



**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

June 30, 2015

**WELL WORK PERMIT**  
**Secondary Recovery Well**

This permit, API Well Number: 47-4303486, 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: NATHANIEL MASON143  
Farm Name: BRUMFIELD, JOSHUA, WHITE, /  
**API Well Number: 47-4303486**  
**Permit Type: Secondary Recovery Well**  
Date Issued: 06/30/2015

**Promoting a healthy environment.**

**07/03/2015**

## 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](mailto:DEPOOGNotify@wv.gov) within 30 days of commencement of drilling.



4704303486S

CK# 2990  
\$65000

FORM WW-3 (B)  
1/12



1) Date: 04/06/2015  
2) Operator's Well No. Nathaniel Mason 143  
3) API Well No.: 47 - Lincoln - s  
State County Permit  
4) UIC Permit No. UIC2R04301AP

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: 910' Watershed: Straight & Bear Fork  
District: Duval County Lincoln Quadrangle Griffithsville 7.5'  
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 Jeremy James Name To Be Determined Upon Approval of Permit  
Address P. O. Box 147 Address  
Ona, WV 25545

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 Berea Depth 2878 <sup>AD</sup> Feet (top) to 2895 Feet (bottom)  
13) Estimated Depth of Completed Well, (or actual depth of existing well): 3115' <sup>AD</sup> Feet  
14) Approximate water strata depths: Fresh 300 Feet Salt 1150 Feet  
15) Approximate coal seam depths: 350'  
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 <i>RPT 04/23/15</i>
Fresh Water	7"	LS	17#	x		450'	450'		
Coal									Sizes 2.375" x 4.5"
Intermediate									
Production	4 1/2"	J-55	10.5#	x		3065'	3065'		Depths set
Tubing	2 3/8"	J-55	4.6#	x		2678'	2678'		2578'
Liners									Perforations Top Bottom

24) APPLICANT'S OPERATING RIGHTS were acquired from Nathaniel and Rhoda Mason  
by deed \_\_\_\_\_ / lease x / other contract \_\_\_\_\_ / dated 04/06/2015 [- 29 - 07 of record in the  
Lincoln County Clerk's office in lease Book 39 Page 123

Received  
Office of Oil & Gas

APR 29 2015

07/03/2015



43034865

CK# 2990  
65D-02

FORM WW-3 (A)  
1/12



1) Date: April 6, 2015  
2) Operator's Well No. Nathaniel Mason 143  
3) API Well No.: 47 - -  
State County Permit  
4) UIC Permit No. UIC2R04301AP

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

5) Surface Owner(S) To Be Served  
(a) Name Joshua Brumfield  
Address 31 Vandalia Drive  
Yawkey, WV 25573  
(b) Name Arthur & Romaline White  
Address 7564 Plum Orchard Road  
Munith, MI 49259  
(c) Name Justin White  
Address 53 Bear Fork Road  
Yawkey, WV 25573  
6) Inspector Jeremy James  
Address P. O. Box 147  
Ona, WV 25545  
Telephone 304-951-2596  
7) (a) Coal Operator  
Name NA  
Address \_\_\_\_\_  
7) (b) Coal Owner(S) With Declaration Of Record  
Name NA  
Address \_\_\_\_\_  
7) (c) Coal Lessee with Declaration Of Record  
Name NA  
Address \_\_\_\_\_

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

- (1) The Application For A Liquid Injection or Waste Disposal Well Work Permit on Form WW-3(B), which sets out the parties involved in the drilling or other work;
- (2) The plat (surveyor's map) showing the well location on Form WW-6; and
- (3) The Construction and Reclamation Plan on Form WW-9 (unless the well work is only to plug a well), which sets out the plan for erosion and sediment control and for reclamation for the site and access road.

The date proposed for the first injection or waste disposal is \_\_\_\_\_ 20 \_\_\_\_.

THE REASON YOU HAVE RECEIVED THESE DOCUMENTS IS THAT YOU HAVE RIGHTS REGARDING THE APPLICATION WHICH ARE SUMMARIZED IN THE "INSTRUCTIONS" ON THE REVERSE SIDE OF THE COPY OF THE APPLICATION [(FORM WW-3(B))] DESIGNATED TO YOU. HOWEVER YOU ARE NOT REQUIRED TO TAKE 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 Well Work Permit with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to a well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, the plat, and the Construction and Reclamation Plan 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 the mailing or delivery to the Chief.

The person signing this document shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document 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 HG Energy, LLC  
Address 5260 Dupont Road  
Parkersburg, WV 26101  
By: Diane White  
Its: Agent  
Signature: Diane White

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Office of Oil & Gas

APR 29 2015

07/03/2015

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WW-2B1  
(5-12)

Well No. Nathaniel Mason

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 Sturm Environmental Lab  
Sampling Contractor Sturm Environmental Lab

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

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.

Surface Owners with Water Sources Identified for Testing:

- \* Arthur White  
7564 Plum Orchard Road  
Munith MI 49259
- \* Joshua Brumfield  
31 Vandalia Drive  
Yawkey WV 25573

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Office of Oil & Gas  
APR 29 2015

07/03/2015



43034865

WW-9  
Rev. 5/10

Page \_\_\_\_\_ of \_\_\_\_\_  
API Number 47 - \_\_\_\_\_ - \_\_\_\_\_  
Operator's Well No. Nathaniel Mason 143

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 Straight & Bear Fork Quadrangle Griffithsville 7.5'

Elevation 910' County Lincoln District Duval

Description of anticipated Pit Waste: Fluids encountered while drilling shallow 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 mil

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number \_\_\_\_\_ )
- Reuse (at API Number \_\_\_\_\_ )
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain \_\_\_\_\_ )

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

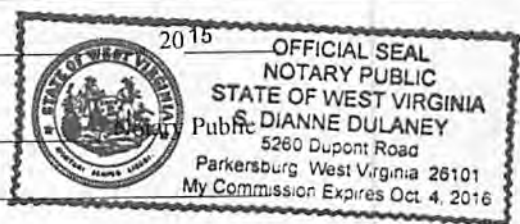
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Office of Oil & Gas

APR 29 2015

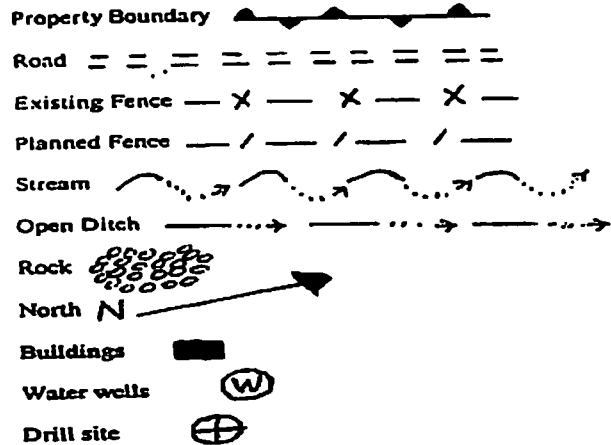
Subscribed and sworn before me this 7th day of April

[Signature]

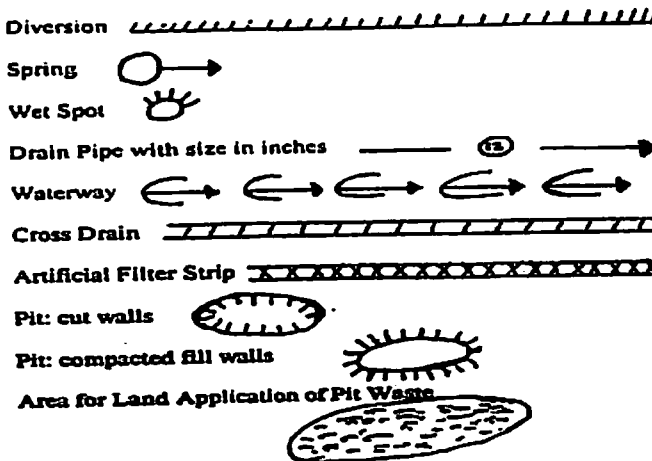
My commission expires Oct. 4, 2016



07/03/2015



**LEGEND**



Proposed Revegetation Treatment: Acres Disturbed 1.0 acres Prevegetation pH \_\_\_\_\_

Lime 3 Tons/acre or to correct to pH 6.5

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

Mulch Straw 2 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

**\*\*Sediment Control to be Maintained at all Times\*\***

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

Photocopied section of involved 7.5' topographic sheet.

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Office of Oil & Gas

Plan Approved by: Ralph D. Triplett

APR 29 2015

Comments: \_\_\_\_\_

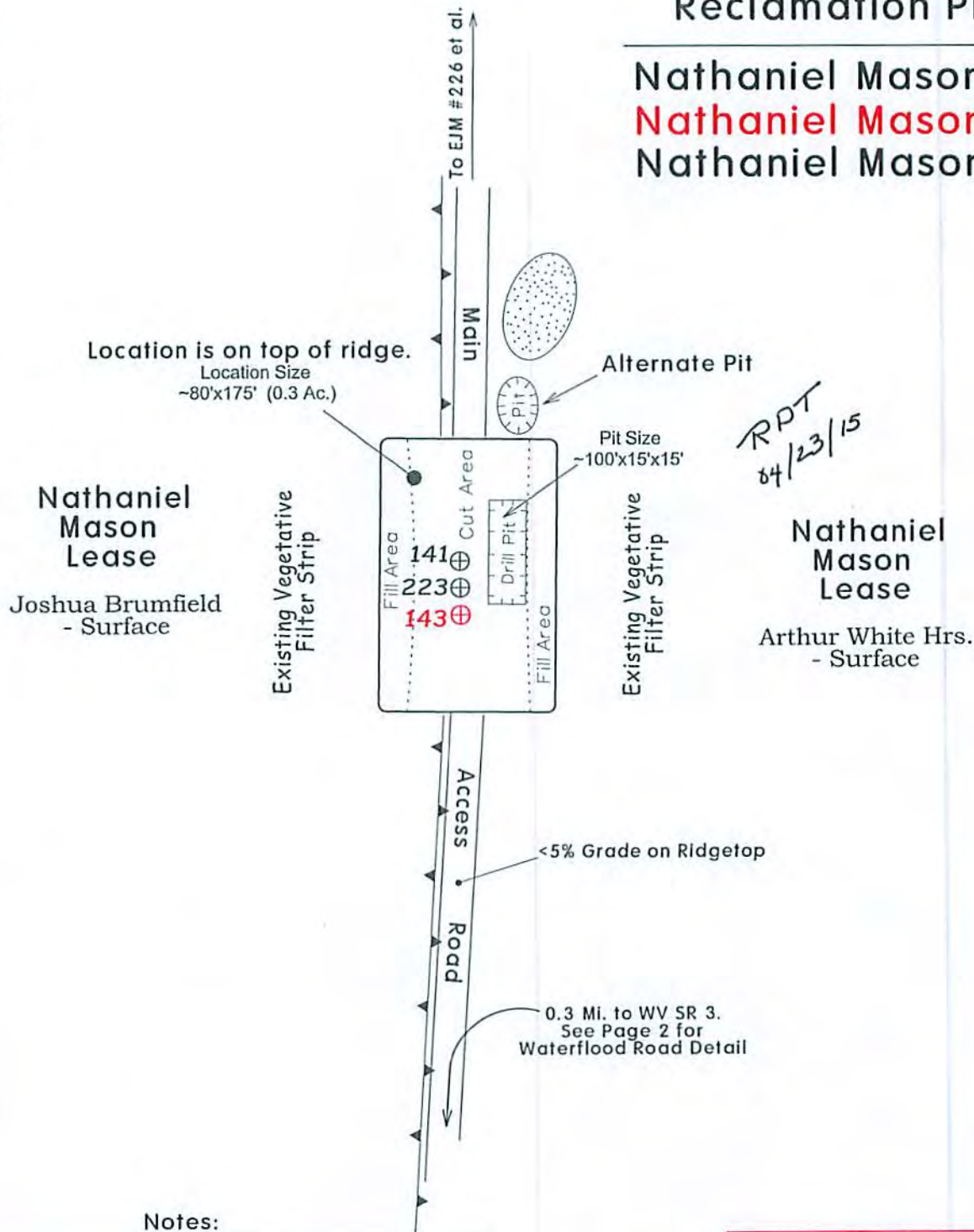
Title: District Inspector

Date: April 23, 2015

Field Reviewed?  Yes  No



Reclamation Plan For:  
 Nathaniel Mason No. 141  
 Nathaniel Mason No. 143  
 Nathaniel Mason No. 223



Notes:

- REQUESTED PERMIT IS FOR DRILLING OF NEW WELL.
- SOME ACCESS ROADS ARE EXISTING AND WILL BE UPGRADED TO WVDEP STANDARDS. NEW STRUCTURES WILL BE INSTALLED AS SHOWN.
- STOCKPILE TOPSOIL FOR RE-DRESSING LOCATION DURING RECLAMATION
- 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.
- STACK BRUSH BELOW DISTURBED AREAS FOR SEDIMENTATION CONTROL.
- DRAWING NOT TO SCALE.

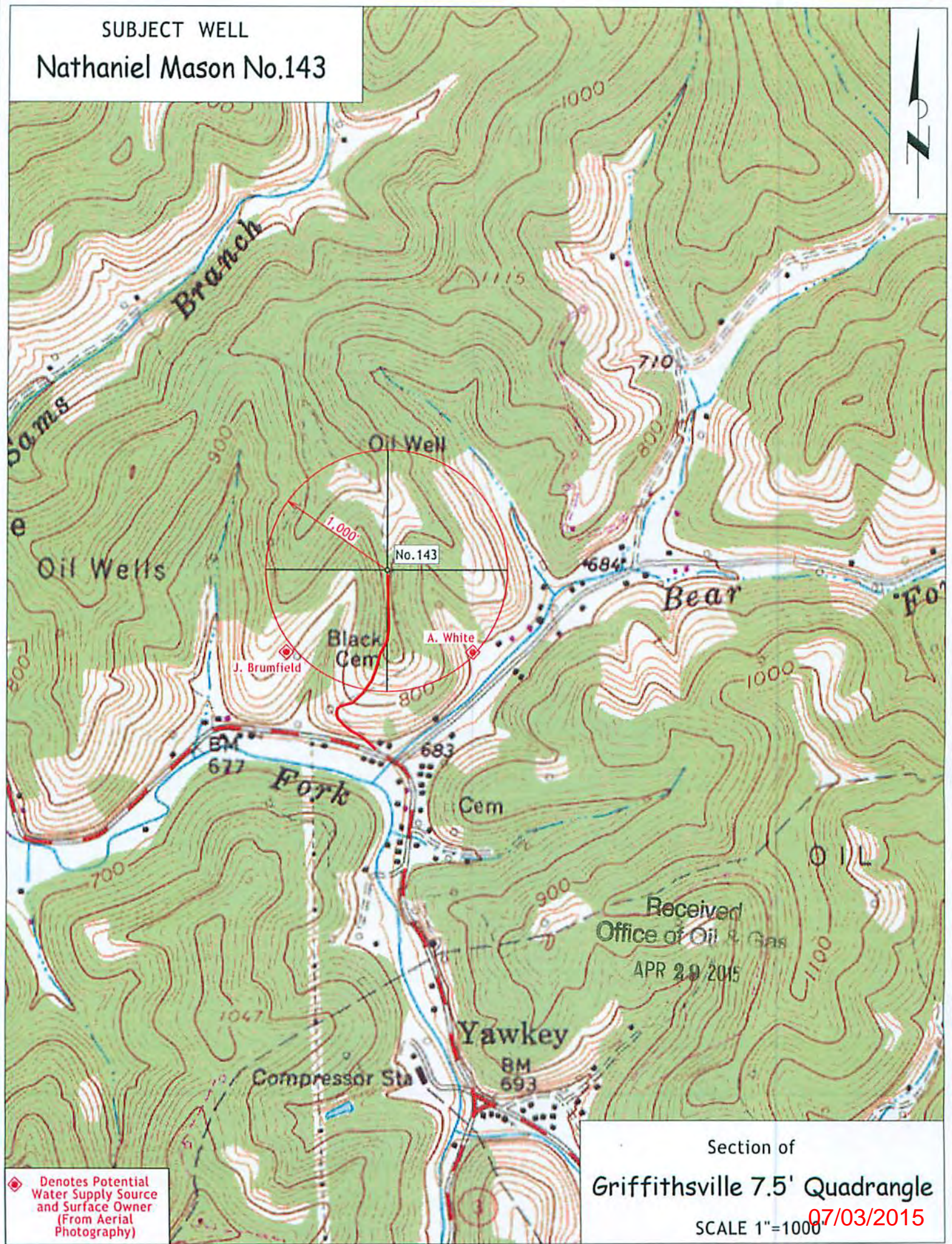
**NOTE**  
 REFER TO THE WVDEP  
 EROSION AND SEDIMENT CONTROL  
 FIELD MANUAL VER. MAY 2012 FOR  
 BMPs CONTROLLING EROSION AND  
 SEDIMENT FROM SOIL-DISTURBING  
 OPERATIONS.

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SUBJECT WELL  
Nathaniel Mason No.143

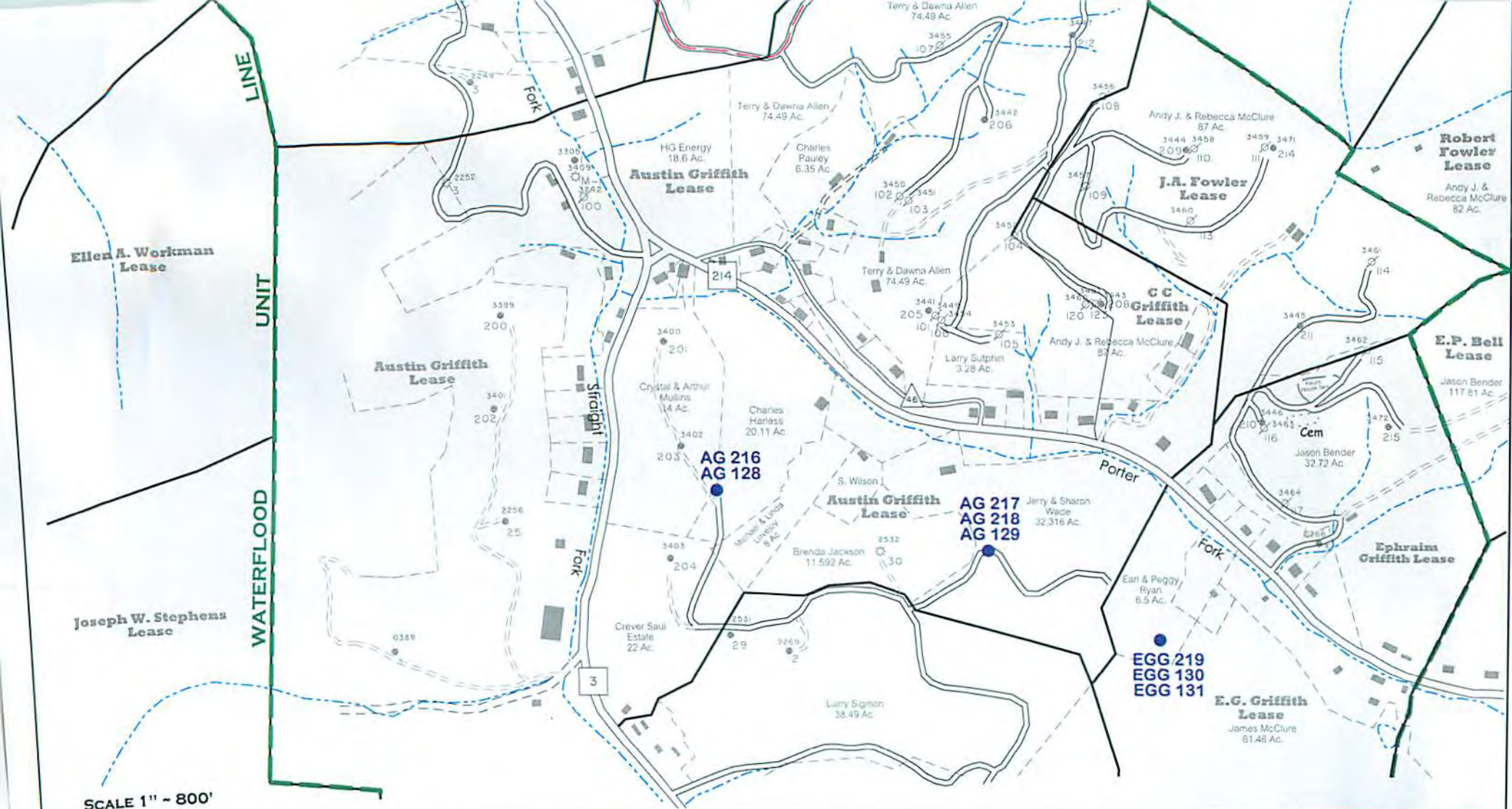


◆ Denotes Potential Water Supply Source and Surface Owner (From Aerial Photography)

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Office of Oil & Gas  
APR 29 2015

Section of  
Griffithsville 7.5' Quadrangle  
SCALE 1"=1000  
07/03/2015





# GRIFFTHSVILLE WATERFLOOD

Lincoln County, W.Va.

Received  
**RECLAMATION PLAN**  
 Office of Oil & Gas  
**SHOWING ROAD SYSTEMS**  
 APR 29 2015  
**TO BE USED FOR 2015**  
**DRILLING PROGRAM**  
**(NORTH)**

## NOTES

1. REFER TO THE WVDEP EROSION AND SEDIMENTATION CONTROL MANUAL (VER. MAY 20, 2013) FOR BMP'S CONTROLLING EROSION AND SEDIMENTATION FROM ALL SOIL-DISTURBING OPERATIONS.
2. SEE PAGE ONE OF RECLAMATION PLAN FOR DETAILS OF NEW ROAD CONSTRUCTION AND ROAD UPGRADES FROM POINT (A) TO DRILL SITE LOCATION.
3. EXISTING WATERFLOOD ACCESS ROADS WILL BE MAINTAINED IN PRESENT CONDITION. THESE ROADS WERE CONSTRUCTED UNDER CONDITIONS SET FORTH IN VARIOUS DRILLING PERMITS ISSUED BY WVDEP-OOG PRIOR

## LEGEND

- EXISTING WATERFLOOD ROADS TO BE USED.
- OTHER EXISTING MAIN WATERFLOOD ROADS (POSSIBLE ACCESS).
- EXISTING LEASE OR FARM ROADS TO BE UPGRADED.
- NEW ROADS TO BE CONSTRUCTED.
- AG 216
- LOCATION FOR PROPOSED WELLS
- POTENTIAL WATER



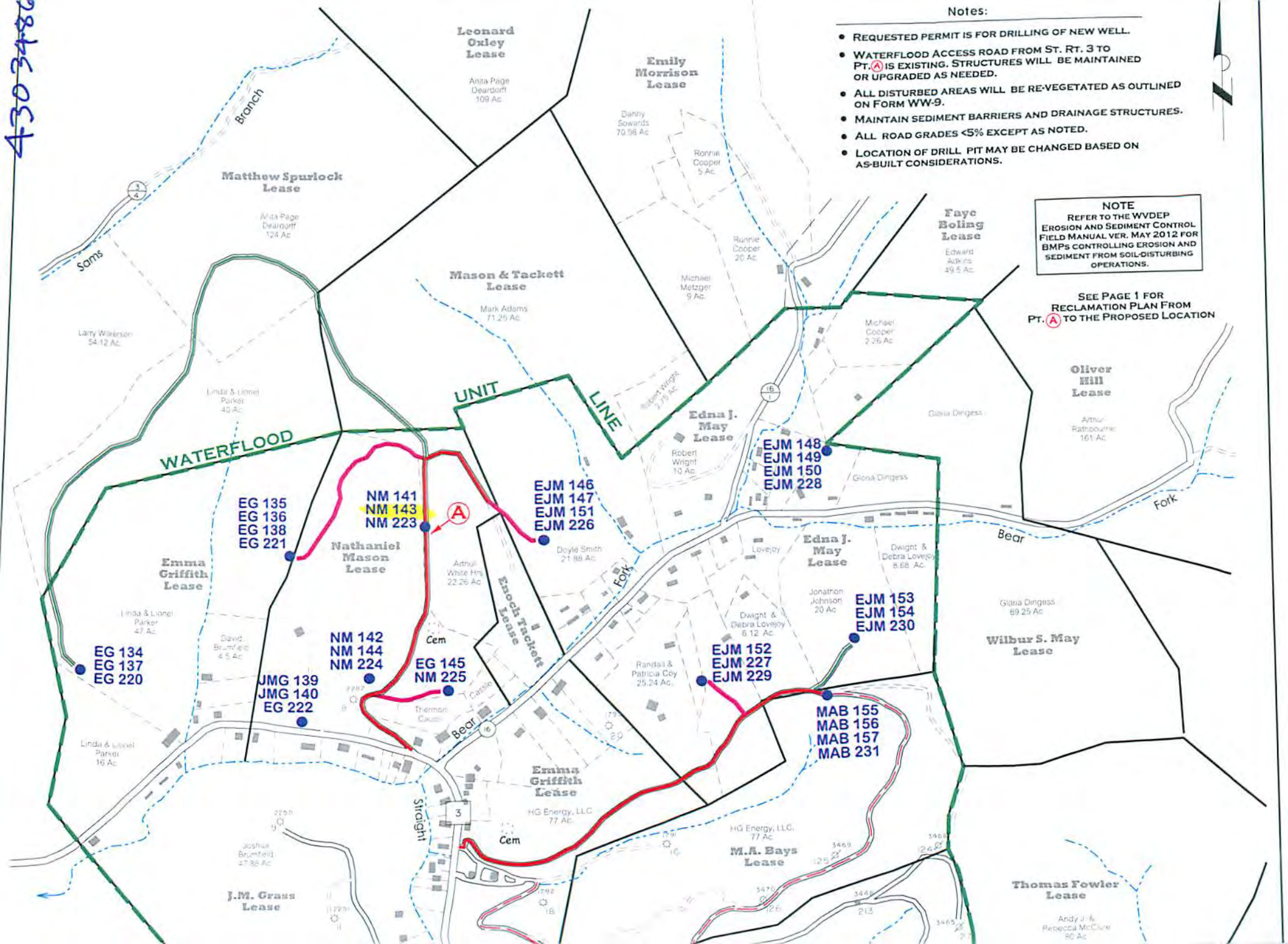
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Notes:

- REQUESTED PERMIT IS FOR DRILLING OF NEW WELL.
- WATERFLOOD ACCESS ROAD FROM ST. RT. 3 TO PT. A IS EXISTING. STRUCTURES WILL BE MAINTAINED OR UPGRADED AS NEEDED.
- 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.

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

SEE PAGE 1 FOR  
 RECLAMATION PLAN FROM  
 PT. A TO THE PROPOSED LOCATION



**Oliver Hill Lease**  
 Arthur Rathbourn  
 161 Ac

**Wilbur S. May Lease**

**Thomas Fowler Lease**  
 Andy J. &  
 Rebecca McClure  
 80 Ac

**Leonard Oxley Lease**  
 Anita Page Deardorff  
 109 Ac

**Emily Morrison Lease**  
 Denny Sowards  
 70.98 Ac

**Matthew Spurlock Lease**  
 Anita Page Deardorff  
 124 Ac

**Mason & Tackett Lease**  
 Mark Adams  
 71.25 Ac

**Faye Boling Lease**  
 Edward Adkins  
 49.5 Ac

Larry Wikinson  
 54.12 Ac

Linda & Lionel Parker  
 40 Ac

**UNIT LINE**

**Edna J. May Lease**  
 Robert Wright  
 10 Ac

Gloria Dingess

**WATERFLOOD**

EG 135  
 EG 136  
 EG 138  
 EG 221

**Nathaniel Mason Lease**

NM 141  
 NM 143  
 NM 223

EJM 146  
 EJM 147  
 EJM 151  
 EJM 226

EJM 148  
 EJM 149  
 EJM 150  
 EJM 228

**Emma Griffith Lease**

Arthur White Hrs  
 22.26 Ac

**Enoch Tackett Lease**

**Edna J. May Lease**

EJM 153  
 EJM 154  
 EJM 230

EG 134  
 EG 137  
 EG 220

NM 142  
 NM 144  
 NM 224

EG 145  
 NM 225

EJM 152  
 EJM 227  
 EJM 229

Gloria Dingess  
 69.25 Ac

JMG 139  
 JMG 140  
 EG 222

Cem

Thermon

MAB 155  
 MAB 156  
 MAB 157  
 MAB 231

Linda & Lionel Parker  
 16 Ac

**J.M. Grass Lease**

3

**Emma Griffith Lease**  
 HG Energy, LLC  
 77 Ac

**M.A. Bays Lease**  
 HG Energy, LLC  
 77 Ac

3469  
 3468  
 3465

Joshua Brumfield  
 47.86 Ac

3465  
 3462  
 3461



43034865

(BOT. HL: LON:-81°58'02.0") LON: -81°58'05.6"

2840'

LAT:38°15'00"

LON:81°57'30"

4790'

LAT:38°14'12.7"

(BOTTOM HOLE: LAT:38°14'07.2")

**SURVEY NOTES**

1 - Well ties and Latitude and Longitude were measured by DGPS (Sub-meter Mapping Grade). Bearings are referenced to UTM Grid North (Zone 17 North - NAD 1983).

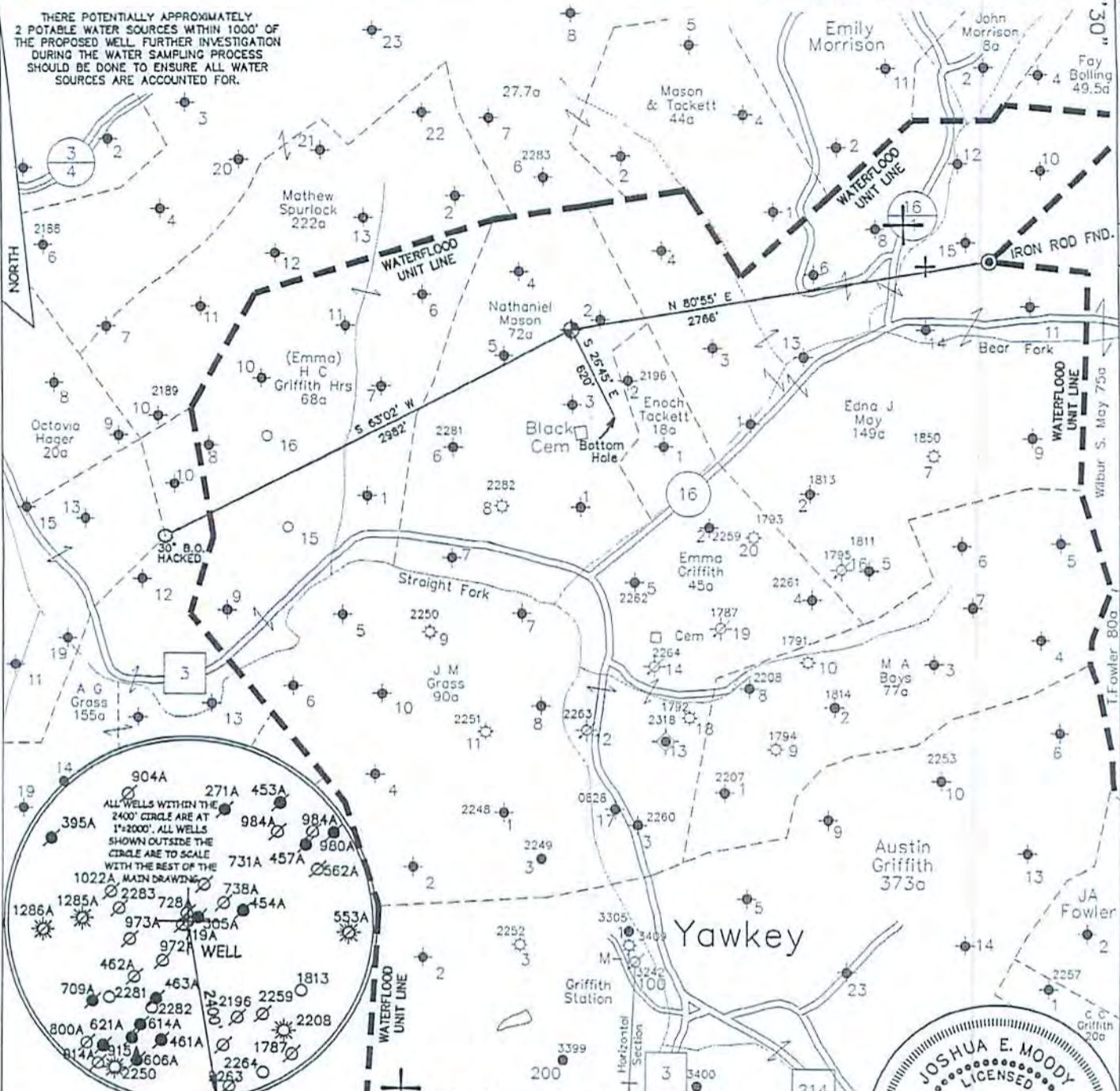
2 - Surface owners and adjoining information obtained from the Lincoln County Assessor's tax records.

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

UTM Coordinates (Zone 17N-NAD 1983)	
Surface	N-4,232,548m. E-415,279m.
Bottom Hole	N-4,232,379m. E-415,364m.

LOCATION REFERENCES	
MAGNETIC BEARING	
S 54° W 79.9'	10' R.O.
N 33° W 130.3'	6' W.O.

**MAP OF  
H.G. ENERGY, LLC  
-WATERFLOOD UNIT-  
NATHANIEL MASON 143**



JOB # 14-023  
DRAWING # 15HG LC FOLDER  
SCALE 1" = 1000'  
MINIMUM DEGREE OF ACCURACY 1/200  
PROVEN SOURCE OF ELEV. 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 PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



**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

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS

DATE 3/10/15  
OPERATOR'S WELL NATHANIEL MASON # 143

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  HORIZONTAL   
(IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW   
LOCATION: ELEVATION 910' WATERSHED STRAIGHT & BEAR FORK API WELL #  
DISTRICT DUVAL COUNTY LINCOLN 47 - 043 - 03486  
QUADRANGLE GRIFFITHSVILLE 7.5' STATE COUNTY PERMIT

SURFACE OWNER JOSHUA D. BRUMFIELD & ARTHUR WHITE, ETAL ACREAGE 42.72 AC.+/- & 22.26 AC.+/-  
OIL & GAS ROYALTY OWNER HG ENERGY, LLC ET AL LEASE ACREAGE 80 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 26°45' E 620')  
PLUG & ABANDON  CLEAN OUT & REPLUG   
TARGET FORMATION BERA ESTIMATED DEPTH TVD=2,565' MD=3,115'  
WELL OPERATOR H.G. ENERGY, LLC DESIGNATED AGENT D. WHITE  
ADDRESS 5260 DuPONT ROAD ADDRESS 5260 DuPONT ROAD  
PARKERSBURG, WV 26101 PARKERSBURG, WV 26101

FORM WW-6 APR 29 2015 LEASE # 71124-50

07/03/2015

Received Office of Oil & Gas



(BOT. HL: LON:-81°58'02.0") LON: -81°58'05.6"

2840'

LAT:38°15'00"

LON:81°57'30"

4790'

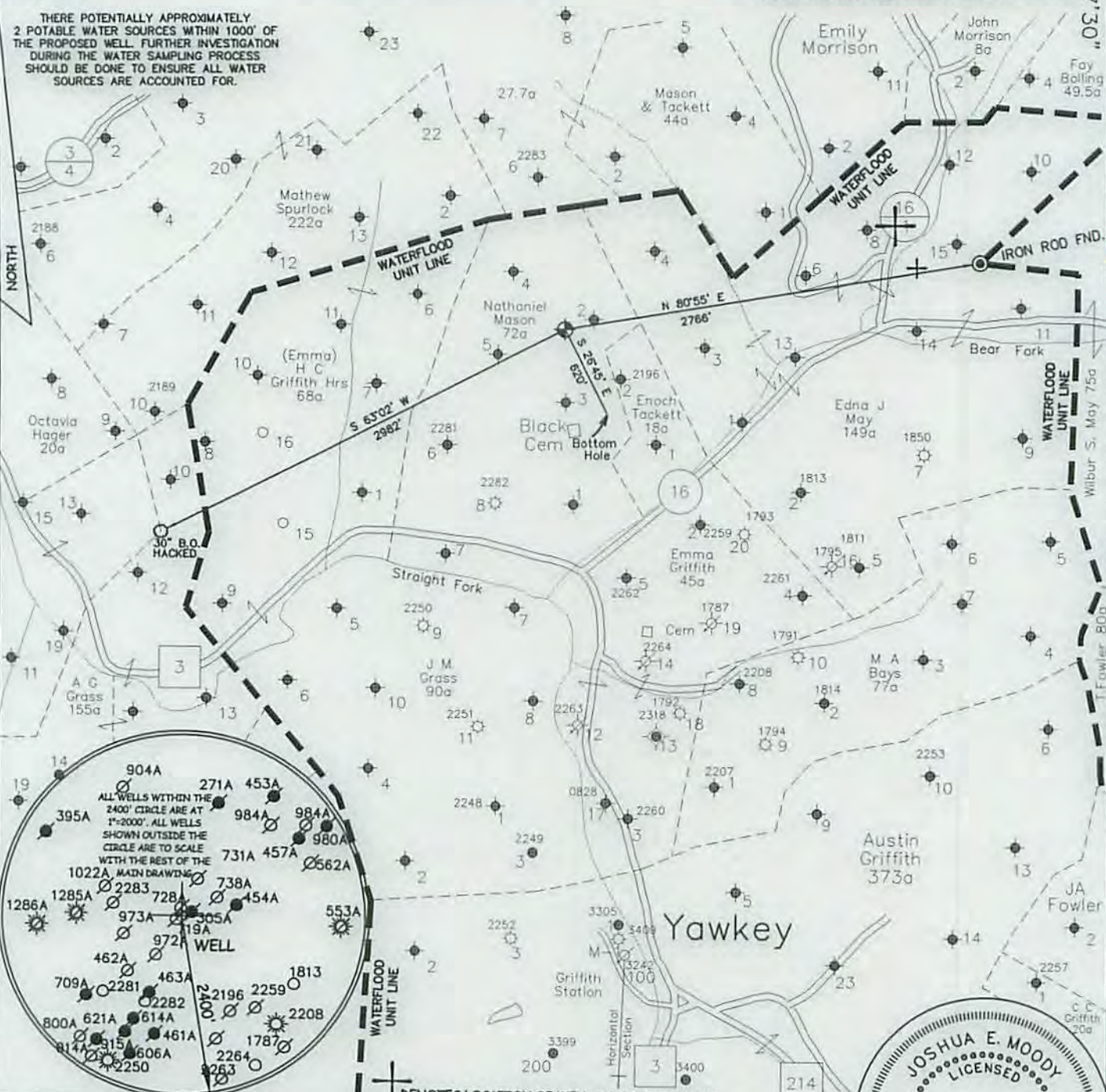
LAT:38°14'12.7"

(BOTTOM HOLE: LAT:38°14'07.2")

- SURVEY NOTES**
- Well ties and Latitude and Longitude were measured by DGPS (Sub-meter Mapping Grade). Bearings are referenced to UTM Grid North (Zone 17 North - NAD 1983).
  - Surface owners and adjacent information obtained from the Lincoln County Assessor's tax records.
  - No Title Opinion was provided to the Surveyor during this survey. This survey is subject to a complete Title Opinion.

UTM Coordinates (Zone 17N-NAD 1983)		LOCATION REFERENCES	
Surface	N-4,232,548m. E-415,279m.	<b>MAGNETIC BEARING</b> S 54° W 79.9' 10" R.O. N 33° W 130.3' 6" W.O.	
Bottom Hole	N-4,232,379m. E-415,364m.		

# MAP OF H.G. ENERGY, LLC -WATERFLOOD UNIT- NATHANIEL MASON 143



JOB # 14-023  
DRAWING # 15HG LC FOLDER  
SCALE 1" = 1000'  
MINIMUM DEGREE OF ACCURACY 1/200  
PROVEN SOURCE OF ELEV. 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 PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



**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 3/10/15  
OPERATOR'S WELL NATHANIEL MASON # 143

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  HORIZONTAL   
(IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW   
LOCATION: ELEVATION 910' WATERSHED STRAIGHT & BEAR FORK API WELL # \_\_\_\_\_  
DISTRICT DUVAL COUNTY LINCOLN 47 - 43 - 03486 S  
QUADRANGLE GRIFFITHSVILLE 7.5' STATE COUNTY PERMIT

SURFACE OWNER JOSHUA D. BRUMFIELD & ARTHUR WHITE, ETAL ACREAGE 42.72 AC.+/- & 22.26 AC.+/-  
OIL & GAS ROYALTY OWNER HG ENERGY, LLC ET AL LEASE ACREAGE 80 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 26°45' E 620')  
PLUG & ABANDON  CLEAN OUT & REPLUG   
TARGET FORMATION BEREA ESTIMATED DEPTH TVD=2,565' MD=3,115'  
WELL OPERATOR H.G. ENERGY, LLC DESIGNATED AGENT D. WHITE  
ADDRESS 5260 DuPONT ROAD ADDRESS 5260 DuPONT ROAD  
PARKERSBURG, WV 26101 PARKERSBURG, WV 26101

07/03/2015