WR-35
Rev. 8/23/13

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

API 47 - 095 - 02284 County Tyler District Centerville
Quad Shirley 7.5' Pad Name Edna Monroe Pad Field/Pool Name ---
Farm name Edna Monroe Well Number Seckman 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 4363711m	Easting 510914m
Landing Point of Curve	Northing 4363857.741m	Easting 511110.924m
Bottom Hole	Northing 4366308m	Easting 510237m

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 08/07/2015 Date drilling commenced 09/13/2016 Date drilling ceased 12/14/2016
Date completion activities began 05/11/2017 Date completion activities ceased 09/06/2017
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: JBB

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API 47- 095 - 02284 Farm name Edna Monroe Well number Seckman 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"	93'	New	94#, H-40	N/A	Y
Surface	17- 1/2"	13- 3/8"	515'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2643'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5-1/2"	15612'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6737'		4.6#, N-80		
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	204 sx	15.6	1.18	241	0	8 Hrs.
Surface	Class A	640 sx	15.6	1.19	762	0	8 Hrs.
Coal							
Intermediate 1	Class A	1032 sx	15.6	1.18	1218	0	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	793 sx (Lead), 1255 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.44 (Lead), 1.87 (Tail)	3489	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15612' MD, 6503' TVD (BHL), 6509' TVD (Deepest point drilled) Loggers TD (ft) 15596' MD

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

Plug back procedure N/A

Kick off depth (ft) 5960'

** 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	6482' (Top)	TVD	6815' (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	Oil	NGL	Water	GAS MEASURED BY
	12456 mcfpd	111 bpd	-- bpd	43 bpd	☐ 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 47-095-02284 Farm Name Edna Monroe Well Number Seckman Unit 1H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	5/11/2017	15343	15411	48	Marcellus
2	7/21/2017	15145	15229	48	Marcellus
3	7/21/2017	14948	15031	48	Marcellus
4	7/22/2017	14750	14834	48	Marcellus
5	7/22/2017	14553	14636	48	Marcellus
6	7/22/2017	14355	14439	48	Marcellus
7	7/23/2017	14158	14241	48	Marcellus
8	7/23/2017	13960	14044	48	Marcellus
9	7/24/2017	13763	13846	48	Marcellus
10	7/24/2017	13565	13648	48	Marcellus
11	7/25/2017	13368	13451	48	Marcellus
12	7/25/2017	13170	13253	48	Marcellus
13	7/26/2017	12972	13056	48	Marcellus
14	7/26/2017	12775	12858	48	Marcellus
15	7/26/2017	12577	12661	48	Marcellus
16	7/26/2017	12380	12463	48	Marcellus
17	7/27/2017	12182	12266	48	Marcellus
18	7/27/2017	11985	12068	48	Marcellus
19	7/27/2017	11787	11871	48	Marcellus
20	7/28/2017	11590	11673	48	Marcellus
21	7/28/2017	11392	11475	48	Marcellus
22	7/28/2017	11195	11278	48	Marcellus
23	7/29/2017	10997	11080	48	Marcellus
24	7/29/2017	10799	10883	48	Marcellus
25	7/29/2017	10602	10685	48	Marcellus
26	7/30/2017	10404	10488	48	Marcellus
27	7/30/2017	10207	10290	48	Marcellus
28	7/30/2017	10009	10093	48	Marcellus
29	7/31/2017	9812	9895	48	Marcellus
30	7/31/2017	9614	9698	48	Marcellus
31	7/31/2017	9417	9500	48	Marcellus
32	8/1/2017	9219	9302	48	Marcellus
33	8/1/2017	9022	9105	48	Marcellus
34	8/2/2017	8824	8907	48	Marcellus
35	8/2/2017	8627	8710	48	Marcellus
36	8/2/2017	8429	8512	48	Marcellus
37	8/3/2017	8231	8315	48	Marcellus
38	8/3/2017	8034	8117	48	Marcellus
39	8/4/2017	7836	7920	48	Marcellus
40	8/4/2017	7639	7722	48	Marcellus
41	8/4/2017	7441	7525	48	Marcellus
42	8/5/2017	7244	7327	48	Marcellus
43	8/5/2017	7046	7129	48	Marcellus
44	8/5/2017	6849	6932	48	Marcellus

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API 47-095-02284 Farm Name Edna Monroe Well Number Seckman 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	7/20/2017	73.2	7481	8605	3752	151162	10230	N/A
2	7/21/2017	77.8	7520	5589	3637	173530	9551.9	N/A
3	7/21/2017	78.4	7609	5481	4051	151550	9639.3	N/A
4	7/22/2017	78.7	7721	5450	3852	156408	9268.5	N/A
5	7/22/2017	76.5	7283	5344	3773	177540	9420.9	N/A
6	7/22/2017	81.0	7483	5352	3866	151750	9301.6	N/A
7	7/23/2017	80.7	7465	5325	3708	170220	9205.7	N/A
8	7/23/2017	79.5	7426	5263	3810	147810	8930.4	N/A
9	7/24/2017	79.4	7645	5444	3714	172590	9418.3	N/A
10	7/24/2017	76.8	7700	5275	5105	147330	9954.7	N/A
11	7/25/2017	78.4	7110	5403	3970	166110	9091.3	N/A
12	7/25/2017	79.9	7124	5163	3860	163310	8979.2	N/A
13	7/26/2017	77.0	7186	5220	3665	145432	8672.8	N/A
14	7/26/2017	79.3	6925	5128	4377	166820	8931.9	N/A
15	7/26/2017	79.8	7068	5258	3663	148040	8497.4	N/A
16	7/26/2017	79.0	6959	5270	3580	163926	9615.1	N/A
17	7/27/2017	79.4	7080	5303	3570	145882	8514.5	N/A
18	7/27/2017	81.1	6803	5317	3744	167460	8740.4	N/A
19	7/27/2017	80.0	6869	5212	3775	143792	8737.2	N/A
20	7/28/2017	77.9	7490	5186	3726	169520	10669.9	N/A
21	7/28/2017	76.2	7374	5299	3417	142300	9668.5	N/A
22	7/28/2017	79.0	6967	5421	3997	165017	9018.2	N/A
23	7/29/2017	79.6	6668	5446	4153	144010	8389.3	N/A
24	7/29/2017	77.0	7209	5280	5374	167480	9516.3	N/A
25	7/29/2017	78.7	7226	5249	3874	167093	10327	N/A
26	7/30/2017	78.7	6872	5089	4516	150250	8239.4	N/A
27	7/30/2017	80.0	6832	5174	3819	165880	8855.6	N/A
28	7/30/2017	79.5	6443	5186	3612	149897	8537.6	N/A
29	7/31/2017	79.6	6759	5194	4009	168630	8820.8	N/A
30	7/31/2017	80.3	6500	5191	3784	152470	8541.1	N/A
31	7/31/2017	78.1	6318	5093	3794	147713	8373.1	N/A
32	8/1/2017	73.8	6900	5270	3769	152001	9852.9	N/A
33	8/1/2017	78.7	6848	5450	3561	143433	9085.9	N/A
34	8/2/2017	78.7	6514	5060	3794	166656	9138.3	N/A
35	8/2/2017	77.1	6747	5465	3652	150521	8706.3	N/A
36	8/2/2017	79.5	6453	6550	3596	168224	9667.2	N/A
37	8/3/2017	78.6	6617	5134	3892	147610	8556.9	N/A
38	8/3/2017	75.5	7096	5328	3725	162425	8486.8	N/A
39	8/4/2017	75.6	6657	5636	3699	141297	8564.7	N/A
40	8/4/2017	56.8	6445	5485	7005	151200	8261.1	N/A
41	8/4/2017	78.2	6502	5209	3579	171420	8956.8	N/A
42	8/5/2017	78.6	6393	5460	3446	166801	9302	N/A
43	8/5/2017	76.3	6152	5011	3689	173160	8836.4	N/A
44	8/5/2017	72.2	6071	5625	3564	167967	8784.9	N/A
	AVG=	77.7	6,966	5,407	3,921	6,963,637	399,858	TOTAL

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API 47-095-02284 Farm Name Edna Monroe Well Number Seckman 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	337'	N/A	337'	N/A
Sandy Siltstone	0	225	0	225
Sandstone	225	325	225	325
Shale/Siltstone	325	605	325	605
Silty Limestone	605	805	605	805
Sandy Siltstone	805	1025	805	1025
Silty Shale	1025	1065	1025	1065
Sandstone	1065	1445	1065	1445
Sandy Shale	1445	1545	1445	1545
Shale/Sandstone	1545	1705	1545	1705
Sandstone/Siltstone	1705	1745	1705	1745
Sandstone	1745	1810	1745	1810
Sandy Shale	1810	1959	1810	1959
Big Lime	1974	2064	1974	2064
Big Injun	2064	2698	2064	2698
Gantz Sand	2698	2789	2698	2789
Fifty Foot Sandstone	2789	2908	2789	2909
Gordon	2908	3262	2909	3262
Fifth Sandstone	3262	3323	3262	3324
Bayard	3323	3552	3324	3552
Warren	3552	4055	3552	4057
Speechley	4055	4437	4057	4450
Baltown	4437	4798	4450	4835
Bradford	4798	5063	4835	5118
Benson	5063	5293	5118	5362
Alexander	5293	5500	5362	5582
Elk	5500	5830	5582	5931
Rhinestreet	5830	6174	5931	6301
Sycamore	6149	6318	6276	6486
Middlesex	6318	6418	6486	6649
Burkett	6418	6449	6649	6719
Tully	6449	6482	6719	6815
Marcellus	6482	NA	6815	NA

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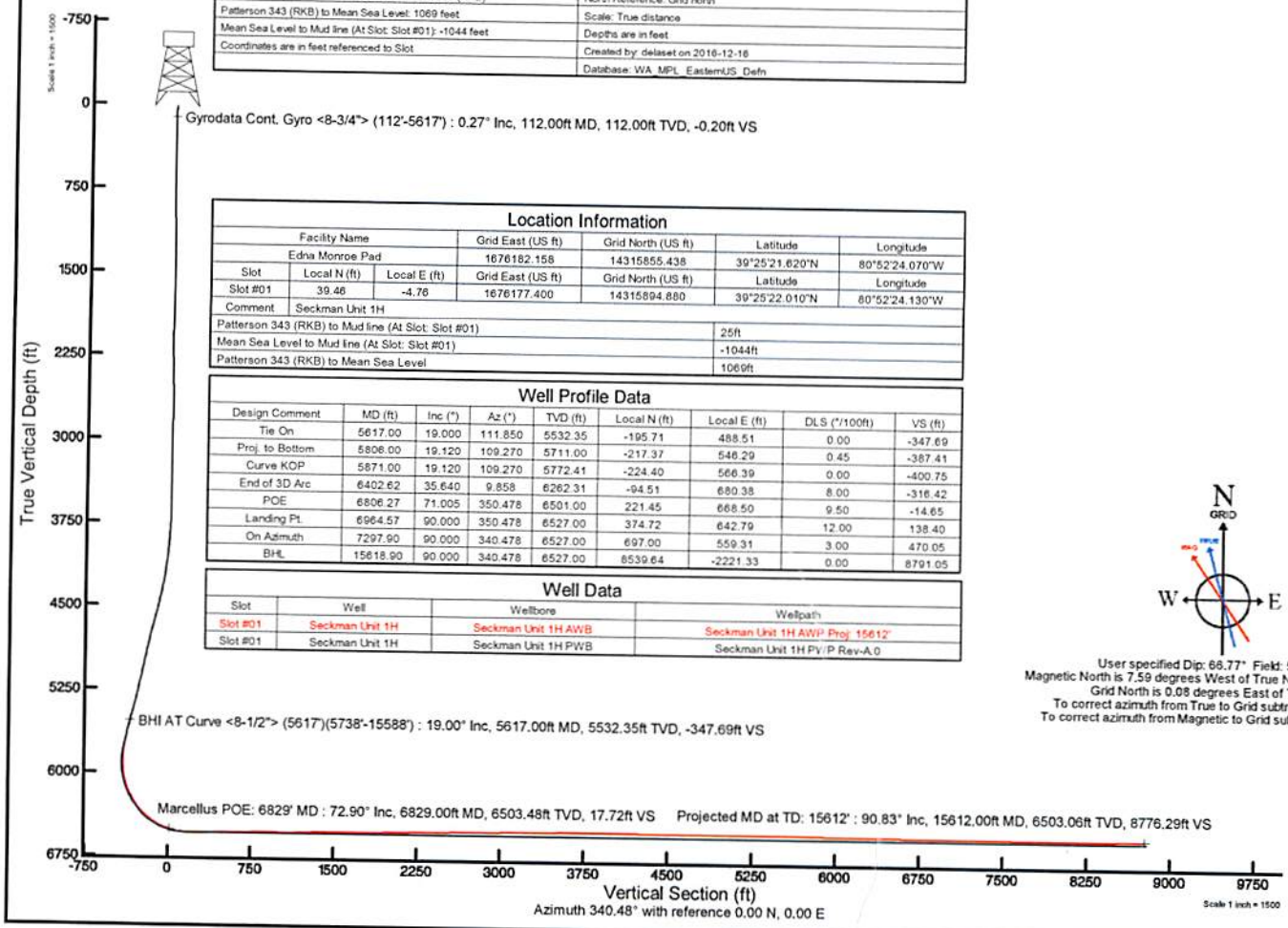
ANTERO RESOURCES CORPORATION

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

Slot: Slot #01
Well: Seckman Unit 1H
Wellbore: Seckman Unit 1H PWB

API: 47-095-02284-0000
BHI Job #: 8284645
Rig: Patterson 343
Duration: 12/09/2016-12/13/2016

Plot reference wellpath is Seckman Unit 1H 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 #01): -1044 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: delaset on 2016-12-16
	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 #01	39.46	-4.76	1676177.400	14315894.880	39°25'22.010"N	80°52'24.130"W
Comment	Seckman Unit 1H					

Patterson 343 (RKB) to Mud line (At Slot: Slot #01)	25ft
Mean Sea Level to Mud line (At Slot: Slot #01)	-1044ft
Patterson 343 (RKB) to Mean Sea Level	1069ft

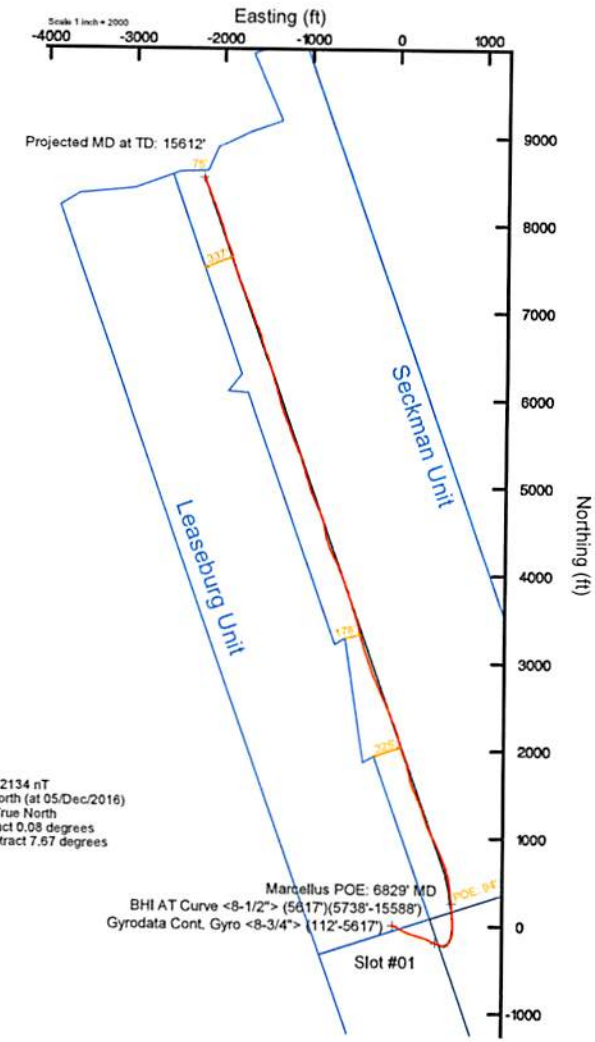
Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	5617.00	19.000	111.850	5532.35	-195.71	488.51	0.00	-347.69
Proj. to Bottom	5806.00	19.120	109.270	5711.00	-217.37	546.29	0.45	-387.41
Curve KOP	5871.00	19.120	109.270	5772.41	-224.40	566.39	0.00	-400.75
End of 3D Arc	6402.62	35.640	9.858	6262.31	-94.51	680.38	8.00	-316.42
POE	6806.27	71.005	350.478	6501.00	221.45	668.50	9.50	-14.65
Landing Pt.	6964.57	90.000	350.478	6527.00	374.72	642.79	12.00	138.40
On Azimuth	7297.90	90.000	340.478	6527.00	697.00	559.31	3.00	470.05
BHL	15618.90	90.000	340.478	6527.00	8539.64	-2221.33	0.00	8791.05

Well Data

Slot	Well	Wellbore	Wellpath
Slot #01	Seckman Unit 1H	Seckman Unit 1H AWB	Seckman Unit 1H AWP Proj: 15612'
Slot #01	Seckman Unit 1H	Seckman Unit 1H PWB	Seckman Unit 1H PWP Rev-A.0

User specified Dip: 66.77° Field: 52134 nT
Magnetic North is 7.59 degrees West of True North (at 05/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



Actual Wellpath Report

Seckman Unit 1H AWP Proj: 15612'

REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Tyler County, WV	Well	Seckman Unit 1H
Field	Tyler	Wellbore	Seckman Unit 1H 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	16/Dec/2016 at 13:25
Convergence at slot	0.09° East	Database/Source file	WA_MPL_EasternUS_Defn/Seckman_Unit_1H_AWP_Proj__15612_.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	39.46	-4.76	1676177.40	14315894.88	39°25'22.010"N	80°52'24.130"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 #01)	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	340.48°

Actual Wellpath Report

Seckman Unit 1H AWP Proj: 15612'

REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Tyler County, WV	Well	Seckman Unit 1H
Field	Tyler	Wellbore	Seckman Unit 1H AWB
Facility	Edna Monroe Pad		

WELLPATH DATA (182 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
7153.00	91.630	344.890	6532.04	331.73	574.02	626.37	1676803.51	14316468.67	39°25'27.675"N	80°52'16.138"W	849.61	47.497	7.79	1.06	-7.72	
7247.00	93.940	341.550	6527.47	425.50	663.89	599.27	1676776.43	14316558.50	39°25'28.563"N	80°52'16.482"W	894.36	42.071	4.32	2.46	-3.55	
7341.00	90.710	337.610	6523.65	519.38	751.88	566.51	1676743.68	14316646.46	39°25'29.433"N	80°52'16.897"W	941.41	36.996	5.42	-3.44	-4.19	
7435.00	90.250	335.690	6522.86	613.16	838.17	529.25	1676706.44	14316732.72	39°25'30.287"N	80°52'17.371"W	991.28	32.270	2.10	-0.49	-2.04	
7529.00	90.650	335.630	6522.13	706.82	923.82	490.51	1676667.72	14316818.33	39°25'31.134"N	80°52'17.863"W	1045.96	27.967	0.43	0.43	-0.06	
7624.00	90.950	333.560	6520.80	801.31	1009.62	449.76	1676626.98	14316904.09	39°25'31.982"N	80°52'18.381"W	1105.27	24.012	2.20	0.32	-2.18	
7718.00	89.850	333.620	6520.14	894.62	1093.80	407.95	1676585.19	14316988.24	39°25'32.815"N	80°52'18.912"W	1167.40	20.454	1.17	-1.17	0.06	
7812.00	88.620	340.530	6521.40	988.39	1180.32	371.36	1676548.61	14317074.72	39°25'33.670"N	80°52'19.376"W	1237.36	17.465	7.47	-1.31	7.35	
7906.00	90.280	344.690	6522.30	1082.30	1269.99	343.28	1676520.54	14317164.36	39°25'34.557"N	80°52'19.733"W	1315.57	15.126	4.76	1.77	4.43	
8000.00	91.290	338.990	6521.01	1176.22	1359.26	314.00	1676491.27	14317253.60	39°25'35.440"N	80°52'20.104"W	1395.06	13.007	6.16	1.07	-6.06	
8094.00	92.680	334.370	6517.76	1269.93	1445.51	276.82	1676454.11	14317339.81	39°25'36.293"N	80°52'20.576"W	1471.78	10.841	5.13	1.48	-4.91	
8189.00	90.340	336.210	6515.25	1364.50	1531.77	237.13	1676414.43	14317426.04	39°25'37.146"N	80°52'21.081"W	1550.02	8.800	3.13	-2.46	1.94	
8283.00	90.090	342.590	6514.90	1458.43	1619.71	204.07	1676381.39	14317513.95	39°25'38.016"N	80°52'21.500"W	1632.52	7.181	6.79	-0.27	6.79	
8377.00	90.280	348.040	6514.60	1552.06	1710.61	180.25	1676357.58	14317604.80	39°25'38.914"N	80°52'21.802"W	1720.08	6.015	5.80	0.20	5.80	
8471.00	90.370	344.600	6514.06	1645.56	1801.93	158.02	1676335.36	14317696.09	39°25'39.817"N	80°52'22.084"W	1808.84	5.012	3.66	0.10	-3.66	
8566.00	90.340	339.760	6513.47	1740.49	1892.34	128.96	1676306.31	14317786.46	39°25'40.711"N	80°52'22.453"W	1896.73	3.899	5.09	-0.03	-5.09	
8660.00	90.310	340.170	6512.94	1834.48	1980.65	96.76	1676274.12	14317874.74	39°25'41.584"N	80°52'22.861"W	1983.01	2.797	0.44	-0.03	0.44	
8754.00	90.800	345.940	6512.03	1928.34	2070.53	69.37	1676246.74	14317964.58	39°25'42.473"N	80°52'23.209"W	2071.69	1.919	6.16	0.52	6.14	
8849.00	91.880	344.120	6509.81	2023.01	2162.27	44.84	1676222.22	14318056.29	39°25'43.380"N	80°52'23.520"W	2162.74	1.188	2.23	1.14	-1.92	
8943.00	90.860	338.970	6507.56	2116.94	2251.38	15.10	1676192.50	14318145.36	39°25'44.261"N	80°52'23.897"W	2251.43	0.384	5.58	-1.09	-5.48	
9038.00	90.620	338.070	6506.33	2211.87	2339.77	-19.68	1676157.73	14318233.72	39°25'45.135"N	80°52'24.339"W	2339.86	359.518	0.98	-0.25	-0.95	
9132.00	90.580	338.490	6505.35	2305.80	2427.10	-54.47	1676122.96	14318321.00	39°25'45.999"N	80°52'24.781"W	2427.71	358.714	0.45	-0.04	0.45	
9226.00	91.320	336.580	6503.79	2399.66	2513.95	-90.38	1676087.06	14318407.82	39°25'46.858"N	80°52'25.237"W	2515.57	357.941	2.18	0.79	-2.03	
9320.00	90.620	334.750	6502.20	2493.31	2599.58	-129.11	1676048.35	14318493.42	39°25'47.705"N	80°52'25.729"W	2602.78	357.157	2.08	-0.74	-1.95	
9415.00	90.650	336.880	6501.14	2587.98	2686.23	-168.02	1676009.45	14318580.03	39°25'48.562"N	80°52'26.223"W	2691.48	356.421	2.24	0.03	2.24	
9509.00	90.650	335.500	6500.08	2681.71	2772.22	-205.97	1675971.52	14318665.99	39°25'49.412"N	80°52'26.705"W	2779.86	355.751	1.47	0.00	-1.47	
9604.00	89.780	340.070	6499.72	2776.58	2860.14	-241.87	1675935.62	14318753.88	39°25'50.282"N	80°52'27.161"W	2870.35	355.166	4.90	-0.92	4.81	
9698.00	91.570	340.450	6498.61	2870.56	2948.61	-273.62	1675903.89	14318842.31	39°25'51.156"N	80°52'27.564"W	2961.28	354.698	1.95	1.90	0.40	
9792.00	90.490	338.780	6496.92	2964.53	3036.71	-306.35	1675871.17	14318930.37	39°25'52.027"N	80°52'27.980"W	3052.12	354.239	2.12	-1.15	-1.78	
9886.00	89.940	342.490	6496.57	3058.52	3125.37	-337.52	1675840.02	14319019.00	39°25'52.904"N	80°52'28.375"W	3143.54	353.836	3.99	-0.59	3.95	

Actual Wellpath Report

Seckman Unit 1H AWP Proj: 15612'

REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Tyler County, WV	Well	Seckman Unit 1H
Field	Tyler	Wellbore	Seckman Unit 1H AWB
Facility	Edna Monroe Pad		

WELLPATH DATA (182 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
9981.00	90.650	344.310	6496.08	3153.39	3216.41	-364.66	1675812.89	14319110.00	39°25'53.804"N	80°52'28.720"W	3237.01	353.532	2.06	0.75	1.92	
10075.00	90.620	344.660	6495.04	3247.15	3306.97	-389.80	1675787.76	14319200.53	39°25'54.700"N	80°52'29.038"W	3329.87	353.277	0.37	-0.03	0.37	
10169.00	90.620	346.160	6494.02	3340.80	3397.94	-413.48	1675764.09	14319291.45	39°25'55.599"N	80°52'29.339"W	3423.00	353.062	1.60	0.00	1.60	
10264.00	91.140	344.350	6492.56	3435.45	3489.79	-437.65	1675739.92	14319383.27	39°25'56.507"N	80°52'29.645"W	3517.13	352.852	1.98	0.55	-1.91	
10358.00	90.220	340.340	6491.45	3529.37	3579.34	-466.15	1675711.44	14319472.79	39°25'57.393"N	80°52'30.007"W	3609.57	352.580	4.38	-0.98	-4.27	
10453.00	89.940	343.750	6491.32	3624.32	3669.70	-495.43	1675682.17	14319563.11	39°25'58.286"N	80°52'30.378"W	3702.99	352.311	3.60	-0.29	3.59	
10547.00	90.060	342.840	6491.32	3718.21	3759.73	-522.45	1675655.16	14319653.10	39°25'59.176"N	80°52'30.721"W	3795.86	352.089	0.98	0.13	-0.97	
10641.00	89.970	337.960	6491.29	3812.18	3848.26	-553.98	1675623.65	14319741.60	39°26'00.052"N	80°52'31.121"W	3887.93	351.808	5.19	-0.10	-5.19	
10735.00	90.060	338.910	6491.27	3906.12	3935.68	-588.52	1675589.11	14319828.98	39°26'00.916"N	80°52'31.560"W	3979.44	351.495	1.02	0.10	1.01	
10829.00	90.030	338.470	6491.19	4000.07	4023.25	-622.69	1675554.96	14319916.52	39°26'01.782"N	80°52'31.994"W	4071.15	351.202	0.47	-0.03	-0.47	
10924.00	90.340	336.980	6490.89	4094.96	4111.16	-658.69	1675518.97	14320004.39	39°26'02.652"N	80°52'32.451"W	4163.59	350.897	1.60	0.33	-1.57	
11018.00	89.540	332.330	6490.98	4188.45	4196.09	-698.92	1675478.76	14320089.28	39°26'03.492"N	80°52'32.962"W	4253.89	350.543	5.02	-0.85	-4.95	
11112.00	89.020	336.850	6492.17	4281.92	4280.96	-739.24	1675438.45	14320174.13	39°26'04.331"N	80°52'33.475"W	4344.32	350.203	4.84	-0.55	4.81	
11207.00	88.550	342.330	6494.18	4376.85	4369.94	-772.35	1675405.36	14320263.07	39°26'05.211"N	80°52'33.895"W	4437.67	349.977	5.79	-0.49	5.77	
11301.00	90.580	348.960	6494.90	4470.41	4460.95	-795.64	1675382.08	14320354.04	39°26'06.111"N	80°52'34.191"W	4531.35	349.887	7.38	2.16	7.05	
11396.00	90.980	348.100	6493.60	4564.46	4554.04	-814.53	1675363.19	14320447.10	39°26'07.031"N	80°52'34.430"W	4626.31	349.859	1.00	0.42	-0.91	
11490.00	90.060	340.260	6492.75	4658.19	4644.41	-840.14	1675337.60	14320537.43	39°26'07.924"N	80°52'34.754"W	4719.78	349.747	8.40	-0.98	-8.34	
11584.00	89.910	338.340	6492.77	4752.17	4732.34	-873.36	1675304.39	14320625.32	39°26'08.794"N	80°52'35.176"W	4812.25	349.544	2.05	-0.16	-2.04	
11678.00	89.630	333.770	6493.15	4845.86	4818.22	-911.50	1675266.26	14320711.17	39°26'09.643"N	80°52'35.661"W	4903.68	349.287	4.87	-0.30	-4.86	
11773.00	89.690	338.160	6493.71	4940.54	4904.96	-950.18	1675227.60	14320797.88	39°26'10.501"N	80°52'36.152"W	4996.15	349.037	4.62	0.06	4.62	
11867.00	90.120	342.980	6493.87	5034.51	4993.58	-981.45	1675196.35	14320886.46	39°26'11.377"N	80°52'36.549"W	5089.12	348.881	5.15	0.46	5.13	
11961.00	90.220	342.120	6493.59	5128.45	5083.26	-1009.63	1675168.17	14320976.10	39°26'12.264"N	80°52'36.907"W	5182.55	348.766	0.92	0.11	-0.91	
12055.00	89.880	342.580	6493.51	5222.40	5172.83	-1038.13	1675139.68	14321065.64	39°26'13.150"N	80°52'37.269"W	5275.97	348.652	0.61	-0.36	0.49	
12150.00	89.970	344.330	6493.63	5317.27	5263.89	-1065.19	1675112.64	14321156.67	39°26'14.050"N	80°52'37.612"W	5370.59	348.560	1.84	0.09	1.84	
12244.00	89.820	340.130	6493.81	5411.20	5353.39	-1093.87	1675083.97	14321246.12	39°26'14.935"N	80°52'37.976"W	5464.00	348.452	4.47	-0.16	-4.47	
12338.00	90.030	336.380	6493.93	5505.11	5440.68	-1128.69	1675049.17	14321333.38	39°26'15.798"N	80°52'38.418"W	5556.53	348.280	4.00	0.22	-3.99	
12433.00	89.480	337.480	6494.34	5599.93	5528.08	-1165.91	1675011.96	14321420.75	39°26'16.663"N	80°52'38.891"W	5649.70	348.090	1.29	-0.58	1.16	
12527.00	89.600	340.840	6495.09	5693.89	5615.92	-1199.35	1674978.53	14321508.55	39°26'17.531"N	80°52'39.316"W	5742.56	347.945	3.58	0.13	3.57	
12621.00	89.690	338.190	6495.67	5787.86	5703.97	-1232.24	1674945.65	14321596.56	39°26'18.402"N	80°52'39.733"W	5835.55	347.810	2.82	0.10	-2.82	
12716.00	89.380	338.720	6496.44	5882.80	5792.32	-1267.13	1674910.78	14321684.88	39°26'19.276"N	80°52'40.177"W	5929.30	347.660	0.65	-0.33	0.56	

Actual Wellpath Report

Seckman Unit 1H AWP Proj: 15612'

REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Tyler County, WV	Well	Seckman Unit 1H
Field	Tyler	Wellbore	Seckman Unit 1H AWB
Facility	Edna Monroe Pad		

WELLPATH DATA (182 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
12810.00	89.850	339.750	6497.08	5976.78	5880.21	-1300.45	1674877.47	14321772.74	39°26'20.145"N	80°52'40.600"W	6022.30	347.529	1.20	0.50	1.10	
12904.00	89.230	344.000	6497.83	6070.72	5969.53	-1329.69	1674848.25	14321862.02	39°26'21.028"N	80°52'40.971"W	6115.82	347.443	4.57	-0.66	4.52	
12998.00	89.940	345.480	6498.51	6164.46	6060.21	-1354.42	1674823.52	14321952.66	39°26'21.924"N	80°52'41.285"W	6209.72	347.402	1.75	0.76	1.57	
13093.00	89.820	341.450	6498.71	6259.31	6151.26	-1381.46	1674796.50	14322043.68	39°26'22.825"N	80°52'41.628"W	6304.48	347.342	4.24	-0.13	-4.24	
13187.00	89.380	343.800	6499.37	6353.23	6240.96	-1409.52	1674768.44	14322133.34	39°26'23.712"N	80°52'41.984"W	6398.15	347.273	2.54	-0.47	2.50	
13281.00	89.660	343.720	6500.15	6447.08	6331.21	-1435.81	1674742.16	14322223.55	39°26'24.604"N	80°52'42.317"W	6491.98	347.222	0.31	0.30	-0.09	
13376.00	89.480	341.490	6500.87	6542.00	6421.85	-1464.21	1674713.78	14322314.16	39°26'25.500"N	80°52'42.678"W	6586.66	347.156	2.35	-0.19	-2.35	
13470.00	88.620	338.540	6502.43	6635.98	6510.17	-1496.33	1674681.67	14322402.44	39°26'26.373"N	80°52'43.086"W	6679.92	347.056	3.27	-0.91	-3.14	
13563.00	89.110	342.830	6504.27	6728.93	6597.90	-1527.08	1674650.94	14322490.14	39°26'27.241"N	80°52'43.476"W	6772.31	346.968	4.64	0.53	4.61	
13658.00	89.820	344.360	6505.16	6823.79	6689.02	-1553.90	1674624.12	14322581.22	39°26'28.142"N	80°52'43.816"W	6867.14	346.922	1.78	0.75	1.61	
13752.00	90.650	339.810	6504.77	6917.72	6778.44	-1582.81	1674595.22	14322670.61	39°26'29.026"N	80°52'44.183"W	6960.79	346.857	4.92	0.88	-4.84	
13846.00	89.690	337.640	6504.49	7011.67	6866.03	-1616.91	1674561.13	14322758.16	39°26'29.892"N	80°52'44.616"W	7053.85	346.749	2.52	-1.02	-2.31	
13941.00	89.600	338.530	6505.08	7106.59	6954.16	-1652.37	1674525.69	14322846.26	39°26'30.764"N	80°52'45.067"W	7147.77	346.634	0.94	-0.09	0.94	
14035.00	89.850	341.690	6505.53	7200.57	7042.54	-1684.35	1674493.73	14322934.60	39°26'31.638"N	80°52'45.473"W	7241.16	346.549	3.37	0.27	3.36	
14129.00	90.150	338.150	6505.53	7294.55	7130.81	-1716.61	1674461.47	14323022.84	39°26'32.510"N	80°52'45.883"W	7334.53	346.465	3.78	0.32	-3.77	
14223.00	89.510	338.400	6505.81	7388.48	7218.14	-1751.41	1674426.69	14323110.12	39°26'33.374"N	80°52'46.325"W	7427.58	346.361	0.73	-0.68	0.27	
14318.00	90.000	337.930	6506.22	7483.40	7306.32	-1786.74	1674391.37	14323198.27	39°26'34.246"N	80°52'46.774"W	7521.62	346.258	0.71	0.52	-0.49	
14412.00	89.420	338.330	6506.69	7577.32	7393.55	-1821.76	1674356.37	14323285.47	39°26'35.109"N	80°52'47.218"W	7614.68	346.158	0.75	-0.62	0.43	
14506.00	89.380	343.480	6507.68	7671.28	7482.35	-1852.49	1674325.65	14323374.23	39°26'35.987"N	80°52'47.609"W	7708.26	346.094	5.48	-0.04	5.48	
14600.00	89.970	345.970	6508.21	7765.01	7573.02	-1877.26	1674300.89	14323464.86	39°26'36.883"N	80°52'47.923"W	7802.22	346.078	2.72	0.63	2.65	
14695.00	90.550	341.130	6507.78	7859.85	7664.10	-1904.15	1674274.01	14323555.91	39°26'37.784"N	80°52'48.264"W	7897.10	346.047	5.13	0.61	-5.09	
14789.00	89.570	338.700	6507.68	7953.84	7752.37	-1936.43	1674241.75	14323644.15	39°26'38.657"N	80°52'48.674"W	7990.56	345.975	2.79	-1.04	-2.59	
14882.00	89.480	340.940	6508.45	8046.82	7839.66	-1968.51	1674209.68	14323731.40	39°26'39.520"N	80°52'49.081"W	8083.02	345.905	2.41	-0.10	2.41	
14976.00	89.780	343.520	6509.06	8140.77	7929.16	-1997.19	1674181.01	14323820.87	39°26'40.405"N	80°52'49.446"W	8176.82	345.862	2.76	0.32	2.74	
15071.00	90.180	341.260	6509.09	8235.71	8019.70	-2025.93	1674152.28	14323911.37	39°26'41.300"N	80°52'49.810"W	8271.64	345.823	2.42	0.42	-2.38	
15165.00	90.220	339.670	6508.76	8329.70	8108.29	-2057.36	1674120.86	14323999.92	39°26'42.176"N	80°52'50.209"W	8365.23	345.762	1.69	0.04	-1.69	
15259.00	90.650	338.150	6508.05	8423.66	8195.99	-2091.19	1674087.05	14324087.59	39°26'43.043"N	80°52'50.639"W	8458.56	345.687	1.68	0.46	-1.62	
15353.00	90.920	338.910	6506.76	8517.60	8283.46	-2125.59	1674052.66	14324175.02	39°26'43.908"N	80°52'51.076"W	8551.83	345.608	0.86	0.29	0.81	
15448.00	90.800	338.410	6505.34	8612.54	8371.93	-2160.15	1674018.11	14324263.46	39°26'44.783"N	80°52'51.515"W	8646.13	345.532	0.54	-0.13	-0.53	
15542.00	90.770	336.950	6504.05	8706.42	8458.88	-2195.85	1673982.43	14324350.37	39°26'45.643"N	80°52'51.969"W	8739.24	345.448	1.55	-0.03	-1.55	

Actual Wellpath Report

Seckman Unit 1H AWP Proj: 15612'

REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #01
Area	Tyler County, WV	Well	Seckman Unit 1H
Field	Tyler	Wellbore	Seckman Unit 1H AWB
Facility	Edna Monroe Pad		

WELLPATH DATA (182 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
15588.00	90.830	337.250	6503.41	8752.33	8501.25	-2213.75	1673964.54	14324392.73	39°26'46.062"N	80°52'52.196"W	8784.76	345.404	0.67	0.13	0.65	
15612.00	90.830	337.250	6503.06	8776.29	8523.38	-2223.03	1673955.26	14324414.85	39°26'46.280"N	80°52'52.314"W	8808.51	345.382	0.00	0.00	0.00	Projected MD at TD: 15612'

HOLE & CASING SECTIONS - Ref Wellbore: Seckman Unit 1H AWB Ref Wellpath: Seckman Unit 1H AWP Proj: 15612'

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	-0.15	0.04
17.5in Open Hole	100.00	550.00	450.00	100.00	550.00	-0.15	0.04	-1.51	0.23
13.375in Casing Surface	25.00	527.00	502.00	25.00	527.00	0.00	0.00	-1.47	0.25
12.25in Open Hole	550.00	2682.00	2132.00	550.00	2681.74	-1.51	0.23	5.48	-3.26
9.625in Casing Intermediate	25.00	2655.00	2630.00	25.00	2654.75	0.00	0.00	5.63	-2.42

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Seckman Unit 1H POE Rev-1	6501.00	221.45	668.50	1676845.63	14316116.24	39°25'24.189"N	80°52'15.607"W	point
Seckman Unit 1H BHL Rev-1	6527.00	8539.64	-2221.33	1673956.96	14324431.10	39°26'46.441"N	80°52'52.292"W	point
Seckman Unit 1H LP Rev-1	6527.00	374.72	642.79	1676819.93	14316269.45	39°25'25.705"N	80°52'15.932"W	point

Actual Wellpath Report

Seckman Unit 1H AWP Proj: 15612'

REFERENCE WELLPATH IDENTIFICATION			
Operator	**ANTERO RESOURCES CORPORATION**	Slot	**Slot #01**
Area	**Tyler County, WV**	Well	**Seckman Unit 1H**
Field	**Tyler**	Wellbore	**Seckman Unit 1H AWB**
Facility	**Edna Monroe Pad**		

WELLPATH COMPOSITION - Ref Wellbore: Seckman Unit 1H AWB Ref Wellpath: Seckman Unit 1H AWP Proj: 15612'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	5617.00	Gyrodata standard - Continuous gyro	03_Gyrodata Cont. Gyro <8-3/4"> (100'-5605')	Seckman Unit 1H AWB
5617.00	15588.00	BHI AutoTrak Curve (Short)	04_BHI AT Curve <8-1/2"> (5617')(5738'-15588')	Seckman Unit 1H AWB
15588.00	15612.00	Blind Drilling (std)	Projection to bit	Seckman Unit 1H AWB

Actual Wellpath Report

Seckman Unit 1H AWP Proj: 15612'

REFERENCE WELLPATH IDENTIFICATION			
Operator	**ANTERO RESOURCES CORPORATION**	Slot	**Slot #01**
Area	**Tyler County, WV**	Well	**Seckman Unit 1H**
Field	**Tyler**	Wellbore	**Seckman Unit 1H AWB**
Facility	**Edna Monroe Pad**		

COMMENTS

Wellpath general comments
API: 47-095-02284-0000
BHI Job #: 8284645
Rig: Patterson 343
Duration: 12/09/2016-12/13/2016
Gyrodata Cont. Gyro <8-3/4"> (112'-5617')
BHI AT Curve <8-1/2"> (5617')(5738'-15588')
Middlesex: 6511' MD
Burket: 6674' MD
Tully: 6727' MD
Marcellus POE: 6829' MD
Projected MD at TD: 15612'

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	7/20/2017
Job End Date:	8/5/2017
State:	West Virginia
County:	Tyler
API Number:	47-095-02284-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Seckman 1H
Latitude:	39.42278000
Longitude:	-80.87337000
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,532
Total Base Water Volume (gal):	16,733,856
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	88.37491	Density = 8.330
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.33353	

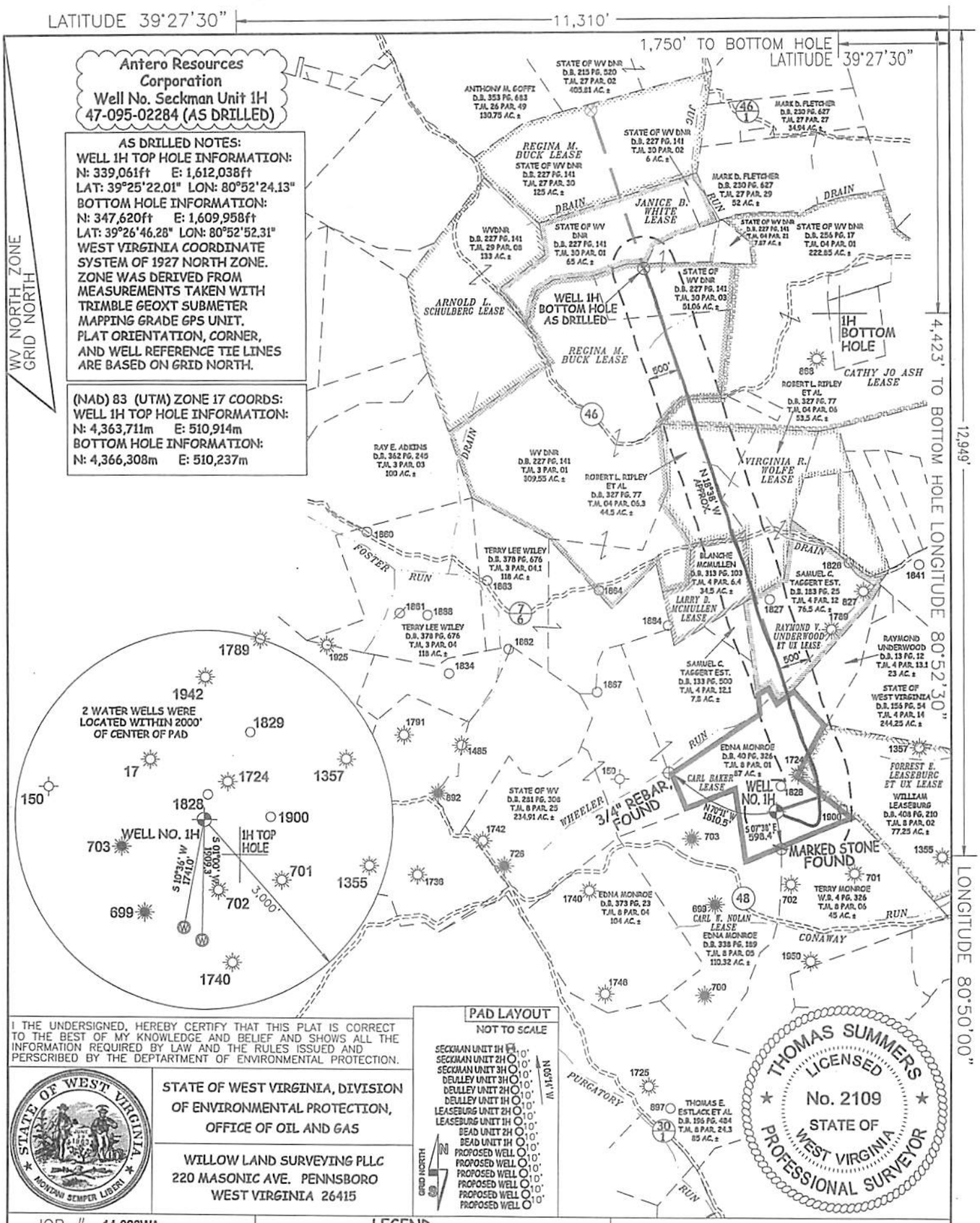
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
				Listed Below			
SP BREAKER	Halliburton	Breaker					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
SAND-PREMIUM WHITE-40/70	Halliburton	Proppant					
				Listed Below			
MC B-8614	Halliburton	Biocide					
				Listed Below			
HYDROCHLORIC ACID	Halliburton	Solvent					
				Listed Below			
SAND-COMMON WHITE - 100 MESH	Halliburton	Proppant					
				Listed Below			
SAND-PREMIUM WHITE-30/50	Halliburton	Proppant					
				Listed Below			

LP-70	Halliburton	Scale Inhibitor					
				Listed Below			
FR-76	Halliburton	Friction Reducer					
				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	11.24082	
			Hydrochloric acid	7647-01-0	15.00000	0.04202	
			Inorganic salt	Proprietary	30.00000	0.01860	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01860	
			Acrylamide acrylate copolymer	Proprietary	30.00000	0.01860	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Guar gum	9000-30-0	100.00000	0.01812	
			Ethylene Glycol	107-21-1	60.00000	0.00859	
			Glutaraldehyde	111-30-8	30.00000	0.00274	
			Neutralized Polyacrylic Emulsion	Proprietary	10.00000	0.00143	
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1	5.00000	0.00046	
			Sodium persulfate	7775-27-1	100.00000	0.00032	
			Methanol	67-56-1	60.00000	0.00014	
			Ethanol	64-17-5	1.00000	0.00009	
			Ethoxylated alcohols	Proprietary	30.00000	0.00006	
			Fatty acids, tall oil	Proprietary	30.00000	0.00006	

			Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1	30.00000	0.00006	
			Olefins	Proprietary	5.00000	0.00003	
			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

JOB # 14-026WA
DRAWING # SECKMAN1HAD
SCALE 1" = 2000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

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

LEGEND

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

THOMAS SUMMERS P.S. 2109
DATE 12/13/17
OPERATOR'S WELL# SECKMAN UNIT #1H

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.

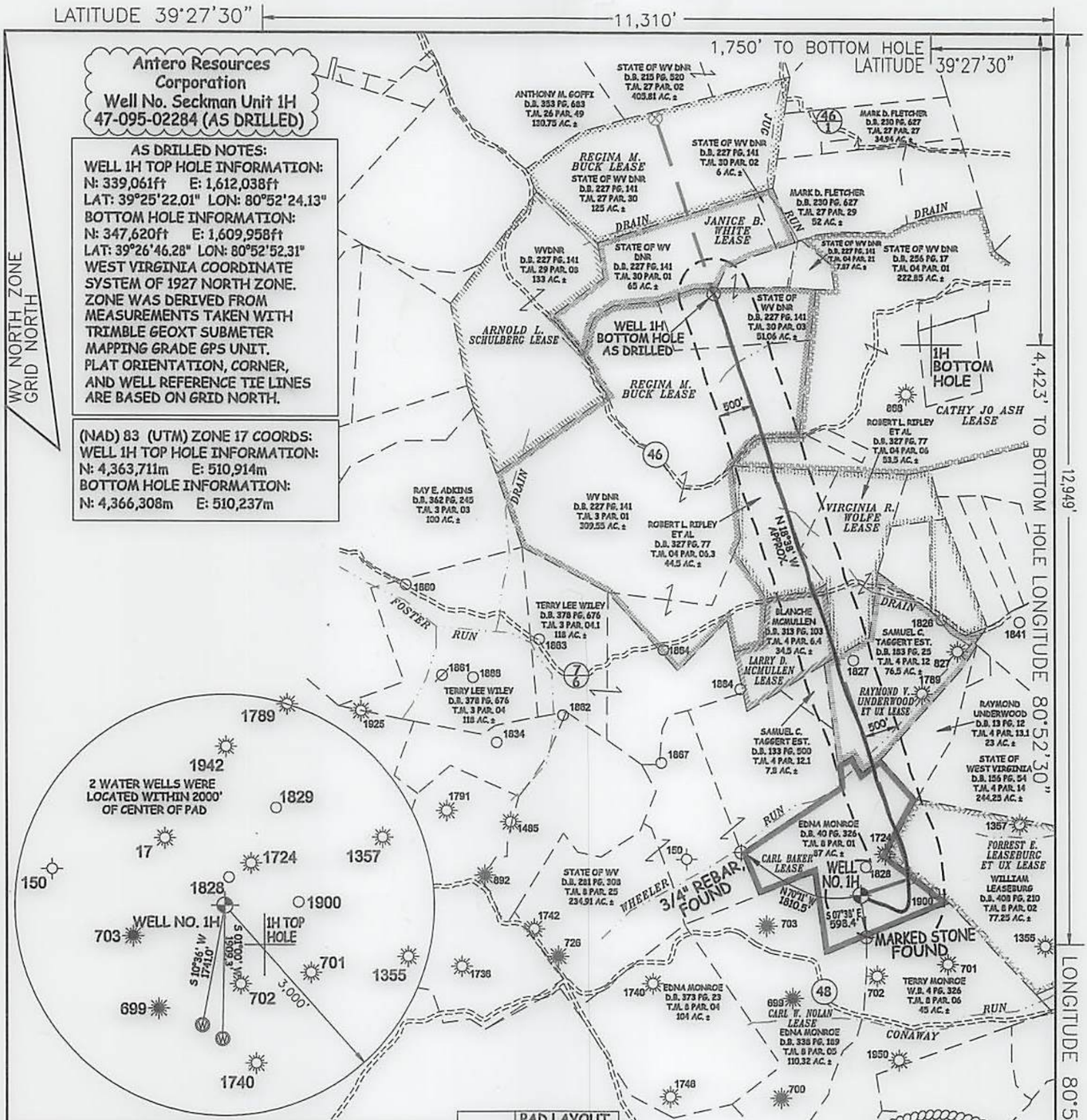
WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X

47 – 095 – 02284
STATE COUNTY PERMIT

LOCATION: ELEVATION 1,044' - AS DRILLED WATERSHED HEADWATERS MIDDLE ISLAND CREEK
QUADRANGLE SHIRLEY 7.5' - TOP HOLE MIDDLEBOURNE 7.5' - BOTTOM HOLE DISTRICT CENTERVILLE COUNTY TYLER
SURFACE OWNER EDNA MONROE ACREAGE 87 ACRES +/-
OIL & GAS ROYALTY OWNER CARL BAKER; FORREST E. LEASEBURG ET UX; RAYMOND V. UNDERWOOD ET UX; VIRGINIA R. WOLFE; LARRY D. MCMULLEN; CATHY JO ASH; REGINA M. BUCK LEASE ACREAGE 87 AC.±; 78 AC.±; 76.5 AC.±; 126 AC.±; 34.5 AC.±; 315.25 AC.±; 465 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 6,503' TVD 15,612' 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



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

THOMAS SUMMERS LICENSED No. 2109 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

JOB # 14-026WA	LEGEND
DRAWING # SECKMAN1HAD	Surface Owner Boundary Lines +/-
SCALE 1" = 2000'	Interior Surface Tracts +/-
MINIMUM DEGREE OF ACCURACY SUBMETER	Found monument, as noted
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS	Proposed Well Path
	As Drilled Well Path
STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS	THOMAS SUMMERS P.S. 2109
	DATE 12/13/17
	OPERATOR'S WELL# SECKMAN UNIT #1H

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.
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(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X

47 – 095 – 02284
STATE COUNTY PERMIT

LOCATION: ELEVATION 1,044' - AS DRILLED WATERSHED HEADWATERS MIDDLE ISLAND CREEK
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SURFACE OWNER EDNA MONROE ACREAGE 87 ACRES +/-
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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 PLUG & ABANDON ___ CLEAN OUT & REPLUG ___
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,503' TVD 15,612' 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

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