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

4301531P

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.

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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
Address 5260 Dupont Road
Parkersburg, WV 26101

7) DESIGNATED AGENT Diane White
Address 5260 Dupont Road
Parkersburg, WV 26101

8) OIL & GAS INSPECTOR TO BE NOTIFIED
Name Jeffery L. Smith
Address 5369 Big Tyler Road
Cross Lanes, WV 25313

9) PLUGGING CONTRACTOR
Name To Be Determined Upon Approval of Permit
Address

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

TD- 2,480'

JS

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

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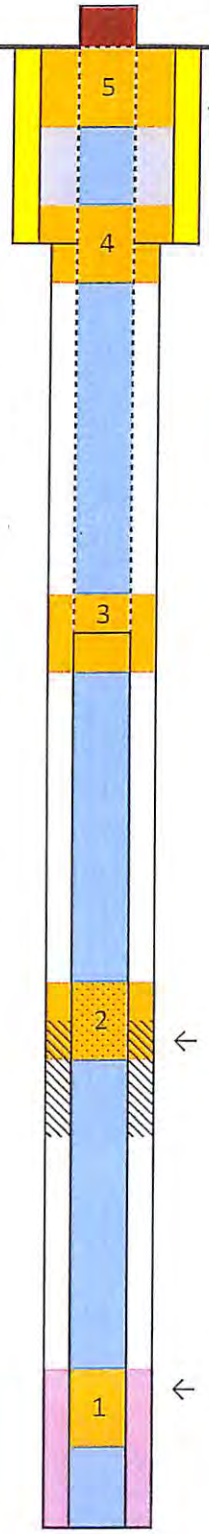
Office of Oil & Gas
JUL 14 2016

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

GS

Big Lime 1796' - 1919'

50 Sks Cement T.O.C. 2304'

Highest Perforation 2432'

TD 2480'

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

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WW-4B
Rev. 2/01

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

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 or 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
Address 5260 Dupont Road
Parkersburg, WV 26101

7) Designated Agent Diane White
Address 5260 Dupont Road
Parkersburg, WV 26101

8) Oil and Gas Inspector to be notified
Name Jeffery L. Smith
Address 5369 Big Tyler Road
Cross Lanes, WV 25313

9) Plugging Contractor
Name To Be Determined Upon Approval of Permit
Address

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

** See Attached Sheet **

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

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Office of Oil & G
JUL 14 2016

Work order approved by inspector Jeffery Smith Date 7-7-16

PENNZOIL COMPANY
Well Completion Report

Lease: E. G. PAULEY Well No. 4 New Well X 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 ___
From ___ to ___

Original Total Depth: 2480' Gas: From ___ to ___
From ___ to ___

Plug Back Depth: 2466'

Production	Initial	Present	After Fracture
Oil			
Gas			

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

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

Production Csg. set @ 5-1/2" 2477' KB:~~GL~~ 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

	Fluid	Sand	Acid	Solvent	Gel	Breaking Agent	Fluid Loss	F.R. Agent	N.E. Agent
Type	Lease Crude	20/40	15% HCl					FR-5	15
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

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Preliminary Report
PENNZOIL COMPANY

NEW WELL REPORT

LEASE NO. 79581 175 ACRES

WORKING DISTRICT Southern Area

E. G. Pauley FARM

Map 124W
WELL NO. 4 N. S. 79 E. W. 74

Duval DISTRICT OR TOWNSHIP

Lincoln COUNTY

St. Albans QUAD.

LOCATION MADE May 20, 19 74

DRILLING COMMENCED May 25, 19 74

DRILLING EQUIPMENT USED ☐ SPUDDER ☒ ROTARY ☐

DRILLING COMPLETED May 29, 19 74

DRILLING EQUIPMENT FURNISHED BY FWA Drilling Company

TOTAL DEPTH 2480 SAND Berea

ELEVATION: FLOOR 934.91

DRILLING CONTRACTOR FWA Drilling Co.

ELEVATION: GROUND 926.91

WORK ORDER NO. 70-24504

FORMATION RECORD

KIND	TOP	BOTTOM	STEEL LINE MEAS.	TEST	KIND	TOP	BOTTOM	STEEL LINE MEAS.	TEST
Substructure	0	8							
Rock & Shale	8	1240							
Salt Sand	1240	1716							
Shale	1716	1764							
Little Lime	1764	1792							
Pencil Cave	1792	1796							
Big Lime	1796	1919							
McCrady Shale	1919	1941							
Pocono Injun	1941	1997							
Shale	1997	2078							
Weir	2078	2148							
Shale	2148	2398							
Coffee Shale	2398	2422							
Berea	2422	2442							
Shale	2442	2480							
Total Depth		2480							
Logged by Basin		2447	- Perforated 2432-2437						

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(OVER)

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NEW WELL REPORT — CONTINUED

INITIAL TORPEDO RECORD	
Date of Shot	
Name of Torpedo Co.	
No. of Quarts	
Length of Shell	
Diameter of Shell	
Length of Anchor	
Top of Shot	
Bottom of Shot	
Feet of Fluid in Hole When Shot	
Results:	

CASING AND TUBING RECORD

SIZE	PUT IN WELL TRANSFER NO.	PUT IN WELL FEET	PUT IN WELL INCH	PULLED OUT TRANSFER NO.	PULLED OUT FEET	PULLED OUT INCH
8-5/8"		318	65			
5-1/2"		2486	25			

INITIAL PRODUCTION FIRST 24 HOURS

Open Flow /10ths Water in ____ Inch
____ /10ths Merc. in ____ Inch
Volume ____ Cu. Ft.
Rock Pressure ____ lbs. ____ hrs.
Oil ____ bbls., First 24 hrs.

PACKER RECORD

KIND	SIZE	DEPTH SET	DATE SET
Parmaco Steel Shoe	8-5/8"	326.32 KB	5-25-74
Baker Guide Shoe	5-1/2"	2477.25 KB	5-29-74

ACIDIZATION OR FRACTURING RECORD

Date Well Acidized ____
Date Well Fractured ____
Name of Company ____
(List below materials used in Acidizing or Fracturing, i.e., Sand, Crude Oil, Gasoline, Water, Kerosene, Mothballs, Acid, etc., giving gallons, barrels and pounds.)

Breakdown Pressure ____
Pumping Pressure ____
Average Pumping Rate/Minute ____
Pumping Time ____
Result After Treatment: Gas ____ Cu. Ft.; Oil ____ Bbls.
Rock Pressure After Treatment ____ Lbs.

CASING CEMENTED

8-5/8" Size 326.32 KB Ft. 5-25-74 Date
Bags Used 225 sks. Neat Cement 3% CC
5-1/2" Size 2477.25 KB Ft. 5-29-74 Date
Bags Used 50 sks. 50/50 Pozmix 2% CC
500 gal. Mud Flush
Size ____ Ft. ____ Date
Bags Used ____
Size ____ Ft. ____ Date
Bags Used ____

Top Depth of Cement Shown by Temperature Log ____

REMARKS:

Received
Office of Oil & Gas
JUL 14 2016

APPROVED
R. A. Valentine
Superintendent

4301531P

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 0F APPLICATION TO PLUG AND ABANDON A WELL

4) Surface Owner(s) to be served:
(a) Name Rexford D. Pauley
Address 322 Joe's Creek Road
Sod, WV 25564

(b) Name
Address

(c) Name
Address

6) Inspector Jeffery L. Smith
Address 5369 Big Tyler Road
Cross Lanes, WV 25313
Telephone 681-313-6743

5) (a) Coal Operator
Name NA
Address

(b) Coal Owner(s) with Declaration
Name NA
Address

Name
Address

(c) Coal Lessee with Declaration
Name NA
Address

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 Diane White
Its: Agent
Address 5260 Dupont Road
Parkersburg, WV 26101
Telephone 304-420-1119

OFFICIAL SEAL
NOTARY PUBLIC, STATE OF WEST VIRGINIA
MARK J SCHALL
H G Energy LLC
PO Box 5519, Vienna, WV 26105
My Commission Expires November 2, 2021

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

Received
Office of Oil & Gas
JUL 14 2016

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 depprivacyoffier@wv.gov.

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:

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

_____ 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

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

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JUL 14 2016

Subscribed and sworn before me this 16th day of June, 20 16

Notary Public

My commission expires NOVEMBER 2, 2021

OFFICIAL SEAL
NOTARY PUBLIC, STATE OF WEST VIRGINIA
MARK J SCHALL
H G Energy LLC
PO Box 5519, Vienna, WV 26105
My Commission Expires November 2, 2021

4301531P

Form WW-9

Operator's Well No. E G Pauley 4

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

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Rev. 5/16

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API Number 47 - 043 - 01531
Operator's Well No. E G Pauley 4

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

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

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

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

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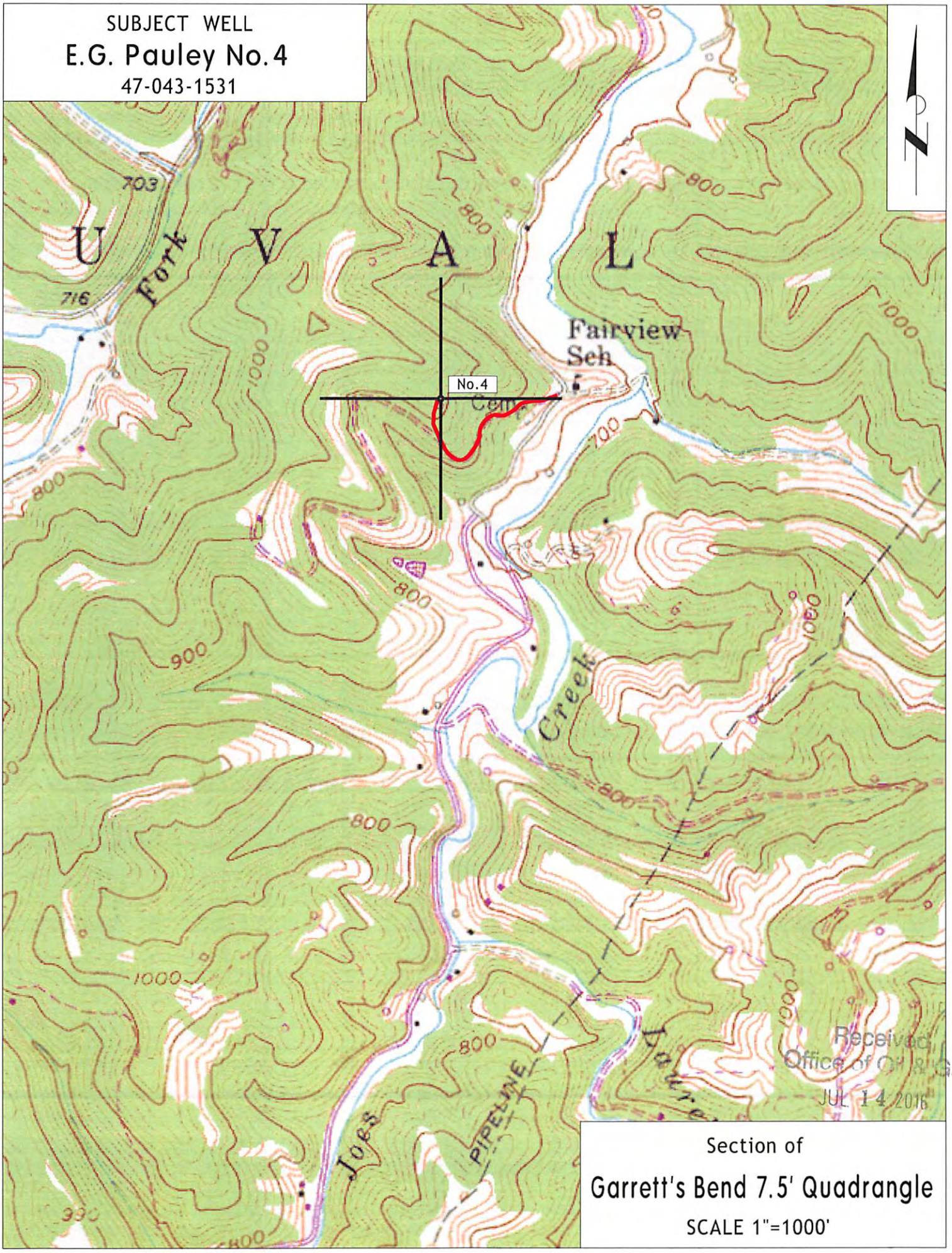

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JUL 14 2016

4301531P

WW-7
5-02

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. – 934 ft.

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit 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 ___ Post Processed Differential ___
Real-Time Differential ___

Mapping Grade GPS X Post Processed Differential X
Real-Time Differential ___

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 — Designated Agent
Signature — Title

November 24, 2015
Date

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Office of Oil & Gas
JUL 14 2016