

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

API 47-085-10078 County Ritchie District Clay
Quad Pullman 7.5' Pad Name Edwin Field/Pool Name ---
Farm name Quimby, Franklin P. Well Number Miracle Unit 1H
Operator (as registered with the OOG) Antero Resources Corporation
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 4342360m Easting 508388m
Landing Point of Curve Northing 4342238.77m Easting 508634.28m
Bottom Hole Northing 4340295m Easting 509486m

Elevation (ft) 1191' 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 12/30/2013 Date drilling commenced 11/22/2014 Date drilling ceased 8/15/2015
Date completion activities began 10/16/2015 Date completion activities ceased 3/10/2016
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

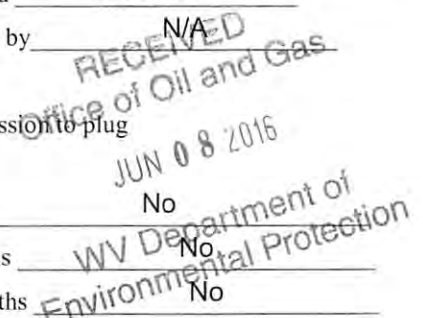
Freshwater depth(s) ft 49' Open mine(s) (Y/N) depths No
Salt water depth(s) ft None Identified Void(s) encountered (Y/N) depths No
Coal depth(s) ft 1287' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

APPROVED

NAME: Michael Doff
DATE: 6/13/16

Reviewed by:

AX08/12/2016
WS



API 47-085 - 10078 Farm name Quimby, Franklin P. Well number Miracle 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	94# H-40	N/A	Y
Surface	17- 1/2"	13- 3/8"	385'	New	48# H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2528'	New	36# J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4" & 8-1/2"	5-1/2"	14268'	New	20# P-110	N/A	Y
Tubing		2-3/8"	6815'		4.7# 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 ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Class A	200 sx	15.6	1.18	38	0'	8 Hrs.
Surface	Class A	478 sx	15.6	1.18	267	0'	8 Hrs.
Coal							
Intermediate 1	Class A	988 sx	15.6	1.18	792	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	911 sx (Lead) 1216 sx (Tail)	13.5 Lead 15.2 Tail	1.44 Lead 1.80 Tail	2804	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 14280' MD, 6658' TVD (BHL), 6683' (Deepest Point Drilled) Loggers TD (ft) 14228'
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5830'

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Hornet Unit 1H API #47-085-10062). Please reference the wireline logs submitted with Form WR-35 for Hornet 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 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

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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- 085 - 10078 Farm name Quimby, Franklin P. Well number Miracle Unit 1H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
*PLEASE 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)
*PLEASE SEE ATTACHED EXHIBIT 2								

Please insert additional pages as applicable.

API 47- 085 - 10078 Farm name Quimby, Franklin P. Well number Miracle Unit 1H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6597' (TOP)</u> TVD	<u>6967' (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 2759 mcfpd Oil 54 bpd NGL --- bpd Water 1 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	0		0		

***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

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

Logging Company Rush Wellsite Services
Address 60 Alpha Dr. 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 US Well Services
Address 533 Industrial Park Dr. City Jane Lew State WV Zip 26378

Please insert additional pages as applicable.

Completed by Kara Quackenbush Telephone 303-357-7233
Signature *Kara Quackenbush* Title Permit Representative Date 6/7/2016

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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	16-Oct-15	14,018	14,187	60	Marcellus
2	15-Dec-15	13,818	13,987	60	Marcellus
3	15-Dec-15	13,617	13,786	60	Marcellus
4	15-Dec-15	13,417	13,586	60	Marcellus
5	16-Dec-15	13,217	13,386	60	Marcellus
6	16-Dec-15	13,016	13,185	60	Marcellus
7	16-Dec-15	12,816	12,985	60	Marcellus
8	16-Dec-15	12,616	12,785	60	Marcellus
9	17-Dec-15	12,415	12,584	60	Marcellus
10	17-Dec-15	12,215	12,384	60	Marcellus
11	17-Dec-15	12,015	12,184	60	Marcellus
12	17-Dec-15	11,814	11,983	60	Marcellus
13	18-Dec-15	11,614	11,783	60	Marcellus
14	18-Dec-15	11,413	11,582	60	Marcellus
15	18-Dec-15	11,213	11,382	60	Marcellus
16	18-Dec-15	11,013	11,182	60	Marcellus
17	18-Dec-15	10,812	10,981	60	Marcellus
18	18-Dec-15	10,612	10,781	60	Marcellus
19	19-Dec-15	10,412	10,581	60	Marcellus
20	19-Dec-15	10,211	10,380	60	Marcellus
21	19-Dec-15	10,011	10,180	60	Marcellus
22	19-Dec-15	9,810	9,979	60	Marcellus
23	20-Dec-15	9,610	9,779	60	Marcellus
24	20-Dec-15	9,410	9,579	60	Marcellus
25	20-Dec-15	9,209	9,378	60	Marcellus
26	20-Dec-15	9,009	9,178	60	Marcellus
27	21-Dec-15	8,809	8,978	60	Marcellus
28	21-Dec-15	8,608	8,777	60	Marcellus
29	21-Dec-15	8,408	8,577	60	Marcellus
30	21-Dec-15	8,207	8,376	60	Marcellus
31	21-Dec-15	8,007	8,176	60	Marcellus
32	22-Dec-15	7,807	7,976	60	Marcellus
33	22-Dec-15	7,606	7,775	60	Marcellus
34	22-Dec-15	7,406	7,575	60	Marcellus
35	22-Dec-15	7,206	7,375	60	Marcellus
36	22-Dec-15	7,005	7,174	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	15-Dec-15	63.6	7,045	6,225	4,893	156,270	6,486	N/A
2	15-Dec-15	68.3	6,987	5,555	5,047	247,620	6,801	N/A
3	15-Dec-15	70.0	6,853	5,831	5,173	241,480	7,069	N/A
4	15-Dec-15	71.0	7,114	5,592	5,136	240,330	6,502	N/A
5	16-Dec-15	71.0	7,442	5,480	4,473	203,780	7,106	N/A
6	16-Dec-15	69.8	6,990	5,385	5,423	247,940	6,496	N/A
7	16-Dec-15	70.0	6,761	5,236	5,286	239,020	6,495	N/A
8	16-Dec-15	69.0	6,689	5,466	4,126	241,240	6,456	N/A
9	17-Dec-15	70.5	6,813	5,195	5,204	247,650	6,465	N/A
10	17-Dec-15	65.3	7,427	4,991	4,354	137,440	6,864	N/A
11	17-Dec-15	67.7	6,555	5,110	4,689	221,290	6,030	N/A
12	17-Dec-15	71.0	6,638	5,061	5,082	242,080	6,484	N/A
13	18-Dec-15	71.0	6,349	5,028	4,853	241,550	6,368	N/A
14	18-Dec-15	69.0	6,350	5,361	4,953	248,000	6,364	N/A
15	18-Dec-15	70.4	6,083	4,971	4,727	247,170	6,344	N/A
16	18-Dec-15	70.0	6,304	5,436	4,920	247,890	6,317	N/A
17	18-Dec-15	71.0	6,590	5,306	3,750	241,020	6,321	N/A
18	18-Dec-15	72.0	6,587	5,146	3,584	242,310	6,305	N/A
19	19-Dec-15	71.1	6,537	5,324	4,819	246,960	6,299	N/A
20	19-Dec-15	70.7	6,683	5,131	3,798	225,570	6,875	N/A
21	19-Dec-15	72.5	6,360	5,247	3,510	240,160	6,315	N/A
22	19-Dec-15	72.0	6,537	5,456	3,528	246,600	6,369	N/A
23	20-Dec-15	72.0	6,993	5,594	3,956	203,110	6,738	N/A
24	20-Dec-15	71.8	6,541	5,489	4,425	247,150	6,441	N/A
25	20-Dec-15	72.0	6,279	5,536	5,179	229,900	6,806	N/A
26	20-Dec-15	72.0	6,193	5,303	4,651	242,780	6,161	N/A
27	21-Dec-15	71.0	6,202	5,795	4,799	247,370	6,184	N/A
28	21-Dec-15	71.3	6,158	5,527	4,969	246,670	6,191	N/A
29	21-Dec-15	72.0	5,997	5,545	4,913	247,520	6,166	N/A
30	21-Dec-15	71.5	5,851	5,142	4,683	247,320	6,156	N/A
31	21-Dec-15	72.3	5,983	5,050	4,473	248,170	6,135	N/A
32	22-Dec-15	71.7	6,084	5,541	4,662	248,060	6,127	N/A
33	22-Dec-15	72.0	5,849	5,087	4,608	247,150	6,122	N/A
34	22-Dec-15	71.6	6,069	5,401	4,738	247,120	6,102	N/A
35	22-Dec-15	72.4	6,447	5,261	4,508	247,850	6,110	N/A
36	22-Dec-15	71.9	6,251	5,518	4,367	248,040	6,071	N/A
AVG=		70.6	6,516	5,370	4,618	8,491,580	6,407	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	49'	N/A	49'	N/A
Sandy Shale	0	187	0	187
Sandstone	est. 187	447	est. 187	447
Shale/Siltstone	est. 447	647	est. 447	647
Shaley Limestone	est. 647	727	est. 647	727
Shale/Siltstone	est. 727	1127	est. 727	1127
Shaley Limestone	est. 1127	1287	est. 1127	1287
Coal	est. 1287	1307	est. 1287	1307
Shaley Limestone (trace coal)	est. 1307	1627	est. 1307	1627
Shale/Siltstone	est. 1627	1787	est. 1627	1787
Sandstone/Siltstone	est. 1787	1827	est. 1787	1827
Sandstone/Siltstone with trace coal	est. 1827	2007	est. 1827	2007
Silty Sandstone	est. 2007	2162	est. 2007	2164
Big Lime	2162	2257	2164	2259
Big Injun	2257	2660	2259	2662
Gantz Sand	2660	2857	2662	2859
Fifty Foot Sandstone	2857	2916	2859	2918
Gordon	2916	3062	2918	3064
Fifth Sandstone	3062	3197	3064	3199
Bayard	3197	3626	3199	3628
Warren	3626	4019	3628	4021
Speechley	4019	4287	4021	4289
Baltown	4287	4715	4289	4717
Bradford	4715	5098	4717	5100
Benson	5098	5359	5100	5361
Alexander	5359	5535	5361	5537
Elk	5535	5971	5537	5978
Rhinestreet	5971	6257	5978	6327
Sycamore	6257	6418	6327	6578
Middlesex	6418	6533	6578	6799
Burkett	6533	6566	6799	6887
Tully	6566	6591	6887	6967
Marcellus	6591	NA	6967	NA

*Please note Antero determines formation tops based on mud 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



Job Start Date:	12/15/2015
Job End Date:	12/22/2015
State:	West Virginia
County:	Ritchie
API Number:	47-085-10078-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Miracle 1H
Longitude:	-80.90281700
Latitude:	39.23049700
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,683
Total Base Water Volume (gal):	10,070,676
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					
			Water	7732-18-5	100.00000	90.46667	
Sand	U.S. Well Services, LLC	Proppant					
			Crystalline Silica, quartz	14808-60-7	100.00000	9.14645	
LGC-15	U.S. Well Services	Gelling Agents					
			Guar Gum	9000-30-0	50.00000	0.08348	
			Petroleum Distillates	64742-47-8	60.00000	0.07906	
			Suspending agent (solid)	14808-60-7	3.00000	0.01277	
			Surfactant	68439-51-0	3.00000	0.00501	
HCL Acid (12.6% 18.0%)	U.S. Well Services, LLC	Bulk Acid					
			Water	7732-18-5	87.50000	0.08441	
			Hydrogen Chloride	7647-01-0	18.00000	0.02016	
WFRA-405	U.S. Well Services	Friction Reducer					
			Water	7732-18-5	60.00000	0.03755	
			2-Propenoic acid, polymer with 2 propenamide	29003-06-9	30.00000	0.01878	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01511	
			Ethoxylated alcohol blend	68002-97-1	4.00000	0.00250	

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SI-1100	U.S. Well Services	Scale Inhibitor					
			Water	7732-18-5	80.00000	0.01037	
			Ethylene Glycol	107-21-1	25.00000	0.00366	
			Copolymer of Maleic and Acrylic acid	52255-49-9	10.00000	0.00153	
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	7.50000	0.00131	
			Hexamethylene tramine penta (methylene phosphonic acid)	34690-00-1	5.00000	0.00084	
			Phosphino carboxylic acid polymer	71050-62-9	5.00000	0.00084	
			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-nitrilopropionamide	10222-01-2	20.00000	0.00422	
			Deionized Water	7732-18-5	28.00000	0.00241	
AP One	U.S. Well Services	Gel Breakers					
			Ammonium Persulfate	7727-54-0	100.00000	0.00208	
AI-302	U.S. Well Services	Acid Corrosion Inhibitors					
			Water	7732-18-5	95.00000	0.00037	
			2-Propyn-1-olcompound with methyloxirane	38172-91-7	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.

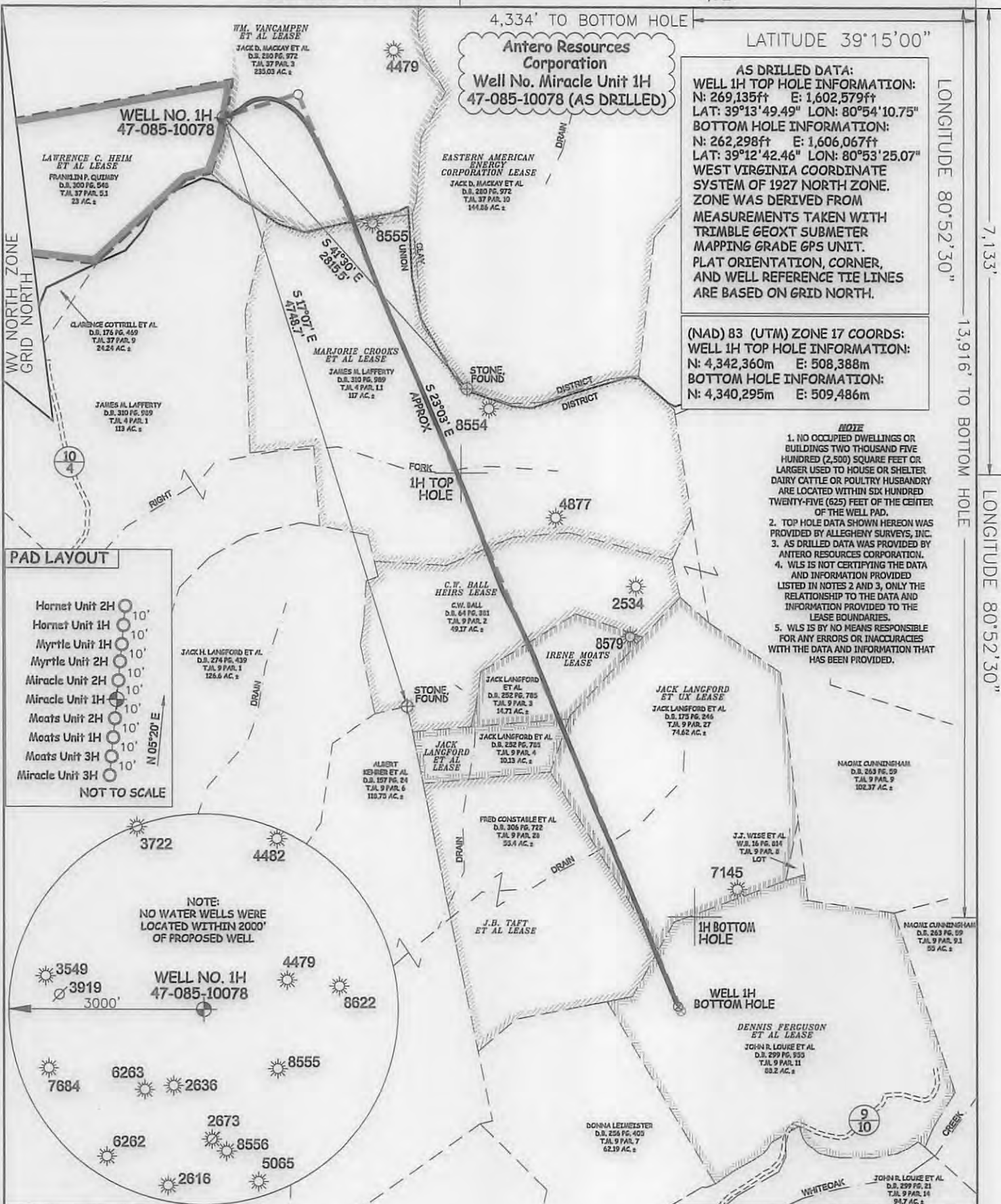
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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LATITUDE 39°15'00"

7,927'

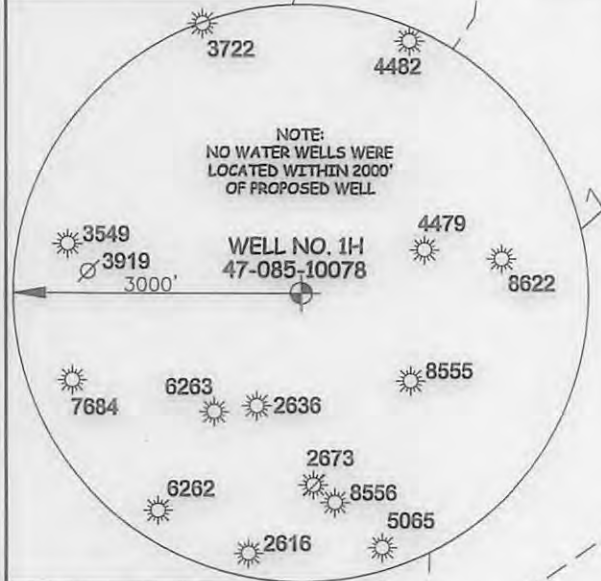
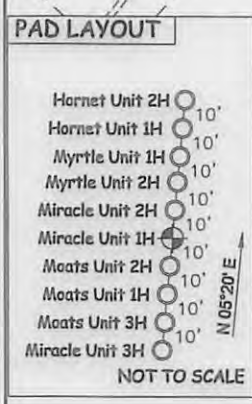
LATITUDE 39°15'00"



AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
 N: 269,135ft E: 1,602,579ft
 LAT: 39°13'49.49" LON: 80°54'10.75"
BOTTOM HOLE INFORMATION:
 N: 262,298ft E: 1,606,067ft
 LAT: 39°12'42.46" LON: 80°53'25.07"
 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: 4,342,360m E: 508,388m
BOTTOM HOLE INFORMATION:
 N: 4,340,295m E: 509,486m

- 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 # 13-050WA
 DRAWING # MIRACLE1HAD
 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



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

LEGEND

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

DATE 2/24/2016
 OPERATOR'S WELL# MIRACLE UNIT #1H
 API WELL # 47 - 085 - 10078
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW
 LOCATION: ELEVATION 1,216' ORIGINAL - 1,191' AS DRILLED WATERSHED NORTH FORK HUGHES RIVER
 QUADRANGLE PULLMAN 7.5' DISTRICT CLAY (TH) UNION (BH) COUNTY RITCHIE
 SURFACE OWNER FRANKLIN P. QUIMBY ACREAGE 23 ACRES +/-
 OIL & GAS ROYALTY OWNER LAWRENCE C. HEIM ET AL; WM. VANCAMPEN ET AL; LEASE ACREAGE 53 AC±; 312 AC±;
 MARJORIE CROOKS ET AL; C.W. BALL HEIRS; IRENE MOATS; JACK LANGFORD ET AL; JACK LANGFORD ET UX; J.B. TAFT ET AL; DENNIS FERGUSON ET AL 117 AC±; 49.27 AC±; 14.71 AC±; 10 AC±; 74 AC±; 57 AC±; 88 AC±
 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 6,659' TVD 14,280' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER
 ADDRESS 1615 WYNKOPOP STREET ADDRESS 5400 D BIG TYLER ROAD
 FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

08/12/2016

COUNTY NAME PERMIT

LATITUDE 39°15'00"

7,927'

4,334' TO BOTTOM HOLE

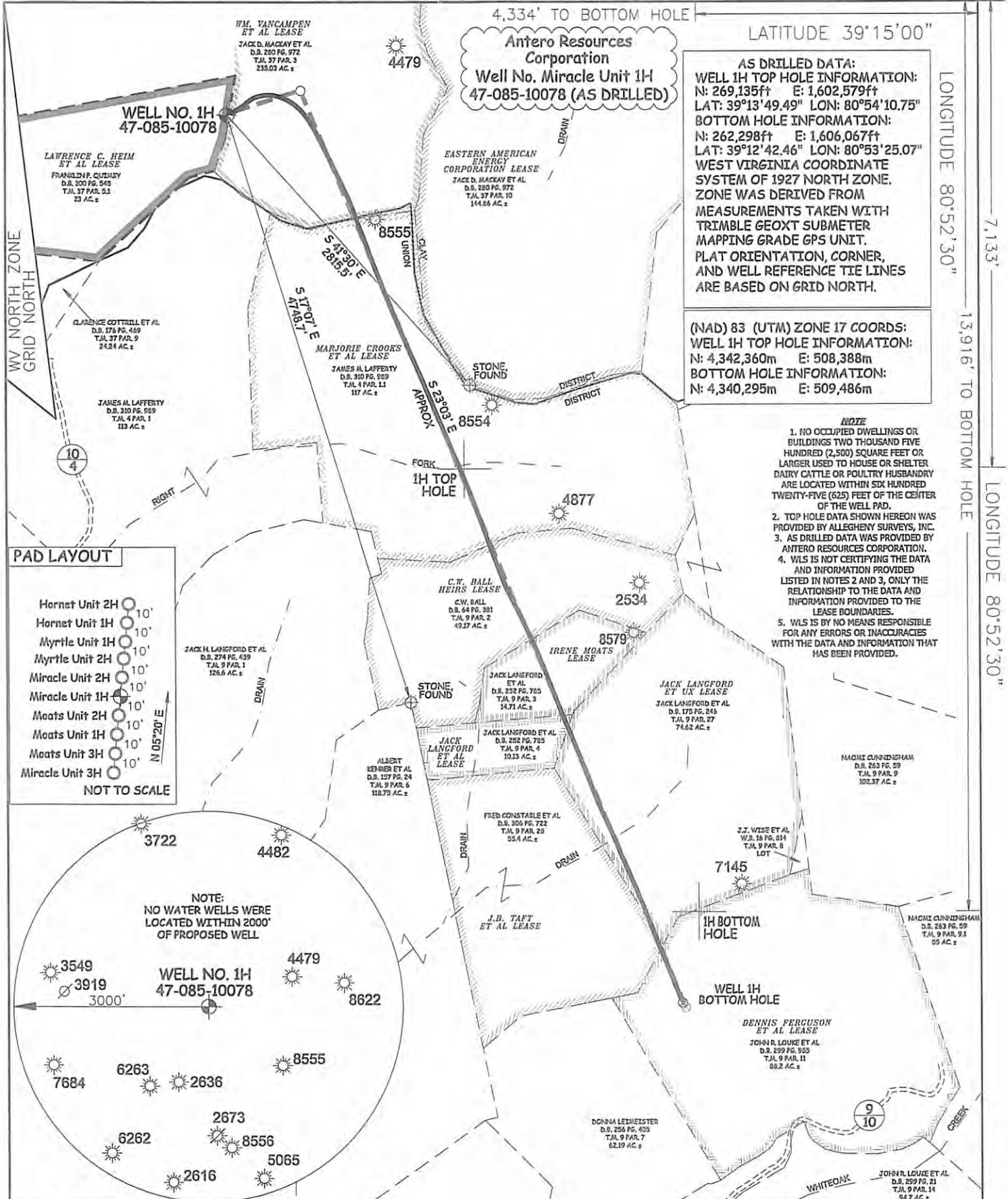
LATITUDE 39°15'00"

LONGITUDE 80°52'30"

7,133'

13,916' TO BOTTOM HOLE

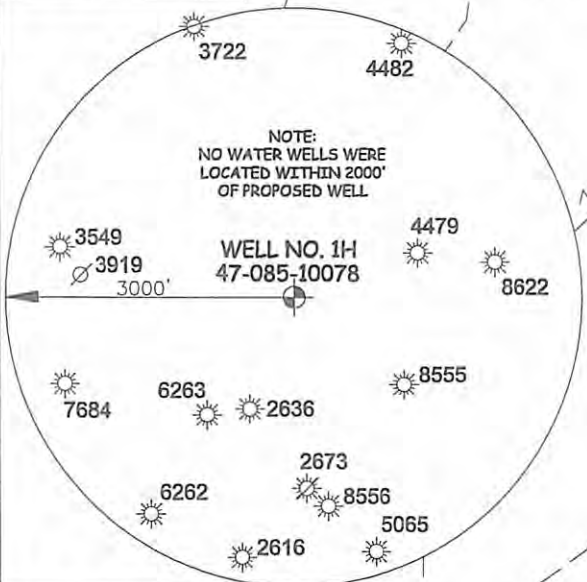
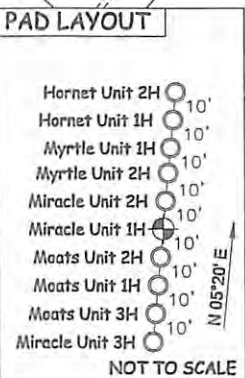
LONGITUDE 80°52'30"



AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
 N: 269,135ft E: 1,602,579ft
 LAT: 39°13'49.49" LON: 80°54'10.75"
BOTTOM HOLE INFORMATION:
 N: 262,298ft E: 1,606,067ft
 LAT: 39°12'42.46" LON: 80°53'25.07"
 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: 4,342,360m E: 508,388m
BOTTOM HOLE INFORMATION:
 N: 4,340,295m E: 509,486m

- 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 # 13-050WA
 DRAWING # MIRACLE1HAD
 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
 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

LEGEND

- Surface Owner Boundary Lines +/-
- Interior Surface Tracts +/-
- 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 LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS") PRODUCTION STORAGE ___ DEEP ___ SHALLOW

LOCATION: ELEVATION 1,216' ORIGINAL - 1,191' AS DRILLED WATERSHED NORTH FORK HUGHES RIVER
 QUADRANGLE PULLMAN 7.5' DISTRICT CLAY (TH) UNION (BH) COUNTY RITCHIE

SURFACE OWNER FRANKLIN P. QUIMBY ACREAGE 23 ACRES +/-

OIL & GAS ROYALTY OWNER LAWRENCE C. HEIM ET AL; W.M. VANCAMPEN ET AL; LEASE ACREAGE 53 AC±; 312 AC±
 MARJORIE CROOKS ET AL; C.W. BALL HEIRS; IRENE MOATS; JACK LANGFORD ET AL; JACK LANGFORD ET UX; J.B. TAFT ET AL; DENNIS FERGUSON ET AL 117 AC±; 49.27 AC±; 14.71 AC±; 10 AC±; 74 AC±; 57 AC±; 88 AC±

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 6,659' TVD 14,280' MD

WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER
 ADDRESS 1615 WYNKOPOP STREET ADDRESS CT CORPORATION SYSTEM
 DENVER, CO 80202 CHARLESTON, WV 25313

DATE 2/24/2016 OPERATOR'S WELL# MIRACLE UNIT #1H
 API WELL # 47 - 085 - 10078
 STATE COUNTY PERMIT

08/12/2016

COUNTY NAME PERMIT