



west virginia department of environmental protection

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

December 10, 2014

WELL WORK PERMIT
Secondary Recovery Well

This permit, API Well Number: 47-3305854, issued to HG ENERGY, 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.

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: BH BROWN 20
Farm Name: ELSEY, KENNETH DAVID
API Well Number: 47-3305854
Permit Type: Secondary Recovery Well
Date Issued: 12/10/2014

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

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.

FORM WW-3 (B)
1/12



- 1) Date: 10/13/2014
- 2) Operator's Well No. B. H. Brown 20
- 3) API Well No.: 47 - Harrison - s
State County Permit
- 4) UIC Permit No. UIC2R03301AP

**STATE OF WEST VIRGINIA
NOTICE OF LIQUID INJECTION OR WASTE DISPOSAL WELL WORK PERMIT APPLICATION
FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**

- 5) WELL TYPE: Liquid Injection / Gas Injection (not storage) / Waste Disposal
- 6) LOCATION: Elevation: 1149' Watershed: Tenmile Creek
District: Ten Mile 9 County Harrison Quadrangle Wolf Summit 7.5' 692
- 7) WELL OPERATOR: HG Energy, LLC 8) DESIGNATED AGENT Diane White
Address 5260 Dupont Road Address 5260 Dupont Road
Parkersburg, WV 26101 Parkersburg, WV 26101
- 9) OIL & GAS INSPECTOR TO BE NOTIFIED 10) DRILLING CONTRACTOR
Name Sam Ward Name To Be Determined Upon Approval of Permit
Address P. O. Box 2327 Address _____
Buckhannon, WV 26201
- 11) PROPOSED WELL WORK Drill / Drill deeper / Redrill / Stimulate
Plug off old formation / Perforate new formation Convert
Other physical change in well (specify) _____
- 12) GEOLOGIC TARGET FORMATION Fifth Sand Depth 2800' Feet (top) to 2810' Feet (bottom)
- 13) Estimated Depth of Completed Well, (or actual depth of existing well): 2850 TVD, 3310 TMD Feet
- 14) Approximate water strata depths: Fresh 300 Feet Salt 1265 Feet
- 15) Approximate coal seam depths: 325
- 16) Is coal being mined in the area? Yes No
- 17) Virgin reservoir pressure in target formation 1250 psig Source Estimated
- 18) Estimated reservoir fracture pressure 2650 psig (BHFP)
- 19) MAXIMUM PROPOSED INJECTION OPERATIONS: Volume per hour 25 BBL Bottom hole pressure 2400 psi
- 20) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES
Fresh water, produced water, bactericides and other chemicals as needed to maintain water quality and improve oil recovery
- 21) FILTERS (IF ANY) Cartridge filters and/or coal bed filters
- 22) SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL _____

23) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (CU. FT.)	PACKERS
	Size	Grade	Weight per ft.	New	Used	For Drilling	Left In Well		
Conductor									Kinds
Fresh Water	7"	LS ST&C	17#	X		500'	500'	CTS	Sizes
Coal									2.375" x 4.5"
Intermediate									Depths set
Production	4 1/2"	J-55	10.5#	X		3280'	3280'	200 sks	2930'
Tubing	2 3/8"	J-55	4.6#	X		3030'	3030'		Perforations
Liners									Top Bottom

24) APPLICANT'S OPERATING RIGHTS were acquired from B. H. Brown
by deed _____ / lease X / other contract _____ / dated 10/13/2014
Harrison County Clerk's office in Lease Book 105 Page 298

Received

Office of Oil & Gas

OCT 17 2014

33058545

7013 1090 0002 3242 9313

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Certified Fee	3.30
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Total Postage & Fees	\$ 7.61

Postmark Here
 PARKERSBURG, WV
 USPS
 BHB 20

Sent To
 Kenneth Elsey
 Street, Apt. No.,
 or PO Box No. 242 Victory Lane
 City, State, ZIP+4 Salem WV 26426

PS Form 3800, August 2006 See Reverse for Instructions

WRONG Address
- Re Noticed
10/20/14

7013 1090 0002 3242 9320

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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 7.61

Postmark Here
 PARKERSBURG, WV
 USPS
 BHB 20

Sent To
 Murray Coal
 Street, Apt. No.,
 or PO Box No. 46226 National Road
 City, State, ZIP+4 St. Clairsville OH 43950

PS Form 3800, August 2006 See Reverse for Instructions

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Office of Oil & Gas
OCT 17 2014

12/12/14

7033 1090 0002 3242 9597

U.S. Postal Service™
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Certified Fee		05.00
Return Receipt Fee (Endorsement Required)		02.00
Restricted Delivery Fee (Endorsement Required)		05.00
Total Postage & Fees	\$	17.00

Postmark Here
10/20/14
BHB 20

Sent To
 Street, Apt. No., or PO Box No. Kenneth P. Elsey
 7547 New Creek Road
 City, State, ZIP+4 Salem WV 26426 ✓

PS Form 3800, August 2006 See Reverse for Instructions

Received

OCT 21 2014

Office of Oil and Gas
WV Dept. of Environmental Protection

WW-2B1
(5-12)

Well No. B. H. Brown 20

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	<u>Sturm Environmental Lab</u>
Sampling Contractor	<u>Sturm Environmental Lab</u>

Well Operator	<u>HG Energy, LLC</u>
Address	<u>5260 Dupont Road</u> <u>Parkersburg, WV 26101</u>
Telephone	<u>304-420-1119</u>

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.

Water Sources Identified for Sampling and Analysis :

- | | |
|---|--|
| * Kenneth D. Eisey
7547 New Creek Rd
Salem WV 26426 | * Daniel Bailey
RR 5, Box 1000
Salem, WV 26426 |
| * James Rogers
150 Victory Lane
Salem WV 26426 | * Michael Lyons
1247 New Creek Road
Salem WV 26426 |
| * Hubert Modispaugh
RR 5, Box 976
Salem WV 26426 | * Robert Searcy
RR 5, Box 1014
Salem WV 26426 |

WW-9
Rev. 5/10

Page _____ of _____
API Number 47 - _____
Operator's Well No. B. H. Brown 20

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

CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM
GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE

Operator Name HG Energy, LLC OP Code 494497948
Watershed Tenmile Creek Quadrangle Wolf Summit 7.5'
Elevation 1149' County Harrison District Ten Mile

Description of anticipated Pit Waste: Fluids encountered while drilling subject well

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

Will a synthetic liner be used in the pit? Yes _____ If so, what mil.? 20

*SDW
10/16/2014*

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 _____)

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. Air, Fresh Water
-If oil based, what type? Synthetic, petroleum, etc. NA

Additives to be used? Water, soap, KCl

Will closed loop system be used? No

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 Native soil, cement, lime
-Landfill or offsite name/permit number? _____

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

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

Company Official Signature Diane White

Company Official (Typed Name) Diane White

Company Official Title Agent

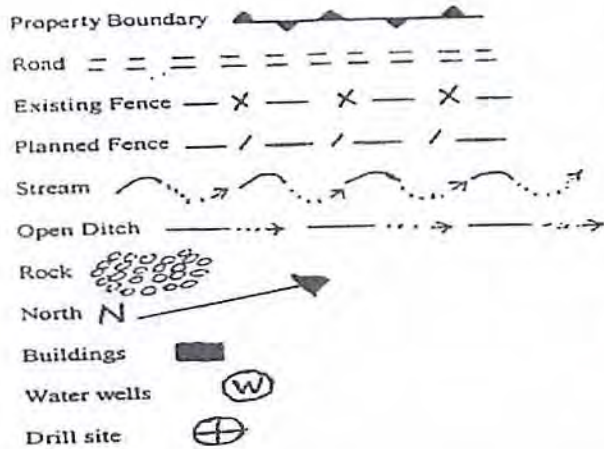
Subscribed and sworn before me this 13th day of October

[Signature]
10/12/2018

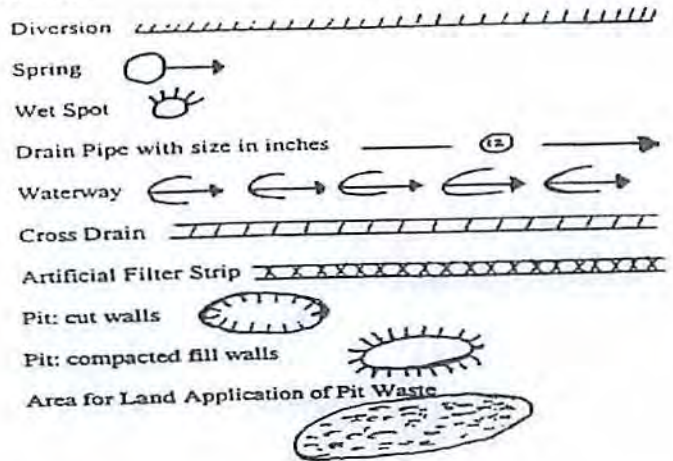
My commission expires _____



12/12/14



LEGEND



Proposed Revegetation Treatment: Acres Disturbed 1.6 acres Prevegetation pH _____

Lime 2 Tons/acre or to correct to pH 6.5

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

Mulch Straw 5 Tons/acre

Seed Mixtures

Seed Type	Area I	lbs/acre	Seed Type	Area II	lbs/acre
Tall Fescue		40	Tall Fescue		40
Ladino Clover		5	Ladino Clover		5

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: S. P. D. Ward

Comments: Pre-seed/mulch all disturbed areas as soon as possible. Upgrade R/S as needed per regulations

Title Oil & Gas Inspector

Date: 10/16/2014

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Office of Oil & Gas

OCT 17 2014

Field Reviewed? () Yes () No

Reclamation Plan For: B.H. Brown No. 20



To BH Brown No. 14

Replace Existing Culvert

150' of 15% Grade

NOTE
REFER TO THE WVDEP
EROSION AND SEDIMENT CONTROL
FIELD MANUAL VER. MAY 2012 FOR
BMPs CONTROLLING EROSION AND
SEDIMENT FROM SOIL-DISTURBING
OPERATIONS.

350' of 18-20% Grade

Upgrade Existing
Farm Road

B.H. Brown Lease

Kenneth Elsey
- Surface Owner

600' of <5% Grade

(See Attached Detail
for Additional Access
Roads to Location)

HREA Electric Line
SDW
10/16/2014

Notes:

- REQUESTED PERMIT IS FOR DRILLING OF NEW WELL.
- ACCESS ROAD FROM Co. Rd. 7/2 TO PT. A IS EXISTING. ROAD WILL BE UPGRADED TO WVDEP STANDARDS AND STRUCTURES INSTALLED AS SHOWN.
- ALL DISTURBED AREAS WILL BE RE-VEGETATED AS OUTLINED ON FORM WW-9.
- MAINTAIN SEDIMENT BARRIERS AND DRAINAGE STRUCTURES.
- ALL ROAD GRADES <5% EXCEPT AS NOTED.
- LOCATION OF DRILL PIT MAY BE CHANGED BASED ON AS-BUILT CONSIDERATIONS.
- DRAWING NOT TO SCALE.

Received
Office of Oil & Gas
OCT 17 2014

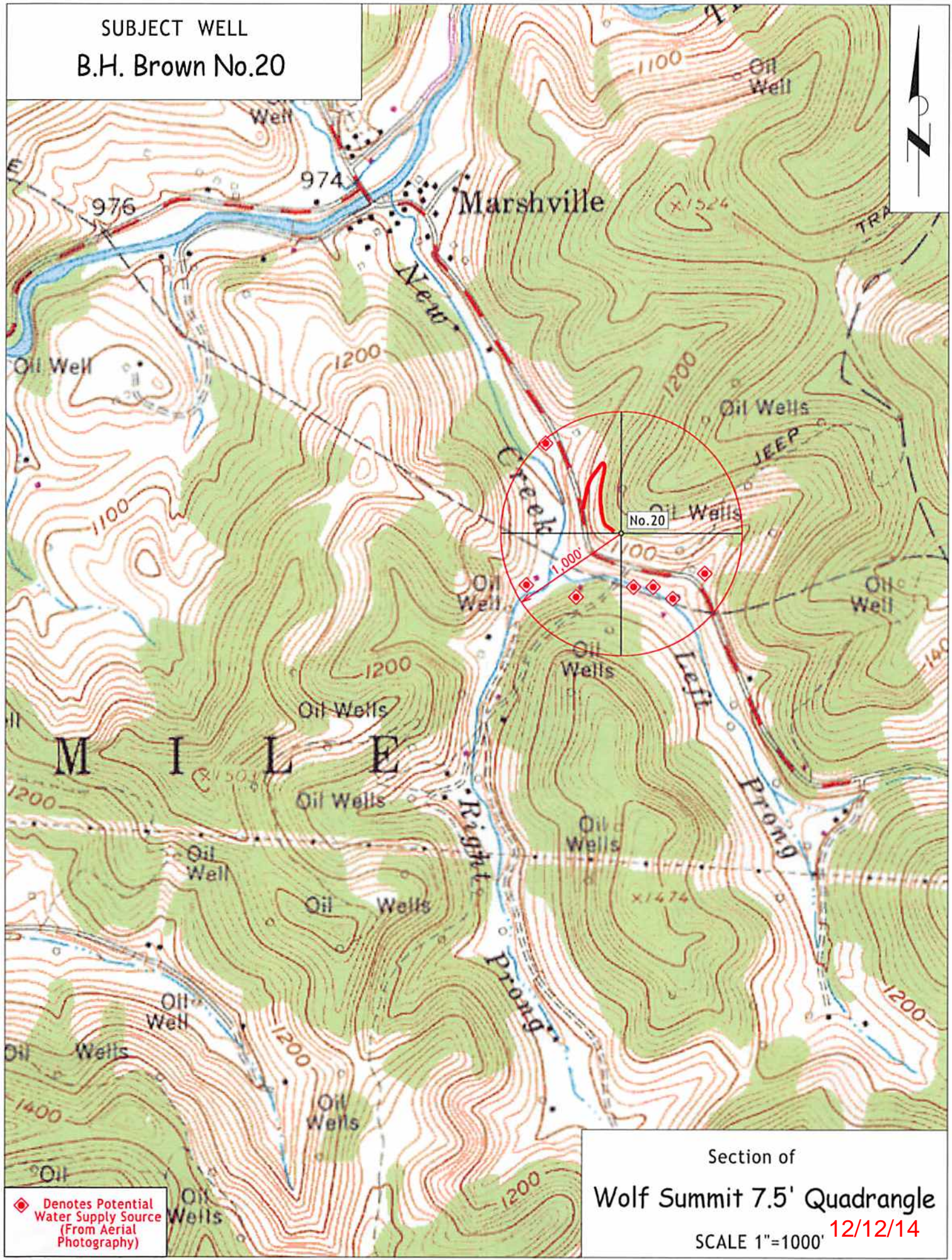
B.H.B. 20 ⊕

Cut Area

Fill Area

Existing Vegetative Filter Strip

SUBJECT WELL
B.H. Brown No.20



◆ Denotes Potential Water Supply Source (From Aerial Photography)

Section of
Wolf Summit 7.5' Quadrangle
SCALE 1"=1000' 12/12/14

(BOT. HL: LON:-80°27'32.2") LON:-80°27'31.1" 90'

LAT: 39°20'00"

MAP OF H.G. ENERGY, LLC -WATERFLOOD UNIT- BH BROWN 20

LON: 80°27'30"

LAT: 39°18'51.5"

(BOTTOM HOLE: LAT: 39°18'48.1")

SURVEY NOTES

1 - Well ties and Latitude and Longitude were measured by Topcon Hiper GA survey grade GPS. Bearings are referenced to UTM Grid North (Zone 17 North - NAD 1927).

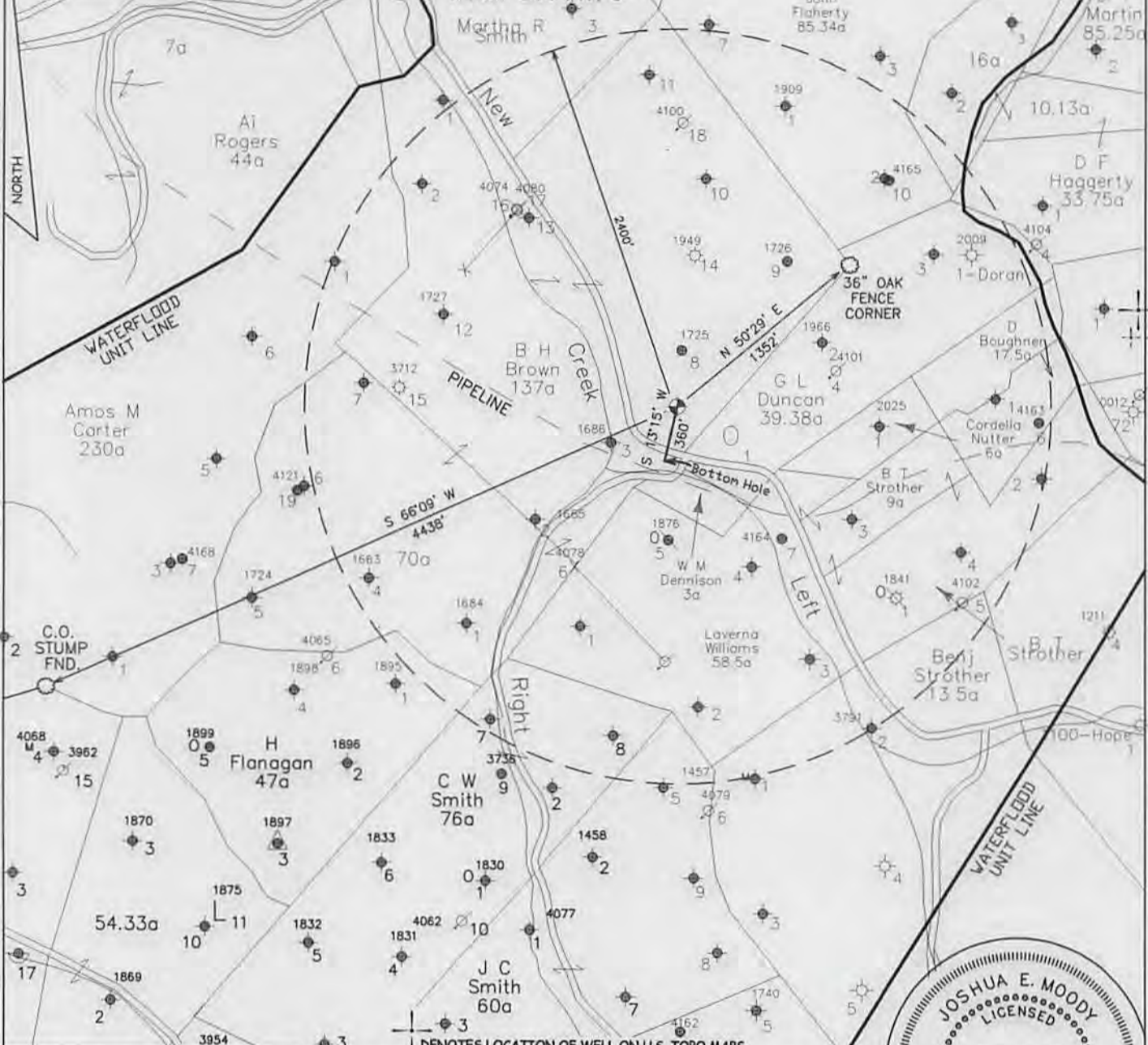
2 - Surface owners, adjoiners information, Lease names existing wells, & line mapping obtained from HGE GIS system. No survey was performed to determine lines within the Waterflood Unit-reference: HGE GIS system.

3 - No Title Opinion was provided to the Surveyor during this survey. This survey is subject to a complete title Opinion.

THERE ARE POTENTIALLY APPROXIMATELY 6 POTABLE WATER SOURCES WITHIN 1000' OF THE PROPOSED WELL. FURTHER INVESTIGATION DURING THE WATER SAMPLING PROCESS SHOULD BE DONE TO ENSURE ALL WATER SOURCES ARE ACCOUNTED FOR.

UTM Coordinates (Zone 17N-NAD 1983)	
Surface	N-4,351,806m. E-546,685m.
Bottom Hole	N-4,351,699m. E-546,660m.

LOCATION REFERENCES	
MAGNETIC BEARING	S 27° W 100.3' 8" HICKORY N 57° E 110.7' 18" MAPLE



JOB # 13-014
DRAWING # 14LAKEFLOYD FOLDER
SCALE 1" = 1000'

I DENOTES LOCATION OF WELL ON U.S. TOPO MAPS.
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 PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



MINIMUM DEGREE OF ACCURACY 1/200
PROVEN SOURCE OF ELEV. MAPPING GRADE GPS



**WEST VIRGINIA DEPARTMENT
OF ENVIRONMENTAL PROTECTION,
OFFICE OF OIL AND GAS**

MOODY LAND SURVEYING, LLC
ST. MARYS, WV 26170

JOSHUA E. MOODY, P.S. 2020
DATE 10/06/14
OPERATOR'S WELL
BH BROWN # 20

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL HORIZONTAL
(IF "GAS") PRODUCTION STORAGE DEEP SHALLOW
LOCATION: ELEVATION 1149' WATERSHED TENMILE CREEK API WELL # 47-033-05854 S
DISTRICT TEN MILE COUNTY HARRISON STATE COUNTY PERMIT

SURFACE OWNER KENNETH DAVID ELSEY ACREAGE 96.94 ACRES +/-
OIL & GAS ROYALTY OWNER MAUDE LEE JARVIS AG'T LEASE ACREAGE 213 ACRES +/-
PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION
OTHER PHYSICAL CHANGE IN WELL (SPECIFY) WELL WILL BE DRILLED DIRECTIONALLY (S 13°15' W 360')
PLUG & ABANDON CLEAN OUT & REPLUG
TARGET FORMATION 5TH SAND ESTIMATED DEPTH TVD=2,830' MD=3,310'
WELL OPERATOR H.G. ENERGY, LLC DESIGNATED AGENT MIKE KIRSCH
ADDRESS 5260 DuPONT ROAD ADDRESS 5260 DuPONT ROAD
PARKERSBURG, WV 26101 PARKERSBURG, WV 26101

12/12/14

COUNTY NAME PERMIT



HG Energy, LLC
5260 Dupont Road
Parkersburg, WV 26101
(304) 420-1100 - Office
(304) 863-3172 - Fax

ck 2799
650.00

October 13, 2014

Mr. Jeff McLaughlin
WVDEP
Division of Oil & Gas
601 57th Street
Charleston, West Virginia 25304

RE: B. H. Brown No. 20
Ten Mile District, Harrison County
West Virginia

Dear Mr. McLaughlin:

Enclosed are Forms WW-3A, WW-3B, WW-9, WW-3(B1), mylar of plat, reclamation plan, topo map and copies of the certified mailing receipts for a permit to drill a production well. Also enclosed is our check in the amount of \$650.00 to cover the associated permit fees.

Very truly yours,

Diane C White

Diane C. White

Enclosures

cc: Kenneth D. Elsey – Certified
Murray Coal – Certified
Sam Ward – Inspector

Received
Office of Oil & Gas
OCT 17 2014

12/12/14

McLaughlin, Jeffrey W

From: Diane White <dwhite@hgenergyllc.com>
Sent: Monday, December 08, 2014 12:28 PM
To: McLaughlin, Jeffrey W
Subject: Leasing Information for pending permit applications

Jeff,
JT Williams 14 – 47-033-05852 Book 105, Page 90
Elizabeth Fletcher 19 - 47-033-05849 Book 105, Page 138
BH Brown 20, 21, 22 - Book 105, Page 298

Let me know if you need anything else,
Thanks very much,
Diane

Diane C. White



HG Energy, LLC
5260 Dupont Road
Parkersburg, WV 26101
304-420-1119 (O)
304-482-0108 (C)
304-863-3172 (F)
dwhite@hgenergyllc.com