

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

API 47 - 017 - 06431 County Doddridge District Central
Quad West Union 7.5' Pad Name Dotson-Holland Field/Pool Name ---
Farm name Holland, Robert L., Jr. Well Number Amanda Unit 1H
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 4347131m Easting 510968m
Landing Point of Curve Northing 4345551.92m Easting 511517.17m
Bottom Hole Northing 4345296m Easting 511633m

Elevation (ft) 989' 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 1/28/2014 Date drilling commenced 7/21/2014 Date drilling ceased 10/3/2014
Date completion activities began 10/8/2014 Date completion activities ceased 12/16/2014
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 56' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1527' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 381' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

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Reviewed by:

[Signature]
10/23/2015

API 47-017 - 06431 Farm name Holland, Robert L., Jr. Well number Amanda Unit 1H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	28"	20"	40'	New	133# J-55	N/A	Y
Surface	17- 1/2"	13- 3/8"	360'	New	48# H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2525'	New	36# J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4" & 8-1/2"	5-1/2"	12960'	New	20# P-110	N/A	Y
Tubing		2-3/8"	6663'		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	185 sx	15.6	1.18	38	0'	8 Hrs.
Surface	Class A	428 sx	15.6	1.18	250	0'	8 Hrs.
Coal							
Intermediate 1	Class A	928 sx	15.6	1.18	791	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	563 sx (Lead) 1032 sx (Tail)	14.5 Lead 15.2 Tail	1.30 Lead 1.86 Tail	2505	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 12960' MD, 6505' TVD (BHL), 6515' TVD (Deepest Point Drilled) Loggers TD (ft) 12911'
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5583'

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 _____

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API 47- 017 - 06431 Farm name Holland, Robert L., Jr. Well number Ireland Unit 1H

PRODUCING FORMATION(S)	DEPTHS	
Marcellus	6390' (TOP) TVD	6737' (TOP) MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 3600 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 8938 mcfpd Oil 0 bpd NGL --- bpd Water 299 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	<u>0</u>		<u>0</u>		

***PLEASE SEE EXHIBIT 3**

Please insert additional pages as applicable.

Drilling Contractor Precision Drilling Company, LP
Address 2640 Reach Rd. City Williamsport State PA Zip 17701

Logging Company _____
Address _____ City _____ State _____ Zip _____

Cementing Company Nabors Completion & Production Services, Co.
Address 1650 Hackers Creek City Jane Lew State WV Zip 26378

Stimulating Company US Well Services
Address 533 Industrial Park Dr. City Jane Lew State WV Zip 26378

Please insert additional pages as applicable.

Completed by Kara Quackenbush Telephone 303-357-7233
Signature [Signature] Title Permitting Agent Date 8/25/2015

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API 47-017-06431 Farm Name Holland, Robert L., Jr. Well Number Amanda Unit 1H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	8-Oct-14	12,705	12,872	60	Marcellus
2	3-Nov-14	12,507	12,674	60	Marcellus
3	4-Nov-14	12,310	12,477	60	Marcellus
4	4-Nov-14	12,112	12,279	60	Marcellus
5	4-Nov-14	11,915	12,081	60	Marcellus
6	5-Nov-14	11,717	11,884	60	Marcellus
7	5-Nov-14	11,519	11,686	60	Marcellus
8	5-Nov-14	11,322	11,488	60	Marcellus
9	6-Nov-14	11,124	11,291	60	Marcellus
10	7-Nov-14	10,926	11,093	60	Marcellus
11	7-Nov-14	10,729	10,895	60	Marcellus
12	8-Nov-14	10,531	10,698	60	Marcellus
13	8-Nov-14	10,333	10,500	60	Marcellus
14	8-Nov-14	10,136	10,302	60	Marcellus
15	9-Nov-14	9,938	10,105	60	Marcellus
16	9-Nov-14	9,740	9,907	60	Marcellus
17	10-Nov-14	9,543	9,709	60	Marcellus
18	15-Nov-14	9,345	9,512	60	Marcellus
19	16-Nov-14	9,147	9,314	60	Marcellus
20	16-Nov-14	8,950	9,117	60	Marcellus
21	17-Nov-14	8,752	8,919	60	Marcellus
22	17-Nov-14	8,555	8,721	60	Marcellus
23	17-Nov-14	8,357	8,524	60	Marcellus
24	18-Nov-14	8,159	8,326	60	Marcellus
25	19-Nov-14	7,962	8,128	60	Marcellus
26	19-Nov-14	7,764	7,931	60	Marcellus
27	19-Nov-14	7,566	7,733	60	Marcellus
28	20-Nov-14	7,369	7,535	60	Marcellus
29	20-Nov-14	7,171	7,338	60	Marcellus
30	21-Nov-14	6,973	7,140	60	Marcellus
31	21-Nov-14	6,776	6,942	60	Marcellus

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10/23/2015

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	2-Nov-14	62.0	6,753	5,951	5,032	202,960	6,145	N/A
2	3-Nov-14	63.9	6,913	6,008	6,294	208,040	6,891	N/A
3	4-Nov-14	64.0	6,777	5,862	5,393	236,470	6,295	N/A
4	4-Nov-14	64.8	6,447	5,286	6,670	237,475	6,277	N/A
5	4-Nov-14	63.0	6,463	5,584	4,867	235,270	6,250	N/A
6	5-Nov-14	64.6	6,530	5,615	6,423	236,500	6,339	N/A
7	5-Nov-14	64.0	6,258	5,300	4,982	226,970	6,215	N/A
8	6-Nov-14	63.3	6,407	5,357	5,701	178,125	6,393	N/A
9	7-Nov-14	61.5	7,036	5,754	5,153	136,500	6,197	N/A
10	7-Nov-14	64.0	6,645	5,354	4,985	240,080	6,160	N/A
11	8-Nov-14	60.0	6,288	5,640	4,957	100,020	5,736	N/A
12	8-Nov-14	63.9	6,359	5,411	5,286	235,650	6,132	N/A
13	8-Nov-14	64.0	6,328	5,468	5,329	235,350	6,111	N/A
14	9-Nov-14	63.4	6,249	5,221	5,790	236,545	6,092	N/A
15	9-Nov-14	63.0	6,368	5,266	5,128	235,510	6,072	N/A
16	10-Nov-14	63.0	6,247	5,307	4,939	233,650	6,054	N/A
17	10-Nov-14	64.6	6,513	5,479	6,037	227,820	5,929	N/A
18	15-Nov-14	63.0	6,440	5,279	5,039	237,500	6,027	N/A
19	16-Nov-14	64.9	6,165	4,996	5,540	238,800	6,028	N/A
20	16-Nov-14	63.0	6,235	5,608	5,043	238,500	5,988	N/A
21	17-Nov-14	63.0	6,291	5,425	5,304	238,500	5,971	N/A
22	17-Nov-14	64.0	6,227	5,243	5,279	237,250	5,949	N/A
23	18-Nov-14	63.0	6,283	5,336	5,351	239,350	5,930	N/A
24	18-Nov-14	63.0	6,191	5,400	4,967	237,750	5,912	N/A
25	19-Nov-14	64.0	6,263	5,418	5,218	237,140	5,902	N/A
26	19-Nov-14	63.0	6,192	5,468	5,000	233,650	5,886	N/A
27	20-Nov-14	64.0	6,237	5,318	5,103	239,310	5,866	N/A
28	20-Nov-14	63.0	6,183	5,558	5,257	235,050	5,858	N/A
29	21-Nov-14	64.0	6,114	5,472	4,517	238,400	5,828	N/A
30	21-Nov-14	65.0	6,316	5,414	5,096	229,050	6,366	N/A
31	22-Nov-14	63.0	6,091	5,686	4,427	237,000	5,798	N/A
	AVG=	63.4	6,381	5,467	5,294	6,960,185	188,597	TOTAL

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AUG 31 2015

10/23/2015

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	56'	N/A	56'	N/A
Shale/ Siltstone	0	221	0	221
Sandstone	est. 221	241	est. 221	241
Shale/ Siltstone	est. 241	381	est. 241	381
Coal	est. 381	401	est. 381	401
Siltstone	est. 401	441	est. 401	441
Shale/ Limestone	est. 441	561	est. 441	561
Sandstone/ Siltstone	est. 561	621	est. 561	621
Shale/ Siltstone	est. 621	761	est. 621	761
Limestone	est. 761	941	est. 761	941
Siltstone / Trace Coal/ Shale	est. 941	1381	est. 941	1381
Sandstone	est. 1381	1401	est. 1381	1401
Shale/ Siltstone/ Trace Coal	est. 1401	1621	est. 1401	1621
Sandstone/ Siltstone	est. 1621	1701	est. 1621	1701
Shale/ Siltstone/ Trace Coal	est. 1701	1741	est. 1701	1741
Shale/ Siltstone	est. 1741	1939	est. 1741	1939
Big Lime	1939	2026	1939	2026
Big Injun	2026	2407	2026	2407
Gantz Sand	2407	2525	2407	2525
Fifty Foot Sandstone	2525	2618	2525	2618
Gordon	2618	2971	2618	2971
Fifth Sandstone	2971	3098	2971	3098
Bayard	3098	3306	3098	3306
Speechley	3306	4007	3306	4007
Baltown	4007	4446	4007	4448
Bradford	4446	4860	4448	4862
Benson	4860	5135	4862	5137
Alexander	5135	5292	5137	5294
Elk	5292	5775	5294	5794
Rhinestreet	5775	6055	5794	6167
Sycamore	6055	6212	6167	6383
Middlesex	6212	6326	6383	6571
Burkett	6326	6360	6571	6650
Tully	6360	6390	6650	6737
Marcellus	6390	NA	6737	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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AUG 31 2015

10/23/2015

17-06431



Antero Resources
Antero Resources
Amanda Unit 1H
Dodderidge County WV
Northing: 14261499.41
Easting: 1676353.23
As Drilled

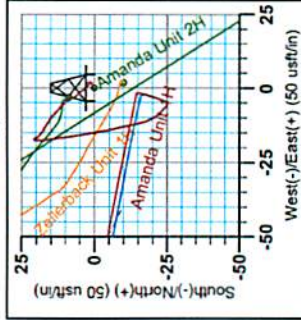
WELL DETAILS: Amanda Unit 1H
 Ground Level: 989.0
 Well ID: 14261499.41
 Northing: 1676353.23
 Easting: 14261499.41
 Longitude: 80° 52' 22.863 W
 Latitude: 38° 16' 24.108 N

REFERENCE INFORMATION
 Coordinates (NAD 83) referenced to the North American Datum of 1983 (NAD 83) using the Clarke 1866 Ellipsoid. The datum is Mean Sea Level (MSL).
 Vertical (VD) referenced to the North American Datum of 1983 (NAD 83) using the Clarke 1866 Ellipsoid. The datum is Mean Sea Level (MSL).
 Calculations Method: Minimum Curvature

PROJECT DETAILS: Dodderidge County WV
 Geographic System: Universal Transverse Mercator (US Survey Feet)
 NAD: 1983 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: Zone 17N (84 W to 78 W)
 System Datum: Mean Sea Level



Scientific Drilling
 10-02, October 02 2014
 Scientific Drilling
 421 South Eagle Lane
 Oklahoma City, OK

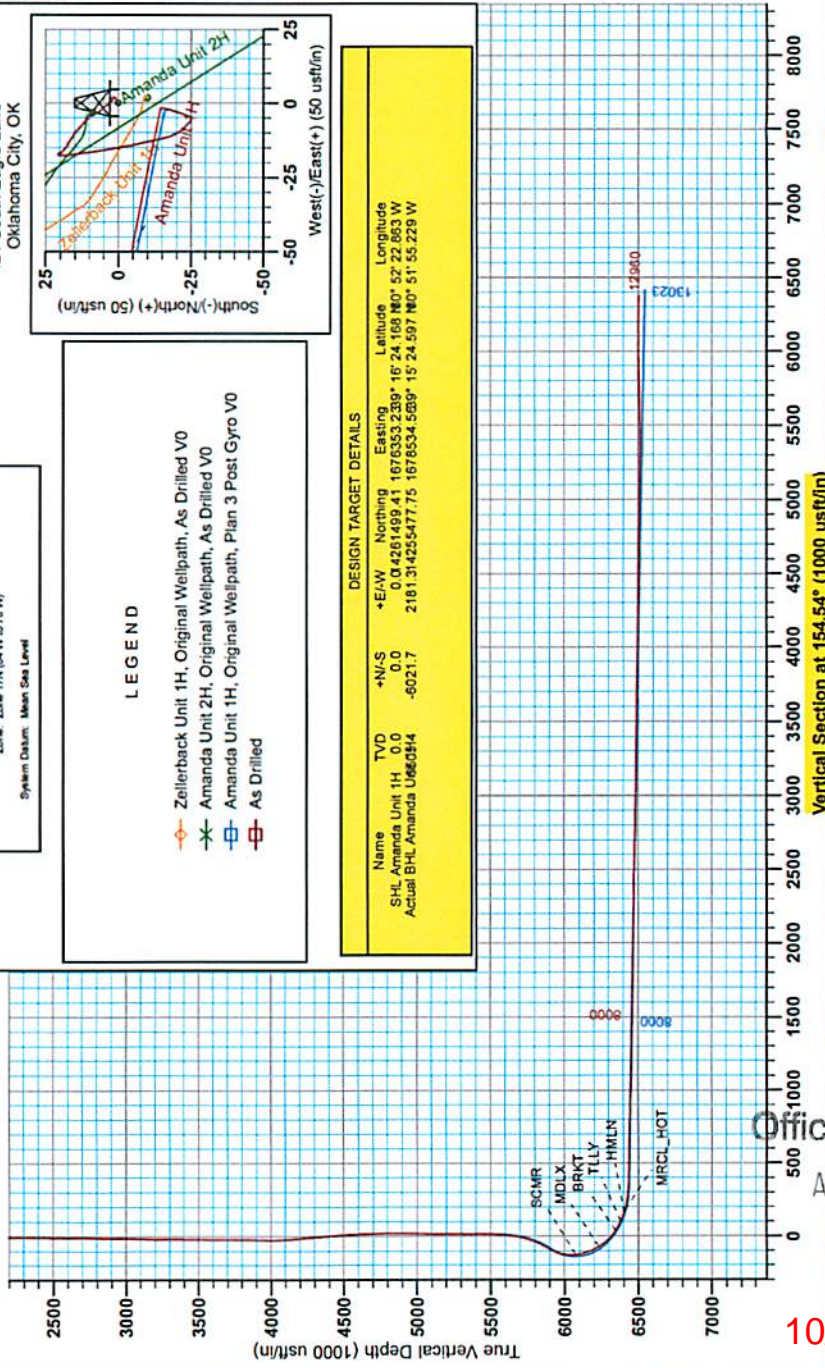


LEGEND

- Zellerback Unit 1H, Original Wellpath, As Drilled V0
- ✱ Amanda Unit 2H, Original Wellpath, As Drilled V0
- Amanda Unit 1H, Original Wellpath, Plan 3 Post Gyro V0
- As Drilled

DESIGN TARGET DETAILS

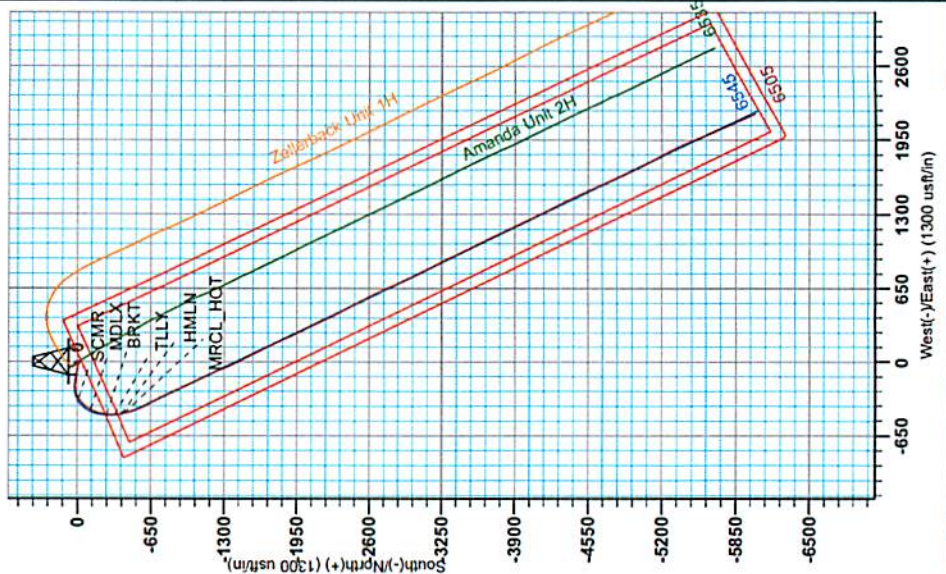
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL Amanda Unit 1H	0.0	0.0	0.0	4261499.41	1676353.23	38° 16' 24.108 N	80° 52' 22.863 W
Actual BHL Amanda UM60514	-6021.7	2181.31	4255477.75	1676353.23	15° 24' 59.7 N	51° 55' 22.9 W	



Vertical Section at 154.54° (1000 usft/m)

To convert Magnetic North to Grid, Subtract 8.50°
 To convert True North to Grid, Subtract 0.08°

Magnetic Field
 Strength: 52332.66nT
 Dip Angle: 66.81°
 Date: 9/9/2014
 Model: BGGM2014



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Antero Resources

**Doddridge County WV
Zellerback/Amanda Pad
Amanda Unit 1H
Original Wellpath**

Design: As Drilled

EOW Completion Report

02 October, 2014



Scientific Drilling

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10/23/2015

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EOW Completion Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Amanda Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Site:	Zellerback/Amanda Pad	MD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Well:	Amanda Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

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

Site	Zellerback/Amanda Pad				
Site Position:	Northing:	14,261,489.45usft	Latitude:	39° 16' 24.070 N	
From: Map	Easting:	1,676,355.00usft	Longitude:	80° 52' 22.841 W	
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.08 °

Well	Amanda Unit 1H, Marcellus					
Well Position	+N/-S	0.0 usft	Northing:	14,261,499.41 usft	Latitude:	39° 16' 24.168 N
	+E/-W	0.0 usft	Easting:	1,676,353.23 usft	Longitude:	80° 52' 22.863 W
Position Uncertainty	2.0 usft	Wellhead Elevation:	1,008.0 usft	Ground Level:	989.0 usft	

Wellbore	Original Wellpath				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	9/9/2014	-8.41	66.85	52,233

Design	As Drilled				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	154.54	

Survey Program	Date 10/2/2014				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	5,316.0	Survey #8 Def Gyro to KOP (Original Well	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper	
5,374.0	12,960.0	Survey #9 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)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	
100.0	0.07	280.43	100.0	0.0	-0.1	0.0	0.07	
125.0	0.19	277.67	125.0	0.0	-0.1	-0.1	0.48	
150.0	0.06	294.18	150.0	0.0	-0.2	0.0	0.53	
175.0	0.13	17.09	175.0	0.1	-0.2	-0.1	0.55	
200.0	0.28	33.95	200.0	0.1	-0.1	-0.2	0.64	
225.0	0.24	2.86	225.0	0.2	-0.1	-0.3	0.58	
250.0	0.23	40.16	250.0	0.3	-0.1	-0.3	0.60	
275.0	0.16	55.83	275.0	0.4	0.0	-0.4	0.35	
300.0	0.23	88.64	300.0	0.4	0.1	-0.3	0.52	
325.0	0.27	124.11	325.0	0.4	0.2	-0.3	0.63	

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AUG 31 2015

Company: Antero Resources	Local Co-ordinate Reference: Well Amanda Unit 1H
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Site: Zellerback/Amanda Pad	MD Reference: Precision 523: 989' GL + 19' KB @ 1008.0usft
Well: Amanda Unit 1H	North Reference: Grid
Wellbore: Original Wellpath	Survey Calculation Method: Minimum Curvature
Design: As Drilled	Database: Oklahoma District

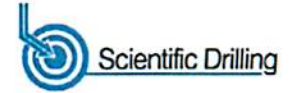
Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)		TVD (usft)	N/S (usft)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)	
350.0	0.14	96.42	96.42	350.0	0.3	0.3	-0.2	0.64	0.10
375.0	0.15	87.03	87.03	375.0	0.3	0.3	-0.2	0.24	0.10
400.0	0.09	88.02	88.02	400.0	0.3	0.4	-0.2	0.50	0.24
425.0	0.21	102.22	102.22	425.0	0.3	0.4	-0.1	1.46	0.50
450.0	0.17	314.70	314.70	450.0	0.4	0.5	-0.1	0.76	1.46
475.0	0.13	32.44	32.44	475.0	0.4	0.4	-0.2	0.37	0.76
500.0	0.22	39.15	39.15	500.0	0.5	0.5	-0.2	0.44	0.37
525.0	0.24	66.56	66.56	525.0	0.5	0.6	-0.2	0.37	0.44
550.0	0.22	43.98	43.98	550.0	0.6	0.7	-0.2	0.41	0.37
575.0	0.31	54.89	54.89	575.0	0.7	0.7	-0.3	0.64	0.41
600.0	0.40	76.50	76.50	600.0	0.7	0.9	-0.3	0.52	0.64
625.0	0.27	77.11	77.11	625.0	0.7	1.0	-0.2	0.17	0.52
650.0	0.31	74.89	74.89	650.0	0.8	1.1	-0.2	0.25	0.17
675.0	0.25	71.85	71.85	675.0	0.8	1.3	-0.2	0.59	0.25
700.0	0.11	56.72	56.72	700.0	0.8	1.3	-0.2	0.37	0.59
725.0	0.14	97.60	97.60	725.0	0.8	1.4	-0.2	0.50	0.37
750.0	0.23	69.29	69.29	750.0	0.9	1.5	-0.1	0.54	0.50
775.0	0.17	104.63	104.63	775.0	0.9	1.5	-0.1	0.68	0.54
800.0	0.16	42.93	42.93	800.0	0.9	1.6	-0.1	0.56	0.68
825.0	0.27	67.12	67.12	825.0	0.9	1.7	-0.1	0.19	0.56
850.0	0.29	58.11	58.11	850.0	1.0	1.8	-0.1	0.66	0.19
875.0	0.27	24.33	24.33	875.0	1.1	1.9	-0.2	0.13	0.66
900.0	0.30	27.12	27.12	900.0	1.2	1.9	-0.2	0.42	0.13
925.0	0.30	47.19	47.19	925.0	1.3	2.0	-0.3	0.74	0.42
950.0	0.13	25.44	25.44	950.0	1.4	2.1	-0.3	0.17	0.74
975.0	0.09	32.69	32.69	975.0	1.4	2.1	-0.4	0.28	0.17
1,000.0	0.04	343.37	343.37	1,000.0	1.4	2.1	-0.4	0.49	0.28
1,025.0	0.13	273.56	273.56	1,025.0	1.4	2.1	-0.4	0.31	0.49
1,050.0	0.09	310.03	310.03	1,050.0	1.5	2.0	-0.4	0.58	0.31
1,075.0	0.12	36.98	36.98	1,075.0	1.5	2.0	-0.5	0.79	0.58
1,100.0	0.20	325.79	325.79	1,100.0	1.5	2.0	-0.5	0.33	0.79
1,125.0	0.17	349.85	349.85	1,125.0	1.6	2.0	-0.6	0.50	0.33
1,150.0	0.15	35.41	35.41	1,150.0	1.7	2.0	-0.7	0.28	0.50
1,175.0	0.09	18.45	18.45	1,175.0	1.7	2.0	-0.7	0.54	0.28
1,200.0	0.19	338.56	338.56	1,200.0	1.8	2.0	-0.7	0.58	0.54
1,225.0	0.06	13.43	13.43	1,225.0	1.8	2.0	-0.8	0.44	0.58
1,250.0	0.09	281.23	281.23	1,250.0	1.9	2.0	-0.8	0.56	0.44
1,275.0	0.05	96.89	96.89	1,275.0	1.9	2.0	-0.8	0.50	0.56
1,300.0	0.14	160.14	160.14	1,300.0	1.8	2.0	-0.8	0.89	0.50
1,325.0	0.12	277.39	277.39	1,325.0	1.8	2.0	-0.8	0.28	0.89
1,350.0	0.19	281.05	281.05	1,350.0	1.8	1.9	-0.8	0.35	0.28
1,375.0	0.21	305.86	305.86	1,375.0	1.8	1.8	-0.9	0.51	0.35
1,400.0	0.14	341.68	341.68	1,400.0	1.9	1.8	-0.9	0.68	0.51
1,425.0	0.14	266.94	266.94	1,425.0	1.9	1.7	-1.0		0.68

Received
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 AUG 31 2015

17.06431



EOW Completion Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Amanda Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Site:	Zellerback/Arnanda Pad	MD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Well:	Amanda Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)		
1,450.0	0.28	262.38	1,450.0	1.9	1.7	-1.0	0.56		
1,475.0	0.17	267.55	1,475.0	1.9	1.6	-1.1	0.45		
1,500.0	0.23	263.49	1,500.0	1.9	1.5	-1.1	0.25		
1,525.0	0.25	280.54	1,525.0	1.9	1.4	-1.1	0.30		
1,550.0	0.31	266.45	1,550.0	1.9	1.2	-1.2	0.36		
1,575.0	0.21	306.98	1,575.0	1.9	1.1	-1.3	0.81		
1,600.0	0.22	298.15	1,600.0	2.0	1.1	-1.3	0.14		
1,625.0	0.18	308.41	1,625.0	2.0	1.0	-1.4	0.21		
1,650.0	0.18	295.18	1,650.0	2.1	0.9	-1.5	0.17		
1,675.0	0.16	322.89	1,675.0	2.1	0.9	-1.5	0.33		
1,700.0	0.25	308.51	1,700.0	2.2	0.8	-1.6	0.41		
1,725.0	0.32	297.12	1,725.0	2.2	0.7	-1.7	0.36		
1,750.0	0.16	302.65	1,750.0	2.3	0.6	-1.8	0.65		
1,775.0	0.37	307.95	1,775.0	2.4	0.5	-1.9	0.84		
1,800.0	0.38	307.45	1,800.0	2.5	0.4	-2.1	0.04		
1,825.0	0.23	307.37	1,825.0	2.5	0.3	-2.2	0.60		
1,850.0	0.34	305.61	1,850.0	2.6	0.2	-2.3	0.44		
1,875.0	0.40	312.65	1,875.0	2.7	0.1	-2.4	0.30		
1,900.0	0.45	334.71	1,900.0	2.9	-0.1	-2.6	0.68		
1,925.0	0.47	325.71	1,925.0	3.0	-0.2	-2.8	0.30		
1,950.0	0.43	319.01	1,950.0	3.2	-0.3	-3.0	0.26		
1,975.0	0.50	324.63	1,975.0	3.4	-0.4	-3.2	0.33		
2,000.0	0.46	330.06	2,000.0	3.5	-0.5	-3.4	0.24		
2,025.0	0.57	319.60	2,025.0	3.7	-0.6	-3.6	0.58		
2,050.0	0.47	342.59	2,050.0	3.9	-0.8	-3.9	0.92		
2,075.0	0.39	327.51	2,075.0	4.1	-0.8	-4.0	0.55		
2,100.0	0.51	307.74	2,100.0	4.2	-1.0	-4.2	0.78		
2,125.0	0.49	325.83	2,125.0	4.4	-1.1	-4.4	0.63		
2,150.0	0.45	316.25	2,150.0	4.5	-1.2	-4.6	0.35		
2,175.0	0.48	321.47	2,175.0	4.7	-1.4	-4.8	0.21		
2,200.0	0.63	311.46	2,200.0	4.9	-1.5	-5.0	0.71		
2,225.0	0.65	316.00	2,225.0	5.1	-1.7	-5.3	0.22		
2,250.0	0.67	313.48	2,250.0	5.3	-1.9	-5.6	0.14		
2,275.0	0.65	329.47	2,275.0	5.5	-2.1	-5.9	0.74		
2,300.0	0.88	312.03	2,300.0	5.7	-2.3	-6.2	1.30		
2,325.0	0.72	329.47	2,325.0	6.0	-2.6	-6.5	1.16		
2,350.0	0.74	333.90	2,350.0	6.3	-2.7	-6.8	0.24		
2,375.0	0.76	325.42	2,375.0	6.6	-2.9	-7.2	0.45		
2,400.0	0.87	319.72	2,400.0	6.8	-3.1	-7.5	0.55		
2,425.0	0.70	331.95	2,425.0	7.1	-3.3	-7.8	0.95		
2,450.0	0.74	351.84	2,450.0	7.4	-3.4	-8.1	1.01		
2,475.0	0.71	326.88	2,475.0	7.7	-3.5	-8.5	1.26		
2,500.0	0.69	339.63	2,500.0	8.0	-3.6	-8.8	0.63		
2,525.0	0.67	330.27	2,525.0	8.2	-3.8	-9.1	0.45		
2,550.0	0.60	337.51	2,549.9	8.5	-3.9	-9.3	0.43		

Received
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AUG 31 2015

17-06431



EOW Completion Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Amanda Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Site:	Zellerback/Arnanda Pad	MD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Well:	Amanda Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
2,575.0	0.65	335.11	2,574.9	8.7	-4.0	-9.6	0.23	
2,600.0	0.62	327.44	2,599.9	9.0	-4.1	-9.9	0.36	
2,625.0	0.61	325.70	2,624.9	9.2	-4.3	-10.1	0.08	
2,650.0	0.59	323.01	2,649.9	9.4	-4.4	-10.4	0.14	
2,675.0	0.60	316.64	2,674.9	9.6	-4.6	-10.6	0.27	
2,700.0	0.72	315.35	2,699.9	9.8	-4.8	-10.9	0.48	
2,725.0	0.74	316.41	2,724.9	10.0	-5.0	-11.2	0.10	
2,750.0	0.85	315.08	2,749.9	10.3	-5.2	-11.6	0.45	
2,775.0	0.85	320.56	2,774.9	10.6	-5.5	-11.9	0.33	
2,800.0	0.82	321.90	2,799.9	10.9	-5.7	-12.3	0.14	
2,825.0	0.87	324.99	2,824.9	11.2	-5.9	-12.6	0.27	
2,850.0	0.76	306.33	2,849.9	11.4	-6.2	-13.0	1.14	
2,875.0	0.82	309.32	2,874.9	11.6	-6.5	-13.3	0.29	
2,900.0	0.93	309.61	2,899.9	11.9	-6.8	-13.6	0.44	
2,925.0	0.93	311.34	2,924.9	12.1	-7.1	-14.0	0.11	
2,950.0	0.94	312.94	2,949.9	12.4	-7.4	-14.4	0.11	
2,975.0	0.96	311.36	2,974.9	12.7	-7.7	-14.7	0.13	
3,000.0	1.07	313.72	2,999.9	13.0	-8.0	-15.2	0.47	
3,025.0	1.02	311.27	3,024.9	13.3	-8.3	-15.6	0.27	
3,050.0	0.98	313.70	3,049.9	13.6	-8.7	-16.0	0.23	
3,075.0	0.96	318.73	3,074.9	13.9	-8.9	-16.4	0.35	
3,100.0	0.91	312.84	3,099.9	14.2	-9.2	-16.8	0.43	
3,125.0	0.85	304.65	3,124.9	14.4	-9.5	-17.1	0.56	
3,150.0	0.87	306.58	3,149.9	14.6	-9.8	-17.4	0.14	
3,175.0	0.88	306.18	3,174.9	14.9	-10.1	-17.8	0.05	
3,200.0	0.77	301.70	3,199.9	15.1	-10.4	-18.1	0.51	
3,225.0	0.79	304.11	3,224.9	15.2	-10.7	-18.4	0.15	
3,250.0	0.72	303.86	3,249.9	15.4	-11.0	-18.7	0.28	
3,275.0	0.83	298.09	3,274.9	15.6	-11.3	-18.9	0.54	
3,300.0	0.73	307.54	3,299.9	15.8	-11.6	-19.2	0.65	
3,325.0	0.61	310.60	3,324.9	16.0	-11.8	-19.5	0.50	
3,350.0	0.54	307.81	3,349.9	16.1	-12.0	-19.7	0.30	
3,375.0	0.46	300.07	3,374.9	16.2	-12.2	-19.9	0.42	
3,400.0	0.61	301.69	3,399.9	16.4	-12.4	-20.1	0.60	
3,425.0	0.57	302.81	3,424.9	16.5	-12.6	-20.3	0.17	
3,450.0	0.60	298.53	3,449.9	16.6	-12.8	-20.5	0.21	
3,475.0	0.65	306.57	3,474.9	16.8	-13.0	-20.8	0.40	
3,500.0	0.67	316.98	3,499.9	17.0	-13.3	-21.1	0.49	
3,525.0	0.60	290.43	3,524.9	17.1	-13.5	-21.3	1.20	
3,550.0	0.47	300.27	3,549.9	17.2	-13.7	-21.4	0.63	
3,575.0	0.57	294.25	3,574.9	17.3	-13.9	-21.6	0.46	
3,600.0	0.50	293.89	3,599.9	17.4	-14.1	-21.8	0.28	
3,625.0	0.62	298.77	3,624.9	17.5	-14.3	-22.0	0.52	
3,650.0	0.35	302.69	3,649.9	17.6	-14.5	-22.2	1.09	

Received
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AUG 11 2015

17.06431



EOW Completion Report



Company: Antero Resources	Local Co-ordinate Reference: Well Amanda Unit 1H
Project: Doddridge County WV	TVD Reference: Precision 523: 989' GL + 19' KB @ 1008.0usft
Site: Zellerback/Arnanda Pad	MD Reference: Precision 523: 989' GL + 19' KB @ 1008.0usft
Well: Amanda Unit 1H	North Reference: Grid
Wellbore: Original Wellpath	Survey Calculation Method: Minimum Curvature
Design: As Drilled	Database: Oklahoma District

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
3,675.0	0.63	302.45	3,674.9	17.8	-14.7	-22.3	1.12
3,700.0	0.53	291.78	3,699.9	17.9	-14.9	-22.5	0.59
3,725.0	0.39	313.02	3,724.9	18.0	-15.1	-22.7	0.87
3,750.0	0.47	334.82	3,749.8	18.1	-15.2	-22.9	0.72
3,775.0	0.65	315.96	3,774.8	18.3	-15.3	-23.1	1.02
3,800.0	0.71	305.03	3,799.8	18.5	-15.6	-23.4	0.57
3,825.0	0.55	316.20	3,824.8	18.7	-15.8	-23.6	0.80
3,850.0	0.74	296.69	3,849.8	18.8	-16.0	-23.9	1.15
3,875.0	0.61	305.76	3,874.8	19.0	-16.2	-24.1	0.67
3,900.0	0.60	329.44	3,899.8	19.2	-16.4	-24.4	0.99
3,925.0	0.89	341.06	3,924.8	19.5	-16.5	-24.7	1.30
3,950.0	1.02	341.79	3,949.8	19.9	-16.7	-25.1	0.52
3,975.0	1.14	332.86	3,974.8	20.3	-16.9	-25.6	0.83
4,000.0	0.79	313.87	3,999.8	20.6	-17.1	-26.0	1.88
4,025.0	0.53	238.72	4,024.8	20.7	-17.3	-26.1	3.32
4,050.0	0.94	198.97	4,049.8	20.5	-17.5	-26.0	2.52
4,075.0	2.15	181.98	4,074.8	19.8	-17.6	-25.4	5.12
4,100.0	3.32	178.05	4,099.8	18.6	-17.6	-24.3	4.74
4,125.0	4.49	174.39	4,124.7	16.9	-17.4	-22.8	4.78
4,150.0	4.87	172.30	4,149.6	14.9	-17.2	-20.8	1.67
4,175.0	4.88	171.71	4,174.6	12.8	-16.9	-18.8	0.20
4,200.0	5.00	172.06	4,199.5	10.6	-16.6	-16.7	0.49
4,225.0	5.07	172.23	4,224.4	8.5	-16.3	-14.7	0.29
4,250.0	5.07	172.39	4,249.3	6.3	-16.0	-12.6	0.06
4,275.0	5.09	170.42	4,274.2	4.1	-15.7	-10.4	0.70
4,300.0	5.14	171.51	4,299.1	1.9	-15.3	-8.3	0.44
4,325.0	5.10	170.22	4,324.0	-0.3	-15.0	-6.2	0.49
4,350.0	5.08	169.33	4,348.9	-2.5	-14.6	-4.0	0.33
4,375.0	5.08	168.78	4,373.8	-4.7	-14.2	-1.9	0.19
4,400.0	5.03	167.25	4,398.7	-6.8	-13.7	0.3	0.58
4,425.0	5.13	168.28	4,423.6	-9.0	-13.2	2.4	0.54
4,450.0	5.09	167.64	4,448.5	-11.2	-12.8	4.6	0.28
4,475.0	5.05	167.79	4,473.4	-13.3	-12.3	6.7	0.17
4,500.0	4.54	166.44	4,498.3	-15.4	-11.8	8.8	2.09
4,525.0	3.77	164.16	4,523.2	-17.1	-11.4	10.6	3.15
4,550.0	3.05	159.78	4,548.2	-18.5	-10.9	12.0	3.06
4,575.0	2.35	152.87	4,573.2	-19.6	-10.5	13.2	3.08
4,600.0	2.20	149.50	4,598.1	-20.5	-10.0	14.2	0.80
4,625.0	2.03	146.03	4,623.1	-21.3	-9.5	15.1	0.65
4,650.0	1.78	140.76	4,648.1	-21.9	-9.0	15.9	1.22
4,675.0	1.62	132.39	4,673.1	-22.5	-8.5	16.6	1.18
4,700.0	1.76	135.40	4,698.1	-23.0	-8.0	17.3	0.66
4,725.0	1.77	134.25	4,723.1	-23.5	-7.4	18.0	0.15
4,750.0	1.65	130.30	4,748.1	-24.0	-6.9	18.7	0.67

Received
Office of Oil & Gas
Aug 31 2015

17-0643)



EOW Completion Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Amanda Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Site:	Zellerback/Amanda Pad	MD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Well:	Amanda Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)		TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
4,775.0	1.59	134.22		4,773.0	-24.5	-6.3	19.4		0.50
4,800.0	1.35	125.96		4,798.0	-24.9	-5.9	20.0		1.28
4,825.0	0.86	92.73		4,823.0	-25.1	-5.4	20.3		3.15
4,850.0	0.74	59.26		4,848.0	-25.0	-5.1	20.4		1.90
4,875.0	0.79	49.18		4,873.0	-24.8	-4.8	20.3		0.57
4,900.0	0.85	30.01		4,898.0	-24.6	-4.6	20.2		1.12
4,925.0	1.25	21.04		4,923.0	-24.1	-4.4	19.9		1.73
4,950.0	1.10	18.29		4,948.0	-23.7	-4.2	19.5		0.64
4,975.0	1.19	21.05		4,973.0	-23.2	-4.1	19.2		0.42
5,000.0	1.17	23.37		4,998.0	-22.7	-3.9	18.8		0.21
5,025.0	1.22	18.40		5,023.0	-22.2	-3.7	18.5		0.46
5,050.0	1.29	21.19		5,048.0	-21.7	-3.5	18.1		0.37
5,075.0	1.56	19.47		5,073.0	-21.1	-3.3	17.7		1.09
5,100.0	1.52	11.92		5,098.0	-20.5	-3.1	17.1		0.83
5,125.0	1.36	16.08		5,123.0	-19.9	-3.0	16.7		0.76
5,150.0	1.42	17.91		5,148.0	-19.3	-2.8	16.2		0.30
5,175.0	0.96	21.67		5,173.0	-18.8	-2.6	15.8		1.87
5,200.0	0.64	12.09		5,198.0	-18.5	-2.5	15.6		1.38
5,225.0	0.49	34.58		5,223.0	-18.2	-2.4	15.4		1.06
5,250.0	0.37	46.05		5,248.0	-18.1	-2.3	15.4		0.59
5,275.0	0.39	28.21		5,273.0	-18.0	-2.2	15.3		0.48
5,300.0	0.33	8.67		5,298.0	-17.8	-2.2	15.2		0.54
5,316.0	0.39	352.41		5,314.0	-17.7	-2.2	15.1		0.74
5,374.0	0.85	15.57		5,372.0	-17.1	-2.1	14.6		0.89
5,404.0	0.84	3.50		5,401.9	-16.7	-2.0	14.2		0.59
5,434.0	0.97	17.73		5,431.9	-16.2	-1.9	13.8		0.86
5,464.0	0.97	11.84		5,461.9	-15.7	-1.8	13.4		0.33
5,493.0	1.02	4.94		5,490.9	-15.2	-1.7	13.0		0.45
5,523.0	0.75	18.04		5,520.9	-14.8	-1.6	12.6		1.12
5,553.0	1.24	288.64		5,550.9	-14.5	-1.9	12.3		4.81
5,583.0	5.70	280.14		5,580.9	-14.1	-3.6	11.2		14.92
5,613.0	9.83	280.91		5,610.6	-13.4	-7.6	8.8		13.77
5,643.0	13.55	282.74		5,640.0	-12.1	-13.6	5.1		12.46
5,673.0	17.22	282.13		5,668.9	-10.4	-21.3	0.2		12.25
5,703.0	20.67	281.76		5,697.2	-8.4	-30.9	-5.7		11.51
5,733.0	24.26	280.75		5,725.0	-6.2	-42.1	-12.5		12.04
5,762.0	28.10	280.32		5,751.0	-3.8	-54.7	-20.1		13.26
5,792.0	32.06	280.26		5,776.9	-1.1	-69.5	-28.8		13.20
5,822.0	35.26	279.91		5,801.9	1.8	-85.8	-38.5		10.69
5,852.0	37.99	279.56		5,826.0	4.8	-103.5	-48.8		8.13
5,882.0	41.49	279.86		5,849.0	8.0	-122.4	-59.9		11.68
5,912.0	44.49	279.59		5,871.0	11.5	-142.5	-71.6		10.02
5,942.0	47.00	278.64		5,891.9	14.9	-163.8	-83.8		15.67
5,972.0	46.26	276.40		5,912.5	17.7	-185.4	-95.7		5.96

Received
Office of Oil & Gas
AUG 31 2015

17-06431



EOW Completion Report



Company: Antero Resources	Local Co-ordinate Reference: Well Amanda Unit 1H
Project: Doddridge County WV	TVD Reference: Precision 523: 989' GL + 19' KB @ 1008.0usft
Site: Zellerback/Arnanda Pad	MD Reference: Precision 523: 989' GL + 19' KB @ 1008.0usft
Well: Amanda Unit 1H	North Reference: Grid
Wellbore: Original Wellpath	Survey Calculation Method: Minimum Curvature
Design: As Drilled	Database: Oklahoma District

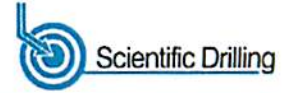
Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)		TVD (usft)	N/S (usft)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)
6,002.0	43.21	271.44	271.44	5,933.8	19.2	-206.4	-106.1	15.45
6,031.0	41.37	264.93	264.93	5,955.3	18.6	-225.9	-113.9	16.38
6,061.0	40.27	259.16	259.16	5,978.0	15.9	-245.3	-119.8	13.09
6,091.0	39.31	254.26	254.26	6,001.1	11.5	-264.0	-123.9	10.93
6,121.0	38.75	248.56	248.56	6,024.4	5.5	-281.9	-126.1	12.11
6,151.0	39.18	243.56	243.56	6,047.7	-2.2	-299.1	-126.6	10.58
6,181.0	40.59	239.62	239.62	6,070.7	-11.3	-316.0	-125.6	9.64
6,186.0	40.75	238.95	238.95	6,074.5	-13.0	-318.8	-125.3	9.33
SCMR								
6,211.0	41.62	235.66	235.66	6,093.3	-21.9	-332.7	-123.3	9.33
6,241.0	42.38	231.24	231.24	6,115.6	-33.8	-348.8	-119.4	10.18
6,271.0	42.83	226.84	226.84	6,137.7	-47.1	-364.1	-114.0	10.04
6,300.0	43.26	223.25	223.25	6,158.9	-61.1	-378.1	-107.4	8.58
6,330.0	43.84	218.88	218.88	6,180.7	-76.7	-391.7	-99.1	10.22
6,360.0	44.88	214.77	214.77	6,202.1	-93.5	-404.2	-89.4	10.19
6,390.0	46.06	211.40	211.40	6,223.2	-111.4	-415.9	-78.2	8.92
6,402.0	46.42	209.77	209.77	6,231.5	-118.9	-420.3	-73.4	10.25
MDLX								
6,420.0	47.01	207.37	207.37	6,243.8	-130.4	-426.6	-65.7	10.25
6,450.0	48.40	202.28	202.28	6,264.0	-150.5	-435.9	-51.5	13.38
6,480.0	51.07	197.70	197.70	6,283.4	-172.0	-443.7	-35.4	14.66
6,510.0	53.63	194.26	194.26	6,301.7	-194.8	-450.2	-17.6	12.46
6,540.0	55.71	191.92	191.92	6,319.1	-218.7	-455.7	1.5	9.41
6,569.0	59.01	188.86	188.86	6,334.7	-242.7	-460.1	21.3	14.44
6,590.0	61.27	186.60	186.60	6,345.2	-260.7	-462.6	36.6	14.25
BRKT								
6,599.0	62.25	185.66	185.66	6,349.4	-268.6	-463.4	43.3	14.25
6,629.0	64.61	181.92	181.92	6,362.9	-295.4	-465.2	66.7	13.64
6,659.0	66.04	178.02	178.02	6,375.4	-322.6	-465.2	91.3	12.74
6,669.0	66.73	176.62	176.62	6,379.4	-331.8	-464.7	99.8	14.55
TLLY								
6,689.0	68.15	173.87	173.87	6,387.1	-350.2	-463.2	117.1	14.55
6,719.0	70.77	171.08	171.08	6,397.6	-378.0	-459.5	143.8	12.33
6,734.0	72.24	170.15	170.15	6,402.3	-392.1	-457.2	157.5	11.43
HMLN								
6,748.0	73.62	169.30	169.30	6,406.5	-405.2	-454.8	170.4	11.43
6,756.0	74.32	168.81	168.81	6,408.7	-412.8	-453.4	177.8	10.55
MRCL_HOT								
6,778.0	76.26	167.49	167.49	6,414.3	-433.6	-449.0	198.5	10.55
6,808.0	79.51	164.87	164.87	6,420.5	-462.1	-442.0	227.2	13.79
6,838.0	81.94	162.12	162.12	6,425.4	-490.5	-433.6	256.5	12.14
6,868.0	83.38	160.36	160.36	6,429.2	-518.6	-424.0	286.0	7.54
6,906.0	85.47	157.59	157.59	6,432.9	-553.9	-410.4	323.7	9.10
6,965.0	89.70	150.67	150.67	6,435.4	-606.9	-384.7	382.6	13.74
7,060.0	88.86	151.89	151.89	6,436.6	-690.2	-339.1	477.4	1.56

Received
Office of Oil & Gas
AUG 31 2015

17-06431



EOW Completion Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Amanda Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Site:	Zellerback/Arnanda Pad	MD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Well:	Amanda Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
7,150.0	88.79	154.39	6,438.4	-770.5	-298.4	567.4	2.78	
7,239.0	88.63	155.12	6,440.4	-851.0	-260.5	656.4	0.84	
7,329.0	88.19	155.66	6,442.9	-932.8	-223.0	746.3	0.77	
7,419.0	87.89	155.47	6,446.0	-1,014.7	-185.8	836.3	0.39	
7,508.0	87.59	154.57	6,449.5	-1,095.3	-148.2	925.2	1.07	
7,602.0	88.02	155.95	6,453.1	-1,180.6	-108.9	1,019.1	1.54	
7,696.0	88.52	156.91	6,456.0	-1,266.7	-71.4	1,113.0	1.15	
7,790.0	89.13	156.27	6,457.9	-1,352.9	-34.0	1,206.9	0.94	
7,885.0	89.63	153.63	6,458.9	-1,439.0	6.2	1,301.9	2.83	
7,979.0	89.73	152.73	6,459.4	-1,522.9	48.6	1,395.9	0.96	
8,072.0	88.89	153.81	6,460.6	-1,605.9	90.4	1,488.8	1.47	
8,166.0	88.39	153.35	6,462.8	-1,690.1	132.2	1,582.8	0.72	
8,260.0	89.33	155.22	6,464.7	-1,774.8	173.0	1,676.8	2.23	
8,354.0	89.19	156.35	6,465.9	-1,860.5	211.6	1,770.7	1.21	
8,448.0	88.69	154.14	6,467.6	-1,945.8	250.9	1,864.7	2.41	
8,542.0	89.46	153.95	6,469.1	-2,030.3	292.1	1,958.7	0.84	
8,632.0	89.06	155.23	6,470.3	-2,111.6	330.7	2,048.7	1.49	
8,721.0	89.19	155.97	6,471.7	-2,192.7	367.4	2,137.7	0.84	
8,811.0	89.66	153.52	6,472.6	-2,274.0	405.8	2,227.7	2.77	
8,901.0	89.50	152.26	6,473.2	-2,354.2	446.8	2,317.6	1.41	
8,990.0	89.66	151.90	6,473.9	-2,432.8	488.5	2,406.5	0.44	
9,080.0	88.99	152.53	6,474.9	-2,512.4	530.5	2,496.4	1.02	
9,170.0	88.46	153.15	6,476.9	-2,592.5	571.5	2,586.4	0.91	
9,259.0	88.22	154.61	6,479.5	-2,672.3	610.7	2,675.3	1.66	
9,349.0	88.93	156.30	6,481.8	-2,754.2	648.1	2,765.3	2.04	
9,439.0	89.23	157.76	6,483.2	-2,837.0	683.2	2,855.2	1.66	
9,528.0	89.06	156.19	6,484.5	-2,918.9	718.0	2,944.1	1.77	
9,618.0	89.56	153.89	6,485.6	-3,000.5	756.0	3,034.1	2.62	
9,708.0	89.77	152.53	6,486.1	-3,080.8	796.5	3,124.1	1.53	
9,797.0	89.97	153.63	6,486.3	-3,160.2	836.8	3,213.0	1.26	
9,887.0	89.50	152.91	6,486.8	-3,240.6	877.3	3,303.0	0.96	
9,977.0	88.99	154.88	6,487.9	-3,321.4	916.9	3,393.0	2.26	
10,066.0	89.56	154.76	6,489.1	-3,401.9	954.8	3,482.0	0.65	
10,156.0	89.13	153.70	6,490.1	-3,483.0	993.9	3,572.0	1.27	
10,245.0	88.56	153.80	6,491.9	-3,562.8	1,033.2	3,660.9	0.65	
10,335.0	89.93	154.54	6,493.1	-3,643.8	1,072.4	3,750.9	1.73	
10,424.0	88.86	154.92	6,494.0	-3,724.2	1,110.4	3,839.9	1.28	
10,514.0	88.26	154.75	6,496.3	-3,805.7	1,148.7	3,929.9	0.69	
10,604.0	89.46	155.21	6,498.1	-3,887.2	1,186.8	4,019.9	1.43	
10,693.0	89.00	154.52	6,499.3	-3,967.8	1,224.6	4,109.9	0.93	
10,783.0	88.65	154.97	6,501.1	-4,049.2	1,262.9	4,199.8	0.63	
10,873.0	88.56	154.29	6,503.3	-4,130.5	1,301.5	4,288.8	0.76	
10,962.0	89.60	153.12	6,504.7	-4,210.2	1,340.9	4,377.8	1.76	
11,052.0	88.52	153.16	6,506.2	-4,290.5	1,381.6	4,467.7	1.20	

Received
Office of Oil & Gas
AUG 31 2015

17-06431



EOW Completion Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well Amanda Unit 1H
Project:	Doddridge County WV	TVD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Site:	Zellerback/Amanda Pad	MD Reference:	Precision 523: 989' GL + 19' KB @ 1008.0usft
Well:	Amanda Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
11,142.0	89.30	154.85	6,507.9	-4,371.4	1,421.0	4,557.7	2.07
11,231.0	89.39	155.40	6,508.9	-4,452.1	1,458.4	4,646.7	0.63
11,321.0	89.93	154.05	6,509.5	-4,533.5	1,496.9	4,736.7	1.62
11,411.0	89.19	156.71	6,510.2	-4,615.3	1,534.4	4,826.7	3.07
11,500.0	89.33	155.74	6,511.3	-4,696.8	1,570.2	4,915.6	1.10
11,590.0	89.76	156.95	6,512.0	-4,779.2	1,606.3	5,005.6	1.43
11,680.0	89.43	155.24	6,512.7	-4,861.5	1,642.8	5,095.6	1.94
11,769.0	89.33	154.66	6,513.6	-4,942.1	1,680.5	5,184.5	0.66
11,859.0	89.70	154.03	6,514.4	-5,023.2	1,719.5	5,274.5	0.81
11,949.0	89.93	152.99	6,514.7	-5,103.8	1,759.6	5,364.5	1.18
12,038.0	90.17	150.13	6,514.6	-5,182.0	1,802.0	5,453.4	3.22
12,128.0	91.51	152.98	6,513.3	-5,261.1	1,844.8	5,543.3	3.50
12,218.0	90.40	153.40	6,511.8	-5,341.4	1,885.4	5,633.2	1.32
12,307.0	92.25	157.76	6,509.7	-5,422.4	1,922.2	5,722.1	5.32
12,397.0	91.07	157.37	6,507.1	-5,505.6	1,956.5	5,812.0	1.38
12,487.0	91.21	157.20	6,505.3	-5,588.6	1,991.3	5,901.9	0.24
12,576.0	90.43	156.99	6,504.1	-5,670.6	2,025.9	5,990.8	0.91
12,667.0	90.70	155.98	6,503.2	-5,754.0	2,062.2	6,081.7	1.15
12,756.0	90.03	155.75	6,502.6	-5,835.2	2,098.6	6,170.7	0.80
12,846.0	89.16	156.23	6,503.2	-5,917.4	2,135.2	6,260.6	1.10
12,903.0	88.79	156.11	6,504.2	-5,969.6	2,158.3	6,317.6	0.68
12,960.0	88.79	156.11	6,505.4	-6,021.7	2,181.3	6,374.6	0.00

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,186.0	6,074.5	-13.0	-318.8	SCMR
6,402.0	6,231.5	-118.9	-420.3	MDLX
6,590.0	6,345.2	-260.7	-462.6	BRKT
6,669.0	6,379.4	-331.8	-464.7	TLLY
6,734.0	6,402.3	-392.1	-457.2	HMLN
6,756.0	6,408.7	-412.8	-453.4	MRCL_HOT

Checked By: _____ Approved By: _____ Date: _____

Received
Office of Oil & Gas
AUG 31 2015

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	11/2/2014
Job End Date:	11/22/2014
State:	West Virginia
County:	Doddridge
API Number:	47-017-06431-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Amanda Unit 1H
Longitude:	-80.87284700
Latitude:	39.27345800
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,515
Total Base Water Volume (gal):	7,921,074
Total Base Non Water Volume:	357,065



17-06431

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	Antero Resources	Base Fluid	Water	7732-18-5	100.00000	90.10159	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	9.49299	
LGC-15	U.S. Well Services, LLC	Gelling Agents	Guar Gum	9000-30-0	50.00000	0.07706	
			Petroleum Distillates	64742-47-8	60.00000	0.07298	
			Suspending agent (solid)	14808-60-7	3.00000	0.01179	
			Surfactant	68439-51-0	3.00000	0.00462	
HCL Acid (12.6%-18.0%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.50000	0.09570	
			Hydrogen Chloride	7647-01-1	18.00000	0.02286	
WFRA-405	U.S. Well Services, LLC	Friction Reducer	Anionic Polyacrylamide	Proprietary	40.00000	0.02790	
			Water	7732-18-5	40.00000	0.02790	
			Petroleum Distillates	64742-47-8	40.00000	0.02246	
			Ethoxylated alcohol blend	Proprietary	5.00000	0.00349	

Received
 Office of Oil & Gas
 AUG 3 2015

1702431

			Crystalline Salt	12125-02-9	5.00000	0.00349
SI-1100	U.S. Well Services	Scale Inhibitor				
			Di Water	7732-18-5	80.00000	0.01054
			Ethylene Glycol	107-21-1	40.00000	0.00595
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	10.00000	0.00178
			2-Phosphonobutane 1,2,4 tricarboxylic salt	37971-36-1	10.00000	0.00170
			hexamethylenediamine tetra (methylene phosphonic acid)	38820-59-6	10.00000	0.00165
			Copolymer of Maleic and Acrylic acid	26677-99-6	10.00000	0.00155
			bis (hexamethylene) tramine penta (methylene phosphonic acid) - phosphate acid	40623-75-4	10.00000	0.00151
			Acrylic polymer	52255-49-9	5.00000	0.00066
K-BAC 1020	U.S. Well Services, LLC	Anti-Bacterial Agent				
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00439
			Deionized Water	7732-18-5	28.00000	0.00251
AP One	U.S. Well Services, LLC	Gel Breakers				
			Ammonium Persulfate	7727-54-0	100.00000	0.00253
AI-301	U.S. Well Services, LLC	Acid Corrosion Inhibitors				
			Diethylene Glycol	111-46-6	30.00000	0.00015
			Methenamine	100-97-0	20.00000	0.00012
			Hydrogen Chloride	7647-01-0	10.00000	0.00005
			Polyethylene polyamine	68603-67-8	10.00000	0.00005
			Coco amine	61791-14-8	5.00000	0.00002

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.

* 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)

Received
 Office of Oil & Gas
 AUG 31 2015

LATITUDE 39°17'30"

11,235'

9,064' TO BOTTOM HOLE

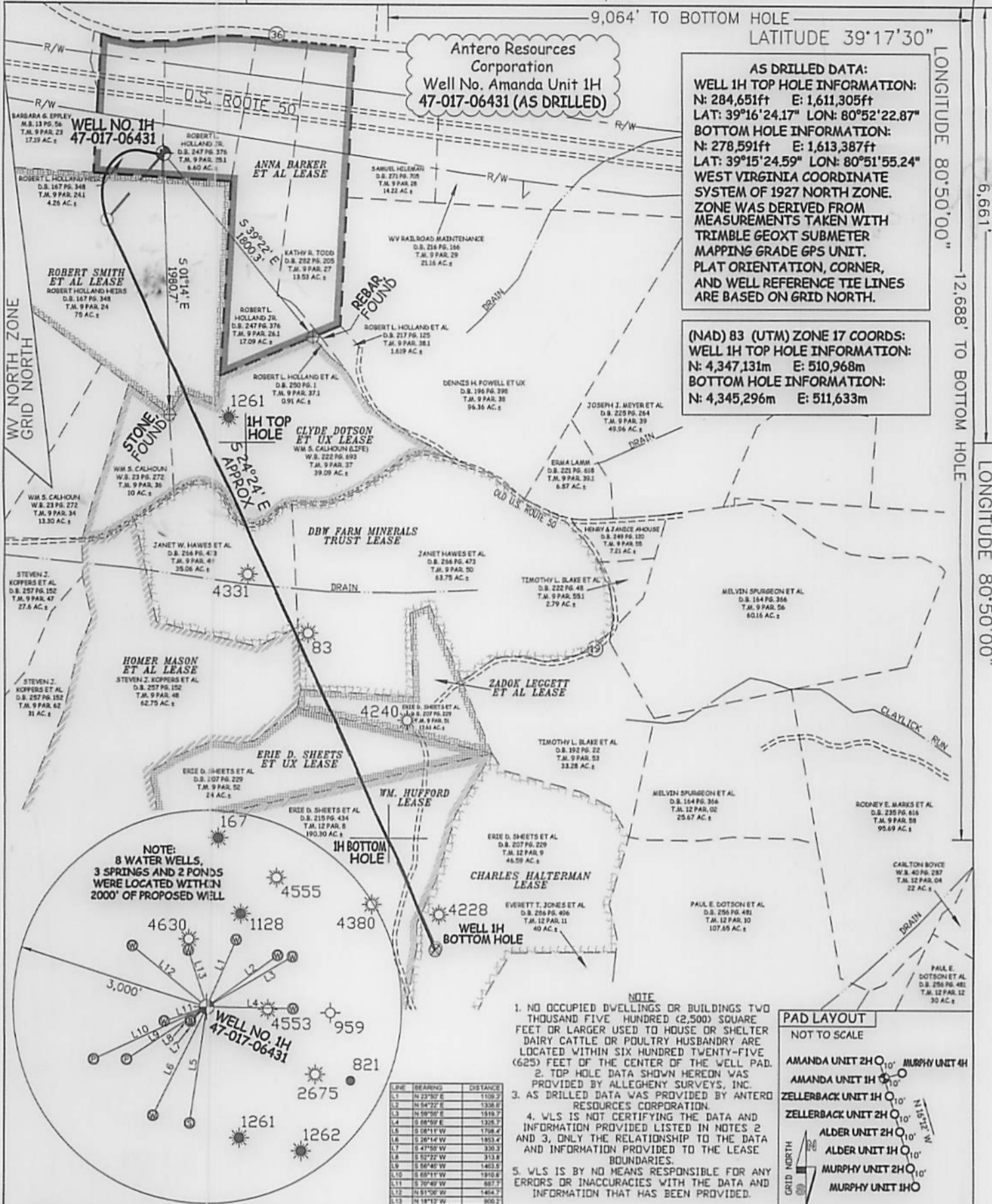
LATITUDE 39°17'30"

LONGITUDE 80°50'00"

6,661'

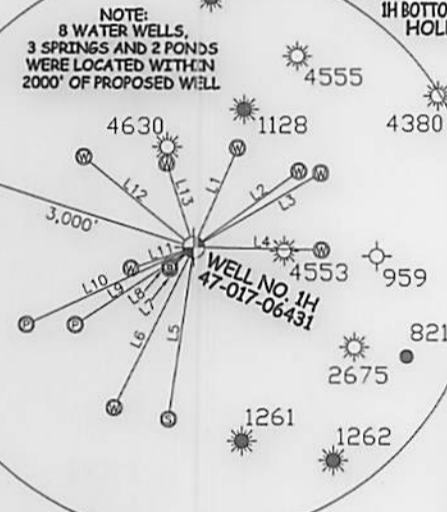
12,688' TO BOTTOM HOLE

LONGITUDE 80°50'00"



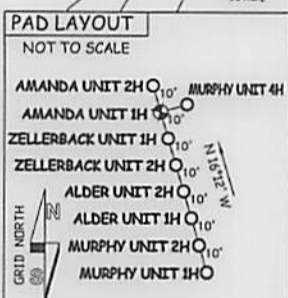
AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
 N: 284,651ft E: 1,611,305ft
 LAT: 39°16'24.17" LON: 80°52'22.87"
BOTTOM HOLE INFORMATION:
 N: 278,591ft E: 1,613,387ft
 LAT: 39°15'24.59" LON: 80°51'55.24"
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE.
 ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:
WELL 1H TOP HOLE INFORMATION:
 N: 4,347,131m E: 510,968m
BOTTOM HOLE INFORMATION:
 N: 4,345,296m E: 511,633m



LINE	BEARING	DISTANCE
L1	N 23°30' E	1109.2
L2	N 84°22' E	1338.8
L3	N 59°50' E	1519.7
L4	S 83°59' E	1325.2
L5	S 20°11' W	1708.4
L6	S 20°14' W	1953.4
L7	S 47°58' W	330.3
L8	S 52°22' W	313.8
L9	S 56°48' W	1453.3
L10	S 65°11' W	1910.6
L11	S 70°49' W	687.7
L12	N 81°36' W	1484.7
L13	N 18°13' W	905.7

- NOTE**
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.



JOB # 13-061WA
 DRAWING # AMANDA1HAD
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY SUBMETER
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS



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

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

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS
 WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X
 LOCATION: ELEVATION 990' ORIGINAL - 989' AS DRILLED WATERSHED NORTH FORK HUGHES RIVER
 QUADRANGLE WEST UNION 7.5 DISTRICT CENTRAL COUNTY DODDRIDGE
 SURFACE OWNER ROBERT L. HOLLAND JR. ACREAGE 6.60 ACRES +/-
 OIL & GAS ROYALTY OWNER ANNA BARKER ET AL; ROBERT SMITH ET AL; CLYDE DOTSON ET UX; LEASE ACREAGE 127 ACRES +/-; 75 ACRES +/-; 50 ACRES +/-
 DBV FARM MINERALS TRUST; HOMER MASON ET AL; ZADOK LEGGETT ET AL; ERIE D. SHEETS ET UX; WILLIAM HUFFORD; CHARLES HALTERMAN 98 ACRES +/-; 62 ACRES +/-; 13.61 ACRES +/-; 24 ACRES +/-; 141 ACRES +/-; 47.17 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 6,505' TVD 12,960' 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

DATE 06/15/15
 OPERATOR'S WELL# AMANDA UNIT #1H
 API WELL # 47 - 017 - 06431
 STATE COUNTY PERMIT
 16/23/2015