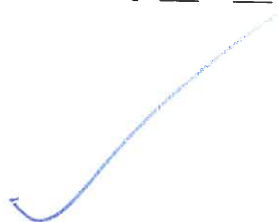


State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work



API 47 - 085 - 10204 County Ritchie District Union
Quad Pullman 7.5' Pad Name Lockhart Heirs West Pad Field/Pool Name ----
Farm name O'Neill Family Trust, et al Well Number Left Fork 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 4337823m Easting 506218m
Landing Point of Curve Northing 4337872.85m Easting 506078.06m
Bottom Hole Northing 4340636m Easting 505187m

Elevation (ft) 1039' 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 04/10/2015 Date drilling commenced 2/25/2016 Date drilling ceased 4/17/2016
Date completion activities began 8/8/2016 Date completion activities ceased 9/8/2016
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by Office of Oil and Gas

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug **FEB 01 2017**

Freshwater depth(s) ft 78' Open mine(s) (Y/N) depths N
Salt water depth(s) ft None Identified Void(s) encountered (Y/N) depths N
Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

WV Department of
Environmental Protection

APPROVED

Reviewed by: _____

NAME: Michael Goff
DATE: 5/10/17

05/26/2017

API 47-085 - 10204 Farm name O'Neill Family Trust, et al Well number Left Fork 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	30"	20"	105'	New	106.5#/J-55	N/A	Y
Surface	17-1/2"	13-3/8"	411'	New	48#/H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2534'	New	36#/J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	16201'	New	20#/P-110	N/A	Y
Tubing		2-3/8"	6449'		4.7#/N-80		
Packer type and depth set		N/A					

Comment Details *cement squeeze @ 5,900' (562sx); fish in hole @3,719'- cement plugs @ 2,500' (174sx) & 3,350' (185sx) - plug partially drilled out to sidetrack well @3,350'

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	201 sx	15.6	1.18	101 Cu. Ft.	0'	8 Hrs.
Surface	Class A	494 sx	15.6	1.18	285 Cu. Ft.	0'	8 Hrs.
Coal							
Intermediate 1	Class A	821 sx	15.6	1.18	794 Cu. Ft.	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	842 sx (Lead), 1531 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.24 (Lead), 1.81 (Tail)	3246 Cu. Ft.	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 16201' MD, 6300' TVD (BHL), 6358' TVD (Deepest Point Drilled) Loggers TD (ft) 5884' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5934'

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

RECEIVED
 Office of Oil and Gas
 FEB 01 2017
 WV Department of
 Environmental Protection
 05/26/2017

API 47- 085 - 10204 Farm name O'Neill Family Trust, et al Well number Left Fork Unit 1H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6394' (TOP)</u> TVD	<u>6325' (TOP)</u> 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 11698 mcfpd Oil 85 bpd NGL ---- bpd Water 3 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	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	
	<u>0</u>		<u>0</u>		
					SEE ATTACHED EXHIBIT 3

Please insert additional pages as applicable.

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

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

Cementing Company Allied Oil & Gas Services, LLC
Address 1036 East Main Street City Bridgeport State WV Zip 26330

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 Kara Quackenbush Telephone 303-357-7233 Office of Oil and Gas
Signature *Kara* Title Permitting Agent Date 1/21/2017

Submittal of Hydraulic Fracturing Chemical Disclosure Information

Attach copy of FRACFOCUS Registry

RECEIVED
Office of Oil and Gas
FEB 01 2017
WV Department of
Environmental Protection
05/26/2017

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	08-Aug-16	15930	16099	60	Marcellus
2	08-Aug-16	15729	15898	60	Marcellus
3	09-Aug-16	15528	15697	60	Marcellus
4	09-Aug-16	15327	15496	60	Marcellus
5	09-Aug-16	15126	15295	60	Marcellus
6	09-Aug-16	14925	15095	60	Marcellus
7	10-Aug-16	14724	14894	60	Marcellus
8	10-Aug-16	14523	14693	60	Marcellus
9	10-Aug-16	14322	14492	60	Marcellus
10	10-Aug-16	14122	14291	60	Marcellus
11	11-Aug-16	13921	14090	60	Marcellus
12	11-Aug-16	13720	13889	60	Marcellus
13	11-Aug-16	13519	13688	60	Marcellus
14	11-Aug-16	13318	13487	60	Marcellus
15	12-Aug-16	13117	13287	60	Marcellus
16	12-Aug-16	12916	13086	60	Marcellus
17	12-Aug-16	12715	12885	60	Marcellus
18	12-Aug-16	12514	12684	60	Marcellus
19	13-Aug-16	12314	12483	60	Marcellus
20	13-Aug-16	12113	12282	60	Marcellus
21	13-Aug-16	11912	12081	60	Marcellus
22	13-Aug-16	11711	11880	60	Marcellus
23	14-Aug-16	11510	11679	60	Marcellus
24	14-Aug-16	11309	11478	60	Marcellus
25	14-Aug-16	11108	11278	60	Marcellus
26	14-Aug-16	10907	11077	60	Marcellus
27	15-Aug-16	10706	10876	60	Marcellus
28	15-Aug-16	10506	10675	60	Marcellus
29	15-Aug-16	10305	10474	60	Marcellus
30	15-Aug-16	10104	10273	60	Marcellus
31	15-Aug-16	9903	10072	60	Marcellus
32	16-Aug-16	9702	9871	60	Marcellus
33	16-Aug-16	9501	9670	60	Marcellus
34	16-Aug-16	9300	9470	60	Marcellus
35	16-Aug-16	9099	9269	60	Marcellus
36	16-Aug-16	8898	9068	60	Marcellus
37	17-Aug-16	8697	8867	60	Marcellus
38	17-Aug-16	8497	8666	60	Marcellus
39	17-Aug-16	8296	8465	60	Marcellus
40	17-Aug-16	8095	8264	60	Marcellus
41	17-Aug-16	7894	8063	60	Marcellus
42	18-Aug-16	7693	7862	60	Marcellus
43	18-Aug-16	7492	7662	60	Marcellus
44	18-Aug-16	7291	7461	60	Marcellus
45	18-Aug-16	7090	7260	60	Marcellus
46	18-Aug-16	6889	7059	60	Marcellus
47	19-Aug-16	6689	6858	60	Marcellus
48	19-Aug-16	6521	6691	60	Marcellus

RECEIVED
Office of Oil and Gas

FEB 01 2017

WV Department of
Environmental Protection

05/26/2017

API 47-085-10204 Farm Name O'Neill Family Trust, et al Well Number Left Fork 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	08-Aug-16	73.2	8161	0	3918	306065	8430	N/A
2	08-Aug-16	71.8	7860	6330	4531	304600	8412	N/A
3	09-Aug-16	70.8	7967	6743	3859	265100	9149	N/A
4	09-Aug-16	74.1	7872	5994	4127	304820	8390	N/A
5	09-Aug-16	75.7	7768	5715	4877	305225	8370	N/A
6	09-Aug-16	74.3	7916	6158	4123	309900	8396	N/A
7	10-Aug-16	75.2	7957	6448	4063	307300	8381	N/A
8	10-Aug-16	77.3	7745	5907	4938	306020	8139	N/A
9	10-Aug-16	71.3	7392	5631	4967	305765	8330	N/A
10	10-Aug-16	74.2	7845	5672	4753	304600	8425	N/A
11	11-Aug-16	74.3	7958	5840	3991	305200	8379	N/A
12	11-Aug-16	73.0	7308	5511	4885	305515	8303	N/A
13	11-Aug-16	73.5	7437	5529	4513	305540	8296	N/A
14	11-Aug-16	73.9	7744	5600	4442	307780	8315	N/A
15	12-Aug-16	72.6	7883	5879	4163	302210	8298	N/A
16	12-Aug-16	70.7	7378	5690	4642	306200	8269	N/A
17	12-Aug-16	70.9	7538	5844	4367	306600	8275	N/A
18	12-Aug-16	73.0	7848	6412	4313	306810	8495	N/A
19	13-Aug-16	70.1	7505	7789	3937	303980	8243	N/A
20	13-Aug-16	71.2	7330	6698	4156	304960	8236	N/A
21	13-Aug-16	71.9	7503	6201	4771	305620	8228	N/A
22	13-Aug-16	76.0	7561	5901	4288	306010	8231	N/A
23	14-Aug-16	75.9	7586	5769	4478	305540	8217	N/A
24	14-Aug-16	70.3	6990	5651	4091	307100	8202	N/A
25	14-Aug-16	71.1	7049	5904	4545	306920	8194	N/A
26	14-Aug-16	74.1	7771	5618	5203	149000	7869	N/A
27	15-Aug-16	75.1	7208	5686	3980	303940	8204	N/A
28	15-Aug-16	73.7	7004	5933	3845	303080	8168	N/A
29	15-Aug-16	71.5	6842	5744	4427	303960	8158	N/A
30	15-Aug-16	71.0	6954	5668	4374	303920	8150	N/A
31	15-Aug-16	76.6	7488	5726	4470	305850	8167	N/A
32	16-Aug-16	77.9	7378	5665	4345	305650	8163	N/A
33	16-Aug-16	76.4	7295	6126	4878	306130	8124	N/A
34	16-Aug-16	71.2	6940	5769	4202	306380	8116	N/A
35	16-Aug-16	72.2	7010	6112	3955	304840	8108	N/A
36	16-Aug-16	76.0	7383	6577	4234	305170	8115	N/A
37	17-Aug-16	75.0	7534	6223	4045	304820	9485	N/A
38	17-Aug-16	73.9	7329	5833	5114	303230	8082	N/A
39	17-Aug-16	73.6	7135	5990	4113	303050	8074	N/A
40	17-Aug-16	74.0	7144	6359	3898	304820	8065	N/A
41	17-Aug-16	76.0	7193	5769	4349	305065	8056	N/A
42	18-Aug-16	77.0	7372	5844	5082	304535	8062	N/A
43	18-Aug-16	73.3	6934	6073	4678	307600	8040	N/A
44	18-Aug-16	68.1	7566	6920	4928	297320	9473	N/A
45	18-Aug-16	78.0	6995	6845	3555	305025	8034	N/A
46	18-Aug-16	77.0	7203	7650	4030	305555	8034	N/A
47	19-Aug-16	77.0	7428	7228	4817	304976	8746	N/A
48	19-Aug-16	73.2	6845	6527	3891	307587	8094	N/A
AVG=		73.7	7,439	5,973	4,378	14,456,883	398,193	TOTAL

Completed by N/A and Gas

EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Fresh Water	78'	N/A	78'	N/A
Siltstone/Sandstone	0	95	0	95
Shale	95	255	95	255
Siltstone	255	295	255	295
Shale	295	335	295	335
Siltstone	335	475	335	475
Sandstone	475	675	475	675
Siltstone	675	725	675	725
Siltstone/ sandstone	725	745	725	745
Sandstone	745	915	745	915
Shale/ Siltstone	915	1015	915	1015
Shale	1015	1055	1015	1055
Sandstone	1055	1215	1055	1215
Shale	1215	1255	1215	1255
Sandstone	1255	1395	1255	1395
Siltstone	1395	1715	1395	1715
Shale/ Siltstone	1715	1915	1715	1915
Limestone	1915	1957	1915	1939
Big Lime	1957	2874	1939	2404
Fifty Foot Sandstone	2874	2969	2404	2884
Gordon	2969	3335	2884	2897
Fifth Sandstone	3335	3399	2897	2982
Bayard	3399	3516	2982	3772
Speechley	3516	4164	3772	3892
Baltown	4164	4579	3892	4456
Bradford	4579	4982	4456	4824
Benson	4982	5208	4824	5065
Alexander	5208	6150	5065	6013
Sycamore	6150	6244	6013	6170
Middlesex	6244	6351	6170	6276
Burkett	6351	6376	6276	6307
Tully	6376	6394	6307	6325
Marcellus	6394	NA	6,325	NA

RECEIVED
Office of Oil and Gas

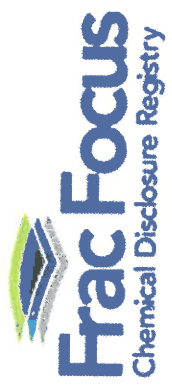
FEB 01 2017

WV Department of
Environmental Protection

05/26/2017

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	8/8/2016
Job End Date:	8/19/2016
State:	West Virginia
County:	Ritchie
API Number:	47-085-10204-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Left Fork 1H
Latitude:	39.11223800
Longitude:	-80.55414100
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,354
Total Base Water Volume (gal):	17,378,896
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					
Sand	U.S. Well Services, LLC	Proppant				90.58000	
HCL Acid (12.6%-18.0%)	U.S. Well Services, LLC	Bulk Acid	Crystalline Silica, quartz	14808-60-7	100.00000	9.03480	
LGC-15	U.S. Well Services	Gelling Agents					
			Water	7732-18-5	87.50000	0.12529	
			Hydrogen Chloride	7647-01-0	18.00000	0.02993	
			Guar Gum	9000-30-0	50.00000	0.05892	
			Petroleum Distillates	64742-47-8	60.00000	0.05580	
			Suspending agent (solid)	14808-60-7	3.00000	0.00901	
			Surfactant	38439-51-0	3.00000	0.00354	
WFRA-405	U.S. Well Services	Friction Reducer					
			Water	7732-18-5	60.00000	0.03993	
			2-Propanoic acid, polymer with 28003-06-9 propanamide	28003-06-9	30.00000	0.01997	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01607	

SI-1100s	J.S. Well Services	Scale Inhibitor	Ethoxylated alcohol blend	68002-97-1	4.00000	0.00266
			Water	7732-18-5	80.00000	0.01040
			Copolymer of Maleic and Acrylic acid	62255-49-9	10.00000	0.00153
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	7.50000	0.00132
			Hexamethylene tramine penta (methylene phosphonic acid)	34690-00-1	5.00000	0.00084
			Phosphino carboxylic acid polymer	71050-62-9	5.00000	0.00084
			Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5	2.00000	0.00034
X-BAC 1020	J.S. Well Services	Anti-Bacterial Agent				
			2,2-dibromo-3-nitropropionamide	10222-01-2	20.00000	0.00432
AP One	J.S. Well Services	Gel Breakers	Deionized Water	7732-18-5	28.00000	0.00246
AI-302	J.S. Well Services	Acid Corrosion Inhibitors	Ammonium Persulfate	7727-54-0	100.00000	0.00175
			Water	7732-18-5	95.00000	0.00023
			2-Propyn-1-ol compound with methyloxirane	68172-91-7	15.00000	0.00004

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)

LATITUDE 39°12'30"

3,261'

LATITUDE 39°15'00"

LONGITUDE 80°55'00"

6,842'

12,783' TO BOTTOM HOLE

WELL NO. 1H
BOTTOM HOLE

6,636' TO BOTTOM HOLE

Antero Resources
Corporation
Well No. Left Fork Unit 1H
A.P.I. #47-085-10204

AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
N: 254,366ft E: 1,595,208ft
LAT: 39°11'22.38" LON: 80°55'41.42"
BOTTOM HOLE INFORMATION:
N: 263,654ft E: 1,591,979ft
LAT: 39°12'53.66" LON: 80°56'24.31"
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 1H TOP HOLE INFORMATION:
N: 4,337,823m E: 506,218m
BOTTOM HOLE INFORMATION:
N: 4,340,636m E: 505,187m

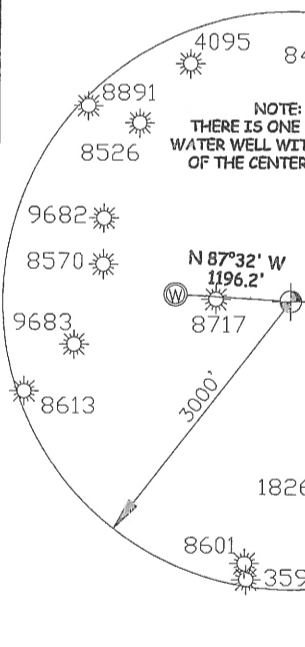
- NOTE**
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.
 2. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY 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.

WV NORTH ZONE
GRID NORTH

JOB # **12-045WA**
DRAWING # **LEFTFORKUNIT1HAD**
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

PAD LAYOUT
NOT TO SCALE

LEFT FORK UNIT 2H 10'
LEFT FORK UNIT 1H 10'
LEFT FORK UNIT 3H 10'
LEFT FORK UNIT 4H 10'
HARRIS UNIT 2H 10'
HARRIS UNIT 1H 10'



W. G. BURGAN
ET AL LEASE

JOHN CAMPBELL
D.B. 171 PG. 662
T.J. 8 PAR. 3
126.23 AC. ±

JOHN CAMPBELL
D.B. 122 PG. 611
T.J. 40 PAR. 19
88 AC. ±

DUANE REGGS
D.B. 274 PG. 45
T.J. 40 PAR. 24
36.63 AC. ±

JOHN CAMPBELL
D.B. 122 PG. 611
T.J. 40 PAR. 19
88 AC. ±

RACHIE E. JONES
ET AL LEASE

DUANE REGGS
D.B. 274 PG. 39
T.J. 40 PAR. 20
19.9 AC. ±

MITCHIE COTTRILL ET AL LEASE

DUANE REGGS
D.B. 274 PG. 39
T.J. 40 PAR. 20
19.9 AC. ±

ROGER D. RICHARDS
D.B. 242 PG. 319
T.J. 40 PAR. 10
103.56 AC. ±

LORETTA K. CLARK ET AL LEASE

TERRY LEE RICHARDS
D.B. 154 PG. 507
T.J. 40 PAR. 05
60 AC. ±

KEVIN U. WRIGHT
W.B. 38 PG. 535
T.J. 8 PAR. 4
71 AC. ±

FRED MCKINNEY ET AL
D.B. 290 PG. 579
T.J. 08 PAR. 05
91.416 AC. ±

JOHN WAYNE RICHARDS
D.B. 224 PG. 75
T.J. 8 PAR. 7
209 AC. ±

MARK GRIMMELL ET AL
W.B. 36 PG. 660
T.J. 13 PAR. 19
73.75 AC. ±

CHRISTOPHER A. SMITH
D.B. 246 PG. 140
T.J. 13 PAR. 15
41.75 AC. ±

O'NEILL FAMILY TRUST
D.B. 300 PG. 901
T.J. 13 PAR. 17
98.32 AC. ±

O'NEILL FAMILY TRUST
D.B. 300 PG. 901
T.J. 13 PAR. 23
300.45 AC. ±

O'NEILL FAMILY TRUST
D.B. 300 PG. 901
T.J. 13 PAR. 17.1
29.25 AC. ±



STATE OF WEST VIRGINIA, DIVISION
OF ENVIRONMENTAL PROTECTION,
OFFICE OF OIL AND GAS

WILLOW LAND SURVEYING PLLC
220 MASONIC AVE PENNSBORO
WEST VIRGINIA 26415

DATE **11/08/16**
OPERATOR'S WELL # **LEFT FORK UNIT #1H**

LEGEND

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

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL API WELL # **47 - 085 - 10204**

(IF "GAS") PRODUCTION STORAGE DEEP SHALLOW STATE COUNTY PERMIT

LOCATION: ORIGINAL GROUND ELEV. **1,039'** AS DRILLED ELEV. **1,019'** WATERSHED **SOUTH FORK HUGHES RIVER**

QUADRANGLE **PULLMAN 7.5'** DISTRICT **UNION** COUNTY **RITCHIE**

SURFACE OWNER **O'NEILL FAMILY TRUST ET AL** ACREAGE **300.45 ACRES +/-**

OIL & GAS ROYALTY OWNER **O'NEILL FAMILY TRUST ET AL;** LEASE ACREAGE **517.83 ACRES +/-**

W. G. BURGAN ET AL; RACHIE E. JONES ET AL; MITCHIE COTTRILL ET AL; LORETTA K. CLARK ET AL **154 ACRES +/-; 39 ACRES +/-; 19.9 ACRES +/-; 60 ACRES +/-**

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 **6,300' TVD 16,201' 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**

DENVER, CO 80202 **CHARLESTON, WV 25313**

05/26/2017

COUNTY NAME
PERMIT

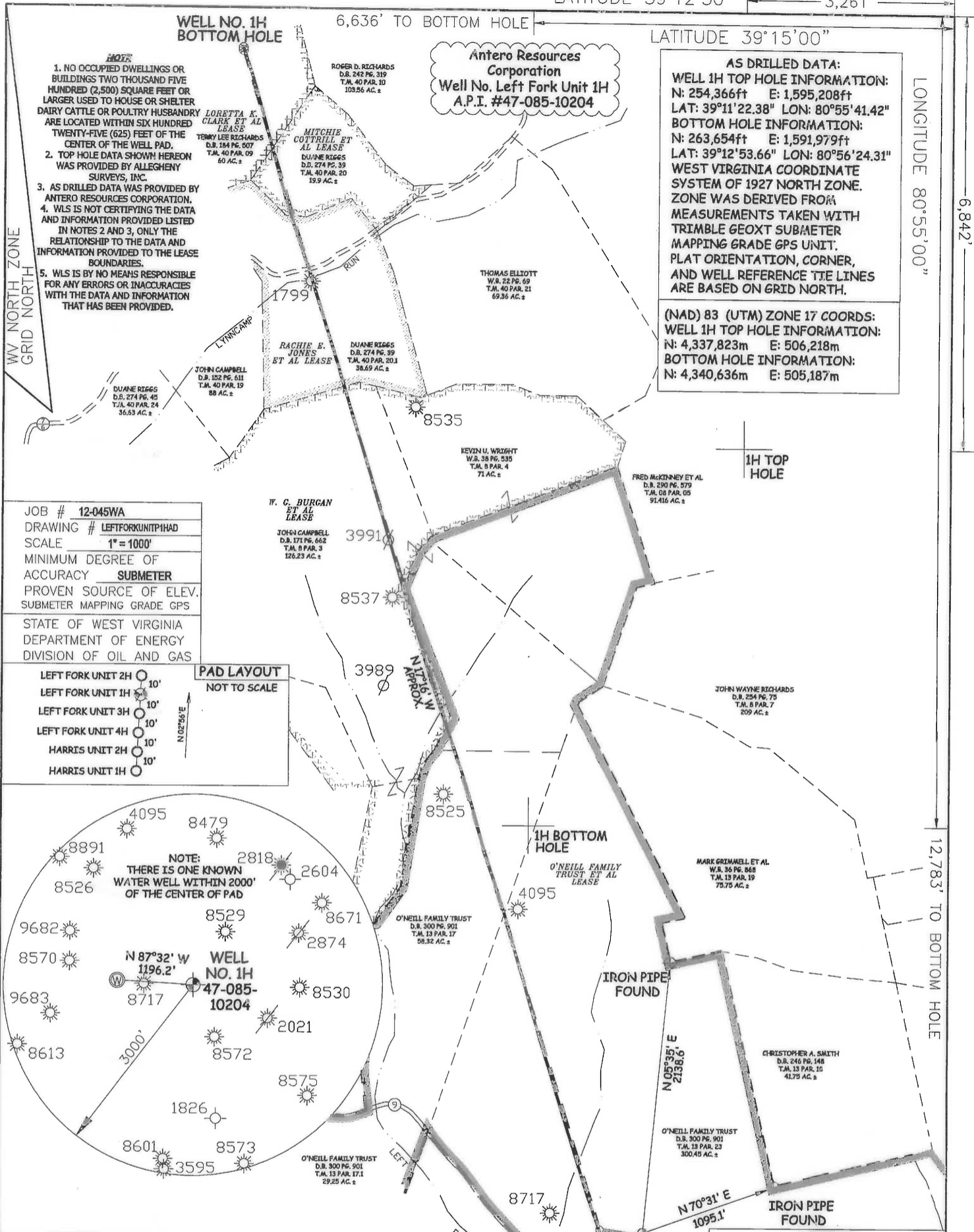
LATITUDE 39°12'30" 3,261'

LATITUDE 39°15'00"

LONGITUDE 80°55'00"

6,842'

12,783' TO BOTTOM HOLE

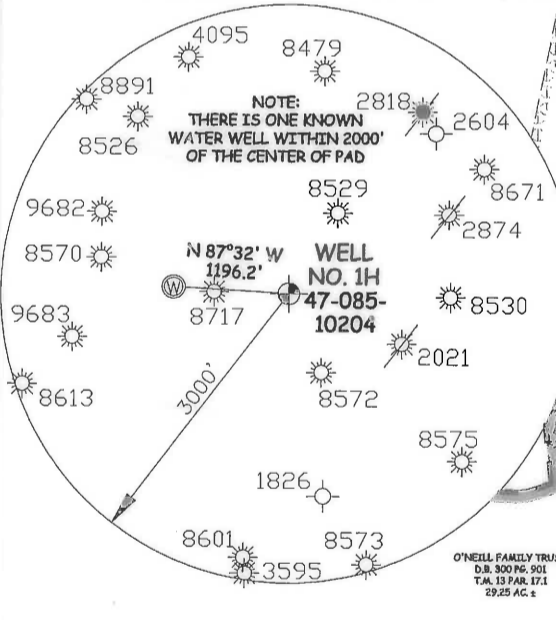
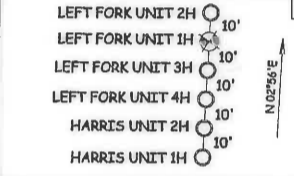


- NOTE**
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.
 2. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY 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 1H TOP HOLE INFORMATION:
 N: 254,366ft E: 1,595,208ft
 LAT: 39°11'22.38" LON: 80°55'41.42"
BOTTOM HOLE INFORMATION:
 N: 263,654ft E: 1,591,979ft
 LAT: 39°12'53.66" LON: 80°56'24.31"
 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 1H TOP HOLE INFORMATION:
 N: 4,337,823m E: 506,218m
BOTTOM HOLE INFORMATION:
 N: 4,340,636m E: 505,187m

JOB # 12-045WA
 DRAWING # LEFTFORKUNIT#1HAD
 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



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
 WILLOW LAND SURVEYING PLLC
 220 MASONIC AVE PENNSBORO WEST VIRGINIA 26415

DATE 11/08/16
 OPERATOR'S WELL# LEFT FORK UNIT #1H

LEGEND

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

WELL TYPE: OIL ___ GAS LIQUID INJECTION ___ WASTE DISPOSAL ___ API WELL # 47 - 085 - 10204
 (IF "GAS") PRODUCTION STORAGE ___ DEEP ___ SHALLOW STATE COUNTY PERMIT
 LOCATION: ORIGINAL GROUND ELEV. 1,039' AS DRILLED ELEV. 1,019' WATERSHED SOUTH FORK HUGHES RIVER
 QUADRANGLE PULLMAN 7.5' DISTRICT UNION COUNTY RITCHIE
 SURFACE OWNER O'NEILL FAMILY TRUST ET AL ACREAGE 300.45 ACRES +/-
 OIL & GAS ROYALTY OWNER O'NEILL FAMILY TRUST ET AL; LEASE ACREAGE 517.83 ACRES +/-
 W. G. BURGAN ET AL; RACHIE E. JONES ET AL; MITCHIE COTTRILL ET AL; LORETTA K. CLARK ET AL 154 ACRES +/-; 39 ACRES +/-; 19.9 ACRES +/-; 60 ACRES +/-
 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 6,300' TVD 16,201' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
 DENVER, CO 80202 CHARLESTON, WV 25313

COUNTY NAME PERMIT