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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)

November 06, 2013

**WELL WORK PERMIT**

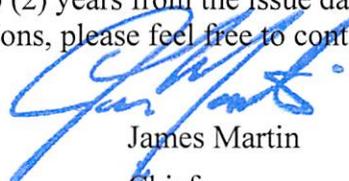
**Vertical Well**

This permit, API Well Number: 47-2105764, issued to DORWARD 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 completion of permitted well work, 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: SPROUSE #9  
Farm Name: HEARTWOOD FOREST LAND FU  
**API Well Number: 47-2105764**  
**Permit Type: Vertical Well**  
Date Issued: 11/06/2013

**Promoting a healthy environment.**

# PERMIT CONDITIONS

West Virginia Code § 22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

## CONDITIONS

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1. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6-20, which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
2. Pursuant to 35 CSR § 4-19.1.a, at the request of the surface owner all water wells or springs within 1000 feet of the proposed well that are actually utilized for human consumption, domestic animals or other general use shall be sampled and analyzed.
3. Pursuant to 35 CSR § 4-19.1.c, if the operator is unable to sample and analyze any water well or spring within one thousand (1,000) feet of the permitted well location, the Office of Oil and Gas requires the operator to sample, at a minimum, one water well or spring located between one thousand (1,000) feet and two thousand (2,000) feet of the permitted well location.
4. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
5. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
6. During the surface casing and cementing process, in the event cement does not return to the surface, or any other casing string that is permitted to circulate cement to the surface and does not return to the surface, the oil and gas inspector shall be notified within twenty-four (24) hours.
7. Well work activities shall not constitute a hazard to the safety of persons.
8. If well work related activities require the use of water obtained by withdrawals from waters of this state in amounts that exceed two hundred ten thousand gallons during any thirty day period, the operator is required to consult, and adhere to, the guidance provided by DEP's Water Withdrawal Guidance Tool prior to any water withdrawals.

CK2148  
6500

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

21      03      365

1) Well Operator: Dorward Energy Corporation      309135      Gilmer      Glenville      Gilmer 7.5'  
Operator ID      County      District      Quadrangle

2) Operator's Well Number: Sprouse No. 9      3) Elevation: 833'

4) Well Type: (a) Oil \_\_\_\_\_ or Gas X  
(b) If Gas: Production X / Underground Storage \_\_\_\_\_  
Deep \_\_\_\_\_ / Shallow X

5) Proposed Target Formation(s): Gordon & 5th Sand      Proposed Target Depth: 2520', 2640', 2880'

6) Proposed Total Depth: 2,960 Feet      Formation at Proposed Total Depth: Gordon & 5th Sand

7) Approximate fresh water strata depths: 140'

8) Approximate salt water depths: None shown on offset records

9) Approximate coal seam depths: None

10) Approximate void depths, (coal, Karst, other): None shown on offset records

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

12) Describe proposed well work and fracturing methods in detail (attach additional sheets if needed)

Drill and stimulate. See attached Drilling & Frac Schedule.

**13) CASING AND TUBING PROGRAM**

|              | SPECIFICATIONS |      |       | FOOTAGE INTERVALS |              | CEMENT       |
|--------------|----------------|------|-------|-------------------|--------------|--------------|
|              | TYPE           | Size | Grade | Weight per ft     | For Drilling |              |
| Conductor    | 10.75"         | J-55 | 40.5# | 40'               |              |              |
| Fresh Water  | 7"             | J-55 | 20#   | 600'              |              | CTS          |
| Coal         |                |      |       |                   | <i>Byer</i>  | <i>Hevin</i> |
| Intermediate | 7"             | J-55 | 20#   | <del>840'</del>   |              | CTS          |
| Production   | 4.5"           | J-55 | 10.5# | 2960'             |              | 1171'        |
| Tubing       |                |      |       |                   |              |              |
| Liners       |                |      |       |                   |              |              |

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OCT 18 2013

Packers: Kind: \_\_\_\_\_  
Sizes: \_\_\_\_\_  
Depths Set \_\_\_\_\_

WV Department of  
Environmental Protection

# Dorward Energy Corporation

## DEC Contacts

|                | <u>Home Phone</u> | <u>Cell/Work Phone</u> | <u>E-mail</u>            |
|----------------|-------------------|------------------------|--------------------------|
| Dave Dorward   | (304) 462-4006    | (614) 395-1524         | Dave@dorwardenergy.com   |
| Eddie Bartlett | (304) 659-2870    | (304) 481-5827         | Eddie@dorwardenergy.com  |
| Dustin Haddox  | (304) 349-2757    | (304) 539-2127         | Dustin@dorwardenergy.com |
| DEC Office     | (727) 490-1778    | (614) 559-6672 (fax)   | (727) 490- 1780 (fax #2) |

## Sprouse #9

833' elevation  
 38° 56' 39.8" N  
 80° 39' 45.3" W

| Expected Stratigraphy            | Depth (ft.) | Thickness (ft.) | Gas Checks | Expected Pay Zones |
|----------------------------------|-------------|-----------------|------------|--------------------|
| Third Salt Sand Top              | 1471        | 31              | 1502       |                    |
| Salt Layers Top                  | 1502        | 30              |            |                    |
| Salt Layers Bottom               | 1532        |                 |            |                    |
| Maxton Top                       | 1842        | 34              | 1876       |                    |
| Little Lime Top                  | 1876        | 29              |            |                    |
| Blue Monday Top                  | 1905        | 25              | 1930       |                    |
| Big Lime Top                     | 1930        | 116             | 2016       |                    |
| Big Injun Top                    | 2045        | 31              |            |                    |
| Keener Top                       | 2077        | 13              | 2089       |                    |
| Squaw Top                        | 2089        | 20              |            | ✓                  |
| Weir Top                         | 2110        | 105             |            |                    |
| Weir Bottom                      | 2215        |                 |            |                    |
| Godron Stray Top                 | 2491        | 14              |            | ✓                  |
| Gordon Stray Bottom              | 2504        |                 |            |                    |
| Gordon Top                       | 2597        | 35              |            | ✓                  |
| Gordon Bottom                    | 2632        |                 |            |                    |
| Fifth Sand Top                   | 2842        | 19              |            | ✓                  |
| Fifth Sand Bottom                | 2861        |                 |            |                    |
| Well Total Depth                 | 2960        |                 |            |                    |
| Rathole Below Bottom Perf's      | 99          |                 |            |                    |
| Prod CSG Cement Above Top Perf's | 300         | 1171            |            |                    |
| Top Perf's in Squaw              | 2089        |                 |            |                    |

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Dorward Energy Corporation  
Sprouse #9

| Hardware                      |    |                                |      |                  |                      |
|-------------------------------|----|--------------------------------|------|------------------|----------------------|
| 10.75" J-55 or H-40 Conductor | 1  | joint of 40' pipe @ 40.5#/ft.  | 40   | total pipe depth | 10.75"OD<br>10.05"ID |
| 7" J-55 Surface Casing        | 21 | joints of 40' pipe @ 20#/ft.   | 840  | total pipe depth | 7"OD<br>6.456"ID     |
| 4.5" J-55 Production Casing   | 74 | joints of 40' pipe @ 10.5#/ft. | 2960 | total pipe depth | 4.5"OD<br>4.052"ID   |

| Bit Sizes Per Drilling Sequence |                     |       |
|---------------------------------|---------------------|-------|
| 12.25" Bit                      | Conductor Drill Out | 12.25 |
| 9.625" Bit                      | Surface Drilling    | 9.625 |
| 6.25" Bit                       | Production Drilling | 6.25  |

| Expected Annular Volumes        |                               |                  |                            |                |
|---------------------------------|-------------------------------|------------------|----------------------------|----------------|
|                                 | Annular Volume/ Vertical Foot |                  |                            |                |
|                                 | CSG OD (in.)                  | Annular OD (in.) | ft <sup>3</sup> /vert. ft. | bbbl/vert. ft. |
| Conductor vs. Open Hole         | 10.75                         | 12.25            | 0.18816831                 | 0.03351172     |
| Surface Casing vs. Open Hole    | 7                             | 9.625            | 0.238022686                | 0.042390505    |
| Production Casing vs. Open Hole | 4.5                           | 6.25             | 0.10260627                 | 0.018273601    |
| Production CSG vs. Surface CSG  | 4.5                           | 6.456            | 0.116882169                | 0.020816059    |

| Cement Volume                   | Fill-Up (ft.) | Cement Volume Needed |        | With Safety Factor : 1.20 |        |
|---------------------------------|---------------|----------------------|--------|---------------------------|--------|
|                                 |               | ft <sup>3</sup>      | bbbl   | ft <sup>3</sup>           | bbbl   |
| Conductor vs. Open Hole         | N/A           | N/A                  | N/A    |                           |        |
| Surface Casing vs. Open Hole    | 840           | 199.939              | 35.608 | 239.927                   | 42.730 |
| Production Casing vs. Open Hole | 1171          | 120.113              | 21.392 | 144.136                   | 25.670 |
| Production CSG vs. Surface CSG  | N/A           | N/A                  | N/A    |                           |        |

| Frac Baffles, Centralizers, Cement Baskets and Cement Shoes |   |  |      |      |
|---|---|--|------|------|
| Frac Baffles on Top of Joint #'s                            | 21  | 11   | 8    | 2    |
| at Depths of:   | 2120  | 2520   | 2640 | 2880 |
| Centralizers  | 9   | *to be run every third joint starting on joint one |      |      |
| Cement Baskets  | 9   | *to be run every third joint starting on joint two |      |      |
| Cement Shoes  | one 4.5" CSG cement shoe and one 7" CSG cement shoe |  |      |      |

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Office of Oil and Gas

2105764

WW-2A  
(Rev. 6-07)

1). Date: \_\_\_\_\_  
2.) Operator's Well Number \_\_\_\_\_ Sprouse No. 9  
State County Permit  
3.) API Well No.: 47- 21 - 05764

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

4) Surface Owner(s) to be served: (a) Name Heartwood Forest Land Fund IV ✓ Address 3001 Emerson Avenue  
Parkersburg, WV 26104  
(b) Name \_\_\_\_\_ Address \_\_\_\_\_  
(c) Name \_\_\_\_\_ Address \_\_\_\_\_  
6) Inspector Bryan Harris Address P.O. Box 157  
Volga, WV 26238 Telephone \_\_\_\_\_

5) (a) Coal Operator Name N/A Address \_\_\_\_\_  
(b) Coal Owner(s) with Declaration Name N/A - No Declaration on record Address \_\_\_\_\_  
(c) Coal Lessee with Declaration Name N/A Address \_\_\_\_\_

**TO THE PERSONS NAMED ABOVE TAKE NOTICE THAT:**

Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas

OR  
 Included is the information required by Chapter 22, Article 6, Section 8(d) of the Code of West Virginia (see page 2)

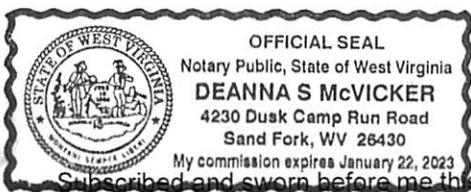
I certify that as required under Chapter 22-6 of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through \_\_\_ on the above named parties by:

- \_\_\_\_\_ Personal Service (Affidavit attached)
- Certified Mail (Postmarked postal receipt attached)
- \_\_\_\_\_ Publication (Notice of Publication attached)

I have read and understand Chapter 22-6 and 35 CSR 4, and I agree to the terms and conditions of any permit issued under this application.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

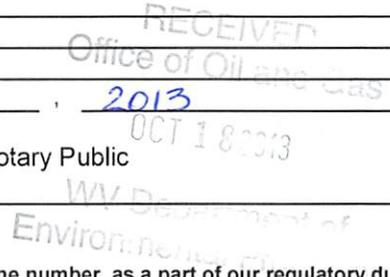


Well Operator Dorward Energy Corporation  
By: David Dorward *David Dorward*  
Its: President  
Address 447 Third Ave. N  
Saint Petersburg, FL 33701  
Telephone 727-490-1778

Subscribed and sworn before me this 11th day of October, 2013  
Deanna S. McVicker Notary Public  
My Commission Expires Jan 22, 2023

Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov)



WW-2A Surface Waiver

SURFACE OWNER WAIVER

County           Gilmer          

Operator  
Operator well number

Dorward Energy Corporation  
Sprouse No. 9

**INSTRUCTIONS TO SURFACE OWNERS NAMED ON PAGE WW2-A**

The well operator named on page WW2A is applying for a permit from the State to do oil or gas well work. (Note: If the surface tract is owned by more than three persons, then these materials were served on you because your name appeared on the Sheriff's tax ticket on the land or because you actually occupy the surface tract. In either case, you may be the only owner who will actually receive these materials.) See Chapter 22 of the West Virginia Code. Well work permits are valid for 24 months. If you do not own any interest in the surface tract, please forward these materials to the true owner immediately if you know who it is. Also, please notify the well operator and the Office of Oil and Gas.

**NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

**WHERE TO FILE COMMENTS AND OBTAIN ADDITIONAL INFORMATION:**

Chief, Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> St. SE  
Charleston, WV 25304  
(304) 926-0450

**Time Limits and methods for filing comments.** The law requires these materials to be served on or before the date the operator files his Application. You have **FIFTEEN (15) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure a adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

**Comments must be in writing.** Your comments must include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

The Chief has the power to deny or condition a well work permit based on comments on the following grounds:

- 1) The proposed well work will constitute a hazard to the safety of persons.
- 2) The soil erosion and sediment control plan is not adequate or effective;
- 3) Damage would occur to publicly owned lands or resources;
- 4) The proposed well work fails to protect fresh water sources or supplies;
- 5) The applicant has committed a substantial violation of a previous permit or a substantial violation of one or more of the rules promulgated under Chapter 22, and has failed to abate or seek review of the violation...".

If you want a copy of the permit as it is issued or a copy of the order denying the permit, you should request a copy from the Chief.

**List of Water Testing Laboratories.** The Office maintains a list of water testing laboratories which you can hire to test your water to establish water quality prior to and after drilling. Contact the Chief to obtain a copy.

**VOLUNTARY STATEMENT OF NO OBJECTION**

I hereby state that I have read the instructions to surface owners and that I have received copies of a Notice and Application for a Well Work Permit on Form WW2-A, and attachments consisting of pages 1 through \_\_\_ including a work order on Form WW2-B, a survey plat, and a soil and erosion plan, all for proposed well work on my surface land as described therein.

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

FOR EXECUTION BY A NATURAL PERSON

FOR EXECUTION BY A CORPORATION, ETC.

\_\_\_\_\_  
Signature  
\_\_\_\_\_  
Date

\_\_\_\_\_  
Company Name  
By  
Its  
\_\_\_\_\_  
Date

Print Name

HEARTWOOD FORESTLAND FUND IV L.P.  
By: Heartwood Forestland Advisors IV, LLC  
Its general partner  
By: The Forestland Group, LLC  
Its Manager

*James M. Wilhelm*  
*James C. Wilhelm*  
*Assistant Regional Director*  
*10-10-13*

Signature

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Office of Oil and Gas  
Date

OCT 18 2013  
Date

WV Department of  
Environmental Protection



NOV 5 2013

WW-2B1  
(5-12)

WV Department of  
Environmental Protection  
West Virginia Department of Environmental Protection  
Office of Oil and Gas

Well No.                      Sprouse No. 9

**NOTICE TO SURFACE OWNERS**

The well operator named below is preparing to file for a permit from the state to drill a new well. Before a well work permit can be filed with the Chief of the Office of Oil and Gas, the well operator is required to have given notice of the right to request water well or spring analytical testing. This notice shall be given to the owners or occupants of land which have a water well or spring being utilized for human consumption, domestic animals, or other general use and which is located within 1000 feet of the proposed well site.

With this form, the operator is giving you notice of your right to request analytical testing. The operator is required to sample and analyze the water wells or springs of all owners or occupants who request it. Therefore, if you wish to have your water well or spring tested, contact the operator named below.

All sampling shall be completed prior to drilling. Within thirty (30) days of the receipt of such sample analyses the operator shall submit the results to the Chief of the Office of Oil and Gas and to the owners or occupants who may have requested them.

Be advised, you have the right to sample and analyze any water supply at your own expense.

Listed below is the laboratory chosen by operator to perform analysis, and contactor chosen to collect sample.

Certified Laboratory Name Reliance Labs  
Sampling Contractor Smith Land Surveying, Inc. - Environmental Division

Well Operator Dorward Energy Corporation  
Address 447 Third Ave. N  
Saint Petersburg, FL 33701  
Telephone 727-490-1778

FOR OPERATOR'S USE ONLY: Below, or on an attached page, list those persons which were given this notice. Place an asterisk beside the one(s) that contacted you and requested sampling and analyses. If there were no requests made, indicate by underling which one you have selected to sample and analyze. If there are no water wells or springs within 1000 feet of the proposed site, the Chief may require the operator to test wells up to 2000 feet from the proposed site.

NOTE: There appears to be 2 potable water sources within 1,500', therefore tests will be offered and samples taken as required.

*Duane & Rachel Brown  
1125 Butchers Fork Rd  
Linn, WV 26384*

*Rose F. Snow  
508 Butchers Fork Rd  
Linn, WV 26384*

WW-9  
(5/13)

Page \_\_\_\_\_ of \_\_\_\_\_  
API Number 47 - \_\_\_\_\_ - \_\_\_\_\_  
Operator's Well No. Sprouse No. 9

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Dorward Energy Corporation OP Code 309135

Watershed (HUC 10) Tributary of Butchers Fork Quadrangle Gilmer 7.5'

Elevation 833' County Gilmer District Glenville

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes \_\_\_\_\_ No X

Will a pit be used for drill cuttings? Yes X No \_\_\_\_\_

If so, please describe anticipated pit waste: Rock Cuttings/Drilled Solids, Drilling and Completion Fluids

Will a synthetic liner be used in the pit? Yes X No \_\_\_\_\_ If so, what ml.? 60 ml

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number \_\_\_\_\_ )
- Reuse (at API Number \_\_\_\_\_ )
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain \_\_\_\_\_)

Will closed loop system be used? No

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. Air

-If oil based, what type? Synthetic, petroleum, etc. \_\_\_\_\_

Additives to be used in drilling medium? Soap/Foam, if needed

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Leave in Pit

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) Lime

-Landfill or offsite name/permit number? \_\_\_\_\_

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature *David Dorward* 10 H-13

Company Official (Typed Name) David Dorward

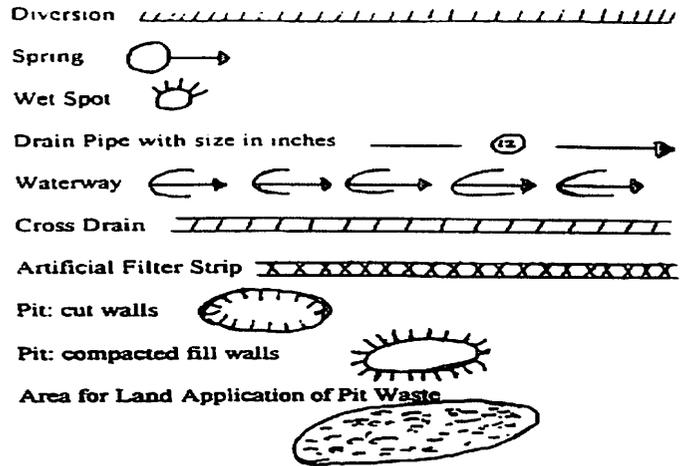
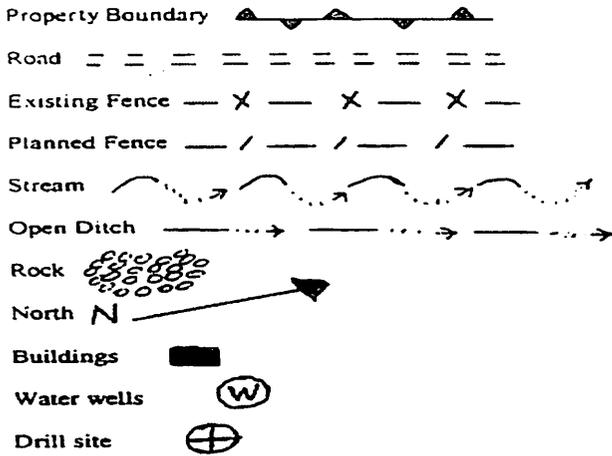
Company Official Title President

Subscribed and sworn before me this 11th day of October, 20 13

Deanna S. McVicker Notary Public

My commission expires Jan. 22, 2023

**LEGEND**



Proposed Revegetation Treatment: Acres Disturbed 1 +/- Prevegetation pH \_\_\_\_\_

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) 1/3 TON lbs/acre (500 lbs minimum)

Mulch HAY 2 Tons/acre

**Seed Mixtures**

| Seed Type     | Area I<br>lbs/acre | Seed Type     | Area II<br>lbs/acre |
|---------------|--------------------|---------------|---------------------|
| KY-31         | 40                 | ORCHARD GRASS | 15                  |
| ALSIKE CLOVER | 5                  | ALSIKE CLOVER | 5                   |
| ANNUAL RYE    | 15                 |               |                     |

Attach:  
Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *Suzan Heen*

Comments: \_\_\_\_\_

Title: \_\_\_\_\_ Date: 10-15-13

Field Reviewed? () Yes () No

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Office of Environmental Protection  
OCT 2 8 2013  
Ivy  
Environmental Protection

# SPROUSE LEASE WELL NO. 9

11

11  
1

11  
1



## PROPOSED GAS WELL NO. 9

1020' ± @  
0-5% GRADE ±

EXISTING  
PIPELINE CROSSING

EXISTING  
DRIVEWAY

EXISTING  
36" CULVERT

90' ± @  
5-10% GRADE ±

## PROPOSED GAS WELL NO. 3

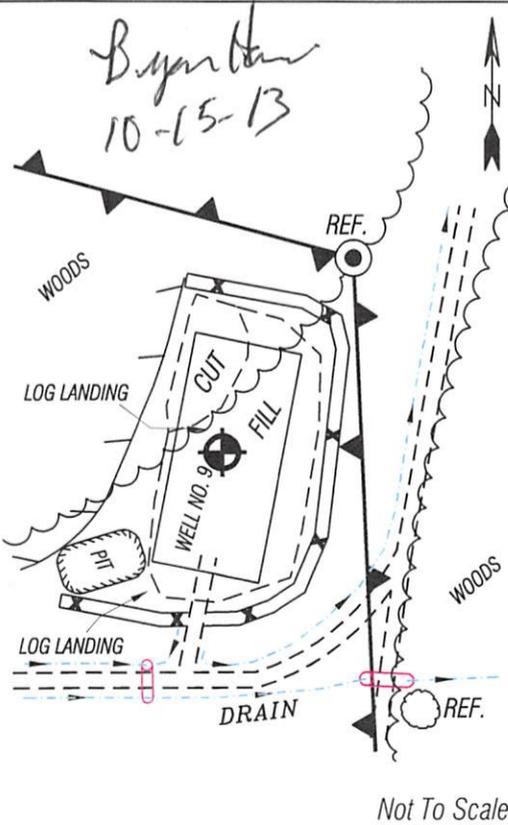
## PROPOSED GAS WELL NO. 7

47-021-1682

### SCALE: 1"=500'



Detail Sketch for Proposed Well No. 9



ALL ROADS SHOWN HEREON ARE EXISTING UNLESS OTHERWISE NOTED AND SHALL BE MAINTAINED IN ACCORDANCE WITH WV D.E.P. OIL AND GAS BMP MANUAL ENTRANCES AT COUNTY/STATE ROADS SHALL BE MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATION. SEPARATE PERMITS MAY BE REQUIRED BY THE D.O.T.

SEDIMENT BASINS (TRAPS) AND APPROPRIATE EROSION CONTROL BARRIERS ARE TO BE CONSTRUCTED AT ALL CULVERT AND CROSS DRAIN INLETS AND OUTLETS AS REQUIRED IN THE WV D.E.P. OIL AND GAS BMP MANUAL. FIELD CONDITIONS (ROCK OUTCROPS AND BEDROCK) MAY PROHIBIT INLET TRAPS BEING INSTALLED. WHEN THESE CONDITIONS EXIST ADDITIONAL EROSION CONTROL MEASURES SHALL BE EVALUATED AND UTILIZED AS NEEDED.

EARTHWORK CONTRACTORS ARE RESPONSIBLE FOR NOTIFICATION TO THE OPERATOR AND INSPECTOR PRIOR TO ANY DEVIATION FROM THIS PLAN.

TEMPORARY SEED & MULCH ALL SLOPES AFTER CONSTRUCTION OF LOCATION.

CUT & STACK ALL MARKETABLE TIMBER.

STACKED BRUSH MAY BE USED FOR SEDIMENT CONTROL.

APPLICATIONS FOR SEPARATE PLC PERMITS ON THE ACCESS ROAD STREAM CROSSINGS HAVE BEEN PREPARED (IF APPLIES).

- = EXISTING CULVERT
- = PROPOSED CULVERT 12" MIN. UNLESS OTHERWISE NOTED
- = PROPOSED STREAM CROSSING
- = APPROXIMATE LIMITS OF DISTURBANCE

TOPO SECTION OF GILMER 7.5' USGS TOPO QUADRANGLE

Professional Energy Consultants  
A DIVISION OF SMITH LAND SURVEYING

SURVEYORS PROJECT MGMT. **SLS** ENGINEERS ENVIRONMENTAL

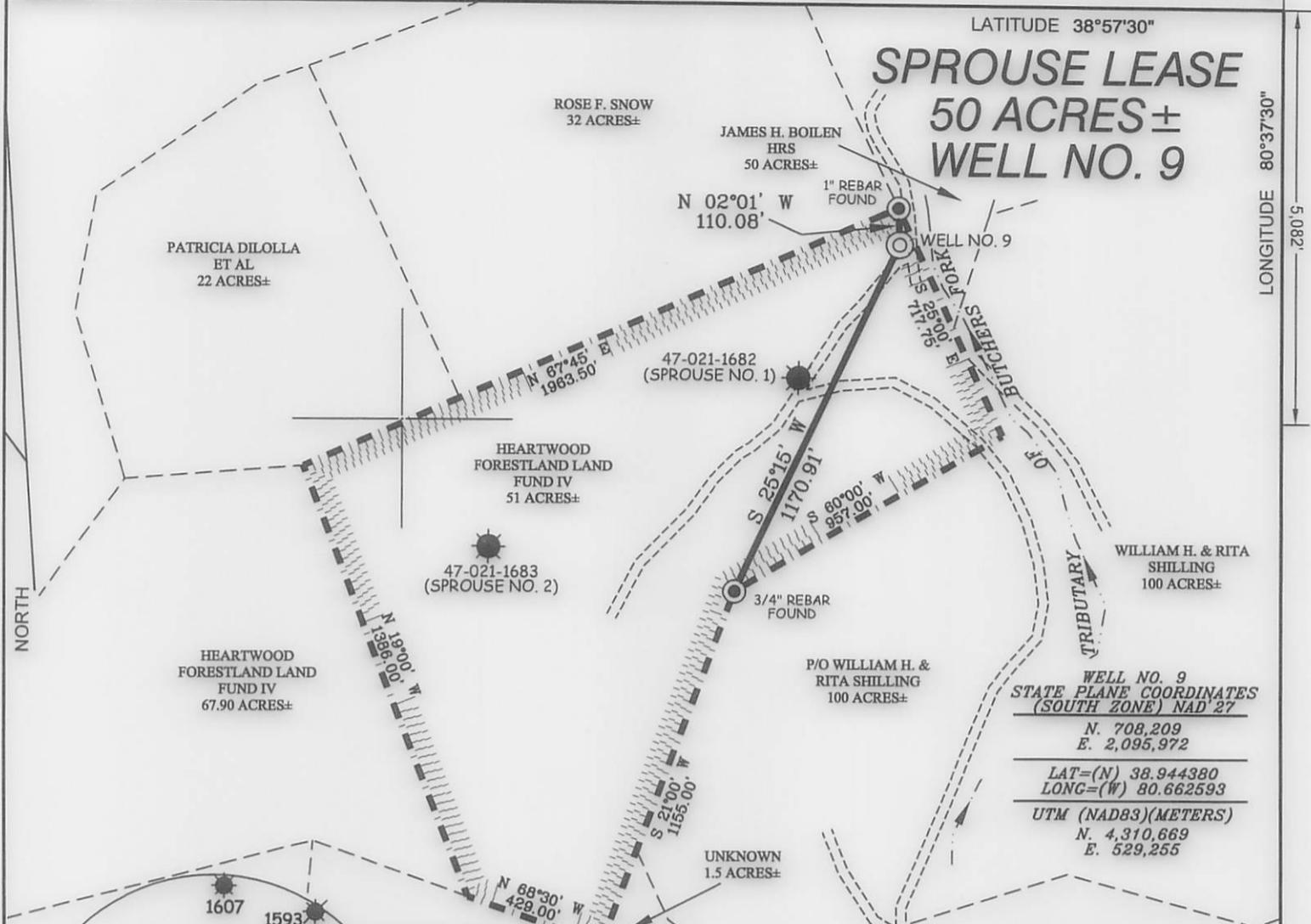
228 West Main St.  
P.O. Box 150  
Glenville, WV 26031  
(304) 462-6634

5605 Dille Bottom Road  
Shady Side, OH 43087  
(740) 671-9911

HONESTY, INTEGRITY, QUALITY

|                    |                  |                  |                            |
|--------------------|------------------|------------------|----------------------------|
| DRAWN BY<br>K.D.W. | FILE NO.<br>8072 | DATE<br>09/06/13 | CADD FILE:<br>8072REC7.dwg |
|--------------------|------------------|------------------|----------------------------|

# SPROUSE LEASE 50 ACRES± WELL NO. 9



**WELL NO. 9  
STATE PLANE COORDINATES  
(SOUTH ZONE) NAD '27**

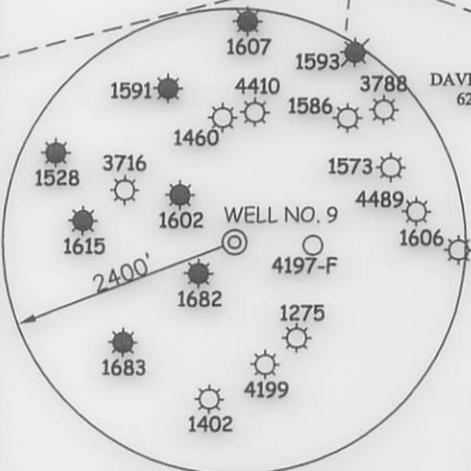
N. 708,209  
E. 2,095,972

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LAT=(N) 38.944380  
LONG=(W) 80.662593

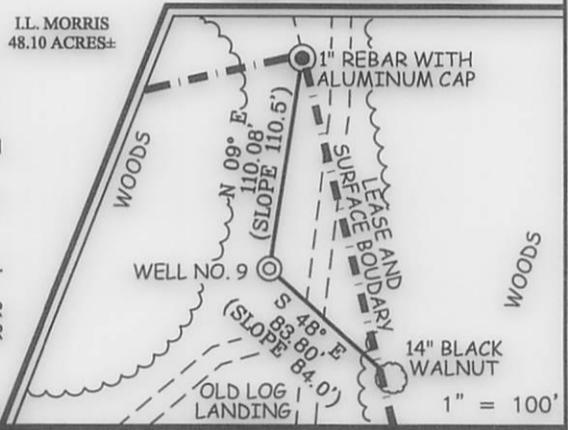
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UTM (NAD83)(METERS)  
N. 4,310,669  
E. 529,255



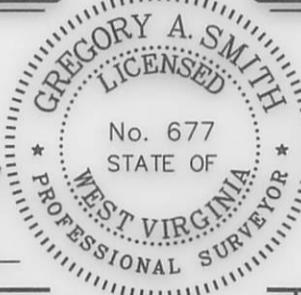
### NOTES ON SURVEY

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 07/09/13.
3. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 453 PAGE 581.
4. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF GILMER COUNTY IN JULY, 2013.
5. WELL LAT./LONG. (NAD'27) ESTABLISHED BY DGPS(MAPPING GRADE).



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 10, 20 13  
OPERATORS WELL NO. SPROUSE # 9  
API WELL NO. 47 - 021 - 05764  
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 8072P9R (454-51)  
PROVEN SOURCE OF ELEVATION DGPS (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 833' WATERSHED TRIBUTARY OF BUTCHERS FORK  
DISTRICT GLENVILLE COUNTY GILMER QUADRANGLE GILMER 7.5'

SURFACE OWNER HEARTWOOD FOREST LAND FUND IV ACREAGE 51±  
ROYALTY OWNER EVELYN J. McHENRY ET AL LEASE ACREAGE 50±

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 GORDON & 5th SAND  
ESTIMATED DEPTH 2960'

WELL OPERATOR DORWARD ENERGY CORPORATION DESIGNATED AGENT EDWIN BARTLETT  
ADDRESS 447 THIRD AVE. N ADDRESS RT. 1 BOX 2  
SAINT PETERSBURG, FL 33701 PULLMAN, WV 26241