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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

August 12, 2014

ANTERO RESOURCES CORPORATION  
1615 WYNKOOP STREET  
DENVER, CO 80202

Re: Permit Modification Approval for API Number 1706424 , Well #: ZIMKA UNIT 2H

**Moved Lateral**

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  
Assistant Chief of Permitting  
Office of Oil and Gas



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

April 4th, 2014

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 permit modification for an approved well on the Pearl Jean Pad. We are requesting to move the horizontal lateral which will change the bottom hole location of the Zimka Unit 2H (API# 47-017-06424).

Attached you will find the following documents:

- REVISED Form WW-6A1, which shows the leases we will be drilling into
- REVISED Mylar Plat, which shows the new bottom hole location

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

Thank you in advance for your consideration.

Sincerely,

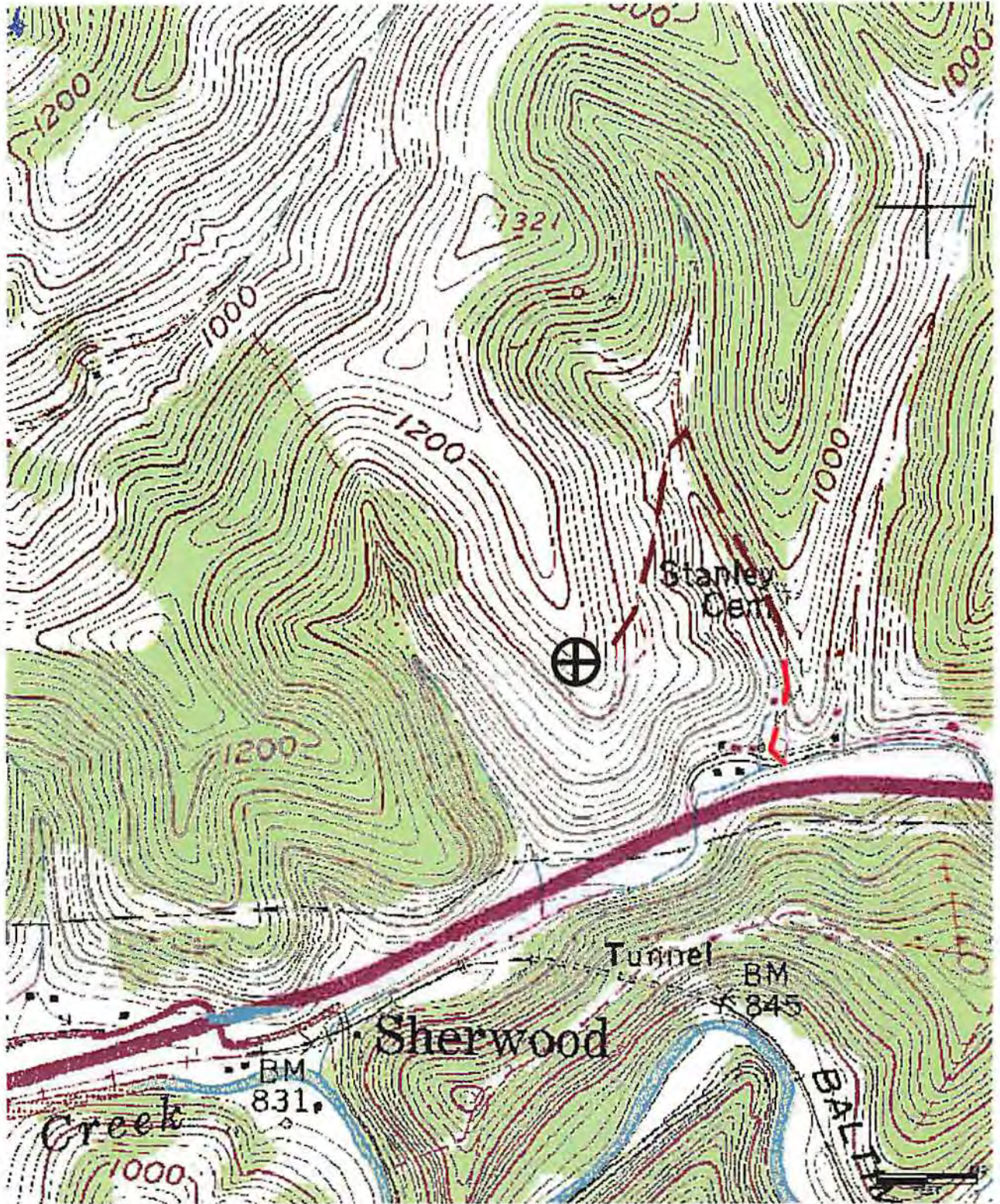
A handwritten signature in black ink that reads "Ashlie Mihalcin". The signature is written in a cursive, flowing style.

Ashlie Mihalcin  
Permit Representative  
Antero Resources Corporation

RECEIVED  
Office of Oil and Gas  
APR 10 2014  
WV Department of  
Environmental Protection

Enclosures

017 -- 06424



*DCW  
1-9-2014  
MAG*

Antero Resources Corporation  
Appalachian Basin  
Zimka Unit 2H  
Dodridge County

RECEIVED  
Office of Oil and Gas

Quadrangle: Smithburg  
Watershed: Morgans Run and Buckeye Creek  
Watersheds  
District: Grant  
Date: 10/17/13

JAN 1 2014

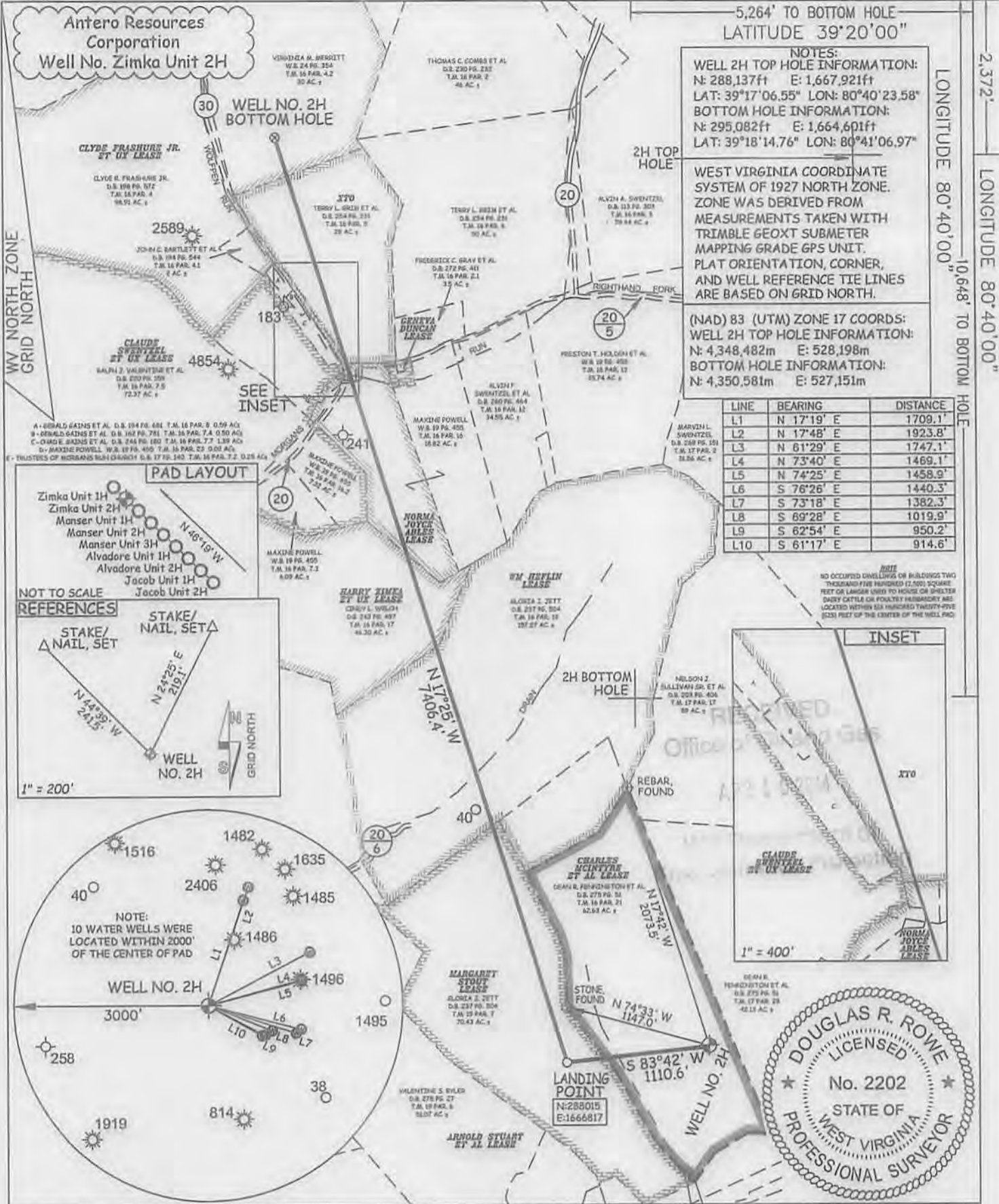
WV Department of  
Environmental Protection

08/15/2014

LATITUDE 39°17'30" 1,854'

5,264' TO BOTTOM HOLE  
LATITUDE 39°20'00"

LONGITUDE 80°40'00" 10,648' TO BOTTOM HOLE  
LONGITUDE 80°40'00"



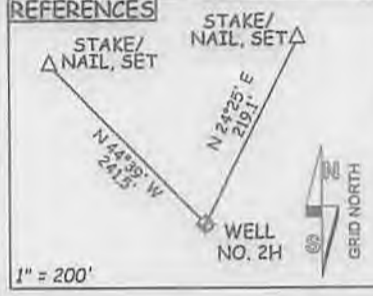
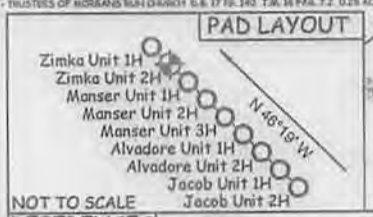
NOTES:  
 WELL 2H TOP HOLE INFORMATION:  
 N: 288,137ft E: 1,667,921ft  
 LAT: 39°17'06.55" LON: 80°40'23.58"  
 BOTTOM HOLE INFORMATION:  
 N: 295,082ft E: 1,664,601ft  
 LAT: 39°18'14.76" LON: 80°41'06.97"

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: 4,348,482m E: 528,198m  
 BOTTOM HOLE INFORMATION:  
 N: 4,350,581m E: 527,151m

LINE	BEARING	DISTANCE
L1	N 17°19' E	1709.1'
L2	N 17°48' E	1923.8'
L3	N 61°29' E	1747.1'
L4	N 73°40' E	1469.1'
L5	N 74°25' E	1458.9'
L6	S 76°26' E	1440.3'
L7	S 73°18' E	1382.3'
L8	S 69°28' E	1019.9'
L9	S 62°54' E	950.2'
L10	S 61°17' E	914.6'

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



JOB # 13-092WA  
 DRAWING # ZIMKAUNIT2HR2  
 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 1,141' WATERSHED BUCKEYE CREEK  
 QUADRANGLE SMITHBURG 7.5' DISTRICT GRANT COUNTY DODD

SURFACE OWNER DEAN R. PENNINGTON ET AL ACREAGE 62.63 ACRES +/-  
 OIL & GAS ROYALTY OWNER CHARLES MCINTYRE ET AL; MARGARET STOUT; WM HEFLIN; LEASE ACREAGE 70 ACRES±; 70.43 ACRES±; 120.6 ACRES±;  
 HARRY ZIMKA ET UX; NORMA JOYCE ABLES; XTO; CLYDE FRASHURE JR. ET UX 47 ACRES±; 21.63 ACRES±; 28 ACRES±; 131 ACRES±

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) Blt - Permit Modification PLUG & ABANDON CLEAN OUT & REPLUG  
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 7,200' TVD 16,300' MD

WELL OPERATOR ANTERO RESOURCES CORPORATION DESIGNATED AGENT CT CORPORATION SYSTEM  
 ADDRESS 1625 17TH STREET ADDRESS 5400 D BIG TYLER ROAD  
 DENVER, CO 80202 CHARLESTON, WV 25313

LEGEND:  
 - - - Surface Owner Boundary Lines +/-  
 - - - Interior Surface Tracts +/-  
 X Existing Fence  
 ⊕ Found monument, as noted

DOUGLAS R. ROWE LICENSED PROFESSIONAL SURVEYOR No. 2202 STATE OF WEST VIRGINIA

DATE 04/03/14  
 OPERATOR'S WELL# ZIMKA UNIT #2H  
 API WELL # 47 - 017 - MOD - 06424 H6A  
 STATE COUNTY PERMIT

FORM WW-6

08/15/2014

COUNTY NAME PERMIT