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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- 085 - 10190 County Ritchie District Clay
Quad Pullman 7.5' Pad Name Mackay Pad Field/Pool Name ---
Farm name Jack D. Mackay et al Well Number Caldwell Unit 2H
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 4343235m Easting 508881m
Landing Point of Curve Northing 4343412.93m Easting 509092.08m
Bottom Hole Northing 4346210m Easting 507770m

Elevation (ft) 1100' GL Type of Well ■New □ Existing Type of Report □Interim ■Final

Permit Type □ Deviated □ Horizontal ■ Horizontal 6A □ Vertical Depth Type □ Deep ■ Shallow

Type of Operation □ Convert □ Deepen ■ Drill □ Plug Back □ Redrilling □ Rework ■ Stimulate

Well Type □ Brine Disposal □ CBM ■ Gas ■ Oil □ Secondary Recovery □ Solution Mining □ Storage □ Other _____

Type of Completion ■ Single □ Multiple Fluids Produced □ Brine ■Gas □ NGL ■ Oil □ Other _____
Drilled with □ Cable ■ Rotary

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

Mud Type(s) and Additive(s)
Air - Foam & 4% KCL
Mud - Polymer

Date permit issued 1/14/2015 Date drilling commenced 4/24/2015 Date drilling ceased 11/20/2015
Date completion activities began 1/29/2016 Date completion activities ceased 9/10/2016
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 434' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1966' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 301' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No Reviewed by:

Received
Office of Oil & Gas
MAR 20 2017
WV Department of
Environmental Protection

APPROVED
NAME: Michael Dahl
DATE: 5/10/2017

AK 5/23/17
RBDMS

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API 47- 085 - 10190 Farm name Jack D. Mackay et al Well number Caldwell Unit 2H

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"	40'	New	94#, K-55	N/A	Y
Surface	17- 1/2"	13- 3/8"	521'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2525'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5-1/2"	17273'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6830'		5.95#, 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	193 sx	15.6	1.20	38	0	8 Hrs.
Surface	Class A	659 sx	15.6	1.19	362	0	8 Hrs.
Coal							
Intermediate 1	Class A	976 sx	15.6	1.18	791	0	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	918 sx (Lead), 1639 (Tail)	13.5 (Lead), 15.2 (Tail)	1.44 (Lead), 1.83 (Tail)	3493	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 17273' MD, 6438' TVD (BHL); 6553' TVD (Deepest point drilled) Loggers TD (ft) 17225' MD

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

Plug back procedure N/A

Kick off depth (ft) 6495'

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (McNabb Unit 1H API# 47-085-10196). Please reference the wireline logs submitted with Form WR-35 for the McNabb Unit 1H. A Cement Bond Log has been included with this submittal.

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

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

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING

Conductor - 0

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

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

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

WAS WELL COMPLETED AS SHOT HOLE ☐ Yes ■ No DETAILS

WAS WELL COMPLETED OPEN HOLE? ☐ Yes ■ No DETAILS

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

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API 47- 085 - 10190 Farm name Jack D. Mackay et al Well number Caldwell Unit 2H

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- 085 - 10190 Farm name Jack D. Mackay et al Well number Caldwell Unit 2H

PRODUCING FORMATION(S)	DEPTHS			
Marcellus	6527' (Top)	TVD	6888' (Top)	MD

Please insert additional pages as applicable.

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

SHUT-IN PRESSURE Surface 3000 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 14412 mcfpd Oil 90 bpd NGL --- bpd Water 566 bpd GAS MEASURED BY □ Estimated ■ Orifice □ Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H_2S, ETC)
	0		0		

*** PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

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

Logging Company Rush Wellsite Services
Address 600 Alpha Drive City Canonsburg State PA Zip 15317

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

Stimulating Company US Well Services
Address 533 Industrial Park Drive City Jane Lew State WV Zip 26378
Please insert additional pages as applicable.

Completed by Shelby Johnson Telephone (303) 357-7310
Signature SJohnson Title Permitting Agent Date 3/24/2017

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

API 47-085-10190 Farm Name Jack D. Mackay et al Well Number Caldwell Unit 2H					
EXHIBIT 1					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	1/29/2016	17052	17180	60	Marcellus
2	5/16/2016	16900	17029	60	Marcellus
3	5/16/2016	16749	16877	60	Marcellus
4	5/16/2016	16598	16726	60	Marcellus
5	5/16/2016	16446	16574	60	Marcellus
6	5/17/2016	16295	16423	60	Marcellus
7	5/17/2016	16143	16272	60	Marcellus
8	5/17/2016	15992	16120	60	Marcellus
9	5/17/2016	15841	15969	60	Marcellus
10	5/18/2016	15689	15817	60	Marcellus
11	5/18/2016	15538	15666	60	Marcellus
12	5/18/2016	15386	15515	60	Marcellus
13	5/19/2016	15235	15363	60	Marcellus
14	5/19/2016	15084	15212	60	Marcellus
15	5/19/2016	14932	15060	60	Marcellus
16	5/19/2016	14781	14909	60	Marcellus
17	5/20/2016	14629	14758	60	Marcellus
18	5/20/2016	14478	14606	60	Marcellus
19	5/20/2016	14327	14455	60	Marcellus
20	5/21/2016	14175	14303	60	Marcellus
21	5/21/2016	14024	14152	60	Marcellus
22	5/21/2016	13872	14001	60	Marcellus
23	5/21/2016	13721	13849	60	Marcellus
24	5/21/2016	13570	13698	60	Marcellus
25	5/22/2016	13418	13546	60	Marcellus
26	5/22/2016	13267	13395	60	Marcellus
27	5/22/2016	13115	13243	60	Marcellus
28	5/23/2016	12964	13092	60	Marcellus
29	5/23/2016	12813	12941	60	Marcellus
30	5/23/2016	12661	12789	60	Marcellus
31	5/23/2016	12510	12638	60	Marcellus
32	5/24/2016	12358	12486	60	Marcellus
33	5/24/2016	12207	12335	60	Marcellus
34	5/24/2016	12055	12184	60	Marcellus
35	5/24/2016	11904	12032	60	Marcellus
36	5/24/2016	11753	11881	60	Marcellus
37	5/25/2016	11601	11729	60	Marcellus
38	5/25/2016	11450	11578	60	Marcellus
39	5/25/2016	11298	11427	60	Marcellus
40	5/25/2016	11147	11275	60	Marcellus
41	5/25/2016	10996	11124	60	Marcellus
42	5/26/2016	10844	10972	60	Marcellus
43	5/26/2016	10693	10821	60	Marcellus
44	5/26/2016	10541	10670	60	Marcellus
45	5/26/2016	10390	10518	60	Marcellus
46	5/27/2016	10239	10367	60	Marcellus
47	5/27/2016	10087	10215	60	Marcellus
48	5/27/2016	9936	10064	60	Marcellus
49	5/27/2016	9784	9913	60	Marcellus
50	5/27/2016	9633	9761	60	Marcellus
51	5/28/2016	9482	9610	60	Marcellus
52	5/28/2016	9330	9458	60	Marcellus
53	5/28/2016	9179	9307	60	Marcellus
54	5/28/2016	9027	9156	60	Marcellus
55	5/28/2016	8876	9004	60	Marcellus
56	5/29/2016	8725	8853	60	Marcellus
57	5/29/2016	8573	8701	60	Marcellus
58	5/29/2016	8422	8550	60	Marcellus
59	5/29/2016	8270	8399	60	Marcellus
60	5/30/2016	8119	8247	60	Marcellus
61	5/30/2016	7968	8096	60	Marcellus
62	5/30/2016	7816	7944	60	Marcellus
63	5/30/2016	7665	7793	60	Marcellus
64	5/30/2016	7513	7642	60	Marcellus
65	5/31/2016	7362	7490	60	Marcellus
66	5/31/2016	7211	7339	60	Marcellus
67	5/31/2016	7059	7187	60	Marcellus
68	5/31/2016	6908	7036	60	Marcellus

API 47-085-10190 Farm Name James D. Mackay et al Well Number Caldwell Unit 2H

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	5/15/2016	65	6970	5263	4876	236100	6619	N/A
2	5/16/2016	64	6688	5481	4845	237620	6645	N/A
3	5/16/2016	70	6932	5735	4102	234450	6595	N/A
4	5/16/2016	69	6880	5579	4478	236800	6600	N/A
5	5/16/2016	65	6838	5516	5149	238060	6606	N/A
6	5/17/2016	65	6766	5446	4955	237200	6535	N/A
7	5/17/2016	71	6922	5619	4690	236150	6595	N/A
8	5/17/2016	71	7015	5645	4999	237620	6527	N/A
9	5/17/2016	75	7099	5735	4140	238910	6542	N/A
10	5/18/2016	74	7031	5511	4884	237840	6543	N/A
11	5/18/2016	76	7063	5634	4633	239100	6495	N/A
12	5/18/2016	70	6993	5796	4660	236520	6593	N/A
13	5/19/2016	74	7078	5560	4944	237390	6466	N/A
14	5/19/2016	77	7114	5617	4510	236500	6451	N/A
15	5/19/2016	76	7024	6049	4889	232630	6511	N/A
16	5/19/2016	71	6815	5563	5199	235900	6466	N/A
17	5/20/2016	72.6	6857	5726	4960	237640	6507	N/A
18	5/20/2016	74	7186	5849	4140	237740	7686	N/A
19	5/20/2016	74	6927	5559	4988	237880	6460	N/A
20	5/21/2016	74	6869	5520	5150	236720	6473	N/A
21	5/21/2016	75	6853	5482	4673	238340	6479	N/A
22	5/21/2016	74	6866	5726	4986	234560	7476	N/A
23	5/21/2016	70	6787	5696	5314	237380	6433	N/A
24	5/21/2016	73	6881	5773	4864	237180	6382	N/A
25	5/22/2016	72	6932	5790	4756	237460	6403	N/A
26	5/22/2016	74	6935	6002	4656	238840	7266	N/A
27	5/22/2016	71	6823	5879	5059	237420	6380	N/A
28	5/23/2016	72	6827	5623	5360	237740	6346	N/A
29	5/23/2016	71	6697	5722	4709	238830	6411	N/A
30	5/23/2016	71	6666	5962	4724	239850	6438	N/A
31	5/23/2016	72.1	6926	5786	5169	237170	6369	N/A
32	5/24/2016	70.5	6776	5757	5053	236380	6295	N/A
33	5/24/2016	70	6673	5800	4717	240433	6496	N/A
34	5/24/2016	72	6647	5868	4974	240450	7336	N/A
35	5/24/2016	69.7	6765	5478	4822	237930	6414	N/A
36	5/24/2016	67.7	7080	5893	4162	236820	6482	N/A
37	5/25/2016	74	6911	5909	5191	237060	7126	N/A
38	5/25/2016	70	6938	5625	4286	235720	6376	N/A
39	5/25/2016	70	6766	6181	4525	236740	6823	N/A
40	5/25/2016	69.6	6702	5635	4828	237820	6219	N/A
41	5/25/2016	69.3	6804	5794	4609	237790	6209	N/A
42	5/26/2016	70	6778	5817	4102	237100	6199	N/A
43	5/26/2016	70	6521	5543	4223	237320	6181	N/A
44	5/26/2016	71	6726	5969	4979	234200	6171	N/A
45	5/26/2016	73.7	6686	5400	5249	236700	6212	N/A
46	5/27/2016	75.7	6627	5478	5031	237810	6348	N/A
47	5/27/2016	75	6675	5420	4421	239500	6169	N/A
48	5/27/2016	75	6723	5507	4745	238150	6379	N/A
49	5/27/2016	75.8	6719	5560	4726	236580	6882	N/A
50	5/27/2016	75.6	6686	5323	5116	237810	6208	N/A
51	5/28/2016	75.7	6734	5316	4638	239090	6189	N/A
52	5/28/2016	74	6547	5486	4163	240400	6105	N/A
53	5/28/2016	74	6701	5754	4013	240500	6125	N/A
54	5/28/2016	74	6745	5631	4055	238240	6091	N/A
55	5/28/2016	76.4	6805	5467	4371	237640	6836	N/A
56	5/29/2016	73.9	6570	5403	5216	239160	6164	N/A
57	5/29/2016	74	6471	5549	5099	238300	6057	N/A
58	5/29/2016	72	6546	5482	5170	210180	7189	N/A
59	5/29/2016	74.1	6690	5387	5161	235710	6855	N/A
60	5/30/2016	73.4	6726	5623	5002	239480	6055	N/A
61	5/30/2016	74.8	6732	5654	4850	238875	6031	N/A
62	5/30/2016	74	6619	5900	4132	237340	6020	N/A
63	5/30/2016	74.5	6779	5583	4121	236570	6305	N/A
64	5/30/2016	73.5	6670	5336	4718	238618	6018	N/A
65	5/31/2016	75.2	6840	5093	4825	237860	5974	N/A
66	5/31/2016	72	6750	5389	4859	236180	6357	N/A
67	5/31/2016	72	6622	6266	5070	236780	6552	N/A
68	5/31/2016	73	6308	5841	4798	237360	6083	N/A
	AVG =	72.3	6,799	5,646	4,757	16,124,136	439,829	TOTAL

API 47-085-10190 Farm Name Jack D. Mackay et al Well Number Caldwell Unit 2H				
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	434'	N/A	434'	N/A
Shale	0	201	0	201
Sandstone	est. 201	281	est. 201	281
Siltstone	est. 281	301	est. 281	301
Coal "Washington Coal"	est. 301	361	est. 301	361
Sandstone	est. 361	581	est. 361	581
Shale	est. 581	1,241	est. 581	1,241
Sandstone	est. 1241	1,321	est. 1241	1,321
Siltsone/ sandstone	est. 1321	1,401	est. 1321	1,401
Sandstone	est. 1401	1,721	est. 1401	1,721
Shale	est. 1721	1,821	est. 1721	1,821
Siltstone	est. 1821	1,981	est. 1821	1,981
Limestone	est. 1981	2,100	est. 1981	2,102
Big Lime	2,100	2,754	2,102	2,757
Fifty Foot Sandstone	2,754	2,828	2,757	2,830
Gordon	2,828	2,754	2,830	2,757
Fifth Sandstone	2,754	3,109	2,757	3,111
Bayard	3,109	3,936	3,111	3,939
Speechley	3,936	4,200	3,939	4,203
Baltown	4,200	4,648	4,203	4,663
Bradford	4,648	5,032	4,663	5,076
Benson	5,032	5,286	5,076	5,360
Alexander	5,286	6,207	5,360	6,387
Sycamore	6,207	6,367	6,387	6,581
Middlesex	6,367	6,474	6,581	6,758
Burkett	6,474	6,504	6,758	6,826
Tully	6,504	6,527	6,826	6,888
Marcellus	6,527	N/A	6,888	N/A

*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.

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/15/2016
Job End Date:	5/31/2016
State:	West Virginia
County:	Ritchie
API Number:	47-085-10190-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Caldwell 2H
Latitude:	39.23837500
Longitude:	-80.89709200
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,553
Total Base Water Volume (gal):	19,307,742
Total Base Non Water Volume:	0

Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Antero Resources	Base Fluid					
			Water	7732-18-5	100.00000	90.49420	
Sand	U.S. Well Services, LLC	Proppant					
			Crystalline Silica, quartz	14808-60-7	100.00000	9.06154	
HCL Acid (12.6%-18.0%)	U.S. Well Services, LLC	Bulk Acid					
			Water	7732-18-5	87.50000	0.15364	
			Hydrogen Chloride	7647-01-0	18.00000	0.03670	
LGC-15	U.S. Well Services	Gelling Agents					
			Guar Gum	9000-30-0	50.00000	0.06795	
			Petroleum Distillates	64742-47-8	60.00000	0.06435	
			Suspending agent (solid)	14808-60-7	3.00000	0.01039	
			Surfactant	68439-51-0	3.00000	0.00408	
WFRA-405	U.S. Well Services	Friction Reducer					
			Water	7732-18-5	60.00000	0.04173	
			2-Propenoic acid, polymer with 2 propenamide	9003-06-9	30.00000	0.02086	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01680	

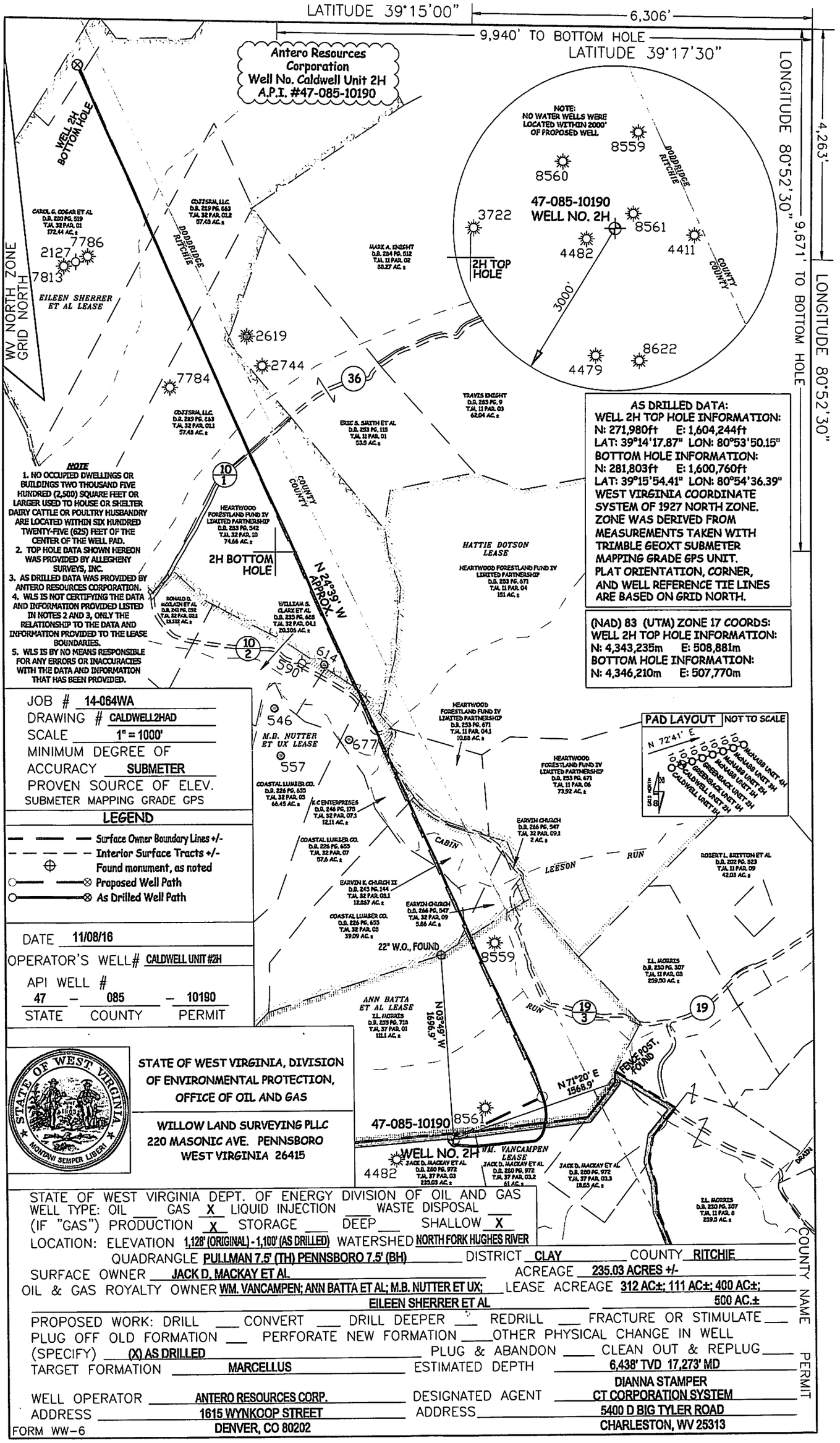
			Ethoxylated alcohol blend	68002-97-1	4.00000	0.00278	
SI-1100s	U.S. Well Services	Scale Inhibitor					
			Water	7732-18-5	80.00000	0.00975	
			Copolymer of Maleic and Acrylic acid	52255-49-9	10.00000	0.00144	
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	7.50000	0.00123	
			Phosphino carboxylic acid polymer	71050-62-9	5.00000	0.00079	
			Hexamethylene tramine penta (methylene phosphonic acid)	34690-00-1	5.00000	0.00079	
			Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5	2.00000	0.00032	
BIOCLEAR 2000	U.S. Well Services	Anti-Bacterial Agent					
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	30.00000	0.00613	
			Deionized Water	7732-18-5	28.00000	0.00233	
AP One	U.S. Well Services	Gel Breakers					
			Ammonium Persulfate	7727-54-0	100.00000	0.00181	
AI-302	U.S. Well Services	Acid Corrosion Inhibitors					
			Water	7732-18-5	95.00000	0.00033	
			2-Propyn-1-olcompound with methyloxirane	38172-91-7	15.00000	0.00005	

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

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

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

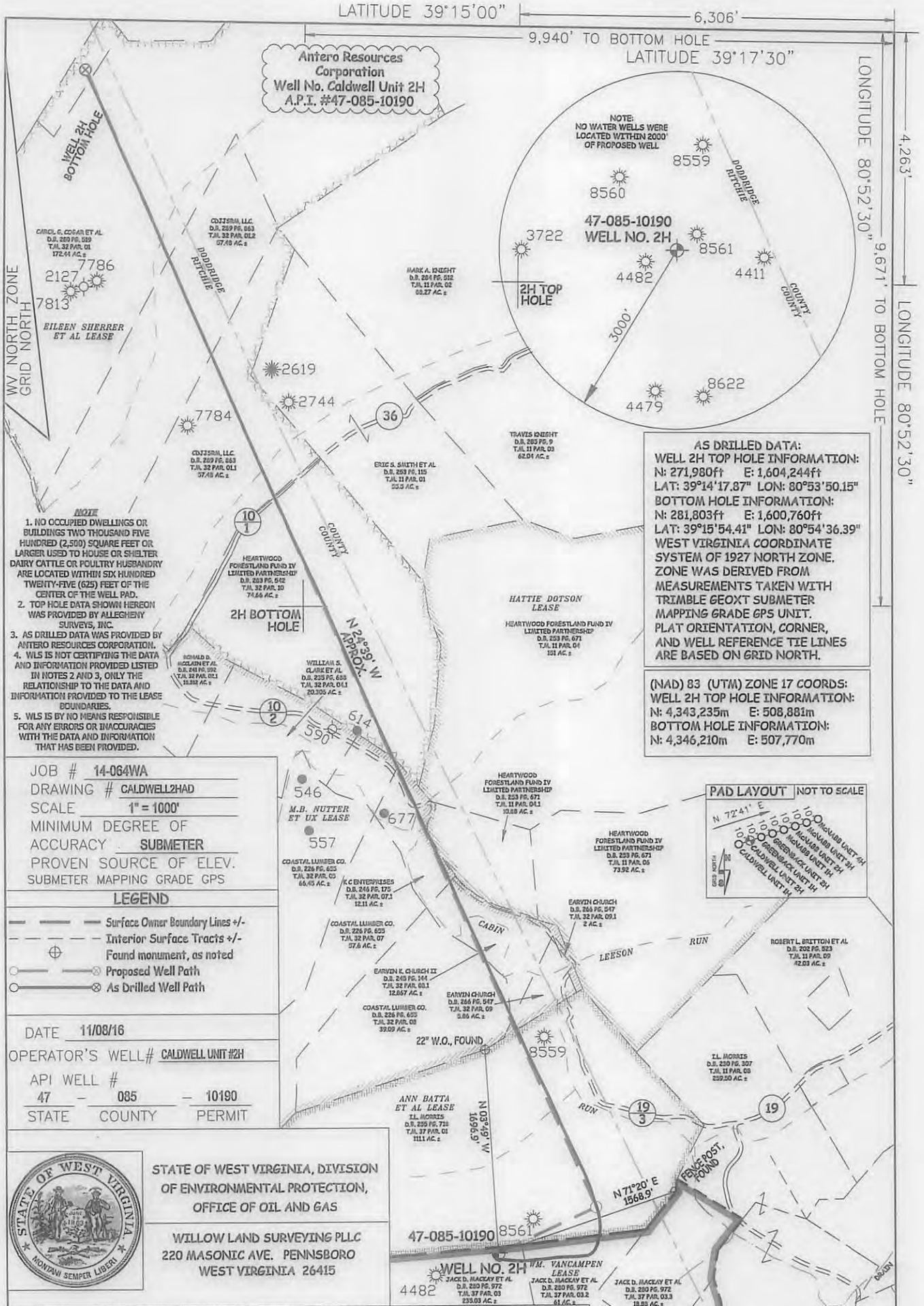
AS-DRILLED



STATE OF WEST VIRGINIA DEPT. OF ENERGY DIVISION OF OIL AND GAS
WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
LOCATION: ELEVATION 1,128' (ORIGINAL) - 1,100' (AS DRILLED) WATERSHED NORTH FORK HUGHES RIVER
QUADRANGLE PULLMAN 7.5' (TH) PENNSBORO 7.5' (BH) DISTRICT CLAY COUNTY RITCHIE
SURFACE OWNER JACK D. MACKAY ET AL. ACREAGE 235.03 ACRES +/-
OIL & GAS ROYALTY OWNER WM. VANCAMPEN; ANN BATTA ET AL; M.B. NUTTER ET UX; EILEEN SHERRER ET AL LEASE ACREAGE 312 AC±; 111 AC±; 400 AC±; 500 AC.±
PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___
PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) (X) AS DRILLED PLUG & ABANDON ___ CLEAN OUT & REPLUG ___
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,438' TVD 17,273' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER
ADDRESS 1615 WYNKOOP STREET ADDRESS CT CORPORATION SYSTEM
DENVER, CO 80202 5400 D BIG TYLER ROAD
CHARLESTON, WV 25313
FORM WW-6

COUNTY NAME PERMIT

As-Drilled


LATITUDE 39°15'00"
6,306'
9,940' TO BOTTOM HOLE
LATITUDE 39°17'30"
LONGITUDE 80°52'30"
4,263'
9,671' TO BOTTOM HOLE
LONGITUDE 80°52'30"
Antero Resources Corporation
Well No. Caldwell Unit 2H
A.P.I. #47-085-10190
WELL 2H BOTTOM HOLE
NOTE: NO WATER WELLS WERE LOCATED WITHIN 2000' OF PROPOSED WELL
47-085-10190
WELL NO. 2H
2H TOP HOLE
2H BOTTOM HOLE
3000'
WV NORTH ZONE GRID NORTH
EILEEN SHERRER ET AL LEASE
HATTIE DOTSON LEASE
M.B. NUTTER ET UX LEASE
ANN BATTA ET AL LEASE
WM. VANCAMPEN LEASE
N 24°39' W APPROX.
N 03°49' W 1969'
N 71°20' E 1568.9'
22" W.O., FOUND
FENCE POST, FOUND
LEESON RUN
CABIN RUN
COUNTY COUNTY
DODDRIDGE RITCHIE
CDJISRM, LLC D.B. 269 PG. 863 T.M. 32 PAR. 01.2 97.49 AC.±
CDJISRM, LLC D.B. 269 PG. 863 T.M. 32 PAR. 01.1 97.49 AC.±
CAROL G. COSAR ET AL D.B. 269 PG. 589 T.M. 32 PAR. 01 172.44 AC.±
MARK A. KNIGHT D.B. 264 PG. 532 T.M. 11 PAR. 02 68.27 AC.±
TRAVIS KNIGHT D.B. 263 PG. 9 T.M. 11 PAR. 03 62.01 AC.±
ERIC S. SMITH ET AL D.B. 253 PG. 115 T.M. 11 PAR. 01 253.3 AC.±
HEARTWOOD FORESTLAND FUND IV LIMITED PARTNERSHIP D.B. 253 PG. 542 T.M. 32 PAR. 10 74.66 AC.±
HEARTWOOD FORESTLAND FUND IV LIMITED PARTNERSHIP D.B. 253 PG. 671 T.M. 11 PAR. 04 101 AC.±
HEARTWOOD FORESTLAND FUND IV LIMITED PARTNERSHIP D.B. 253 PG. 671 T.M. 11 PAR. 04.1 10.68 AC.±
HEARTWOOD FORESTLAND FUND IV LIMITED PARTNERSHIP D.B. 253 PG. 671 T.M. 11 PAR. 05 73.92 AC.±
RONALD D. MCCLAIN ET AL D.B. 241 PG. 592 T.M. 32 PAR. 01.1 18.312 AC.±
WILLIAM S. CLARK ET AL D.B. 225 PG. 669 T.M. 32 PAR. 04.1 20.305 AC.±
COASTAL LUMBER CO. D.B. 226 PG. 425 T.M. 32 PAR. 03 66.45 AC.±
K C ENTERPRISES D.B. 246 PG. 175 T.M. 32 PAR. 07.1 12.11 AC.±
COASTAL LUMBER CO. D.B. 226 PG. 655 T.M. 32 PAR. 07 57.6 AC.±
EARVIN E. CHURCH II D.B. 249 PG. 144 T.M. 32 PAR. 03.1 12.867 AC.±
EARVIN CHURCH D.B. 266 PG. 547 T.M. 32 PAR. 09 3.86 AC.±
COASTAL LUMBER CO. D.B. 226 PG. 655 T.M. 32 PAR. 08 39.09 AC.±
EARVIN CHURCH D.B. 266 PG. 547 T.M. 32 PAR. 09.1 2 AC.±
ROBERT L. BRITTON ET AL D.B. 202 PG. 523 T.M. 11 PAR. 09 42.03 AC.±
T.L. MORRIS D.B. 230 PG. 307 T.M. 11 PAR. 08 259.50 AC.±
T.L. MORRIS D.B. 230 PG. 307 T.M. 11 PAR. 6 259.5 AC.±
T.L. MORRIS D.B. 225 PG. 722 T.M. 37 PAR. 01 111.1 AC.±
JACK D. MACKAY ET AL D.B. 250 PG. 972 T.M. 37 PAR. 03 233.03 AC.±
JACK D. MACKAY ET AL D.B. 250 PG. 972 T.M. 37 PAR. 03.2 61 AC.±
JACK D. MACKAY ET AL D.B. 250 PG. 972 T.M. 37 PAR. 03.3 18.85 AC.±
PAD LAYOUT NOT TO SCALE
N 72°41' E
McNABB UNIT 4H
McNABB UNIT 3H
McNABB UNIT 1H
GREENBACK UNIT 2H
GREENBACK UNIT 1H
CALDWELL UNIT 2H
CALDWELL UNIT 1H
GRID NORTH
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.
AS DRILLED DATA:
WELL 2H TOP HOLE INFORMATION:
N: 271,980ft E: 1,604,244ft
LAT: 39°14'17.87" LON: 80°53'50.15"
BOTTOM HOLE INFORMATION:
N: 281,803ft E: 1,600,760ft
LAT: 39°15'54.41" LON: 80°54'36.39"
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 2H TOP HOLE INFORMATION:
N: 4,343,235m E: 508,881m
BOTTOM HOLE INFORMATION:
N: 4,346,210m E: 507,770m
JOB # 14-064WA
DRAWING # CALDWELL2HAD
SCALE 1" = 1000'
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
DATE 11/08/16
OPERATOR'S WELL # CALDWELL UNIT #2H
API WELL # 47 - 085 - 10190
STATE COUNTY PERMIT
STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WILLOW LAND SURVEYING PLLC
220 MASONIC AVE. PENNSBORO
WEST VIRGINIA 26415
STATE OF WEST VIRGINIA DEPT. OF ENERGY DIVISION OF OIL AND GAS
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