

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

API 47 - 085 - 10185 County Ritchie District Clay
Quad Pennsboro 7.5' Pad Name Charlene Pad Field/Pool Name ----
Farm name Linda C. Dewberry Trust Well Number Brook 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 4350036m Easting 503141m
Landing Point of Curve Northing 4350043.181m Easting 502848.861m
Bottom Hole Northing 4352254m Easting 501954m

Elevation (ft) 1118' 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 1/26/2015 Date drilling commenced 7/7/2015 Date drilling ceased 11/6/2015
Date completion activities began 5/11/2016 Date completion activities ceased 6/30/2016
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 77', 260' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 997', 3222' 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: Michael Gaff
DATE: 12-21-16

Reviewed by: _____

API 47-085 10185 Farm name Linda C. Dewberry Trust Well number Brook 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"	40'	New	133#/K-55	N/A	Y
Surface	17-1/2"	13-3/8"	394'	New	48#/H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2525'	New	36#/J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	14,741'	New	23#/P-110	N/A	Y
Tubing		2-3/8"	6636'		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	90 sx	15.6	1.18	38 Cu. Ft.	0'	8 Hrs.
Surface	Class A	470 sx	15.6	1.18	274 Cu. Ft.	0'	8 Hrs.
Coal							
Intermediate 1	Class A	979 sx	15.6	1.18	791 Cu. Ft.	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	837 sx (Lead), 1014 sx (Tail)	14.2 (Lead), 14.6 (Tail)	1.24 (Lead), 1.81 (Tail)	2913 Cu. Ft.	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 14,741' MD, 6402' TVD (BHL), 6423' TVD (Deepest Point Drilled) Loggers TD (ft) 14,890' MD

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

Plug back procedure N/A

Kick off depth (ft) 8039'

SEP 19 2016
** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Hendershot Unit 1H API# 47-085-10060). Please reference the wireline logs submitted with Form WR-35 for the Hendershot Unit 1H. 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

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

API 47-085 - 10185

Farm name Linda C. Dewberry Trust

Well number Brook Unit 1H

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.

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 Office of Oil and Gas
 SEP 12 2016

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 (bbbls)	Amount of Nitrogen/other (units)
								PRODUCTION
			SEE ATTACHED EXHIBIT 2					

Please insert additional pages as applicable.

API 47- 085 - 10185 Farm name Linda C. Dewberry Trust Well number Brook Unit 1H

PRODUCING FORMATION(S)	DEPTHS			
	6371' (Top)	TVD	6715' (Top)	MD
Marcellus				

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 4083 mcfpd Oil 15 bpd NGL --- bpd Water 92 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		

SEP 12 2016
 Office of Oil and Gas
 SEP 12 2016
 W.V. Department of
 Environmental Protection

Please insert additional pages as applicable.

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

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

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

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

Please insert additional pages as applicable.

Completed by Natalie Komp Telephone 303-357-6820
 Signature  Title Permitting Agent Date 9/8/2016

API 47-085-10185 Farm Name Linda C. Dewberry Trust Well Number Brook Unit 1H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	11-May-16	14487	14655	60	Marcellus
2	5/12/2016	14288	14456	60	Marcellus
3	5/12/2016	14089	14257	60	Marcellus
4	5/12/2016	13891	14058	60	Marcellus
5	5/12/2016	13692	13859	60	Marcellus
6	5/13/2016	13493	13661	60	Marcellus
7	5/13/2016	13294	13462	60	Marcellus
8	5/13/2016	13096	13263	60	Marcellus
9	5/14/2016	12897	13064	60	Marcellus
10	5/14/2016	12698	12866	60	Marcellus
11	5/14/2016	12499	12667	60	Marcellus
12	5/14/2016	12300	12468	60	Marcellus
13	5/15/2016	12102	12269	60	Marcellus
14	5/16/2016	11903	12071	60	Marcellus
15	5/16/2016	11704	11872	60	Marcellus
16	5/16/2016	11505	11673	60	Marcellus
17	5/16/2016	11307	11474	60	Marcellus
18	5/17/2016	11108	11275	60	Marcellus
19	5/17/2016	10909	11077	60	Marcellus
20	5/17/2016	10710	10878	60	Marcellus
21	5/17/2016	10512	10679	60	Marcellus
22	5/18/2016	10313	10480	60	Marcellus
23	5/18/2016	10114	10282	60	Marcellus
24	5/18/2016	9915	10083	60	Marcellus
25	5/18/2016	9716	9884	60	Marcellus
26	5/18/2016	9518	9685	60	Marcellus
27	5/19/2016	9319	9487	60	Marcellus
28	5/19/2016	9120	9288	60	Marcellus
29	5/19/2016	8921	9089	60	Marcellus
30	5/19/2016	8723	8890	60	Marcellus
31	5/20/2016	8524	8692	60	Marcellus
32	5/20/2016	8325	8493	60	Marcellus
33	5/20/2016	8126	8294	60	Marcellus
34	5/20/2016	7928	8095	60	Marcellus
35	5/21/2016	7729	7896	60	Marcellus
36	5/21/2016	7530	7698	60	Marcellus
37	5/21/2016	7331	7499	60	Marcellus
38	5/21/2016	7133	7300	60	Marcellus
39	5/21/2016	6934	7101	60	Marcellus
40	5/22/2016	6735	6903	60	Marcellus

API 47-085-10185 Farm Name Linda C. Dewberry Trust Well Number Brook Unit 1H

EXHIBIT 2

Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/ other (units)
1	5/11/2016	74	7357	5540	4992	302280	7900	N/A
2	5/12/2016	73.4	7047	5568	4821	301970	7898	N/A
3	5/12/2016	71.5	7010	6579	4828	301350	7897	N/A
4	5/12/2016	72.1	7067	5855	4800	301750	7856	N/A
5	5/12/2016	72	7099	5548	4871	301590	7839	N/A
6	5/13/2016	72	7093	5773	3953	301450	7830	N/A
7	5/13/2016	71.2	7126	6493	3980	301250	7824	N/A
8	5/13/2016	72	6964	5434	4755	301400	7811	N/A
9	5/14/2016	71	7213	5443	4896	275820	7758	N/A
10	5/14/2016	71.5	7119	5418	3896	301700	8839	N/A
11	5/14/2016	72	6876	5338	3714	301950	7773	N/A
12	5/14/2016	74	7069	5662	4121	301330	7748	N/A
13	5/15/2016	73	7193	5731	4546	296780	8205	N/A
14	5/16/2016	72	6905	5204	4824	302210	7732	N/A
15	5/16/2016	71.9	6978	5410	5142	296660	7751	N/A
16	5/16/2016	70.3	7169	5703	4187	301420	8172	N/A
17	5/16/2016	71	6824	5465	4739	260990	7117	N/A
18	5/17/2016	74	6911	5890	4224	285020	9038	N/A
19	5/17/2016	72.7	7167	5884	4138	304112	8065	N/A
20	5/17/2016	76.5	7151	5859	4169	303390	7774	N/A
21	5/17/2016	76	7087	5304	3992	301080	8511	N/A
22	5/18/2016	76	6800	5413	3853	301230	7677	N/A
23	5/18/2016	75.2	6673	5630	4985	301930	7682	N/A
24	5/18/2016	75.7	6719	4792	5103	301580	7785	N/A
25	5/18/2016	76.9	6782	4747	5146	303620	7659	N/A
26	5/18/2016	77	6814	5283	4977	301360	7652	N/A
27	5/19/2016	77	6889	5411	4127	303300	8530	N/A
28	5/19/2016	75.2	6898	5170	5250	301430	7654	N/A
29	5/19/2016	73.7	6565	5214	4964	302080	7952	N/A
30	5/19/2016	72	6949	5364	4525	301350	9140	N/A
31	5/20/2016	79.1	6750	5143	4297	301340	7515	N/A
32	5/20/2016	74.5	6682	5650	4675	300680	8411	N/A
33	5/20/2016	75	6818	5470	3966	304030	8669	N/A
34	5/20/2016	77	6585	5530	4739	301240	8362	N/A
35	5/21/2016	78	6435	5667	3542	301900	7591	N/A
36	5/21/2016	74.7	6330	5952	3374	302500	7392	N/A
37	5/21/2016	75.1	6301	6673	3166	302180	7425	N/A
38	5/21/2016	76	6617	6519	4436	303430	8394	N/A
39	5/21/2016	78	6663	5917	4253	301330	8445	N/A
40	5/22/2016	77	6414	5925	3240	301430	7808	N/A
	AVG=	74.2	6,878	5,614	4,405	11,983,442	319,081	TOTAL

API 47-085-02181 Farm Name Linda C. Dewberry Trust Well Number Brook Unit 1H

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	77	N/A	77	N/A
Fresh Water	260	N/A	260	N/A
Siltstone/Sandstone	0	107	0	107
Shale	107	267	107	267
Siltstone	267	307	267	307
Shale	307	347	307	347
Trace Coal	347	487	347	487
Sandstone	487	687	487	687
Siltstone	687	737	687	737
Siltstone/ sandstone	737	757	737	757
Sandstone	757	927	757	927
Shale/ Siltstone	927	1,027	927	1,027
Shale	1,027	1,067	1,027	1,067
Sandstone	1,067	1,227	1,067	1,227
Shale/ trace coal	1,227	1,267	1,227	1,267
Sandstone	1,267	1,467	1,267	1,467
Sandstone	1,467	1,727	1,467	1,727
Shale/ Siltstone	1,727	1,767	1,727	1,767
Sandstone	1,767	2,005	1,767	2,007
Big Lime	2,005	2,856	2,007	2,858
Fifty Foot Sandstone	2,856	2,983	2,858	2,984
Gordon	2,983	3,363	2,984	3,364
Fifth Sandstone	3,363	3,438	3,364	3,440
Bayard	3,438	3,952	3,440	3,954
Speechley	3,952	4,198	3,954	4,200
Baltown	4,198	4,636	4,200	4,648
Bradford	4,636	4,971	4,648	4,997
Benson	4,971	5,227	4,997	5,272
Alexander	5,227	6,133	5,272	6,293
Sycamore	6,133	6,225	6,293	6,420
Middlesex	6,225	6,328	6,420	6,600
Burkett	6,328	6,354	6,600	6,663
Tully	6,354	6,371	6,663	6,715
Marcellus	6,371	NA	6,715	NA

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	5/11/2016
Job End Date:	5/22/2016
State:	West Virginia
County:	Ritchie
API Number:	47-085-10185-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Brook 1H
Latitude:	39.29969640
Longitude:	-80.96356990
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,423
Total Base Water Volume (gal):	13,886,188
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Antero Resources	Base Fluid					
Sand	J.S. Well Services, LLC	Proppant		7732-18-5	100.00000	90.23999	
HCL Acid (12.6%-18.0%)	J.S. Well Services, LLC	Bulk Acid	Crystalline Silica, quartz	14808-60-7	100.00000	9.33752	
LGC-15	J.S. Well Services	Gelling Agents	Water	7732-18-5	87.50000	0.16474	
			Hydrogen Chloride	7647-01-0	18.00000	0.03935	
			Guar Gum	9000-30-0	50.00000	0.06237	
			Petroleum Distillates	64742-47-8	60.00000	0.05907	
			Suspending agent-(solid)	14808-60-7	3.00000	0.00954	
			Surfactant	68439-51-0	3.00000	0.00374	
WFR-405	J.S. Well Services	Friction Reducer	Water	7732-18-5	60.00000	0.03032	
			2-Propranoic acid, polymer with propenamide	29003-06-9	30.00000	0.01516	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01221	

SI-1100s	U.S. Well Services	Scale Inhibitor	Ethoxylated alcohol blend	68002-97-1	4.00000	0.00202
			Water	7732-18-5	80.00000	0.01029
			Copolymer of Maleic and Acrylic acid	62255-49-9	10.00000	0.00152
			Potassium salt of diethylene triamine penta (methylene phosphonic acid) polymer	15827-60-8	7.50000	0.00130
			Phosphino carboxylic acid	71050-62-9	5.00000	0.00084
			Hexamethylene tramine penta (methylene phosphonic acid)	34690-00-1	5.00000	0.00084
			Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5	2.00000	0.00033
K-BAC 1020	U.S. Well Services	Anti-Bacterial Agent				
			2,2-dibromo-3-nitropropionamide	10222-01-2	20.00000	0.00418
			Deionized Water	7732-18-5	28.00000	0.00239
AP One	U.S. Well Services	Gel Breakers				
			Ammonium Persulfate	7727-54-0	100.00000	0.00187
AI-302	U.S. Well Services	Acid Corrosion Inhibitors				
			Water	7732-18-5	95.00000	0.00036
			2-Propyn-1-ol compound with methoxirane	88172-91-7	15.00000	0.00006

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS

* Total Water Volume sources may include fresh water, produced water, and/or recycled water
 ** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.
 Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

LATITUDE 39°20'00" 1,530'

5,422' TO BOTTOM HOLE

LATITUDE 39°20'00"

LONGITUDE 80°57'30" 4,999' TO BOTTOM HOLE

12,281' LONGITUDE 80°57'30"

Antero Resources Corporation
Well No. Brook Unit 1H
47-085-10185 (AS DRILLED)

NORTH ZONE
GRID NORTH

AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
N: 294,611ft E: 1,585,781ft
LAT: 39°17'58.62" LON: 80°57'49.46"
BOTTOM HOLE INFORMATION:
N: 301,956ft E: 1,582,007ft
LAT: 39°19'10.60" LON: 80°58'39.00"
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: 4,350,036m E: 503,141m
BOTTOM HOLE INFORMATION:
N: 4,352,254m E: 501,954m

JOB # 14-005WA
DRAWING # BROOKUNIT1HAD
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

DATE 01/29/16
OPERATOR'S WELL# BROOK UNIT #1H

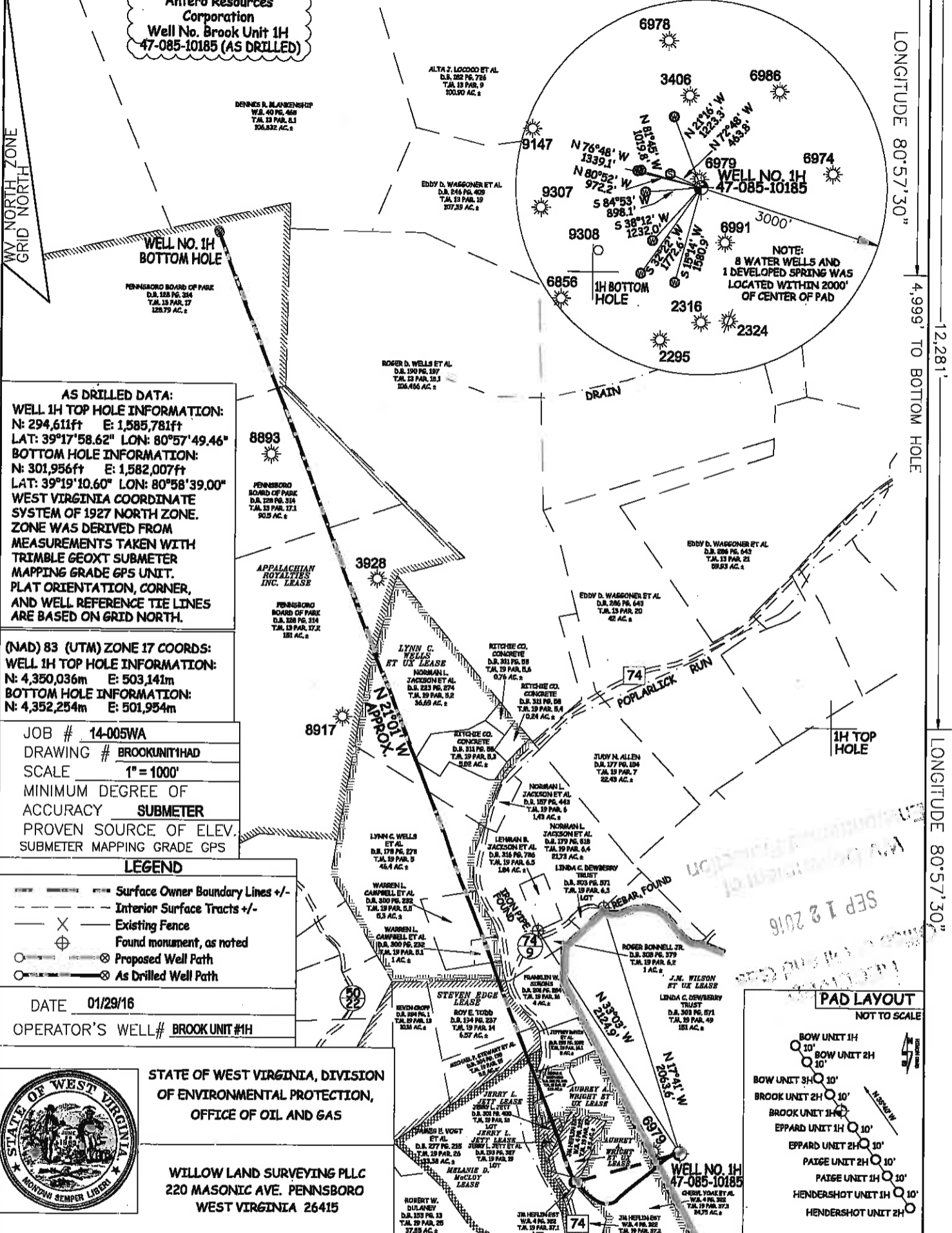
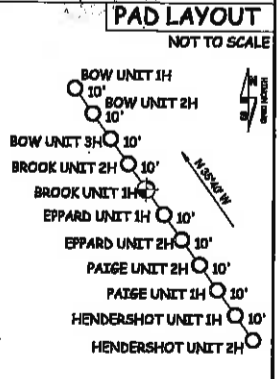


STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

WILLOW LAND SURVEYING PLLC
220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS
API WELL # 47-085-10185
STATE COUNTY PERMIT 47-085-10185
WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X
LOCATION: ELEVATION 1,124'-ORIGINAL 1,118'-AS DRILLED WATERSHED NORTH FORK HUGHES RIVER
QUADRANGLE PENNSBORO 7.5 DISTRICT CLAY COUNTY RITCHIE
SURFACE OWNER LINDA C. DEWBERRY TRUST ACREAGE 151 ACRES +/-
OIL & GAS ROYALTY OWNER J.M. WILSON ET UX; AUBREY A. WRIGHT ET UX; AUBREY A. WRIGHT ET UX; JERRY L. JETT; JERRY L. JETT; MELANIE D. McCLOY; STEVEN EDGE; LYNN C. WELLS ET UX; APPALACHIAN ROYALTIES INC.
LEASE ACREAGE 700 AC±; 25.73 AC±; 4.25 AC±; 0.5 AC±; 0.92 AC±; 36 AC±; 36.48 AC±; 87.5 AC±; 372.5 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 6,402' TVD 14,741' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT CT CORPORATION SYSTEM-DIANNA STAMPER
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

NOTE
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR FEED LACTATING 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.



SEP 12 2016

COUNTY NAME PERMIT

LATITUDE 39°20'00" 1,530'

5,422' TO BOTTOM HOLE

LATITUDE 39°20'00"

LONGITUDE 80°57'30" 4,999' TO BOTTOM HOLE

12,281'

LONGITUDE 80°57'30"

Antero Resources Corporation
Well No. Brook Unit 1H
47-085-10185 (AS DRILLED)

WV NORTH ZONE
GRID NORTH

AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
N: 294,611ft E: 1,585,781ft
LAT: 39°17'58.62" LON: 80°57'49.46"
BOTTOM HOLE INFORMATION:
N: 301,956ft E: 1,582,007ft
LAT: 39°19'10.60" LON: 80°58'39.00"
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: 4,350,036m E: 503,141m
BOTTOM HOLE INFORMATION:
N: 4,352,254m E: 501,954m

JOB # 14-005WA
DRAWING # BROOKUNIT1HAD
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

DATE 01/29/16
OPERATOR'S WELL# BROOK UNIT #1H

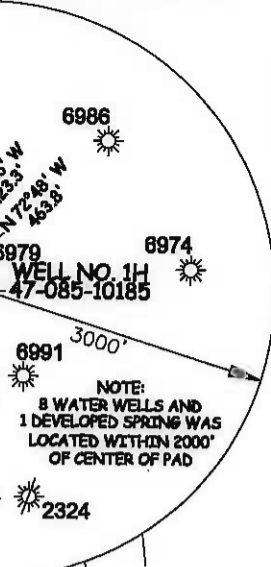


STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

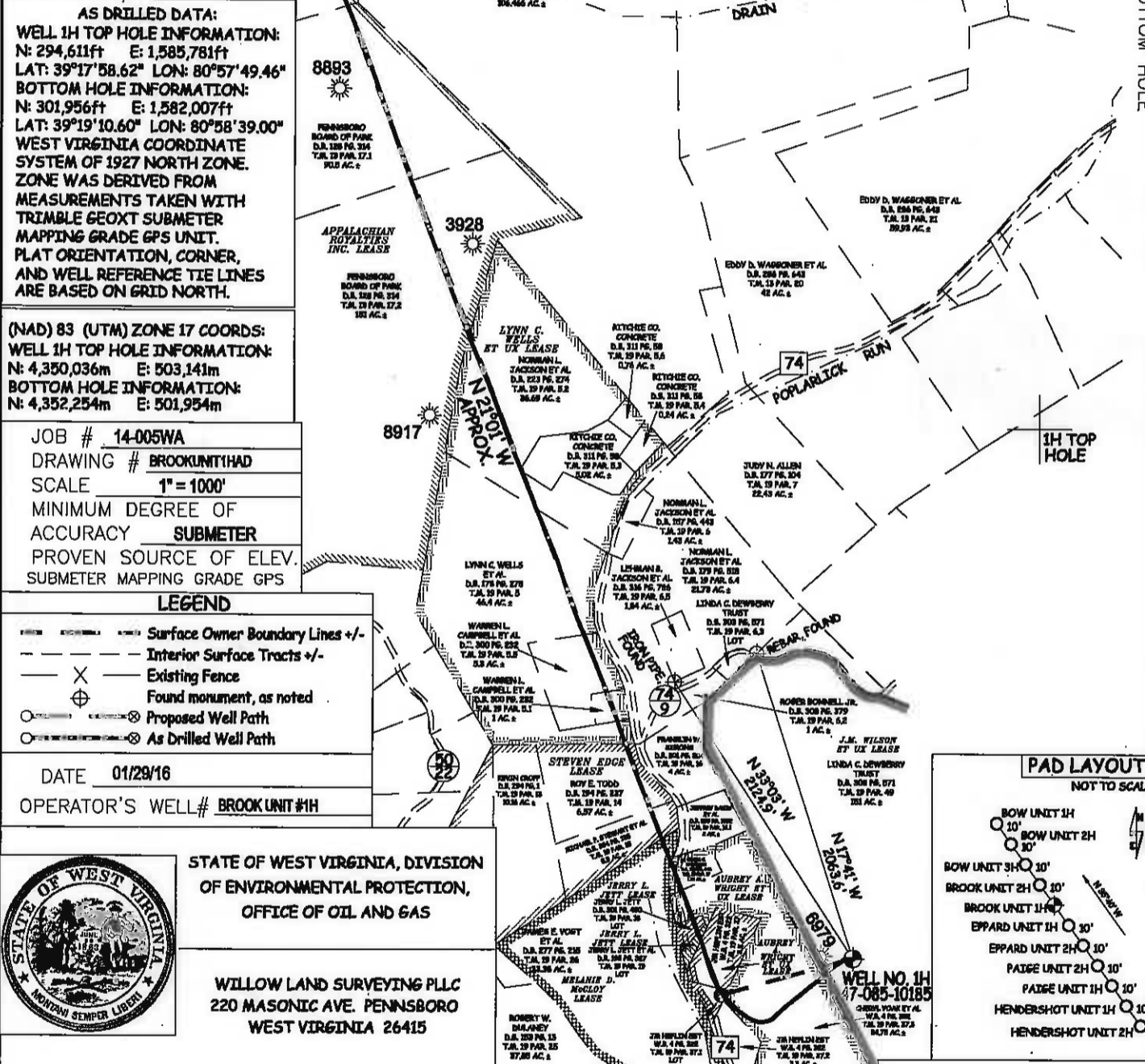
WILLOW LAND SURVEYING PLLC
220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

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 1,124' - ORIGINAL 1,118' - AS DRILLED WATERSHED NORTH FORK HUGHES RIVER
QUADRANGLE PENNSBORO 7.5' DISTRICT CLAY COUNTY RITCHIE
SURFACE OWNER LINDA C. DEWBERRY TRUST ACREAGE 151 ACRES +/-
OIL & GAS ROYALTY OWNER J.M. WILSON ET UX; AUBREY A. WRIGHT ET UX; AUBREY A. WRIGHT ET UX; JERRY L. JETT; JERRY L. JETT; MELANIE D. McCLOY; STEVEN EDGE; LYNN C. WELLS ET UX; APPALACHIAN ROYALTIES INC.

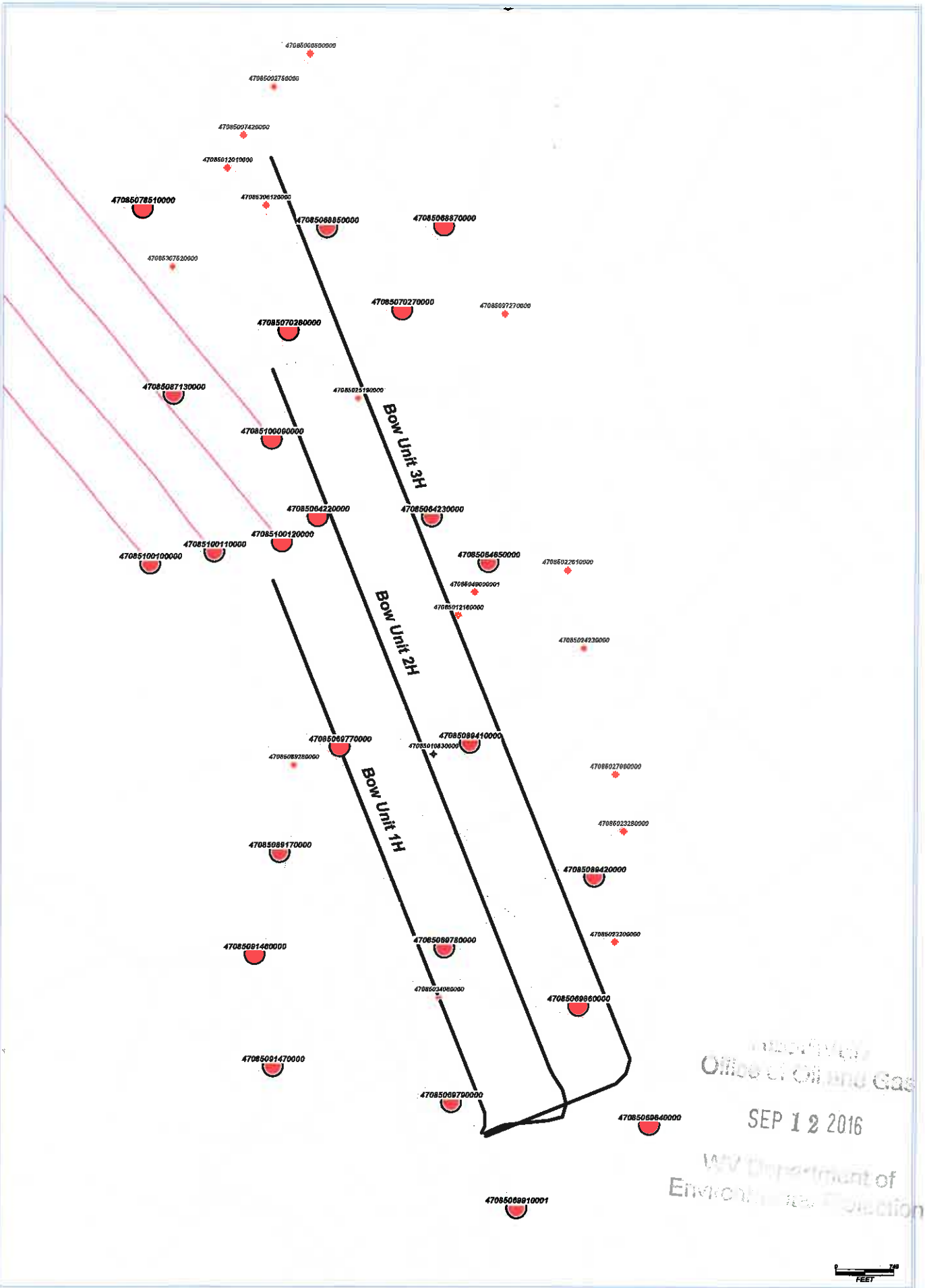
API WELL # 47 - 085 - 10185
STATE COUNTY PERMIT
PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,402' TVD 14,741' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT CT CORPORATION SYSTEM-DIANNA STAMPER
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313



NOTES
1. NO OCCUPIED DWELLINGS OR BUILDING TWO THOUSAND FIVE HUNDRED (2,000) 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 ALLESBERRY SURVEYS, INC.
3. AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
4. WELLS 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 LESSEE BOUNDARIES.
5. WELLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR ENCROACHES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.



BOW UNIT 3H (CHARLENE PAD) - DATA COLLECTED ON OFFSET WELLS PER ADDENDUM



West Virginia
Office of Oil and Gas

SEP 12 2016

WV Department of
Environmental Protection

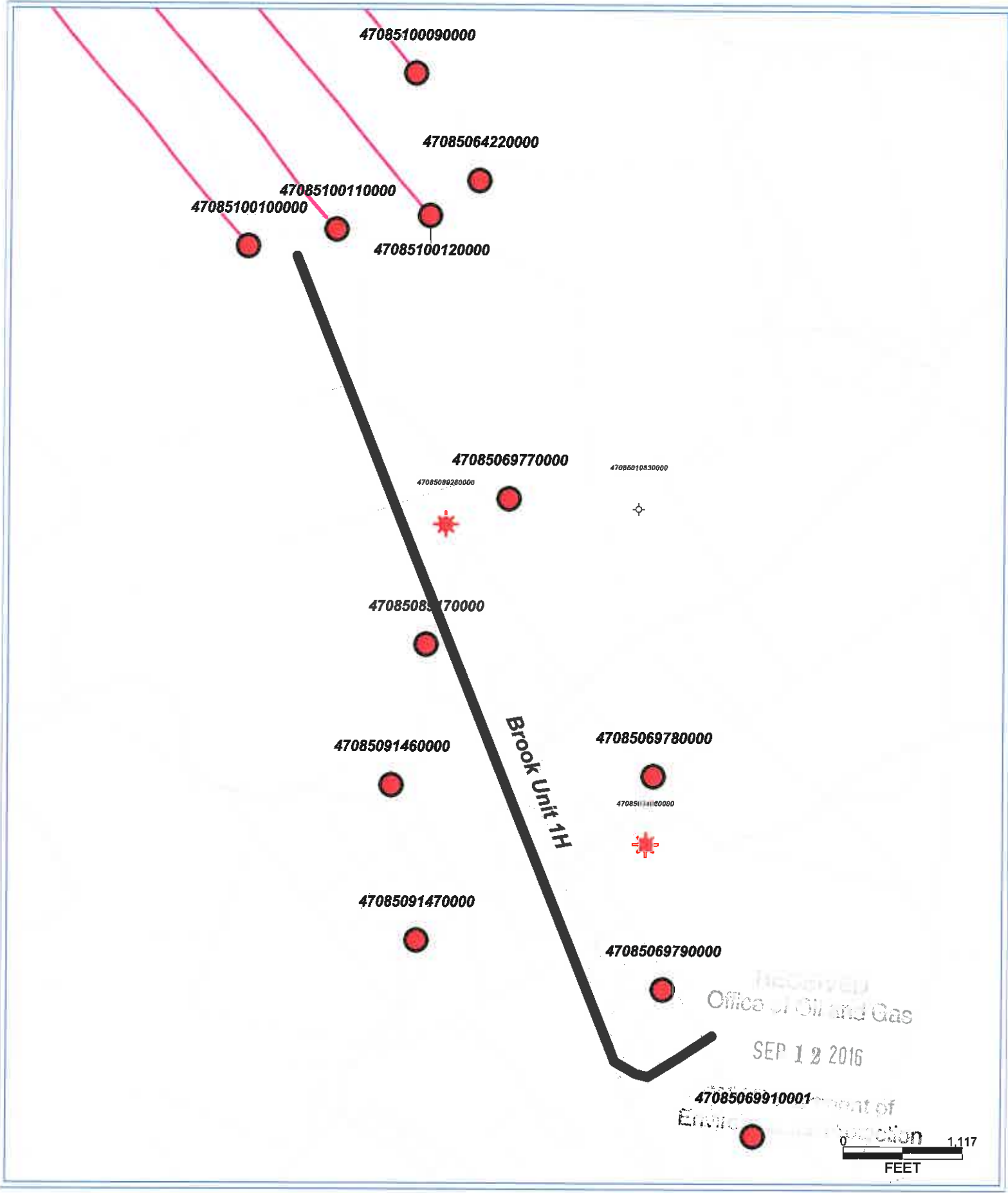


BOW UNIT 3H (CHARLENE PAD) - DATA COLLECTED ON OFFSET WELLS PER ADDENDUM

UWI (API/Num)	Well Name	Well Number	Operator	Hist Oper	TD	ELEV_GR	TD (SSTDV)	Perfs (shallowest, deepest)
47085100120000	CNX GAS COMPANY LLC	PENS1BHS	NOBLE ENERGY INC	NOBLE ENERGY INC	14074	1112	-5279	Marcellus horizontal well
47085100100000	CNX GAS COMPANY LLC	PENS1DHS	NOBLE ENERGY INC	NOBLE ENERGY INC	12825	1121	-5267	Marcellus horizontal well
47085100110000	CNX GAS COMPANY LLC	PENS1CHS	NOBLE ENERGY INC	NOBLE ENERGY INC	13220	1121	-5263	Marcellus horizontal well
47085100090000	CNX GAS COMPANY LLC	PENS1AHS	NOBLE ENERGY INC	NOBLE ENERGY INC	12955	1137	-5251	Marcellus horizontal well
47085068870000	UJT JAMES WJ	JK-906	PETROLEUM DEV CORP	J & J ENTERPRISES	5995	990	-5005	4465'-4475' (Riley), 5683'-5644' (Rhinstreet)
47085070280000	FREELAND E G ET AL	JK-1012	PETROLEUM DEV CORP	J & J ENTERPRISES	5995	1021	-4974	4886'-4888' (Benson), 5725'-5834' (Rhinstreet)
47085064650000	DENNING W F HEIRS	1-C	NASHVILLE ASSOC	STALNAKER GENE INC	5990	1070	-4920	no perfs recorded
47085069790000	WILSON GLENN V	WK-377	PETROLEUM DEV CORP	KEPCO INCORPORATED	5999	1110	-4889	2065' (Big Injun), 5840'-5934' (Rhinstreet)
47085068850000	UTT JAMES WJ	JK-904	PETROLEUM DEV CORP	J & J ENTERPRISES	5995	1110	-4885	2108' (Big Injun), 5730'-5975' (Rhinstreet)
47085069910001	WILSON G	2776	PETROLEUM DEV CORP	SENECA-UPSHUR PET	5999	1127	-4872	1836' (Maxton), 5851'-5951' (Rhinstreet)
47085069640000	SLEVIN JOHN M	WK-380	PETROLEUM DEV CORP	KEPCO INCORPORATED	5995	1153	-4842	4622'-4641' (Riley), 5848'-5899' (Rhinstreet)
47085098660000	COLLINS CARTHA	WK-347	PETROLEUM DEV CORP	KEPCO INCORPORATED	5995	1163	-4832	4665'-4687' (Riley), 5900'-5996' (Rhinstreet)
47085070270000	FREELAND E G ET AL	JK-1020	PETROLEUM DEV CORP	J & J ENTERPRISES	5995	1182	-4813	5009'-5011' (Benson)
47085069770000	SMITH KARLTON L	WK-363	PETROLEUM DEV CORP	KEPCO INCORPORATED	5995	1208	-4787	3633'-3667' (Warren), 5093'-5097' (Benson)
47085069780000	DENNING JERRY F	WK-346	PETROLEUM DEV CORP	KEPCO INCORPORATED	5995	1230	-4765	3629'-3664' (Warren), 5954'-5974' (Rhinstreet)
47085064230000	DENNING W F HEIRS	1-B	ZICKEFOOSE W F & R L	STALNAKER GENE INC	5450	1145	-4305	3942'-3857' (Berea), 4591'-4941' (Lower Huron)
47085089410000	JOHNSON 1		KEY OIL COMPANY	KEY OIL COMPANY	5310	1035	-4275	4532'-4551' (Riley), 4892'-4895' (Benson)
47085089420000	JOHNSON 2		KEY OIL COMPANY	KEY OIL COMPANY	5250	975	-4275	4480'-4501' (Riley), 5118' (Alexander)
47085064220000	DENNING W F HEIRS	1-A	ZICKEFOOSE W F & R L	STALNAKER GENE INC	5450	1195	-4255	3492'-3863' (Warren), 4591'-5277' (Balltown-Alexander)
47085078510000	MARKLE R E	3684	CONSOL GAS COMPANY	CNG DEVELOPMENT CO	5050	888	-4162	4713'-4722' (Benson)
47085089170000	PENNSBORO PARK 2		KEY OIL COMPANY	KEY OIL COMPANY	5277	1176	-4101	4651'-4670' (Riley), 5008'-5012' (Benson)
47085087130000	MAPLE 1		RUBIN RESOURCES	RUBIN RESOURCES	4990	893	-4097	4731'-4735' (Benson)
47085091470000	MAPLE 3		KEY OIL COMPANY	KEY OIL COMPANY	5200	1204	-3996	5068'-5071' (Benson)
47085091460000	MAPLE 2		KEY OIL COMPANY	KEY OIL COMPANY	5257	1263	-3994	5125'-5128' (Benson)

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 SEP 12 2016
 WV Department of
 Environmental Protection

BROOK UNIT 1H (CHARLENE PAD) - DATA COLLECTED ON OFFSET WELLS PER ADDENDUM



BROOK UNIT 1H (CHARLENE PAD) - DATA COLLECTED ON OFFSET WELLS PER ADDENDUM

UWI (API/Num)	Well Name	Well Number	Operator	Hist Oper	TD	ELEV_GR	TD (SSTD)	Perfs (shallowest, deepest)
47085100120000	CNX GAS COMPANY LLC	PENS1BHS	NOBLE ENERGY INC	NOBLE ENERGY INC	14074	1112	-5279	Marcellus horizontal well
47085100100000	CNX GAS COMPANY LLC	PENS1DHS	NOBLE ENERGY INC	NOBLE ENERGY INC	12825	1121	-5267	Marcellus horizontal well
47085100110000	CNX GAS COMPANY LLC	PENS1CHS	NOBLE ENERGY INC	NOBLE ENERGY INC	13220	1121	-5263	Marcellus horizontal well
47085100090000	CNX GAS COMPANY LLC	PENS1AHS	NOBLE ENERGY INC	NOBLE ENERGY INC	12955	1137	-5251	Marcellus horizontal well
47085068870000	UTT JAMES W	JK-906	PETROLEUM DEV CORP	J & J ENTERPRISES	5995	990	-5005	4465'-4475' (Riley), 5683'-5844' (Rhinstreet)
47085070280000	FREELAND E G ET AL	JK-1012	PETROLEUM DEV CORP	J & J ENTERPRISES	5995	1021	-4974	4886'-4888' (Benson), 5725'-5834' (Rhinstreet)
47085064650000	DENNING W F HEIRS	1-C	NASHVILLE ASSOC	STALNAKER GENE INC	5990	1070	-4920	no perfs recorded
47085065790000	WILSON GLENN V	WK-377	PETROLEUM DEV CORP	KEPCO INCORPORATED	5999	1110	-4889	2065' (Big Injun), 5840'-5934' (Rhinstreet)
47085068850000	UTT JAMES W	JK-904	PETROLEUM DEV CORP	J & J ENTERPRISES	5995	1110	-4885	2108' (Big Injun), 5730'-5975' (Rhinstreet)
47085069910001	WILSON G	2776	PETROLEUM DEV CORP	SENECA-UPSHUR PET	5999	1127	-4872	1836' (Maxton), 5851'-5951' (Rhinstreet)
47085069640000	SLEVIN JOHN M	WK-380	PETROLEUM DEV CORP	KEPCO INCORPORATED	5995	1153	-4842	4622'-4641' (Riley), 5848'-5899' (Rhinstreet)
47085069860000	COLLINS CARTHA	WK-347	PETROLEUM DEV CORP	KEPCO INCORPORATED	5995	1163	-4832	4665'-4687' (Riley), 5900'-5996' (Rhinstreet)
47085070270000	FREELAND E G ET AL	JK-1020	PETROLEUM DEV CORP	J & J ENTERPRISES	5995	1182	-4813	5009'-5011' (Benson)
47085069770000	SMITH KARLTON L	WK-363	PETROLEUM DEV CORP	KEPCO INCORPORATED	5995	1208	-4787	3633'-3667' (Warren), 5093'-5097' (Benson)
47085069780000	DENNING JERRY F	WK-346	PETROLEUM DEV CORP	KEPCO INCORPORATED	5995	1230	-4765	3629'-3664' (Warren), 5954'-5974' (Rhinstreet)
47085064230000	DENNING W F HEIRS	1-B	ZICKFOOSE W F & R L	STALNAKER GENE INC	5450	1145	-4305	3942'-3857' (Berea), 4591'-4941' (Lower Huron)
47085089410000	JOHNSON I		KEY OIL COMPANY	KEY OIL COMPANY	5310	1035	-4275	4532'-4551' (Riley), 4892'-4895' (Benson)
47085089420000	JOHNSON Z		KEY OIL COMPANY	KEY OIL COMPANY	5250	975	-4275	4480'-4501' (Riley), 5118' (Alexander)
47085064220000	DENNING W F HEIRS	1-A	ZICKFOOSE W F & R L	STALNAKER GENE INC	5450	1195	-4255	3492'-3863' (Warren), 4591'-5277' (Balltown-Alexander)
47085078510000	MARKLE R E	3684	CONSOL GAS COMPANY	CNG DEVELOPMENT CO	5050	888	-4162	4713'-4722' (Benson)
47085089170000	PENNSBORO PARK 2		KEY OIL COMPANY	KEY OIL COMPANY	5277	1176	-4101	4651'-4670' (Riley), 5008'-5012' (Benson)
47085087130000	MAPLE 1		RUBIN RESOURCES	RUBIN RESOURCES	4990	893	-4097	4731'-4735' (Benson)
47085091470000	MAPLE 3		KEY OIL COMPANY	KEY OIL COMPANY	5200	1204	-3996	5068'-5071' (Benson)
47085091460000	MAPLE 2		KEY OIL COMPANY	KEY OIL COMPANY	5257	1263	-3994	5125'-5128' (Benson)

EPPARD UNIT 1H (CHARLENE PAD) - DATA COLLECTED ON OFFSET WELLS PER ADDENDUM

47085069790000

47085069640000

47085069910000

47085080740000

47085021800000

47085022950000

47085023250000

47085023240000

47085038450000

47085080540000

47085023260000

47085082900000

47085078430000

47085307310000

47085079840000

REGENT
Office of Oil and Gas

SEP 12 2016

MISSOURI DEPARTMENT OF
ENERGY AND COMMERCE

Eppard Unit 1H



EPPARD UNIT 1H (CHARLENE PAD) - DATA COLLECTED ON OFFSET WELLS PER ADDENDUM

UWI (API/Num)	Well Name	Well Number	Operator	Hist Oper	TD	ELEV_GR	TD (SSTVD)	Perfs (shallowest, deepest)
47085069790000	WILSON GLENN V	WK-377	PETROLEUM DEV CORP	KEPCO INCORPORATED	5999	1110	-4889	2065' (Big Injun), 5840'-5934' (Rhinstreet)
47085069910000	WILSON GLENN V	WK-378	SENECA-UPSHUR PET	KEPCO INCORPORATED	5999	1127	-4872	1826'-1836' (Blue Monday/Maxton), 5851'-5951' (Rhinstreet)
47085069640000	SLEVIN JOHN M	WK-380	PETROLEUM DEV CORP	KEPCO INCORPORATED	5995	1153	-4842	4622'-4641' (Riley), 5848'-5899' (Rhinstreet)
47085069860000	COLLINS CARTHA	WK-347	PETROLEUM DEV CORP	KEPCO INCORPORATED	5995	1163	-4832	4665'-4687' (Riley), 5900'-5996' (Rhinstreet)
47085070150000	HENDERSHOT J ET AL	WK-353	PETROLEUM DEV CORP	KEPCO INCORPORATED	5999	1200	-4799	4634'-4649' (Riley), 5877'-5978' (Rhinstreet)
47085079890000	BURNS JOHN HEIRS ET 2		ENERGY CORP OF AMER	EASTERN AMERICAN ENE	5465	1022	-4443	4486'-4518' (Riley), 5130'-5138' (Alexander)
47085079840000	MURPHY JOSEPH G ET A 1		ENERGY CORP OF AMER	EASTERN AMERICAN ENE	5571	1150	-4421	4650'-4662' (Riley), 5297'-5305' (Alexander)
47085079550000	BLAUSER/TAYLOR E R 20		ENERGY CORP OF AMER	EASTERN AMERICAN ENE	5412	1020	-4392	4482'-4502' (Riley), 5127'-5131' (Alexander)
47085080540000	HENDERSHOT JOHNNIE KEYSTONE1		ENERGY CORP OF AMER	EASTERN AMERICAN ENE	5490	1120	-4370	4603'-4624' (Riley), 5245'-5252' (Alexander)
47085078430000	HOMER RICHARD 3		NEW FREEDOM ENERGY	DEVONIAN APPALACHIAN	5521	1202	-4319	4685'-4697' (Riley), 4872'-5334' (Riley-Benson-Alexander)
47085080740000	SLEVIN JOHN M ETAL KEYSTONE/S		ENERGY CORP OF AMER	EASTERN AMERICAN ENE	5190	916	-4274	4370'-4392' (Riley), 4729'-5020' (Benson - Alexander)