



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

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

Friday, August 12, 2016
WELL WORK PERMIT
Vertical / Plugging - 2

HG ENERGY, LLC
5260 DUPONT ROAD

PARKERSBURG, WV 26101

Re: Permit approval for 4
47-043-01531-00-00

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

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of 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.

Per 35 CSR 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- 0450.



James A. Martin
Chief

Operator's Well Number: 4
Farm Name: PAULEY, E. G.
U.S. WELL NUMBER: 47-043-01531-00-00
Vertical / Plugging - 2
Date Issued: 8/12/2016

Promoting a healthy environment.

08/12/2016

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

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.

4301531A

WW-4B - Conti
Rev. 2/01

1) Date: June 16, 2016
2) Operator's Well Number E. G. Pauley 4
3) API Well No: 47 - 043 - 1531
State County Permit

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 x Gas x Liquid Injection _____ Waste Disposal _____
(If "Gas", Production x Underground Storage _____) Deep _____ Shallow x

5) LOCATION: Elevation: 934' Watershed: Joe's Creek
District: Duval County: Lincoln Quadrangle Garrett's Bend 7.5'

6) WELL OPERATOR: HG Energy, LLC 494497948 7) DESIGNATED AGENT Diane White
Address 5260 Dupont Road Address 5260 Dupont Road
Parkersburg, WV 26101 Parkersburg, WV 26101

8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) PLUGGING CONTRACTOR
Name Jeffery L. Smith Name To Be Determined Upon Approval of Permit
Address 5369 Big Tyler Road Address _____
Cross Lanes, WV 25313 _____

10) WORK ORDER: The work order for the manner of plugging this well is as follows:

TD- 2,480'

Manners of plugging:

SPOT GEL.

Plug #1 - 2400' - 2300'

Located above highest perforation

Check for free-point at top of Big Lime, (1796'), if pipe is free, part and pull. If pipe isn't free, perforate for placement of plug # 2

Plug # 2 - 1850' - 1750'

Located at top of Big Lime, 5 1/2" casing stub

Plug #3 - 975' - 875'

Located at elevation. If pipe wasn't free at 1796', part and pull at elevation (934')

If pipe isn't free at elevation, perforate for placement of plug #3, find first available free-point above elevation to part and pull. Set additional plug at 5 1/2" casing stub

Plug #4 - 375' - 275'

Located at 8 5/8" casing shoe and fresh water

Plug #5 - 100' - 0'

Surface

Recover all possible casing. If casing can not be recovered, perforate for plug placement.

Monument -

6" minimum diameter metal pipe

30" above surface

10' in well below surface

Sealed with cement

API identification (1/2") height numbering

6% Gel between all plugs

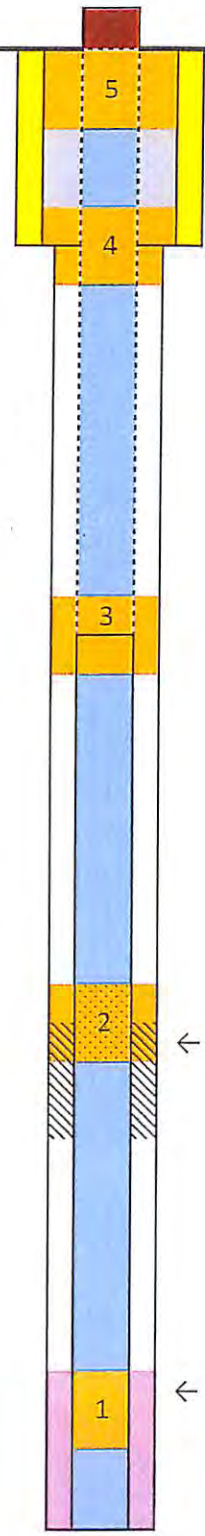
Received
Office of Oil & Gas
JUL 14 2016

08/12/2016

Well: E.G. Pauley #4
 API: 47-43-1531
 Elevation: 934'

Monument to extend 30" above surface. 10' into well. 6" min metal pipe, sealed with cement. API i.D.

Casing Information		
Size	Depth	Weight
8 5/8"	326'	20#/ft.
5 1/2"	2477'	14#/ft.

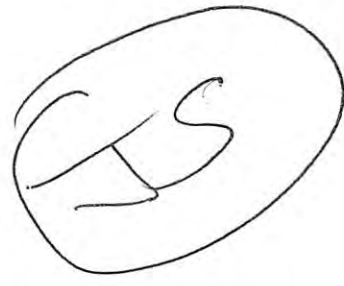


← 225 sacks cement to surface

Freepoint Cut and Pull Casing	
Size	Approx. Depth
5 1/2"	1796' or 934'

Hole Size 7.875" →

Cement Plugs		
NO.	Bottom	Top
1	2400	2300
2	1850	1750
3	975	875
4	375	275
5	100	0



Bottom Hole Cement Level Calculations

Sacks Used Cement Depth
 50 2304.029

Hole Size Casing Size Depth
 7.875 5.5 2480

diameter delta Conv. Factor bbls / ft.
 31.765625 1029.4 0.030858

cubic ft. per vertical ft. depth
 0.173254422

Sacks per vertical ft. depth
 0.284137251

Yield options

50/50 posmix 6% gel = 1.64
 Neat w/ salt flakes = 1.19
 50/50 w/ 2% gel = 1.27

← Big Lime 1796' - 1919'

← 50 Sks Cement T.O.C. 2304'

← Highest Perforation 2432'

TD 2480'

Received
 Office of Oil & Gas
 JUL 14 2016

08/12/2016

PENNZOIL COMPANY
Well Completion Report

Lease: E. G. PAULEY Well No. 4 New Well Old Well

District: Duval County: Lincoln State: West Virginia

Pool Name: Griffithsville Northeast Pool No. 57 Elevation 933.91' KB: GL

Producing Formation: Berea Depth: From _____ to _____

Date Drilled In: May 29, 1974 Pays: Oil: From _____ to _____

Original Total Depth: 2480' From _____ to _____

Plug Back Depth: 2466' Gas: From _____ to _____

Production Initial Present After Fracture

Oil _____

Gas _____

Surface Csg. set @ ^{8-5/8"} 326' KB: ~~66~~ Gr. H-40 New:Used Wt. 20# Collars ST&C

Cement Req. Neat Amount 225 Sacks Plug Down @ 11:45 ~~AM~~ PM Date 5/25/74

Production Csg. set @ ^{5-1/2"} 2477' KB: ~~66~~ Gr. K-55 New:Used Wt. 14# Collars ST&C

Cement 50/50 Posmix Amount 50 Sacks Plug Down @ 8:30 ~~AM~~ PM Date 5/29/74

Logged by: _____ Date: _____

Logs Used: _____

Perforated by: Basin Surveys Date: June 18, 1974

Perforations: 2432'-2437' - 4 holes/ft. - 20 holes

Treatment Data

Type	Fluid Lease Crude	Sand 20/40	Acid 15% HCl	Solvent	Gel	Breaking Agent	Fluid Loss	F.R. Agent	N.E. Agent
Amount	550	11,000	500					80	4

Breakdown Pressure: 2550 Treating Pressure: Max. 4450 Min. 4100 Avg. 4300

Avg. Inj. Rate 19.0 BPM ISIP 2000 @ _____ AM:PM 5 min. SIP 1800

10 min. SIP 1650 15 min. SIP 1600 Other 1-1/4 hr. SIP 1000#

EQUIPMENT USED

Service Company: Halliburton HHP 2065

By: Frank V. Patton, Jr. Date Fractured: 6/18/74

Received
Office of Oil & Gas
JUL 14 2016

08/12/2016

4301531 P

WW-4A
Revised 6-07

1) Date: June 16, 2016
2) Operator's Well Number
E. G. Pauley 4
3) API Well No.: 47 - 043 - 1531

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

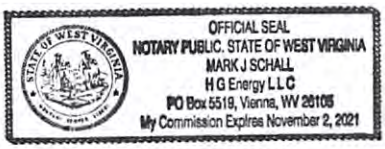
4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>Rexford D. Pauley</u>	Name <u>NA</u>
Address <u>322 Joe's Creek Road</u>	Address _____
<u>Sod, WV 25564</u>	_____
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name <u>NA</u>
_____	Address _____
(c) Name _____	Name _____
Address _____	Address _____
_____	_____
6) Inspector <u>Jeffery L. Smith</u>	(c) Coal Lessee with Declaration
Address <u>5369 Big Tyler Road</u>	Name <u>NA</u>
<u>Cross Lanes, WV 25313</u>	Address _____
Telephone <u>681-313-6743</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 HG Energy, LLC
 By: Diane White
 Its: Agent
 Address 5260 Dupont Road
Parkersburg, WV 26101
 Telephone 304-420-1119

Subscribed and sworn before me this 16th day of June 2016
 My Commission Expires NOVEMBER 2, 2021 Notary Public

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.

Received
Office of Oil & Gas
JUL 14 2016

08/12/2016

4301531P

WW-9
(5/16)

API Number 47 - 043 - 1531
Operator's Well No. E G Pauley 4

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name HG Energy, LLC OP Code 494497948
Watershed (HUC 10) Joe's Creek Quadrangle Garrett's Bend 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: _____

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

Proposed Disposal Method For Treated Pit Wastes:

- Land Application (if selected provide a completed form WW-9-GPP)
- Underground Injection (UIC Permit Number _____)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain Any fluids will be hauled for off site disposal at an authorized site to be determined at the time the well is plugged) _____

ANY WELL MUST BE CONTAINED IN TANKS BEFORE DISPOSAL. gwm OFF SITE

Will closed loop system be used? If so, describe: NA

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

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

Additives to be used in drilling medium? NA

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

-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 April 1, 2016, 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 Diane White
Company Official (Typed Name) Diane White
Company Official Title Agent

Received
Office of Oil & Gas
JUL 14 2016

Subscribed and sworn before me this _____ 16th _____ day of June _____, 2016
[Signature] Notary Public

My commission expires NOVEMBER 2, 2021



08/12/2016

Proposed Revegetation Treatment: Acres Disturbed 1.0 acres Prevegetation pH

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10/20/20

Fertilizer amount 500 lbs/acre

Mulch Straw 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Tall Fescue	40	Tall Fescue	40
Ladino Clover	5	Ladino Clover	5

**** Sediment Control Will Be In Place At All Times ****

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, provide water volume, include dimensions (L, W, D) of the pit, and dimensions (L, W), and area in acres, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Jeffrey Smith

Comments: All sediment control to be removed during reclamation

Title: Oil & Gas Inspector

Date: 06/16/2016

Field Reviewed? Yes No

Received
Office of Oil & Gas
JUL 14 2016

08/12/2016

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

Operator Name: HG Energy, LLC
Watershed (HUC 10): Joe's Creek Quad: Garrett's Bend 7.5'
Farm Name: E G Pauley

1. List the procedures used for the treatment and discharge of fluids. Include a list of all operations that could contaminate the groundwater.

NA

2. Describe procedures and equipment used to protect groundwater quality from the list of potential contaminant sources above.

NA

3. List the closest water body, distance to closest water body, and distance from closest Well Head Protection Area to the discharge area.

NA

4. Summarize all activities at your facility that are already regulated for groundwater protection.

NA

Received
Office of Oil & Gas

JUL 14 2016

5. Discuss any existing groundwater quality data for your facility or an adjacent property.

08/12/2016

NA

6. Provide a statement that no waste material will be used for deicing or fill material on the property.

NA

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

NA

8. Provide provisions and frequency for inspections of all GPP elements and equipment.

NA

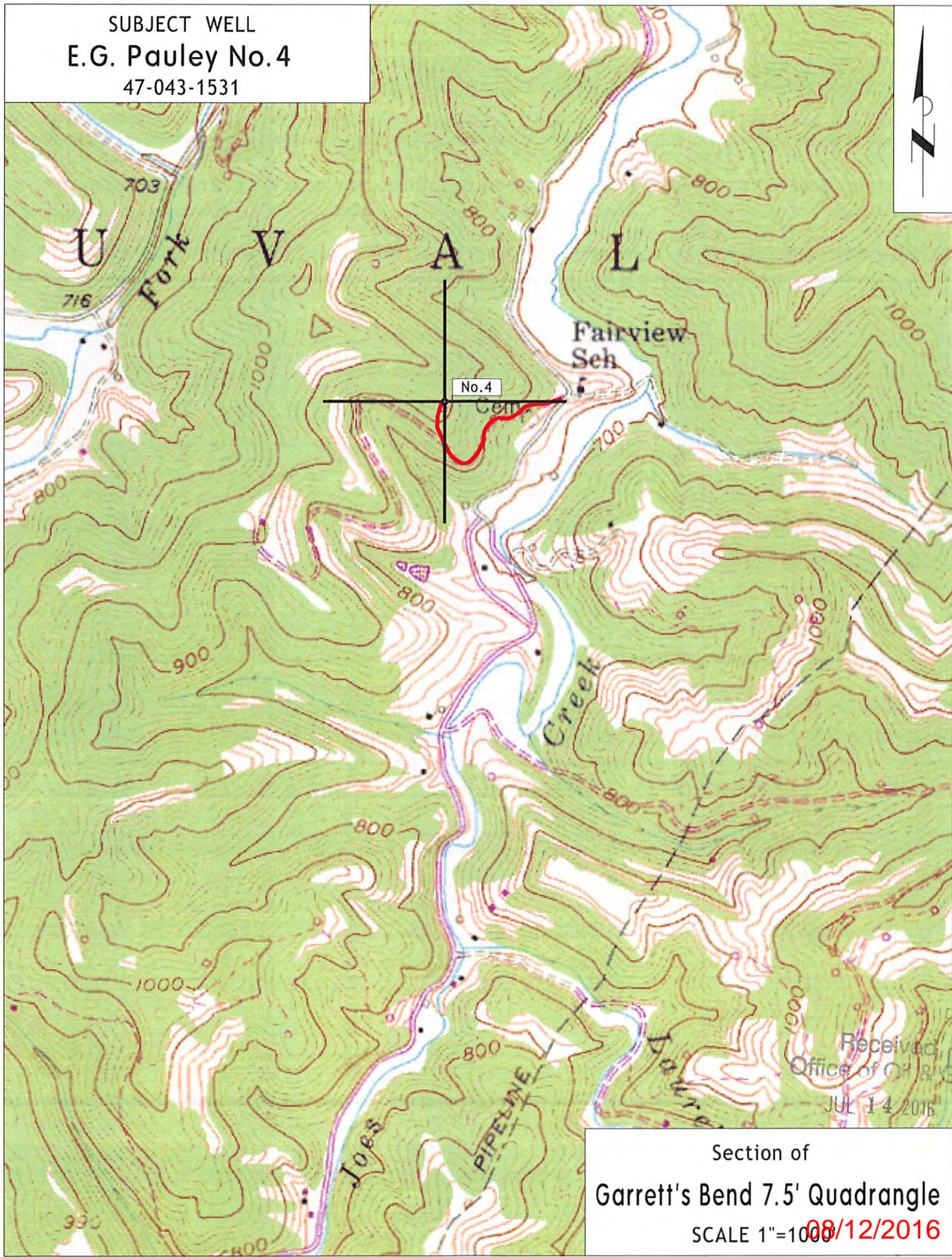
Signature: Diane White

Date: 06/16/2016

Received
Office of Oil & Gas
JUL 14 2016

08/12/2016

SUBJECT WELL
E.G. Pauley No.4
47-043-1531



Received
Office of Oil & Gas
JUL 14 2016

Section of
Garrett's Bend 7.5' Quadrangle
SCALE 1"=1000' 08/12/2016

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

API: 47- 043 - 1531 WELL NO: 4

FARM NAME: E.G. Pauley No.4

RESPONSIBLE PARTY NAME: H.G. Energy, LLC

COUNTY: Lincoln DISTRICT: Duval -2

QUADRANGLE: Garrett's Bend 7.5' -358

SURFACE OWNER: Rexford D. Pauley

ROYALTY OWNER: H.G. Energy, LLC et al.

UTM GPS NORTHING: 4,236,627 (NAD 83)

UTM GPS EASTING: 419,673 (NAD 83) GPS ELEVATION: 282 m. - ~~2850~~ 934ft.

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.

Diane White Diane C. White
Signature

Designated Agent
Title

November 24, 2015
Date

Received
Office of Oil & Gas
JUL 14 2016
08/12/2016