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WR-35  
Rev. 8/23/13

WV GEOLOGICAL SURVEY  
MORGANTOWN, WV

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

API 47 - 017 - 06402 County Doddridge District Central  
Quad West Union 7.5' Pad Name Diane Davis Pad Field/Pool Name ----  
Farm name Davis, Jonathan, et al Well Number Twyford Unit 1H  
Operator (as registered with the OOG) Antero Resources Corportion  
Address 1615 Wynkoop St. 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 4350527m Easting 515285m  
Landing Point of Curve Northing 4350071.09m Easting 515819.63m  
Bottom Hole Northing 4348041m Easting 516663m

Elevation (ft) 824' 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 12/18/2013 Date drilling commenced 5/11/2014 Date drilling ceased 8/2/2014  
Date completion activities began 8/7/2014 Date completion activities ceased 10/23/2014  
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 90' Open mine(s) (Y/N) depths No  
Salt water depth(s) ft 1367' 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:

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API 47-017 - 06402 Farm name Davis, Jonathan, et al Well number Twyford Unit 1H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24"	20"	80'	New	94# J-55	N/A	Y
Surface	17- 1/2"	13- 3/8"	501'	New	48# H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2544'	New	36# J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4" & 8-1/2"	5-1/2"	15327'	New	23# P-110	N/A	Y
Tubing		2-3/8"	6677'		5.95# N-80	N/A	
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	300 sx	15.6	1.18	77	0'	8 Hrs.
Surface	Class A	586 sx	15.6	1.00	348	0'	8 Hrs.
Coal							
Intermediate 1	Class A	930 sx	15.6	1.00	797	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	883 sx (Lead) 1393 sx (Tail)	13.5 Lead 15.2 Tail	1.0 Lead 2.0 Tail	3043	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15330' MD, 6491' TVD (BHL); 6506' TVD (Deepest point drilled) Loggers TD (ft) 15282'  
 Deepest formation penetrated Marcellus Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 6173'

\*\* This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Shearer Unit 2H API#47-017-06359). Please reference the wireline logs submitted with Form WR-35 for Shearer Unit 2H. A Cement Bond Log has been included with this submittal.

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 \_\_\_\_\_



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API 47- 017 - 06402 Farm name Davis, Jonathan, et al Well number Twyford Unit 1H

PRODUCING FORMATION(S)	DEPTHS	
Marcellus	6336' (TOP) TVD	6662' (TOP) 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 11532 mcfpd Oil 25 bpd NGL --- bpd Water 1342 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 <sub>2</sub> S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		

**\*PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

Drilling Contractor Frontier Drilling, LLC  
Address 562 Spring Run Rd. City Pennsboro State WV Zip 26415

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 St. City Bridgeport State WV Zip 26330

Stimulating Company Haliburton  
Address 121 Champion Way, Suite 200 City Canonsburg State PA Zip 15317

Please insert additional pages as applicable.

Completed by Kara Quackenbush Telephone 303-357-7233  
Signature [Signature] Title Permit Representative Date 6/3/2015

**EXHIBIT 1**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	7-Aug-14	15,071	15,239	60	Marcellus
2	22-Sep-14	14,872	15,040	60	Marcellus
3	22-Sep-14	14,672	14,840	60	Marcellus
4	23-Sep-14	14,473	14,641	60	Marcellus
5	23-Sep-14	14,274	14,442	60	Marcellus
6	23-Sep-14	14,075	14,243	60	Marcellus
7	23-Sep-14	13,876	14,044	60	Marcellus
8	23-Sep-14	13,676	13,844	60	Marcellus
9	24-Sep-14	13,477	13,645	60	Marcellus
10	24-Sep-14	13,278	13,446	60	Marcellus
11	24-Sep-14	13,079	13,247	60	Marcellus
12	25-Sep-14	12,880	13,048	60	Marcellus
13	25-Sep-14	12,680	12,848	60	Marcellus
14	25-Sep-14	12,481	12,649	60	Marcellus
15	26-Sep-14	12,282	12,450	60	Marcellus
16	26-Sep-14	12,083	12,251	60	Marcellus
17	26-Sep-14	11,884	12,052	60	Marcellus
18	26-Sep-14	11,685	11,853	60	Marcellus
19	27-Sep-14	11,485	11,653	60	Marcellus
20	27-Sep-14	11,286	11,454	60	Marcellus
21	27-Sep-14	11,087	11,255	60	Marcellus
22	28-Sep-14	10,888	11,056	60	Marcellus
23	28-Sep-14	10,689	10,857	60	Marcellus
24	29-Sep-14	10,489	10,657	60	Marcellus
25	29-Sep-14	10,290	10,458	60	Marcellus
26	29-Sep-14	10,091	10,259	60	Marcellus
27	30-Sep-14	9,892	10,060	60	Marcellus
28	30-Sep-14	9,693	9,861	60	Marcellus
29	1-Oct-14	9,493	9,661	60	Marcellus
30	1-Oct-14	9,294	9,462	60	Marcellus
31	1-Oct-14	9,095	9,263	60	Marcellus
32	1-Oct-14	8,896	9,064	60	Marcellus
33	2-Oct-14	8,697	8,865	60	Marcellus
34	2-Oct-14	8,497	8,665	60	Marcellus
35	2-Oct-14	8,298	8,466	60	Marcellus
36	2-Oct-14	8,099	8,267	60	Marcellus
37	2-Oct-14	7,900	8,068	60	Marcellus
38	3-Oct-14	7,701	7,869	60	Marcellus
39	3-Oct-14	7,501	7,669	60	Marcellus
40	3-Oct-14	7,302	7,470	60	Marcellus
41	3-Oct-14	7,103	7,271	60	Marcellus
42	4-Oct-14	6,904	7,072	60	Marcellus
43	5-Oct-14	6,705	6,873	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	22-Sep-14	60.3	6,747	5,555	5,417	204,615	8,089	N/A
2	22-Sep-14	58.3	6,549	5,623	5,204	230,695	7,307	N/A
3	22-Sep-14	61.0	6,708	5,418	5,303	231,819	6,914	N/A
4	23-Sep-14	62.3	6,818	5,467	5,360	242,285	6,865	N/A
5	23-Sep-14	63.8	6,665	5,529	5,119	241,302	6,791	N/A
6	23-Sep-14	63.8	6,533	5,341	5,193	240,861	6,697	N/A
7	24-Sep-14	63.5	6,541	5,367	5,190	240,013	6,742	N/A
8	24-Sep-14	63.9	6,606	5,390	5,114	237,954	6,656	N/A
9	24-Sep-14	63.1	6,432	5,241	5,018	240,784	6,631	N/A
10	24-Sep-14	63.6	6,425	5,208	4,929	241,740	6,630	N/A
11	25-Sep-14	64.2	6,364	5,280	5,088	240,760	6,624	N/A
12	25-Sep-14	63.4	6,311	5,159	5,147	238,608	6,612	N/A
13	25-Sep-14	63.6	6,364	5,169	4,941	241,920	6,606	N/A
14	25-Sep-14	63.7	6,399	5,210	4,974	242,004	6,530	N/A
15	26-Sep-14	65.2	6,370	5,385	5,076	241,173	6,510	N/A
16	26-Sep-14	65.3	6,409	5,410	5,054	239,591	6,425	N/A
17	26-Sep-14	63.5	6,386	5,158	5,045	236,915	6,519	N/A
18	26-Sep-14	63.3	6,235	5,088	4,962	239,595	6,399	N/A
19	27-Sep-14	65.2	6,220	5,027	4,975	238,379	6,402	N/A
20	27-Sep-14	63.3	6,262	5,069	4,722	239,907	6,400	N/A
21	27-Sep-14	63.8	6,229	5,206	4,803	240,519	6,316	N/A
22	28-Sep-14	65.2	6,307	5,154	5,073	241,003	6,342	N/A
23	28-Sep-14	63.4	6,364	5,367	5,124	238,585	6,345	N/A
24	29-Sep-14	65.2	6,195	5,113	5,148	242,097	6,383	N/A
25	29-Sep-14	63.7	6,219	5,250	5,078	242,565	6,405	N/A
26	29-Sep-14	64.6	6,377	5,174	4,892	239,290	6,268	N/A
27	30-Sep-14	64.6	6,375	5,260	5,211	241,111	6,330	N/A
28	30-Sep-14	62.2	6,127	5,211	5,107	239,814	6,234	N/A
29	1-Oct-14	62.6	6,054	5,194	5,174	242,717	6,317	N/A
30	1-Oct-14	63.8	6,142	5,350	5,249	242,932	6,321	N/A
31	1-Oct-14	63.3	6,166	5,265	5,269	243,086	6,200	N/A
32	1-Oct-14	63.2	6,329	5,355	5,188	238,498	6,123	N/A
33	2-Oct-14	63.3	6,238	5,494	5,215	239,368	6,110	N/A
34	2-Oct-14	65.2	6,088	5,261	5,334	243,362	6,148	N/A
35	2-Oct-14	65.2	6,163	5,135	5,245	241,804	6,100	N/A
36	2-Oct-14	61.9	6,101	5,459	5,315	240,523	6,062	N/A
37	3-Oct-14	62.7	6,009	5,258	5,197	241,367	6,093	N/A
38	3-Oct-14	65.6	5,940	5,139	5,240	243,382	5,988	N/A
39	3-Oct-14	65.0	6,017	5,217	5,108	240,006	5,961	N/A
40	3-Oct-14	57.2	5,861	5,589	5,347	236,703	5,908	N/A
41	3-Oct-14	62.9	5,984	5,116	5,256	240,214	5,968	N/A
42	4-Oct-14	62.9	5,973	5,029	5,291	240,443	5,979	N/A
43	4-Oct-14	65.2	6,043	6,103	5,317	239,387	6,020	N/A
<b>AVG=</b>		<b>63.4</b>	<b>6,294</b>	<b>5,298</b>	<b>5,140</b>	<b>10,289,696</b>	<b>276,270</b>	<b>TOTAL</b>

**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	90'	N/A	90'	N/A
Sandstone/ Shale	0	407	0	407
Sand Shale/ Trace Coal	est. 407	457	est. 407	457
Sandstone/ Limestone	est. 457	567	est. 457	567
Sandstone	est. 567	667	est. 567	667
Sandstone/ Limestone	est. 667	707	est. 667	707
Sandstone/ Siltstone	est. 707	807	est. 707	807
Sandstone/ Limestone	est. 807	927	est. 807	927
Shale	est. 927	947	est. 927	947
Sandstone/ Shale	est. 947	1147	est. 947	1147
Sandstone/ Trace Coal	est. 1147	1507	est. 1147	1507
Sandstone/ Siltstone	est. 1507	1567	est. 1507	1567
Sandstone/ Trace Coal	est. 1567	1587	est. 1567	1587
Sandstone/ Siltstone	est. 1587	1689	est. 1587	1690
Big Lime	1689	1819	1690	1820
Big Injun	1819	2202	1820	2204
Gantz Sand	2202	2342	2204	2343
Fifty Foot Sandstone	2342	2425	2343	2426
Gordon	2425	2757	2426	2759
Fifth Sandstone	2757	2793	2759	2795
Bayard	2793	3148	2795	3150
Warren	3148	3522	3150	3523
Speechley	3522	3825	3523	3828
Baltown	3825	4255	3828	4279
Bradford	4255	4710	4279	4772
Benson	4710	4920	4772	5004
Alexander	4920	5206	5004	5320
Elk	5206	5645	5320	5798
Rhinestreet	5645	5968	5798	6147
Sycamore	5968	6141	6147	6346
Middlesex	6141	6266	6346	6522
Burkett	6266	6297	6522	6578
Tully	6297	6336	6578	6662
Marcellus	6336	NA	6662	NA

\*Please note Antero determines shallow formation tops based on mud and/or wireline logs that are only run on one well on a multi-well pad. The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

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# Hydraulic Fracturing Fluid Product Component Information Disclosure



**Frac Focus**  
Chemical Disclosure Registry



Job Start Date:	9/22/2014
Job End Date:	10/4/2014
State:	West Virginia
County:	Doddridge
API Number:	47-017-06402-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Twyford Unit 1H
Longitude:	-80.82272200
Latitude:	39.30399400
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,506
Total Base Water Volume (gal):	12,339,349
Total Base Non Water Volume:	0

## Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Fresh Water	Operator	Base Fluid	Fresh Water	7732-18-5	100.00000	90.60293	Density = 8.330
SAND - PREMIUM WHITE	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00000	8.24341	
SSA-2	Halliburton	Proppant	Crystalline silica, quartz	14808-60-7	100.00000	0.76712	
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
HYDROCHLORIC ACID 10-30%	Halliburton	Solvent	Guar gum	9000-30-0	100.00000	0.10942	
FR-66	Halliburton	Friction Reducer	Hydrochloric acid	7647-01-0	30.00000	0.05917	
SP BREAKER	Halliburton	Breaker	Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01651	
Scalechek® LP-65 Scale Inhibitor	Halliburton	Scale Inhibitor	Sodium persulfate	7775-27-1	100.00000	0.00232	
BE-9	Halliburton	Biocide	Ammonium chloride	12125-02-9	10.00000	0.00141	



LCA-1	Halliburton	Solvent	Tributyl tetradecyl phosphonium chloride	81741-28-8	10.00000	0.00077	
			Paraffinic solvent	Confidential	100.00000	0.00052	Denise Tuck, Halliburton 3000 N. Sam Houston Pkwy E., Houston, TX 77032 281-871-6226
HAL-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
			Methanol	67-56-1	60.00000	0.00010	
			Propargyl alcohol	107-19-7	10.00000	0.00002	
Ingredients shown above are subject to 29 CFR 1910.1200(j) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
		Other Ingredient(s)					
		Other Ingredient(s)	Water	7732-18-5		0.24647	
		Other Ingredient(s)	Polyacrylamide copolymer	Confidential		0.01651	
		Other Ingredient(s)	Organic phosphonate	Confidential		0.00848	
			Bentonite, benzyl(hydrogenated tallow alkyl) dimethylammonium stearate complex	121888-68-4		0.00547	
		Other Ingredient(s)	Ammonium chloride	12125-02-9		0.00275	
		Other Ingredient(s)	Sodium chloride	7647-14-5		0.00275	
		Other Ingredient(s)	Alcohols, C12-16, ethoxylated	38551-12-2		0.00275	
		Other Ingredient(s)	Fatty acid tall oil amide	Confidential		0.00275	
		Other Ingredient(s)	Surfactant mixture	Confidential		0.00109	
		Other Ingredient(s)	Surfactant mixture	Confidential		0.00109	
		Other Ingredient(s)	Silica gel	112926-00-8		0.00109	
		Other Ingredient(s)	Sorbitan monooleate polyoxyethylene derivative	9005-65-6		0.00055	
		Other Ingredient(s)	Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8		0.00055	
		Other Ingredient(s)	Formaldehyde	50-00-0		0.00014	
		Other Ingredient(s)	Crystalline Silica, Quartz	14808-60-7		0.00011	

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			Fatty acids, tall oil	Confidential		0.00005
	Other Ingredient(s)		Alcohols, C14-C15, ethoxylated	68951-67-7		0.00005
	Other Ingredient(s)		Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1		0.00005
	Other Ingredient(s)		Olefins	Confidential		0.00001
	Other Ingredient(s)		Olefins	Confidential		0.00001
	Other Ingredient(s)		Sodium sulfate	7757-82-6		0.00000
	Other Ingredient(s)		Olefins	Confidential		0.00000
	Other Ingredient(s)		Olefins	Confidential		0.00000

\* 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°20'00"

8,836'

LATITUDE 39°17'30"

LONGITUDE 80°47'30"

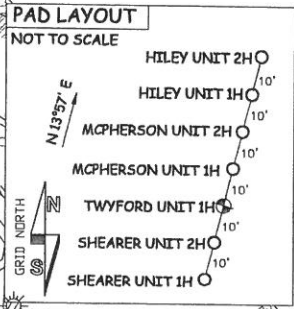
10,715'

LONGITUDE 80°47'30"

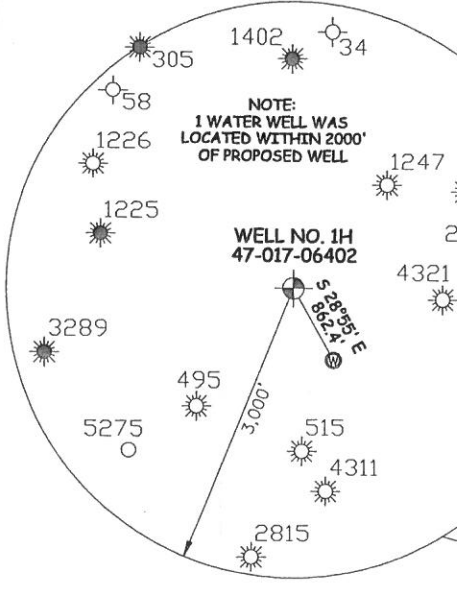
Antero Resources Corporation  
Well No. Twyford Unit 1H  
47-017-06402 (AS DRILLED)

AS DRILLED DATA:  
WELL 1H TOP HOLE INFORMATION:  
N: 295,558ft E: 1,625,659ft  
LAT: 39°18'14.10" LON: 80°49'22.41"  
BOTTOM HOLE INFORMATION:  
N: 287,324ft E: 1,630,045ft  
LAT: 39°16'53.35" LON: 80°48'25.09"  
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: 4,350,527m E: 515,285m  
BOTTOM HOLE INFORMATION:  
N: 4,348,041m E: 516,663m



- 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.



JOB # 13-080WA  
DRAWING # TWYFORD1HAD  
SCALE 1" = 1000'  
MINIMUM DEGREE OF ACCURACY SUBMETER  
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS



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

WILLOW LAND SURVEYING PLLC  
P.O. BOX 17  
PENNBSORO, WV 26415

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

DATE 05/18/15  
OPERATOR'S WELL# TWYFORD UNIT #1H

API WELL # 47 - 017 - 06402  
STATE COUNTY PERMIT

QUADRANGLE WEST UNION 7.5' DISTRICT CENTRAL COUNTY DODDRIDGE

SURFACE OWNER JONATHAN DAVIS ET AL ACREAGE 35.21 ACRES +/-

OIL & GAS ROYALTY OWNER V. KARIN OSBOURN HOLLIS; FLORA SWEENEY; WILLIAM JOHN WILSON; LEASE ACREAGE 79.09 AC±; 103 AC±; 29.4 AC±; CORLIS P. HUDSON ET AL; WVSRA; ROBERTA WALKER ET AL; RUBY FARR MAXWELL ET AL; RUTH D. ROGERS; MAYME TWYFORD 488.7 AC±; 301.19 AC±; 109 AC±; 45 AC±; 20 AC±; 71 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 6,490' TVD 15,330' MD WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM ADDRESS 1615 WYNKOOP STREET DENVER, CO 80202 ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313