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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

October 05, 2015

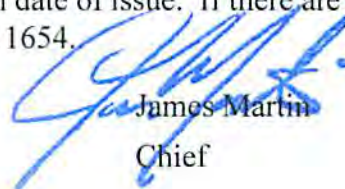
**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-9703160, issued to XTO ENERGY, INC., 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: D0421  
Farm Name: LOCK 3 OIL, COAL & DOCK  
**API Well Number: 47-9703160**  
**Permit Type: Plugging**  
Date Issued: 10/05/2015

**Promoting a healthy environment.**

**10/09/2015**

## 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.

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### CONDITIONS

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1. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
2. 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.
3. Well work activities shall not constitute a hazard to the safety of persons.

WW-4B  
Rev. 2/01

1) Date 8/24, 2015  
2) Operator's  
Well No. Gould 2  
3) API Well No. 47-097 - 03160

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 X or Underground storage \_\_\_) Deep \_\_\_/ Shallow X
- 5) Location: Elevation 1322' Watershed Tygart Valley  
District Warren County Upshur Quadrangle Berlin
- 6) Well Operator XTO Energy Inc 7) Designated Agent Gary Beall  
Address PO Box 1008 Address PO Box 1008  
Jane Lew, WV 26378 Jane Lew, WV 26378
- 8) Oil and Gas Inspector to be notified 9) Plugging Contractor  
Name Sam Ward Name \_\_\_\_\_  
Address PO Box 2327 Address \_\_\_\_\_  
Buckhannon, WV 26201

10) Work Order: The work order for the manner of plugging this well is as follows:  
 RIH and check TD at 3920', POOH and run 2" tubing down to 3920' and circulate 6% gel back to surface, then pump cement from 3920' up to 3500', perfs at 3842 - 3637', pull tubing up to 3400' and reverse circulation up tubing, then wait for cement to set and RIH down tubing to tag cement at 3500', if ok, pull tubing up to 3175' and pump cement up to 2970', perfs at 3120 - 3095', pull tubing up to 2750' and pump cement up to 2490', perfs at 2694 - 2822', pull tubing out of well and run CBL, cement top at 1730' on log, cut casing at 1708' in collar, circulate 6% gel back to surface and pump cement from 1708' up to 1558', 150' of cement at cul, pull casing up to 1380' and pump cement up to 1200', elevation at 1322', pull casing up to 1040' and pump cement up to 872', bottom of 7" casing at 972', pull casing up to 250' and pump cement to surface. 7" casing is cemented to surface. Install well monument.

See attached

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

Work order approved by inspector Bryan J. Heron

RECEIVED  
Office of Oil and Gas  
Date 8-24-15  
AUG 27 2015

WV Department of  
Environmental Protection  
10/09/2015

WR-35

DATE: 3/20/05  
 API: 47-097-03160

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

Well Operator's Report of Well Work

Farm Name: Gould #2 Operator Well No. D0421

LOCATION: Elevation: 1,321.51' Quadrangle: Berlin  
 District: Warren County: Upshur  
 Latitude: 1,850 Feet S. of 39 Deg. 05 Min. 00 Sec.  
 Longitude: 9,670 Feet W. of 80 Deg. 15 Min. 00 Sec.

Company: Devonian Gas Production, Inc.

Address:	Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. Ft.
<u>PO Box 907</u>	<u>9 5/8</u>	<u>27</u>	<u>-</u>	
<u>Jane Lew, WV 26378</u>	<u>7"</u>	<u>972</u>	<u>972</u>	<u>to surface</u>
Agent: <u>John Haskins</u>	<u>4 1/2"</u>	<u>-</u>	<u>3,970</u>	<u>210 sks</u>
Inspector: <u>Craig Duckworth</u>				
Date Permit Issued: <u>07/08/04</u>				
Date Well Work Commenced: <u>07/30/04</u>				
Date Well Work Completed: <u>08/06/04</u>				
Verbal Plugging:				
Date Permission Granted on:				
Rotary X Cable Rig				
Total Depth (ft): <u>4,750</u>				
Fresh Water Depth (ft): <u>180</u>				

Salt Water Depth (ft): \_\_\_\_\_

Is coal being mined in the area (Y/N)? N  
 Coal Depths (ft): 744', 813

OPEN FLOW DATA

Producing formations	Pay zone depth (ft)
<u>5th Sand</u>	<u>2,612</u>
<u>Bayard</u>	<u>2,672</u>
<u>Speechley</u>	<u>3,087</u>
<u>Bradford</u>	<u>3,782</u>
_____	_____
_____	_____

Gas: Initial open flow show Mcf/d. Oil: Initial open flow N/A Bbl/d  
 Final open flow 120 Mcf/d. Final open flow N/A Bbl/d  
 Time to open flow between initial and final tests: 2 Hours  
 Static rock Pressure 875 psig (surface press.) after 36 Hours

RECEIVED  
 12/09/2015  
 Office of Oil & Gas  
 Office of Chief  
 Environmental Protection  
 DEC 28 2006

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.

Signed: [Signature]  
 By: \_\_\_\_\_  
 Date: 3/20/05

WPS 3160



## 47-097-03160

## Plugging Procedure

Cement	3920	-	3500	=	420'	in	4.5"
Cement	3175	-	2970	=	205'	in	4.5"
Cement	2750	-	2490	=	260'	in	4.5"
Cement	1708	-	1558	=	150'	in	6.25"
Cement	1380	-	1200	=	180'	in	6.25"
Cement	1040	-	872	=	168'	in	7"
Cement	250	-	0	=	250'	in	7"

10/09/2015



97031607



**SUPERIOR**  
Black Lick, Pa  
Mercer, Pa  
Wooster, Ohio  
Charleston, W Va

**MARKED LOG**

**GAMMA RAY  
NEUTRON  
DENSITY  
DUAL INDUCTION**

COMPANY DEVONIAN GAS PRODUCTION, INC.  
 WELL GOULD #2 (D0421)  
 FIELD BERLIN QUADRANGLE  
 COUNTY UPSHUR STATE WV  
 LOCATION PERMIT#47-097-03160  
WARREN DISTRICT  
HOOTING CREEK  
 OTHER SERVICES:  
TEMPERATURE  
PE  
 SEC. N/A TWP. N/A RGE. N/A

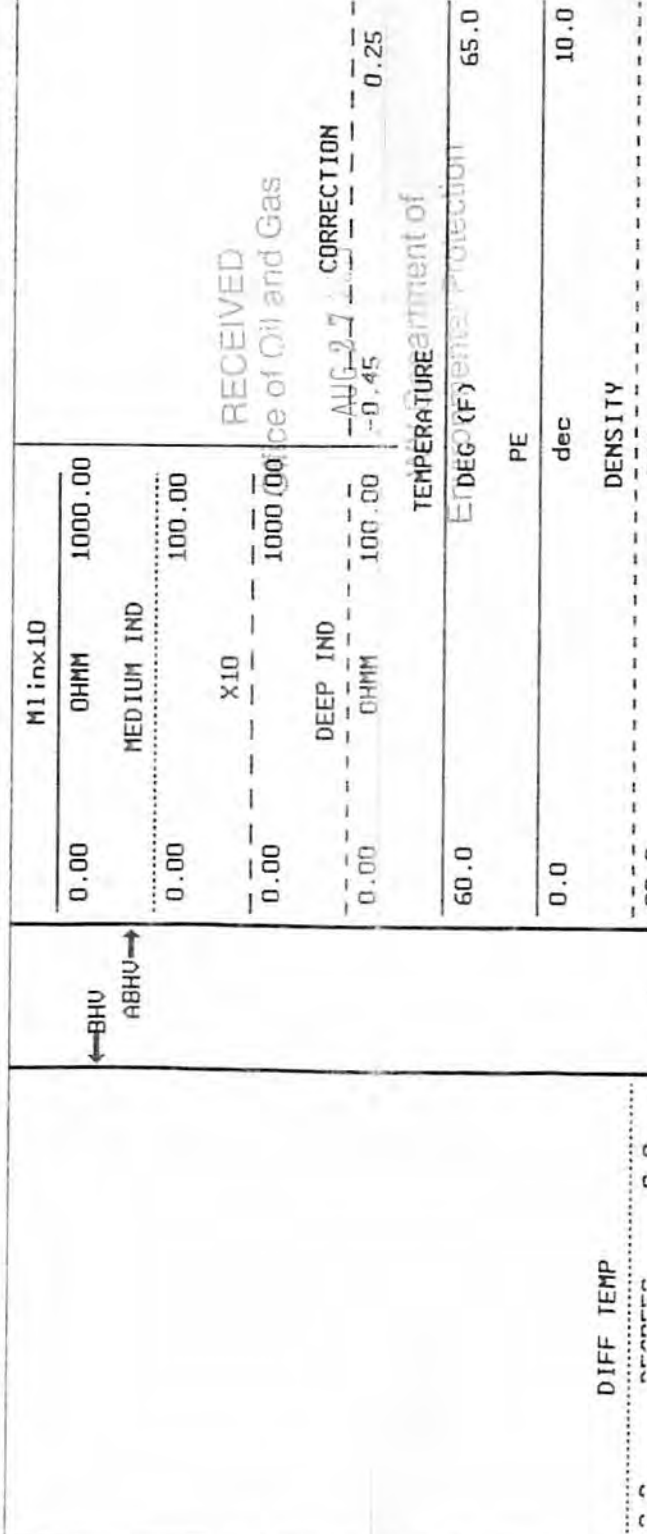
PERMANENT DATUM GROUND LEVEL ELEV. 1322 FT  
 LOG MEASURED FROM TOP OF 7 IN. ABOVE PERMANENT DATUM  
 MUD LOG MEASURED FROM K.B.

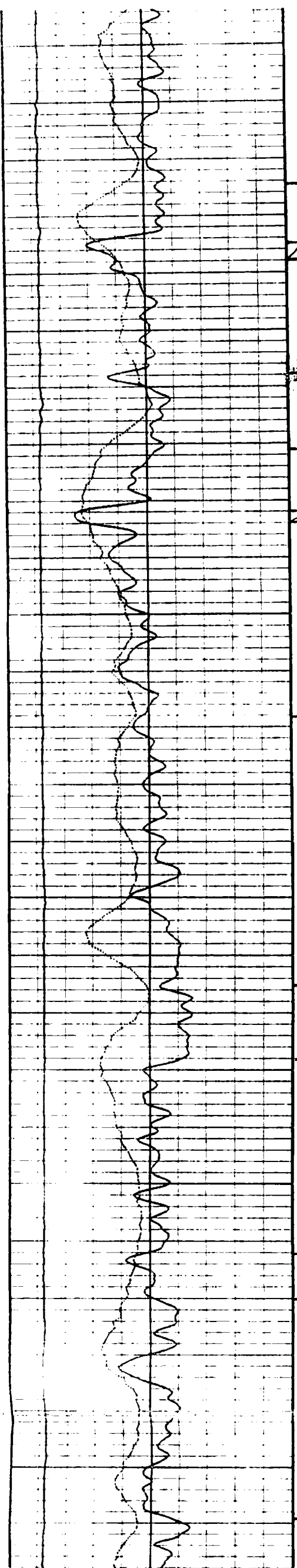
DATE	06 AUG 04		
RUN NO.	ONE		
DEPTH-DRILLER	4725.00 FT.		
DEPTH-LOGGER	4750.00 FT.		
BTH. LOG INTER.	4746.00 FT.		
TOP LOG INTER.	950.00 FT.		
CASING-DRILLER	970.00 FT.		
CASING-LOGGER	972.00 FT.		
BIT SIZE	6.25 IN.		
FLUID TYPE	WATER/SOAP		
FLUID LEVEL	3660.00 FT.		
DENS. : VISC.	N/A		
PH : FLUID LOSS	N/A		
SOURCE OF SAMPLE	N/A		
RM @ MEAS. TEMP.	N/A		
RMF @ MEAS. TEMP.	N/A		
RMC @ MEAS. TEMP.	N/A		
SOURCE: RMF/RMC	N/A		
RM @ BHT	N/A		
TIME SINCE CIRC.	N/A		
MAX. REC. TEMP.	N/A		
EQUIP. : LOCATION	0058/BLACK LICK		
RECORDED BY	M. RIGGLEMAN		
WITNESSED BY	MR. HASKINS	MR. ARNOLD	

ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENT AND WE CANNOT AND DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFUL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES, OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS SET OUT IN OUR CURRENT PRICE SCHEDULE.

**REMARKS:**  
  
 CREW: R. STUMP \ G. POLENIK  
 FLUID DENSITY: 0.7  
 MTXD: 2.71  
 TEMPERATURE RAN UP HOLE.  
 THANK YOU FOR CHOOSING SUPERIOR WELL SERVICES

STOP DEPTH: 920.6 FEET  
 DIRECTION: UP 1:240  
 FILE: DEV0806B.PTS  
 FILE DATE: 08-06-2004  
 TIME: 12:36  
 PLOT DATE: 08-06-2004  
 TIME: 12:46 VI.58





Estimated

N 4

②

3800

N 2

N 3

3900

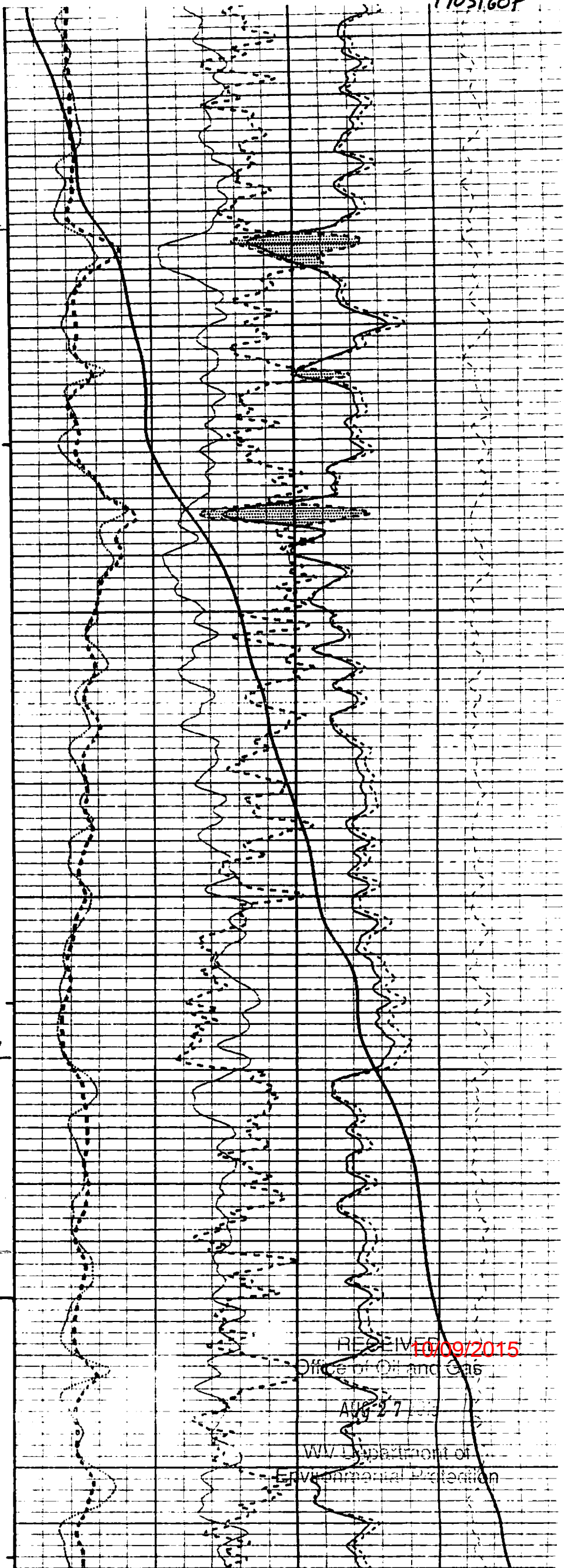
LD Plug

3928

TD 4 1/2

3970

4000



RECEIVED 10/09/2015  
 Office of Oil and Gas  
 AUG 27 2015  
 WV Department of  
 Environmental Protection



WW-4A  
Revised 6-07

1) Date: 8/24/15  
2) Operator's Well Number  
Gould 2  
3) API Well No.: 47 - 097 - 03160

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

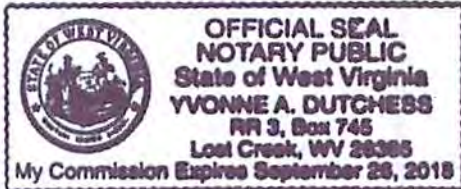
4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>XTO Energy Inc.</u>	Name _____
Address <u>PO Box 1008</u>	Address _____
<u>Jane Lew, WV 26378</u>	
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name <u>Penn Virginia Corporation</u> ✓
	Address <u>Four Radnor Corporate Center, Suite 200</u>
	<u>100 Mantsonford Road</u>
(c) Name _____	Name <u>Radnor, PA 19087</u>
Address _____	Address _____
6) Inspector <u>Bryan Harris</u>	(c) Coal Lessee with Declaration
Address <u>PO Box 157</u>	Name _____
<u>Volga, WV 26238</u>	Address _____
Telephone <u>304-553-6087</u>	

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.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions 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 XTO Energy Inc.  
 By: [Signature]  
 Its: Regulatory Compliance Technician  
 Address PO Box 1008  
Jane Lew, WV 26378  
 Telephone 304-884-6000

Subscribed and sworn before me this 24 day of August 2015  
Yvonne A. Dutchess Notary Public  
 My Commission Expires August 26, 2018

RECEIVED  
Office of Oil and Gas

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 normal 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](mailto:depprivacyofficer@wv.gov).

AUG 27 2015

10/09/2015



WW-9  
Rev. 5/08

Page \_\_\_\_\_ of \_\_\_\_\_  
API Number 47 - 097 - 03160  
Operator's Well No. Gould 2

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 XTO Energy Inc. OP Code 494487940

Watershed Tygart Valley Quadrangle Berlin

Elevation 1322' County Upshur District Warren

Description of anticipated Pit Waste: Fluids from plugging operations.

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 4707302523, 4708505151, 4708509721 )
- Reuse (at API Number \_\_\_\_\_)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain Meadowbrook Landfill SWF#1032, RES Water Recycling -WMGR123SW005 (PA))

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 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 *TS*

Company Official (Typed Name) Tim Sands

Company Official Title Regulatory Compliance Technician

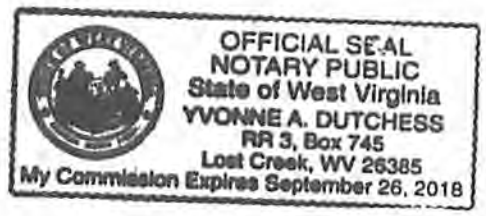
RECEIVED  
Office of Oil and Gas

Subscribed and sworn before me this 24 day of August, 20 15 AUG 27 2015

*Yvonne A. Dutches* Notary Public WV Department of Environmental Protection

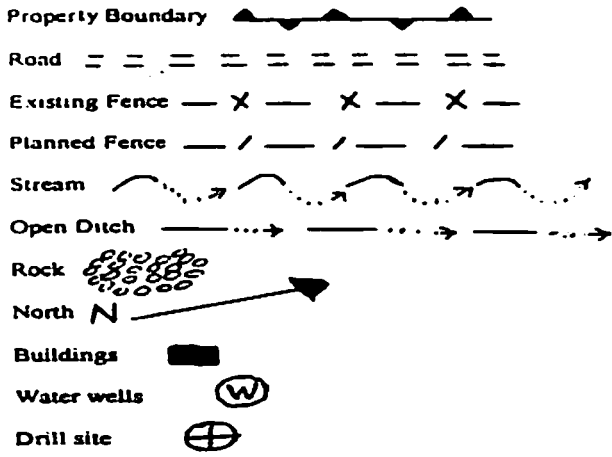
My commission expires September 26, 2018

10/09/2015

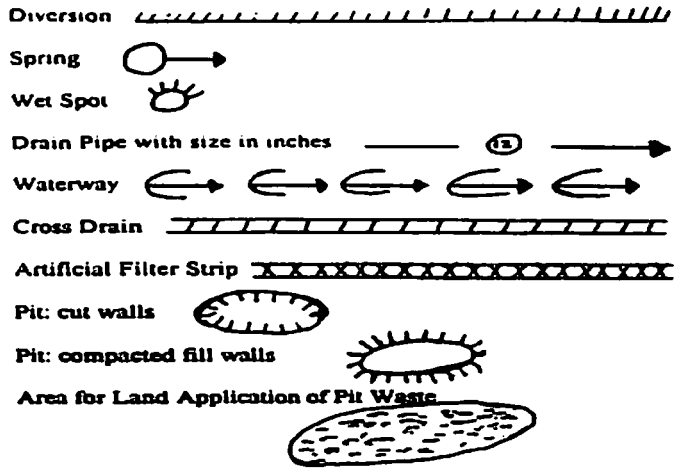


Form WW-9

Operator's Well No. Gould 2



**LEGEND**



Proposed Revegetation Treatment: Acres Disturbed 1.5 +/- Prevegetation pH \_\_\_\_\_

Lime 3 Tons/acre or to correct to pH \_\_\_\_\_

Fertilizer (10-20-20 or equivalent) 1000 lbs/acre (500 lbs minimum)

Mulch 3 Tons/acre

**Seed Mixtures**

Area I		Area II	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Ryegrass	40	Kentucky Bluegrass	20
		Redtop	3
		Birdsfoot Trefoil	10

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

Photocopied section of involved 7.5' topographic sheet.

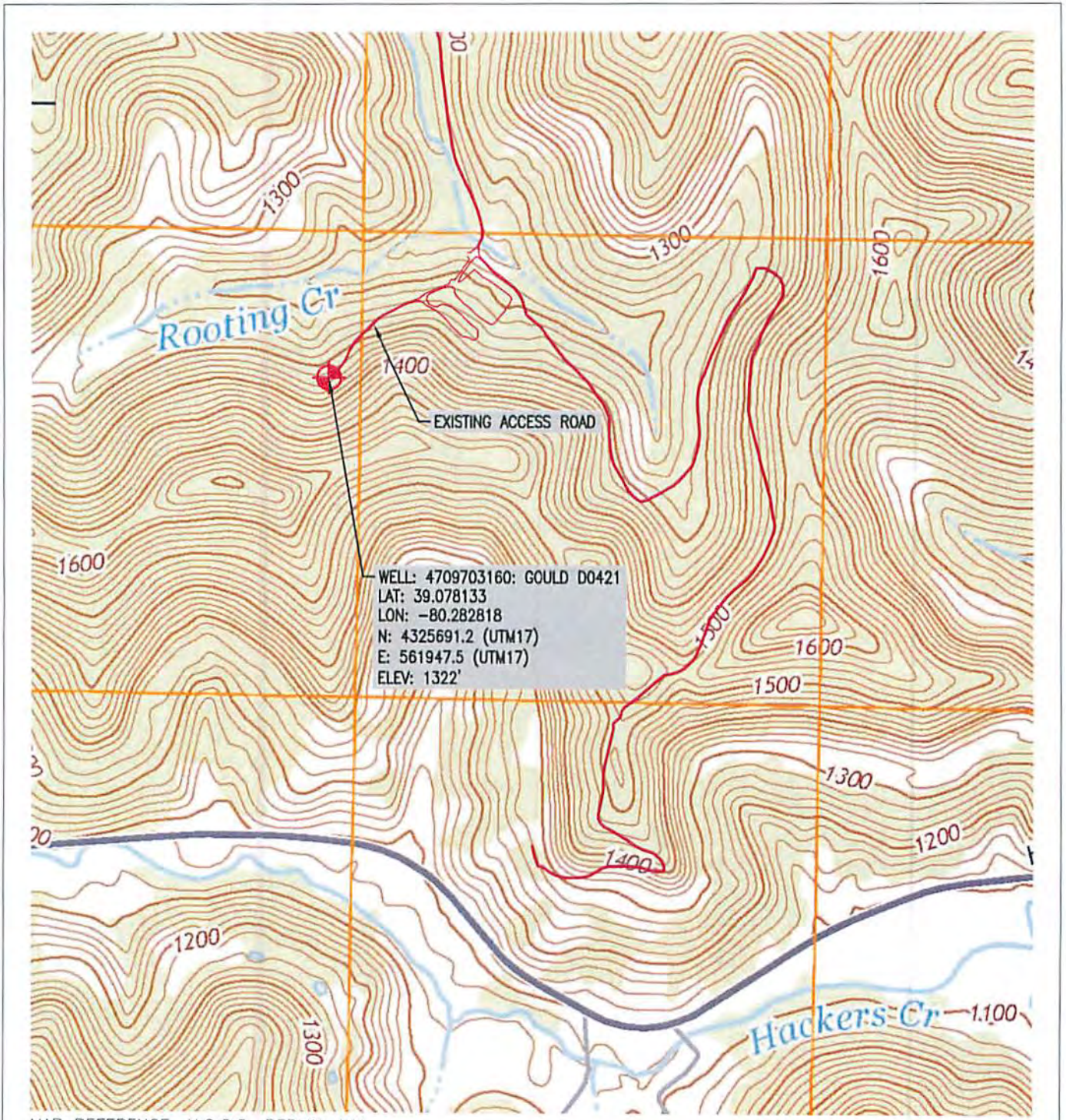
Plan Approved by: Bryan O'Hara

Comments: \_\_\_\_\_ RECEIVED  
Office of Oil and Gas

Title: Oil + Gas Inspection Date: 8-24-15 AUG 27 2015  
Field Reviewed?  Yes  No WVA Department of Environmental Protection

10/09/2015





MAP REFERENCE: U.S.G.S. BERLIN, WV



810 HOUSTON STREET  
FORT WORTH, TX 76102



Voice: (724) 635-0210

**TRI-COUNTY ENGINEERING, LLC**

An **ENERCON** Company  
 319 Paintersville Road  
 Hunker, PA 15639  
 www.tricountyeng.com

Fax: (724) 635-0676



Excellence-Every project. Every day.

LOCATION MAP

GOULD D0421 WELL PLUG

DRAWN BY:  
MRC  
 DATE:  
7/16/2015  
 SCALE:  
AS NOTED

WARREN DISTRICT,  
UPSHUR COUNTY, WEST VIRGINIA  
 SHEET:  
1 OF 1  
 FILE NO:  
OG61-13

WV Department of Environmental Protection 10/09/2015



WW-7  
8-30-06



West Virginia Department of Environmental Protection  
Office of Oil and Gas  
**WELL LOCATION FORM: GPS**

API: 47-097-03160 WELL NO.: D0421

FARM NAME: Gould

RESPONSIBLE PARTY NAME: XTO Energy, Inc.

COUNTY: Upshur DISTRICT: Warren

QUADRANGLE: Berlin

SURFACE OWNER: XTO Energy, Inc.

ROYALTY OWNER: See attached list

UTM GPS NORTHING: 4325691.2

UTM GPS EASTING: 561947.5 GPS ELEVATION: 403 meters (1322')

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
2. Accuracy to Datum – 3.05 meters
3. Data Collection Method:

Survey grade GPS  : Post Processed Differential   
Real-Time Differential

Mapping Grade GPS  : Post Processed Differential   
Real-Time Differential

4. Letter size copy of the topography map showing the well location.

I the undersigned, hereby certify this data 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 Office of Oil and Gas.

*[Signature]*  
Signature

Project Manager  
Title

August 11, 2015  
Date

RECEIVED  
Office of Oil and Gas  
AUG 27 2015  
WV Department of Environmental Protection  
10/09/2015



9703160P

WELL NAME	OWNER NAME	ADDRESS LINE1	CITY	STATE	ZIP
GOULD 2	JAMES WILLIAM HENDERSON &	5050 HACKERS CREEK RD	WESTON	WV	264520000
GOULD 2	HELEN S. HENDERSON	5050 HACKERS CREEK ROAD	WESTON	WV	264527508
GOULD 2	ALMA C REXROAD	1 RILEY HEIGHTS	BUCKHANNON	WV	262010000

Royalty Owner List

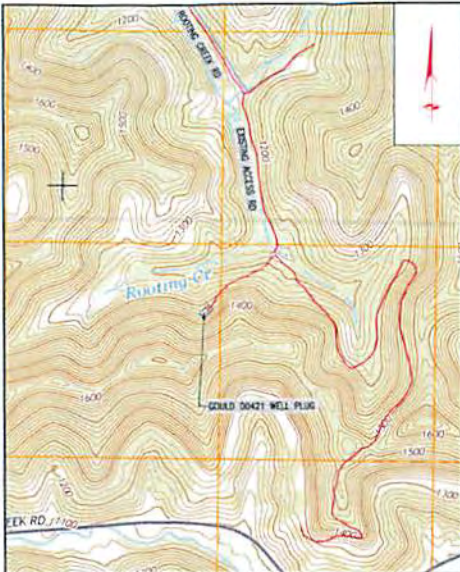
RECEIVED  
Office of Oil and Gas

AUG 27 2015

WV Department of  
Environmental Protection

10/09/2015

9703160P



**SITE LOCATION MAP**  
 MAP REF. BERLIN, WV  
 U.S.G.S. 7.5 MINUTE QUAD  
 SCALE: 1"=1000'



STUDY AREA PREVIOUSLY DETERMINED BY EROSION ENVIRONMENTAL CONSULTANTS AND APPROVED BY THE U.S. EROSION PROGRAM IN 2012

THE CURRENT PROPOSED CONSTRUCTION TO THIS WELL PLUG WILL BE LIMITED TO THE ACCESS ROAD AND TEMPORARY WORKSPACE. ALL OTHER CONSTRUCTION OPERATIONS WILL BE LIMITED TO THE ACCESS ROAD AND TEMPORARY WORKSPACE.

1. ELEVATIONS ARE APPROXIMATED FROM WEST VIRGINIA DGS TECHNICAL CENTER CONTOURS AND NOT FIELD SURVEYED.  
 2. PROPERTY LINES SHOWN ON PLANS ARE REFERENCED FROM COUNTY MAPS AND NOT FIELD SURVEYED.  
 3. NO TEMPORARY OR PERMANENT IMPACTS TO WETLANDS.  
 4. NO TEMPORARY OR PERMANENT IMPACTS TO STREAMS.

REVISIONS			
NO.	DESCRIPTION	DATE	BY

LEGEND	
EXISTING CONTOUR TO	ACCESS ROAD - EXISTING
PROPERTY LINE	ACCESS ROAD - PROPOSED
TEMPORARY WORKSPACE	CONSTRUCTION SAFETY FENCE
STREAM	STUDY AREA
SAT SURF DATA	WETLANDS
LIMITS OF DISTURBANCE CODE	

NOTES:

- ELEVATIONS ARE APPROXIMATED FROM WEST VIRGINIA DGS TECHNICAL CENTER CONTOURS AND NOT FIELD SURVEYED.
- PROPERTY LINES SHOWN ON PLANS ARE REFERENCED FROM COUNTY MAPS AND NOT FIELD SURVEYED.
- NO TEMPORARY OR PERMANENT IMPACTS TO WETLANDS.
- NO TEMPORARY OR PERMANENT IMPACTS TO STREAMS.

**XTO ENERGY**  
 810 HOUSTON STREET  
 FORT WORTH, TX 76102

GRAPHIC SCALE 1" = 100'

**TRI-COUNTY ENGINEERING, LLC**  
 An ENERCON Company  
 374 Pennsylvania Drive  
 Homer, PA 16139  
 www.tri-countyeng.com

Voice: (724) 835-0210 Fax: (724) 838-0676

**SEDIMENT CONTROL PLAN**

**GOULD D0421 WELL PLUG**

PROJECT NO.	WARREN DISTRICT
DATE	UPSHUR COUNTY, WEST VIRGINIA
DATE	08/14/2015
DATE	AS NOTED
PAGE NO.	1 OF 3
PROJECT NO.	0061-13

Existence-Every project. Every day.



97031601P

**PROJECT DESCRIPTION**

TRI-COUNTY ENGINEERING, LLC (TCE) ON BEHALF OF XTO ENERGY, INC., PREPARED THIS SEDIMENT CONTROL PLAN FOR THE GOULD 00421 WELL PLUG PROJECT. THE PROJECT IS LOCATED APPROXIMATELY 11 MILES EAST OF JAM 12W IN THE MARSHAL DISTRICT OF UPSHUR COUNTY, WEST VIRGINIA. THE PROPOSED GOULD 00421 WELL PLUG PROJECT INVOLVES THE PLUGGING AND ABANDONMENT OF THE GOULD 00421 SHALLOW GAS WELL. THE WELL HEAD CASING AND PRODUCTION EQUIPMENT WILL BE REMOVED. THREE CEMENT PLUGS ARE PLACED WITHIN THE BOPHOLES. THE WELL PAD AREA WILL BE RECLAIMED AND GRASSED TO BE CONSISTENT WITH THE GENERAL CONDITIONS OF THE ADJACENT SURROUNDING LAND. THE SITE WILL BE SEEDED, AS REQUIRED, WITH A MIX APPROVED BY WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE PROJECT CONSISTS OF AN ACCESS ROAD APPROXIMATELY 10 FEET IN WIDTH BY 760 FEET IN LENGTH AND A TEMPORARY WORKSPACE APPROXIMATELY 20,000 SQUARE FEET (0.5 ACRES) TOTALING A LIMITS OF DISTURBANCE OF 28,720 SQUARE FEET (0.6 ACRES). THE STUDY AREA FOR THIS PROJECT HAS 629,165 SQUARE FEET (14.4 ACRES).

**STANDARD EROSION AND SEDIMENTATION CONTROL MEASURES AND NOTES**

THE CONTRACTOR SHALL USE WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL. BEST MANAGEMENT PRACTICES WILL BE USED DURING CONSTRUCTION TO HELP MINIMIZE SEDIMENTATION TO ANY STREAMS AND/OR WETLANDS AND TO KEEP MUD, DIRT, AND DEBRIS OFF OF THE PUBLIC ROADS THAT COULD BE DEPOSITED FROM THE EQUIPMENT USED FOR CONSTRUCTION OF THE PROJECT. EROSION AND SEDIMENTATION CONTROL MEASURES TO BE USED FOR THIS PROJECT ARE COMPOST FILTER SOCKS, STABILIZED CONSTRUCTION ENTRANCE, AND TAMER MAT BRIGDES FOR STREAM AND WETLAND CROSSINGS (WHEN APPLICABLE).

IF PROJECT LIMITS CHANGE FOR NEEDS OF CONSTRUCTION, AND ADDITIONAL WETPROTECTS AND/OR WETLANDS ARE TO BE CROSSED OR IMPACTED, IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE NECESSARY PERMITS PRIOR TO IMPACTING THESE FEATURES.

IF OTHER ACCESSES ARE NEEDED OR BETTER ROUTES ARE DETERMINED, OBTAIN THE NECESSARY PERMITS PRIOR TO INITIATING WORK FOR THE NEW ROUTE. PROVIDE RECORD MARKERS ON THE ON-SITE SOP DRAWINGS TO ACCLUE THE LOCATION OF THE ACCESS ROADS AND THE CONTROL MEASURES, SUCH AS STABILIZED CONSTRUCTION ENTRANCES, TO BE USED.

**VEGETATIVE PRACTICES - TEMPORARY AND PERMANENT**

PERMANENT VEGETATIVE STABILIZATION: DISTURBED AREAS WILL RECEIVE TOPSOIL AND PERMANENT VEGETATIVE STABILIZATION, DEFINED AS A UNIFORM 70% PERENNIAL VEGETATIVE COVER. THE SOIL TO A DEPTH OF 2" - 3" ABOVE ALL COLLECTS 2" OR LARGER. THESE AREAS WILL BE PERMANENTLY STABILIZED IN ACCORDANCE WITH THE SEEDING SPECIFICATIONS OF THIS PLAN.

TEMPORARY VEGETATIVE PRACTICES (INTERIM STABILIZATION): SLOPE AREAS, SOIL STOCKPILES, OR EMBARCMENTS THAT WILL BE LEFT DUE TO UNFORESEEN CIRCUMSTANCES DURING OPERATIONS OR THAT WILL REMAIN IN PLACE FOR MORE THAN TWO WEEKS SHALL RECEIVE TEMPORARY SEEDING. THESE AREAS WILL BE TEMPORARILY STABILIZED IN ACCORDANCE WITH THE SEEDING TABLES OF THIS PLAN.

THE PLANS AND SPECIFICATIONS FOR INSTALLING TOPSOIL SHALL BE IN KEEPING WITH THIS STANDARD AND SHALL DESCRIBE THE REQUIREMENTS FOR APPLYING THE PRACTICE TO ACHIEVE ITS INTENDED PURPOSE. AT A MINIMUM INCLUDE THE FOLLOWING ITEMS:

1. TOPSOIL SOURCE,
2. STOCKPILE LOCATION AND METHOD OF STABILIZATION PRIOR TO USE,
3. TOPSOIL/SUBSOIL BONDING PROCEDURES,
4. SITE PREPARATION PLANS AND METHODS OF APPLICATION, DISTRIBUTION AND COMPACTOR.

**SITE PREPARATION**- BEFORE SPREADING TOPSOIL, ASSURE THAT ALL NECESSARY SEDIMENT CONTROL PRACTICES, SUCH AS OVERSOWS AND SEDIMENT BARRIERS ARE IN PLACE AND FUNCTIONING PROPERLY. THESE PRACTICES MUST BE MAINTAINED UNTIL THE SITE IS PERMANENTLY STABILIZED.

**GRADING**- MAINTAIN GRADES ON THE AREAS TO BE TOPSOILED ACCORDING TO THE APPROVED PLAN AND DO NOT ALTER THEM BY ADDING TOPSOIL.

**LIMING OF SUBSOIL**- WHERE THE PH OF THE EXISTING SUBSOIL IS 6.0 OR LESS, OR THE SOIL IS COMPOSED OF HEAVY CLAYS, INCORPORATE AGRICULTURAL LIMESTONE IN AMOUNTS RECOMMENDED BY SOIL TESTS OR SPECIFIED FOR THE SEEDING MIXTURE TO BE USED. INCORPORATE LIME TO A DEPTH OF AT LEAST 2 INCHES BY DIGGING.

**ROUGHENING**- IMMEDIATELY PRIOR TO SPREADING THE TOPSOIL, LOOSEN THE SUBGRADE BY DIGGING OR SCARIFYING TO A DEPTH OF AT LEAST 4 INCHES, TO ENSURE BONDING OF THE TOPSOIL AND SUBSOIL. IF NO AMENDMENTS HAVE BEEN INCORPORATED, LOOSEN THE SOIL TO A DEPTH OF AT LEAST 6 INCHES BEFORE SPREADING THE TOPSOIL.

**SPREADING TOPSOIL**- UNIFORMLY DISTRIBUTE TOPSOIL TO A MINIMUM COMPACTED DEPTH OF 3 INCHES ON 3:1 SLOPES AND 4 INCHES ON FLATTER SLOPES. TOPSOIL SHALL NOT BE SPREAD WHILE IT IS FROZEN OR SATURATED OR WHEN THE SUBSOIL IS FROZEN OR SATURATED. IRREGULARITIES IN THE SURFACE THAT RESULT FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED TO PREVENT THE FORMATION OF DEPRESSIONS OR PONDING OF WATER. COMPACT THE TOPSOIL ENOUGH TO ENSURE GOOD CONTACT WITH THE UNDERLYING SOIL, BUT AVOID EXCESSIVE COMPACTON AS IT INCREASES BONDSTF AND IMPAIRS SOIL PENETRATION AND SEEDLING GROWTH. LIGHT PACKING WITH A ROLLER IS RECOMMENDED WHERE HIGH-MAINTENANCE TRAFFIC IS TO BE ESTABLISHED. IN AREAS THAT ARE NOT GOING TO BE MOWED, THE SURFACE CAN BE LEFT ROUGH.

**MAINTENANCE**- AFTER TOPSOIL APPLICATION, FOLLOW PROCEDURES FOR SEEDING PREPARATION. TAKE CARE TO AVOID EXCESSIVE MIXING OF TOPSOIL INTO THE SUBSOIL. PERMANENTLY STABILIZE THE SITE FOLLOWING APPROPRIATE PRACTICE STANDARDS AS CLOSELY AS PRACTICABLE. PERIODICALLY NOTIFY THE SITE UNTIL PERMANENT STABILIZATION IS ACHIEVED. MAKE NECESSARY REPAIRS TO ERODED AREAS OR AREAS OF LIGHT VEGETATIVE COVER. ESTABLISH A VEGETATIVE

**COVER IN THE AREAS THAT WILL ADEQUATELY PREVENT EROSION.**

SEEDING PREPARATION: TO CONTROL EROSION ON HAYSIDE SURFACES, PLANTS MUST BE ABLE TO GERMINATE AND GROW. SEEDING PREPARATION IS ESSENTIAL. IF THE AREA HAS BEEN RECENTLY LOOSED OR DISTURBED, NO FURTHER ROUGHENING IS REQUIRED. WHEN THE AREA IS COMPACTED, CRUSTED, OR HARDENED, THE SOIL SURFACE MUST BE LOOSED BY DIGGING, RAVING, HARROWING, OR OTHER ACCEPTABLE MEANS (SEE SURFACE ROUGHENING SECTION).

**SEEDING**- SEED SHALL BE EVENLY APPLIED WITH A BROADCAST SEEDER, DRILL, CULTIPACKER SEEDER OR HYDROSEEDER. SMALL GRASS SHALL BE PLANTED NO MORE THAN 1.0 INCHES DEEP. SMALL SEEDS, SUCH AS ANNUAL RYE, SHALL BE PLANTED NO MORE THAN A QUARTER INCH DEEP. OTHER GRASSES AND LEGUMES SHALL BE PLANTED NO MORE THAN A HALF INCH DEEP. MULCHING, TEMPORARY SEEDING, CONDUCTED IN FALL FOR WINTER COVER AND DURING HOT AND DRY SUMMER MONTHS, SHALL BE MULCHED WITH STRAW OR HAY ACCORDING TO THE STANDARD FOR MULCHING. HYDROMULCHES (OTHER MULCH) MAY NOT PROVIDE ADEQUATE TEMPERATURE AND MOISTURE CONTROL.

**BASIC SEDIMENT CONTROL PLAN ELEMENTS**

OBTAIN ALL PERMITS AND APPROVALS PRIOR TO CONSTRUCTION.

IF CONSTRUCTION LIMITS NEED TO BE EXPANDED BEYOND THE LIMITS OF DISTURBANCE AREA SHOWN ON THE PLANS, A PRE-CONSTRUCTION ENVIRONMENTAL EVALUATION WILL NEED TO BE CONDUCTED. CONTACT THE ENVIRONMENTAL BIOLOGIST TO CONDUCT A REVIEW ON THE NEW AREAS PRIOR TO CONSTRUCTION. INSTALL THE STABILIZED CONSTRUCTION ENTRANCES AT THE ACCESS ROAD. STABILIZED CONSTRUCTION ENTRANCES MAY BE NEEDED AT THE ACCESS ROAD PENDING ITS USE AT THE TIME OF THIS PROJECT'S CONSTRUCTION.

MARK ALL CLEARING LIMITS AND SENSITIVE AREAS SUCH AS STREAMS, WETLANDS, ETC.

INSTALL CRANE CONSTRUCTION FENCE NEAR STREAMS, WETLANDS AND STRUCTURES WITHIN THE LIMITS OF DISTURBANCE TO PROVIDE A PHYSICAL BARRIER TO DETRIMENTAL ACTIVITY BY CONSTRUCTION ACTIVITIES.

ADD GRASSES TO ACCESS ROAD AS NEEDED, BUT NO GRASSING OR PACKING TO EXISTING DRAINAGE FEATURES ARE TO BE MODIFIED.

ON A DAILY BASIS, CLEAN THE ROADS THOROUGHLY BY REMOVING TRAPPED SEDIMENT BY SHOVELING OR SWEEPING. STREET WASHING TO A WATERCOURSE OR STORM DRAIN SYSTEM IS NOT ALLOWED.

INSTALL COMPOST FILTER SOCK WHERE SHOWN PARALLEL TO THE SLOPE AND ON THE DOWN-SLOPE SIDE OF THE LIMITS OF DISTURBANCE TO PREVENT SEDIMENTATION FROM LEAVING THE PROJECT AREA.

CLEAR AND GRASS ALONG THE ROW. PRESERVE NATURAL VEGETATION AS MUCH AS POSSIBLE, WITHOUT SIGNIFICANT INTERFERENCE WITH CONSTRUCTION ACTIVITIES.

USE TAMER MAT BRIGDES TO CROSS WATERBODIES AND WET AREAS, AS NEEDED.

RE-ESTABLISH THE GRADE TO THE PRE-CONSTRUCTION CONDITIONS.

RE-STABILIZE DISTURBED SOILS WITHIN 7 DAYS BY PLACING TEMPORARY SEEDING IF NOT FINAL GRASSED AND PERMANENT SEEDING WITH A NURSE CROP IF FINAL GRASSED.

MULCH AND FERTILIZE AS STATED IN THIS PLAN.

PLACE ROLLED EROSION CONTROL PRODUCTS (RCP) MATS AND BLANKETS ON TOP OF SEEDING AREAS ON STEEP SLOPES WHERE SEEDING MAY BE DISPLACED BY RUNOFF. TYPICALLY, SLOPES GREATER THAN 3:1V NEED TO HAVE AN EROSION CONTROL MAT OR BLANKET PLACE OVER THE SEEDING AREAS. SIZE AND PLACE RCP ON THE STEEP SLOPES ADJACENT TO ANY AND ALL STREAMS IMMEDIATELY (WITHIN 7 DAYS) AFTER THE WELL PLUG IS REMOVED.

MAINTAIN ALL BEST MANAGEMENT PRACTICES (BMPs) AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION.

ALL BMPs SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCHES PER 24 HOUR PERIOD. ANY REQUIRED REPAIRS OR MAINTENANCE SHOULD BE MADE IMMEDIATELY. THIS INCLUDES THE REMOVAL OF SEDIMENT THAT IS OVER HALF THE HEIGHT OF THE COMPOST FILTER SOCK (1 DAY PER WEEK OR AS STORM EVENTS REQUIRES).

TEMPORARY BMPs SHOULD BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMPs ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL RESULTING FROM REMOVAL OF BMPs OR VEGETATION SHALL BE PERMANENTLY STABILIZED. FINAL STABILIZATION MEANS THAT ALL SOIL-DISTURBING ACTIVITIES ARE COMPLETED, AND THAT EITHER A PERMANENT VEGETATIVE COVER OF THE TOTAL VEGETATED AREA WITH A DENSITY OF 70% OR GREATER HAS BEEN ESTABLISHED OR THAT THE SURFACE HAS BEEN STABILIZED BY MUD COVER SUCH AS PAVEMENT OR BUILDINGS (WHEN APPLICABLE).

NO NEW PERMANENT CUP OR FILL SLOPES ARE TO BE REMAIN ON-SITE. GRADING SHOULD BE DONE SUCH THAT POST-CONSTRUCTION CONTOURS SHOULD CLOSELY MATCH APPROXIMATE ORIGINAL CONTOURS AFTER CONSTRUCTION IS COMPLETE. ALL AREAS IN THE LOD THAT WERE VEGETATED IN THE EXISTING CONDITION ARE TO BE VEGETATED AFTER CONSTRUCTION.

**MANAGING THE PROJECT**

THIS SEDIMENT CONTROL PLAN (SCP) IS TO REMAIN ON-SITE AT ALL TIMES DURING CONSTRUCTION. THE SCP SHALL BE MODIFIED WHENEVER THERE IS SIGNIFICANT CHANGE IN THE DESIGN, CONSTRUCTION, OPERATION OR MAINTENANCE OF ANY BMP.

CLEARING AND GRADING ACTIVITIES SHOULD TAKE INTO CONSIDERATION REMOVAL OF TREES AND DISTURBANCE AND COMPACTION OF NATIVE SOILS. ANY AREAS THAT REQUIRE PRESERVATION OF CRITICAL OR SENSITIVE AREAS AND/OR REQUIRE BUFFERS SHALL BE DELINEATED ON BOTH THE PLANS AND THE SITE.

ALL BMPs SHALL BE INSPECTED, MAINTAINED AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED USE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE SEDIMENTATION AND EROSION IS BEING CONTROLLED ON-SITE AND IS NOT IMPOSING ON ADJACENT PROPERTIES. BMPs OTHER THAN STATED IN THIS PLAN, MAY NEED TO BE IMPLEMENTED.

SPILLS OR DISCHARGE OF POLLUTANTS ARE TO BE REPORTED WITHIN 24-HOURS TO THE APPROPRIATE AGENCIES.

**WASTE MATERIALS AND DEBRIS**

ALL POLLUTANTS, INCLUDING WASTE MATERIALS, SHOULD BE HANDLED AND DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF SURFACE WATER. MUDCY DEBRIS MAY BE COLLECTED AND SPREAD ON-SITE AS APPROVED BY THE LANDOWNER.

COVER, CONTAINMENT AND PROTECTION FROM VANDALISM SHALL BE PROVIDED FOR ALL CHEMICALS, LIQUID PRODUCTS AND NON-HEAT WASTES PRESENT ON THE SITE.

MAINTENANCE AND REPAIR OF HEAVY EQUIPMENT AND VEHICLES INVOLVING OIL CHANGES, HYDRAULIC SYSTEM DRAIN DOWN, SOLVENT AND RE-OILING, CLEANING OPERATIONS, FUEL TANK DRAIN DOWN AND REMOVAL, AND OTHER ACTIVITIES WHICH MAY RESULT IN DISCHARGE OR SPLASH OF POLLUTANTS TO THE GROUND OR INTO THE SURFACE WATER RUNOFF MUST BE CONDUCTED USING SPILL PREVENTION MEASURES, SUCH AS DUMP PANS. CONTAMINATED SURFACES SHALL BE CLEANED IMMEDIATELY FOLLOWING ANY DISCHARGE OR SPILL. ACCIDENT "PLACE PLASTIC BENEATH THE EQUIPMENT WHEN EMERGENCY REPAIRS ARE TO BE PERFORMED ON-SITE. IF RAINING, PLACE PLASTIC OVER THE VEHICLE.

**GENERAL NOTES REGARDING REGULATION**

THE GENERAL CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES INVOLVED IN THE SITE NO MORE THAN TEN DAYS AND NO LESS THAN THREE DAYS IN ADVANCE OF EXCAVATION EXCLUDING SATURDAY, SUNDAY, AND FEDERAL OR STATE HOLIDAYS. CONTACT WEST VIRGINIA AT 1-800-243-4848. TRAFFIC SHALL BE MAINTAINED ON ALL ADJACENT STREETS AND DRIVES AT ALL TIMES IN ACCORDANCE WITH WV DOT'S REQUIREMENTS.

DISTURBED AREAS CREATED DUE TO WELL PLUG REMOVAL, SHALL BE RECLAIMED, MULCHED AND SEEDED TO REDUCE EROSION AND SEDIMENTATION.

API NUMBERS AND IDENTIFICATION NUMBERS SHALL BE DISPLAYED AT THE WELL. IN ACCORDANCE WITH STATE REQUIREMENTS. LANDOWNERS SHALL BE GIVEN ADEQUATE NOTICE THAT CERTAIN SPECIFIED ACTIVITIES WILL BE OCCURRING ON THEIR PROPERTY.

**PERMANENT STABILIZATION**

SPECIES	KENTUCKY BLUEGRASS / RECTOR / BROADFOOT TREFOIL
% PURE LIME SEED	80%
APPLICATION RATE	20 LBS/ACRE, 3 LBS/ACRE, AND 10 LBS/ACRE, RESPECTIVELY
FERTILIZER TYPE	COMMERCIAL FERTILIZER 10-20-20
FERTILIZER APPL. RATE	COMMERCIAL - 1000 LBS/ACRE
LIMING RATE	3 TONS/ACRE
MULCH TYPE	HAY & STRAW
MULCHING RATE	5 TONS/ACRE
ANCHOR MATERIAL	RECYCLED CELLULOSE FIBER/WOOD FIBER MATTER
ANCHORING METHOD	HYDRAULIC SEEDING EQUIPMENT
RATE OF ANCHOR	370 LBS/1000 SQ. YD.
MATERIAL APPLICATION	
SEEDING SEASON DATES	YEAR ROUND


**TEMPORARY STABILIZATION**

SPECIES	ANNUAL RHYZOGON
% PURE LIME SEED	90%
APPLICATION RATE	40 LBS/ACRE
FERTILIZER TYPE	COMMERCIAL FERTILIZER 10-10-10
FERTILIZER APPL. RATE	COMMERCIAL - 1000 LBS/ACRE
LIMING RATE	3 TONS/ACRE
MULCH TYPE	HAY & STRAW
MULCHING RATE	3 TONS/ACRE

ESTIMATED QUANTITIES				
ITEMS & QUANTITY (TOTAL)	UNITS	STANDARD QUANTITY	EST. QUANTITY	TOTAL QUANTITY
SOIL CONSTRUCTION DISTURBED	SQ. FT.	100	100	100
TOPSOIL	CY	100	100	100
STABILIZATION	SQ. FT.	100	100	100
SOIL CONSTRUCTION DISTURBED	SQ. FT.	100	100	100


**REVISIONS**

NO.	DESCRIPTION	DATE	BY
1			



17816  
STATE OF WEST VIRGINIA

PREPARED FOR:



**XTO ENERGY**  
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**SEDIMENT CONTROL NARRATIVE**

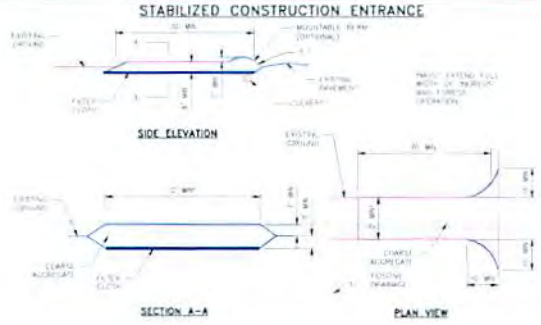
**GOULD 00421 WELL PLUG**

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West Virginia Department of Environmental Protection

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**INSTALLATION**

- USE 2-4 INCH STONE FOR LOW VOLUME ENTRANCES UNDER STONE OR GRAVEL FOR HIGH USE OR MATERIAL. EXISTING ENTRANCES LEACH DRAIN REQUIRED BUT NOT LESS THAN 10 FEET EXCEPT ON A SINGLE RESIDENT LOT WHERE A 30-FOOT MINIMUM LENGTH WILL SUFFICE.
- ENTRANCE SHOULD BE NOT LESS THAN 8 INCHES.
- THE WIDTH SHOULD BE A MINIMUM OF 12 FEET BUT NOT LESS THAN 16 FEET, WITH AN OPENING WHERE NEEDED OF EXCEED 18 INCHES.
- EXISTING PAVING SHALL BE PLACED OVER THE EXISTING AREA PRIOR TO THE PLACING OF STONE.
- ALL SURFACE WITH EXCEPT EXCEPTED CONSTRUCTION ENTRANCES SHALL BE PROTECTED AGAINST THE ENTRANCE OF A LEAKAGE OF MATERIAL. A MINIMUM 2 INCHES DEEP WITH 1/2 INCHES THICK OF CURB.
- IF NECESSARY, CURB MAY BE PLACED DOWN AND ALIGNED WITH A STONE WITH A COMPOST FILTER SOCK TREATMENT BARRIER LOCATED ON EITHER SIDE OF THE STABILIZED CONSTRUCTION ENTRANCE.

**MAINTENANCE**

- THE ENTRANCE SHALL BE MAINTAINED TO A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT DURING PUBLIC RIGHTS-OF-WAY THAT MAY RESULT FROM THE OPERATION WITH ADDITIONAL STONE AS CONSTRUCTION IS MADE AND REPAIR AND/OR CLEANING OF ANY MATERIALS USED TO THIS ENTRANCE AND REMOVE ALL OTHER MATERIALS FROM THE ENTRANCE AND SURFACE.
- WHEELS SHALL BE WASHED PRIOR TO BEING USED TO REMOVE SEDIMENT FROM TO ENTRANCE. ONLY PUBLIC RIGHTS-OF-WAY IS REQUIRED TO BE WASHED. IT SHALL BE DONE ON A REGULAR BASIS WITH STONE AND WHEN STONE IS ALSO APPLIED TO REMOVE TRACKING. SHALL IN THE COURSE OF WASHING PRECAUTIONS NOT BE TAKEN TO PREVENT WASH WATER FROM RUNNING INTO ADJACENT OR EXISTING DRAINAGE.
- INSPECTION AND MAINTENANCE SHOULD BE PROVIDED DAILY WITH A MINIMUM EACH WEEKLY AND AFTER EACH EVENT OF 0.5 INCH OF RAINFALL.



**NOTES**

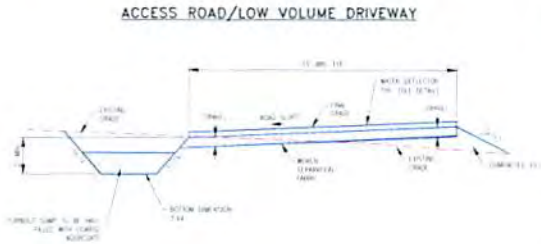
- REFER TO STONE TREATMENT REQUIRED EXISTING ROADWAY AND DRAINAGE OR CURB TO BE PLACED OVER EXISTING TO MATCH EXISTING CONDITIONS. MINIMUM 2 INCHES AND COMPOST SOFT TYPICALLY 1/2 INCHES THICK TO BE SPECIFIED.
- GRADE SHALL NOT BE LOWER THAN EXISTING CONDITIONS OR AS ADJUSTED UPON WITH THE OWNER OF THE ROAD.

**INSTALLATION**

- ROADWAY SURFACE MAY BE DESIGNED TO EITHER SIDE AS TOPOGRAPHY AND DRAINAGE ALLOWING.
- INSTALL WATER DETECTOR AS PER DETAIL ON THIS PLAN FOR POSITIVE DRAINAGE TO TYPICAL DRAIN.
- CONSTRUCT CURB TO HAVE A BOTTOM DIMENSION OF 3 INCH WITH A 1/2 INCH TOP.
- PLACE CURB ACCORDING TO PLAN OR VERTICAL.

**MAINTENANCE**

- AUTOMATED TOWING SHALL BE REMOVED WHEN IT REACHES 1/2 THE HEIGHT OF THE CURB.
- INSPECT AT A MINIMUM ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.2 INCHES OF RAIN PER 24 HOUR PERIOD.

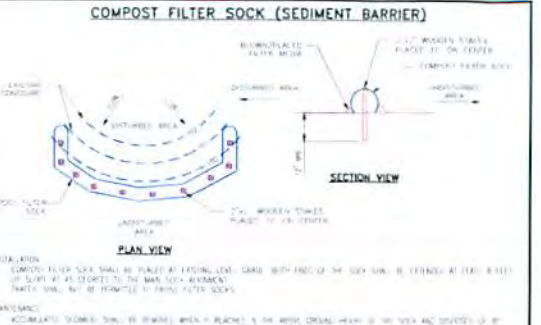


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**INSTALLATION**

- COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL. GRADE BOTH SIDES OF THE SOCK SHALL BE FINISHED AT LEAST 8 FEET TO SURFACE AS IS EXISTING TO THE MAXIMUM ALLOWABLE.
- SOCKS SHALL NOT BE PLACED TO FORM FILTER SOCKS.

**MAINTENANCE**

- ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE WIDTH OR GRADE HEIGHT OF THE SOCK AND DIVERTED TO BE SPREAD OR RETURNED TO THE ROW OR IN A SPECIAL TREATMENT AREA.
- SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RAINFALL EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
- UNDRAINABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS. PERMEABLE SOCKS AFTER 1 YEAR. PERMEABLE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- UPON ESTABLISHMENT OF THE AREA IMMEDIATE TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK SHALL BE LEFT IN PLACE AND REPAIRED OR REMOVED IN THE LATTER CASE. THE SOCK SHALL BE LEFT OPEN AND THE WASH WATER SHALL BE TREATMENT AS A TAIL SUPPLEMENT.

**MATERIALS**

- SOCKS SHALL BE 100% BIODEGRADABLE WITH A MINIMUM OF 10% SMOOTH COMPOST POLYESTER FIBER.
- AT THE END OF EACH OPERATING YEAR, THE SOCKS SHALL BE REPLACED WITH COMPOST FILTER SOCKS.
- SOCKS SHALL BE 100% BIODEGRADABLE WITH A MINIMUM OF 10% SMOOTH COMPOST POLYESTER FIBER.
- COMPOST SOCK SHALL MEET MINIMUM SPECIFICATIONS FOR SOIL EQUAL OR GREATER THAN LISTED BELOW.

MATERIAL TYPE	1 INCH HERE	3 INCH HERE
MATERIAL CHARACTERISTICS	PHOTODEGRADABLE	PHOTODEGRADABLE
SOCK LENGTH	18'	24'
WEIR OPENING	1/2"	1/2"
TENSILE STRENGTH	100 LB	100 LB
ULTIMATE STABILITY TO DRIVING STAPLON (DOWN TO 100)	15 AT 1000 LB	175 AT 1000 LB
MINIMUM FUNCTIONAL LIFE (EVENTS)	4 MONTHS	4 MONTHS

COMPOST SHALL MEET THE FOLLOWING SPECIFICATIONS:

ORGANIC MATTER CONTENT	MIN. 10% DRY WEIGHT BASIS
DRAINAGE PATTERN	FIBROUS AND LOGICATED
pH	5.0-8.0
MATERIAL CONTENT	100-100%
PERMEABILITY INDEX	MIN. 100 THROUGH 1 DRAINAGE
SOLUBLE SALT CONCENTRATION	1/2% OF MAXIMUM

REVISIONS			
NO.	DESCRIPTION	DATE	BY
1			



PREPARED FOR:

**XTO ENERGY**

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**SEDIMENT CONTROL DETAILS**

GOULD D0421 WELL PLUG

WARREN DISTRICT  
UPSHUR COUNTY, WEST VIRGINIA

DATE: 8/14/2015

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