WR-35
Rev. 8/23/13

Review 12/28/2018

12/10/18

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

API 47 - 017 - 06809 County Doddridge District West Union
Quad West Union 7.5' Pad Name Addie Pad Field/Pool Name -----
Farm name Antero Resources Corporation Well Number Cobra 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 4353811m	Easting 516769m
Landing Point of Curve	Northing 4354008m	Easting 517319m
Bottom Hole	Northing 4356213m	Easting 516453m

Elevation (ft) 891' 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

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Drilling Media Surface hole ■ Air □ Mud □Fresh Water Intermediate hole ■ Air □ Mud □ Fresh Water □ Brine
Production hole □ Air ■ Mud □ Fresh Water □ Brine

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Mud Type(s) and Additive(s)

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Air - Foam & 4% KCL

Mud - Polymer

Date permit issued 5/11/2017 Date drilling commenced 7/6/2017 Date drilling ceased 11/27/2017
Date completion activities began 2/11/2018 Date completion activities ceased 7/6/2018
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 370' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1495', 1535' 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 by:

API 47- 017 - 06809 Farm name Antero Resources Corporation Well number Cobra 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"	95'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	491'	New	54#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2607'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	15090'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	7000'		4.7#, P-110		
Packer type and depth set		N/A					

Comment Details

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft^3/sks)	Volume (ft^3)	Cement Top (MD)	WOC (hrs)
Conductor	Class A	204 sx	15.6	1.18	241	0'	8 Hrs.
Surface	Class A	440 sx	15.6	1.20	528	0'	8 Hrs.
Coal							
Intermediate 1	Class A	950 sx	15.6	1.18	1121	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	674sx (Lead) 1112sx (Tail)	14(Lead), 15.2 (Tail)	1.45 (Lead), 1.83 (Tail)	3012	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15090' MD, 6475' TVD (BHL), 6503' (Deepest Point Drilled) Loggers TD (ft) 15090' MD

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

Plug back procedure N/A

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Kick off depth (ft) 6295'

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

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

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING

Conductor - 0

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

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

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

WAS WELL COMPLETED AS SHOT HOLE ☐ Yes ■ No DETAILS

WAS WELL COMPLETED OPEN HOLE? ☐ Yes ■ No DETAILS

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

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API 47- 017 - 06809 Farm name Antero Resources Corporation Well number Cobra Unit 1H

PERFORATION RECORD

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

*PLEASE SEE ATTACHED EXHIBIT 1

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

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

*PLEASE SEE ATTACHED EXHIBIT 2

Please insert additional pages as applicable.

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API 47- 017 - 06809 Farm name Antero Resources Corporation Well number Cobra Unit 1H

PRODUCING FORMATION(S)	DEPTHS			
Marcellus	6435' (TOP)	TVD	7042' (TOP)	MD

Please insert additional pages as applicable.

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

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

OPEN FLOW	Gas		Oil		NGL		Water		GAS MEASURED BY
	12840	mcfpd	92	bpd	---	bpd	73	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)

***PLEASE SEE ATTACHED EXHIBIT 3**

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Please insert additional pages as applicable.

Drilling Contractor Frontier Drilling LLC
Address 562 Spring Run Road City Pennsboro State WV Zip 26415

Logging Company Allied Horizontal
Address 381 Colonial Manor Rd City North Huntington State PA Zip 15642

Cementing Company C&J Energy Services
Address 1650 Hackers Creek City Lane Jew State WV Zip 26378

Stimulating Company Keane Group
Address 5825 North Sam Houston Parkway West, Suite 600 City Houston State TX Zip 77086

Please insert additional pages as applicable.

Completed by Karin Cox Telephone 303-357-6820
Signature [signature] Title Permitting Agent Date 11/9/2018

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

12/28/2018

API 47-017-06809 Farm Name Antero Resources Corp Well Number Cobra Unit 1H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	2/11/2018	14822	14989	48	Marcellus
2	2/24/2018	14624	14791	48	Marcellus
3	2/24/2018	14425	14593	48	Marcellus
4	2/25/2018	14227	14394	48	Marcellus
5	2/25/2018	14029	14196	48	Marcellus
6	2/26/2018	13830	13998	48	Marcellus
7	2/27/2018	13632	13799	48	Marcellus
8	2/27/2018	13434	13601	48	Marcellus
9	2/28/2018	13235	13403	48	Marcellus
10	3/1/2018	13037	13204	48	Marcellus
11	3/1/2018	12839	13006	48	Marcellus
12	3/2/2018	12640	12808	48	Marcellus
13	3/2/2018	12442	12609	48	Marcellus
14	3/3/2018	12244	12411	48	Marcellus
15	3/3/2018	12045	12213	48	Marcellus
16	3/4/2018	11847	12014	48	Marcellus
17	3/4/2018	11649	11816	48	Marcellus
18	3/5/2018	11450	11618	48	Marcellus
19	3/5/2018	11252	11419	48	Marcellus
20	3/6/2018	11054	11221	48	Marcellus
21	3/7/2018	10855	11023	48	Marcellus
22	3/7/2018	10657	10824	48	Marcellus
23	3/7/2018	10459	10626	48	Marcellus
24	3/8/2018	10260	10428	48	Marcellus
25	3/8/2018	10062	10229	48	Marcellus
26	3/8/2018	9864	10031	48	Marcellus
27	3/9/2018	9665	9833	48	Marcellus
28	3/9/2018	9467	9634	48	Marcellus
29	3/9/2018	9269	9436	48	Marcellus
30	3/10/2018	9070	9238	48	Marcellus
31	3/10/2018	8872	9039	48	Marcellus
32	3/10/2018	8674	8841	48	Marcellus
33	3/11/2018	8475	8643	48	Marcellus
34	3/11/2018	8277	8444	48	Marcellus
35	3/11/2018	8079	8246	48	Marcellus
36	3/12/2018	7880	8048	48	Marcellus
37	3/12/2018	7682	7849	48	Marcellus
38	3/12/2018	7484	7651	48	Marcellus
39	3/12/2018	7285	7453	48	Marcellus
40	3/13/2018	7087	7254	48	Marcellus

API 47-017-06809 Farm Name Antero Resources Corp Well Number Cobra 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	2/11/2018	74.7	7281	5634	4770	466562	12738	N/A
2	2/24/2018	74	7446	6250	5315	461666	10641	N/A
3	2/24/2018	71	7505	5647	5078	459317	10537	N/A
4	2/25/2018	70.9	7522	5486	3500	460702	10309	N/A
5	2/25/2018	73.4	7611	5362	4716	459567	11022	N/A
6	2/26/2018	70.3	7433	5418	4825	503330	10507	N/A
7	2/27/2018	74.7	7317	5550	3991	502000	10540	N/A
8	2/27/2018	78.4	7812	5441	4028	502500	10046	N/A
9	2/28/2018	73.3	7134	5425	4797	500170	10375	N/A
10	3/1/2018	78.2	7619	5180	4583	501830	10303	N/A
11	3/1/2018	71.7	7187	5662	4981	505440	10159	N/A
12	3/2/2018	80.2	7602	5618	4236	504350	10252	N/A
13	3/2/2018	74.1	7205	5011	4479	501332	10229	N/A
14	3/3/2018	77.7	7362	5483	3925	502060	10163	N/A
15	3/3/2018	78.2	7875	5601	5111	504230	10142	N/A
16	3/4/2018	72.6	7451	5487	5174	501700	11242	N/A
17	3/4/2018	76.5	7417	5570	4720	502600	10123	N/A
18	3/5/2018	71.3	7214	4564	3861	510950	10380	N/A
19	3/5/2018	79.8	7753	5373	3940	501860	10996	N/A
20	3/6/2018	77.6	7301	5530	4694	501800	11587	N/A
21	3/7/2018	77.8	7163	5402	4093	503500	10266	N/A
22	3/7/2018	72.9	7166	5131	3939	506510	10070	N/A
23	3/7/2018	75.4	7262	5989	5586	506000	10035	N/A
24	3/8/2018	73.8	6885	5644	5415	507000	10129	N/A
25	3/8/2018	76.7	7012	5935	4082	505925	10035	N/A
26	3/8/2018	78.8	6968	4974	5222	505000	10153	N/A
27	3/9/2018	78.3	7413	5515	3612	505000	10179	N/A
28	3/9/2018	76.4	7103	5871	5735	485264	9786	N/A
29	3/9/2018	78.2	6782	5504	3978	503000	10186	N/A
30	3/10/2018	78.7	6568	4618	5041	511684	10093	N/A
31	3/10/2018	74.1	7016	5668	4388	513565	9994	N/A
32	3/10/2018	79.6	6831	5280	4313	508000	10163	N/A
33	3/11/2018	69.4	7030	5853	4109	515190	9989	N/A
34	3/11/2018	76.1	6806	4240	5076	501793	10019	N/A
35	3/11/2018	76.8	6621	5310	4495	503000	10186	N/A
36	3/12/2018	74.6	6761	5470	3988	507908	10137	N/A
37	3/12/2018	74.3	6828	5495	4441	501752	9997	N/A
38	3/12/2018	77.7	7269	5489	5241	501000	11792	N/A
39	3/12/2018	76.1	6699	5473	3810	507000	10129	N/A
40	3/13/2018	76.5	6369	5712	3999	505000	10157	N/A
	AVG=	**76**	**7,190**	**5,447**	**4,532**	**19,957,057**	**415,786**	TOTAL

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API 47-017-06809 Farm Name Antero Resources Corp Well Number Cobra 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**
Shale	0	197	0	197
Sandy shale	197	357	197	357
Sandstone	357	417	357	417
Sandstone tr coal	417	437	417	437
Sandy shale	437	537	437	537
Shale	537	737	537	737
Silty sandstone	737	817	737	817
Silty shale	817	997	817	997
Sandstone	997	1,017	997	1,017
Silty shale	1,017	1,277	1,017	1,277
Sandstone	1,277	1,417	1,277	1,417
Sandy shale	1,417	1,677	1,417	1,677
Silty shale	1,677	1,748	1,677	1,768
Big Lime	1,748	2,286	1,768	2,325
Fifty Foot Sandstone	2,286	2,507	2,325	2,553
Gordon	2,507	2,712	2,553	2,764
Fifth Sandstone	2,712	2,777	2,764	2,831
Bayard	2,777	3,565	2,831	3,680
Speechley	3,565	3,745	3,680	3,880
Balltown	3,745	4,353	3,880	4,537
Bradford	4,353	4,796	4,537	5,028
Benson	4,796	5,090	5,028	5,355
Alexander	5,090	6,053	5,355	6,420
Sycamore	6,053	6,230	6,420	6,648
Middlesex	6,230	6,362	6,648	6,862
Burkett	6,362	6,392	6,862	6,927
Tully	6,392	6,435	6,927	7,042
Marcellus	6,435	NA	7,042	NA

*Please note Antero determines formation tops based on mud logs that are only run on one well on a multi-well pad. The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	2/23/2018
Job End Date:	3/13/2018
State:	West Virginia
County:	Doddridge
API Number:	47-017-06809-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Cobra 1H
Latitude:	39.33348000
Longitude:	-80.80560000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,503
Total Base Water Volume (gal):	17,893,932
Total Base Non Water Volume:	0

FracFocus Chemical Disclosure Registry

GROUNDWATER PROTECTION COUNCIL

Oil & Gas

Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Ascent	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	87.97406	None
Sand (Proppant)	Keane	Proppant					
			Crystalline silica: Quartz (SiO2)	14808-60-7	100.00000	11.75761	None
KWG-111LS	Keane	Gel					
			Guar gum	9000-30-0	55.00000	0.02988	None
			Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.02988	None
KFR-16FW	Keane	Friction Reducer					
			Water	7732-18-5	60.00000	0.03378	None
			Distillates (petroleum), hydrotreated light	64742-47-8	20.00000	0.01126	None
			oleic acid diethanolamide	93-83-4	1.50000	0.00084	None
			ammonium chloride	12125-02-9	1.50000	0.00084	None
			alcohols, C12-16, ethoxylated	68551-12-2	1.00000	0.00056	None
Hydrochloric Acid (15%)	Keane	Acidizing					
			Hydrochloric Acid	7647-01-0	15.00000	0.01996	None
MBC-516W	Keane	Biocide					

			Water	7732-18-5	56.70000	0.00511	None
			Glutaral	111-30-8	26.70000	0.00241	None
			didecyldimethylammonium chloride	7173-51-5	8.00000	0.00072	None
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00048	None
			ethonal	64-17-5	2.80000	0.00025	None
KSI-19	Keane	Scale Inhibitor					
			Methanol	67-56-1	30.00000	0.00420	None
KWBO-2	Keane	Breaker					
			Sodium persulfate	7775-27-1	99.00000	0.00122	None
KAI-12	Keane	Acid Inhibitor					
			Ethylene glycol	107-21-1	40.00000	0.00004	None
			dipropylene gylcol, monomethyl ether	34590-94-8	20.00000	0.00002	None
			formic acid	64-18-6	10.00000	0.00001	None
			Tar bases, quinoline derivs., benzyl chloride-quaternized	72480-70-7	10.00000	0.00001	None
			Cinnamaldehyde	104-55-2	10.00000	0.00001	None
			Ethoxylated alcohol	68131-39-5	10.00000	0.00001	None
			isoproyl alcohol	67-63-0	5.00000	0.00001	None
KFEAC-30	Keane	Iron Control					
			Citric acid	77-92-9	30.00000	0.00009	None
			Acetic acid	64-19-7	5.00000	0.00002	None
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS							
Other Chemical(s)	Listed Above	See Trade Name(s) List					
			Distillates (petroleum), hydrotreated light	64742-47-8	55.00000	0.02988	
			Distillates (petroleum), hydrotreated light	64742-47-8	20.00000	0.01126	
			Glutaral	111-30-8	26.70000	0.00241	
			oleic acid diethanolamide	93-83-4	1.50000	0.00084	
			ammonium chloride	12125-02-9	1.50000	0.00084	
			didecyldimethylammonium chloride	7173-51-5	8.00000	0.00072	
			alcohols, C12-16, ethoxylated	68551-12-2	1.00000	0.00056	
			quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl, chlorides	68424-85-1	5.30000	0.00048	
			ethonal	64-17-5	2.80000	0.00025	
			Citric acid	77-92-9	30.00000	0.00009	
			dipropylene gylcol, monomethyl ether	34590-94-8	20.00000	0.00002	
			formic acid	64-18-6	10.00000	0.00001	
			Tar bases, quinoline derivs., benzyl chloride-quaternized	72480-70-7	10.00000	0.00001	
			Cinnamaldehyde	104-55-2	10.00000	0.00001	
			Ethoxylated alcohol	68131-39-5	10.00000	0.00001	

			soproyl alcohol	67-63-0	5.00000	0.00001	

* Total Water Volume sources may include fresh water, produced water, and/or recycled water
** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

12/28/2018

Antero Resources Well No. Cobra Unit 1H As-Drilled Plat

Antero Resources Corporation

Leases	
A.	Jerry L. Myer Lease
B.	Thomas Lee White Lease
C.	S. A. Smith & C. Burke Morris Lease
D.	Kendra K. Cottrill Wyke Lease
E.	Asia D. Cumberledge, et al Lease

Notes:

West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.

Well No. Cobra Unit 1H Top Hole coordinates are
N: 306,252.82' Latitude: 39°20'00.52"
E: 1,630,707.87' Longitude: 80°48'20.16"

Bottom Hole coordinates are
N: 314,150.23' Latitude: 39°21'18.44"
E: 1,629,802.20' Longitude: 80°48'33.15"

UTM Zone 17, NAD 1983

Top Hole Coordinates	Bottom Hole Coordinates
N: 4,353,811.176m	N: 4,356,212.529m
E: 516,768.886m	E: 516,452.830m

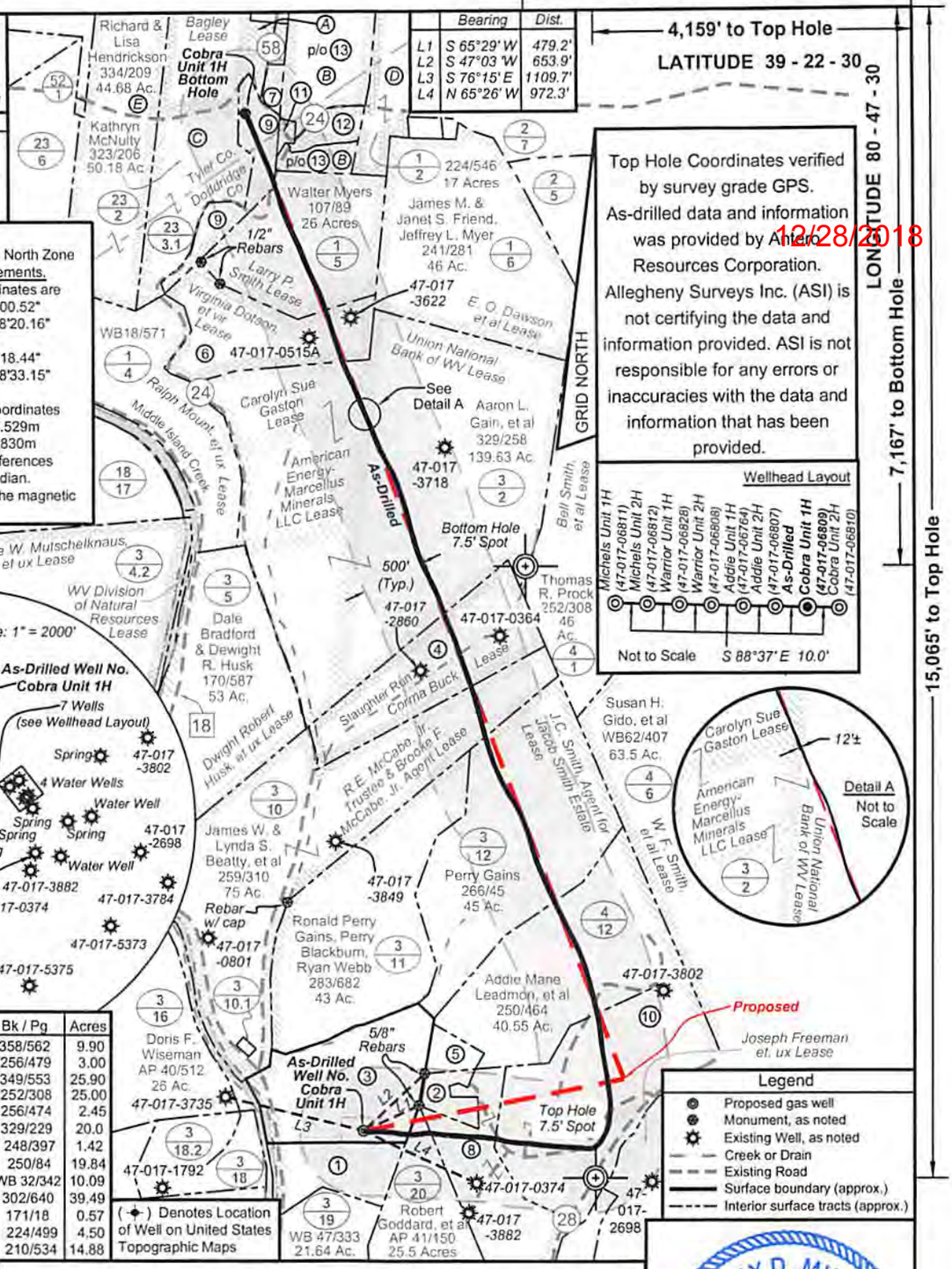
Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.

Note: It appears 13 water wells, 7 springs and a pond were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad.

Bearing		Dist.
L1	S 65°29' W	479.2'
L2	S 47°03' W	653.9'
L3	S 76°15' E	1109.7'
L4	N 65°26' W	972.3'

Top Hole Coordinates verified by survey grade GPS. As-drilled data and information was provided by Antero Resources Corporation. Allegheny Surveys Inc. (ASI) is not certifying the data and information provided. ASI is not responsible for any errors or inaccuracies with the data and information that has been provided.

12/28/2018



ID	TM/Par	Owner	Bk / Pg	Acres
1	3/17.1	Antero Resources Corp.	358/562	9.90
2	3/21.1	Charles & Carol Cottrill	256/479	3.00
3	3/17	Antero Resources Corp.	349/553	25.90
4	3/6	Thomas R. Prock	252/308	25.00
5	3/24	Charles L. & Carol Cottrill	256/474	2.45
6	1/7	Perry Gains & Aaron Gain	329/229	20.0
7	1/10.1	Jason & Jennifer Bagley	248/397	1.42
8	3/21	Addie Marie Leadmon	250/84	19.84
9	1/10	Judith Ann Bagley	WB 32/342	10.09
10	4/22	Gary M. & Mary Ann Eiff	302/640	39.49
11	1/1.1	Myron B. & Betty L. White	171/18	0.57
12	1/1.2	Charles & Roberta Beagle	224/499	4.50
13	1/1	Myron B. & Betty L. White	210/534	14.88

(✦) Denotes Location of Well on United States Topographic Maps

Legend

- Proposed gas well
- Monument, as noted
- Existing Well, as noted
- Creek or Drain
- Existing Road
- Surface boundary (approx.)
- Interior surface tracts (approx.)

ALLEGHENY SURVEYS, INC.

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 prescribed by the Department of Environmental Protection.

Bradley D. Miller, P.S. 2167

BRADLEY D. MILLER LICENSED No. 2167 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

SEAL

FILE NO: 45-30-WU-14
DRAWING NO: Cobra 1H As DrilledWell Plat
SCALE: 1" = 1200'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE: June 7 20 18
OPERATOR'S WELL NO. Cobra Unit 1H

API WELL NO
47 - 017 - 06809
STATE COUNTY PERMIT

WELL TYPE: ☐ OIL ☒ GAS ☐ LIQUID INJECTION ☐ WASTE DISPOSAL
(IF GAS) PRODUCTION: ☐ STORAGE ☐ DEEP ☒ SHALLOW

LOCATION: ELEVATION: 891' As-Drilled WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union
DISTRICT: West Union COUNTY: Doddridge
SURFACE OWNER: Antero Resources Corp. Union National Bank of WV; Corma Buck; Joseph Freeman, et ux; J.C. Smith, Agent for Jacob Smith Estate; Virginia Dotson, et vir Carolyn Sue Gaston; S.A. Smith & C. Burke Morris, Larry P. Smith ACREAGE: 25.9 (600' 29.57; 20; 79; 28.1)
ROYALTY OWNER: R. E. McCabe, Jr. Trustee & Brooke F. McCabe, Jr, Agent LEASE NO: ACREAGE: 25; 290; 75; 20
PROPOSED WORK: ☐ DRILL ☐ CONVERT ☐ DRILL DEEPER ☐ FRACTURE OR STIMULATE ☐ PLUG OFF OLD FORMATION
☐ PERFORATE NEW FORMATION ☒ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled
☐ PLUG AND ABANDON ☐ CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 6,474.6' TVD / 15,090' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System
ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road
Denver, CO 80202 Charleston, WV 25313

12/28/2018

BRADLEY D MILLER
LICENSED
NO. 2?6
STATE OF
WEST VIRGINIA
PROFESSIONAL SURVEYOR

Antero Resources Well No.Cobra Unit 1H As-Drilled Plat

Antero Resources Corporation

Leases

A.	Jerry L. Myer Lease
B.	Thomas Lee White Lease
C.	S. A. Smith & C. Burke Morris Lease
D.	Kendra K. Cottrill Wyke Lease
E.	Asia D. Cumberledge, et al Lease

Notes:

West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.

Well No. Cobra Unit 1H Top Hole coordinates are
N: 306,252.82' Latitude: 39°20'00.52"
E: 1,630,707.87' Longitude: 80°48'20.16"

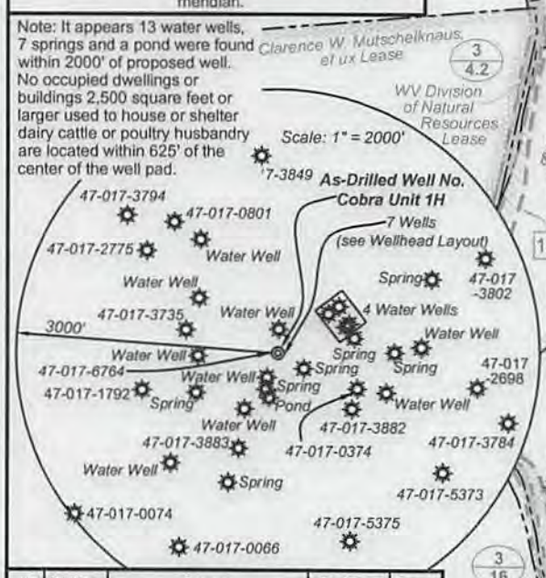
Bottom Hole coordinates are
N: 314,150.23' Latitude: 39°21'18.44"
E: 1,629,802.20' Longitude: 80°48'33.15"

UTM Zone 17, NAD 1983

Top Hole Coordinates	Bottom Hole Coordinates
N: 4,353,811.176m	N: 4,356,212.529m
E: 516,768.886m	E: 516,452.830m

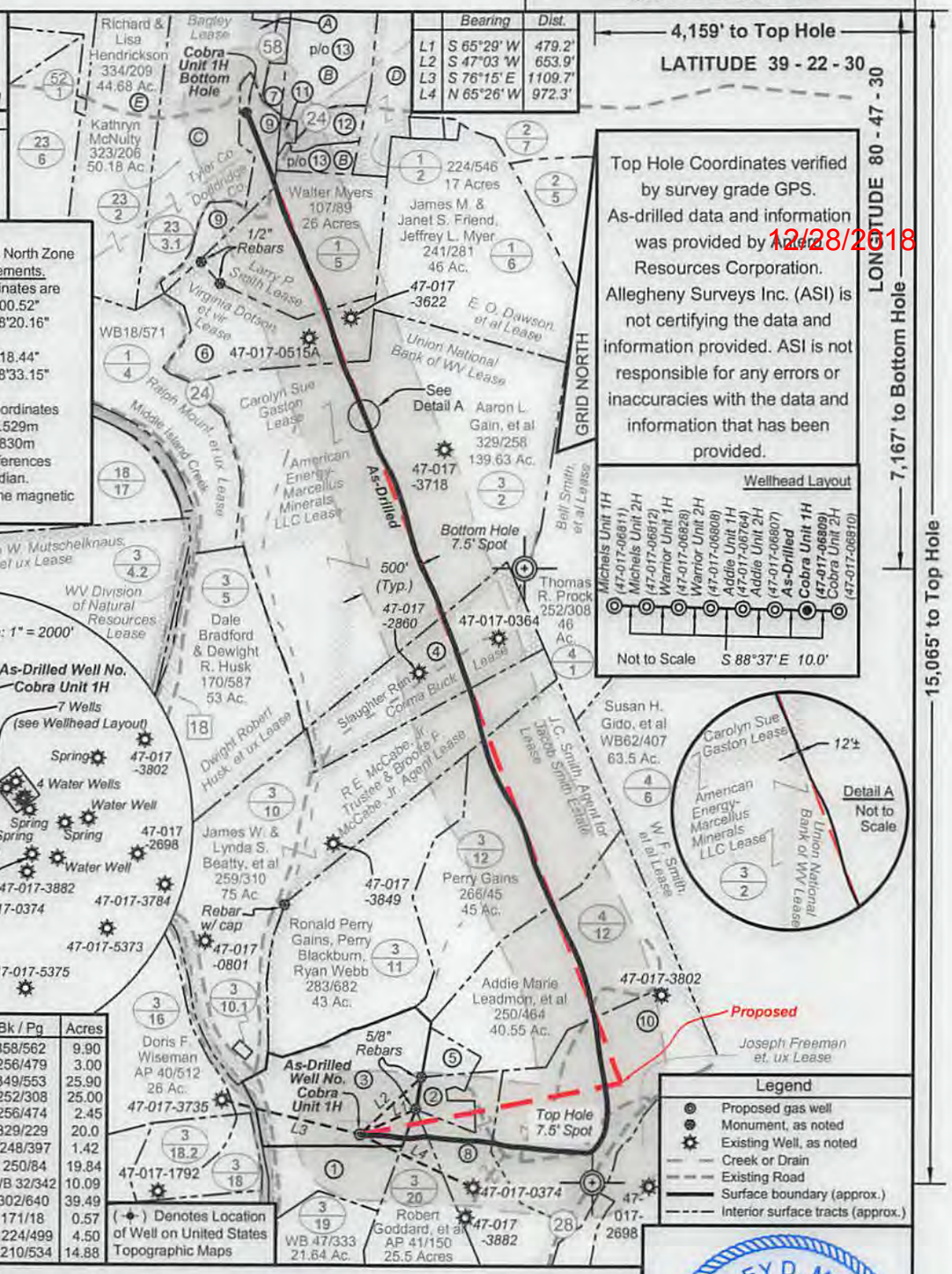
Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.

Note: It appears 13 water wells, 7 springs and a pond were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad.



ID	TM/Par	Owner	Bk / Pg	Acres
1	3/17.1	Antero Resources Corp.	358/562	9.90
2	3/21.1	Charles & Carol Cottrill	256/479	3.00
3	3/17	Antero Resources Corp.	349/553	25.90
4	3/6	Thomas R. Prock	252/308	25.00
5	3/24	Charles L. & Carol Cottrill	256/474	2.45
6	1/7	Perry Gains & Aaron Gain	329/229	20.0
7	1/10.1	Jason & Jennifer Bagley	248/397	1.42
8	3/21	Addie Marie Leadmon	250/84	19.84
9	1/10	Judith Ann Bagley	WB 32/342	10.09
10	4/22	Gary M. & Mary Ann Eiff	302/640	39.49
11	1/1.1	Myron B. & Betty L. White	171/18	0.57
12	1/1.2	Charles & Roberta Beagle	224/499	4.50
13	1/1	Myron B. & Betty L. White	210/534	14.88

(✦) Denotes Location of Well on United States Topographic Maps



	Bearing	Dist.
L1	S 65°29' W	479.2'
L2	S 47°03' W	653.9'
L3	S 76°15' E	1109.7'
L4	N 65°26' W	972.3'

Top Hole Coordinates verified by survey grade GPS. As-drilled data and information was provided by Antero Resources Corporation. Allegheny Surveys Inc. (ASI) is not certifying the data and information provided. ASI is not responsible for any errors or inaccuracies with the data and information that has been provided.

12/28/2018

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BRADLEY D. MILLER LICENSED No. 2167 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR SEAL

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STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE: June 7 20 18
OPERATOR'S WELL NO. Cobra Unit 1H

API WELL NO
47 - 017 - 06809
STATE COUNTY PERMIT

WELL TYPE: ☐ OIL ☒ GAS ☐ LIQUID INJECTION ☐ WASTE DISPOSAL
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WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System
ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road
Denver, CO 80202 Charleston, WV 25313

Antero Resources
Well No. Cobra Unit 1H
As-Drilled Plat
Antero Resources Corporation

12/28/2018

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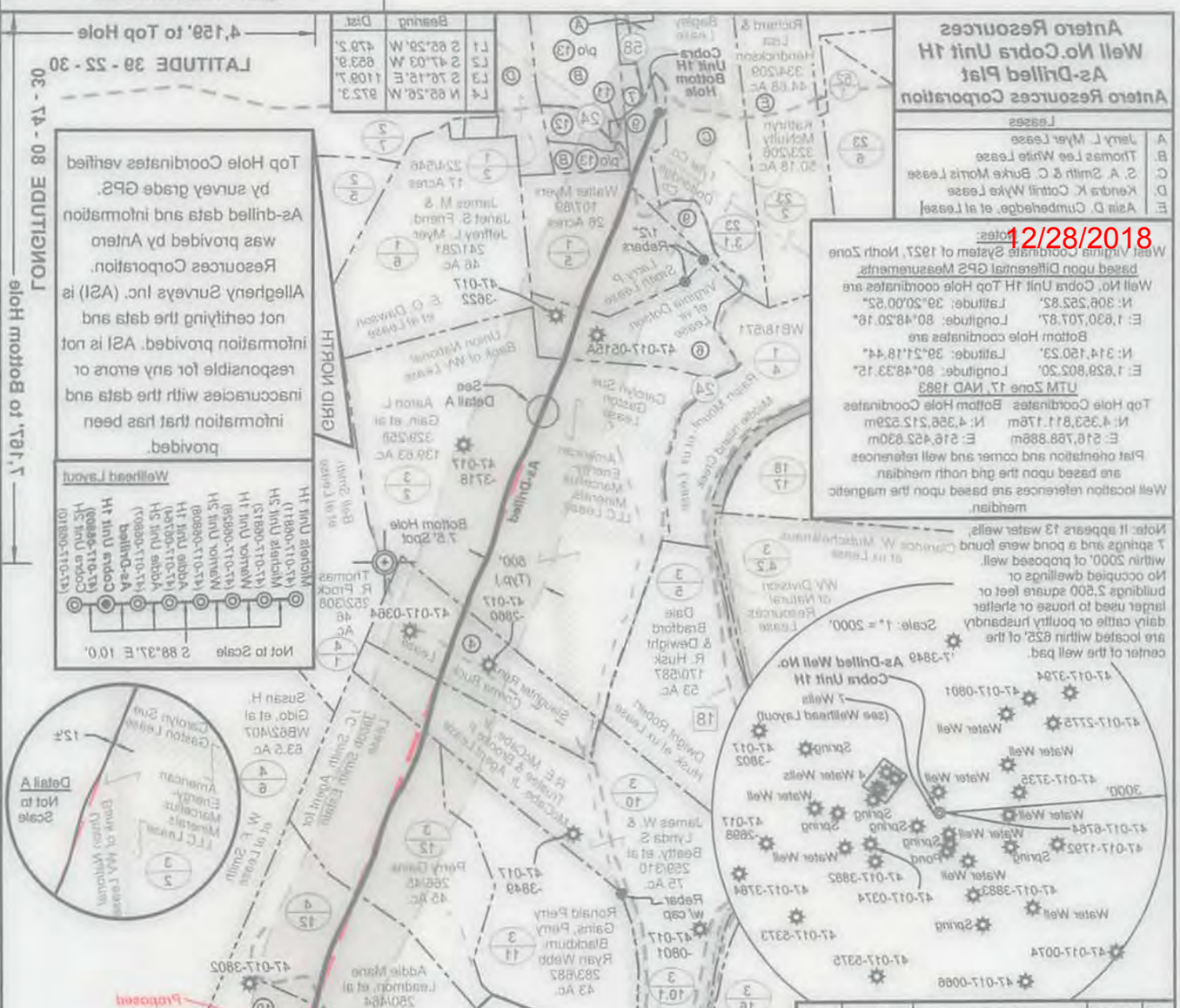
Wellhead Layout

Not to Scale S 88°37'E 10.0'



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