



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

August 29, 2013

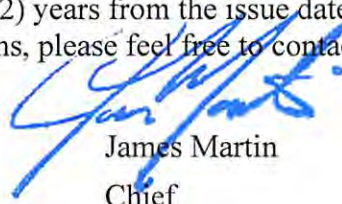
WELL WORK PERMIT
Secondary Recovery Well

This permit, API Well Number: 47-10302812, 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: MCCOY HEIRS 17
Farm Name: WAYNE, ROBERTA B.
API Well Number: 47-10302812
Permit Type: Secondary Recovery Well
Date Issued: 08/29/2013

Promoting a healthy environment.

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 within 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.

103028125

WW-3B
10/07



1) Date July 11, 2013
 2) Operator's Well No. McCoy Heirs 17
 3) API Well No. 47 - 103 - 2812
 State County Permit
 4) UIC Permit No. UIC2R09501AP

**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 X Gas Injection (not storage) _____ Waste Disposal _____
- 6) LOCATION: Elevation 810' Watershed Piney Fork
 District Green 05 County Wetzel 103 Quadrangle Pine Grove 7.5' 548
- 7) WELL OPERATOR: HG Energy, LLC 494497948
5260 Dupont Road
Parkersburg, WV 26101
- 8) DESIGNATED AGENT: Mike Kirsch
5260 Dupont Road
Parkersburg, WV 26101
- 9) OIL & GAS INSPECTOR TO BE NOTIFIED: Name Derek Haught
 Address PO Box 85
Smithville, WV 26178
- 10) DRILLING CONTRACTOR: Name To be Determined Upon Approval of Permit
 Address _____
- 11) PROPOSED WELL WORK: Drill _____ Drill Deeper _____ Redrill _____ Stimulate _____
 Plug Off Old Formation _____ Perforate New Formation _____ Convert X
 Other Physical Change in Well (specify) _____
- 12) Geological target formation Gordon Depth 2,898 Ft. (Top) to 2,905 Ft. (Bottom)
- 13) Estimated depth of completed well (or actual depth of existing well) 3132' TMD 2883' TVD Ft.
- 14) Approximate water strata depths: Fresh 50', 120' Ft. Salt NA Ft.
- 15) Approximate coal seam depths: 546' - 554' Ft.
- 16) Is coal being mined in the area? Yes X No
- 17) Virgin reservoir pressure in target formation: 1,250 psig. Source Estimated
- 18) Estimated reservoir fracture pressure: 2,650 psig.
- 19) MAXIMUM PROPOSED INJECTION OPERATIONS: Volume per hour 25 BBL Bottom Hole Pressure 2,400 psi
- 20) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES and other chemicals as needed to maintain water quality and improve oil recovery. Fresh water, produced water, bactericides
- 21) FILTERS (IF ANY) Cartridge filters and/or coal bed filters
- 22) SPECIFICATION FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL _____

*Dmit
7-25-13*

23) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILLUP OR SACKS (CU. FT.)	PACKERS
	Size	Grade	Weight	New	Used	For Drilling	Left in Well		
Conductor									Kinds
Fresh Water	7"	L.S.	17#	X		805'	805'	Existing Casing	Tension
Coal									Sizes
Intermediate									2 3/8" x 4 1/2"
Production	4 1/2"	J-55	10.5#	X		3053'	3053'	Existing Casing	Depths Set
Tubing	2 3/8"	J-55	4.6#	X		2770'	2770'		" 2650'
Liners									Perforations
									Top Bottom

*Received
JUL 30 2013*

24) APPLICANTS OPERATING RIGHTS were acquired from John R McCoy, et al.
 by Deed _____ Lease X Other Contract _____ Dated February 14, 1886 of record in the
Wetzel County Clerk's Office in Lease Book 48 Page 485

*Office of Oil and Gas
 WV Dept. of Environmental Protection*

**State of West Virginia
Division of Environmental Protection
Section of Oil and Gas
Well Operator's Report of Well Work**

Farm name: WAYNE, ROBERTA B. Operator Well No.: MCCOY HEIRS 17
 LOCATION: Elevation: 810' Quadrangle: PINE GROVE 7.5'
 District: GREEN County: WETZEL
 Latitude: 11,005 Feet south of 39 Deg 32 Min 30 Sec.
 Longitude: 5,160 Feet west of 80 Deg 40 Min 0 Sec.

Company Address:	HG Energy 5260 DuPont Road Parkersburg, WV 26101	Casing & Tubing	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
Inspector:	Derek Haught	9 5/8"	32'	32'	
Date Permit Issued:	08/31/2012				
Date Well Work Commenced:	10/24/2012				
Date Well Work Completed:	11/07/2012				
Verbal Plugging:		7"	805'	805'	175 sks
Date Permission Granted On:					
Rotary X Cable Rig					
Total vertical Depth (ft):	2883'				
Total Measured Depth (ft):	3132'	4 1/2"	3052.8'	3052.8'	250 sks
Fresh Water Depth (ft):	50', 120'				
Salt Water Depth (ft):	None				
Is Coal being mined in ares (Y/N)?	No				
Coal Depths (ft): x	546'-554'				
Void(s) encountered (Y/N) depth(s):	NONE				

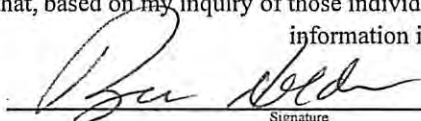
OPEN FLOW DATA

* Waterflood Producer

This well drilled directionally 294° NW a distance of 802'. 2870'-2883'

Producing formation	Gordon	Pay zone depth (ft)	2898'-2905'
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

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the 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.


Signature

3/7/13
Date


 Office of Oil and Gas
 WV Dept. of Environmental Protection

Were core samples taken? No

Were cuttings caught during drilling? No

Were Y Electrical, N Mechanical, N or Geophysical logs recorded on this well?
Y/N Y/N Y/N

NOTE: IN THE AREA BELOW PU1 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 THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Treatment : Treated perms 2870'-2883', and 2898'-2905' w/ 1250 gals 15% HCL, 379 bbls cross linked gel, and 20,000# 20/40 sand.**Well Log :** All depths are measured relative to KB (8' AGL).

Shale w/ sand streaks	0	-	546
Coal	546	-	554
Shale w/ sand streaks	554	-	1084
Sand	1084	-	1120
shale	1120	-	1194
sand	1194	-	1280
shale	1280	-	1304
sand	1304	-	1323
shale	1323	-	1350
sand	1350	-	1375
shale	1375	-	1506
sand	1506	-	1552
shale	1552	-	1603
sand	1603	-	1624
shale	1624	-	1758
sand	1758	-	1770
shale	1770	-	1787
sand	1787	-	1803
shale	1803	-	1812
Big Lime	1812	-	1892
Big Injun	1892	-	2144
shale	2144	-	2834
Gordon stray	2834	-	2854
shale	2854	-	2864
Gordon	2864	-	2886
shale	2886	-	2896
sand	2896	-	2908
shale	2908	-	3132
TD	3132		
T.D. -Logger	3097	KB	
T.D. -Driller	3132	KB	

103028125

WW-3A
10/07



1) Date: July 11, 2013

2) Operator's Well No. McCoy Heirs 17

3) API Well No. 47 103 - 2812

State County Permit

4) UIC Permit No. UIC2R09501AP

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) Surface Owner(s) To Be Served

(a) Name Roberta B. Wayne ✓
 Address HC 60, Box 315
Pine Grove, WV 26419

(b) Name _____
 Address _____

(c) Name _____
 Address _____

6) Inspector Derek Haught
 Address PO Box 85
Smithville, WV 26178
 Telephone 304-206-7613

7 (a) Coal Operator
 Name NA
 Address _____

7 (b) Coal Owner(s) With Declaration Of Record
 Name NA
 Address _____

Name _____
 Address _____

7(c) Coal Lessee With Declaration Of Record

TO THE PERSON(S) 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 September 1, 2012

THE REASON YOU RECEIVED THESE DOCUMENTS IS THAT YOU HAVE RIGHTS REGARDING THE APPLICATION WHICH ARE SUMMARIZED IN THE "INSTRUCTIONS" ON FORM WW-3(A) DESIGNATED TO YOU. 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 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.

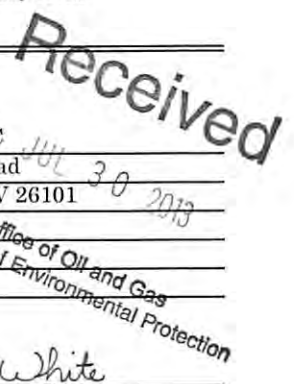
The person signing this document shall make the following certification:

"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 C. White
 Its: Accountant

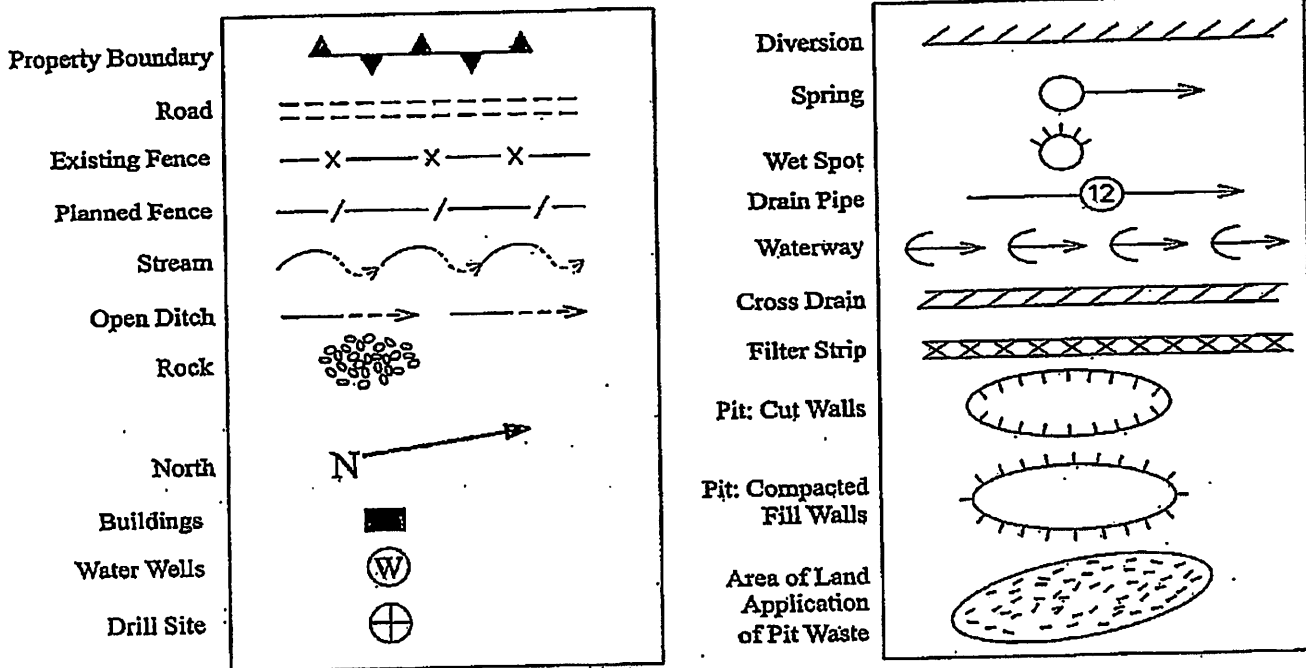
Signature Diane C White



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 course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at: depprivacyofficer@wv.gov

Legend



Proposed Revegetation Treatment: Acres Disturbed Area I Approx. 0.2 Ac. Prevegetation pH _____

Area II
Approx. 0.5 Ac.

Lime 2 Tons/Acre or Correct to pH 6.5
Fertilizer (10-20-20 or Equivalent) 500 Lbs./Acre (500 lbs. Minimum)
Mulch Straw 2 Tons/Acre *

SEED MIXTURES

<u>Area I (Location)</u>	
Seed Type	Lbs./Ac.
Tall Fescue	40
Ladino Clover	5

<u>Area II (Road)</u>	
Seed Type	Lbs./Ac.
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.

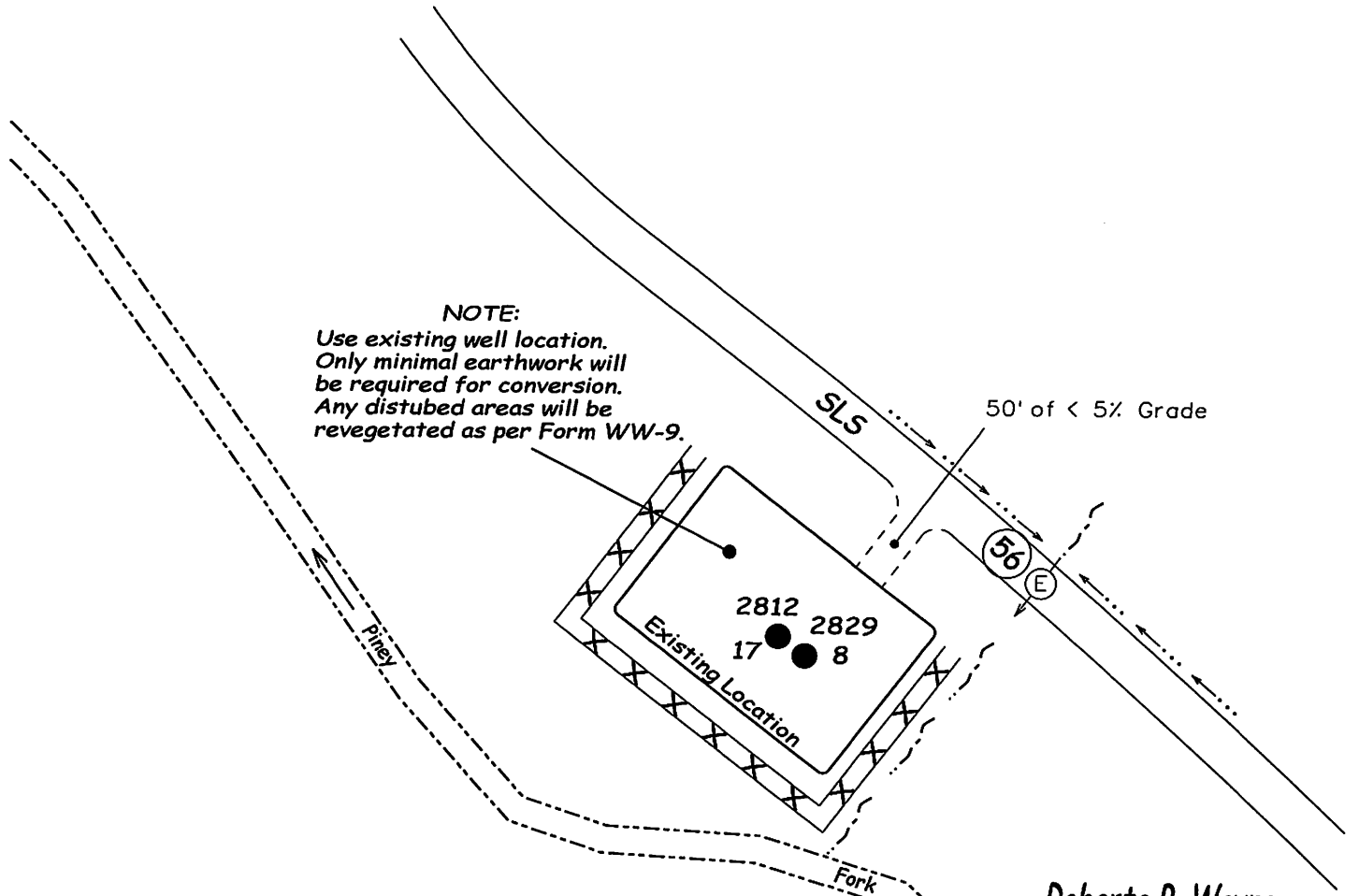
Plan approved by: [Signature]
Comments: _____

Title: Dr. [Signature] Inspector Date: 7-25-13
Field Reviewed? () Yes () No

Reclamation Plan For:

McCoy Heirs No. 17 47-103-2812

NOTE:
 Use existing well location.
 Only minimal earthwork will
 be required for conversion.
 Any disturbed areas will be
 revegetated as per Form WW-9.



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

Roberta B. Wayne
 - Surface Owner

Received

JUL 30 2013

Office of Oil and Gas
 WV Dept. of Environmental Protection

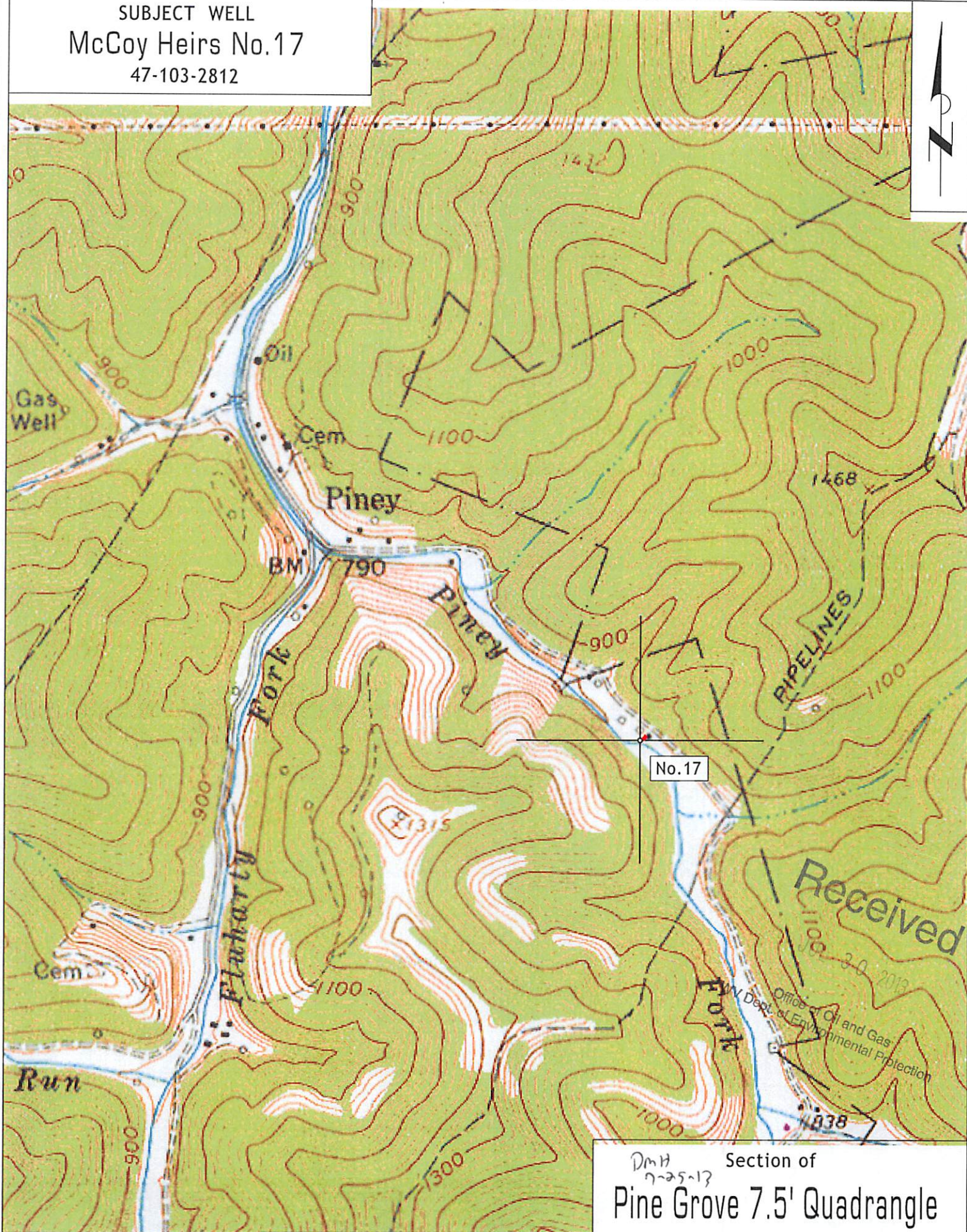
DmH
 7-25-13

Notes:

- Requested permit is for conversion of existing well.
- 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.
- No pit will be constructed for requested well work.

Note: Drawing not to Scale

SUBJECT WELL
McCoy Heirs No.17
47-103-2812



No. 17

Received
3-0-2013

Office of Oil and Gas
Dept. of Environmental Protection

Section of
Pine Grove 7.5' Quadrangle

SCALE 1"=1000'

26

(CENTER F

DmH
7-25-13

Longitude = 80° 41' 05.8"

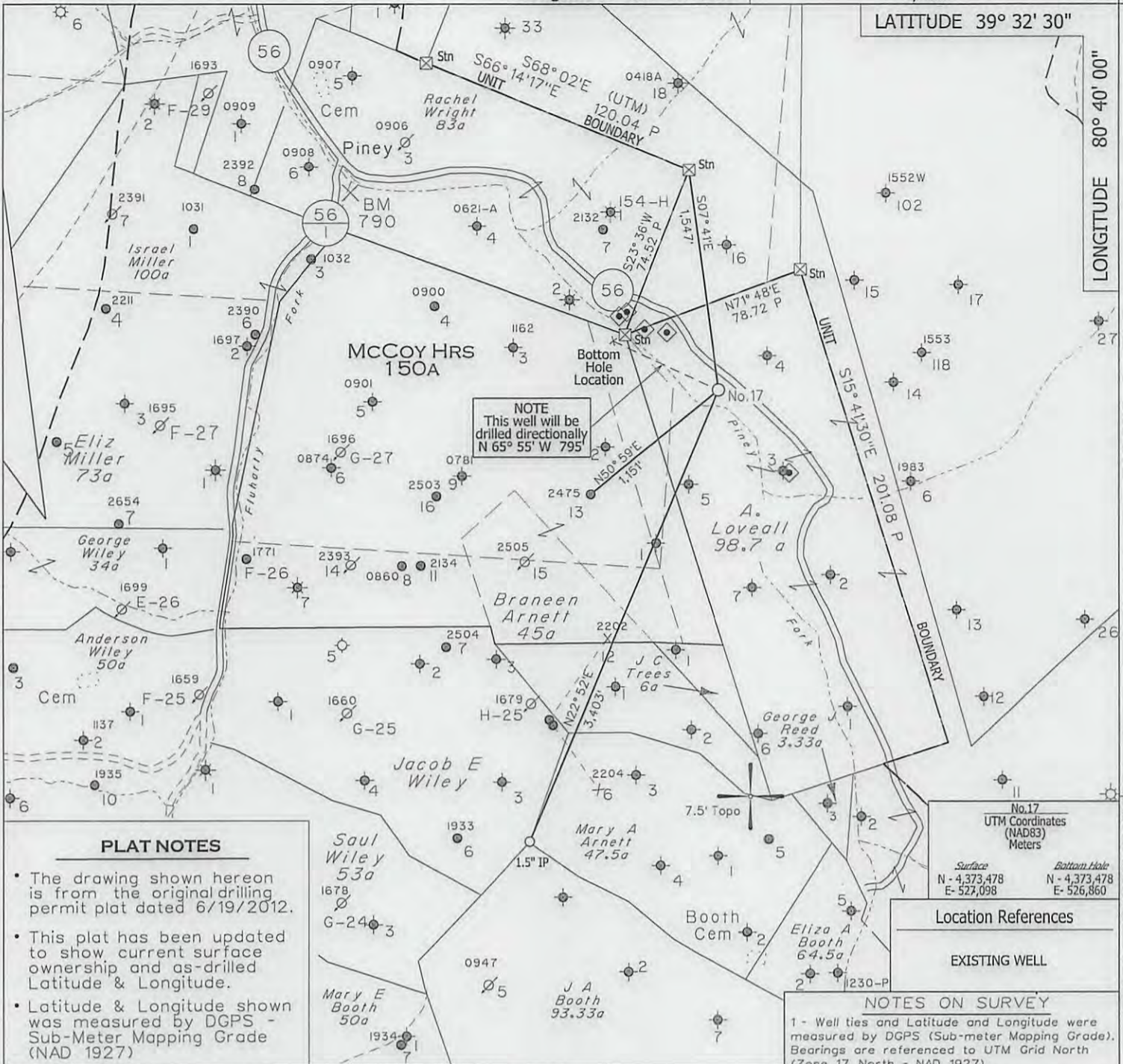
5,160'

LATITUDE 39° 32' 30"

LONGITUDE 80° 40' 00"

11,005'

Latitude = 39° 30' 41.2"



NOTE
This well will be drilled directionally
N 65° 55' W 795'

PLAT NOTES

- The drawing shown hereon is from the original drilling permit plat dated 6/19/2012.
- 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)

- ◆ - DENOTES A POSSIBLE WATER SUPPLY SOURCE LOCATED FROM CIRCA 2003 AERIAL PHOTOGRAPHY - NOT BY SURVEY. OTHER SOURCES MAY BE PRESENT.
- ⊕ - DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

No.17
UTM Coordinates
(NAD83)
Meters
Surface N - 4,373,478 E - 527,098
Bottom Hole N - 4,373,478 E - 526,860

Location References

EXISTING WELL

NOTES ON SURVEY

- 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 1927).
- 2 - Unit Boundary description from survey of the John Mills property by H.M. Stansberry, PE of Sistersville, WV (1907-08).
- 3 - Surface owner information obtained from the Wetzel County Assessor's tax records.

FILE NO. 1046-46
MAP NO. N S E W
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY Sub-Meter
PROVEN SOURCE OF ELEVATION DGPS Survey (Sub-Meter Mapping Grade)

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 25301



DATE July 9, 2013
FARM McCoy Heirs No.17
API WELL NO. 47-103-02812 S

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF "GAS") PRODUCTION STORAGE DEEP SHALLOW
LOCATION: ELEVATION 810' WATERSHED Piney Fork
DISTRICT Green COUNTY Wetzel
QUADRANGLE Pine Grove 7.5'
SURFACE OWNER Roberta B. Wayne ACREAGE 98.7 ac.
OIL & GAS ROYALTY OWNER HG Energy, LLC., et al LEASE ACREAGE 150 ac.
LEASE NO. 25040-50
PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) Convert well to liquid injection
PLUG AND ABANDON CLEAN OUT AND REPLUG 3,132' MD
TARGET FORMATION Gordon ESTIMATED DEPTH 2,883' TVD
WELL OPERATOR HG Energy LLC. DESIGNATED AGENT Mike Kirsch
ADDRESS 5260 DuPont Road ADDRESS 5260 DuPont Road
Parkersburg, WV 26101 Parkersburg, WV 26101

TURM IV-0