

RECEIVED

JUL 27 2015

WR-35
Rev. 8/23/13

WV GEOLOGICAL SURVEY
MORGANTOWN, WV

Page ___ of ___

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

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:

JUL 27 2015

WV GEOLOGICAL SURVEY
MORGANTOWN, WV

WR-35
Rev. 8/23/13

Page ___ of ___

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 ³ /sks)	Volume (ft ³)	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	~500' 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 _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

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

RECEIVED

JUL 27 2015

WV GEOLOGICAL SURVEY
MORGANTOWN, WV

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

RECEIVED
 JUL 27 2015
 WYOMING GEOLOGICAL SURVEY
 MOHICANTOWN, WY

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

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	6,296	N/A
41	25-May-14	80.0	6,834	5,821	4,784	257,310	6,047	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

RECEIVED

JUL 27 2015

WV GEOLOGICAL SURVEY
MORGANTOWN, WV

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

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.

RECEIVED
JUL 27 2015

WV GEOLOGICAL SURVEY
MORGANTOWN, WV

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

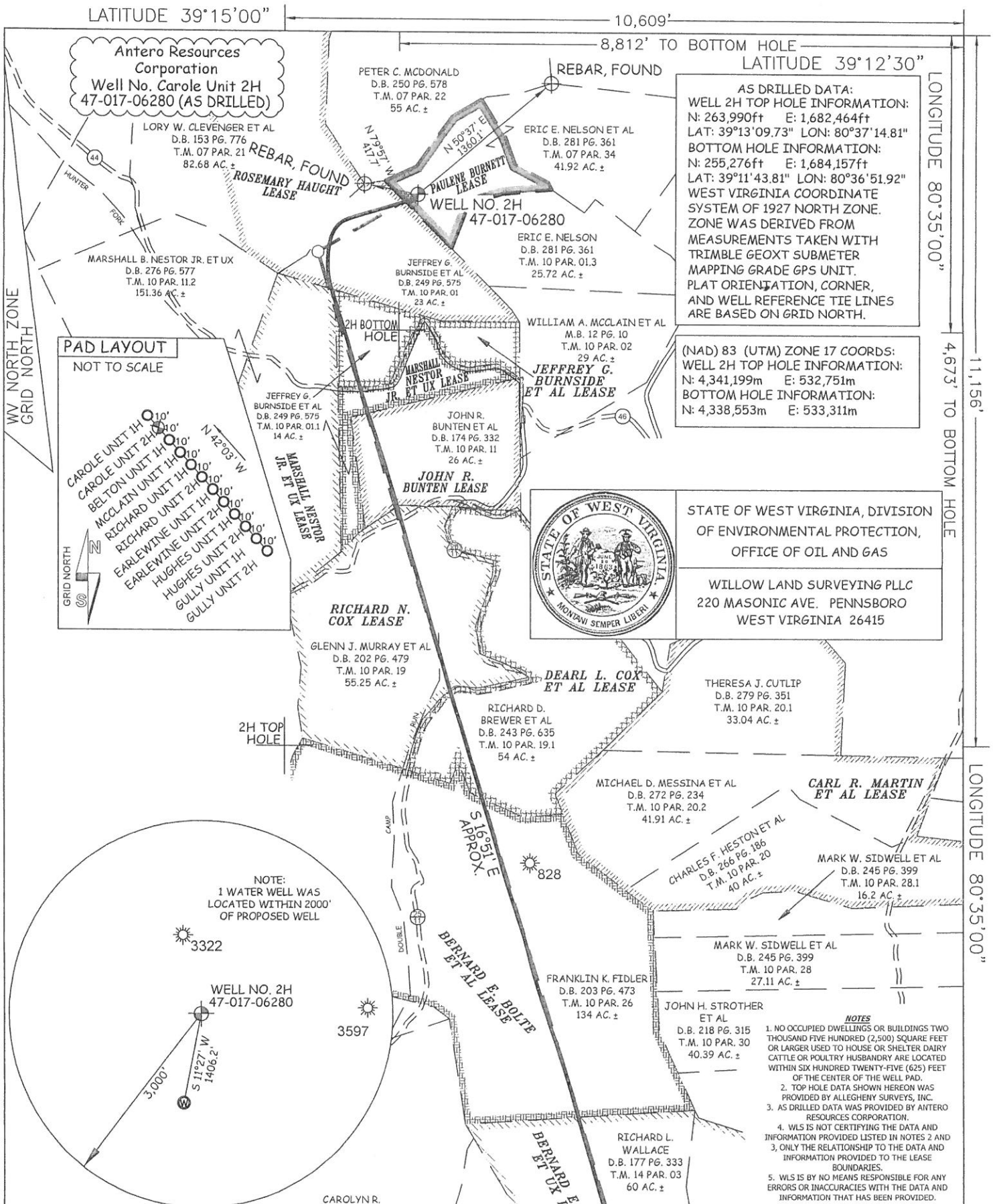
Hydraulic Fracturing Fluid Composition:

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

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
Ferrolol 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)			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	84742-55-8	30.00000		0.02628	
			Poly (acrylamide-co-acrylic acid) partial sodium salt	82649-23-4	30.00000		0.01898	
			Hydrotreated Light Distillate	84742-47-8	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	
			Isotridecano, 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	86551-12-2	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	84-17-5	5.00000		0.00065	
			Quaternary Ammonium Compound	88424-85-1	5.00000		0.00065	
			Hemicellulase Enzyme Concentrate	9025-56-3	5.00000		0.00059	
			Methanol	67-56-1	100.00000		0.00033	

RECEIVED
JUL 27 2015

WV CENTER FOR
MATERIALS RESEARCH
AND MANUFACTURING



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



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

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

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' DISTRICT GREENBRIER COUNTY DODDRIDGE

SURFACE OWNER ERIC E. NELSON, ET AL ACREAGE 41.92 ACRES +/-
 OIL & GAS ROYALTY OWNER PAULENE BURNETT; ROSEMARY HAUGHT; MARSHALL NESTOR JR ET UX; 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 LEASE ACREAGE 14.29 ACRES +/-; 115 ACRES +/-; 50 ACRES +/-; 14 ACRES +/-; 13.326 ACRES +/-; 26 ACRES +/-; 63.578 ACRES +/-; 39.923 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 CT CORPORATION SYSTEM
DENVER, CO 80202 5400 D BIG TYLER ROAD
CHARLESTON, WV 25313

LEGEND

- Surface Owner Boundary Lines +/-
- - - Interior Surface Tracts +/-
- X Existing Fence
- ⊕ Found monument, as noted
- Proposed Well Path
- ⊗ As Drilled Well Path

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

API WELL # 47 - 017 - 06280
 STATE COUNTY PERMIT

COUNTY NAME DODDRIDGE
 PERMIT