

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47-017-06279 County Doddridge District Greenbrier
Quad Big Isaac 7.5' Pad Name Hughes Pad Field/Pool Name _____
Farm name Nelson, Eric E. et al Well Number Carole Unit 1H
Operator (as registered with the OOG) Antero Resources Corporation
Address 1615 Wynkoop Street City Denver State CO Zip 80202

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,341,201m Easting 532,749m
Landing Point of Curve Northing 4,340,903.84m Easting 532,362.21m
Bottom Hole Northing 4,338,360m Easting 533,165m

Elevation (ft) 1,332' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine

Mud Type(s) and Additive(s)

Air- Foam & 4% KCL

Mud- Polymer

Date permit issued 07/30/2013 Date drilling commenced 11/21/2013 Date drilling ceased 03/11/2014
Date completion activities began 04/26/2014 Date completion activities ceased 06/17/2014
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 109', 112' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1,091'; 1,150' Void(s) encountered (Y/N) depths None
Coal depth(s) ft 390' Cavern(s) encountered (Y/N) depths None
Is coal being mined in area (Y/N) No

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Reviewed by:

JK 8/21/15

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API 47-017 - 06279 Farm name Nelson, Eric E. et al Well number Carole Unit 1H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	24"	20"	40'	New	94#; H-40	N/A	Yes
Surface	17 1/2"	13 3/8"	565'	New	48#; H-40	N/A	Yes
Coal							
Intermediate 1	12 1/4"	9 5/8"	2,509'	New	36#; J-55	N/A	Yes
Intermediate 2							
Intermediate 3							
Production	8 3/4" & 8 1/2"	5 1/2"	16,925'	New	23#; P-110	N/A	Yes
Tubing		2 3/8"	7,825'		4.7#; N-80	N/A	
Packer type and depth set		N/A					

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Class A	100 sx	15.6	1.18	38	0'	8 Hrs.
Surface	Class A	690 sx	15.6	1.18	392	0'	8 Hrs.
Coal							
Intermediate 1	Class A	966 sx	15.6	1.18	786	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	916 sx (Lead); 1,851 sx (Tail)	14.5 (Lead); 15.2 (Tail)	1.3 (Lead); 1.86 (Tail)	3,417	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 16,925' MD; 7,312' TVD (BHL); 7,372' TVD (Deepest Point Drilled) Loggers TD (ft) 16,875'
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 6,611'

**This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Belton Unit 1H, API #47-017-06278). Please reference the wireline logs submitted with Form WR-35 for the Belton Unit 1H. A Cement Bond Log has been included with this submittal.

Check all wireline logs run ** caliper density deviated/directional induction neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____
 Conductor- 0
 Surface- 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface
 Intermediate- 1 above float joint, 1 above float collar, 1 every 4th joint to surface
 Production- 1 above float joint, 1 below float collar, 1 every 3rd joint to top of cement

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

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WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

API 47-017-06279 Farm Name Nelson, Eric E. et al Well Number Carole Unit 1H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	26-Apr-14	16,663	16,833	60	Marcellus
2	4-May-14	16,462	16,632	60	Marcellus
3	4-May-14	16,261	16,430	60	Marcellus
4	4-May-14	16,059	16,229	60	Marcellus
5	5-May-14	15,858	16,028	60	Marcellus
6	5-May-14	15,657	15,827	60	Marcellus
7	5-May-14	15,456	15,625	60	Marcellus
8	6-May-14	15,254	15,424	60	Marcellus
9	6-May-14	15,053	15,223	60	Marcellus
10	6-May-14	14,852	15,022	60	Marcellus
11	7-May-14	14,651	14,820	60	Marcellus
12	7-May-14	14,449	14,619	60	Marcellus
13	7-May-14	14,248	14,418	60	Marcellus
14	7-May-14	14,047	14,216	60	Marcellus
15	7-May-14	13,845	14,015	60	Marcellus
16	8-May-14	13,644	13,814	60	Marcellus
17	8-May-14	13,443	13,613	60	Marcellus
18	8-May-14	13,242	13,411	60	Marcellus
19	9-May-14	13,040	13,210	60	Marcellus
20	9-May-14	12,839	13,009	60	Marcellus
21	9-May-14	12,638	12,807	60	Marcellus
22	9-May-14	12,436	12,606	60	Marcellus
23	10-May-14	12,235	12,405	60	Marcellus
24	10-May-14	12,034	12,204	60	Marcellus
25	10-May-14	11,833	12,002	60	Marcellus
26	10-May-14	11,631	11,801	60	Marcellus
27	10-May-14	11,430	11,600	60	Marcellus
28	11-May-14	11,229	11,399	60	Marcellus
29	11-May-14	11,028	11,197	60	Marcellus
30	11-May-14	10,826	10,996	60	Marcellus
31	11-May-14	10,625	10,795	60	Marcellus
32	12-May-14	10,424	10,593	60	Marcellus
33	12-May-14	10,222	10,392	60	Marcellus
34	12-May-14	10,021	10,191	60	Marcellus
35	12-May-14	9,820	9,990	60	Marcellus
36	12-May-14	9,619	9,788	60	Marcellus
37	13-May-14	9,417	9,587	60	Marcellus
38	13-May-14	9,216	9,386	60	Marcellus
39	13-May-14	9,015	9,185	60	Marcellus
40	13-May-14	8,814	8,983	60	Marcellus
41	13-May-14	8,612	8,782	60	Marcellus
42	14-May-14	8,411	8,581	60	Marcellus
43	14-May-14	8,210	8,379	60	Marcellus
44	14-May-14	8,008	8,178	60	Marcellus

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EXHIBIT 2

Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/ other (units)
1	4-May-14	69.0	8,204	6,129	5,507	243,852	7,088	N/A
2	4-May-14	75.0	8,193	6,437	5,800	248,195	6,749	N/A
3	4-May-14	79.0	8,153	6,465	5,178	247,053	6,683	N/A
4	4-May-14	76.0	8,060	5,850	6,221	258,709	6,702	N/A
5	5-May-14	74.0	8,460	5,877	5,848	218,241	6,151	N/A
6	5-May-14	77.2	8,368	6,201	6,412	244,417	7,346	N/A
7	5-May-14	82.7	8,260	6,142	5,774	253,758	6,520	N/A
8	6-May-14	74.0	7,749	5,820	6,038	255,145	6,583	N/A
9	6-May-14	78.0	7,689	5,619	6,197	255,958	6,589	N/A
10	6-May-14	78.0	7,795	5,955	5,767	256,668	6,475	N/A
11	7-May-14	75.7	7,697	5,752	6,107	258,452	6,499	N/A
12	7-May-14	79.7	7,629	5,554	6,192	258,171	6,548	N/A
13	7-May-14	78.3	7,719	5,822	6,103	260,333	6,471	N/A
14	7-May-14	78.5	7,681	5,891	6,056	259,124	6,441	N/A
15	7-May-14	74.6	7,617	5,753	6,164	260,207	6,482	N/A
16	8-May-14	73.4	7,665	5,547	5,758	244,330	6,305	N/A
17	8-May-14	78.4	7,696	5,986	5,634	261,169	6,495	N/A
18	8-May-14	79.1	7,661	5,789	5,804	242,862	7,264	N/A
19	9-May-14	75.3	7,321	5,614	5,754	259,524	6,431	N/A
20	9-May-14	72.3	7,367	5,720	5,710	258,680	6,308	N/A
21	9-May-14	77.8	7,718	6,021	5,945	256,289	6,487	N/A
22	9-May-14	81.6	7,993	5,734	5,894	248,472	6,331	N/A
23	10-May-14	64.5	7,577	-	6,193	138,464	6,252	N/A
24	10-May-14	76.3	7,098	6,174	6,345	256,837	6,433	N/A
25	10-May-14	77.3	7,403	5,716	5,422	258,016	6,334	N/A
26	10-May-14	77.5	7,506	5,729	5,832	257,246	6,405	N/A
27	10-May-14	82.8	7,694	6,062	5,913	254,452	6,282	N/A
28	11-May-14	82.4	7,673	5,725	5,586	256,505	6,282	N/A
29	11-May-14	78.1	7,590	6,044	5,300	239,919	6,843	N/A
30	11-May-14	76.9	7,507	6,045	5,155	267,111	6,440	N/A
31	11-May-14	81.8	7,825	5,700	6,055	260,660	6,182	N/A
32	12-May-14	74.9	7,044	5,872	5,901	256,813	6,219	N/A
33	12-May-14	77.8	7,457	5,721	5,214	257,373	6,207	N/A
34	12-May-14	77.6	7,425	5,783	4,841	259,191	6,229	N/A
35	12-May-14	73.9	7,650	5,744	5,696	209,322	7,037	N/A
36	12-May-14	83.7	7,855	5,954	4,730	258,260	8,135	N/A
37	13-May-14	78.8	7,196	6,259	4,805	255,247	6,140	N/A
38	13-May-14	78.4	6,965	5,590	5,364	258,618	6,142	N/A
39	13-May-14	77.3	7,365	6,062	4,835	258,418	6,134	N/A
40	13-May-14	74.7	7,173	6,683	N/A	220,170	5,610	N/A
41	13-May-14	76.5	6,803	5,864	4,719	258,416	6,050	N/A
42	14-May-14	78.3	6,990	5,782	5,481	258,366	6,102	N/A
43	14-May-14	77.5	7,505	6,189	5,478	139,264	6,064	N/A
44	14-May-14	78.0	7,013	5,892	4,387	261,942	6,159	N/A
AVG=		77.1	7,614	5,913	5,654	10,890,219	282,627	TOTAL

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EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Fresh Water	109'	N/A	109'	N/A
Fresh Water	112'	N/A	112'	N/A
Shale	0	188	0	188
Sandy siltstone	est. 188	390	est. 188	390
Coal	est. 390	408	est. 390	408
Shale	est. 408	488	est. 408	488
Siltstone	est. 488	828	est. 488	828
Shale	est. 828	908	est. 828	908
Sandstone	est. 908	943	est. 908	943
Shale	est. 943	964	est. 943	964
Trace coal	est. 964	986	est. 964	986
Sandy siltstone	est. 986	1,348	est. 986	1,348
Shale	est. 1348	1,588	est. 1348	1,588
Sandy shale	est. 1588	1,648	est. 1588	1,648
Trace coal	est. 1648	1,668	est. 1648	1,668
Shale	est. 1668	1,708	est. 1668	1,708
Sandstone	est. 1708	1,808	est. 1708	1,808
Silty sandstone	est. 1808	1,948	est. 1808	1,948
Trace coal	est. 1948	1,988	est. 1948	1,988
Silty sandstone	est. 1988	2,248	est. 1988	2,248
Shale	est. 2248	2,304	est. 2248	2,304
Big Lime	2,304	2,454	2,304	2,454
Big Injun	2,454	2,788	2,454	2,788
Weir	2,788	2,902	2,788	2,902
Fifty Foot Sandstone	2,902	2,993	2,902	2,993
Gordon	2,993	3,169	2,993	3,169
Fifth Sandstone	3,169	3,206	3,169	3,206
Bayard	3,206	3,995	3,206	3,995
Speechley	3,995	4,468	3,995	4,468
Baltown	4,468	4,759	4,468	4,759
Bradford	4,759	5,077	4,759	5,078
Riley	5,077	5,294	5,078	5,298
Benson	5,294	5,560	5,298	5,573
Alexander	5,560	6,852	5,573	7,164
Sycamore	6,852	7,023	7,164	7,394
Middlesex	7,023	7,172	7,394	7,615
Burkett	7,172	7,203	7,615	7,668
Tully	7,203	7,324	7,668	7,963
Marcellus	7,324	NA	7,963	NA

*Please note Antero determines shallow formation tops based on mud logs that are only run on one well on a multi-well pad. The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

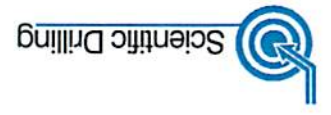
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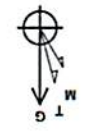


Carole Unit 1H
 Doddridge County WV
 Northing: 14242041.55
 Easting: 1747814.24
 As Drilled

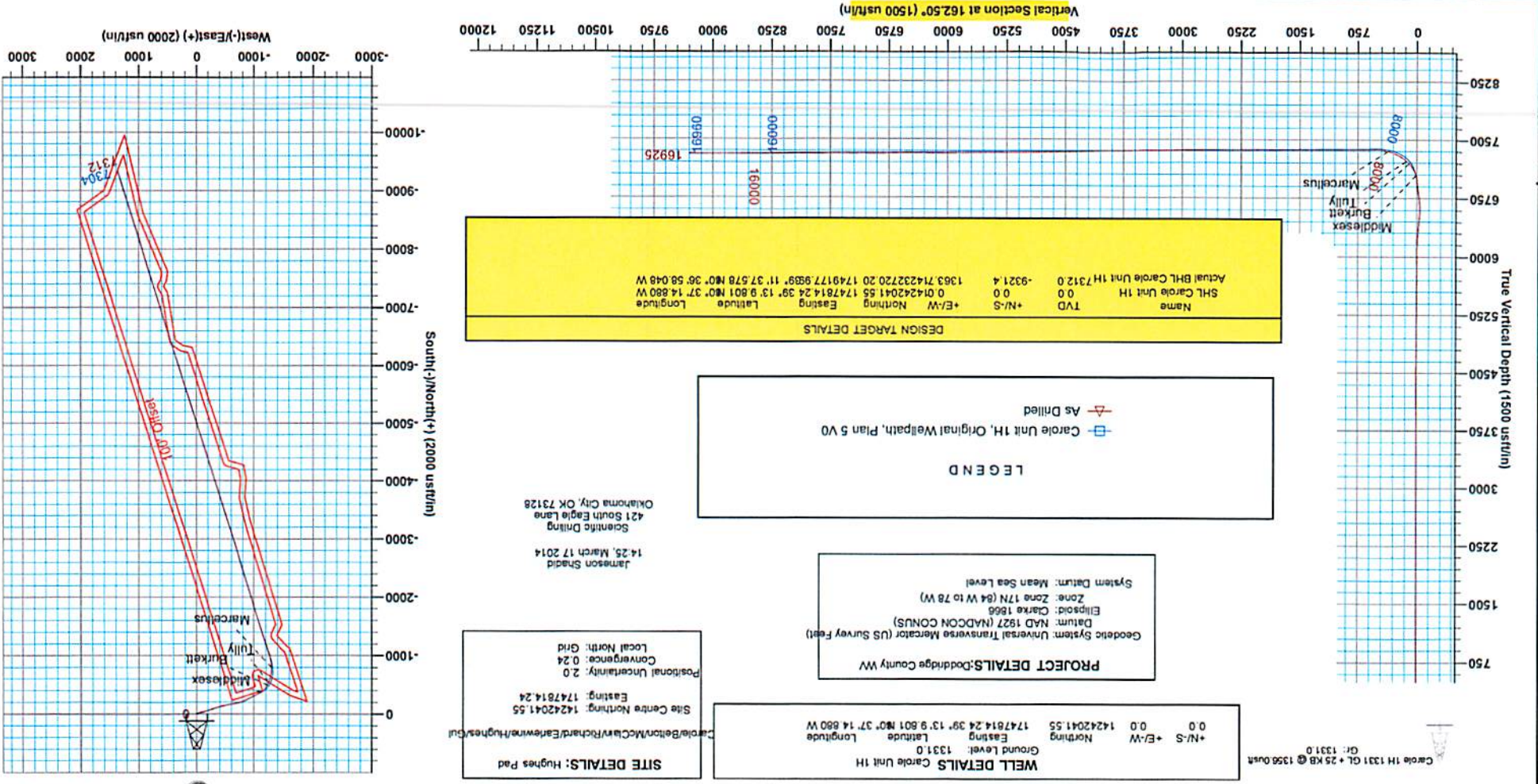


Azimuths to Grid North
 True North: -0.24°
 Magnetic North: -0.79°
 Strength: 52305 5ant
 Dip Angle: 66.79°
 Date: 11/25/2013
 Model: IGRF2010

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To convert True North to Grid North, subtract 0.24°
 To convert Magnetic North to Grid North, subtract 0.79°



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Antero Resources

**Doddridge County WV
Hughes Pad
Carole Unit 1H
Original Wellpath**

Design: As Drilled

EOW Completion Report

17 March, 2014

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EOW Completion Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Carole Unit 1H
Project:	Doddridge County WV	TVD Reference:	Carole 1H 1331 GL + 25 KB @ 1356.0usft
Site:	Hughes Pad	MD Reference:	Carole 1H 1331 GL + 25 KB @ 1356.0usft
Well:	Carole Unit 1H	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 Fee	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:	14,242,041.55usft	Latitude:	39° 13' 9.801 N
From:	Map	Easting:	1,747,814.24usft	Longitude:	80° 37' 14.880 W
Position Uncertainty:	2.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.24 °

Well	Carole Unit 1H, Marcellus					
Well Position	+N/-S	0.0 usft	Northing:	14,242,041.55 usft	Latitude:	39° 13' 9.801 N
	+E/-W	0.0 usft	Easting:	1,747,814.24 usft	Longitude:	80° 37' 14.880 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	11/26/2013	-8.55	66.79	52,305

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	162.50

Survey Program	Date 3/17/2014				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
102.5	6,537.5	Survey #1 Gyro (Original Wellpath)	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper	
6,639.0	16,925.0	Survey #2 MWD (Original Wellpath)	MWD SDI	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	0.00	
102.5	0.42	165.49	102.5	-0.4	0.1	0.4	0.41	
202.5	0.18	179.83	202.5	-0.9	0.2	0.9	0.25	
302.5	0.08	195.58	302.5	-1.1	0.2	1.1	0.11	
402.5	0.27	108.32	402.5	-1.2	0.4	1.3	0.28	
502.5	0.30	102.41	502.5	-1.4	0.9	1.6	0.04	
602.5	0.22	113.75	602.5	-1.5	1.3	1.8	0.09	
702.5	0.23	103.86	702.5	-1.6	1.7	2.1	0.04	
802.5	0.27	113.57	802.5	-1.8	2.1	2.3	0.06	
902.5	0.24	136.44	902.5	-2.0	2.4	2.7	0.11	
1,002.5	0.20	170.55	1,002.5	-2.3	2.6	3.0	0.13	

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EOW Completion Report



Company: Antero Resources	Local Co-ordinate Reference: Well Carole Unit 1H
Project: Doddridge County WV	TVD Reference: Carole 1H 1331 GL + 25 KB @ 1356.0usft
Site: Hughes Pad	MD Reference: Carole 1H 1331 GL + 25 KB @ 1356.0usft
Well: Carole Unit 1H	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)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)	
1,102.5	0.13	115.45	115.45	1,102.5	-2.6	2.7	3.3	0.16	
1,202.5	0.15	178.29	178.29	1,202.5	-2.7	2.8	3.5	0.15	
1,302.5	0.13	159.81	159.81	1,302.5	-3.0	2.9	3.7	0.05	
1,402.5	0.09	175.32	175.32	1,402.5	-3.2	2.9	3.9	0.05	
1,502.5	0.18	149.36	149.36	1,502.5	-3.4	3.0	4.1	0.11	
1,602.5	0.11	192.57	192.57	1,602.5	-3.6	3.1	4.4	0.13	
1,702.5	0.11	263.47	263.47	1,702.5	-3.7	3.0	4.4	0.13	
1,802.5	0.17	232.42	232.42	1,802.5	-3.8	2.7	4.5	0.09	
1,902.5	0.02	308.84	308.84	1,902.5	-3.9	2.6	4.5	0.17	
2,002.5	0.09	355.63	355.63	2,002.5	-3.8	2.6	4.4	0.08	
2,102.5	0.04	16.20	16.20	2,102.5	-3.7	2.6	4.3	0.05	
2,202.5	0.12	205.71	205.71	2,202.5	-3.8	2.6	4.3	0.16	
2,302.5	0.19	249.82	249.82	2,302.5	-3.9	2.4	4.4	0.13	
2,402.5	0.23	244.97	244.97	2,402.5	-4.0	2.0	4.5	0.04	
2,502.5	0.28	227.53	227.53	2,502.5	-4.3	1.7	4.6	0.09	
2,602.5	0.24	212.30	212.30	2,602.5	-4.6	1.4	4.8	0.08	
2,702.5	0.31	228.59	228.59	2,702.5	-5.0	1.1	5.1	0.10	
2,802.5	0.31	233.39	233.39	2,802.5	-5.3	0.6	5.3	0.03	
2,902.5	0.33	231.05	231.05	2,902.5	-5.7	0.2	5.5	0.02	
3,002.5	0.35	238.18	238.18	3,002.5	-6.0	-0.3	5.7	0.05	
3,102.5	0.21	236.42	236.42	3,102.5	-6.3	-0.7	5.8	0.14	
3,202.5	0.23	239.08	239.08	3,202.5	-6.5	-1.0	5.9	0.02	
3,302.5	0.22	249.26	249.26	3,302.5	-6.7	-1.4	5.9	0.04	
3,402.5	0.26	234.53	234.53	3,402.5	-6.9	-1.7	6.0	0.07	
3,502.5	0.27	258.56	258.56	3,502.5	-7.0	-2.2	6.1	0.11	
3,602.5	0.24	209.91	209.91	3,602.5	-7.3	-2.5	6.2	0.21	
3,702.5	0.35	206.16	206.16	3,702.5	-7.7	-2.7	6.5	0.11	
3,802.5	0.29	243.35	243.35	3,802.5	-8.1	-3.1	6.8	0.21	
3,902.5	0.23	247.82	247.82	3,902.5	-8.3	-3.5	6.9	0.06	
4,002.5	0.22	237.88	237.88	4,002.5	-8.5	-3.9	6.9	0.04	
4,102.5	0.32	222.74	222.74	4,102.5	-8.8	-4.2	7.1	0.12	
4,202.5	0.31	249.20	249.20	4,202.5	-9.1	-4.7	7.3	0.14	
4,302.5	0.33	235.00	235.00	4,302.5	-9.3	-5.1	7.4	0.08	
4,402.5	0.30	285.28	285.28	4,402.5	-9.4	-5.6	7.3	0.27	
4,502.5	0.18	297.03	297.03	4,502.5	-9.3	-6.0	7.1	0.13	
4,602.5	0.25	343.92	343.92	4,602.5	-9.0	-6.2	6.7	0.18	
4,702.5	0.32	340.33	340.33	4,702.5	-8.5	-6.4	6.2	0.07	
4,802.5	0.38	312.81	312.81	4,802.5	-8.1	-6.7	5.7	0.18	
4,847.5	0.40	347.01	347.01	4,847.5	-7.8	-6.9	5.4	0.51	
4,902.5	1.31	249.45	249.45	4,902.5	-7.8	-7.5	5.2	2.58	
5,002.5	4.31	246.22	246.22	5,002.3	-9.8	-12.0	5.7	3.00	
5,102.5	7.02	249.45	249.45	5,101.8	-13.4	-21.2	6.4	3.00	
5,202.5	10.01	253.78	253.78	5,200.7	-18.0	-35.2	6.6	3.06	
5,302.5	12.34	260.81	260.81	5,298.8	-22.1	-54.1	4.8	2.70	

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EOW Completion Report



Company: Antero Resources	Local Co-ordinate Reference: Well Carole Unit 1H
Project: Doddridge County WV	TVD Reference: Carole 1H 1331 GL + 25 KB @ 1356.0usft
Site: Hughes Pad	MD Reference: Carole 1H 1331 GL + 25 KB @ 1356.0usft
Well: Carole Unit 1H	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)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)	
5,402.5	14.43	258.07	5,396.1	-26.4	-76.9	2.1	2.18	
5,502.5	16.40	254.52	5,492.5	-32.8	-102.7	0.4	2.18	
5,602.5	18.53	253.43	5,587.9	-41.1	-131.5	-0.4	2.15	
5,702.5	19.81	253.51	5,682.3	-50.4	-163.0	-1.0	1.28	
5,802.5	23.07	252.13	5,775.4	-61.2	-197.9	-1.1	3.30	
5,902.5	26.23	251.30	5,866.3	-74.3	-237.5	-0.5	3.18	
6,002.5	29.99	252.25	5,954.5	-89.0	-282.2	0.0	3.79	
6,102.5	33.29	252.84	6,039.6	-104.7	-332.3	0.0	3.31	
6,202.5	36.25	254.97	6,121.7	-120.5	-387.1	-1.5	3.20	
6,302.5	38.53	257.55	6,201.2	-134.9	-446.0	-5.5	2.77	
6,402.5	41.41	258.42	6,277.8	-148.3	-508.9	-11.6	2.93	
6,502.5	40.75	258.08	6,353.2	-161.6	-573.2	-18.2	0.70	
6,537.5	40.52	257.60	6,379.7	-166.4	-595.5	-20.3	1.11	
6,639.0	39.20	259.30	6,457.7	-179.5	-659.2	-27.1	1.69	
6,736.0	39.21	258.14	6,532.8	-191.5	-719.3	-33.7	0.76	
6,832.0	39.31	252.29	6,607.2	-207.0	-778.0	-36.6	3.86	
6,929.0	40.25	246.14	6,681.8	-229.0	-836.0	-33.0	4.17	
7,025.0	40.34	243.29	6,755.0	-255.5	-892.1	-24.6	1.92	
7,121.0	41.94	244.87	6,827.3	-283.1	-948.9	-15.3	1.99	
7,218.0	42.76	244.25	6,899.0	-311.2	-1,007.9	-6.3	0.95	
7,314.0	42.01	245.29	6,969.9	-338.8	-1,066.4	2.4	1.07	
7,372.0	40.95	243.10	7,013.3	-355.5	-1,101.0	7.9	3.10	
7,405.0	41.76	237.46	7,038.1	-366.3	-1,119.9	12.6	11.55	
7,419.0	42.39	236.04	7,048.5	-371.4	-1,127.8	15.1	8.15	
Middlesex								
7,437.0	43.23	234.27	7,061.7	-378.4	-1,137.8	18.7	8.15	
7,469.0	44.69	225.15	7,084.8	-392.8	-1,154.7	27.4	20.29	
7,501.0	46.97	220.59	7,107.1	-409.6	-1,170.3	38.7	12.46	
7,533.0	47.89	217.24	7,128.7	-427.9	-1,185.1	51.7	8.23	
7,565.0	49.58	214.10	7,149.8	-447.5	-1,199.1	66.2	9.07	
7,598.0	51.04	211.39	7,170.9	-468.8	-1,212.9	82.4	7.71	
7,630.0	52.47	208.95	7,190.7	-490.5	-1,225.5	99.3	7.47	
7,640.0	52.82	208.23	7,196.8	-497.5	-1,229.3	104.8	6.74	
Burkett								
7,662.0	53.61	206.66	7,210.0	-513.2	-1,237.4	117.3	6.74	
7,693.0	56.05	203.20	7,227.8	-536.1	-1,248.1	136.0	12.05	
Tully								
7,694.0	56.13	203.09	7,228.4	-536.9	-1,248.4	136.7	12.05	
7,726.0	58.05	199.60	7,245.8	-561.9	-1,258.2	157.6	10.95	
7,758.0	59.81	197.79	7,262.3	-587.9	-1,266.9	179.7	10.33	
7,790.0	61.42	196.26	7,278.0	-614.5	-1,275.1	207.0	6.53	
7,823.0	63.64	192.50	7,293.2	-642.9	-1,282.4	227.5	6.53	
7,855.0	66.99	188.30	7,306.6	-671.5	-1,287.6	253.3	15.87	
7,887.0	69.10	186.35	7,318.5	-700.9	-1,291.4	280.2	8.68	
7,919.0	70.90	185.24	7,329.5	-730.8	-1,294.4	307.8	6.50	

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EOW Completion Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Carole Unit 1H
Project:	Doddridge County WV	TVD Reference:	Carole 1H 1331 GL + 25 KB @ 1356.0usft
Site:	Hughes Pad	MD Reference:	Carole 1H 1331 GL + 25 KB @ 1356.0usft
Well:	Carole Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

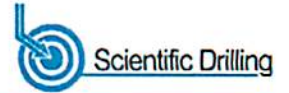
Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
7,951.0	72.88	182.91	7,339.4	-761.2	-1,296.6	336.1	9.28
7,983.0	75.77	180.10	7,348.1	-792.0	-1,297.4	365.2	12.37
7,991.0	76.33	179.47	7,350.0	-799.7	-1,297.3	372.6	10.34
Marcellus							
8,015.0	78.02	177.61	7,355.3	-823.1	-1,296.7	395.1	10.34
8,048.0	80.42	174.03	7,361.5	-855.4	-1,294.4	426.6	12.90
8,080.0	83.78	170.91	7,365.9	-886.9	-1,290.2	457.8	14.26
8,106.0	86.68	168.08	7,368.1	-912.3	-1,285.5	483.5	15.56
8,171.0	90.74	164.92	7,369.5	-975.5	-1,270.3	548.3	7.91
8,268.0	89.66	164.58	7,369.2	-1,069.1	-1,244.8	645.3	1.17
8,364.0	89.83	161.10	7,369.6	-1,160.8	-1,216.5	741.3	3.63
8,460.0	89.83	160.41	7,369.9	-1,251.4	-1,184.9	837.2	0.72
8,556.0	90.71	162.92	7,369.5	-1,342.5	-1,154.7	933.2	2.77
8,653.0	90.75	161.98	7,368.2	-1,435.0	-1,125.4	1,030.2	0.97
8,749.0	90.13	163.62	7,367.5	-1,526.7	-1,097.0	1,126.2	1.83
8,846.0	90.50	162.65	7,366.9	-1,619.5	-1,068.9	1,223.2	1.07
8,942.0	89.09	162.69	7,367.3	-1,711.2	-1,040.3	1,319.2	1.47
9,038.0	89.06	162.13	7,368.8	-1,802.7	-1,011.3	1,415.1	0.58
9,135.0	89.73	163.74	7,369.9	-1,895.4	-982.8	1,512.1	1.80
9,231.0	89.90	162.64	7,370.2	-1,987.3	-955.1	1,608.1	1.16
9,328.0	89.63	163.11	7,370.6	-2,080.0	-926.5	1,705.1	0.56
9,424.0	89.33	161.04	7,371.4	-2,171.3	-897.0	1,801.1	2.18
9,521.0	89.87	159.37	7,372.1	-2,262.6	-864.1	1,898.0	1.81
9,617.0	91.18	161.61	7,371.2	-2,353.1	-832.1	1,994.0	2.70
9,714.0	90.37	160.88	7,369.9	-2,444.9	-800.9	2,090.9	1.12
9,811.0	91.18	162.71	7,368.6	-2,537.0	-770.6	2,187.9	2.06
9,907.0	91.07	163.80	7,366.7	-2,628.9	-742.9	2,283.9	1.14
10,003.0	89.87	165.32	7,365.9	-2,721.5	-717.4	2,379.8	2.02
10,099.0	90.20	164.73	7,365.9	-2,814.2	-692.6	2,475.7	0.70
10,196.0	90.10	163.82	7,365.6	-2,907.6	-666.3	2,572.7	0.94
10,292.0	90.27	162.37	7,365.3	-2,999.4	-638.3	2,668.6	1.52
10,388.0	90.37	161.12	7,364.8	-3,090.6	-608.3	2,764.6	1.31
10,485.0	90.87	159.88	7,363.7	-3,182.0	-575.9	2,861.6	1.38
10,581.0	90.60	163.66	7,362.5	-3,273.2	-545.9	2,957.5	3.95
10,678.0	90.57	162.78	7,361.5	-3,366.0	-517.9	3,054.5	0.91
10,774.0	90.54	161.59	7,360.6	-3,457.4	-488.5	3,150.5	1.24
10,871.0	91.68	162.30	7,358.7	-3,549.6	-458.4	3,247.5	1.38
10,967.0	90.77	161.80	7,356.6	-3,640.9	-428.9	3,343.5	1.08
11,063.0	90.74	163.72	7,355.4	-3,732.6	-400.4	3,439.5	2.00
11,155.0	90.94	162.44	7,354.0	-3,820.6	-373.6	3,531.4	1.41
11,248.0	91.14	163.97	7,352.3	-3,909.6	-346.8	3,624.4	0.66
11,339.0	91.65	163.74	7,350.1	-3,997.0	-321.5	3,715.4	0.61
11,430.0	90.97	162.93	7,348.1	-4,084.2	-295.4	3,806.3	1.16
11,521.0	91.01	162.35	7,346.5	-4,171.0	-268.2	3,897.3	0.64

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EOW Completion Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Carole Unit 1H
Project:	Doddridge County WV	TVD Reference:	Carole 1H 1331 GL + 25 KB @ 1356.0usft
Site:	Hughes Pad	MD Reference:	Carole 1H 1331 GL + 25 KB @ 1356.0usft
Well:	Carole Unit 1H	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)
11,611.0	90.74	161.94	161.94	7,345.1	-4,256.7	-240.7	3,987.3	0.55
11,701.0	90.84	161.62	161.62	7,343.9	-4,342.2	-212.5	4,077.3	0.37
11,792.0	90.57	161.07	161.07	7,342.7	-4,428.4	-183.4	4,168.3	0.67
11,883.0	91.48	163.36	163.36	7,341.1	-4,515.0	-155.6	4,259.2	2.71
11,973.0	91.98	162.59	162.59	7,338.4	-4,601.0	-129.3	4,349.2	1.02
12,064.0	92.08	162.74	162.74	7,335.2	-4,687.8	-102.2	4,440.1	0.20
12,155.0	90.60	162.91	162.91	7,333.0	-4,774.7	-75.3	4,531.1	1.64
12,251.0	91.61	162.51	162.51	7,331.2	-4,866.4	-46.8	4,627.1	1.13
12,347.0	90.67	162.34	162.34	7,329.3	-4,957.9	-17.8	4,723.1	1.00
12,444.0	90.94	161.34	161.34	7,327.9	-5,050.0	12.4	4,820.0	1.07
12,540.0	91.65	160.68	160.68	7,325.8	-5,140.8	43.6	4,916.0	1.01
12,637.0	91.75	164.02	164.02	7,322.9	-5,233.2	73.0	5,012.9	3.44
12,733.0	90.48	163.39	163.39	7,321.0	-5,325.3	100.0	5,108.9	1.48
12,829.0	91.08	163.07	163.07	7,319.7	-5,417.2	127.7	5,204.9	0.71
12,926.0	90.30	160.88	160.88	7,318.5	-5,509.4	157.7	5,301.9	2.40
13,022.0	90.57	162.33	162.33	7,317.8	-5,600.5	188.0	5,397.8	1.54
13,119.0	89.87	163.48	163.48	7,317.4	-5,693.2	216.5	5,494.8	1.39
13,215.0	91.91	163.86	163.86	7,315.9	-5,785.3	243.5	5,590.8	2.16
13,311.0	90.44	164.52	164.52	7,314.0	-5,877.7	269.6	5,686.7	1.68
13,408.0	89.80	162.95	162.95	7,313.8	-5,970.8	296.8	5,783.7	1.75
13,504.0	90.70	163.21	163.21	7,313.3	-6,062.6	324.7	5,879.7	0.98
13,601.0	89.77	161.35	161.35	7,313.0	-6,155.0	354.2	5,976.7	2.14
13,697.0	90.64	161.49	161.49	7,312.6	-6,246.0	384.8	6,072.7	0.92
13,794.0	90.03	162.19	162.19	7,312.0	-6,338.2	415.1	6,169.7	0.96
13,890.0	90.44	161.72	161.72	7,311.6	-6,429.5	444.8	6,265.7	0.65
13,986.0	88.72	161.87	161.87	7,312.4	-6,520.7	474.8	6,361.6	1.80
14,083.0	89.56	161.68	161.68	7,313.8	-6,612.8	505.1	6,458.6	0.89
14,179.0	90.24	162.07	162.07	7,314.0	-6,704.0	535.0	6,554.6	0.82
14,276.0	90.34	162.13	162.13	7,313.5	-6,796.3	564.8	6,651.6	0.12
14,372.0	90.74	161.07	161.07	7,312.6	-6,887.4	595.1	6,747.6	1.18
14,468.0	90.66	164.00	164.00	7,311.4	-6,979.0	623.9	6,843.6	3.05
14,565.0	89.97	163.93	163.93	7,310.9	-7,072.2	650.7	6,940.5	0.71
14,661.0	90.50	163.59	163.59	7,310.5	-7,164.4	677.5	7,036.5	0.66
14,758.0	88.22	161.29	161.29	7,311.6	-7,256.8	706.8	7,133.5	3.34
14,854.0	89.46	162.62	162.62	7,313.5	-7,348.1	736.5	7,229.5	1.89
14,950.0	89.83	162.43	162.43	7,314.1	-7,439.6	765.4	7,325.5	0.43
15,046.0	90.54	161.91	161.91	7,313.8	-7,531.0	794.8	7,421.5	0.92
15,142.0	91.17	161.24	161.24	7,312.4	-7,622.1	825.1	7,517.4	2.26
15,237.0	91.24	162.89	162.89	7,310.4	-7,712.5	854.3	7,612.4	2.26
15,333.0	89.43	164.09	164.09	7,309.8	-7,804.5	881.6	7,708.4	2.26
15,429.0	90.44	164.27	164.27	7,309.9	-7,896.9	907.8	7,804.3	1.15
15,524.0	89.40	163.95	163.95	7,310.0	-7,988.2	933.8	7,899.3	0.81
15,621.0	90.17	164.08	164.08	7,310.4	-8,081.5	960.5	7,996.3	2.03
15,717.0	89.97	162.14	162.14	7,310.3	-8,173.3	988.4	8,092.3	0.96
15,813.0	90.40	161.32	161.32	7,310.0	-8,264.5	1,018.5	8,188.3	0.96

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EOW Completion Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Carole Unit 1H
Project:	Doddridge County WV	TVD Reference:	Carole 1H 1331 GL + 25 KB @ 1356.0usft
Site:	Hughes Pad	MD Reference:	Carole 1H 1331 GL + 25 KB @ 1356.0usft
Well:	Carole Unit 1H	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)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)	
15,909.0	91.11	160.82	7,308.7	-8,355.3	1,049.6	8,284.2	0.90	
16,005.0	89.70	161.31	7,308.0	-8,446.1	1,080.8	8,380.2	1.55	
16,101.0	90.30	161.50	7,308.0	-8,537.1	1,111.4	8,476.2	0.66	
16,197.0	91.01	161.57	7,306.9	-8,628.1	1,141.8	8,572.1	0.74	
16,294.0	89.63	161.15	7,306.4	-8,720.0	1,172.8	8,669.1	1.49	
16,390.0	89.76	161.15	7,306.9	-8,810.9	1,203.8	8,765.1	0.14	
16,486.0	90.07	162.83	7,307.0	-8,902.2	1,233.5	8,861.1	1.78	
16,583.0	90.47	162.32	7,306.6	-8,994.7	1,262.5	8,958.1	0.67	
16,679.0	88.76	163.11	7,307.2	-9,086.4	1,291.1	9,054.1	1.96	
16,775.0	88.93	162.91	7,309.2	-9,178.2	1,319.1	9,150.0	0.27	
16,870.0	88.92	162.58	7,311.0	-9,268.9	1,347.3	9,245.0	0.35	
16,925.0	88.92	162.58	7,312.0	-9,321.4	1,363.8	9,300.0	0.00	

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,419.0	7,048.5	-371.4	-1,127.8	Middlesex
7,640.0	7,196.8	-497.5	-1,229.3	Burkett
7,693.0	7,227.8	-536.1	-1,248.1	Tully
7,991.0	7,350.0	-799.7	-1,297.3	Marcellus

Checked By: _____ Approved By: _____ Date: _____

Received
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JUL 27 2015

Hydraulic Fracturing Fluid Product Component Information Disclosure

Received
Office of Oil & Gas
JUL 27 2015

Job Start Date:	5/4/2014
Job End Date:	5/14/2014
State:	West Virginia
County:	Doddridge
API Number:	47-017-06279-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Carole Unit 1H
Longitude:	-80.62080000
Latitude:	39.21938900
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	7,372
Total Base Water Volume (gal):	12,154,758
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Operator	Carrier	Water	7732-18-5	100.00000	89.87896	
Sand, White, 40/70	Baker Hughes	Proppant	MSDS and Non-MSDS Ingredients Listed Below	N/A		5.79471	
Sand, White, 20/40	Baker Hughes	Proppant	MSDS and Non-MSDS Ingredients Listed Below	N/A		3.25023	
Sand, White, 100 mesh	Baker Hughes	Proppant	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.61975	
HCl, 10.1 - 15%	Baker Hughes	Acidizing	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.20284	SmartCare Product
GW-3LDF	Baker Hughes	Gelling Agent	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.08276	SmartCare Product
FRW-18	Baker Hughes	Friction Reducer	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.06099	SmartCare Product
Scaletrol 720	Baker Hughes	Scale Inhibitor	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.01513	SmartCare Product

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Alpha 1427	Baker Hughes	Biocide						
			MSDS and Non-MSDS Ingredients Listed Below	N/A			0.01333	SmartCare Product
Enzyme G-NE	Baker Hughes	Breaker						
			MSDS and Non-MSDS Ingredients Listed Below	N/A			0.01203	SmartCare Product
Ferrotrol 300L	Baker Hughes	Iron Control						
			MSDS and Non-MSDS Ingredients Listed Below	N/A			0.00144	SmartCare Product
CI-14	Baker Hughes	Corrosion Inhibitor						
			MSDS and Non-MSDS Ingredients Listed Below	N/A			0.00033	SmartCare Product
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.								
Ingredients in Additive (s) (MSDS and non- MSDS)	Baker Hughes	See Trade Name(s) List						
			Crystalline Silica (Quartz)	14808-60-7	100.00000		9.65745	
			Water	7732-18-5	95.00000		0.22435	
			Mineral Oil	8042-47-5	70.00000		0.05789	
			Guar Gum	9000-30-0	60.00000		0.04962	
			Hydrochloric Acid	7647-01-0	15.00000		0.03041	
			Paraffinic Petroleum Distillate	64742-55-8	30.00000		0.02481	
			Hydrotreated Light Distillate	64742-47-8	30.00000		0.01828	
			Poly (acrylamide-co-acrylic acid) partial sodium salt	62649-23-4	30.00000		0.01828	
			Ethylene Glycol	107-21-1	45.00000		0.00680	
			1-butoxy-2-propanol	5131-66-8	5.00000		0.00414	
			Crystalline Silica: Quartz	14808-60-7	5.00000		0.00414	
			Isotridecanol, ethoxylated	9043-30-5	5.00000		0.00414	
			Glutaraldehyde	111-30-8	30.00000		0.00400	
			Sodium Chloride	7647-14-5	5.00000		0.00320	
			2-Propenoic, Polymer with Sodium Phosphinate, Sodium Salt	71050-62-9	20.00000		0.00302	
			Ammonium Chloride	12125-02-9	3.00000		0.00183	
			Didecyl Dimethyl Ammonium Chloride	7173-51-5	10.00000		0.00133	
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000		0.00122	
			Oleamide DEA	93-83-4	2.00000		0.00122	
			Citric Acid	77-92-9	60.00000		0.00086	
			Calcium Chloride	10043-52-4	5.00000		0.00076	
			Quaternary Ammonium Compound	68424-85-1	5.00000		0.00067	
			Ethanol	64-17-5	5.00000		0.00067	
			Hemicellulase Enzyme Concentrate	9025-56-3	5.00000		0.00060	
			Methanol	67-56-1	100.00000		0.00033	
			Polyoxyethylene Sorbitan Monooleate	9005-65-6	0.50000		0.00030	
			Sorbitan Monooleate	1338-43-8	0.50000		0.00030	
			Potassium Chloride	7447-40-7	1.00000		0.00015	

17-06279

SmartCare
Product
MSDS
Date: 11/27/15

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	Polyoxyalkylenes	68951-67-7	30.00000	0.00010	
	2-butoxy-1-propanol	15821-83-7	0.10000	0.00008	
	Fatty Acids	91790-12-3	10.00000	0.00003	
	Modified Thiourea Polymer	68527-49-1	7.00000	0.00002	
	Olefin	64743-02-8	5.00000	0.00002	
	Propargyl Alcohol	107-19-7	5.00000	0.00002	
	Formaldehyde	50-00-0	1.00000	0.00000	

* Total Water Volume sources may include fresh water, produced water, and/or recycled water
 ** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.
 Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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 JUL 27 2015
 Received
 Office of Oil & Gas
 JUL 27 2015

10/23/2015

LATITUDE 39°15'00"

10,615'

9,294' TO BOTTOM HOLE

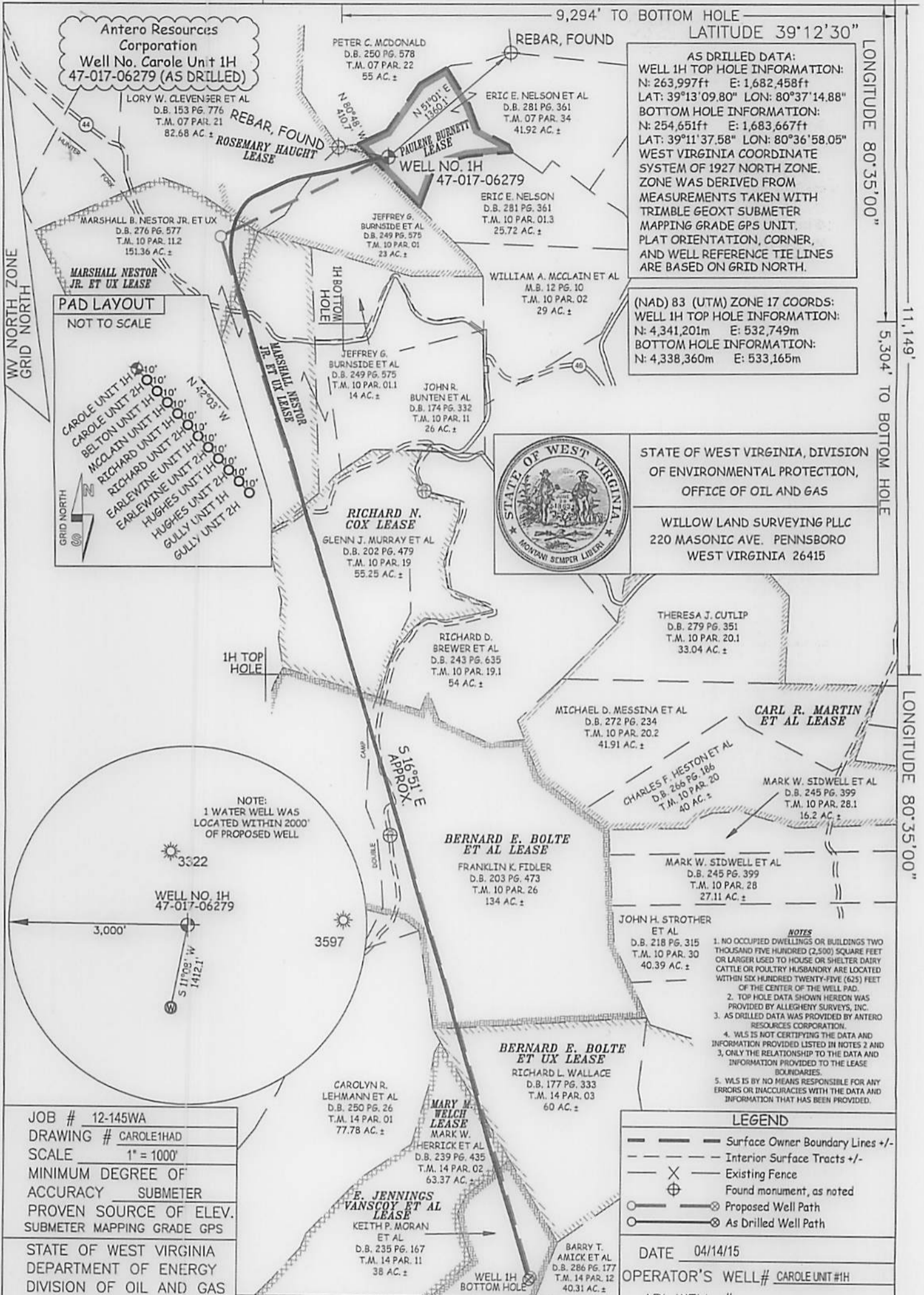
LATITUDE 39°12'30"

LONGITUDE 80°35'00"

11,149'

5,304' TO BOTTOM HOLE

LONGITUDE 80°35'00"



AS DRILLED DATA:
 WELL 1H TOP HOLE INFORMATION:
 N: 263,997ft E: 1,682,458ft
 LAT: 39°13'09.80" LON: 80°37'14.88"
 BOTTOM HOLE INFORMATION:
 N: 254,651ft E: 1,683,667ft
 LAT: 39°11'37.58" LON: 80°36'58.05"
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

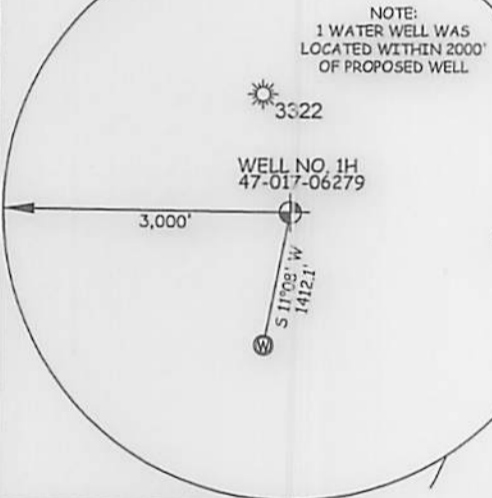
(NAD) 83 (UTM) ZONE 17 COORDS:
 WELL 1H TOP HOLE INFORMATION:
 N: 4,341,201m E: 532,749m
 BOTTOM HOLE INFORMATION:
 N: 4,338,360m E: 533,165m



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

WILLOW LAND SURVEYING PLLC
 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

PAD LAYOUT
 NOT TO SCALE



- NOTES
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.
 2. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
 3. AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
 4. VLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3, ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.
 5. VLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

JOB # 12-145WA
 DRAWING # CAROLE1HAD
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY SUBMETER
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

STATE OF WEST VIRGINIA
 DEPARTMENT OF ENERGY
 DIVISION OF OIL AND GAS

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
 LOCATION: ELEVATION 1,354' ORIGINAL - 1,332' AS-DRILLED WATERSHED HEADWATERS MIDDLE ISLAND CREEK
 QUADRANGLE BIG ISSAC 7.5'

SURFACE OWNER ERIC E. NELSON, ET AL ACREAGE 41.92 ACRES +/-
 OIL & GAS ROYALTY OWNER PAULENE BURNETT; ROSEMARY HAUGHT; MARSHALL NESTOR JR ET UX; LEASE ACREAGE 14.29 ACRES+; 115 ACRES+; 42.89 ACRES+;
 MARSHALL NESTOR JR ET UX; RICHARD N. COX; BERNARD E. BOLTE ET AL; BERNARD E. BOLTE ET UX; MARY M. WELCH; E. JENNINGS VANSOY ET AL 50 ACRES+; 63.578 ACRES+; 134 ACRES+; 80 ACRES+; 70 ACRES+; 65 ACRES+
 PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___
 PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL
 (SPECIFY) (X) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 7,312' TVD 16,925' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
 FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

10/23/2015

COUNTY NAME PERMIT