



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

February 27, 2013

**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-1704466, issued to EXCO RESOURCES (WV), INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

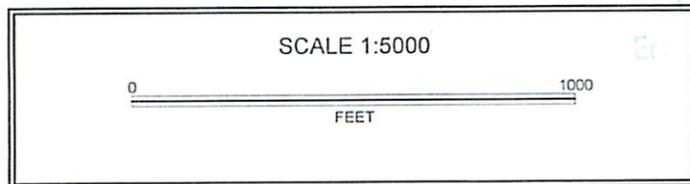
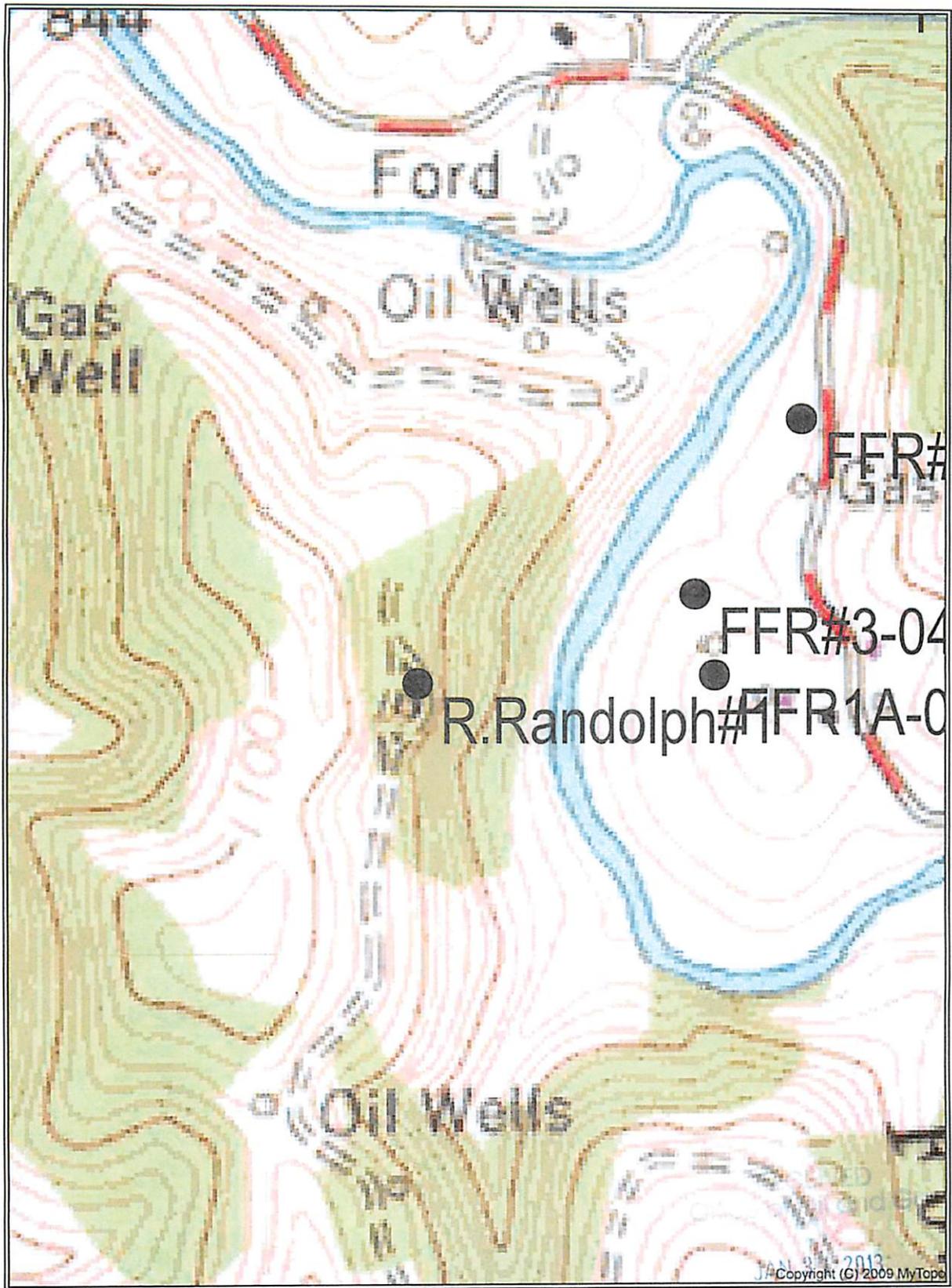
Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.

James Martin  
Chief

Operator's Well No: RANDOLPH 1  
Farm Name: KEPLINGER, DALE W. & MELISS.  
**API Well Number: 47-1704466**  
**Permit Type: Plugging**  
Date Issued: 02/27/2013

Promoting a healthy environment.



Department of  
Environmental Protec

WW-7  
8-30-06



West Virginia Department of Environmental Protection  
Office of Oil and Gas  
WELL LOCATION FORM: GPS

API: 47-017-04466 WELL NO.: Randolph #1  
FARM NAME: Keplinger, Dale & Melissa  
RESPONSIBLE PARTY NAME: EXCO Resources (PA), LLC  
COUNTY: Doddridge DISTRICT: New Milton  
QUADRANGLE: New Milton  
SURFACE OWNER: Dale & Melissa Keplinger  
ROYALTY OWNER: \_\_\_\_\_  
UTM GPS NORTHING: 4342842.4 m  
UTM GPS EASTING: 526737.9 m GPS ELEVATION: 1105 ft

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
2. Accuracy to Datum – 3.05 meters
3. Data Collection Method:  
Survey grade GPS \_\_\_\_: Post Processed Differential \_\_\_\_

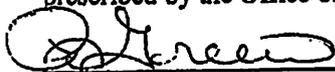
Real-Time Differential \_\_\_\_

Mapping Grade GPS X: Post Processed Differential \_\_\_\_

Real-Time Differential X

4. Letter size copy of the topography map showing the well location.

I the undersigned, hereby certify this data 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 Office of Oil and Gas.

  
Signature

Construction Specialist I

Title

2-20-13

Date



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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  
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Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
www.dep.wv.gov

February 27, 2013

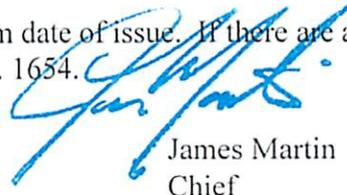
**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-1700576, issued to EXCO RESOURCES (WV), INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.

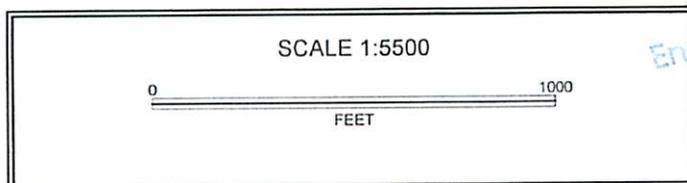
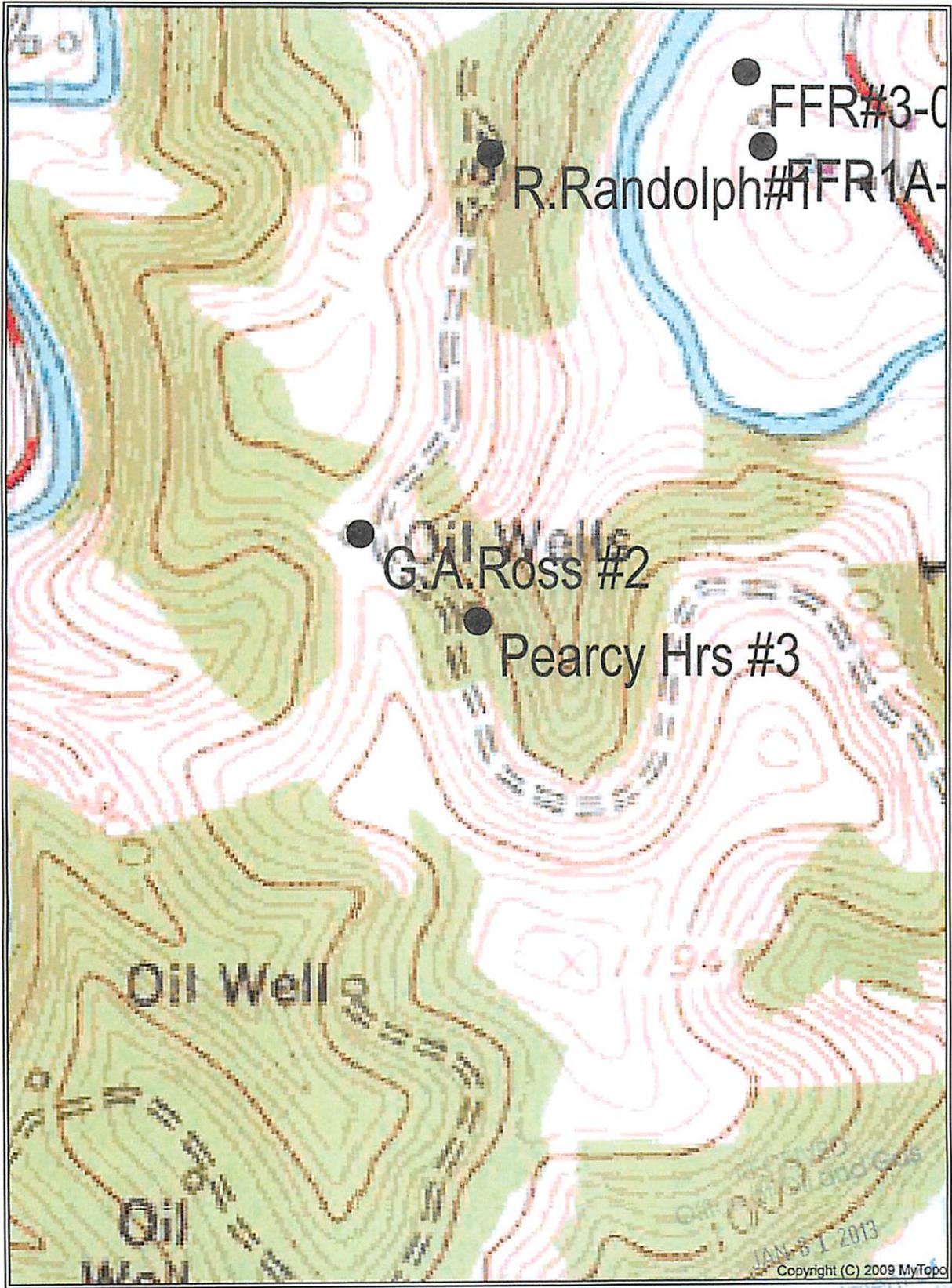


James Martin  
Chief

Operator's Well No: PEARCY HEIRS / NEELY #3  
Farm Name: KEPLINGER, DALE AND MELISS  
API Well Number: 47-1700576  
Permit Type: Plugging  
Date Issued: 02/27/2013

Promoting a healthy environment.

1700576A



Environmental Protection

WW-7  
8-30-06



West Virginia Department of Environmental Protection  
Office of Oil and Gas

WELL LOCATION FORM: GPS

API: 47-017-00576 P WELL NO.: Pearcy Hrs/Neely #3

FARM NAME: Keplinger, Dale and Melissa

RESPONSIBLE PARTY NAME: EXCO Resources (PA), LLC

COUNTY: Doddridge DISTRICT: New Milton

QUADRANGLE: Vadis

SURFACE OWNER: Dale & Melissa Keplinger

ROYALTY OWNER: \_\_\_\_\_

UTM GPS NORTHING: 4342424.96m

UTM GPS EASTING: 526713.63m GPS ELEVATION: 320.20m

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
2. Accuracy to Datum – 3.05 meters
3. Data Collection Method:  
Survey grade GPS \_\_\_\_\_: Post Processed Differential \_\_\_\_\_

Real-Time Differential \_\_\_\_\_

Mapping Grade GPS X: Post Processed Differential \_\_\_\_\_

Real-Time Differential X

4. Letter size copy of the topography map showing the well location.

I the undersigned, hereby certify this data 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 Office of Oil and Gas.

[Signature]  
Signature

Construction Specialist I  
Title

2-20-13  
Date



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west virginia department of environmental protection

---

Office of Oil and Gas  
601 57th Street SE  
Charleston, WV 25304  
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Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

February 27, 2013

**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-1700117, issued to EXCO RESOURCES (WV), INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

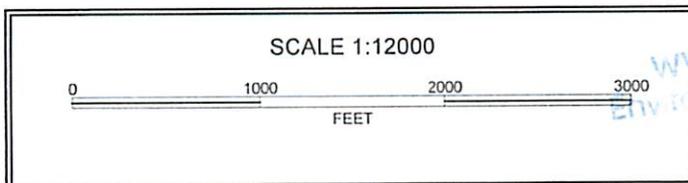
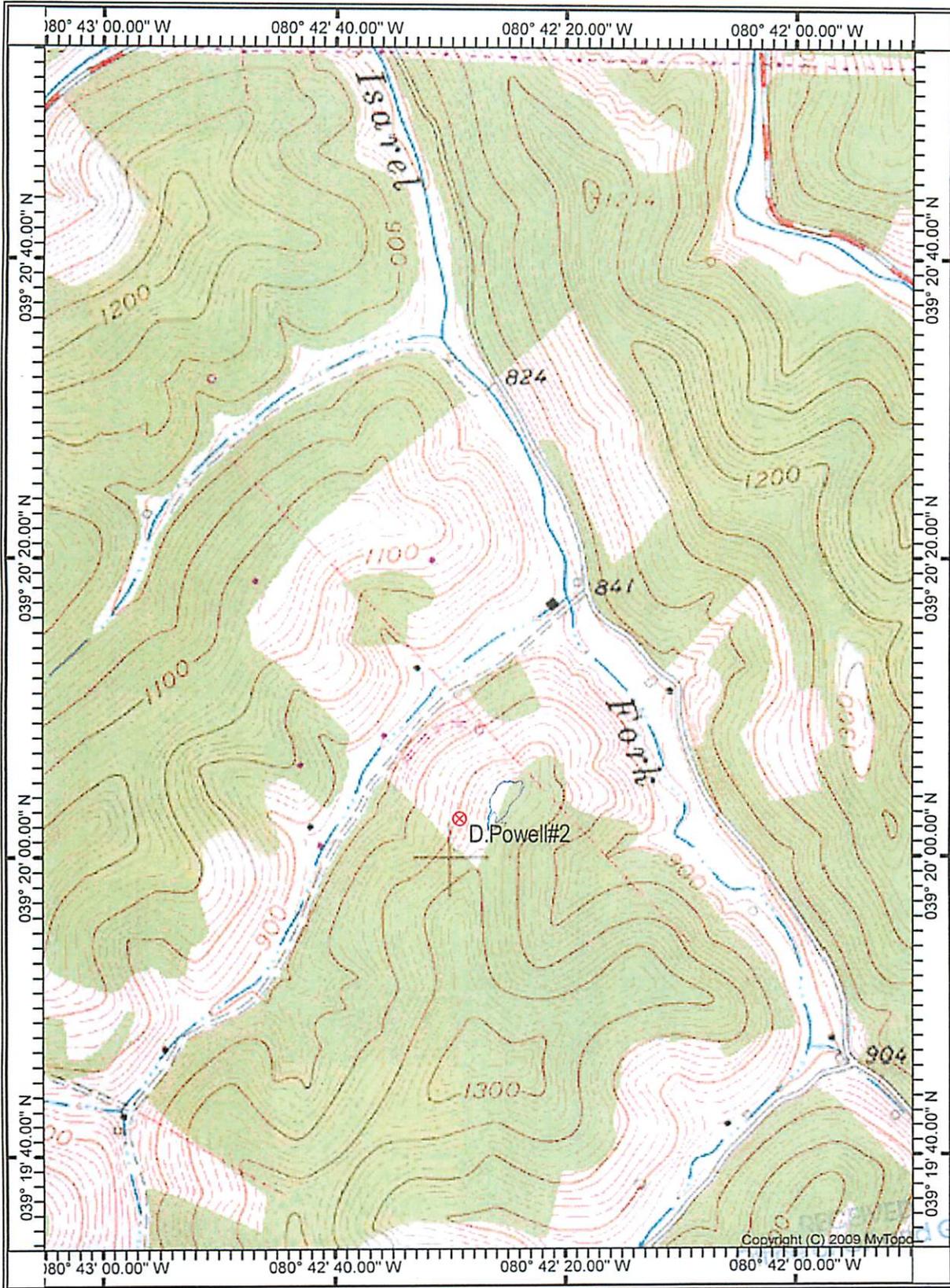
This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.

James Martin  
Chief

Operator's Well No: POWELL 2  
Farm Name: FOX, JAMES J.  
**API Well Number: 47-1700117**  
**Permit Type: Plugging**  
Date Issued: 02/27/2013

Promoting a healthy environment.

170017 P



RECEIVED  
JAN 31 2013  
WV Department of Environmental Protection

WW-7  
8-30-06



West Virginia Department of Environmental Protection  
Office of Oil and Gas  
WELL LOCATION FORM: GPS

API: 47-017-00117 f WELL NO.: Powell 2  
FARM NAME: Fox, James J  
RESPONSIBLE PARTY NAME: EXCO Resources (PA), LLC  
COUNTY: Doddridge DISTRICT: Grant  
QUADRANGLE: Center Point  
SURFACE OWNER: James J. Fox  
ROYALTY OWNER: \_\_\_\_\_  
UTM GPS NORTHING: 4354007.10 m  
UTM GPS EASTING: 525171.28 m GPS ELEVATION: 324.42 m

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
2. Accuracy to Datum – 3.05 meters
3. Data Collection Method:  
Survey grade GPS \_\_\_\_: Post Processed Differential \_\_\_\_

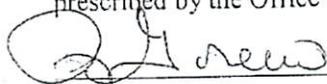
Real-Time Differential \_\_\_\_

Mapping Grade GPS : Post Processed Differential \_\_\_\_

Real-Time Differential

4. Letter size copy of the topography map showing the well location.

I the undersigned, hereby certify this data 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 Office of Oil and Gas.

  
Signature

Construction Specialist I  
Title

2-20-13  
Date



west virginia department of environmental protection

Office of Oil and Gas  
601 57th Street SE  
Charleston, WV 25304  
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Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
www.dep.wv.gov

February 28, 2013

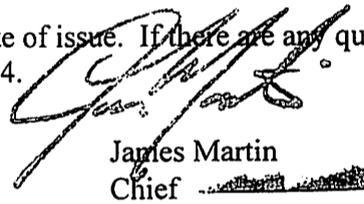
**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-1702775, issued to EXCO RESOURCES (PA), LLC, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.

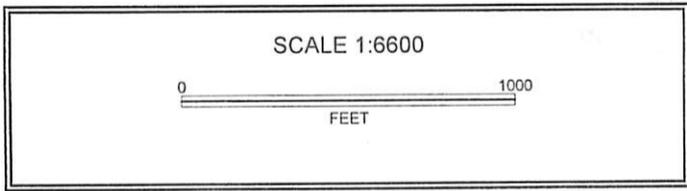
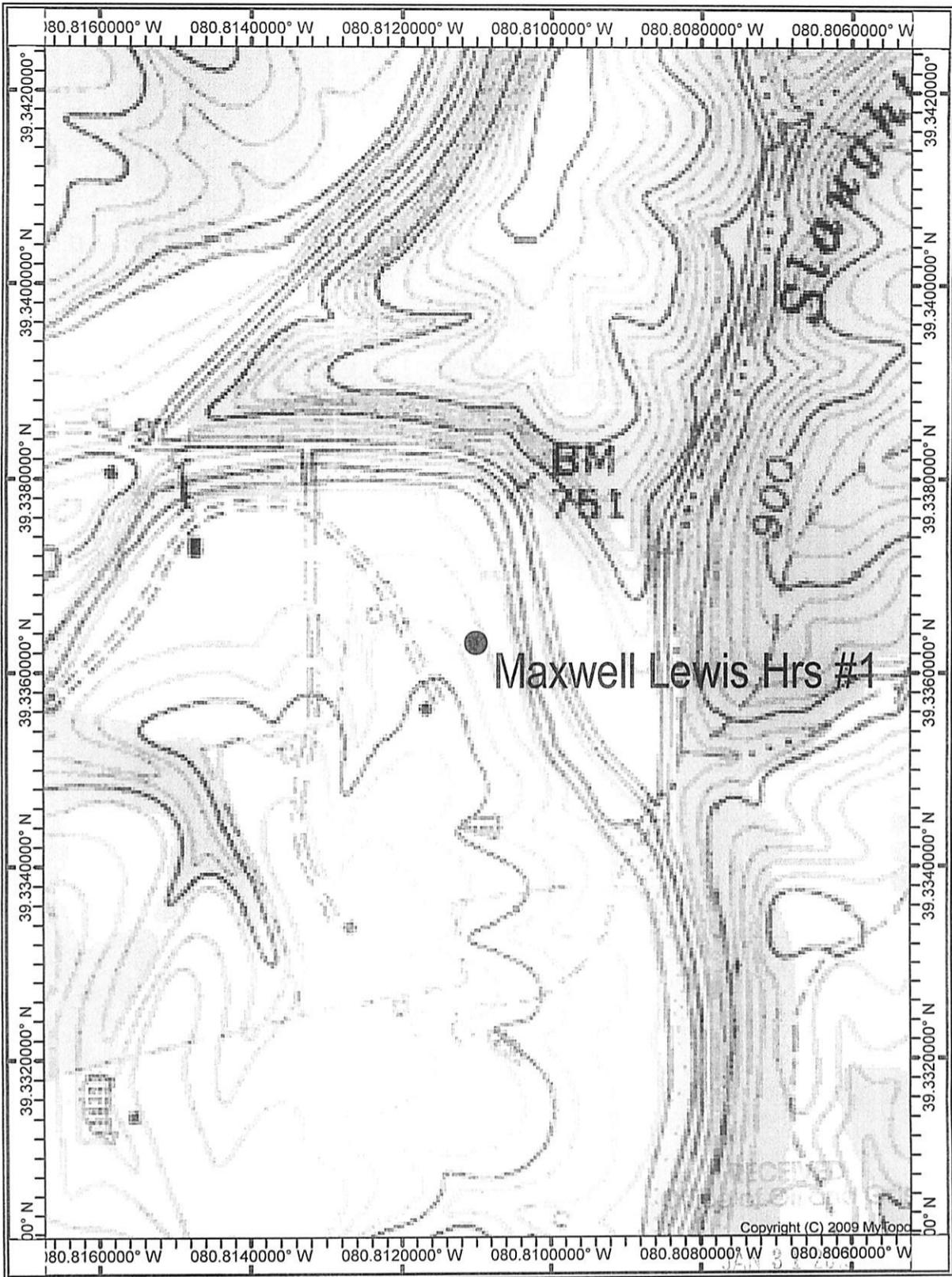


James Martin  
Chief

Operator's Well No: 1  
Farm Name: MAXWELL HEIRS  
**API Well Number: 47-1702775**  
**Permit Type: Plugging**  
Date Issued: 02/28/2013

**Promoting a healthy environment.**

1702775 P



WW-7  
8-30-06



West Virginia Department of Environmental Protection  
Office of Oil and Gas  
**WELL LOCATION FORM: GPS**

API: 47-017-02775 WELL NO.: Maxwell Lewis Hrs #1

FARM NAME: Maxwell Heirs 1

RESPONSIBLE PARTY NAME: EXCO Resources (PA), LLC

COUNTY: Doddridge DISTRICT: West Union

QUADRANGLE: West Union

SURFACE OWNER: Doris Wiseman

ROYALTY OWNER: \_\_\_\_\_

UTM GPS NORTHING: 4354160.70 m

UTM GPS EASTING: 516297.60 m GPS ELEVATION: 232.60 m

*763.12'*

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
2. Accuracy to Datum – 3.05 meters
3. Data Collection Method:  
Survey grade GPS \_\_\_\_: Post Processed Differential \_\_\_\_  
Real-Time Differential \_\_\_\_  
Mapping Grade GPS X: Post Processed Differential \_\_\_\_  
Real-Time Differential X

4. Letter size copy of the topography map showing the well location.

I the undersigned, hereby certify this data 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 Office of Oil and Gas.

Signature

Construction Specialist I

Title

2-20-13

Date



west virginia department of environmental protection

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601 57th Street SE  
Charleston, WV 25304  
(304) 926-0450  
(304) 926-0452 fax

Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
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February 27, 2013

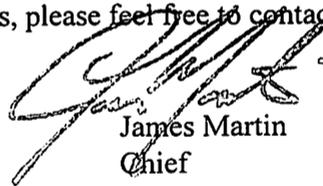
**WELL WORK PERMIT**  
**Horizontal 6A Well**

This permit, API Well Number: 47-10302859, issued to STONE ENERGY CORPORATION, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, well operators report of well work, is to be submitted to this office within 90 days of completion of drilling, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

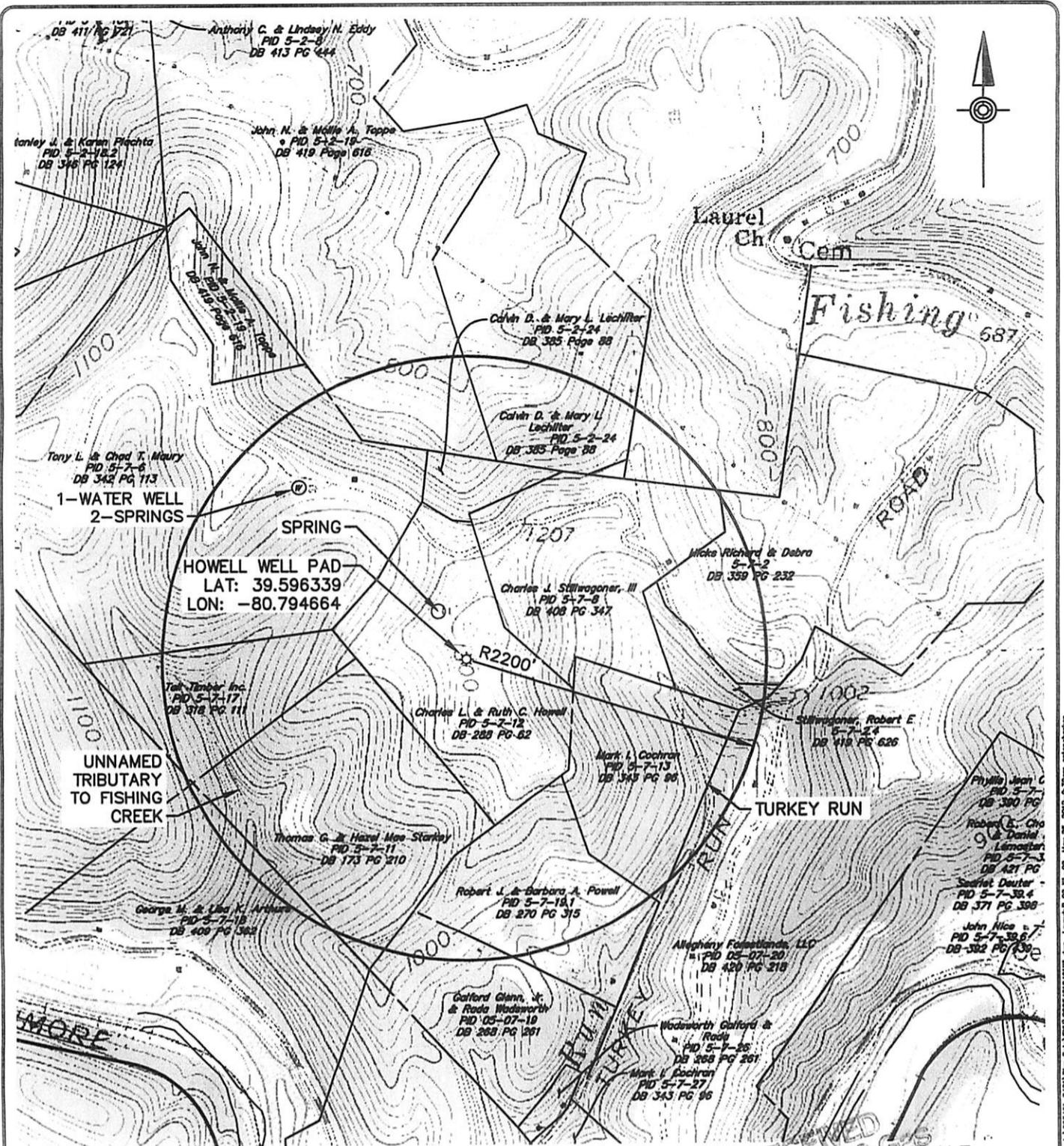
Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.



James Martin  
Chief

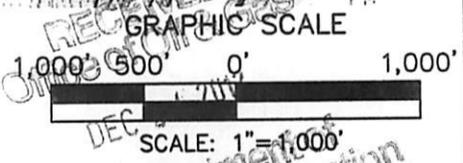
Operator's Well No: HOWELL 2H  
Farm Name: HOWELL, CHARLES L. AND RU1  
**API Well Number: 47-10302859**  
**Permit Type: Horizontal 6A Well**  
Date Issued: 02/27/2013

**Promoting a healthy environment.**



- NOTES:
1. USGS TOPOGRAPHIC MAP: PORTERS FALLS 7.5' USGS QUADRANGLES
  2. ALL COORDINATES SHOWN ARE IN WV STATE PLANE-NORTH (NAD 83) WV83-NF

DMH  
6-5-12



**HRG**  
Herbert Rowland & Grubb, Inc.  
Engineering & Related Services

240 Scott Avenue, Suite 1  
Morgantown, WV 26508  
(304) 284-9222  
Fax (304) 284-9223  
hrg@hrg-inc.com  
www.hrg-inc.com

**WATER / WELL LOCATION MAP**  
FOR  
**HOWELL WELL PAD SURFACE HOLE 2H**

GREEN DISTRICT      WETZEL COUNTY      WEST VIRGINIA

PROJ. MGR. - JWB
DESIGN - MAN
CADD - MAN
CHECKED - RMW
SCALE - 1" = 2000'
DATE - MAY 2011

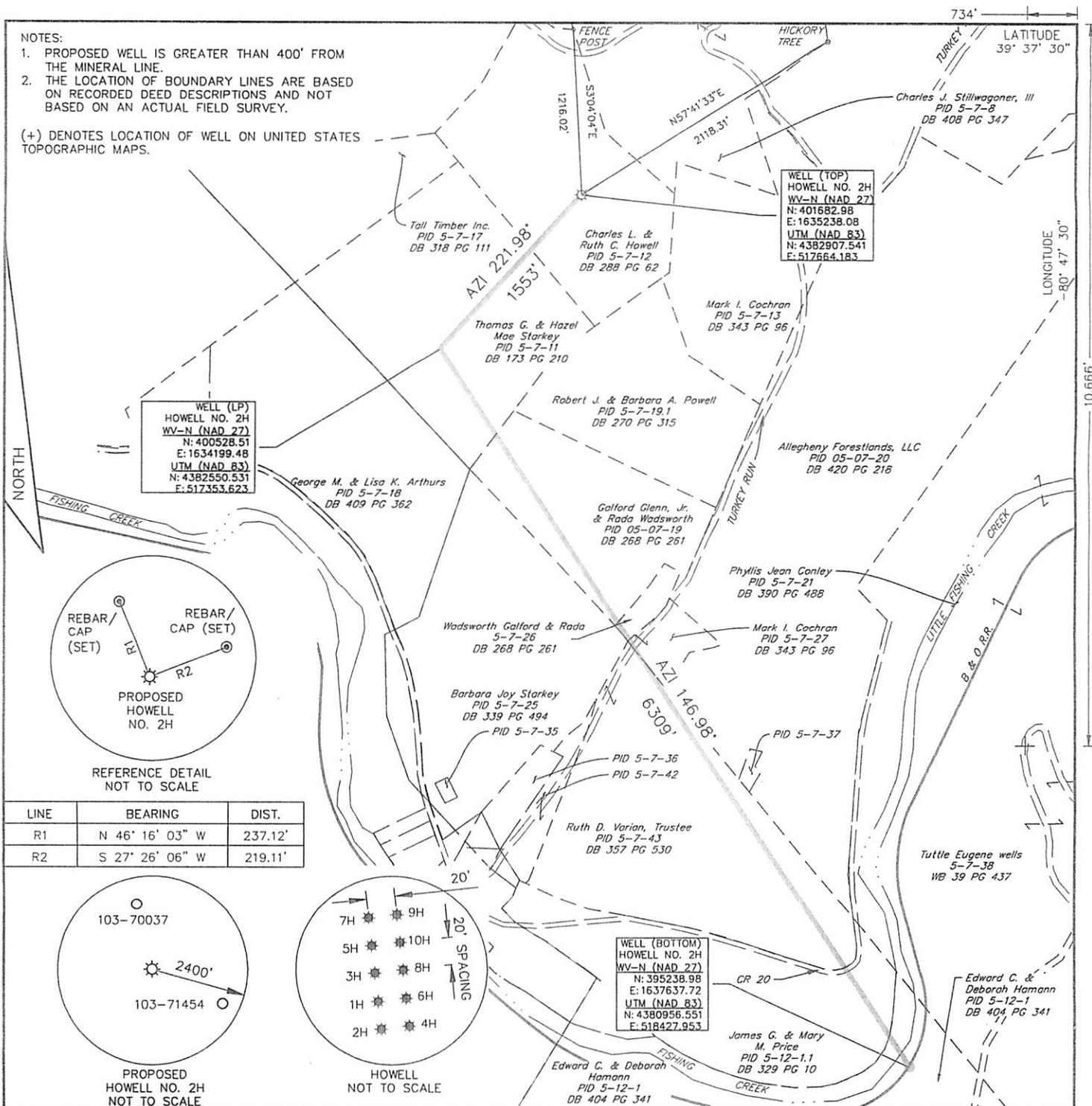
DRAWING NO.
<b>WL-02</b>
SHEET NO.
<b>2 OF 10</b>
PROJECT P005461.0461

103-02859

File name: G:\cell 3D Projects\005461\_0461\Plan\_Site\DWG\00546104610118.dwg Layer: 0 02 W-02 May 23, 2012 9:28am cadswater

- NOTES:  
 1. PROPOSED WELL IS GREATER THAN 400' FROM THE MINERAL LINE.  
 2. THE LOCATION OF BOUNDARY LINES ARE BASED ON RECORDED DEED DESCRIPTIONS AND NOT BASED ON AN ACTUAL FIELD SURVEY.

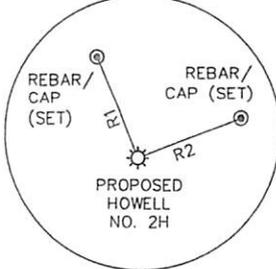
(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.



WELL (LP)  
 HOWELL NO. 2H  
 WV-N (NAD 27)  
 N: 400528.51  
 E: 1634199.48  
 UTM (NAD 83)  
 N: 4382550.531  
 E: 517353.623

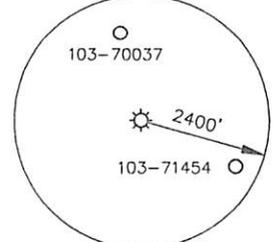
WELL (TOP)  
 HOWELL NO. 2H  
 WV-N (NAD 27)  
 N: 401682.98  
 E: 1635238.08  
 UTM (NAD 83)  
 N: 4382907.541  
 E: 517664.183

WELL (BOTTOM)  
 HOWELL NO. 2H  
 WV-N (NAD 27)  
 N: 395238.98  
 E: 1637637.72  
 UTM (NAD 83)  
 N: 4380956.551  
 E: 518427.953

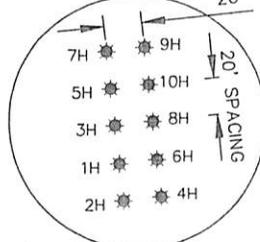


REFERENCE DETAIL  
 NOT TO SCALE

LINE	BEARING	DIST.
R1	N 46° 16' 03" W	237.12'
R2	S 27° 26' 06" W	219.11'



PROPOSED  
 HOWELL NO. 2H  
 NOT TO SCALE



HOWELL  
 NOT TO SCALE



240 Scott Avenue, Suite 1  
 Morgantown, WV 26508  
 (304) 284-9222  
 Fax (304) 284-9223  
 hrg@hrg-inc.com  
 www.hrg-inc.com

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) *Jason A. McVicker*  
 R.P.E. \_\_\_\_\_ L.L.S. 2050



PLACE SEAL HERE

STATE OF WEST VIRGINIA  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
 OIL AND GAS DIVISION



DATE DECEMBER 12, 2012  
 OPERATOR'S WELL NO. HOWELL NO. 2H  
 API WELL NO. \_\_\_\_\_

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS,") PRODUCTION \_\_\_ STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X  
 LOCATION: ELEVATION 1342 WATERSHED: FISHING CREEK  
 DISTRICT: GREEN COUNTY: WETZEL  
 QUADRANGLE: PORTERS FALLS, WV  
 SURFACE OWNER: CHARLES L. & RUTH C. HOWELL ACREAGE: ±51  
 OIL & GAS ROYALTY OWNER: SEE TABLE ATTACHED LEASE ACREAGE: ±1780  
 LEASE NO. 5-7-12  
 PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE X  
 PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ PLUG AND ABANDON \_\_\_  
 CLEAN OUT AND REPLUG \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_

47 - 103 - 02859 H6A  
 STATE COUNTY PERMIT

TARGET FORMATION: MARCELLUS SHALE ESTIMATED DEPTH: TVD-6930' MD-14100'  
 WELL OPERATOR: STONE ENERGY CORPORATION DESIGNATED AGENT: TIM MCGREGOR  
 ADDRESS: P.O. BOX 52807 ADDRESS: 6000 HAMPTON CENTER, SUITE B  
LAFAYETTE, LA 70508 MORGANTOWN, WV 26505

WETZEL COUNTY PERMIT

File name: C:\Civil 3D Projects\005461\_0461\Plan Sets\Permit\0054610461\_2HP\PLAT.dwg Layout: PLAT 2H Dec 17, 2012 1:25pm cfohey FORM WW-6



**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

February 27, 2013

**WELL WORK PERMIT  
Horizontal 6A Well**

This permit, API Well Number: 47-10302860, issued to STONE ENERGY CORPORATION, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, well operators report of well work, is to be submitted to this office within 90 days of completion of drilling, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

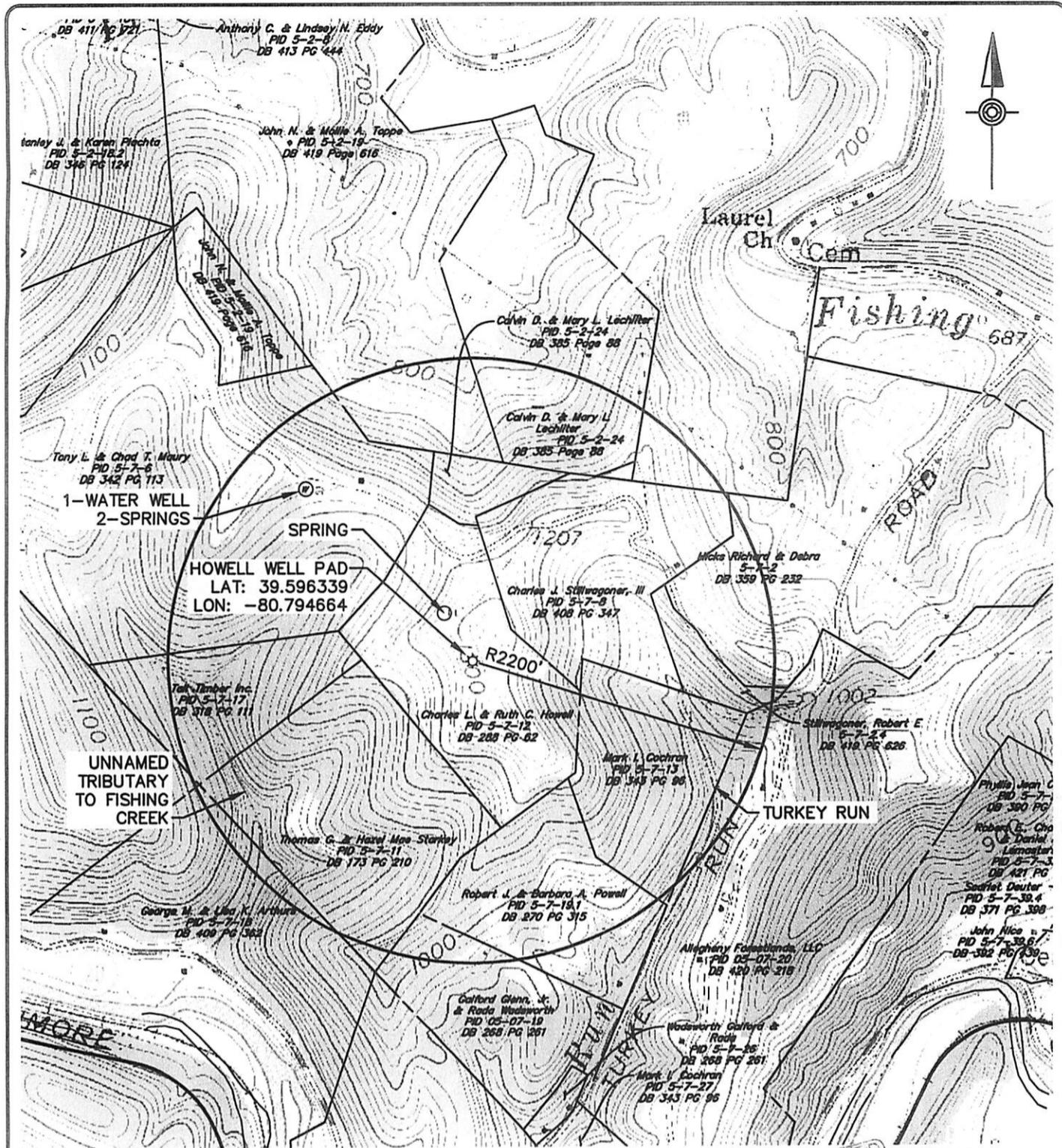
Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.



James Martin  
Chief

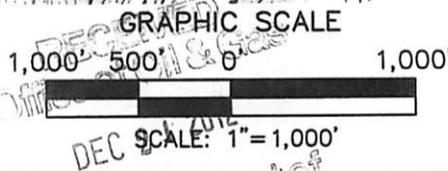
Operator's Well No: HOWELL 6H  
Farm Name: HOWELL, CHARLES L. AND RUT  
**API Well Number: 47-10302860**  
**Permit Type: Horizontal 6A Well**  
Date Issued: 02/27/2013

**Promoting a healthy environment.**



- NOTES:
1. USGS TOPOGRAPHIC MAP:  
PORTERS FALLS 7.5' USGS QUADRANGLES
  2. ALL COORDINATES SHOWN ARE IN WV STATE PLANE-  
NORTH (NAD 83) WV83-NF

DmH  
6-5-10



240 Scott Avenue, Suite 1  
Morgantown, WV 26508  
(304) 284 - 9222  
Fax (304) 284 - 9223  
hrg@hrg-inc.com  
www.hrg-inc.com

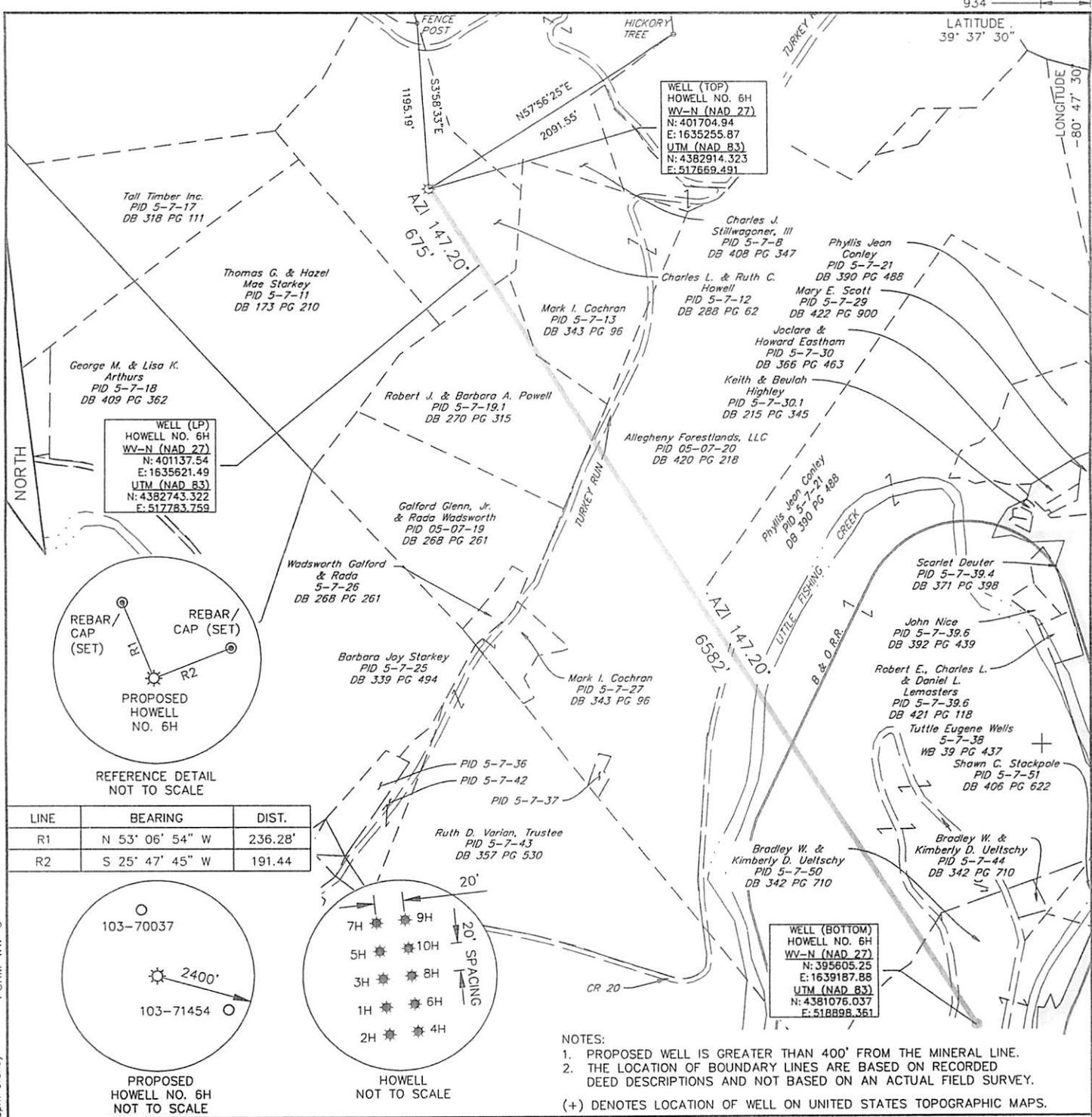
**WATER / WELL LOCATION MAP**  
**FOR**  
**HOWELL WELL PAD SURFACE HOLE 6H**

GREEN DISTRICT      WETZEL COUNTY      WEST VIRGINIA

PROJ. MGR. - THK
DESIGN - MAN
CADD - MAN
CHECKED - RMW
SCALE - 1" = 2000'
DATE - MAY 2011

DRAWING NO. <b>WL-06</b>
SHEET NO. <b>6 OF 10</b>
PROJECT P005461.0461

File name: C:\ch30\Projects\005461\_0461\Plan Set\DWG\0054610461.dwg Layer: B 05 11-08 May 25, 2011 9:42am est:mba



FORM WW-6  
Dec 17, 2012-1:35pm cfohey  
Layout: PLAT 6H  
Projects\005461\0461\Plan Sets\Permit\0054610461\_6H\PLAT.dwg



240 Scott Avenue, Suite 1  
Morgantown, WV 26508  
(304) 284-9222  
Fax (304) 284-9223  
hrg@hrg-inc.com  
www.hrg-inc.com

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) Jason A. McVicker  
R.P.E. \_\_\_\_\_ L.L.S. \_\_\_\_\_ 2050



FILE NO. R005461.0461  
DRAWING NO. WELL NO. 6H PLAT  
SCALE 1" = 1000'  
MINIMUM DEGREE OF ACCURACY 1 : 2500  
PROVEN SOURCE OF ELEVATION GPS (SURVEY GRADE)

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OIL AND GAS DIVISION



DATE DECEMBER 12, 2012  
OPERATOR'S WELL NO. HOWELL NO. 6H  
API WELL NO. \_\_\_\_\_

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
(IF "GAS,") PRODUCTION \_\_\_ STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X  
LOCATION: ELEVATION 1342 WATERSHED: FISHING CREEK  
DISTRICT: GREEN COUNTY: WETZEL  
QUADRANGLE: PORTERS FALLS, WV  
SURFACE OWNER: CHARLES L. & RUTH C. HOWELL ACREAGE: ±51  
OIL & GAS ROYALTY OWNER: SEE TABLE ATTACHED LEASE ACREAGE: ±1780  
LEASE NO. 5-7-12  
PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE X  
PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ PLUG AND ABANDON \_\_\_  
CLEAN OUT AND REPLUG \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_

TARGET FORMATION: MARCELLUS SHALE ESTIMATED DEPTH: TVD-6930' MD-13210'  
WELL OPERATOR: STONE ENERGY CORPORATION DESIGNATED AGENT: TIM MCGREGOR  
ADDRESS: P.O. BOX 52807 ADDRESS: 6000 HAMPTON CENTER, SUITE B  
LAFAYETTE, LA 70508 MORGANTOWN, WV 26505

WETZEL COUNTY PERMIT



**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

February 28, 2013

**WELL WORK PERMIT**

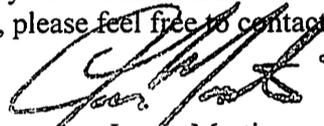
**Horizontal 6A Well**

This permit, API Well Number: 47-9502090, issued to CHESAPEAKE APPALACHIA, L.L.C., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, well operators report of well work, is to be submitted to this office within 90 days of completion of drilling, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

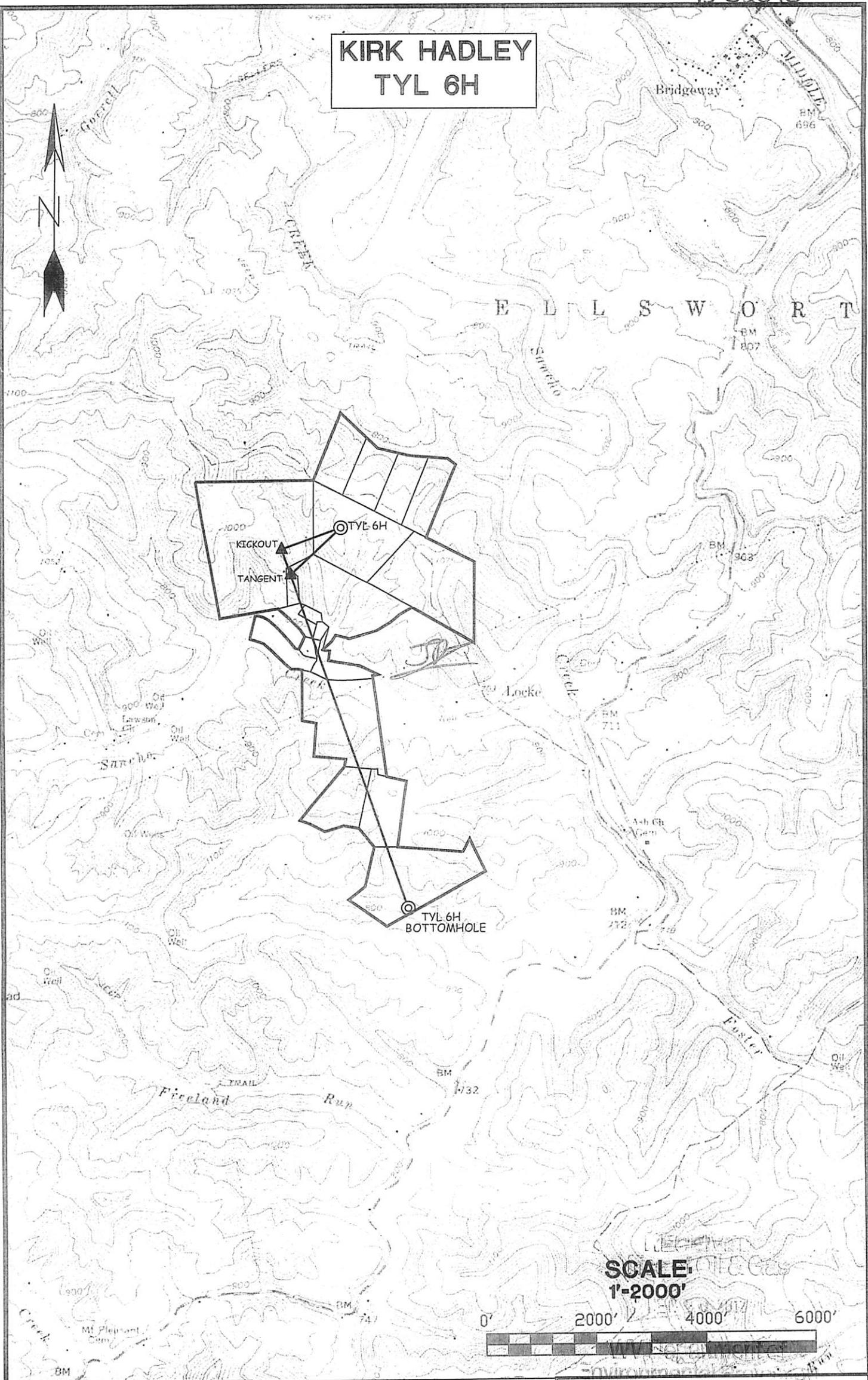


James Martin  
Chief

Operator's Well No: KIRK HADLEY TYL 6H  
Farm Name: HADLEY, KIRK  
**API Well Number: 47-9502090**  
**Permit Type: Horizontal 6A Well**  
Date Issued: 02/28/2013

**Promoting a healthy environment.**

# KIRK HADLEY TYL 6H



**SCALE:**  
**1"=2000'**

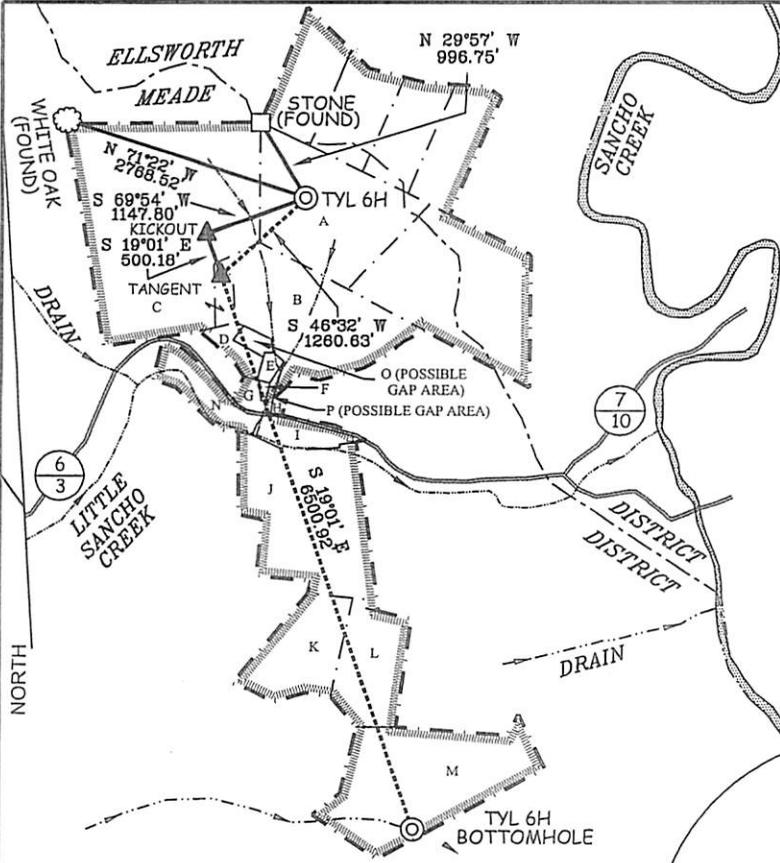


**95-SLS-02090**  
SMITH LAND SURVEYING, INC.  
P.O. BOX 150 GLENVILLE, WV. 26351  
PH: (304)462-5634 FAX: (304)462-5656 E-MAIL: sls@slsurveys.com

**TYLER COUNTY**  
MIDDLEBOURNE, WV 7.5' QUAD  
DRAWN BY: K.D.W. FILE NO.: 7422PHR2TOPO.DWG DATE: 11-16-12

OPERATOR:  
**CHESAPEAKE APPALACHIA, LLC.**  
P.O. BOX 6070  
CHARLESTON, WV 25362

# KIRK HADLEY LEASE WELL NO. TYL 6H



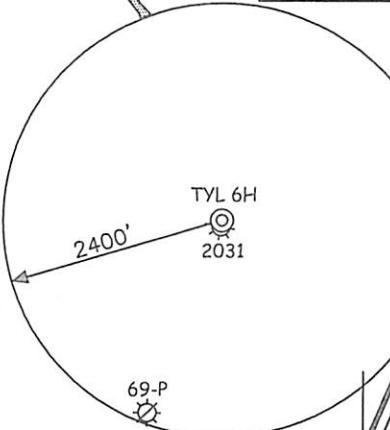
<b>WELL NO. TYL 6H</b> STATE PLANE COORDINATES (SOUTH ZONE NAD'27) N. 354,088 E. 1,594,829 <b>WELL NO. TYL 6H (NAD'27)</b> LAT=(N) 39.46327 LONG=(W) 80.93229 <b>WELL NO. TYL 6H (NAD'27)</b> LAT=(N) 39.2747.8 LONG=(W) 80.5556.3 <b>WELL NO. TYL 6H (NAD'83)</b> LAT=(N) 39.46335 LONG=(W) 80.93212 <b>WELL NO. TYL 6H (NAD'83)</b> LAT=(N) 39.2748.1 LONG=(W) 80.5556.6 <b>UTM (NAD'83)</b> N. 4,368,199 E. 505,839	<b>WELL NO. TYL 6H "KICK OUT" POINT</b> STATE PLANE COORDINATES (NORTH ZONE NAD'27) N. 353,673 E. 1,594,532 <b>"KICK OUT" POINT (NAD'27)</b> LAT=(N) 39.46214 LONG=(W) 80.93609 <b>"KICK OUT" POINT (NAD'27)</b> LAT=(N) 39.2743.7 LONG=(W) 80.5509.9 <b>"KICK OUT" POINT (NAD'83)</b> LAT=(N) 39.46222 LONG=(W) 80.93592 <b>"KICK OUT" POINT (NAD'83)</b> LAT=(N) 39.2744.0 LONG=(W) 80.5509.3 <b>UTM (NAD'83)</b> N. 4,368,074 E. 505,513
<b>WELL NO. TYL 6H TANGENT POINT</b> STATE PLANE COORDINATES (NORTH ZONE NAD'27) N. 353,200 E. 1,594,715 <b>TANGENT POINT (NAD'27)</b> LAT=(N) 39.46085 LONG=(W) 80.93548 <b>TANGENT POINT (NAD'27)</b> LAT=(N) 39.2739.1 LONG=(W) 80.5607.7 <b>TANGENT POINT (NAD'83)</b> LAT=(N) 39.46093 LONG=(W) 80.93531 <b>TANGENT POINT (NAD'83)</b> LAT=(N) 39.2739.4 LONG=(W) 80.5607.1 <b>UTM (NAD'83)</b> N. 4,367,931 E. 505,565	<b>WELL NO. TYL 6H BOTTOM HOLE</b> STATE PLANE COORDINATES (SOUTH ZONE NAD'27) N. 347,054 E. 1,595,832 <b>BOTTOM HOLE (NAD'27)</b> LAT=(N) 39.44407 LONG=(W) 80.92764 <b>BOTTOM HOLE (NAD'27)</b> LAT=(N) 39.2638.7 LONG=(W) 80.5539.5 <b>BOTTOM HOLE (NAD'83)</b> LAT=(N) 39.44415 LONG=(W) 80.92747 <b>BOTTOM HOLE (NAD'83)</b> LAT=(N) 39.2638.9 LONG=(W) 80.5538.9 <b>UTM (NAD'83)</b> N. 4,366,069 E. 506,241

### NOTES ON SURVEY

1. TIES TO WELLS, REFERENCES, AND CORNERS ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD '27.
2. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 213 PAGE 74, DEED BOOK 88 PAGE 159, AND ADJOINING DEEDS.
3. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF TYLER COUNTY IN JULY, 2011.
4. WELL COORDINATES ESTABLISHED BY SURVEY GRADE GPS.

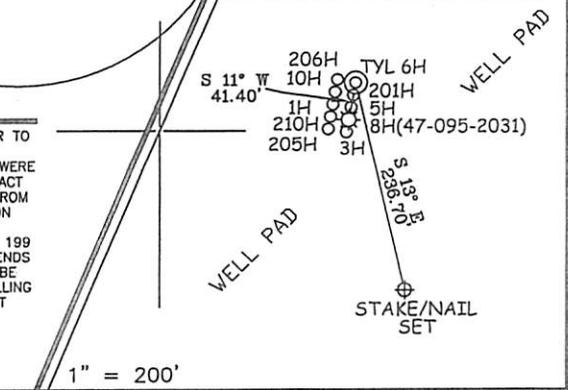
### REFERENCES

LOT	OWNER	ACERS ±	TAX MAP / PARCEL	DEED BOOK/PG	LEASE NUMBER
A	KIRK HADLEY	45 OF 162	26/12	213/74	1-291161-000
B	WILLIAM SNYDER ET AL	41.258	3/1.2	309/598	1-355080-001, 1-358969-000, 1-357174-001, 1-355079-001, 1-355082-001, 1-355084-001
C	JAMES & ANGELA LONG	100 (97 & 3)	2/15	333/188	1-309109-000
D	BRIAN REYNOLDS, ETAL	4	2/17	343/794	1-324941-001
E	RANDALL & KATHERYN WISE	1.39	2/17.3	303/19	1-324906-001
F	RANDALL & KATHERYN WISE	.469	2/17.2	303/19	1-324906-001
G	BRIAN REYNOLDS, ETAL	2.12	2/17.1	307/236	1-324941-001
H	VIRGINIA FRAZIER	.48	3/2	215/506	1-324899-001
I	WILLIAM MINGER	7.3	3/8	298/7	1-309164-001, 1-355080-001, 1-324907-001, 1-355082-001, 1-355084-001
J	TERRY & NANCY BAXTER	53.22	2/18	300/622	1-324936-001
K	FREDRICK McMULLEN	17 OF 85.57	3/3	140/138	1-309170-001, THROUGH 1-309170-007, 1-344616-001
L	FREDRICK McMULLEN	18.5 OF 85.57	3/3	140/138	1-309170-001, THROUGH 1-309170-007, 1-344616-001
M	ELMER SHERFEY ETAL	52.32	6/4	320/282	1-324933-001 THROUGH 1-324933-013
N	TIMOTHY PATTERSON	10.8	6/16.1	287/24	1-324907-001
O	N/F BRADY PATTERSON (POSSIBLE RESIDUE AREA)			P/O 199/404	
P	N/F BRADY PATTERSON (POSSIBLE RESIDUE AREA)			P/O 199/404	



### NOTES

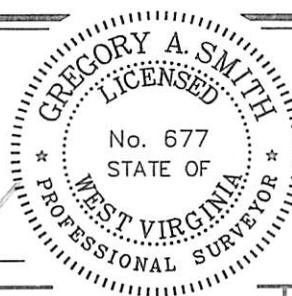
TRACTS "O" & "P" APPEAR TO BE POSSIBLE DEED GAP/RESIDUE AREAS THAT WERE PART OF A 125 ACRE TRACT CONVEYED TO IVAN ASH FROM SYLVIA MASTERS ETAL ON SEPTEMBER 14, 1973 RECORDED IN DEED BOOK 199 PAGE 404. SLS RECOMMENDS ADDITIONAL TITLE WORK BE COMPLETED PRIOR TO DRILLING TO DETERMINE CURRENT MINERAL OWNERSHIP.



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
 DATE NOVEMBER 16, 20 12  
 OPERATORS WELL NO. KIRK HADLEY TYL 6H  
 API NO. 47-95-02090 H6A  
 WELL NO. 47-95 STATE 95 COUNTY 02090 PERMIT H6A

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 DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677 *Gregory A. Smith*



MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 7422P6HR2 (308-50)  
 PROVEN SOURCE OF ELEVATION DGPS (SUBMETER MAPPING GRADE) SCALE 1" = 2,000'

STATE OF WEST VIRGINIA  
 DIVISION OF ENVIRONMENTAL PROTECTION  
 OFFICE OF OIL AND GAS

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION 911' WATERSHED LITTLE SANCHO CREEK  
 DISTRICT MEADE COUNTY TYLER QUADRANGLE MIDDLEBOURNE 7.5'  
 SURFACE OWNER KIRK HADLEY ACREAGE 162±  
 ROYALTY OWNER KIRK HADLEY, ET AL (45 OF 162, 41.258, 100(97 & 3), 4, 1.39, .469, 2.12, .48, 7.3, 53.22, 17 & 18 OF 85.57, 52.32, & 10.8 ACRES±)  
 PROPOSED WORK: LEASE NO. \_\_\_\_\_  
 DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION   
 PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER   
 PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION MARCELLUS  
 ESTIMATED DEPTH TVD 6173' / TMD 13,208'

WELL OPERATOR CHESAPEAKE APPALACHIA, LLC. DESIGNATED AGENT ERIC B. GILLESPIE  
 ADDRESS P.O. BOX 18496 ADDRESS P.O. BOX 6070  
OKLAHOMA CITY, OK 73154-0496 CHARLESTON, WV 25362

COUNTY NAME PERMIT



**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

February 28, 2013

**WELL WORK PERMIT**

**Horizontal 6A Well**

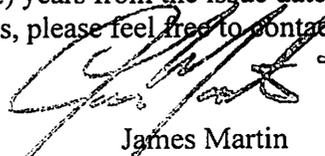
This permit, API Well Number: 47-10302858, issued to STONE ENERGY CORPORATION, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto.

Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

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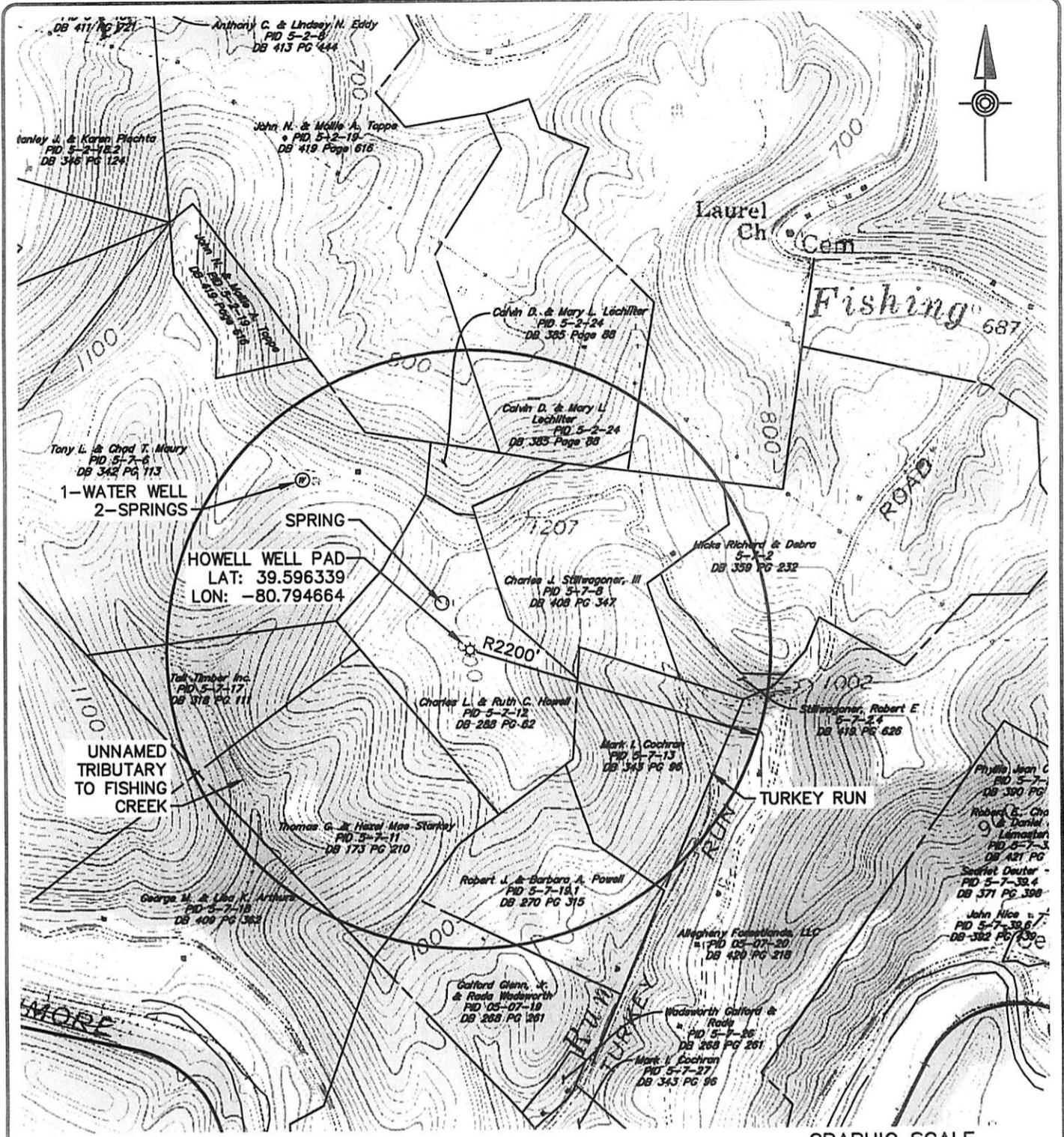
Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.



James Martin  
Chief

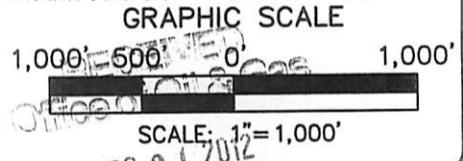
Operator's Well No: HOWELL 4H  
Farm Name: HOWELL, CHARLES L. AND RUI  
**API Well Number: 47- 10302858**  
**Permit Type: Horizontal 6A Well**  
Date Issued: 02/28/2013

**Promoting a healthy environment.**



- NOTES:
1. USGS TOPOGRAPHIC MAP: PORTERS FALLS 7.5' USGS QUADRANGLES
  2. ALL COORDINATES SHOWN ARE IN WV STATE PLANE-NORTH (NAD 83) WV83-NF

DmH  
6-5-10



**HRG**  
Herbert Rowland & Grubic, Inc.  
Engineering & Related Services

240 Scott Avenue, Suite 1  
Morgantown, WV 26508  
(304) 284-9222  
Fax (304) 284-9223  
hrg@hrg-inc.com  
www.hrg-inc.com

**WATER / WELL LOCATION MAP**  
FOR  
**HOWELL WELL PAD SURFACE HOLE 4H**

GREEN DISTRICT      WETZEL COUNTY      WEST VIRGINIA

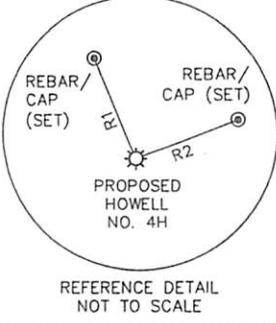
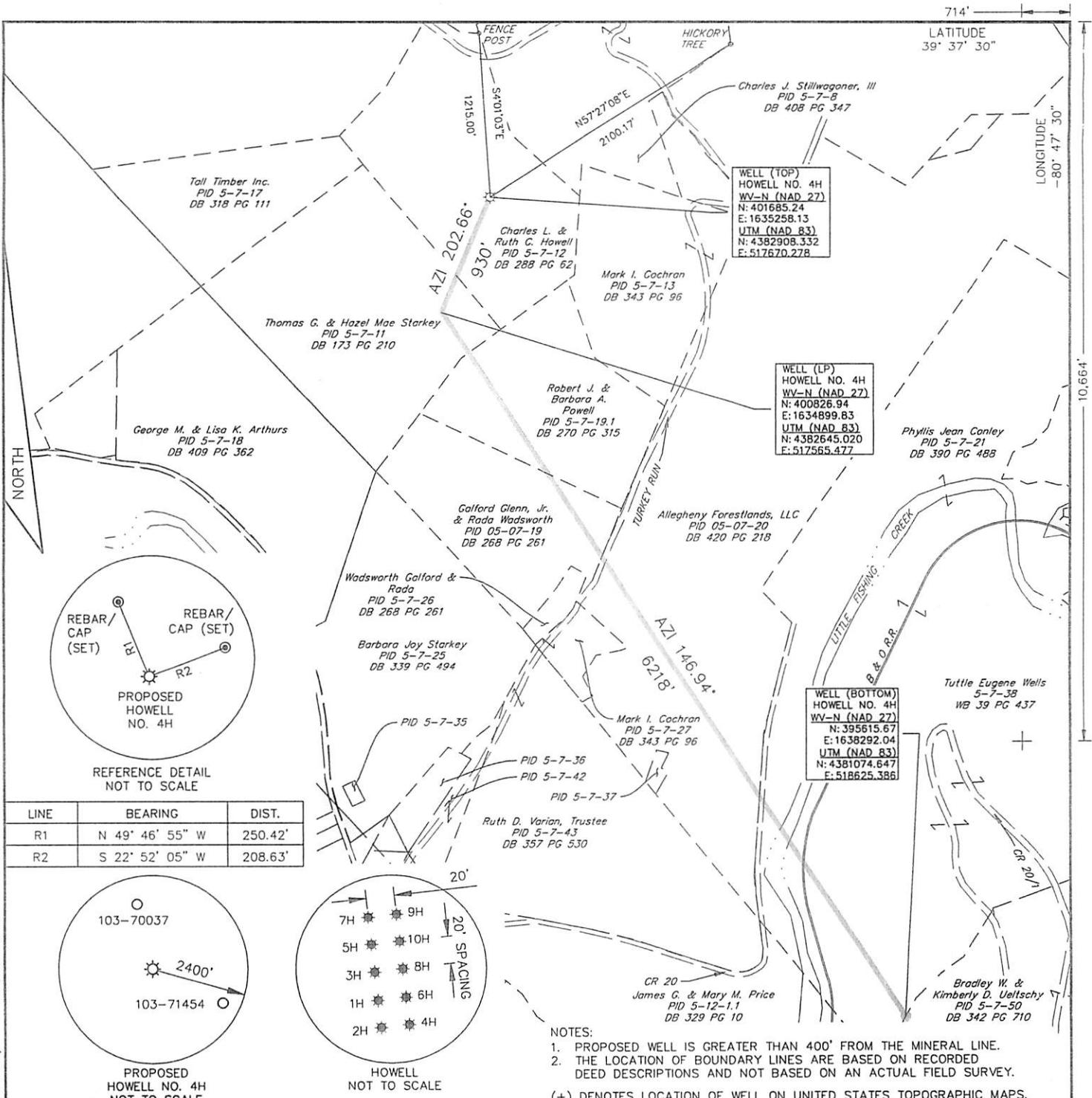
PROJ. MGR. - TRK  
DESIGN - MAN  
CADD - MAN  
CHECKED - RMV  
SCALE - 1" = 2000'  
DATE - MAY 2011

DRAWING NO.  
**WL-04**

SHEET NO.  
**4 OF 10**

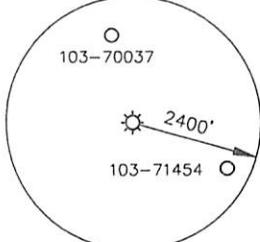
PROJECT P005461.0461

File name: C:\Users\30\Projects\103-02858\_0461\Drawings\103-02858-0461.dwg    Exported: 04/11/11 04:54:00 PM    2012-08-10 10:40am    cadswriter

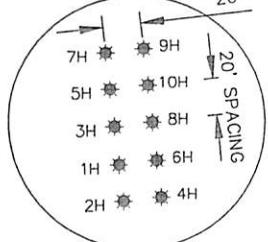


REFERENCE DETAIL NOT TO SCALE

LINE	BEARING	DIST.
R1	N 49° 46' 55" W	250.42'
R2	S 22° 52' 05" W	208.63'



PROPOSED HOWELL NO. 4H NOT TO SCALE



HOWELL NOT TO SCALE

NOTES:  
 1. PROPOSED WELL IS GREATER THAN 400' FROM THE MINERAL LINE.  
 2. THE LOCATION OF BOUNDARY LINES ARE BASED ON RECORDED DEED DESCRIPTIONS AND NOT BASED ON AN ACTUAL FIELD SURVEY.  
 (+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.



240 Scott Avenue, Suite 1  
 Morgantown, WV 26508  
 (304) 284-9222  
 Fax (304) 284-9223  
 hrg@hrg-inc.com  
 www.hrg-inc.com

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) *Jason A. McVicker*

R.P.E. \_\_\_\_\_ L.L.S. 2050



PLACE SEAL HERE

STATE OF WEST VIRGINIA  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
 OIL AND GAS DIVISION



DATE DECEMBER 12, 2012  
 OPERATOR'S WELL NO. HOWELL NO. 4H  
 API WELL NO. \_\_\_\_\_

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS,") PRODUCTION \_\_\_ STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X  
 LOCATION: ELEVATION 1342 WATERSHED: FISHING CREEK  
 DISTRICT: GREEN COUNTY: WETZEL  
 QUADRANGLE: PORTERS FALLS, WV  
 SURFACE OWNER: CHARLES L. & RUTH C. HOWELL ACREAGE: ±51  
 OIL & GAS ROYALTY OWNER: SEE TABLE ATTACHED LEASE ACREAGE: ±1780  
 LEASE NO. 5-7-12  
 PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE X  
 PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ PLUG AND ABANDON \_\_\_  
 CLEAN OUT AND REPLUG \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_

47 - 103 - 02858 46A  
 STATE COUNTY PERMIT

TARGET FORMATION: MARCELLUS SHALE ESTIMATED DEPTH: TVD-6930' MD-13910  
 WELL OPERATOR: STONE ENERGY CORPORATION DESIGNATED AGENT: TIM MCGREGOR  
 ADDRESS: P.O. BOX 52807 ADDRESS: 6000 HAMPTON CENTER, SUITE B  
LAFAYETTE, LA 70508 MORGANTOWN, WV 26505

File name: C:\Civil 3D Projects\005461\_0461\Plan Sets\Permit\0054610461\_4HPLAT.dwg Layout: PLAT 4H Dec 17, 2012-1:36pm cfbney FORM WW-6

WETZEL COUNTY PERMIT



**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

February 28, 2013

**WELL WORK PERMIT**

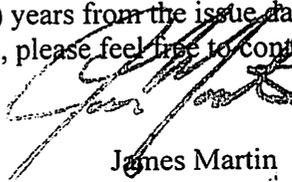
**Horizontal 6A Well**

This permit, API Well Number: 47-1706178, issued to ANTERO RESOURCES APPALACHIAN CORPORATION, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, well operators report of well work, is to be submitted to this office within 90 days of completion of drilling, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

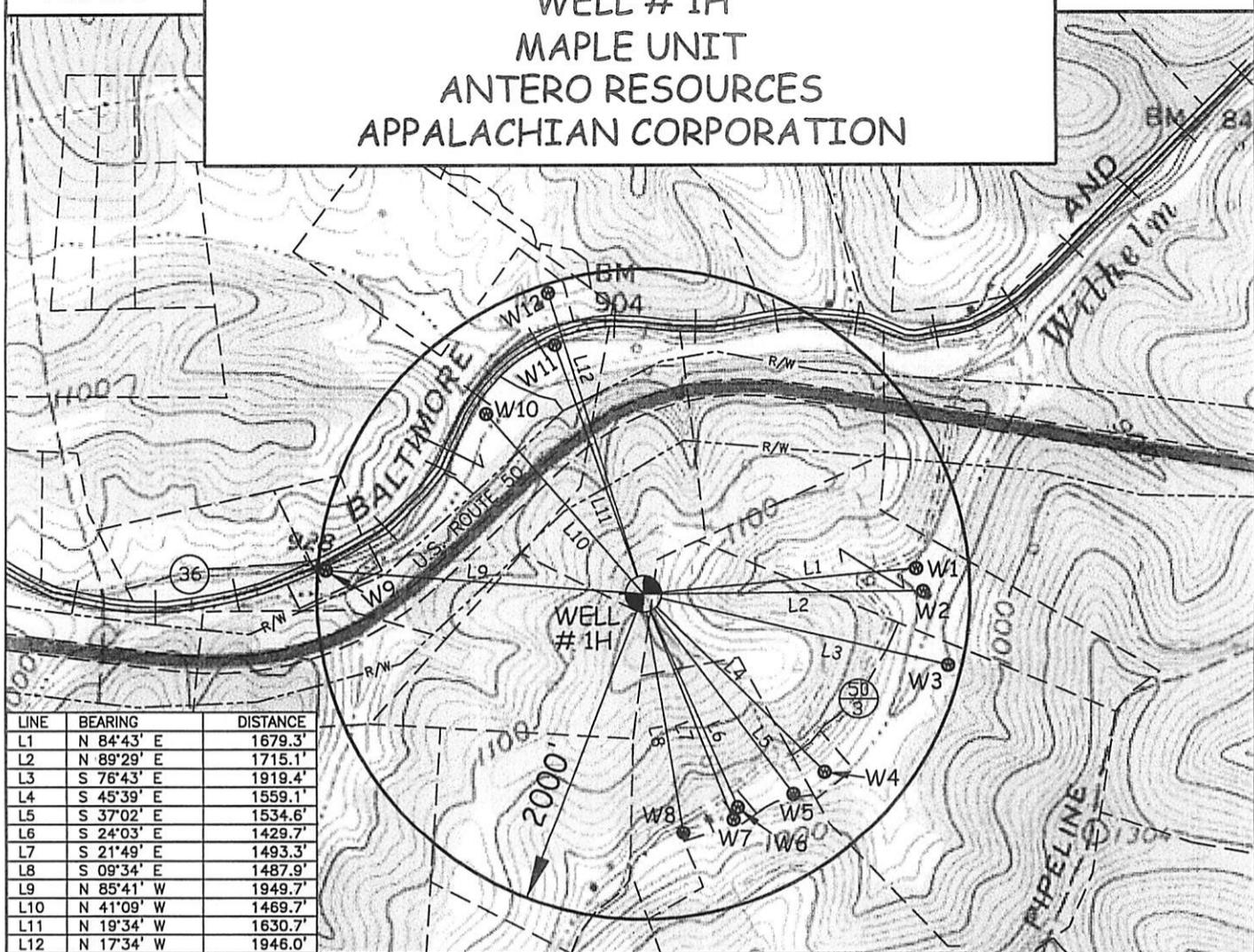


James Martin  
Chief

Operator's Well No: MAPLE UNIT 1H  
Farm Name: BROWN, MARY F.  
**API Well Number: 47-1706178**  
**Permit Type: Horizontal 6A Well**  
Date Issued: 02/28/2013

**Promoting a healthy environment.**

**WELL # 1H  
MAPLE UNIT  
ANTERO RESOURCES  
APPALACHIAN CORPORATION**

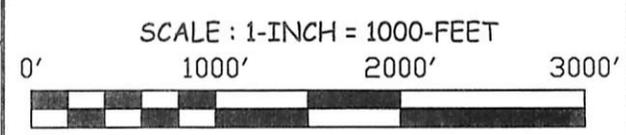


LINE	BEARING	DISTANCE
L1	N 84°43' E	1679.3'
L2	N 89°29' E	1715.1'
L3	S 76°43' E	1919.4'
L4	S 45°39' E	1559.1'
L5	S 37°02' E	1534.6'
L6	S 24°03' E	1429.7'
L7	S 21°49' E	1493.3'
L8	S 09°34' E	1487.9'
L9	N 85°41' W	1949.7'
L10	N 41°09' W	1469.7'
L11	N 19°34' W	1630.7'
L12	N 17°34' W	1946.0'

WELL	SURFACE OWNER	ADDRESS
W1	ROBERT KEITH LEWIS ET AL	RT. 1 BOX 447 PENNSBORO, WV 26415
W2	ROBERT KEITH LEWIS ET AL	RT. 1 BOX 447 PENNSBORO, WV 26415
W3	TERESA L. CLARK	RT. 1 BOX 457 PENNSBORO, WV 26415
W4	TERESA MARIE SEESE	RT 1 BOX 462 GREENWOOD, WV 26415
W5	JIMMY LEE & SHELLA LIPSCOMB	P.O. BOX 433 WEST UNION, WV 26456
W6	ROBERT M. & JASON P. LIPSCOMB	653 WILHEM RUN RD GREENWOOD, WV 26415
W7	ROBERT M. & JASON P. LIPSCOMB	653 WILHEM RUN RD GREENWOOD, WV 26415
W8	BILLY J. & PEGGY A. LIPSCOMB	RT. 1 BOX 473 GREENWOOD, WV 26415
W9	RICHARD A. & RHEA J. DAVIS	RT. 1 BOX 420 GREENWOOD, WV 26415
W10	WILLIAM L. SR. & THELMA SWISHER	RT. 1 BOX 424 GREENWOOD, WV 26415
W11	JAMES M. & KIMBERLY D. HARTNESS	RT. 1 BOX 428 GREENWOOD, WV 26415
W12	GREGORY R. & CAROLYN S. VOGT	RT. 1 BOX 429 GREENWOOD, WV 26415

WILLOW LAND SURVEYING PLLC  
P.O. BOX 17, PENNSBORO, WV 26415  
(304) 659-1717

TOPO SECTION(S) OF :  
WEST UNION 7.5' QUAD



DATE: 12/06/12      DRAWN BY: C.J.P.

LATITUDE 39°17'30"

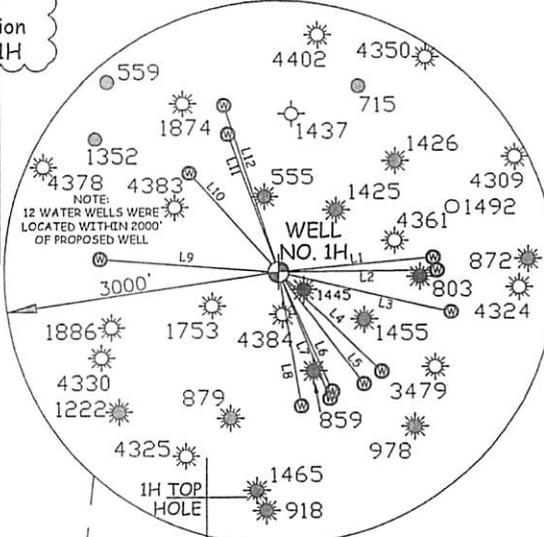
4,407'

9,093' TO BOTTOM HOLE  
LATITUDE 39°20'00"

LONGITUDE 80°50'00"  
6,181'  
13,894' TO BOTTOM HOLE  
LONGITUDE 80°50'00"

### Antero Resources Appalachian Corporation Well No. Maple Unit 1H

LINE	BEARING	DISTANCE
L1	N 84°43' E	1679.3'
L2	N 89°29' E	1715.1'
L3	S 76°43' E	1919.4'
L4	S 45°39' E	1559.1'
L5	S 37°02' E	1534.6'
L6	S 24°03' E	1429.7'
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L10	N 41°09' W	1469.7'
L11	N 19°34' W	1630.7'
L12	N 17°34' W	1946.0'



NOTES:  
WELL 1H TOP HOLE INFORMATION:  
N: 285,027ft E: 1,618,140ft  
LAT: 39°16'28.91" LON: 80°50'56.04"  
BOTTOM HOLE INFORMATION:  
N: 292,560ft E: 1,613,566ft  
LAT: 39°17'42.67" LON: 80°51'55.66"  
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: 4,347,281m E: 513,048m  
BOTTOM HOLE INFORMATION:  
N: 4,349,552m E: 511,616m

JOB # 12-102WA  
DRAWING # MAPLE1H  
SCALE 1" = 1000'  
MINIMUM DEGREE OF ACCURACY SUBMETER  
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

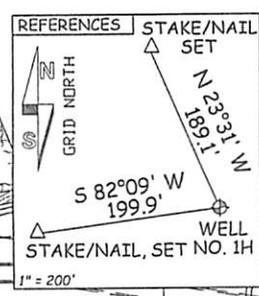
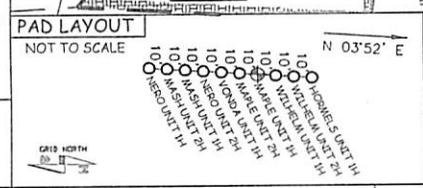
**LEGEND**  
 - - - Surface Owner Boundary Lines +/-  
 - - - Interior Surface Tracts +/-  
 - - - Existing Fence  
 ⊕ Monument, As specified

DOUGLAS R. ROWE P.S. 2202  
DATE 12/05/12  
OPERATOR'S WELL# MAPLE UNIT #1H  
API WELL # 47-017  
STATE COUNTY PERMIT H6A-Old78

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 PERSCRIBED 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



STATE OF WEST VIRGINIA DEPT. OF ENERGY DIVISION OF OIL AND GAS  
WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL   
(IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW   
LOCATION: ELEVATION 1,164' WATERSHED TRIBUTARY OF WILHELM RUN  
QUADRANGLE WEST UNION 7.5' DISTRICT CENTRAL COUNTY DODDRIDGE  
SURFACE OWNER MARY F. BROWN ACREAGE 49.43 ACRES +/-  
OIL & GAS ROYALTY OWNER MARY F. BROWN; PATRICK A. WRIGHT; WVSRA; THELMA PRIMM ET AL; LEASE ACREAGE 55.65 AC±; 222 AC±; 301.19 AC±; 76.04 ACRES±;  
JOSEPH L. TOWNER ET AL; FLOYD MCGILL JR. ET AL; RICHARD F. MCCULLOUGH; FRANK MCGILL ET AL; ROSALEE WILSON ET AL 33 AC±; 107 AC±; 72.83 AC±; 106 AC±; 100 AC±  
PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE   
PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL CLEAN OUT & REPLUG  
(SPECIFY)  PLUG & ABANDON  
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 7,000' TVD 16,100' MD  
WELL OPERATOR ANTERO RESOURCES APPALACHIAN CORP. DESIGNATED AGENT DIANNA STAMPER  
ADDRESS 1625 17TH STREET ADDRESS 5400 D BIG TYLER ROAD  
FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

COUNTY NAME PERMIT



**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

February 27, 2013

**WELL WORK PERMIT**

**Horizontal 6A Well**

This permit, API Well Number: 47-1706188, issued to ANTERO RESOURCES APPALACHIAN CORPORATION, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, well operators report of well work, is to be submitted to this office within 90 days of completion of drilling, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

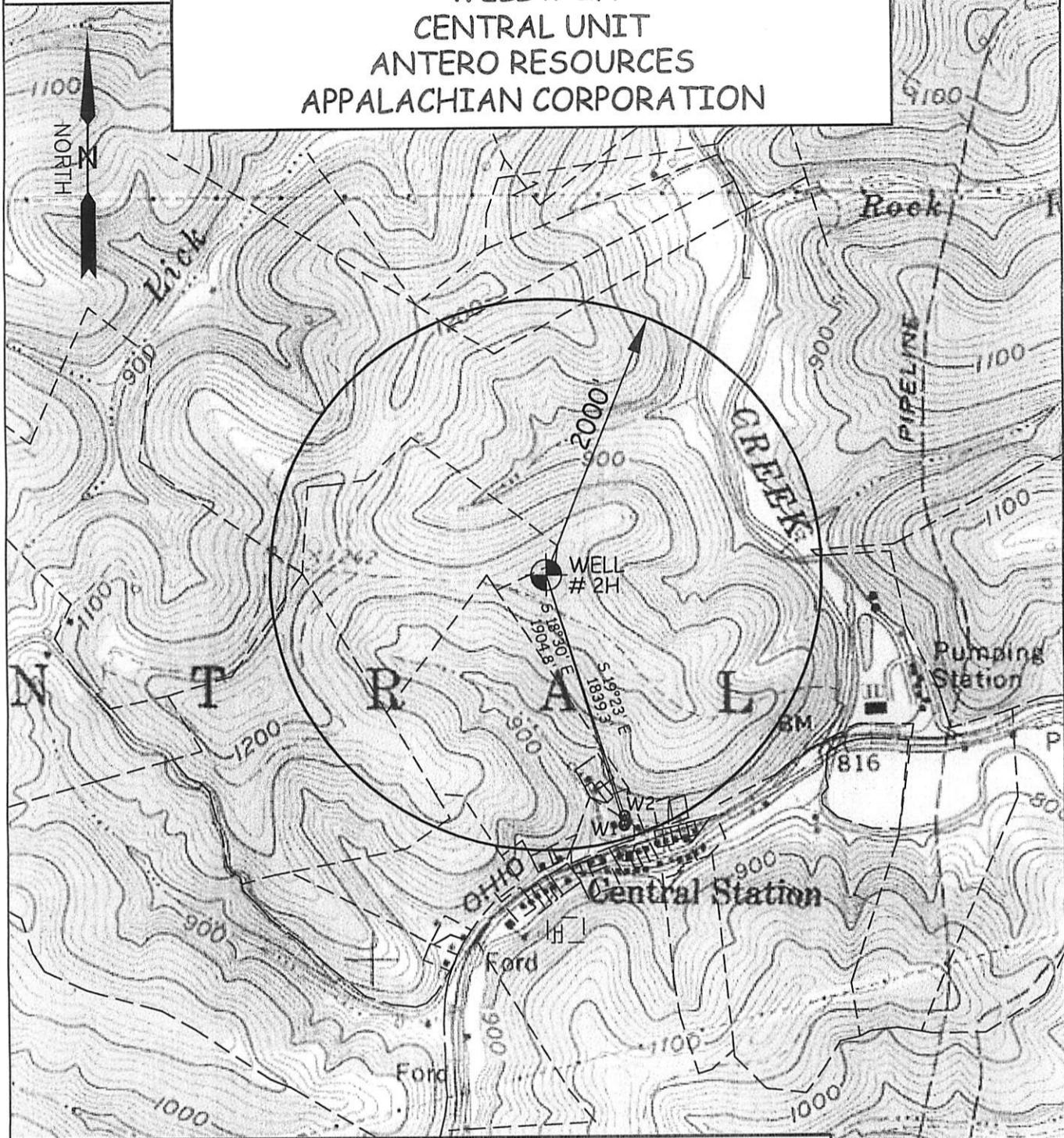
Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin  
Chief

Operator's Well No: CENTRAL UNIT 2H  
Farm Name: DAVIS, JONATHAN  
**API Well Number: 47-1706188**  
**Permit Type: Horizontal 6A Well**  
Date Issued: 02/27/2013

**Promoting a healthy environment.**

WELL # 2H  
CENTRAL UNIT  
ANTERO RESOURCES  
APPALACHIAN CORPORATION



WELL	SURFACE OWNER	ADDRESS
W1	Robert L. & Dorothy N. Harper	Rt. 1 Box 307 West Union, WV 26456
W2	Wilma Ash	Rt. 1 Box 319 1/2 West Union, WV 26456

WILLOW LAND SURVEYING PLLC P.O. BOX 17, PENNSBORO, WV 26415 (304) 659-1717	TOPO SECTION(S) OF : WEST UNION 7.5' QUAD	SCALE : 1-INCH = 1000-FEET 0'      1000'      2000'      3000' 
	DATE: 01/04/13      DRAWN BY: D.L.P.	

LATITUDE 39°20'00"  
10,584' TO TOP HOLE

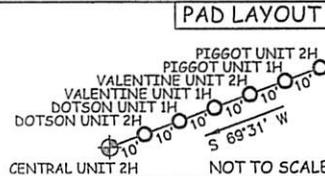
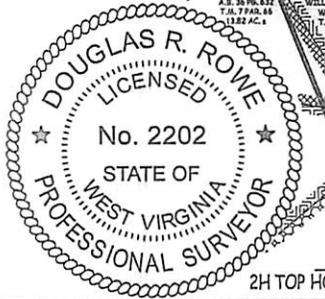
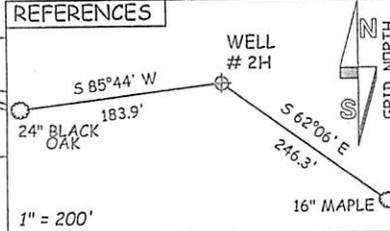
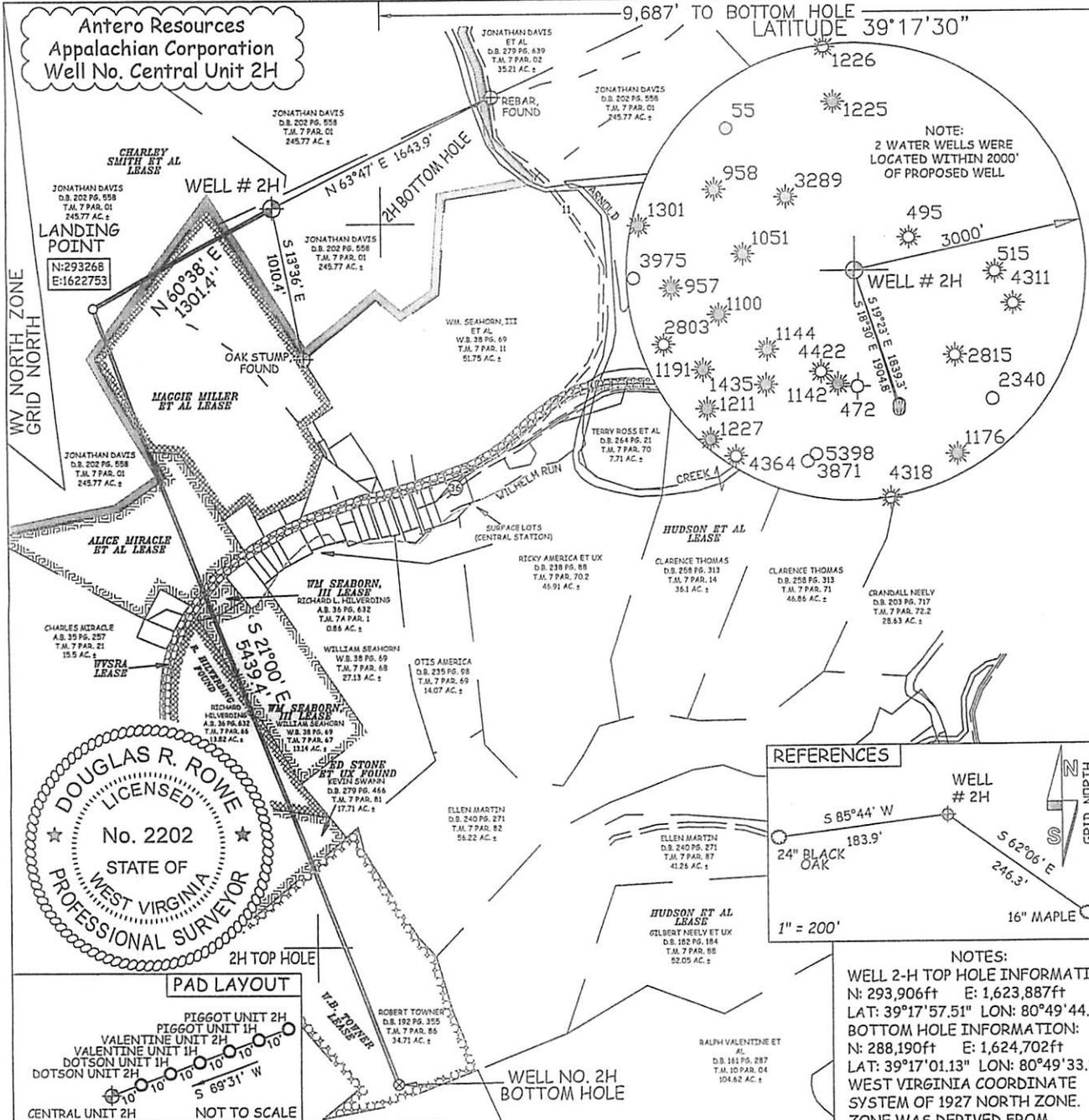
9,687' TO BOTTOM HOLE

LATITUDE 39°17'30"

LONGITUDE 80°47'30"  
12,393' TO TOP HOLE

LONGITUDE 80°47'30"  
2,921' TO BOTTOM HOLE

Antero Resources  
Appalachian Corporation  
Well No. Central Unit 2H



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

NOTES:  
WELL 2-H TOP HOLE INFORMATION:  
N: 293,906ft E: 1,623,887ft  
LAT: 39°17'57.51" LON: 80°49'44.64"  
BOTTOM HOLE INFORMATION:  
N: 288,190ft E: 1,624,702ft  
LAT: 39°17'01.13" LON: 80°49'33.20"  
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.

JOB # 11-156WA  
DRAWING # CENTRAL2H  
SCALE 1" = 1000'

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 PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

(NAD) 83 (UTM) ZONE 17 COORDS:  
WELL 2-H TOP HOLE INFORMATION:  
N: 4,350,015m E: 514,754m  
BOTTOM HOLE INFORMATION:  
N: 4,348,278m E: 515,031m

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  
266 HUSHERS RUN RD PENNSBORO WEST VIRGINIA 26415

DOUGLAS R. ROWE P.S. 2202  
DATE 01/03/13  
OPERATOR'S WELL# CENTRAL UNIT 2H  
API WELL # 47 - 017 - 06188 H6A

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
(IF "GAS") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X  
LOCATION: ELEVATION 1,146' WATERSHED ARNOLD CREEK DISTRICT CENTRAL COUNTY DODDRIDGE  
QUADRANGLE WEST UNION 7.5'

SURFACE OWNER JONATHAN DAVIS ACREAGE 245.77 ACRES +/-  
OIL & GAS ROYALTY OWNER CHARLEY SMITH ET AL; MAGGIE MILLER ET AL; ALICE MIRACLE ET AL; LEASE ACREAGE 213 AC; 40 AC; 16 AC;  
WV STATE RAIL AUTHORITY: WM SEABORN, III; WM SEABORN, III; R. HILVERDING; ED STONE ET UX; W.B. TOWNER 301.19 AC; 0.838 AC; 17.50 AC; 15.586 AC; 17.71 ac of 97 AC; 34.71 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)  
PLUG & ABANDON \_\_\_ CLEAN OUT & REPLUG \_\_\_ ESTIMATED DEPTH 7,000' TVD 13,500' MD  
TARGET FORMATION MARCELLUS DIANNA STAMPER  
WELL OPERATOR ANTERO RESOURCES APPALACHIAN CORP. DESIGNATED AGENT CT CORPORATION SYSTEM  
ADDRESS 1625 17TH STREET ADDRESS 5400 D BIG TYLER ROAD  
DENVER, CO 80202 CHARLESTON, WV 25313

COUNTY NAME PERMIT



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

February 27, 2013

**WELL WORK PERMIT**  
**Horizontal 6A Well**

This permit, API Well Number: 47-1706179, issued to ANTERO RESOURCES APPALACHIAN CORPORATION, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, well operators report of well work, is to be submitted to this office within 90 days of completion of drilling, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

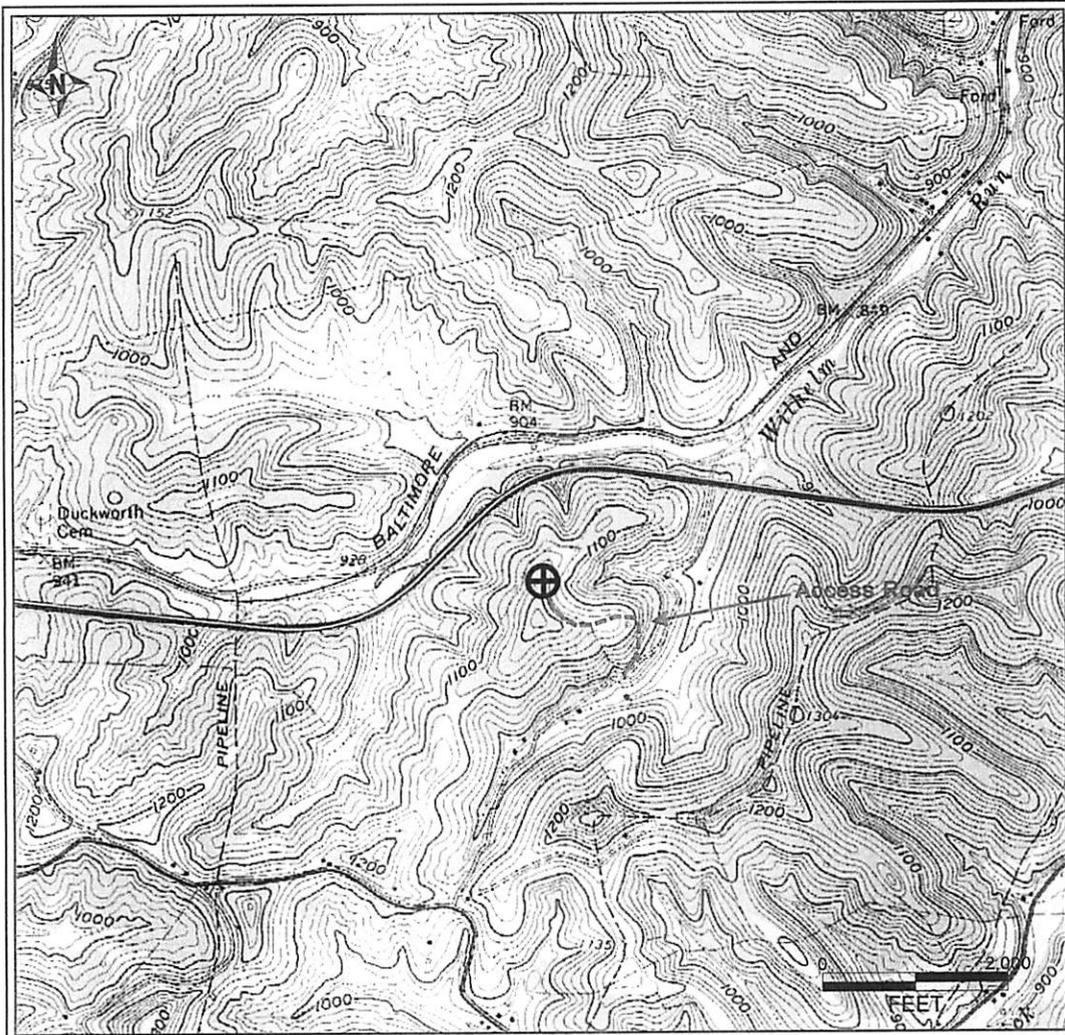
In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin  
Chief

Operator's Well No: MAPLE UNIT 2H  
Farm Name: BROWN, MARY F.  
**API Well Number: 47-1706179**  
**Permit Type: Horizontal 6A Well**  
Date Issued: 02/27/2013

**Promoting a healthy environment.**

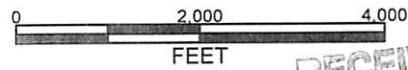


PETRA 11/29/2012 4:05:04 PM

**Antero Resources Corporation**

APPALACHIAN BASIN

Maple Unit 2H  
Doddridge County



REMARKS  
QUADRANGLE: WEST UNION  
WATERSHED: TRIB. OF WILHELM RUN  
DISTRICT: CENTRAL

Date: 11/29/2012

RECEIVED  
Office of Oil & Gas  
WV Department of  
Environmental Protection

LATITUDE 39°17'30"

4,408'

8,414' TO BOTTOM HOLE

LATITUDE 39°20'00"

LONGITUDE 80°50'00"

6.191'

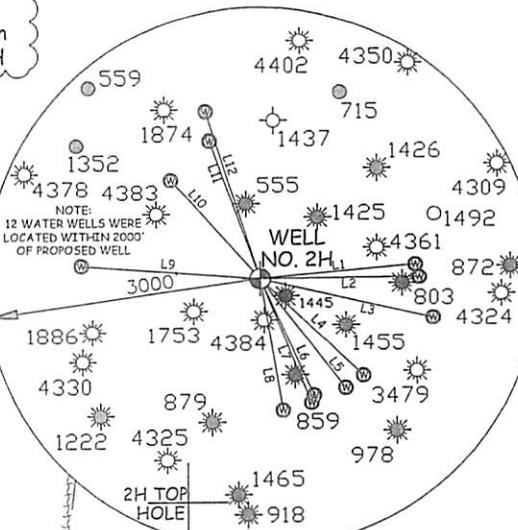
13,784' TO BOTTOM HOLE

LONGITUDE 80°50'00"

### Antero Resources Appalachian Corporation Well No. Maple Unit 2H

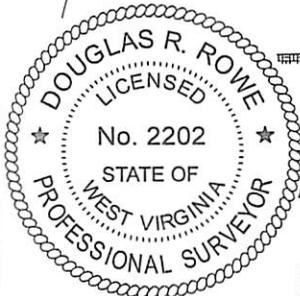
LINE	BEARING	DISTANCE
L1	S 84°23' W	1680.9'
L2	S 89°09' W	1715.9'
L3	S 77°00' E	1917.8'
L4	S 45°56' E	1552.6'
L5	S 37°17' E	1527.1'
L6	S 24°15' E	1420.8'
L7	S 21°59' E	1484.3'
L8	S 09°39' E	1478.2'
L9	N 85°24' W	1949.8'
L10	N 40°52' W	1476.7'
L11	N 19°25' W	1639.8'
L12	N 17°27' W	1955.4'

NOTE:  
12 WATER WELLS WERE  
LOCATED WITHIN 2000'  
OF PROPOSED WELL



NOTES:  
WELL 2H TOP HOLE INFORMATION:  
N: 285,017ft E: 1,618,139ft  
LAT: 39°16'28.81" LON: 80°50'56.05"  
BOTTOM HOLE INFORMATION:  
N: 292,659ft E: 1,614,246ft  
LAT: 39°17'43.76" LON: 80°51'47.03"  
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: 4,347,278m E: 513,048m  
BOTTOM HOLE INFORMATION:  
N: 4,349,586m E: 511,823m



JOB # 12-102WA  
DRAWING # MAPLE2H  
SCALE 1" = 1000'  
MINIMUM DEGREE OF  
ACCURACY SUBMETER  
PROVEN SOURCE OF ELEV.  
SUBMETER MAPPING GRADE GPS

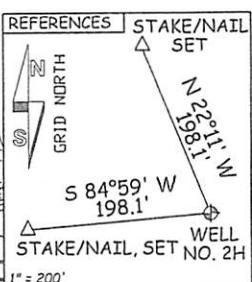
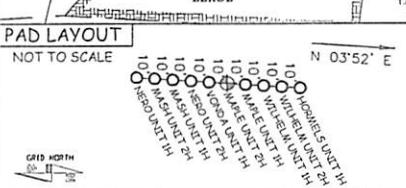
**LEGEND**  
 - - - Surface Owner Boundary Lines +/-  
 - - - Interior Surface Tracts +/-  
 X Existing Fence  
 ⊕ Monument, Found As Specified

DOUGLAS R. ROWE P.S. 2202  
DATE 12/05/12  
OPERATOR'S WELL# MAPLE UNIT 2H  
API WELL # 47 - 017  
STATE COUNTY PERMIT

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 PERSCRIBED 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



STATE OF WEST VIRGINIA DEPT. OF ENERGY DIVISION OF OIL AND GAS  
WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL   
(IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW   
LOCATION: ELEVATION 1,164' WATERSHED TRIBUTARY OF WILHELM RUN  
QUADRANGLE WEST UNION 7.5' DISTRICT CENTRAL COUNTY DODDRIDGE  
SURFACE OWNER MARY F. BROWN ACREAGE 49.43 ACRES +/-  
OIL & GAS ROYALTY OWNER MARY F. BROWN; PATRICK A. WRIGHT; WVSRA; LEASE ACREAGE 55.65 AC±; 222 AC±; 301.19 AC±;  
THELMA PRIMM ET AL; FLOYD MCGILL JR. ET AL; RICHARD F. MCCULLOUGH; ROBERT P. JACKSON; ROSALEE WILSON ET AL 76.04 AC±; 107 AC±; 72.83 AC±; 94 AC±; 100 AC±  
PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE   
PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL  
(SPECIFY) \_\_\_\_\_ PLUG & ABANDON CLEAN OUT & REPLUG  
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 7,000' TVD 15,900' MD  
WELL OPERATOR ANTERO RESOURCES APPALACHIAN CORP. DESIGNATED AGENT CT CORPORATION SYSTEM  
ADDRESS 1625 17TH STREET ADDRESS 5400 D BIG TYLER ROAD  
FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

COUNTY NAME PERMIT



**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

February 27, 2013

**WELL WORK PERMIT**

**Horizontal 6A Well**

This permit, API Well Number: 47-1706189, issued to ANTERO RESOURCES APPALACHIAN CORPORATION, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, well operators report of well work, is to be submitted to this office within 90 days of completion of drilling, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

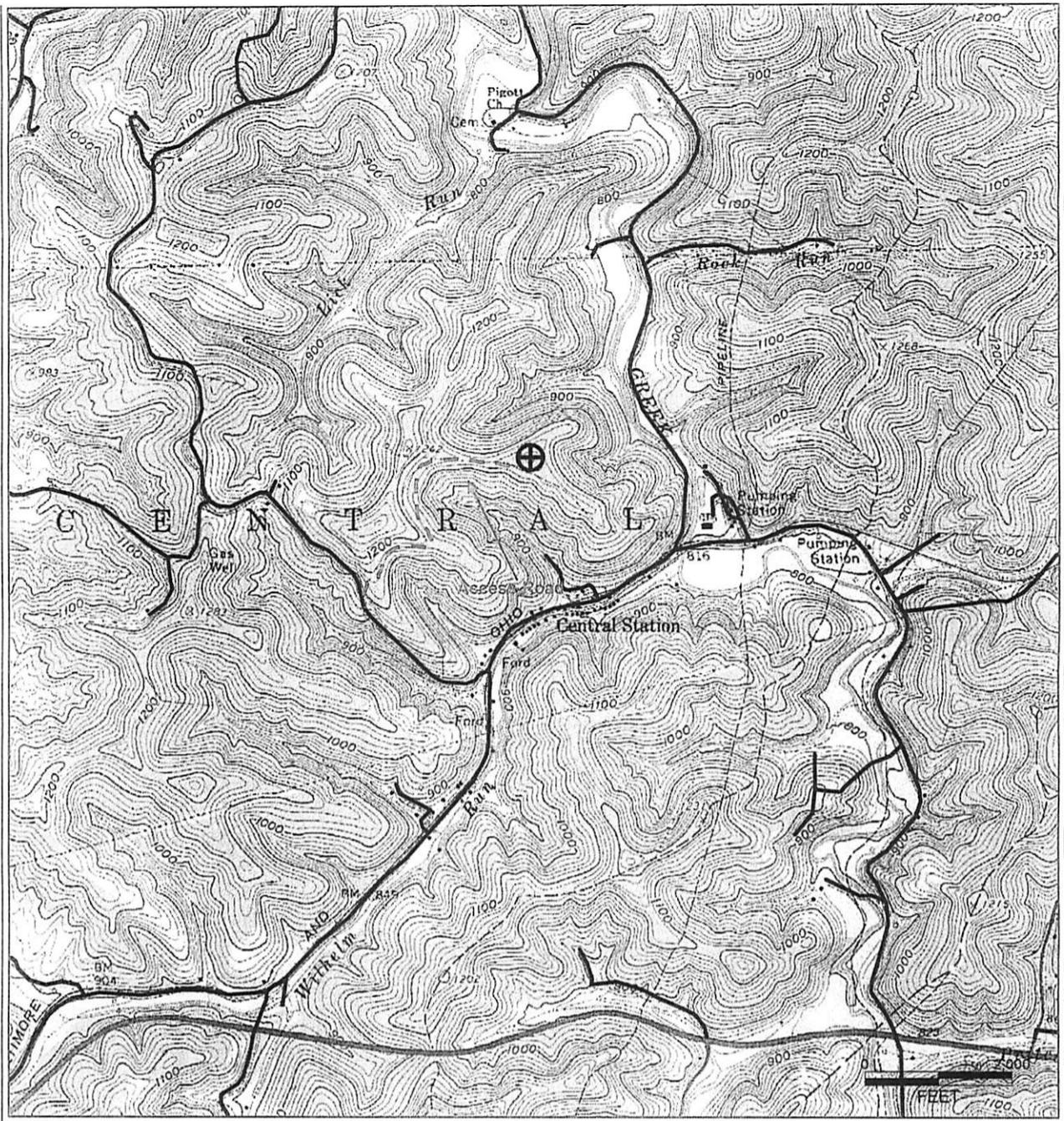
In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin  
Chief

Operator's Well No: DOTSON UNIT 2H  
Farm Name: DAVIS, JONATHAN  
**API Well Number: 47-1706189**  
**Permit Type: Horizontal 6A Well**  
Date Issued: 02/27/2013

**Promoting a healthy environment.**



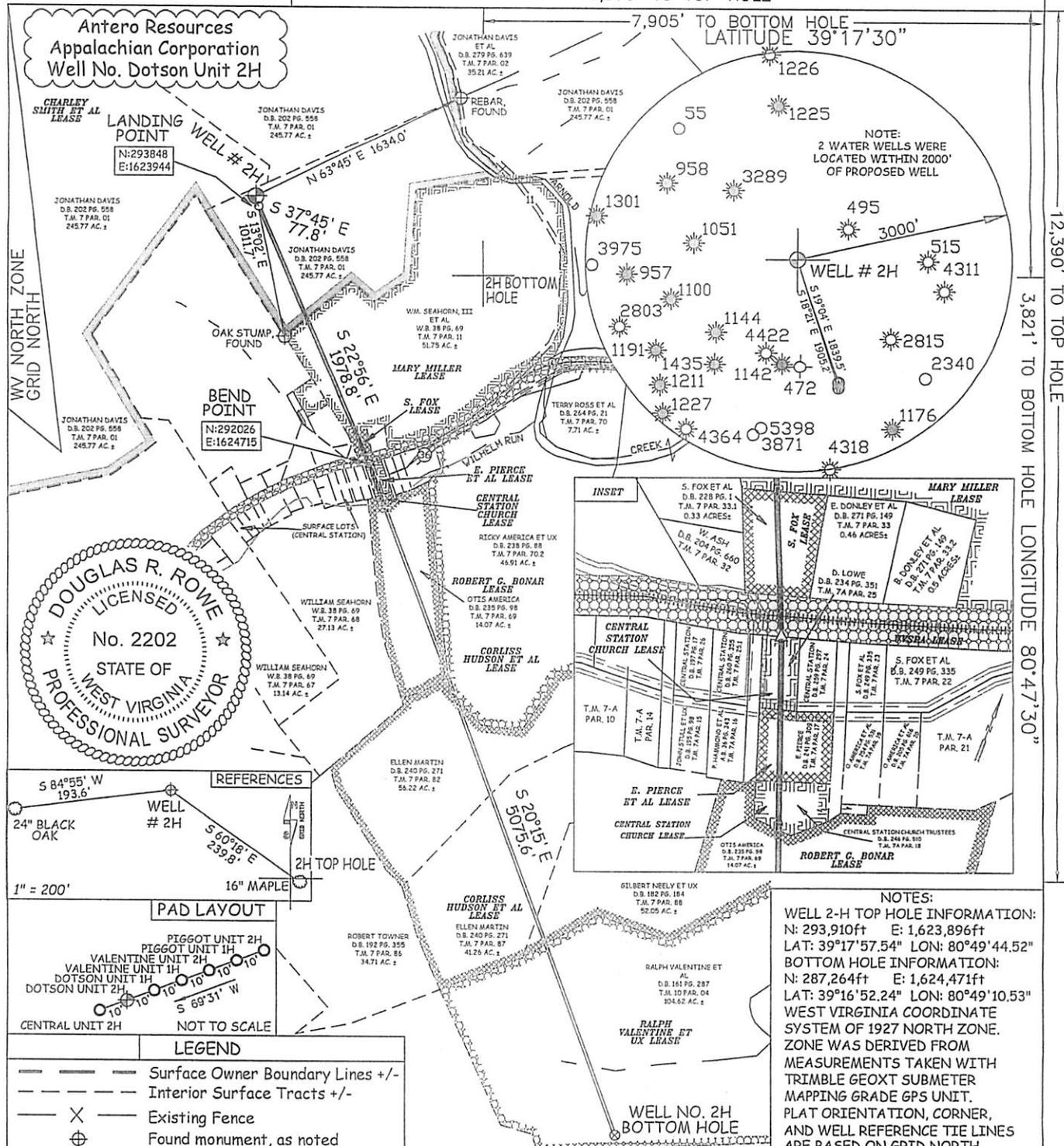
PETRA 1/4/2012 4:16:23 PM

17-06189 H6A      DOTSON UNIT 2H  
 ANTERO RESOURCES

PAD NAME: JONATHAN DAVIS

Antero Resources Corporation
APPALACHIAN BASIN
Dotson Unit 2H Doddridge County
REMARKS QUADRANGLE: WEST UNION WATERSHED: ARNOLD CREEK DISTRICT: CENTRAL
Date: 01/03/2013

LATITUDE 39°20'00"  
10,575' TO TOP HOLE



Antero Resources  
Appalachian Corporation  
Well No. Dotson Unit 2H

LANDING POINT  
N:293848  
E:1623944

BEND POINT  
N:292026  
E:1624715

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

REFERENCES  
WELL # 2H  
24" BLACK OAK  
16" MAPLE  
S 84°55' W 193.6'  
S 60°16' E 239.8'

PAD LAYOUT  
PIGGOTT UNIT 2H  
VALENTINE UNIT 2H  
VALENTINE UNIT 1H  
DOTSON UNIT 1H  
DOTSON UNIT 2H  
CENTRAL UNIT 2H  
S 69°31' W  
NOT TO SCALE

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

JOB # 12-099WA  
DRAWING # DOTSON2H  
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  LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
(IF "GAS") PRODUCTION  STORAGE \_\_\_ DEEP \_\_\_ SHALLOW  STATE COUNTY PERMIT

LOCATION: ELEVATION 1,146' WATERSHED ARNOLD CREEK DISTRICT CENTRAL COUNTY DODDRIDGE  
QUADRANGLE WEST UNION 7.5'

SURFACE OWNER JONATHAN DAVIS ACREAGE 245.77 ACRES +/-  
OIL & GAS ROYALTY OWNER CHARLEY SMITH ET AL; MARY MILLER ET AL; S. FOX; WV STATE RAIL AUTHORITY; LEASE ACREAGE 213 AC; 54 AC; 0.444 AC; 301.19 AC +/-  
CENTRAL STATION CHURCH; E. PIERCE ET AL; CENTRAL STATION CHURCH; ROBERT BONAR; CORLISS HUDSON ET AL; RALPH VALENTINE ET UX 0.138 AC; 0.344 AC; 0.19564 AC; 14.7 AC; 245 AC; 244.6 AC; 104.62 AC

PROPOSED WORK: DRILL  CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION

OTHER PHYSICAL CHANGE IN WELL (SPECIFY)  
PLUG & ABANDON \_\_\_ CLEAN OUT & REPLUG \_\_\_ ESTIMATED DEPTH 7,000' TVD 14,500' MD  
TARGET FORMATION MARCELLUS

WELL OPERATOR ANTERO RESOURCES APPALACHIAN CORP. DESIGNATED AGENT DIANNA STAMPER  
ADDRESS 1625 17TH STREET ADDRESS 5400 D BIG TYLER ROAD  
DENVER, CO 80202 CHARLESTON, WV 25313

7,905' TO BOTTOM HOLE  
LATITUDE 39°17'30"

NOTE:  
2 WATER WELLS WERE LOCATED WITHIN 2000' OF PROPOSED WELL



INSET  
S. FOX ET AL D.B. 228 PG. 1 T.M. 7 PAR. 321 0.33 ACRES  
W. ASH D.B. 204 PG. 650 T.M. 7 PAR. 32  
E. DONLEY ET AL D.B. 271 PG. 149 T.M. 7 PAR. 33 0.46 ACRES  
D. LOWE D.B. 234 PG. 351 T.M. 7A PAR. 25  
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CORLISS HUDSON ET AL D.B. 240 PG. 271 T.M. 7 PAR. 27 14.25 AC  
GILBERT NEELY ET UX D.B. 192 PG. 184 T.M. 7 PAR. 8 52.05 AC  
RALPH VALENTINE ET AL D.B. 161 PG. 287 T.M. 10 PAR. 04 30.65 AC  
RALPH VALENTINE ET UX LEASE

NOTES:  
WELL 2-H TOP HOLE INFORMATION:  
N: 293,910ft E: 1,623,896ft  
LAT: 39°17'57.54" LON: 80°49'44.52"  
BOTTOM HOLE INFORMATION:  
N: 287,264ft E: 1,624,471ft  
LAT: 39°16'52.24" LON: 80°49'10.53"  
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.

STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
WILLOW LAND SURVEYING PLLC  
266 HUSHERS RUN RD PENNSBORO WEST VIRGINIA 26415

DATE 12/28/12  
OPERATOR'S WELL # DOTSON UNIT 2H  
API WELL #

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  STATE COUNTY PERMIT

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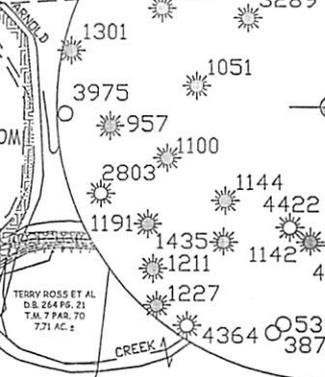
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7,905' TO BOTTOM HOLE  
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STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
WILLOW LAND SURVEYING PLLC  
266 HUSHERS RUN RD PENNSBORO WEST VIRGINIA 26415

DATE 12/28/12  
OPERATOR'S WELL # DOTSON UNIT 2H  
API WELL #

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENERGY  
DIVISION OF OIL AND GAS

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LOCATION: ELEVATION 1,146' WATERSHED ARNOLD CREEK DISTRICT CENTRAL COUNTY DODDRIDGE  
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DENVER, CO 80202 CHARLESTON, WV 25313

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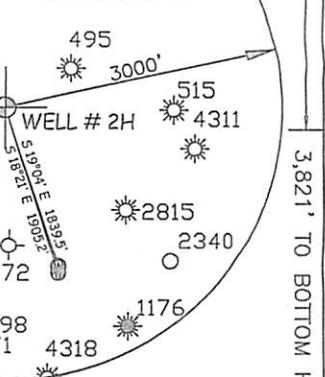
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STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
WILLOW LAND SURVEYING PLLC  
266 HUSHERS RUN RD PENNSBORO WEST VIRGINIA 26415

DATE 12/28/12  
OPERATOR'S WELL # DOTSON UNIT 2H  
API WELL #

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  STATE COUNTY PERMIT

LOCATION: ELEVATION 1,146' WATERSHED ARNOLD CREEK DISTRICT CENTRAL COUNTY DODDRIDGE  
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LONGITUDE 80°47'30"  
12,390' TO TOP HOLE

LONGITUDE 80°47'30"



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266 HUSHERS RUN RD PENNSBORO WEST VIRGINIA 26415

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API WELL #

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DIVISION OF OIL AND GAS

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QUADRANGLE WEST UNION 7.5'

SURFACE OWNER JONATHAN DAVIS ACREAGE 245.77 ACRES +/-  
OIL & GAS ROYALTY OWNER CHARLEY SMITH ET AL; MARY MILLER ET AL; S. FOX; WV STATE RAIL AUTHORITY; LEASE ACREAGE 213 AC; 54 AC; 0.444 AC; 301.19 AC +/-  
CENTRAL STATION CHURCH; E. PIERCE ET AL; CENTRAL STATION CHURCH; ROBERT BONAR; CORLISS HUDSON ET AL; RALPH VALENTINE ET UX 0.138 AC; 0.344 AC; 0.19564 AC; 14.7 AC; 245 AC; 244.6 AC; 104.62 AC

PROPOSED WORK: DRILL  CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION

OTHER PHYSICAL CHANGE IN WELL (SPECIFY)  
PLUG & ABANDON \_\_\_ CLEAN OUT & REPLUG \_\_\_ ESTIMATED DEPTH 7,000' TVD 14,500' MD  
TARGET FORMATION MARCELLUS

WELL OPERATOR ANTERO RESOURCES APPALACHIAN CORP. DESIGNATED AGENT DIANNA STAMPER  
ADDRESS 1625 17TH STREET ADDRESS 5400 D BIG TYLER ROAD  
DENVER, CO 80202 CHARLESTON, WV 25313

STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
WILLOW LAND SURVEYING PLLC  
266 HUSHERS RUN RD PENNSBORO WEST VIRGINIA 26415

DATE 12/28/12  
OPERATOR'S WELL # DOTSON UNIT 2H  
API WELL #

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  STATE COUNTY PERMIT

LOCATION: ELEVATION 1,146' WATERSHED ARNOLD CREEK DISTRICT CENTRAL COUNTY DODDRIDGE  
QUADRANGLE WEST UNION 7.5'

SURFACE OWNER JONATHAN DAVIS ACREAGE 245.77 ACRES +/-  
OIL & GAS ROYALTY OWNER CHARLEY SMITH ET AL; MARY MILLER ET AL; S. FOX; WV STATE RAIL AUTHORITY; LEASE ACREAGE 213 AC; 54 AC; 0.444 AC; 301.19 AC +/-  
CENTRAL STATION CHURCH; E. PIERCE ET AL; CENTRAL STATION CHURCH; ROBERT BONAR; CORLISS HUDSON ET AL; RALPH VALENTINE ET UX 0.138 AC; 0.344 AC; 0.19564 AC; 14.7 AC; 245 AC; 244.6 AC; 104.62 AC

PROPOSED WORK: DRILL  CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION



**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

February 27, 2013

**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-5901045, issued to LEATHERWOOD, INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.

James Martin  
Chief

Operator's Well No: C-54

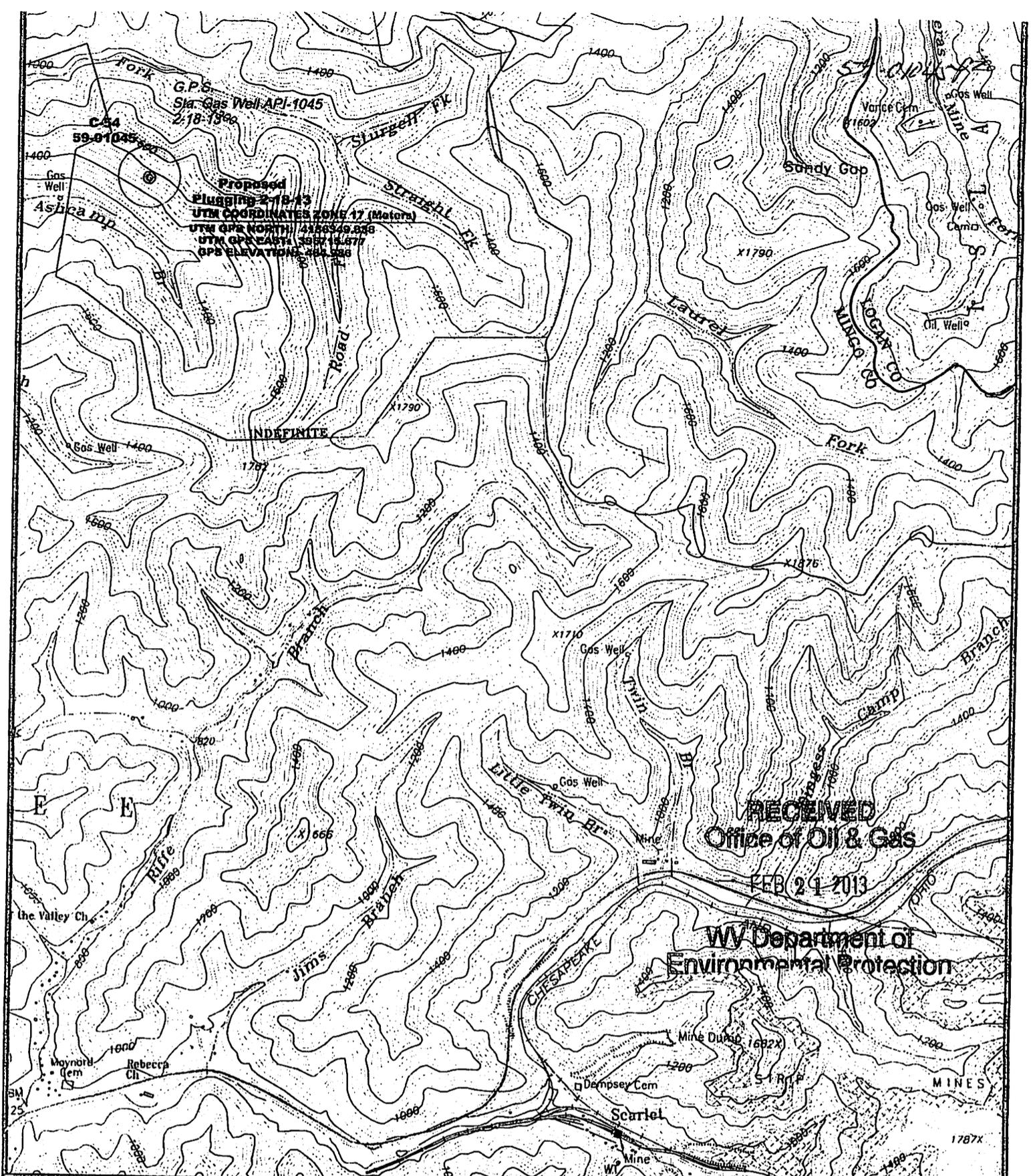
Farm Name: HEARTWOOD FORESTLAND FU

API Well Number: 47-5901045

Permit Type: Plugging

Date Issued: 02/27/2013

**Promoting a healthy environment.**



**Proposed Gas Well Plugging**  
Well No. 47-059-1045

**GENERAL LOCATION MAP**  
MYRTLE QUADRANGLE  
SCALE 1" = 2000' FEET  
18 February 2013

Prepared By:  
**Tug Valley Surveying, Inc.**  
P.O. BOX 862  
Williamson, W. V. 25661







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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

February 27, 2013

**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-5901047, issued to LEATHERWOOD, INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

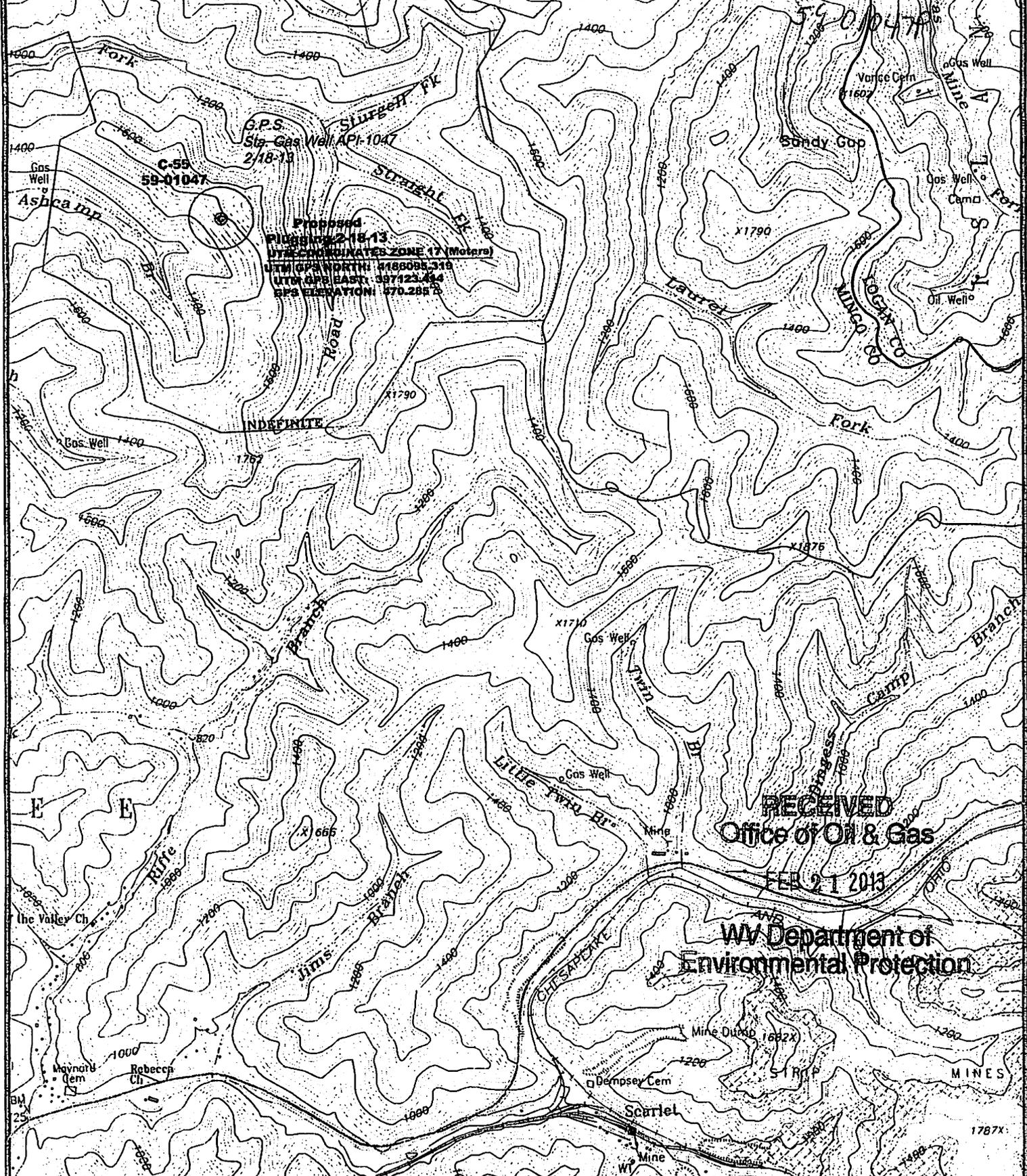
This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.

A handwritten signature in black ink, appearing to read 'James Martin', is written over a circular stamp.

James Martin  
Chief

Operator's Well No: C-55  
Farm Name: HEARTWOOD FORESTLAND FU  
API Well Number: 47-5901047  
Permit Type: Plugging  
Date Issued: 02/27/2013

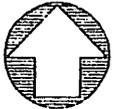
**Promoting a healthy environment.**



**Proposed Gas Well Plugging**  
 Well No. 47-059-1047

**GENERAL LOCATION MAP**  
 MYRTLE QUADRANGLE  
 SCALE 1" = 2000' FEET  
 18 February 2013

Prepared By:  
 Tug Valley Surveying, Inc.  
 P.O. BOX 862  
 Williamson, W. V. 25661







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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

February 27, 2013

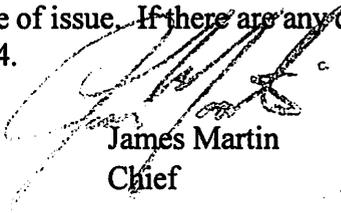
**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-5901091, issued to LEATHERWOOD, INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

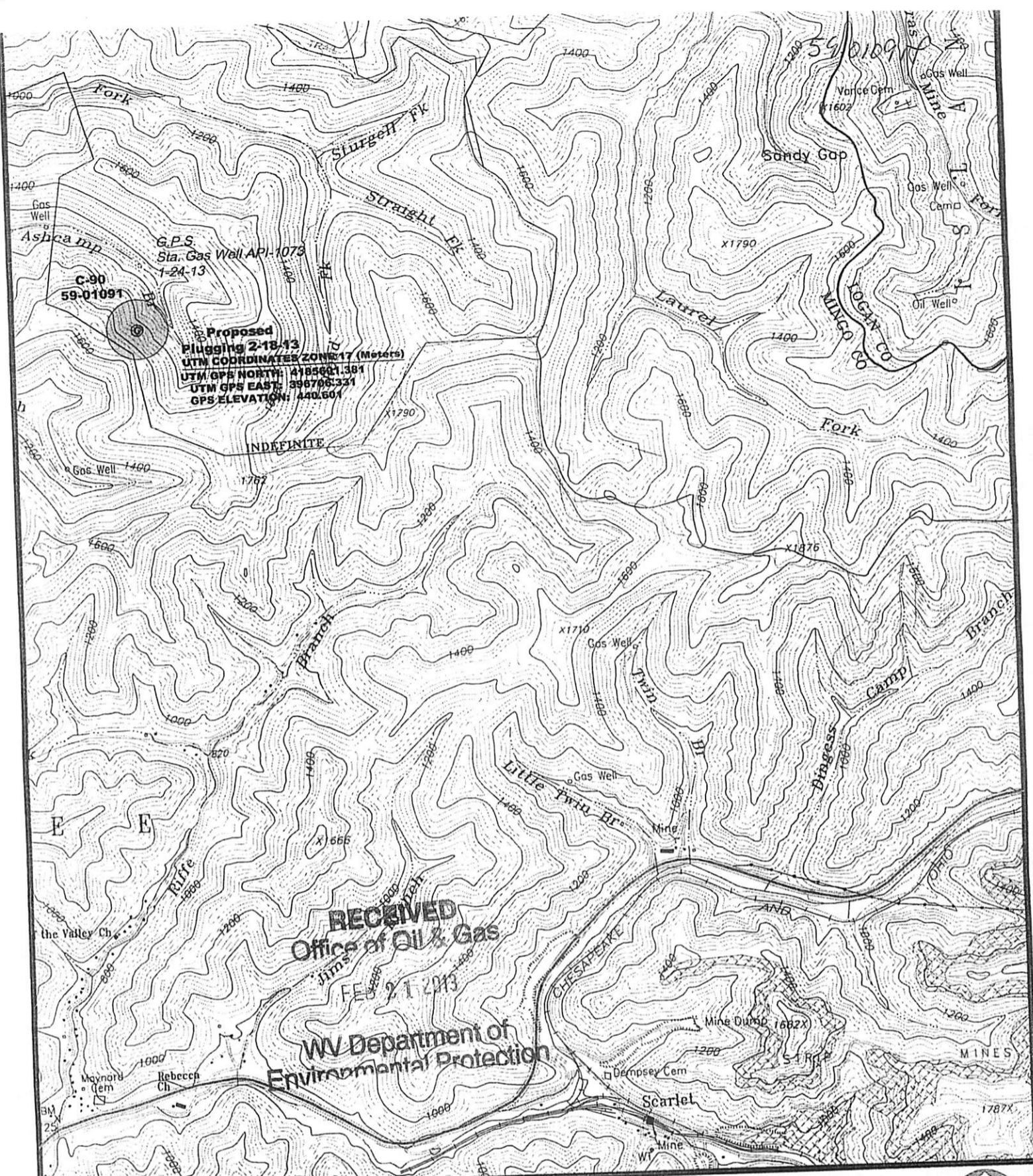
This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.



James Martin  
Chief

Operator's Well No: C-90  
Farm Name: HEARTWOOD FORESTLAND FU  
**API Well Number: 47-5901091**  
**Permit Type: Plugging**  
Date Issued: 02/27/2013

**Promoting a healthy environment.**



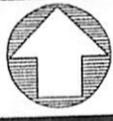
G.P.S. Sta. Gas Well API-1073  
 1-24-13  
**Proposed  
 Plugging 2-18-13**  
 UTM COORDINATES ZONE 17 (Meters)  
 UTM GPS NORTH: 4185661.381  
 UTM GPS EAST: 396706.331  
 GPS ELEVATION: 440.601

**RECEIVED**  
 Office of Oil & Gas  
 Jims  
 FEB 21 2013  
 WV Department of  
 Environmental Protection

**Proposed Gas Well Plugging**  
 Well No. 47-059-1091

**GENERAL LOCATION MAP**  
 MYRTLE QUADRANGLE  
 SCALE 1" = 2000' FEET  
 18 February 2013

Prepared By:  
**Tug Valley Surveying, Inc.**  
 P.O. BOX 862  
 Williamson, W. V. 25661







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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

February 25, 2013

CNX GAS COMPANY LLC  
ONE ENERGY DRIVE  
JANE LEW, WV 26378

Re: Permit Modification Approval for API Number 103255 , Well #: PHL10EHS  
MODIFIED LATERAL

Oil and Gas Operator:

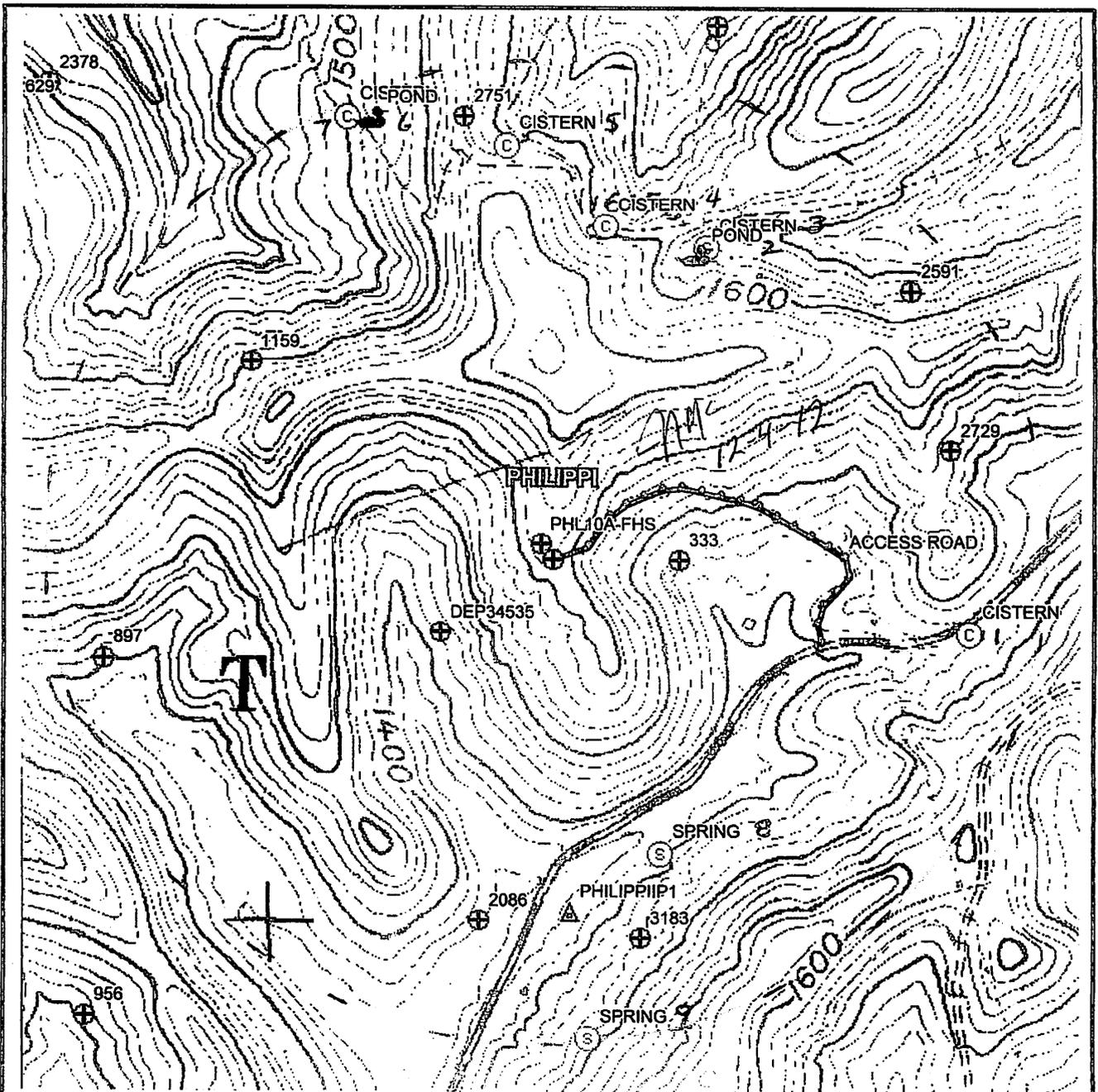
The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

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

Sincerely,

  
*for* Gene Smith  
Regulatory/Compliance Manager  
Office of Oil and Gas

Promoting a healthy environment.



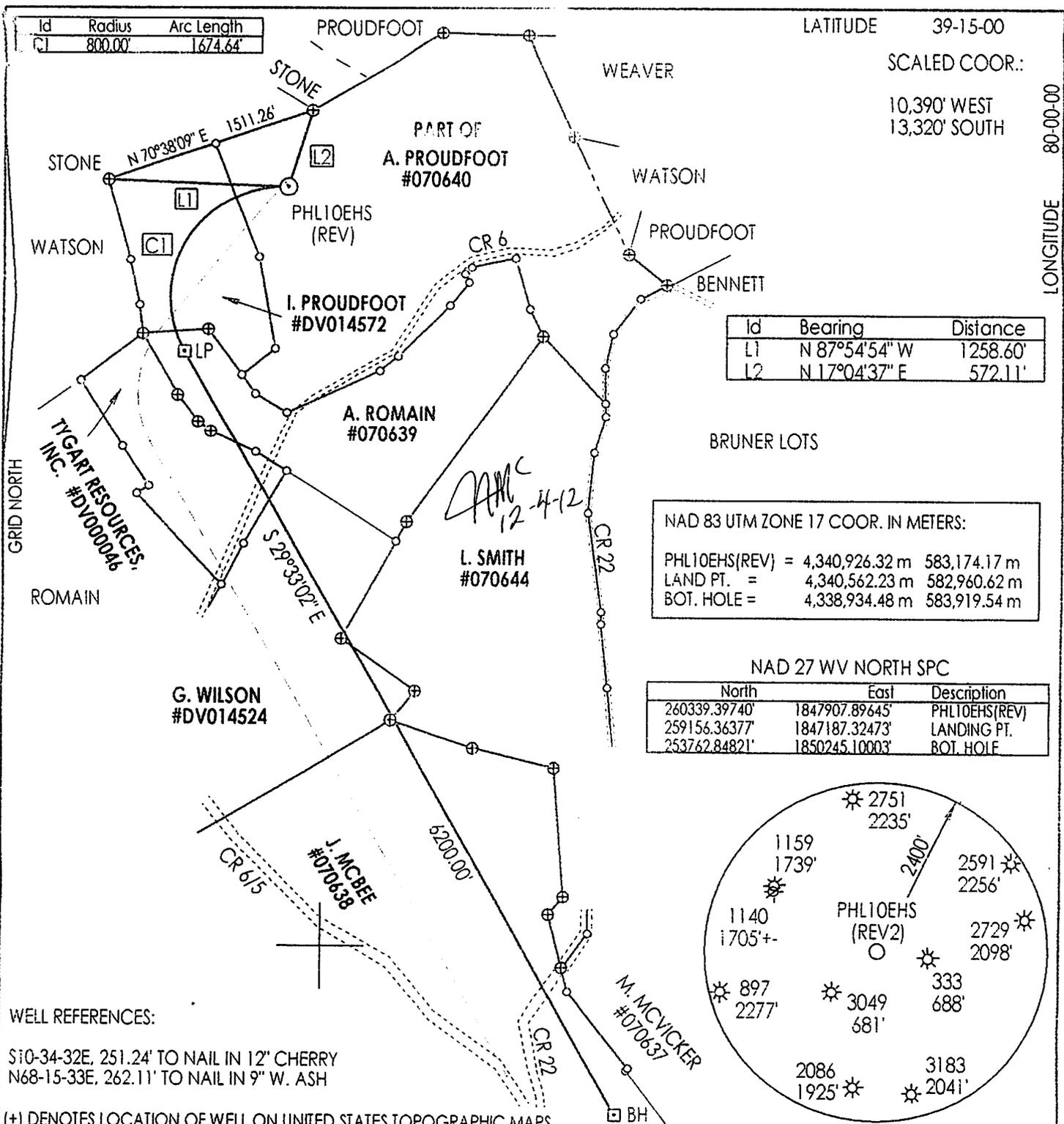
COORDINATES ARE NAD 27  
WV NORTH SPC.

- PHL10WATPURV
- 1, 259887.776, 1850032.824, 1450.998, "cistern"
  - 2, 261805.637, 1848685.561, 1562.749, "pond"
  - 3, 261856.683, 1848739.219, 1553.304, "cistern"
  - 4, 261974.270, 1848232.520, 1599.294, "cistern"
  - 5, 262397.298, 1847736.178, 1622.381, "cistern"
  - 6, 262529.502, 1847059.112, 1517.749, "pond"
  - 7, 262548.916, 1846938.082, 1499.398, "cistern"
  - 8, 258789.406, 1848477.893, 1379.807, "spring"
  - 9, 257848.310, 1848106.258, 1479.434, "spring"

GRID NORTH

CNX GAS COMPANY LLC P. O. BOX 1248 JANE LEW, WV 26378
PLAT SHOWING WATER PURVEYORS WITHIN 2500 FEET OF THE PHL10 PAD COVER
PLEASANT SPRING HARBOUR CO. WEST VIRGINIA SCALE: 1" = 733.30'
LAND SURVEYING SERVICES 21 CEDAR CANE L. BRIDGEPORT, WV 26330 PHONE: 304-842-2018 OR 576

Office of Oil & Gas  
WV Department of  
Environmental Protection



FILE NUMBER: \_\_\_\_\_  
 DRAWING NUMBER: CNXPHL10EHSR3.PCS  
 SCALE: 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY: SUBMETER  
 PROVEN SOURCE OF ELEVATION: DGPS SURVEY  
 RTK SYSTEM

I THE UNDERSIGNED, HEREBY STATE 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 ENERGY.

(SIGNED) \_\_\_\_\_  
 STEPHEN D. LOSH, P.S. #674



STATE OF WEST VIRGINIA  
 DIVISION OF ENVIRONMENTAL PROTECTION  
 OFFICE OF OIL AND GAS  
 #10 McJUNKIN ROAD  
 NIRO, WV 25143-2506

FORM WW-6

LAND SURVEYING SERVICES  
 21 CEDAR LANE, BRIDGEPORT, WV 26330  
 PHONE: 304-842-2018 OR 842-5762

DATE: AUGUST 16, 2012  
 OPERATORS WELL NO.: PHL10EHS (REV2)  
 API WELL NO. 47-001-03255 H6A  
 STATE COUNTY MOD PERMIT

WELL TYPE: OIL \_\_\_ GAS \_\_\_ LIQUID INJECTION  WASTE DISPOSAL \_\_\_ CBM \_\_\_  
 (IF "GAS") PRODUCTION \_\_\_ STORAGE  DEEP \_\_\_ SHALLOW

LOCATIC: ELEVATION 1618.50' (493.32 m) WATERSHED TAYLOR DPAIN  
 DISTRICT PLEASANT COUNTY BARBOUR  
 QUADRANGLE PHILIPPI LEASE NUMBER SEE ABOVE

SURFACE OWNER MARY LOU WATSON ACREAGE 103.00 (15-30)  
 OIL & GAS ROYALTY OWNER A. PROUDFOOT, ET. AL. UNIT LEASE ACREAGE 10.16

PROPOSED WORK: DRILL  CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION \_\_\_  
 PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE (SPECIFY) HORIZONTAL  
 PLUG & ABANDON \_\_\_ CLEAN OUT & REPLUG \_\_\_

TARGET FORMATION MARCELLUS ESTIMATED DEPTH TVD 7850' / TMD 16400'

WELL OPERATOR CNX GAS COMPANY LLC DESIGNATED AGENT KENT WRIGHT  
 ADDRESS P. O. BOX 1248 JANE LEW, WV 26378 ADDRESS P. O. BOX 1248 JANE LEW, WV 26378

LONGITUDE 80-00-00  
 COUNTY NAME BARBOUR  
 PERMIT



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](http://www.dep.wv.gov)

## PERMIT MODIFICATION APPROVAL

February 25, 2013

STONE ENERGY CORPORATION  
6000 HAMPTON CENTER, SUITE B  
MORGANTOWN, WV 26505

Re: Permit Modification Approval for API Number 10302774, Well #: BOWYERS 4H

*Modified Lateral & disposal site for pit waste*

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,

A handwritten signature in cursive script, appearing to read 'Gene Smith'.

*for*

Gene Smith  
Regulatory/Compliance Manager  
Office of Oil and Gas

Promoting a healthy environment.

LONG. 80°50'39.4"

3,050'

LATITUDE 39°42'30"

# BOWYERS #4H (47-103-02774) REVISED

NICE, ET AL  
133 ACRES ±  
MAP 2  
PARCEL 8

BOWYERS #4H  
(47-103-02774)  
REVISED  
STATE PLANE  
COORDINATES  
NORTH ZONE  
(N) 429487  
(E) 1621810

BOWYERS #4H  
(47-103-02774)  
REVISED  
L & L DECIMAL  
39.67141  
80.84428

BOWYERS #4H  
(47-103-02774)  
REVISED  
UTM (NAD 83)  
4391309  
513371

REBAR N 85° W 1811'

BOWYERS #4H  
(47-103-02774)  
REVISED  
LANDING POINT

DENOON  
60 ACRES ±  
MAP 2  
PARCEL 8.1

S 87° E 3962'

STONE

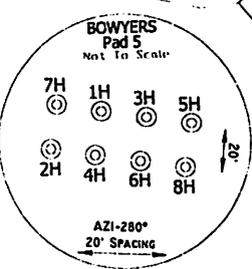
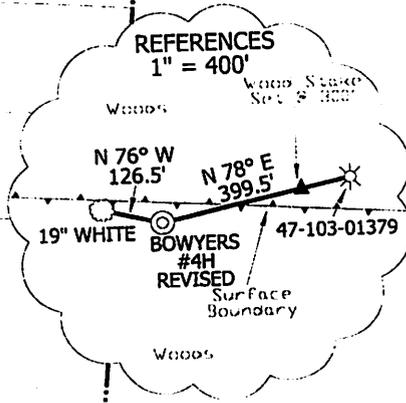
MAP 2  
PARCEL 7

MAP 2  
PARCEL 9

BOWYERS #4H  
LANDING POINT

DENOON  
72.6 ACRES ±  
MAP 2  
PARCEL 10

DENOON  
72.6 ACRES ±  
MAP 2  
PARCEL 12



BOWYERS #4H  
(47-103-02774)  
REVISED  
LANDING POINT  
STATE PLANE  
COORDINATES  
NORTH ZONE  
(N) 428694  
(E) 1621117

BOWYERS #4H  
(47-103-02774)  
REVISED  
LANDING POINT  
L & L DECIMAL  
39.66922  
80.84599

BOWYERS #4H  
(47-103-02774)  
REVISED  
LANDING POINT  
UTM (NAD 83)  
4391065  
513225

MENSORE, et al  
289 ACRES ±  
MAP 4  
PARCEL 2

NICE, ET AL  
413.59 ACRES ±  
MAP 5  
PARCEL 1

BRIDGEMAN, et al  
77 ACRES ±  
MAP 4  
PARCEL 7

THOMAS  
85.52 ACRES ±  
MAP 4  
PARCEL 8

THOMAS  
68.389 ACRES ±  
MAP 5  
PARCEL 5

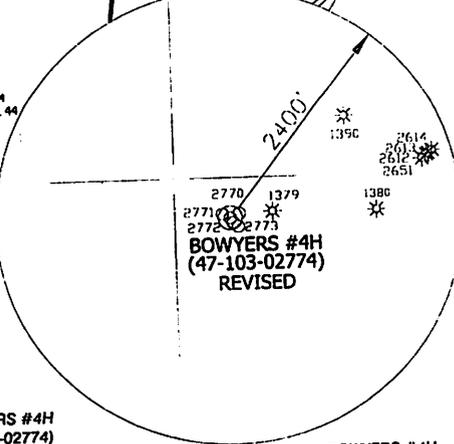
### NOTES ON SURVEY

THIS TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH WV NORTH ZONE NAD '27. THE LAST BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 419 AT PAGE 568 AND INFORMATION PROVIDED BY STONE ENERGY. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF WETZEL COUNTY IN MARCH, 2011 AND INFORMATION PROVIDED BY STONE ENERGY CORPORATION. WELL LAT./LONG. ESTABLISHED BY SG-GPS. ORIGINAL PLAT DATE OF OCTOBER 19, 2011.

AZI-160  
S 14° E  
621'

SCHEIBELHOOD  
74.76 ACRES ±  
MAP 4  
PARCEL 17

HEINZMAN  
138.24 ACRES ±  
MAP 5  
PARCEL 8



BOWYERS #4H  
BOTTOM HOLE

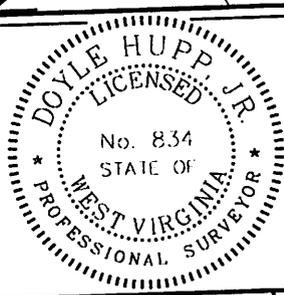
LLOYD  
40.25 ACRES ±  
MAP 4  
PARCEL 24

BOWYERS #4H  
(47-103-02774)  
REVISED  
BOTTOM HOLE  
STATE PLANE  
COORDINATES  
NORTH ZONE  
(N) 422568  
(E) 1622672

BOWYERS #4H  
(47-103-02774)  
REVISED  
BOTTOM HOLE  
STATE PLANE  
COORDINATES  
L & L DECIMAL  
39.65247  
80.84014

BOWYERS #4H  
(47-103-02774)  
REVISED  
BOTTOM HOLE  
STATE PLANE  
COORDINATES  
UTM (NAD 83)  
4389206  
513730

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 DIVISION OF ENVIRONMENTAL PROTECTION.



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
DATE: AUGUST 23, 2012  
OPERATORS WELL NO. BOWYERS #4H-REVISED

*Doyle Hupp Jr.*  
HUPP Surveying & Mapping  
P.O. Box 647 Grantsville, WV 26147  
(304) 354-7035 EMAIL: hupp@frontiernet.net

API WELL NO. 47-103-02774-H6A  
STATE COUNTY PERMIT  
**REVISED**

MINIMUM DEGREE OF ACCURACY 1/2500  
FILE NO. W2015 (BK 53 3)  
PROVEN SOURCE OF ELEVATION SG-GPS(OPUS)  
SCALE 1" = 1000'

STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

WELL TYPE: OIL	LIQUID GAS <input checked="" type="checkbox"/>	WASTE INJECTION	IF "GAS" PRODUCTION <input checked="" type="checkbox"/>	STORAGE	DEEP	SHALLOW <input checked="" type="checkbox"/>					
LOCATION: ELEVATION 1,190'	WATERSHED WILLIAMS RUN	COUNTY WETZEL	QUADRANGLE NEW MARTINSVILLE 70	ACRE AG. 60'	LEASE ACRI AG. 654.48'	LEASE NO.					
SURFACE OWNER JANE DENOON TRUST	ROYALTY OWNER DAVID BOWYERS, et al	PROPOSED WORK: DRILL <input checked="" type="checkbox"/>	CONVERT	DRILL DEEPER	REDRILL	FRACTURE OR STIMULATE <input checked="" type="checkbox"/>	PLUG OFF OLD FORMATION	PERFORATE NEW FORMATION	PLUG AND ABANDON	CLEAN OUT AND REPLUG	OTHER
PHYSICAL CHANGE IN WELL (SPECIFY)											
TARGET FORMATION MARCHLUS											
ESTIMATED DEPTH TVD 6,420' MD 13,500'											

WELL OPERATOR STONE ENERGY CORPORATION  
ADDRESS P.O. BOX 52807 LAFAYETTE, LA 70508  
DESIGNATED AGENT  
ADDRESS 6000 HAMPTON CENTER SUITE B MORGANTOWN WV 26609



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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)

February 25, 2013

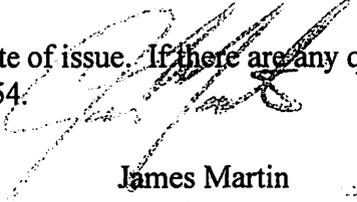
**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-5901051, issued to LEATHERWOOD, INC., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.

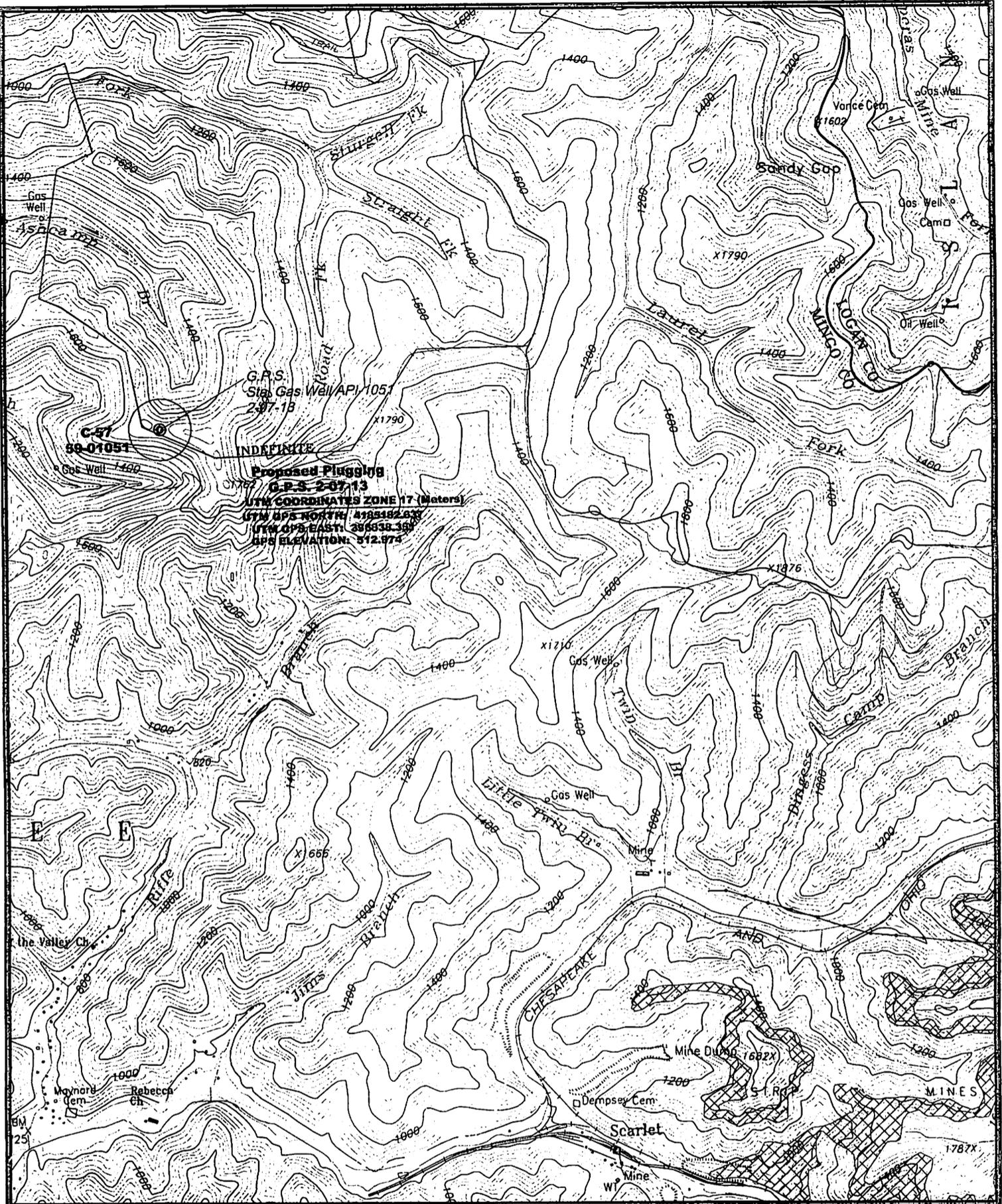


James Martin  
Chief

Operator's Well No: C-57  
Farm Name: HEARTWOOD FORESTLAND FU  
API Well Number: 47-5901051  
Permit Type: Plugging  
Date Issued: 02/25/2013

**Promoting a healthy environment.**

59-01051P



**Proposed Gas Well Plugging**  
 Well No. 47-059-1051

**GENERAL LOCATION MAP**  
 MYRTLE QUADRANGLE  
 SCALE 1" = 2000' FEET  
 7 February 2013

Prepared By:  
**Tug Valley Surveying, Inc.**  
 P.O. BOX 862  
 Williamson, W. V. 25661





West Virginia Department of Environmental Protection  
Office of Oil and Gas

WELL LOCATION FORM: GPS

API: 47-059-1051<sup>f</sup> WELL NO.: C-57

FARM NAME: Heartwood Forestland Tract 390

RESPONSIBLE PARTY NAME: LEATHERWOOD, INC.

COUNTY: Mingo DISTRICT: Hardee

QUADRANGLE: Myrtle

SURFACE OWNER: Heartwood Forestland Fund II

ROYALTY OWNER: New River Energy Corp.

UTM GPS NORTHING: 4185182.637

UTM GPS EASTING: 396838.351 GPS ELEVATION: 512.974

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.

2. Accuracy to Datum – 3.05 meters

3. Data Collection Method:

Survey grade GPS  : Post Processed Differential

Real-Time Differential

Mapping Grade GPS  : Post Processed Differential

Real-Time Differential

4. Letter size copy of the topography map showing the well location.

I the undersigned, hereby certify this data 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 Office of Oil and Gas.

[Signature] PLS 869su 2-7-13  
Signature Title Date



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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

**PERMIT MODIFICATION APPROVAL**

February 22, 2013

STONE ENERGY CORPORATION  
6000 HAMPTON CENTER, SUITE B  
MORGANTOWN, WV 26505

Re: Permit Modification Approval for API Number 10302772, Well #: BOWYERS 6H

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.

*Larger lateral, casing modified, added lease info.*

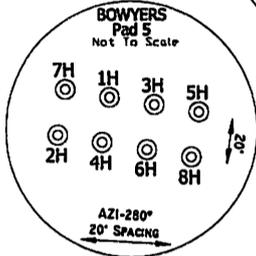
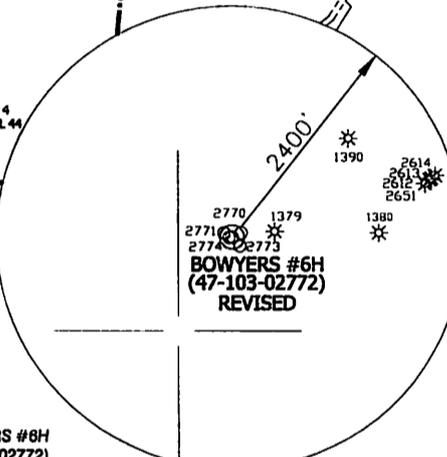
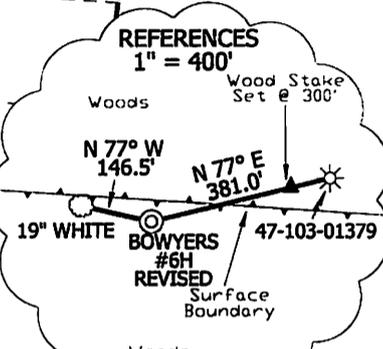
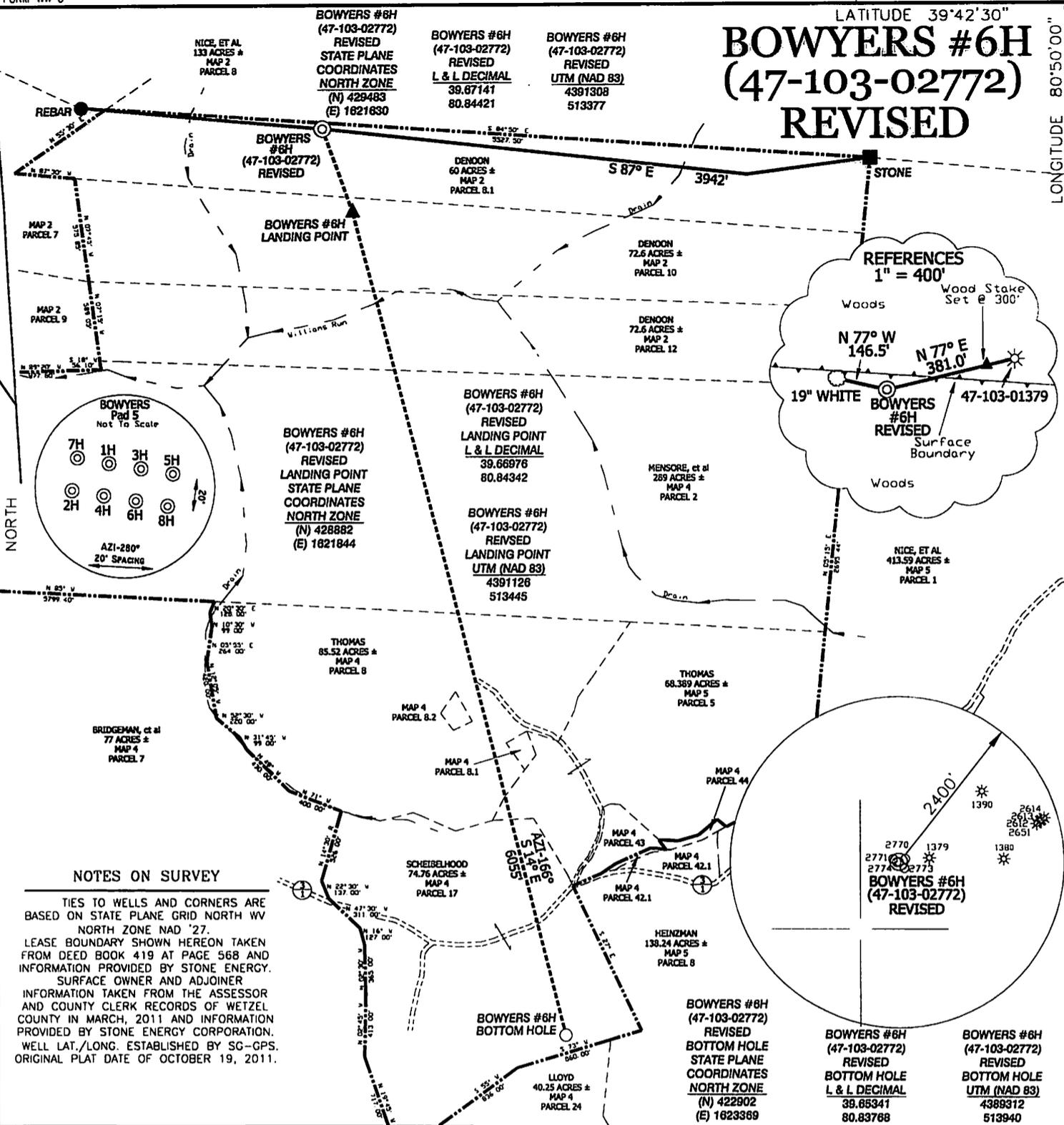
Sincerely,

Gene Smith

Regulatory/Compliance Manager  
Office of Oil and Gas

**Promoting a healthy environment.**

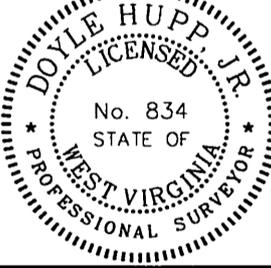
# BOWYERS #6H (47-103-02772) REVISED



**NOTES ON SURVEY**

TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH WV NORTH ZONE NAD '27. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 419 AT PAGE 568 AND INFORMATION PROVIDED BY STONE ENERGY. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF WETZEL COUNTY IN MARCH, 2011 AND INFORMATION PROVIDED BY STONE ENERGY CORPORATION. WELL LAT./LONG. ESTABLISHED BY SG-GPS. ORIGINAL PLAT DATE OF OCTOBER 19, 2011.

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 DIVISION OF ENVIRONMENTAL PROTECTION.



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
DATE AUGUST 23, 20 12  
OPERATORS WELL NO. BOWYERS #6H-REVISED

P.S. 834 *Doyle Hupp Jr.*  
**HUPP Surveying & Mapping**  
P.O. Box 647 Grantsville, WV 26147  
(304) 354-7035 EMAIL: hupp@frontiernet.net

API WELL NO. 47-103-02772 *HeA*  
STATE WV COUNTY WETZEL PERMIT Revised

MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. W2015 (BK 53-3)  
PROVEN SOURCE OF ELEVATION SG-GPS(OPUS) SCALE 1" = 1000'

STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS



WELL TYPE : OIL  GAS  INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION :  
ELEVATION 1,190' WATERSHED WILLIAMS RUN  
DISTRICT MAGNOLIA COUNTY WETZEL QUADRANGLE NEW MARTINSVILLE 7.5'

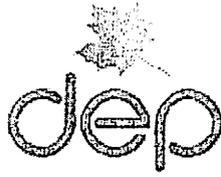
SURFACE OWNER JANIE DENOON TRUST ACREAGE 60±  
ROYALTY OWNER DAVID BOWYERS, et al LEASE ACREAGE 654.48±

PROPOSED WORK : LEASE NO. \_\_\_\_\_  
DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION MARCELLUS  
ESTIMATED DEPTH TVD 6,420' MD 13,200'

WELL OPERATOR STONE ENERGY CORPORATION DESIGNATED AGENT TIM MCGREGOR  
ADDRESS P.O. BOX 52807 LAFAYETTE, LA 70508 ADDRESS 6000 HAMPTON CENTER SUITE B MORGANTOWN WV 26505

LONGITUDE 80°50'00" LONGITUDE 80°50'17.1" LAT. 39°40'17.1"



**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

February 22, 2013

**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-9900335, issued to CHESAPEAKE APPALACHIA, L.L.C., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.

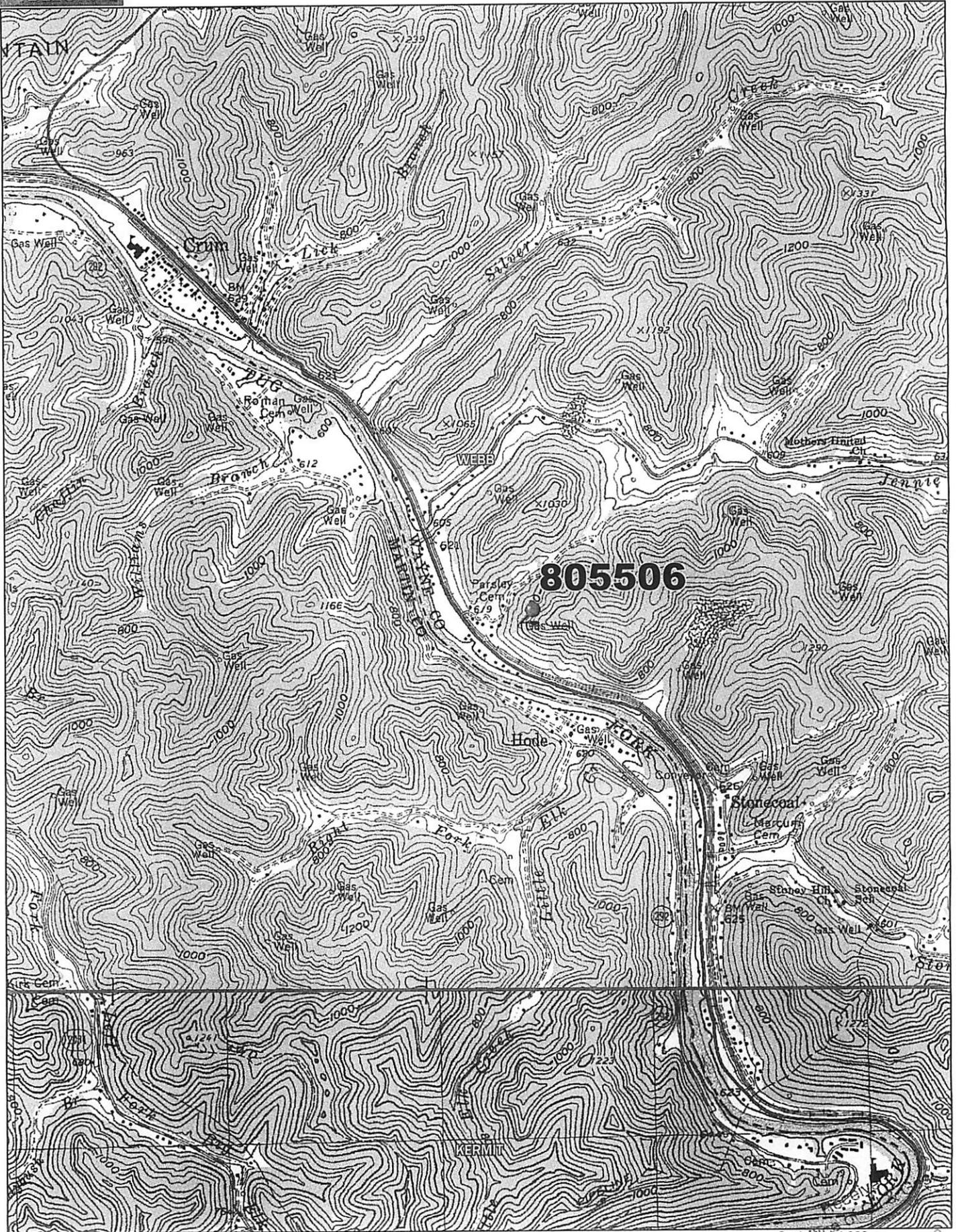
A handwritten signature in black ink, appearing to read 'James Martin', is written over the typed name and title.

James Martin  
Chief

Operator's Well No: 805506  
Farm Name: HAYNES, FAITH AND SPENCER  
**API Well Number: 47-9900335**  
**Permit Type: Plugging**  
Date Issued: 02/22/2013

**Promoting a healthy environment.**

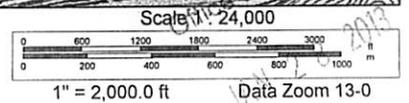
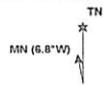
99 00335 P



Data use subject to license.

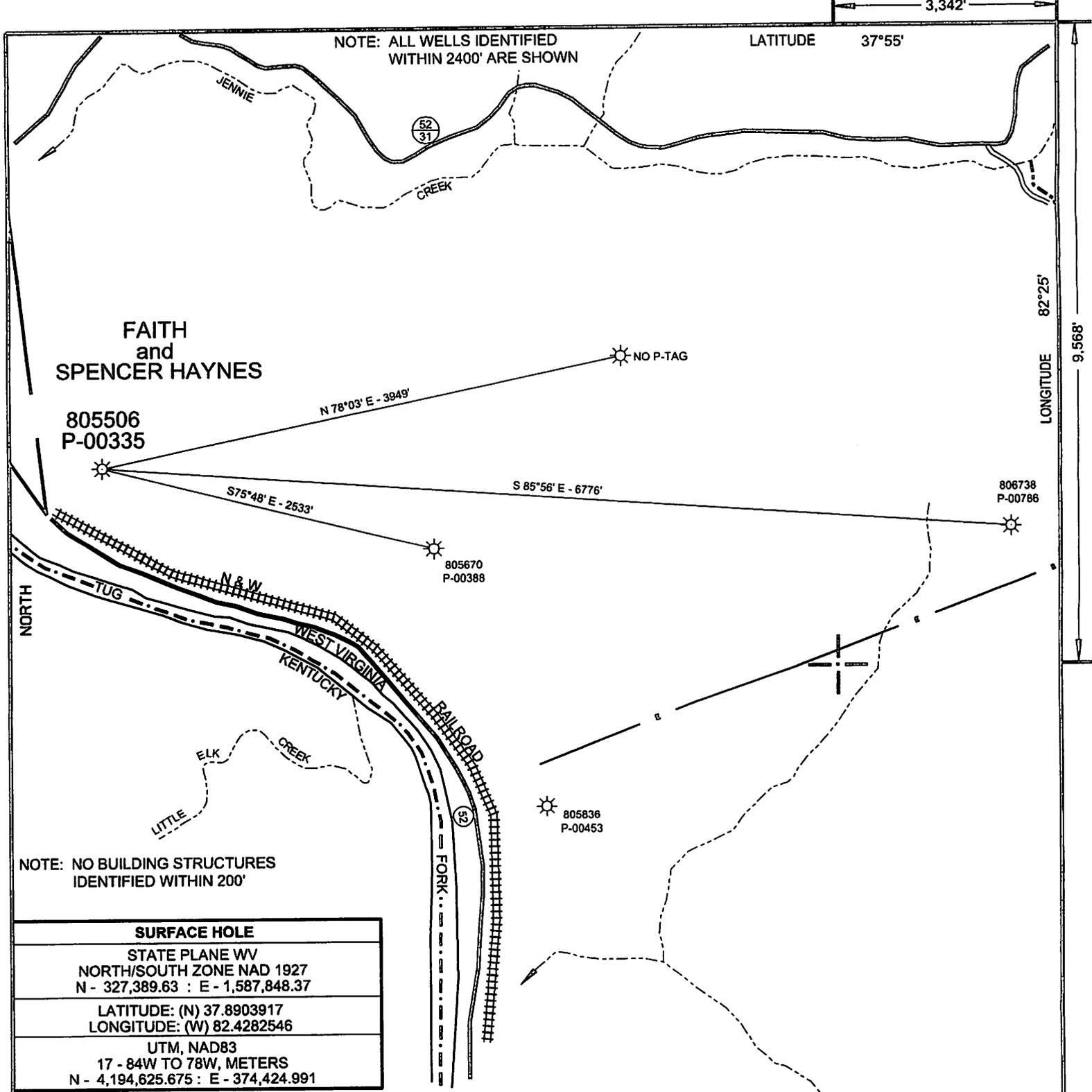
© DeLorme. XMap® 7.

www.delorme.com



99-00335 P 805506  
 CHESAPEAKE APPALACHIA

Farm Name: Haynes, Faith & Spencer



SURFACE HOLE	
STATE PLANE WV NORTH/SOUTH ZONE NAD 1927 N - 327,389.63 : E - 1,587,848.37	
LATITUDE: (N) 37.8903917 LONGITUDE: (W) 82.4282546	
UTM, NAD83 17 - 84W TO 78W, METERS N - 4,194,625.675 : E - 374,424.991	

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

FILE NO. <u>805506P&amp;A.DGN</u> DRAWING NO. <u>805506 P&amp;A</u> SCALE <u>1" = 1000'</u> MINIMUM DEGREE OF ACCURACY <u>1:200</u> PROVEN SOURCE OF ELEVATION <u>MAPPING GRADE GPS</u>	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) <u><i>Paul E. Miller</i></u> R.P.E. _____ L.L.S. <u>647</u>	
---	--	--

STATE OF WEST VIRGINIA DIVISION OF ENVIRONMENTAL PROTECTION OIL AND GAS DIVISION		DATE <u>JANUARY 18</u> , 20 <u>13</u> OPERATOR'S WELL NO. <u>805506</u> API WELL NO. <u>47 099 00335 P</u> STATE COUNTY PERMIT
WELL TYPE: OIL ___ GAS <u>X</u> LIQUID INJECTION ___ WASTE DISPOSAL ___ (IF "GAS,") PRODUCTION <u>X</u> STORAGE ___ DEEP ___ SHALLOW <u>X</u>		
LOCATION: ELEVATION <u>758'</u> WATER SHED <u>TUG FORK</u> DISTRICT <u>LINCOLN</u> COUNTY <u>WAYNE</u> QUADRANGLE <u>WEBB, WV 7.5'</u>		
SURFACE OWNER <u>FAITH and SPENCER HAYNES</u> ACREAGE <u>51.516</u> OIL & GAS ROYALTY OWNER <u>WAYNE COUNTY LAND AND MINERAL</u> LEASE ACREAGE <u>13.500</u> LEASE NO. <u>38002</u>		
PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___ PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____		
PLUG AND ABANDON <u>X</u> CLEAN OUT AND REPLUG ___ TARGET FORMATION _____ ESTIMATED DEPTH _____ WELL OPERATOR <u>CHESAPEAKE APPALACHIA, LLC</u> DESIGNATED AGENT <u>ERIC B. GILLESPIE</u> ADDRESS <u>PO BOX 18496, OKLAHOMA CITY, OK 73154-0496</u> ADDRESS <u>PO BOX 6070, CHARLESTON, WV 25362</u>		

FORM WW-6

COUNTY NAME

PERMIT



**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

February 22, 2013

**WELL WORK PERMIT**

**Horizontal 6A Well**

This permit, API Well Number: 47-10302854, issued to HG ENERGY, LLC, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, well operators report of well work, is to be submitted to this office within 90 days of completion of drilling, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

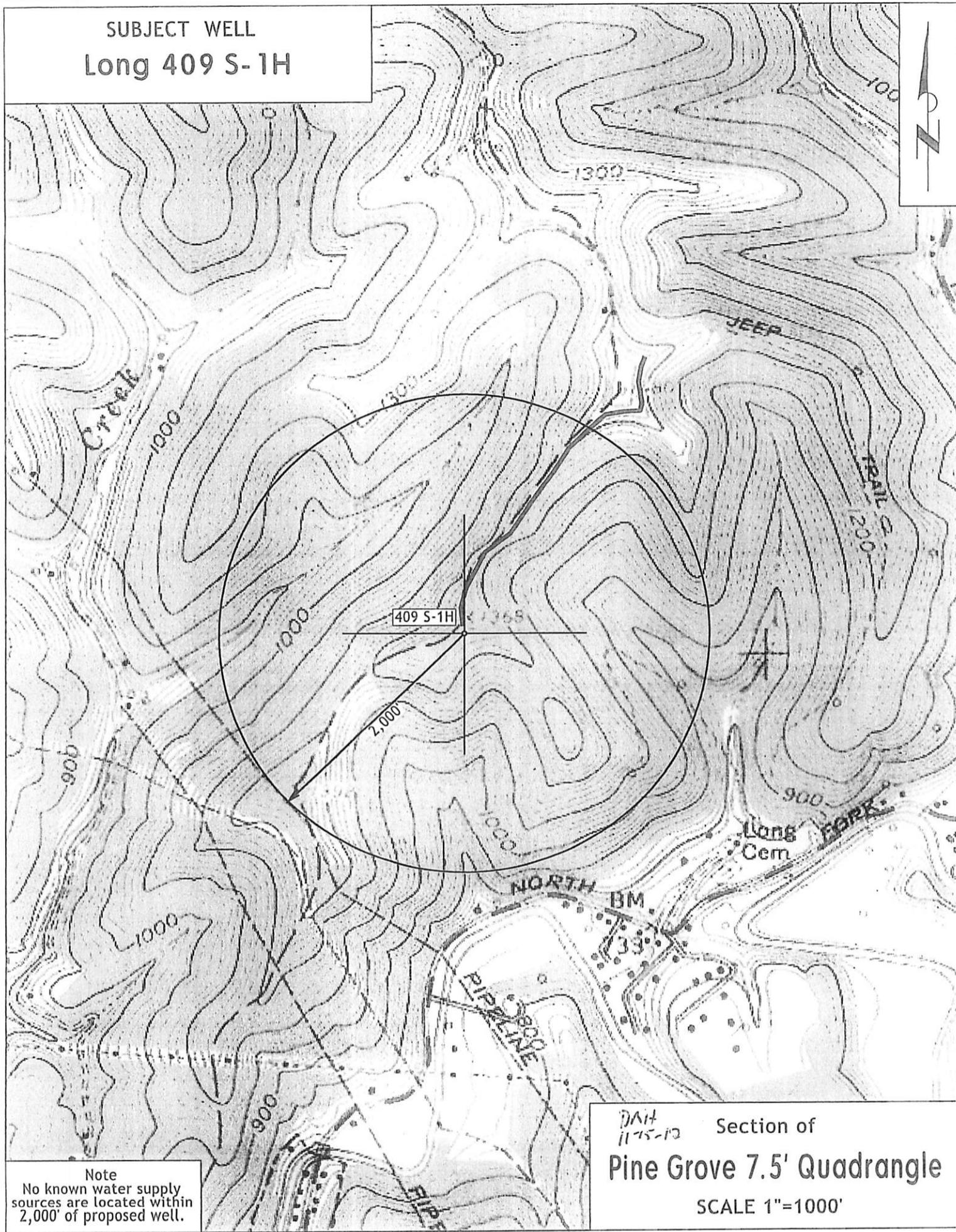


James Martin  
Chief

Operator's Well No: 409 S-1H  
Farm Name: BROWN, FRANCIS D. & FREEDA  
**API Well Number: 47-10302854**  
**Permit Type: Horizontal 6A Well**  
Date Issued: 02/22/2013

**Promoting a healthy environment.**

SUBJECT WELL  
Long 409 S-1H



Note  
No known water supply  
sources are located within  
2,000' of proposed well.

DNH  
11-15-12 Section of  
**Pine Grove 7.5' Quadrangle**  
SCALE 1"=1000'

(BOTTOM HOLE: 80°38'58.5")

LON: -80°40'31.6"

2475'

LAT: 39°37'30"

LON: 80°40'00"

14,960'

LAT: 39°35'02.2"

(BOTTOM HOLE: 39°34'48.2")

1 - Well ties and Latitude and Longitude were measured by DGPS (Sub-meter Mapping Grade). Bearings are referenced to UTM Grid North (Zone 17 North - NAD 1927).

2 - Surface owners and adjacent information obtained from the Wetzel County Assessor's tax records.

3 - No Title Opinion was provided to the Surveyor during this survey. This survey is subject to a complete title Opinion.

SURVEY NOTES

UTM Coordinates

(Zone 17N-NAD 1983)

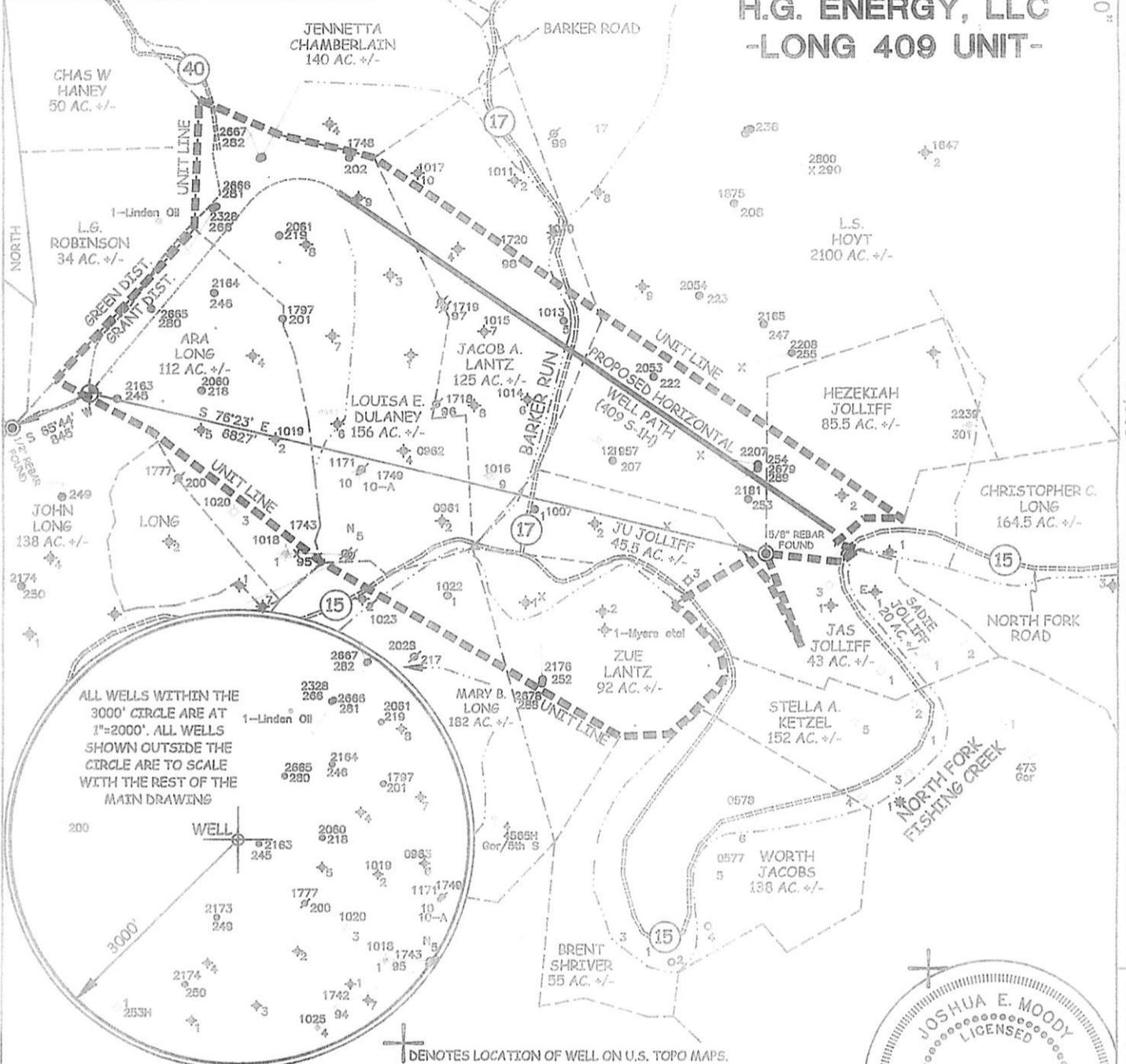
Surface N-4,381,640m.  
E-527,887m.

Bottom Hole N-4,381,217m.  
E-530,111m.

LOCATION REFERENCES

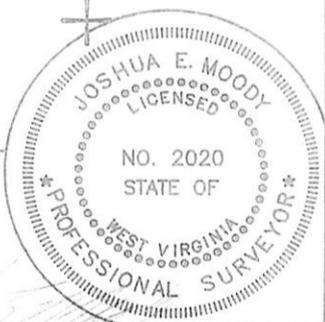
NAD 1983  
N 70°30' W 217' UTILITY POLE  
N 50°30' E 280' SPIKE

# MAP OF H.G. ENERGY, LLC -LONG 409 UNIT-



ALL WELLS WITHIN THE 3000' CIRCLE ARE AT 1"=2000'. ALL WELLS SHOWN OUTSIDE THE CIRCLE ARE TO SCALE WITH THE REST OF THE MAIN DRAWING

+ DENOTES LOCATION OF WELL ON U.S. TOPO MAPS.



JOB # 12-025  
DRAWING # 12HG409FOLDER  
SCALE 1" = 1500'

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 PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

MINIMUM DEGREE OF ACCURACY SUB-METER  
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
MOODY LAND SURVEYING, LLC  
ST. MARYS, WV 26170

JOSHUA E. MOODY, P.S. 2020  
DATE 10/30/12  
OPERATOR'S WELL #409 S-1H

WELL TYPE: OIL \_\_\_ GAS  LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_ HORIZONTAL   
(IF "GAS") PRODUCTION  STORAGE \_\_\_ DEEP \_\_\_ SHALLOW   
LOCATION: ELEVATION 1340' WATERSHED NORTH FOR, FISHING CREEK API WELL # 47-103-02854  
DISTRICT GRANT COUNTY WETZEL STATE COUNTY PERMIT  
QUADRANGLE PINE GROVE 7.5'

SURFACE OWNER FRANCIS D. & FREEDA M. BROWN (surface hole) ACREAGE 103 ACRES +/-  
OIL & GAS ROYALTY OWNER ROBERT B. MYERS ET AL LEASE ACREAGE 549 ACRES +/-  
PROPOSED WORK: DRILL  CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_  
OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_  
PLUG & ABANDON \_\_\_ CLEAN OUT & REPLUG \_\_\_  
TARGET FORMATION MARCELLUS  
WELL OPERATOR H.G. ENERGY, LLC  
ADDRESS 5260 DuPONT ROAD PARKERSBURG, WV 26101  
ESTIMATED DEPTH TVD= 7,315' MD= 14,942'  
DESIGNATED AGENT MIKE KIRSCH  
ADDRESS 5260 DuPONT ROAD PARKERSBURG, WV 26101

FORM WW-6 LEASE # 31950-50 et al



**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

February 22, 2013

**WELL WORK PERMIT**  
**Horizontal 6A Well**

This permit, API Well Number: 47-1706187, issued to ANTERO RESOURCES APPALACHIAN CORPORATION, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, well operators report of well work, is to be submitted to this office within 90 days of completion of drilling, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

A handwritten signature in black ink, appearing to read 'James Martin', is written over a faint circular stamp.

James Martin  
Chief

Operator's Well No: DOTSON UNIT 1H  
Farm Name: DAVIS, JONATHAN  
**API Well Number: 47-1706187**  
**Permit Type: Horizontal 6A Well**  
Date Issued: 02/22/2013

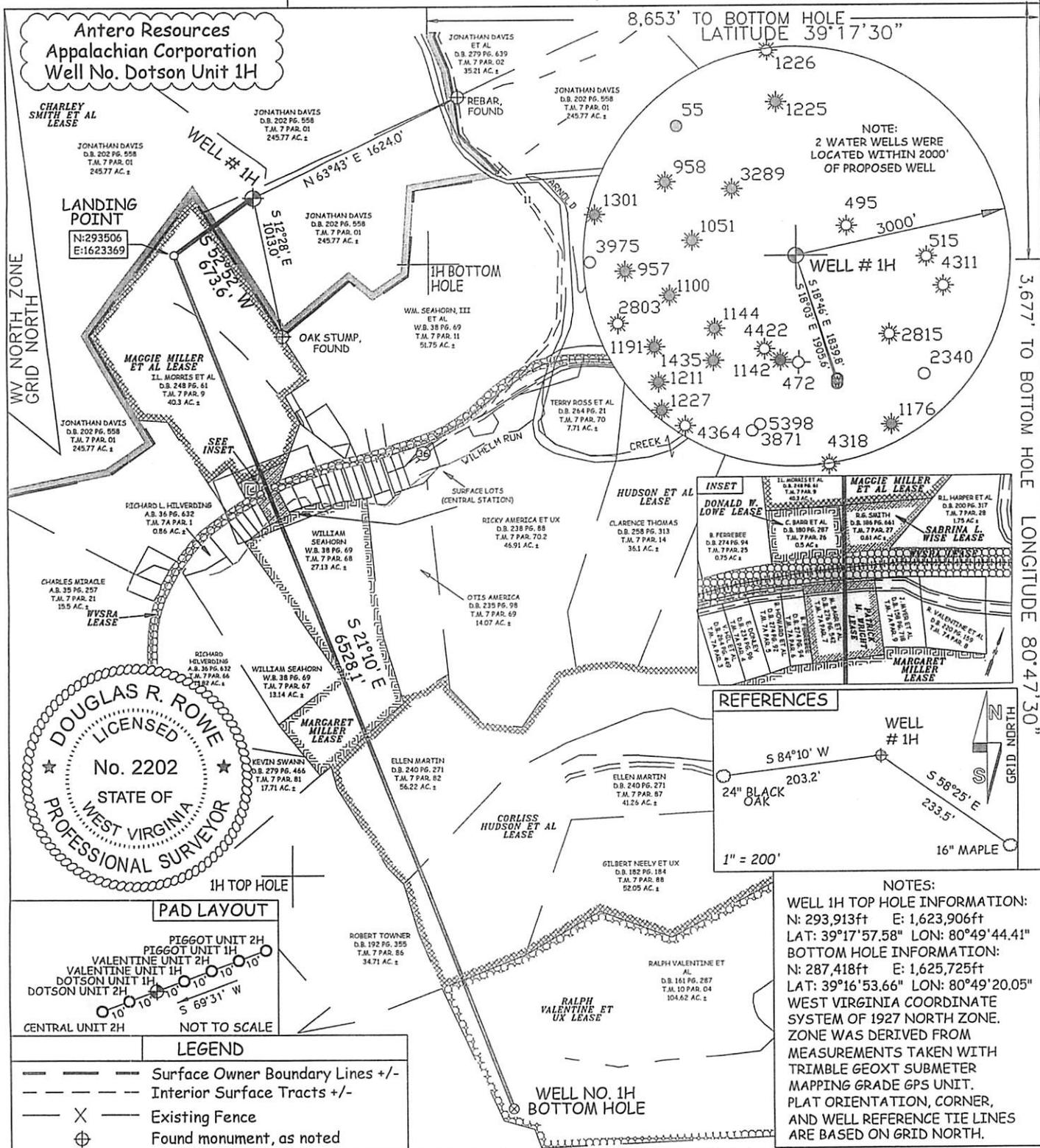
**Promoting a healthy environment.**



LATITUDE 39°20'00"  
10,566' TO TOP HOLE

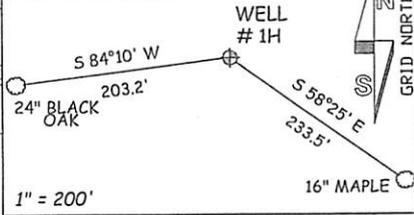
LONGITUDE 80°47'30"  
12,386' TO TOP HOLE  
3,677' TO BOTTOM HOLE  
LONGITUDE 80°47'30"

**Antero Resources  
Appalachian Corporation  
Well No. Dotson Unit 1H**

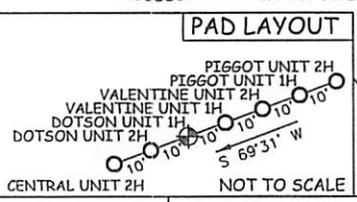


NOTE:  
2 WATER WELLS WERE  
LOCATED WITHIN 2000'  
OF PROPOSED WELL

**REFERENCES**



**NOTES:**  
WELL 1H TOP HOLE INFORMATION:  
N: 293,913ft E: 1,623,906ft  
LAT: 39°17'57.58" LON: 80°49'44.41"  
BOTTOM HOLE INFORMATION:  
N: 287,418ft E: 1,625,725ft  
LAT: 39°16'53.66" LON: 80°49'20.05"  
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.



**LEGEND**

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

JOB # 12-099WA  
DRAWING # DOTSON1H  
SCALE 1" = 1000'  
MINIMUM DEGREE OF ACCURACY SUBMETER  
PROVEN SOURCE OF ELEV. 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 PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

(NAD) 83 (UTM) ZONE 17 COORDS:  
WELL 1H TOP HOLE INFORMATION:  
N: 4,350,017m E: 514,759m  
BOTTOM HOLE INFORMATION:  
N: 4,348,048m E: 515,347m



STATE OF WEST VIRGINIA, DIVISION  
OF ENVIRONMENTAL PROTECTION,  
OFFICE OF OIL AND GAS  
WILLOW LAND SURVEYING PLLC  
266 HUSHERS RUN RD PENNSBORO  
WEST VIRGINIA 26415

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENERGY  
DIVISION OF OIL AND GAS

DATE 01/03/13  
OPERATOR'S WELL # DOTSON UNIT 1H  
API WELL # 47 - 017 - 0618746A  
STATE COUNTY PERMIT  
LOCATION: ELEVATION 1,146' WATERSHED ARNOLD CREEK DISTRICT CENTRAL COUNTY DODDRIDGE

QUADRANGLE WEST UNION 7.5'  
SURFACE OWNER JONATHAN DAVIS ACREAGE 245.77 ACRES +/-  
OIL & GAS ROYALTY OWNER CHARLEY SMITH ET AL; MAGGIE MILLER ET AL; SABRINA L. WISE; DONALD W. LOWE; LEASE ACREAGE 213 AC; 40 AC; 0.478 AC; 0.50 AC;  
WV STATE RAIL AUTHORITY; PATRICK M. WRIGHT; MARGARET MILLER; CORLISS HUDSON ET AL; RALPH VALENTINE ET UX 301.19 AC; 0.65 AC; 27.13 AC; 244.6 AC; 104.62 AC  
PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR  
STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION   
OTHER PHYSICAL CHANGE IN WELL (SPECIFY)  
PLUG & ABANDON  CLEAN OUT & REPLUG  ESTIMATED DEPTH 7,000' TVD 14,000' MD  
TARGET FORMATION MARCELLUS DIANNA STAMPER  
WELL OPERATOR ANTERO RESOURCES APPALACHIAN CORP. DESIGNATED AGENT CT CORPORATION SYSTEM  
ADDRESS 1625 17TH STREET ADDRESS 5400 D BIG TYLER ROAD  
DENVER, CO 80202 CHARLESTON, WV 25313

COUNTY NAME PERMIT

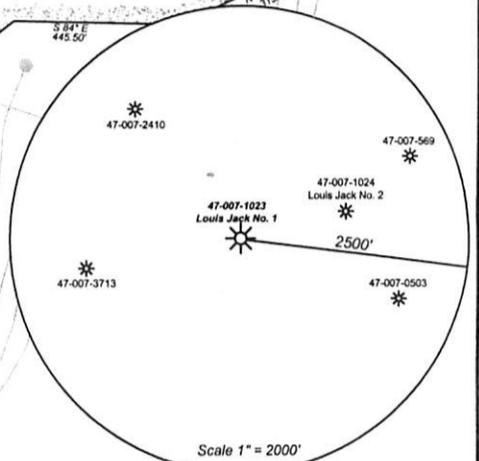
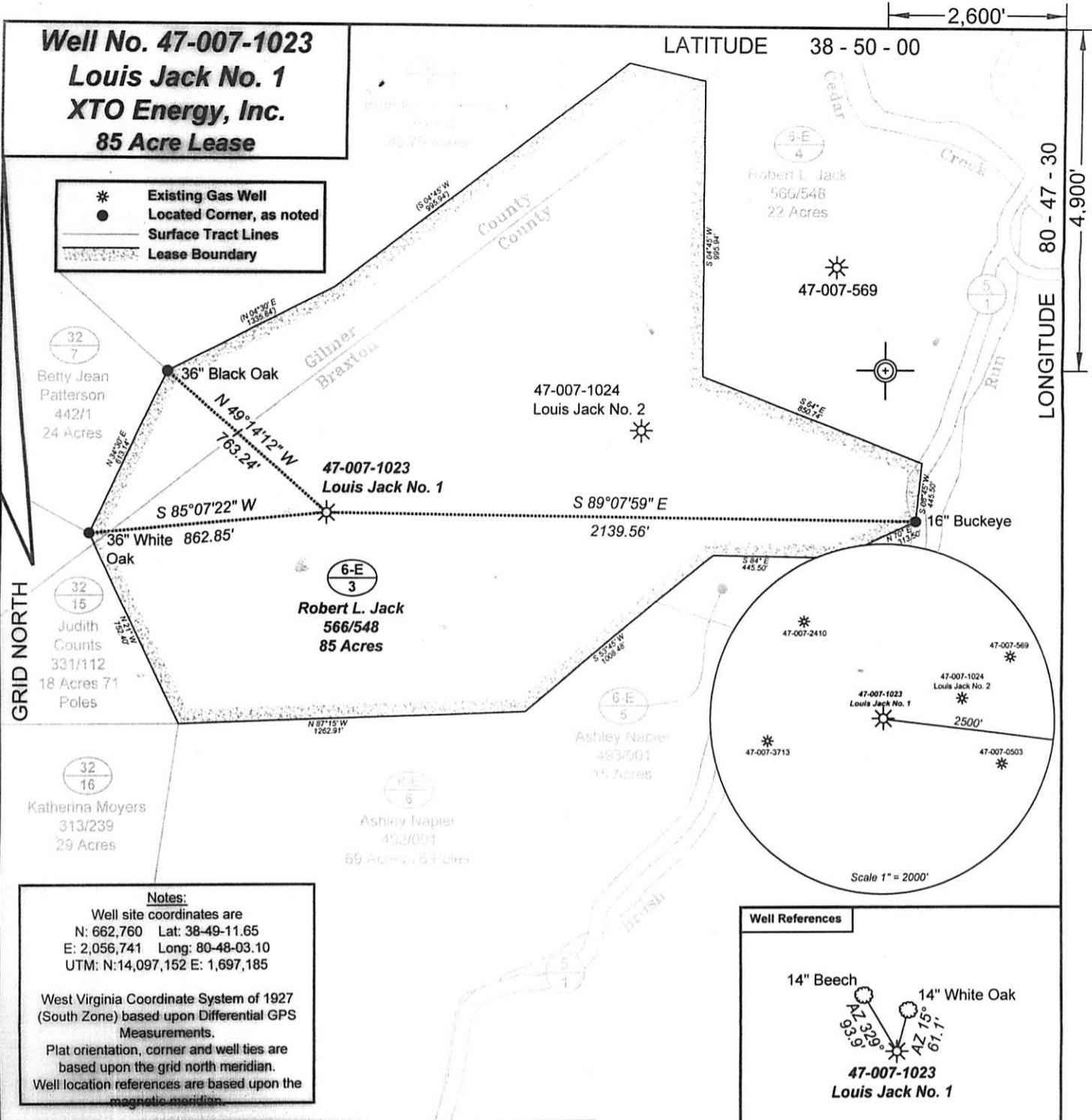
**Well No. 47-007-1023**  
**Louis Jack No. 1**  
**XTO Energy, Inc.**  
**85 Acre Lease**

LATITUDE 38 - 50 - 00

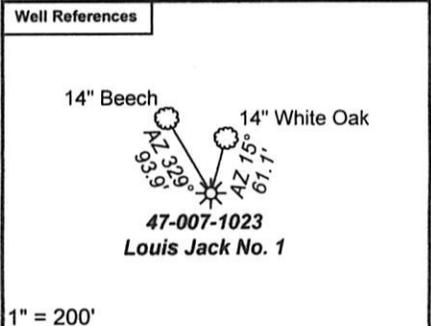
LONGITUDE 80 - 47 - 30

- \* Existing Gas Well
- Located Corner, as noted
- Surface Tract Lines
- - - Lease Boundary

GRID NORTH



**Notes:**  
 Well site coordinates are  
 N: 662,760 Lat: 38-49-11.65  
 E: 2,056,741 Long: 80-48-03.10  
 UTM: N:14,097,152 E: 1,697,185  
 West Virginia Coordinate System of 1927  
 (South Zone) based upon Differential GPS  
 Measurements.  
 Plat orientation, corner and well ties are  
 based upon the grid north meridian.  
 Well location references are based upon the  
 magnetic meridian.



(⊕) Denotes Location of Well on United States Topographic Maps



*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.*

*Ben R. Singleton*  
 P.S. 2092



FILE NO: 181-02-O-10  
 DRAWING NO: 181-10 Louis Jack #1 plat.dwg  
 SCALE: 1" = 500'  
 MINIMUM DEGREE OF ACCURACY: 1:2500  
 PROVEN SOURCE OF ELEVATION: NGS CORS Station

**STATE OF WEST VIRGINIA**  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**OIL AND GAS DIVISION**

DATE: December 2 20 10  
 OPERATOR'S WELL NO. 47-007-1023  
 API WELL NO  
 47 - 007 - 1023P  
 STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW  
 LOCATION: ELEVATION: 1042' WATERSHED Brush Run of Cedar Creek QUADRANGLE: Cedarville  
 DISTRICT: Otter COUNTY: Braxton  
 SURFACE OWNER: Robert L. Jack ACREAGE: 85  
 OIL AND GAS ROYALTY OWNER: Robert L. Jack LEASE NO: ACREAGE: 85  
 PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY)  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Big Injun/Blue Monday ESTIMATED DEPTH: 2200

WELL OPERATOR: XTO Energy, Inc. DESIGNATED AGENT: Gary Beall  
 ADDRESS: 600 East Exchange Avenue ADDRESS: P.O. Box 1008  
 Fort Worth, Texas 76101 Jane Lew, WV 26385

**CANCELLED**

**Well No. 47-007-1024**  
**Louis Jack No. 2**  
**XTO Energy, Inc.**  
**85 Acre Lease**

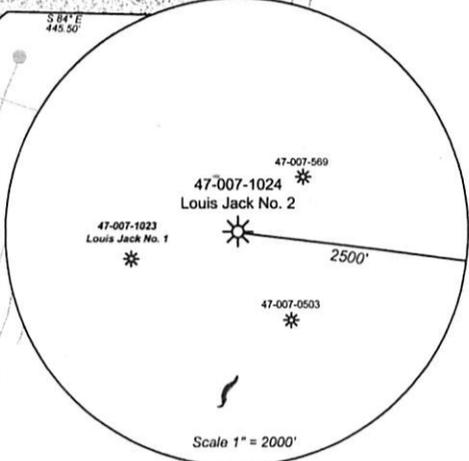
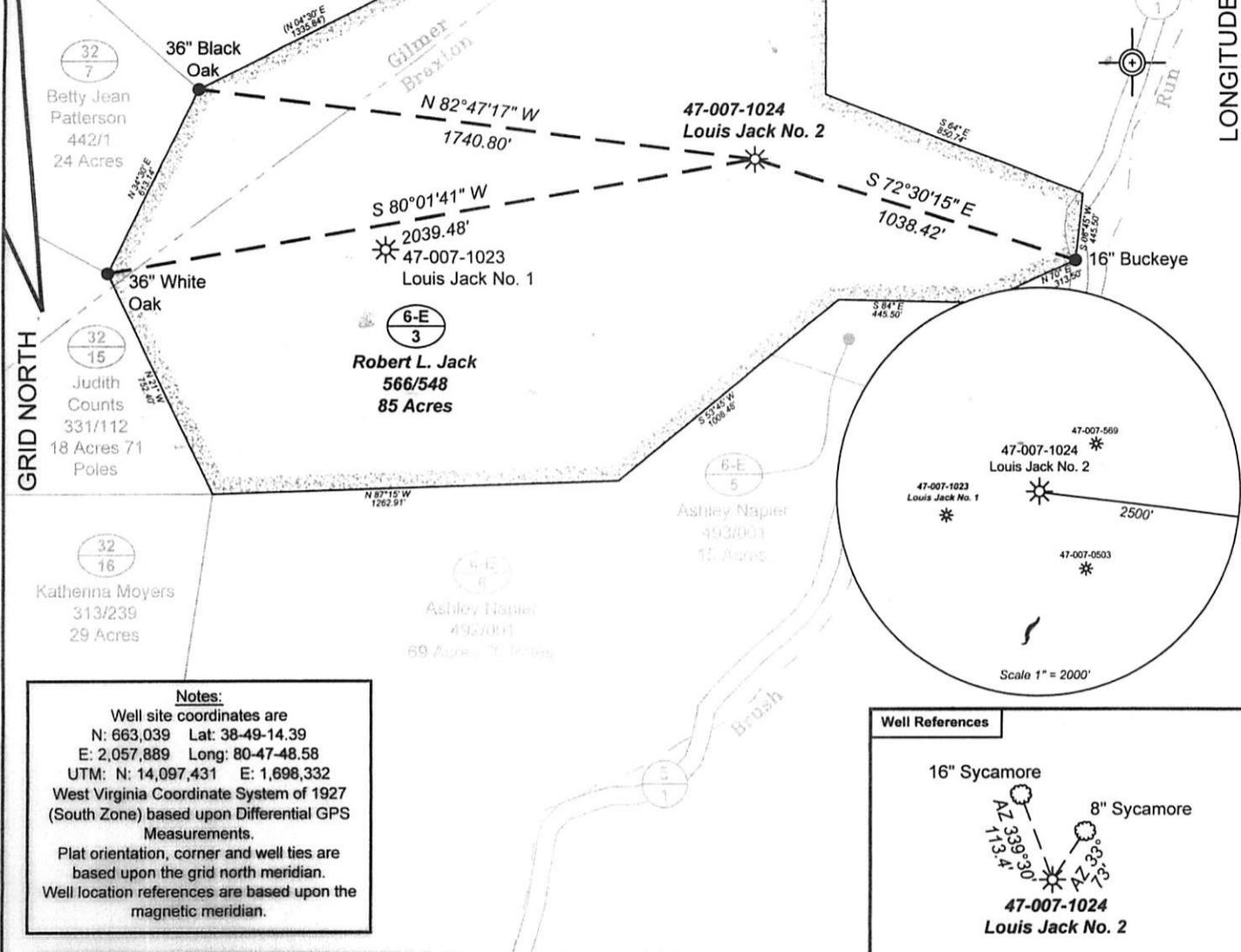
LATITUDE 38 - 50 - 00

1,450'

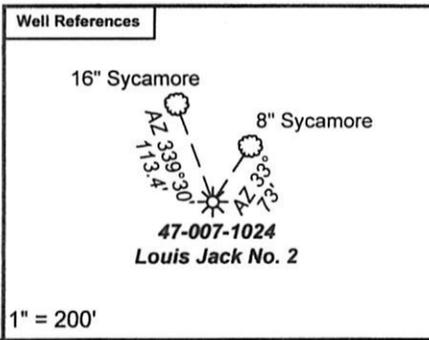
LONGITUDE 80 - 47 - 30

4,600'

- \* Existing Gas Well
- Located Corner, as noted
- Surface Tract Lines
- - - Lease Boundary



**Notes:**  
 Well site coordinates are  
 N: 663,039 Lat: 38-49-14.39  
 E: 2,057,889 Long: 80-47-48.58  
 UTM: N: 14,097,431 E: 1,698,332  
 West Virginia Coordinate System of 1927  
 (South Zone) based upon Differential GPS  
 Measurements.  
 Plat orientation, corner and well ties are  
 based upon the grid north meridian.  
 Well location references are based upon the  
 magnetic meridian.



(-⊕-) Denotes Location of Well on United States Topographic Maps



*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.*

*Ben R. Singleton*  
 P.S. 2092



FILE NO: 181-02-O-10  
 DRAWING NO: 181-10 Louis Jack #2 plat.dwg  
 SCALE: 1" = 500'  
 MINIMUM DEGREE OF ACCURACY: 1:2500  
 PROVEN SOURCE OF ELEVATION: NGS CORS Station

**STATE OF WEST VIRGINIA**  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION  
**OIL AND GAS DIVISION**

DATE: December 16 20 10  
 OPERATOR'S WELL NO. 47-007-1024  
 API WELL NO  
 47 - 007 - 1024P  
 STATE COUNTY PERMIT

WELL TYPE:  OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  
 (IF GAS) PRODUCTION:  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION: 874' WATERSHED Brush Run of Cedar Creek QUADRANGLE: Cedarville  
 DISTRICT: Otter COUNTY: Braxton

SURFACE OWNER: Robert L. Jack ACREAGE: 85  
 OIL AND GAS ROYALTY OWNER: Robert L. Jack LEASE NO: ACREAGE: 85

PROPOSED WORK:  DRILL  CONVERT  DRILL DEEPER  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  
 PERFORATE NEW FORMATION  OTHER PHYSICAL CHANGE IN WELL (SPECIFY)  
 PLUG AND ABANDON  CLEAN OUT AND REPLUG TARGET FORMATION: Big Injun/Blue Monday ESTIMATED DEPTH: 2350

**CANCELLED**

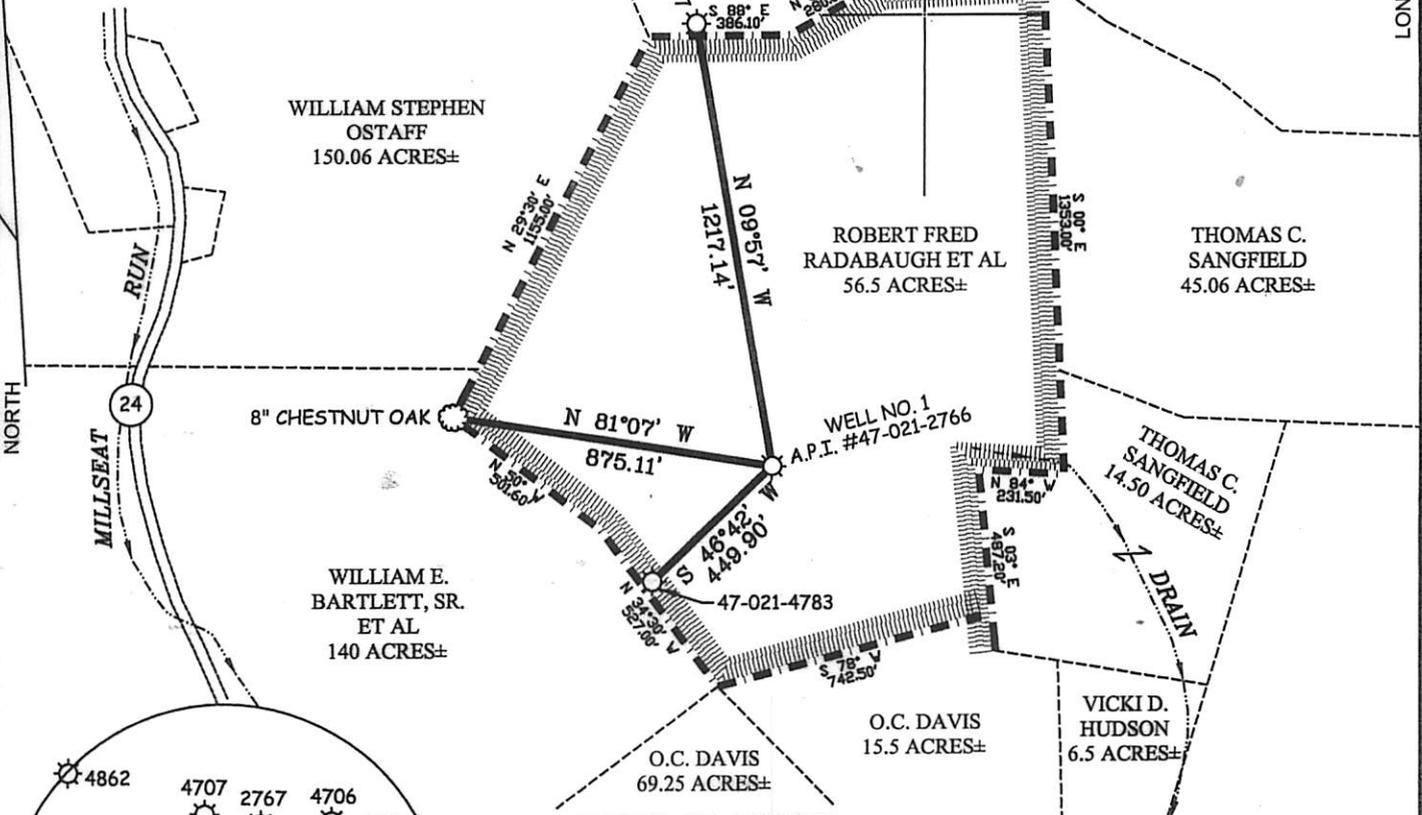
WELL OPERATOR: XTO Energy, Inc. DESIGNATED AGENT: Gary Beall  
 ADDRESS: 600 East Exchange Avenue ADDRESS: P.O. Box 1008  
 Fort Worth, Texas 76101 Jane Lew, WV 26385

# GREENLIEF "B" LEASE

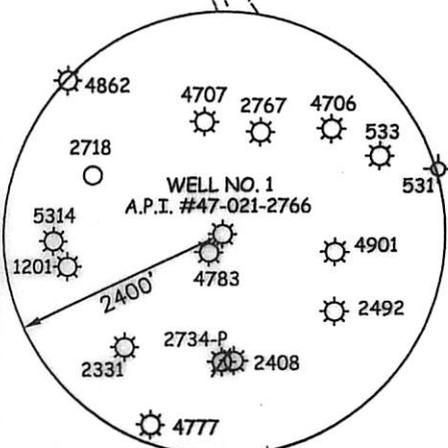
## 56.5 ACRES ±

### WELL NO. 1

### A.P.I. #47-021-2766



NORTH



#### NOTES ON SURVEY

1. TIES TO WELLS AND CORNERS ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM SOUTH ZONE NAD '27.
2. LEASE BOUNDARY SHOWN HEREON TAKEN FROM A PLAT DATED 11/04/1976 AS PREPARED BY M.S. HOLT JR. FOR A.P.I. #47-021-2766.
3. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNT JULY, 2010.
4. WELL LAT./LONG. (NAD'27) ESTABLISHED BY DGPS(SUBMETER MAPPING GRADE).

**WELL NO. 1**  
**A.P.I. #47-021-2766**  
**STATE PLANE COORDINATES**  
**SOUTH ZONE (NAD'27)**

---

**N. 709,929**  
**E. 2,018,303**

---

**LAT=(N) 38.94956**  
**LONG=(W) 80.93565**

---

**UTM (NAD'83)**  
**N. 4,311,191**  
**E. 505,591**



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 DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677 *Gregory A. Smith*



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
 DATE SEPTEMBER 14, 20 10  
 OPERATORS WELL NO. GREENLIEF #1  
 API WELL NO. 47-021-02766P  
 STATE GREENLIEF COUNTY GREENLIEF PERMIT CANCELLED

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 7481P1 (305-48)  
 PROVEN SOURCE OF ELEVATION DGPS (SUBMETER MAPPING GRADE) SCALE 1" = 500'

STATE OF WEST VIRGINIA  
 DIVISION OF ENVIRONMENTAL PROTECTION  
 OFFICE OF OIL AND GAS



WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION 998' WATERSHED TRIBUTARY OF LITTLE KANAWHA RIVER  
 DISTRICT DEKALB COUNTY GILMER QUADRANGLE TANNER 7.5'  
 SURFACE OWNER ROBERT FRED RADABAUGH ET AL ACREAGE 56.5±  
 ROYALTY OWNER KENNETH L. GREENLIEF ET AL LEASE ACREAGE 56.5±

PROPOSED WORK: LEASE NO. \_\_\_\_\_  
 DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER \_\_\_\_\_  
 PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION \_\_\_\_\_  
 ESTIMATED DEPTH \_\_\_\_\_

WELL OPERATOR XTO ENERGY INC. DESIGNATED AGENT GARY BEALL  
 ADDRESS P.O. BOX 1008 ADDRESS P.O. BOX 1008  
JANE LEW, WV 26378 JANE LEW, WV 26378

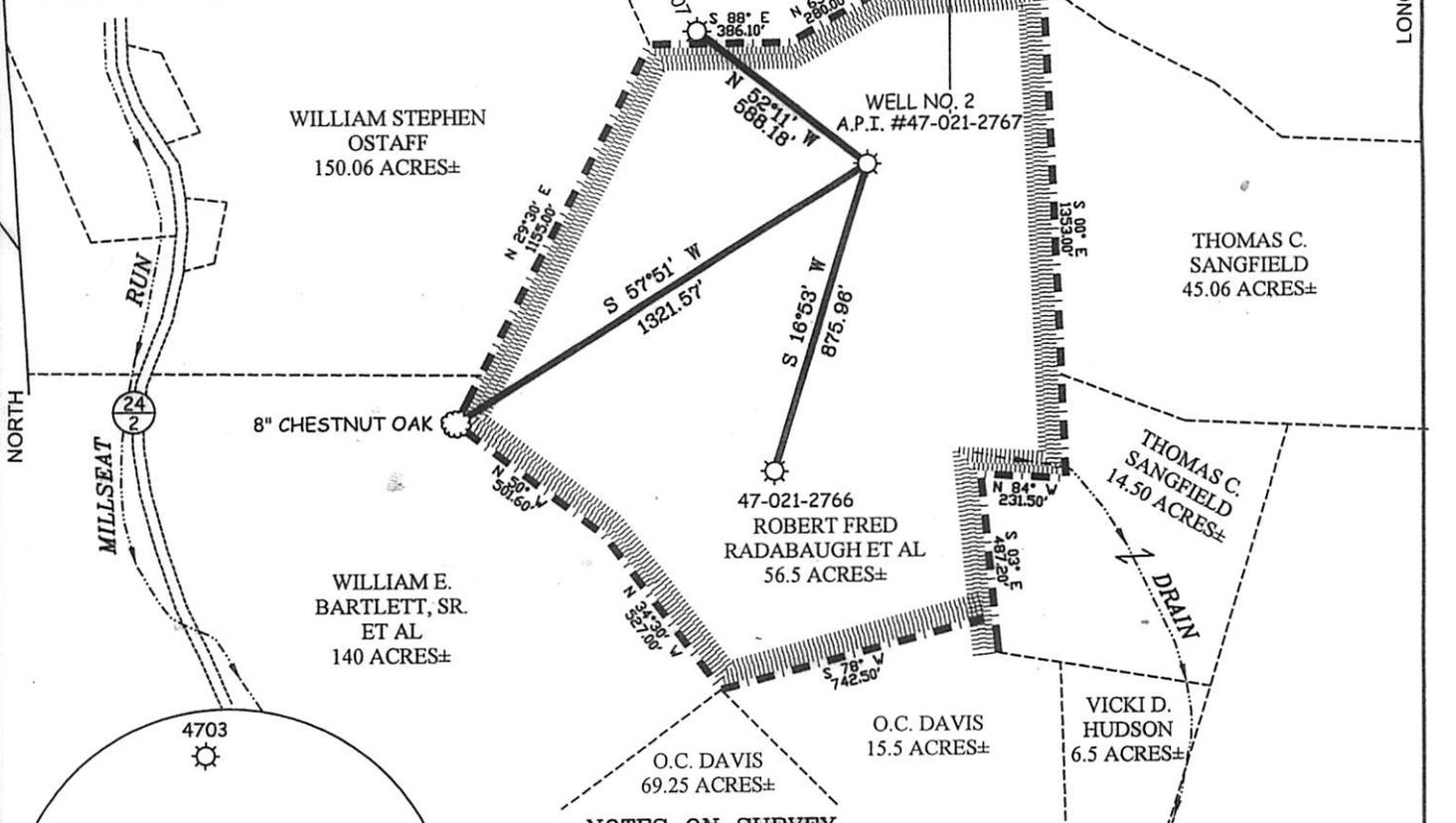
COUNTY NAME  
 PERMIT

# GREENLIEF "B" LEASE

## 56.5 ACRES±

### WELL NO. 2

### A.P.I. #47-021-2767



#### NOTES ON SURVEY

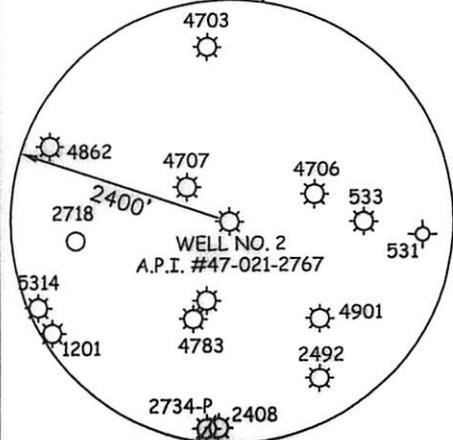
1. TIES TO WELLS AND CORNERS ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM SOUTH ZONE NAD '27.
2. LEASE BOUNDARY SHOWN HEREON TAKEN FROM A PLAT DATED 11/04/1976 AS PREPARED BY M.S. HOLT JR. FOR A.P.I. #47-021-2766.
3. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERKS RECORDS OF GILMER COUNTY IN JULY, 2010.
4. WELL LAT./LONG. (NAD'27) ESTABLISHED BY DGPS(SUBMETER MAPPING GRADE).

WELL NO. 2  
A.P.I. #47-021-2767  
STATE PLANE COORDINATES  
SOUTH ZONE (NAD'27)

N. 710,767  
E. 2,018,557

LAT=(N) 38.95186  
LONG=(W) 80.93475

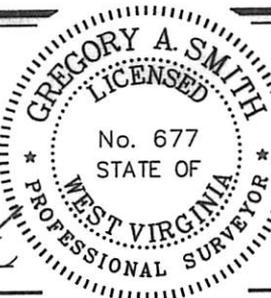
UTM (NAD'83)  
N. 4,311,447  
E. 505,669



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 DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677

*Gregory A. Smith*



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

DATE OCTOBER 29, 20 10

OPERATORS WELL NO. #2

API WELL NO. 47-021-02767P

STATE CANCELLED COUNTY CANCELLED PERMIT CANCELLED

MINIMUM DEGREE OF ACCURACY 1/200 FILE NO. 7481P2 (326-69)  
PROVEN SOURCE OF ELEVATION DGPS (SUBMETER MAPPING GRADE) SCALE 1" = 500'

STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS



WELL TYPE: OIL  GAS  INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION 1,155' WATERSHED TRIBUTARY OF LITTLE KANAWHA RIVER

DISTRICT DEKALB COUNTY GILMER QUADRANGLE TANNER 7.5'

SURFACE OWNER ROBERT FRED RADABAUGH ET AL ACREAGE 56.5±

ROYALTY OWNER KENNETH L. GREENLIEF ET AL LEASE ACREAGE 56.5±

PROPOSED WORK: LEASE NO. \_\_\_\_\_

DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION \_\_\_\_\_ ESTIMATED DEPTH \_\_\_\_\_

WELL OPERATOR XTO ENERGY INC. DESIGNATED AGENT GARY BEALL  
ADDRESS P.O. BOX 1008 ADDRESS P.O. BOX 1008  
JANE LEW, WV 26378 JANE LEW, WV 26378

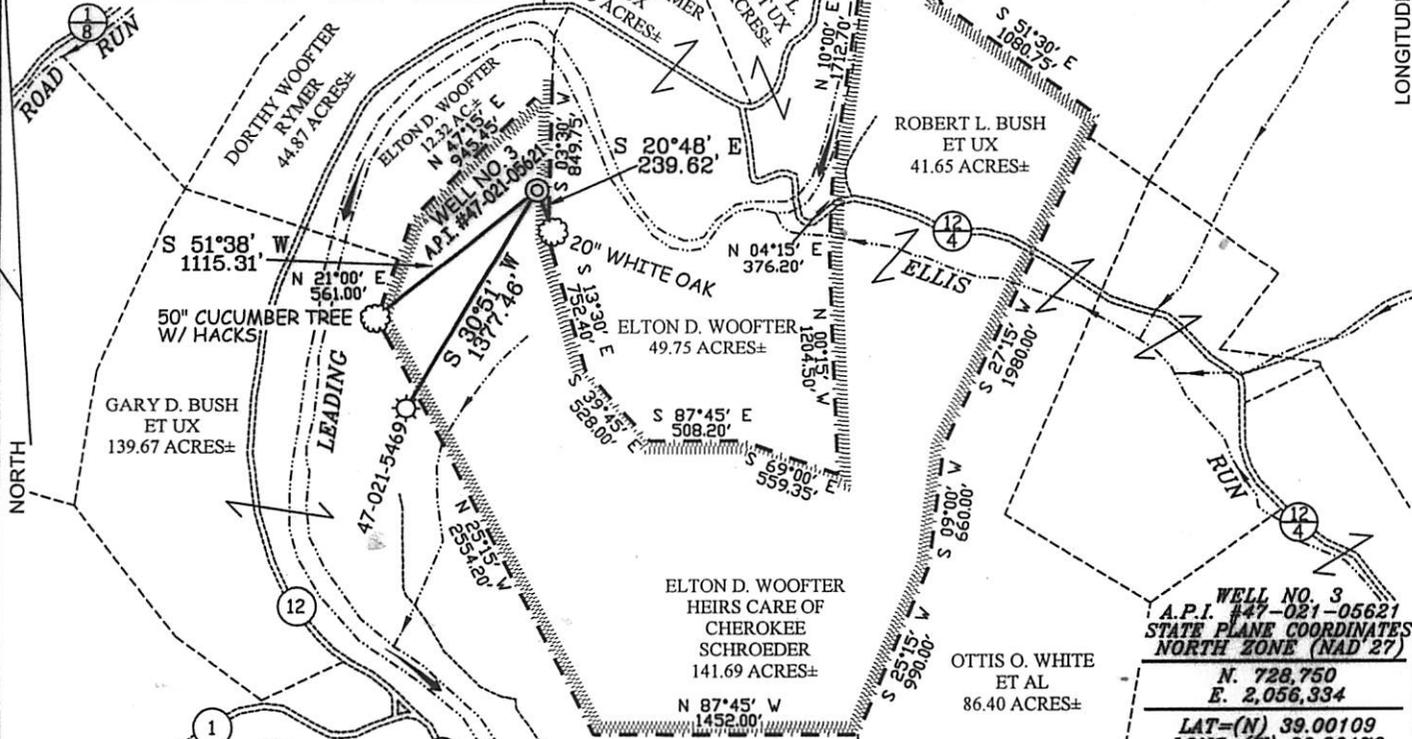
COUNTY NAME  
PERMIT

# WOOFTER LEASE 175.80 ACRES ± WELL NO. 3 A.P.I. #47-021-05621

RONALD G. BONNETT ET AL  
127.35 ACRES±

LATITUDE 39° 02' 30"

ALVIN L. ENGELKE ET AL  
87.75 ACRES±

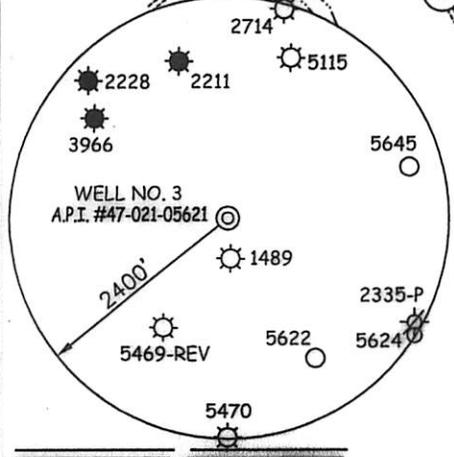


**WELL NO. 3  
A.P.I. #47-021-05621  
STATE PLANE COORDINATES  
NORTH ZONE (NAD '27)**  
N. 728,750  
E. 2,056,334  
LAT=(N) 39.00109  
LONG=(W) 80.80179  
UTM (NAD'83)  
N. 4,316,926  
E. 517,178

### NOTES ON SURVEY

1. TIES TO WELLS AND CORNERS ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM SOUTH ZONE NAD '27.
2. TIES TO REFERENCES ARE BASED ON MAGNETIC NORTH 08/14/08.
3. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 55 PAGE 69.
4. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF GILMER COUNTY IN JULY, 2010.
5. WELL LAT./LONG. (NAD'27) ESTABLISHED BY DGPS(SUBMETER MAPPING GRADE).
6. THIS PLAT WAS PREVIOUSLY PERMITTED AS A.P.I. #47-021-05621 AND HAS BEEN REVISED TO UPDATE OWNERSHIP & SPOT CIRCLE INFORMATION & TO ADD UTM COORDINATES, ETC.
7. REVISED PLAT TO REFLECT SURFACE OWNER CHANGE.

### REFERENCES



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 DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677 *Gregory A. Smith*



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
DATE AUGUST 25, 20 08  
UPDATED DECEMBER 16, 20 10  
OPERATORS WELL NO. WOOFTER #3  
API WELL NO. 47-021-05715  
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/200 FILE NO. 6914P3R2 (257-28)  
PROVEN SOURCE OF ELEVATION DGPS (SUBMETER MAPPING GRADE) SCALE 1" = 1000'

STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION 967' WATERSHED LEADING CREEK  
DISTRICT TROY COUNTY GILMER QUADRANGLE AUBURN 7.5'

SURFACE OWNER ELTON D. WOOFTER HEIRS C/O CHEROKEE SCHROEDER ACREAGE 141.69±  
ROYALTY OWNER ELTON D. WOOFTER HEIRS, ET AL LEASE ACREAGE 175.80±

PROPOSED WORK: LEASE NO. \_\_\_\_\_  
DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD   
FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER   
PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION ELK  
ESTIMATED DEPTH 5,800'

WELL OPERATOR PDC MOUNTAINEER, LLC. DESIGNATED AGENT GARY W. FRIDLEY  
ADDRESS 120 GENESIS BOULEVARD BRIDGEPORT, WV 26330 ADDRESS 120 GENESIS BOULEVARD BRIDGEPORT, WV 26330

COUNTY NAME  
PERMIT

# WOOFTER LEASE

## 175.80 ACRES ±

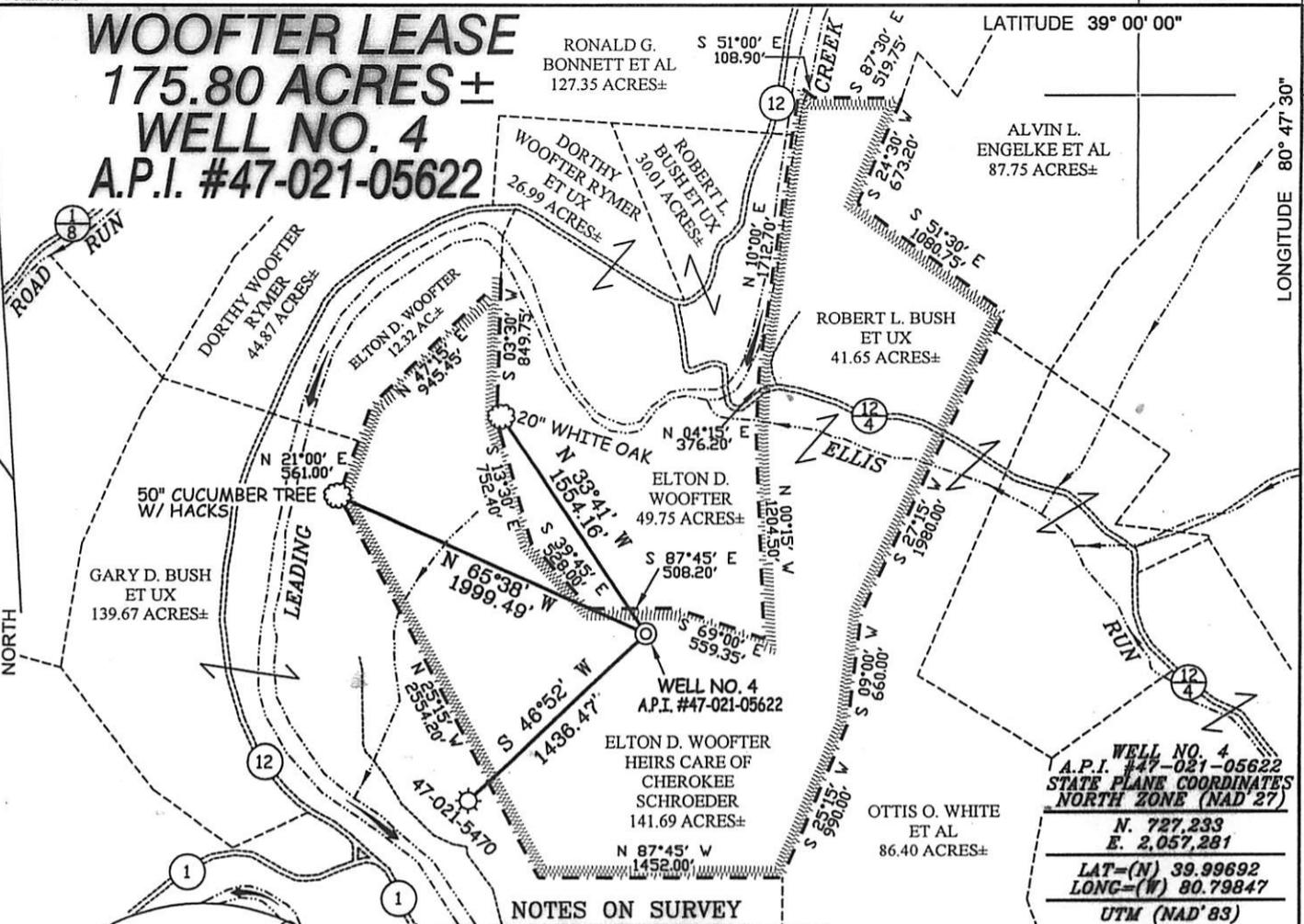
### WELL NO. 4

### A.P.I. #47-021-05622

RONALD G. BONNETT ET AL  
127.35 ACRES±

LATITUDE 39° 00' 00"

ALVIN L. ENGELKE ET AL  
87.75 ACRES±



#### NOTES ON SURVEY

1. TIES TO WELLS AND CORNERS ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM SOUTH ZONE NAD '27.
2. TIES TO REFERENCES ARE BASED ON MAGNETIC NORTH 08/15/08.
3. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 55 PAGE 69.
4. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF GILMER COUNTY IN JULY, 2010.
5. WELL LAT./LONG. (NAD'27) ESTABLISHED BY DGPS(SUBMETER MAPPING GRADE).
6. THIS PLAT WAS PREVIOUSLY PERMITTED AS A.P.I. #47-021-05622 AND HAS BEEN REVISED TO UPDATE OWNERSHIP & SPOT CIRCLE INFORMATION & TO ADD UTM COORDINATES, ETC.
7. REVISED PLAT TO REFLECT SURFACE OWNER CHANGE.

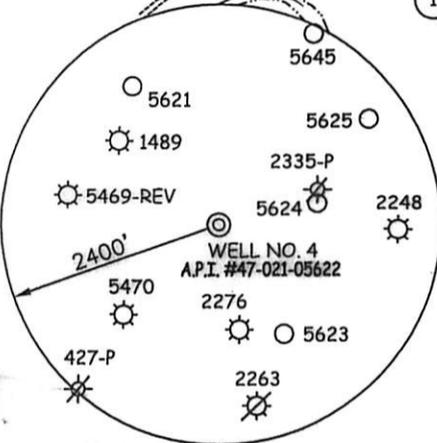
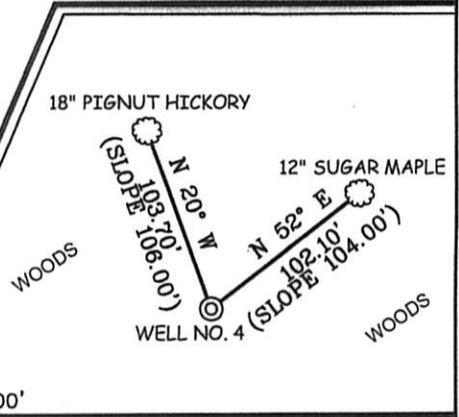
WELL NO. 4  
A.P.I. #47-021-05622  
STATE PLANE COORDINATES  
NORTH ZONE (NAD 27)

N. 727,233  
E. 2,057,281

LAT=(N) 39.99692  
LONG=(W) 80.79847

UTM (NAD'83)  
N. 4,316,464  
E. 517,467

#### REFERENCES



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 DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677 Gregory A. Smith



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

DATE AUGUST 26, 20 08

UPDATED DECEMBER 16, 20 10

OPERATORS WELL NO. WOOFTER #4

API WELL 47-021-05716

STATE CANCELLED COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 6914P4R2 (257-33)

PROVEN SOURCE OF ELEVATION DGPS (SUBMETER MAPPING GRADE) SCALE 1" = 1000'

STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION 1,086' WATERSHED TRIBUTARY OF LEADING CREEK

DISTRICT TROY COUNTY GILMER QUADRANGLE GLENVILLE 7.5'

SURFACE OWNER ELTON D. WOOFTER HEIRS C/O CHEROKEE SCHROEDER ACREAGE 141.69±

ROYALTY OWNER ELTON D. WOOFTER HEIRS, ET AL LEASE ACREAGE 175.80±

PROPOSED WORK: LEASE NO. \_\_\_\_\_

DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD

FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION ELK

ESTIMATED DEPTH 5,800'

WELL OPERATOR PDC MOUNTAINEER, LLC. DESIGNATED AGENT GARY W. FRIDLEY

ADDRESS 120 GENESIS BOULEVARD ADDRESS 120 GENESIS BOULEVARD

BRIDGEPORT, WV 26330 BRIDGEPORT, WV 26330

COUNTY NAME \_\_\_\_\_ PERMIT \_\_\_\_\_

# WOOFTER LEASE 175.80 ACRES± WELL NO. 6 A.P.I. #47-021-05624

RONALD G. BONNETT ET AL  
127.35 ACRES±

LATITUDE 39° 00' 00"

ALVIN L. ENGELKE ET AL  
87.75 ACRES±

DORTHY WOOFTER RYMER ET UX  
26.99 ACRES±

ROBERT L. BUSH ET UX  
30.01 ACRES±

ROBERT L. BUSH ET UX  
41.65 ACRES±

DORTHY WOOFTER RYMER  
44.87 ACRES±

ELTON D. WOOFTER  
12.32 AC.±

ELTON D. WOOFTER  
49.75 ACRES±

GARY D. BUSH ET UX  
139.67 ACRES±

ELTON D. WOOFTER HEIRS CARE OF CHEROKEE SCHROEDER  
141.69 ACRES±

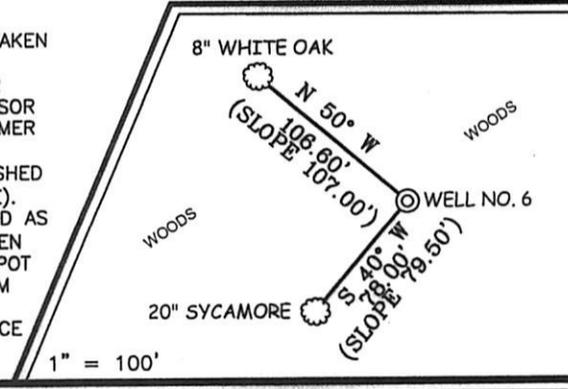
OTTIS O. WHITE ET AL  
86.40 ACRES±

**WELL NO. 6**  
**A.P.I. #47-021-05624**  
**STATE PLANE COORDINATES**  
**NORTH ZONE (NAD '27)**  
N. 727,478  
E. 2,058,350  
LAT=(N) 39.99759  
LONG=(W) 80.79471  
**UTM (NAD'83)**  
N. 4,316,539  
E. 517,792

### NOTES ON SURVEY

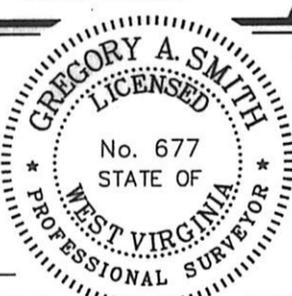
1. TIES TO WELLS AND CORNERS ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM SOUTH ZONE NAD '27.
2. TIES TO REFERENCES ARE BASED ON MAGNETIC NORTH 08/15/08.
3. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 55 PAGE 69.
4. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF GILMER COUNTY IN JULY, 2010.
5. WELL LAT./LONG. (NAD'27) ESTABLISHED BY DGPS(SUBMETER MAPPING GRADE).
6. THIS PLAT WAS PREVIOUSLY PERMITTED AS A.P.I. #47-021-05624 AND HAS BEEN REVISED TO UPDATE OWNERSHIP & SPOT CIRCLE INFORMATION & TO ADD UTM COORDINATES, ETC.
7. REVISED PLAT TO REFLECT SURFACE OWNER CHANGE.

### REFERENCES



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 DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677 *Gregory A. Smith*



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
DATE AUGUST 26, 20 08  
UPDATED DECEMBER 16, 20 10  
OPERATORS WELL NO. WOOFTER #6  
API WELL NO. 47 - 021 - 05717  
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/200  
FILE NO. 6914P6R (257-32)  
PROVEN SOURCE OF ELEVATION DGPS (SUBMETER MAPPING GRADE)  
SCALE 1" = 1000'

STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

WELL TYPE: OIL \_\_\_ GAS  LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_ IF "GAS" PRODUCTION  STORAGE \_\_\_ DEEP \_\_\_ SHALLOW

LOCATION:  
ELEVATION 1,077' WATERSHED ELLIS RUN  
DISTRICT TROY COUNTY GILMER QUADRANGLE GLENVILLE 7.5'

SURFACE OWNER ELTON D. WOOFTER HEIRS C/O CHEROKEE SCHROEDER ACREAGE 141.69±  
ROYALTY OWNER ELTON D. WOOFTER HEIRS, ET AL LEASE ACREAGE 175.80±

PROPOSED WORK:  
DRILL  CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_ OTHER \_\_\_  
PHYSICAL CHANGE IN WELL (SPECIFY) TARGET FORMATION ELK  
ESTIMATED DEPTH 5,800'

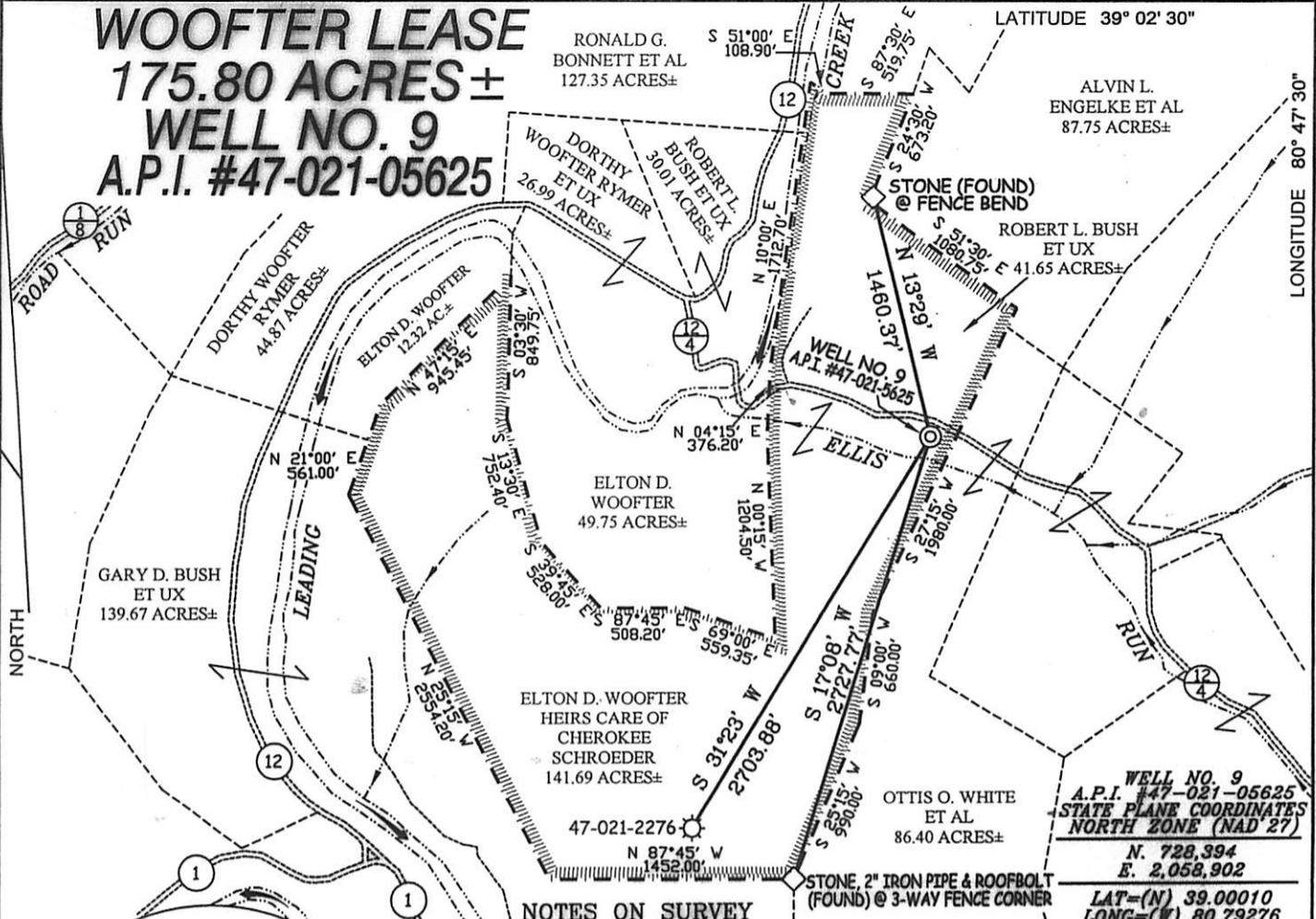
WELL OPERATOR PDC MOUNTAINEER, LLC. DESIGNATED AGENT GARY W. FRIDLEY  
ADDRESS 120 GENESIS BOULEVARD BRIDGEPORT, WV 26330

COUNTY NAME  
PERMIT

# WOOFTER LEASE 175.80 ACRES ± WELL NO. 9 A.P.I. #47-021-05625

RONALD G. BONNETT ET AL  
127.35 ACRES±

ALVIN L. ENGELKE ET AL  
87.75 ACRES±



**WELL NO. 9**  
A.P.I. #47-021-05625  
STATE PLANE COORDINATES  
NORTH ZONE (NAD '27)

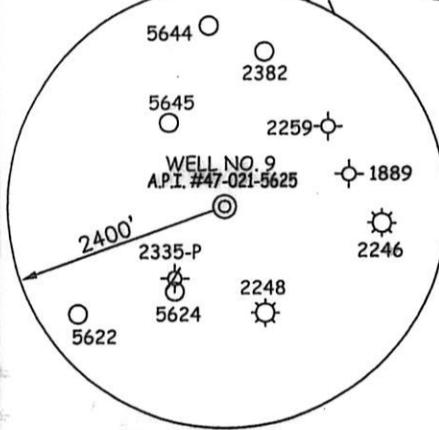
N. 728,394  
E. 2,058,902

LAT=(N) 39.00010  
LONG=(W) 80.79276

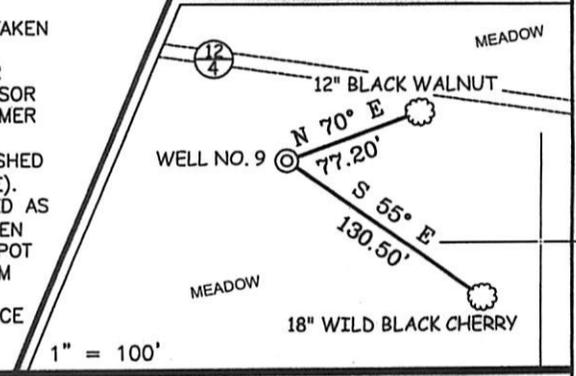
UTM (NAD'83)  
N. 4,316,818  
E. 517,961

### NOTES ON SURVEY

1. TIES TO WELLS AND CORNERS ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM SOUTH ZONE NAD '27.
2. TIES TO REFERENCES ARE BASED ON MAGNETIC NORTH 08/15/08.
3. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 55 PAGE 69.
4. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF GILMER COUNTY IN JULY, 2010.
5. WELL LAT./LONG. (NAD'27) ESTABLISHED BY DGPS(SUBMETER MAPPING GRADE).
6. THIS PLAT WAS PREVIOUSLY PERMITTED AS A.P.I. #47-021-05625 AND HAS BEEN REVISED TO UPDATE OWNERSHIP & SPOT CIRCLE INFORMATION & TO ADD UTM COORDINATES, ETC.
7. REVISED PLAT TO REFLECT SURFACE OWNER CHANGE.

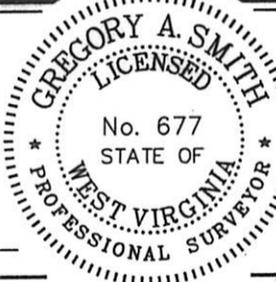


### REFERENCES



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 DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677 Gregory A. Smith



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

DATE AUGUST 26, 20 08

UPDATED DECEMBER 16, 20 10

OPERATORS WELL NO. WOOFTER #9

API WELL NO. 47-021-05718

STATE CANCELLED COUNTY 05718 PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 6914P9R2 (257-31)

PROVEN SOURCE OF ELEVATION DGPS (SUBMETER MAPPING GRADE) SCALE 1" = 1000'

STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS



WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION 750' WATERSHED ELLIS RUN

DISTRICT TROY COUNTY GILMER QUADRANGLE AUBURN 7.5'

SURFACE OWNER ELTON D. WOOFTER HEIRS C/O CHEROKEE SCHROEDER ACREAGE 141.69±

ROYALTY OWNER ELTON D. WOOFTER HEIRS, ET AL LEASE ACREAGE 175.80±

PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD

FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION ELK

WELL OPERATOR PDC MOUNTAINEER, LLC. DESIGNATED AGENT GARY W. FRIDLEY

ADDRESS 120 GENESIS BOULEVARD ADDRESS 120 GENESIS BOULEVARD

BRIDGEPORT, WV 26330 BRIDGEPORT, WV 26330

COUNTY NAME

PERMIT

# WOOFTER LEASE

## 175.80 ACRES ±

### WELL NO. 7

#### A.P.I. #47-021-05644

RONALD G. BONNETT ET AL  
127.35 ACRES ±

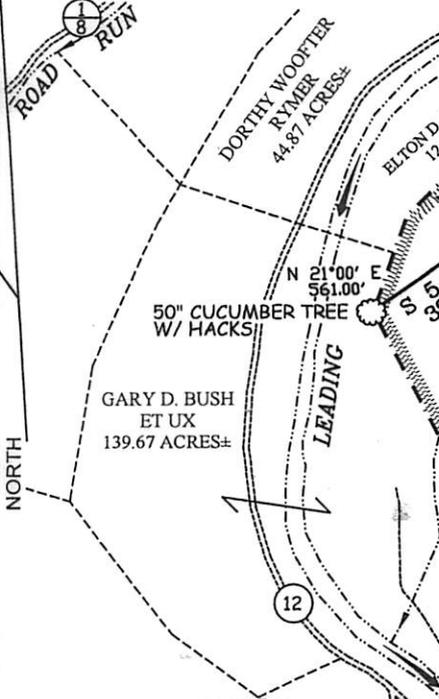
LATITUDE 39° 02' 30"

ALVIN L. ENGELKE ET AL  
87.75 ACRES ±

DORTHY WOOFTER RYMER  
26.99 ACRES ±

WELL NO. 7  
A.P.I. #47-021-05644  
S 24°30' W  
673.20'

STONE (FOUND) @ FENCE BEND  
ROBERT L. BUSH ET UX  
41.65 ACRES ±



### NOTES ON SURVEY

1. TIES TO WELLS AND CORNERS ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM SOUTH ZONE NAD '27.
2. TIES TO REFERENCES ARE BASED ON MAGNETIC NORTH 08/12/08.
3. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 55 PAGE 69.
4. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF GILMER COUNTY IN JULY, 2010.
5. WELL LAT./LONG. (NAD'27) ESTABLISHED BY DGPS(SUBMETER MAPPING GRADE).
6. THIS PLAT WAS PREVIOUSLY PERMITTED AS A.P.I. #47-021-05644 AND HAS BEEN REVISED TO UPDATE OWNERSHIP & SPOT CIRCLE INFORMATION & TO ADD UTM COORDINATES, ETC.

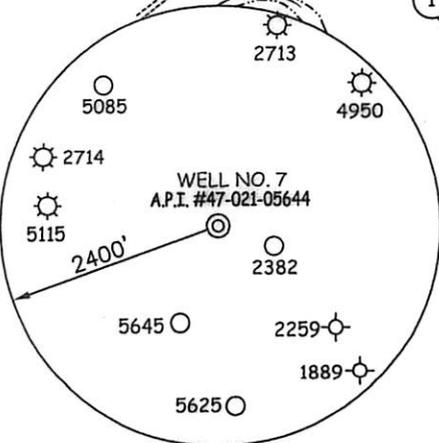
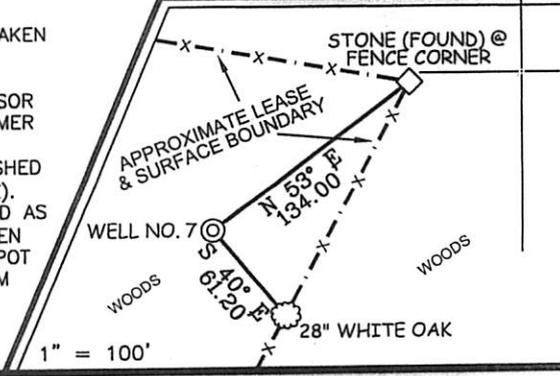
WELL NO. 7  
A.P.I. #47-021-05644  
STATE PLANE COORDINATES  
NORTH ZONE (NAD '27)

N. 730,357  
E. 2,058,722

LAT=(N) 39.00549  
LONG=(W) 80.79338

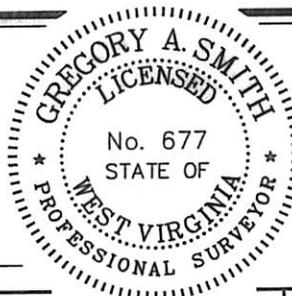
UTM (NAD'83)  
N. 4,317,416  
E. 517,906

### REFERENCES



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 DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677  
*Gregory A. Smith*



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

DATE AUGUST 26, 20 08

UPDATED SEPTEMBER 15, 20 10

OPERATORS WELL NO. WOOFTER #7

API WELL NO. 47-021-05721

STATE CANCELLED COUNTY 05721 PERMIT

MINIMUM DEGREE OF ACCURACY 1/200 FILE NO. 6914P7R (257-26)

PROVEN SOURCE OF ELEVATION DGPS (SUBMETER MAPPING GRADE) SCALE 1" = 1000'

STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS



WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION 876' WATERSHED LEADING CREEK

DISTRICT TROY COUNTY GILMER QUADRANGLE AUBURN 7.5'

SURFACE OWNER ROBERT L. BUSH ET UX ACREAGE 41.65±

ROYALTY OWNER ELTON D. WOOFTER, ET AL LEASE ACREAGE 175.80±

PROPOSED WORK: DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD

FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION ELK

ESTIMATED DEPTH 5,800'

WELL OPERATOR PDC MOUNTAINEER, LLC. DESIGNATED AGENT GARY W. FRIDLEY

ADDRESS 120 GENESIS BOULEVARD BRIDGEPORT, WV, 26330 ADDRESS 120 GENESIS BOULEVARD BRIDGEPORT, WV 26330

COUNTY NAME

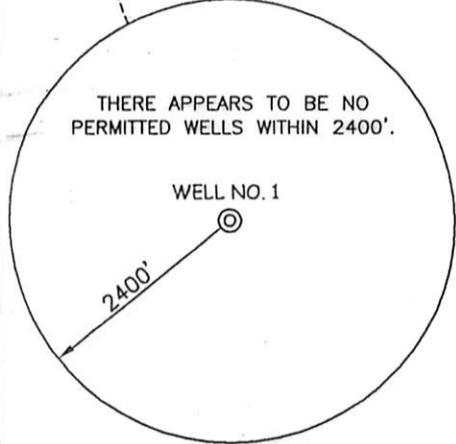
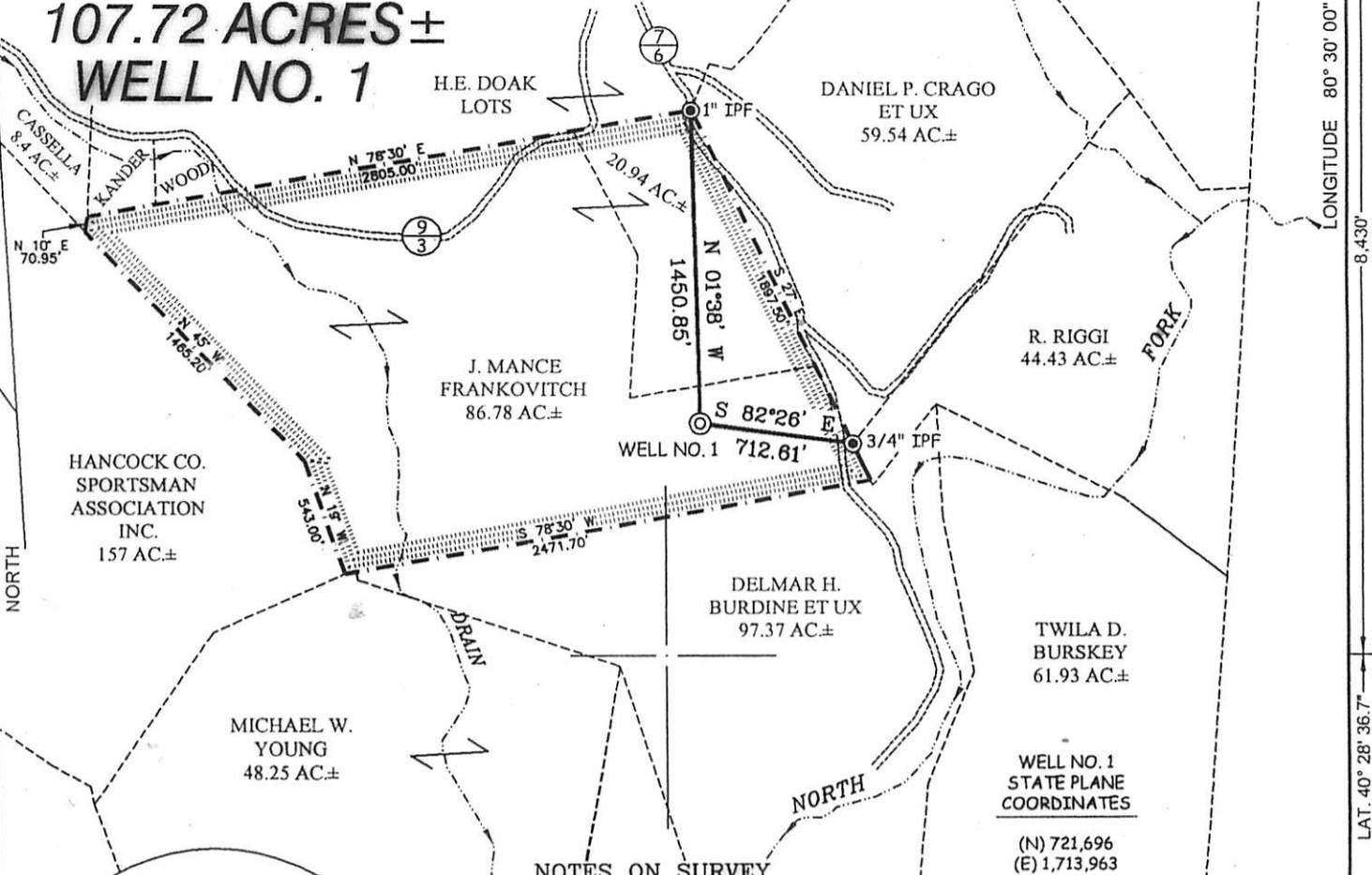
PERMIT



# J. M. FRANKOVITCH LEASE

## 107.72 ACRES ±

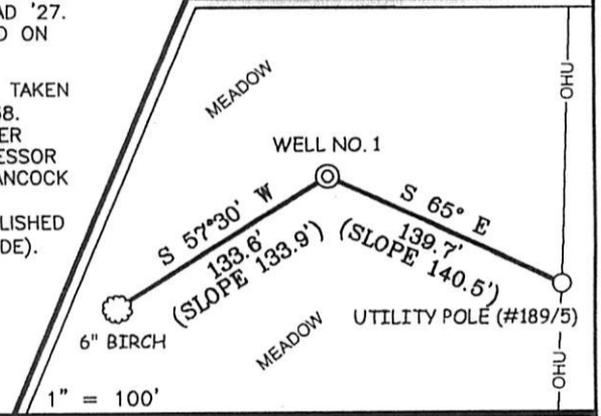
### WELL NO. 1



#### NOTES ON SURVEY

1. TIES TO WELLS AND CORNERS ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD '27.
2. TIES TO REFERENCES ARE BASED ON MAGNETIC NORTH 7/20/06.
3. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 241 PAGE 338.
4. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF HANCOCK COUNTY IN JULY, 2006.
5. WELL LAT./LONG. (NAD'27) ESTABLISHED BY DGPS(SUBMETER MAPPING GRADE).

#### REFERENCES



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 DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677 *Gregory A. Smith*



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
 DATE JULY 24, 20 06  
 OPERATORS WELL NO. J. M. FRANKOVITCH #1  
 API WELL NO. 47 - 029 - 00133  
 STATE COUNTY PERMIT  
**CANCELLED**

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 6120P1 (208-40)  
 PROVEN SOURCE OF ELEVATION DGPS (SUBMETER MAPPING GRADE) SCALE 1" = 800'

STATE OF WEST VIRGINIA  
 DIVISION OF ENVIRONMENTAL PROTECTION  
 OFFICE OF OIL AND GAS



WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION 1,123' WATERSHED NORTH FORK OF KINGS CREEK  
 DISTRICT CLAY COUNTY HANCOCK QUADRANGLE WEIRTON 7.5'

SURFACE OWNER JOSEPH MANCE FRANKOVITCH ACREAGE 86.78± OF 107.72±  
 ROYALTY OWNER JOSEPH MANCE FRANKOVITCH LEASE ACREAGE 107.72±  
 PROPOSED WORK: LEASE NO. \_\_\_\_\_

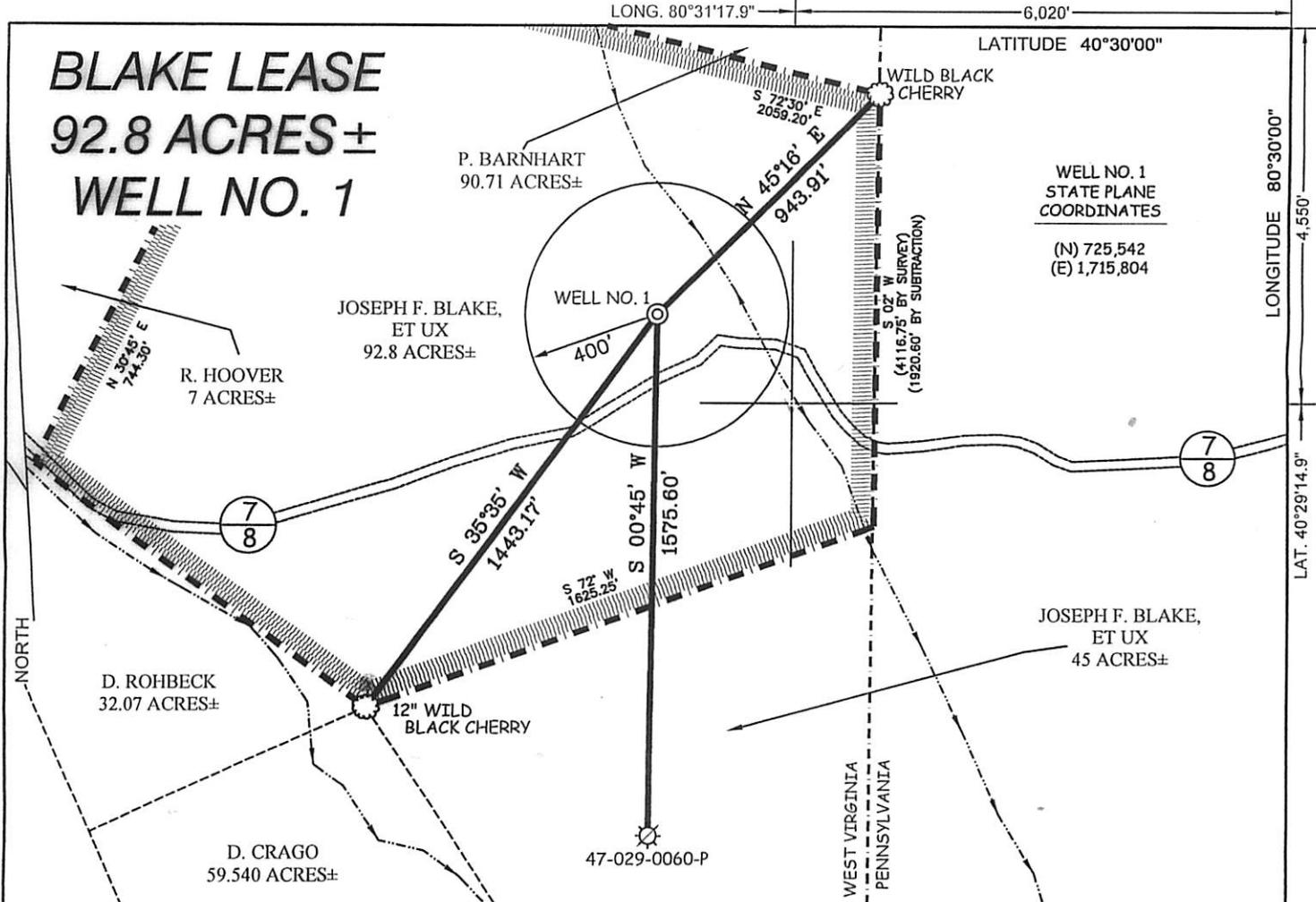
DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER \_\_\_\_\_

PHYSICAL CHANGE " " WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION ORISKANY  
 ESTIMATED DEPTH 5,600'

WELL OPERATOR BUCKEYE OIL PRODUCING CO. DESIGNATED AGENT WILLIAM RICHARDS  
 ADDRESS P.O. BOX 129 ADDRESS RT. 1 BOX 150A  
WOOSTER, OHIO 44691 BIG BEND, WV 26136

COUNTY NAME  
 PERMIT

# BLAKE LEASE 92.8 ACRES± WELL NO. 1

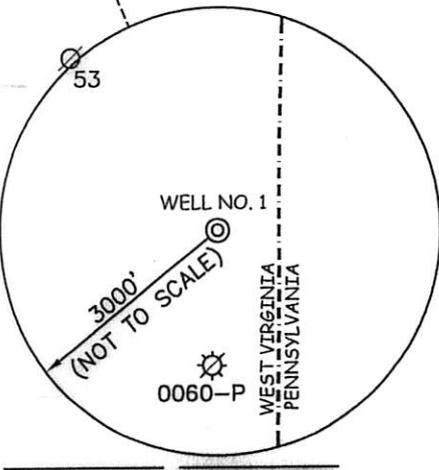
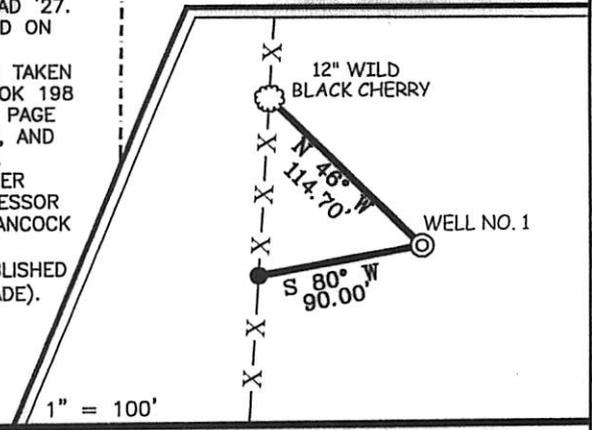


WELL NO. 1  
STATE PLANE  
COORDINATES  
(N) 725,542  
(E) 1,715,804

### NOTES ON SURVEY

1. TIES TO WELLS AND CORNERS ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD '27.
2. TIES TO REFERENCES ARE BASED ON MAGNETIC NORTH 05/17/07.
3. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEEDS RECORDED IN DEED BOOK 198 AT PAGE 600, DEED BOOK 230 AT PAGE 320, DEED BOOK 172 AT PAGE 46, AND DEED BOOK 135 AT PAGE 61.
4. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF HANCOCK COUNTY IN JULY, 2006.
5. WELL LAT./LONG. (NAD'27) ESTABLISHED BY DGPS(SUBMETER MAPPING GRADE).

### REFERENCES



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 DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 677 *Gregory A. Smith*



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
DATE MAY 18, 20 07  
OPERATORS WELL NO. BLAKE #1  
API WELL NO. 47-029-00135  
STATE CANCELLED COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/200 FILE NO. 6431P1 (231 - 17)  
PROVEN SOURCE OF ELEVATION DGPS (SUBMETER MAPPING GRADE) SCALE 1" = 500'

STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS



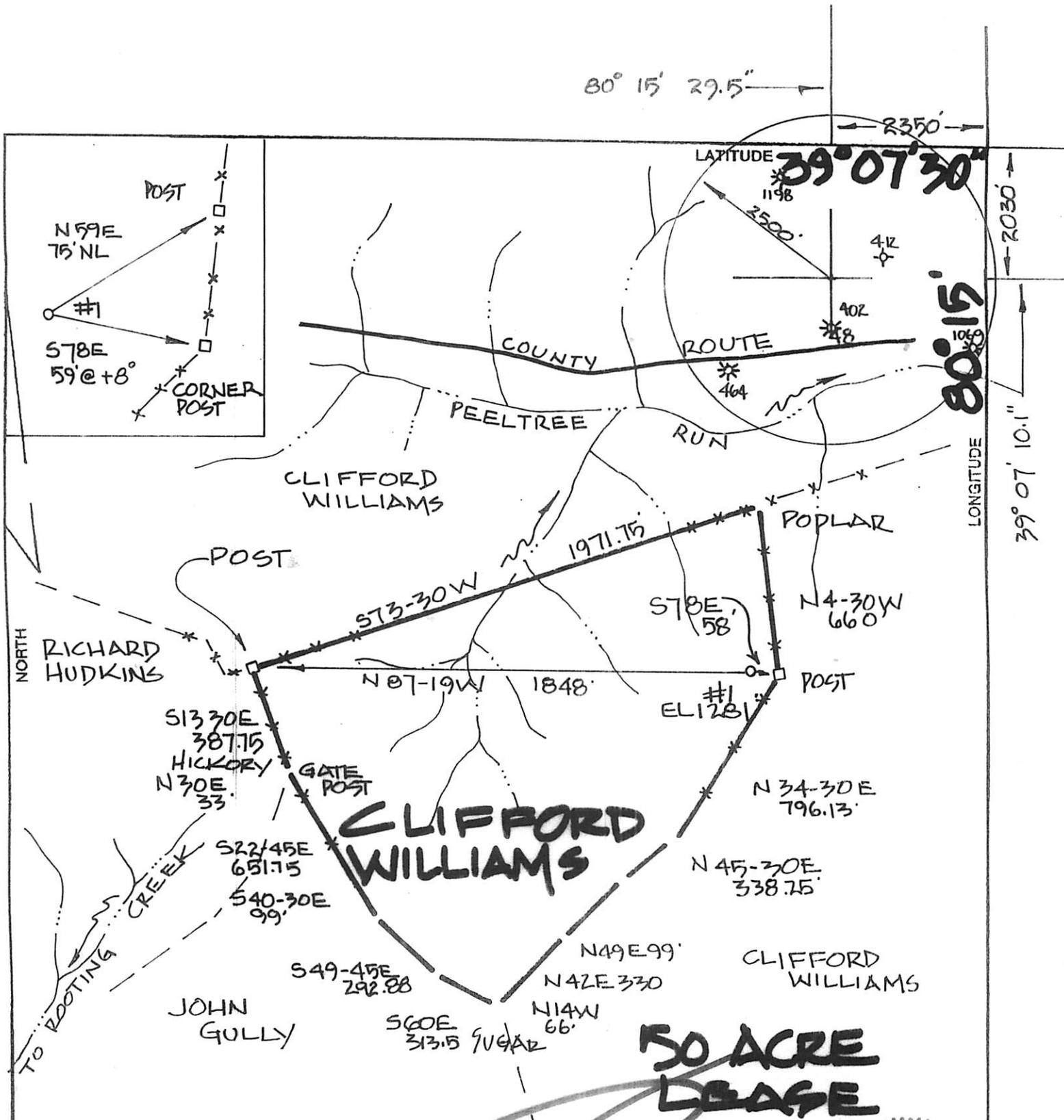
WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION:  
ELEVATION 1,143' WATERSHED NORTH FORK OF KINGS CREEK  
DISTRICT CLAY COUNTY HANCOCK QUADRANGLE WEIRTON 7.5'

SURFACE OWNER JOSEPH F. BLAKE, ET UX ACREAGE 92.8±  
ROYALTY OWNER JOSEPH F. BLAKE, ET UX LEASE ACREAGE 92.8±  
PROPOSED WORK:  
DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION   
PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER   
PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION ORISKANY  
ESTIMATED DEPTH 5,600'

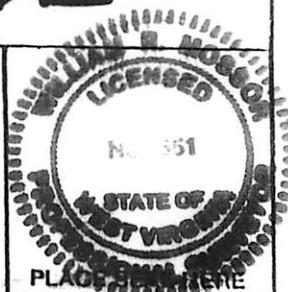
WELL OPERATOR BUCKEYE OIL PRODUCING CO. DESIGNATED AGENT WILLIAM RICHARDS  
ADDRESS P.O. BOX 129 ADDRESS RT. 1 BOX 150A  
WOOSTER, OH 44691 BIG BEND, WV 26136

COUNTY NAME  
PERMIT



FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 500'  
 MINIMUM DEGREE OF ACCURACY 1:200  
 PROVEN SOURCE OF ELEVATION G.P.S. OBSERVATION

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 PRESCRIBED BY THE DEPARTMENT OF ENERGY AND NATURAL RESOURCES (DENR).  
 R.P.E. \_\_\_\_\_ P.S. 551



STATE OF WEST VIRGINIA  
 DEPARTMENT OF ENERGY  
 DIVISION OF OIL AND GAS



DATE SEPTEMBER 24, 2006

OPERATOR'S WELL NO. \_\_\_\_\_

API WELL NO. 47-033-04892

WELL TYPE: OIL  GAS  LIQUID INJECTION \_\_\_\_\_ WASTE DISPOSAL \_\_\_\_\_  
 (IF "GAS,") PRODUCTION  STORAGE \_\_\_\_\_ DEEP \_\_\_\_\_ SHALLOW

LOCATION: ELEVATION 1281' WATER SHED PEELTREE RUN COUNTY HARRISON

DISTRICT ELK QUADRANGLE BERLIN

SURFACE OWNER CLIFFORD WILLIAMS ACREAGE 50

OIL & GAS ROYALT CLIFFORD WILLIAMS LEASE AC 50

PROPOSED WORK: DRILL  CONVERT \_\_\_\_\_ DRILL DEEPER \_\_\_\_\_ REDRILL \_\_\_\_\_ FRACTURE OR STIMULATE \_\_\_\_\_ PLUG OFF OLD FORMATION \_\_\_\_\_ PERFORATE NEW FORMATION \_\_\_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_

PLUG AND ABANDON \_\_\_\_\_ CLEAN OUT AND REPLUG \_\_\_\_\_

TARGET FORMATION MARCELLUS SHALE ESTIMATED DEPTH 7475'

WELL OPERATOR REED GAS, INC. DESIGNATED AGENT JAMES W. REED, JR.

ADDRESS 1314 VIRGINIA ST. E. CHARLESTON, WV 25301 ADDRESS 1314 VIRGINIA ST. E. CHARLESTON, WV 25301

FORM WW-6

COUNTY NAME

PERMIT