

APPROVED
NAME: *Michael Hoff*
DATE: *1/27/14*

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

API 47-085-10164 County Ritchie District Clay
Quad Pennsboro 7.5' Pad Name Walnut West Pad Field/Pool Name ----
Farm name Walnut Investments Co. Well Number Noland 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 4351536m Easting 500177m
Landing Point of Curve Northing 4351369.51m Easting 500664.76m
Bottom Hole Northing 4349204m Easting 501525m

Elevation (ft) 1121' 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 11/25/2014 Date drilling commenced 12/27/2014 Date drilling ceased 4/27/2015
Date completion activities began 6/23/2015 Date completion activities ceased 9/18/2015
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 130', 310' Open mine(s) (Y/N) depths N
Salt water depth(s) ft None Void(s) encountered (Y/N) depths N
Coal depth(s) ft 1558' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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Reviewed by:
WS ozlojka Ax'd
02/05/2016

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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"	40'	New	94#/H-40	N/A	Y
Surface	17-1/2"	13-3/8"	589'	New	48#/H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2514'	New	36#/J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	14,882'	New	23#/P-110	N/A	Y
Tubing		2-3/8"	6689'		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	150 sx	15.6	1.18	38 Cu. Ft.	0'	8 Hrs.
Surface	Class A	702 sx	15.6	1.18	409 Cu. Ft.	0'	8 Hrs.
Coal							
Intermediate 1	Class A	967 sx	15.6	1.18	787 Cu. Ft.	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	895 sx (Lead), 1321 sx (Tail)	13.17 (Lead), 15.04 (Tail)	1.44 (Lead), 1.80 (Tail)	2948 Cu. Ft.	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 14,882' MD, 6405' TVD Loggers TD (ft) 14,834' MD
 Deepest formation penetrated Marcellus Shale Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 6259'

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

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)

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)

SEE ATTACHED EXHIBIT 2

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Please insert additional pages as applicable.

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6296' (Top)</u> TVD	<u>6664' (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 11,135 mcfpd Oil 109 bpd NGL --- bpd Water 1 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	
	0		0		
			SEE ATTACHED EXHIBIT 3		

Please insert additional pages as applicable.

Drilling Contractor Patterson - UTI Drilling Company LLC
 Address 207 Carton 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 Natalie Komp Telephone 303-357-6820
 Signature _____ Title Permitting Agent Date 1/11/2015

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

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API 47-085-10164 Farm Name Walnut Investments Co. Well Number Noland Unit 1H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	23-Jun-15	14,573	14,743	60	Marcellus
2	8-Jul-15	14,372	14,542	60	Marcellus
3	9-Jul-15	14,170	14,340	60	Marcellus
4	9-Jul-15	13,968	14,138	60	Marcellus
5	9-Jul-15	13,767	13,937	60	Marcellus
6	9-Jul-15	13,565	13,735	60	Marcellus
7	10-Jul-15	13,363	13,533	60	Marcellus
8	10-Jul-15	13,162	13,332	60	Marcellus
9	10-Jul-15	12,960	13,130	60	Marcellus
10	10-Jul-15	12,758	12,928	60	Marcellus
11	11-Jul-15	12,557	12,727	60	Marcellus
12	11-Jul-15	12,355	12,525	60	Marcellus
13	11-Jul-15	12,153	12,323	60	Marcellus
14	12-Jul-15	11,952	12,122	60	Marcellus
15	12-Jul-15	11,750	11,920	60	Marcellus
16	12-Jul-15	11,548	11,718	60	Marcellus
17	12-Jul-15	11,347	11,517	60	Marcellus
18	12-Jul-15	11,145	11,315	60	Marcellus
19	13-Jul-15	10,943	11,114	60	Marcellus
20	13-Jul-15	10,742	10,912	60	Marcellus
21	13-Jul-15	10,540	10,710	60	Marcellus
22	13-Jul-15	10,338	10,509	60	Marcellus
23	14-Jul-15	10,137	10,307	60	Marcellus
24	14-Jul-15	9,935	10,105	60	Marcellus
25	14-Jul-15	9,734	9,904	60	Marcellus
26	15-Jul-15	9,532	9,702	60	Marcellus
27	15-Jul-15	9,330	9,500	60	Marcellus
28	15-Jul-15	9,129	9,299	60	Marcellus
29	16-Jul-15	8,927	9,097	60	Marcellus
30	16-Jul-15	8,725	8,895	60	Marcellus
31	16-Jul-15	8,524	8,694	60	Marcellus
32	16-Jul-15	8,322	8,492	60	Marcellus
33	16-Jul-15	8,120	8,290	60	Marcellus
34	17-Jul-15	7,919	8,089	60	Marcellus
35	17-Jul-15	7,717	7,887	60	Marcellus
36	17-Jul-15	7,515	7,685	60	Marcellus
37	17-Jul-15	7,314	7,484	60	Marcellus
38	17-Jul-15	7,112	7,282	60	Marcellus
39	18-Jul-15	6,910	7,080	60	Marcellus
40	18-Jul-15	6,709	6,879	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-Jul-15	52.9	7,233	N/A	4,613	73,200	6,782	N/A
2	8-Jul-15	66.8	7,359	5,918	4,624	226,265	7,247	N/A
3	9-Jul-15	65.6	7,250	5,744	5,000	234,500	6,880	N/A
4	9-Jul-15	66.3	7,066	5,525	4,749	195,800	7,255	N/A
5	9-Jul-15	66.8	7,204	6,412	4,714	233,220	6,923	N/A
6	9-Jul-15	66.9	7,302	5,826	4,363	223,592	7,199	N/A
7	10-Jul-15	67.5	7,033	5,869	5,103	225,000	6,725	N/A
8	10-Jul-15	65.3	6,865	5,615	5,289	245,600	6,588	N/A
9	10-Jul-15	63.8	6,902	5,994	4,317	225,530	6,365	N/A
10	10-Jul-15	72.3	7,393	5,436	4,857	175,950	6,421	N/A
11	11-Jul-15	66.7	7,198	5,847	5,265	242,405	6,509	N/A
12	11-Jul-15	67.8	6,841	6,108	5,472	244,600	6,474	N/A
13	11-Jul-15	67.2	6,880	6,008	4,617	197,100	5,690	N/A
14	12-Jul-15	68.3	6,793	5,976	5,622	244,850	6,490	N/A
15	12-Jul-15	64.2	6,982	6,663	5,025	209,600	7,043	N/A
16	12-Jul-15	67.7	6,822	6,001	3,144	245,780	6,470	N/A
17	12-Jul-15	68.2	6,585	5,631	3,798	241,880	6,464	N/A
18	12-Jul-15	68.8	6,835	5,908	4,732	180,824	6,348	N/A
19	13-Jul-15	68.5	6,822	5,741	4,091	237,600	7,017	N/A
20	13-Jul-15	69.6	6,583	5,987	3,941	229,000	6,916	N/A
21	13-Jul-15	68.3	6,485	5,794	4,574	224,415	6,943	N/A
22	13-Jul-15	68.2	6,813	5,393	4,860	242,120	6,332	N/A
23	14-Jul-15	68.7	6,716	5,254	4,867	244,590	6,389	N/A
24	14-Jul-15	68.0	6,595	5,341	4,892	190,500	6,744	N/A
25	14-Jul-15	68.7	6,574	5,291	4,847	243,280	6,881	N/A
26	15-Jul-15	67.1	6,789	5,132	4,759	245,100	6,311	N/A
27	15-Jul-15	68.3	6,493	5,303	5,379	234,900	6,916	N/A
28	15-Jul-15	66.1	7,031	5,591	5,046	184,500	6,808	N/A
29	16-Jul-15	69.2	6,409	6,026	3,823	243,245	6,259	N/A
30	16-Jul-15	43.9	8,411	7,799	4,463	21,200	6,329	N/A
31	16-Jul-15	57.3	8,067	7,344	4,556	63,300	6,693	N/A
32	16-Jul-15	53.2	8,028	6,988	4,419	70,935	6,779	N/A
33	16-Jul-15	64.8	7,265	6,514	4,351	243,810	6,252	N/A
34	17-Jul-15	64.7	7,261	6,237	4,194	164,500	6,231	N/A
35	17-Jul-15	58.8	7,162	6,402	4,342	181,500	6,835	N/A
36	17-Jul-15	30.9	5,946	6,409	4,506	175,600	6,786	N/A
37	17-Jul-15	42.8	8,521	6,384	4,734	5,795	5,667	N/A
38	17-Jul-15	48.7	8,123	6,087	4,866	19,255	6,516	N/A
39	18-Jul-15	65.9	6,639	6,248	3,934	152,600	6,535	N/A
40	18-Jul-15	52.7	5,840	6,248	4,531	126,100	6,712	N/A
	AVG=	63.2	7,028	6,000	4,632	7,609,541	264,724	TOTAL

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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	130	N/A	130	N/A
Fresh Water	310	N/A	310	N/A
Sandstone	0	422	0	422
Shale	422	638	422	638
Siltstone	638	736	638	736
Shale	736	756	736	756
Limestone	756	780	756	780
Shale	780	798	780	798
Sandstone	798	818	798	818
Shale	818	838	818	838
Sandstone	838	858	838	858
Shale	858	1,047	858	1,047
Sandstone	1,047	1,218	1,047	1,218
Trace Coal/Sandstone	1,218	1,238	1,218	1,238
Shale	1,238	1,318	1,238	1,318
Sandstone	1,318	1,458	1,318	1,458
Shale/Trace Coal	1,458	1,478	1,458	1,478
Shale	1,478	1,514	1,478	1,514
Sandstone	1,514	1,558	1,514	1,558
Coal	1,558	1,578	1,558	1,578
Sandstone	1,578	1,658	1,578	1,658
Shale/Trace Coal	1,658	1,678	1,658	1,678
Silty Shale	1,678	1,738	1,678	1,738
Sandstone	1,738	1,858	1,738	1,858
Shale	1,858	1,901	1,858	1,901
Limestone	1,901	1,919	1,901	1,919
Shale	1,919	1,973	1,919	1,975
Big Lime	1,973	2,156	1,975	2,157
Big Injun	2,156	2,526	2,157	2,528
Gantz Sand	2,526	2,851	2,528	2,852
Fifty Foot Sandstone	2,851	2,965	2,852	2,966
Gordon	2,965	3,420	2,966	3,422
Fifth Sandstone	3,420	3,494	3,422	3,497
Bayard	3,494	3,909	3,497	3,922
Speechley	3,909	4,166	3,922	4,199
Baltown	4,166	4,619	4,199	4,705
Bradford	4,619	4,972	4,705	5,099
Benson	4,972	5,201	5,099	5,355
Alexander	5,201	5,501	5,355	5,686
Elk	5,501	5,744	5,686	5,956
Rhinestreet	5,744	6,081	5,956	6,337
Sycamore	6,081	6,167	6,337	6,443
Middlesex	6,167	6,264	6,443	6,592
Burkett	6,264	6,289	6,592	6,646
Tully	6,289	6,296	6,646	6,664
Marcellus	6,296	NA	6,664	NA

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	7/8/2015
Job End Date:	7/18/2015
State:	West Virginia
County:	Ritchie
API Number:	47-085-10164-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Noland Unit 1H
Longitude:	-80.99794700
Latitude:	39.31322200
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,407
Total Base Water Volume (gal):	11,542,196
Total Base Non Water Volume:	413,729



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					
			Water	7732-18-5	100.00000	92.20923	
Sand	U.S. Well Services, LLC	Proppant					
			Crystalline Silica, quartz	14808-60-7	100.00000	7.28917	
HCL Acid (12.6%-18.0%)	U.S. Well Services, LLC	Bulk Acid					
			Water	7732-18-5	87.50000	0.18157	
			Hydrogen Chloride	7647-01-0	18.00000	0.04337	
LGC-15	U.S. Well Services	Gelling Agents					
			Guar Gum	9000-30-0	50.00000	0.06909	
			Petroleum Distillates	64742-47-8	60.00000	0.06543	
			Suspending agent (solid)	14808-60-7	3.00000	0.01057	
			Surfactant	68439-51-0	3.00000	0.00415	
WFRA-405	U.S. Well Services	Friction Reducer					
			Water	7732-18-5	40.00000	0.03260	
			Anionic Polyacrylamide	Proprietary	40.00000	0.03260	
			Sodium Chloride	7647-14-5	20.00000	0.01630	
			Petroleum Distillates	64742-47-8	20.00000	0.01312	
			Ethoxylated alcohol blend	Proprietary	5.00000	0.00408	

Disclosure
 Date: 7/18/2015
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SI-1100	U.S. Well Services	Scale Inhibitor				
			Water	7732-18-5	80.00000	0.01061
			Ethylene Glycol	107-21-1	25.00000	0.00375
			Copolymer of Maleic and Acrylic acid	52255-49-9	10.00000	0.00156
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	7.50000	0.00134
			Hexamethylene tramine penta (methylene phosphonic acid)	34690-00-1	5.00000	0.00086
			Phosphino carboxylic acid polymer	71050-62-9	5.00000	0.00086
			Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5	2.00000	0.00034
K-BAC 1020	U.S. Well Services	Anti-Bacterial Agent				
			2,2-dibromo-3-nitropropionamide	10222-01-2	20.00000	0.00443
			Deionized Water	7732-18-5	28.00000	0.00253
AP One	U.S. Well Services	Gel Breakers				
			Ammonium Persulfate	7727-54-0	100.00000	0.00206
AI-301	U.S. Well Services	Acid Corrosion Inhibitors				
			Diethylene Glycol	111-46-6	30.00000	0.00014
			Methenamine	100-97-0	20.00000	0.00011
			Hydrogen Chloride	7647-01-0	10.00000	0.00005
			Polyethylene polyamine	68603-67-8	10.00000	0.00004
			Coco amine	61791-14-8	5.00000	0.00002

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.

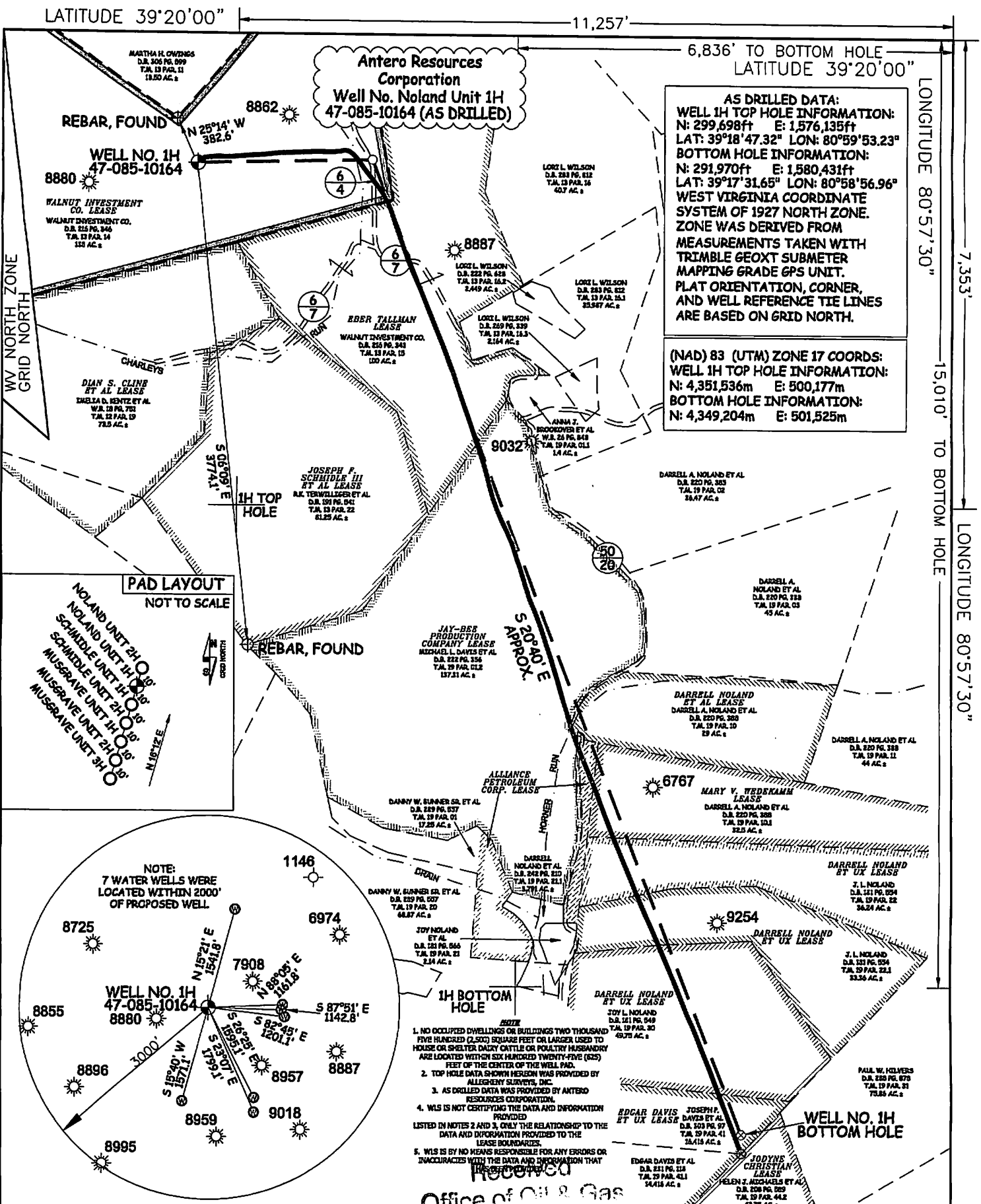
* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** 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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AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
 N: 299,698ft E: 1,576,135ft
 LAT: 39°18'47.32" LON: 80°59'53.23"
BOTTOM HOLE INFORMATION:
 N: 291,970ft E: 1,580,431ft
 LAT: 39°17'31.65" LON: 80°58'56.96"
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: 4,351,536m E: 500,177m
BOTTOM HOLE INFORMATION:
 N: 4,349,204m E: 501,525m

PAD LAYOUT
 NOT TO SCALE

NOLAND UNIT 2H 0.6
 NOLAND UNIT 1H 0.6
 SCHMIDLE UNIT 2H 0.6
 MUSGRAVE UNIT 1H 0.6
 MUSGRAVE UNIT 3H 0

1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POLTRY 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 RECORDS.
5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

JOB # 13-009WA
 DRAWING # NOLAND1HAD
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY SUBMETER
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS



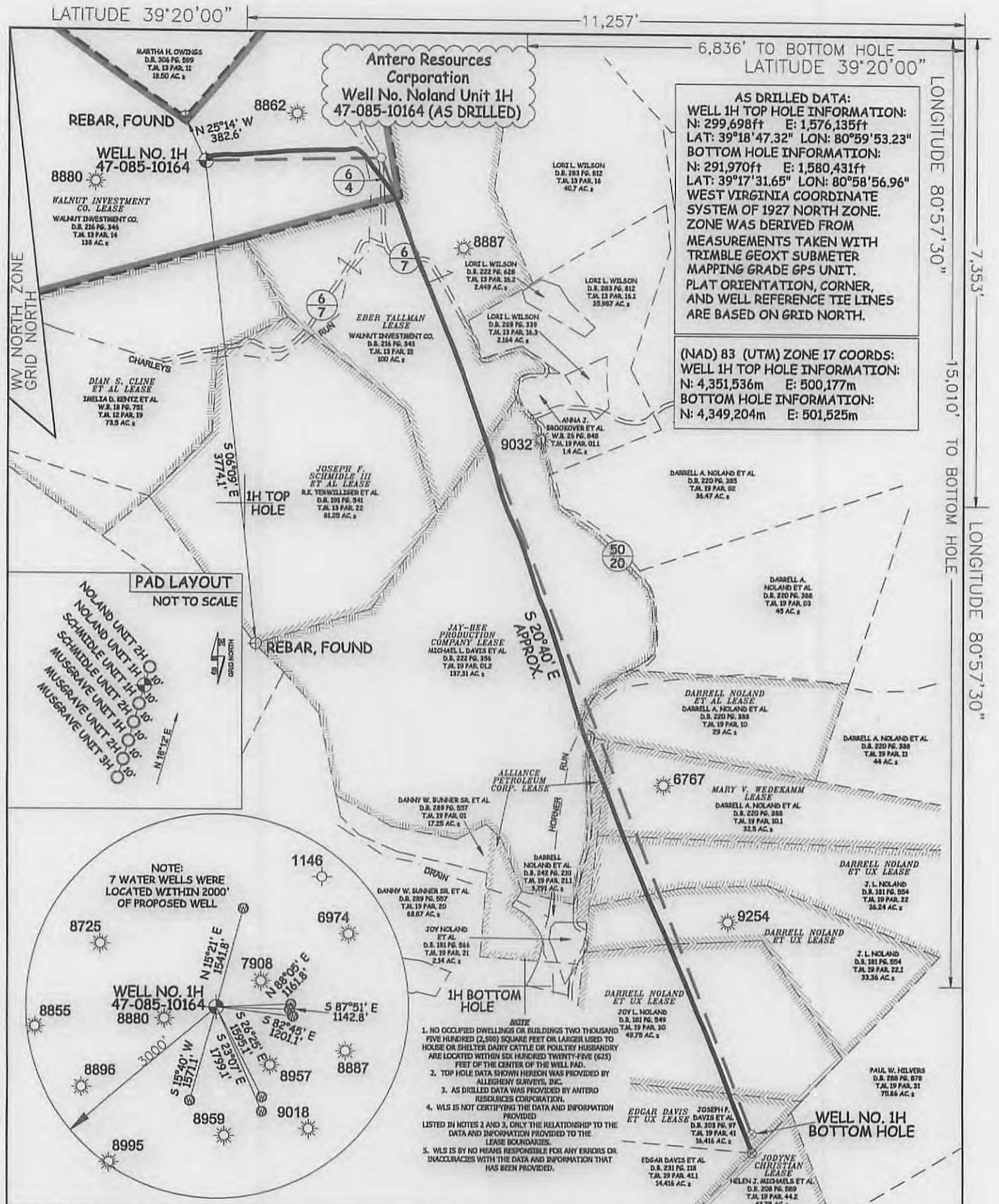
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 STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
 WILLOW LAND SURVEYING PLLC
 266 HUSHERS RUN RD PENNSBORO WEST VIRGINIA 26415

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

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS
 WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
 LOCATION: ELEVATION 1,142' ORIGINAL - 1,121' AS DRILLED WATERSHED NORTH FORK HUGHES RIVER
 QUADRANGLE PENNSBORO 7.5' DISTRICT CLAY COUNTY RITCHIE
 SURFACE OWNER WALNUT INVESTMENTS CO. ACREAGE 138 ACRES +/-
 OIL & GAS ROYALTY OWNER WALNUT INVESTMENT CO.; EBER TALLMAN; JAY-BEE PRODUCTION CO.; DARRELL NOLAND ET AL; LEASE ACREAGE 288 ACRES; 30 ACRES; 137.31 ACRES; 29 ACRES;
ALLIANCE PETROLEUM CORP.; MARY V. WEDEKAM; DARRELL NOLAND ET UX; DARRELL NOLAND ET UX; EDGAR DAVIS ET UX; JODYNE CHRISTIAN 16 ACRES; 33 ACRES; 32 ACRES; 33 ACRES; 48.5 ACRES; 50 ACRES; 43.75 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 6,404' TVD 14,882 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

02/05/2016

COUNTY NAME
 PERMIT



AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
 N: 299,698ft E: 1,576,135ft
 LAT: 39°18'47.32" LON: 80°59'53.23"
BOTTOM HOLE INFORMATION:
 N: 291,970ft E: 1,580,431ft
 LAT: 39°17'31.65" LON: 80°58'56.96"
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE.
 SYSTEM 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: 4,351,536m E: 500,177m
BOTTOM HOLE INFORMATION:
 N: 4,349,204m E: 501,525m

PAD LAYOUT
 NOT TO SCALE

NOTE:
 7 WATER WELLS WERE LOCATED WITHIN 2000' OF PROPOSED WELL.

- NOTE**
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER BARRY 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 # 13-009WA
 DRAWING # NOLAND1HAD
 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
 WELL TYPE: OIL ___ GAS LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS") PRODUCTION STORAGE ___ DEEP ___ SHALLOW
 LOCATION: ELEVATION 1,142' ORIGINAL - 1,121' AS DRILLED WATERSHED NORTH FORK HUGHES RIVER
 QUADRANGLE PENNSBORO 7.5' DISTRICT CLAY COUNTY RITCHIE
 SURFACE OWNER WALNUT INVESTMENTS CO. ACREAGE 138 ACRES +/-
 OIL & GAS ROYALTY OWNER WALNUT INVESTMENT CO.; EBER TALLMAN; JAY-BEE PRODUCTION CO.; DARRELL NOLAND ET AL.; LEASE ACREAGE 238 ACRES +/-; 90 ACRES +/-; 137.31 ACRES +/-; 29 ACRES +/-
 ALLIANCE PETROLEUM CORP.; MARY V. WEDEKAMM; DARRELL NOLAND ET UX; DARRELL NOLAND ET UX; DARRELL NOLAND ET UX; EDGAR DAVIS ET UX; JOYDNE CHRISTIAN 16 ACRES +/-; 33 ACRES +/-; 32 ACRES +/-; 33 ACRES +/-; 48.5 ACRES +/-; 50 ACRES +/-; 43.75 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 6,404' TVD 14,882 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



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
 WILLOW LAND SURVEYING PLLC
 266 HUSHERS RUN RD PENNSBORO WEST VIRGINIA 26415

LEGEND

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

DATE 08/04/14
 OPERATOR'S WELL# NOLAND UNIT #1H
 API WELL # 47 - 085 - 10164
 STATE COUNTY PERMIT
 02/05/2016



Antero Resources
1615 Wynkoop Street
Denver, CO 80202
Office 303.357.7310
Fax 303.357.7315

January 12, 2016

West Virginia Department of Environmental Protection
Office of Oil and Gas
Attn: John Kearney
601 57th Street
Charleston, WV 25304

Mr. Kearney:

Please find enclosed the data collected as part of Antero's Ritchie County Addendums. Please include this information as a supplement to the previously submitted Final Well Operator's Report of Well Work, Form WR-35 for the following wells:

- Musgrave Unit 1H (API# 47-085-10163) – Walnut West Pad
- Musgrave Unit 2H (API# 47-085-10191) – Walnut West Pad
- Noland Unit 1H (API# 47-085-10164) – Walnut West Pad
- Schmidle Unit 1H (API# 47-085-10042) – Walnut West Pad

If you have any questions please feel free to contact me at (303) 357-6820.

Sincerely,

A handwritten signature in blue ink that reads "Natalie Komp". The signature is fluid and cursive, with a long, sweeping tail.

Natalie Komp
Permitting Agent
Antero Resources Corporation

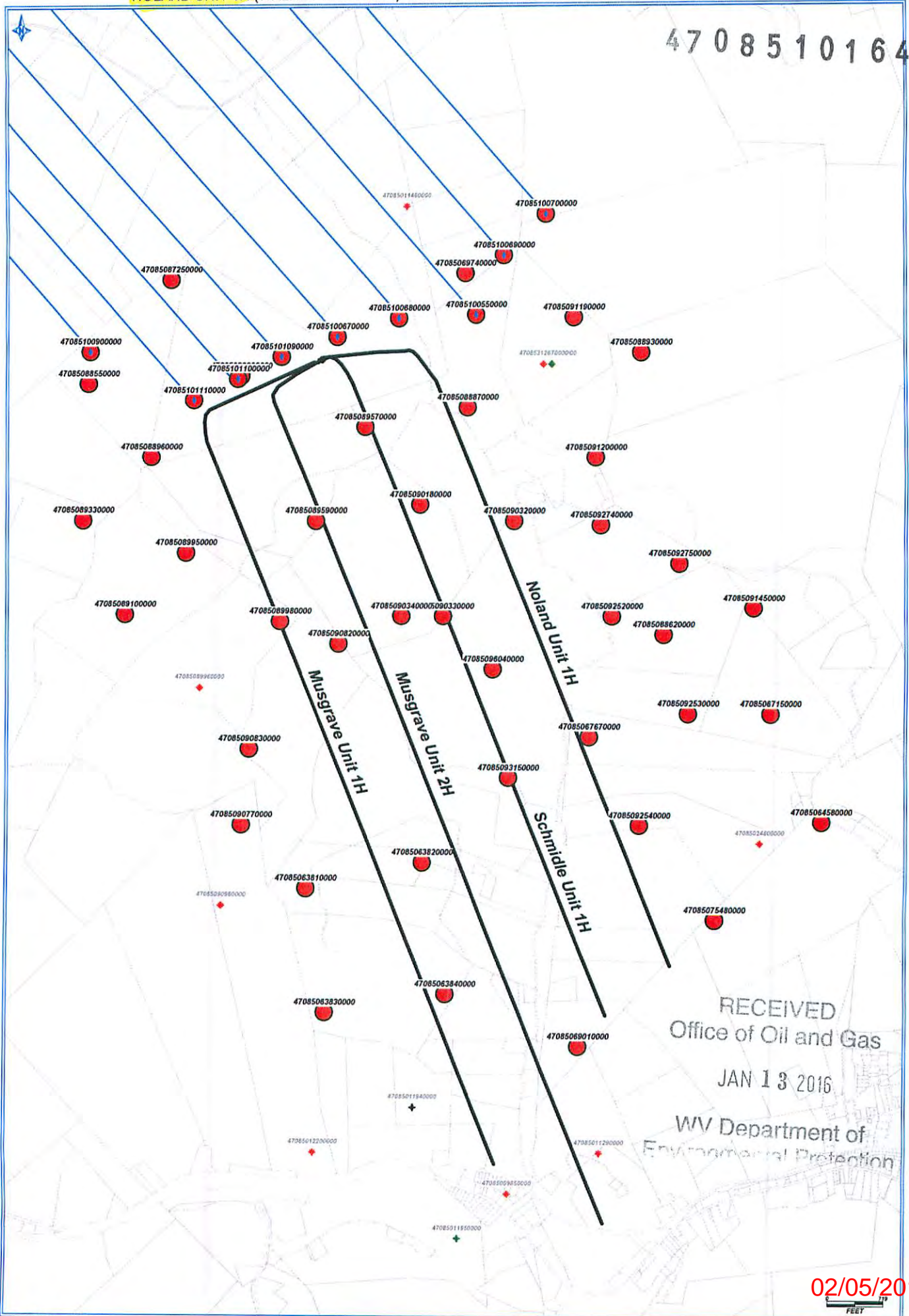
RECEIVED
Office of Oil and Gas
JAN 13 2016

WV Department of
Environmental Protection

Enclosures

02/05/2016

4708510164



02/05/2016

NOLAND UNIT 1H (WALNUT WEST PAD) - DATA COLLECTED ON OFFSET WELLS PER ADDENDUM

UWI (API#)	Well Name	Well Number	Operator	Historical Operator	TD	ELEV_GR	TD (SSTVD)	Perfs (shallowest, deepest)
4708510050000	KISSLING TERRY & H	PEN2ZHS	NOBLE ENERGY INC	NOBLE ENERGY INC	16598	1084	-15314	MRCL Horizontal well
47085100670000	KISSLING TERRY & H	PEN2AHS	NOBLE ENERGY INC	NOBLE ENERGY INC	16397	1081	-15316	MRCL Horizontal well
47085100690000	KISSLING TERRY & H	PEN2DHS	NOBLE ENERGY INC	NOBLE ENERGY INC	16273	1084	-15189	MRCL Horizontal well
47085100680000	KISSLING TERRY & H	PEN2BHS	NOBLE ENERGY INC	NOBLE ENERGY INC	16010	1084	-14926	MRCL Horizontal well
47085100700000	KISSLING TERRY & H	PEN2EHS	NOBLE ENERGY INC	NOBLE ENERGY INC	15953	1084	-14869	MRCL Horizontal well
47085101090000	COKELEY LAWRENCE &	PEN 20 BHS	NOBLE ENERGY INC	NOBLE ENERGY INC	15247	1081	-14166	MRCL Horizontal well
47085101100000	COKELEY LAWRENCE &	PEN 20 CHS	NOBLE ENERGY INC	NOBLE ENERGY INC	14921	1081	-13840	MRCL Horizontal well
47085101110000	COKELEY LAWRENCE &	PEN 20 DHS	NOBLE ENERGY INC	NOBLE ENERGY INC	14892	1081	-13771	MRCL Horizontal well
47085100900000	COKELEY LAWRENCE &	PEN 20 HHS	NOBLE ENERGY INC	NOBLE ENERGY INC	13237	1081	-12156	MRCL Horizontal well
47085067570000	WEDEKEMANN MARY V	WK-303	ROSS & WHARTON	KEPCO INCORPORATED	5979	1085	-4894	4936'-4938' (Benson), 5796'-5889' (Rhinstreet)
47085069749000	HUFFORD DWIGHT	JK-957	PETROLEUM DEV CORP	J & J ENTERPRISES	5995	1118	-4877	4935'-4937' (Benson), 5784'-5874' (Rhinstreet)
47085064580000	HAZELBAKER BRENDEN	1	MAY GAS CO	RARE EARTH ENERGY	5987	1144	-4843	4995'-5284' (Java/Angola), 5352'-5810' (Rhinstreet)
47085064590000	HAZELBAKER BRENDEN	2	RARE EARTH MINERALS	RARE EARTH ENERGY	5900	1086	-4814	no perfs recorded
47085073480000	HAZELBAKER BRENDEN	2	MAY GAS CO	RARE EARTH ENERGY	5450	1086	-4364	2062'-2440' (Big Injun/Welr), 5216'-5220' (Alexander)
47085069010000	HAYHURST ELLA D	1	MAY GAS CO	RARE EARTH ENERGY	5290	964	-4326	3381'-3440' (Berea/L Huron), 4496'-4846' (Java)
47085091190000	WILSON LORI	1	KEY OIL COMPANY	KEY OIL COMPANY	5438	1154	-4284	4988'-4991' (Benson)
47085067150000	GIEBELL C E & MARY	1	LIPPZAN PETRO INCOR	STALNAKER GENE INC	5363	1105	-4258	3507'-3686' (Berea/L Huron), 4843'-5245' (Angola)
47085087250000	BAKER	1	KEY OIL COMPANY	KEY OIL COMPANY	5332	1077	-4255	4883'-4901' (Benson)
47085090770000	RAINES	1	ZICKEFOOSE W F & R L	BOWIE INC	5276	1028	-4248	1976'-2002' (Big Injun), 4856'-4860' (Benson)
47085063830000	GIEBELL C E & MARY	3	LIPPZAN PETRO INCOR	STALNAKER GENE INC	5211	987	-4224	3412'-3813' (Berea/L Huron), 4503'-5158' (Angola)
47085063840000	GIEBELL C E & MARY	4	LIPPZAN PETRO INCOR	STALNAKER GENE INC	5215	1001	-4214	3393'-4207' (Berea/L Huron), 4207'-5136' (Angola)
47085090830000	GIEBELL	5	KEY OIL COMPANY	KEY OIL COMPANY	5130	1030	-4100	4861'-4875' (Benson)
47085089950000	ANDERSON M A	3	GASSEARCH CORPORATN	GASSEARCH CORPORATN	5204	1121	-4083	1776'-1825' (Maxton), 4608'-4953' (Riley/Benson)
47085089100000	ANDERSON M A	1	GASSEARCH CORPORATN	GASSEARCH CORPORATN	5108	1059	-4049	1884'-2063' (Big Injun), 4561'-4888' (Riley/Benson)
47085089980000	ANDERSON M A	2	GASSEARCH CORPORATN	GASSEARCH CORPORATN	5170	1127	-4043	2461'-2960' (Welr/Gordon), 4639'-4970' (Riley/Benson)
47085096040000	GIEBELL	7	KEY OIL COMPANY	KEY OIL	5060	1031	-4029	4874'-4877' (Benson)
47085092530000	NOLAND	2	KEY OIL COMPANY	KEY OIL COMPANY	5097	1076	-4021	4946'-4949' (Benson)
47085091450000	MAPLE	1	KEY OIL COMPANY	KEY OIL COMPANY	5153	1134	-4019	4991'-4994' (Benson)
47085092740000	NOLAND	6	KEY OIL COMPANY	KEY OIL COMPANY	5129	1118	-4011	1973' (Big Injun), 4972'-4975' (Benson)
47085093150000	GIEBELL	6	KEY OIL COMPANY	KEY OIL COMPANY	5003	992	-4011	4848'-4851' (Benson)
47085092750000	NOLAND	7	KEY OIL COMPANY	KEY OIL COMPANY	5132	1130	-4002	4967'-4975' (Benson)
47085063810000	GIEBELL C E & MARY	1	LIPPZAN PETRO INCOR	STALNAKER GENE INC	5109	1108	-4001	3516'-3668' (Berea/L Huron), 4666'-4948' (Benson)
47085088800000	SMITH	2	KEY OIL COMPANY	KEY OIL COMPANY	5057	1060	-3997	4543'-4558' (Riley), 4886'-4888' (Benson)
47085089590000	MUSGRAVE	1	KEY OIL COMPANY	KEY OIL COMPANY	5059	1065	-3994	4910'-4913' (Benson)
47085088870000	SMITH	3	KEY OIL COMPANY	KEY OIL COMPANY	4899	907	-3992	4398'-4408' (Riley), 4747'-4408' (Benson)
47085088930000	PENNSBORO	1	KEY OIL COMPANY	KEY OIL COMPANY	5150	1159	-3991	5018'-5021' (Benson)
47085090180000	SCHMIDLE	1	KEY OIL COMPANY	KEY OIL COMPANY	5031	1041	-3990	4529'-4547' (Riley), 4876'-4878' (Benson)
47085092520000	NOLAND	1	KEY OIL COMPANY	KEY OIL COMPANY	5010	1021	-3989	4869'-4877' (Benson)
47085090330000	GIEBELL	2	KEY OIL COMPANY	KEY OIL COMPANY	5096	1110	-3986	5000'-5003' (Benson)
47085090320000	GIEBELL	1	KEY OIL COMPANY	KEY OIL COMPANY	5065	1081	-3984	4576'-4594' (Riley), 4926'-4929' (Benson)
47085088620000	SMITH	1	KEY OIL COMPANY	KEY OIL COMPANY	5017	1034	-3983	4847'-4850' (Benson)
47085089570000	SMITH	5	KEY OIL COMPANY	KEY OIL COMPANY	4967	988	-3979	4806'-4821' (Benson)
47085090340000	GIEBELL	3	KEY OIL COMPANY	KEY OIL COMPANY	5000	1021	-3979	4879'-4882' (Benson)
47085091200000	WILSON LORI	2	KEY OIL COMPANY	KEY OIL COMPANY	5153	1180	-3973	5016'-5019' (Benson)
47085092540000	NOLAND	3	KEY OIL COMPANY	KEY OIL COMPANY	4904	933	-3971	3306'-3363' (Warren), 4776'-4779' (Benson)
47085090820000	GIEBELL	4	KEY OIL COMPANY	KEY OIL COMPANY	5106	1138	-3968	2032' (Big Lime), 4973'-4976' (Benson)
47085088960000	SMITH	4	KEY OIL COMPANY	KEY OIL COMPANY	5062	1101	-3961	4923'-4926' (Benson)
47085089330000	BAKER	4	KEY OIL COMPANY	KEY OIL COMPANY	5066	1106	-3960	4582'-4597' (Riley), 4920'-4953' (Benson)
47085088550000	BAKER	2	KEY OIL COMPANY	KEY OIL COMPANY	5177	1219	-3958	5034'-5037' (Benson)
47085063820000	GIEBELL C E & MARY	2	LIPPZAN PETRO INCOR	STALNAKER GENE INC	4905	1000	-3905	3248'-3437' (Berea/L Huron), 4116'-4877' (Java)
47085095350000	GIEBELL	7	KEY OIL COMPANY	KEY OIL COMPANY	4230	1031	-3199	
47085089960000	ANDERSON M A	4	GASSEARCH CORPORATN	GASSEARCH CORPORATN	3230	1139	-2097	
47085090980000	RAINES	4	ZICKEFOOSE W F & R L	BOWIE INC	3050	1064	-1986	
47085024800000	CHARLES W HORNER	1	TERM ENERGY	LEMON PHILIP	2240	1108	-1132	
47085012200000	MARY LOFTIS	4	DEEM F S	DEEM F S	2128	998	-1130	
47085011290000	H C SCHULTE	3	KOHL T H	KOHL T H	2205	1085	-1120	
47085011950000	W H & CAROL STEWARD	1	MCCALL DRILLING	MCCALL DRILLING	2007	915	-1092	
47085012670000	W BARNARD	1	RANGER PETROLEUM INC	RANGER PETROLEUM INC	1963	874	-1089	
47085312670000	GEORGE C BOYCE	1	MOSES J R	MOSES J R	2125	1061	-1064	
47085011460000	S F MCDONNELL	1	BEASON GAS COMPANY	BEASON GAS COMPANY	1975	912	-1063	
47085011940000	NOBLE LAMBERT	1	UNKNOWN	UNKNOWN	1996	1002	-994	
47085009850000	HENRY C SCHULTE	2	YOUNG CHARLES E	YOUNG CHARLES E	2025	1078	-947	

MARY LOFTIS
 HENRY C SCHULTE
 W H & CAROL STEWARD
 W BARNARD
 GEORGE C BOYCE
 S F MCDONNELL
 NOBLE LAMBERT
 HENRY C SCHULTE

4708510164