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**west virginia** department of environmental protection

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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 11, 2013

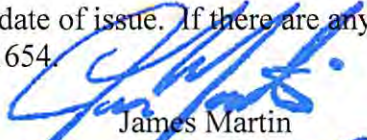

**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-3500499, issued to COLUMBIA GAS TRANSMISSION, 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.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.

  
James Martin  
Chief 

Operator's Well No: 7285  
Farm Name: HILL, LONNIE & THERESA  
**API Well Number: 47-3500499**  
**Permit Type: Plugging**  
Date Issued: 06/11/2013

FORM WW-4(B)  
Observe  
File Copy  
(Rev. 2/01)

1) Date 4/23/13  
2) Operator's  
Well No. Ripley 7285  
3) API Well No. 47-035-00499

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        / Gas X / Liquid injection        / Waste disposal        /  
(If "Gas, Production        or Underground storage X) Deep X / Shallow
- 5) Location: Elevation 775 ft Watershed Mud Run  
District Ravenswood 02 County Jackson 35 Quad Ripley 578
- 6) Well Operator Columbia Gas Transmission 7) Designated Agent Paul Amick  
Address 1700 MacCorkle Ave SE Address same  
Charleston, WV 25325-1273
- 8) Oil and Gas Inspector to be notified Name Jamie Stevens  
Address HC 62 - Box 1C  
Kenna, WV 25248
- 9) Plugging Contractor Name Hagen Well Services  
Address 2285 Eagle Pass BLVD  
Wooster, OH 44691

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

Drilled in 1945. Converted to underground natural gas storage in 1954.

Casing / Cementing Data:

8-5/8" casing	0 - 2072 ft	(likely cmt'd to surface via grout/pour)
7" casing	0 - 4878 ft	(likely cmt'd to surface via grout/pour)
4-1/2" casing	0 - 5000 ft	(likely cmt'd to surface)

Formation Tops (driller):

sand	1352 - 1400 ft	hole full salt water
Injun Sand	2054 - 2066 ft	water
Berea Sand	2460 - 2470 ft	show gas @ 2465 ft
Onondaga LS	4864 - 4960 ft	
Oriskany Sandstone	4960 - 4993 ft	* storage zone
current TD	5000 ft	

Plugging Procedure:

An attempt will be made to pull all free casing - this procedure assumes the 4-1/2" production casing is cmt'd at/to surface (which is likely based on the common practice of pouring cement down annulus until full in 1954 when well was converted to storage).

Kill well. Obtain cement bond log inside 4-1/2" casing. MIRU service rig. Clean to TD (if necessary). Spot bottom Cement Plug #1 from 4500 ft to TD. Install cast iron bridge plug above top of cement plug. Spot Cement Plug #2 from 2800 ft to bridge plug. If Berea not cemented, perforate. Spot Cement Plug #3 from 2200 - 2800 ft, and attempt to squeeze cement Berea (if perforated). If Injun not cemented, perforate. Spot Cement Plug #4 from 1600 - 2200 ft, and attempt to squeeze cement Injun (if perforated). If no cement at 1347 ft, perforate 1347-48 ft. Spot Cement Plug #5 from 1000 - 1600 ft, and attempt to squeeze cement (if perforated). Spot Cement Plug #6 from surface to 1000 ft. Install casing monument with API number.

*Ran Bond Log if any spots not covered Perf & Squeeze.*

*4 1/2 from Records is CTS.*

5/2/2013 06/14/2013

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

*Jamie Stevens*

Work order approved by inspector \_\_\_\_\_

Date \_\_\_\_\_

# Columbia Gas Transmission, LLC Ripley storage well 7285

3500499P

U 5728

7285  
~~Complete Set~~

Miriam Hersman, et al.  
United Fuel Gas Company  
Ravenswood District, Jackson County, W. Va.  
County Order 57 95  
Completed 12-28-45  
Elevation 771.8

Size	Weight	Point
13-3/8"	48#	800'
10 3/4"	32.75#	1227'
8"	28#	2072'
7"	22#	4878'
2" tubing		

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Office of Oil and Gas

CONTRACTOR: Everett Ferrell  
DRILLERS: V. V. Knight  
Hugh Raines  
M. B. Kennedy

MAY 15 2013

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Stone	0	14
Red Rock	14	41
Slate	41	56
Red Rock	56	105
Shells	105	115
Slate	115	134
Red Rock	134	195
Sand	195	230
Red Rock	230	255
Slate	255	294
Red Rock	294	332
Sand	332	390
Slate & shells	390	450
Red Rock	450	462
Shells	462	590
Sand	590	646
Slate	646	649
Sand	649	662
Slate	662	743
Sand	743	800
Lime	800	806
Sand	806	870
Red Rock	870	914
Sand	914	943
Slate	943	970
Red Rock	970	1000
Shells	1000	1030
Red Rock	1030	1036
Sand	1036	1040
Slate	1040	1192
Sand	1192	1220
Slate & shells	1220	1352
Sand	1352	1400
Slate	1400	1415
Sand	1415	1445
Slate & Lime	1445	1505
Sand	1505	1542
Slate	1542	1553
Sand	1553	1575
Slate & shells	1575	1680
Sand	1680	1782
Slate	1782	1785
Little Lime	1785	1805
Slate	1805	1810
Big Lime	1810	1959
Slate	1959	1961
Injun Sand	1961	1988
Slate & shells	1988	2054

Injun Sand	2054	2066
Slate	2066	2071
Sand	2071	2085
Slate & shells	2085	2444
Brown Shale	2444	2460
Berea Grit	2460	2470
Slate & shells	2470	3900
Brown Shale	3900	4175
Slate & shells	4175	4670
Brown Shale	4670	4864
Corniferous Lime	4864	4960
Oriskany Sand	4960	4993
Lime	4993	4996
Sand	4996	5000
Total Depth		5000'

4760  
772  
417

Water 366' 1 1/2 B.P.H.  
Water 645' 8 bailers  
Water 790' 12 Bailers

Hole full Salt Water 1360'  
Water in Injun Sand 2054 2066

Show gas 2465'

Show gas 4960'

Oriskany gas 4966-4972 12/10 Merc 7" 22# 5.5'  
Test 4973 8/10 Merc 7" 22# 4,500 M  
Test 4976 4/10 Merc 7" 22# 3,181 M  
Oriskany gas 4975-4980 14/10 Merc 7" 22# 5.9'  
Test 4988 8/10 Merc 7" 22# 4,500 M

WELL NOT SHOT

OPEN FLOW - 8.286 M - Oriskany  
48 hr R.F. 1425#

Shut in 12-27-45 in 2" tubing

5955M  
3121M  
2714

7285

Permit No. 06/14/2013

3500499F

WW4-A  
Revised  
2/01

1) Date: 4/23/2013  
2) Operator's Well Number  
Ripley 7285  
3) API Well No.: 47 - 035 - 00499

**STATE OF WEST VIRGINIA - BUREAU OF ENVIRONMENT**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL**

Check #  
05112915  
\$ 100.00

4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>Lonnie C &amp; Theresa S Hill</u>	Name <u>None operated</u>
Address <u>440 Creed Rd</u>	Address _____
<u>Sandyville, WV 25275</u>	_____
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name _____
_____	Address _____
(c) Name _____	Name _____
Address _____	Address _____
6) Inspector <u>Jamie Stevens</u>	(c) Coal Lessee with Declaration
Address <u><del>HC 62 - Box 1C</del> <u>105 Kentucky Rd</u></u>	Name _____
<u>Kenna, WV 25248</u>	Address _____
Telephone <u>304-206-7775</u>	_____

RECEIVED  
Office of Oil and Gas

**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.

MAY 15 2013

WV Department of  
Environmental Protection

The reason you received these documents is that you have rights regarding the application which are summarized in the conditions 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 Columbia Gas Transmission, LLC  
 By: James E. Amos  
 Its: Senior Engineer  
 Address 48 Columbia Gas Rd  
Sandyville, WV 25275  
 Telephone 304-373-2412

Subscribed and sworn before me this 26th day of April, 2013  
Mary Marie Clendenin Notary Public  
 My Commission Expires 3/22/2015



06/14/2013

FORM WW-4 (B)  
Reverse

API No. 47 - 035 - 00499 P

Farm Name John F. Folden

Well No. Ripley 7285

*\*NOT OPERATED*

**INSTRUCTIONS TO COAL OPERATORS  
OWNERS AND LESSEE**

The well operator named on the obverse side of WW-4 (B) is about to abandon the well described in the enclosed materials and will commence the work of plugging and abandoning said well on the date the inspector is notified. Which date shall not be less than five days after the day on which this notice and application so mailed is received, or in due course should be received by the Department of Environmental Protection Office of Oil & Gas.

This notice and application is given to you in order that your respective representatives may be present at the plugging and filling of said well. You are further notified that whether you are represented or not the operator will proceed to plug and fill said well in the manner required by Section 24, Article 6, Chapter 22 of the Code and given in detail on obverse side of this application.

NOTE: If you wish this well to be plugged according to 22-6-24(d) then as per Regulation 35CSR4-13.9 you must complete and return to this office on form OB-16 "Request by Coal Operator, Owner, or Lessee for plugging" prior to the issuance of this plugging permit.

**WAIVER**

The undersigned coal operator \_\_\_\_\_ / owner \_\_\_\_\_ / lessee \_\_\_\_\_ / of the coal under this well location has examined this proposed plugging work order. The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

Date: \_\_\_\_\_

**RECEIVED**  
**Office of Oil and Gas**

By: \_\_\_\_\_  
Its \_\_\_\_\_ **MAY 15 2013**

**WV Department of  
Environmental Protection**

**06/14/2013**

3500499 P

FORM WW-9  
Rev. 02/01

Page \_\_\_\_\_ of \_\_\_\_\_  
API Number 47 - 0035 - 00499  
Operator's Well No. Ripley 7285

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 Columbia Gas Transmission, LLC OP Code 307032

Watershed Mud Run Quadrangle Ripley

Elevation 775 ft County Jackson District Ravenswood

Description of anticipated Pit Waste: fresh and/or salt water, drilling fluid, cement returns

Will a synthetic liner be used in the pit? yes 20 mil.

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number 34-167-2-9395 (WVOG), 34-167-2-3862 (HWR))
- Reuse (at API Number \_\_\_\_\_)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain additional UIC wells: 34-121-2-3995 & 34-121-2-4086 (Hunter))

Proposed Work For Which Pit Will Be Used:

- Drilling
- Workover
- Other (Explain \_\_\_\_\_)
- Swabbing
- Plugging

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on December 31, 1999, 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 James E. Amos

Company Official (Typed Name) James E. Amos

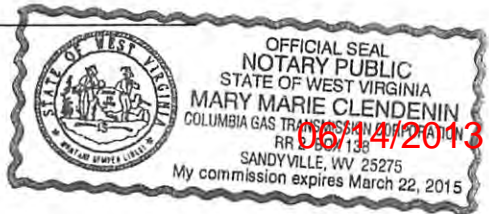
Company Official Title Senior Engineer

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WV Department of  
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Subscribed and sworn before me this 26<sup>th</sup> day of April, 192013

Mary Marie Clendenin Notary Public

My commission expires 3/22/2015



LEGEND

- Property Boundary
- Road
- Existing Fence
- Planned Fence
- Stream
- Open Ditch
- Rock
- North
- Buildings
- Water wells
- Drill site
- Diversion
- Spring
- Wet Spot
- Drain Pipe with size in inches
- Waterway
- Cross Drain
- Artificial Filter Strip
- Pit: cut walls
- Pit: compacted fill walls
- Area for Land Application of Pit Waste

Proposed Revegetation Treatment: Acres Disturbed 1 acre Prevegetation pH 5 - 6

Lime 2 Tons/acre or to correct to pH 6.5

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

Mulch 2 Tons/acre

Seed Mixtures

Area I		Area II	
Seed Type	lbs/acre	Seed Type	lbs/acre
<u>Orchard Grass</u>	<u>20</u>	<u>Orchard Grass</u>	<u>20</u>
<u>Ledino Clover</u>	<u>10</u>	<u>Ledino Clover</u>	<u>10</u>
<u>Annual Rye</u>	<u>20</u>	<u>Annual Rye</u>	<u>20</u>

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**MAY 15 2013**  
**WV Department of**  
**Environmental Protection**

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *Jennie Stevens*

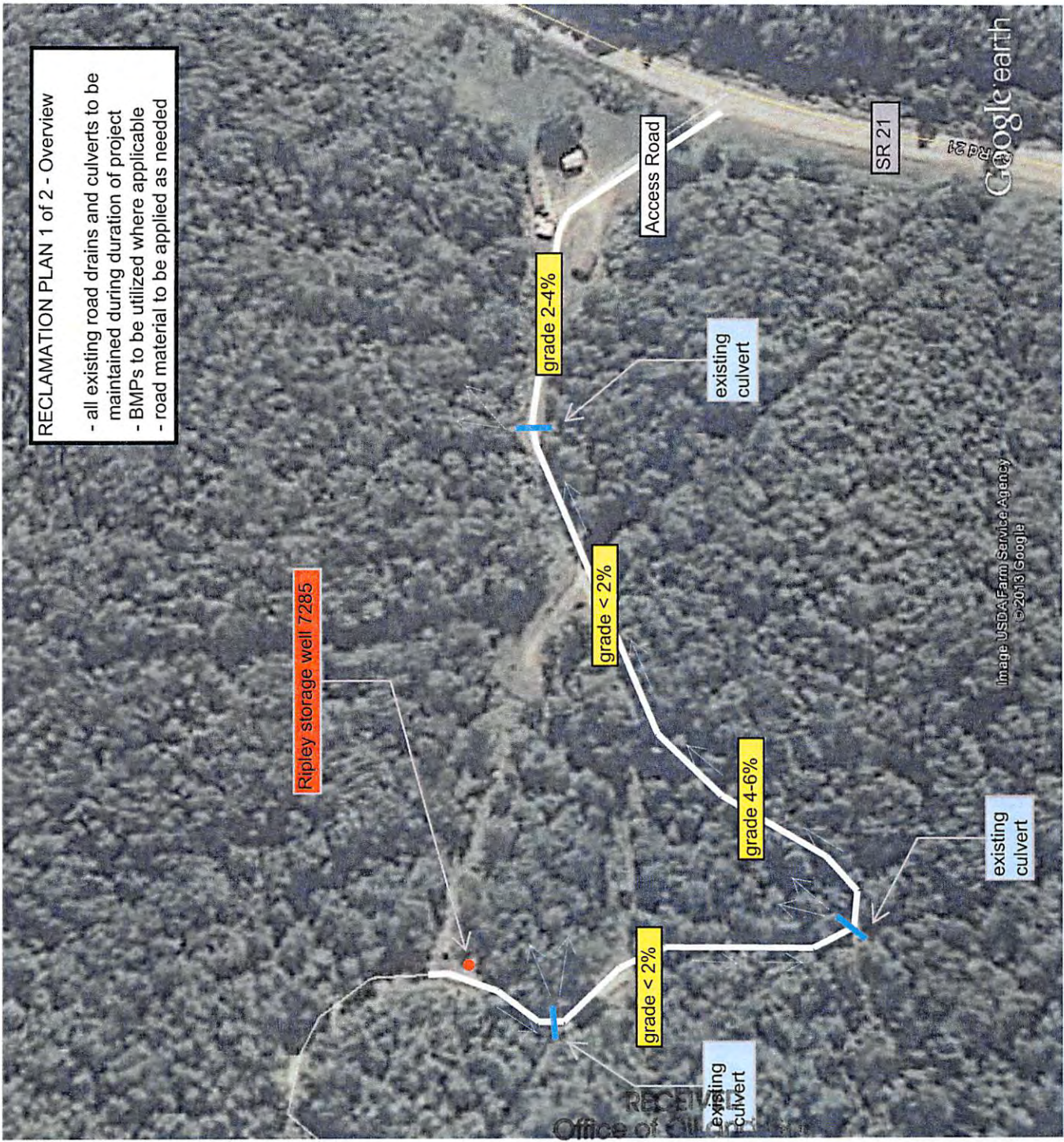
Title: \_\_\_\_\_ Date: 5/2/2013

Field Reviewed? (  ) Yes (  ) No



**RECLAMATION PLAN 1 of 2 - Overview**

- all existing road drains and culverts to be maintained during duration of project
- BMPs to be utilized where applicable
- road material to be applied as needed



MAY 15 2013

WV Department of Environmental Protection

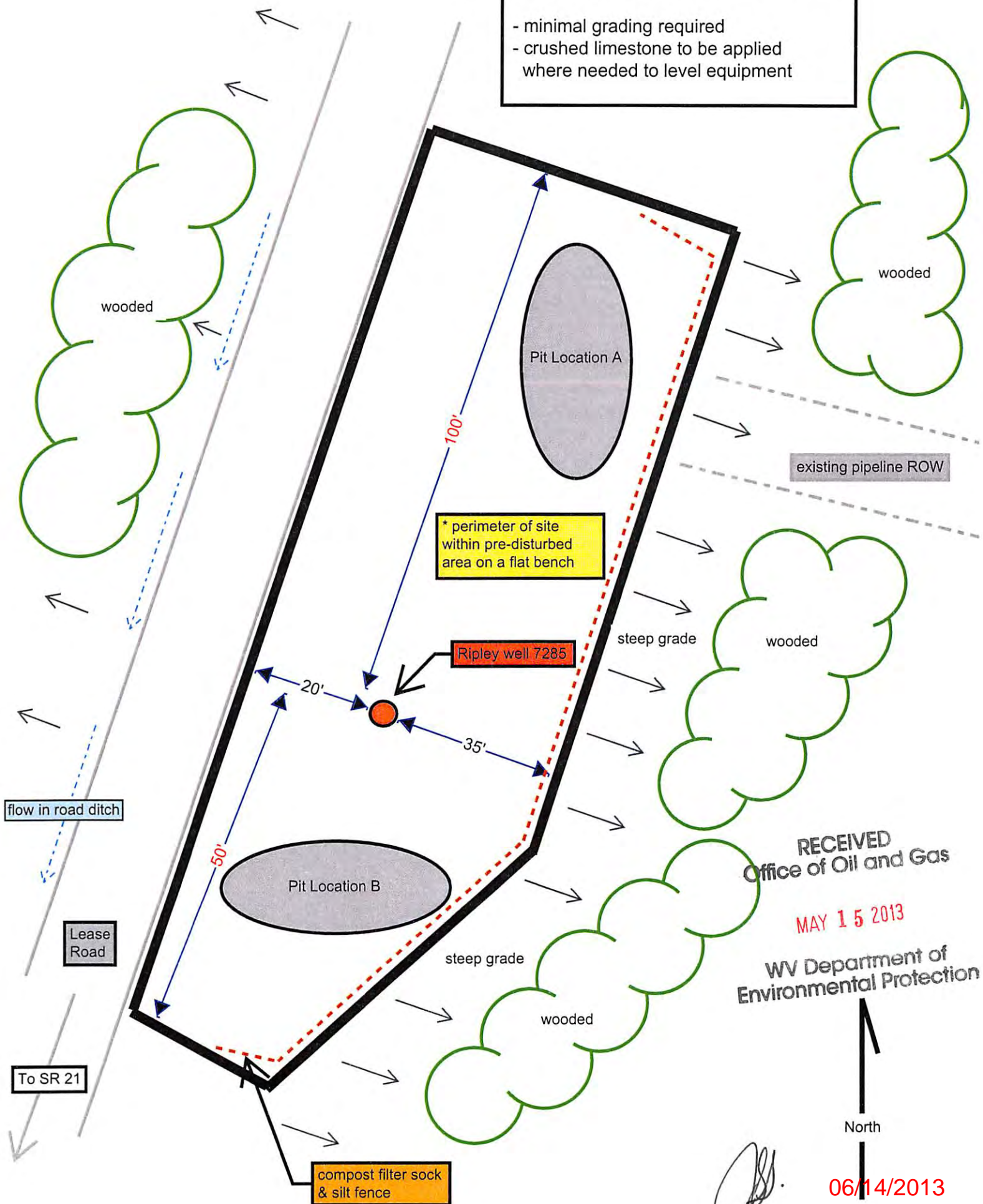
06/14/2013

Google earth



**RECLAMATION PLAN 2 of 2 - site detail**

- minimal grading required
- crushed limestone to be applied where needed to level equipment



\* perimeter of site within pre-disturbed area on a flat bench

Ripley well 7285

Pit Location B

Pit Location A

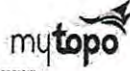
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North

06/14/2013

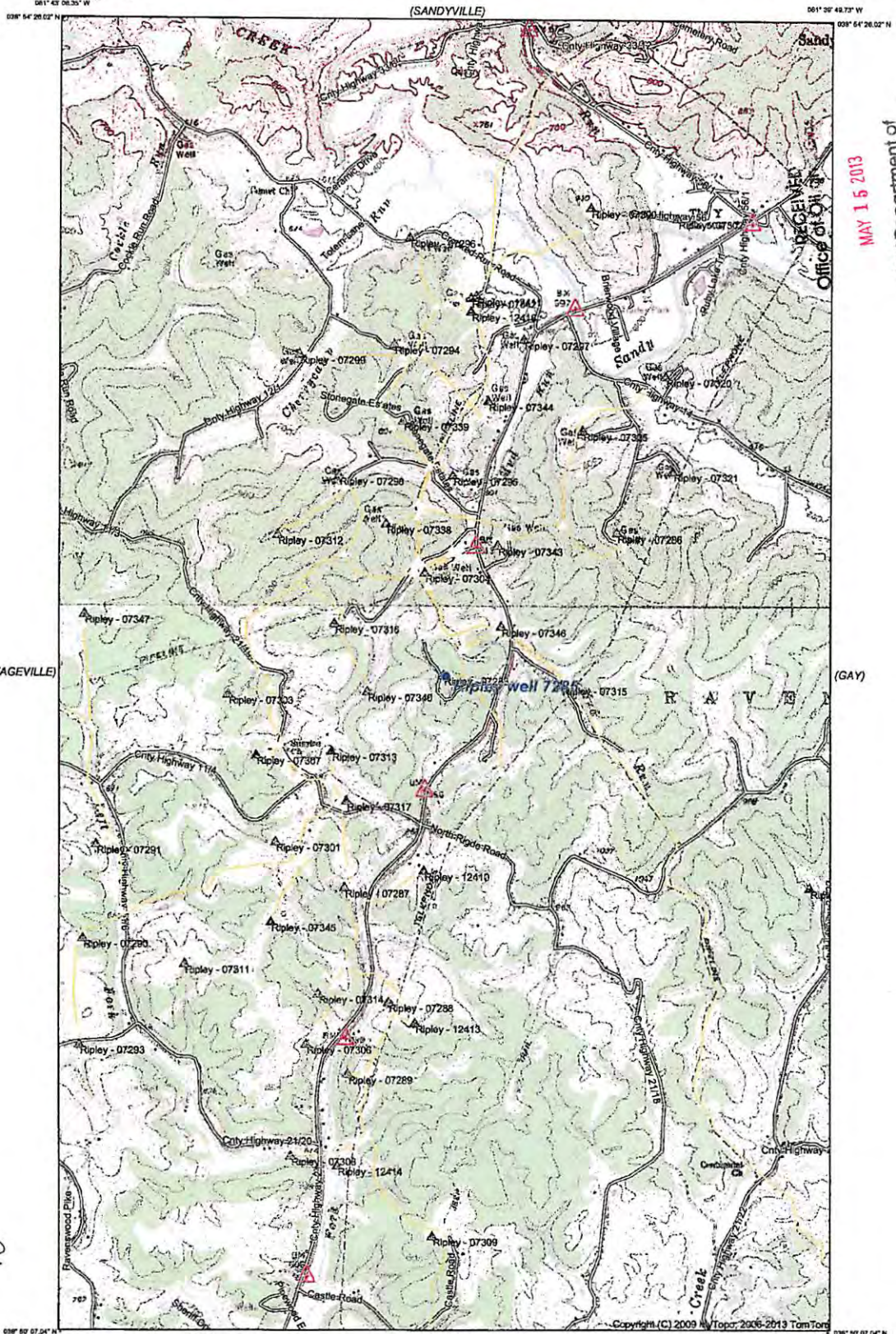
3500499 P

(RAVENSWOOD)



RIPLEY QUADRANGLE  
WEST VIRGINIA  
TOPOGRAPHIC SERIES

(LIVERPOOL)



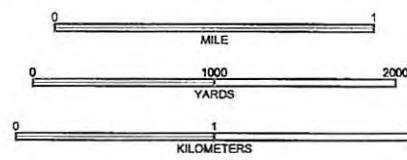
MAY 15 2013  
WV Department of  
Environmental Protection

(ELMWOOD)

Produced by MyTopo Terrain Navigator  
Topography based on USGS 1:24,000 Maps  
North American 1983 Datum (NAD83)  
Polyconic Projection  
To place on the predicted North American 1927 move the  
projection lines 10M N and 13M E



(KENNA)  
SCALE 1:24000

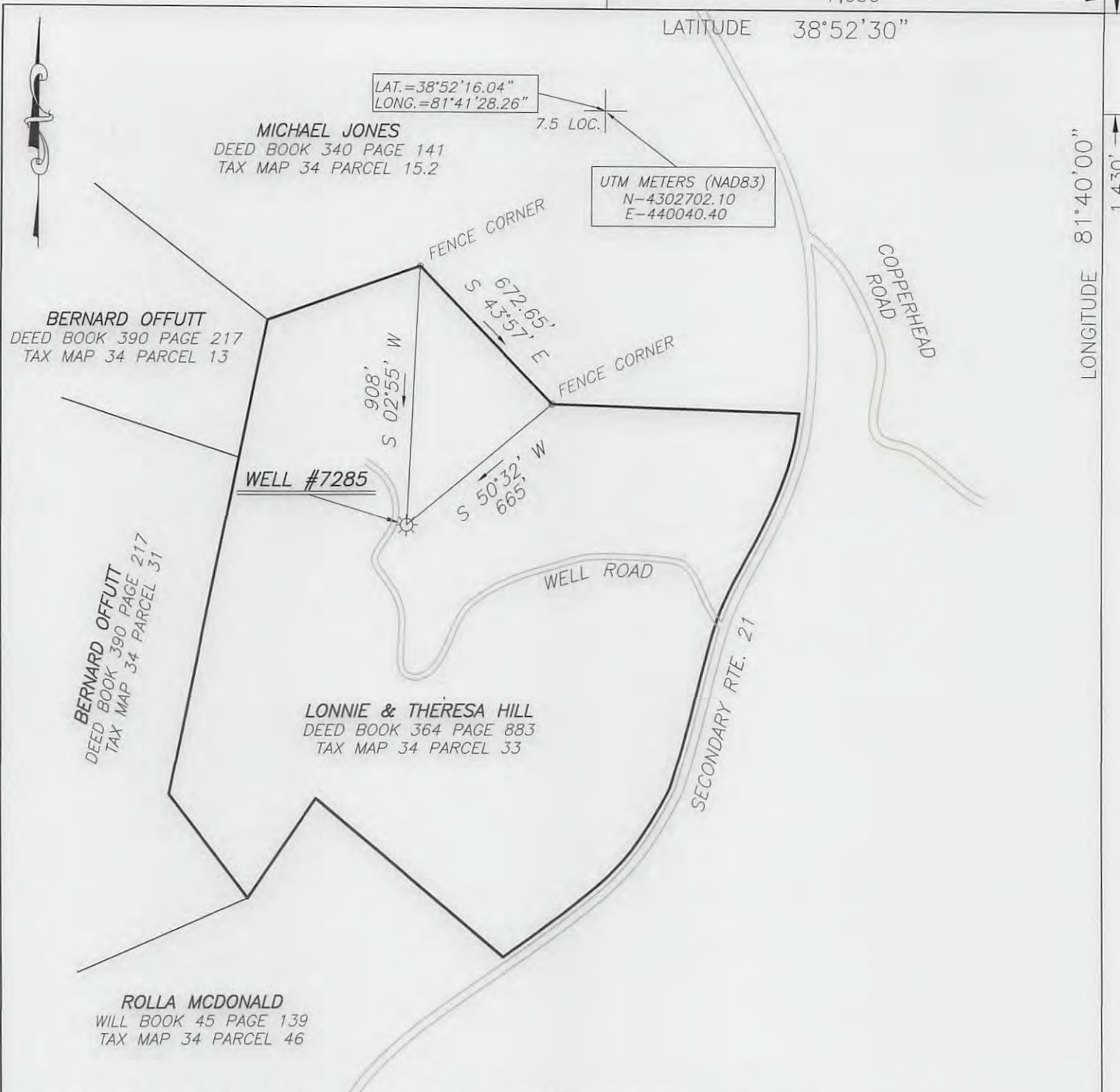


CONTOUR INTERVAL 20 FEET  
NATIONAL GEODETIC VERTICAL DATUM 1929

RIPLEY, WV  
1960

(KENTUCKY)

06/14/2013

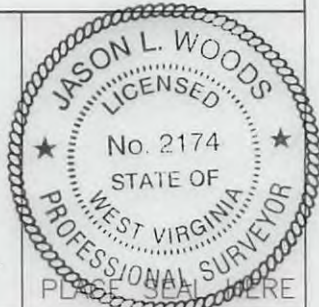


(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE No. 13-100-013  
 DRAWING No. 13-100-013  
 SCALE 1"=500'  
 MINIMUM DEGREE OF ACCURACY 1:200  
 PROVEN SOURCE OF ELEVATION TRIMBLE PRO XH GPS UNIT

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 DIVISION OF ENVIRONMENTAL PROTECTION.

(SIGNED) Jason L. Woods 4-13-13  
 JASON L. WOODS PS #2174



STATE OF WEST VIRGINIA  
 DIVISION OF ENVIRONMENTAL PROTECTION  
 OFFICE OF OIL AND GAS  
 NITRO, WV

DATE APRIL 10 20 13  
 OPERATOR'S WELL No. 7285  
 API WELL No. 47 035 -00499 P

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL   
 (IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION 775 WATER SHED MUD RUN  
 DISTRICT RAVENSWOOD COUNTY JACKSON  
 QUADRANGLE RIPLEY

SURFACE OWNER LONNIE & THERESA HILL ACREAGE 82.5  
 OIL & GAS ROYALTY OWNER JOHN FOLDEN etal LEASE ACREAGE 89  
 LEASE No. 41768

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 ORISKANY ESTIMATED DEPTH 5000  
 WELL OPERATOR COLUMBIA GAS TRANSMISSION, LLC DESIGNATED AGENT PAUL AMICK  
 ADDRESS PO BOX 1273, CHARLESTON, WV ADDRESS P.O. BOX 1273, CHARLESTON W.V.  
 25325-1273 25325-1273

06/14/2013

FORM IV-6 (8-78)