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JUL 27 2015

WV GEOLOGICAL SURVEY
MORGANTOWN, WV



Carole Unit 2H
Doddridge County WV
Northing: 14242033.67
Easting: 1747821.37
As Drilled



Azimuths to Grid North
True North: -0.24°
Magnetic North: -8.79°
Magnetic Field
Strength: 52301.1snT
Dip Angle: 66.79°
Date: 12/9/2013
Model: IGRF2010

To convert Magnetic North to Grid, Subtract 8.79°
To convert True North to Grid, Subtract 0.24°

Carole Unit 2H GL: 1331' +25 RKB @ 1356.0usft
Gr: 1331.0

WELL DETAILS
Ground Level: 1331.0
Easting: 1747821.37
Northing: 14242033.67
Latitude: 39° 13' 9.723 N
Longitude: 80° 37' 14.790 W

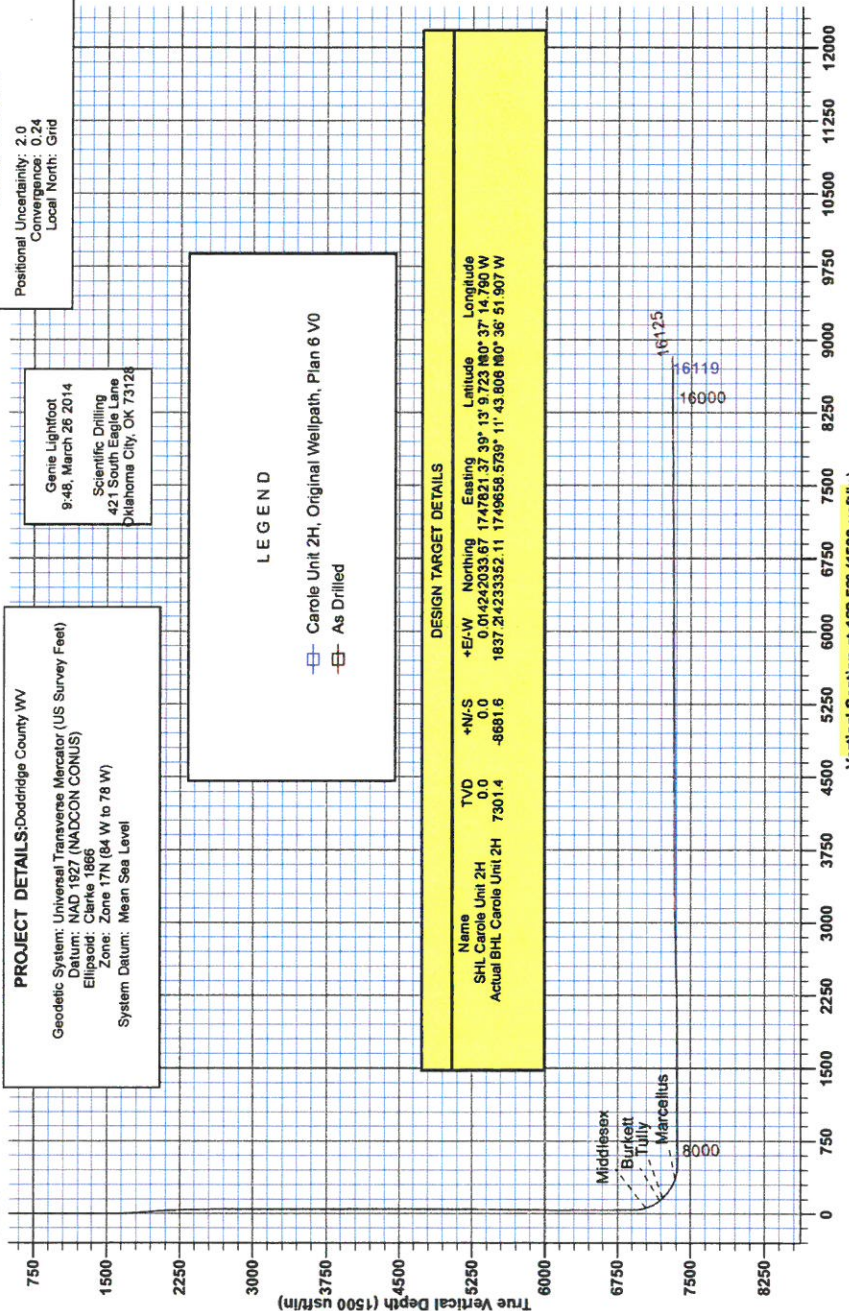
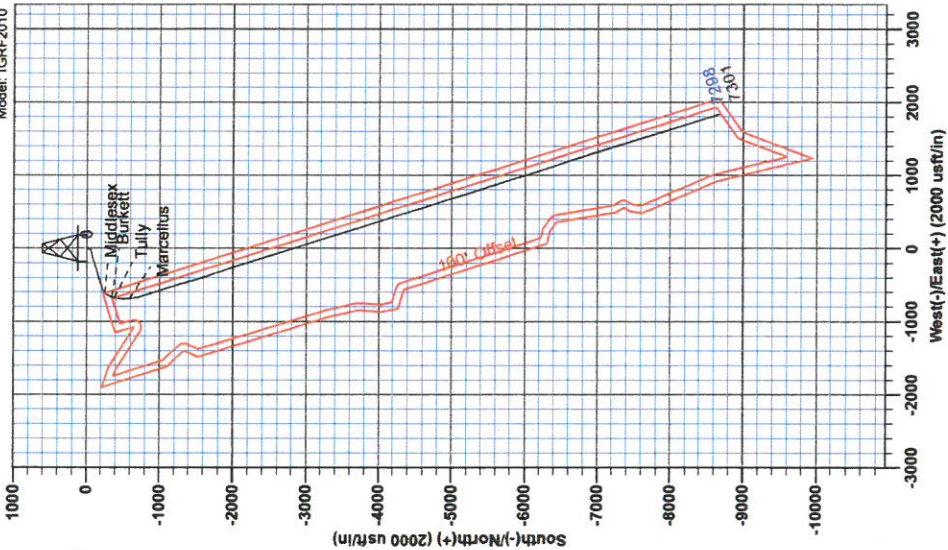
PROJECT DETAILS: Doddridge County WV
Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Zone 17N (84 W to 78 W)
System Datum: Mean Sea Level

Genie Lightfoot
9-48, March 26 2014
Scientific Drilling
421 South Eagle Lane
Oklahoma City, OK 73128

LEGEND
□ Carole Unit 2H, Original Wellpath, Plan 6 V0
⊠ As Drilled

DESIGN TARGET DETAILS

Name	+N/-S	TVD	+E/-W	Northing	Easting	Latitude	Longitude
SHL Carole Unit 2H	0.0	0.0	0.0	14242033.67	1747821.37	39° 13' 9.723 N	80° 37' 14.790 W
Actual BHL Carole Unit 2H	-8681.6	7301.4	1837.2	4233352.11	1749658.5739	11° 43' 8.06 N	36° 51' 9.07 W





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WV GEOLOGICAL SURVEY
MORGANTOWN, WV

Antero Resources

**Doddridge County WV
Hughes Pad
Carole Unit 2H
Original Wellpath**

Design: As Drilled

EOW Completion Report

26 March, 2014



JUL 27 2015



EOW Completion Report



Company: Antero Resources	Local Co-ordinate Reference: Well Carole Unit 2H
Project: Doddridge County WV	TVD Reference: Carole Unit 2H GL 1331' +25 RKB @ 1356.0usft
Site: Hughes Pad	MD Reference: Carole Unit 2H GL 1331' +25 RKB @ 1356.0usft
Well: Carole Unit 2H	North Reference: Grid
Wellbore: Original Wellpath	Survey Calculation Method: Minimum Curvature
Design: As Drilled	Database: Oklahoma District

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	Hughes Pad				
Site Position:		Northing:	14,242,041.55 usft	Latitude:	39° 13' 9.801 N
From:	Map	Easting:	1,747,814.24 usft	Longitude:	80° 37' 14.880 W
Position Uncertainty:	2.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.24 °

Well	Carole Unit 2H					
Well Position	+N/-S	0.0 usft	Northing:	14,242,033.67 usft	Latitude:	39° 13' 9.723 N
	+E/-W	0.0 usft	Easting:	1,747,821.37 usft	Longitude:	80° 37' 14.790 W
Position Uncertainty	2.0 usft		Wellhead Elevation:	1,356.0 usft	Ground Level:	1,331.0 usft

Wellbore	Original Wellpath				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/9/2013	-8.55	66.79	52,301

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	162.52	

Survey Program	Date 3/26/2014				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
112.0	1,580.0	Survey #6 Def Gyro to 1568 (Original Well)	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper	
1,612.0	6,712.0	Survey #4 Def Gyro to KOP (Original Well)	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper	
6,757.5	16,125.0	Survey #5 SDI MWD (Original Wellpath)	SDI MWD	Scientific Drilling Intl. MWD - Standard ver 1.0.1	

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.00	
112.0	0.25	160.56	112.0	-0.2	0.1	0.2	0.22		
212.0	0.17	259.25	212.0	-0.5	0.0	0.4	0.32		
312.0	0.10	268.55	312.0	-0.5	-0.2	0.4	0.07		
412.0	0.07	206.78	412.0	-0.6	-0.3	0.4	0.09		
512.0	0.09	140.77	512.0	-0.7	-0.3	0.5	0.09		
612.0	0.05	188.23	612.0	-0.8	-0.3	0.7	0.07		
712.0	0.15	179.60	712.0	-0.9	-0.3	0.8	0.10		
812.0	0.13	174.34	812.0	-1.2	-0.3	1.1	0.02		
912.0	0.11	246.40	912.0	-1.3	-0.3	1.2	0.14		

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Site: Hughes Pad	MD Reference: Carole Unit 2H GL 1331' +25 RKB @ 1356.0usft
Well: Carole Unit 2H	North Reference: Grid
Wellbore: Original Wellpath	Survey Calculation Method: Minimum Curvature
Design: As Drilled	Database: Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
1,012.0	0.17	185.80	1,012.0	-1.5	-0.4	1.3	0.15
1,112.0	0.15	203.98	1,112.0	-1.8	-0.5	1.6	0.05
1,212.0	0.08	195.01	1,212.0	-2.0	-0.6	1.7	0.07
1,312.0	0.05	309.39	1,312.0	-2.0	-0.6	1.7	0.11
1,412.0	0.11	154.88	1,412.0	-2.1	-0.6	1.8	0.16
1,512.0	0.01	354.77	1,512.0	-2.2	-0.6	1.9	0.12
1,580.0	0.29	248.34	1,580.0	-2.2	-0.8	1.9	0.43
1,612.0	0.31	192.12	1,612.0	-2.3	-0.8	2.0	0.89
1,712.0	2.50	184.65	1,712.0	-4.8	-1.1	4.2	2.19
1,812.0	5.15	196.68	1,811.7	-11.2	-2.5	10.0	2.75
1,912.0	5.53	201.05	1,911.3	-20.0	-5.6	17.4	0.56
2,012.0	5.52	206.81	2,010.8	-28.8	-9.5	24.7	0.55
2,112.0	5.08	206.81	2,110.4	-37.1	-13.6	31.3	0.44
2,212.0	2.91	204.56	2,210.2	-43.3	-16.7	36.3	2.18
2,312.0	1.59	199.66	2,310.1	-46.9	-18.2	39.3	1.33
2,412.0	1.53	203.27	2,410.0	-49.5	-19.2	41.4	0.12
2,512.0	1.31	202.99	2,510.0	-51.8	-20.2	43.3	0.22
2,612.0	0.89	206.86	2,610.0	-53.5	-21.0	44.7	0.43
2,712.0	0.70	216.04	2,710.0	-54.7	-21.7	45.7	0.23
2,812.0	0.56	207.93	2,810.0	-55.6	-22.3	46.4	0.17
2,912.0	0.39	227.65	2,910.0	-56.3	-22.7	46.8	0.23
3,012.0	0.34	223.95	3,010.0	-56.7	-23.2	47.1	0.06
3,112.0	0.22	229.96	3,110.0	-57.1	-23.6	47.3	0.12
3,212.0	0.15	243.25	3,210.0	-57.2	-23.8	47.4	0.08
3,312.0	0.19	247.50	3,310.0	-57.4	-24.1	47.5	0.04
3,412.0	0.21	260.38	3,410.0	-57.5	-24.4	47.5	0.05
3,512.0	0.22	242.01	3,510.0	-57.6	-24.8	47.5	0.07
3,612.0	0.26	234.58	3,610.0	-57.8	-25.1	47.6	0.05
3,712.0	0.26	246.57	3,710.0	-58.0	-25.5	47.7	0.05
3,812.0	0.28	243.75	3,810.0	-58.2	-26.0	47.7	0.02
3,912.0	0.31	241.94	3,910.0	-58.5	-26.4	47.8	0.03
4,012.0	0.31	240.90	4,010.0	-58.7	-26.9	47.9	0.01
4,112.0	0.43	229.78	4,110.0	-59.1	-27.4	48.1	0.14
4,212.0	0.32	242.11	4,210.0	-59.5	-27.9	48.3	0.14
4,312.0	0.30	263.51	4,310.0	-59.6	-28.4	48.3	0.12
4,412.0	0.33	272.09	4,410.0	-59.6	-29.0	48.2	0.06
4,512.0	0.32	265.27	4,510.0	-59.7	-29.6	48.0	0.04
4,612.0	0.29	304.40	4,609.9	-59.5	-30.0	47.8	0.21
4,712.0	0.23	276.79	4,709.9	-59.4	-30.5	47.5	0.14
4,812.0	0.32	297.76	4,809.9	-59.2	-30.9	47.2	0.13
4,912.0	0.31	323.76	4,909.9	-58.9	-31.3	46.7	0.14
5,012.0	0.37	314.68	5,009.9	-58.4	-31.7	46.2	0.08
5,112.0	0.25	3.98	5,109.9	-58.0	-31.9	45.7	0.28
5,212.0	0.34	344.97	5,209.9	-57.5	-32.0	45.2	0.13
5,272.0	0.48	3.25	5,270.0	-57.0	-32.0	44.8	0.32

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EOW Completion Report



Company: Antero Resources
Project: Doddridge County WV
Site: Hughes Pad
Well: Carole Unit 2H
Wellbore: Original Wellpath
Design: As Drilled

Local Co-ordinate Reference: Well Carole Unit 2H
TVD Reference: Carole Unit 2H GL 1331' +25 RKB @ 1356.0usft
MD Reference: Carole Unit 2H GL 1331' +25 RKB @ 1356.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
5,312.0	0.69	276.99	5,309.9	-56.8	-32.2	44.5	2.04
5,412.0	2.60	257.66	5,409.9	-57.3	-35.1	44.1	1.96
5,512.0	4.91	251.24	5,509.7	-59.1	-41.3	44.0	2.34
5,612.0	7.20	257.66	5,609.1	-61.8	-51.5	43.5	2.38
5,712.0	10.16	260.44	5,708.0	-64.6	-66.3	41.7	2.99
5,812.0	12.73	258.99	5,806.0	-68.2	-85.8	39.3	2.59
5,912.0	15.42	255.24	5,902.9	-73.7	-109.5	37.4	2.84
6,012.0	17.64	253.03	5,998.8	-81.5	-136.9	36.6	2.31
6,112.0	19.88	251.36	6,093.5	-91.4	-167.5	36.9	2.30
6,212.0	22.79	251.35	6,186.6	-103.0	-201.9	37.6	2.91
6,312.0	25.37	252.15	6,277.9	-115.8	-240.7	38.1	2.60
6,412.0	26.58	253.04	6,367.8	-128.9	-282.5	38.1	1.27
6,512.0	26.73	252.65	6,457.2	-142.1	-325.3	37.8	0.23
6,612.0	27.09	252.47	6,546.4	-155.7	-368.5	37.8	0.37
6,712.0	27.27	252.16	6,635.3	-169.5	-412.0	37.9	0.23
6,851.0	26.06	251.56	6,759.5	-188.9	-471.3	38.7	0.89
6,947.0	27.48	252.52	6,845.3	-202.3	-512.5	39.0	1.55
7,043.0	28.55	247.55	6,930.0	-217.7	-554.8	41.0	2.67
7,074.0	29.05	239.88	6,957.2	-224.3	-568.2	43.3	12.02
7,106.0	30.08	235.37	6,985.0	-232.8	-581.5	47.3	7.66
7,137.0	31.44	231.00	7,011.7	-242.3	-594.2	52.6	8.44
7,170.0	33.40	225.26	7,039.5	-254.1	-607.3	59.9	11.05
7,172.0	33.47	224.94	7,041.2	-254.8	-608.1	60.4	9.49
Middlesex							
7,202.0	34.60	220.27	7,066.1	-267.2	-619.4	68.8	9.49
7,234.0	36.20	214.93	7,092.2	-281.9	-630.7	79.4	10.88
7,265.0	37.99	209.78	7,116.9	-297.7	-640.7	91.5	11.56
7,297.0	40.49	204.79	7,141.7	-315.7	-650.0	105.9	12.58
7,329.0	42.87	200.80	7,165.6	-335.3	-658.2	122.1	11.14
7,356.0	45.28	196.97	7,185.0	-353.0	-664.2	137.2	13.30
Burkett							
7,361.0	45.74	196.30	7,188.5	-356.5	-665.3	140.2	13.30
7,393.0	48.10	193.80	7,210.3	-379.0	-671.3	159.9	9.32
7,402.0	48.78	192.98	7,216.3	-385.6	-672.9	165.7	10.17
Tully							
7,425.0	50.54	190.96	7,231.2	-402.7	-676.5	180.9	10.17
7,456.0	53.37	188.01	7,250.3	-426.8	-680.5	202.7	11.81
7,488.0	56.12	185.88	7,268.8	-452.7	-683.7	226.5	10.17
7,520.0	59.23	183.63	7,285.9	-479.7	-685.9	251.5	11.39
7,552.0	62.49	181.60	7,301.5	-507.6	-687.2	277.8	11.60
7,584.0	65.41	179.96	7,315.5	-536.4	-687.6	305.1	10.22
7,616.0	68.39	178.64	7,328.1	-565.8	-687.2	333.2	10.06
7,648.0	71.45	176.50	7,339.1	-595.8	-685.9	362.3	11.44
7,650.0	71.68	176.30	7,339.7	-597.7	-685.8	364.1	14.90
Marcellus							

JUL 27 2015



EOW Completion Report



Company: Antero Resources
Project: Doddridge County WV
Site: Hughes Pad
Well: Carole Unit 2H
Wellbore: Original Wellpath
Design: As Drilled

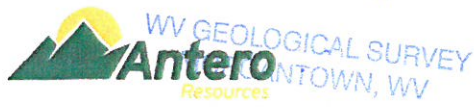
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Survey

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7,681.0	75.28	173.28	7,348.5	-627.3	-683.1	393.1	14.90
7,713.0	79.15	170.85	7,355.6	-658.2	-678.8	423.9	14.18
7,745.0	82.56	168.42	7,360.7	-689.3	-673.1	455.2	13.03
7,770.0	84.92	166.29	7,363.4	-713.5	-667.7	480.0	12.68
7,822.0	89.40	162.43	7,366.0	-763.5	-653.7	531.9	11.37
7,873.0	90.64	161.46	7,366.0	-812.0	-637.8	582.9	3.09
7,970.0	91.71	161.52	7,364.0	-903.9	-607.1	679.9	1.10
8,066.0	90.74	161.80	7,361.9	-995.0	-576.9	775.8	1.05
8,163.0	89.36	162.91	7,361.8	-1,087.5	-547.5	872.8	1.83
8,259.0	89.53	162.83	7,362.8	-1,179.2	-519.2	968.8	0.20
8,355.0	90.00	163.78	7,363.2	-1,271.2	-491.6	1,064.8	1.10
8,452.0	90.77	165.90	7,362.5	-1,364.8	-466.2	1,161.7	2.33
8,548.0	90.71	165.06	7,361.3	-1,457.7	-442.2	1,257.6	0.88
8,645.0	90.97	161.46	7,359.8	-1,550.6	-414.2	1,354.5	3.72
8,741.0	89.46	160.94	7,359.5	-1,641.4	-383.3	1,450.5	1.66
8,828.0	90.00	161.17	7,359.9	-1,723.7	-355.1	1,537.5	0.67
8,934.0	90.30	160.98	7,359.6	-1,824.0	-320.7	1,643.4	0.34
9,030.0	90.47	159.78	7,359.0	-1,914.4	-288.4	1,739.4	1.26
9,127.0	90.07	162.10	7,358.5	-2,006.1	-256.8	1,836.3	2.43
9,218.0	90.07	160.63	7,358.4	-2,092.3	-227.7	1,927.3	1.62
9,309.0	91.04	162.38	7,357.5	-2,178.6	-198.8	2,018.3	2.20
9,399.0	91.04	161.79	7,355.9	-2,264.2	-171.2	2,108.3	0.66
9,489.0	91.34	162.40	7,354.0	-2,349.9	-143.5	2,198.2	0.76
9,579.0	91.88	163.68	7,351.5	-2,435.9	-117.2	2,288.2	1.54
9,670.0	92.52	163.06	7,348.0	-2,523.0	-91.2	2,379.1	0.98
9,761.0	91.61	162.37	7,344.7	-2,609.9	-64.2	2,470.1	1.25
9,851.0	91.68	162.88	7,342.1	-2,695.7	-37.3	2,560.0	0.57
9,942.0	91.55	163.16	7,339.6	-2,782.7	-10.8	2,651.0	0.34
10,032.0	91.01	162.91	7,337.6	-2,868.8	15.5	2,741.0	0.66
10,124.0	91.01	161.78	7,335.9	-2,956.4	43.4	2,832.9	1.23
10,215.0	90.81	161.29	7,334.5	-3,042.7	72.2	2,923.9	0.58
10,311.0	90.34	163.23	7,333.5	-3,134.1	101.4	3,019.9	2.08
10,408.0	91.04	163.88	7,332.4	-3,227.2	128.9	3,116.9	0.98
10,504.0	91.34	162.75	7,330.4	-3,319.1	156.5	3,212.8	1.22
10,600.0	90.67	162.61	7,328.7	-3,410.7	185.0	3,308.8	0.71
10,696.0	89.50	162.93	7,328.5	-3,502.4	213.5	3,404.8	1.26
10,792.0	90.40	162.67	7,328.6	-3,594.1	241.9	3,500.8	0.98
10,889.0	91.07	164.57	7,327.4	-3,687.2	269.2	3,597.8	2.08
10,985.0	89.87	162.77	7,326.6	-3,779.3	296.2	3,693.8	2.25
11,082.0	90.77	163.47	7,326.0	-3,872.1	324.4	3,790.7	1.18
11,178.0	90.84	162.89	7,324.7	-3,964.0	352.1	3,886.7	0.61
11,275.0	89.70	159.40	7,324.2	-4,055.8	383.5	3,983.7	3.78
11,371.0	90.47	162.71	7,324.1	-4,146.6	414.6	4,079.6	3.54
11,468.0	90.74	163.71	7,323.1	-4,239.4	442.7	4,176.6	1.07

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Site: Hughes Pad	MD Reference: Carole Unit 2H GL 1331' +25 RKB @ 1356.0usft
Well: Carole Unit 2H	North Reference: Grid
Wellbore: Original Wellpath	Survey Calculation Method: Minimum Curvature
Design: As Drilled	Database: Oklahoma District

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
11,562.0	89.83	162.37	7,322.6	-4,329.3	470.1	4,270.6	1.72
11,659.0	90.30	162.71	7,322.5	-4,421.9	499.2	4,367.6	0.60
11,755.0	89.97	163.02	7,322.3	-4,513.6	527.5	4,463.6	0.47
11,852.0	90.17	162.76	7,322.2	-4,606.3	556.0	4,560.6	0.34
11,948.0	90.03	162.90	7,322.0	-4,698.0	584.3	4,656.6	0.21
12,044.0	90.44	162.64	7,321.6	-4,789.7	612.8	4,752.6	0.51
12,140.0	89.19	161.43	7,321.9	-4,881.0	642.4	4,848.6	1.81
12,237.0	91.58	163.01	7,321.3	-4,973.4	672.0	4,945.6	2.95
12,333.0	89.46	162.62	7,320.4	-5,065.1	700.4	5,041.6	2.25
12,429.0	90.71	163.50	7,320.2	-5,156.9	728.3	5,137.6	1.59
12,525.0	91.28	163.99	7,318.6	-5,249.1	755.2	5,233.5	0.78
12,621.0	88.76	161.01	7,318.5	-5,340.6	784.1	5,329.5	4.07
12,718.0	91.64	161.87	7,318.2	-5,432.6	814.9	5,426.5	3.10
12,814.0	89.40	160.32	7,317.3	-5,523.4	846.0	5,522.4	2.84
12,911.0	91.27	160.89	7,316.8	-5,614.9	878.2	5,619.4	2.02
13,007.0	90.24	161.02	7,315.5	-5,705.6	909.6	5,715.3	1.08
13,104.0	89.90	163.07	7,315.4	-5,797.9	939.5	5,812.3	2.14
13,200.0	91.04	165.69	7,314.6	-5,890.3	965.3	5,908.3	2.98
13,297.0	88.79	164.21	7,314.7	-5,984.0	990.5	6,005.2	2.78
13,393.0	88.46	163.04	7,317.0	-6,076.1	1,017.6	6,101.1	1.27
13,490.0	89.36	161.97	7,318.9	-6,168.5	1,046.7	6,198.1	1.44
13,586.0	89.56	160.90	7,319.8	-6,259.5	1,077.3	6,294.1	1.13
13,682.0	90.47	161.42	7,319.8	-6,350.4	1,108.3	6,390.0	1.09
13,779.0	89.60	160.69	7,319.7	-6,442.1	1,139.8	6,487.0	1.17
13,875.0	89.80	160.16	7,320.2	-6,532.6	1,171.9	6,582.9	0.59
13,972.0	90.20	161.25	7,320.2	-6,624.1	1,204.0	6,679.9	1.20
14,068.0	90.03	160.89	7,320.0	-6,715.0	1,235.1	6,775.9	0.41
14,164.0	91.28	161.98	7,318.9	-6,805.9	1,265.7	6,871.8	1.73
14,260.0	91.44	162.14	7,316.6	-6,897.3	1,295.2	6,967.8	0.24
14,356.0	90.07	163.27	7,315.4	-6,988.9	1,323.8	7,063.8	1.85
14,453.0	90.00	163.54	7,315.3	-7,081.9	1,351.5	7,160.8	0.29
14,549.0	91.48	163.75	7,314.1	-7,174.0	1,378.5	7,256.8	1.56
14,646.0	89.77	162.59	7,313.0	-7,266.8	1,406.6	7,353.7	2.13
14,742.0	90.60	163.66	7,312.7	-7,358.7	1,434.5	7,449.7	1.41
14,838.0	90.30	162.09	7,311.9	-7,450.4	1,462.7	7,545.7	1.66
14,935.0	90.64	161.98	7,311.2	-7,542.7	1,492.6	7,642.7	0.37
15,031.0	91.44	162.91	7,309.4	-7,634.2	1,521.6	7,738.7	1.28
15,128.0	90.97	163.11	7,307.4	-7,726.9	1,549.9	7,835.7	0.53
15,224.0	90.77	163.11	7,305.9	-7,818.8	1,577.8	7,931.7	0.21
15,320.0	89.73	164.09	7,305.5	-7,910.9	1,604.9	8,027.6	1.49
15,417.0	89.33	164.15	7,306.3	-8,004.2	1,631.5	8,124.6	0.42
15,513.0	90.60	163.16	7,306.3	-8,096.3	1,658.5	8,220.6	1.68
15,610.0	90.84	163.13	7,305.1	-8,189.1	1,686.6	8,317.6	0.25
15,706.0	89.40	162.80	7,304.9	-8,280.9	1,714.7	8,413.6	1.54
15,803.0	90.40	162.98	7,305.1	-8,373.6	1,743.3	8,510.5	1.05



Company:	Antero Resources	Local Co-ordinate Reference:	Well Carole Unit 2H
Project:	Doddridge County WV	TVD Reference:	Carole Unit 2H GL 1331' +25 RKB @ 1356.0usft
Site:	Hughes Pad	MD Reference:	Carole Unit 2H GL 1331' +25 RKB @ 1356.0usft
Well:	Carole Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
15,899.0	90.97	163.35	7,304.0	-8,465.5	1,771.1	8,606.5	0.71
15,996.0	90.71	162.98	7,302.5	-8,558.3	1,799.2	8,703.5	0.47
16,073.0	90.44	162.79	7,301.8	-8,631.9	1,821.8	8,780.5	0.43
16,125.0	90.44	162.79	7,301.4	-8,681.6	1,837.2	8,832.5	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
7,172.0	7,041.2	-254.8	-608.1	Middlesex
7,356.0	7,185.0	-353.0	-664.2	Burkett
7,402.0	7,216.3	-385.6	-672.9	Tully
7,650.0	7,339.7	-597.7	-685.8	Marcellus

Checked By: _____ Approved By: _____ Date: _____

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 MORGANTOWN, WV