west virginia department of environmental protection

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

PERMIT MODIFICATION APPROVAL

July 24, 2015

NORTHEAST NATURAL ENERGY LLC
707 VIRGINIA STREET EAST
CHARLESTO, WV 25301

Re: Permit Modification Approval for API Number 6101705, Well #: MIP SW

Change to shallow well, modify target formation

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

Gene Smith
Assistant Chief of Permitting
Office of Oil and Gas

WW - 2B
(Rev. 8/10)

61- 01705 MAD

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

1) Well Operator: Northeast Natural Energy LLC

494498281	Monongalia	Grant	Morgantown South
Operator ID	County	District	Quadrangle

2) Operator's Well Number: MIP SW 3) Elevation: 1,072.91'

4) Well Type: (a) Oil_____ or Gas X

(b) If Gas: Production ____ / Underground Storage _____

Deep_____ / Shallow X

5) Proposed Target Formation(s): Onondaga Proposed Target Depth: 7,672'
6) Proposed Total Depth: 7,672' Feet Formation at Proposed Total Depth: Onondaga
7) Approximate fresh water strata depths: 50', 450'
8) Approximate salt water depths: 1,600'

9) Approximate coal seam depths: 200', 225'

10) Approximate void depths,(coal, Karst, other): N/A

11) Does land contain coal seams tributary to active mine? No

12) Describe proposed well work and fracturing methods in detail (attach additional sheets if needed)
The MIP SW will be drilled to a depth of 7,672 ft. for the purposes of acquiring various geologic and engineering data and to be used for scientific observation. This well will not be perforated or produced.

13) **CASING AND TUBING PROGRAM**

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft	For Drilling	Left in Well	Fill -up (Cu. Ft.)
Conductor	13 3/8"	J-55	54.5	60'	60'	GTS
Fresh Water	9 5/8"	J-55	36	530'	500'	CTS
Coal						
Intermediate	7"	J-55	23	1,830'	1,800'	CTS
Production	4 1/2"	J-55	11.6	7,672'	7,642'	920 Cu. Ft.
Tubing						
Liners						

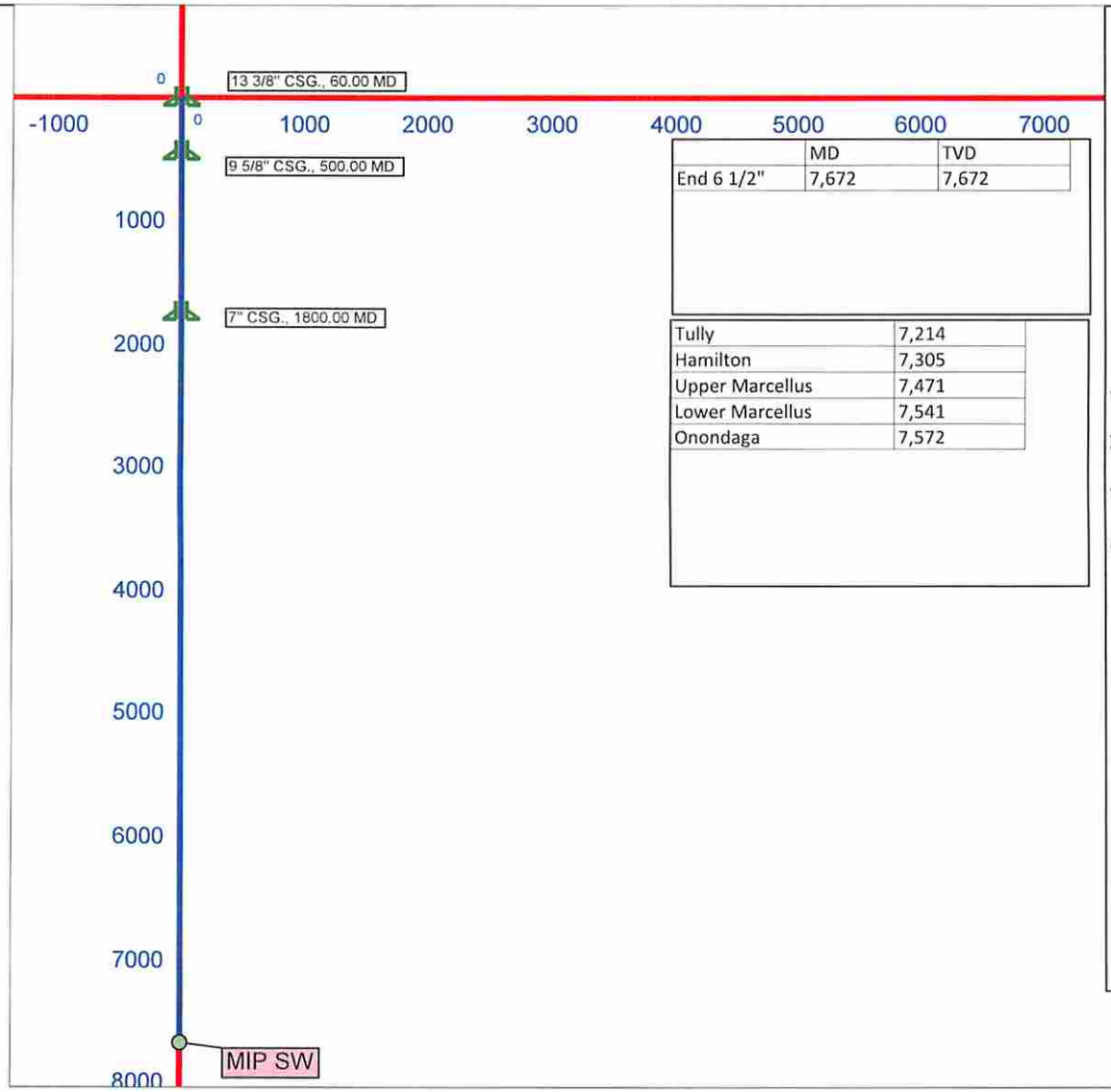
Received
JUL 21 2011
Office of Oil and Gas
WV Dept. of Environmental Protection

Packers: Kind:
Sizes:
Depths Set

61-017-05MON

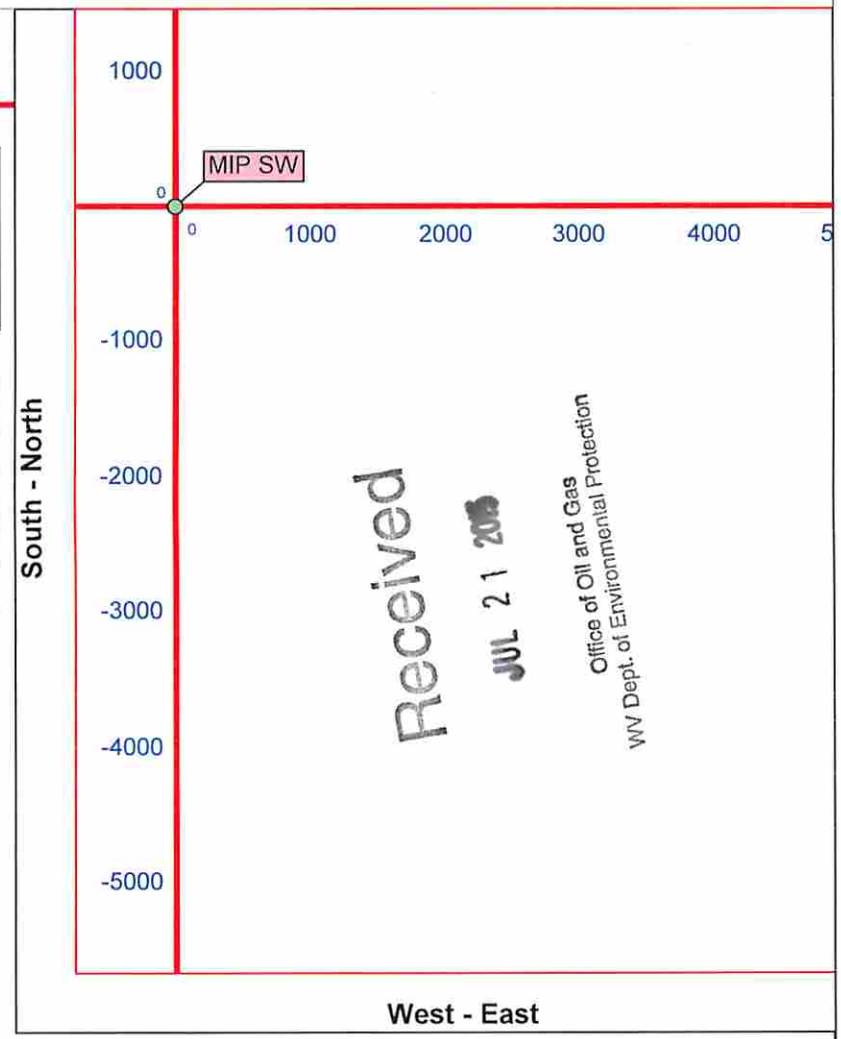
Job Number:
Company: Northeast Natural Energy
Lease/Well: MIP SW
Location: MIP
Rig Name: Patterson 254
State/County: WV/ Mon
Country: US
API Number:

Elevation (To MSL): 1060.00 ft
RKB: 18.00 ft
Projection System: US State Plane 1983
Projection Group: West Virginia Northern Zone
Projection Datum: GRS80
Magnetic Declination: -9.02
Grid Convergence: -0.30608 W
Date: Monday, July 20, 2015



	MD	TVD
End 6 1/2"	7,672	7,672

Tully	7,214
Hamilton	7,305
Upper Marcellus	7,471
Lower Marcellus	7,541
Onondaga	7,572



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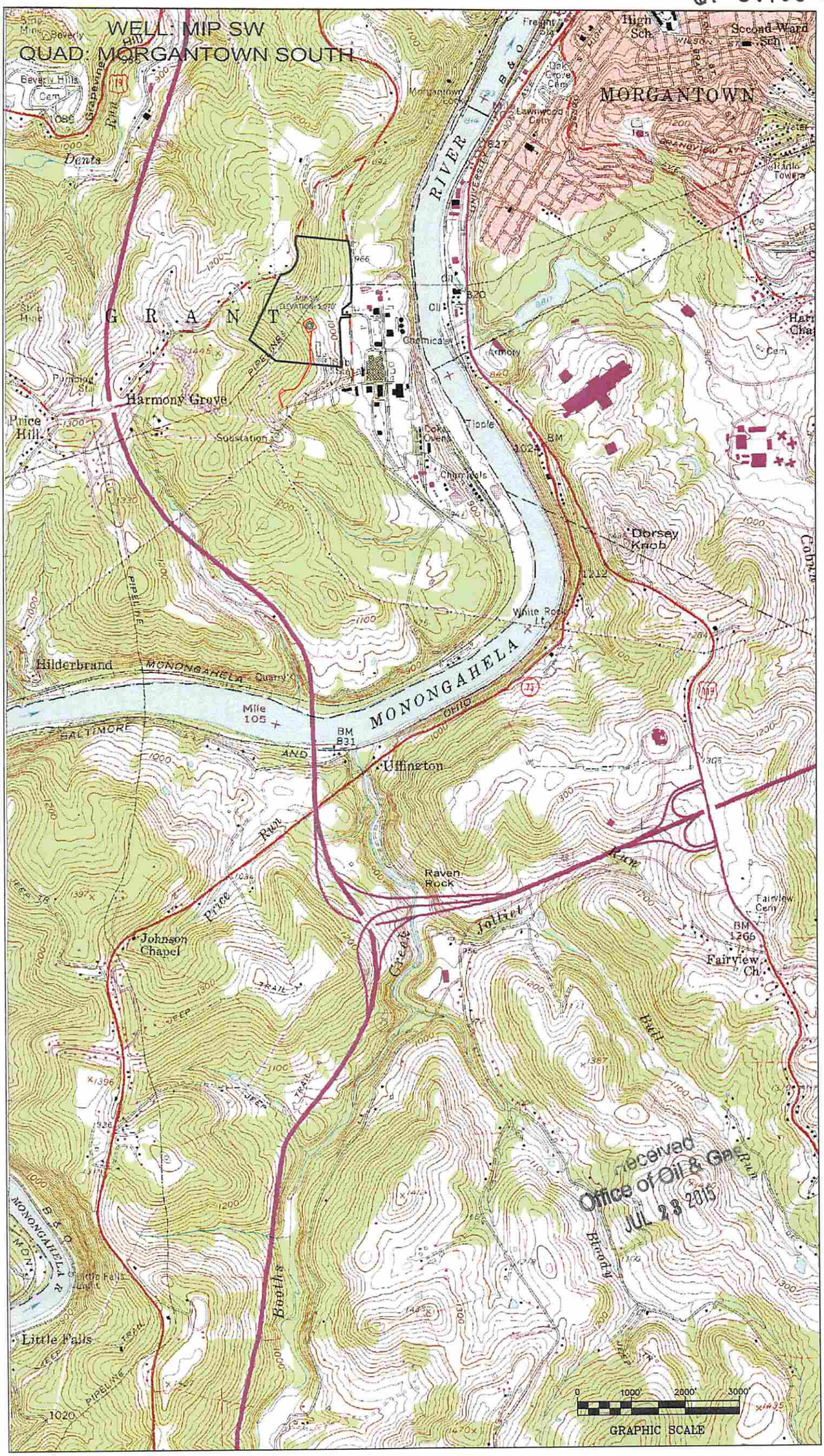
JUL 21 2015
Office of Oil and Gas
WV Dept. of Environmental Protection

Vertical Section (1000 Ft/Div) VSP: 0.00°

Performance Drilling Technology, Inc. - HawkEye™ ©2014

61-01705 MOD



Received
Office of Oil & Gas
JUL 23 2015

SURFACE HOLE DEC. LONG: 79.980133
SURVEYED LONG: 79° 58' 48.5"

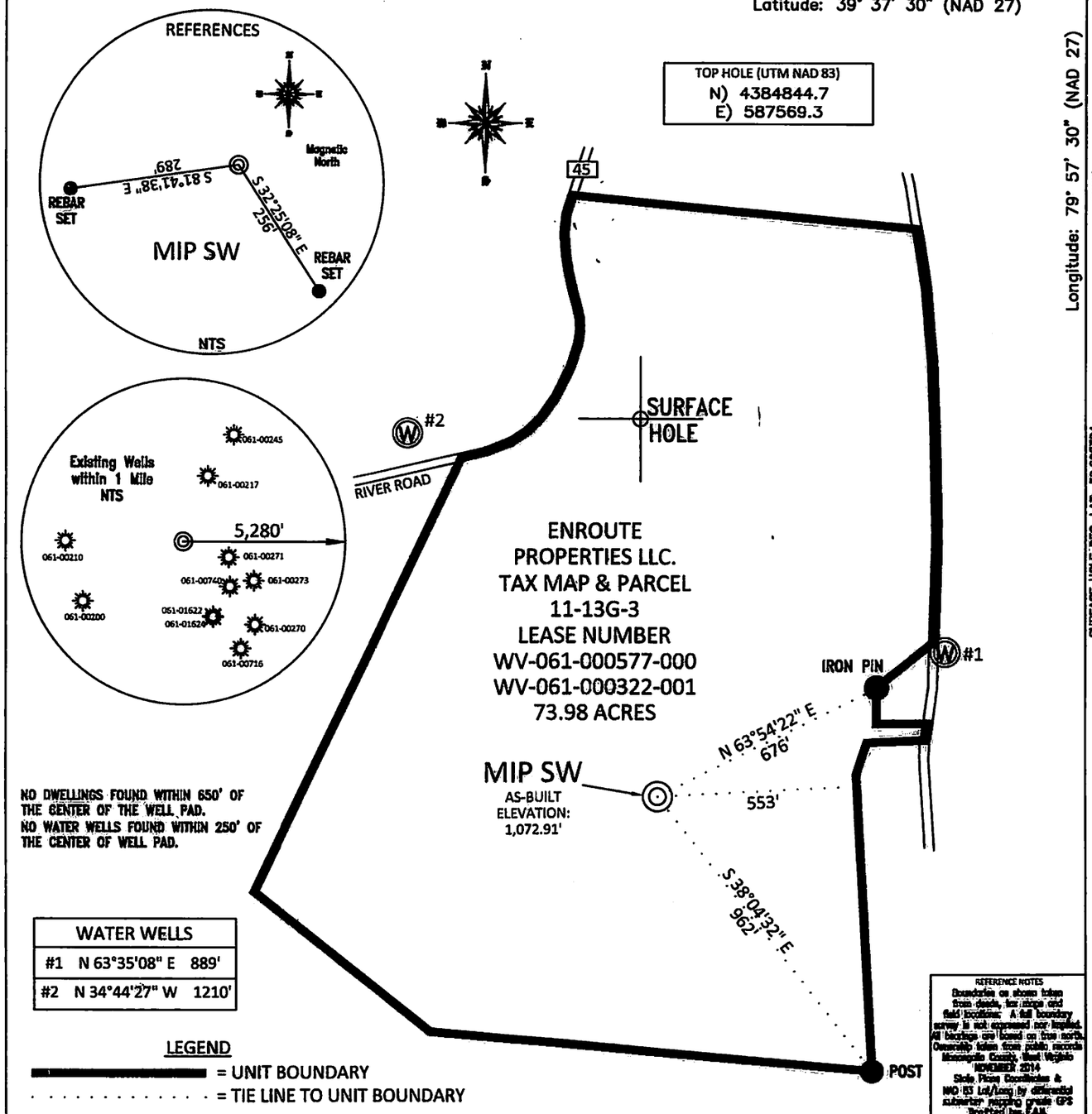
6140'

Latitude: 39° 37' 30" (NAD 27)

Longitude: 79° 57' 30" (NAD 27)

6900'

SURFACE HOLE DEC. LAT: 39.605794
SURVEYED LAT: 39° 36' 31.7"



WATER WELLS		
#1	N 63°35'08" E	889'
#2	N 34°44'27" W	1210'

LEGEND

= UNIT BOUNDARY

. . . . . = TIE LINE TO UNIT BOUNDARY

FILE #: NNE004
DRAWING #: 2453
SCALE: 1"=400'
MINIMUM DEGREE OF ACCURACY: 1/200
PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING GRADE GPS

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 REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: _____

L.L.S. #2124 : Ernest J. Benchek III

ERNEST J. BENCHEK III
LICENSED
No. 2124
STATE OF WEST VIRGINIA
PROFESSIONAL SURVEYOR

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304

DATE: JULY 21, 2015

OPERATOR'S WELL #: MIP SW

API WELL #: 47 (STATE) 61 (COUNTY) 01705 (PERMIT)

Well Type: ☐ Oil ☐ Waste Diposal ☐ Production ☐ Deep
☒ Gas ☐ Liquid Injection ☐ Storage ☒ Shallow

AS-BUILT ELEVATION : 1,072.91'

WATERSHED: UPPER MONONGAHELA RIVER

COUNTY/DISTRICT: MONONGALIA/GRANT

QUADRANGLE: MORGANTOWN SOUTH

SURFACE OWNER: ENROUTE PROPERTIES LLC.

ACREAGE: 73.98 +/-

OIL & GAS ROYALTY OWNER: ENROUTE PROPERTIES LLC.

ACREAGE: 73.98 +/-

LEASE NUMBERS: _____

DRILL ☒ CONVERT ☐ DRILL DEEPER ☐ REDRILL ☐ FRACTURE OR STIMULATE ☐
PLUG OFF FORMATION ☐ PERFORATE NEW FORMATION ☐ PLUG & ABANDON ☐
CLEAN OUT & REPLUG ☐ OTHER CHANGE ☐ (SPECIFY): _____

TARGET FORMATION: ONONDAGA

ESTIMATED DEPTH: TVD: 7,672' TMD: 7,672'

WELL OPERATOR : NORTHEAST NATURAL ENERGY LLC

DESIGNATED AGENT : JOHN ADAMS

ADDRESS: 707 VIRGINIA STREET – SUITE 1200

ADDRESS: 707 VIRGINIA STREET – SUITE 1200

CITY: CHARLESTON STATE: WV ZIP CODE: 25301

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