

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

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APR 25 2018

WV Department of Environmental Protection
Clay

API 47-085-10294 County Ritchie
Quad Pennsboro 7.5' Pad Name Noland Pad Field/Pool Name -----
Farm name Darrell A. Noland et al Well Number Western 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 4349946m Easting 501899m
Landing Point of Curve Northing 4349830.99m Easting 501796.24m
Bottom Hole Northing 4346574m Easting 503138m

Elevation (ft) 1143' 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 08/31/2016 Date drilling commenced 10/20/2016 Date drilling ceased 4/4/2017
Date completion activities began 07/25/2017 Date completion activities ceased 11/19/2017
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 43', 124', 216' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1112' 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: _____

Reviewed

MAG 5-9-2018

WR-35
Rev. 8/23/13

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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"	65'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	367'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2573'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	18405'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	5578'		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	102 sx	15.6	1.18	120	0'	8 Hrs.
Surface	Class A	480 sx	15.6	1.19	571	0'	8 Hrs.
Coal							
Intermediate 1	Class A	1010 sx	15.6	1.18	1192	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	809 sx (Lead) 1723 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.44 (Lead), 1.87 (Tail)	4387	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 18405' MD, 6432' TVD (BHL), 18405' (Deepest Point Drilled) Loggers TD (ft) 18405' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

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Kick off depth (ft) 8062'

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								

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Please insert additional pages as applicable.

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PRODUCING FORMATION(S)	DEPTHS		
Marcellus	6365' (TOP)	TVD	6596' (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 10,275 mcfpd Oil 149 bpd NGL --- bpd Water 54 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**

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Please insert additional pages as applicable.

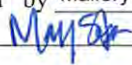
Drilling Contractor Patterson - UTI Drilling Company LLC
Address 207 Carlton Drive City Eighty Four State PA Zip 15330

Logging Company Allied Horizontal Wireline Services
Address 381 Colonial Manor Rd City North Huntingdon State PA Zip 15642

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 Canonsburg State PA Zip 15317

Please insert additional pages as applicable.

Completed by Mallory Stanton Telephone 303-357-7182
Signature  Title Permitting Supervisor Date 04/24/2018

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EXHIBIT 1					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	8/23/2017	18205	18305	60	Marcellus
2	8/23/2017	18002	18166	60	Marcellus
3	8/24/2017	17799	17964	60	Marcellus
4	8/24/2017	17596	17761	60	Marcellus
5	8/25/2017	17394	17558	60	Marcellus
6	8/25/2017	17191	17355	60	Marcellus
7	8/26/2017	16988	17152	60	Marcellus
8	8/26/2017	16785	16949	60	Marcellus
9	8/27/2017	16582	16746	60	Marcellus
10	8/27/2017	16379	16543	60	Marcellus
11	8/28/2017	16176	16341	60	Marcellus
12	8/28/2017	15973	16138	60	Marcellus
13	8/29/2017	15771	15935	60	Marcellus
14	8/29/2017	15568	15732	60	Marcellus
15	8/30/2017	15365	15529	60	Marcellus
16	8/31/2017	15162	15326	60	Marcellus
17	8/31/2017	14959	15123	60	Marcellus
18	9/1/2017	14756	14920	60	Marcellus
19	9/2/2017	14553	14718	60	Marcellus
20	9/2/2017	14350	14515	60	Marcellus
21	9/3/2017	14147	14312	60	Marcellus
22	9/4/2017	13945	14109	60	Marcellus
23	9/4/2017	13742	13906	60	Marcellus
24	9/4/2017	13539	13703	60	Marcellus
25	9/5/2017	13336	13500	60	Marcellus
26	9/5/2017	13133	13297	60	Marcellus
27	9/5/2017	12930	13095	60	Marcellus
28	9/6/2017	12727	12892	60	Marcellus
29	9/7/2017	12524	12689	60	Marcellus
30	9/8/2017	12322	12486	60	Marcellus
31	9/8/2017	12119	12283	60	Marcellus
32	9/8/2017	11916	12080	60	Marcellus
33	9/9/2017	11713	11877	60	Marcellus
34	9/10/2017	11510	11674	60	Marcellus
35	9/10/2017	11307	11472	60	Marcellus
36	9/10/2017	11104	11269	60	Marcellus
37	9/10/2017	10901	11066	60	Marcellus
38	9/11/2017	10699	10863	60	Marcellus
39	9/11/2017	10496	10660	60	Marcellus
40	9/11/2017	10293	10457	60	Marcellus
41	9/11/2017	10090	10254	60	Marcellus
42	9/11/2017	9887	10051	60	Marcellus
43	9/12/2017	9684	9849	60	Marcellus
44	9/12/2017	9481	9646	60	Marcellus
45	9/12/2017	9278	9443	60	Marcellus
46	9/12/2017	9076	9240	60	Marcellus
47	9/12/2017	8873	9037	60	Marcellus
48	9/13/2017	8670	8834	60	Marcellus
49	9/13/2017	8467	8631	60	Marcellus
50	9/13/2017	8264	8428	60	Marcellus
51	9/14/2017	8061	8226	60	Marcellus
52	9/14/2017	7858	8023	60	Marcellus
53	9/14/2017	7655	7820	60	Marcellus
54	9/14/2017	7453	7617	60	Marcellus
55	9/14/2017	7250	7414	60	Marcellus
56	9/15/2017	7047	7211	60	Marcellus
57	9/15/2017	6844	7008	60	Marcellus
58	9/15/2017	6641	6805	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	8/23/2017	72.4	7872	7214	5356	278910	9143.55	N/A
2	8/23/2017	73.2	7604	5714	2822	419300	8343.26	N/A
3	8/24/2017	74	7405	6416	3057	416730	8457.6	N/A
4	8/24/2017	74.8	7256	6171	2854	419010	8406.26	N/A
5	8/25/2017	74	7311	6644	3096	421160	8645.55	N/A
6	8/25/2017	75.9	7402	6265	2927	421580	8078.98	N/A
7	8/26/2017	74.5	7687	6813	3226	421170	9974.88	N/A
8	8/26/2017	71.8	7307	5490	2996	419070	8472.81	N/A
9	8/27/2017	68.7	7515	5441	3144	421200	8063.55	N/A
10	8/27/2017	70.9	7625	5508	3138	414410	8135.52	N/A
11	8/28/2017	73.3	7504	5737	3272	420220	9864.38	N/A
12	8/28/2017	71.3	7631	5392	3063	412860	8327.83	N/A
13	8/29/2017	74.2	7680	5251	3163	418600	8260.1	N/A
14	8/29/2017	72.6	8364	5825	3082	412860	9377.74	N/A
15	8/30/2017	79.3	7966	5142	2935	422570	8221.76	N/A
16	8/31/2017	76	7658	5226	3183	422220	8511.4	N/A
17	8/31/2017	78.7	7243	5757	2835	419670	8450.4	N/A
18	9/1/2017	73.7	7766	5440	6161	414690	11935.26	N/A
19	9/2/2017	78.4	7301	5157	3078	419900	8205.19	N/A
20	9/2/2017	73.4	8123	5898	4257	300860	11244.24	N/A
21	9/3/2017	73.2	7482	5418	2994	415360	8040.86	N/A
22	9/4/2017	77.6	7435	5538	2969	422060	8132.36	N/A
23	9/4/2017	77.5	7197	5545	3161	417030	8057.69	N/A
24	9/4/2017	79.7	7252	5552	3186	414980	8113.95	N/A
25	9/5/2017	77.5	7586	5928	3157	416690	8327.71	N/A
26	9/5/2017	64.9	8279	5797	6549	232000	7494.88	N/A
27	9/5/2017	27.3	6968	5685	0	8600	8683.19	N/A
28	9/6/2017	78.1	7451	5789	2949	415250	8480.62	N/A
29	9/7/2017	79.9	6924	5860	3182	417060	8487.36	N/A
30	9/8/2017	77.6	7502	5779	3077	420910	8186.14	N/A
31	9/8/2017	77.9	7423	6605	3437	415470	8031.83	N/A
32	9/8/2017	79.3	7395	5992	3040	415120	7992.67	N/A
33	9/9/2017	78.7	7281	6191	3193	417170	7958.95	N/A
34	9/10/2017	78.8	7096	5500	3193	417520	7791.05	N/A
35	9/10/2017	77.2	7135	6254	2975	416800	8004.19	N/A
36	9/10/2017	78.8	6860	5719	3176	419090	8108.36	N/A
37	9/10/2017	81.2	6861	5537	3257	411130	7797.36	N/A
38	9/11/2017	80.2	6589	6137	3198	412860	7859.69	N/A
39	9/11/2017	80.4	6932	6235	3148	421200	8158.52	N/A
40	9/11/2017	79.7	7009	6109	2905	422030	8139.33	N/A
41	9/11/2017	80.2	6748	5905	3123	421930	7980.55	N/A
42	9/11/2017	80.2	6491	5980	3308	407595	7787.79	N/A
43	9/12/2017	80.1	6468	5846	3168	424885	8180.69	N/A
44	9/12/2017	79.8	6760	6294	3201	416490	7984.81	N/A
45	9/12/2017	79.9	6298	5881	3117	414970	8025.74	N/A
46	9/12/2017	78.2	7151	6084	4058	271430	8843.88	N/A
47	9/12/2017	37	7373	5728	6361	10525	5029.86	N/A
48	9/13/2017	73.8	6687	5829	3366	405555	9675.67	N/A
49	9/13/2017	74.2	6934	5767	2943	409730	7998.69	N/A
50	9/13/2017	75.3	6783	5681	2969	417190	8028.62	N/A
51	9/14/2017	76.5	6560	5133	3154	410070	8035.36	N/A
52	9/14/2017	74.4	6234	5734	3086	417060	8204.31	N/A
53	9/14/2017	74.7	7504	5694	6189	6000	2941.81	N/A
54	9/14/2017	74.6	5779	5049	3120	412840	8134.88	N/A
55	9/14/2017	70.1	6404	5035	2826	433840	8352.07	N/A
56	9/15/2017	70.4	6569	6412	2928	425360	9174.74	N/A
57	9/15/2017	74.2	6177	6146	2935	418340	8187	N/A
58	9/15/2017	63.3	7501	5941	4552	414470	11355.1	N/A
AVG=		74.2	7,195	5,824	3,359	22,403,600	483,889	TOTAL

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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	43'	N/A	43'	N/A
Fresh Water	124'	N/A	124'	N/A
Fresh Water	216'	N/A	216'	N/A
Siltstone/Sandstone	0	137	0	137
Sandstone	est. 137	217	est. 137	217
Shale	est. 217	357	est. 217	357
Siltstone/ Shale	est. 357	397	est. 357	397
Trace Coal	est. 397	657	est. 397	657
Siltstone	est. 657	697	est. 657	697
Sandstone	est. 697	737	est. 697	737
Siltstone/ Shale	est. 737	757	est. 737	757
Sandstone	est. 757	777	est. 757	777
Shale/ Limestone	est. 777	817	est. 777	817
Siltstone	est. 817	877	est. 817	877
Shale	est. 877	957	est. 877	957
Shale	est. 957	997	est. 957	997
Shale/ limestone	est. 997	1,257	est. 997	1,257
Siltstone/ shale	est. 1257	1,357	est. 1257	1,357
Sandstone	est. 1357	1,577	est. 1357	1,577
Sandstone	est. 1577	2,095	est. 1577	2,005
Big Lime	2,095	2,573	2,005	2,575
Gantz	2,573	2,851	2,575	2,853
Fifty Foot Sandstone	2,851	2,940	2,853	2,942
Gordon	2,940	3,306	2,942	3,308
Fifth Sandstone	3,306	3,374	3,308	3,376
Bayard	3,374	3,936	3,376	3,939
Speechley	3,936	4,137	3,939	4,142
Baltown	4,137	4,552	4,142	4,569
Bradford	4,552	4,958	4,569	4,990
Benson	4,958	5,218	4,990	5,258
Alexander	5,218	5,509	5,258	5,558
Elk	5,509	5,782	5,558	5,836
Rhinestreet	5,782	6,117	5,836	6,194
Sycamore	6,117	6,223	6,194	6,332
Middlesex	6,223	6,321	6,332	6,494
Burkett	6,321	6,352	6,494	6,560
Tully	6,352	6,365	6,560	6,596
Marcellus	6,365	NA	6,596	NA

*Please note Antero determines formation tops based on mud logs received 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:	9/17/2017
Job End Date:	9/17/2017
State:	West Virginia
County:	Ritchie
API Number:	47-085-10294-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Western 2H
Latitude:	39.29880278
Longitude:	-80.97814444
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,431
Total Base Water Volume (gal):	21,067,228
Total Base Non Water Volume:	0



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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	88.34723	Density = 8.340
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.34619	

SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant					
				Listed Below			
SAND- PREMIUM WHITE-40/70, BULK	Halliburton	Proppant					
				Listed Below			
HYDROCHLORI C ACID	Halliburton	Solvent					
				Listed Below			
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
				Listed Below			
MC S-2510T	Halliburton	Scale Inhibitor					
				Listed Below			
SP BREAKER	Halliburton	Breaker					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
MC B-8614	Halliburton	Biocide					
				Listed Below			

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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	11.26520	
			Hydrochloric acid	7647-01-0	7.50000	0.02296	
			Guar gum	9000-30-0	100.00000	0.01652	
			Inorganic salt	Proprietary	30.00000	0.01469	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01469	
			Acrylamide acrylate copolymer	Proprietary	30.00000	0.01469	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Ethylene Glycol	107-21-1	60.00000	0.00572	
			Glutaraldehyde	111-30-8	30.00000	0.00179	
			Neutralized Polyacrylic Emulsion	Proprietary	10.00000	0.00095	
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1	5.00000	0.00030	
			Sodium persulfate	7775-27-1	100.00000	0.00029	
			Methanol	67-56-1	60.00000	0.00010	
			Ethanol	64-17-5	1.00000	0.00006	
			Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1	30.00000	0.00005	
			Ethoxylated alcohols	Proprietary	30.00000	0.00005	
			Fatty acids, tall oil	Proprietary	30.00000	0.00005	
			Olefins	Proprietary	5.00000	0.00002	
			Propargyl alcohol	107-19-7	10.00000	0.00002	
			Phosphoric acid	7664-38-2	0.10000	0.00001	

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			Sodium sulfate	7757-82-6	0.10000	0.00000	
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* 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

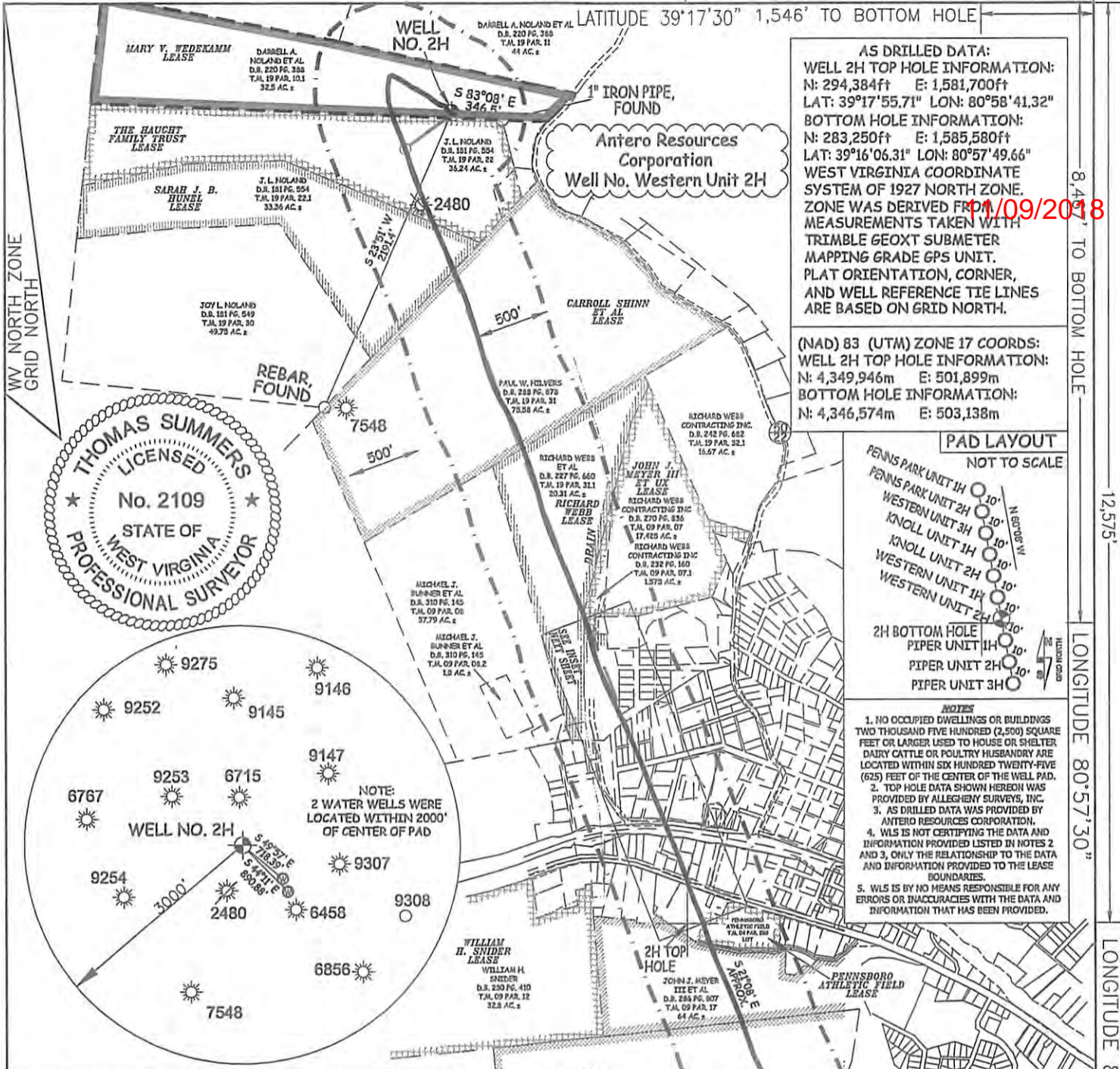
Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

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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Environmental Protection

LATITUDE 39°20'00" 5,606'

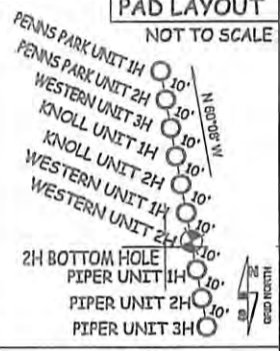
LATITUDE 39°17'30" 1,546' TO BOTTOM HOLE



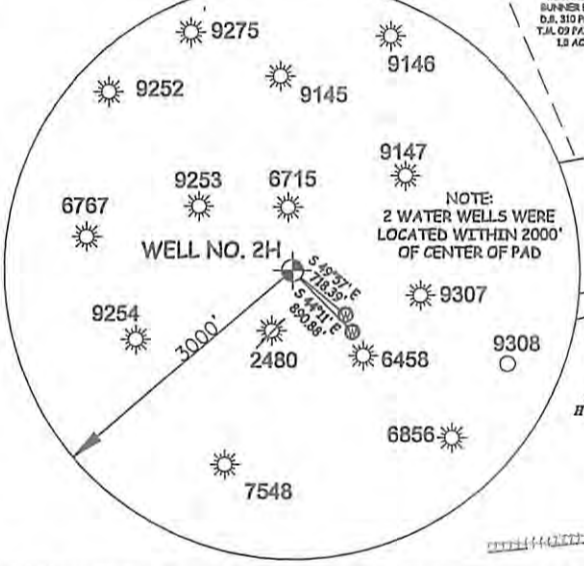
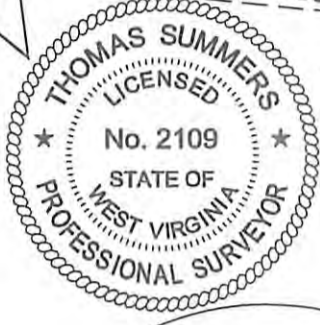
AS DRILLED DATA:
WELL 2H TOP HOLE INFORMATION:
 N: 294,384ft E: 1,581,700ft
 LAT: 39°17'55.71" LON: 80°58'41.32"
BOTTOM HOLE INFORMATION:
 N: 283,250ft E: 1,585,580ft
 LAT: 39°16'06.31" LON: 80°57'49.66"
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH 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: 4,349,946m E: 501,899m
BOTTOM HOLE INFORMATION:
 N: 4,346,574m E: 503,138m

PAD LAYOUT
 NOT TO SCALE



- NOTES**
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER 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.
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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

47 - 085 - 10294
 STATE COUNTY PERMIT

JOB # 16-022WA
 DRAWING # WESTERN2HAD
 SCALE 1" = 1000'
 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 02/01/18
 OPERATOR'S WELL# WESTERN UNIT #2H

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
 LOCATION: ELEVATION 1,143' AS DRILLED WATERSHED NORTH FORK HUGHES RIVER
 QUADRANGLE PENNSBORO 7.5' DISTRICT CLAY COUNTY RITCHIE
 SURFACE OWNER DARRELL A. NOLAND ET AL ACREAGE 32.5 ACRES +/-
 OIL & GAS ROYALTY OWNER SEE ATTACHED PAGES LEASE ACREAGE SEE ATTACHED PAGES

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 6,432' TVD 18,405' 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

FORM WW-6

8,475' TO BOTTOM HOLE
 12,575'
 LONGITUDE 80°57'30"
 LONGITUDE 80°57'30"

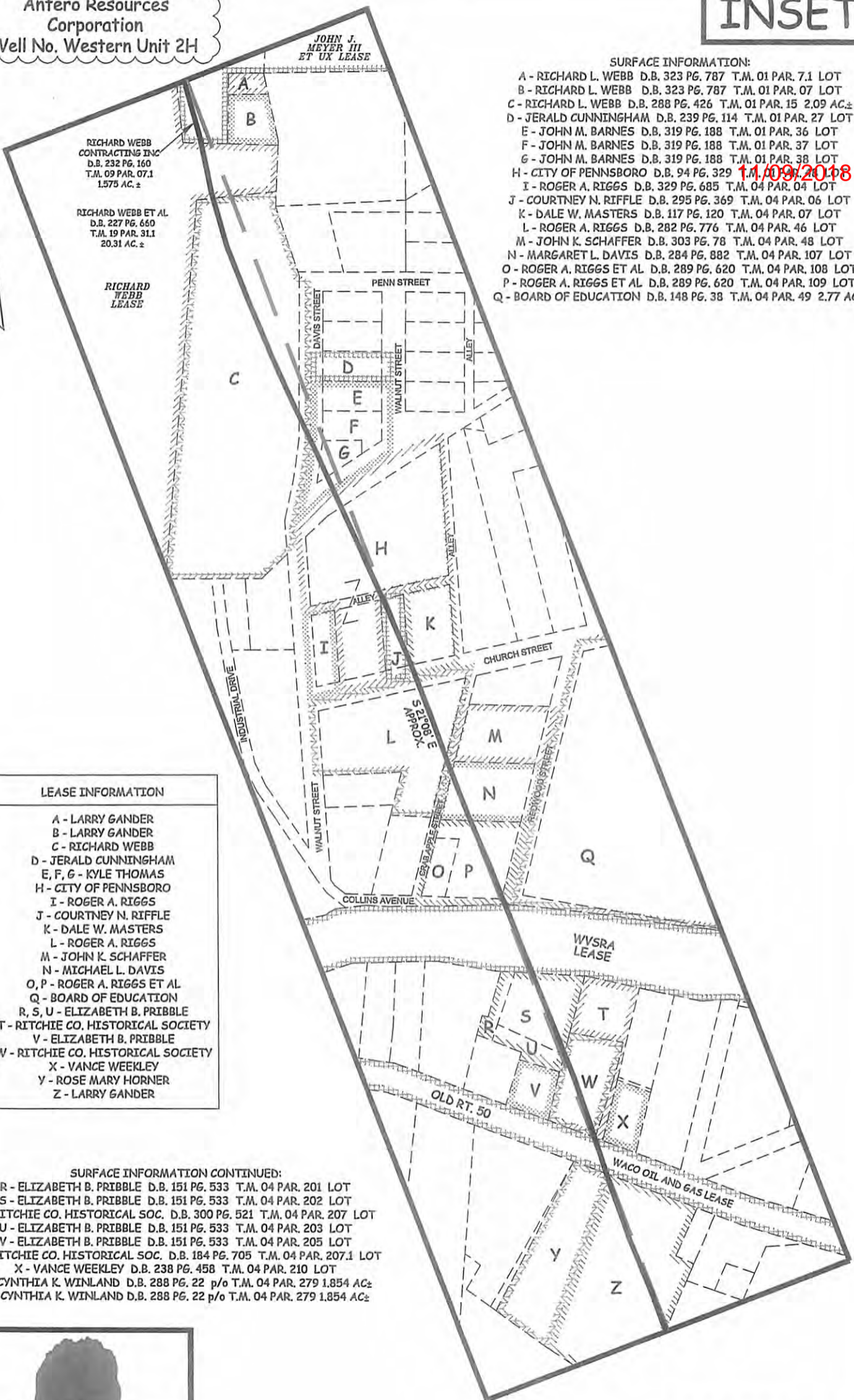
Antero Resources Corporation
Well No. Western Unit 2H

WV NORTH ZONE
GRID NORTH

SURFACE INFORMATION:

- A - RICHARD L. WEBB D.B. 323 PG. 787 T.M. 01 PAR. 7.1 LOT
- B - RICHARD L. WEBB D.B. 323 PG. 787 T.M. 01 PAR. 07 LOT
- C - RICHARD L. WEBB D.B. 288 PG. 426 T.M. 01 PAR. 15 2.09 AC.±
- D - JERALD CUNNINGHAM D.B. 239 PG. 114 T.M. 01 PAR. 27 LOT
- E - JOHN M. BARNES D.B. 319 PG. 188 T.M. 01 PAR. 36 LOT
- F - JOHN M. BARNES D.B. 319 PG. 188 T.M. 01 PAR. 37 LOT
- G - JOHN M. BARNES D.B. 319 PG. 188 T.M. 01 PAR. 38 LOT
- H - CITY OF PENNSBORO D.B. 94 PG. 329 T.M. 04 PAR. 21
- I - ROGER A. RIGGS D.B. 329 PG. 685 T.M. 04 PAR. 04 LOT
- J - COURTNEY N. RIFFLE D.B. 295 PG. 369 T.M. 04 PAR. 06 LOT
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- Q - BOARD OF EDUCATION D.B. 148 PG. 38 T.M. 04 PAR. 49 2.77 AC.±

11/09/2018



LEASE INFORMATION

- A - LARRY GANDER
- B - LARRY GANDER
- C - RICHARD WEBB
- D - JERALD CUNNINGHAM
- E, F, G - KYLE THOMAS
- H - CITY OF PENNSBORO
- I - ROGER A. RIGGS
- J - COURTNEY N. RIFFLE
- K - DALE W. MASTERS
- L - ROGER A. RIGGS
- M - JOHN K. SCHAFER
- N - MICHAEL L. DAVIS
- O, P - ROGER A. RIGGS ET AL
- Q - BOARD OF EDUCATION
- R, S, U - ELIZABETH B. PRIBBLE
- T - RITCHIE CO. HISTORICAL SOCIETY
- V - ELIZABETH B. PRIBBLE
- W - RITCHIE CO. HISTORICAL SOCIETY
- X - VANCE WEEKLEY
- Y - ROSE MARY HORNER
- Z - LARRY GANDER

SURFACE INFORMATION CONTINUED:

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P.O. BOX 17
PENNSBORO, WV 26415
304-659-1717

SCALE: 1-INCH = 200-FEET



FILE: 16-022WA
JOB: WESTERN2H INSET AD
DRAFTED BY: T.B.S. 01/24/18

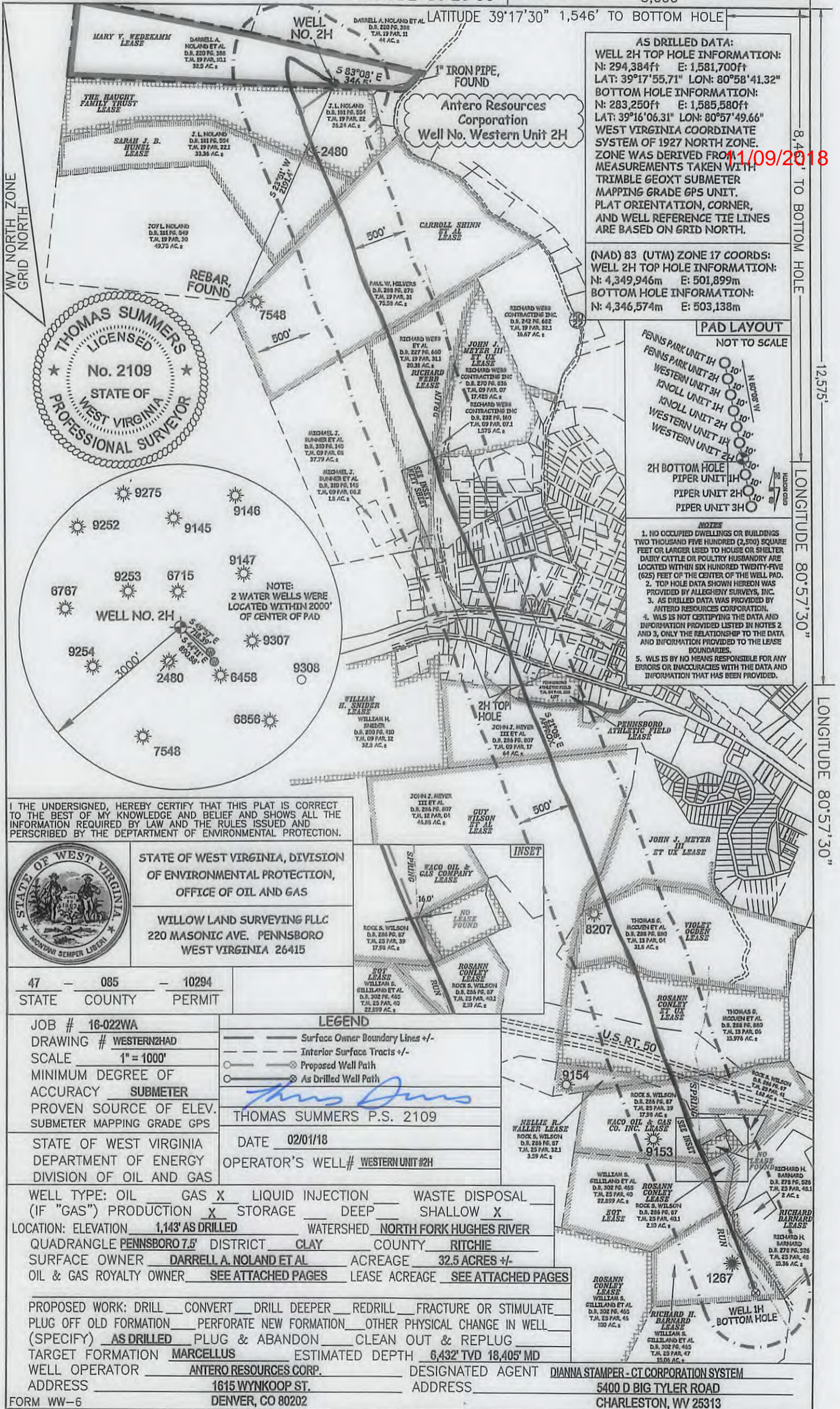
LEGEND

- As Drilled Well Path
- Interior Surface Tracts +/-
- Proposed Well Path

LATITUDE 39°20'00"

5,606'

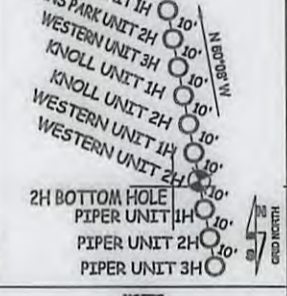
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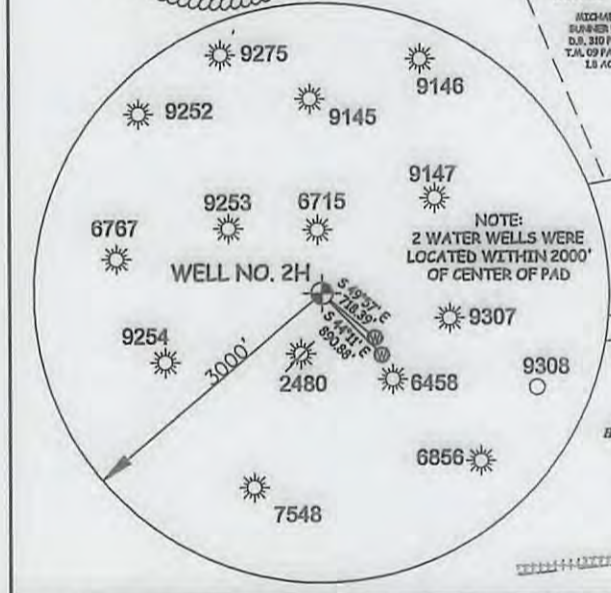
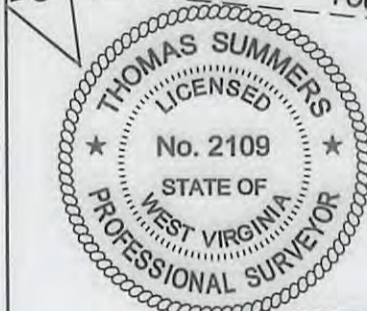
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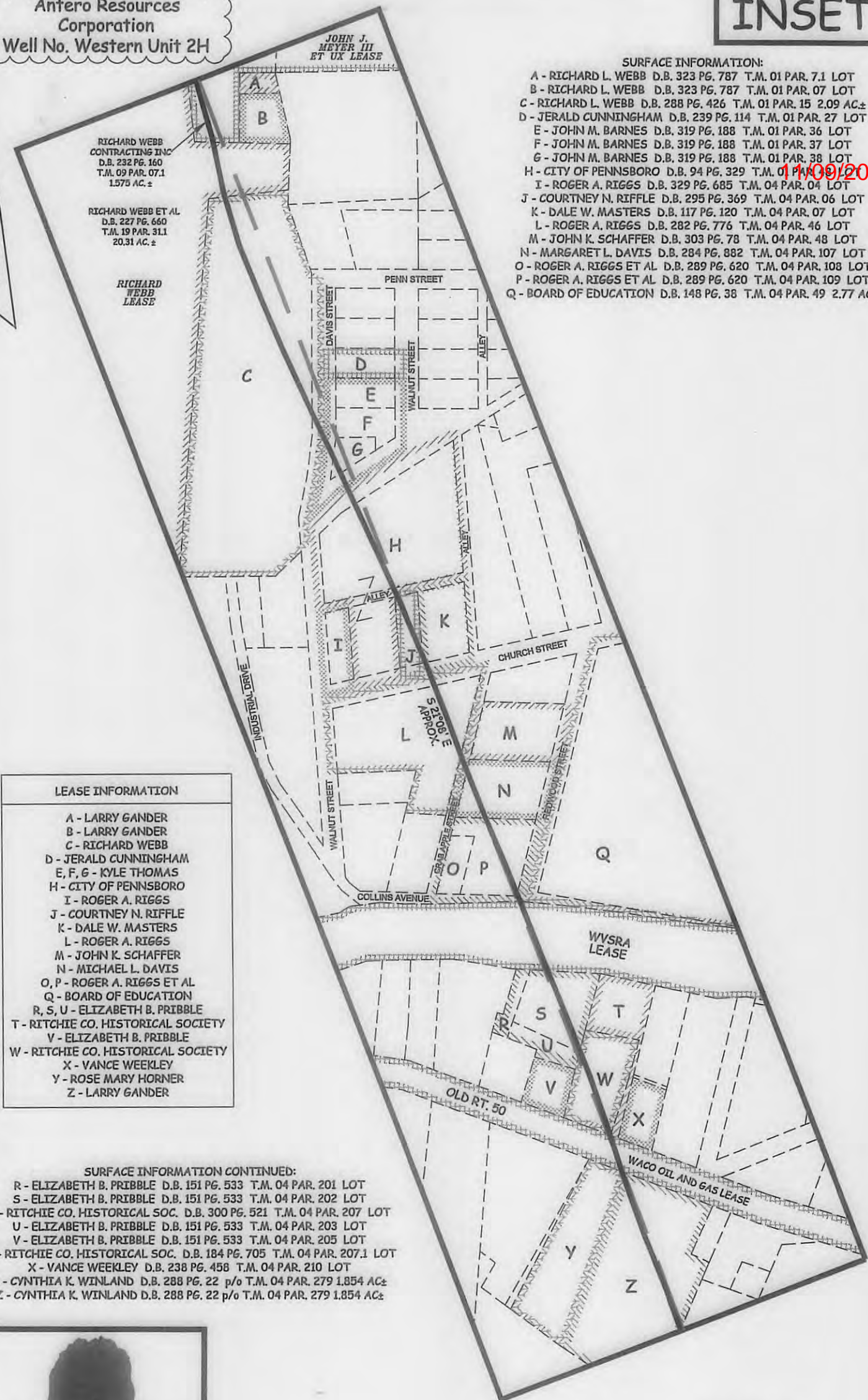
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INSET

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11/09/2018

WV NORTH ZONE
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LEGEND

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- Interior Surface Tracts +/-
- Proposed Well Path