	
17,654.0	6,569.0	10,357.2	-3,896.7	Last SDI MWD @ 17654	
17,720.0	6,569.2	10,418.2	-3,922.0	Projection To Bit @ 17220 MD / 6569 TVD	

Checked By: _____ Approved By: _____ Date: _____

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