

# APPROVED

NAME: Blue Ann

DATE: 11/1/17

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

API 47 - 017 - 06642 County Doddridge District Central  
Quad West Union 7.5' Pad Name Dotson-Holland Pad Field/Pool Name -----  
Farm name Robert L. Holland Jr. Well Number Murphy 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 4347117m Easting 510972m  
Landing Point of Curve Northing 4347214.675m Easting 510988.427m  
Bottom Hole Northing 4349685m Easting 510189m

Elevation (ft) 989' 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 01/15/2015 Date drilling commenced 11/18/2015 Date drilling ceased 02/24/2016  
Date completion activities began 01/27/2017 Date completion activities ceased 04/18/2017  
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 56' Open mine(s) (Y/N) depths No  
Salt water depth(s) ft 1527' Void(s) encountered (Y/N) depths No  
Coal depth(s) ft 381', 941', 1701' Cavern(s) encountered (Y/N) depths No  
Is coal being mined in area (Y/N) No

Reviewed by:

11/10/2017

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API 47-017 - 06642 Farm name Robert L. Holland Jr. Well number Murphy Unit 2H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade w/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	30"	20"	40'	New	94#, J-55	N/A	Y
Surface	17-1/2"	13-3/8"	413'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2492'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	15305'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6550'		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	400 sx	15.6	1.19	476	0'	8 Hrs.
Surface	Class A	481 sx	15.6	1.18	568	0'	8 Hrs.
Coal							
Intermediate 1	Class A	984 sx	15.6	1.18	1161	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	885 sx (Lead) 1371 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.44 (Lead), 1.83 (Tail)	3783	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15305' MD, 6446' TVD (BHL); 6454' TVD (Deepest Point Drilled) Loggers TD (ft) 15256' MD  
 Deepest formation penetrated Marcellus Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 5953'

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

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

\*\* This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Amanda Unit 1H API #47-017-06432). Please reference the wireline logs submitted with Form WR-35 for Amanda Unit 1H. A Cement Bond Log has been included with this submittal.

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6396' (TOP)</u> TVD	<u>6560' (TOP)</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 3600 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 3965 mcfpd Oil --- bpd NGL --- bpd Water 398 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

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

**\*PLEASE SEE ATTACHED EXHIBIT 3**


Please insert additional pages as applicable.


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

Logging Company Allied Horizontal Wireline Services  
Address 380 Bedford Rd. City North Huntingdon State PA Zip 15642

Cementing Company Nabors Completion & Production Services, Co.  
Address 1650 Hackers Creek City Jane Lew State WV Zip 26378

Stimulating Company US Well Services  
Address 533 Industrial Park Dr. City Jane Lew State WV Zip 26378

Please insert additional pages as applicable.

Completed by Samantha Klaas Telephone 303-357-6759  
Signature  Title Permitting Agent Date 09/20/2017

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

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**EXHIBIT 1**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	1/27/2017	14904	15050	60	Marcellus
2	2/23/2017	14727	14873	60	Marcellus
3	2/23/2017	14549	14695	60	Marcellus
4	2/23/2017	14372	14518	60	Marcellus
5	2/23/2017	14197	14341	60	Marcellus
6	2/23/2017	14006	14175	60	Marcellus
7	2/24/2017	13806	13975	60	Marcellus
8	2/24/2017	13606	13775	60	Marcellus
9	2/24/2017	13406	13575	60	Marcellus
10	2/24/2017	13206	13374	60	Marcellus
11	2/25/2017	13005	13174	60	Marcellus
12	2/25/2017	12805	12974	60	Marcellus
13	2/25/2017	12605	12774	60	Marcellus
14	2/25/2017	12405	12574	60	Marcellus
15	2/25/2017	12205	12373	60	Marcellus
16	2/26/2017	12004	12173	60	Marcellus
17	2/26/2017	11804	11973	60	Marcellus
18	2/26/2017	11604	11773	60	Marcellus
19	2/26/2017	11404	11573	60	Marcellus
20	2/26/2017	11204	11372	60	Marcellus
21	2/27/2017	11003	11172	60	Marcellus
22	2/27/2017	10803	10972	60	Marcellus
23	2/27/2017	10603	10772	60	Marcellus
24	2/27/2017	10403	10572	60	Marcellus
25	2/27/2017	10203	10371	60	Marcellus
26	2/27/2017	10002	10171	60	Marcellus
27	2/28/2017	9802	9971	60	Marcellus
28	2/28/2017	9602	9771	60	Marcellus
29	2/28/2017	9402	9571	60	Marcellus
30	2/28/2017	9202	9370	60	Marcellus
31	2/28/2017	9001	9170	60	Marcellus
32	3/1/2017	8801	8970	60	Marcellus
33	3/1/2017	8601	8770	60	Marcellus
34	3/1/2017	8401	8570	60	Marcellus
35	3/1/2017	8201	8369	60	Marcellus
36	3/2/2017	8000	8169	60	Marcellus
37	3/2/2017	7800	7969	60	Marcellus
38	3/2/2017	7600	7769	60	Marcellus
39	3/2/2017	7400	7569	60	Marcellus
40	3/2/2017	7200	7368	60	Marcellus
41	3/2/2017	6999	7168	60	Marcellus
42	3/3/2017	6799	6968	60	Marcellus
43	3/3/2017	6599	6768	60	Marcellus

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## EXHIBIT 2

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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	2/22/2017	79.5	7922	0	4815	354565	7833	N/A
2	2/23/2017	79.6	7812	5311	4902	354740	7827	N/A
3	2/23/2017	79.6	7593	5322	5450	354300	7769	N/A
4	2/23/2017	79.5	7567	5100	5397	354400	7743	N/A
5	2/23/2017	80.2	7723	5414	4928	354320	7685	N/A
6	2/23/2017	80.4	7452	5217	5046	354580	7257	N/A
7	2/24/2017	78.9	7327	5307	5443	354800	8399	N/A
8	2/24/2017	79.1	7160	5003	5186	354900	7363	N/A
9	2/24/2017	79.0	7087	4989	5229	355200	7251	N/A
10	2/24/2017	79.8	7030	5321	4917	354665	7217	N/A
11	2/25/2017	80.4	7077	5279	4896	355415	7207	N/A
12	2/25/2017	80.5	7141	5018	5186	354100	7251	N/A
13	2/25/2017	80.1	7073	5265	4978	355000	7249	N/A
14	2/25/2017	79.9	7004	5364	4907	354800	7256	N/A
15	2/25/2017	80.3	7176	5276	4968	355680	7175	N/A
16	2/26/2017	79.9	7163	5238	4673	354830	7165	N/A
17	2/26/2017	80.2	7029	5268	5479	355400	7205	N/A
18	2/26/2017	80.5	7039	5136	5246	355100	7205	N/A
19	2/26/2017	79.8	6964	5085	4864	355660	7141	N/A
20	2/26/2017	80.1	7106	5631	4832	356090	7131	N/A
21	2/27/2017	80.2	7244	5461	4878	354935	7121	N/A
22	2/27/2017	80.2	7384	5553	5429	355600	7163	N/A
23	2/27/2017	80.0	7155	5507	5039	355800	7140	N/A
24	2/27/2017	80.3	7068	5432	5114	354300	7137	N/A
25	2/27/2017	80.4	7300	5118	5293	354200	7089	N/A
26	2/27/2017	80.2	7181	5507	5250	355600	7077	N/A
27	2/28/2017	79.8	6846	5171	4874	355100	7075	N/A
28	2/28/2017	80.5	6817	5357	5239	355500	7090	N/A
29	2/28/2017	80.7	6915	5386	5182	357200	7110	N/A
30	2/28/2017	80.7	6772	5318	4957	357000	7102	N/A
31	2/28/2017	80.2	6631	5389	4781	356200	7042	N/A
32	3/1/2017	80.1	6560	5329	5071	354900	7031	N/A
33	3/1/2017	80.3	6611	5368	5078	355700	7501	N/A
34	3/1/2017	80.1	6666	5583	4975	356300	7057	N/A
35	3/1/2017	80.2	6569	5611	5046	356000	7006	N/A
36	3/2/2017	80.6	6614	5350	5400	356400	6997	N/A
37	3/2/2017	80.3	6759	5790	5286	355300	7028	N/A
38	3/2/2017	80.7	6895	5747	4932	354900	7014	N/A
39	3/2/2017	79.8	6891	5733	5143	354900	7903	N/A
40	3/2/2017	80.4	6919	5565	5382	355300	7002	N/A
41	3/2/2017	79.1	6762	5296	5182	355800	6972	N/A
42	3/3/2017	79.5	6794	5536	5250	355200	6981	N/A
43	3/3/2017	79.4	6659	5586	4560	356400	6828	N/A
AVG=		80.0	7,057	5,238	5,086	15,277,080	311,795	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	56'	N/A	56'	N/A
Shale/ Siltstone	0	221	0	221
Sandstone	est. 221	241	est. 221	241
Shale/ Siltstone	est. 241	381	est. 241	381
Coal	est. 381	401	est. 381	401
Siltstone	est. 401	441	est. 401	441
Shale/ Limestone	est. 441	561	est. 441	561
Sandstone/ Siltstone	est. 561	621	est. 561	621
Shale/ Siltstone	est. 621	761	est. 621	761
Limestone	est. 761	941	est. 761	941
Siltstone / Trace Coal/ Shale	est. 941	1381	est. 941	1381
Sandstone	est. 1381	1401	est. 1381	1401
Shale/ Siltstone/ Trace Coal	est. 1401	1621	est. 1401	1621
Sandstone/ Siltstone	est. 1621	1701	est. 1621	1701
Shale/ Siltstone/ Trace Coal	est. 1701	1741	est. 1701	1741
Shale/ Siltstone	est. 1741	1929	est. 1741	1930
Big Lime	1929	2388	1930	2389
Gantz	2388	2541	2389	2542
Fifty Foot Sandstone	2541	2670	2542	2671
Gordon	2670	2845	2671	2846
Fifth Sandstone	2845	2999	2846	3000
Bayard	2999	3318	3000	3319
Speechley	3318	4022	3319	4023
Baltown	4022	4495	4023	4497
Bradford	4495	4729	4497	4733
Benson	4729	5161	4733	5177
Alexander	5161	5310	5177	5330
Elk	5310	5859	5330	5885
Rhinestreet	5859	6066	5885	6095
Sycamore	6066	6224	6095	6274
Middlesex	6224	6335	6274	6434
Burkett	6335	6369	6434	6499
Tully	6369	6396	6499	6560
Marcellus	6396	NA	6560	NA

\*Please note Antero determines formation tops based on mud logs that are only run on one well on a multi-well pad. RECEIVED  
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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:	2/22/2017
Job End Date:	3/3/2017
State:	West Virginia
County:	Doddridge
API Number:	47-017-06642-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Murphy 2HST
Latitude:	39.27324722
Longitude:	-80.87296667
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,453
Total Base Water Volume (gal):	13,536,976
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	Carrier/Base Fluid	Water	7732-18-5	100.00000	87.85684	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	11.88853	
HCL Acid (12.6%-17.5%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.40000	0.14733	
			Hydrogen Chloride	7647-01-0	17.50000	0.03426	
LGC-15	U.S. Well Services, LLC	Gelling Agents	Guar Gum	9000-30-0	50.00000	0.01695	
			Petroleum Distillates	64742-47-8	60.00000	0.01606	
			Suspending agent (solid)	14808-60-7	3.00000	0.00259	
			Surfactant	68439-51-0	3.00000	0.00102	
WFR-500	U.S. Well Services, LLC	Friction Reducer	2-Propenoic acid, polymer with 2-propenamide	9003-06-9	30.00000	0.01482	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01193	

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Bioclear 2000	U.S. Well Services, LLC	Anti-Bacterial Agent					
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00391	
			Deionized Water	7732-18-5	28.00000	0.00223	
SI-1100s	U.S. Well Services, LLC	Scale Inhibitor					
			Copolymer of Maleic and Acrylic acid	52255-49-9	10.00000	0.00141	
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	3.00000	0.00049	
			Phosphino carboxylic acid polymer	71050-62-9	3.00000	0.00047	
			Hexamethylene tramine penta (methylene phosphonic acid)	34690-00-1	3.00000	0.00047	
AP One	U.S. Well Services, LLC	Gel Breakers					
			Ammonium Persulfate	7727-54-0	100.00000	0.00056	
AI-303	U.S. Well Services, LLC	Acid Corrosion Inhibitors					
			Ethylene glycol	107-21-1	40.00000	0.00006	
			Cinnamaldehyde	104-55-2	20.00000	0.00002	
			Formic acid	64-18-6	20.00000	0.00002	
			Butyl cellosolve	111-76-2	20.00000	0.00002	
			Polyether	60828-78-6	10.00000	0.00001	
			Acetophenone, thiourea, formaldehyde polymer	68527-49-1	5.00000	0.00001	

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)

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LATITUDE 39°17'30"

11,220'

1,985' TO BOTTOM HOLE

LATITUDE 39°20'00"

6,708'

13,453' TO BOTTOM HOLE

LONGITUDE 80°50'00"

Antero Resources Corporation Well No. Murphy Unit 2H 47-017-06642 (AS DRILLED)

AS DRILLED DATA: WELL 2H TOP HOLE INFORMATION: N: 284,603ft E: 1,611,320ft LAT: 39°16'23.69" LON: 80°52'22.68" BOTTOM HOLE INFORMATION: N: 293,072ft E: 1,608,888ft LAT: 39°17'47.03" LON: 80°52'55.25" 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: 4,347,117m E: 510,972m BOTTOM HOLE INFORMATION: N: 4,349,685m E: 510,189m

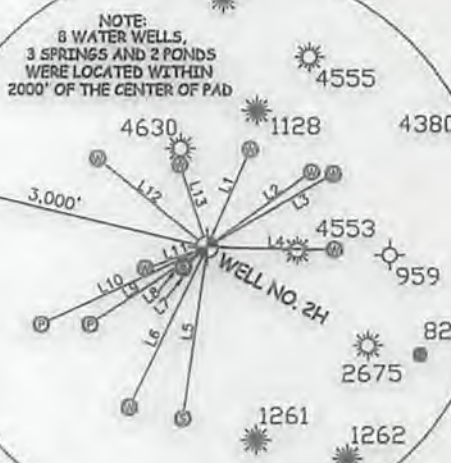
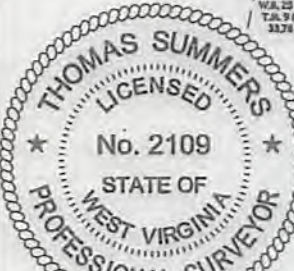
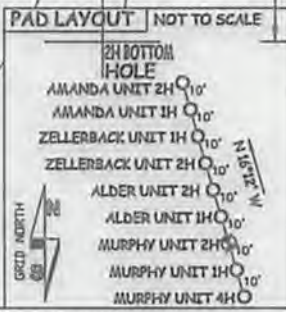


Table with 2 columns: LINE, DISTANCE. It lists various survey lines and their corresponding distances.



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 300 HUNDRED TWENTY-FIVE (325) FEET OF THE CENTER OF THE WELL PAD. 2. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGANY 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.



JOB # 14-079WA DRAWING # MURPHY2H SCALE 1" = 1000' MINIMUM DEGREE OF ACCURACY SUBMETER PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

LEGEND: Surface Owner Boundary Lines +/-, Interior Surface Tracts +/-, Existing Fence, Found monument, as noted, Proposed Well Path, As Drilled Well Path.

\*I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



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

THOMAS SUMMERS P.S. 2109 DATE 08/24/17 OPERATOR'S WELL # MURPHY UNIT 2H API WELL # 47-017-06642 STATE COUNTY PERMIT

WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X LOCATION: ELEVATION 989' AS DRILLED WATERSHED NORTH FORK HUGHES RIVER QUADRANGLE WEST UNION 7.5' DISTRICT CENTRAL COUNTY DODD COUNTY NAME PERMIT SURFACE OWNER ROBERT L. HOLLAND JR. ACREAGE 6.80 ACRES +/- OIL & GAS ROYALTY OWNER ANNA BARKER ET AL; ROBERT SMITH ET AL; WVSRA; ROBERT DOAK ET AL; LEASE ACREAGE 127 ACRES; 75 ACRES; 301.10 ACRES; 71 ACRES; KATE MASON ET AL; DELORES FLETCHER; FREDDIE JAMES ET UX; HARRY WILLIAMSON; HARRY WILLIAMSON ET AL. 96 ACRES; 40 ACRES; 34 ACRES; 166 ACRES; 176 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 6,446' TVD 15,305' MD WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313 FORM WW-6 DENVER, CO 80202

11/10/2017



FORM MM-e DENVER CO 80505 CHRYSTON MA 52313  
 ADDRESS 1812 MAINCOB STREET ADDRESS 2400 D BIG LAGER ROAD  
 MEG OBERATOR VITEBO RESOURCES CORP DESIGNATED AGENT CI CORROSION SYSTEM DIVINA STAMBER  
 TARGET FORMATION MURSETTS ESTIMATED DEPTH 8'400, 12'300, 12  
 (SPECIFY) V2-DRIPT BONE & AROUND CREAM OIL & BERTUS  
 BONE OFF OLD FORMATION BEFORE NEW FORMATION OTHER PHYSICAL CHANGE IN MEG  
 PROPOSED WORK: DRILL COLLECT DRILL DEEPER BEDDING FRASURE OF STIMULATE  
 KYLE WATSON ET AL: DEBORAH FELCHER: FREDDIE WILSON ET AL: HARRY MITCHELL WATSON: HARRY MITCHELL WATSON ET AL 80 VCSB2: 10 VCSB2: 21 VCSB2: 100 VCSB2: 110 VCSB2:  
 OIG & GAS REGULATORY DIVISION VITEBO RESOURCES CORP: ROBERT SMITH ET AL: MARY: ROBERT DOAK ET AL: GEORGE VCSB2: 12 VCSB2: 201: 10 VCSB2: 11 VCSB2:  
 SURFACE OWNER ROBERT G. HOGAN JR VCSB2: 0:00 VCSB2: 4-  
 OPERATING WELLS: DISTRICT CENTRAL COUNTY DODDGE

LOCATION: ELEVATION 888, V2 DRIPT WATERSHED NORTH FORK HUGHES RIVER STATE COUNTY PERMIT  
 (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOM X 41 MEG # 013 - 00843  
 MEG TYPE: OIL GAS X FLUID INJECTION WASTE DISPOSAL OBERATOR, 2 MEG # MURPHY WATSON  
 DIVISION OF OIL AND GAS DATE 08/20/17  
 DEPARTMENT OF ENERGY THOMAS SUMMERS P.2. 3108  
 STATE OF WEST VIRGINIA

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
 RULES ISSUED UNDESIGNED BY THE  
 INFORMATION PROVIDED BY THE  
 KNOWLEDGE AND BELIEF AND SHOWS THAT  
 THIS PLAN IS CORRECT TO THE BEST OF MY  
 AND THE UNDERSIGNED HEREBY CERTIFY THAT



WEST VIRGINIA 5472  
 550 WASHINGTON AVE. BEING 2800  
 WILSON AND SUBSEQUENT B/C  
 OFFICE OF OIL AND GAS  
 OF ENVIRONMENTAL PROTECTION  
 STATE OF WEST VIRGINIA DIVISION

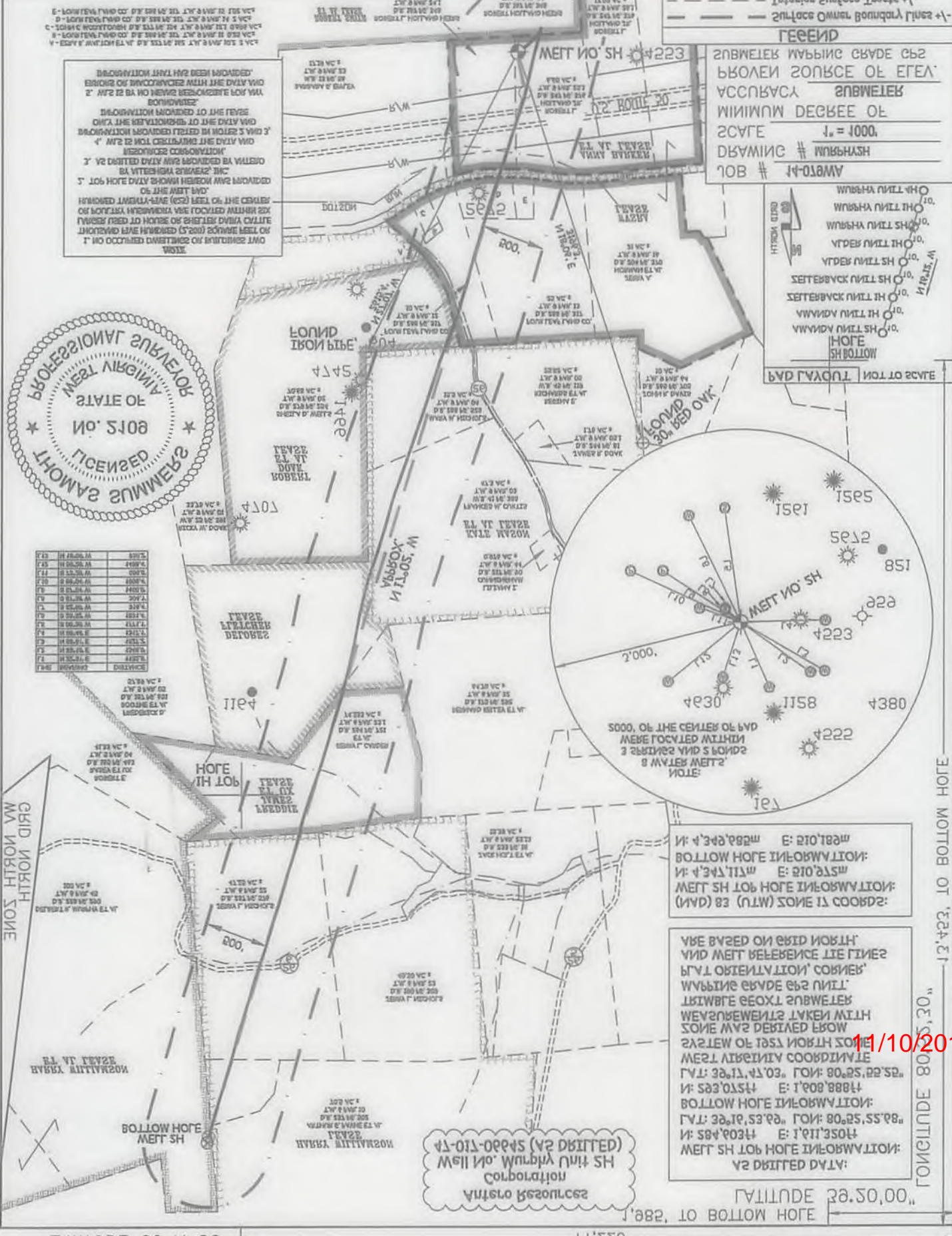
LEGEND  
 V2 Dripped Well Path  
 Proposed Well Path  
 Foundation as shown  
 Existing Fence  
 Intersecting Property Lines  
 Surface Owner Boundary Lines

DESCRIPTION THAT HAS BEEN PROVIDED  
 SHOWS OF PROVISIONS WITH THE ONLY V2  
 2' 1/2" IS IN NO WAY RESPONSIBLE FOR ANY  
 PROVISIONS  
 PROVISIONS PROVIDED TO THE LEGAL  
 ONLY THE RELATIONSHIP TO THE ONLY V2  
 PROVISIONS PROVIDED TO THE ONLY V2  
 4' 1/2" IS IN NO WAY RESPONSIBLE FOR ANY  
 PROVISIONS  
 2' V2 DRIPT ONLY HAS PROVIDED BY VITEBO  
 BY VITEBO 2800 B/C  
 5' 10" HOPE ONLY FROM HEREON HAS PROVIDED  
 OF THE ONLY V2  
 HOGAN 1812 (28) WELL OF THE CENTER  
 OF MARY WATSON VITEBO WITHIN 200'  
 FENCE TO HOPE OF CENTER ONLY CALLS  
 THROUGH THE HOGAN (28) 200' WELL OF  
 1' NO OCCUPY DWELLING OF BUILDING AND  
 WOOD

SUBMETER MAPPING SCALE CBS  
 BROKEN SOURCE OF ELEV  
 ACCURACY SUBMETER  
 MINIMUM DEGREE OF  
 SCALE 1" = 1000'  
 DRAWING # MURPHY WATSON  
 JOB # 14-01804W



WELL NO.	DATE	DEPTH	STATUS
1	11/15/16	100'	ACTIVE
2	11/15/16	100'	ACTIVE
3	11/15/16	100'	ACTIVE
4	11/15/16	100'	ACTIVE
5	11/15/16	100'	ACTIVE
6	11/15/16	100'	ACTIVE
7	11/15/16	100'	ACTIVE
8	11/15/16	100'	ACTIVE
9	11/15/16	100'	ACTIVE
10	11/15/16	100'	ACTIVE
11	11/15/16	100'	ACTIVE
12	11/15/16	100'	ACTIVE
13	11/15/16	100'	ACTIVE
14	11/15/16	100'	ACTIVE
15	11/15/16	100'	ACTIVE
16	11/15/16	100'	ACTIVE
17	11/15/16	100'	ACTIVE
18	11/15/16	100'	ACTIVE
19	11/15/16	100'	ACTIVE
20	11/15/16	100'	ACTIVE
21	11/15/16	100'	ACTIVE
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26	11/15/16	100'	ACTIVE
27	11/15/16	100'	ACTIVE
28	11/15/16	100'	ACTIVE
29	11/15/16	100'	ACTIVE
30	11/15/16	100'	ACTIVE
31	11/15/16	100'	ACTIVE
32	11/15/16	100'	ACTIVE
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37	11/15/16	100'	ACTIVE
38	11/15/16	100'	ACTIVE
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41	11/15/16	100'	ACTIVE
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50	11/15/16	100'	ACTIVE
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62	11/15/16	100'	ACTIVE
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67	11/15/16	100'	ACTIVE
68	11/15/16	100'	ACTIVE
69	11/15/16	100'	ACTIVE
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71	11/15/16	100'	ACTIVE
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80	11/15/16	100'	ACTIVE
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82	11/15/16	100'	ACTIVE
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84	11/15/16	100'	ACTIVE
85	11/15/16	100'	ACTIVE
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88	11/15/16	100'	ACTIVE
89	11/15/16	100'	ACTIVE
90	11/15/16	100'	ACTIVE
91	11/15/16	100'	ACTIVE
92	11/15/16	100'	ACTIVE
93	11/15/16	100'	ACTIVE
94	11/15/16	100'	ACTIVE
95	11/15/16	100'	ACTIVE
96	11/15/16	100'	ACTIVE
97	11/15/16	100'	ACTIVE
98	11/15/16	100'	ACTIVE
99	11/15/16	100'	ACTIVE
100	11/15/16	100'	ACTIVE



IN: 4'34.98' E: 210.18'  
 BOTTOM HOPE INFORMATION:  
 IN: 4'34.11' E: 210.18'  
 MEG SH TOP HOPE INFORMATION:  
 (MAD 83 (LW) SOME 11 COORDS:

ARE BASED ON GRID NORTH  
 AND MEG REFERENCE TIE LINES  
 THAT ORIENTATION CORNER  
 WYBING SCALE CBS UNIT  
 TRIMBLE 800T SUBMETER  
 MEASUREMENTS TAKEN WITH  
 SOME MEG DEVIATED FROM  
 STATE OF WEST VIRGINIA  
 WEST VIRGINIA COORDINATE  
 LAT: 39.11.43.03, LONG: 80.25.22.52,  
 N: 283.0374 E: 1'008.8884  
 BOTTOM HOPE INFORMATION:  
 LAT: 39.10.52.93, LONG: 80.25.55.22.52,  
 N: 284.4034 E: 1'011.3504  
 MEG SH TOP HOPE INFORMATION:  
 V2 DRIPT DATA:

41-017-00843 (V2 DRIPT)  
 Well No. Murphy Unit SH  
 Corporation  
 Antero Resources

GRID NORTH  
 MA NORTH ZONE  
 13'423, 10 BOTTOM HOPE  
 11/10/2017  
 1'082, 10 BOTTOM HOPE  
 LATITUDE 39.11.30,  
 1'150,  
 LONGITUDE 80.20.00,  
 1'008,