

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

API 47-017-06280 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 2H  
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 4,341,199m Easting 532,751m  
Landing Point of Curve Northing 4,340,966.07m Easting 532,552.36m  
Bottom Hole Northing 4,338,553m Easting 533,311m

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 08/12/2013 Date drilling commenced 12/08/2013 Date drilling ceased 03/26/2014  
Date completion activities began 04/15/2014 Date completion activities ceased 06/26/2014  
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

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**JUL 27 2015**

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

Reviewed by:  
JR 8/21/15  
10/23/2015

API 47-017 - 06280

Farm name Nelson, Eric E. et al

Well number Carole Unit 2H

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"	561'	New	48#; H-40	N/A	Yes
Coal							
Intermediate 1	12 1/4"	9 5/8"	2,481'	New	36#; J-55	N/A	Yes
Intermediate 2							
Intermediate 3							
Production	8 3/4" & 8 1/2"	5 1/2"	16,125'	New	23#; P-110	N/A	Yes
Tubing		2 3/8"	7,597'		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 <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Class A	180 sx	15.6	1.18	38	0'	8 Hrs.
Surface	Class A	665 sx	15.6	1.18	390	0'	8 Hrs.
Coal							
Intermediate 1	Class A	954 sx	15.6	1.18	777	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1,189 sx (Lead); 1,347 sx (Tail)	14 (Lead); 15.2 (Tail)	1.3 (Lead); 1.86 (Tail)	3,240	~800' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 16,125' MD; 7,301' TVD (BHL); 7,366' TVD (Deepest Point Drilled)

Loggers TD (ft) 16,125'

Deepest formation penetrated Marcellus

Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 6,712'

\*\*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 \_\_\_\_\_

JUL 27 2015

WERE TRACERS USED  Yes  No    TYPE OF TRACER(S) USED \_\_\_\_\_





API 47-017-06280 Farm Name Nelson, Eric E. et al Well Number Carole Unit 2H

**EXHIBIT 1**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	15-Apr-14	15,865	16,034	60	Marcellus
2	15-May-14	15,666	15,834	60	Marcellus
3	15-May-14	15,466	15,634	60	Marcellus
4	16-May-14	15,266	15,434	60	Marcellus
5	16-May-14	15,066	15,234	60	Marcellus
6	16-May-14	14,866	15,035	60	Marcellus
7	16-May-14	14,666	14,835	60	Marcellus
8	16-May-14	14,466	14,635	60	Marcellus
9	17-May-14	14,266	14,435	60	Marcellus
10	17-May-14	14,066	14,235	60	Marcellus
11	17-May-14	13,867	14,035	60	Marcellus
12	18-May-14	13,667	13,835	60	Marcellus
13	18-May-14	13,467	13,635	60	Marcellus
14	18-May-14	13,267	13,435	60	Marcellus
15	18-May-14	13,067	13,236	60	Marcellus
16	19-May-14	12,867	13,036	60	Marcellus
17	19-May-14	12,667	12,836	60	Marcellus
18	20-May-14	12,467	12,636	60	Marcellus
19	20-May-14	12,267	12,436	60	Marcellus
20	20-May-14	12,068	12,236	60	Marcellus
21	20-May-14	11,868	12,036	60	Marcellus
22	20-May-14	11,668	11,836	60	Marcellus
23	21-May-14	11,468	11,636	60	Marcellus
24	21-May-14	11,268	11,437	60	Marcellus
25	21-May-14	11,068	11,237	60	Marcellus
26	21-May-14	10,868	11,037	60	Marcellus
27	22-May-14	10,668	10,837	60	Marcellus
28	22-May-14	10,468	10,637	60	Marcellus
29	25-May-14	10,269	10,437	60	Marcellus
30	22-May-14	10,069	10,237	60	Marcellus
31	23-May-14	9,869	10,037	60	Marcellus
32	23-May-14	9,669	9,837	60	Marcellus
33	23-May-14	9,469	9,638	60	Marcellus
34	24-May-14	9,269	9,438	60	Marcellus
35	24-May-14	9,069	9,238	60	Marcellus
36	24-May-14	8,869	9,038	60	Marcellus
37	24-May-14	8,669	8,838	60	Marcellus
38	25-May-14	8,469	8,638	60	Marcellus
39	25-May-14	8,270	8,438	60	Marcellus
40	25-May-14	8,070	8,238	60	Marcellus
41	25-May-14	7,870	8,038	60	Marcellus
42	25-May-14	7,670	7,839	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	15-May-14	73.3	8,071	N/A	6,489	257,310	6,591	N/A
2	15-May-14	76.3	7,828	6,530	6,191	257,310	6,472	N/A
3	15-May-14	74.5	7,840	6,387	5,521	257,310	6,620	N/A
4	16-May-14	77.6	7,698	5,979	6,250	257,310	6,592	N/A
5	16-May-14	77.3	7,851	6,031	5,546	257,310	6,480	N/A
6	16-May-14	80.0	7,931	6,442	5,876	257,310	6,603	N/A
7	16-May-14	85.0	7,984	6,239	6,089	257,310	6,504	N/A
8	16-May-14	80.0	7,679	5,823	5,697	257,310	6,558	N/A
9	17-May-14	81.0	7,801	5,800	5,606	257,310	6,548	N/A
10	17-May-14	79.0	7,693	5,947	5,909	257,310	6,506	N/A
11	17-May-14	71.0	7,456	6,075	5,462	257,310	6,486	N/A
12	18-May-14	80.0	7,733	5,816	5,518	257,310	6,381	N/A
13	18-May-14	79.0	7,736	5,852	5,112	257,310	6,480	N/A
14	18-May-14	79.0	8,065	6,000	6,224	257,310	6,461	N/A
15	18-May-14	79.0	7,777	5,850	6,127	257,310	6,441	N/A
16	19-May-14	82.0	7,677	5,840	5,929	257,310	6,454	N/A
17	19-May-14	80.0	7,580	5,849	5,987	257,310	6,443	N/A
18	20-May-14	81.0	7,526	5,795	5,931	257,310	6,429	N/A
19	20-May-14	81.0	7,442	5,531	5,971	257,310	6,399	N/A
20	20-May-14	76.0	7,516	5,863	5,832	257,310	6,353	N/A
21	20-May-14	78.0	7,315	5,618	6,019	257,310	6,382	N/A
22	20-May-14	79.0	7,273	5,622	5,432	257,310	6,345	N/A
23	21-May-14	80.0	7,422	6,134	6,015	257,310	6,358	N/A
24	21-May-14	81.0	7,761	5,851	6,361	257,310	6,366	N/A
25	21-May-14	81.0	7,341	5,835	5,380	257,310	6,966	N/A
26	21-May-14	81.0	7,523	6,082	6,085	257,310	6,322	N/A
27	22-May-14	84.0	7,718	5,748	6,289	257,310	6,238	N/A
28	22-May-14	81.0	7,230	5,847	5,854	257,310	6,253	N/A
29	25-May-14	80.0	7,473	6,185	5,934	257,310	6,358	N/A
30	22-May-14	80.0	7,485	6,186	6,922	257,310	6,248	N/A
31	23-May-14	80.0	7,512	5,541	5,564	257,310	6,211	N/A
32	23-May-14	79.0	6,608	6,648	5,874	257,310	6,234	N/A
33	23-May-14	80.0	7,139	6,334	6,379	257,310	6,320	N/A
34	24-May-14	83.0	7,383	6,018	5,669	257,310	6,218	N/A
35	24-May-14	77.0	7,225	7,320	5,831	257,310	6,170	N/A
36	24-May-14	79.0	7,260	6,294	5,154	257,310	6,252	N/A
37	24-May-14	74.0	7,031	5,698	4,715	257,310	6,176	N/A
38	25-May-14	81.0	7,103	5,136	5,004	257,310	6,593	N/A
39	25-May-14	80.0	6,896	6,767	5,355	257,310	6,198	N/A
40	25-May-14	76.0	6,925	5,602	4,726	257,310	6,255	N/A
41	25-May-14	80.0	6,834	5,821	4,784	257,310	6,077	N/A
42	25-May-14	83.0	6,966	6,204	4,535	257,310	6,178	N/A
AVG=		79.3	7,484	6,003	5,742	10,807,020	268,530	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	2,303	est. 2248	2,305
Big Lime	2,303	2,464	2,305	5,466
Big Injun	2,464	2,783	5,466	2,785
Weir	2,783	2,900	2,785	2,902
Fifty Foot Sandstone	2,900	2,993	2,902	2,995
Gordon	2,993	3,169	2,995	3,171
Fifth Sandstone	3,169	3,205	3,171	3,207
Bayard	3,205	3,995	3,207	3,997
Speechley	3,995	4,460	3,997	4,462
Baltown	4,460	4,753	4,462	4,755
Bradford	4,753	5,075	4,755	5,077
Riley	5,075	5,297	5,077	5,299
Benson	5,297	5,570	5,299	5,573
Alexander	5,570	6,846	5,573	6,952
Sycamore	6,846	7,016	6,952	7,147
Middlesex	7,016	7,160	7,147	7,331
Burkett	7,160	7,192	7,331	7,377
Tully	7,192	7,315	7,377	7,625
Marcellus	7,315	NA	7,625	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 2H**  
**Doddridge County WV**  
**Northing: 14242033.67**  
**Easting: 1747821.37**  
**As Drilled**



**17-06280**

Azimuths to Grid North  
 True North: -0.24°  
 Magnetic North: -8.79°

Magnetic Field  
 Strength: 52301.1nT  
 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 @ 1356.0usf  
 Gr. 1331.0

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

**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

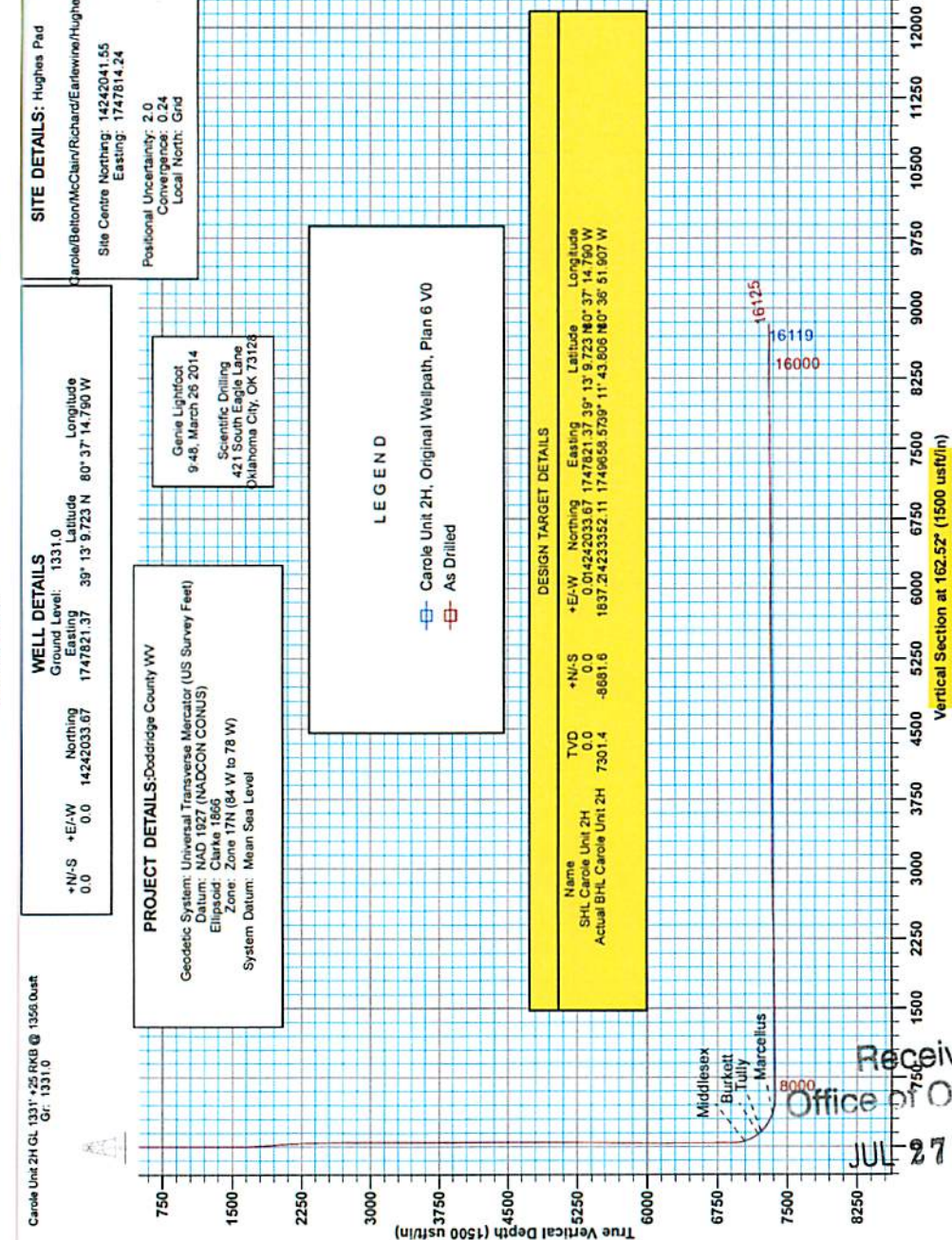
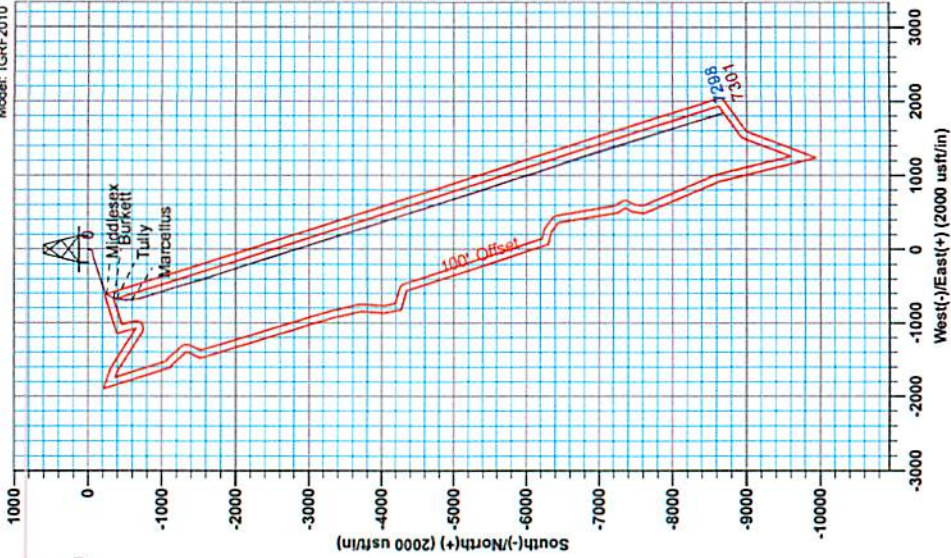
Gene Lightfoot  
 9-48, March 25 2014  
 Scientific Drilling  
 421 South Eagle Lane  
 Oklahoma City, OK 73128

**SITE DETAILS: Hughes Pad**  
 Carole/Belton/McClain/Richard/Earlewine/Hughes/Gal  
 Site Centre Northing: 14242041.55  
 Easting: 1747814.24  
 Positional Uncertainty: 3.0  
 Convergence: 0.24  
 Local North: Grid

**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	-8691.6	7301.4	1837.24	233352.11	1749658.5799	11° 43' 806 N	0° 36' 51 907 W



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## **Antero Resources**

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

**Design: As Drilled**

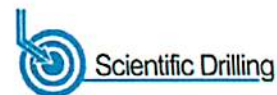
## **EOW Completion Report**

**26 March, 2014**



Received  
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April 24, 2015

10/23/2015



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

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

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

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

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

<b>Design</b>	As Drilled			
<b>Audit Notes:</b>				
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>
				0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	162.52

<b>Survey Program</b>	Date 3/26/2014			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
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

<b>Survey</b>								
<b>MD (usft)</b>	<b>Inc (°)</b>	<b>Azi (azimuth) (°)</b>	<b>TVD (usft)</b>	<b>N/S (usft)</b>	<b>EW (usft)</b>	<b>V. Sec (usft)</b>	<b>DLeg (°/100usft)</b>	
0.0	0.00	0.00	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	0.4	0.09	
612.0	0.05	188.23	612.0	-0.8	-0.3	0.4	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	1.2	0.02	
912.0	0.11	246.40	912.0	-1.3	-0.3		0.14	

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JUL 27 2015

17-06280



EOW Completion Report



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



<b>Company:</b> Antero Resources	<b>Local Co-ordinate Reference:</b> Well Carole Unit 2H
<b>Project:</b> Doddridge County WV	<b>TVD Reference:</b> Carole Unit 2H GL 1331' +25 RKB @ 1356.0usft
<b>Site:</b> Hughes Pad	<b>MD Reference:</b> Carole Unit 2H GL 1331' +25 RKB @ 1356.0usft
<b>Well:</b> Carole Unit 2H	<b>North Reference:</b> Grid
<b>Wellbore:</b> Original Wellpath	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> As Drilled	<b>Database:</b> 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
<b>Middlesex</b>							
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
<b>Burkett</b>							
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
<b>Tully</b>							
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	332.2	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	364.4	14.90
<b>Marcellus</b>							

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EOW Completion Report



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

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
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	3,789.8	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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EOW Completion Report



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

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)		TVD (usft)	N/S (usft)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)
11,562.0	89.83	162.37	162.37	7,322.6	-4,329.3	470.1	4,270.6	1.72
11,659.0	90.30	162.71	162.71	7,322.5	-4,421.9	499.2	4,367.6	0.60
11,755.0	89.97	163.02	163.02	7,322.3	-4,513.6	527.5	4,463.6	0.47
11,852.0	90.17	162.76	162.76	7,322.2	-4,606.3	556.0	4,560.6	0.34
11,948.0	90.03	162.90	162.90	7,322.0	-4,698.0	584.3	4,656.6	0.21
12,044.0	90.44	162.64	162.64	7,321.6	-4,789.7	612.8	4,752.6	0.51
12,140.0	89.19	161.43	161.43	7,321.9	-4,881.0	642.4	4,848.6	1.81
12,237.0	91.58	163.01	163.01	7,321.3	-4,973.4	672.0	4,945.6	2.95
12,333.0	89.46	162.62	162.62	7,320.4	-5,065.1	700.4	5,041.6	2.25
12,429.0	90.71	163.50	163.50	7,320.2	-5,156.9	728.3	5,137.6	1.59
12,525.0	91.28	163.99	163.99	7,318.6	-5,249.1	755.2	5,233.5	0.78
12,621.0	88.76	161.01	161.01	7,318.5	-5,340.6	784.1	5,329.5	4.07
12,718.0	91.64	161.87	161.87	7,318.2	-5,432.6	814.9	5,426.5	3.10
12,814.0	89.40	160.32	160.32	7,317.3	-5,523.4	846.0	5,522.4	2.84
12,911.0	91.27	160.89	160.89	7,316.8	-5,614.9	878.2	5,619.4	2.02
13,007.0	90.24	161.02	161.02	7,315.5	-5,705.6	909.6	5,715.3	1.08
13,104.0	89.90	163.07	163.07	7,315.4	-5,797.9	939.5	5,812.3	2.14
13,200.0	91.04	165.69	165.69	7,314.6	-5,890.3	965.3	5,908.3	2.98
13,297.0	88.79	164.21	164.21	7,314.7	-5,984.0	990.5	6,005.2	2.78
13,393.0	88.46	163.04	163.04	7,317.0	-6,076.1	1,017.6	6,101.1	1.27
13,490.0	89.36	161.97	161.97	7,318.9	-6,168.5	1,046.7	6,198.1	1.44
13,586.0	89.56	160.90	160.90	7,319.8	-6,259.5	1,077.3	6,294.1	1.13
13,682.0	90.47	161.42	161.42	7,319.8	-6,350.4	1,108.3	6,390.0	1.09
13,779.0	89.60	160.69	160.69	7,319.7	-6,442.1	1,139.8	6,487.0	1.17
13,875.0	89.80	160.16	160.16	7,320.2	-6,532.6	1,171.9	6,582.9	0.59
13,972.0	90.20	161.25	161.25	7,320.2	-6,624.1	1,204.0	6,679.9	1.20
14,068.0	90.03	160.89	160.89	7,320.0	-6,715.0	1,235.1	6,775.9	0.41
14,164.0	91.28	161.98	161.98	7,318.9	-6,805.9	1,265.7	6,871.8	1.73
14,260.0	91.44	162.14	162.14	7,316.6	-6,897.3	1,295.2	6,967.8	0.24
14,356.0	90.07	163.27	163.27	7,315.4	-6,988.9	1,323.8	7,063.8	1.85
14,453.0	90.00	163.54	163.54	7,315.3	-7,081.9	1,351.5	7,160.8	0.29
14,549.0	91.48	163.75	163.75	7,314.1	-7,174.0	1,378.5	7,256.8	1.56
14,646.0	89.77	162.59	162.59	7,313.0	-7,266.8	1,406.6	7,353.7	2.13
14,742.0	90.60	163.66	163.66	7,312.7	-7,358.7	1,434.5	7,449.7	1.41
14,838.0	90.30	162.09	162.09	7,311.9	-7,450.4	1,462.7	7,545.7	1.66
14,935.0	90.64	161.98	161.98	7,311.2	-7,542.7	1,492.6	7,642.7	0.37
15,031.0	91.44	162.91	162.91	7,309.4	-7,634.2	1,521.6	7,738.7	1.28
15,128.0	90.97	163.11	163.11	7,307.4	-7,726.9	1,549.9	7,835.7	0.53
15,224.0	90.77	163.11	163.11	7,305.9	-7,818.8	1,577.8	7,931.7	0.21
15,320.0	89.73	164.09	164.09	7,305.5	-7,910.9	1,604.9	8,027.6	1.49
15,417.0	89.33	164.15	164.15	7,306.3	-8,004.2	1,631.5	8,124.6	0.42
15,513.0	90.60	163.16	163.16	7,306.3	-8,096.3	1,658.5	8,220.6	0.68
15,610.0	90.84	163.13	163.13	7,305.1	-8,189.1	1,686.6	8,317.6	0.25
15,706.0	89.40	162.80	162.80	7,304.9	-8,280.9	1,714.7	8,414.7	1.54
15,803.0	90.40	162.98	162.98	7,305.1	-8,373.6	1,743.3	8,510.5	1.05

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EOW Completion Report



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

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

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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# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/15/2014
Job End Date:	5/25/2014
State:	West Virginia
County:	Doddridge
API Number:	47-017-06280-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Carole Unit 2H
Longitude:	-80.62077500
Latitude:	39.21936900
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	7,366
Total Base Water Volume (gal):	11,784,360
Total Base Non Water Volume:	0



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## 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	89.71096	
Sand, White, 40/70	Baker Hughes	Proppant	MSDS and Non-MSDS Ingredients Listed Below	N/A		5.80545	
Sand, White, 20/40	Baker Hughes	Proppant	MSDS and Non-MSDS Ingredients Listed Below	N/A		3.40439	
Sand, White, 100 mesh	Baker Hughes	Proppant	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.60886	
HCl, 10.1 - 15%	Baker Hughes	Acidizing	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.10646	
HCl, 10.1 - 15%	Baker Hughes	Acidizing	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.10055	
GW-3LDF	Baker Hughes	Gelling Agent	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.08767	SmartCare Product
FRW-18	Baker Hughes	Friction Reducer	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.06330	SmartCare Product

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Scaletrol 720	Baker Hughes	Scale Inhibitor						
			MSDS and Non-MSDS Ingredients Listed Below	N/A			0.01481	SmartCare Product
Alpha 1427	Baker Hughes	Biocide						
			MSDS and Non-MSDS Ingredients Listed Below	N/A			0.01301	SmartCare Product
Enzyme G-NE	Baker Hughes	Breaker						
			MSDS and Non-MSDS Ingredients Listed Below	N/A			0.01188	SmartCare Product
Ferrotrol 300L	Baker Hughes	Iron Control						
			MSDS and Non-MSDS Ingredients Listed Below	N/A			0.00146	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		9.81096	
			Water	7732-18-5	95.00000		0.22833	
			Mineral Oil	8042-47-5	70.00000		0.06132	
			Guar Gum	9000-30-0	60.00000		0.05256	
			Hydrochloric Acid	7647-01-0	15.00000		0.03103	
			Paraffinic Petroleum Distillate	64742-55-8	30.00000		0.02628	
			Poly (acrylamide-co-acrylic acid) partial sodium salt	62649-23-4	30.00000		0.01898	
			Hydrotreated Light Distillate	64742-47-8	30.00000		0.01898	
			Ethylene Glycol	107-21-1	45.00000		0.00666	
			Crystalline Silica: Quartz	14808-60-7	5.00000		0.00438	
			1-butoxy-2-propanol	5131-66-8	5.00000		0.00438	
			Isotridecanol, ethoxylated	9043-30-5	5.00000		0.00438	
			Glutaraldehyde	111-30-8	30.00000		0.00390	
			Sodium Chloride	7647-14-5	5.00000		0.00331	
			2-Propenoic, Polymer with Sodium Phosphinate, Sodium Salt	71050-62-9	20.00000		0.00296	
			Ammonium Chloride	12125-02-9	3.00000		0.00190	
			Didecyl Dimethyl Ammonium Chloride	7173-51-5	10.00000		0.00130	
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000		0.00127	
			Oleamide DEA	93-83-4	2.00000		0.00127	
			Citric Acid	77-92-9	60.00000		0.00087	
			Calcium Chloride	10043-52-4	5.00000		0.00074	
			Ethanol	64-17-5	5.00000		0.00065	
			Quaternary Ammonium Compound	68424-85-1	5.00000		0.00065	
			Hemicellulase Enzyme Concentrate	9025-56-3	5.00000		0.00059	
			Methanol	67-56-1	100.00000		0.00033	

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			Polyoxyethylene Sorbitan Monooleate	9005-65-6	0.50000	0.00032	Received Office of Oil & Gas JUL 27 2015
			Sorbitan Monooleate	1338-43-8	0.50000	0.00032	
			Potassium Chloride	7447-40-7	1.00000	0.00015	
			Polyoxyalkylenes	68951-67-7	30.00000	0.00010	
			2-butoxy-1-propanol	15821-83-7	0.10000	0.00009	
			Fatty Acids	61790-12-3	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)

17-06280

LATITUDE 39°15'00"

10,609'

LATITUDE 39°12'30"

LONGITUDE 80°35'00"

4,673' TO BOTTOM HOLE

LONGITUDE 80°35'00"

COUNTY NAME PERMIT

Antero Resources Corporation  
Well No. Carole Unit 2H  
47-017-06280 (AS DRILLED)

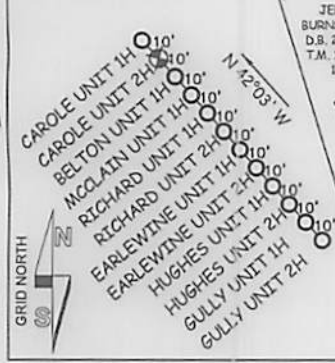
PETER C. McDONALD  
D.B. 250 PG. 578  
T.M. 07 PAR. 22  
55 AC. ±

REBAR, FOUND

AS DRILLED DATA:  
WELL 2H TOP HOLE INFORMATION:  
N: 263,990ft E: 1,682,464ft  
LAT: 39°13'09.73" LON: 80°37'14.81"  
BOTTOM HOLE INFORMATION:  
N: 255,276ft E: 1,684,157ft  
LAT: 39°11'43.81" LON: 80°36'51.92"  
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 2H TOP HOLE INFORMATION:  
N: 4,341,199m E: 532,751m  
BOTTOM HOLE INFORMATION:  
N: 4,338,553m E: 533,311m

PAD LAYOUT  
NOT TO SCALE



WV NORTH ZONE  
GRID NORTH

HUNTER  
FORK

LORY W. CLEVENGER ET AL  
D.B. 153 PG. 776  
T.M. 07 PAR. 21  
82.68 AC. ±

MARSHALL B. NESTOR JR. ET UX  
D.B. 276 PG. 577  
T.M. 10 PAR. 112  
151.36 AC. ±

PAULENE BURNETT  
ROSEMARY HAUGHT  
LEASE

WELL NO. 2H  
47-017-06280

ERIC E. NELSON  
D.B. 281 PG. 361  
T.M. 07 PAR. 34  
41.92 AC. ±

JEFFREY G. BURNSIDE ET AL  
D.B. 249 PG. 575  
T.M. 10 PAR. 01  
23 AC. ±

WILLIAM A. MCCLAIN ET AL  
M.B. 12 PG. 10  
T.M. 10 PAR. 02  
29 AC. ±

JEFFREY G. BURNSIDE  
ET AL LEASE

JOHN R. BUNTEN ET AL  
D.B. 174 PG. 332  
T.M. 10 PAR. 11  
26 AC. ±

JOHN R. BUNTEN LEASE

RICHARD N. COX LEASE

GLENN J. MURRAY ET AL  
D.B. 202 PG. 479  
T.M. 10 PAR. 19  
55.25 AC. ±



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

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

DEARL L. COX  
ET AL LEASE

RICHARD D. BREWER ET AL  
D.B. 243 PG. 635  
T.M. 10 PAR. 19.1  
54 AC. ±

THERESA J. CUTLIP  
D.B. 279 PG. 351  
T.M. 10 PAR. 20.1  
33.04 AC. ±

CARL R. MARTIN  
ET AL LEASE

CHARLES F. HESTON ET AL  
D.B. 266 PG. 186  
T.M. 10 PAR. 20  
40 AC. ±

MARK W. SIDWELL ET AL  
D.B. 245 PG. 399  
T.M. 10 PAR. 28.1  
16.2 AC. ±

MARK W. SIDWELL ET AL  
D.B. 245 PG. 399  
T.M. 10 PAR. 28  
27.11 AC. ±

JOHN H. STROTHER  
ET AL  
D.B. 218 PG. 315  
T.M. 10 PAR. 30  
40.39 AC. ±

- 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. WLS 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. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

FRANKLIN K. FIDLER  
D.B. 203 PG. 473  
T.M. 10 PAR. 26  
134 AC. ±

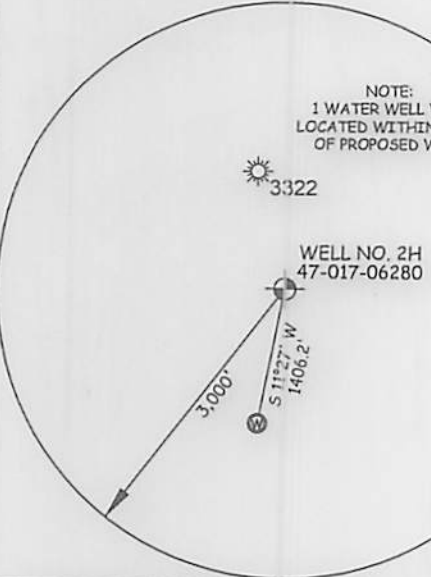
RICHARD L. WALLACE  
D.B. 177 PG. 333  
T.M. 14 PAR. 03  
60 AC. ±

CAROLYN R. LEHMANN ET AL  
D.B. 250 PG. 26  
T.M. 14 PAR. 01  
77.78 AC. ±

MARK W. HERRICK ET AL  
D.B. 239 PG. 435  
T.M. 14 PAR. 02  
63.37 AC. ±

KEITH P. MORAN ET AL  
D.B. 235 PG. 167  
T.M. 14 PAR. 11  
38 AC. ±

BARRY T. AMICK ET AL  
D.B. 286 PG. 177  
T.M. 14 PAR. 12  
40.31 AC. ±



NOTE:  
1 WATER WELL WAS  
LOCATED WITHIN 2000'  
OF PROPOSED WELL

WELL NO. 2H  
47-017-06280

JOB # 12-145WA  
DRAWING # CAROLE2HAD  
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  LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
(IF "GAS") PRODUCTION  STORAGE \_\_\_ DEEP \_\_\_ SHALLOW   
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+; 50 ACRES+;  
JEFFREY G. BURNSIDE ET AL; MARSHALL NESTOR JR ET UX; JOHN R. BUNTEN; RICHARD N. COX; DEARL L. COX ET AL; BERNARD E. BOLTE ET AL; BERNARD E. BOLTE ET UX 14 ACRES+; 13.326 ACRES+; 26 ACRES+; 63.578 ACRES+; 99.923 ACRES+; 134 ACRES+; 80 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 7,301' TVD 16,125' 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

DATE 04/14/15  
OPERATOR'S WELL# CAROLE UNIT #2H

API WELL # 47 - 017 - 06280  
STATE COUNTY PERMIT

10/23/2015