

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

API 47-017-06892 County Doddridge District West Union
Quad Smithburg 7.5' Pad Name George Scott Pad Field/Pool Name -----
Farm name George S. Wyckoff Well Number Lakota 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 4350952m Easting 522993m
Landing Point of Curve Northing 4350760.84m Easting 522925.01m
Bottom Hole Northing 4346933m Easting 524233m

Elevation (ft) 1283' 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

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Date permit issued 6/25/2019 Date drilling commenced 10/1/2019 Date drilling ceased 12/11/2019
Date completion activities began 2/12/2020 Date completion activities ceased 4/20/2020
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 128', 433' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 596', 1750' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 450' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by:
SDW

API 47- 017 - 06892 Farm name George S. Wyckoff Well number Lakota 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"	105'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	561'	New	54#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2544'	New	36#, H-40	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	21030'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	7201'		4.7#, 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	244	0'	8 Hrs.
Surface	Class A	490 sx	15.6	1.19	402	0'	8 Hrs.
Coal							
Intermediate 1	Class A	877 sx	15.6	1.18	1047	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	798 sx (Lead) 3318 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.53 (Lead), 1.83 (Tail)	2819	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 21049' MD, 6920' TVD (BHL), 6922' (Deepest Point Drilled) Loggers TD (ft) 21049' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 6575'

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

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 - 06892 Farm name George S. Wyckoff Well number Lakota 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								

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PRODUCING FORMATION(S)	DEPTHS		
Marcellus	6946' (TOP)	TVD	7231' (TOP) MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2800 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 8088 mcfpd Oil 38 bpd NGL --- bpd Water 117 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP		BOTTOM		DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	

***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

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

Logging Company Nine Energy Services
Address 125 Museum Road City Washington State PA Zip 15301

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

Stimulating Company Baker Hughes
Address 837 Philippi Pike City Clarksburg State WV Zip 26301

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Please insert additional pages as applicable.

Completed by Megan Griffith Telephone 303-357-7223
Signature [Signature] Title Permitting Agent Date 1/21/20

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

API 47-017-06892 Farm Name George S. Wyckoff Well Number Lakota Unit 1H					
EXHIBIT 1					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	2/18/2020	20922	20878	60	Marcellus
2	2/19/2020	20840.471	20675.826	60	Marcellus
3	2/19/2020	20640.497	20475.852	60	Marcellus
4	2/19/2020	20440.523	20275.878	60	Marcellus
5	2/19/2020	20240.549	20075.904	60	Marcellus
6	2/20/2020	20040.575	19875.93	60	Marcellus
7	2/20/2020	19840.601	19675.956	60	Marcellus
8	2/20/2020	19640.627	19475.982	60	Marcellus
9	2/20/2020	19440.653	19276.008	60	Marcellus
10	2/21/2020	19240.679	19076.034	60	Marcellus
11	2/21/2020	19040.705	18876.06	60	Marcellus
12	2/21/2020	18840.731	18676.086	60	Marcellus
13	2/21/2020	18640.757	18476.112	60	Marcellus
14	2/22/2020	18440.783	18276.138	60	Marcellus
15	2/22/2020	18240.809	18076.164	60	Marcellus
16	2/22/2020	18040.835	17876.19	60	Marcellus
17	2/22/2020	17840.861	17676.216	60	Marcellus
18	2/22/2020	17640.887	17476.242	60	Marcellus
19	2/23/2020	17440.913	17276.268	60	Marcellus
20	2/23/2020	17240.939	17076.294	60	Marcellus
21	2/23/2020	17040.965	16876.32	60	Marcellus
22	2/23/2020	16840.991	16676.346	60	Marcellus
23	2/24/2020	16641.017	16476.372	60	Marcellus
24	2/24/2020	16441.043	16276.398	60	Marcellus
25	2/24/2020	16241.069	16076.424	60	Marcellus
26	2/24/2020	16041.095	15876.45	60	Marcellus
27	2/24/2020	15841.121	15676.476	60	Marcellus
28	2/25/2020	15641.147	15476.502	60	Marcellus
29	2/25/2020	15441.173	15276.528	60	Marcellus
30	2/25/2020	15241.199	15076.554	60	Marcellus
31	2/25/2020	15041.225	14876.58	60	Marcellus
32	2/26/2020	14841.251	14676.606	60	Marcellus
33	2/26/2020	14641.277	14476.632	60	Marcellus
34	2/26/2020	14441.303	14276.658	60	Marcellus
35	2/26/2020	14241.329	14076.684	60	Marcellus
36	2/27/2020	14041.355	13876.71	60	Marcellus
37	2/27/2020	13841.381	13676.736	60	Marcellus
38	2/27/2020	13641.407	13476.762	60	Marcellus
39	2/27/2020	13441.433	13276.788	60	Marcellus
40	2/28/2020	13241.459	13076.814	60	Marcellus
41	2/28/2020	13041.485	12876.84	60	Marcellus
42	2/28/2020	12841.511	12676.866	60	Marcellus
43	2/28/2020	12641.537	12476.892	60	Marcellus
44	2/28/2020	12441.563	12276.918	60	Marcellus
45	2/29/2020	12241.589	12076.944	60	Marcellus
46	2/29/2020	12041.615	11876.97	60	Marcellus
47	2/29/2020	11841.641	11676.996	60	Marcellus
48	2/29/2020	11641.667	11477.022	60	Marcellus
49	2/29/2020	11441.693	11277.048	60	Marcellus
50	3/1/2020	11241.719	11077.074	60	Marcellus
51	3/1/2020	11041.745	10877.1	60	Marcellus
52	3/1/2020	10841.771	10677.126	60	Marcellus
53	3/1/2020	10641.797	10477.152	60	Marcellus
54	3/2/2020	10441.823	10277.178	60	Marcellus
55	3/2/2020	10241.849	10077.204	60	Marcellus
56	3/2/2020	10041.875	9877.23	60	Marcellus
57	3/2/2020	9841.901	9677.256	60	Marcellus
58	3/2/2020	9641.927	9477.282	60	Marcellus
59	3/3/2020	9441.953	9277.308	60	Marcellus
60	3/3/2020	9241.979	9077.334	60	Marcellus
61	3/3/2020	9042.005	8877.36	60	Marcellus
62	3/3/2020	8842.031	8677.386	60	Marcellus
63	3/3/2020	8642.057	8477.412	60	Marcellus
64	3/4/2020	8442.083	8277.438	60	Marcellus
65	3/4/2020	8242.109	8077.464	60	Marcellus
66	3/4/2020	8042.135	7877.49	60	Marcellus
67	3/4/2020	7842.161	7677.516	60	Marcellus
68	3/5/2020	7642.187	7477.542	60	Marcellus
69	3/5/2020	7442.213	7277.568	60	Marcellus

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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	2/18/2020	77.05	8279	6728	4627	173995	5198.214	N/A
2	2/19/2020	85.94	8378	5712	4823	412675	7756.595	N/A
3	2/19/2020	84.5	8445	5732	4831	416015	7446.5	N/A
4	2/19/2020	85.06	8313	5350	5007	401340	7382.405	N/A
5	2/19/2020	85.69	8391	5321	4727	406240	7474.714	N/A
6	2/20/2020	85.84	8265	5303	4731	402420	7312.905	N/A
7	2/20/2020	85.64	8477	4700	4090	408260	7215.667	N/A
8	2/20/2020	84.96	8303	5817	4254	400720	7213.976	N/A
9	2/20/2020	85.89	8428	5722	4580	404060	7432.905	N/A
10	2/21/2020	85.53	8097	6396	3688	403700	7144.762	N/A
11	2/21/2020	85.42	8391	5355	4505	404940	7151.881	N/A
12	2/21/2020	85.32	8189	5760	4663	400640	7213.929	N/A
13	2/21/2020	85.19	8245	5524	4762	409980	7311.476	N/A
14	2/22/2020	85.93	8389	5358	4398	408750	7243.881	N/A
15	2/22/2020	85.91	8349	5132	4427	405660	7245.167	N/A
16	2/22/2020	85.56	8395	5738	4570	402660	7104.738	N/A
17	2/22/2020	85.48	8308	5672	4769	409150	7107.167	N/A
18	2/22/2020	85.07	8200	5078	4192	410430	7192.333	N/A
19	2/23/2020	85.22	8428	5213	4717	408740	7204.381	N/A
20	2/23/2020	85.4	8372	5568	4429	407360	7204.048	N/A
21	2/23/2020	85.57	8047	6073	4540	406360	7228.333	N/A
22	2/23/2020	85.92	8097	5068	4142	402380	7013.857	N/A
23	2/24/2020	85.77	7971	4874	4230	409040	7237.595	N/A
24	2/24/2020	85.5	8200	3850	4400	405240	7228	N/A
25	2/24/2020	85.71	8411	4887	4418	404800	7020.024	N/A
26	2/24/2020	85.5	8130	5155	4240	402020	7007.667	N/A
27	2/24/2020	85.8	8175	4755	3898	409740	7096.619	N/A
28	2/25/2020	85.48	7798	4924	4427	404180	6946.81	N/A
29	2/25/2020	85.24	8062	5022	4675	401800	7010.643	N/A
30	2/25/2020	85.21	7967	4887	4493	400780	7064.714	N/A
31	2/25/2020	85.34	8085	4994	4067	401920	6954.595	N/A
32	2/26/2020	84.82	8371	5323	4492	406320	7127.881	N/A
33	2/26/2020	85.28	8132	5228	4387	406280	7075.595	N/A
34	2/26/2020	84.63	8312	4936	4445	403880	6989.786	N/A
35	2/26/2020	85.27	8043	5139	4577	404280	6958.167	N/A
36	2/27/2020	85.23	8389	5209	4333	402180	6982.143	N/A
37	2/27/2020	85.2	7646	5042	4647	403180	6849.19	N/A
38	2/27/2020	84.66	8194	5354	4858	405780	7045.357	N/A
39	2/27/2020	85.87	7684	4517	3982	402880	7044.071	N/A
40	2/28/2020	85.84	8277	5300	3919	403740	7035.524	N/A
41	2/28/2020	85.8	8325	5306	4544	409840	7104.19	N/A
42	2/28/2020	85.87	8120	5376	3964	405520	6846.119	N/A
43	2/28/2020	93.9	8363	5496	4398	398680	6883.595	N/A
44	2/28/2020	95.32	8626	5150	4590	406760	7099.333	N/A
45	2/29/2020	95.03	8522	4610	4545	404820	7108.429	N/A
46	2/29/2020	93.48	8382	5197	4707	400140	6835.381	N/A
47	2/29/2020	95.5	8228	5201	4672	404020	6899.571	N/A
48	2/29/2020	94.02	8498	5112	4337	401060	6925.619	N/A
49	2/29/2020	95.76	8252	4937	4555	405420	6960.214	N/A
50	3/1/2020	94.59	8357	5182	4689	402740	6894.524	N/A
51	3/1/2020	95.99	8488	5281	4479	407320	6918.19	N/A
52	3/1/2020	95.9	8304	5286	4014	402220	6752.667	N/A
53	3/1/2020	94.94	8555	5212	4459	405700	6941.905	N/A
54	3/2/2020	94.44	8455	5130	4195	399780	6892.571	N/A
55	3/2/2020	95.89	8451	5156	4442	403540	6910.381	N/A
56	3/2/2020	94.71	8282	4827	4426	409000	7047.762	N/A
57	3/2/2020	95.62	8220	5265	4051.5	409420	6830.119	N/A
58	3/2/2020	97	8174	5056	4185	406300	6928.333	N/A
59	3/3/2020	96.37	7975	5094	4254	400440	6798.524	N/A
60	3/3/2020	95.87	7903	6033	4405	405060	6803.905	N/A
61	3/3/2020	95.85	7795	5201	4322	401320	6797.762	N/A
62	3/3/2020	95.57	7642	5603	4274	406520	6845.405	N/A
63	3/3/2020	94.66	8079	5420	4466	400720	6690.571	N/A
64	3/4/2020	95.4	7521	5442	4865	406540	6840	N/A
65	3/4/2020	95.88	7525	5301	4589	405760	6741.619	N/A
66	3/4/2020	95.93	7489	5777	4010	407580	6780.833	N/A
67	3/4/2020	95.26	7571	5658	4050	410055	6884.19	N/A
68	3/5/2020	95.36	7528	5581	4325	409580	6826.667	N/A
69	3/5/2020	95.47	7440	5363	3603	408280	6686.357	N/A
	AVG=	85.2	8,218	5,293	4,451	16,394,355	291,578	TOTAL

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EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Sandstone	100	300	100	300
Siltstone	300	580	300	580
Limestone	580	600	580	600
Shaly Siltstone	600	720	600	720
Shaly Limestone	720	800	720	800
Siltstone w/ trace coal	800	870	800	870
Shale	870	980	870	980
Silty Sandstone	980	1,040	980	1,040
Limestone w/ trace coal	1,040	1,080	1,040	1,080
Shaly Sandstone	1,080	1,350	1,080	1,350
Sandstone w/ interbedded co	1,350	1,820	1,350	1,820
Shale	1,820	2,020	1,820	2,020
Limestone	2,020	2,120	2,020	2,120
Sandy Shale	2,120	2,136	2,120	2,138
Big Lime	2,136	2,739	2,113	2,741
Fifty Foot Sandstone	2,739	2,826	2,716	2,828
Gordon	2,826	3,109	2,803	3,111
Fifth Sandstone	3,109	3,312	3,086	3,317
Bayard	3,312	3,951	3,292	3,966
Speechley	3,951	4,249	3,941	4,267
Balltown	4,249	4,655	4,242	4,680
Bradford	4,655	5,147	4,655	5,178
Benson	5,147	5,452	5,153	5,486
Alexander	5,452	6,737	5,461	6,839
Sycamore	6,480	6,712	6,536	6,814
Middlesex	6,712	6,854	6,814	7,031
Burkett	6,854	6,885	7,031	7,090
Tully	6,885	6,946	7,090	7,231
Marcellus	6,946	NA	7,231	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:	2/18/2020
Job End Date:	3/5/2020
State:	West Virginia
County:	Doddrige
API Number:	47-017-06892-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Lakota 1H
Latitude:	39.30757000
Longitude:	-80.73349000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,019
Total Base Water Volume (gal):	21,401,880
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
Produced Mixture	Halliburton	Base Fluid					
			Water	7732-18-5	100.00000	86.60896	Density = 8.50
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.15576	

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Legend LD-2555	MultiChem	Additive					
				Listed Below			
Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant					
				Listed Below			
OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
Legend LD-2990	MultiChem	Friction Reducer					
				Listed Below			
HAI-501	Halliburton	Acid Corrosion Inhibitor					
				Listed Below			
Enviro Energy Solutions EES 2800	EnviroEnergy Solutions	Additive					
				Listed Below			
HYDROCHLORIC ACID, 22 BAUME	Halliburton	Solvent					
				Listed Below			

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LD-2950	MultiChem	Friction Reducer					
				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	13.20143	
			Hydrochloric acid	7647-01-0	30.00000	0.03827	
			Complex Amine Compound	Proprietary	60.00000	0.01005	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.00884	
			Complex Amine Compound	Proprietary	60.00000	0.00763	
			Distillates (petroleum), hydrotreated light	64742-47-8	30.00000	0.00572	
			Guar gum	9000-30-0	100.00000	0.00269	
			Glutaraldehyde	111-30-8	30.00000	0.00243	
			Alcohols, C11-14-iso, C-13-rich, ethoxylated	78330-21-9	5.00000	0.00095	
			Ethoxylated alcohols	Proprietary	5.00000	0.00084	
			Polyethoxylated fatty amine salt	61791-26-2	30.00000	0.00072	
			Surfactant	Proprietary	5.00000	0.00064	
			Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	5.00000	0.00064	
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1	5.00000	0.00041	
			Methanol	67-56-1	100.00000	0.00032	
			Poly(oxy-1,2-ethanediyl), alpha-tridecyl-omega-hydroxy-, branched	69011-36-5	1.00000	0.00017	

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		Adipic acid	124-04-9	1.00000	0.00017
		Ethoxylated alcohols	Proprietary	1.00000	0.00013
		Alkoxyated polyhydric alcohol	Proprietary	1.00000	0.00013
		Organic chlrodie compound	Proprietary	1.00000	0.00013
		Ethanol	64-17-5	1.00000	0.00008
		Modified thiourea polymer	Proprietary	30.00000	0.00007
		Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00007
		Ammonium persulfate	7727-54-0	100.00000	0.00006
		Oxylated phenolic resin	Proprietary	30.00000	0.00002
		Acrylamide	79-06-1	0.10000	0.00001
		Organic salt #1	Proprietary	0.10000	0.00001
		Ethoxylated alcohols	Proprietary	5.00000	0.00001
		Hexadecene	629-73-2	5.00000	0.00001
		Propargyl alcohol	107-19-7	5.00000	0.00001
		Phosphoric acid	7664-38-2	0.10000	0.00001
		Nitrated acetate salt	Proprietary	0.01000	0.00000
		Organic salt #3	Proprietary	0.01000	0.00000
		Formaldehyde	50-00-0	0.01000	0.00000
		Sodium hydroxide	1310-73-2	0.01000	0.00000
		Organic salt #2	Proprietary	0.01000	0.00000
		Sodium glycollate	2836-32-0	0.01000	0.00000
		C.I. pigment Orange 5	3468-63-1	1.00000	0.00000
		Ethylene oxide	75-21-8	0.01000	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)

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ANTERO RESOURCES CORPORATION

Location: Doddridge Co., WV
 Field: Doddridge
 Facility: George Scott Pad

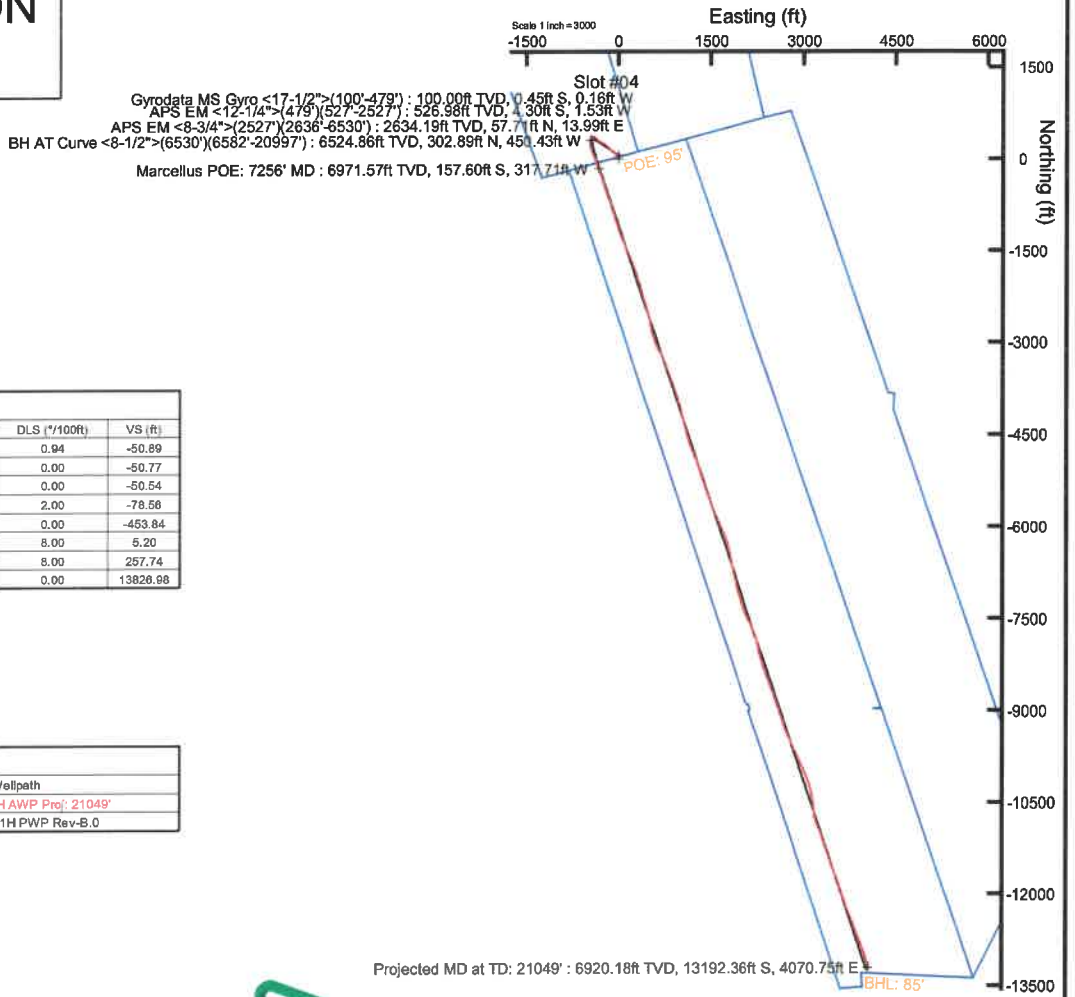
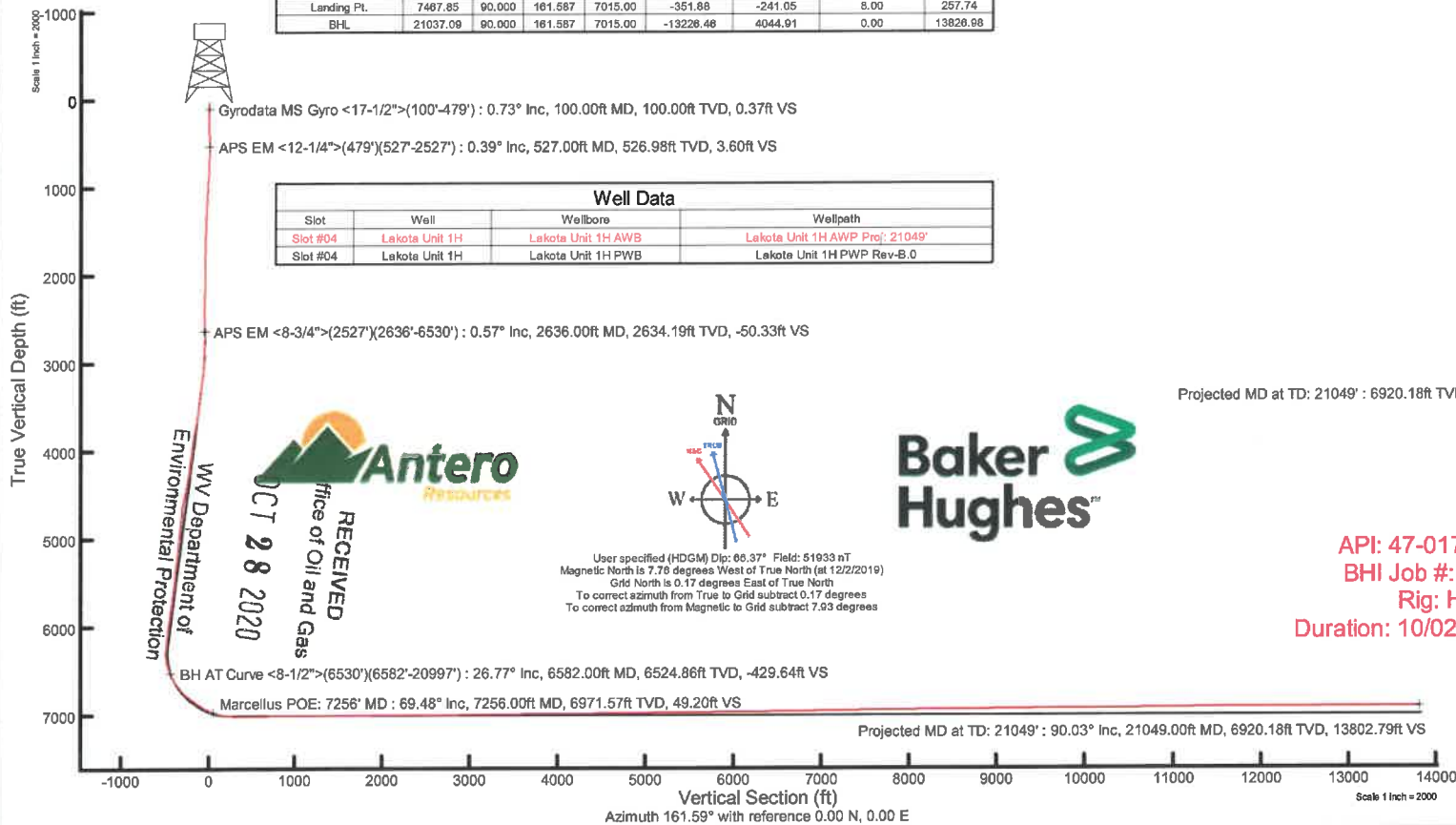
Slot: Slot #04
 Well: Lakota Unit 1H
 Wellbore: Lakota Unit 1H PWB

Plot reference wellpath to Lakota Unit 1H PWP Rev-B.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to H&P 317 (RKB)	North Reference: Grid north
Reference wellpath measured depths are referenced to H&P 317 (RKB)	Scale: True distance
H&P 317 (RKB) to Mean Sea Level: 1308.5 feet	Coordinates are in feet referenced to Slot
Mean Sea Level to Ground level (At Slot: Slot #04): -1283 feet	Depths are in feet
Offset wellpath MDs are referenced to each path's default MD datum	Created by: dalsout on 2019-12-12; Database: WA MPL, EasternUS, Dels

Location Information					
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	
George Scott Pad	1715804.693	14274033.226	39°18'27.2500"N	80°44'0.5480"W	
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Longitude
Slot #04	0.00	-0.00	1715804.690	14274033.230	39°18'27.2500"N 80°44'0.5480"W
H&P 317 (RKB) to Ground level (At Slot: Slot #04)					25.5ft
Mean Sea Level to Ground level (At Slot: Slot #04)					-1283ft
H&P 317 (RKB) to Mean Sea Level					1308.5ft

Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (*/100ft)	VS (ft)
Tie On	2527.00	0.260	93.020	2525.19	58.08	13.34	0.94	-50.89
Proj. To Bottom	2800.00	0.260	93.020	2598.19	58.08	13.67	0.00	-50.77
Drill Out Csg	2738.00	0.260	93.020	2736.19	58.03	14.29	0.00	-50.54
Hold Tangent	3199.27	0.000	303.354	3195.61	77.85	-14.86	2.00	-78.56
Curve KOP	6253.39	0.000	303.354	6212.13	340.54	-413.94	0.00	-453.84
POE	7209.77	69.353	161.587	6969.00	-112.27	-320.82	8.00	5.20
Landing Pt.	7467.85	90.000	161.587	7015.00	-351.88	-241.05	8.00	257.74
BHL	21037.09	90.000	161.587	7015.00	-13226.46	4044.91	0.00	13826.88

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #04	Lakota Unit 1H	Lakota Unit 1H AWP	Lakota Unit 1H AWP Proj: 21049'
Slot #04	Lakota Unit 1H	Lakota Unit 1H PWB	Lakota Unit 1H PWP Rev-B.0



API: 47-017-06892-0000
 BHI Job #: 110060921B
 Rig: H&P 317
 Duration: 10/02/2019-12/09/2019

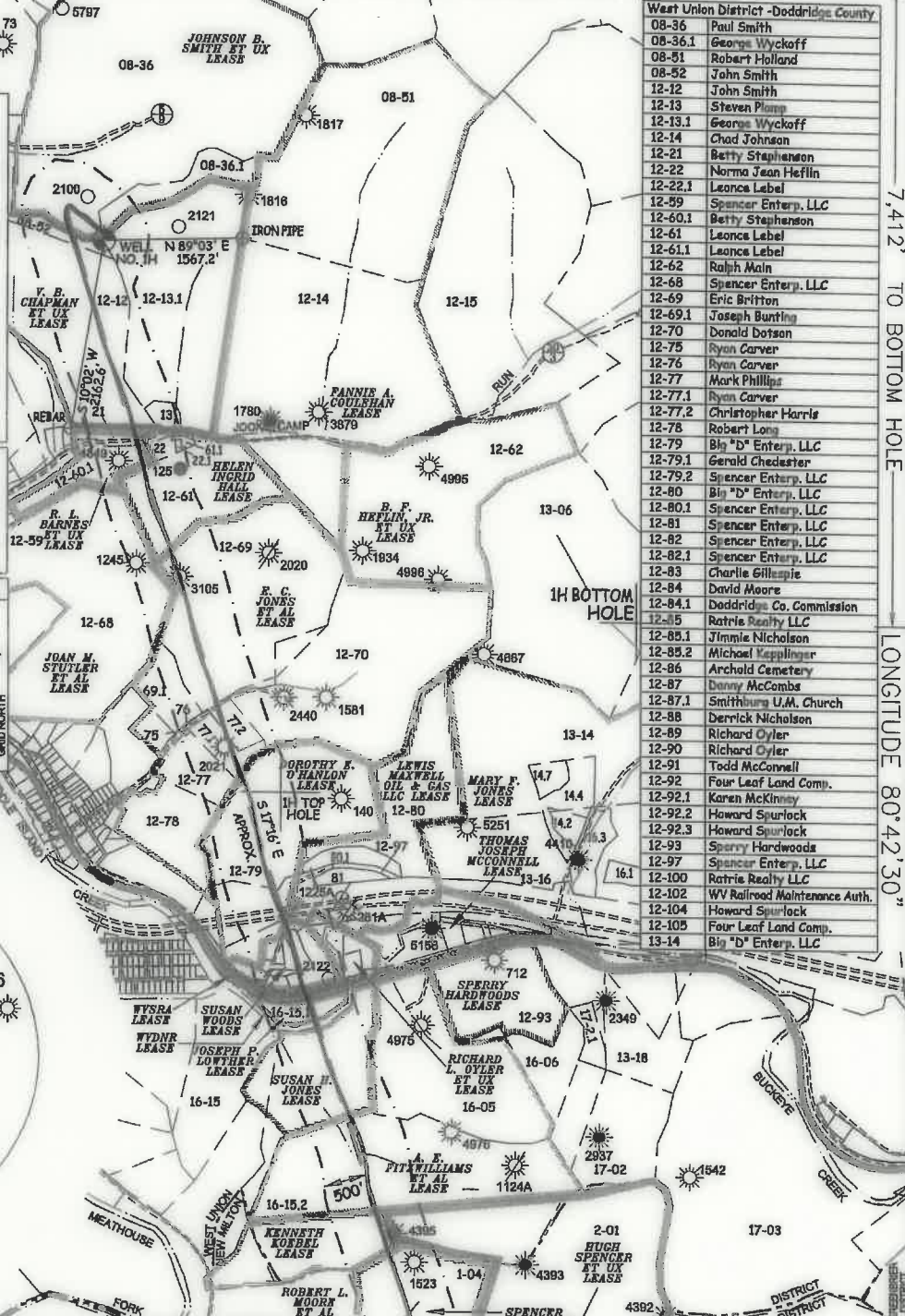
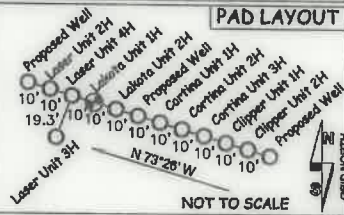
Vertical Section (ft)
 Azimuth 161.59° with reference 0.00 N, 0.00 E

LATITUDE 39°20'00" 7,117'
 LATITUDE 39°17'30" 3,089' TO BOTTOM HOLE

Antero Resources Corporation
Well No. Lakota Unit 1H

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(NAD) 83 (UTM) ZONE 17 COORDS:
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08-51	Robert Holland
08-52	John Smith
12-12	John Smith
12-13	Steven Plans
12-13.1	George Wyckoff
12-14	Chad Johnson
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12-22	Norma Jean Hefflin
12-22.1	Leonce Label
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12-60.1	Betty Stephenson
12-61	Leonce Label
12-61.1	Leonce Label
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12-69.1	Joseph Bunting
12-70	Donald Datsun
12-75	Ryan Carver
12-76	Ryan Carver
12-77	Mark Phillips
12-77.1	Ryan Carver
12-77.2	Christopher Harris
12-78	Robert Long
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12-92.3	Howard Spurlack
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12-97	Spencer Enterp. LLC
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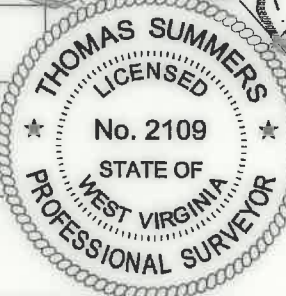
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13-16.3	Hall Drilling LLC
13-18	Frank Racs
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16-06	Ruby Ballenger
16-15	Marion Liberty Midstream & Res. LLC
16-15.1	Lawrence Gaskins
16-15.2	Marion Liberty Midstream & Res. LLC
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17-2.1	Ruby Ballenger
17-03	Helen Jones

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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 # 18-034WA
 DRAWING # LAKOTA1HAD
 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 +/-
- Proposed Well Path
- As Drilled Well Path

THOMAS SUMMERS P.S. 2109
 DATE 06/18/20
 OPERATOR'S WELL# LAKOTA UNIT #1H

NOTE

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WELL TYPE: OIL ___ GAS LIQUID INJECTION ___ WASTE DISPOSAL ___ 47 ___ 017 ___ 06892
 (IF "GAS") PRODUCTION STORAGE ___ DEEP ___ SHALLOW STATE COUNTY PERMIT
 LOCATION: ELEVATION 1,283' - AS BUILT WATERSHED HEADWATERS MIDDLE ISLAND CREEK
 QUADRANGLE SMITHBURG 7.5' DISTRICT WEST UNION COUNTY DODDRIDGE
 SURFACE OWNER GEORGE S. WYCKOFF ACREAGE 70.58 ACRES +/-
 OIL & GAS ROYALTY OWNER V.B. CHAPMAN ET UX; JOHNSON B. SMITH ET UX; R.L. BARNES ET UX; HELEN INGRID HALL; LEASE ACREAGE 156 AC +/-; 180 AC +/-; 222 AC +/-; 33 AC +/-;
 E. C. JONES ET AL; DOROTHY E. O'HANLON; SUSAN WOODS; WYSRA; JOSEPH P. LOWTHER; WVDNR; SUSAN H. JONES; 300 AC +/-; 69.86 AC +/-; 77.53 AC +/-; 301.19 AC +/-; 9 AC +/-; 8.9 AC +/-; 36 AC +/-;
 A. E. FITZWILLIAMS ET AL; KENNETH KOEBEL; SPENCER ENTERPRISES, LLC; ROBERT L. MOORE ET AL; HUGH SPENCER ET UX 138.5 AC +/-; 27.94 AC +/-; 43 AC +/-; 24 AC +/-; 132 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 PLUG & ABANDON CLEAN OUT & REPLUG
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 ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD
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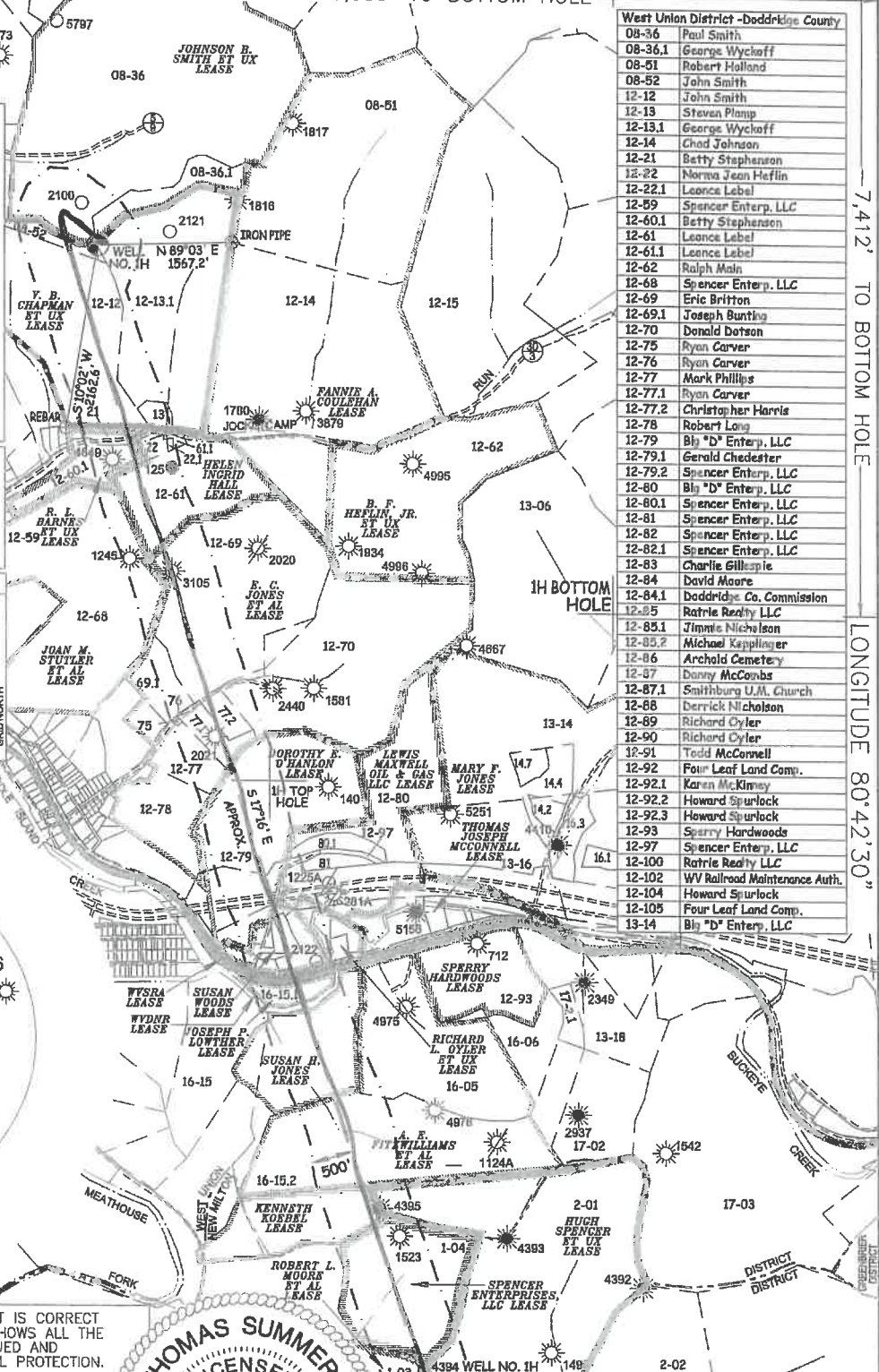
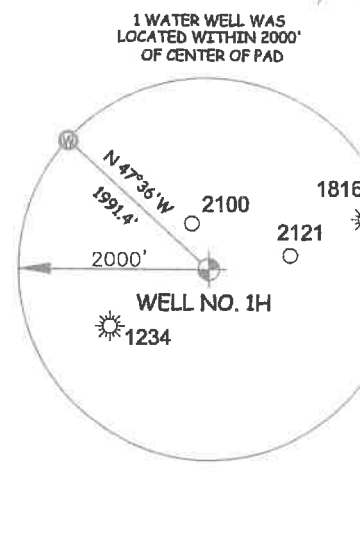
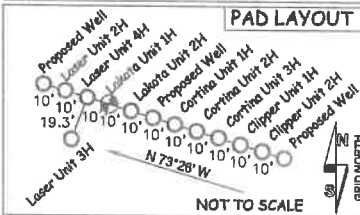
7,412' TO BOTTOM HOLE
 LONGITUDE 80°42'30"
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LATITUDE 39°20'00" 7,117'
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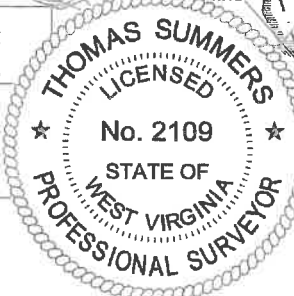
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17-2.1	Ruby Ballenger
17-03	Helen Jones
New Milton District - Doddridge County	
1-03	Ellwood Rill
1-04	Ellwood Rill
1-08	Ralph Lacy
1-10	Donald Barnes
2-01	Ronald Law
2-02	Robert Bland

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LEGEND

- Surface Owner Boundary Lines +/-
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