WR-35
Rev. 8/23/13

Reviewed

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RECEIVED
Office of Oil and Gas
JAN 22 2018
WV Department of
Environmental Protection

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

API 47 - 017 - 06378 County Doddridge District Greenbrier
Quad Big Isaac 7.5' Pad Name Hughes Pad Field/Pool Name -----
Farm name Eric E. Nelson, et al Well Number McClain Unit 1H
Operator (as registered with the OOG) Antero Resources Corporation
Address 1615 Wynkoop Street City Denver State CO Zip 80202

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4341195m Easting 532756m
Landing Point of Curve Northing 4341062.241m Easting 532939.069m
Bottom Hole Northing 4338814m Easting 533662m

Elevation (ft) 1332' 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 10/28/2013 Date drilling commenced 09/25/2014 Date drilling ceased 12/16/2014
Date completion activities began 06/29/2017 Date completion activities ceased 08/30/2017
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 36', 109', 112' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1091', 1150' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 390', 964', 1648', 1948' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

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API 47- 017 - 06378 Farm name Eric E. Nelson, et al Well number McClain Unit 1H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24"	20"	52'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	557'	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"	15619'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	7510'		4.7#, P-110		
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	150 sx	15.6	1.18	177	0'	8 Hrs.
Surface	Class A	707 sx	15.6	1.18	834	0'	8 Hrs.
Coal							
Intermediate 1	Class A	955 sx	15.6	1.18	1127	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1118 sx (Lead) 1308 sx (Tail)	14.5 (Lead), 15.2 (Tail)	1.3 (Lead), 1.86 (Tail)	3886	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15619' MD, 7343' TVD (BHL) & 7362' TVD (Deepest Point Drilled) Loggers TD (ft) 15572' MD

Deepest formation penetrated Marcellus Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 6583'

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (McClain Unit 1API #47-017-06378). Please reference the wireline logs submitted with Form WR-35 for McClain Unit 1H. A Cement Bond Log has been included with this submittal.

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

Well cored □ Yes ■ No Conventional Sidewall Were cuttings collected □ Yes ■ No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING

Conductor - 0

Surface - 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface

Intermediate - 1 above float joint, 1 above float collar, 1 every 4th joint to surface

Production - 1 above float joint, 1 below float collar, 1 every 3rd joint to top of cement

WAS WELL COMPLETED AS SHOT HOLE □ Yes ■ No DETAILS

WAS WELL COMPLETED OPEN HOLE? □ Yes ■ No DETAILS

WERE TRACERS USED □ Yes ■ No TYPE OF TRACER(S) USED N/A

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API 47- 017 - 06378 Farm name Eric E. Nelson, et al Well number McClain Unit 1H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)

***PLEASE SEE ATTACHED EXHIBIT 1**

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)

***PLEASE SEE ATTACHED EXHIBIT 2**

Please insert additional pages as applicable.

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PRODUCING FORMATION(S)	DEPTHS			
Marcellus	7323' (TOP)	TVD	7600' (TOP)	MD

Please insert additional pages as applicable.

GAS TEST ☐ Build up ☐ Drawdown ■ Open Flow OIL TEST ■ Flow ☐ Pump

SHUT-IN PRESSURE Surface 3950 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 14074 mcfpd Oil 7 bpd NGL --- bpd Water 554 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_2S, ETC)

***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

Drilling Contractor Precision Drilling Company, LP
Address 562 Spring Run Rd City Pennsboro State WV Zip 26415

Logging Company Allied Horizontal Wireline Services
Address 381 Colonial Manor Rd City North Huntingdon State PA Zip 15642

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 Drive City Jane Lew State WV Zip 26378

Please insert additional pages as applicable.

Completed by Samantha Klaas Telephone 303-357-6759
Signature Title Permitting Agent Date 01/19/2018

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

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API 47-017-06378 Farm Name Eric E. Nelson, et al Well Number McClain Unit 1H					
EXHIBIT 1					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	6/29/2017	15327	15493	48	Marcellus
2	7/16/2017	15130	15296	48	Marcellus
3	7/16/2017	14932	15099	48	Marcellus
4	7/16/2017	14735	14902	48	Marcellus
5	7/17/2017	14538	14704	48	Marcellus
6	7/17/2017	14341	14507	48	Marcellus
7	7/17/2017	14143	14310	48	Marcellus
8	7/17/2017	13946	14112	48	Marcellus
9	7/17/2017	13749	13915	48	Marcellus
10	7/18/2017	13551	13718	48	Marcellus
11	7/18/2017	13354	13521	48	Marcellus
12	7/18/2017	13157	13323	48	Marcellus
13	7/18/2017	12960	13126	48	Marcellus
14	7/19/2017	12762	12929	48	Marcellus
15	7/19/2017	12565	12731	48	Marcellus
16	7/19/2017	12368	12534	48	Marcellus
17	7/19/2017	12171	12337	48	Marcellus
18	7/19/2017	11973	12140	48	Marcellus
19	7/20/2017	11776	11942	48	Marcellus
20	7/20/2017	11579	11745	48	Marcellus
21	7/20/2017	11381	11548	48	Marcellus
22	7/20/2017	11184	11351	48	Marcellus
23	7/20/2017	10987	11153	48	Marcellus
24	7/21/2017	10790	10956	48	Marcellus
25	7/21/2017	10592	10759	48	Marcellus
26	7/21/2017	10395	10561	48	Marcellus
27	7/21/2017	10198	10364	48	Marcellus
28	7/22/2017	10000	10167	48	Marcellus
29	7/22/2017	9803	9970	48	Marcellus
30	7/22/2017	9606	9772	48	Marcellus
31	7/23/2017	9409	9575	48	Marcellus
32	7/23/2017	9211	9378	48	Marcellus
33	7/24/2017	9014	9180	48	Marcellus
34	7/24/2017	8817	8983	48	Marcellus
35	7/24/2017	8619	8786	48	Marcellus
36	7/24/2017	8422	8589	48	Marcellus
37	7/24/2017	8225	8391	48	Marcellus
38	7/25/2017	8028	8194	48	Marcellus
39	7/25/2017	7830	7997	48	Marcellus
40	7/25/2017	7633	7799	48	Marcellus

API 47-017-06378 Farm Name Eric E. Nelson, et al Well Number McClain Unit 1H

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	7/16/2017	75.0	8759	7302	4674	204200	8944	N/A
2	7/16/2017	73.1	8235	7221	4939	196720	7752	N/A
3	7/16/2017	70.8	8295	6448	5021	197320	9289	N/A
4	7/16/2017	76.7	8495	7170	4857	198200	8000	N/A
5	7/17/2017	75.6	8804	7782	5690	197800	12705	N/A
6	7/17/2017	73.9	8484	7088	5082	197850	9855	N/A
7	7/17/2017	75.1	8056	6766	5958	198000	9338	N/A
8	7/17/2017	78.6	8562	6920	5919	197750	9752	N/A
9	7/17/2017	79.8	8212	7818	6294	197400	7810	N/A
10	7/18/2017	81.1	8200	7138	6237	197100	7712	N/A
11	7/18/2017	76.5	7938	7246	4957	197500	8367	N/A
12	7/18/2017	76.2	8195	6999	5354	198000	8899	N/A
13	7/18/2017	73.5	7942	7135	5915	197250	8090	N/A
14	7/19/2017	74.2	8070	7460	4721	197500	7762	N/A
15	7/19/2017	73.9	7945	6069	5586	197500	9330	N/A
16	7/19/2017	77.6	8098	7199	5729	197700	9431	N/A
17	7/19/2017	74.1	7809	6348	5776	197250	8726	N/A
18	7/19/2017	74.7	7991	6620	5575	197500	7608	N/A
19	7/20/2017	76.3	8078	6913	5060	197000	8766	N/A
20	7/20/2017	75.8	7940	7203	5121	196300	7721	N/A
21	7/20/2017	77.1	7860	6734	5021	196400	7539	N/A
22	7/20/2017	76.6	7952	7135	5625	196700	7503	N/A
23	7/20/2017	76.7	7720	7110	5186	198000	7633	N/A
24	7/21/2017	66.9	7859	7496	5425	197250	9824	N/A
25	7/21/2017	75.8	7882	7693	4749	197450	7623	N/A
26	7/21/2017	76.4	7921	7188	5604	197900	7609	N/A
27	7/21/2017	78.0	7911	7274	5425	198000	7534	N/A
28	7/22/2017	72.6	7738	6459	4935	198140	7734	N/A
29	7/22/2017	77.7	7678	5668	4992	196900	7516	N/A
30	7/22/2017	73.8	7810	6795	4578	197500	7555	N/A
31	7/23/2017	73.7	7668	6562	4942	197700	7534	N/A
32	7/23/2017	72.8	7478	6659	4778	197100	7525	N/A
33	7/24/2017	70.0	7746	6741	4624	197250	7633	N/A
34	7/24/2017	70.7	7269	6613	5211	199480	7578	N/A
35	7/24/2017	73.9	7540	6630	4985	198250	7442	N/A
36	7/24/2017	72.7	7482	6630	4681	197250	7491	N/A
37	7/24/2017	73.5	7650	6344	5175	198250	7486	N/A
38	7/25/2017	72.0	7448	6816	4982	198980	7562	N/A
39	7/25/2017	74.0	7586	6280	5597	196850	8677	N/A
40	7/25/2017	73.4	7372	6373	5193	198100	7298	N/A
AVG=		**74.8**	**7942**	**6,901**	**5,254**	**7,909,290**	**330,153**	TOTAL

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API 47-017-06378 Farm Name Eric E. Nelson, et al Well Number McClain Unit 1H				
EXHIBIT 3				
LITHOLOGY/ FORMATION	**TOP DEPTH (TVD) From Surface**	**BOTTOM DEPTH (TVD) From Surface**	**TOP DEPTH (MD) From Surface**	**BOTTOM DEPTH (MD) From Surface**
Fresh Water	36'	N/A	36'	N/A
Fresh Water	109'	N/A	109'	N/A
Fresh Water	112'	N/A	112'	N/A
Shale	est. 0	188	est. 0	188
Sandy siltstone	est. 188	390	est. 0	390
Coal	est. 390	408	est. 0	408
Shale	est. 408	488	est. 0	488
Siltstone	est. 488	828	est. 0	828
Shale	est. 828	908	est. 0	908
Sandstone	est. 908	943	est. 0	943
Shale	est. 943	964	est. 0	964
Trace coal	est. 964	986	est. 0	986
Sandy siltstone	est. 986	1348	est. 0	1348
Shale	est. 1348	1588	est. 0	1588
Sandy shale	est. 1588	1648	est. 0	1648
Trace coal	est. 1648	1668	est. 0	1668
Shale	est. 1668	1708	est. 0	1708
Sandstone	est. 1708	1808	est. 0	1808
Silty sandstone	est. 1808	1948	est. 0	1948
Trace coal	est. 1948	1988	est. 0	1988
Silty sandstone	est. 1988	2248	est. 0	2248
Shale	est. 2248	2289	est. 0	2291
Big Lime	2289	2455	2291	2457
Big Injun	2455	2764	2457	2766
Weir	2764	2881	2766	2883
Fifty Foot Sandstone	2881	2979	2883	2981
Gordon	2979	3150	2981	3152
Fifth Sandstone	3150	3189	3152	3191
Bayard	3189	3974	3191	3976
Speechley	3974	4449	3976	4451
Baltown	4449	4738	4451	4740
Bradford	4738	5055	4740	5057
Riley	5055	5273	5057	5275
Benson	5273	5540	5275	5542
Alexander	5540	6855	5542	5325
Sycamore	6855	7024	5325	7074
Middlesex	7024	7165	7074	7265
Burkett	7165	7196	7265	7312
Tully	7196	7323	7312	7600
Marcellus	7323	NA	7600	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.

03/02/2018

Antero Resources

Richard Unit 1H
Doddridge County WV
Northing: 14242012.02
Easting: 1747841.28
As Drilled

Scientific Drilling

To convert Magnetic North to Grid, Subtract 8.82°
To convert True North to Grid, Subtract 0.24°

Azimuths to Grid North
True North: -0.24°
Magnetic North: -8.82°

Magnetic Field
Strength: 52163.9snT
Dip Angle: 66.77°
Date: 10/3/2014
Model: BGGM2014

Precision 523: GL 1331' + KB 19' @ 1350.0usft
Gr: 1331.0

WELL DETAILS Richard Unit 1H
Ground Level: 1331.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	14242012.02	1747841.28	39° 13' 9.508 N	80° 37' 14.538 W

Genie Lightfoot
9:59, January 06 2015

Scientific Drilling
11220 N.W. 10th Street
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:
Hughes Pad:Belton/Carole/Earlewine/Gully/Hughes
Carole/Belton/McClain/Richard/Earlewine/Hughes/Gul

Site Centre Northing: 14242041.55
Easting: 1747814.24

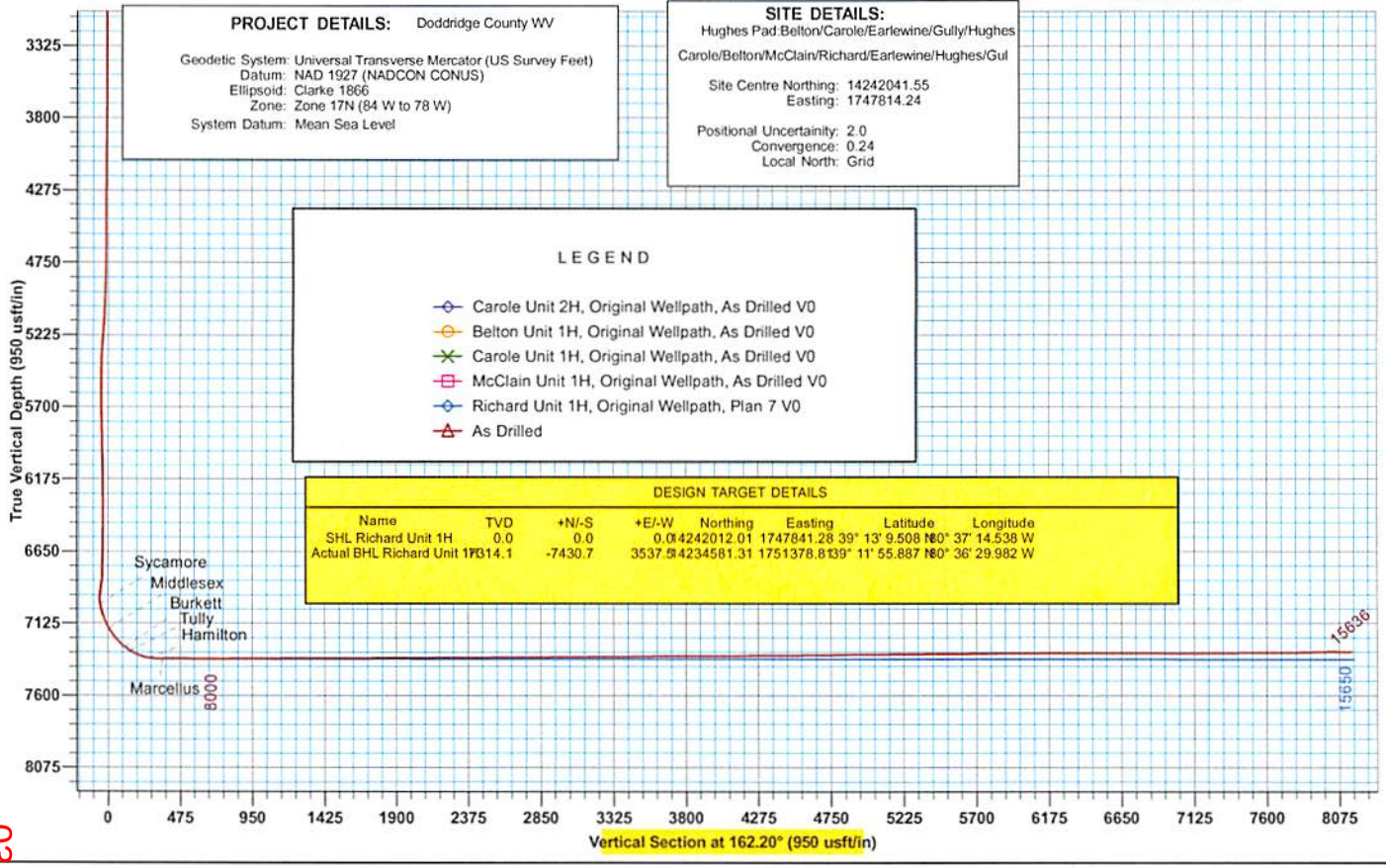
Positional Uncertainity: 2.0
Convergence: 0.24
Local North: Grid

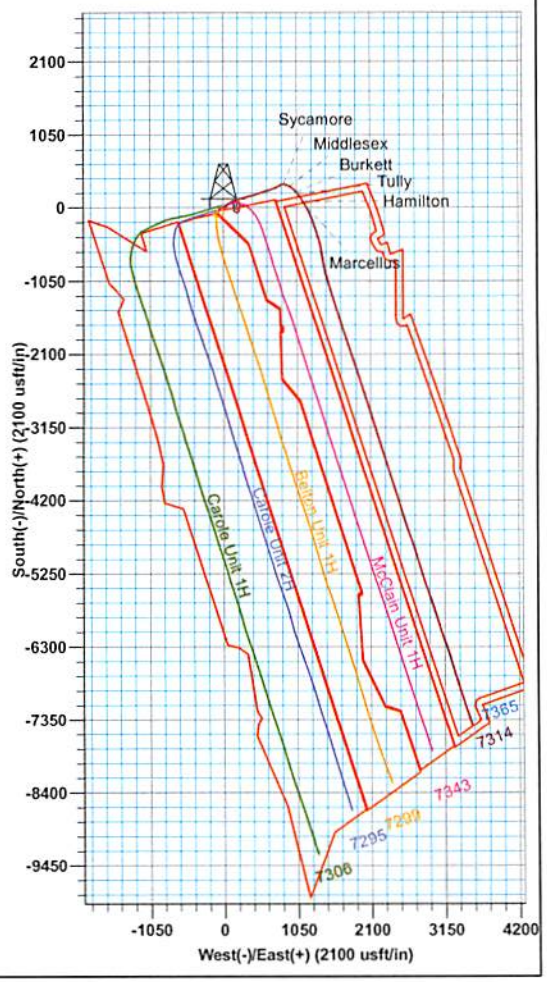
LEGEND

- Carole Unit 2H, Original Wellpath, As Drilled V0
- Belton Unit 1H, Original Wellpath, As Drilled V0
- Carole Unit 1H, Original Wellpath, As Drilled V0
- McClain Unit 1H, Original Wellpath, As Drilled V0
- Richard Unit 1H, Original Wellpath, Plan 7 V0
- As Drilled

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL Richard Unit 1H	0.0	0.0	0.0	14242012.01	1747841.28	39° 13' 9.508 N	80° 37' 14.538 W
Actual BHL Richard Unit 1H	7614.1	-7430.7	3537.5	14234581.31	1751378.81	39° 11' 55.887 N	80° 36' 29.982 W





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Company:	Antero	**Local Co-ordinate Reference:**	Well Richard Unit 1H
Project:	Doddridge County WV	**TVD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Site:	Hughes Pad:Belton/Carole/Earlewine/Gully/Hugh	**MD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Well:	Richard Unit 1H	**North Reference:**	Grid
Wellbore:	Original Wellpath	**Survey Calculation Method:**	Minimum Curvature
Design:	As Drilled	**Database:**	Oklahoma District

Project Doddridge County WV, McClellan District

Map System:	Universal Transverse Mercator (US Survey Fee	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Zone 17N (84 W to 78 W)		

Site Hughes Pad:Belton/Carole/Earlewine/Gully/Hughes

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

Well Richard Unit 1H, Marcellus

Well Position	**+N/-S**	0.0 usft	**Northing:**	14,242,012.02 usft	**Latitude:**	39° 13' 9.508 N
	+E/-W	0.0 usft	**Easting:**	1,747,841.28 usft	**Longitude:**	80° 37' 14.538 W
Position Uncertainty		2.0 usft	**Wellhead Elevation:**	1,350.0 usft	**Ground Level:**	1,331.0 usft

Wellbore Original Wellpath

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	10/3/2014	-8.58	66.77	52,164

Design As Drilled

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	162.20

Survey Program **Date** 1/6/2015

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
31.0	6,841.0	Survey #4 Final Gyro (Original Wellpath)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
6,891.0	15,636.0	Survey #5 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
31.0	0.12	273.33	31.0	0.0	0.0	0.0	0.39
56.0	0.24	273.33	56.0	0.0	-0.1	0.0	0.48
81.0	0.36	273.33	81.0	0.0	-0.2	-0.1	0.48
106.0	0.48	273.33	106.0	0.0	-0.4	-0.2	0.48
131.0	0.53	283.44	131.0	0.1	-0.6	-0.3	0.41
156.0	0.45	279.29	156.0	0.1	-0.9	-0.4	0.35
181.0	0.45	277.78	181.0	0.1	-1.0	-0.4	0.05
206.0	0.35	261.53	206.0	0.1	-1.2	-0.5	0.60
231.0	0.23	266.16	231.0	0.1	-1.3	-0.5	0.49
256.0	0.19	253.75	256.0	0.1	-1.4	-0.5	0.24

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Company:	Antero	**Local Co-ordinate Reference:**	Well Richard Unit 1H
Project:	Doddridge County WV	**TVD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Site:	Hughes Pad:Belton/Carole/Earlewine/Gully/Hugh	**MD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Well:	Richard 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)
281.0	0.15	251.62	281.0	0.1	-1.5	-0.5	0.16
306.0	0.13	298.03	306.0	0.1	-1.6	-0.6	0.45
331.0	0.16	251.25	331.0	0.1	-1.6	-0.6	0.47
356.0	0.14	232.28	356.0	0.1	-1.7	-0.6	0.21
381.0	0.16	233.59	381.0	0.0	-1.7	-0.5	0.08
406.0	0.12	231.56	406.0	0.0	-1.8	-0.5	0.16
431.0	0.12	190.30	431.0	-0.1	-1.8	-0.5	0.34
456.0	0.14	184.59	456.0	-0.1	-1.8	-0.4	0.10
481.0	0.12	151.48	481.0	-0.2	-1.8	-0.4	0.31
506.0	0.12	181.59	506.0	-0.2	-1.8	-0.3	0.25
531.0	0.20	148.28	531.0	-0.3	-1.8	-0.3	0.48
556.0	0.15	123.09	556.0	-0.3	-1.7	-0.2	0.36
581.0	0.10	138.32	581.0	-0.4	-1.7	-0.2	0.24
606.0	0.18	129.34	606.0	-0.4	-1.6	-0.1	0.33
631.0	0.25	141.28	631.0	-0.5	-1.6	0.0	0.33
656.0	0.22	140.62	656.0	-0.6	-1.5	0.1	0.12
681.0	0.16	134.04	681.0	-0.6	-1.4	0.2	0.25
706.0	0.22	137.55	706.0	-0.7	-1.4	0.2	0.24
731.0	0.29	143.96	731.0	-0.8	-1.3	0.3	0.30
756.0	0.32	146.68	756.0	-0.9	-1.2	0.5	0.13
781.0	0.28	139.93	781.0	-1.0	-1.2	0.6	0.21
806.0	0.28	155.57	806.0	-1.1	-1.1	0.7	0.30
831.0	0.11	162.52	831.0	-1.2	-1.1	0.8	0.69
856.0	0.13	169.02	856.0	-1.2	-1.1	0.8	0.10
881.0	0.07	212.36	881.0	-1.3	-1.1	0.9	0.37
906.0	0.02	225.50	906.0	-1.3	-1.1	0.9	0.20
931.0	0.04	194.24	931.0	-1.3	-1.1	0.9	0.10
956.0	0.08	27.53	956.0	-1.3	-1.1	0.9	0.48
981.0	0.14	121.64	981.0	-1.3	-1.0	0.9	0.66
1,006.0	0.08	141.95	1,006.0	-1.3	-1.0	0.9	0.28
1,031.0	0.08	123.64	1,031.0	-1.3	-1.0	1.0	0.10
1,056.0	0.09	158.01	1,056.0	-1.4	-0.9	1.0	0.20
1,081.0	0.15	185.46	1,081.0	-1.4	-0.9	1.1	0.33
1,106.0	0.12	245.62	1,106.0	-1.5	-1.0	1.1	0.55
1,131.0	0.13	169.70	1,131.0	-1.5	-1.0	1.1	0.62
1,156.0	0.15	191.39	1,156.0	-1.6	-1.0	1.2	0.22
1,181.0	0.15	202.98	1,181.0	-1.6	-1.0	1.2	0.12
1,206.0	0.14	214.48	1,206.0	-1.7	-1.0	1.3	0.12
1,231.0	0.43	166.29	1,231.0	-1.8	-1.0	1.4	1.41
1,256.0	0.07	170.51	1,256.0	-1.9	-1.0	1.5	1.44
1,281.0	0.14	271.28	1,281.0	-1.9	-1.0	1.5	0.67
1,306.0	0.07	277.72	1,306.0	-1.9	-1.1	1.5	0.28
1,331.0	0.07	322.86	1,331.0	-1.9	-1.1	1.5	0.21
1,356.0	0.06	172.71	1,356.0	-1.9	-1.1	1.5	0.50

03/02/2018

Company:	Antero	**Local Co-ordinate Reference:**	Well Richard Unit 1H
Project:	Doddridge County WV	**TVD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Site:	Hughes Pad:Belton/Carole/Earlewine/Gully/Hugh	**MD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Well:	Richard 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)
1,381.0	0.13	248.08	1,381.0	-1.9	-1.1	1.5	0.51
1,406.0	0.07	221.40	1,406.0	-1.9	-1.2	1.5	0.30
1,431.0	0.12	177.26	1,431.0	-2.0	-1.2	1.5	0.34
1,456.0	0.09	197.29	1,456.0	-2.0	-1.2	1.6	0.19
1,481.0	0.13	219.91	1,481.0	-2.1	-1.2	1.6	0.23
1,506.0	0.17	233.93	1,506.0	-2.1	-1.3	1.6	0.22
1,531.0	0.14	214.57	1,531.0	-2.1	-1.3	1.6	0.24
1,556.0	0.09	262.88	1,556.0	-2.2	-1.3	1.7	0.42
1,581.0	0.14	241.06	1,581.0	-2.2	-1.4	1.7	0.26
1,606.0	0.18	258.16	1,606.0	-2.2	-1.5	1.7	0.25
1,631.0	0.08	240.02	1,631.0	-2.2	-1.5	1.7	0.43
1,656.0	0.11	275.79	1,656.0	-2.2	-1.6	1.7	0.26
1,681.0	0.02	27.33	1,681.0	-2.2	-1.6	1.6	0.48
1,706.0	0.06	315.12	1,706.0	-2.2	-1.6	1.6	0.23
1,731.0	0.10	207.73	1,731.0	-2.2	-1.6	1.6	0.52
1,756.0	0.11	265.82	1,756.0	-2.3	-1.6	1.6	0.41
1,781.0	0.16	226.34	1,781.0	-2.3	-1.7	1.7	0.41
1,806.0	0.11	260.46	1,806.0	-2.3	-1.7	1.7	0.37
1,831.0	0.09	254.80	1,831.0	-2.3	-1.8	1.7	0.09
1,856.0	0.09	255.40	1,856.0	-2.3	-1.8	1.7	0.00
1,881.0	0.07	290.97	1,881.0	-2.3	-1.8	1.6	0.21
1,906.0	0.06	296.74	1,906.0	-2.3	-1.9	1.6	0.05
1,931.0	0.05	43.95	1,931.0	-2.3	-1.9	1.6	0.35
1,956.0	0.09	42.99	1,956.0	-2.3	-1.9	1.6	0.16
1,981.0	0.07	31.21	1,981.0	-2.2	-1.8	1.6	0.10
2,006.0	0.07	289.12	2,006.0	-2.2	-1.8	1.6	0.44
2,031.0	0.04	262.41	2,031.0	-2.2	-1.9	1.6	0.15
2,056.0	0.10	305.19	2,056.0	-2.2	-1.9	1.5	0.30
2,081.0	0.14	318.95	2,081.0	-2.2	-1.9	1.5	0.20
2,106.0	0.04	320.83	2,106.0	-2.2	-2.0	1.5	0.40
2,131.0	0.21	321.69	2,131.0	-2.1	-2.0	1.4	0.68
2,156.0	0.07	322.72	2,156.0	-2.1	-2.0	1.3	0.56
2,181.0	0.17	313.61	2,181.0	-2.0	-2.1	1.3	0.41
2,206.0	0.12	323.65	2,206.0	-2.0	-2.1	1.2	0.22
2,231.0	0.20	5.09	2,231.0	-1.9	-2.1	1.2	0.54
2,256.0	0.06	7.21	2,256.0	-1.9	-2.1	1.1	0.56
2,281.0	0.14	345.46	2,281.0	-1.8	-2.1	1.1	0.35
2,306.0	0.27	310.48	2,306.0	-1.7	-2.2	1.0	0.70
2,331.0	0.03	348.25	2,331.0	-1.7	-2.2	0.9	0.99
2,356.0	0.09	333.30	2,356.0	-1.7	-2.2	0.9	0.25
2,381.0	0.15	330.96	2,381.0	-1.6	-2.2	0.9	0.24
2,406.0	0.09	48.11	2,406.0	-1.6	-2.2	0.8	0.63
2,431.0	0.11	256.56	2,431.0	-1.6	-2.3	0.8	0.78
2,456.0	0.03	187.62	2,456.0	-1.6	-2.3	0.8	0.41
2,481.0	0.05	14.62	2,481.0	-1.6	-2.3	0.8	0.32

03/02/2018

Company:	Antero	**Local Co-ordinate Reference:**	Well Richard Unit 1H
Project:	Doddridge County WV	**TVD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Site:	Hughes Pad:Belton/Carole/Earlewine/Gully/Hugh	**MD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Well:	Richard 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)
2,506.0	0.12	12.96	2,506.0	-1.6	-2.3	0.8	0.28
2,531.0	0.37	54.25	2,531.0	-1.5	-2.2	0.7	1.16
2,556.0	1.16	55.89	2,556.0	-1.3	-1.9	0.6	3.16
2,581.0	2.48	63.70	2,581.0	-0.9	-1.2	0.5	5.36
2,606.0	3.17	56.92	2,605.9	-0.3	-0.2	0.2	3.06
2,631.0	3.71	55.88	2,630.9	0.5	1.1	-0.2	2.17
2,656.0	4.23	53.12	2,655.8	1.5	2.5	-0.7	2.22
2,681.0	5.24	48.93	2,680.8	2.8	4.1	-1.5	4.27
2,706.0	5.08	48.68	2,705.7	4.3	5.8	-2.4	0.65
2,731.0	5.57	51.50	2,730.5	5.8	7.6	-3.2	2.22
2,756.0	6.09	54.95	2,755.4	7.3	9.6	-4.0	2.51
2,781.0	6.30	59.28	2,780.3	8.8	11.9	-4.7	2.05
2,806.0	6.56	63.85	2,805.1	10.1	14.3	-5.3	2.30
2,831.0	6.55	63.73	2,829.9	11.4	16.9	-5.7	0.07
2,856.0	6.58	63.87	2,854.8	12.6	19.4	-6.1	0.14
2,881.0	6.53	62.92	2,879.6	13.9	22.0	-6.5	0.48
2,906.0	6.43	61.97	2,904.5	15.2	24.5	-7.0	0.59
2,931.0	6.38	61.56	2,929.3	16.6	27.0	-7.5	0.27
2,956.0	6.36	61.26	2,954.1	17.9	29.4	-8.0	0.16
2,981.0	6.19	61.13	2,979.0	19.2	31.8	-8.6	0.68
3,006.0	5.99	61.50	3,003.9	20.5	34.1	-9.1	0.82
3,031.0	5.51	63.35	3,028.7	21.6	36.3	-9.5	2.06
3,056.0	4.40	67.90	3,053.6	22.5	38.3	-9.7	4.71
3,081.0	3.47	74.05	3,078.6	23.1	39.9	-9.8	4.08
3,106.0	2.92	83.10	3,103.5	23.4	41.3	-9.6	2.98
3,131.0	2.30	97.55	3,128.5	23.4	42.4	-9.3	3.60
3,156.0	1.81	118.35	3,153.5	23.1	43.2	-8.8	3.54
3,181.0	1.77	119.86	3,178.5	22.8	43.9	-8.2	0.25
3,206.0	1.73	121.28	3,203.5	22.4	44.6	-7.7	0.24
3,231.0	1.16	127.06	3,228.5	22.0	45.1	-7.2	2.35
3,256.0	0.46	182.66	3,253.5	21.8	45.3	-6.9	3.91
3,281.0	0.97	260.56	3,278.5	21.6	45.1	-6.8	3.93
3,306.0	1.55	263.69	3,303.5	21.6	44.5	-6.9	2.34
3,331.0	1.59	263.22	3,328.4	21.5	43.9	-7.0	0.17
3,356.0	1.61	263.70	3,353.4	21.4	43.2	-7.2	0.10
3,381.0	1.68	259.68	3,378.4	21.3	42.5	-7.3	0.54
3,406.0	1.67	259.60	3,403.4	21.2	41.7	-7.4	0.04
3,431.0	1.65	256.46	3,428.4	21.0	41.0	-7.5	0.37
3,456.0	1.52	254.69	3,453.4	20.8	40.4	-7.5	0.56
3,481.0	1.49	252.07	3,478.4	20.7	39.7	-7.5	0.30
3,506.0	1.46	253.27	3,503.4	20.5	39.1	-7.5	0.17
3,531.0	1.35	251.43	3,528.4	20.3	38.5	-7.5	0.48
3,556.0	1.47	251.49	3,553.4	20.1	38.0	-7.5	0.48
3,581.0	1.39	253.17	3,578.4	19.9	37.4	-7.5	0.36

03/02/2018

Company:	Antero	**Local Co-ordinate Reference:**	Well Richard Unit 1H
Project:	Doddridge County WV	**TVD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Site:	Hughes Pad:Belton/Carole/Earlewine/Gully/Hugh	**MD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Well:	Richard 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)
3,606.0	1.30	257.47	3,603.4	19.7	36.8	-7.6	0.54
3,631.0	0.86	279.81	3,628.3	19.7	36.3	-7.7	2.40
3,656.0	0.88	278.65	3,653.3	19.8	36.0	-7.8	0.11
3,681.0	0.85	280.11	3,678.3	19.8	35.6	-8.0	0.15
3,706.0	0.69	286.78	3,703.3	19.9	35.3	-8.2	0.73
3,731.0	0.86	278.00	3,728.3	20.0	34.9	-8.4	0.83
3,756.0	1.00	276.25	3,753.3	20.0	34.5	-8.5	0.57
3,781.0	0.71	280.57	3,778.3	20.1	34.2	-8.7	1.19
3,806.0	0.37	293.68	3,803.3	20.1	33.9	-8.8	1.44
3,831.0	0.25	311.95	3,828.3	20.2	33.8	-8.9	0.62
3,856.0	0.23	315.63	3,853.3	20.3	33.7	-9.0	0.10
3,881.0	0.32	314.61	3,878.3	20.4	33.7	-9.1	0.36
3,906.0	0.35	341.61	3,903.3	20.5	33.6	-9.2	0.64
3,931.0	0.38	326.90	3,928.3	20.6	33.5	-9.4	0.39
3,956.0	0.47	327.30	3,953.3	20.8	33.4	-9.6	0.36
3,981.0	0.57	328.31	3,978.3	21.0	33.3	-9.8	0.40
4,006.0	0.66	332.75	4,003.3	21.2	33.2	-10.1	0.41
4,031.0	0.67	327.61	4,028.3	21.5	33.0	-10.4	0.24
4,056.0	0.68	329.64	4,053.3	21.7	32.9	-10.6	0.10
4,081.0	0.65	326.46	4,078.3	22.0	32.7	-10.9	0.19
4,106.0	0.69	326.66	4,103.3	22.2	32.5	-11.2	0.16
4,131.0	0.69	332.43	4,128.3	22.5	32.4	-11.5	0.28
4,156.0	0.70	329.91	4,153.3	22.7	32.2	-11.8	0.13
4,181.0	0.68	329.25	4,178.3	23.0	32.1	-12.1	0.09
4,206.0	0.70	328.47	4,203.3	23.3	31.9	-12.4	0.09
4,231.0	0.65	327.97	4,228.3	23.5	31.8	-12.7	0.20
4,256.0	0.57	330.78	4,253.3	23.7	31.6	-12.9	0.34
4,281.0	0.50	322.74	4,278.3	23.9	31.5	-13.1	0.41
4,306.0	0.55	325.34	4,303.3	24.1	31.4	-13.4	0.22
4,331.0	0.45	320.49	4,328.3	24.3	31.3	-13.6	0.43
4,356.0	0.48	316.42	4,353.3	24.4	31.1	-13.8	0.18
4,381.0	0.56	297.99	4,378.3	24.6	30.9	-13.9	0.74
4,406.0	0.42	307.54	4,403.3	24.7	30.8	-14.1	0.65
4,431.0	0.43	319.60	4,428.3	24.8	30.6	-14.3	0.36
4,456.0	0.47	307.50	4,453.3	24.9	30.5	-14.4	0.41
4,481.0	0.48	303.61	4,478.3	25.1	30.3	-14.6	0.14
4,506.0	0.49	310.91	4,503.3	25.2	30.2	-14.8	0.25
4,531.0	0.49	307.42	4,528.3	25.3	30.0	-15.0	0.12
4,556.0	0.53	299.98	4,553.3	25.5	29.8	-15.1	0.31
4,581.0	0.51	307.06	4,578.3	25.6	29.6	-15.3	0.27
4,606.0	0.56	295.87	4,603.3	25.7	29.4	-15.5	0.46
4,631.0	0.50	312.43	4,628.3	25.8	29.2	-15.7	0.66
4,656.0	0.56	304.03	4,653.3	26.0	29.0	-15.8	0.39
4,681.0	0.52	309.37	4,678.3	26.1	28.9	-16.0	0.26

03/02/2018

Company:	Antero	**Local Co-ordinate Reference:**	Well Richard Unit 1H
Project:	Doddridge County WV	**TVD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Site:	Hughes Pad:Belton/Carole/Earlewine/Gully/Hugh	**MD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Well:	Richard 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)
4,706.0	0.50	311.73	4,703.3	26.3	28.7	-16.2	0.12
4,731.0	0.61	306.00	4,728.3	26.4	28.5	-16.4	0.49
4,756.0	0.80	33.56	4,753.3	26.6	28.5	-16.6	3.94
4,781.0	1.59	49.39	4,778.3	27.0	28.8	-16.9	3.40
4,806.0	2.63	55.78	4,803.3	27.5	29.6	-17.2	4.26
4,831.0	3.56	54.65	4,828.2	28.3	30.7	-17.6	3.73
4,856.0	4.24	54.15	4,853.2	29.3	32.1	-18.1	2.72
4,881.0	5.06	55.05	4,878.1	30.5	33.7	-18.7	3.29
4,906.0	5.81	55.73	4,903.0	31.8	35.7	-19.4	3.01
4,931.0	6.70	56.73	4,927.8	33.3	37.9	-20.1	3.59
4,956.0	7.59	57.57	4,952.6	35.0	40.5	-21.0	3.58
4,981.0	8.30	57.79	4,977.4	36.9	43.5	-21.8	2.84
5,006.0	9.15	58.33	5,002.1	38.9	46.7	-22.7	3.42
5,031.0	9.89	58.32	5,026.8	41.0	50.2	-23.7	2.96
5,056.0	10.79	58.88	5,051.3	43.4	54.0	-24.8	3.62
5,081.0	11.40	59.66	5,075.9	45.8	58.2	-25.9	2.51
5,106.0	12.32	59.70	5,100.3	48.4	62.6	-27.0	3.68
5,131.0	12.54	59.62	5,124.8	51.2	67.3	-28.1	0.88
5,156.0	12.67	59.63	5,149.2	53.9	72.0	-29.3	0.52
5,181.0	13.40	59.53	5,173.5	56.8	76.8	-30.6	2.92
5,206.0	13.78	59.54	5,197.8	59.7	81.9	-31.9	1.52
5,231.0	14.42	59.28	5,222.1	62.8	87.1	-33.2	2.57
5,256.0	14.81	59.15	5,246.3	66.1	92.5	-34.6	1.57
5,281.0	15.66	59.21	5,270.4	69.4	98.2	-36.1	3.40
5,306.0	15.65	59.49	5,294.4	72.9	104.0	-37.6	0.30
5,331.0	16.87	59.64	5,318.4	76.4	110.0	-39.1	4.88
5,356.0	16.89	60.87	5,342.4	80.0	116.3	-40.6	1.43
5,381.0	17.64	62.37	5,366.2	83.6	122.9	-42.0	3.49
5,406.0	17.95	64.33	5,390.0	87.0	129.7	-43.2	2.70
5,431.0	18.64	66.09	5,413.8	90.3	136.8	-44.1	3.54
5,456.0	19.15	68.21	5,437.4	93.4	144.3	-44.8	3.42
5,481.0	19.51	69.62	5,461.0	96.4	152.0	-45.3	2.36
5,506.0	20.26	70.98	5,484.5	99.2	160.0	-45.6	3.52
5,531.0	20.90	71.55	5,507.9	102.1	168.3	-45.7	2.68
5,556.0	21.06	71.87	5,531.3	104.9	176.8	-45.8	0.79
5,581.0	21.61	72.01	5,554.6	107.7	185.5	-45.8	2.21
5,606.0	21.62	72.20	5,577.8	110.5	194.2	-45.9	0.28
5,631.0	22.17	72.29	5,601.0	113.4	203.1	-45.9	2.20
5,656.0	22.54	72.56	5,624.1	116.2	212.2	-45.8	1.54
5,681.0	22.02	73.36	5,647.3	119.0	221.2	-45.7	2.41
5,706.0	22.85	73.45	5,670.4	121.7	230.4	-45.5	3.32
5,731.0	23.40	73.45	5,693.4	124.5	239.8	-45.3	2.20
5,756.0	23.27	73.58	5,716.3	127.4	249.3	-45.0	0.56
5,781.0	24.04	73.89	5,739.2	130.2	258.9	-44.8	3.12

03/02/2018

Company:	Antero	**Local Co-ordinate Reference:**	Well Richard Unit 1H
Project:	Doddridge County WV	**TVD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Site:	Hughes Pad:Belton/Carole/Earlewine/Gully/Hugh	**MD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Well:	Richard 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)
5,806.0	24.64	73.61	5,762.0	133.0	268.8	-44.5	2.44
5,831.0	24.50	73.75	5,784.7	136.0	278.8	-44.2	0.61
5,856.0	25.20	73.58	5,807.4	138.9	288.9	-44.0	2.81
5,881.0	25.76	73.51	5,830.0	142.0	299.2	-43.7	2.24
5,906.0	25.83	74.11	5,852.5	145.0	309.6	-43.4	1.08
5,931.0	25.75	74.80	5,875.0	147.9	320.1	-43.0	1.24
5,956.0	26.31	75.45	5,897.5	150.7	330.7	-42.4	2.51
5,981.0	26.23	76.06	5,919.9	153.5	341.4	-41.7	1.13
6,006.0	27.15	76.49	5,942.2	156.1	352.3	-40.9	3.76
6,031.0	26.82	76.56	5,964.5	158.8	363.4	-40.1	1.33
6,056.0	27.40	76.73	5,986.8	161.4	374.5	-39.2	2.34
6,081.0	27.87	76.60	6,008.9	164.1	385.7	-38.3	1.90
6,106.0	27.83	76.07	6,031.0	166.8	397.1	-37.5	1.00
6,131.0	27.21	75.71	6,053.2	169.6	408.3	-36.7	2.57
6,156.0	26.50	74.87	6,075.5	172.5	419.2	-36.1	3.22
6,181.0	26.21	74.45	6,097.9	175.4	429.9	-35.6	1.38
6,206.0	26.37	73.75	6,120.3	178.5	440.6	-35.3	1.40
6,231.0	26.92	73.42	6,142.6	181.6	451.3	-35.0	2.28
6,256.0	27.66	73.20	6,164.9	184.9	462.3	-34.8	2.99
6,281.0	28.14	72.98	6,187.0	188.3	473.5	-34.6	1.96
6,306.0	28.63	73.10	6,208.9	191.8	484.9	-34.4	1.97
6,331.0	28.72	72.93	6,230.9	195.3	496.3	-34.2	0.49
6,356.0	28.33	72.63	6,252.8	198.8	507.7	-34.1	1.66
6,381.0	27.52	72.19	6,274.9	202.4	518.9	-34.1	3.34
6,406.0	26.52	71.08	6,297.2	206.0	529.7	-34.2	4.48
6,431.0	26.40	71.07	6,319.6	209.6	540.2	-34.4	0.48
6,456.0	26.82	71.01	6,341.9	213.2	550.8	-34.6	1.68
6,481.0	27.34	71.20	6,364.2	216.9	561.6	-34.8	2.11
6,506.0	27.76	71.66	6,386.4	220.6	572.5	-35.0	1.88
6,531.0	27.51	71.94	6,408.5	224.2	583.5	-35.1	1.13
6,556.0	27.54	72.49	6,430.7	227.7	594.6	-35.1	1.02
6,581.0	27.52	72.30	6,452.9	231.2	605.6	-35.0	0.36
6,606.0	27.30	71.91	6,475.0	234.8	616.5	-35.1	1.14
6,631.0	27.20	71.74	6,497.3	238.3	627.4	-35.1	0.51
6,656.0	27.28	71.83	6,519.5	241.9	638.3	-35.2	0.36
6,681.0	27.42	72.15	6,541.7	245.5	649.2	-35.3	0.81
6,706.0	27.54	71.68	6,563.9	249.0	660.2	-35.3	0.99
6,731.0	27.58	71.47	6,586.0	252.7	671.1	-35.4	0.42
6,756.0	27.45	71.04	6,608.2	256.4	682.1	-35.6	0.95
6,781.0	27.30	70.73	6,630.4	260.2	692.9	-35.9	0.83
6,806.0	27.19	70.38	6,652.6	264.0	703.7	-36.2	0.78
6,831.0	26.73	70.00	6,674.9	267.8	714.4	-36.6	1.96
6,841.0	26.64	69.86	6,683.9	269.4	718.6	-36.8	1.10
6,928.0	26.44	69.20	6,761.7	283.0	755.0	-38.6	0.41

03/02/2018

Company:	Antero	**Local Co-ordinate Reference:**	Well Richard Unit 1H
Project:	Doddridge County WV	**TVD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Site:	Hughes Pad:Belton/Carole/Earlewine/Gully/Hugh	**MD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Well:	Richard 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)
6,958.0	26.97	68.52	6,788.5	287.8	767.6	-39.4	2.04
6,988.0	27.33	66.83	6,815.2	293.0	780.3	-40.5	2.84
7,018.0	27.23	62.40	6,841.9	298.9	792.7	-42.3	6.78
7,048.0	26.54	56.02	6,868.6	305.8	804.3	-45.3	9.88
7,078.0	26.26	53.04	6,895.5	313.6	815.2	-49.4	4.51
7,107.0	25.58	58.89	6,921.6	320.7	825.7	-52.9	9.12
7,137.0	25.31	68.72	6,948.7	326.3	837.2	-54.8	14.09
7,167.0	26.35	77.93	6,975.7	330.1	849.7	-54.5	13.80
7,189.0	27.61	84.93	6,995.3	331.5	859.5	-52.9	15.52
Sycamore							
7,197.0	28.15	87.32	7,002.4	331.8	863.3	-52.0	15.52
7,227.0	29.59	94.77	7,028.7	331.5	877.7	-47.3	12.91
7,257.0	31.33	101.11	7,054.5	329.4	892.8	-40.7	12.18
7,286.0	32.93	107.00	7,079.1	325.6	907.7	-32.6	12.12
7,316.0	34.29	113.08	7,104.1	319.9	923.3	-22.4	12.09
7,346.0	35.42	118.00	7,128.7	312.5	938.7	-10.6	10.10
7,376.0	35.62	122.62	7,153.1	303.7	953.8	2.4	8.97
7,382.0	35.86	123.51	7,158.0	301.8	956.7	5.1	9.59
Middlesex							
7,406.0	36.90	126.98	7,177.3	293.6	968.3	16.5	9.59
7,436.0	40.14	130.19	7,200.8	281.9	982.9	32.0	12.69
7,465.0	44.00	132.02	7,222.3	269.2	997.5	48.7	13.96
7,495.0	47.53	134.57	7,243.2	254.4	1,013.2	67.5	13.25
7,525.0	50.56	137.23	7,262.9	238.1	1,028.9	87.8	12.12
7,554.0	53.43	140.28	7,280.8	221.0	1,044.0	108.8	12.91
7,557.0	53.81	140.42	7,282.5	219.1	1,045.5	111.0	13.24
Burkett							
7,584.0	57.24	141.65	7,297.8	201.8	1,059.5	131.7	13.24
7,598.0	59.27	141.99	7,305.2	192.4	1,066.9	142.9	14.68
Tully							
7,614.0	61.60	142.37	7,313.1	181.4	1,075.4	156.0	14.68
7,643.0	65.93	142.89	7,325.9	160.8	1,091.2	180.5	15.02
7,673.0	70.00	144.11	7,337.1	138.4	1,107.7	206.8	14.08
7,703.0	73.79	145.82	7,346.5	115.1	1,124.1	234.1	13.75
7,733.0	80.09	148.10	7,353.2	90.6	1,140.0	262.2	22.27
7,738.0	80.88	148.24	7,354.1	86.4	1,142.6	267.0	16.10
Hamilton							
7,758.0	84.06	148.77	7,356.7	69.5	1,153.0	286.3	16.10
7,816.0	91.18	151.10	7,359.1	19.4	1,182.0	342.9	12.91
7,830.0	90.64	151.82	7,358.9	7.1	1,188.6	356.6	6.44
Marcellus							
7,856.0	89.63	153.16	7,358.8	-16.0	1,200.7	382.2	6.44
7,945.0	90.40	158.17	7,358.8	-97.0	1,237.3	470.6	5.70
8,035.0	88.93	159.53	7,359.3	-181.0	1,269.8	560.5	2.23
8,124.0	90.71	161.05	7,359.6	-264.8	1,299.8	649.4	2.63

03/02/2018

Company:	Antero	**Local Co-ordinate Reference:**	Well Richard Unit 1H
Project:	Doddridge County WV	**TVD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Site:	Hughes Pad:Belton/Carole/Earlewine/Gully/Hugh	**MD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Well:	Richard 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)
8,214.0	90.44	160.97	7,358.7	-349.9	1,329.1	739.4	0.31
8,303.0	89.63	161.81	7,358.6	-434.2	1,357.5	828.4	1.31
8,393.0	91.01	166.84	7,358.1	-520.8	1,381.8	918.3	5.80
8,483.0	90.10	168.61	7,357.3	-608.8	1,400.9	1,007.9	2.21
8,572.0	90.03	171.01	7,357.2	-696.3	1,416.7	1,096.1	2.70
8,662.0	91.11	171.32	7,356.3	-785.3	1,430.5	1,185.0	1.25
8,751.0	90.47	167.91	7,355.0	-872.8	1,446.5	1,273.2	3.90
8,845.0	89.87	164.27	7,354.8	-964.0	1,469.1	1,367.0	3.92
8,939.0	89.50	162.71	7,355.3	-1,054.1	1,495.8	1,460.9	1.71
9,033.0	89.66	162.94	7,356.0	-1,143.9	1,523.6	1,554.9	0.30
9,127.0	91.65	164.47	7,354.9	-1,234.2	1,550.0	1,648.9	2.67
9,220.0	90.87	163.16	7,352.8	-1,323.4	1,575.9	1,741.8	1.64
9,314.0	89.83	162.84	7,352.3	-1,413.3	1,603.4	1,835.8	1.16
9,409.0	90.10	162.01	7,352.3	-1,503.9	1,632.1	1,930.8	0.92
9,503.0	89.53	161.73	7,352.6	-1,593.2	1,661.3	2,024.8	0.68
9,597.0	89.97	160.78	7,353.0	-1,682.2	1,691.5	2,118.8	1.11
9,691.0	90.47	162.32	7,352.7	-1,771.4	1,721.3	2,212.8	1.72
9,785.0	90.37	162.25	7,352.0	-1,860.9	1,749.9	2,306.8	0.13
9,875.0	90.44	161.98	7,351.4	-1,946.6	1,777.5	2,396.8	0.31
9,964.0	90.20	162.17	7,350.9	-2,031.3	1,804.9	2,485.8	0.34
10,054.0	90.94	163.53	7,350.0	-2,117.3	1,831.4	2,575.8	1.72
10,143.0	90.30	161.90	7,349.0	-2,202.2	1,857.9	2,664.8	1.97
10,233.0	90.50	161.40	7,348.4	-2,287.7	1,886.2	2,754.8	0.60
10,323.0	89.70	161.21	7,348.2	-2,372.9	1,915.0	2,844.7	0.91
10,412.0	90.67	161.87	7,347.9	-2,457.3	1,943.2	2,933.7	1.32
10,502.0	90.13	161.86	7,347.3	-2,542.9	1,971.2	3,023.7	0.60
10,591.0	90.87	163.71	7,346.5	-2,627.9	1,997.6	3,112.7	2.24
10,681.0	90.10	163.13	7,345.8	-2,714.1	2,023.3	3,202.7	1.07
10,770.0	90.67	162.50	7,345.2	-2,799.1	2,049.6	3,291.7	0.95
10,860.0	90.77	161.16	7,344.0	-2,884.6	2,077.6	3,381.7	1.49
10,949.0	90.34	162.06	7,343.2	-2,969.1	2,105.7	3,470.7	1.12
11,039.0	90.37	162.20	7,342.6	-3,054.7	2,133.3	3,560.7	0.16
11,129.0	90.44	162.62	7,342.0	-3,140.5	2,160.5	3,650.7	0.47
11,218.0	89.87	161.61	7,341.7	-3,225.2	2,187.8	3,739.7	1.30
11,308.0	89.56	162.94	7,342.2	-3,311.0	2,215.2	3,829.7	1.52
11,397.0	90.17	161.98	7,342.4	-3,395.8	2,242.1	3,918.6	1.28
11,487.0	90.37	163.43	7,342.0	-3,481.7	2,268.8	4,008.6	1.63
11,576.0	91.11	162.43	7,340.8	-3,566.8	2,294.9	4,097.6	1.40
11,665.0	91.04	162.22	7,339.2	-3,651.6	2,322.0	4,186.6	0.25
11,755.0	90.60	162.15	7,337.9	-3,737.3	2,349.5	4,276.6	0.50
11,845.0	89.80	162.38	7,337.5	-3,823.0	2,376.9	4,366.6	0.92
11,934.0	91.34	161.56	7,336.7	-3,907.6	2,404.4	4,455.6	1.96
12,024.0	90.40	161.74	7,335.3	-3,993.0	2,432.8	4,545.6	1.06
12,113.0	90.13	162.46	7,334.9	-4,077.7	2,460.1	4,634.6	0.86
12,203.0	91.28	163.55	7,333.8	-4,163.8	2,486.4	4,724.6	1.76

03/02/2018

Company:	Antero	**Local Co-ordinate Reference:**	Well Richard Unit 1H
Project:	Doddridge County WV	**TVD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Site:	Hughes Pad:Belton/Carole/Earlewine/Gully/Hugh	**MD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Well:	Richard 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)
12,292.0	90.67	163.64	7,332.3	-4,249.1	2,511.6	4,813.5	0.69
12,382.0	90.64	162.53	7,331.2	-4,335.2	2,537.8	4,903.5	1.23
12,471.0	90.07	162.17	7,330.7	-4,420.1	2,564.7	4,992.5	0.76
12,561.0	90.97	161.64	7,329.9	-4,505.6	2,592.7	5,082.5	1.16
12,651.0	90.60	161.23	7,328.6	-4,590.9	2,621.3	5,172.5	0.61
12,740.0	90.20	162.18	7,328.0	-4,675.4	2,649.3	5,261.5	1.16
12,830.0	89.93	161.73	7,327.9	-4,761.0	2,677.2	5,351.5	0.58
12,920.0	90.87	161.18	7,327.3	-4,846.3	2,705.8	5,441.5	1.21
13,009.0	90.54	162.09	7,326.2	-4,930.8	2,733.8	5,530.4	1.09
13,099.0	90.10	161.70	7,325.7	-5,016.3	2,761.8	5,620.4	0.65
13,188.0	90.10	163.54	7,325.5	-5,101.2	2,788.4	5,709.4	2.07
13,278.0	90.97	163.06	7,324.7	-5,187.4	2,814.2	5,799.4	1.10
13,368.0	90.67	163.49	7,323.4	-5,273.6	2,840.1	5,889.4	0.58
13,457.0	90.23	161.42	7,322.7	-5,358.5	2,867.0	5,978.4	2.38
13,547.0	91.08	161.58	7,321.7	-5,443.8	2,895.5	6,068.4	0.96
13,637.0	90.67	161.27	7,320.3	-5,529.1	2,924.2	6,158.3	0.57
13,726.0	89.46	159.12	7,320.2	-5,612.8	2,954.3	6,247.3	2.77
13,816.0	90.03	161.23	7,320.6	-5,697.5	2,984.8	6,337.2	2.43
13,905.0	90.54	163.31	7,320.2	-5,782.3	3,011.9	6,426.2	2.41
13,995.0	89.36	161.07	7,320.2	-5,868.0	3,039.5	6,516.2	2.81
14,085.0	90.57	163.65	7,320.3	-5,953.7	3,066.7	6,606.2	3.17
14,174.0	89.76	163.45	7,320.0	-6,039.1	3,091.9	6,695.2	0.94
14,264.0	90.81	162.47	7,319.6	-6,125.1	3,118.3	6,785.2	1.60
14,353.0	88.35	158.14	7,320.2	-6,208.9	3,148.3	6,874.1	5.60
14,443.0	89.50	159.98	7,321.9	-6,292.9	3,180.5	6,963.9	2.41
14,532.0	90.17	161.72	7,322.2	-6,377.0	3,209.7	7,052.9	2.09
14,622.0	90.30	163.30	7,321.8	-6,462.8	3,236.7	7,142.9	1.76
14,711.0	91.35	165.07	7,320.5	-6,548.4	3,261.0	7,231.8	2.31
14,800.0	90.07	162.19	7,319.4	-6,633.8	3,286.0	7,320.8	3.54
14,890.0	89.80	163.52	7,319.5	-6,719.8	3,312.6	7,410.8	1.51
14,979.0	91.71	164.78	7,318.4	-6,805.4	3,336.9	7,499.7	2.57
15,068.0	90.37	162.33	7,316.7	-6,890.8	3,362.1	7,588.7	3.14
15,158.0	89.03	161.05	7,317.2	-6,976.2	3,390.3	7,678.6	2.06
15,247.0	89.90	162.47	7,318.0	-7,060.7	3,418.2	7,767.6	1.87
15,337.0	91.92	163.95	7,316.6	-7,146.9	3,444.2	7,857.6	2.78
15,427.0	91.85	163.82	7,313.7	-7,233.3	3,469.1	7,947.5	0.16
15,516.0	89.29	159.85	7,312.8	-7,317.8	3,496.9	8,036.5	5.31
15,578.0	89.40	160.32	7,313.5	-7,376.1	3,518.0	8,098.4	0.78
15,636.0	89.40	160.32	7,314.1	-7,430.7	3,537.5	8,156.4	0.00

03/02/2018

Company:	Antero	**Local Co-ordinate Reference:**	Well Richard Unit 1H
Project:	Doddridge County WV	**TVD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Site:	Hughes Pad:Belton/Carole/Earlewine/Gully/Hugh	**MD Reference:**	Precision 523: GL 1331' + KB 19' @ 1350.0usft
Well:	Richard Unit 1H	**North Reference:**	Grid
Wellbore:	Original Wellpath	**Survey Calculation Method:**	Minimum Curvature
Design:	As Drilled	**Database:**	Oklahoma District

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
7,189.0	6,995.3	331.5	859.5	Sycamore
7,382.0	7,158.0	301.8	956.7	Middlesex
7,557.0	7,282.5	219.1	1,045.5	Burkett
7,598.0	7,305.2	192.4	1,066.9	Tully
7,738.0	7,354.1	86.4	1,142.6	Hamilton
7,830.0	7,358.9	7.1	1,188.6	Marcellus

Checked By: _____ Approved By: _____ Date: _____

03/02/2018

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	7/26/2017
Job End Date:	8/5/2017
State:	West Virginia
County:	Doddridge
API Number:	47-017-06379-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Richard 1H
Latitude:	39.21930833
Longitude:	-80.62070278
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,360
Total Base Water Volume (gal):	13,968,217
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	Antero Resources	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	87.41377	
Sand	U.S. Well Services, LLC	Proppant					
			Crystalline Silica, quartz	14808-60-7	100.00000	12.19440	
HCL Acid (12.6%-17.5%)	U.S. Well Services, LLC	Bulk Acid					
			Water	7732-18-5	87.40000	0.24588	
			Hydrogen Chloride	7647-01-0	17.50000	0.05717	
LGC-15	U.S. Well Services, LLC	Gelling Agents					
			Guar Gum	9000-30-0	50.00000	0.03380	
			Petroleum Distillates	64742-47-8	60.00000	0.03201	
			Suspending agent (solid)	14808-60-7	3.00000	0.00517	
			Surfactant	68439-51-0	3.00000	0.00203	
WFRC-2100	U.S. Well Services, LLC	Friction Reducer					
			Hydrotreated Petroleum Distillates	64742-47-8	30.00000	0.00519	
			Alcohol Ethoxylate	68551-12-2	5.00000	0.00107	

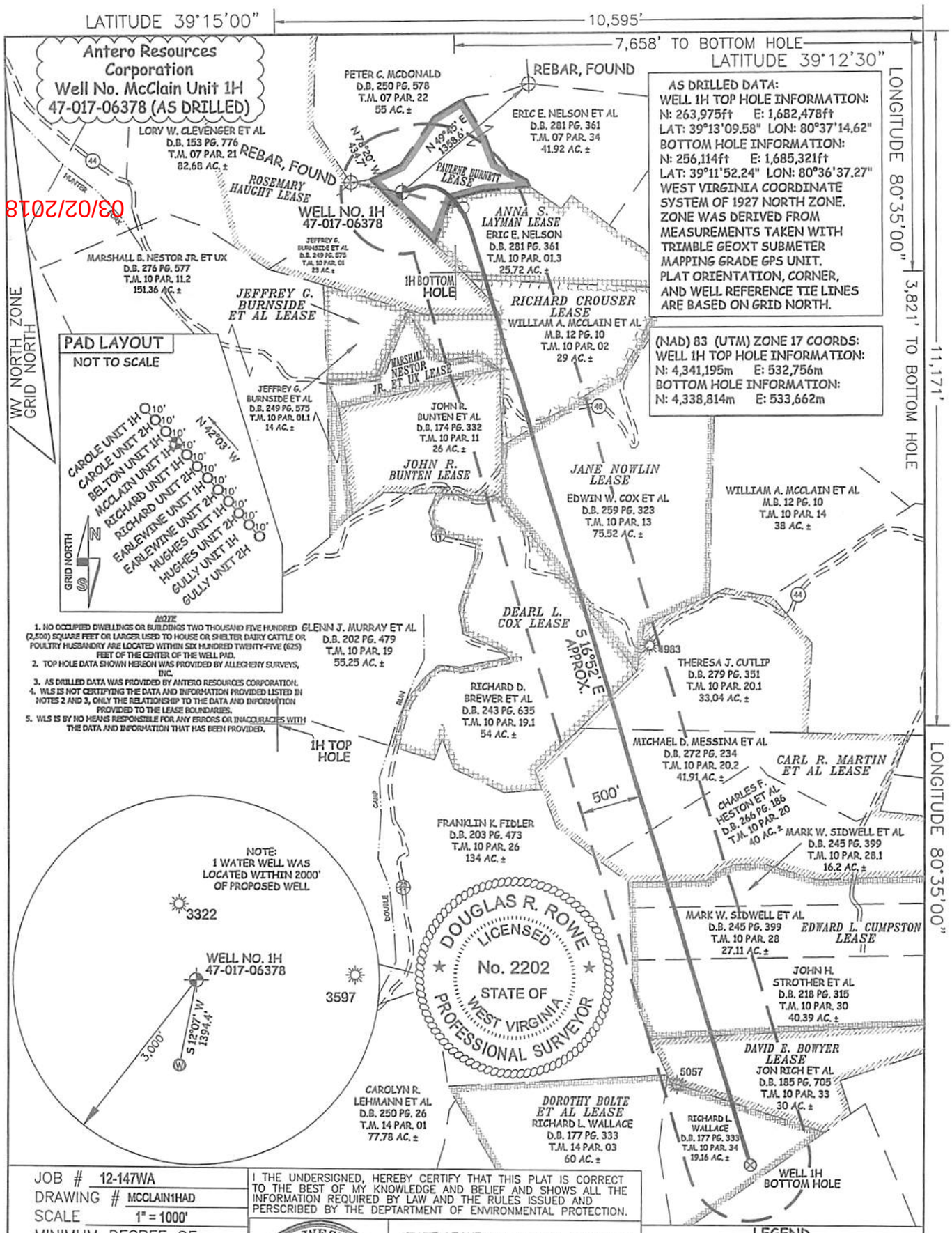
			Cationic copolymer of acrylamide	69418-26-4	30.00000	0.00077	
Bioclear 2000	U.S. Well Services, LLC	Anti-Bacterial Agent					
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00418	
			Deionized Water	7732-18-5	28.00000	0.00239	
AP One	U.S. Well Services, LLC	Gel Breakers					
			Ammonium Persulfate	7727-54-0	100.00000	0.00095	
SI-1200s	U.S. Well Services, LLC	Scale Inhibitor					
			Alkyl Phosphonic Acid	Proprietary	5.00000	0.00063	
			Ammonia	7664-41-7	0.50000	0.00010	
WFRA-405	U.S. Well Services, LLC	Friction Reducer					
			2-Propenoic acid, polymer with 2-propenamide	9003-06-9	30.00000	0.00018	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.00015	
AI-303	U.S. Well Services, LLC	Acid Corrosion Inhibitors					
			Ethylene glycol	107-21-1	40.00000	0.00008	
			Cinnamaldehyde	104-55-2	20.00000	0.00003	
			Formic acid	64-18-6	20.00000	0.00003	
			Butyl cellosolve	111-76-2	20.00000	0.00003	
			Polyether	60828-78-6	10.00000	0.00001	
			Acetophenone,thiourea,formaldehyde polymer	68527-49-1	5.00000	0.00001	

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)

03/02/2018



JOB # 12-147WA
DRAWING # MCCLAIN1HAD
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPTARTMENT OF ENVIRONMENTAL PROTECTION.

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 +/-
- Proposed Well Path
- As Drilled Well Path

DOUGLAS R. ROWE P.S. 2202
DATE 11/28/17
OPERATOR'S WELL# MCCLAIN UNIT #1H
API WELL # 47 – 017 – 06378
STATE COUNTY PERMIT

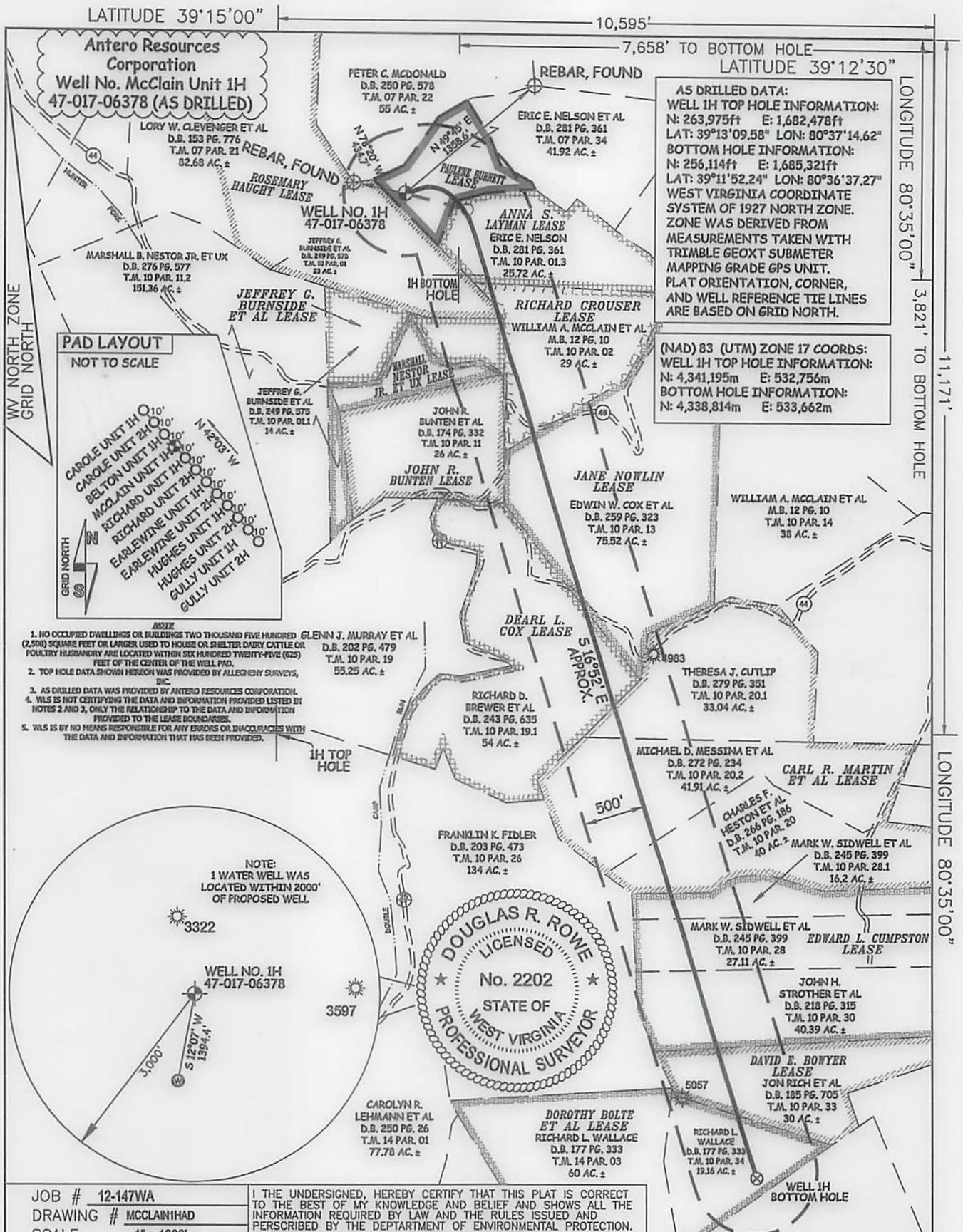
STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY
DIVISION OF OIL AND GAS

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
LOCATION: ELEVATION 1,332' AS-DRILLED WATERSHED HEADWATERS MIDDLE ISLAND CREEK
QUADRANGLE BIG ISSAC 7.5' DISTRICT GREENBRIER COUNTY DODDRIDGE
SURFACE OWNER ERIC E. NELSON, ET AL ACREAGE 41.92 ACRES +/-
OIL & GAS ROYALTY OWNER PAULENE BURNETT; ANNA S. LAYMAN; RICHARD CROUSER; ROSEMARY HAUGHT; JEFFREY G. BURNSIDE ET AL; JANE NOWLIN; DEARL L. COX; CARL R. MARTIN ET AL; EDWARD L. CUMPSTON; DAVID E. BOWYER; DOROTHY BOLTE ET AL LEASE ACREAGE 14.29 ACRES±; 25.16 ACRES±; 29.93 ACRES±; 115 ACRES±; 14 ACRES±; 76 ACRES±; 39.923 ACRES±; 115 ACRES±; 86 ACRES±; 30 ACRES±; 80 ACRES±
PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___
PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) (X) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 7,342' TVD 15,619' MD

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

COUNTY NAME PERMIT

FORM WW-6



JOB # 12-147WA
DRAWING # MCCLAIN1HAD
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

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

LEGEND
Surface Owner Boundary Lines +/-
Interior Surface Tracts +/-
Proposed Well Path
As Drilled Well Path

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

DOUGLAS R. ROWE P.S. 2202
DATE 11/28/17
OPERATOR'S WELL# MCCLAIN UNIT #1H

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
API WELL # 47 – 017 – 06378
STATE COUNTY PERMIT

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ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
DENVER, CO 80202 CHARLESTON, WV 25313

FORM WW-6

COUNTY NAME PERMIT

08/02/2018