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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

November 17, 2014

**WELL WORK PERMIT**

**Horizontal Well**

This permit, API Well Number: 47-4303473, issued to HARD ROCK EXPLORATION, 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.

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: HR-OIL 1  
Farm Name: BYRD, ARTHUR  
**API Well Number: 47-4303473**  
**Permit Type: Horizontal Well**  
Date Issued: 11/17/2014

Promoting a healthy environment.

11/21/2014

## 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 with 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. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.

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

1) Well Operator: Hard Rock Exploration, Inc. 494464205 Lincoln Duval Alum Creek, WV 7.5'  
Operator ID County District Quadrangle

2) Operator's Well Number: HR-Oil 1 3) Elevation: 1120'

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

5) Proposed Target Formation(s): Berea Sand Proposed Target Depth: 2600'

6) Proposed Total Depth: 4570' MD Feet Formation at Proposed Total Depth: Berea Sand

7) Approximate fresh water strata depths: 750'

8) Approximate salt water depths: 1300'

9) Approximate coal seam depths: None noted in offset wells

10) Approximate void depths,(coal, Karst, other): None

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 12 3/8" hole on air/ Freshwater foam; Drill 8 3/4" hole on Air/Freshwater foam/Fluid; Drill Bottom hole on foam/fluid.  
KOP-2037', Land curve- 2900'MD/ 2605'TVD , 2200'VS, 4570'TMD  
Run 4.5" casing with open hole packer completion. Stimulate with fluid/ Nitrogen Foam

13) **CASING AND TUBING PROGRAM**

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft	For Drilling	Left in Well	Fill -up (Cu. Ft.)
Conductor	13 3/8"	LS	37	30'	30'	NA
Fresh Water	9 5/8"	LS	26	850'	850'	415cuft cts
Coal						
Intermediate	7"	mc50	19	2900'	2900'	625cuft cts
Production	4 1/2"	m65	10.5	4570'	4570'	as needed
Tubing						
Liners						

*ROT  
9/24/14*

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Packers: Kind: Hydraulic Set open hole packer

Sizes: 4.5" X 6 5/8" 10k diff Seal

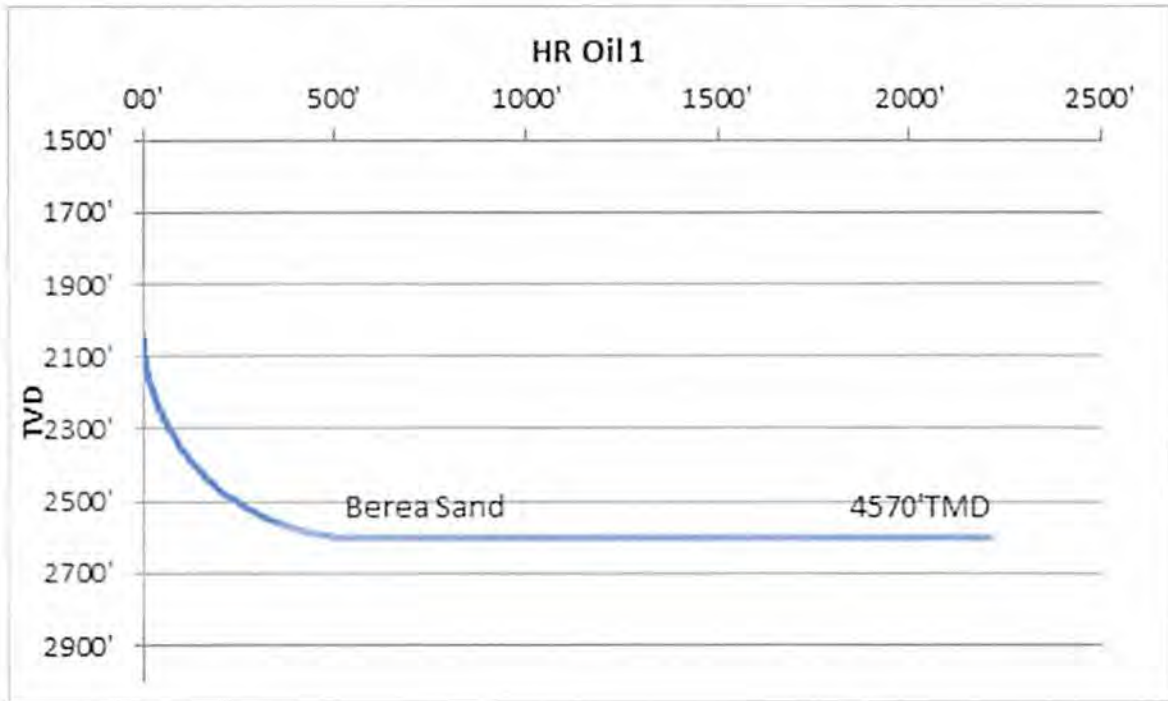
Depths Set Place 10 stg open hole packer system from 2950'- 4570' (162' spacing per stg).

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11/21/2014

NOTICE

WELLBORE GRAPH  
HARD ROCK EXPLORATION WELL NO. HR-Oil 1



CK 000061  
# 650<sup>00</sup>

RDT  
09/24/14

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HARD ROCK EXPLORATION, INC.  
1244 MARTINS BRANCH ROAD  
CHARLESTON, WV 25312

9-5-14

WW-2A  
(Rev. 6-14)

1.) Date: August 27, 2014  
2.) Operator's Well Number HR-Oil 1  
State County Permit  
3.) API Well No.: 47- 043 -

**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 Arthur Byrd ✓  
Address PO Box 18 ✓  
Sod. WV 25564  
(b) Name \_\_\_\_\_  
Address \_\_\_\_\_  
(c) Name \_\_\_\_\_  
Address \_\_\_\_\_  
6) Inspector Ralph Triplett  
Address 5539 McClellan Hwy  
Branchland. WV 25506  
Telephone 304-389-0350  
5) (a) Coal Operator  
Name None  
Address \_\_\_\_\_  
(b) Coal Owner(s) with Declaration  
Name (See Attached)  
Address \_\_\_\_\_  
(c) Coal Lessee with Declaration  
Name None  
Address \_\_\_\_\_

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

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

X 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)
- X   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 Hard Rock Exploration, Inc.  
By: Monica [Signature] RECEIVED  
Its: Executive Vice President Office of Oil and Gas  
Address: 1244 Martins Branch Road  
Charleston, WV 25312 OCT 7 4 2014  
Telephone: 304-984-9004  
Email: monica@hardrockexploration.com WV Department of Environmental Protection

Subscribed and sworn before me this 11th day of September, 2014

Joan L. Beane Notary Public

My Commission Expires Sept. 6, 2022  
Oil and Gas Privacy Notice

HR-Oil 1

Mineral Owners:

Laura Hawkins Stewart ✓ W  
625 Carybell Lane  
Alpharetta, GA 30004

James H. Pettigrew ✓ W  
516 Garrison Avenue  
Charleston, WV 25302

Joseph Kirwin Pettigrew and Stephen R. Knowlton ✓ W  
51 Raymond Avenue  
Unit 3  
Somerville, MA 02144

Kathleen T. Pettigrew ✓  
1380 Grey Oaks Drive  
Gahanna, OH 43230

Eileen K. Pettigrew  
c/o Kathleen T. Pettigrew, AIF  
1380 Grey Oaks Drive  
Gahanna, OH 43230

Anne Marie Pettigrew  
1380 Grey Oaks Drive  
Gahanna, OH 43230

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SURFACE OWNER WAIVER

County Lincoln

Operator  
Operator well number

Hard Rock Exploration, Inc.

HR-Oil 1

**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 an 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.

Arthur Byrd  
Signature

Date 10-3-14

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

Arthur Byrd  
Print Name

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

COAL OPERATOR, OWNER, OR LESSEE WAIVER

County Lincoln

Operator Hard Rock Exploration, Inc.

Operator's Well Number HR-Oil 1

INSTRUCTIONS TO COAL OPERATOR, OWNER, OR LESSEE

To the coal operator, owner, or lessee named on page WW2-A. You are hereby notified that any objection you wish to make or are required to make by WV Code 22-6-15, 16 or 17, must be filed with the Chief of the Office of Oil and Gas within fifteen (15) days after the receipt of this application by the Office. Mail objections to:

Chief, Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> St. SE  
Charleston, WV 25304  
(304) 926-0499 extension 1654

WAIVER

The undersigned coal operator \_\_\_\_\_ / owner \_\_\_\_\_ / lessee  / of the coal under this well location has examined this proposed well location. If a mine map exists which covers the area of well location, the well location has been added to the mine map. The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

FOR EXECUTION BY A NATURAL PERSON

FOR EXECUTION BY A CORPORATION, ETC.

Laura Hawkins Stewart Signature Date 9/22/14

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

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COAL OPERATOR, OWNER, OR LESSEE WAIVER

County Lincoln  
Operator Hard Rock Exploration, Inc. Operator's Well Number HR-Oil 1

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FOR EXECUTION BY A NATURAL PERSON

FOR EXECUTION BY A CORPORATION, ETC.

[Signature]  
Signature  
JAMES H. PETTIGREW

Date 16 Sept 14

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

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COAL OPERATOR, OWNER, OR LESSEE WAIVER

County Lincoln  
Operator Hard Rock Exploration, Inc.

Operator's Well Number HR-Oil 1

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Chief, Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> St. SE  
Charleston, WV 25304  
(304) 926-0499 extension 1654

WAIVER

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FOR EXECUTION BY A NATURAL PERSON

FOR EXECUTION BY A CORPORATION, ETC.

Joseph K. Pettigrew Date 10/2/14  
Signature

[Signature] Date 10/2/14

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

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

Joseph K. Pettigrew  
Stephen Knowlton

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4303473H

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	A. Signature <input checked="" type="checkbox"/> <i>[Signature]</i> <input checked="" type="checkbox"/> Agent <input type="checkbox"/> Addressee	
	B. Received by (Printed Name)	C. Date of Delivery 9-15-14
D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No		
3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.		
4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes		
2. Article Number (Transfer from service label) <u>7011 2000 0001 7717 5746</u>		
PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540		

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	A. Signature <input checked="" type="checkbox"/> <i>[Signature]</i> <input type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee	
	B. Received by (Printed Name)	C. Date of Delivery 9-16-14
D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No		
3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.		
4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes		
2. Article Number (Transfer from service label) <u>7011 2000 0001 7717 5753</u>		
PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540		

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	B. Received by (Printed Name)	C. Date of Delivery 9-17-14
D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input checked="" type="checkbox"/> No		
3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.		
4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes		
2. Article Number (Transfer from service label) <u>7011 2000 0001 7717 5777</u>		
PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540		

*Please sign leave in box*

11/24/2014

4363473H

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	A. Signature <input checked="" type="checkbox"/> <i>James H. Pettigrew</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee	
	B. Received by (Printed Name) <i>JAMES PETTIGREW</i>	C. Date of Delivery <i>8-12-14</i>
1. Article Addressed to:  <p style="text-align: center;">James H. Pettigrew 516 Garrison Avenue Charleston, WV 25302</p>	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No	
	3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.	
	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes	
2. Article Number (Transfer from service label) <u>7011 2000 0001 7717 5760</u>		
PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540		

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	A. Signature <input checked="" type="checkbox"/> <i>Kathleen T. Pettigrew</i> <input type="checkbox"/> Agent <input type="checkbox"/> Addressee	
	B. Received by (Printed Name) <i>KATHLEEN T. PETTIGREW</i>	C. Date of Delivery <i>9/13/14</i>
1. Article Addressed to:  <p style="text-align: center;">Kathleen T. Pettigrew 1380 Grey Oaks Drive Gahanna, OH 43230</p>	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No	
	3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail <input type="checkbox"/> Registered <input checked="" type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.	
	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes	
2. Article Number (Transfer from service label) <u>7011 2000 0001 7717 5739</u>		
PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540		

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**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
Chapter 22, Article 6, Section 8(d)  
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
Laura Hawkins Stewart	Hard Rock Exploration, Inc.	% of 1/8	54/335
James H. Pettigrew	Hard Rock Exploration, Inc.	% of 1/8	54/413
Joseph Kirwin Pettigrew and Stephen R. Knowlton	Hard Rock Exploration, Inc.	% of 1/8	54/371
Kathleen T. Pettigrew	Hard Rock Exploration, Inc.	% of 1/8	54/374
Eileen K. Pettigrew	Hard Rock Exploration, Inc.	% of 1/8	54/377
Anne Marie Pettigrew	Hard Rock Exploration, Inc.	% of 1/8	54/380

**Acknowledgement of Possible Permitting/Approval  
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources
- WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

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The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator:  
By: Its:

Hard Rock Exploration, Inc.  
*Morgan Lewis*  
Executive Vice President

WW-2B1  
(5-12)

Well No. HR-Oil 1

West Virginia Department of Environmental Protection  
Office of Oil and Gas

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 Standard Labs or Sturm Lab  
Sampling Contractor Standard Labs or Sturm Lab

Well Operator Hard Rock Exploration, Inc.  
Address 1244 Martins Branch Road  
Charleston, WV 25312  
Telephone 304-984-9004

**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.

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**WATER NOTICE  
FOR  
HARD ROCK EXPLORATION, INC.  
WELL HR-OIL 1**

**Arthur Byrd  
PO Box 18  
Sod, WV 25564**

MUST TEST AT LEAST ONE WATER  
SOURCE. MUST TAKE SAMPLE BEFORE  
SPUDDING WELL.

*JMM*

**Wilma Smith  
8 Vespers Way  
Bluffton, SC 29910**

**Paul Hughes  
853 Thunderbird Dr.  
Charleston, WV 25306**

**Hubert Pauley  
114 Donnelly Fk.  
Sod, WV 25564**

**Jerry Asbury  
645 Summer Way  
Charleston, WV 25309**

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WW-9  
(5/13)

Page \_\_\_\_\_ of \_\_\_\_\_  
API Number 47-043 - \_\_\_\_\_  
Operator's Well No. HR-Oil 1 \_\_\_\_\_

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Hard Rock Exploration, Inc. OP Code 494464205

Watershed (HUC 10) Donley Fork of Hazlett Fork Quadrangle Alum Creek, WV 7.5'

Elevation 1120' County \_\_\_\_\_ District Duval

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: Drill Cuttings

Will a synthetic liner be used in the pit? Yes X No \_\_\_\_\_ If so, what ml.? ~~10 or greater~~ 20 MIL.

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number UIC2D0190460, 3416729685 )
- Reuse (at API Number 110096, 8704729, 3503009, 8704712, 3503011, 3503008, 3503005, ... - Well will be noted in DMR )
- 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, KCl, or Clay Stay

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? \_\_\_\_\_

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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 Monica Francisco

Company Official (Typed Name) Monica Francisco

Company Official Title Executive Vice President

Subscribed and sworn before me this 11th day of September, 2014

Joan L. Beane Notary Public

My commission expires Sept. 6, 2022



11/21/2014



Form WW-9

Operator's Well No. HR-Oil 1

Proposed Revegetation Treatment: Acres Disturbed 0.48 ✓ Prevegetation pH 5.5

Lime 3 Tons/acre or to correct to pH 6.5

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

Mulch Hay/Straw/Paper (Paper at 1600 lbs/acre) Tons/acre

Seed Mixtures

Area I		Area II	
Seed Type	lbs/acre	Seed Type	lbs/acre
Red Top	15	Red Top	15
Orchard Grass	25	Orchard Grass	25
Perennial Rye/Crimson Red Clover	25 Each	Perennial Rye/Crimson Red Clover	25 Each
Annual Rye	40	Annual Rye	40

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Ralph D. Truptell

Comments:

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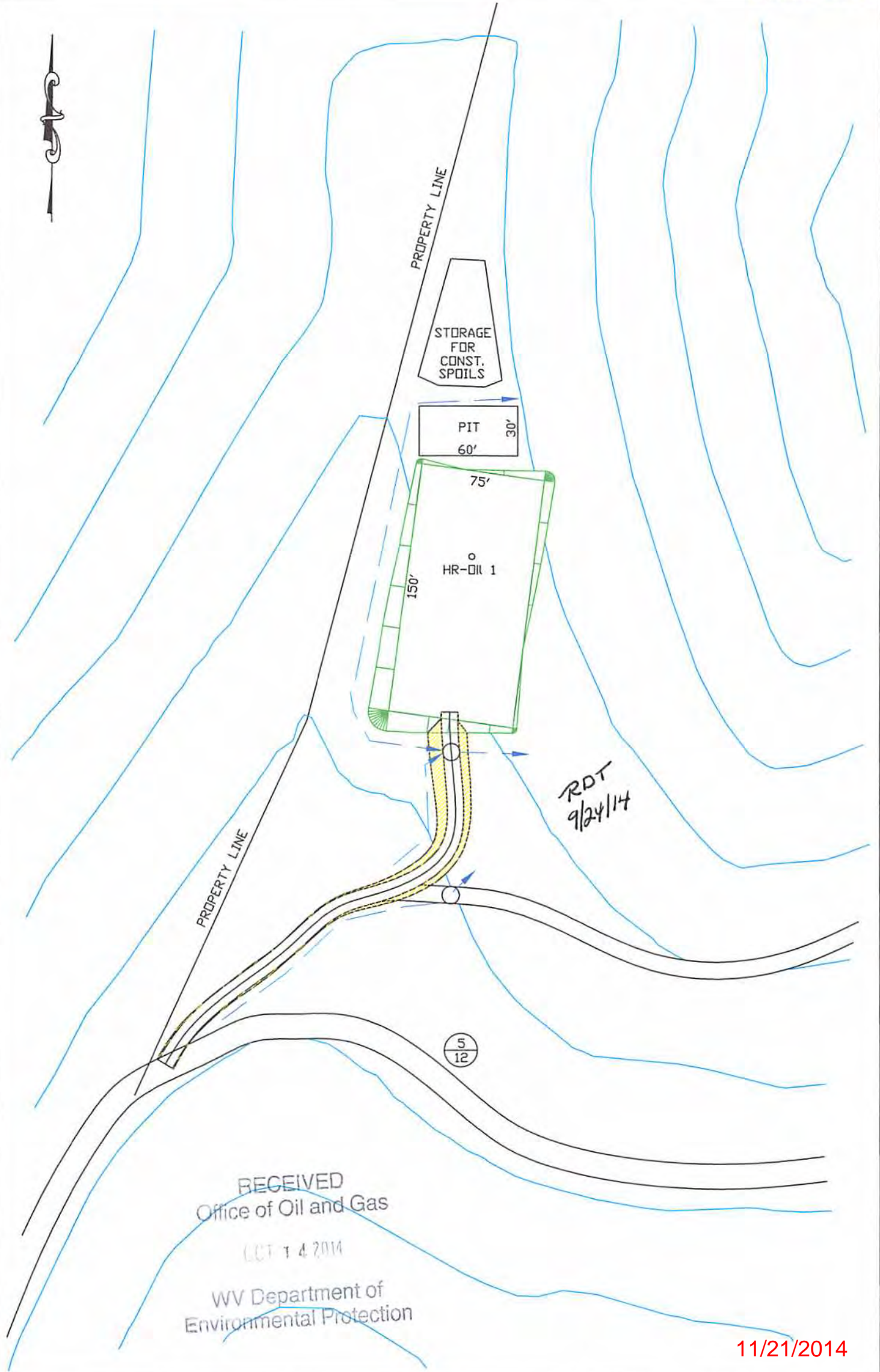
SEP 24 2014

WV Department of  
Environmental Protection

Title: District Inspector

Date: September 24, 2014

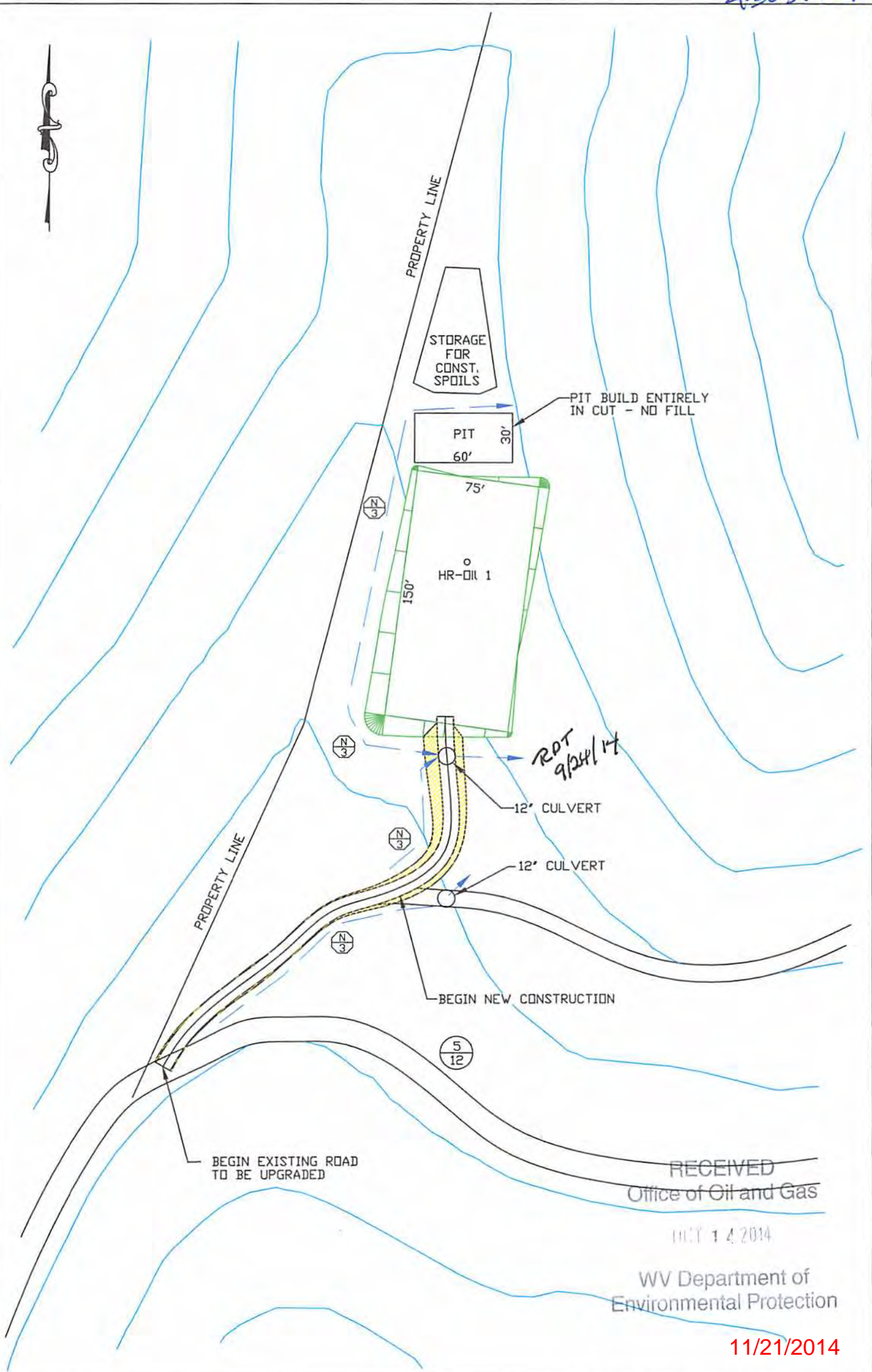
Field Reviewed? (  ) Yes (  ) No



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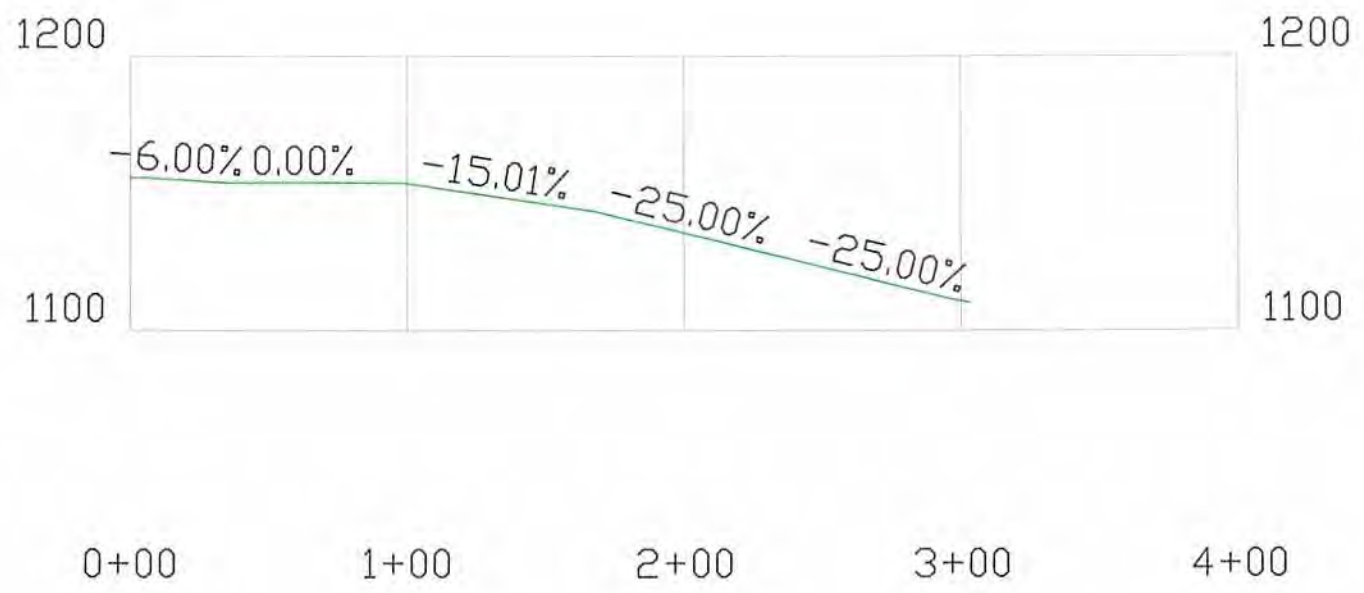
DISTURBED AREAS		LEGEND		SITE PLAN	
WELL PAD CONSTRUCTION	0.32 AC.		STREAM	HARD ROCK EXPLORATION PROPOSED WELL # HR-OIL 1	
NEW ACCESS ROAD CONSTRUCTION	0.10 AC.		PROPERTY LINE	DUVAL DISTRICT, LINCOLN COUNTY ALUM CREEK QUAD, WV 7.5'	
ADD. CLEARING FOR CONST. SPOILS	0.06 AC.		SLOPE AREA	AUGUST 19, 2014	
			WETLAND	TRUE LINE SURVEYING 6211 FAIRVIEW DR. HUNTINGTON, WV 25705	
TOTAL DISTURBED AREA	0.48 AC		BUFFER AREA	PAGE <u>1</u> OF <u>1</u>	




LEGEND		EROSION AND SEDIMENT CONTROL PLAN	
	PROVIDE FLEXTERRA HIGH PERFORMANCE FLEXABLE GROWTH MEDIUM (HP-FLM) ON CUT AND FILL SLOPES		STREAM
	LEVEL SPREADER		PROPERTY LINE
	DIVERSION DITCH		SLOPE AREA
	BERM OUTLET		WETLAND
			24' COMPOST FILTER SOCK AS REQUIRED
		HARD ROCK EXPLORATION PROPOSED WELL # HR-483AA REEDY DISTRICT, ROANE COUNTY PENIEL QUAD, WV 7.5'	
		OCTOBER 21, 2013	
		TRUE LINE SURVEYING 6211 FAIRVIEW DR. HUNTINGTON, WV 25705	
		PAGE 1 OF 1	

11/21/2014

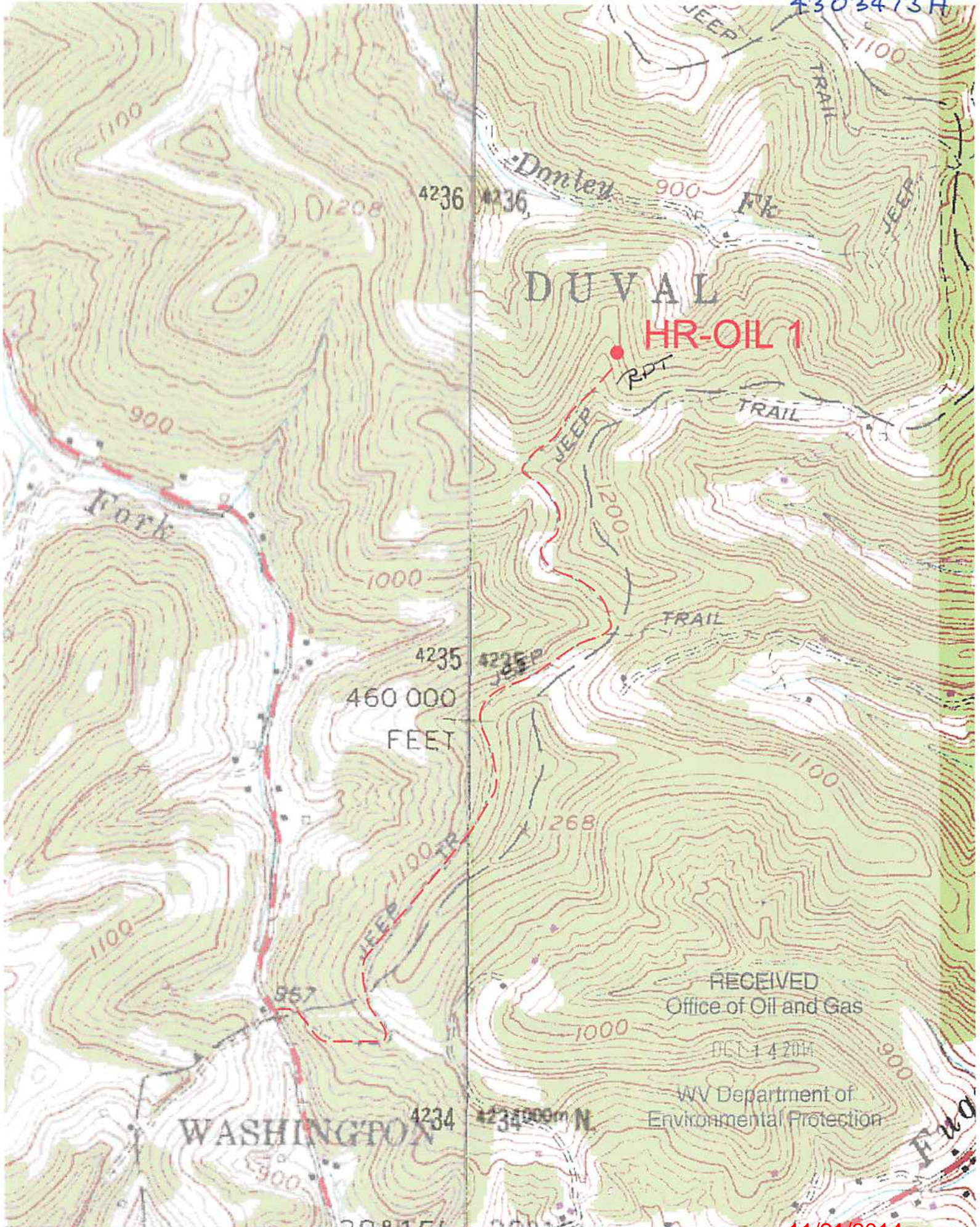
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ROAD PROFILE	
HARD ROCK EXPLORATION PROPOSED WELL # HR-OIL 1 DUVAL DISTRICT, LINCOLN COUNTY ALUM CREEK QUAD, WV 7.5'	
AUGUST 19, 2014	
TRUE LINE SURVEYING 6211 FAIRVIEW DR. HUNTINGTON, WV 25705	
PAGE <u>1</u> OF <u>1</u>	

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DUVAL  
HR-OIL 1

460 000  
FEET

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WASHINGTON

VEY, RESTON, VIRGINIA—1978

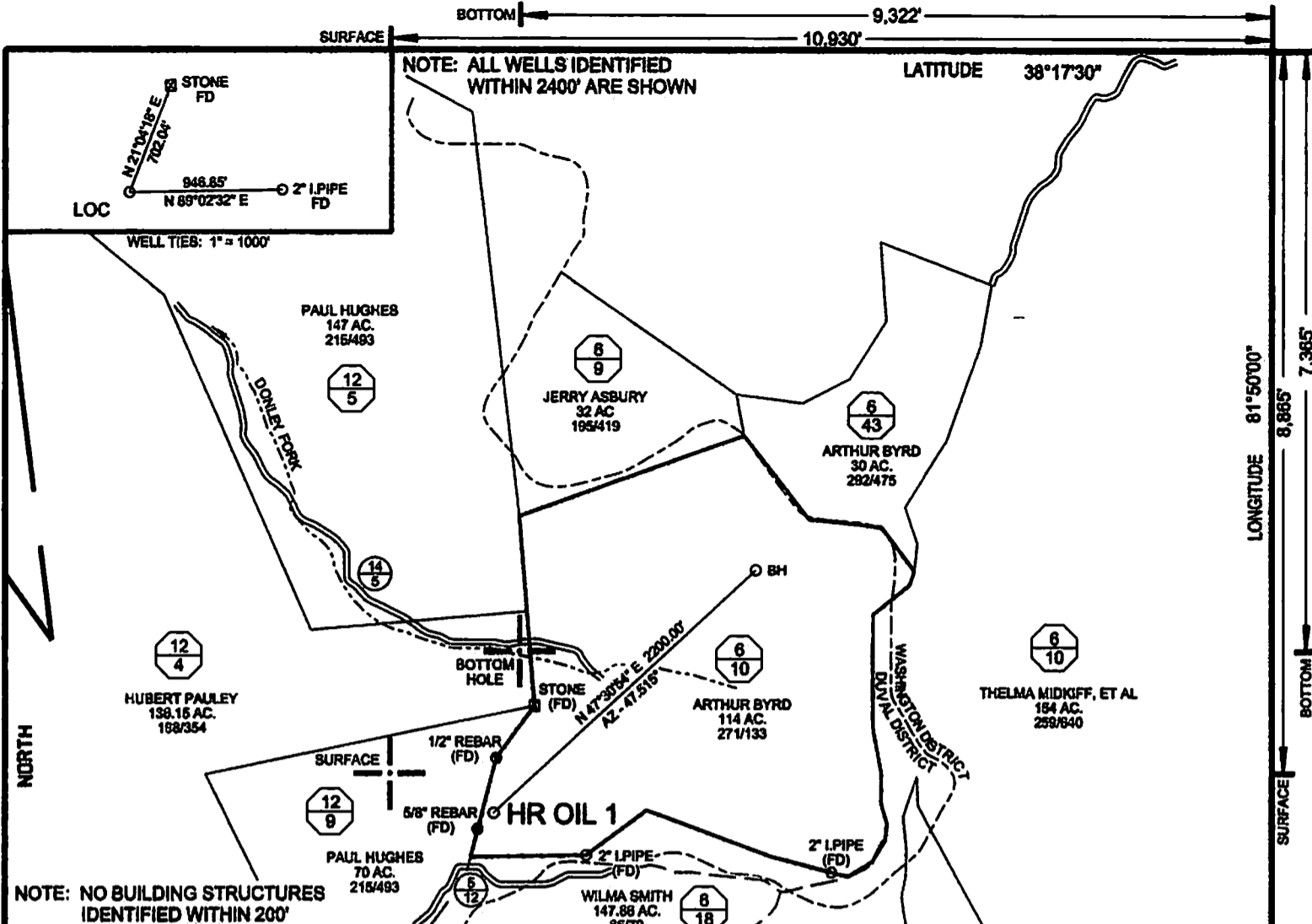
0.5 MI.

38° 15' 38° 15'  
81° 52' 30"

11/21/2014

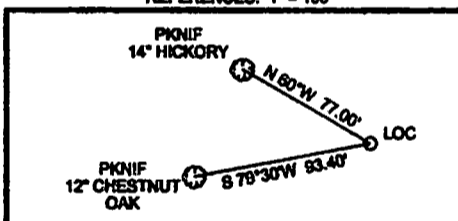
424

7.3 MI. TO V



<b>SURFACE HOLE</b>	
STATE PLANE WV SOUTH ZONE NAD 1927 N - 462,657.77 : E - 1,749,828.11	
LATITUDE: (N) 38.2873641 LONGITUDE: (W) 81.8713887	
UTM, NAD83 17 - 84W TO 78W, METERS N - 4,235,849.779 : E - 423,785.630	
<b>BOTTOM HOLE</b>	
STATE PLANE WV SOUTH ZONE NAD 1927 N - 464,143.84 : E - 1,751,450.51	
LATITUDE: (N) 38.2714862 LONGITUDE: (W) 81.8657843	
UTM, NAD83 17 - 84W TO 78W, METERS N - 4,236,302.559 : E - 424,280.015	

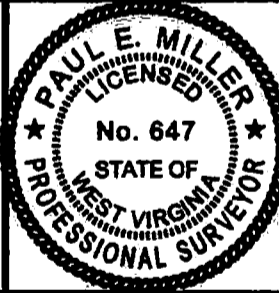
( + ) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS



FILE NO.	HR-OIL 1
DRAWING NO.	HR-OIL 1
SCALE	1" = 1000'
MINIMUM DEGREE OF ACCURACY	1:200
PROVEN SOURCE OF ELEVATION	MAPPING GRADE GPS

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

(SIGNED) *Paul E. Miller*  
R.P.E. \_\_\_\_\_ L.L.S. 647



STATE OF WEST VIRGINIA DIVISION OF ENVIRONMENTAL PROTECTION OIL AND GAS DIVISION	DATE	AUGUST 25	2014
	OPERATOR'S WELL NO.	HR-OIL 1	
	API WELL NO.	47	043
		STATE	COUNTY
		03473 H	
		PERMIT	
WELL TYPE: OIL <input checked="" type="checkbox"/> GAS <input type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/>			
(IF "GAS,") PRODUCTION <input checked="" type="checkbox"/> STORAGE <input type="checkbox"/> DEEP <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/>			
LOCATION: ELEVATION 1,120'	WATER SHED	DONLEY FORK OF HAZLETT FORK	
DISTRICT	DUAL	COUNTY	LINCOLN COUNTY
QUADRANGLE	ALUM CREEK, WV 7.5'		
SURFACE OWNER	ARTHUR BYRD	ACREAGE	114 AC
OIL & GAS ROYALTY OWNER	Stewart, Pettigrew, Pettigrew, Pettigrew, Pettigrew	LEASE ACREAGE	11/21/2014
PROPOSED WORK: DRILL <input checked="" type="checkbox"/> CONVERT <input type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input checked="" type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input checked="" type="checkbox"/> OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____			
PLUG AND ABANDON <input type="checkbox"/> CLEAN OUT AND REPLUG <input type="checkbox"/>			
TARGET FORMATION	BEREA	ESTIMATED DEPTH	4570' MD; 2600' TVD
WELL OPERATOR	HARD ROCK EXPLORATION, INC.	DESIGNATED AGENT	JAMES L. STEVENS
ADDRESS	1244 MARTINS BR. RD., CHARLESTON, WV 26312	ADDRESS	SAME

FORM WW-6

COUNTY NAME  
PERMIT