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

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API 47 - 095 - 02361 County Tyler District Centerville
Quad Shirley 7.5' Pad Name Edna Monroe Pad Field/Pool Name ---
Farm name Edna Monroe Well Number Deulley Unit 3H
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 4363702m Easting 510916m
Landing Point of Curve Northing 4363766.160m Easting 511566.096m
Bottom Hole Northing 4360714m Easting 512660m

Elevation (ft) 1044' 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 07/22/2016 Date drilling commenced 09/13/2016 Date drilling ceased 01/05/2017
Date completion activities began 05/09/2017 Date completion activities ceased 09/25/2017
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 337' Open mine(s) (Y/N) depths No
Salt water depth(s) ft None Identified Void(s) encountered (Y/N) depths No
Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed

Reviewed by: JCB

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API 47- 095 - 02361 Farm name Edna Monroe Well number Deulley Unit 3H

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"	105'	New	94#, H-40	N/A	Y
Surface	17- 1/2"	13- 3/8"	553'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2609'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5-1/2"	18189'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	7063'		4.7#, N-80		
Packer type and depth set		N/A					

Comment Details *Cement squeeze performed 12/28/2016.

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	204 sx	15.6	1.18	241	0	8 Hrs.
Surface	Class A	653 sx	15.6	1.19	777	0	8 Hrs.
Coal							
Intermediate 1	Class A	1011 sx	15.6	1.18	1193	0	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	847 sx (Lead), 1570 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.44 (Lead), 1.87 (Tail)	4156	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 18189' MD, 6585' TVD (BHL), 6585' TVD (Deepest point drilled) Loggers TD (ft) 18173' MD

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

Plug back procedure N/A

Kick off depth (ft) 6127'

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Bead Unit 2H API# 47-095-02362). Please reference the wireline logs submitted with Form WR-35 for the Bead Unit 2H. A Cement Bond Log has been included with this submittal.

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

Well cored ☐ Yes ■ No Conventional Sidewall Were cuttings collected ☐ 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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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	6499' (Top) TVD	7142' (Top) MD

Please insert additional pages as applicable.

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

SHUT-IN PRESSURE Surface 4100 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 9814 mcfpd Oil 170 bpd NGL -- bpd Water 2409 bpd GAS MEASURED BY □ Estimated ■ Orifice □ Pilot

LITHOLOGY/ FORMATION NAME	TOP DEPTH IN FT 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)
	0		0		

*** PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

Drilling Contractor Patterson – UTI Drilling Company LLC
Address 207 Carlton Drive City Eighty Four State PA Zip 15330

Logging Company Pro Oilfield Services LLC
Address 3141 Pulaski Rd City New Castle State PA Zip 16105

Cementing Company Allied Oil & Gas Services, LLC
Address 1036 East Main Street City Bridgeport State WV Zip 26330

Stimulating Company Halliburton
Address 121 Champion Way Suite 200 City Cannonsburg State PA Zip 15317

Please insert additional pages as applicable.

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

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

API 47-095-02361 Farm Name Edna Monroe Well Number Deuley Unit 3H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	5/9/2017	17921	18089	48	Marcellus
2	6/30/2017	17718	17804	48	Marcellus
3	6/30/2017	17516	17601	48	Marcellus
4	7/1/2017	17313	17399	48	Marcellus
5	7/1/2017	17111	17196	48	Marcellus
6	7/1/2017	16908	16994	48	Marcellus
7	7/2/2017	16706	16791	48	Marcellus
8	7/2/2017	16503	16589	48	Marcellus
9	7/3/2017	16301	16386	48	Marcellus
10	7/4/2017	16098	16184	48	Marcellus
11	7/4/2017	15896	15981	48	Marcellus
12	7/5/2017	15693	15779	48	Marcellus
13	7/5/2017	15491	15576	48	Marcellus
14	7/5/2017	15288	15374	48	Marcellus
15	7/6/2017	15086	15171	48	Marcellus
16	7/6/2017	14883	14969	48	Marcellus
17	7/6/2017	14681	14766	48	Marcellus
18	7/6/2017	14478	14563	48	Marcellus
19	7/7/2017	14276	14361	48	Marcellus
20	7/7/2017	14073	14158	48	Marcellus
21	7/7/2017	13871	13956	48	Marcellus
22	7/8/2017	13668	13753	48	Marcellus
23	7/8/2017	13465	13551	48	Marcellus
24	7/8/2017	13263	13348	48	Marcellus
25	7/9/2017	13060	13146	48	Marcellus
26	7/9/2017	12858	12943	48	Marcellus
27	7/9/2017	12655	12741	48	Marcellus
28	7/10/2017	12453	12538	48	Marcellus
29	7/10/2017	12250	12336	48	Marcellus
30	7/11/2017	12048	12133	48	Marcellus
31	7/11/2017	11845	11931	48	Marcellus
32	7/11/2017	11643	11728	48	Marcellus
33	7/11/2017	11440	11526	48	Marcellus
34	7/13/2017	11238	11323	48	Marcellus
35	7/13/2017	11035	11121	48	Marcellus
36	7/14/2017	10833	10918	48	Marcellus
37	7/14/2017	10630	10716	48	Marcellus
38	7/14/2017	10428	10513	48	Marcellus
39	7/15/2017	10225	10311	48	Marcellus
40	7/15/2017	10023	10108	48	Marcellus
41	7/15/2017	9820	9905	48	Marcellus
42	7/15/2017	9618	9703	48	Marcellus
43	7/16/2017	9415	9500	48	Marcellus
44	7/16/2017	9213	9298	48	Marcellus
45	7/17/2017	9010	9095	48	Marcellus
46	7/17/2017	8807	8893	48	Marcellus
47	7/17/2017	8605	8690	48	Marcellus
48	7/17/2017	8402	8488	48	Marcellus
49	7/18/2017	8200	8285	48	Marcellus
50	7/18/2017	7997	8083	48	Marcellus
51	7/18/2017	7795	7880	48	Marcellus
52	7/18/2017	7592	7678	48	Marcellus
53	7/19/2017	7390	7475	48	Marcellus
54	7/19/2017	7187	7273	48	Marcellus

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API 47-095-02361 Farm Name Edna Monroe Well Number Deulley Unit 3H

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	6/30/2017	75.5	7024	0	3025	147090	9155	N/A
2	6/30/2017	74.8	7565	5137	3326	168200	10060	N/A
3	6/30/2017	75.3	7367	5196	3339	147100	9200	N/A
4	7/1/2017	74.6	7531	5252	3378	147180	9128	N/A
5	7/1/2017	74.0	8120	5312	3722	167400	11881	N/A
6	7/1/2017	76.0	7392	5352	3703	147170	9216	N/A
7	7/2/2017	72.0	7179	5355	3752	168280	10008	N/A
8	7/2/2017	70.0	7225	4902	3841	146770	10036	N/A
9	7/3/2017	72.4	7400	5297	3631	163020	9587	N/A
10	7/4/2017	66.4	7136	5653	3734	147430	10414	N/A
11	7/4/2017	76.9	7675	5307	3557	166440	13094	N/A
12	7/5/2017	79.1	7542	5143	3160	147550	10021	N/A
13	7/5/2017	78.8	7574	5238	3766	160600	10273	N/A
14	7/5/2017	77.5	7290	5250	3701	165260	9410	N/A
15	7/6/2017	80.1	7098	5497	3817	161440	9393	N/A
16	7/6/2017	80.1	7310	5704	3786	144660	8844	N/A
17	7/6/2017	77.0	7328	5460	3773	163280	8988	N/A
18	7/6/2017	72.9	6917	5349	3968	168340	9665	N/A
19	7/7/2017	75.8	7869	5372	3805	147200	11379	N/A
20	7/7/2017	78.2	7413	5454	3654	168260	10388	N/A
21	7/7/2017	80.3	8696	5284	3891	147030	11010	N/A
22	7/8/2017	77.9	7143	5228	3991	167900	9277	N/A
23	7/8/2017	59.3	7739	5353	6215	105070	12729	N/A
24	7/8/2017	72.8	7708	5366	3618	147030	11400	N/A
25	7/9/2017	75.0	6864	5317	3783	168220	9463	N/A
26	7/9/2017	73.5	6761	5215	4013	147160	9032	N/A
27	7/9/2017	72.7	6892	5309	3720	166360	9281	N/A
28	7/10/2017	74.0	6773	5237	3639	146910	8868	N/A
29	7/10/2017	72.6	6887	5405	3949	168280	9172	N/A
30	7/11/2017	77.3	6946	5297	3554	166120	9180	N/A
31	7/11/2017	76.8	6642	5022	3910	168160	9397	N/A
32	7/11/2017	69.3	6748	5515	3763	171180	9189	N/A
33	7/11/2017	79.9	6948	5453	5557	165260	11458	N/A
34	7/13/2017	73.5	6881	5229	3763	167980	11109	N/A
35	7/13/2017	78.6	6845	5304	3950	147490	9712	N/A
36	7/14/2017	80.1	6944	5465	3748	167980	8949	N/A
37	7/14/2017	77.0	6666	5314	3692	167380	9321	N/A
38	7/14/2017	78.6	6792	5270	3886	168000	9083	N/A
39	7/15/2017	74.2	6647	5118	3785	146900	9224	N/A
40	7/15/2017	74.5	6999	5380	3768	146450	8802	N/A
41	7/15/2017	75.9	6709	5088	3840	167320	10007	N/A
42	7/15/2017	82.1	6721	5375	3915	145830	8436	N/A
43	7/16/2017	72.0	6092	5571	4003	168200	8923	N/A
44	7/16/2017	75.9	6497	5396	3899	168040	9197	N/A
45	7/17/2017	78.6	6762	5361	4055	145690	8956	N/A
46	7/17/2017	75.7	6953	5243	3926	167980	8941	N/A
47	7/17/2017	80.0	7182	5297	3792	168080	10014	N/A
48	7/17/2017	78.8	6736	5643	4011	147090	8643	N/A
49	7/18/2017	75.4	6691	5573	3959	168360	8715	N/A
50	7/18/2017	74.8	6665	5820	3996	146860	8444	N/A
51	7/18/2017	80.2	6851	5865	4168	168220	8863	N/A
52	7/18/2017	79.6	6662	5644	3779	147200	8643	N/A
53	7/19/2017	79.7	6773	5368	3612	166840	9066	N/A
54	7/19/2017	78.3	6266	5223	3915	168140	8851	N/A
	AVG=	**75.8**	**7,075**	**5,255**	**3,843**	**8,533,380**	**521,494**	TOTAL

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API 47-095-02361 Farm Name Edna Monroe Well Number Deulley Unit 3H				
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	337'	N/A	337'	N/A
Sandy Siltstone	est. 0	225	est. 0	225
Sandstone	est. 225	325	est. 225	325
Shale/Siltstone	est. 325	605	est. 325	605
Silty Limestone	est. 605	805	est. 605	805
Sandy Siltstone	est. 805	1025	est. 805	1025
Silty Shale	est. 1025	1065	est. 1025	1065
Sandstone	est. 1065	1445	est. 1065	1445
Sandy Shale	est. 1445	1545	est. 1445	1545
Shale/Sandstone	est. 1545	1705	est. 1545	1705
Sandstone/Siltstone	est. 1705	1745	est. 1705	1745
Sandstone	est. 1745	1810	est. 1745	1810
Sandy Shale	est. 1810	1870	est. 1810	1879
Big Lime	1885	2021	1894	2038
Big Injun	2021	2564	2038	2608
Gantz Sand	2564	2703	2608	2753
Fifty Foot Sandstone	2703	2782	2753	2836
Gordon	2782	3108	2836	3189
Fifth Sandstone	3108	3186	3189	3276
Bayard	3186	3508	3276	3634
Warren	3508	3893	3634	4062
Speechley	3893	4075	4062	4266
Baltown	4075	4423	4266	4655
Bradford	4423	4846	4655	5128
Benson	4846	5193	5128	5517
Alexander	5193	5402	5517	5750
Elk	5402	5587	5750	5955
Rhinestreet	5587	6184	5955	6608
Sycamore	6159	6328	6583	6807
Middlesex	6328	6433	6807	6979
Burkett	6433	6465	6979	7048
Tully	6465	6499	7048	7142
Marcellus	6499	NA	7142	NA

*Please note Antero determines formation tops based on mud logs that are only run on one well on a multi-well pad. The

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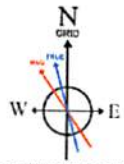
ANTERO RESOURCES CORPORATION

Location: Tyler County, WV
Field: Tyler
Facility: Edna Monroe Pad

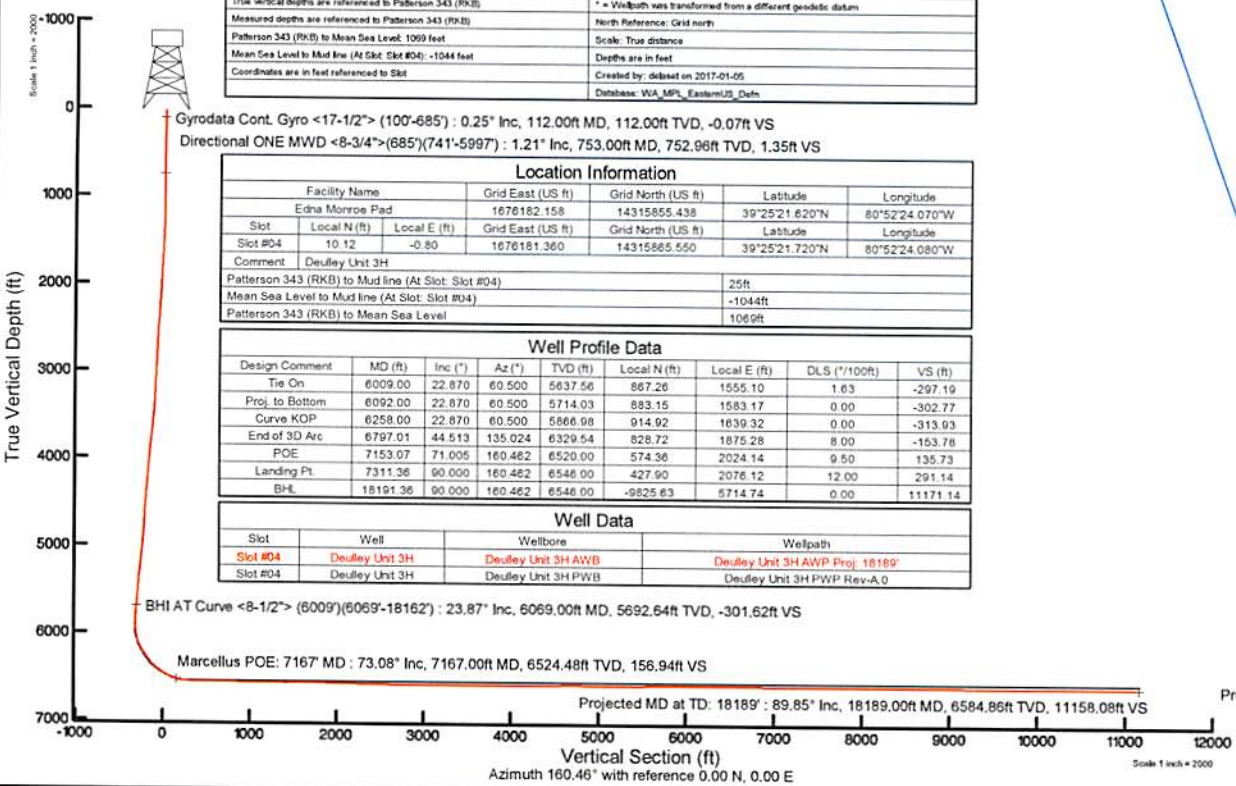
Slot: Slot #04
Well: Deulley Unit 3H
Wellbore: Deulley Unit 3H PWB

API: 47-095-02361-0000
BHI Job #: 8324962
Rig: Patterson 343
Duration: 12/29/2016-01/03/2017



User specified Dip: 66.77° Field: 52128 nT
Magnetic North is 7.59 degrees West of True North (at 26/Dec/2016)
Grid North is 0.08 degrees East of True North
To correct azimuth from True to Grid subtract 0.08 degrees
To correct azimuth from Magnetic to Grid subtract 7.67 degrees

Plot reference wellpath is Deulley Unit 3H PWP Rev-A.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to Patterson 343 (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to Patterson 343 (RKB)	North Reference: Grid north
Patterson 343 (RKB) to Mean Sea Level: 1069 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: Slot #04): -1044 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: delaset on 2017-01-05
	Database: WA_MPL_EasternUS_Defn



Location Information

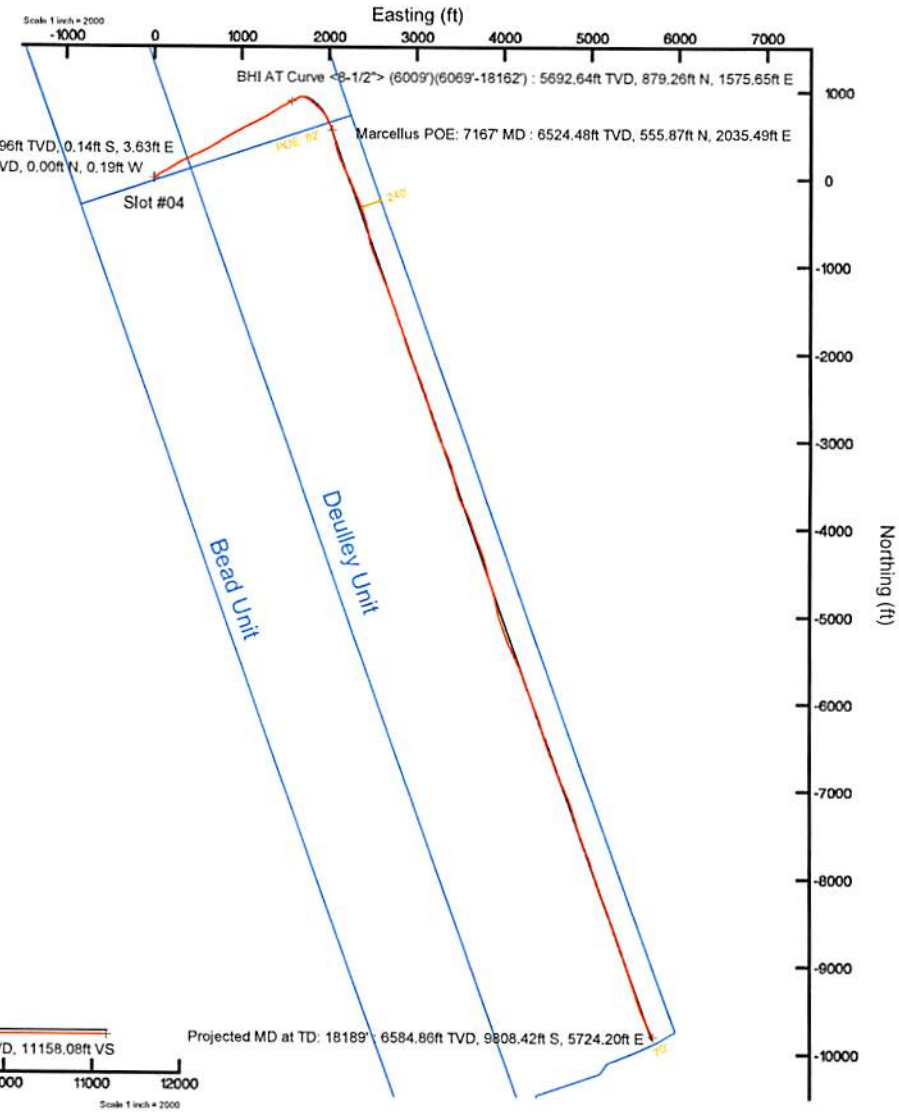
Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Edna Monroe Pad			1676182.158	14315855.438	39°25'21.620"N	80°52'24.070"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot #04	10.12	-0.80	1676181.360	14315865.550	39°25'21.720"N	80°52'24.080"W
Comment	Deulley Unit 3H					
Patterson 343 (RKB) to Mud line (At Slot: Slot #04)					25ft	
Mean Sea Level to Mud line (At Slot: Slot #04)					-1044ft	
Patterson 343 (RKB) to Mean Sea Level					1069ft	

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	6009.00	22.870	60.500	5637.56	867.26	1555.10	1.63	-297.19
Proj. to Bottom	6092.00	22.870	60.500	5714.03	883.15	1583.17	0.00	-302.77
Curve KOP	6258.00	22.870	60.500	5866.98	914.92	1639.32	0.00	-313.93
End of 3D Arc	6797.01	44.513	135.024	6329.54	828.72	1875.28	8.00	-153.78
POE	7153.07	71.005	160.462	6520.00	574.36	2024.14	9.50	135.73
Landing Pt.	7311.36	90.000	160.462	6546.00	427.90	2076.12	12.00	291.14
BHL	18191.36	90.000	160.462	6546.00	-9825.63	5714.74	0.00	11171.14

Well Data

Slot	Well	Wellbore	Wellpath
Slot #04	Deulley Unit 3H	Deulley Unit 3H AWB	Deulley Unit 3H AWP Proj: 18189'
Slot #04	Deulley Unit 3H	Deulley Unit 3H PWB	Deulley Unit 3H PWP Rev-A.0



Actual Wellpath Report

Deulley Unit 3H AWP Proj: 18189'

REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Tyler County, WV	Well	Deulley Unit 3H
Field	Tyler	Wellbore	Deulley Unit 3H AWB
Facility	Edna Monroe Pad		

REPORT SETUP INFORMATION

Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Delaset
Scale	0.999601	Report Generated	05/Jan/2017 at 11:24
Convergence at slot	0.09° East	Database/Source file	WA_MPL_EasternUS_Defn/Deulley_Unit_3H_AWP_Proj__18189_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	10.12	-0.80	1676181.36	14315865.55	39°25'21.720"N	80°52'24.080"W
Facility Reference Pt			1676182.16	14315855.44	39°25'21.620"N	80°52'24.070"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM

Calculation method	Minimum curvature	Patterson 343 (RKB) to Facility Vertical Datum	25.00ft
Horizontal Reference Pt	Slot	Patterson 343 (RKB) to Mean Sea Level	1069.00ft
Vertical Reference Pt	Patterson 343 (RKB)	Patterson 343 (RKB) to Mud Line at Slot (Slot #04)	25.00ft
MD Reference Pt	Patterson 343 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	160.46°

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Actual Wellpath Report

Deulley Unit 3H AWP Proj: 18189'

REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Tyler County, WV	Well	Deulley Unit 3H
Field	Tyler	Wellbore	Deulley Unit 3H AWB
Facility	Edna Monroe Pad		

WELLPATH DATA (243 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
0.00†	0.000	270.560	0.00	0.00	0.00	0.00	1676181.36	14315865.55	39°25'21.720"N	80°52'24.080"W	0.00	0.000	0.00	0.00	0.00	
25.00	0.000	270.560	25.00	0.00	0.00	0.00	1676181.36	14315865.55	39°25'21.720"N	80°52'24.080"W	0.00	0.000	0.00	0.00	0.00	
112.00	0.250	270.560	112.00	-0.07	0.00	-0.19	1676181.17	14315865.55	39°25'21.720"N	80°52'24.082"W	0.19	270.560	0.29	0.29	-102.80	Gyrodata Cont. Gyro <17-1/2"> (100'-685')
212.00	0.170	254.040	212.00	-0.15	-0.04	-0.55	1676180.81	14315865.51	39°25'21.720"N	80°52'24.087"W	0.55	266.176	0.10	-0.08	-16.52	
312.00	0.140	195.170	312.00	-0.06	-0.20	-0.73	1676180.64	14315865.35	39°25'21.718"N	80°52'24.089"W	0.75	254.912	0.15	-0.03	-58.87	
412.00	0.150	184.130	412.00	0.16	-0.44	-0.77	1676180.59	14315865.11	39°25'21.716"N	80°52'24.090"W	0.89	239.922	0.03	0.01	-11.04	
506.00	0.240	142.800	506.00	0.46	-0.72	-0.66	1676180.70	14315864.83	39°25'21.713"N	80°52'24.088"W	0.98	222.216	0.17	0.10	-43.97	
546.00	0.640	80.710	546.00	0.58	-0.75	-0.39	1676180.97	14315864.80	39°25'21.713"N	80°52'24.085"W	0.85	207.061	1.42	1.00	-155.23	
577.00	0.950	79.200	576.99	0.65	-0.68	0.04	1676181.40	14315864.87	39°25'21.713"N	80°52'24.080"W	0.68	176.793	1.00	1.00	-4.87	
636.00	1.140	78.640	635.98	0.81	-0.47	1.09	1676182.45	14315865.08	39°25'21.715"N	80°52'24.066"W	1.19	113.289	0.32	0.32	-0.95	
697.00	1.330	82.840	696.97	1.05	-0.26	2.39	1676183.75	14315865.29	39°25'21.717"N	80°52'24.050"W	2.41	96.278	0.34	0.31	6.89	
753.00	1.210	85.990	752.96	1.35	-0.14	3.63	1676184.98	14315865.41	39°25'21.719"N	80°52'24.034"W	3.63	92.223	0.25	-0.21	5.62	Directional ONE MWD <8-3/4">(685')(741'-5997')
813.00	0.780	97.670	812.95	1.70	-0.15	4.66	1676186.02	14315865.40	39°25'21.718"N	80°52'24.021"W	4.66	91.854	0.79	-0.72	19.47	
878.00	0.590	103.450	877.94	2.09	-0.29	5.43	1676186.78	14315865.26	39°25'21.717"N	80°52'24.011"W	5.43	93.036	0.31	-0.29	8.89	
941.00	0.320	117.600	940.94	2.39	-0.44	5.90	1676187.26	14315865.11	39°25'21.716"N	80°52'24.005"W	5.91	94.313	0.46	-0.43	22.46	
1003.00	0.610	92.640	1002.94	2.64	-0.54	6.38	1676187.74	14315865.01	39°25'21.715"N	80°52'23.999"W	6.40	94.839	0.56	0.47	-40.26	
1066.00	1.670	71.340	1065.92	2.78	-0.26	7.59	1676188.94	14315865.29	39°25'21.717"N	80°52'23.983"W	7.59	91.977	1.78	1.68	-33.81	
1129.00	2.730	66.010	1128.88	2.68	0.64	9.83	1676191.18	14315866.19	39°25'21.726"N	80°52'23.955"W	9.85	86.263	1.71	1.68	-8.46	
1192.00	3.650	61.490	1191.78	2.25	2.21	12.96	1676194.31	14315867.76	39°25'21.742"N	80°52'23.915"W	13.15	80.326	1.51	1.46	-7.17	
1256.00	4.350	56.250	1255.62	1.34	4.53	16.77	1676198.12	14315870.08	39°25'21.765"N	80°52'23.866"W	17.37	74.882	1.23	1.09	-8.19	
1319.00	4.970	51.110	1318.42	-0.15	7.57	20.88	1676202.23	14315873.12	39°25'21.795"N	80°52'23.814"W	22.21	70.069	1.19	0.98	-8.16	
1381.00	5.630	48.770	1380.15	-2.17	11.26	25.26	1676206.61	14315876.81	39°25'21.831"N	80°52'23.758"W	27.65	65.969	1.12	1.06	-3.77	
1444.00	6.140	49.530	1442.82	-4.51	15.48	30.14	1676211.49	14315881.03	39°25'21.873"N	80°52'23.696"W	33.89	62.810	0.82	0.81	1.21	
1506.00	7.470	50.860	1504.38	-7.05	20.18	35.79	1676217.14	14315885.72	39°25'21.919"N	80°52'23.624"W	41.09	60.584	2.16	2.15	2.15	
1570.00	8.640	53.560	1567.75	-9.84	25.66	42.89	1676224.23	14315891.20	39°25'21.973"N	80°52'23.533"W	49.98	59.104	1.92	1.83	4.22	
1632.00	10.210	52.980	1628.91	-12.85	31.74	51.02	1676232.36	14315897.27	39°25'22.033"N	80°52'23.429"W	60.09	58.116	2.54	2.53	-0.94	
1696.00	11.430	55.320	1691.77	-16.21	38.76	60.76	1676242.10	14315904.30	39°25'22.102"N	80°52'23.305"W	72.07	57.466	2.03	1.91	3.66	
1759.00	12.810	57.290	1753.36	-19.43	46.09	71.77	1676253.11	14315911.62	39°25'22.175"N	80°52'23.165"W	85.30	57.295	2.29	2.19	3.13	
1822.00	14.050	60.420	1814.64	-22.35	53.64	84.30	1676265.63	14315919.17	39°25'22.249"N	80°52'23.005"W	99.92	57.534	2.28	1.97	4.97	
1885.00	14.960	62.220	1875.63	-24.85	61.20	98.15	1676279.47	14315926.73	39°25'22.324"N	80°52'22.828"W	115.67	58.053	1.61	1.44	2.86	

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Area	Tyler County, WV	Well	Deulley Unit 3H
Field	Tyler	Wellbore	Deulley Unit 3H AWB
Facility	Edna Monroe Pad		

WELLPATH DATA (243 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
1948.00	16.620	62.030	1936.25	-27.34	69.22	113.30	1676294.62	14315934.74	39°25'22.403"N	80°52'22.635"W	132.77	58.578	2.64	2.63	-0.30	
2011.00	20.760	62.100	1995.92	-30.28	78.67	131.13	1676312.44	14315944.19	39°25'22.496"N	80°52'22.408"W	152.92	59.039	6.57	6.57	0.11	
2074.00	21.570	62.950	2054.67	-33.42	89.16	151.31	1676332.61	14315954.68	39°25'22.599"N	80°52'22.150"W	175.63	59.491	1.37	1.29	1.35	
2137.00	20.790	61.910	2113.41	-36.60	99.70	171.49	1676352.78	14315965.21	39°25'22.703"N	80°52'21.893"W	198.37	59.829	1.37	-1.24	-1.65	
2200.00	18.990	59.650	2172.65	-40.18	110.14	190.20	1676371.49	14315975.65	39°25'22.806"N	80°52'21.654"W	219.79	59.926	3.11	-2.86	-3.59	
2263.00	17.740	57.680	2232.44	-44.23	120.45	207.16	1676388.44	14315985.95	39°25'22.908"N	80°52'21.438"W	239.63	59.825	2.22	-1.98	-3.13	
2326.00	16.590	56.650	2292.64	-48.50	130.53	222.79	1676404.06	14315996.03	39°25'23.007"N	80°52'21.239"W	258.21	59.634	1.89	-1.83	-1.63	
2389.00	16.200	56.850	2353.07	-52.71	140.28	237.66	1676418.92	14316005.77	39°25'23.103"N	80°52'21.049"W	275.97	59.449	0.63	-0.62	0.32	
2452.00	16.460	57.960	2413.53	-56.71	149.82	252.58	1676433.84	14316015.31	39°25'23.197"N	80°52'20.859"W	293.67	59.326	0.64	0.41	1.76	
2515.00	16.360	58.600	2473.97	-60.47	159.18	267.72	1676448.97	14316024.66	39°25'23.289"N	80°52'20.666"W	311.47	59.266	0.33	-0.16	1.02	
2544.00	15.890	58.870	2501.83	-62.10	163.36	274.60	1676455.85	14316028.84	39°25'23.331"N	80°52'20.578"W	319.52	59.252	1.64	-1.62	0.93	
2635.00	15.500	59.790	2589.43	-66.86	175.92	295.78	1676477.02	14316041.39	39°25'23.455"N	80°52'20.308"W	344.14	59.258	0.51	-0.43	1.01	
2699.00	16.530	61.390	2650.95	-69.88	184.58	311.16	1676492.39	14316050.05	39°25'23.540"N	80°52'20.112"W	361.79	59.324	1.75	1.61	2.50	
2762.00	17.110	63.050	2711.25	-72.48	193.07	327.29	1676508.52	14316058.54	39°25'23.624"N	80°52'19.906"W	379.99	59.463	1.20	0.92	2.63	
2825.00	18.140	64.140	2771.30	-74.76	201.55	344.38	1676525.60	14316067.02	39°25'23.707"N	80°52'19.688"W	399.02	59.661	1.72	1.63	1.73	
2888.00	19.510	64.490	2830.92	-76.93	210.36	362.70	1676543.91	14316075.82	39°25'23.794"N	80°52'19.454"W	419.28	59.887	2.18	2.17	0.56	
2952.00	21.390	63.690	2890.89	-79.42	220.13	382.80	1676564.01	14316085.59	39°25'23.890"N	80°52'19.198"W	441.59	60.099	2.97	2.94	-1.25	
3015.00	23.250	63.490	2949.17	-82.28	230.78	404.23	1676585.43	14316096.23	39°25'23.995"N	80°52'18.925"W	465.47	60.278	2.95	2.95	-0.32	
3078.00	24.120	63.580	3006.86	-85.34	242.05	426.89	1676608.08	14316107.51	39°25'24.106"N	80°52'18.636"W	490.74	60.446	1.38	1.38	0.14	
3141.00	24.560	65.360	3064.26	-88.04	253.24	450.32	1676631.50	14316118.69	39°25'24.217"N	80°52'18.337"W	516.64	60.648	1.36	0.70	2.83	
3204.00	25.510	65.630	3121.34	-90.35	264.30	474.57	1676655.74	14316129.74	39°25'24.326"N	80°52'18.028"W	543.21	60.886	1.52	1.51	0.43	
3267.00	26.200	65.640	3178.03	-92.66	275.63	499.60	1676680.76	14316141.07	39°25'24.437"N	80°52'17.709"W	570.59	61.114	1.10	1.10	0.02	
3331.00	25.400	65.230	3235.65	-95.10	287.21	524.94	1676706.09	14316152.64	39°25'24.551"N	80°52'17.386"W	598.37	61.315	1.28	-1.25	-0.64	
3394.00	25.350	64.480	3292.57	-97.73	298.68	549.37	1676730.51	14316164.11	39°25'24.664"N	80°52'17.074"W	625.32	61.468	0.52	-0.08	-1.19	
3457.00	25.700	63.870	3349.43	-100.71	310.51	573.81	1676754.94	14316175.93	39°25'24.781"N	80°52'16.762"W	652.44	61.581	0.69	0.56	-0.97	
3520.00	26.530	62.570	3405.99	-104.21	323.01	598.56	1676779.68	14316188.43	39°25'24.904"N	80°52'16.447"W	680.15	61.647	1.60	1.32	-2.06	
3583.00	26.960	61.200	3462.25	-108.43	336.37	623.57	1676804.68	14316201.78	39°25'25.036"N	80°52'16.128"W	708.50	61.656	1.19	0.68	-2.17	
3647.00	27.430	60.480	3519.18	-113.32	350.62	649.11	1676830.21	14316216.03	39°25'25.176"N	80°52'15.802"W	737.75	61.624	0.90	0.73	-1.13	
3710.00	25.950	59.210	3575.47	-118.53	364.83	673.58	1676854.67	14316230.23	39°25'25.316"N	80°52'15.490"W	766.03	61.559	2.52	-2.35	-2.02	
3773.00	24.060	58.040	3632.56	-123.98	378.68	696.32	1676877.40	14316244.08	39°25'25.453"N	80°52'15.200"W	792.63	61.461	3.10	-3.00	-1.86	

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3835.00	25.140	57.600	3688.93	-129.63	392.43	718.16	1676899.23	14316257.82	39°25'25.588"N	80°52'14.922"W	818.38	61.346	1.77	1.74	-0.71	
3899.00	25.860	56.970	3746.70	-135.91	407.32	741.34	1676922.40	14316272.71	39°25'25.735"N	80°52'14.626"W	845.87	61.214	1.20	1.13	-0.98	
3962.00	26.400	57.070	3803.26	-142.36	422.42	764.61	1676945.67	14316287.81	39°25'25.884"N	80°52'14.329"W	873.54	61.081	0.86	0.86	0.16	
4025.00	26.770	57.620	3859.60	-148.76	437.64	788.35	1676969.40	14316303.01	39°25'26.034"N	80°52'14.026"W	901.68	60.964	0.71	0.59	0.87	
4088.00	26.560	58.210	3915.90	-154.90	452.65	812.31	1676993.34	14316318.02	39°25'26.182"N	80°52'13.721"W	929.91	60.871	0.54	-0.33	0.94	
4151.00	26.240	60.230	3972.33	-160.36	466.99	836.37	1677017.39	14316332.35	39°25'26.324"N	80°52'13.414"W	957.91	60.823	1.51	-0.51	3.21	
4214.00	26.730	61.340	4028.72	-165.08	480.70	860.89	1677041.90	14316346.06	39°25'26.459"N	80°52'13.101"W	986.00	60.822	1.11	0.78	1.76	
4277.00	26.800	61.920	4084.97	-169.43	494.18	885.85	1677066.86	14316359.53	39°25'26.592"N	80°52'12.783"W	1014.37	60.845	0.43	0.11	0.92	
4340.00	26.610	60.400	4141.25	-174.01	507.84	910.65	1677091.65	14316373.18	39°25'26.726"N	80°52'12.467"W	1042.68	60.853	1.13	-0.30	-2.41	
4403.00	26.440	59.450	4197.62	-179.15	521.93	935.00	1677115.98	14316387.28	39°25'26.865"N	80°52'12.156"W	1070.81	60.829	0.73	-0.27	-1.51	
4466.00	26.090	60.620	4254.11	-184.20	535.86	959.15	1677140.12	14316401.20	39°25'27.003"N	80°52'11.848"W	1098.69	60.809	0.99	-0.56	1.86	
4529.00	26.220	61.150	4310.66	-188.82	549.37	983.41	1677164.38	14316414.70	39°25'27.136"N	80°52'11.539"W	1126.46	60.811	0.42	0.21	0.84	
4592.00	26.440	61.510	4367.12	-193.25	562.78	1007.93	1677188.88	14316428.10	39°25'27.268"N	80°52'11.226"W	1154.40	60.823	0.43	0.35	0.57	
4655.00	26.540	60.600	4423.51	-197.84	576.38	1032.52	1677213.46	14316441.70	39°25'27.402"N	80°52'10.912"W	1182.50	60.829	0.66	0.16	-1.44	
4719.00	26.970	61.360	4480.66	-202.59	590.35	1057.71	1677238.65	14316455.67	39°25'27.540"N	80°52'10.591"W	1211.31	60.832	0.86	0.67	1.19	
4782.00	26.860	62.310	4536.83	-206.86	603.81	1082.85	1677263.78	14316469.12	39°25'27.673"N	80°52'10.270"W	1239.82	60.855	0.70	-0.17	1.51	
4845.00	27.010	64.460	4593.00	-210.38	616.59	1108.36	1677289.28	14316481.90	39°25'27.798"N	80°52'09.945"W	1268.33	60.912	1.56	0.24	3.41	
4908.00	27.610	65.390	4648.98	-213.16	628.84	1134.54	1677315.45	14316494.14	39°25'27.919"N	80°52'09.611"W	1297.16	61.002	1.17	0.95	1.48	
4971.00	27.480	64.980	4704.84	-215.84	641.07	1160.99	1677341.88	14316506.36	39°25'28.040"N	80°52'09.274"W	1326.22	61.094	0.36	-0.21	-0.65	
5033.00	26.150	63.440	4760.17	-218.88	653.23	1186.17	1677367.06	14316518.52	39°25'28.159"N	80°52'08.953"W	1354.15	61.158	2.42	-2.15	-2.48	
5097.00	24.670	62.160	4817.98	-222.53	665.77	1210.60	1677391.47	14316531.06	39°25'28.283"N	80°52'08.641"W	1381.59	61.191	2.47	-2.31	-2.00	
5160.00	25.210	61.330	4875.10	-226.55	678.35	1234.00	1677414.86	14316543.63	39°25'28.407"N	80°52'08.343"W	1408.16	61.202	1.02	0.86	-1.32	
5223.00	25.980	59.790	4931.92	-231.24	691.73	1257.69	1677438.55	14316557.00	39°25'28.539"N	80°52'08.041"W	1435.37	61.189	1.62	1.22	-2.44	
5286.00	26.790	59.090	4988.36	-236.59	705.97	1281.80	1677462.65	14316571.23	39°25'28.679"N	80°52'07.733"W	1463.35	61.156	1.38	1.29	-1.11	
5349.00	27.650	57.980	5044.38	-242.55	721.01	1306.38	1677487.21	14316586.27	39°25'28.828"N	80°52'07.420"W	1492.14	61.105	1.59	1.37	-1.76	
5412.00	28.260	59.250	5100.03	-248.61	736.39	1331.59	1677512.42	14316601.64	39°25'28.979"N	80°52'07.098"W	1521.64	61.057	1.35	0.97	2.02	
5475.00	28.080	60.740	5155.57	-254.01	751.26	1357.34	1677538.16	14316616.51	39°25'29.126"N	80°52'06.770"W	1551.38	61.036	1.15	-0.29	2.37	
5538.00	26.890	58.440	5211.46	-259.48	765.97	1382.42	1677563.22	14316631.21	39°25'29.271"N	80°52'06.450"W	1580.44	61.010	2.53	-1.89	-3.65	
5600.00	25.910	55.610	5266.99	-265.87	780.96	1405.55	1677586.34	14316646.19	39°25'29.419"N	80°52'06.155"W	1607.93	60.942	2.57	-1.58	-4.56	
5663.00	26.480	58.130	5323.53	-272.40	796.15	1428.83	1677609.62	14316661.38	39°25'29.568"N	80°52'05.858"W	1635.67	60.873	1.98	0.90	4.00	

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Actual Wellpath Report

Deulley Unit 3H AWP Proj: 18189'

REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Tyler County, WV	Well	Deulley Unit 3H
Field	Tyler	Wellbore	Deulley Unit 3H AWB
Facility	Edna Monroe Pad		

WELLPATH DATA (243 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
5726.00	26.490	61.550	5379.92	-277.58	810.26	1453.12	1677633.89	14316675.48	39°25'29.708"N	80°52'05.548"W	1663.75	60.856	2.42	0.02	5.43	
5789.00	25.990	63.310	5436.43	-281.47	823.15	1477.80	1677658.57	14316688.37	39°25'29.835"N	80°52'05.234"W	1691.59	60.882	1.47	-0.79	2.79	
5852.00	24.930	60.580	5493.31	-285.47	835.87	1501.70	1677682.46	14316701.09	39°25'29.960"N	80°52'04.929"W	1718.66	60.899	2.51	-1.68	-4.33	
5915.00	23.130	57.790	5550.85	-290.46	848.99	1523.74	1677704.49	14316714.20	39°25'30.089"N	80°52'04.648"W	1744.30	60.874	3.38	-2.86	-4.43	
5978.00	22.390	60.900	5608.94	-295.17	861.42	1544.69	1677725.44	14316726.63	39°25'30.212"N	80°52'04.380"W	1768.65	60.853	2.24	-1.17	4.94	
6009.00	22.870	60.500	5637.56	-297.19	867.26	1555.10	1677735.83	14316732.47	39°25'30.270"N	80°52'04.248"W	1780.58	60.852	1.63	1.55	-1.29	
6069.00	23.870	59.010	5692.64	-301.62	879.26	1575.65	1677756.38	14316744.45	39°25'30.388"N	80°52'03.986"W	1804.37	60.837	1.94	1.67	-2.48	BHI AT Curve <8-1/2"> (6009')(6069'-18162')
6116.00	23.230	58.480	5735.72	-305.43	889.00	1591.71	1677772.43	14316754.19	39°25'30.484"N	80°52'03.781"W	1823.14	60.816	1.43	-1.36	-1.13	
6210.00	23.130	62.350	5822.14	-311.88	907.26	1623.86	1677804.57	14316772.44	39°25'30.664"N	80°52'03.371"W	1860.12	60.808	1.62	-0.11	4.12	
6257.00	22.860	67.450	5865.41	-313.66	915.04	1640.47	1677821.18	14316780.23	39°25'30.741"N	80°52'03.159"W	1878.42	60.848	4.28	-0.57	10.85	
6305.00	22.190	77.480	5909.76	-313.05	920.59	1657.94	1677838.64	14316785.77	39°25'30.795"N	80°52'02.936"W	1896.38	60.958	8.12	-1.40	20.90	
6352.00	22.440	84.330	5953.25	-309.81	923.40	1675.53	1677856.22	14316788.58	39°25'30.823"N	80°52'02.712"W	1913.13	61.141	5.56	0.53	14.57	
6399.00	21.990	89.180	5996.76	-304.83	924.41	1693.26	1677873.94	14316789.59	39°25'30.832"N	80°52'02.486"W	1929.16	61.368	4.02	-0.96	10.32	
6446.00	22.740	100.060	6040.25	-297.52	922.95	1711.01	1677891.69	14316788.13	39°25'30.818"N	80°52'02.260"W	1944.07	61.657	8.94	1.60	23.15	
6493.00	25.040	111.530	6083.24	-286.49	917.71	1729.22	1677909.89	14316782.89	39°25'30.766"N	80°52'02.028"W	1957.65	62.045	11.01	4.89	24.40	
6543.00	28.660	119.260	6127.86	-270.51	907.96	1749.54	1677930.20	14316773.14	39°25'30.669"N	80°52'01.769"W	1971.11	62.572	10.05	7.24	15.46	
6588.00	31.510	123.890	6166.80	-252.94	896.12	1768.72	1677949.37	14316761.31	39°25'30.552"N	80°52'01.525"W	1982.78	63.131	8.16	6.33	10.29	
6636.00	35.350	128.580	6206.85	-231.06	880.46	1790.00	1677970.64	14316745.66	39°25'30.397"N	80°52'01.254"W	1994.82	63.808	9.64	8.00	9.77	
6682.00	39.360	131.890	6243.42	-206.94	862.41	1811.27	1677991.91	14316727.62	39°25'30.218"N	80°52'00.983"W	2006.10	64.539	9.75	8.72	7.20	
6730.00	41.860	131.000	6279.85	-179.62	841.74	1834.69	1678015.32	14316706.95	39°25'30.013"N	80°52'00.685"W	2018.57	65.355	5.35	5.21	-1.85	
6776.00	43.300	129.790	6313.72	-152.69	821.57	1858.40	1678039.01	14316686.79	39°25'29.814"N	80°52'00.384"W	2031.90	66.150	3.60	3.13	-2.63	
6823.00	45.420	130.990	6347.32	-124.25	800.28	1883.42	1678064.03	14316665.51	39°25'29.603"N	80°52'00.065"W	2046.39	66.979	4.85	4.51	2.55	
6832.00†	46.139	131.894	6353.60	-118.61	796.01	1888.25	1678068.86	14316661.24	39°25'29.560"N	80°52'00.004"W	2049.18	67.142	10.75	7.99	10.04	Middlesex: 6832' MD
6871.00	49.330	135.570	6379.83	-92.83	776.05	1909.08	1678089.68	14316641.29	39°25'29.363"N	80°51'59.739"W	2060.79	67.878	10.75	8.18	9.43	
6918.00	52.590	140.740	6409.45	-59.07	748.85	1933.39	1678113.98	14316614.10	39°25'29.094"N	80°51'59.429"W	2073.35	68.827	11.00	6.94	11.00	
6965.00	56.020	146.530	6436.88	-22.55	718.11	1955.97	1678136.55	14316583.38	39°25'28.790"N	80°51'59.142"W	2083.63	69.840	12.38	7.30	12.32	
7004.00†	58.785	149.494	6457.89	9.52	690.25	1973.36	1678153.93	14316555.52	39°25'28.514"N	80°51'58.921"W	2090.59	70.721	9.55	7.09	7.60	Burket: 7004' MD
7012.00	59.360	150.080	6462.00	16.27	684.32	1976.81	1678157.38	14316549.59	39°25'28.455"N	80°51'58.877"W	2091.91	70.906	9.55	7.19	7.33	
7059.00	63.390	152.710	6484.52	57.00	648.10	1996.54	1678177.10	14316513.39	39°25'28.097"N	80°51'58.627"W	2099.10	72.016	9.88	8.57	5.60	
7073.00†	64.708	153.889	6490.64	69.49	636.85	2002.20	1678182.75	14316502.15	39°25'27.986"N	80°51'58.555"W	2101.04	72.355	12.08	9.41	8.42	Tully: 7073' MD

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MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
7106.00	67.850	156.570	6503.92	99.57	609.43	2014.84	1678195.40	14316474.73	39°25'27.715"N	80°51'58.394"W	2104.99	73.171	12.08	9.52	8.12	
7153.00	71.560	160.170	6520.22	143.60	568.46	2031.07	1678211.62	14316433.78	39°25'27.309"N	80°51'58.188"W	2109.12	74.364	10.67	7.89	7.66	
7167.00†	73.083	161.150	6524.48	156.94	555.87	2035.49	1678216.03	14316421.20	39°25'27.185"N	80°51'58.132"W	2110.03	74.726	12.76	10.88	7.00	Marcellus POE: 7167' MD
7200.00	76.690	163.400	6533.08	188.78	525.53	2045.18	1678225.72	14316390.87	39°25'26.885"N	80°51'58.009"W	2111.62	75.589	12.76	10.93	6.82	
7247.00	81.630	166.270	6541.92	234.78	480.99	2057.24	1678237.78	14316346.35	39°25'26.445"N	80°51'57.856"W	2112.72	76.840	12.10	10.51	6.11	
7294.00	85.810	167.420	6547.06	281.20	435.51	2067.87	1678248.40	14316300.89	39°25'25.995"N	80°51'57.722"W	2113.23	78.107	9.22	8.89	2.45	
7342.00	89.910	166.880	6548.85	328.83	388.76	2078.54	1678259.06	14316254.15	39°25'25.533"N	80°51'57.587"W	2114.58	79.406	8.62	8.54	-1.12	
7436.00	89.600	162.630	6549.25	422.54	298.09	2103.25	1678283.76	14316163.52	39°25'24.636"N	80°51'57.273"W	2124.27	81.933	4.53	-0.33	-4.52	
7530.00	90.430	157.630	6549.23	516.51	209.71	2135.19	1678315.69	14316075.18	39°25'23.762"N	80°51'56.868"W	2145.46	84.391	5.39	0.88	-5.32	
7624.00	89.380	154.700	6549.38	610.24	123.74	2173.17	1678353.66	14315989.24	39°25'22.912"N	80°51'56.386"W	2176.69	86.741	3.31	-1.12	-3.12	
7718.00	88.800	153.230	6550.88	703.62	39.29	2214.42	1678394.89	14315904.82	39°25'22.077"N	80°51'55.862"W	2214.77	88.984	1.68	-0.62	-1.56	
7813.00	88.890	157.110	6552.79	798.18	-46.89	2254.30	1678434.75	14315818.68	39°25'21.224"N	80°51'55.355"W	2254.78	91.192	4.08	0.09	4.08	
7907.00	89.020	157.080	6554.51	892.00	-133.47	2290.88	1678471.32	14315732.14	39°25'20.368"N	80°51'54.891"W	2294.76	93.334	0.14	0.14	-0.03	
8001.00	88.950	155.920	6556.17	985.76	-219.66	2328.35	1678508.78	14315645.98	39°25'19.516"N	80°51'54.415"W	2338.69	95.389	1.24	-0.07	-1.23	
8095.00	89.480	159.370	6557.46	1079.62	-306.57	2364.09	1678544.51	14315559.10	39°25'18.656"N	80°51'53.961"W	2383.89	97.389	3.71	0.56	3.67	
8189.00	89.320	161.250	6558.44	1173.61	-395.06	2395.76	1678576.16	14315470.64	39°25'17.781"N	80°51'53.559"W	2428.12	99.364	2.01	-0.17	2.00	
8283.00	89.420	164.170	6559.48	1267.52	-484.80	2423.70	1678604.09	14315380.94	39°25'16.894"N	80°51'53.205"W	2471.71	101.311	3.11	0.11	3.11	
8377.00	89.600	167.060	6560.28	1361.13	-575.84	2447.05	1678627.43	14315289.94	39°25'15.994"N	80°51'52.909"W	2513.89	103.242	3.08	0.19	3.07	
8472.00	90.280	170.470	6560.38	1455.12	-669.01	2465.55	1678645.92	14315196.81	39°25'15.072"N	80°51'52.675"W	2554.70	105.181	3.66	0.72	3.59	
8566.00	90.030	165.600	6560.13	1548.27	-760.94	2485.03	1678665.40	14315104.92	39°25'14.164"N	80°51'52.429"W	2598.93	107.025	5.19	-0.27	-5.18	
8661.00	90.000	159.190	6560.10	1643.17	-851.44	2513.75	1678694.10	14315014.45	39°25'13.269"N	80°51'52.064"W	2654.03	108.712	6.75	-0.03	-6.75	
8755.00	89.940	158.020	6560.15	1737.11	-938.96	2548.04	1678728.38	14314926.97	39°25'12.403"N	80°51'51.629"W	2715.54	110.229	1.25	-0.06	-1.24	
8849.00	90.000	158.810	6560.20	1831.05	-1026.37	2582.62	1678762.95	14314839.59	39°25'11.539"N	80°51'51.190"W	2779.09	111.674	0.84	0.06	0.84	
8944.00	88.890	158.120	6561.12	1925.99	-1114.73	2617.49	1678797.80	14314751.27	39°25'10.665"N	80°51'50.748"W	2844.98	113.068	1.38	-1.17	-0.73	
9038.00	88.920	158.290	6562.92	2019.90	-1202.00	2652.39	1678832.68	14314664.04	39°25'09.802"N	80°51'50.305"W	2912.03	114.379	0.18	0.03	0.18	
9133.00	88.860	158.710	6564.76	2114.83	-1290.37	2687.20	1678867.48	14314575.70	39°25'08.928"N	80°51'49.863"W	2980.95	115.650	0.45	-0.06	0.44	
9227.00	89.050	160.250	6566.47	2208.79	-1378.39	2720.14	1678900.41	14314487.72	39°25'08.058"N	80°51'49.445"W	3049.44	116.873	1.65	0.20	1.64	
9321.00	88.920	159.580	6568.14	2302.77	-1466.66	2752.42	1678932.67	14314399.48	39°25'07.185"N	80°51'49.035"W	3118.79	118.051	0.73	-0.14	-0.71	
9415.00	88.800	160.560	6570.01	2396.75	-1555.01	2784.45	1678964.70	14314311.17	39°25'06.311"N	80°51'48.629"W	3189.23	119.182	1.05	-0.13	1.04	
9510.00	88.980	161.870	6571.85	2491.72	-1644.93	2815.04	1678995.27	14314221.28	39°25'05.422"N	80°51'48.241"W	3260.40	120.299	1.39	0.19	1.38	

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9604.00	88.920	162.780	6573.57	2585.66	-1734.47	2843.57	1679023.79	14314131.77	39°25'04.536"N	80°51'47.879"W	3330.81	121.382	0.97	-0.06	0.97	
9698.00	89.320	161.570	6575.01	2679.60	-1823.95	2872.34	1679052.55	14314042.33	39°25'03.652"N	80°51'47.514"W	3402.52	122.416	1.36	0.43	-1.29	
9793.00	89.720	160.780	6575.81	2774.59	-1913.86	2903.00	1679083.19	14313952.45	39°25'02.762"N	80°51'47.125"W	3477.10	123.396	0.93	0.42	-0.83	
9887.00	89.480	159.680	6576.47	2868.59	-2002.32	2934.79	1679114.97	14313864.03	39°25'01.888"N	80°51'46.722"W	3552.78	124.305	1.20	-0.26	-1.17	
9981.00	90.060	159.380	6576.84	2962.57	-2090.38	2967.66	1679147.83	14313776.00	39°25'01.017"N	80°51'46.305"W	3629.98	125.160	0.69	0.62	-0.32	
10076.00	90.150	158.310	6576.67	3057.53	-2178.98	3001.95	1679182.10	14313687.44	39°25'00.141"N	80°51'45.870"W	3709.40	125.974	1.13	0.09	-1.13	
10170.00	90.060	158.830	6576.50	3151.48	-2266.48	3036.29	1679216.43	14313599.98	39°24'59.275"N	80°51'45.434"W	3788.93	126.740	0.56	-0.10	0.55	
10264.00	90.000	159.530	6576.45	3245.46	-2354.34	3069.70	1679249.83	14313512.15	39°24'58.406"N	80°51'45.010"W	3868.59	127.487	0.75	-0.06	0.74	
10359.00	90.060	161.450	6576.40	3340.45	-2443.88	3101.43	1679281.54	14313422.65	39°24'57.521"N	80°51'44.607"W	3948.60	128.238	2.02	0.06	2.02	
10453.00	90.090	163.420	6576.28	3434.39	-2533.50	3129.79	1679309.90	14313333.07	39°24'56.635"N	80°51'44.247"W	4026.69	128.989	2.10	0.03	2.10	
10547.00	90.120	163.040	6576.10	3528.28	-2623.50	3156.91	1679337.01	14313243.10	39°24'55.745"N	80°51'43.904"W	4104.74	129.728	0.41	0.03	-0.40	
10642.00	90.060	162.170	6575.95	3623.22	-2714.15	3185.32	1679365.40	14313152.49	39°24'54.849"N	80°51'43.544"W	4184.84	130.434	0.92	-0.06	-0.92	
10736.00	90.090	161.350	6575.83	3717.19	-2803.43	3214.74	1679394.81	14313063.25	39°24'53.966"N	80°51'43.170"W	4265.41	131.090	0.87	0.03	-0.87	
10830.00	90.150	159.900	6575.63	3811.19	-2892.10	3245.92	1679425.98	14312974.61	39°24'53.089"N	80°51'42.775"W	4347.44	131.701	1.54	0.06	-1.54	
10924.00	90.150	157.670	6575.39	3905.14	-2979.73	3279.93	1679459.98	14312887.02	39°24'52.222"N	80°51'42.343"W	4431.34	132.254	2.37	0.00	-2.37	
11019.00	89.880	156.030	6575.36	3999.95	-3067.07	3317.28	1679497.31	14312799.71	39°24'51.358"N	80°51'41.869"W	4517.89	132.756	1.75	-0.28	-1.73	
11113.00	89.750	155.570	6575.67	4093.64	-3152.81	3355.81	1679535.83	14312714.00	39°24'50.510"N	80°51'41.380"W	4604.53	133.214	0.51	-0.14	-0.49	
11207.00	89.910	160.150	6575.95	4187.51	-3239.86	3391.23	1679571.23	14312626.99	39°24'49.650"N	80°51'40.930"W	4690.11	133.692	4.88	0.17	4.87	
11302.00	89.820	165.250	6576.17	4282.41	-3330.53	3419.47	1679599.46	14312536.36	39°24'48.753"N	80°51'40.572"W	4773.39	134.245	5.37	-0.09	5.37	
11396.00	89.910	167.140	6576.39	4375.94	-3421.81	3441.90	1679621.88	14312445.11	39°24'47.851"N	80°51'40.288"W	4853.40	134.832	2.01	0.10	2.01	
11491.00	90.830	166.510	6575.78	4470.35	-3514.31	3463.55	1679643.52	14312352.65	39°24'46.936"N	80°51'40.014"W	4934.22	135.417	1.17	0.97	-0.66	
11585.00	91.420	160.200	6573.93	4564.16	-3604.30	3490.46	1679670.42	14312262.69	39°24'46.046"N	80°51'39.673"W	5017.40	135.919	6.74	0.63	-6.71	
11679.00	89.820	153.620	6572.91	4657.92	-3690.72	3527.30	1679707.25	14312176.31	39°24'45.191"N	80°51'39.205"W	5105.22	136.297	7.20	-1.70	-7.00	
11773.00	89.820	153.540	6573.21	4751.24	-3774.90	3569.12	1679749.06	14312092.16	39°24'44.359"N	80°51'38.674"W	5195.05	136.605	0.09	0.00	-0.09	
11868.00	88.890	154.730	6574.28	4845.66	-3860.37	3610.56	1679790.48	14312006.72	39°24'43.513"N	80°51'38.148"W	5285.70	136.915	1.59	-0.98	1.25	
11962.00	89.940	160.870	6575.24	4939.50	-3947.36	3646.06	1679825.96	14311919.77	39°24'42.653"N	80°51'37.697"W	5373.58	137.272	6.63	1.12	6.53	
12056.00	90.150	162.840	6575.16	5033.47	-4036.68	3675.33	1679855.22	14311830.49	39°24'41.770"N	80°51'37.326"W	5459.20	137.683	2.11	0.22	2.10	
12150.00	90.710	159.100	6574.46	5127.45	-4125.52	3705.98	1679885.85	14311741.68	39°24'40.891"N	80°51'36.937"W	5545.65	138.066	4.02	0.60	-3.98	
12245.00	89.940	154.460	6573.92	5222.22	-4212.80	3743.42	1679923.28	14311654.43	39°24'40.028"N	80°51'36.462"W	5635.68	138.376	4.95	-0.81	-4.88	
12339.00	89.750	160.260	6574.17	5316.05	-4299.52	3779.59	1679959.44	14311567.75	39°24'39.171"N	80°51'36.003"W	5724.61	138.682	6.17	-0.20	6.17	

Actual Wellpath Report

Deulley Unit 3H AWP Proj: 18189'

REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Tyler County, WV	Well	Deulley Unit 3H
Field	Tyler	Wellbore	Deulley Unit 3H AWB
Facility	Edna Monroe Pad		

WELLPATH DATA (243 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
12434.00	90.120	167.000	6574.28	5410.85	-4390.62	3806.35	1679986.19	14311476.69	39°24'38.270"N	80°51'35.664"W	5810.84	139.077	7.11	0.39	7.09	
12528.00	90.220	167.210	6574.00	5504.21	-4482.25	3827.33	1680007.15	14311385.10	39°24'37.364"N	80°51'35.398"W	5893.98	139.506	0.25	0.11	0.22	
12622.00	91.630	162.680	6572.48	5597.89	-4572.98	3851.73	1680031.55	14311294.40	39°24'36.467"N	80°51'35.089"W	5978.96	139.893	5.05	1.50	-4.82	
12716.00	90.090	160.810	6571.07	5691.85	-4662.24	3881.17	1680060.98	14311205.18	39°24'35.584"N	80°51'34.716"W	6066.30	140.224	2.58	-1.64	-1.99	
12810.00	89.910	164.730	6571.07	5785.75	-4752.00	3909.01	1680088.80	14311115.45	39°24'34.696"N	80°51'34.363"W	6153.20	140.559	4.17	-0.19	4.17	
12905.00	89.970	168.840	6571.17	5880.15	-4844.46	3930.72	1680110.51	14311023.03	39°24'33.782"N	80°51'34.088"W	6238.54	140.945	4.33	0.06	4.33	
12993.00	90.580	168.530	6570.75	5967.25	-4930.75	3947.99	1680127.77	14310936.77	39°24'32.929"N	80°51'33.870"W	6316.56	141.316	0.78	0.69	-0.35	
13093.00	89.880	161.390	6570.35	6066.87	-5027.26	3973.92	1680153.69	14310840.30	39°24'31.975"N	80°51'33.542"W	6408.23	141.675	7.17	-0.70	-7.14	
13188.00	89.720	158.460	6570.68	6161.86	-5116.48	4006.53	1680186.28	14310751.12	39°24'31.093"N	80°51'33.128"W	6498.51	141.937	3.09	-0.17	-3.08	
13282.00	89.690	161.130	6571.16	6255.84	-5204.69	4038.99	1680218.73	14310662.95	39°24'30.220"N	80°51'32.716"W	6588.03	142.187	2.84	-0.03	2.84	
13376.00	90.280	160.090	6571.19	6349.84	-5293.35	4070.20	1680249.93	14310574.32	39°24'29.344"N	80°51'32.320"W	6677.28	142.442	1.27	0.63	-1.11	
13470.00	89.690	155.370	6571.21	6443.70	-5380.32	4105.81	1680285.52	14310487.39	39°24'28.483"N	80°51'31.868"W	6767.97	142.652	5.06	-0.63	-5.02	
13564.00	89.510	154.130	6571.87	6537.23	-5465.33	4145.90	1680325.60	14310402.41	39°24'27.643"N	80°51'31.359"W	6859.91	142.817	1.33	-0.19	-1.32	
13658.00	89.660	156.540	6572.55	6630.85	-5550.75	4185.13	1680364.81	14310317.03	39°24'26.798"N	80°51'30.861"W	6951.70	142.985	2.57	0.16	2.56	
13753.00	89.750	158.960	6573.04	6725.73	-5638.67	4221.10	1680400.77	14310229.14	39°24'25.928"N	80°51'30.405"W	7043.59	143.182	2.55	0.09	2.55	
13847.00	89.690	160.010	6573.50	6819.72	-5726.70	4254.04	1680433.69	14310141.14	39°24'25.058"N	80°51'29.987"W	7133.86	143.393	1.12	-0.06	1.12	
13941.00	89.690	159.670	6574.01	6913.71	-5814.94	4286.43	1680466.08	14310052.94	39°24'24.185"N	80°51'29.576"W	7224.06	143.605	0.36	0.00	-0.36	
14035.00	89.750	158.520	6574.47	7007.68	-5902.75	4319.97	1680499.60	14309965.16	39°24'23.317"N	80°51'29.150"W	7314.69	143.801	1.23	0.06	-1.22	
14130.00	89.660	158.590	6574.96	7102.63	-5991.17	4354.71	1680534.32	14309876.78	39°24'22.442"N	80°51'28.710"W	7406.59	143.988	0.12	-0.09	0.07	
14224.00	89.750	159.340	6575.44	7196.59	-6078.91	4388.45	1680568.05	14309789.08	39°24'21.575"N	80°51'28.282"W	7497.44	144.174	0.80	0.10	0.80	
14318.00	89.720	160.640	6575.87	7290.59	-6167.23	4420.61	1680600.20	14309700.79	39°24'20.701"N	80°51'27.874"W	7587.92	144.367	1.38	-0.03	1.38	
14412.00	89.630	162.060	6576.41	7384.57	-6256.29	4450.67	1680630.25	14309611.77	39°24'19.820"N	80°51'27.493"W	7677.87	144.572	1.51	-0.10	1.51	
14506.00	89.820	164.450	6576.86	7478.45	-6346.30	4477.75	1680657.32	14309521.79	39°24'18.930"N	80°51'27.149"W	7766.96	144.794	2.55	0.20	2.54	
14601.00	90.430	164.240	6576.65	7573.23	-6437.77	4503.38	1680682.94	14309430.36	39°24'18.026"N	80°51'26.825"W	7856.55	145.026	0.68	0.64	-0.22	
14695.00	89.940	158.210	6576.35	7667.18	-6526.73	4533.62	1680713.17	14309341.44	39°24'17.146"N	80°51'26.441"W	7946.82	145.215	6.44	-0.52	-6.41	
14789.00	89.720	157.200	6576.63	7761.07	-6613.70	4569.28	1680748.81	14309254.50	39°24'16.286"N	80°51'25.989"W	8038.62	145.360	1.10	-0.23	-1.07	
14883.00	89.750	159.110	6577.06	7854.99	-6700.95	4604.26	1680783.78	14309167.29	39°24'15.423"N	80°51'25.545"W	8130.31	145.507	2.03	0.03	2.03	
14977.00	89.690	161.850	6577.52	7948.98	-6789.53	4635.67	1680815.17	14309078.74	39°24'14.547"N	80°51'25.147"W	8221.14	145.676	2.92	-0.06	2.91	
15071.00	89.690	155.910	6578.03	8042.90	-6877.18	4669.52	1680849.01	14308991.13	39°24'13.680"N	80°51'24.717"W	8312.64	145.824	6.32	0.00	-6.32	
15166.00	89.630	154.620	6578.59	8137.51	-6963.46	4709.27	1680888.74	14308904.88	39°24'12.827"N	80°51'24.212"W	8406.36	145.930	1.36	-0.06	-1.36	

Actual Wellpath Report

Deulley Unit 3H AWP Proj: 18189'

REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Tyler County, WV	Well	Deulley Unit 3H
Field	Tyler	Wellbore	Deulley Unit 3H AWB
Facility	Edna Monroe Pad		

WELLPATH DATA (243 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
15260.00	89.910	158.530	6578.97	8231.27	-7049.69	4746.63	1680926.09	14308818.68	39°24'11.974"N	80°51'23.738"W	8498.75	146.047	4.17	0.30	4.16	
15354.00	90.060	160.560	6579.00	8325.25	-7137.76	4779.48	1680958.92	14308730.65	39°24'11.103"N	80°51'23.322"W	8590.17	146.194	2.17	0.16	2.16	
15448.00	90.060	161.670	6578.90	8419.25	-7226.70	4809.90	1680989.34	14308641.74	39°24'10.224"N	80°51'22.936"W	8681.04	146.353	1.18	0.00	1.18	
15542.00	90.000	163.590	6578.85	8513.17	-7316.41	4837.97	1681017.39	14308552.07	39°24'09.337"N	80°51'22.580"W	8771.30	146.525	2.04	-0.06	2.04	
15637.00	89.940	164.250	6578.90	8608.00	-7407.69	4864.28	1681043.69	14308460.82	39°24'08.434"N	80°51'22.247"W	8862.00	146.709	0.70	-0.06	0.69	
15731.00	89.940	161.220	6579.00	8701.92	-7497.45	4892.17	1681071.57	14308371.11	39°24'07.547"N	80°51'21.893"W	8952.38	146.875	3.22	0.00	-3.22	
15825.00	89.970	159.190	6579.07	8795.91	-7585.89	4924.00	1681103.39	14308282.70	39°24'06.672"N	80°51'21.490"W	9043.87	147.012	2.16	0.03	-2.16	
15920.00	89.910	158.560	6579.17	8890.87	-7674.50	4958.24	1681137.62	14308194.12	39°24'05.796"N	80°51'21.055"W	9136.86	147.135	0.67	-0.06	-0.66	
16014.00	89.630	158.860	6579.55	8984.83	-7762.09	4992.37	1681171.73	14308106.57	39°24'04.929"N	80°51'20.622"W	9228.96	147.252	0.44	-0.30	0.32	
16109.00	89.690	162.440	6580.11	9079.81	-7851.70	5023.84	1681203.19	14308016.99	39°24'04.043"N	80°51'20.223"W	9321.39	147.387	3.77	0.06	3.77	
16203.00	89.720	163.950	6580.60	9173.70	-7941.69	5051.02	1681230.36	14307927.04	39°24'03.153"N	80°51'19.879"W	9411.86	147.543	1.61	0.03	1.61	
16297.00	89.630	163.540	6581.13	9267.54	-8031.93	5077.33	1681256.66	14307836.84	39°24'02.261"N	80°51'19.545"W	9502.17	147.701	0.45	-0.10	-0.44	
16392.00	89.630	159.810	6581.74	9362.50	-8122.09	5107.19	1681286.51	14307746.71	39°24'01.369"N	80°51'19.167"W	9594.36	147.838	3.93	0.00	-3.93	
16486.00	89.630	156.940	6582.35	9456.43	-8209.46	5141.83	1681321.13	14307659.37	39°24'00.505"N	80°51'18.727"W	9686.78	147.940	3.05	0.00	-3.05	
16581.00	89.570	157.440	6583.01	9551.27	-8297.03	5178.66	1681357.95	14307571.84	39°23'59.639"N	80°51'18.260"W	9780.56	148.029	0.53	-0.06	0.53	
16675.00	89.720	162.130	6583.60	9645.24	-8385.22	5211.13	1681390.40	14307483.69	39°23'58.767"N	80°51'17.848"W	9872.58	148.140	4.99	0.16	4.99	
16769.00	89.750	161.730	6584.03	9739.21	-8474.58	5240.29	1681419.55	14307394.37	39°23'57.883"N	80°51'17.479"W	9963.89	148.269	0.43	0.03	-0.43	
16864.00	89.720	159.490	6584.47	9834.20	-8564.18	5271.83	1681451.07	14307304.80	39°23'56.997"N	80°51'17.079"W	10056.71	148.385	2.36	-0.03	-2.36	
16958.00	89.720	159.350	6584.93	9928.18	-8652.18	5304.87	1681484.10	14307216.83	39°23'56.127"N	80°51'16.660"W	10148.99	148.487	0.15	0.00	-0.15	
17053.00	90.090	160.130	6585.09	10023.17	-8741.31	5337.76	1681516.99	14307127.75	39°23'55.246"N	80°51'16.242"W	10242.17	148.590	0.91	0.39	0.82	
17147.00	90.150	161.140	6584.89	10117.17	-8829.99	5368.93	1681548.14	14307039.10	39°23'54.369"N	80°51'15.847"W	10334.12	148.699	1.08	0.06	1.07	
17241.00	90.090	161.950	6584.69	10211.15	-8919.15	5398.69	1681577.89	14306949.97	39°23'53.487"N	80°51'15.470"W	10425.79	148.814	0.86	-0.06	0.86	
17335.00	90.090	163.280	6584.54	10305.08	-9008.85	5426.77	1681605.96	14306860.30	39°23'52.600"N	80°51'15.114"W	10517.10	148.936	1.41	0.00	1.41	
17430.00	89.910	162.100	6584.54	10400.01	-9099.55	5455.04	1681634.22	14306769.64	39°23'51.703"N	80°51'14.756"W	10609.40	149.058	1.26	-0.19	-1.24	
17524.00	90.000	161.370	6584.62	10493.99	-9188.81	5484.50	1681663.66	14306680.42	39°23'50.820"N	80°51'14.382"W	10701.12	149.168	0.78	0.10	-0.78	
17619.00	90.150	161.640	6584.49	10588.97	-9278.91	5514.64	1681693.79	14306590.36	39°23'49.930"N	80°51'14.000"W	10793.95	149.276	0.33	0.16	0.28	
17714.00	89.910	161.440	6584.44	10683.95	-9369.02	5544.72	1681723.86	14306500.28	39°23'49.038"N	80°51'13.619"W	10886.80	149.382	0.33	-0.25	-0.21	
17809.00	90.030	160.390	6584.49	10778.95	-9458.80	5575.78	1681754.91	14306410.54	39°23'48.151"N	80°51'13.225"W	10979.90	149.481	1.11	0.13	-1.11	
17903.00	90.000	158.370	6584.47	10872.93	-9546.77	5608.88	1681787.99	14306322.60	39°23'47.281"N	80°51'12.806"W	11072.50	149.565	2.15	-0.03	-2.15	
17998.00	89.940	156.760	6584.52	10967.80	-9634.58	5645.14	1681824.23	14306234.83	39°23'46.412"N	80°51'12.346"W	11166.58	149.633	1.70	-0.06	-1.69	

Actual Wellpath Report

Deulley Unit 3H AWP Proj: 18189'

REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Tyler County, WV	Well	Deulley Unit 3H
Field	Tyler	Wellbore	Deulley Unit 3H AWB
Facility	Edna Monroe Pad		

WELLPATH DATA (243 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
18092.00	89.910	155.880	6584.64	11061.56	-9720.66	5682.89	1681861.97	14306148.78	39°23'45.561"N	80°51'11.866"W	11259.95	149.689	0.94	-0.03	-0.94	
18162.00	89.850	154.180	6584.79	11131.24	-9784.12	5712.44	1681891.51	14306085.35	39°23'44.933"N	80°51'11.491"W	11329.64	149.722	2.43	-0.09	-2.43	
18189.00	89.850	154.180	6584.86	11158.08	-9808.42	5724.20	1681903.26	14306061.06	39°23'44.693"N	80°51'11.342"W	11356.56	149.732	0.00	0.00	0.00	Projected MD at TD: 18189'

HOLE & CASING SECTIONS - Ref Wellbore: Deulley Unit 3H AWB Ref Wellpath: Deulley Unit 3H AWP Proj: 18189'

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
20in Conductor	25.00	100.00	75.00	25.00	100.00	0.00	0.00	0.00	-0.14
17.5in Open Hole	100.00	550.00	450.00	100.00	550.00	0.00	-0.14	-0.75	-0.34
13.375in Casing Surface	25.00	550.00	525.00	25.00	550.00	0.00	0.00	-0.75	-0.34
12.25in Open Hole	550.00	2615.00	2065.00	550.00	2570.16	-0.75	-0.34	173.21	291.15
9.625in Casing Intermediate	25.00	2615.00	2590.00	25.00	2570.16	0.00	0.00	173.21	291.15

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Deulley Unit 3H POE Rev-1	6520.00	574.36	2024.14	1678204.69	14316439.68	39°25'27.368"N	80°51'58.276"W	point
Deulley Unit 3H BHL Rev-2	6546.00	-9825.63	5714.74	1681893.81	14306043.85	39°23'44.523"N	80°51'11.463"W	point
Deulley Unit 3H LP Rev-1	6546.00	427.90	2076.12	1678256.65	14316293.27	39°25'25.919"N	80°51'57.617"W	point
Deulley Unit 3H 20' L/R Hard Line	6600.00	-4698.87	3895.43	1680075.23	14311168.56	39°24'35.222"N	80°51'34.535"W	rectangle

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/29/2017
Job End Date:	7/19/2017
State:	West Virginia
County:	Tyler
API Number:	47-095-02361-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Deulley Unit 3H
Latitude:	39.41847900
Longitude:	-80.87448000
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,546
Total Base Water Volume (gal):	22,728,022
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
Fresh Water	Operator	Base Fluid					
			Water	7732-18-5	100.00000	89.02370	Density = 8.330
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.53259	

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LP -70	Halliburton	Scale Inhibitor					
				Listed Below			
FR-76	Halliburton	Friction Reducer					
				Listed Below			
SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant					
				Listed Below			
SP BREAKER	Halliburton	Breaker					
				Listed Below			
SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant					
				Listed Below			
HCL >10%	Halliburton	Solvent					
				Listed Below			
SAND-PREMIUM WHITE-30/50 BULK	Halliburton	Proppant					
				Listed Below			
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					

				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
HYDROCHLORIC ACID	Halliburton	Solvent					
				Listed Below			
MC B-8614	Halliburton	Biocide					
				Listed Below			
Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.							
			Crystalline silica, quartz	14808-60-7	100.00000	10.38305	
			Hydrochloric acid	7647-01-0	15.00000	0.05488	
			Guar gum	9000-30-0	100.00000	0.02380	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02180	
			Acrylamide acrylate copolymer	Proprietary	30.00000	0.02180	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Inorganic salt	Proprietary	30.00000	0.02180	
			Ethylene Glycol	107-21-1	60.00000	0.00849	
			Glutaraldehyde	111-30-8	30.00000	0.00263	
			Neutralized Polyacrylic Emulsion	Proprietary	10.00000	0.00141	
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1	5.00000	0.00044	
			Sodium persulfate	7775-27-1	100.00000	0.00043	
			Methanol	67-56-1	60.00000	0.00013	

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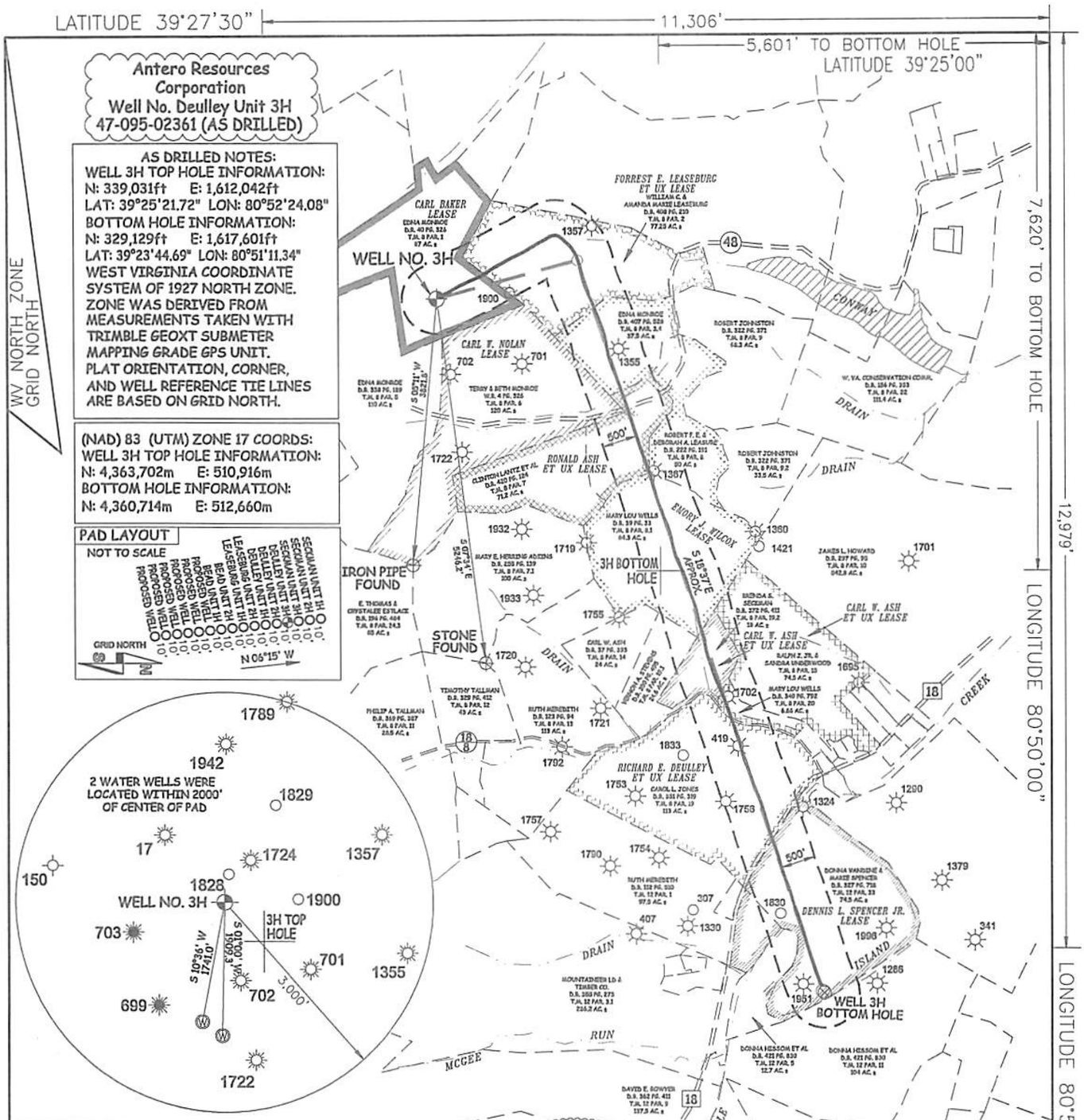
			Ethanol	64-17-5	1.00000	0.00009	
			Modified thiourea polymer	Proprietary	30.00000	0.00006	
			Ethoxylated alcohols	Proprietary	30.00000	0.00006	
			Fatty acids, tall oil	Proprietary	30.00000	0.00006	
			Olefins	Proprietary	5.00000	0.00002	
			Propargyl alcohol	107-19-7	10.00000	0.00002	
			Phosphoric acid	7664-38-2	0.10000	0.00001	
			Sodium sulfate	7757-82-6	0.10000	0.00000	

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water
** Information is based on the maximum potential for concentration and thus the total may be over 100%
*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

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)



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

DOUGLAS R. ROWE LICENSED No. 2202 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

JOB # 15-012WA
DRAWING # DEULLEY3HAD
SCALE 1" = 2000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

LEGEND

- Surface Owner Boundary Lines +/-
- Interior Surface Tracts +/-
- Found monument, as noted
- 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 12/13/17
OPERATOR'S WELL# DEULLEY UNIT #3H

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.

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

47 – 095 – 02361
STATE COUNTY PERMIT

LOCATION: ELEVATION 1,044' - AS DRILLED WATERSHED HEADWATERS MIDDLE ISLAND CREEK
QUADRANGLE SHIRLEY 7.5' DISTRICT CENTERVILLE COUNTY TYLER
SURFACE OWNER EDNA MONROE ACREAGE 110.32 ACRES +/-
OIL & GAS ROYALTY OWNER CARL BAKER; FORREST E LEASEBURG ET UX; EMORY J. WILCOX; RONAD ASH ET UX; CARL W. ASH ET UX; CARL W. ASH ET UX; RICHARD E DEULLEY ET UX; DENNIS L SPENCER JR LEASE ACREAGE 87 AC.±; 78 AC±; 168.75 AC±; 72 AC±; 17.4 AC±; 88 AC.±; 113 AC±; 221 AC±
PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___
PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) AS DRILLED
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,585' TVD 18,189' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD
DENVER, CO 80202 CHARLESTON, WV 25313

COUNTY NAME PERMIT

FORM WW-6

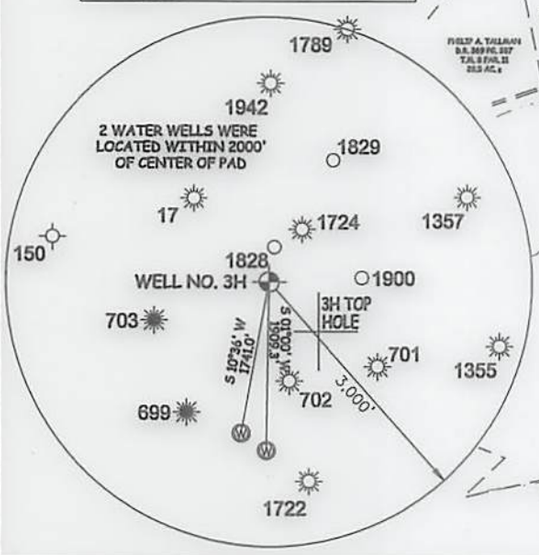
LATITUDE 39°27'30" — 11,306' — 5,601' TO BOTTOM HOLE LATITUDE 39°25'00" — 7,620' TO BOTTOM HOLE — 12,979' — LONGITUDE 80°50'00" — LONGITUDE 80°50'00"

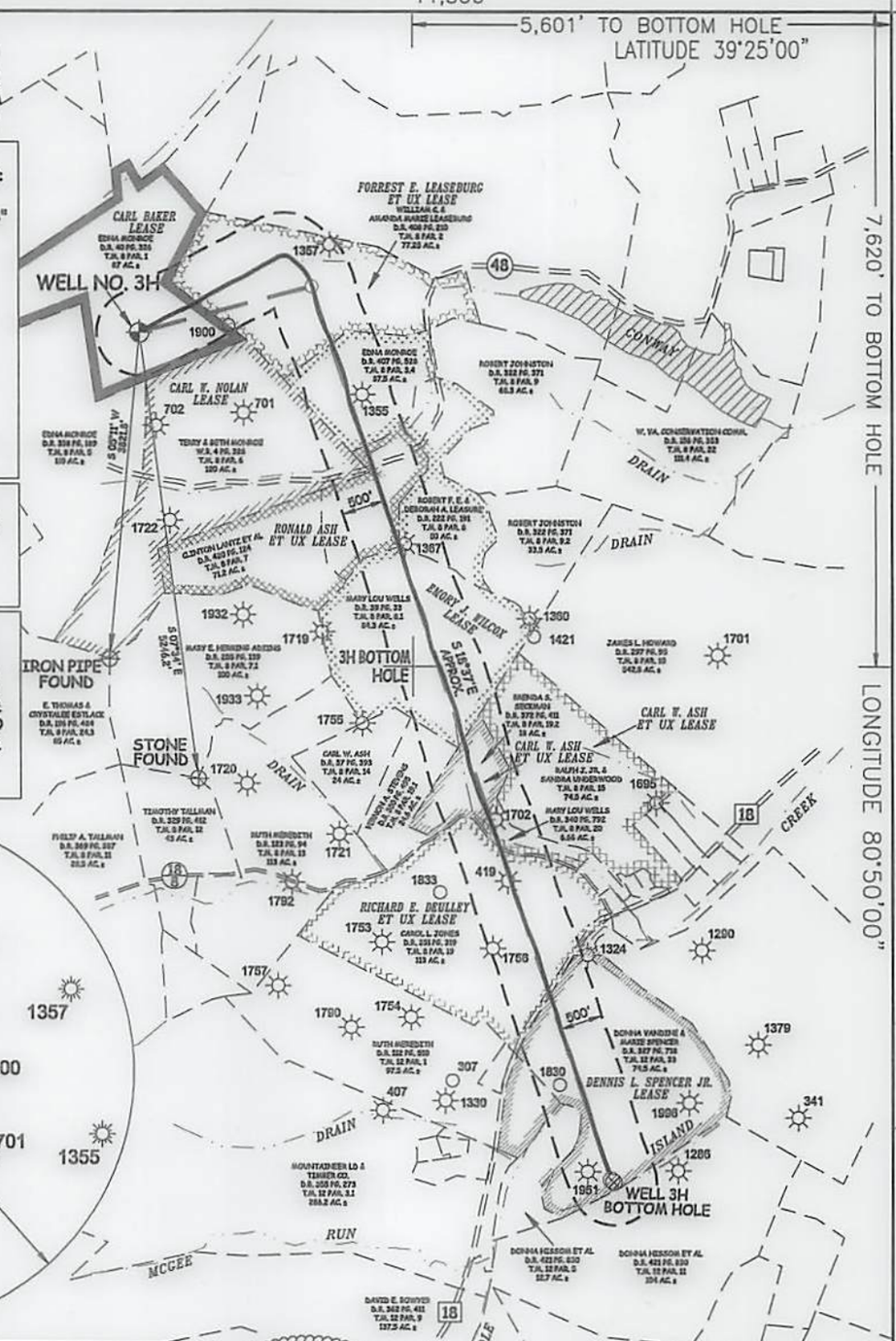
Antero Resources Corporation
Well No. Deulley Unit 3H
47-095-02361 (AS DRILLED)

AS DRILLED NOTES:
WELL 3H TOP HOLE INFORMATION:
N: 339,031ft E: 1,612,042ft
LAT: 39°25'21.72" LON: 80°52'24.08"
BOTTOM HOLE INFORMATION:
N: 329,129ft E: 1,617,601ft
LAT: 39°23'44.69" LON: 80°51'11.34"
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 3H TOP HOLE INFORMATION:
N: 4,363,702m E: 510,916m
BOTTOM HOLE INFORMATION:
N: 4,360,714m E: 512,660m

PAD LAYOUT
NOT TO SCALE
GRID NORTH
N 06°15' W





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DOUGLAS R. ROWE LICENSED No. 2202 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

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PROVEN SOURCE OF ELEV.	SUBMETER MAPPING GRADE GPS
STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS	DOUGLAS R. ROWE P.S. 2202
	DATE 12/13/17
	OPERATOR'S WELL# DEULLEY UNIT #3H

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

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