

# APPROVED

NAME: [Signature]  
DATE: 5/25/16 State of West Virginia  
Department of Environmental Protection - Office of Oil and Gas  
Well Operator's Report of Well Work



API 47-017-06566 County Doddridge District Grant  
Quad Smithburg 7.5' Pad Name RJ Smith Field/Pool Name ---  
Farm name Smith, Robert J. Well Number Vinola Unit 2H  
Operator (as registered with the OOG) Antero Resources Corporation  
Address 1615 Wynkoop St. 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 4357408m Easting 523020m  
Landing Point of Curve Northing 4357544.84m Easting 523369.66m  
Bottom Hole Northing 4359666m Easting 522508m

Elevation (ft) 998' 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 10/29/2014 Date drilling commenced 1/19/2015 Date drilling ceased 5/7/2015  
Date completion activities began 11/4/2015 Date completion activities ceased 1/8/2016  
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 181', 237' Open mine(s) (Y/N) depths No  
Salt water depth(s) ft 804', 1267', 1350', 1431' Void(s) encountered (Y/N) No  
Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths No  
Is coal being mined in area (Y/N) No

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Reviewed by:

AX 07/22/2016

API 47- 017 - 06566 Farm name Smith, Robert J. Well number Vinola 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	30"	20"	40'	New	94# J-55	N/A	Y
Surface	17- 1/2"	13- 3/8"	409'	New	48# H-40	N/A	Y*
Coal							
Intermediate 1	12-1/4"	9-5/8"	2568'	New	36# J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4" & 8-1/2"	5-1/2"	14994'	New	23# P-110	N/A	Y
Tubing		2-3/8"	7243'		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	193 sx	15.6	1.18	38	0'	8 Hrs.
Surface	Class A	486 sx	15.6	1.18	284	0'	8 Hrs.
Coal							
Intermediate 1	Class A	1005 sx	15.6	1.18	804	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	846 sx (Lead) 1775 sx (Tail)	13.5 Lead 15.2 Tail	1.44 Lead 1.80 Tail	2961	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 14994' MD, 6859' TVD (BHL) 6906' (Deepest Point Drilled) Loggers TD (ft) 14994'  
 Deepest formation penetrated Marcellus Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 6240'

\*\* This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Duff Unit 2H API #47-017-06247). Please reference the wireline logs submitted with Form WR-35 for Duff Unit 2H. 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  No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING Office of Oil and Gas

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

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WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS WV Department of Environmental Protection

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS \_\_\_\_\_

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





**EXHIBIT 1**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	4-Nov-15	14,733	14,902	60	Marcellus
2	10-Nov-15	14,533	14,702	60	Marcellus
3	12-Nov-15	14,333	14,501	60	Marcellus
4	12-Nov-15	14,132	14,301	60	Marcellus
5	12-Nov-15	13,932	14,101	60	Marcellus
6	13-Nov-15	13,732	13,901	60	Marcellus
7	13-Nov-15	13,532	13,701	60	Marcellus
8	13-Nov-15	13,332	13,500	60	Marcellus
9	14-Nov-15	13,131	13,300	60	Marcellus
10	14-Nov-15	12,931	13,100	60	Marcellus
11	14-Nov-15	12,731	12,900	60	Marcellus
12	14-Nov-15	12,531	12,699	60	Marcellus
13	15-Nov-15	12,330	12,499	60	Marcellus
14	15-Nov-15	12,130	12,299	60	Marcellus
15	15-Nov-15	11,930	12,099	60	Marcellus
16	15-Nov-15	11,730	11,899	60	Marcellus
17	16-Nov-15	11,530	11,698	60	Marcellus
18	16-Nov-15	11,329	11,498	60	Marcellus
19	16-Nov-15	11,129	11,298	60	Marcellus
20	16-Nov-15	10,929	11,098	60	Marcellus
21	17-Nov-15	10,729	10,897	60	Marcellus
22	17-Nov-15	10,528	10,697	60	Marcellus
23	17-Nov-15	10,328	10,497	60	Marcellus
24	17-Nov-15	10,128	10,297	60	Marcellus
25	18-Nov-15	9,928	10,097	60	Marcellus
26	17-Nov-15	9,728	9,896	60	Marcellus
27	18-Nov-15	9,527	9,696	60	Marcellus
28	18-Nov-15	9,327	9,496	60	Marcellus
29	18-Nov-15	9,127	9,296	60	Marcellus
30	18-Nov-15	8,927	9,096	60	Marcellus
31	19-Nov-15	8,726	8,895	60	Marcellus
32	19-Nov-15	8,526	8,695	60	Marcellus
33	19-Nov-15	8,326	8,495	60	Marcellus
34	19-Nov-15	8,126	8,295	60	Marcellus
35	19-Nov-15	7,926	8,094	60	Marcellus
36	20-Nov-15	7,725	7,894	60	Marcellus
37	20-Nov-15	7,525	7,694	60	Marcellus
38	20-Nov-15	7,325	7,494	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	10-Nov-15	68.0	7,122	-	5,325	150,819	6,518	N/A
2	10-Nov-15	70.1	7,308	5,964	5,390	211,691	7,168	N/A
3	12-Nov-15	69.2	7,147	5,751	5,389	73,011	7,585	N/A
4	12-Nov-15	69.6	7,026	5,663	5,148	262,969	6,754	N/A
5	12-Nov-15	68.0	7,053	5,849	5,160	241,854	7,127	N/A
6	13-Nov-15	70.0	6,990	5,509	5,224	261,477	6,365	N/A
7	13-Nov-15	67.6	6,960	5,734	5,566	264,372	6,667	N/A
8	13-Nov-15	68.0	7,053	5,811	5,124	236,318	7,137	N/A
9	14-Nov-15	69.0	7,093	5,615	5,622	207,361	6,865	N/A
10	14-Nov-15	69.0	6,880	5,815	5,503	266,606	6,513	N/A
11	14-Nov-15	69.9	6,960	5,538	5,047	233,272	6,985	N/A
12	14-Nov-15	68.0	7,280	5,433	5,667	256,132	6,355	N/A
13	15-Nov-15	67.0	6,951	5,571	5,428	266,694	6,212	N/A
14	15-Nov-15	58.0	7,615	5,498	4,753	110,039	6,705	N/A
15	15-Nov-15	64.0	6,655	5,496	4,978	245,339	7,013	N/A
16	15-Nov-15	67.0	6,787	5,349	5,382	219,216	7,153	N/A
17	16-Nov-15	64.0	7,032	5,704	5,211	224,072	6,313	N/A
18	16-Nov-15	66.4	6,845	5,775	6,403	263,400	6,314	N/A
19	16-Nov-15	68.0	6,992	6,033	5,274	103,088	6,519	N/A
20	16-Nov-15	65.0	6,808	5,585	5,539	264,198	6,207	N/A
21	17-Nov-15	68.0	6,726	5,551	5,145	265,877	6,221	N/A
22	17-Nov-15	69.0	6,746	5,662	5,321	266,725	6,247	N/A
23	17-Nov-15	69.4	6,598	5,696	6,204	268,695	6,603	N/A
24	17-Nov-15	67.4	6,644	6,398	5,476	192,247	6,776	N/A
25	18-Nov-15	70.0	6,623	5,800	4,911	267,107	6,198	N/A
26	17-Nov-15	72.0	6,685	5,601	4,975	267,211	6,207	N/A
27	18-Nov-15	70.0	6,867	5,851	5,101	267,189	6,072	N/A
28	18-Nov-15	69.0	6,784	5,340	5,411	263,644	6,224	N/A
29	18-Nov-15	67.5	6,590	5,382	5,111	194,170	6,342	N/A
30	18-Nov-15	68.0	6,848	5,865	5,109	233,420	6,191	N/A
31	19-Nov-15	71.0	6,682	5,576	5,339	233,541	6,761	N/A
32	19-Nov-15	71.0	6,874	5,528	5,090	186,066	6,706	N/A
33	19-Nov-15	64.7	6,394	5,368	5,233	256,061	6,109	N/A
34	19-Nov-15	69.0	6,583	5,439	5,249	254,800	6,106	N/A
35	19-Nov-15	70.0	7,175	5,464	4,478	187,148	6,111	N/A
36	20-Nov-15	71.5	6,149	5,537	5,011	225,456	6,111	N/A
37	20-Nov-15	70.0	6,716	5,240	5,008	255,817	6,111	N/A
38	20-Nov-15	73.2	6,671	5,392	4,613	249,422	6,111	N/A
<b>AVG=</b>		<b>68.3</b>	<b>6,866</b>	<b>5,632</b>	<b>5,261</b>	<b>8,696,524</b>	<b>248,628</b>	<b>TOTAL</b>

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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	181'	N/A	181'	N/A
Fresh Water	237'	N/A	237'	N/A
Siltstone	0	427	0	427
Sandstone	est. 427	597	est. 427	597
Dolostone/Sandstone/Siltstone	est. 597	637	est. 597	637
Sandstone and Siltstone w/trace coal	est. 637	697	est. 637	697
Siltstone	est. 697	877	est. 697	877
Shale	est. 877	1027	est. 877	1027
Sandstone	est. 1027	1107	est. 1027	1107
Sandstone w/trace coal	est. 1107	1197	est. 1107	1197
Sandstone	est. 1197	1527	est. 1197	1527
Siltstone	est. 1527	1587	est. 1527	1587
Sandstone	est. 1587	1647	est. 1587	1647
Shale	est. 1647	1707	est. 1647	1707
Sandstone	est. 1707	1737	est. 1707	1737
Shale	est. 1737	1867	est. 1737	1867
Siltstone	est. 1867	2008	est. 1867	2010
Big Lime	2008	2115	2010	2117
Big Injun	2115	2564	2117	2566
Gantz Sand	2564	2697	2566	2699
Fifty Foot Sandstone	2697	2784	2699	2786
Gordon	2784	3116	2786	3118
Fifth Sandstone	3116	3130	3118	3132
Bayard	3130	3500	3132	3502
Warren	3500	3889	3502	3891
Speechley	3889	4601	3891	4624
Bradford	4601	5079	4624	5164
Benson	5079	5348	5164	5473
Alexander	5348	5544	5473	5688
Elk	5544	6067	5688	6274
Rhinestreet	6067	6426	6274	6680
Sycamore	6426	6611	6680	6896
Middlesex	6611	6751	6896	7101
Burkett	6751	6781	7101	7156
Tully	6781	6841	7156	7289
Marcellus	6841	NA	7289	NA

\*Please note Antero determines 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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07/22/2016



**Vinola Unit 2H**  
**Doddridge County WV**  
 Northing: 14295213.10  
 Easting: 1715893.22  
**As Drilled**



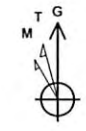
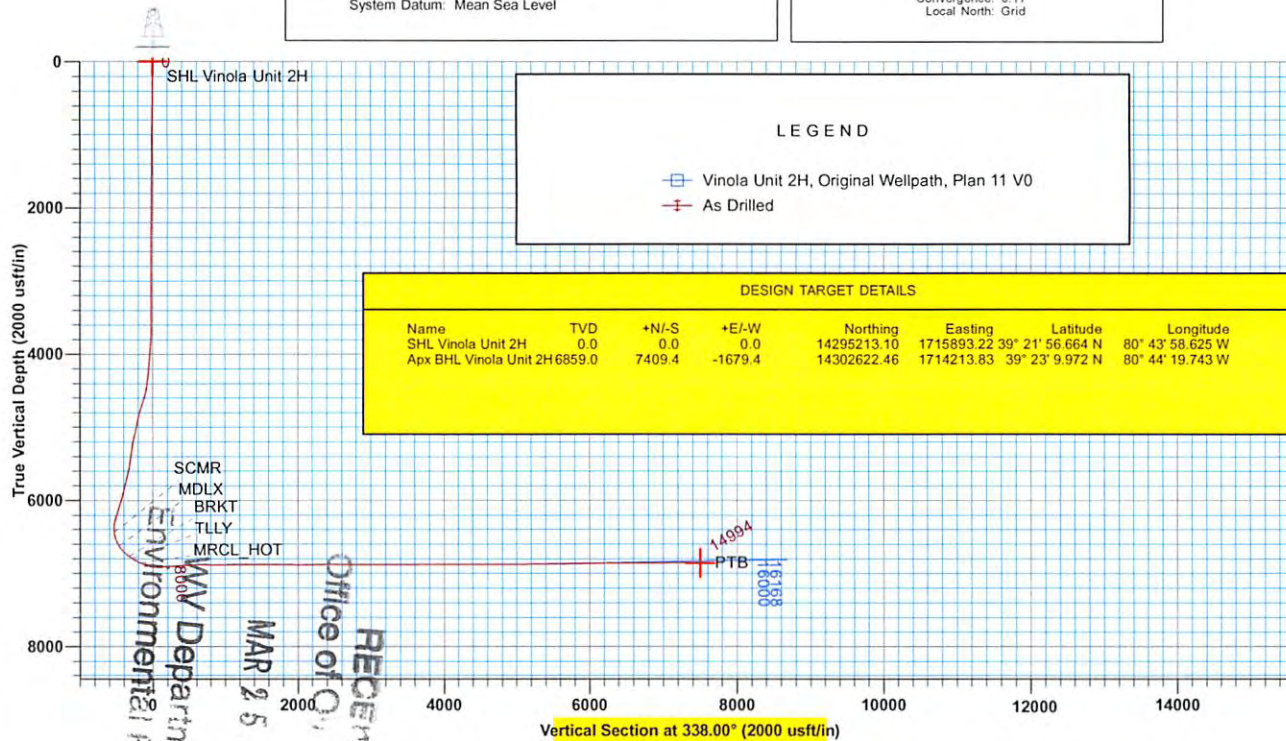
WELL DETAILS		Vinola Unit 2H			
Ground Level:		998.0			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	14295213.10	1715893.22	39° 21' 56.664 N	80° 43' 58.625 W

Genie Lightfoot  
 10.34, May 11 2015  
 Scientific Drilling  
 11220 N.W. 10th St  
 Yukon, OK 73099

**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

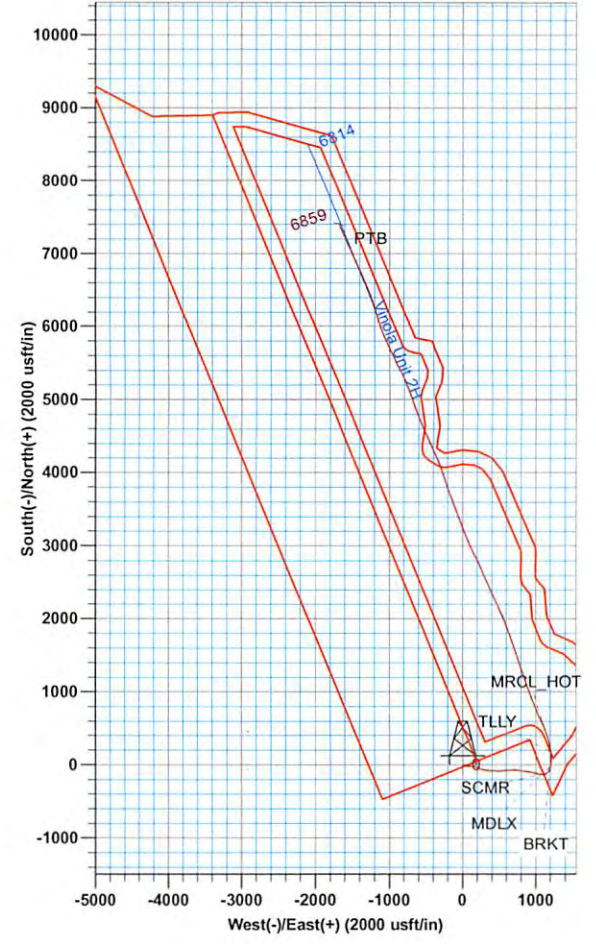
**SITE DETAILS:**  
 R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinola  
 Site Centre Northing: 14295223.06  
 Easting: 1715891.05  
 Positional Uncertainty: 0.0  
 Convergence: 0.17  
 Local North: Grid

Precision 522: GL 998' + KB 18' @ 1016.0usft  
 Gr: 998.0



To convert Magnetic North to Grid, Subtract 8.70°  
 To convert True North to Grid, Subtract 0.17°

Azimuths to Grid North  
 True North: -0.17°  
 Magnetic North: -8.70°  
 Magnetic Field  
 Strength: 52181.8snT  
 Dip Angle: 66.85°  
 Date: 4/25/2015  
 Model: BGGM2014



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# Antero

Doddridge County WV

R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinola

Vinola Unit 2H

Original Wellpath

Design: As Drilled

## EOW Completion Report

11 May, 2015



07/22/2016



<b>Company:</b>	Antero	<b>Local Co-ordinate Reference:</b>	Well Vinola Unit 2H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 522: GL 998' + KB 18' @ 1016.0usft
<b>Site:</b>	R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinola	<b>MD Reference:</b>	Precision 522: GL 998' + KB 18' @ 1016.0usft
<b>Well:</b>	Vinola 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>	R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinola		
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<b>Site Position:</b>		<b>Northing:</b>	14,295,223.06 usft	<b>Latitude:</b>	39° 21' 56.762 N
<b>From:</b>	Map	<b>Easting:</b>	1,715,891.05 usft	<b>Longitude:</b>	80° 43' 58.652 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16"	<b>Grid Convergence:</b>	0.17 °

<b>Well</b>	Vinola Unit 2H, Marcellus					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	14,295,213.10 usft	<b>Latitude:</b>	39° 21' 56.664 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,715,893.22 usft	<b>Longitude:</b>	80° 43' 58.625 W
<b>Position Uncertainty</b>	2.0 usft		<b>Wellhead Elevation:</b>	1,016.0 usft	<b>Ground Level:</b>	998.0 usft

<b>Wellbore</b>	Original Wellpath				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	4/25/2015	-8.53	66.85	52,182

<b>Design</b>	As Drilled				
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<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	338.00	

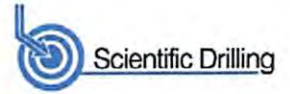
Survey Program	Date	From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
	5/11/2015	106.0	6,338.2	Survey #9 Final Gyro to KOP (Original Wellbore)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
		6,384.0	8,579.0	Survey #10 Crescent Drilling Surveys (Original Wellbore)	Other MWD	MWD Other Company
		8,642.0	14,994.0	Survey #11 SDI MWD (Original Wellpath)	SDI MWD	Scientific Drilling Intl. MWD - Standard ver 1.0.1

Survey	MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00
	106.0	0.31	90.03	106.0	0.0	0.3	0.1	0.29
	107.0	0.31	90.60	107.0	0.0	0.3	-0.1	0.31
	132.0	0.24	109.81	132.0	0.0	0.4	0.2	0.46
	157.0	0.22	142.98	157.0	-0.1	0.5	0.3	0.53
	182.0	0.18	173.66	182.0	-0.2	0.5	-0.3	0.45
	207.0	0.21	188.99	207.0	-0.2	0.5	0.4	0.24
	232.0	0.28	177.71	232.0	-0.3	0.5	0.5	0.34
	257.0	0.16	203.69	257.0	-0.4	0.5	-0.6	0.61
	282.0	0.13	199.90	282.0	-0.5	0.5	-0.6	0.13

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EOW Completion Report



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<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 522: GL 998' + KB 18' @ 1016.0usft
<b>Site:</b>	R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinc	<b>MD Reference:</b>	Precision 522: GL 998' + KB 18' @ 1016.0usft
<b>Well:</b>	Vinola 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)		
307.0	0.14	193.18	307.0	-0.6	0.5	-0.7	0.07		
332.0	0.11	190.94	332.0	-0.6	0.4	-0.7	0.12		
357.0	0.07	181.16	357.0	-0.6	0.4	-0.8	0.17		
382.0	0.13	148.49	382.0	-0.7	0.5	-0.8	0.32		
407.0	0.21	156.25	407.0	-0.7	0.5	-0.9	0.33		
432.0	0.22	174.57	432.0	-0.8	0.5	-1.0	0.28		
457.0	0.20	171.74	457.0	-0.9	0.5	-1.1	0.09		
482.0	0.20	127.18	482.0	-1.0	0.6	-1.1	0.61		
507.0	0.48	89.96	507.0	-1.0	0.7	-1.2	1.37		
532.0	0.96	82.76	532.0	-1.0	1.0	-1.3	1.95		
557.0	1.78	76.92	557.0	-0.9	1.6	-1.4	3.32		
582.0	2.47	80.52	582.0	-0.7	2.5	-1.6	2.81		
607.0	3.12	80.81	606.9	-0.5	3.7	-1.9	2.60		
632.0	3.50	82.98	631.9	-0.3	5.1	-2.2	1.60		
657.0	3.57	83.19	656.9	-0.1	6.7	-2.6	0.28		
682.0	3.71	84.01	681.8	0.1	8.3	-3.0	0.60		
707.0	4.33	86.98	706.7	0.2	10.0	-3.6	2.62		
732.0	4.54	88.10	731.7	0.3	11.9	-4.2	0.91		
757.0	4.62	88.28	756.6	0.3	13.9	-4.9	0.33		
782.0	4.76	90.12	781.5	0.4	16.0	-5.6	0.82		
807.0	4.78	90.10	806.4	0.4	18.1	-6.4	0.08		
832.0	4.74	89.58	831.3	0.4	20.1	-7.2	0.24		
857.0	4.78	89.44	856.2	0.4	22.2	-8.0	0.17		
882.0	4.84	89.03	881.2	0.4	24.3	-8.7	0.28		
907.0	4.95	88.61	906.1	0.5	26.4	-9.5	0.46		
932.0	4.57	89.85	931.0	0.5	28.5	-10.2	1.57		
957.0	4.41	90.64	955.9	0.5	30.5	-11.0	0.69		
982.0	4.17	91.97	980.8	0.4	32.3	-11.7	1.04		
1,007.0	3.71	93.02	1,005.8	0.4	34.0	-12.4	1.86		
1,032.0	3.43	92.92	1,030.7	0.3	35.6	-13.1	1.12		
1,057.0	3.16	92.55	1,055.7	0.2	37.0	-13.7	1.08		
1,082.0	2.87	92.18	1,080.6	0.2	38.3	-14.2	1.16		
1,107.0	2.60	88.80	1,105.6	0.1	39.5	-14.7	1.26		
1,132.0	2.53	88.87	1,130.6	0.2	40.7	-15.1	0.28		
1,157.0	2.26	87.78	1,155.6	0.2	41.7	-15.4	1.10		
1,182.0	2.10	88.05	1,180.6	0.2	42.7	-15.8	0.64		
1,207.0	1.84	89.59	1,205.5	0.2	43.5	-16.3	1.06		
1,232.0	1.65	89.47	1,230.5	0.3	44.3	-16.6	0.76		
1,257.0	1.48	88.84	1,255.5	0.3	45.0	-16.8	0.68		
1,282.0	1.31	89.84	1,280.5	0.3	45.6	-17.0	0.69		
1,307.0	1.17	93.02	1,305.5	0.3	46.1	-17.3	0.62		
1,332.0	1.06	99.77	1,330.5	0.2	46.6	-17.7	0.68		
1,357.0	0.98	101.42	1,355.5	0.1	47.0	-17.7	0.34		
1,382.0	0.82	102.95	1,380.5	0.0	47.4	-17.9	0.65		
1,407.0	0.64	109.38	1,405.5	0.0	47.7	-17.9	0.79		

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EOW Completion Report



<b>Company:</b>	Antero	<b>Local Co-ordinate Reference:</b>	Well Vinola Unit 2H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 522: GL 998' + KB 18' @ 1016.0usft
<b>Site:</b>	R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinc	<b>MD Reference:</b>	Precision 522: GL 998' + KB 18' @ 1016.0usft
<b>Well:</b>	Vinola 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)	
1,432.0	0.63	104.10	1,430.5	-0.1	48.0	-18.1	0.24	
1,457.0	0.65	106.37	1,455.5	-0.2	48.3	-18.3	0.13	
1,482.0	0.70	102.43	1,480.5	-0.3	48.5	-18.4	0.27	
1,507.0	0.75	105.97	1,505.5	-0.3	48.8	-18.6	0.27	
1,532.0	0.65	112.63	1,530.5	-0.4	49.1	-18.8	0.52	
1,557.0	0.62	112.31	1,555.5	-0.6	49.4	-19.0	0.12	
1,582.0	0.67	119.80	1,580.5	-0.7	49.6	-19.2	0.39	
1,607.0	0.62	125.58	1,605.5	-0.8	49.9	-19.5	0.33	
1,632.0	0.48	117.26	1,630.5	-1.0	50.1	-19.6	0.64	
1,657.0	0.55	132.72	1,655.5	-1.1	50.3	-19.8	0.62	
1,682.0	0.32	126.24	1,680.5	-1.2	50.4	-20.0	0.94	
1,707.0	0.28	127.79	1,705.5	-1.3	50.5	-20.1	0.16	
1,732.0	0.30	126.18	1,730.5	-1.4	50.6	-20.2	0.09	
1,757.0	0.31	115.68	1,755.5	-1.4	50.7	-20.3	0.23	
1,782.0	0.23	102.47	1,780.5	-1.5	50.8	-20.4	0.40	
1,807.0	0.24	125.58	1,805.5	-1.5	50.9	-20.5	0.38	
1,832.0	0.29	136.74	1,830.5	-1.6	51.0	-20.6	0.29	
1,857.0	0.20	102.38	1,855.5	-1.6	51.1	-20.7	0.67	
1,882.0	0.32	145.62	1,880.5	-1.7	51.2	-20.8	0.89	
1,907.0	0.26	141.84	1,905.5	-1.8	51.3	-20.9	0.25	
1,932.0	0.26	132.53	1,930.5	-1.9	51.3	-21.0	0.17	
1,957.0	0.30	161.18	1,955.5	-2.0	51.4	-21.1	0.58	
1,982.0	0.19	149.66	1,980.5	-2.1	51.4	-21.2	0.48	
2,007.0	0.22	175.04	2,005.5	-2.2	51.5	-21.3	0.38	
2,032.0	0.22	183.93	2,030.5	-2.3	51.5	-21.4	0.14	
2,057.0	0.16	179.02	2,055.5	-2.4	51.5	-21.5	0.25	
2,082.0	0.09	122.75	2,080.5	-2.4	51.5	-21.5	0.53	
2,107.0	0.07	195.56	2,105.5	-2.4	51.5	-21.5	0.39	
2,132.0	0.11	170.38	2,130.5	-2.5	51.5	-21.6	0.22	
2,157.0	0.15	118.14	2,155.5	-2.5	51.5	-21.6	0.48	
2,182.0	0.26	126.46	2,180.5	-2.6	51.6	-21.7	0.45	
2,207.0	0.22	146.62	2,205.5	-2.6	51.7	-21.8	0.37	
2,232.0	0.22	153.26	2,230.5	-2.7	51.7	-21.9	0.10	
2,257.0	0.16	169.39	2,255.5	-2.8	51.7	-22.0	0.32	
2,282.0	0.13	134.85	2,280.5	-2.8	51.8	-22.0	0.36	
2,307.0	0.13	158.09	2,305.5	-2.9	51.8	-22.1	0.21	
2,332.0	0.05	170.05	2,330.5	-2.9	51.8	-22.1	0.33	
2,357.0	0.10	164.69	2,355.5	-3.0	51.8	-22.2	0.20	
2,382.0	0.13	193.97	2,380.5	-3.0	51.8	-22.2	0.26	
2,407.0	0.09	158.79	2,405.5	-3.1	51.8	-22.2	0.31	
2,432.0	0.11	224.50	2,430.5	-3.1	51.8	-22.3	0.44	
2,457.0	0.11	142.72	2,455.5	-3.1	51.8	-22.3	0.58	
2,482.0	0.15	138.99	2,480.5	-3.2	51.8	-22.4	0.16	
2,507.0	0.18	196.82	2,505.5	-3.2	51.9	-22.4	0.65	

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EOW Completion Report



<b>Company:</b>	Antero	<b>Local Co-ordinate Reference:</b>	Well Vinola Unit 2H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 522: GL 998' + KB 18' @ 1016.0usft
<b>Site:</b>	R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinc	<b>MD Reference:</b>	Precision 522: GL 998' + KB 18' @ 1016.0usft
<b>Well:</b>	Vinola 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)	
2,532.0	0.14	199.35	2,530.5	-3.3	51.8	-22.5	0.16	
2,557.0	0.10	202.51	2,555.5	-3.3	51.8	-22.5	0.16	
2,582.0	0.05	172.94	2,580.5	-3.4	51.8	-22.5	0.25	
2,607.0	0.05	119.28	2,605.5	-3.4	51.8	-22.6	0.18	
2,632.0	0.09	171.92	2,630.5	-3.4	51.8	-22.6	0.29	
2,657.0	0.07	169.61	2,655.5	-3.5	51.8	-22.6	0.08	
2,682.0	0.09	145.20	2,680.5	-3.5	51.9	-22.7	0.16	
2,707.0	0.09	184.50	2,705.5	-3.5	51.9	-22.7	0.24	
2,732.0	0.10	179.38	2,730.5	-3.6	51.9	-22.7	0.05	
2,757.0	0.07	243.13	2,755.5	-3.6	51.8	-22.7	0.37	
2,782.0	0.03	170.58	2,780.5	-3.6	51.8	-22.8	0.27	
2,807.0	0.05	227.47	2,805.5	-3.6	51.8	-22.8	0.17	
2,832.0	0.04	231.41	2,830.5	-3.6	51.8	-22.8	0.04	
2,857.0	0.06	221.89	2,855.5	-3.6	51.8	-22.8	0.09	
2,882.0	0.08	215.09	2,880.5	-3.7	51.8	-22.8	0.09	
2,907.0	0.16	200.72	2,905.5	-3.7	51.8	-22.8	0.34	
2,932.0	0.17	212.16	2,930.5	-3.8	51.7	-22.9	0.14	
2,957.0	0.17	204.18	2,955.5	-3.8	51.7	-22.9	0.09	
2,982.0	0.18	214.42	2,980.5	-3.9	51.6	-23.0	0.13	
3,007.0	0.26	190.95	3,005.5	-4.0	51.6	-23.0	0.48	
3,032.0	0.18	229.18	3,030.5	-4.1	51.6	-23.1	0.65	
3,057.0	0.16	219.41	3,055.5	-4.1	51.5	-23.1	0.14	
3,082.0	0.22	223.22	3,080.5	-4.2	51.5	-23.2	0.25	
3,107.0	0.20	225.44	3,105.5	-4.3	51.4	-23.2	0.09	
3,132.0	0.22	240.14	3,130.5	-4.3	51.3	-23.2	0.23	
3,157.0	0.15	268.77	3,155.5	-4.3	51.3	-23.2	0.46	
3,182.0	0.14	229.67	3,180.5	-4.4	51.2	-23.2	0.39	
3,207.0	0.28	213.73	3,205.5	-4.4	51.1	-23.3	0.60	
3,232.0	0.23	213.26	3,230.5	-4.5	51.1	-23.3	0.20	
3,257.0	0.15	230.96	3,255.5	-4.6	51.0	-23.4	0.39	
3,282.0	0.21	201.14	3,280.5	-4.6	51.0	-23.4	0.44	
3,307.0	0.26	224.06	3,305.5	-4.7	50.9	-23.5	0.42	
3,332.0	0.28	231.84	3,330.5	-4.8	50.8	-23.5	0.17	
3,357.0	0.19	189.99	3,355.5	-4.9	50.8	-23.6	0.75	
3,382.0	0.21	200.43	3,380.5	-5.0	50.8	-23.6	0.17	
3,407.0	0.20	233.42	3,405.5	-5.0	50.7	-23.7	0.47	
3,432.0	0.16	221.00	3,430.5	-5.1	50.7	-23.7	0.22	
3,457.0	0.10	145.98	3,455.5	-5.1	50.6	-23.7	0.66	
3,482.0	0.12	192.21	3,480.5	-5.2	50.7	-23.8	0.35	
3,507.0	0.20	246.43	3,505.5	-5.2	50.6	-23.8	0.65	
3,532.0	0.20	223.83	3,530.5	-5.3	50.5	-23.8	0.31	
3,557.0	0.22	214.29	3,555.5	-5.3	50.5	-23.9	0.16	
3,582.0	0.20	261.54	3,580.5	-5.4	50.4	-23.9	0.68	
3,607.0	0.34	214.75	3,605.5	-5.5	50.3	-23.9	1.00	

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EOW Completion Report



<b>Company:</b>	Antero	<b>Local Co-ordinate Reference:</b>	Well Vinola Unit 2H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 522: GL 998' + KB 18' @ 1016.0usft
<b>Site:</b>	R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinc	<b>MD Reference:</b>	Precision 522: GL 998' + KB 18' @ 1016.0usft
<b>Well:</b>	Vinola 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)	
3,632.0	0.34	227.08	3,630.5	-5.6	50.2	-24.0	0.29	
3,657.0	0.41	222.90	3,655.5	-5.7	50.1	-24.0	0.30	
3,682.0	0.31	215.41	3,680.5	-5.8	50.0	-24.1	0.44	
3,707.0	0.25	190.17	3,705.5	-5.9	50.0	-24.2	0.54	
3,732.0	1.09	134.40	3,730.5	-6.1	50.1	-24.5	3.89	
3,757.0	1.87	132.02	3,755.5	-6.6	50.6	-25.1	3.13	
3,782.0	2.66	130.92	3,780.4	-7.2	51.3	-25.9	3.16	
3,807.0	3.40	127.55	3,805.4	-8.1	52.4	-27.1	3.04	
3,832.0	3.96	126.44	3,830.3	-9.0	53.6	-28.5	2.26	
3,857.0	4.88	124.12	3,855.3	-10.1	55.2	-30.1	3.75	
3,882.0	5.40	120.94	3,880.2	-11.3	57.1	-31.9	2.37	
3,907.0	5.68	119.75	3,905.1	-12.6	59.2	-33.8	1.21	
3,932.0	6.23	115.73	3,929.9	-13.8	61.5	-35.8	2.76	
3,957.0	6.57	112.89	3,954.8	-14.9	64.0	-37.8	1.86	
3,982.0	7.18	107.87	3,979.6	-15.9	66.8	-39.8	3.42	
4,007.0	7.73	102.94	4,004.4	-16.8	70.0	-41.8	3.37	
4,032.0	8.09	99.67	4,029.1	-17.5	73.3	-43.7	2.30	
4,057.0	8.35	96.06	4,053.9	-18.0	76.9	-45.4	2.31	
4,082.0	8.43	94.69	4,078.6	-18.3	80.5	-47.1	0.86	
4,107.0	9.06	95.50	4,103.3	-18.6	84.3	-48.9	2.57	
4,132.0	9.66	96.45	4,128.0	-19.1	88.3	-50.8	2.48	
4,157.0	10.28	97.34	4,152.6	-19.6	92.6	-52.9	2.56	
4,182.0	10.78	97.24	4,177.2	-20.2	97.2	-55.1	2.00	
4,207.0	11.61	95.32	4,201.7	-20.7	102.0	-57.4	3.64	
4,232.0	12.27	93.15	4,226.2	-21.1	107.1	-59.7	3.19	
4,257.0	13.11	91.14	4,250.6	-21.3	112.6	-61.9	3.80	
4,282.0	13.75	89.60	4,274.9	-21.3	118.4	-64.1	2.93	
4,307.0	14.43	88.21	4,299.1	-21.2	124.5	-66.3	3.04	
4,332.0	15.34	87.11	4,323.3	-20.9	130.9	-68.4	3.81	
4,357.0	16.10	87.91	4,347.3	-20.6	137.7	-70.7	3.16	
4,382.0	16.46	88.61	4,371.3	-20.4	144.7	-73.1	1.64	
4,407.0	16.80	90.38	4,395.3	-20.4	151.9	-75.8	2.44	
4,432.0	16.94	95.10	4,419.2	-20.7	159.1	-78.8	5.51	
4,457.0	16.94	101.23	4,443.1	-21.7	166.3	-82.4	7.14	
4,482.0	17.12	106.79	4,467.0	-23.5	173.4	-86.8	6.55	
4,507.0	17.59	111.02	4,490.9	-25.9	180.4	-91.6	5.38	
4,532.0	18.09	112.98	4,514.7	-28.8	187.5	-97.0	3.13	
4,557.0	18.86	112.48	4,538.4	-31.9	194.9	-102.5	3.14	
4,582.0	19.97	112.16	4,562.0	-35.0	202.5	-108.3	4.46	
4,607.0	20.92	112.69	4,585.4	-38.3	210.6	-114.4	3.87	
4,632.0	22.31	113.47	4,608.7	-42.0	219.1	-121.0	5.68	
4,657.0	23.97	113.99	4,631.7	-45.9	228.1	-128.0	6.69	
4,682.0	25.21	113.55	4,654.4	-50.1	237.6	-135.5	5.01	
4,707.0	26.14	111.23	4,676.9	-54.2	247.6	-143.0	5.48	



EOW Completion Report

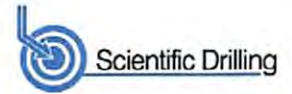


<b>Company:</b>	Antero	<b>Local Co-ordinate Reference:</b>	Well Vinola Unit 2H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 522: GL 998' + KB 18' @ 1016.0usft
<b>Site:</b>	R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinc	<b>MD Reference:</b>	Precision 522: GL 998' + KB 18' @ 1016.0usft
<b>Well:</b>	Vinola 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)
4,732.0	26.31	108.99	4,699.3	-58.0	258.0	-150.4	4.02
4,757.0	26.97	106.77	4,721.7	-61.5	268.7	-157.6	4.78
4,782.0	27.77	104.93	4,743.9	-64.6	279.7	-164.7	4.66
4,807.0	28.28	103.35	4,766.0	-67.5	291.1	-171.6	3.60
4,832.0	28.93	102.01	4,787.9	-70.1	302.8	-178.4	3.65
4,857.0	28.97	99.80	4,809.8	-72.4	314.7	-185.0	4.28
4,882.0	29.33	97.40	4,831.6	-74.2	326.7	-191.2	4.89
4,907.0	29.54	94.30	4,853.4	-75.4	338.9	-196.9	6.15
4,932.0	29.42	91.81	4,875.2	-76.1	351.2	-202.1	4.92
4,957.0	29.70	90.96	4,896.9	-76.4	363.5	-207.0	2.02
4,982.0	29.50	90.24	4,918.6	-76.5	375.9	-211.8	1.63
5,007.0	29.01	89.88	4,940.5	-76.5	388.1	-216.4	2.08
5,032.0	28.38	89.61	4,962.4	-76.5	400.1	-220.8	2.57
5,057.0	27.80	89.74	4,984.4	-76.4	411.9	-225.1	2.33
5,082.0	28.04	89.77	5,006.5	-76.4	423.6	-229.5	0.96
5,107.0	28.25	90.44	5,028.6	-76.4	435.4	-233.9	1.52
5,132.0	28.26	91.72	5,050.6	-76.6	447.2	-238.6	2.42
5,157.0	28.52	92.36	5,072.6	-77.0	459.1	-243.4	1.60
5,182.0	28.70	94.08	5,094.5	-77.7	471.0	-248.5	3.37
5,207.0	29.01	94.57	5,116.4	-78.6	483.1	-253.9	1.56
5,232.0	29.66	94.01	5,138.2	-79.5	495.3	-259.3	2.82
5,257.0	30.48	91.68	5,159.9	-80.2	507.8	-264.5	5.71
5,282.0	30.89	89.46	5,181.4	-80.3	520.5	-269.4	4.82
5,307.0	30.61	87.30	5,202.8	-79.9	533.3	-273.9	4.56
5,332.0	30.16	85.05	5,224.4	-79.1	545.9	-277.8	4.89
5,357.0	29.54	82.93	5,246.1	-77.8	558.3	-281.3	4.90
5,382.0	29.12	81.46	5,267.9	-76.1	570.4	-284.3	3.33
5,407.0	28.57	81.00	5,289.8	-74.3	582.4	-287.0	2.37
5,432.0	28.03	81.03	5,311.8	-72.4	594.1	-289.7	2.16
5,457.0	27.04	81.66	5,334.0	-70.7	605.5	-292.4	4.13
5,482.0	25.51	82.76	5,356.4	-69.2	616.4	-295.1	6.42
5,507.0	24.60	83.50	5,379.0	-67.9	627.0	-297.8	3.85
5,532.0	23.63	85.76	5,401.9	-67.0	637.1	-300.8	5.36
5,557.0	23.54	87.95	5,424.8	-66.4	647.1	-304.0	3.52
5,582.0	23.59	89.61	5,447.7	-66.2	657.1	-307.5	2.66
5,607.0	23.70	90.24	5,470.6	-66.2	667.1	-311.3	1.10
5,632.0	24.03	90.68	5,493.4	-66.3	677.2	-315.1	1.50
5,657.0	24.56	91.06	5,516.2	-66.4	687.5	-319.1	2.21
5,682.0	25.06	91.85	5,538.9	-66.7	698.0	-323.3	2.40
5,707.0	25.75	92.69	5,561.5	-67.1	708.7	-327.7	3.11
5,732.0	25.97	94.17	5,584.0	-67.8	719.6	-332.4	2.73
5,757.0	25.62	96.88	5,606.5	-68.8	730.4	-337.4	4.92
5,782.0	25.35	98.05	5,629.1	-70.2	741.1	-342.7	2.28
5,807.0	25.47	98.80	5,651.7	-71.8	751.7	-348.2	1.37



EOW Completion Report



<b>Company:</b>	Antero	<b>Local Co-ordinate Reference:</b>	Well Vinola Unit 2H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 522: GL 998' + KB 18' @ 1016.0usft
<b>Site:</b>	R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinc	<b>MD Reference:</b>	Precision 522: GL 998' + KB 18' @ 1016.0usft
<b>Well:</b>	Vinola 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

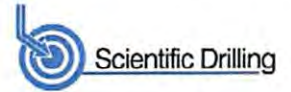
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
5,832.0	25.23	98.98	5,674.3	-73.4	762.3	-353.6	1.01
5,857.0	25.72	99.03	5,696.8	-75.1	772.9	-359.2	1.96
5,882.0	25.92	98.58	5,719.3	-76.8	783.7	-364.8	1.12
5,907.0	26.67	98.48	5,741.7	-78.4	794.6	-370.4	3.01
5,932.0	27.15	98.34	5,764.0	-80.1	805.8	-376.1	1.94
5,957.0	27.60	98.48	5,786.2	-81.8	817.2	-381.9	1.82
5,982.0	27.43	98.05	5,808.4	-83.4	828.6	-387.8	1.05
6,007.0	27.93	97.77	5,830.5	-85.0	840.1	-393.5	2.07
6,032.0	28.22	96.87	5,852.6	-86.5	851.8	-399.3	2.05
6,057.0	28.35	95.73	5,874.6	-87.8	863.6	-404.9	2.22
6,082.0	28.14	95.58	5,896.6	-89.0	875.3	-410.4	0.89
6,107.0	28.04	95.98	5,918.7	-90.2	887.1	-415.9	0.85
6,132.0	27.58	97.91	5,940.8	-91.6	898.6	-421.5	4.04
6,157.0	27.40	99.09	5,963.0	-93.3	910.0	-427.4	2.29
6,182.0	27.27	100.52	5,985.2	-95.2	921.4	-433.5	2.68
6,207.0	27.18	102.02	6,007.4	-97.5	932.6	-439.7	2.77
6,232.0	27.06	102.81	6,029.7	-99.9	943.7	-446.2	1.52
6,257.0	27.52	103.46	6,051.9	-102.5	954.9	-452.8	2.19
6,282.0	27.63	103.34	6,074.1	-105.2	966.1	-459.5	0.49
6,307.0	27.79	103.41	6,096.2	-107.9	977.4	-466.2	0.65
6,332.0	28.47	103.16	6,118.2	-110.6	988.9	-473.0	2.76
6,338.2	28.56	103.20	6,123.7	-111.3	991.8	-474.7	1.48
6,386.0	29.29	101.18	6,165.5	-116.2	1,014.4	-487.7	2.55
6,448.0	29.34	102.11	6,219.6	-122.3	1,044.1	-504.5	0.74
6,478.0	29.60	103.70	6,245.7	-125.6	1,058.5	-513.0	2.75
6,509.0	28.50	101.50	6,272.8	-128.9	1,073.2	-521.5	4.95
6,540.0	25.46	93.25	6,300.4	-130.7	1,087.1	-528.4	15.53
6,571.0	24.38	85.08	6,328.6	-130.6	1,100.1	-533.2	11.63
6,602.0	24.40	77.30	6,356.8	-128.6	1,112.7	-536.1	10.36
6,632.0	24.96	70.49	6,384.1	-125.1	1,124.8	-537.4	9.66
6,663.0	24.86	62.87	6,412.2	-120.0	1,136.7	-537.1	10.35
6,694.0	25.20	53.50	6,440.3	-113.1	1,147.8	-534.8	12.82
6,698.0	25.30	52.36	6,443.9	-112.0	1,149.2	-534.4	12.41
<b>SCMR</b>							
6,725.0	26.18	44.91	6,468.2	-104.3	1,158.0	-530.5	12.41
6,756.0	27.28	37.54	6,495.9	-93.8	1,167.1	-524.2	11.26
6,787.0	29.27	32.16	6,523.2	-81.8	1,175.5	-516.2	10.42
6,817.0	30.86	26.76	6,549.2	-68.7	1,182.9	-506.8	10.46
6,848.0	32.75	22.56	6,575.5	-53.8	1,189.7	-495.6	9.39
6,879.0	34.86	17.35	6,601.3	-37.6	1,195.5	-482.7	11.56
6,910.0	37.50	12.26	6,626.3	-19.9	1,200.2	-468.1	12.90
6,914.0	37.81	11.80	6,629.5	-17.6	1,200.7	-466.1	10.42
<b>MDLX</b>							
6,941.0	39.92	8.84	6,650.5	-0.9	1,203.7	-443.9	10.42
6,972.0	42.48	5.24	6,673.9	19.4	1,206.2	-433.9	11.25

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EOW Completion Report



<b>Company:</b>	Antero	<b>Local Co-ordinate Reference:</b>	Well Vinola Unit 2H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 522: GL 998' + KB 18' @ 1016.0usft
<b>Site:</b>	R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinc	<b>MD Reference:</b>	Precision 522: GL 998' + KB 18' @ 1016.0usft
<b>Well:</b>	Vinola 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

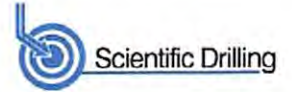
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
7,002.0	45.56	0.29	6,695.4	40.2	1,207.2	-415.0	15.38
7,033.0	48.49	0.33	6,716.6	62.9	1,207.3	-394.0	9.45
7,064.0	50.94	358.80	6,736.6	86.5	1,207.1	-372.0	8.75
7,095.0	54.00	357.59	6,755.5	111.1	1,206.3	-348.9	10.34
7,119.0	56.37	356.93	6,769.2	130.7	1,205.4	-330.3	10.13
<b>BRKT</b>							
7,126.0	57.06	356.74	6,773.0	136.6	1,205.1	-324.8	10.13
7,157.0	57.77	356.71	6,789.7	162.7	1,203.6	-300.0	2.29
7,174.0	58.69	355.92	6,798.7	177.1	1,202.6	-286.3	6.72
<b>TLLY</b>							
7,188.0	59.46	355.28	6,805.9	189.1	1,201.7	-274.9	6.72
7,219.0	61.12	352.71	6,821.2	215.8	1,198.9	-249.0	8.97
7,249.0	63.70	349.39	6,835.1	242.1	1,194.7	-223.1	13.04
7,280.0	65.75	348.11	6,848.4	269.6	1,189.3	-195.6	7.59
7,307.0	68.08	347.36	6,859.0	293.9	1,184.0	-171.1	8.98
<b>MRCL_HOT</b>							
7,311.0	68.42	347.25	6,860.4	297.5	1,183.2	-167.4	8.98
7,342.0	70.31	345.29	6,871.4	325.7	1,176.3	-138.7	8.50
7,376.0	73.20	342.60	6,882.0	356.7	1,167.4	-106.6	11.34
7,407.0	76.00	342.20	6,890.2	385.2	1,158.3	-76.8	9.12
7,438.0	79.40	342.70	6,896.8	414.0	1,149.2	-46.6	11.08
7,468.0	82.70	343.00	6,901.5	442.3	1,140.5	-17.1	11.04
7,499.0	86.00	341.80	6,904.6	471.8	1,131.1	13.7	11.32
7,561.0	91.50	337.70	6,905.9	529.9	1,109.7	75.6	11.06
7,654.0	90.50	334.60	6,904.3	614.9	1,072.1	168.5	3.50
7,746.0	91.20	334.80	6,902.9	698.1	1,032.8	260.4	0.79
7,839.0	94.00	337.70	6,898.7	783.1	995.4	353.2	4.33
7,931.0	94.90	337.60	6,891.6	867.9	960.5	444.9	0.98
8,093.0	92.40	340.89	6,881.2	1,019.1	903.2	606.5	2.55
8,124.0	91.78	337.98	6,880.1	1,048.1	892.3	637.5	9.59
8,178.0	86.70	339.50	6,880.8	1,098.4	872.8	691.4	9.82
8,271.0	87.30	342.10	6,885.7	1,186.1	842.2	784.2	2.87
8,301.0	87.50	342.00	6,887.1	1,214.6	833.0	814.1	0.75
8,394.0	91.90	342.30	6,887.5	1,303.1	804.5	906.8	4.74
8,486.0	92.30	342.40	6,884.2	1,390.7	776.6	998.5	0.45
8,579.0	90.30	341.60	6,882.1	1,479.1	747.9	1,091.2	2.32
8,642.0	90.54	339.25	6,881.6	1,538.5	726.8	1,154.2	3.75
8,707.0	91.24	340.10	6,880.6	1,599.4	704.2	1,219.1	1.69
8,800.0	89.73	341.17	6,879.8	1,687.1	673.4	1,312.0	1.99
8,892.0	89.56	340.41	6,880.4	1,774.0	643.1	1,403.9	0.85
8,985.0	90.07	339.60	6,880.7	1,861.4	611.3	1,499.9	1.03
9,078.0	90.81	339.24	6,880.0	1,948.5	578.6	1,589.8	0.88
9,170.0	89.63	336.70	6,879.6	2,033.7	544.1	1,681.8	3.04
9,263.0	89.80	335.42	6,880.1	2,118.7	506.4	1,774.8	1.39

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EOW Completion Report



<b>Company:</b>	Antero	<b>Local Co-ordinate Reference:</b>	Well Vinola Unit 2H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 522: GL 998' + KB 18' @ 1016.0usft
<b>Site:</b>	R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinc	<b>MD Reference:</b>	Precision 522: GL 998' + KB 18' @ 1016.0usft
<b>Well:</b>	Vinola 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)
9,355.0	88.52	334.96	6,881.4	2,202.2	467.8	1,866.6	1.48
9,448.0	88.29	334.79	6,884.0	2,286.4	428.3	1,959.5	0.31
9,540.0	90.47	336.98	6,885.0	2,370.4	390.7	2,051.4	3.36
9,633.0	91.78	336.11	6,883.2	2,455.7	353.7	2,144.3	1.69
9,727.0	90.84	335.32	6,881.0	2,541.3	315.1	2,238.2	1.31
9,821.0	92.08	337.05	6,878.6	2,627.3	277.1	2,332.2	2.26
9,916.0	91.28	336.75	6,875.9	2,714.6	239.9	2,427.1	0.90
9,979.0	86.81	335.20	6,876.9	2,772.1	214.2	2,490.0	7.51
10,010.0	87.72	334.64	6,878.4	2,800.2	201.1	2,521.0	3.45
10,064.0	88.02	333.15	6,880.4	2,848.6	177.4	2,574.8	2.81
10,079.0	87.95	333.09	6,880.9	2,862.0	170.6	2,589.7	0.61
10,104.0	88.12	332.99	6,881.8	2,884.3	159.2	2,614.6	0.79
10,198.0	89.46	335.02	6,883.8	2,968.7	118.1	2,708.3	2.59
10,292.0	91.14	337.16	6,883.3	3,054.7	80.0	2,802.3	2.89
10,387.0	90.30	337.33	6,882.1	3,142.3	43.2	2,897.3	0.90
10,481.0	90.64	339.57	6,881.3	3,229.7	8.7	2,991.3	2.41
10,576.0	91.11	338.86	6,879.9	3,318.5	-25.0	3,086.2	0.90
10,669.0	90.54	338.82	6,878.5	3,405.2	-58.6	3,179.2	0.61
10,763.0	89.66	339.03	6,878.3	3,492.9	-92.4	3,273.2	0.96
10,856.0	89.93	338.29	6,878.7	3,579.6	-126.2	3,366.2	0.85
10,951.0	90.81	340.51	6,878.1	3,668.5	-159.6	3,461.1	2.51
11,041.0	89.43	339.56	6,877.9	3,753.1	-190.4	3,551.1	1.86
11,134.0	90.81	342.00	6,877.7	3,840.9	-221.0	3,644.0	3.01
11,226.0	90.54	341.52	6,876.6	3,928.2	-249.8	3,735.8	0.60
11,318.0	90.27	340.01	6,875.9	4,015.1	-280.1	3,827.7	1.67
11,411.0	89.87	338.77	6,875.8	4,102.1	-312.8	3,920.6	1.40
11,503.0	90.60	337.63	6,875.5	4,187.6	-347.0	4,012.6	1.47
11,575.0	90.81	337.19	6,874.6	4,254.0	-374.6	4,084.6	0.68
11,667.0	89.30	335.40	6,874.5	4,338.3	-411.6	4,176.6	2.55
11,760.0	89.83	335.74	6,875.2	4,422.9	-450.1	4,269.5	0.68
11,852.0	89.43	335.36	6,875.8	4,506.7	-488.2	4,361.4	0.60
11,945.0	90.87	335.91	6,875.5	4,591.4	-526.5	4,454.3	1.66
12,037.0	89.63	336.79	6,875.1	4,675.7	-563.4	4,546.3	1.65
12,130.0	90.60	337.01	6,875.0	4,761.2	-599.9	4,639.2	1.07
12,222.0	89.53	338.10	6,874.8	4,846.2	-635.0	4,731.2	1.66
12,315.0	91.31	341.48	6,874.2	4,933.5	-667.2	4,824.2	4.11
12,408.0	89.33	340.45	6,873.6	5,021.4	-697.5	4,917.0	2.40
12,501.0	89.13	339.62	6,874.9	5,108.8	-729.2	5,010.0	0.92
12,593.0	90.57	338.76	6,875.1	5,194.8	-761.9	5,102.0	1.82
12,686.0	91.04	338.26	6,873.8	5,281.3	-796.0	5,194.9	0.74
12,778.0	89.77	332.69	6,873.2	5,365.0	-834.2	5,286.8	6.21
12,871.0	89.29	332.76	6,873.9	5,447.6	-876.8	5,379.7	0.52
12,963.0	91.28	334.28	6,873.5	5,530.0	-917.8	5,471.1	0.77
13,056.0	92.11	334.53	6,870.7	5,613.8	-958.0	5,563.9	0.93
13,149.0	91.11	334.35	6,868.1	5,697.7	-998.1	5,656.7	1.09

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EOW Completion Report



<b>Company:</b>	Antero	<b>Local Co-ordinate Reference:</b>	Well Vinola Unit 2H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Precision 522: GL 998' + KB 18' @ 1016.0usft
<b>Site:</b>	R.J. Smith Pad: Costlow/Duff/Gibson/Mishka/Vinc	<b>MD Reference:</b>	Precision 522: GL 998' + KB 18' @ 1016.0usft
<b>Well:</b>	Vinola 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)
13,241.0	89.87	336.45	6,867.3	5,781.3	-1,036.4	5,748.6	2.65
13,333.0	91.74	338.98	6,866.0	5,866.4	-1,071.2	5,840.6	3.42
13,425.0	92.72	339.20	6,862.5	5,952.3	-1,104.1	5,932.5	1.09
13,518.0	90.64	341.90	6,859.7	6,039.9	-1,135.0	6,025.3	3.66
13,611.0	90.47	344.92	6,858.8	6,129.1	-1,161.5	6,117.9	3.25
13,703.0	90.91	343.53	6,857.7	6,217.6	-1,186.6	6,209.3	1.58
13,796.0	89.73	339.98	6,857.2	6,305.9	-1,215.7	6,302.1	4.02
13,888.0	90.10	341.13	6,857.3	6,392.6	-1,246.3	6,394.0	1.31
13,981.0	90.54	340.80	6,856.8	6,480.6	-1,276.6	6,486.9	0.59
14,073.0	89.66	337.13	6,856.7	6,566.4	-1,309.6	6,578.9	4.10
14,166.0	89.70	336.30	6,857.2	6,651.8	-1,346.4	6,671.8	0.89
14,259.0	90.27	337.60	6,857.2	6,737.4	-1,382.8	6,764.8	1.53
14,351.0	90.77	335.39	6,856.4	6,821.8	-1,419.5	6,856.8	2.46
14,444.0	89.97	333.91	6,855.8	6,905.8	-1,459.3	6,949.6	1.81
14,536.0	90.10	334.93	6,855.7	6,988.8	-1,499.0	7,041.4	1.12
14,629.0	90.00	334.39	6,855.6	7,072.8	-1,538.8	7,134.3	0.59
14,721.0	90.71	335.97	6,855.1	7,156.3	-1,577.5	7,226.2	1.88
14,814.0	88.09	335.90	6,856.0	7,241.2	-1,615.4	7,319.1	2.82
14,908.0	88.92	339.64	6,858.5	7,328.2	-1,650.9	7,413.0	4.07
14,929.0	89.73	340.81	6,858.7	7,348.0	-1,658.0	7,434.0	6.78
14,994.0	89.73	340.81	6,859.0	7,409.4	-1,679.4	7,498.9	0.00

PTB

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,698.0	6,443.9	-112.0	1,149.2	SCMR
6,914.0	6,629.5	-17.6	1,200.7	MDLX
7,119.0	6,769.2	130.7	1,205.4	BRKT
7,174.0	6,798.7	177.1	1,202.6	TLLY
7,307.0	6,859.0	293.9	1,184.0	MRCL_HOT
14,994.0	6,859.0	7,409.4	-1,679.4	PTB

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

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COMPASS Building 74  
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# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	11/10/2015
Job End Date:	11/20/2015
State:	West Virginia
County:	Doddridge
API Number:	47-017-06566-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	VINOLA UNIT 2H
Longitude:	-80.74050000
Latitude:	39.38948000
Datum:	NAD27
Federal/Tribal Well:	NO
True Vertical Depth:	6,905
Total Base Water Volume (gal):	10,849,188
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	90.74973	
Sand, White, 40/70	Baker Hughes	Proppant	MSDS and Non-MSDS Ingredients Listed Below	N/A		4.77222	
Sand, White, 20/40	Baker Hughes	Proppant	MSDS and Non-MSDS Ingredients Listed Below	N/A		3.30204	
Sand, White, 100 mesh	Baker Hughes	Proppant	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.66187	
HCl, 10.1 - 15%	Baker Hughes	Acidizing	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.20954	SmartCare Product
GW-3LDF	Baker Hughes	Gelling Agent	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.08361	SmartCare Product
FRW-18	Baker Hughes	Friction Reducer	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.06765	SmartCare Product
GW-3	Baker Hughes	Gelling Agent	MSDS and Non-MSDS Ingredients Listed Below	N/A		0.01694	

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Scaletrol 720, 330 gl tote	Baker Hughes	Scale Inhibitor					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.01562	SmartCare Product
Alpha 1427	Baker Hughes	Biocide					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.00866	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		0.00029	SmartCare Product
CI-14	Baker Hughes	Corrosion Inhibitor					
			MSDS and Non-MSDS Ingredients Listed Below	N/A		0.00005	
Ingredients shown above are subject to 29 CFR 1910.1200(l) 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	8.72554	
			Water	7732-18-5	95.00000	0.23783	
			Guar Gum	9000-30-0	100.00000	0.06703	
			Mineral Oil	8042-47-5	70.00000	0.05846	
			Hydrochloric Acid	7647-01-0	15.00000	0.03140	
			Petroleum Distillates	64742-47-8	30.00000	0.02505	
			Paraffinic Petroleum Distillate	64742-55-8	30.00000	0.02505	
			Hydrotreated Light Distillate	64742-47-8	30.00000	0.02027	
			Poly (acrylamide-co-acrylic acid) partial sodium salt	62649-23-4	30.00000	0.02027	
			Ethylene Glycol	107-21-1	45.00000	0.00702	
			Isotridecanol, ethoxylated	9043-30-5	5.00000	0.00418	
			Crystalline Silica: Quartz	14808-60-7	5.00000	0.00418	
			1-butoxy-2-propanol	5131-66-8	5.00000	0.00418	
			Sodium Chloride	7647-14-5	5.00000	0.00353	
			2-Propenoic, Polymer with Sodium Phosphinate, Sodium Salt	71050-62-9	20.00000	0.00312	
			Glutaraldehyde	111-30-8	30.00000	0.00259	
			Ammonium Chloride	12125-02-9	3.00000	0.00203	
			Alcohols, C12-16, ethoxylated	68551-12-2	2.00000	0.00135	
			Oleamide DEA	93-83-4	2.00000	0.00135	
			Hemicellulase Enzyme Concentrate	9025-56-3	5.00000	0.00101	
			Citric Acid	77-92-9	60.00000	0.00087	
			Didecyl Dimethyl Ammonium Chloride	7173-51-5	10.00000	0.00086	
			Calcium Chloride	10043-52-4	5.00000	0.00078	
			Quaternary Ammonium Compound	68424-85-1	5.00000	0.00043	
			Ethanol	64-17-5	5.00000	0.00043	

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		Methanol	67-56-1	100.00000	0.00034
		Polyoxyethylene Sorbitan Monooleate	9005-65-6	0.50000	0.00034
		Sorbitan Monooleate	1338-43-8	0.50000	0.00034
		Potassium Chloride	7447-40-7	1.00000	0.00016
		Polyoxyalkylenes	68951-67-7	30.00000	0.00010
		2-butoxy-1-propanol	15821-83-7	0.10000	0.00008
		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)

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LATITUDE 39°22'30"

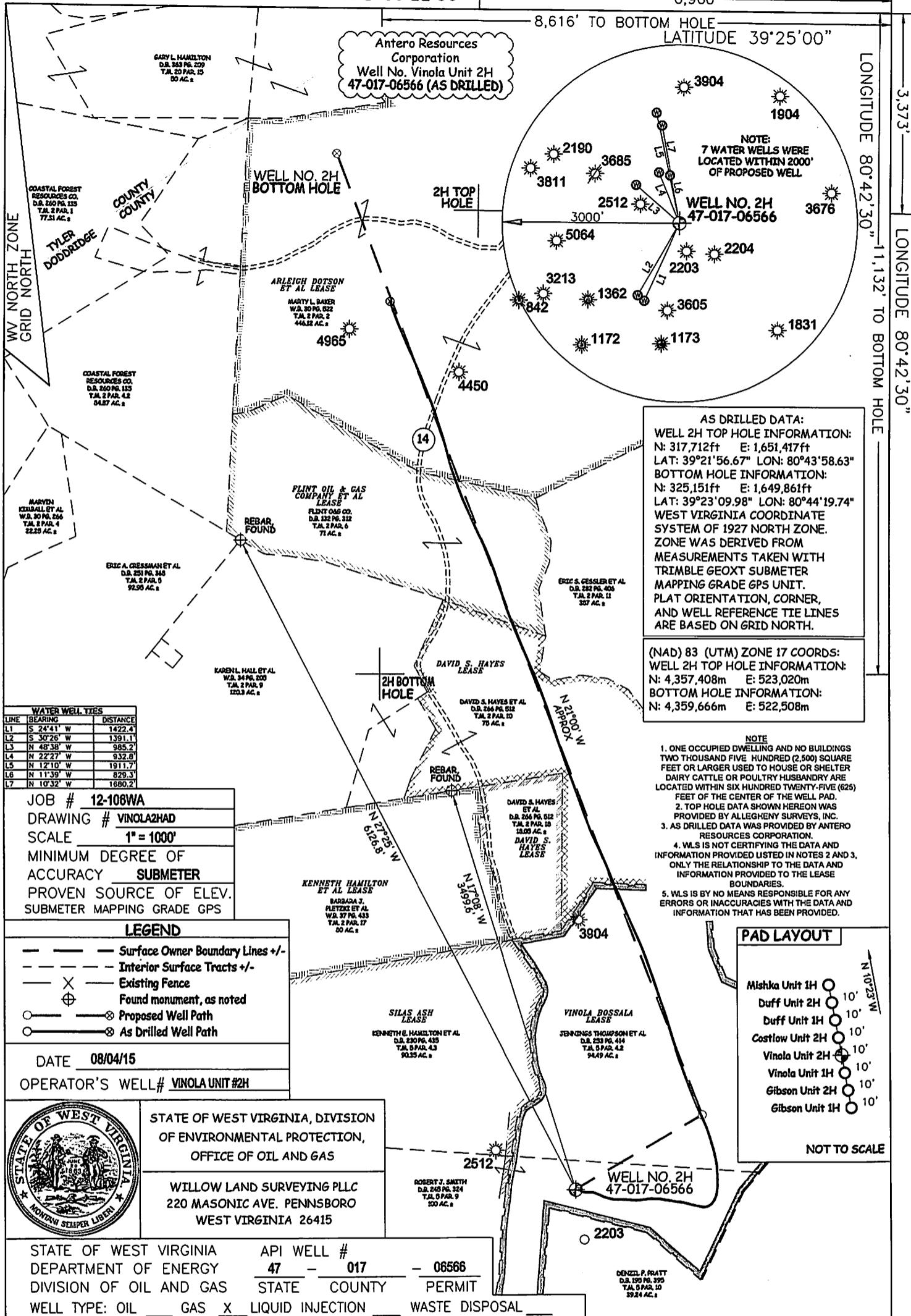
6,960'

8,616' TO BOTTOM HOLE

LATITUDE 39°25'00"

LONGITUDE 80°42'30"

LONGITUDE 80°42'30"



Antero Resources Corporation  
Well No. Vinola Unit 2H  
47-017-06566 (AS DRILLED)

NOTE:  
7 WATER WELLS WERE  
LOCATED WITHIN 2000'  
OF PROPOSED WELL

AS DRILLED DATA:  
WELL 2H TOP HOLE INFORMATION:  
N: 317,712ft E: 1,651,417ft  
LAT: 39°21'56.67" LON: 80°43'58.63"  
BOTTOM HOLE INFORMATION:  
N: 325,151ft E: 1,649,861ft  
LAT: 39°23'09.98" LON: 80°44'19.74"  
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: 4,357,408m E: 523,020m  
BOTTOM HOLE INFORMATION:  
N: 4,359,666m E: 522,508m

- NOTE
- ONE OCCUPIED DWELLING AND NO 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.
  - TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
  - AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
  - 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.
  - WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

LINE	BEARING	DISTANCE
L1	S 24°41' W	1422.4
L2	S 30°26' W	1391.1
L3	N 48°38' W	985.2
L4	N 22°27' W	932.8
L5	N 12°10' W	1911.7
L6	N 11°39' W	829.3
L7	N 10°32' W	1680.2

JOB # 12-108WA  
DRAWING # VINOLA2HAD  
SCALE 1" = 1000'  
MINIMUM DEGREE OF ACCURACY SUBMETER  
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

**LEGEND**

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

DATE 08/04/15  
OPERATOR'S WELL # VINOLA UNIT #2H



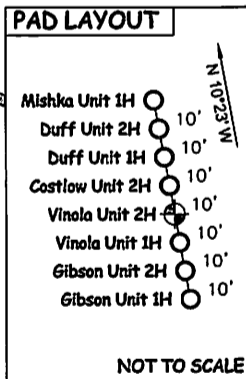
STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
WILLOW LAND SURVEYING PLLC  
220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

STATE OF WEST VIRGINIA	API WELL #
DEPARTMENT OF ENERGY	47 - 017 - 06566
DIVISION OF OIL AND GAS	STATE COUNTY PERMIT

WELL TYPE: OIL \_\_\_ GAS  LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
(IF "GAS") PRODUCTION  STORAGE \_\_\_ DEEP \_\_\_ SHALLOW   
LOCATION: ELEVATION 1,004' ORIGINAL - 998' AS DRILLED WATERSHED MCELROY CREEK  
QUADRANGLE SMITHBURG (TH) CENTERPOINT (GH) DISTRICT GRANT COUNTY DODDRIDGE  
SURFACE OWNER ROBERT J. SMITH ACREAGE 100 ACRES +/-  
OIL & GAS ROYALTY OWNER VINOLA BOSSALA; DAVID S. HAYES; FLINT OIL & GAS COMPANY ET AL; ARLEIGH DOTSON ET AL  
LEASE ACREAGE 120 ACRES±; 75 ACRES±; 446.5 ACRES±; 167.29 ACRES±

PROPOSED WORK: DRILL \_\_\_ CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE \_\_\_  
PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN \_\_\_  
(SPECIFY)  AS DRILLED PLUG & ABANDON \_\_\_ CLEAN OUT & REPLENISH \_\_\_  
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,859' TVD @ 994' MD

WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT CT CORPORATION SYSTEM  
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD  
DENVER, CO 80202 CHARLESTON, WV 25313



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LATITUDE 39°22'30"

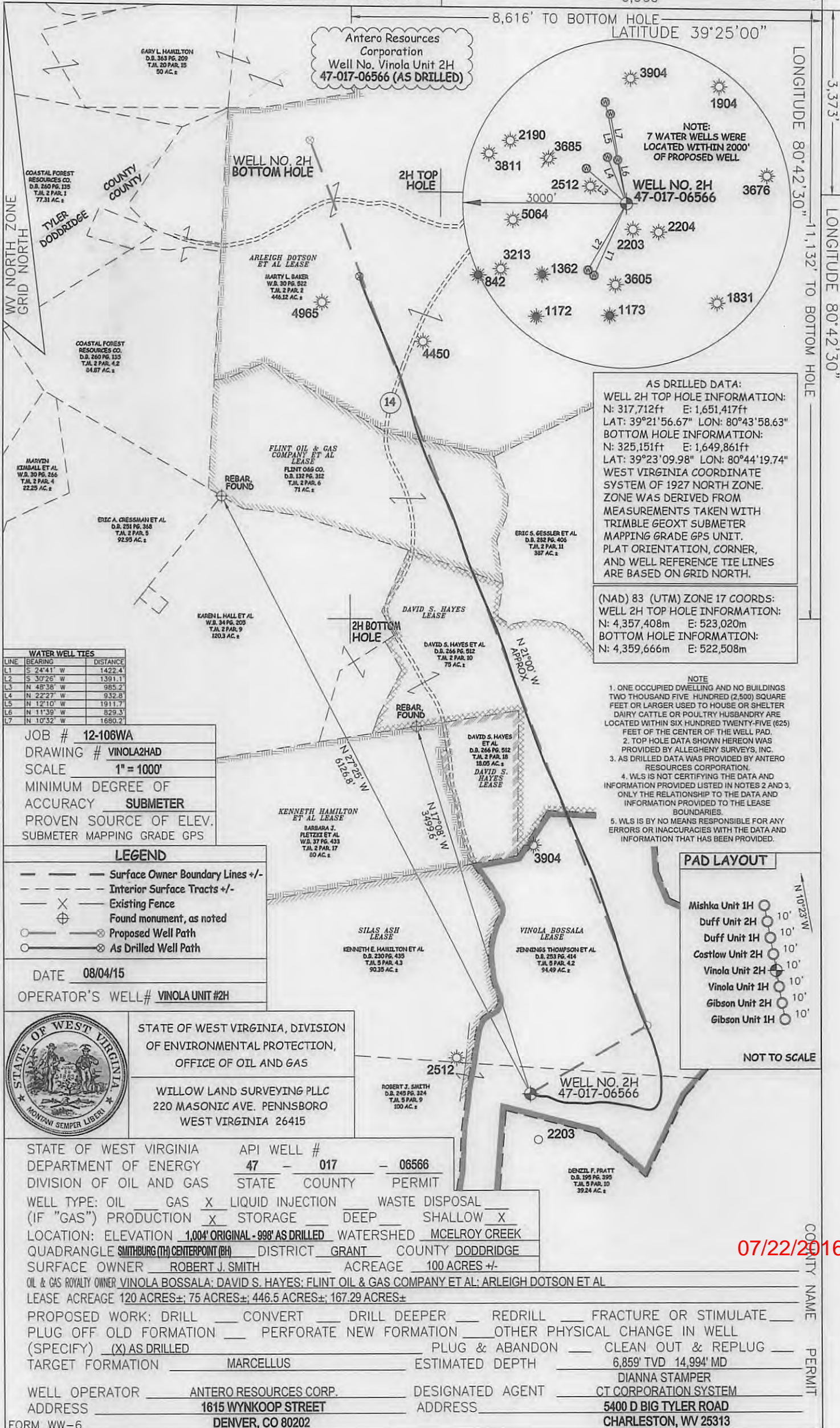
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8,616' TO BOTTOM HOLE

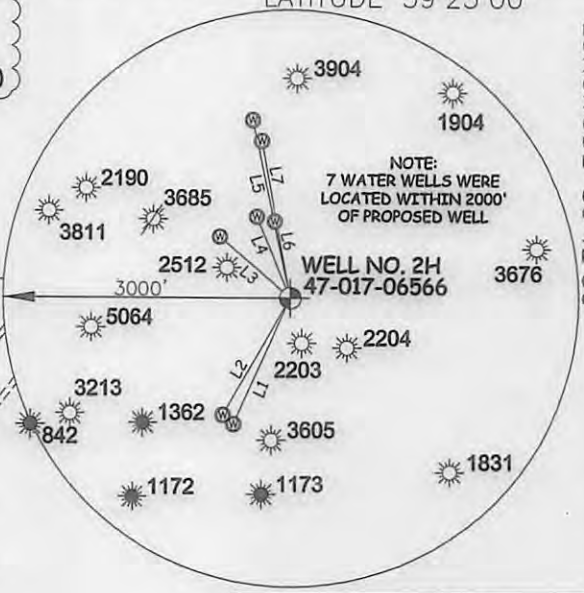
LATITUDE 39°25'00"

LONGITUDE 80°42'30" 1,132' TO BOTTOM HOLE

LONGITUDE 80°42'30"



Antero Resources Corporation  
Well No. Vinola Unit 2H  
47-017-06566 (AS DRILLED)



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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.

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WATER WELL TIES

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JOB # 12-106WA  
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PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

- LEGEND
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  - Existing Fence
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DATE 08/04/15  
OPERATOR'S WELL# VINOLA UNIT #2H



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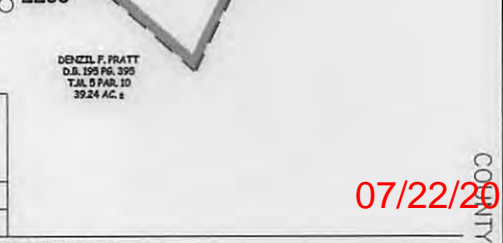
STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS

API WELL # 47 - 017 - 06566

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
(IF "GAS") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X

LOCATION: ELEVATION 1,004' ORIGINAL - 998' AS DRILLED WATERSHED MCELROY CREEK  
QUADRANGLE SMITHBURG (TH) CENTERPOINT (BH) DISTRICT GRANT COUNTY DODDRIDGE

SURFACE OWNER ROBERT J. SMITH ACREAGE 100 ACRES +/-



OIL & GAS ROYALTY OWNER VINOLA BOSSALA; DAVID S. HAYES; FLINT OIL & GAS COMPANY ET AL; ARLEIGH DOTSON ET AL  
LEASE ACREAGE 120 ACRES±; 75 ACRES±; 446.5 ACRES±; 167.29 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 6,859' TVD 14,994' MD

WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER  
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD  
DENVER, CO 80202 CHARLESTON, WV 25313

07/22/2016

COUNTY NAME PERMIT