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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](http://www.dep.wv.gov)

July 31, 2015

**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-9703132, 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: ROHR 3 D0319  
Farm Name: BAILEY, GARY  
**API Well Number: 47-9703132**  
**Permit Type: Plugging**  
Date Issued: 07/31/2015

**Promoting a healthy environment.**

**07/31/2015**

## 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 July 1, 2014  
2) Operator's  
Well No. ROHR 3 D0319  
3) API Well No. 47-097 - 03132

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 1154' Watershed Hackers Creek  
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 Bryan Harris Name \_\_\_\_\_  
Address PO Box 157 Address \_\_\_\_\_  
Volga, WV 26238

10) Work Order: The work order for the manner of plugging this well is as follows:  
RIH and check TD at 4340', POOH and run 2" tubing down to 4340' and circulate 6% gel back to surface, then pump cement from 4340' up to 4150', perfs at 4278 - 4284', pull tubing up to 4000' and flush tubing out and wait for cement to set up, RIH down tubing and tag cement at 4150', if ok pull tubing up to 3590' and break circulation and pump cement up to 3350', perfs at 3532' - 3476', pull tubing up to 2870' and pump cement up to 2680', perfs at 2806 - 2816', pull tubing up to 2460' and pump cement up to 2250', perfs at 2406 - 2402', pull tubing out of well and run CBL in 4.5 casing, bond log shows cement top at 1860', cut casing at 1830' in collar, POOH with wire and break circulation with 6% gel, then pump cement from 1830' up to 1680' at casing cut, pull casing up to 1220' and pump cement up to 1050' elevation at 1154', pull casing up to 875' and pump cement to 700' bottom of 7" casing at 814', pull casing up to 200' and pump cement 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 Duane O'Hara Date 7-1-15

07/31/2015

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JUL 08 2015

47-097-03132

## Plugging Procedure

Cement	4340	-	4150	=	190'	in	4.5"	
Cement	3590	-	3350	=	240'	in	4.5"	
Cement	2870	-	2680	=	190'	in	4.5"	
Cement	2460	-	2250	=	210'	in	4.5"	
Cement	1830	-	1680	=	150'	in	6.25"	Open Hole
Cement	1220	-	1050	=	170'	in	6.25"	Open Hole
Cement	875	-	700	=	175'	in	7"	
Cement	200	-	0	=	200'	in	7"	

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JUL 08 2015

WR-35

DATE: 5/16/04  
API: 47-097-03132

*mt*

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

Well Operator's Report of Well Work

Farm Name: Rohr #3 Operator Well No. D0319

LOCATION: Elevation: 1,153.85' Quadrangle: Berlin  
District: Warren County: Upshur  
Latitude: 13,425 Feet S. of 39 Deg. 07 Min. 30 Sec.  
Longitude: 2,700 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>30'</u>	<u>-</u>	<u>conductor</u>
<u>Jane Lew, WV 26378</u>	<u>7"</u>	<u>814'</u>	<u>814'</u>	<u>to surface</u>
Agent: <u>John Haskins</u>	<u>4 1/2"</u>	<u>-</u>	<u>4391'</u>	<u>220 sks</u>
Inspector: <u>Tim Bennett</u>				
Date Permit Issued: <u>09/12/03</u>				
Date Well Work Commenced: <u>10/19/03</u>				
Date Well Work Completed: <u>10/26/03</u>				
Verbal Plugging:				
Date Permission Granted on:				
Rotary X Cable Rig				
Total Depth (ft): <u>4,422'</u>				
Fresh Water Depth (ft): <u>98', 130'</u>				
Salt Water Depth (ft): <u>none</u>				

Is coal being mined in the area (Y/N)? N  
Coal Depths (ft): 258-260'; 329'-332'; 573-576'

OPEN FLOW DATA

Producing formations	Pay zone depth (ft)
<u>Bayard</u>	<u>2,400'</u>
<u>Speechley</u>	<u>2,812'</u>
<u>Bradford</u>	<u>3,485'</u>
<u>Benson</u>	<u>4,291'</u>

Gas: Initial open flow odor Mcf/d. Oil: Initial open flow N/A Bbl/d  
Final open flow 235 Mcf/d. Final open flow N/A Bbl/d  
Time to open flow between initial and final tests: 2 Hours  
Static rock Pressure 1180 psig (surface press.) after 108 Hours

07/31/2015

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: *Ed ...*  
By: *AP ...*  
Date: 5/16/04

Received  
Office of Environmental Protection  
Department of Oil & Gas  
June 2015  
AUG 01 2005

WPS 3/132



9703132P

WELL NAME	OWNER NAME	ROYALTY INTEREST	ADDRESS LINE1	CITY	STATE	ZIP
ROHR, GLEN 3	GLEN H ROHR &	0.125000000	3520 OLD WESTON RD	BUCKHANNON	WV	262016071

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Office of Oil & Gas  
JUL 08 2015

4703132P

WW-4A  
Revised 6-07

1) Date: July 1, 2014  
2) Operator's Well Number  
ROHR 3 D0319  
3) API Well No.: 47 - 097 - 03132

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

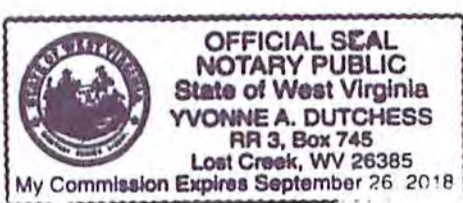
4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>Gary D. Bailey</u>	Name _____
Address <u>1132 Claypool Hollow Rd.</u>	Address _____
<u>Buckhannon, WV 26201</u>	
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name <u>Penn Virginia Operating Co. LLC</u>
	Address <u>Five Radnor Corporate Center</u>
	<u>100 Matsonford Rd., Suite 500</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: Jane Lew  
 Its: Regulatory Compliance Technician  
 Address PO Box 1008  
Jane Lew, WV 26378  
 Telephone 304-884-6000

Subscribed and sworn before me this 1 day of July, 2015  
Yvonne A. Dutchess Notary Public  
 My Commission Expires September 26, 2018

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).

07/31/2015  
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Office of Oil & Gas  
JUL 08 2015



9703132P

CK 7735025  
10000

WW-9  
(2/15)

API Number 47 - 097 - 03132  
Operator's Well No. ROHR 3 D0319

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name XTO Energy Inc. OP Code 494487940

Watershed (HUC 10) Hackers Creek Quadrangle Berlin

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes  No

Will a pit be used? Yes  No

If so, please describe anticipated pit waste: Fluids from plugging operations.

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.? 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))

Will closed loop system be used? If so, describe: NA

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. NA - Plugging

-If oil based, what type? Synthetic, petroleum, etc. NA

Additives to be used in drilling medium? NA

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Any solid waste from plugging will be taken to landfill.

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) NA

-Landfill or offsite name/permit number? Meadowbrook Landfill SWF#1032

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

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Office of Oil & Gas

JUL 08 2015

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 Tim Sands

Company Official (Typed Name) Tim Sands

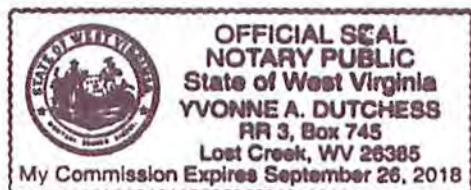
Company Official Title Regulatory Compliance Technician

Subscribed and sworn before me this 18<sup>th</sup> day of June, 20 15

Yvonne A. Dutches Notary Public

My commission expires September 26, 2018

07/31/2015



Form WW-9

Operator's Well No. ROHR 3 D0319

XTO Energy Inc.

Proposed Revegetation Treatment: Acres Disturbed .5 Prevegetation pH \_\_\_\_\_

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

Fertilizer type Commercial Fertilizer 10-20-20

Fertilizer amount 1000 lbs/acre

Mulch 3 Tons/acre

Seed Mixtures

Temporary		Permanent	
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 (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

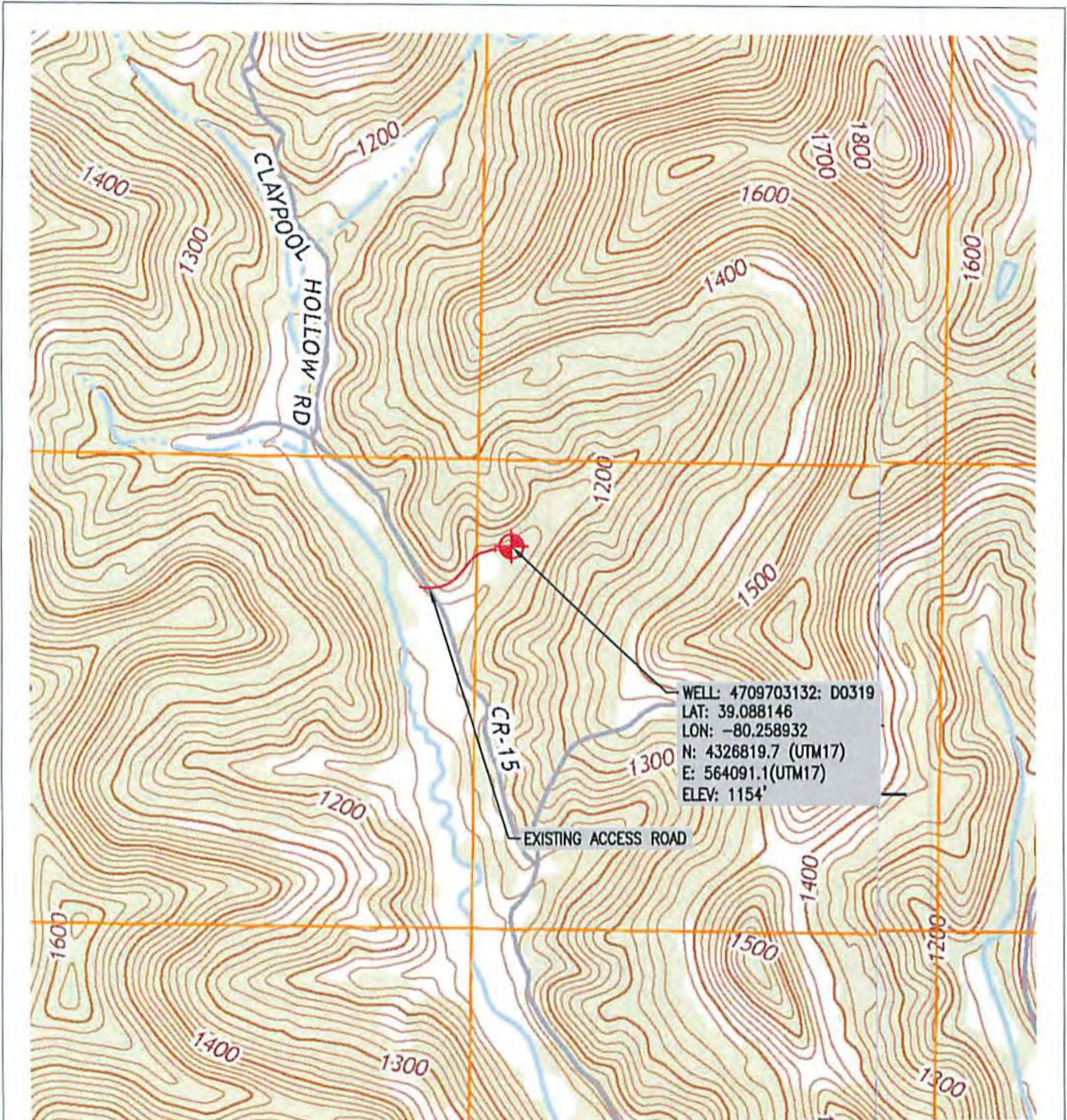
Plan Approved by: Byron O'Hanrahan

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

Title: Oil & Gas Inspector Date: 7-1-15

Field Reviewed? ( ) Yes (  ) No

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

<p>WV NORTH ZONE SPCS GRID NORTH</p>	<p><b>XTO ENERGY</b> 810 HOUSTON STREET FORT WORTH, TX 76102</p> <p>0' 1000' SCALE 1" = 1000'</p>	<p><b>TRI-COUNTY ENGINEERING, LLC</b> An ENERCON Company 319 Paintersville Road Hurker, PA 15639 www.tricountyeng.com</p> <p>Voice: (724) 635-0210 Fax: (724) 635-0676</p>					
		<p><b>LOCATION MAP</b></p> <p><b>ROHR D0319 WELL PLUG</b></p> <table border="1"> <tr> <td>DRAWN BY: ZJC</td> <td>WARREN DISTRICT, UPSHUR COUNTY, WEST VIRGINIA</td> </tr> <tr> <td>DATE: 5/29/2015</td> <td>SHEET: 1 OF 1</td> </tr> <tr> <td>SCALE: AS NOTED</td> <td>FILE NO. OG61-15</td> </tr> </table>		DRAWN BY: ZJC	WARREN DISTRICT, UPSHUR COUNTY, WEST VIRGINIA	DATE: 5/29/2015	SHEET: 1 OF 1
DRAWN BY: ZJC	WARREN DISTRICT, UPSHUR COUNTY, WEST VIRGINIA						
DATE: 5/29/2015	SHEET: 1 OF 1						
SCALE: AS NOTED	FILE NO. OG61-15						

07/31/2015

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JUL 08 2015



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



REVISIONS			
NO.	DESCRIPTION	DATE	BY
1			
2			
3			

LEGEND	
	EXISTING DISTURBANCE
	PROPOSED FENCE
	EXISTING WORKINGS
	STRAKE
	1/4\"/>

NOTES:  
1. ELEVATIONS ARE DETERMINED FROM WEST VIRGINIA STATE CENTER CONTROLS AND NOT FIELD MEASUREMENTS.  
2. PROPERTY LINES SHOWN ON PLANS ARE DISTANCED FROM COUNTY RECORDS AND HAVE NOT BEEN FIELD VERIFIED.  
3. ALL OF TEMPORARY WORKS TO BE REMOVED.  
4. ALL OF TEMPORARY WORKS TO BE CLEANED.

PREPARED FOR:  
**XTO ENERGY**  
810 HOUSTON STREET  
FORT WORTH, TX 76102

Graphic Scale: 1" = 50'

17016  
STATE OF TEXAS  
COUNTY OF TARRANT

TRI-COUNTY ENGINEERING, LLC  
An E2 ENERCON Company  
219 Parkside Road  
Furman, TX 75829  
www.tce-engineering.com  
Phone: (724) 635-0210 Fax: (724) 635-0675

**SEDIMENT CONTROL PLAN**  
ROHR D0319 WELL PLUG  
WARREN DISTRICT,  
UPSHUR COUNTY, WV  
DATE: 3/29/2015  
1 OF 3  
D061-15

ESCALENCE - Every project. Every day.

**PROJECT DESCRIPTION:**

TRI-COUNTY ENGINEERING, LLC (TCE), ON BEHALF OF XTO ENERGY, INC., PREPARED THIS SEDIMENT CONTROL PLAN FOR THE ROHR D0319 WELL PLUG PROJECT. THE PROJECT IS LOCATED APPROXIMATELY 8.0 MILES SOUTHEAST OF JANE LEE IN THE WARREN DISTRICT OF UPSHUR COUNTY, WEST VIRGINIA. THE PROPOSED ROHR D0319 WELL PLUG PROJECT INVOLVES THE PILING AND ABANDONMENT OF THE ROHR D0319 SHALLOW GAS WELL. THE WELLHEAD, CASING, AND PRODUCTION EQUIPMENT WILL BE REMOVED. THREE CEMENT PILLS ARE PLACED WITHIN THE BOREHOLE. THE WELL PAD AREA WILL BE RECLAIMED AND GRADED TO BE CONSISTENT WITH THE GENERAL CONTOUR OF THE IMMEDIATE SURROUNDING LAND. THE SITE WILL BE SEEDING AS REQUIRED, WITH A MAT APPROVED BY WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE PROJECT CONSISTS OF AN ACCESS ROAD APPROXIMATELY 7 FEET WIDE AND 840 FEET LONG, AND A WOODPILE APPROXIMATELY 2144' SQUARE FEET (534 ACRES). THE STUDY AREA FOR THE PROJECT WAS 64,715 SQUARE FEET (1.5 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 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 ENTRANCES, AND TIMBER MAT BRIDGES FOR STREAM AND WETLAND CROSSINGS (WHEN APPLICABLE).

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

IF OTHER ACCESSES ARE NEEDED OR BETTER ROUTES ARE DETERMINED, OBTAIN THE NECESSARY PERMITS PRIOR TO IMPACTING NOW FOR THE NEW ROUTES. PROMISE RECORD MARKUPS ON THE ON-SITE SCD DRAWINGS TO INCLUDE 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**

RESTORED AREAS WILL RECEIVE TOPSOIL AND PERMANENT VEGETATIVE STABILIZATION, DEFINED AS A UNIFORM TOP PERENNIAL VEGETATIVE COVER. TOP SOIL TO A DEPTH OF 2" REMAIN ALL OBJECTS 2" OR LARGER. THESE AREAS WILL BE PERMANENTLY STABILIZED IN ACCORDANCE WITH THE SEEDING SPECIFICATIONS OF THIS PLAN.

**TEMPORARY VEGETATIVE PRACTICES (INTERIM STABILIZATION)**

SLOPE ARMS, SOIL STOCKPILES, OR IMPROVEMENTS THAT WILL NOT BE OLE DUE TO UNDESIRABLE 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 COMPACTION.

**SITE PREPARATION:** BEFORE SPREADING TOPSOIL, ASSURE THAT ALL NECESSARY SEDIMENT CONTROL PRACTICES, SUCH AS CONTROLS 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.

**BONDING OF SUBSOIL -** WHEN THE PH OF THE EXISTING SUBSOIL IS 8.0 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 BONDING.

**ROUGHENING -** IMMEDIATELY PRIOR TO SPREADING THE TOPSOIL, LOOSEN THE SUBGRADE BY DISKING OR SCARPING 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 2 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 POCKING OF WATER. COMPACT THE TOPSOIL ENOUGH TO ENSURE GOOD CONTACT WITH THE UNDERLYING SOIL, BUT AVOID EXCESSIVE COMPACTION, AS IT REDUCES RUNOFF AND IMPAIRS SEED GERMINATION AND SEEDLING GROWTH. LIGHT PACKING WITH A ROLLER IS RECOMMENDED WHERE HIGH-MAINTENANCE TURF 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 MOWING OF TOPSOIL INTO THE SUBSOIL. PERMANENTLY STABILIZE THE SITE FOLLOWING APPROPRIATE PRACTICE STANDARDS AS QUICKLY AS PRACTICABLE. PERIODICALLY INSPECT 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 BARE SOIL SURFACES, PLANTS MUST BE ABLE TO GERMINATE AND GROW. SEEDING PREPARATION IS ESSENTIAL. IF THE AREA HAS BEEN RECENTLY LOOSENED OR DISTURBED, NO FURTHER ROUGHENING IS REQUIRED, WHEN THE AREA IS COMPACTED, CRUSTED, OR HARDENED, THE SOIL SURFACE MUST BE LOOSENED BY DIGGING, RAKING, HARROWING, OR OTHER ACCEPTABLE MEANS. (SEE SURFACE MAINTENANCE SECTION)

**SEEDING -** SEED SHALL BE EVENLY APPLIED WITH A BROADCAST SEEDER, DRILL, CULTIPACKER SEEDER OR HYDROSEEDER. SMALL GRASS SHALL BE PLANTED NO MORE THAN 1.5 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. WINTERING TEMPORARY SEEDING, CONDUCTED IN FALL FOR WINTER COVER AND SPRING HOT AND DRY SUMMER MOWING, SHALL BE MULCHED WITH STRAW OR HAY ACCORDING TO THE STANDARD FOR MULCHING. HERBICIDES (ORER 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 PRIOR TO CONSTRUCTION.

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

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

ADO DRAPERS TO ACCESS ROAD AS NEEDED, BUT NO GRADING OR IMPACTS TO EXISTING DRAINAGE FEATURES ARE TO BE MODIFIED.

ON A DAILY BASIS, CLEAN THE ROADS THOROUGHLY BY REMOVING TRACKED 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-GRADIENT SIDE OF THE LIMITS OF DISTURBANCE TO PREVENT SEDIMENTATION FROM LEAVING THE PROJECT AREA.

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

USE TIMBER MAT BRIDGES TO CROSS WATERSHEDS 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 GRADED, AND PERMANENT SEEDING WITH A NURSE CROP IF FINAL GRADED.

MULCH AND FERTILIZE AS STATED IN THIS PLAN.

PLACE ROLLER EROSION CONTROL PRODUCTS (NETS), MATS AND BLANKETS ON TOP OF SEEDING AREAS ON STEEP SLOPES WHERE SEEDING MAY BE DISPLACED BY RUNOFF. TYPICALLY, SLOPES GREATER THAN 3:1, NEED TO HAVE AN EROSION CONTROL MAT OR BLANKET PLACED OVER THE SEEDS. AREAS SEEDS AND PLACE KEEP ON THE STEEP SLOPES ADJACENT TO ANY AND ALL STREAMS IMMEDIATELY (WITHIN 3 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 REQUIRE).

TEMPORARY BMPs SHOULD BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMPs ARE NO LONGER NEEDED. UNWANTED 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 HARD COVER SUCH AS PAVEMENT OR BUILDINGS (WHEN APPLICABLE).

NO NEW PERMANENT CUT OR FILL SLOPES ARE TO REMAIN ON-SITE. GRADING SHOULD BE DONE SUCH THAT POST-CONSTRUCTION CONTROLS 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.

**WINNING 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 DRUBBING ACTIVITIES SHOULD TAKE INTO CONSIDERATION WINNING REMOVAL OF TREES AND DISTURBANCE AND COMPACTION OF NATIVE SOILS AND 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 PROMOTE SEDIMENTATION AND EROSION IS BEING CONTROLLED ON-SITE, AND IS NOT IMPROVING OR AGGRAVATING PROPERTIES.

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

**WASTE MATERIALS AND DISPOSAL**

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

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

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

**GENERAL NOTES REGARDING RECLAMATION**

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 MISS UTILITY OF WEST VIRGINIA AT 1-800-343-4444.

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 SEEDING TO REDUCE EROSION AND SEDIMENTATION.

WV 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 / REDTOP / BIRSDOOF TREFOIL  
 % PURE LIME SEED: 5%  
 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: 3 TONS/ACRE  
 ANCHOR MATERIAL: RECYCLED CELLULOSE FIBER/WOOD FIBER MIXTURE  
 ANCHORING METHOD: HYDRAULIC SEEDING EQUIPMENT  
 RATE OF ANCHOR: 310 LBS/1000 SQ YD  
 MATERIAL APPLICATION: YEAR ROUND  
 SEEDING SEASON DATES:

**TEMPORARY STABILIZATION**


SPECIES: ANNUAL RYEGRASS  
 % PURE LIME SEED: 5%  
 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**

	UNITS	ESTIM. QUANTITY	BID QUANTITY	UNIT PRICE	TOTAL COST
<b>EROSION &amp; SEDIMENT CONTROL</b>					
STONE CONSTRUCTION ENTRANCES	50'	356			
12" COMPOST FILTER SOCK	17'	90			
PERMANENT SEEDING	50'	2400			
TIMBER MAT BRIDGE	1.8	27			


\*SEE PLAN DRAWINGS FOR TIMBER MAT DIMENSIONS

REVISIONS			
NO.	DESCRIPTION	DATE	BY
1			




STATE ENGINEER  
WEST VIRGINIA  
JUL 15 2015

PREPARED FOR:



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

PREPARED BY:



**TRI-COUNTY ENGINEERING, LLC**  
An E & BECON Company  
312 Parkersville Road  
Parker, PA 15078  
www.tce-engineering.com Fax: (724) 833-0670

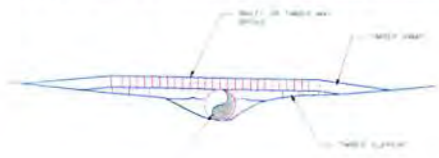
**SEDIMENT CONTROL PLAN NARRATIVE**

**ROHR D0319 WELL PLUG**

Drawing No.	WARREN DISTRICT, UPSHUR COUNTY, WV	Sheet No.	0061-15
Date	5/29/2015	Of	2 OF 3
AS NOTED			

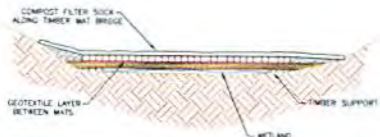
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**BAILEY OR TIMBER MAT BRIDGE FOR STREAM CROSSING**



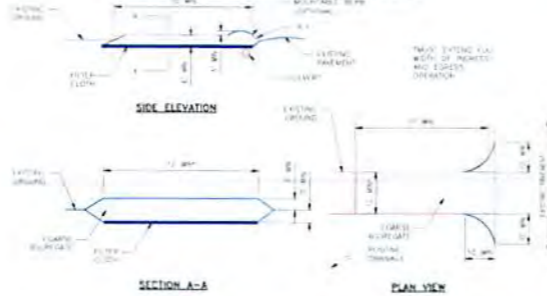
- NOTE:**
1. REMOVE MAT FROM BRIDGE DECK AND PLACE IN SPILL CONFINEMENT AREA.
  2. ALLOW FOR MINIMAL WETLAND IMPACT DURING CONSTRUCTION AND QUICK RESTORATION TO PRE-CONSTRUCTION CONDITIONS.
  3. USE WETLAND MAT FROM PALMISTON GROUP, WAREY INC. OR APPROVED EQUIVALENT.

**BAILEY OR TIMBER MAT BRIDGE FOR WETLAND CROSSING**



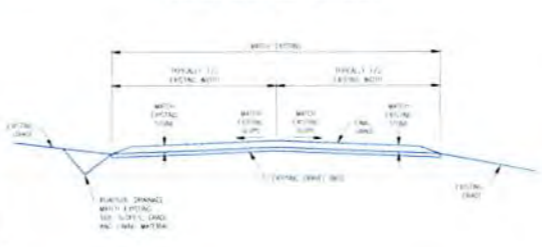
- NOTE:**
1. REMOVE MAT FROM BRIDGE DECK AND PLACE IN SPILL CONFINEMENT AREA.
  2. BRIDGES SHOULD BE SECURELY ANCHORED AT ONLY ONE END USING STEEL CABLE OR CHAIN ANCHORING AT ONLY ONE END WILL PREVENT CHANNEL OBSTRUCTION IN THE EVENT THAT FLOODWATERS FLOOD THE BRIDGE. ACCEPTABLE ANCHORS ARE LARGE TREES, LARGE BOLLARDS, OR BURNED STEEL ANCHORS. ANCHORS SHALL BE SUFFICIENT TO PREVENT THE BRIDGE FROM FLOATING LONGER THAN 100 FEET AND POSSIBLY CAUSING AN OBSTRUCTION TO THE FLOW.
  3. ALLOW FOR MINIMAL WETLAND IMPACT DURING CONSTRUCTION AND QUICK RESTORATION TO PRE-CONSTRUCTION CONDITIONS.
  4. USE WETLAND MATS FROM PALMISTON GROUP, WAREY INC. OR APPROVED EQUIVALENT.

**STABILIZED CONSTRUCTION ENTRANCE**



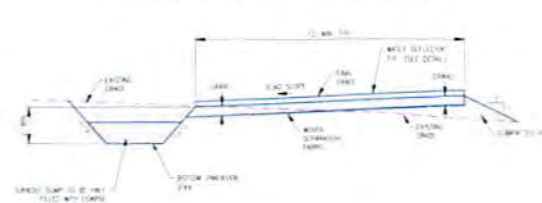
- REVISIONS:**
1. USE 2-4 INCH STONE FOR LOW VOLUME ENTRANCES LARGER THAN 14.5 INCH FOR HEAVY USE OR MATERIAL DELIVERY ENTRANCES.
  2. LENGTH IS AS REQUIRED BUT NOT LESS THAN 10 FEET EXCEPT ON A SINGLE RESIDENCE (17' MIN. A 30-FOOT MINIMUM LENGTH SHALL APPLY).
  3. THICKNESS SHOULD BE NOT LESS THAN 8 INCHES.
  4. THE MATS SHALL BE A MINIMUM OF 12 FEET, BUT NOT LESS THAN THE FULL WIDTH OF MATS WHERE APPLIED ON STREET CORNERS.
  5. GEOTEXTILE FABRIC SHALL BE PLACED OVER THE ENTIRE AREA UNDER THE PLACE OF STONE.
  6. ALL ENTRANCE MATS PLACING ON STREET CORNERS OR DRIVEWAYS SHOULD BE PLACED UNDER THE ENTRANCE. A 4' WALKWAY TO SIDEWALK, A MINIMUM 18" WALKWAY TO DRIVE SHALL BE USED.
  7. A NECESSARY DRIVEWAY WITH A MINIMUM 18" WALKWAY SHALL BE USED WITH A MINIMUM 18" WALKWAY TO DRIVEWAY. ENTRANCE MATS SHALL BE PLACED ON OTHER SIDE OF THE STABILIZED CONSTRUCTION ENTRANCE.
- MAINTENANCE:**
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRAFFIC OR EQUIPMENT FROM ENTERING INTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND RETAIN AND/OR CLEANOUT OF ANY MATERIALS UNDER THE STABILIZED ENTRANCE. MAINTENANCE SHOULD BE PERFORMED ON A REGULAR BASIS.
  2. WHEELS OR ALL WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT FROM JOINTS AND GROUVE JOINTS OF MATS. IF MAINTENANCE IS REQUIRED, IT SHALL BE DONE IN AN AREA SEPARATE FROM STONE AND MATS. DRIVEWAY ENTRANCE MATS SHOULD BE MAINTAINED ON A REGULAR BASIS.
  3. MAINTENANCE AND REPAIRS SHOULD BE PERFORMED ONLY WITH A MINIMUM DRIVEWAY MATS AND AFTER EVERY MATS OF THE MATS OF DRIVEWAY.

**GRAVEL ROAD RESTORATION**



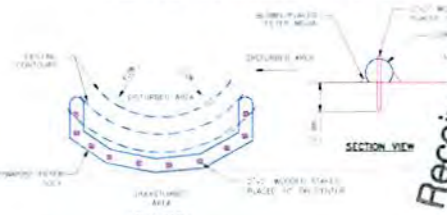
- NOTE:**
1. PRIOR TO STONE PLACEMENT, EXISTING ROADWAY SHALL BE CLEANED OF STONE TO EXPOSE UNDERLAYMENT TO MINIMUM EXISTING CONDITION. REMOVE WEEDS AND GRASS. STONE SHALL BE PLACED IN ORDER OF PLACEMENT. ALL 1/2" (MAX. SIZE) SHALL BE NO GREATER THAN 20%.
  2. PLACE STONE IN ORDER OF CONSTRUCTION, TOPPING OR AS APPLICABLE WITH THE ORDER OF THE ROAD.

**ACCESS ROAD/LOW VOLUME DRIVEWAY**



- REVISIONS:**
1. EXISTING SURFACE MATS BE SUBJECT TO OTHER SIDE AS DISCREPANCY AND LOCATION. MAINTENANCE.
  2. MATERIAL WITH 1/2" (MAX. SIZE) SHALL BE NO GREATER THAN 20%.
  3. CONCRETE MATS TO HAVE A BOTTOM DIMENSION OF 1/4" WITH A 2 FOOT DEPTH.
  4. PLACE STONE ACCORDING TO TABLE OR VERTICAL.
- MAINTENANCE:**
1. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2" THE HEIGHT OF THE MATS.
  2. INSPECT AT A MINIMUM ONCE EACH SEVEN CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCHES OF RAIN PER 24 HOUR PERIOD.

**COMPOST FILTER SOCK (SEDIMENT BARRIER)**



- REVISIONS:**
1. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL. GRADED WITH FINISH OF THE SOCK SHALL BE EXPOSED TO THE SURFACE OF THE SLOPE AT ALL TIMES TO THE MAXIMUM ALLOWABLE.
  2. SOCKS SHALL NOT BE PERMITTED TO CROSS PAVED SURFACES.
- MAINTENANCE:**
1. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2" THE HEIGHT OF THE SOCK. THE HEIGHT OF THE SOCK SHALL BE MAINTAINED BY PERIODIC TOP DRESSING WITH FINISH OF THE SOCK. THE HEIGHT OF THE SOCK SHALL BE MAINTAINED BY PERIODIC TOP DRESSING WITH FINISH OF THE SOCK.
  2. SOCKS SHALL BE REPLACED WHEN THEY ARE DAMAGED OR WHEN THEY ARE NO LONGER EFFECTIVE.
  3. DISCREPANCY FILTER SOCK SHALL BE REPLACED AFTER 6 MONTHS. DISCREPANCY SOCKS AFTER 1 YEAR. DISCREPANCY SOCKS SHALL BE REPLACED ACCORDING TO MAINTENANCE RECOMMENDATIONS.
  4. UPON THE EXPIRATION OF THE MAINTENANCE OF THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MATS SHALL BE PLACED AND REINSTALLED OR REMOVED. IN THE LATTER CASE, THE SOCK SHALL BE CUT UP AND THE MATS SHALL BE PLACED AS A SPILL CONFINEMENT.
- MAINTENANCE:**
1. IN THE EVENT OF MAINTENANCE, THE SOCK SHALL BE REPLACED WITHIN 24 HOURS OF THE MAINTENANCE.
  2. IN THE EVENT OF MAINTENANCE, THE SOCK SHALL BE REPLACED WITHIN 24 HOURS OF THE MAINTENANCE.
  3. COMPOST FILTER SOCKS SHALL BE REPLACED WITHIN 24 HOURS OF THE MAINTENANCE.

MATERIAL TYPE	1-4 INCH	3/4 INCH	3/8 INCH
MATERIAL CHARACTERISTICS	MAXIMUM 20% (MAXIMUM)	MAXIMUM 20% (MAXIMUM)	MAXIMUM 20% (MAXIMUM)
SOCK DIAMETER	18"	18"	18"
MATSPACING	12"	12"	12"
TENSILE STRENGTH	---	---	---
STRENGTH CHARACTERISTICS (TYPICAL)	2.0-3.0 LB/FT	2.0-3.0 LB/FT	2.0-3.0 LB/FT
MINIMUM FUNCTIONAL LIFE (EST.)	6 MONTHS	6 MONTHS	6 MONTHS

1. COMPOST SHALL MEET THE FOLLOWING STANDARDS:

ORGANIC MATTER CONTENT	MIN. SIZE OF WOODY DEBRIS
ORGANIC MATTER	FRAGILE AND CLEANED
PH	5.5-6.5
MOISTURE CONTENT	60-80%
PARTICLE SIZE	NO MORE THAN 1" DIAMETER
SECURE SALT CONCENTRATION	0.1% MAXIMUM

**REVISIONS**

NO.	DESCRIPTION	DATE	BY
1			

PREPARED FOR:

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

APPROVED FOR:

**TRI-COUNTY ENGINEERING, LLC**  
A Tri-County Company  
319 Philadelphia Road  
Forker, PA 15628  
www.tri-county.com  
Voice: (724) 833-0210 Fax: (724) 833-0675

SEDIMENT CONTROL PLAN DETAILS

RQHR D0319 WELL PLUG

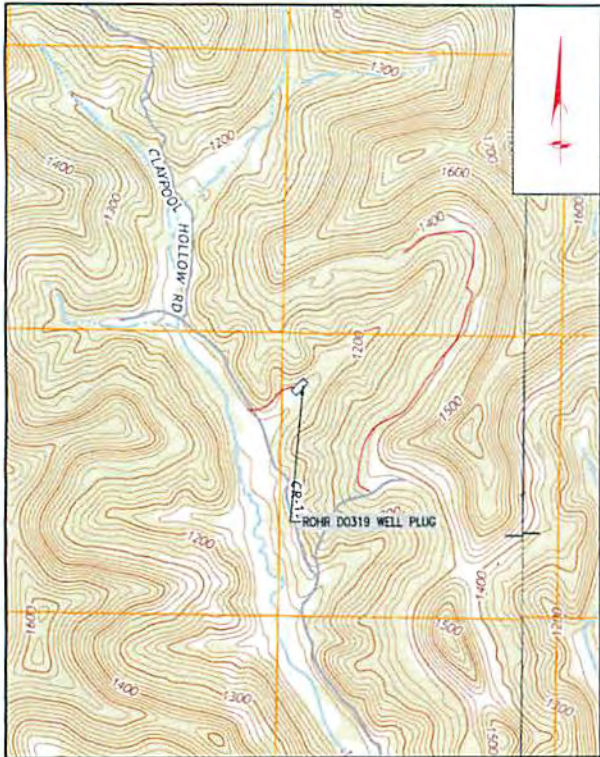
WARREN DISTRICT, UPSHUR COUNTY, WV

DATE: 5/29/2015

3 OF 3

0661-15

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**SITE LOCATION MAP**  
SCALE: 1"=1000'

MAP REF: BERLIN & CENTURY, WV  
U.S.G.S. 7.5 MINUTE QUAD



INT-G  
EXISTING 14" STEEL CULVERT  
LAT: 38.087889  
LON: -80.254925  
IMPACT AREA: 8.3 SF

**REVISIONS**

NO.	DESCRIPTION	DATE	BY
1	-	-	-

UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE ONLY. THERE MAY BE OTHER UNDERGROUND UTILITIES THAT ARE NOT SHOWN. BEFORE ANY EXCAVATION OR CONSTRUCTION OPERATIONS BEGIN THE CONTRACTOR MUST CONTACT MISS UTILITY OF WEST VIRGINIA AND THE OWNERS OF THE UTILITIES TO VERIFY THEIR LOCATION.

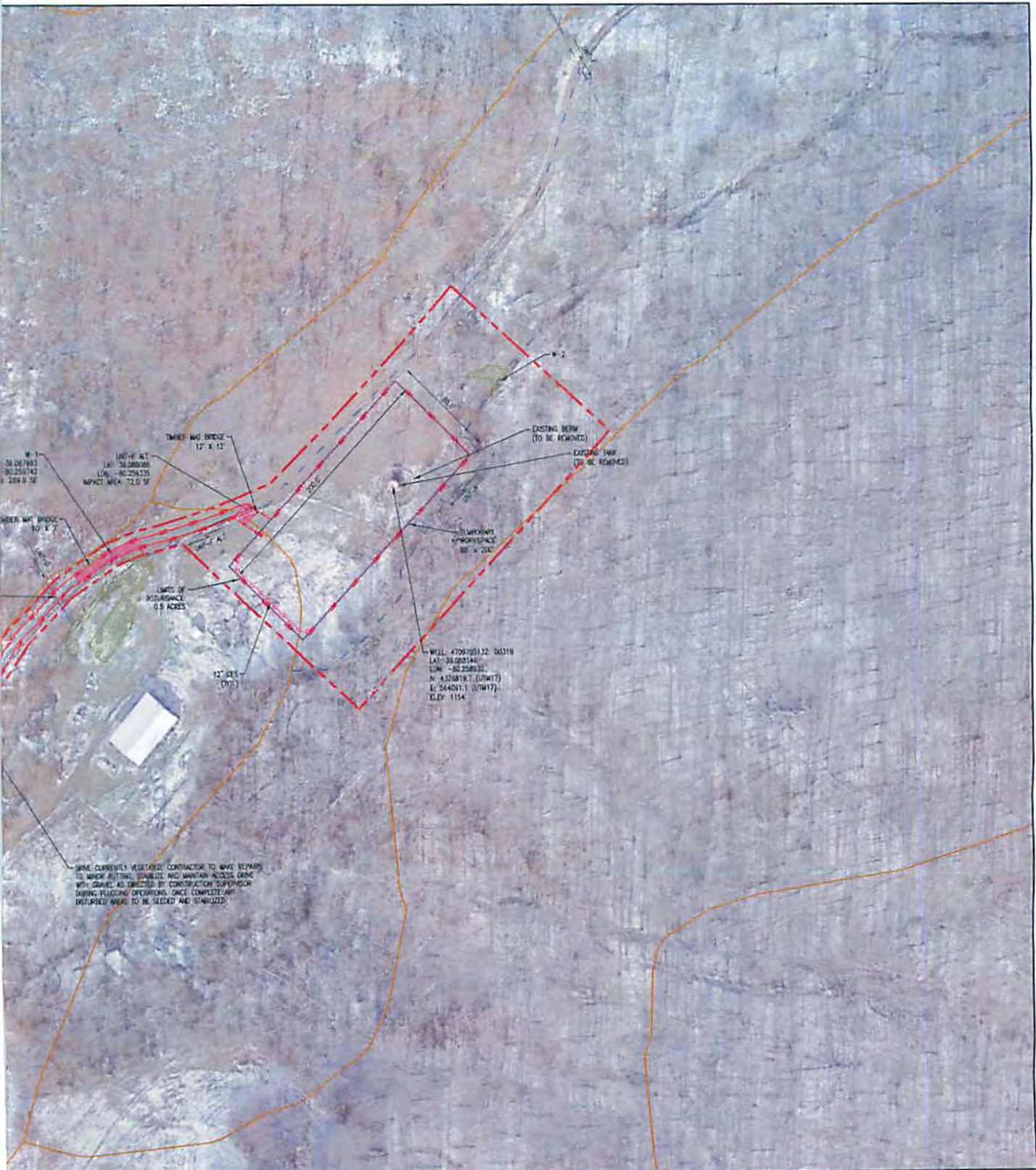
**LEGEND**

- EXISTING CONTOUR 10'
- PROPERTY LINE
- TEMPORARY WORKSPACE
- STREAMS
- SILT SOCK (CFS)
- LIMIT OF DISTURBANCE (LOD)
- ACCESS ROAD - EXISTING
- ACCESS ROAD - PROPOSED
- CONSTRUCTION BARRIER FENCE
- STUDY AREA

**NOTES**

1. ELEVATIONS ARE APPROXIMATED FROM WEST VIRGINIA GIS TECHNICAL CENTER CONTOURS, AND NOT FIELD VERIFIED.
2. PROPERTY LINES SHOWN ON PLANS ARE REFERENCED FROM COUNTY MAPPING AND HAVE NOT BEEN FIELD VERIFIED.
3. 588.9 SF TEMPORARY IMPACTS TO WETLANDS.
4. 80.3 SF TEMPORARY IMPACTS TO STREAMS.





WV NORTH-ZONE  
SPCS GRID NORTH

DONALD R. HUDSON, JR.  
REGISTERED PROFESSIONAL ENGINEER  
STATE OF WEST VIRGINIA  
17818

PREPARED FOR:

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

GRAPHIC SCALE 1" = 50'

TRI-COUNTY ENGINEERING, LLC  
An ENERCON Company  
319 Parkersville Road  
Hunker, PA 15639  
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SEDIMENT CONTROL PLAN

ROHR D0319 WELL PLUG

WARREN DISTRICT,  
UPSHUR COUNTY, WV

DATE: 5/29/2015	SHEET: 1 OF 3	FILE NO: DG61-15
SCALE: AS NOTED		

07/31/2015

**PROJECT DESCRIPTION**

TRI-COUNTY ENGINEERING, LLC (TCE), ON BEHALF OF KTO ENERGY, INC., PREPARED THIS SEDIMENT CONTROL PLAN FOR THE ROHR D0319 WELL PLUG PROJECT. THE PROJECT IS LOCATED APPROXIMATELY 8.0 MILES SOUTHEAST OF JANE LEW IN THE BARREN DISTRICT OF UPSHUR COUNTY, WEST VIRGINIA. THE PROPOSED ROHR D0319 WELL PLUG PROJECT INVOLVES THE PLUGGING AND ABANDONMENT OF THE ROHR D0319 SHALLOW GAS WELL. THE WELLHEAD, CASING, AND PRODUCTION EQUIPMENT WILL BE REMOVED. ONCE CEMENT PLUGS ARE PLACED WITHIN THE BOPENHOLE, THE WELL PAD AREA WILL BE RECLAIMED AND GRADED TO BE CONSISTENT WITH THE GENERAL CONTOUR OF THE IMMEDIATE SURROUNDING LAND. THE SITE WILL BE SEEDING, AS REQUIRED, WITH A MIX APPROVED BY WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE PROJECT CONSISTS OF AN ACCESS ROAD APPROXIMATELY 7 FEET WIDE AND 648 FEET LONG, AND A WORKSPACE APPROXIMATELY 21,447 SQUARE FEET (0.50 ACRES). THE STUDY AREA FOR THE PROJECT WAS 64,715 SQUARE FEET (1.5 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 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 TENDER MAT BRIDGES FOR STREAM AND WETLAND CROSSINGS (WHEN APPLICABLE).

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

IF OTHER ACCESSES ARE NEEDED OR BETTER ROUTES ARE DETERMINED, OBTAIN THE NECESSARY PERMITS PRIOR TO INITIATING WORK FOR THE NEW ROUTES. PROVIDE RECORD MARKUPS ON THE ON-SITE SGP DRAWINGS TO INCLUDE 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. TILL SOIL TO A DEPTH OF 2". REMOVE ALL OBJECTS 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 EMBANKMENTS THAT WILL STAY IDLE 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 COMPACTION.

**SITE PREPARATION**- BEFORE SPREADING TOPSOIL ASSURE THAT ALL NECESSARY SEDIMENT CONTROL PRACTICES, SUCH AS DIVERSIONS 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 DISKING.

**ROUGHENING**- IMMEDIATELY PRIOR TO SPREADING THE TOPSOIL, LOOSEN THE SUBGRADE BY DISKING 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 2 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 COMPACTION, AS IT INCREASES RUNOFF AND PREVENTS SEED GERMINATION AND SEEDLING GROWTH. LIGHT PACKING WITH A ROLLER IS RECOMMENDED WHERE HIGH-MAINTENANCE TURF 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 QUICKLY AS PRACTICABLE. PERIODICALLY INSPECT 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 RILLING.

**SEEDING PREPARATION**- TO CONTROL EROSION ON BARE SOIL SURFACES, PLANTS MUST BE ABLE TO ESTABLISH. IF THE AREA HAS BEEN RECENTLY LOOSENED OR DISTURBED, NO FURTHER ROUGHENING OR HARDENING, THE SOIL SURFACE MUST BE LOOSENED BY DISKING, RAKING, HARROWING, OR OTHER SECTION).

**SEEDING**- SEED SHALL BE EVENLY APPLIED WITH A BROADCAST SEEDER, DRILL, CULTIPACKER SEEDER NO MORE THAN 1.5 INCHES DEEP. SMALL SEEDS, SUCH AS ANNUAL RYE, SHALL BE PLANTED NO DEEPER THAN 1/2 INCH. MULCHING SHALL BE PLANTED NO MORE THAN A HALF INCH DEEP. MULCHING TEMPORARY SEEDING, CONDUCTED IN FALL FOR WINTER COVER AND DURING HOT AND DRY HAY ACCORDING TO THE STANDARD FOR MULCHING HYDROMULCHES (FRESH MULCH) MAY NOT BE USED.

**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 SHOW EVALUATION WILL NEED TO BE CONDUCTED. CONTACT THE ENVIRONMENTAL BIOLOGIST TO CONDUCT A

INSTALL THE STABILIZED CONSTRUCTION ENTRANCES AT THE ACCESS ROAD STABILIZED CONSTRUCTION ENTRANCES TO BE USED AT THE TIME OF THIS PROJECT'S CONSTRUCTION.

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

INSTALL ORANGE CONSTRUCTION FENCE NEAR STREAMS, WETLANDS AND STRUCTURES WITHIN THE LIMITS OF DISTURBANCE BY CONSTRUCTION ACTIVITIES.

ADD GRAVEL TO ACCESS ROAD AS NEEDED, BUT NO GRADING OR IMPACTS TO EXISTING DRAINAGE OR ON A DAILY BASIS, CLEAN THE ROADS THOROUGHLY BY REMOVING TRACKED SEDIMENT BY SHOULDER STORM DRAIN SYSTEM IS NOT ALLOWED.

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

CLEAR AND GRUB ALONG THE ROW. PRESERVE NATURAL VEGETATION AS MUCH AS POSSIBLE WITHIN ACTIVITIES.

USE TENDER MAT BRIDGES 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 GRADATION.

MULCH AND FERTILIZE AS STATED IN THIS PLAN.

PLACE ROLLED EROSION CONTROL PRODUCTS (RECP), MATS AND BLANKETS ON TOP OF SEEDING OR DISPLACED BY RUNOFF. TYPICALLY, SLOPES GREATER THAN 3:1 WILL NEED TO HAVE AN EROSION CONTROL PRODUCT PLACED ON THE STEEP SLOPES ADJACENT TO ANY AND ALL STREAMS IMMEDIATELY.

MAINTAIN ALL BEST MANAGEMENT PRACTICES (BMPs) AS NEEDED TO ASSURE CONTINUED PERFORMANCE.

ALL BMPs SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS PER 24 HOUR PERIOD. ANY REQUIRED REPAIRS OR MAINTENANCE SHOULD BE MADE IMMEDIATELY. HALF THE HEIGHT OF THE COMPOST FILTER SOCK (1 DAY PER WEEK OR AS STORM EVENTS REQUIRE).

TEMPORARY BMPs SHOULD BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL SHALL BE PERMANENTLY STABILIZED. FINAL STABILIZATION MEANS THAT ALL SOIL-DISTURBING ACTIVITIES ARE COVERED BY THE TOTAL VEGETATED AREA WITH A DENSITY OF 70% OR GREATER HAS BEEN ESTABLISHED SUCH AS PAVEMENT OR BUILDINGS (WHEN APPLICABLE).

NO NEW PERMANENT CUT OR FILL SLOPES ARE TO REMAIN ON-SITE. GRADING SHOULD BE DONE CLOSELY MATCH APPROXIMATE ORIGINAL CONTOURS AFTER CONSTRUCTION IS COMPLETE. ALL AREAS OF DISTURBANCE ARE TO BE VEGETATED AFTER CONSTRUCTION.

REVISIONS			
NO	DESCRIPTION	DATE	BY
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**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 GRUBBING ACTIVITIES SHOULD TAKE INTO CONSIDERATION MINIMIZING 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 DISPOSAL:**

ALL POLLUTANTS, INCLUDING WASTE MATERIALS, SHOULD BE HANDLED AND DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF SURFACE WATER. WOODY DEBRIS MAY BE CHOPPED 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-INERT WASTES PRESENT ON THE SITE.

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

**GENERAL NOTES REGARDING RECLAMATION:**

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 MISS UTILITY OF WEST VIRGINIA AT 1-800-245-4848.

TRAFFIC SHALL BE MAINTAINED ON ALL ADJOINING 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: API 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 / REDTOP / BIRDFOOT TREFOL  
 % PURE LIVE SEED: 99%  
 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: 3 TONS/ACRE  
 ANCHOR MATERIAL: RECYCLED CELLULOSE FIBER/WOOD FIBER MIXTURE  
 ANCHORING METHOD: HYDRAULIC SEEDING EQUIPMENT  
 RATE OF ANCHOR: 310 LBS/1000 SQ. YD.  
 MATERIAL APPLICATION: YEAR ROUND  
 SEEDING SEASON DATES:

**TEMPORARY STABILIZATION:**

SPECIES: ANNUAL RYEGRASS  
 % PURE LIVE SEED: 95%  
 APPLICATION RATE: 40 LBS/ACRE  
 FERTILIZER TYPE: COMMERCIAL FERTILIZER 10-10-10  
 FERTILIZER APPL. RATE: COMMERCIAL - 1060 LBS/ACRE  
 LIMING RATE: 3 TONS/ACRE  
 MULCH TYPE: HAY & STRAW  
 MULCHING RATE: 3 TONS/ACRE

**ESTIMATED QUANTITIES**

	UNITS	ESTIM. QUANTITY	BID QUANTITY	UNIT PRICE	TOTAL COST
<b>EROSION &amp; SEDIMENT CONTROL</b>					
STONE CONSTRUCTION ENTRANCE	SF	356			
12" COMPOST FILTER SOCK	LF	99			
PERMANENT SEEDING	SY	2403			
TIMBER MAT BRIDGE	EA	2*			

\* SEE PLAN DRAWING FOR TIMBER MAT DIMENSIONS

PREPARED FOR:



6/15/2015

TRI-COUNTY ENGINEERING, LLC

An ENERCON Company  
 319 Parkersville Road  
 Hanker, PA 15630  
 www.tri-county-eng.com

Voice: (724) 635-0210

Fax: (724) 635-0670



SEDIMENT CONTROL PLAN NARRATIVE

ROHR D0319 WELL PLUG

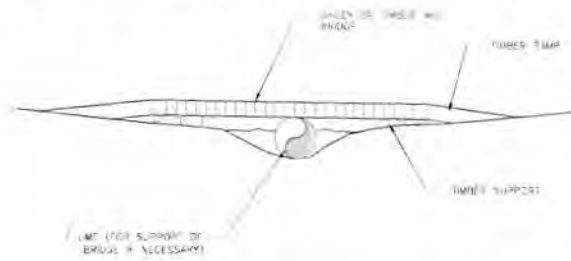
WARREN DISTRICT, UPSHUR COUNTY, WV

DATE: 5/29/2015 SHEET: 2 OF 3 FILE NO: 0661-15

SCALE: AS NOTED

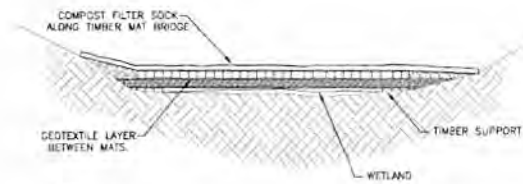
07/31/2015

**BAILEY OR TIMBER MAT BRIDGE FOR STREAM CROSSING**



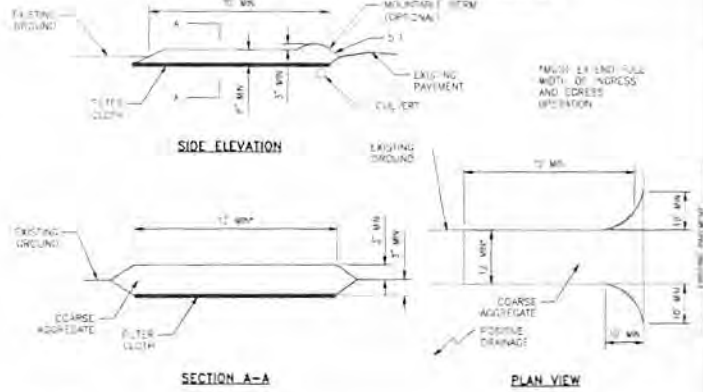
- NOTE:**
1. REMOVE DIRT FROM BRIDGE DECK AND PLACE IN SPILL CONTAINMENT AREA.
  2. ALLOWS FOR MINIMAL WETLAND IMPACT DURING CONSTRUCTION AND QUICK RESTORATION TO PRE-CONSTRUCTION CONDITIONS.
  3. USE WETLAND MATS FROM PALMERSON GROUP, WAREY INC., OR APPROVED EQUIVALENT.

**BAILEY OR TIMBER MAT BRIDGE FOR WETLAND CROSSING**



- NOTE:**
1. REMOVE DIRT FROM BRIDGE DECK AND PLACE IN SPILL CONTAINMENT AREA.
  2. BRIDGES SHOULD BE SECURELY ANCHORED AT ONLY ONE END USING STEEL CABLE OR CHAIN. ANCHORING AT ONLY ONE END WILL PREVENT CHANNEL OBSTRUCTION IN THE EVENT THAT FLOODWATERS FLOAT THE BRIDGE. ACCEPTABLE ANCHORS ARE LARGE TREES, LARGE BOULDERS, OR DRIVEN STEEL ANCHORS. ANCHORS SHALL BE SUFFICIENT TO PREVENT THE BRIDGE FROM FLOATING DOWNSTREAM AND POSSIBLY CAUSING AN OBSTRUCTION TO THE FLOW.
  3. ALLOWS FOR MINIMAL WETLAND IMPACT DURING CONSTRUCTION AND QUICK RESTORATION TO PRE-CONSTRUCTION CONDITIONS.
  4. USE WETLAND MATS FROM PALMERSON GROUP, WAREY INC., OR APPROVED EQUIVALENT.

**STABILIZED CONSTRUCTION ENTRANCE**

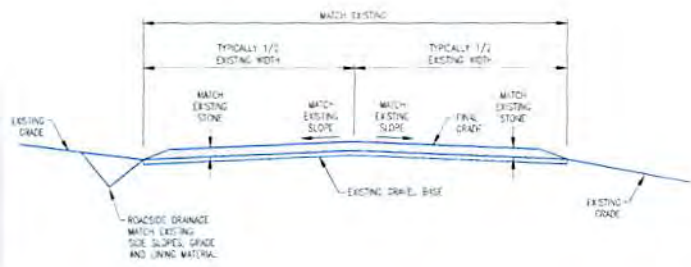


- INSTALLATION:**
1. USE 2-4 INCH STONE FOR LOW VOLUME ENTRANCES, LARGER STONE (4-6 INCH) FOR HEAVY USE OR MATERIAL DELIVERY ENTRANCES.
  2. LENGTH IS AS REQUIRED, BUT NOT LESS THAN 10 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30-FOOT MINIMUM LENGTH WOULD APPLY).
  3. THICKNESS SHOULD BE NOT LESS THAN 6 INCHES.
  4. THE WIDTH SHALL BE A MINIMUM OF 10 FEET, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
  5. GEOTEXTILE FABRIC SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO THE PLACING OF STONE.
  6. ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PAVED ACROSS THE ENTRANCE. IF A CULVERT IS IMPRACTICAL, A MOUNTAIN BERM WITH 5:1 SLOPES SHALL BE USED.
  7. IF NECESSARY, DIVERT ANY WATER RUNNING DOWN ACCESS ROAD TO A DITCH WITH A COMPOST FILTER SOCK SEDIMENT BARRIER LOCATED ON E-WAY SIDE OF THE STABILIZED CONSTRUCTION ENTRANCE.
- MAINTENANCE:**
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY VEHICLES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLES, DROPPED, BASHED OR TRACKED INTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
  2. WHEELS ON ALL VEHICLES SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. IF WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE, AND WHICH DRAINS INTO APPROVED SEDIMENT TRAPPING DEVICE. IF THE STREET IS WASHED, PRECAUTIONS MUST BE TAKEN TO PREVENT WASH WATER FROM RUNNING INTO WATERWAYS OR STORM SEWERS.
  3. INSPECTION AND NEEDED MAINTENANCE SHOULD BE PROVIDED DAILY, BUT AT A MINIMUM EVERY SEVEN DAYS AND AFTER EVERY RAIN OF 0.2 INCH OR GREATER.

**REVISIONS**

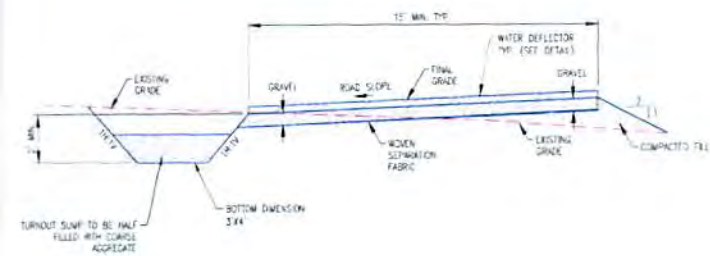
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### GRAVEL ROAD RESTORATION



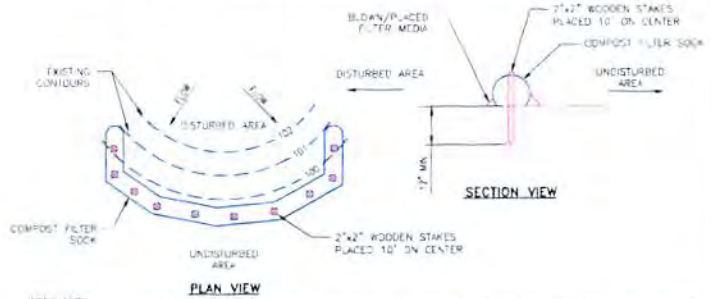
- NOTES:**
1. PRIOR TO STONE PLACEMENT, RESHAPE EXISTING ROADWAY INTO "CROWNED" OR "SLOPE TO DITCH" CONFIGURATION TO MATCH EXISTING CONDITIONS. REMOVE, REFILL, AND COMPACT SOFT SPOTS PRIOR TO STONE PLACEMENT. ALL OUT/FILL SLOPES SHALL BE NO GREATER THAN 2H:1V.
  2. PLACE SAME SIZE STONE AS PRE-CONSTRUCTION CONDITIONS OR AS AGREED UPON WITH THE OWNER OF THE ROAD.

### ACCESS ROAD/LOW VOLUME DRIVEWAY



- INSTALLATION:**
1. ROADWAY SURFACE MAY BE SLOPED TO EITHER SIDE AS TOPOGRAPHY AND CONDITIONS WARRANT.
  2. INSTALL WATER DEFLECTOR AS PER DETAIL ON THIS PLAN FOR POSITIVE DRAINAGE TO TURNOUT SUMP.
  3. CONSTRUCT SUMPS TO HAVE A BOTTOM DIMENSION OF 3'4" WITH A 2' FOOT DEPTH.
  4. PLACE COURSE AGGREGATE IN SUMP OR VEGETATE.
- MAINTENANCE:**
1. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE HEIGHT OF THE SUMP.
  2. INSPECT AT A MINIMUM ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCHES OF RAIN PER 24 HOUR PERIOD.

### COMPOST FILTER SOCK (SEDIMENT BARRIER)



- INSTALLATION:**
1. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN SOCK ALIGNMENT.
  2. TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
- MAINTENANCE:**
1. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/4 THE ABOVE GROUND HEIGHT OF THE SOCK AND DISPOSED OF BY SPREADING ON UPLAND AREAS OR THE ROW OR IN A SPECIAL CONTAINMENT AREA.
  2. 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.
  3. BIODEGRADABLE FILTER SOCK SHALL BE REPLACED AFTER 6 MONTHS. PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
  4. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SEAL SUPPLEMENT.
- MATERIALS:**
1. IN LIEU OF 18" REINFORCED SALT FENCE, USE A MINIMUM 18-INCH DIAMETER COMPOST FILTER SOCK.
  2. AT THE END OF ROW DIVERGENCE USE AN 18-INCH DIAMETER COMPOST FILTER SOCK (SEDIMENT BARRIER).
  3. IN LIEU OF SUPER SALT FENCE, USE A MINIMUM 24-INCH DIAMETER COMPOST FILTER SOCK.
  4. COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS CAN BE EQUAL OR GREATER THAN STATED BELOW.

MATERIAL TYPE	3 mil HDPE	5 mil HDPE
MATERIAL CHARACTERISTICS	PHOTODEGRADABLE	PHOTODEGRADABLE
SOCK DIAMETERS	18"	24"
MESH OPENINGS	3/8"	3/8"
TENSILE STRENGTH	-----	26 psi
ULTRAVIOLET STABILITY % ORIGINAL STRENGTH (ASTM G-155)	5% AT 1000 HR	23% AT 1000 HR
MINIMUM FUNCTIONAL LONGEVITY	6 MONTHS	8 MONTHS

5. COMPOST SHALL MEET THE FOLLOWING STANDARDS:

ORGANIC MATTER CONTENT	80%-100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND FIBRILATED
pH	5.5-8.0
MOISTURE CONTENT	30%-50%
PARTICLE SIZE	90% PASS THROUGH 1" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 ±5 MAXIMUM



PREPARED FOR:

**XTO ENERGY**

810 HOUSTON STREET  
FORT WORTH, TX 76102

TRI-COUNTY ENGINEERING, LLC  
An ENERCON Company  
319 Panthersville Road  
Mankin, WA 15639  
www.tri-countyeng.com  
Voice: (724) 635-0210 Fax: (724) 635-0678



SEDIMENT CONTROL PLAN DETAILS	
ROHR D0319 WELL PLUG	
DRAWN BY: ZJC	WARREN DISTRICT, LPSHUR COUNTY, WY
DATE: 5/29/2015	SHEET FILE NO.
SCALE AS NOTED	3 OF 3 0061-15

07/31/2015