



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

October 16, 2014

WELL WORK PERMIT
Rework-Secondary Recovery

This permit, API Well Number: 47-3304933, 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: W. F. WILLIAMS 111
Farm Name: HUFFMAN, BRIAN V.

API Well Number: 47-3304933

Permit Type: Rework-Secondary Recovery

Date Issued: 10/16/2014

Promoting a healthy environment.

10/17/2014

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.

3304933WS

FORM WW-3 (B)
1/12



1) Date: 09/03/2014
2) Operator's Well No. W. F. Williams No. 111
3) API Well No.: 47 - Harrison - 04933
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: 1348' Watershed: Lick Run
District: Ten Mile County Harrison Quadrangle Salem 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 Sam Ward Name To Be Determined
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 2950' Feet (top) to 2960' Feet (bottom)

13) Estimated Depth of Completed Well, (or actual depth of existing well): 3,110' Feet
14) Approximate water strata depths: Fresh 495' Feet Salt 1350' Feet

15) Approximate coal seam depths: 610'
16) Is coal being mined in the area? Yes _____ No _____

17) Virgin reservoir pressure in target formation 1250 psig Source Estimated psig (BHFP)
18) Estimated reservoir fracture pressure 2650

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		676'	676'	CTS	RECEIVED Office of Oil and Gas Sizes
Coal									
Intermediate									Depths set SEP 2 4 2014 2750'
Production	4 1/2"	J-55	10.5#	X		3091'	3091'	150 sks	
Tubing	2 3/8"	J-55	4.6#	X		2850'	2850'		Perforations
Liners									Top Bottom

24) APPLICANT'S OPERATING RIGHTS were acquired from Williams, W. F., et ux
by deed _____ / lease X / other contract _____ / dated 08/15/1896 of record in the
Harrison County Clerk's office in _____ Book 92 Page 49

10/17/2014

1/13/2010

API# 47 33 04933

State of West Virginia
Division of Environmental Protection
Section of Oil and Gas

COPY

Well Operator's Report of Well Work

Farm name: HUFFMAN, BRIAN V. Operator Well No.: W.F. WILLIAMS 111

LOCATION: Elevation: 1.348' Quadrangle: SALEM 7.5'

District: TEN MILE County: HARRISON
Latitude: 5,625 Feet south of 39 Deg 17 Min 30 Sec.
Longitude: 25 Feet west of 80 Deg 27 Min 30 Sec.

Company: EAST RESOURCES, INC.
P.O. BOX 5519
VIENNA, WV 26105-5519

Agent: PHILIP S. ONDRUSEK

Inspector: TIM BENNETT

Permit Issued: 01/13/10
Well work Commenced: 01/29/10
Well work Completed: 02/25/10

Verbal plugging permission granted on:
Rotary X Cable _____ Rig _____

Total Depth (feet) 3110'

Fresh water depths (ft) NA

Salt water depths (ft) NA

Is coal being mined in area (Y/N) N

Coal Depths (ft): NA

Casing Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
7"	676'	676'	165 sks
4 1/2"	3091.4'	3091.4'	150 sks

OPEN FLOW DATA * WATERFLOOD INJECTOR

Producing formation Fifth Sand Pay zone (ft) 2949.5'-2952', 2954'-2957'

Gas: Initial open flow * MCF/d Oil: Initial open flow * Bbl/d
 Final open flow * MCF/d Final open flow * Bbl/d
 Time of open flow between initial and final tests _____ Hours

Static rock pressure _____ psig (surface pressure) _____ after _____ Hours

Second producing formation _____ Pay zone depth (ft) _____

Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
 Final open flow _____ MCF/d Final open flow _____ Bbl/d
 Time of open flow between initial and final tests _____ Hours

Static rock pressure _____ psig (surface pressure) _____ after _____ Hours

NOTE: ON BACK OF THIS FORM, PUT THE FOLLOWING: 1) DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2) THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For: EAST RESOURCES, INC.

By: [Signature]

Date: 5/12/10 10/17/2014

Treatment: Treated perforations, 2954'-2959', w/ 500 gals 15% HCl.

Well Log :		
0	246	Sand and Shale
246	260	Sand
260	304	Shale
304	320	Sand
320	427	Shale
427	498	Sand
498	544	Shale
544	554	Sand
554	617	Shale
617	640	Sand
640	758	Shale
758	774	Sand
774	973	Shale
973	984	Sand
984	1214	Shale
1214	1230	Sand
1230	1350	Shale
1350	1438	Sand
1438	1694	Shale
1694	1705	Sand
1705	1730	Shale
1730	1746	Sand
1746	1848	Shale
1848	1900	Sand
1900	1912	Shale
1912	1932	Sand
1932	1950	Shale
1950	1960	Sand
1960	1990	Shale
1990	2072	Big Lime
2072	2130	Big Injun
2130	2542	Shale
2542	2556	Sand
2556	2638	Shale
2638	2660	Sand
2660	2670	Shale
2670	2794	Sand
2794	2950	Shale
2950	2960	Fifth Sand
2960	2992	Shale
2992	3002	Sand
3002	3110	Shale
3110		TD

7012 3460 0002 6850 603E

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Certified Fee	3.30
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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	\$ 7.61

Postmark Here

WFVII

Sent To: Brian Huffman ✓
 Street, Apt. No.; or PO Box No.: 768 Lick Run Road
 City, State, ZIP+4: Salem, WV 26426

PS Form 3800, August 2006 See Reverse for Instructions

7012 3460 0002 6850 6019

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

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WFVII

Sent To: Wolf Run Mining Company ✓
 Street, Apt. No.; or PO Box No.: 2708 Cranberry Square
 City, State, ZIP+4: Morgantown WV 26505

PS Form 3800, August 2006 See Reverse for Instructions

7012 3460 0002 6850 6026

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

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WFVII

Sent To: Belva & Earl Jenkins ✓
 Street, Apt. No.; or PO Box No.: 515 Still House Road
 City, State, ZIP+4: Salem WV 26426

PS Form 3800, August 2006 See Reverse for Instructions

RECEIVED
 Office of Oil and Gas
 SEP 24 2014
 WV Department of Environmental Protection
 10/17/2014

3304933WS

WW-9
Rev. 5/10

Page 49 of _____
API Number 47 - 033 - 04933
Operator's Well No. _____ W. F. Williams No. 111

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 Lick Run Quadrangle Salem 7.5'
Elevation 1348' County Harrison District Ten Mile

Description of anticipated Pit Waste: Fluids encountered in stimulating injection 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 _____)

SDW
9/15/2014

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. Air, freshwater
-If oil based, what type? Synthetic, petroleum, etc. NA
Additives to be used? Water, soap, KCl
Will closed loop system be used? _____
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? _____

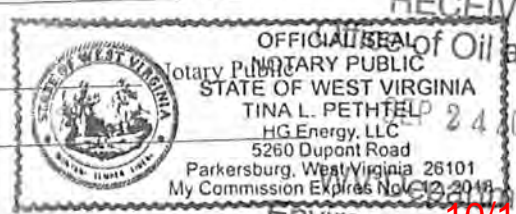
I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations 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.

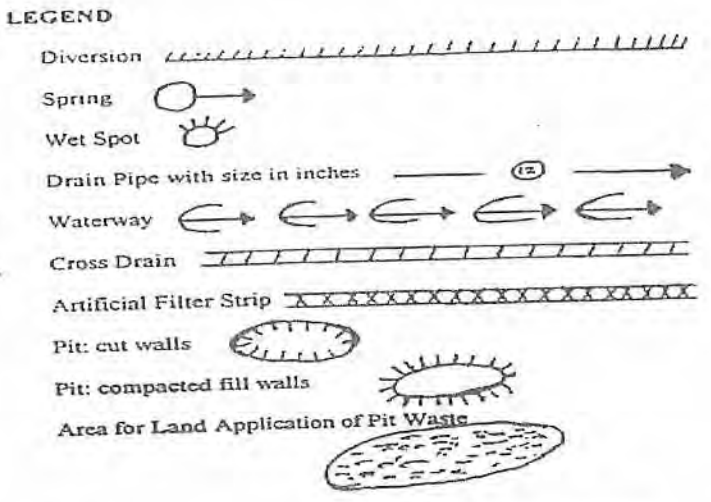
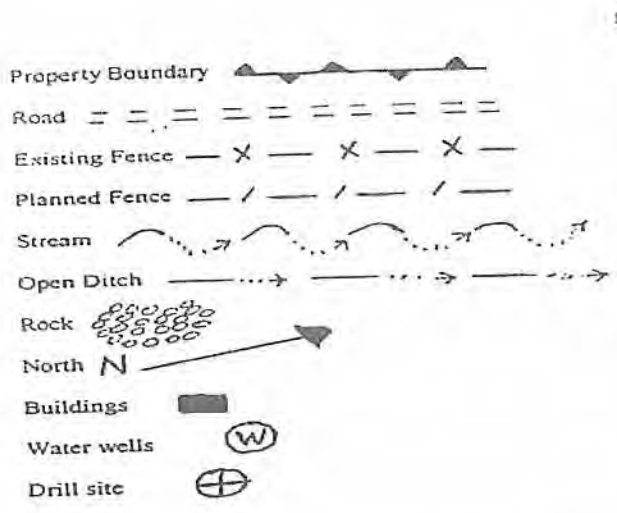
Company Official Signature Diane White
Company Official (Typed Name) Diane White
Company Official Title Accountant

Subscribed and sworn before me this 3rd day of September, 2014

[Signature]
My commission expires Nov. 12 2018



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Department of
Environmental Protection
10/17/2014



Proposed Revegetation Treatment: Acres Disturbed Approx .5 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 2 Tons/acre

Seed Mixtures

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

Seed Type	Area II	lbs/acre
Tall Fescue		40
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 J O'Connell

Comments: Seed & mulch all disturbed areas as soon as reasonably possible & Upgrade ETS as needed.

Title: Oil & Gas Inspector

Date: 9/15/2014

Field Reviewed? (Harrison) Yes No

RECEIVED Office of Oil and Gas

SEP 24 2014

WV Department of Environmental Protection 10/07/2014

Reclamation Plan For:

W.F. Williams No. 111

47-033-4933



W.B. Carpenter Lease

Earl & Belva Junkins
- Surface Owner

(See Attached Detail
for Access Road to
County Road)

1.2 Mi. to
SLS (31)

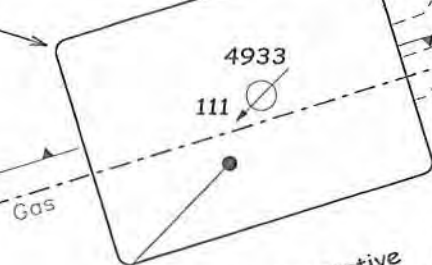
250' of 20% Grade

Location is on Ridgetop
No Diversion Required

Existing Vegetative
Filter Strip

4933

111



Pipeline

Existing Vegetative
Filter Strip

Brian V. Huffman
- Surface Owner

10/15/14
ww-9
SUGGESTS USE
OF PIT.
gwm

Note:
This is an existing well
and location. No pit will
be required for planned
stimulation treatment.

NOTE:

WELL LOCATION WAS BUILT AND RECLAIMED UNDER DRILLING PERMIT No.47-033-4933. ONLY MINIMAL EARTHWORK WILL BE REQUIRED FOR PROPOSED WELL WORK. ALL DISTURBED AREAS WILL BE RE-VEGETATED AS PER THE SEEDING PLAN ON FORM WW-9. A SMALL WORKOVER PIT WILL BE CONSTRUCTED TO CONTAIN ANY FLUIDS RECOVERED DURING PROPOSED WELL WORK.

SDW
9/15/2014

W.F. Williams Lease

Notes:

- Requested permit is for stimulation of existing well.
- Access road from Co. Rd. 31 to location is existing. Structures will be maintained.
- All disturbed areas will be re-vegetated as outlined on Form WW-9.
- Maintain sediment barriers and drainage structures.

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

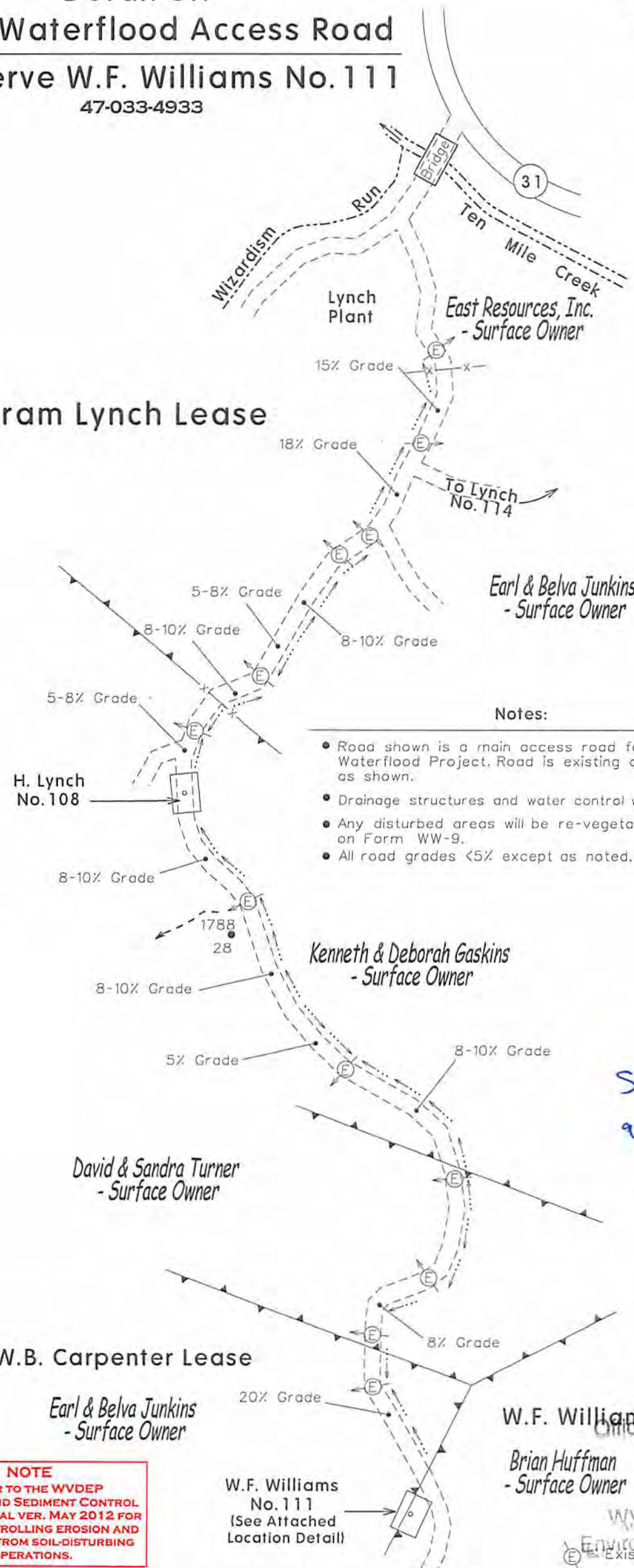
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Office of Oil and Gas

Department of
Environmental Protection
10/17/2014
Note: Drawing not to Scale

Detail of: Main Waterflood Access Road To Serve W.F. Williams No. 111 47-033-4933



Hiram Lynch Lease



Notes:

- Road shown is a main access road for the Wolf Summit Waterflood Project. Road is existing and has been upgraded as shown.
- Drainage structures and water control will be maintained.
- Any disturbed areas will be re-vegetated as outlined on Form WW-9.
- All road grades <5% except as noted.

SDW
9/15/2014

10/17/2014

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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Office of Oil and Gas
Brian Huffman
- Surface Owner
Sep 9 2014
WV Department of
Environmental Protection
Existing Ditch Relief Culvert

W.F. Williams
No. 111
(See Attached
Location Detail)

Earl & Belva Junkins
- Surface Owner

David & Sandra Turner
- Surface Owner

Kenneth & Deborah Gaskins
- Surface Owner

H. Lynch
No. 108

Earl & Belva Junkins
- Surface Owner

East Resources, Inc.
- Surface Owner

Lynch
Plant

Bridge

31

Wizardism
Run

Ten
Mile
Creek

15% Grade

18% Grade

To Lynch
No. 114

5-8% Grade

8-10% Grade

8-10% Grade

5-8% Grade

8-10% Grade

1788
28

8-10% Grade

5% Grade

8-10% Grade

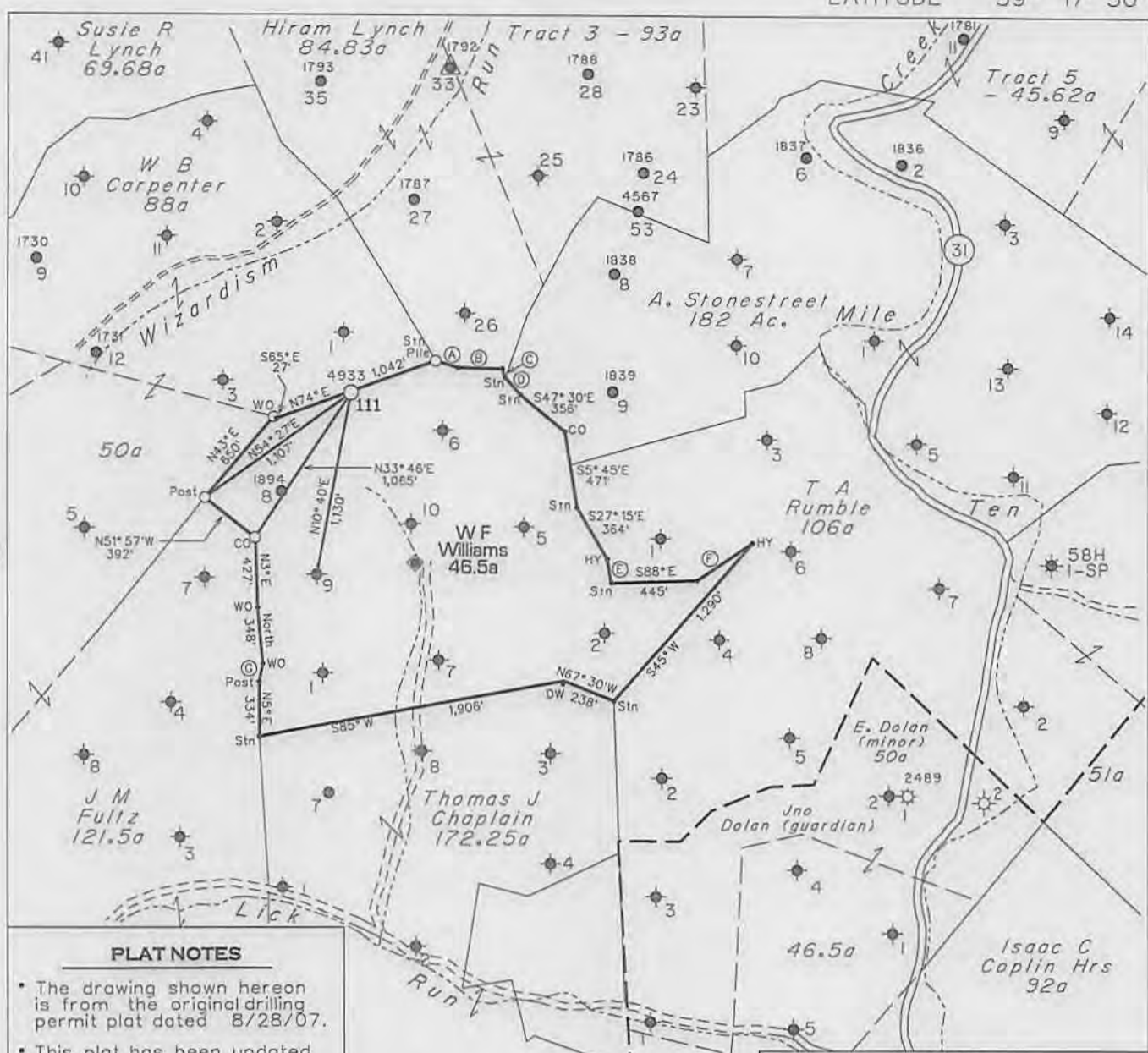
W.B. Carpenter Lease

8% Grade

20% Grade

W.F. Williams Lease

Brian Huffman
- Surface Owner



PLAT NOTES

- The drawing shown hereon is from the original drilling permit plat dated 8/28/07.
- This plat has been updated to show current surface ownership and as-drilled Latitude & Longitude.
- Latitude & Longitude shown was measured by DGPS - Sub-Meter Mapping Grade (NAD 1927)

UTM Coordinates (NAD83) Meters
 N - 4,347,565
 E - 543,126

CALL TABLE	
(A) S70° 00'E 142'	(B) S85° 45'E 269'
(C) S13° 30'E 59'	(D) S39° 45'E 138'
(E) S5° 45'E 190'	(F) N60° 00'E 409'
(G) N16° 30'E 114'	

— DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

FILE NO. _____
 MAP NO. _____ N _____ S _____ E _____ W _____
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY _____
 PROVEN SOURCE OF ELEVATION WVDEP Records

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 MINES.

(SIGNED) *Timothy P. Roush*
 TIMOTHY P. ROUSH PS 793



WEST VIRGINIA
 Division of Environmental Protection
 Office of Oil and Gas
 601 57th Street
 Charleston, West Virginia 25304



DATE August 25, 2014
 FARM W.F. Williams No.111
 API WELL NO. 47-033-04933 *WS*

WELL TYPE: OIL ___ GAS ___ LIQUID INJECTION WASTE DISPOSAL ___ CORE ___
 (IF "GAS") PRODUCTION ___ STORAGE ___ DEEP ___ SHALLOW ___
 LOCATION: ELEVATION 1,348' WATERSHED Lick Run
 DISTRICT Ten Mile COUNTY Harrison
 QUADRANGLE Salem 7.5'

SURFACE OWNER Brian V. Huffman ACREAGE 102.35 Ac.
 OIL & GAS ROYALTY OWNER Clyde Williams et al. LEASE ACREAGE 102 Ac. 10/17/2014
 LEASE NO. 23876-50

PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
 TARGET FORMATION Fifth Sand ESTIMATED DEPTH 3,110'
 WELL OPERATOR HG Energy, LLC DESIGNATED AGENT Diane White
 ADDRESS 5260 DuPont Road ADDRESS 5260 DuPont Road
 Parkersburg, WV 26101 Parkersburg, WV 26101



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

3304933WS

✓ 2749.00
650.00

September 3, 2014

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

RE: W. F. Williams No. 111 (47-033-4933)
Tenmile District, Harrison County
West Virginia

Dear Mr. McLaughlin:

Enclosed are Forms WW-3A, WW-3B, WW-9, Mylar of plat, reclamation plan, topo map and copies of the certified mailing receipts for a permit to stimulate the above-captioned liquid injection well. Also enclosed is our check in the amount of \$650.00 to cover the associated permit fees.

Very truly yours,

Diane White

Diane C. White

Enclosures

cc: Belva & Earl Junkins – Certified
Brian Huffman - Certified
Wolf Run Mining Company - Certified
Sam Ward - Inspector

RECEIVED
Office of Oil and Gas
SEP 24 2014
WV Department of
Environmental Protection

10/17/2014