

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

API 47 - 095 - 02181 County Tyler District Ellsworth  
Quad Shirley 7.5' Pad Name Weigle East Pad Field/Pool Name -----  
Farm name Edwin C. Weigle Well Number Hawkeye 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 4368538m Easting 512674m  
Landing Point of Curve Northing 4368239.29m Easting 512112.71m  
Bottom Hole Northing 4364767m Easting 513360m

Elevation (ft) 817' 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

Received  
Office of Oil & Gas

JUL 05 2016

Date permit issued 6/25/2014 Date drilling commenced 10/23/2014 Date drilling ceased 6/20/2015  
Date completion activities began 7/1/2015 Date completion activities ceased 4/18/2016  
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 194', 366' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 842', 1027', 1199' 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

**APPROVED**

NAME: [Signature]

DATE: 9/8/16

10/28/2016

API 47-095 - 02181 Farm name Edwin C. Weigle Well number Hawkeye 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"	60'	New	94#/J-55	N/A	Y
Surface	17-1/2"	13-3/8"	510'	New	48#/H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2524'	New	36#/J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	19,277'	New	23#/P-110	N/A	Y
Tubing		2-3/8"	6850'		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 <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Class A	170 sx	15.6	1.18	58 Cu. Ft.	0'	8 Hrs.
Surface	Class A	624 sx	15.6	1.18	354 Cu. Ft.	0'	8 Hrs.
Coal							
Intermediate 1	Class A	975 sx	15.6	1.18	791 Cu. Ft.	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1004 sx (Lead), 2004 sx (Tail)	14.2 (Lead), 14.8 (Tail)	1.24 (Lead), 1.81 (Tail)	3953 Cu. Ft.	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 19,277' MD, 6385' TVD (BHL), 6398' TVD (Deepest Point Drilled) Loggers TD (ft) 19,277' MD

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

Plug back procedure N/A

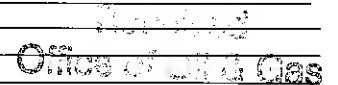
Kick off depth (ft) 6420'

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



JUL 05 2016

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





## EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	1-Jul-15	19,018	19,185	60	Marcellus
2	6-Nov-15	18,820	18,987	60	Marcellus
3	6-Nov-15	18,622	18,789	60	Marcellus
4	6-Nov-15	18,424	18,591	60	Marcellus
5	6-Nov-15	18,226	18,393	60	Marcellus
6	7-Nov-15	18,028	18,195	60	Marcellus
7	7-Nov-15	17,830	17,997	60	Marcellus
8	7-Nov-15	17,632	17,799	60	Marcellus
9	7-Nov-15	17,435	17,601	60	Marcellus
10	8-Nov-15	17,237	17,404	60	Marcellus
11	8-Nov-15	17,039	17,206	60	Marcellus
12	8-Nov-15	16,841	17,008	60	Marcellus
13	8-Nov-15	16,643	16,810	60	Marcellus
14	9-Nov-15	16,445	16,612	60	Marcellus
15	9-Nov-15	16,247	16,414	60	Marcellus
16	9-Nov-15	16,049	16,216	60	Marcellus
17	10-Nov-15	15,851	16,018	60	Marcellus
18	10-Nov-15	15,653	15,820	60	Marcellus
19	10-Nov-15	15,455	15,622	60	Marcellus
20	11-Nov-15	15,257	15,424	60	Marcellus
21	12-Nov-15	15,059	15,226	60	Marcellus
22	12-Nov-15	14,861	15,028	60	Marcellus
23	13-Nov-15	14,663	14,830	60	Marcellus
24	13-Nov-15	14,465	14,632	60	Marcellus
25	13-Nov-15	14,267	14,434	60	Marcellus
26	13-Nov-15	14,070	14,236	60	Marcellus
27	14-Nov-15	13,872	14,039	60	Marcellus
28	14-Nov-15	13,674	13,841	60	Marcellus
29	14-Nov-15	13,476	13,643	60	Marcellus
30	14-Nov-15	13,278	13,445	60	Marcellus
31	15-Nov-15	13,080	13,247	60	Marcellus
32	15-Nov-15	12,882	13,049	60	Marcellus
33	15-Nov-15	12,684	12,851	60	Marcellus
34	15-Nov-15	12,486	12,653	60	Marcellus
35	16-Nov-15	12,288	12,455	60	Marcellus
36	16-Nov-15	12,090	12,257	60	Marcellus
37	19-Nov-15	11,892	12,059	60	Marcellus
38	19-Nov-15	11,694	11,861	60	Marcellus
39	19-Nov-15	11,496	11,663	60	Marcellus
40	19-Nov-15	11,298	11,465	60	Marcellus
41	19-Nov-15	11,100	11,267	60	Marcellus
42	20-Nov-15	10,903	11,069	60	Marcellus
43	20-Nov-15	10,705	10,872	60	Marcellus
44	20-Nov-15	10,507	10,674	60	Marcellus
45	20-Nov-15	10,309	10,476	60	Marcellus
46	21-Nov-15	10,111	10,278	60	Marcellus
47	21-Nov-15	9,913	10,080	60	Marcellus
48	21-Nov-15	9,715	9,882	60	Marcellus
49	21-Nov-15	9,517	9,684	60	Marcellus
50	21-Nov-15	9,319	9,486	60	Marcellus
51	22-Nov-15	9,121	9,288	60	Marcellus
52	22-Nov-15	8,923	9,090	60	Marcellus
53	22-Nov-15	8,725	8,892	60	Marcellus
54	22-Nov-15	8,527	8,694	60	Marcellus
55	23-Nov-15	8,329	8,496	60	Marcellus
56	23-Nov-15	8,131	8,298	60	Marcellus
57	23-Nov-15	7,933	8,100	60	Marcellus
58	24-Nov-15	7,735	7,902	60	Marcellus
59	24-Nov-15	7,538	7,704	60	Marcellus
60	24-Nov-15	7,340	7,507	60	Marcellus
61	24-Nov-15	7,142	7,309	60	Marcellus
62	24-Nov-15	6,944	7,111	60	Marcellus

Received  
Office of Oil & Gas

JUL 05 2016

10/28/2016

**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-Nov-15	62.0	7,673	5,537	6,238	136,100	8,581	N/A
2	6-Nov-15	62.0	7,267	5,863	5,975	287,800	7,850	N/A
3	6-Nov-15	63.0	7,154	5,593	4,474	299,100	7,871	N/A
4	6-Nov-15	63.0	7,176	5,711	5,100	297,550	7,830	N/A
5	6-Nov-15	62.0	7,280	5,515	5,128	256,000	7,237	N/A
6	7-Nov-15	64.0	7,395	5,382	5,093	243,030	7,721	N/A
7	7-Nov-15	61.0	7,057	5,350	4,932	269,260	7,945	N/A
8	7-Nov-15	64.0	7,328	5,472	5,387	251,400	8,495	N/A
9	7-Nov-15	74.0	7,493	5,257	6,493	298,400	7,692	N/A
10	8-Nov-15	75.0	7,649	5,819	4,807	301,030	7,686	N/A
11	8-Nov-15	76.0	7,658	5,511	5,214	301,270	7,684	N/A
12	8-Nov-15	74.0	7,552	5,314	6,148	301,650	7,673	N/A
13	8-Nov-15	73.0	7,622	5,647	5,667	299,100	7,624	N/A
14	9-Nov-15	75.0	7,550	5,550	5,379	249,450	8,238	N/A
15	9-Nov-15	74.0	7,496	5,329	4,900	301,690	7,642	N/A
16	9-Nov-15	76.4	7,514	5,411	4,639	300,675	7,611	N/A
17	10-Nov-15	75.0	7,531	5,398	4,860	302,520	7,617	N/A
18	10-Nov-15	75.0	7,435	5,440	4,842	302,130	7,596	N/A
19	10-Nov-15	77.3	7,528	5,521	4,215	301,130	7,587	N/A
20	11-Nov-15	76.0	7,432	5,232	5,372	301,000	7,556	N/A
21	12-Nov-15	76.4	7,285	5,411	4,975	298,175	7,485	N/A
22	12-Nov-15	76.3	7,431	5,608	4,860	270,305	8,284	N/A
23	13-Nov-15	71.8	7,270	5,219	5,075	236,100	8,209	N/A
24	13-Nov-15	72.6	7,262	5,300	5,003	247,640	8,181	N/A
25	13-Nov-15	75.0	7,343	5,418	4,292	299,275	7,488	N/A
26	13-Nov-15	74.3	7,243	5,502	4,139	291,075	7,379	N/A
27	14-Nov-15	74.4	7,395	5,714	4,792	301,740	7,474	N/A
28	14-Nov-15	74.4	7,405	5,393	4,771	288,980	7,281	N/A
29	14-Nov-15	74.6	7,245	5,386	4,637	391,430	7,330	N/A
30	14-Nov-15	74.3	7,451	5,493	4,278	253,310	7,119	N/A
31	15-Nov-15	72.8	7,157	5,301	5,144	257,240	8,101	N/A
32	15-Nov-15	74.6	7,266	5,356	4,746	302,880	7,402	N/A
33	15-Nov-15	78.1	7,003	5,205	4,523	285,970	7,197	N/A
34	15-Nov-15	76.3	7,055	5,228	4,463	296,220	7,329	N/A
35	16-Nov-15	74.9	7,034	5,536	5,286	300,340	7,387	N/A
36	16-Nov-15	68.1	7,098	5,304	8,024	163,170	7,422	N/A
37	19-Nov-15	74.7	6,957	5,211	5,286	300,255	7,447	N/A
38	19-Nov-15	74.3	7,032	5,111	5,189	261,900	6,857	N/A
39	19-Nov-15	68.5	6,380	5,018	5,068	293,900	8,003	N/A
40	19-Nov-15	74.3	6,684	5,176	4,581	301,210	7,430	N/A
41	19-Nov-15	76.8	6,808	5,601	4,498	303,885	7,423	N/A
42	20-Nov-15	75.0	6,836	5,321	5,282	301,200	7,375	N/A
43	20-Nov-15	74.0	6,696	5,525	5,064	302,500	7,354	N/A
44	20-Nov-15	73.7	6,693	5,486	5,207	301,600	7,359	N/A
45	20-Nov-15	76.3	7,003	5,504	4,288	301,030	7,338	N/A
46	21-Nov-15	74.6	6,781	5,208	4,889	301,015	7,323	N/A
47	21-Nov-15	75.5	6,721	5,736	5,225	301,700	7,326	N/A
48	21-Nov-15	75.7	6,628	5,289	4,739	302,400	7,300	N/A
49	21-Nov-15	75.0	6,677	5,794	4,259	300,085	7,290	N/A
50	21-Nov-15	75.7	6,574	5,391	4,451	299,930	7,302	N/A
51	22-Nov-15	75.8	6,543	5,481	4,588	301,200	7,270	N/A
52	22-Nov-15	75.4	6,570	5,465	5,203	299,200	7,240	N/A
53	22-Nov-15	75.9	6,437	5,297	4,278	302,575	7,248	N/A
54	22-Nov-15	75.8	6,436	5,247	4,303	269,420	6,730	N/A
55	23-Nov-15	74.6	6,380	5,232	5,050	301,900	7,280	N/A
56	23-Nov-15	75.5	6,357	5,511	4,989	301,000	7,203	N/A
57	23-Nov-15	74.0	6,482	5,854	4,975	267,120	7,776	N/A
58	24-Nov-15	73.0	6,317	5,772	4,957	301,800	7,183	N/A
59	24-Nov-15	72.7	6,315	6,073	5,053	301,800	7,153	N/A
60	24-Nov-15	72.6	6,190	5,343	4,889	264,000	6,558	N/A
61	24-Nov-15	74.7	6,238	5,275	4,714	302,440	7,154	N/A
62	24-Nov-15	75.0	6,382	5,715	4,603	298,620	7,050	N/A
AVG=		73.1	7,030	5,449	4,992	17,767,820	465,776	TOTAL

Office of Oil & Gas  
 JUL 05 2016

## 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	194	N/A	194	N/A
Fresh Water	366	N/A	366	N/A
Siltstone	0	227	0	227
Siltstone and Coal	227	275	227	275
Siltstone	275	411	275	411
Sandstone	411	542	411	542
Shale w/Trace Coal	542	567	542	567
Shale w/Trace Coal	567	767	567	767
Siltstone	767	807	767	807
Shale w/Trace Coal	807	947	807	947
Siltstone	947	1,139	947	1,139
Sandstone	1,139	1,201	1,139	1,201
Siltstone	1,201	1,237	1,201	1,237
Sandstone	1,237	1,317	1,237	1,317
Siltstone	1,317	1,717	1,317	1,753
Big Lime	1,717	1,817	1,753	1,860
Big Injun	1,817	2,327	1,860	2,408
Gantz Sand	2,327	2,447	2,408	2,535
Fifty Foot Sandstone	2,447	2,541	2,535	2,634
Gordon	2,541	2,893	2,634	3,002
Fifth Sandstone	2,893	2,950	3,002	3,062
Bayard	2,950	3,306	3,062	3,446
Warren	3,306	3,698	3,446	3,886
Speechley	3,698	4,422	3,886	4,708
Bradford	4,422	4,822	4,708	5,168
Benson	4,822	5,060	5,168	5,439
Alexander	5,060	5,228	5,439	5,628
Elk	5,228	5,604	5,628	6,050
Rhinestreet	5,604	5,915	6,050	6,401
Sycamore	5,915	6,087	6,401	6,615
Middlesex	6,087	6,181	6,615	6,761
Burkett	6,181	6,204	6,761	6,805
Tully	6,204	6,247	6,805	6,905
Marcellus	6,247	NA	6,905	NA

Received  
Office of Oil & Gas

JUL 05 2016

10/28/2016

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date	11/5/2015
Job End Date	11/24/2015
State	West Virginia
County	Tyler
API Number	47-095-02181-00-00
Operator Name	Antero Resources Corporation
Well Name and Number	Hawkeye 1H
Longitude	-80.85266400
Latitude	39.46632800
Datum	NAD83
Federal/Tribal Well	NO
True Vertical Depth	6,393
Total Base Water Volume (gal)	20,642,436
Total Base Non Water Volume	0



Received  
Office of Oil & Gas

JUL 05 2016

## Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract 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	90.34654	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	9.27187	
IGC-15	U.S. Well Services	Gelling Agents	Guar Gum	9000-30-0	50.00000	0.08631	
			Petroleum Distillates	64742-47-8	60.00000	0.08174	
			Suspending agent (solid)	14808-60-7	3.00000	0.01320	
			Surfactant	68439-51-0	3.00000	0.00518	
WFRA-405	U.S. Well Services	Friction Reducer	Water	7732-18-5	60.00000	0.04303	
			2-Propenoic acid, polymer with 2-propenamamide	29003-06-9	30.00000	0.02152	
			Hydrated light castillate (petroleum)	64742-47-8	30.00000	0.01732	
			Ethoxylated alcohol blend	68002-97-1	4.00000	0.00287	
HCL Acid (12.6% - 18.0%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.50000	0.06668	
			Hydrogen Chloride	7647-01-0	18.00000	0.01593	

10/28/2016



SI-1100	U.S. Well Services	Scale Inhibitor					
			Water	7732-18-5	80.00000	0.01028	
			Ethylene Glycol	107-21-1	25.00000	0.00363	
			Copolymer of Maleic and Acrylic acid	52255-49-9	10.00000	0.00152	
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	7.50000	0.00130	
			Hexamethylene triamine penta (methylene phosphonic acid)	34690-00-1	5.00000	0.00083	
			Phosphino carboxylic acid polymer	71050-62-9	5.00000	0.00083	
			Hexamethylene diamine penta (methylene phosphonic acid)	23695-74-5	2.00000	0.00033	
K-BAC 1020	U.S. Well Services	Anti-Bacterial Agent					
			2,2-dibromo-3-nitropropionamide	19222-01-2	20.00000	0.00423	
			Deionized Water	7732-18-5	28.00000	0.00244	
AP One	U.S. Well Services	Gel Breakers					
			Ammonium Persulfate	7727-54-0	100.00000	0.00203	
AI-302	U.S. Well Services	Acid Corrosion Inhibitors					
			Water	7732-18-5	95.00000	0.00029	
			2-Propyn-1-ol compound with Triethylxirane	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)

Received  
 Office of Oil & Gas  
 JUL 05 2016

LATITUDE 39°30'00"

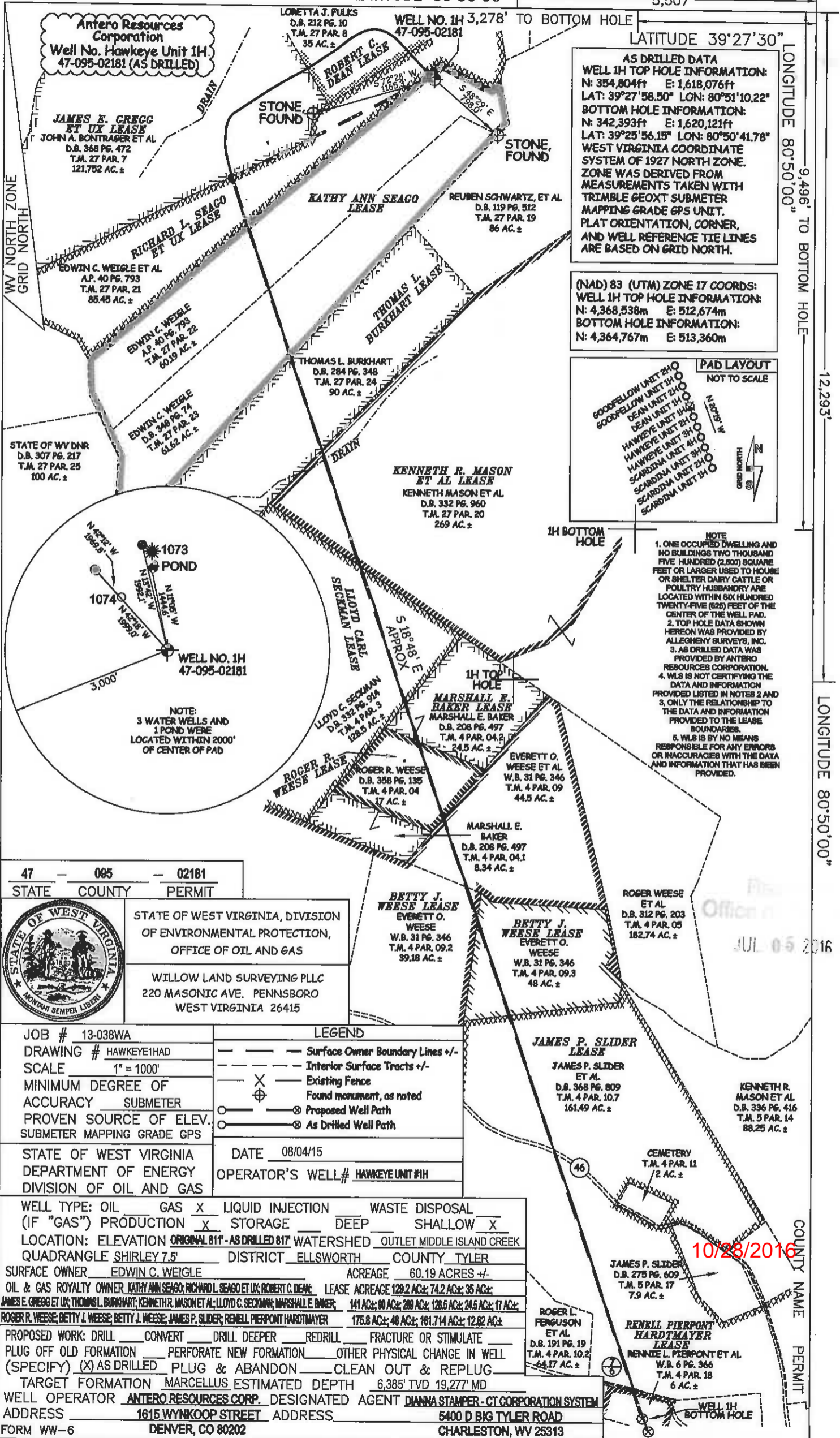
5,507'

LATITUDE 39°27'30"

LONGITUDE 80°50'00"

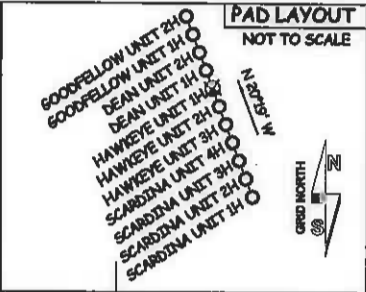
12,293'

LONGITUDE 80°50'00"

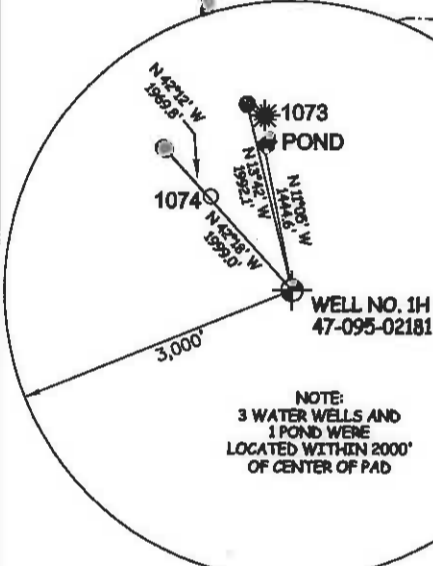


**AS DRILLED DATA**  
**WELL 1H TOP HOLE INFORMATION:**  
 N: 354,804ft E: 1,618,076ft  
 LAT: 39°27'58.50" LON: 80°51'10.22"  
**BOTTOM HOLE INFORMATION:**  
 N: 342,393ft E: 1,620,121ft  
 LAT: 39°25'56.15" LON: 80°50'41.78"  
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM 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: 4,368,538m E: 512,674m  
**BOTTOM HOLE INFORMATION:**  
 N: 4,364,767m E: 513,360m



- NOTE**
- ONE OCCUPIED DWELLING AND NO 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.
  - TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
  - AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
  - 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.
  - WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.



**NOTE:**  
 3 WATER WELLS AND 1 POND WERE LOCATED WITHIN 2000' OF CENTER OF PAD

47 - 095 - 02181  
 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

JOB # 13-038WA  
 DRAWING # HAWKEYE1HAD  
 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 +/-  
 X Existing Fence  
 ⊕ Found monument, as noted  
 ⊙ Proposed Well Path  
 ⊙ As Drilled Well Path

DATE 08/04/15  
 OPERATOR'S WELL# HAWKEYE UNIT #1H

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X  
 LOCATION: ELEVATION ORIGINAL 811' - AS DRILLED 817' WATERSHED OUTLET MIDDLE ISLAND CREEK  
 QUADRANGLE SHIRLEY 7.5' DISTRICT ELLSWORTH COUNTY TYLER  
 SURFACE OWNER EDWIN C. WEIGLE ACREAGE 60.19 ACRES +/-  
 OIL & GAS ROYALTY OWNER KATHY ANN SEAGO, RICHARD L. SEAGO ET UX, ROBERT C. DEAN LEASE ACREAGE 129.2 AC±; 74.2 AC±; 35 AC±;  
 JAMES E. GREGG ET UX; THOMAS L. BURKHART; KENNETH R. MASON ET AL; LLOYD C. SECKMAN; MARSHALL E. BAKER 141 AC±; 80 AC±; 280 AC±; 128.5 AC±; 24.5 AC±; 17 AC±;  
 ROGER R. WEESE; BETTY J. WEESE; BETTY J. WEESE; JAMES P. SLIDER; RENELL PIERPONT HARDTMAYER 175.8 AC±; 48 AC±; 161.714 AC±; 12.62 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 6,385' TVD 19,277' MD  
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM  
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD  
 FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

JUL 05 2016

10/28/2016

COUNTY NAME PERMIT

LATITUDE 39°30'00"

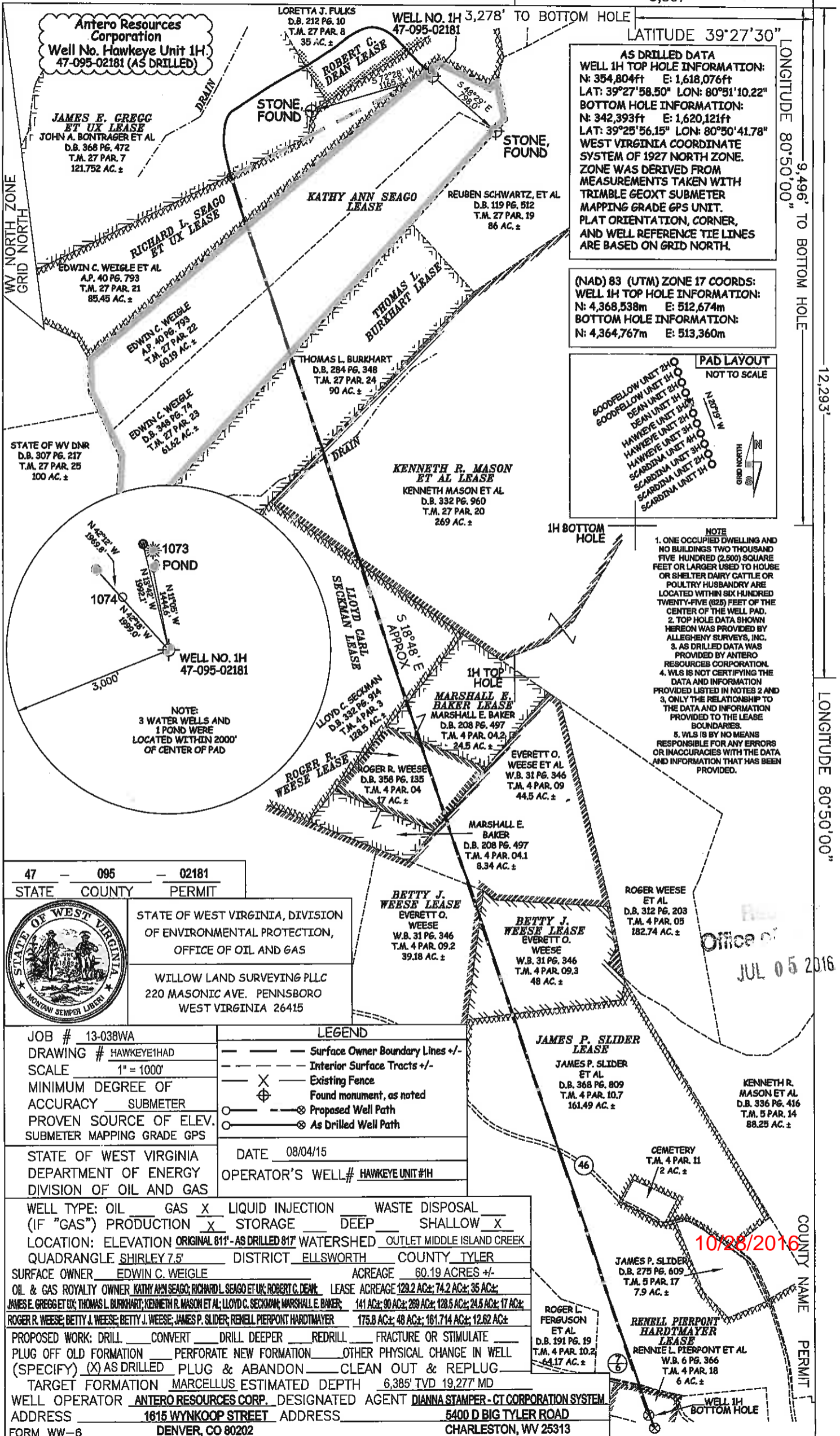
5,507'

LATITUDE 39°27'30"

LONGITUDE 80°50'00"

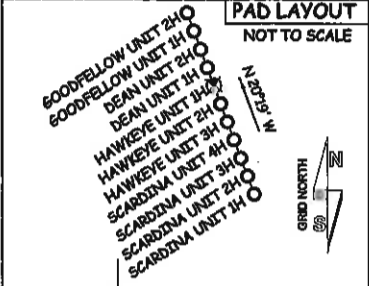
12,293'

LONGITUDE 80°50'00"



**AS DRILLED DATA**  
**WELL 1H TOP HOLE INFORMATION:**  
 N: 354,804ft E: 1,618,076ft  
 LAT: 39°27'58.50" LON: 80°51'10.22"  
**BOTTOM HOLE INFORMATION:**  
 N: 342,393ft E: 1,620,121ft  
 LAT: 39°25'56.15" LON: 80°50'41.78"  
 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: 4,368,538m E: 512,674m  
**BOTTOM HOLE INFORMATION:**  
 N: 4,364,767m E: 513,360m



- NOTE**
- ONE OCCUPIED DWELLING AND NO 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.
  - TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
  - AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
  - 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.
  - WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

47 - 095 - 02181  
 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

JOB # 13-038WA  
 DRAWING # HAWKEYE1HAD  
 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 +/-  
 X Existing Fence  
 ⊕ Found monument, as noted  
 ○ Proposed Well Path  
 ⊗ As Drilled Well Path

DATE 08/04/15  
 OPERATOR'S WELL# HAWKEYE UNIT #1H

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL   
 (IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW   
 LOCATION: ELEVATION ORIGINAL 811' - AS DRILLED 817' WATERSHED  OUTLET MIDDLE ISLAND CREEK   
 QUADRANGLE SHIRLEY 7.5' DISTRICT ELLSWORTH COUNTY TYLER  
 SURFACE OWNER EDWIN C. WEIGLE ACREAGE 60.19 ACRES +/-  
 OIL & GAS ROYALTY OWNER KATHY ANN SEAGO; RICHARD L. SEAGO ET UX; ROBERT C. DEAN LEASE ACREAGE 129.2 AC±; 74.2 AC±; 35 AC±;  
 JAMES E. GREGG ET UX; THOMAS L. BURKHART; KENNETH R. MASON ET AL; LLOYD C. SECKMAN; MARSHALL E. BAKER; 141 AC±; 90 AC±; 289 AC±; 128.5 AC±; 24.5 AC±; 17 AC±;  
 ROGER R. WEESE; BETTY J. WEESE; BETTY J. WEESE; JAMES P. SLIDER; RENELL PIERPONT HARDTMAYER 175.8 AC±; 48 AC±; 181.714 AC±; 12.82 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 6,385' TVD 19,277' MD  
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM  
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD  
 DENVER, CO 80202 CHARLESTON, WV 25313

Office of  
 JUL 05 2016

10/28/2016

COUNTY NAME PERMIT