

PM

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

API 47-017-06496 County Doddrige District Grant  
Quad West Union 7.5 & Smithburg 7.5' Pad Name Melody Pad Field/Pool Name \_\_\_\_\_  
Farm name Brown, Melody et al Well Number Weinhold Unit 2H  
Operator (as registered with the OOG) Antero Resources Corporation  
Address 1615 Wynkoop Street City Denver State CO Zip 80202

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4,356,597m Easting 520,751m  
Landing Point of Curve Northing 4,356,336.92m Easting 520,810.74m  
Bottom Hole Northing 4,354,395m Easting 521,788m

Elevation (ft) 1,135' 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

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WV Department of  
Environmental Protection  
2014

Date permit issued 06/25/2014 Date drilling commenced 10/13/2014 Date drilling ceased \_\_\_\_\_  
Date completion activities began WOC Date completion activities ceased \_\_\_\_\_  
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 46' Open mine(s) (Y/N) depths No  
Salt water depth(s) ft 865'; 1,509' Void(s) encountered (Y/N) depths None  
Coal depth(s) ft 1,821' Cavern(s) encountered (Y/N) depths None  
Is coal being mined in area (Y/N) No

Reviewed by:  
[Signature]  
10/30/2015

API 47-017 - 06496 Farm name Brown, Melody et al Well number Weinhold Unit 2H

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#; J-55	N/A	Yes
Surface	17 1/2"	13 3/8"	564'	New	48#; H-40	N/A	Yes
Coal							
Intermediate 1	12 1/4"	9 5/8"	2,565'	New	36#; J-55	N/A	Yes
Intermediate 2							
Intermediate 3							
Production	8 3/4" & 8 1/2"	5 1/2"	15,984'	New	23#; P-110	N/A	Yes
Tubing							
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	100 sx	15.6	1.18	38	0'	8 Hrs.
Surface	Class A	670 sx	15.6	1.18	392	0'	8 Hrs.
Coal							
Intermediate 1	Class A	937 sx	15.6	1.18	803	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1,054 sx (Lead); 1,392 sx (Tail)	14.5 (Lead); 15.2 (Tail)	1.3 (Lead); 1.86 (Tail)	3,189	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15,984' MD; 6,932' TVD (BHL); 6,966' TVD (Deepest Point Drilled) Loggers TD (ft) 15,984'  
 Deepest formation penetrated Marcellus Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 6,414'

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 N/A - WOC

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS N/A - WOC

WERE TRACERS USED  Yes  No TYPE OF TRACER(S) USED N/A - WOC

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 Will be submitted with  
 FINAL Completion Report  
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**EXHIBIT 3**

LITHOLOGY/ FORMATION	TOP DEPTH (TVD) From Surface	BOTTOM DEPTH (TVD) From Surface	TOP DEPTH (MD) From Surface	BOTTOM DEPTH (MD) From Surface
Fresh Water	46'	N/A	46'	N/A
silt	0	81	0	81
Sandstone	81	281	81	281
siltstone (tr coal)	281	401	281	401
Silty Sandstone	401	581	401	581
Sandy siltstone	581	761	581	761
Limestone	761	781	761	781
Sandy siltstone	781	861	781	861
Limey Siltstone	861	961	861	961
Sandy shale	961	1,281	961	1,281
Sandstone	1,281	1,401	1,281	1,401
Sandy shale	1,401	1,561	1,401	1,561
Silty Sandstone (tr coal)	1,561	1,761	1,561	1,761
Sandstone	1,761	1,821	1,761	1,821
Coal	1,821	2,001	1,821	2,001
Limey Siltstone	2,001	2,069	2,001	2,050
Big Lime	2,069	NA	2,069	NA
Big Injun**	NA	NA	NA	NA
Gantz Sand**	NA	NA	NA	NA
Fifty Foot Sandstone**	NA	NA	NA	NA
Gordon**	NA	NA	NA	NA
Fifth Sandstone**	NA	NA	NA	NA
Bayard**	NA	NA	NA	NA
Warren**	NA	NA	NA	NA
Speechley**	NA	NA	NA	NA
Baltown**	NA	NA	NA	NA
Bradford**	NA	NA	NA	NA
Benson**	NA	NA	NA	NA
Alexander**	NA	NA	NA	NA
Elk**	NA	NA	NA	NA
Rhinestreet**	NA	NA	NA	NA
Sycamore	6,438	6,616	6,441	6,633
Middlesex	6,616	6,749	6,633	6,818
Burkett	6,749	6,778	6,818	6,869
Tully	6,778	6,830	6,869	6,992
Marcellus	6,830	NA	6,992	

\*Please note Antero determines shallow 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.

\*\*Depths for these formations are recorded with the cement bond log for each individual well. This information will be provided, along with the cement bond log, in the final report for this well.

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LATITUDE 39°22'30" 2,633'

LONGITUDE 80°42'30"

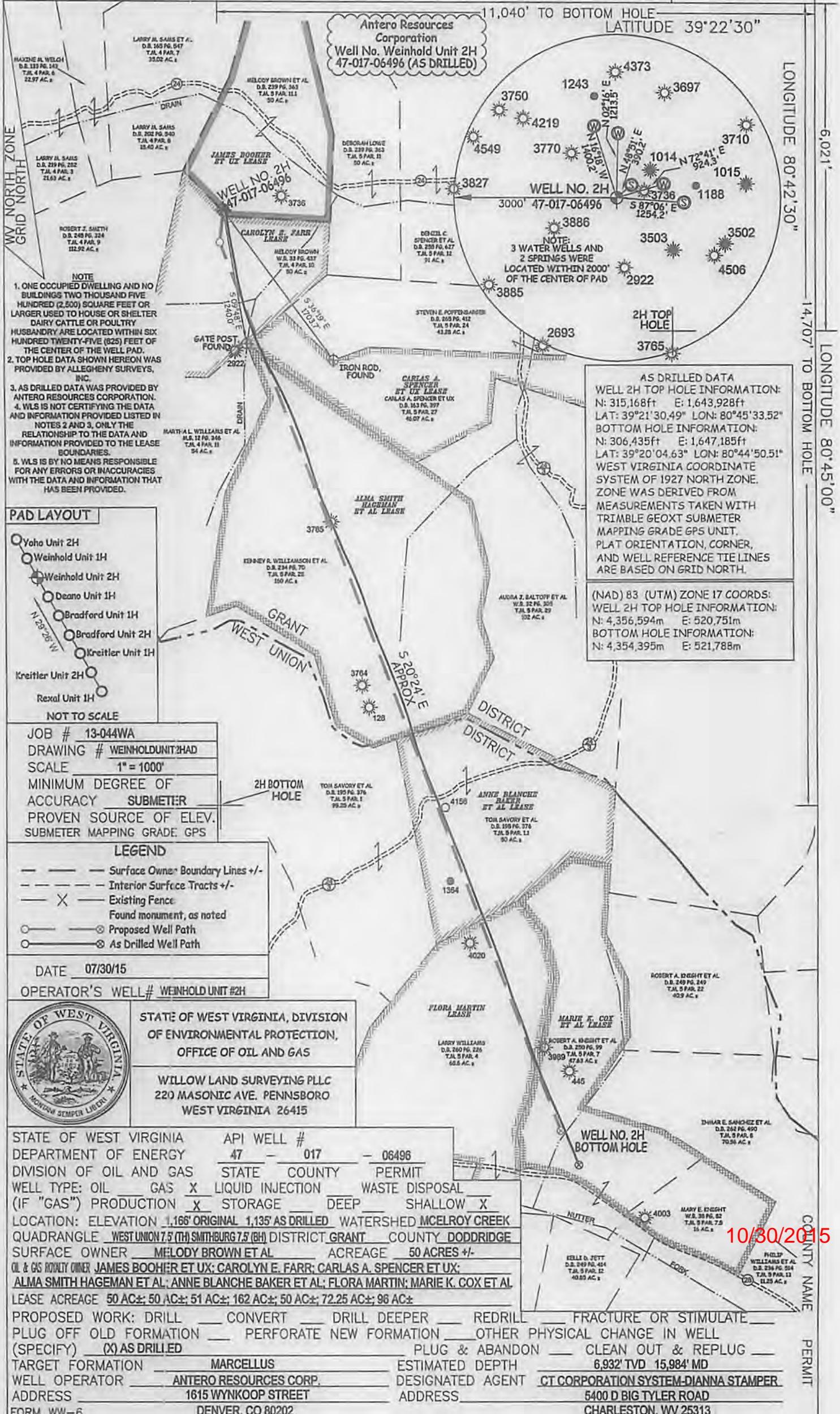
6,021'

LONGITUDE 80°45'00"

14,707' TO BOTTOM HOLE

Antero Resources Corporation  
Well No. Weinhold Unit 2H  
47-017-06496 (AS DRILLED)

11,040' TO BOTTOM HOLE  
LATITUDE 39°22'30"



**NOTE**

- ONE OCCUPIED DWELLING AND NO 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.
- TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
- AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
- 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.
- WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.



JOB # 13-044WA  
DRAWING # WEINHOLDUNIT2HAD  
SCALE 1" = 1000'  
MINIMUM DEGREE OF ACCURACY SUBMETER  
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

**LEGEND**

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

DATE 07/30/15  
OPERATOR'S WELL # WEINHOLD UNIT #2H



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 X LIQUID INJECTION WASTE DISPOSAL  
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X  
LOCATION: ELEVATION 1,166' ORIGINAL 1,135' AS DRILLED WATERSHED MCELROY CREEK  
QUADRANGLE WEST UNION 7.5 (TH) SMITHBURG 7.5 (BH) DISTRICT GRANT COUNTY DODDRIDGE  
SURFACE OWNER MELODY BROWN ET AL ACREAGE 50 ACRES +/-  
OIL & GAS ROYALTY OWNER JAMES BOOHER ET UX; CAROLYN E. FARR; CARLAS A. SPENCER ET UX;  
ALMA SMITH HAGEMAN ET AL; ANNE BLANCHE BAKER ET AL; FLORA MARTIN; MARIE K. COX ET AL  
LEASE ACREAGE 50 AC±; 50 AC±; 51 AC±; 162 AC±; 50 AC±; 72.25 AC±; 96 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 6,932' TVD 15,984' 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

AS DRILLED DATA  
WELL 2H TOP HOLE INFORMATION:  
N: 315,168ft E: 1,643,928ft  
LAT: 39°21'30.49" LON: 80°45'33.52"  
BOTTOM HOLE INFORMATION:  
N: 306,435ft E: 1,647,185ft  
LAT: 39°20'04.63" LON: 80°44'50.51"  
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE.  
ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT, PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:  
WELL 2H TOP HOLE INFORMATION:  
N: 4,356,594m E: 520,751m  
BOTTOM HOLE INFORMATION:  
N: 4,354,395m E: 521,788m

10/30/2015

COUNTY NAME PERMIT