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west virginia department of environmental protection

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Office of Oil and Gas  
601 57th Street SE  
Charleston, WV 25304  
(304) 926-0450  
(304) 926-0452 fax

Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

## PERMIT MODIFICATION APPROVAL

March 31, 2014

ANTERO RESOURCES CORPORATION  
1625 17TH STREET, SUITE 300  
DENVER, CO 80202

Re: Permit Modification Approval for API Number 8510078 , Well #: MIRACLE UNIT 1H  
**Updated Bottom Hole Coordinates**

Oil and Gas Operator:

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

Please call James Martin at 304-926-0499, extension 1654 if you have any questions.

Sincerely,

for

Gene Smith

Regulatory/Compliance Manager

Office of Oil and Gas



February 7, 2014

Antero Resources  
1625 17th Street  
Denver, Colorado 80202  
Office 303.357.7310  
Fax 303.357.7315

West Virginia Department of Environmental Protection  
Office of Oil and Gas  
Attn: Ms. Laura Cooper  
601 57<sup>th</sup> Street  
Charleston, WV 25304

Ms. Laura Cooper:

Antero Resources Corporation (Antero) would like to submit the following updated mylar plat for the Miracle Unit 1H (API# 47-085-10078) well work permit that was approved on December 30, 2013. We are requesting to update the bottom hole coordinates. Please note that all other information will remain the same as originally permitted.

Attached you will find the following documents:

- REVISED Mylar Plat, which shows the correct bottom hole coordinates

If you have any questions please feel free to contact me at (303) 357-7323.

Thank you in advance for your consideration.

Sincerely,

Ashlie Mihalcin  
Permit Representative  
Antero Resources Corporation

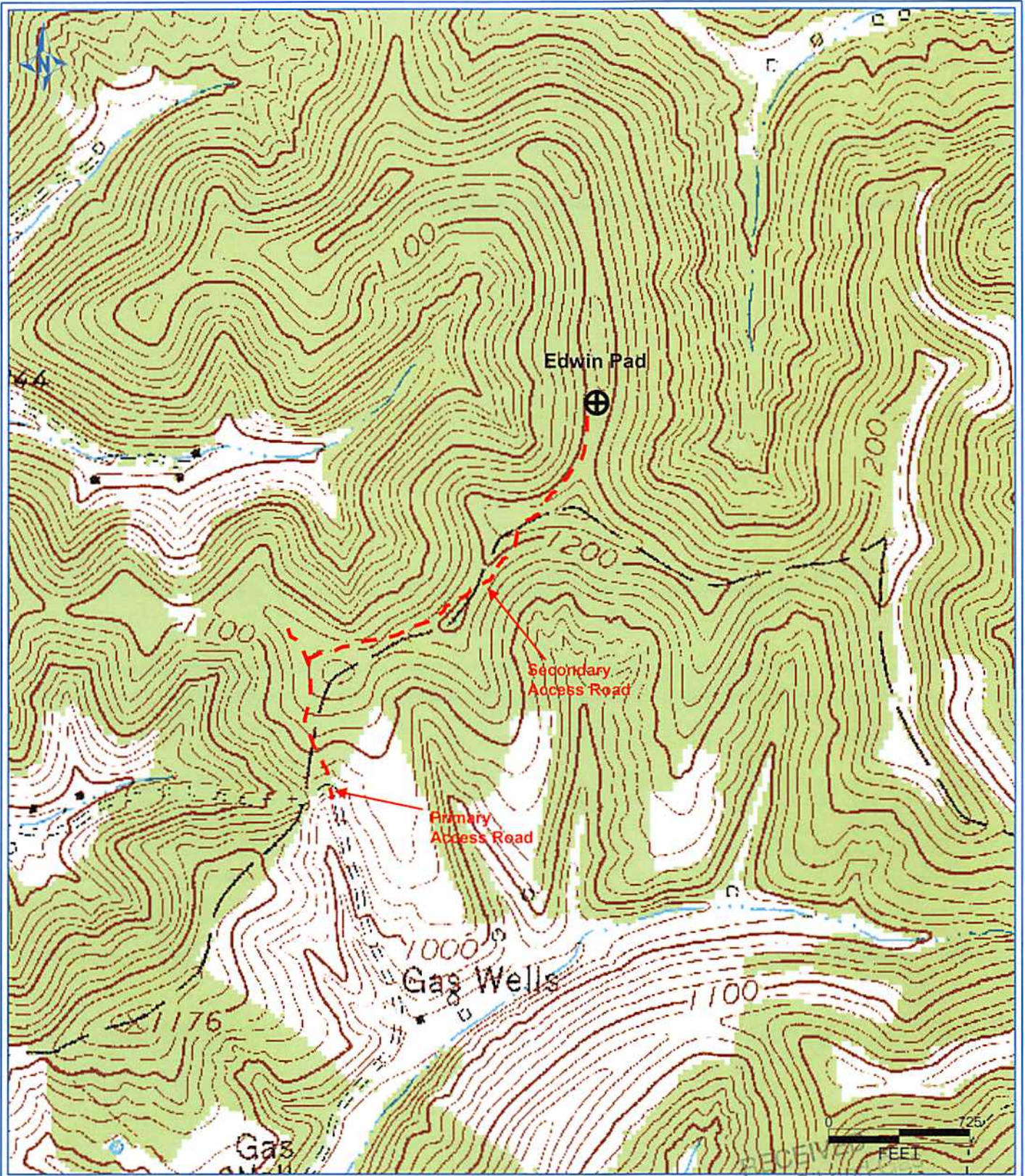
Enclosures

Received

FEB 14 2014

Office of Oil and Gas  
WV Dept. of Environmental Protection

04/04/2014



DETRA 8/6/2013 2:27:16 PM

**Antero Resources Corporation**  
 Appalachian Basin  
 Miracle Unit 1H  
 Ritchie County

Office of Oil  
 May 23 2013  
 WV Department of  
 Environmental Protection

Quadrangle: Pullman  
 Watershed: Little Kanawha  
 District: Clay  
 Date: 8-9-2013

**04/04/2014**

LATITUDE 39°15'00"

7,928'

3,961' TO BOTTOM HOLE

LATITUDE 39°12'30"

LONGITUDE 80°52'30"

7.134'

13,742' TO BOTTOM HOLE

LONGITUDE 80°52'30"

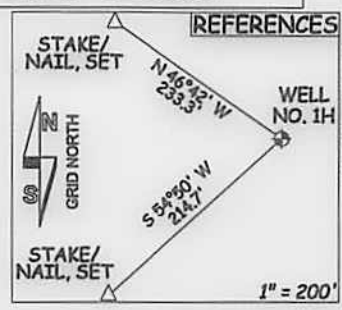
Antero Resources Corporation Well No. Miracle Unit 1H

WM. VANCAMPEN ET AL LEASE JACK D. MACRAY ET AL D.B. 280 PG. 972 T.A.L. 37 PAR. 3 23.03 AC. ±

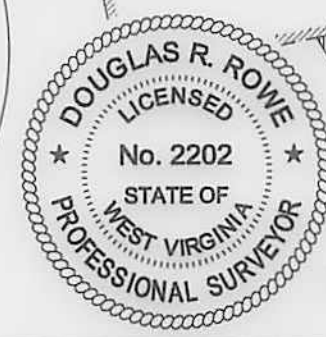
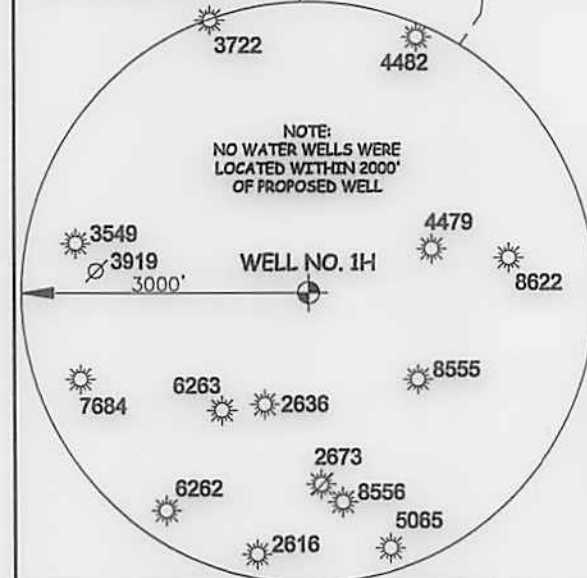
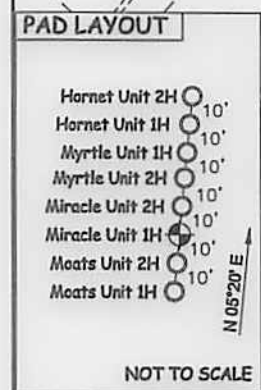
LANDING POINT N:269330 E:1603671 4479

NOTES: WELL 1H TOP HOLE INFORMATION: N: 269,135ft E: 1,602,578ft LAT: 39°13'49.49" LON: 80°54'10.75" BOTTOM HOLE INFORMATION: N: 262,467ft E: 1,606,444ft LAT: 39°12'44.18" LON: 80°53'20.33" 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: 4,340,348m E: 509,599m



NOTE: NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY REGULARLY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.



JOB # 13-050WA  
DRAWING # MIRACLE1H  
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 X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
(IF "GAS") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X  
LOCATION: ELEVATION 1,191' WATERSHED TRIBUTARY OF CABIN RUN  
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±;  
EASTERN AMERICAN ENERGY CORP.; MARJORIE CROOKS ET AL; C.W. BALL HEIRS; IRENE MOATS; JACK LANGFORD ET UX; DENNIS FERGUSON ET AL 145 AC±; 117 AC±; 49.27 AC±; 14.71 AC±; 74 AC±; 88 AC±  
PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE X  
PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_  
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,900' TVD 14,800' MD  
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER  
ADDRESS 1625 17TH STREET DENVER, CO 80202 ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.  
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 +/-  
X Existing Fence  
Rebar, Found  
DATE 02/04/14  
OPERATOR'S WELL# MIRACLE UNIT #1H  
API WELL # 47 - 085 MOD - 10078  
STATE COUNTY PERMIT  
FORM WW-6

COUNTY NAME PERMIT