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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)

July 30, 2015

**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-8509669, issued to HALL DRILLING, 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: SHANLEY 6A  
Farm Name: TECH SERVICE CENTER  
**API Well Number: 47-8509669**  
**Permit Type: Plugging**  
Date Issued: 07/30/2015

**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.

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### CONDITIONS

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1. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
2. 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.
3. Well work activities shall not constitute a hazard to the safety of persons.

1) Date May 28, 20 15  
2) Operator's  
Well No. Mary Shanley No.6A  
3) API Well No. 47-085 - 09669

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

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

4) Well Type: Oil \_\_\_ / Gas \_\_\_ / Liquid injection X / Waste disposal X /  
(If "Gas, Production \_\_\_ or Underground storage \_\_\_) Deep \_\_\_ / Shallow \_\_\_

5) Location: Elevation 1,037' Watershed Husher's Run  
District Clay County Ritchie Quadrangle Ellenboro 7.5'

6) Well Operator Hall Drilling, LLC 7) Designated Agent Mike Hall  
Address P.O. Box 249 Address P.O. Box 249  
Ellenboro, WV 26346 Ellenboro, WV 26346

8) Oil and Gas Inspector to be notified 9) Plugging Contractor  
Name David Cowan Name \_\_\_\_\_  
Address 1597 Devil Hole Road Address \_\_\_\_\_  
Harrisville, WV 26362-7543

10) Work Order: The work order for the manner of plugging this well is as follows:  
**SEE ATTACHED SHEET FOR MANNER OF PLUGGING**

Received  
Office of Oil & Gas  
JUL 06 2015

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector *David W. Cowan* Date 6-22-15

<b>Shanley No.6A</b>
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47-085-9669
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CASING	LEFT IN WELL	CEMENT	TOC (EST.)
9 5/8"	130'	CTS	0
7"	1,842'	CTS	0
4 1/2"	6,263'		5,300'
2 7/8"	5,800'	On Packer @ 5,800'	
TD	6,269'		

FORMATIONS	DEPTHS
Marcellus	6,164' - 6,250'
Benson	4,856' - 4,878'
2nd Riley	4,718' - 4,770'
Riley	4,521' - 4,554'
Balltown	3,671 - 4,069'
Gordon	2,857' - 2,870'
Big Injun	1,958' - 2,074'

<b>MANNER OF PLUGGING</b>
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Plug 1	6,100' - 5,750'	Pump cement down tubing & displace to approx. 5,750' WOC then Free point, and cut & pull tubing at TOC
Plug 2	5,850' - 5,750'	Free point, cut & pull 4 1/2" casing - 5,250' (estimated)
Plug 3	5,300' - 5,200'	
Plug 4	4,900' - 4,450'	
Plug 5	4,100' - 3,600'	
Plug 6	2,950' - 2,750'	
Plug 7	2,150' - 1,800'	
Plug 8	100' - Surface	

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Office of Oil & Gas  
JUL 06 2015

*CEMENT PLUG FROM 1000' - 900' INSIDE 7" CASING.  
JRM*

Fill well-bore with 6% gel between cement plugs

Erect Monument with API Number

*JRM*

8509669P

WR-35  
Rev (5 01)

DATE: 3/1/08  
API #: 47-085-09669

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

Well Operator's Report of Well Work

Farm name: Shanley Operator Well No.: 6a

LOCATION: Elevation: 1037 Quadrangle: Ellenboro

District: Clay County: Ritchie  
Latitude: 870 Feet South of 39 Deg. 17 Min. 30 Sec.  
Longitude 3800 Feet West of 81 Deg. 00 Min. 00 Sec.

Company: Jay-Bee Oil & Gas Inc.

	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Address: 1720 Rt. 22 East				
Union, N.J. 07083				
Agent: Randy Broda	9 5/8	130	130	C1S
Inspector: Steve Mossor				
Date Permit Issued: 11/26/07	7	1842	1842	C1S
Date Well Work Commenced: 11/27/07				
Date Well Work Completed: 12/1/07				
Verbal Plugging:	4 1/2	6263	6263	65 SKS
Date Permission granted on:				
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <u>30</u>				
Total Depth (feet): 6269				
Fresh Water Depth (ft.): 75'				
Salt Water Depth (ft.): n/a				
Is coal being mined in area (N/Y)? <u>n</u>				
Coal Depths (ft.): <u>n/a</u>				

OPEN FLOW DATA

Producing formation Marcellus Pay zone depth (ft) See Well Record  
Gas: Initial open flow 0 MCF/d Oil: Initial open flow 0 Bbl/d  
Final open flow 20 MCF/d Final open flow 0 Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ Hours  
Static rock Pressure N/A psig (surface pressure) after 96 Hours

Second producing formation \_\_\_\_\_ Pay zone depth (ft) \_\_\_\_\_  
Gas: Initial open flow \_\_\_\_\_ MCF/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow \_\_\_\_\_ MCF/d Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ Hours  
Static rock Pressure \_\_\_\_\_ psig (surface pressure) after \_\_\_\_\_ Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Signed: [Signature]  
By: Randy Broda  
Date: 3/1/08

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Office of Oil & Gas  
JUL 06 2015

65096

8509669A

WELL RECORD

Shanley 6a  
PERMIT # 47-085-09669  
elevation 1037

DETAILS OF PERFORATED INTERVALS:

6240 6171 15000 WATER 1800 SKS

<u>FORMATION</u>	<u>COLOR</u>	<u>HARD/SOFT</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>OIL,GAS,WATER</u>	<u>DEPTH</u>	<u>REMARKS</u>
MISC. RED ROCK & SHALES			0	1894		130	9 5/8
LIME			1894	1958		1842	7
INJUN			1958	2074			
SHALE			2074	2397			
BEREA			2397	2400			
SHALE			2400	2857			
GORDON			2857	2870			
SHALE			2870	3448			
WARREN			3448	3497			
SHALE			3497	3584			
LOWER WARREN			3584	3608			
SHALE			3608	3671			
BALLTOWN			3671	4069			
SHALE			4069	4521			
RILEY			4521	4554			
SHALE			4554	4718			
2nd RILEY			4718	4770			
SHALE			4770	4856			
BENSON			4856	4858			
SHALE			4858	5360			
HAMILTON			5360	5912			
SHALE			5912	6164			
MARCELLUS			6164	6250			
LIME			6250	6269 TD		4 1/2	6263

SIGNED: \_\_\_\_\_  
JAY-BEE PRODUCTION CO.  
BY ITS: PRESIDENT  
DATE: 3/1/2008

WW-4A  
Revised 6-07

1) Date: May 28, 2015  
2) Operator's Well Number  
Mary Shanley No.6A  
3) API Well No.: 47 - 085 - 09669

**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL**

4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>Tech Service Center</u>	Name <u>NA</u>
Address <u>265 Hall Drive</u>	Address _____
<u>Pennsboro, WV 26415</u>	_____
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name <u>NA</u>
_____	Address _____
(c) Name _____	Name _____
Address _____	Address _____
_____	_____
6) Inspector <u>David Cowan</u>	(c) Coal Lessee with Declaration
Address <u>1597 Devil Hole Road</u>	Name <u>NA</u>
<u>Harrisville, WV 26362-7543</u>	Address _____
Telephone <u>304-389-3509</u>	_____

**TO THE PERSONS NAMED ABOVE:** You should have received this Form and the following documents:

- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.



Well Operator Hall Drilling, LLC  
 By: [Signature] Michael T. Hall  
 Its: President  
 Address P.O. Box 249  
Ellenboro, WV 26346  
 Telephone 304-869-3904

**Received**  
**Office of Oil & Gas**  
**Received**  
**Office of Oil & Gas**  
**JUL 06 2015**  
**JUL 06 2015**

Subscribed and sworn before me this 29<sup>th</sup> day of June 2015  
Angela D. De Moss Notary Public  
 My Commission Expires Oct. 30, 2022

**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).

**SURFACE OWNER WAIVER**

Operator's Well  
Number

Mary Shanley No.6A

**INSTRUCTIONS TO SURFACE OWNERS NAMED ON PAGE WW4-A**

The well operator named on page WW-4A is applying for a permit from the State to plug and abandon a well. (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 **FIVE (5) 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 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.

Received  
Office of Oil & Gas

**VOLUNTARY STATEMENT OF NO OBJECTION**

**JUL 06 2015**

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 Permit To Plug And Abandon on Forms WW-4A and WW-4B, and a survey plat.

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  
ETC.

FOR EXECUTION BY A CORPORATION, ✓

\_\_\_\_\_  
Signature

Date

Name  
By  
Its

TECH SERVICE CENTER  
MICHAEL T. HOUL  
PRESIDENT Date 6/29/15

Signature

Date

8509669P

WW-9  
(2/15)

API Number 47 - 085 - 09669  
Operator's Well No. Mary Shanley No. 6A

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Hall Drilling, LLC OP Code 494480467  
Watershed (HUC 10) Husher's Run Quadrangle Ellenboro 7.5'

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

Will a pit be used? Yes  No

If so, please describe anticipated pit waste: Fluids encountered in plugging subject well

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.? 20 mil

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? If so, describe: \_\_\_\_\_

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. \_\_\_\_\_

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

Additives to be used in drilling medium? \_\_\_\_\_

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

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

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

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

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.

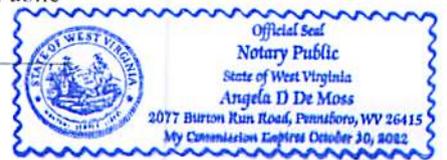
Company Official Signature [Signature]  
Company Official (Typed Name) Michael T. Hall  
Company Official Title President

Subscribed and sworn before me this 29<sup>th</sup> day of June, 20 15

Angela D. DeMoss Notary Public

My commission expires Oct. 30, 2022

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JUL 06 2015



Hall Drilling, LLC

Proposed Revegetation Treatment: Acres Disturbed ~0.5 Prevegetation pH 6.0

Lime 2 Tons/acre or to correct to pH \_\_\_\_\_

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch Straw 2 Tons/acre

Seed Mixtures

**Temporary**

**Permanent**

Seed Type	lbs/acre
Tall Fescue	40
Ladino Clover	5

Seed Type	lbs/acre
Tall Fescue	40
Ladino Clover	5

Attach:

Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by:

*[Signature]*

Comments:

*Maintain all-containment used in plugging operation*

Received  
Office of Oil & Gas  
JUL 06 2015

Title:

*oil & gas inspector*

Date:

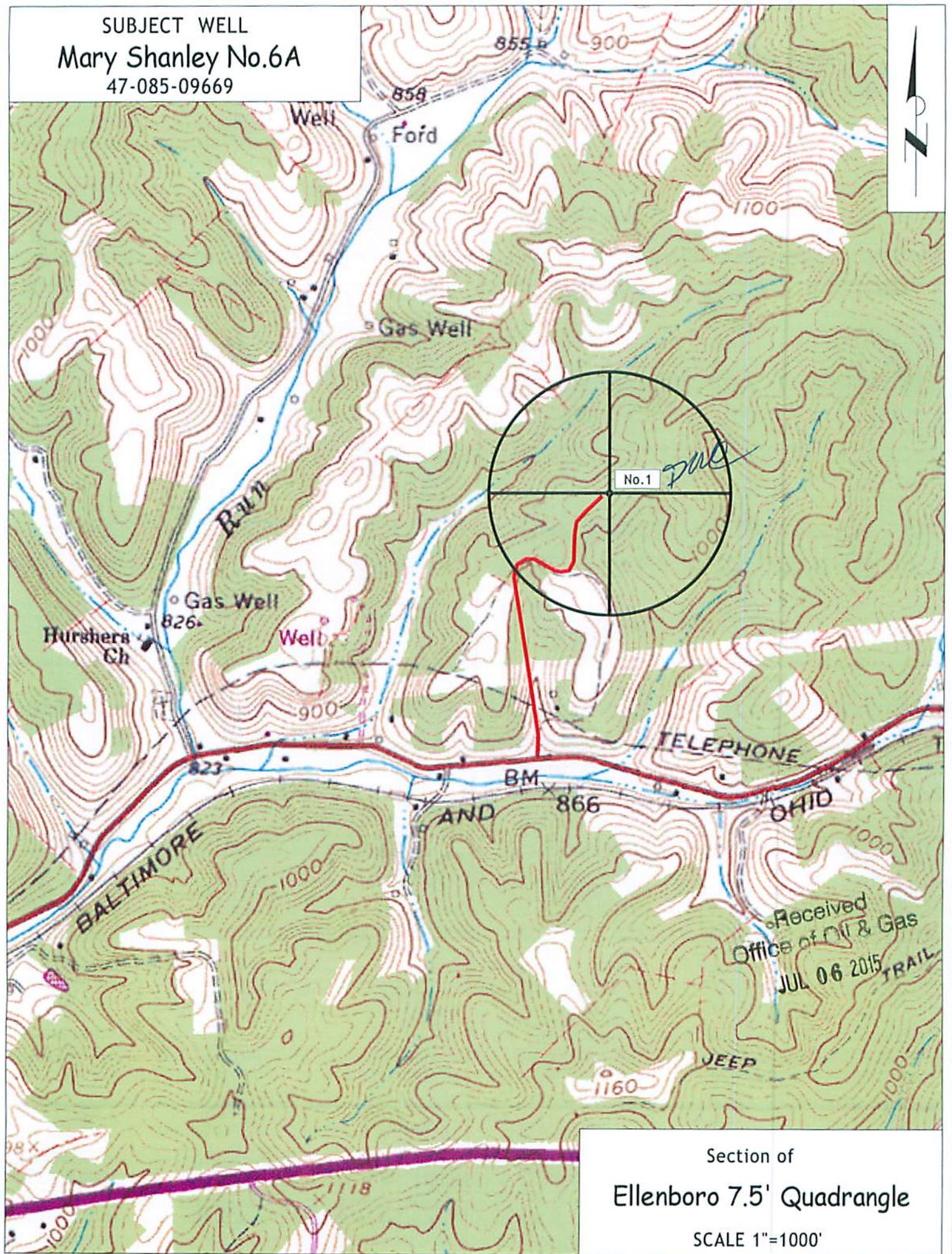
*6-22-15*

Field Reviewed?

Yes

No

SUBJECT WELL  
Mary Shanley No.6A  
47-085-09669



Section of  
Ellenboro 7.5' Quadrangle  
SCALE 1"=1000'

West Virginia Department of Environmental Protection  
Office of Oil & Gas

**WELL LOCATION FORM: GPS**

API: 47- 085 -09669 WELL NO: 6A

FARM NAME: Mary Shanley

RESPONSIBLE PARTY NAME: Hall Drilling, LLC

COUNTY: Ritchie DISTRICT: Clay

QUADRANGLE: Ellenboro 7.5'

SURFACE OWNER: Tech Service Center

ROYALTY OWNER: T.C. Daugherty Hrs. et al.

UTM GPS NORTHING: 4,348,883 (NAD 83)

UTM GPS EASTING: 498,882 (NAD 83) GPS ELEVATION: 316 m. (1036')

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit on the above well. The Office of Oil & 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	<input type="checkbox"/>	Post Processed Differential	<input type="checkbox"/>
		Real-Time Differential	<input type="checkbox"/>
Mapping Grade GPS	<input checked="" type="checkbox"/>	Post Processed Differential	<input checked="" type="checkbox"/>
		Real-Time Differential	<input type="checkbox"/>

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.

Michael T. Hall  
Signature

President  
Title

May 29, 2015  
Date