west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

Earl Ray Tomblin , Governor
Randy C. Huffman , Cabinet Secretary
www.dep.wv.gov

Friday, August 26, 2016
WELL WORK PERMIT
Vertical / Plugging - 2

XTO ENERGY, INC.
810 HOUSTON STREET

FORT WORTH, TX 76102

Re: Permit approval for 1
47-033-02375-00-00

This well work permit 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 any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin
Chief

Operator's Well Number: 1
Farm Name: MARTIN, VONDA
U.S. WELL NUMBER: 47-033-02375-00-00
Vertical / Plugging - 2
Date Issued: 8/26/2016

3302375P

PERMIT CONDITIONS

West Virginia Code §22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. 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.
4. This well is under a consent order and must be plugged under the terms of that agreement.

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WW-4B
Rev. 2/01

1) Date July 6, 2016
2) Operator's Well No. Martin, Vonda 1
3) API Well No. 47- 033 - 02375

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 1112' Watershed 0502000303
District Eagle - 04 County Harrison Quadrangle Wallace - 655

6) Well Operator XTO Energy Inc
Address PO Box 1008
Jane Lew, WV 26378

7) Designated Agent Gary Beall
Address PO Box 1008
Jane Lew, WV 26378

8) Oil and Gas Inspector to be notified
Name Sam Ward
Address PO Box 2327
Buckhannon, WV 26201

9) Plugging Contractor
Name
Address

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

RIH with tools and check TD at 4560', POOH and run 2" tubing down to 4560' and circulate 6% gel back to surface, then pump cement from 4560' up to 4325', perfs at 4474 - 4471', pull tubing up to 4100' and reverse circulation out of tubing, then wait for cement to set up and run small tools down tubing to tag cement at 4325', POOH and if cement is ok pull tubing up to 3380' and pump cement up to 3150' perfs at 3321 - 3313', pull tubing out and RIH to CBL 4.5" casing, est. top of cement at 2400', cut casing and circulate 6% gel back to surface, and pump cement from 2400 up to 2250', pull casing up to 1850' and pump cement up to 1650', pull casing up to 1250' and pump cement up to 1050', pull casing up to 300' and pump cement to surface.

Install well monument. See attached

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Office of Oil and Gas
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WV Department of
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yam ok

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

Work order approved by inspector [signature] Date 7/14/2016

3302375P

47-033-02375
Plugging Procedure

Cement - 4560 - 4325' = 235' in 4.5"
Cement - 3380' - 3150' = 230' in 4.5"
Cement - 2400 - 2250' = 150' in 7 7/8" Open Hole
Cement - 1850 - 1650' = 200' in 7 7/8" Open Hole
Cement - 1250 - 1050' = 200 in 8 5/8"
Cement - 300 - 0' = 300' in 8 5/8"

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OG-10
Rev. - 9-71

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

Oil and Gas Division
WELL RECORD

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JAN 23 1981
OIL & GAS DIVISION
DEPT. OF MINES

Rotary X Oil ____
Cable ____ Gas X
Recycling ____ Comb. ____
Water Flood ____ Storage ____
Disposal ____ ____ (Kind)

Quadrangle Wallace 7.5
833
Permit No. 2375

Company Vanguard Exploration Co., Inc.
Address 12606 Greenville Ave-Ste 200-Dallas, Tx 75243
Farm H. M Martin Acres 50.25
Location (waters) Jones Creek
Well No. Martin #1 Elev. 1110
District Eagle County Harrison
The surface of tract is owned in fee by Mrs. Gay B. Rogers
Address Clarksburg, W. VA.
Mineral rights are owned by Mrs. Gay B. Rogers
Address Clarksburg, W. VA.
Drilling Commenced July 14, 1980
Drilling Completed July 20, 1980
Initial open flow 1400 M cu. ft. 0 bbls.
Final production 660 M cu. ft. per day 0 bbls.
Well open 4 hrs. before test 1370RP.

Casing and Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft. (Sks.)
Size 20-16 Cond.			
13-10" 11 3/4	33'	33'	0
9 5/8			
8 5/8	1191.3	1191.3	325
7			
5 1/2			
4 1/2	4574.55	4574.55	400
3			
2			
Liners Used			

Attach copy of cementing record.

Well treatment details:

Benson: Perforations: 4471-74 (12 Holes)
Fracturing: 20,000 lbs. 80/100 sand, 30,000 lbs. 20/40 sand, 490 BBLS fluid

Balltown: Perforations: 3313-21 (12 Holes)
Fracturing: 20,000 lbs., 80/100 sand, 40,000 lbs., 20/40 sand, 500 gal. acid, 460 BBLS. fluid.

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Coal was encountered at none encountered Feet ____ Inches ____
Fresh water 245 Feet ____ Salt Water None Feet ____
Producing Sand Balltown, Benson Depth 3313-21, 4471-74

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
Clay			0	10		
Shale & Sand			10	190	Hole damp @ 40'	
Red Rock			190	200		
Shale & White Sand			200	275	2½" stream @ 245'	
Sand & Shale			275	550		
Sand & Shale			550	595		
Sand & Sandy Shale			595	910	Gas ck @ 3411 16/10 thru 1½" w/water 67,777 cu. ft.	
Sand & Sandy Shale			910	1030		
Sand, shale & white sand			1030	1095		
Shale & white sand			1095	1165	Gas ck @ 4368 16/10 thru 1½" w/water 67,777 cu. ft.	
Black Shale			1165	1200		
Red rock & Shale			1200	1365		
Big Lime & Injun			1365	1490	Gas ck @ 4583 20/10 thru 1½" w/water 75,777 cu. ft.	
Shale & sand			1490	3313		
Balltown			3313	3341		
Shale & sand			3341	3835		
Shale			3835	4470		
Benson			4470	4490		
Shale			4490	4613 TD		

(over)

* Indicates Electric Log tops in the remarks section

3302375P

WW-4A
Revised 6-07

1) Date: July 12, 2016
2) Operator's Well Number
Martin, Vonda 1

3) API Well No.: 47 - 033 - 02375

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE 0F APPLICATION TO PLUG AND ABANDON A WELL

4) Surface Owner(s) to be served:
(a) Name: Harrison County Coal Company ✓
Address: 46226 National Road
St. Clairsville, OH 43950

(b) Name
Address

(c) Name
Address

5) (a) Coal Operator
Name
Address

(b) Coal Owner(s) with Declaration
Name: Consolidation Coal Company ✓
Address: c/o Leatherwood Inc.
CNX Center
1000 Consol Energy Drive
Canonsburg, PA 15317

(c) Coal Lessee with Declaration
Name
Address

6) Inspector: Sam Ward
Address: PO Box 2327
Buckhannon, WV 26201
Telephone: 304-389-7583

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.

OFFICIAL SEAL
NOTARY PUBLIC
State of West Virginia
DIANNE RICKLES
PO Box 1008
Jane Lew, WV 26378
My Commission Expires September 26, 2018

Well Operator: XTO Energy Inc.
By: [signature]
Its: Regulatory Compliance Technician
Address: PO Box 1008
Jane Lew, WV 26378
Telephone: Jane Lew, WV 26378

Subscribed and sworn before me this 6th day of July, 2016
Dianne Rickles Notary Public
My Commission Expires Sept. 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 depprivacyoffier@wv.gov.

3302375P

WW-9
(2/15)

API Number 47 - 033 - 02375
Operator's Well No. Vonda Martin 1

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) 0502000303 Quadrangle Wallace, West Virginia

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 ☑ - TS 8/25/16

If so, please describe anticipated pit waste: ~~Fluids from plugging operations~~ NA - TS 8/25/16

Will a synthetic liner be used in the pit? Yes ☐ No ☐ If so, what ml.? ~~Yes - 20 mil~~ NA - TS 8/25/16

Proposed Disposal Method For Treated Pit Wastes: ANY WELL EFFLUENT MUST BE CONTAINED IN TANKS BEFORE HAULING OFFSITE. SDW 7/14/16 gwm 8/25/16

- ____ 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.

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 6th day of July, 2016

Dianne Pickles Notary Public

My commission expires Sept. 26, 2018

OFFICIAL SEAL
NOTARY PUBLIC
State of West Virginia
DIANNE PICKLES
PO Box 1008
Jane Lew, WV 26378
My Commission Expires September 26, 2018

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Form WW-9

Operator's Well No. Vonda Martin 1

XTO Energy Inc.

Proposed Revegetation Treatment: Acres Disturbed 0.54 Prevegetation pH 6.5

Lime according to pH test Tons/acre or to correct to pH 7.0

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch wood fiber or chopped straw @ 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Ryegrass	40	Ladino Clover	30
		Serecia Lespedeza	25
		Tall Fescu	2

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.

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JUL 18 2016
WV Department of
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Plan Approved by: [signature]

Comments:

Title: OOG Inspecter Date: 7/14/2016

Field Reviewed? (_____) Yes (X) No

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WW-9- GPP
Rev. 5/16

Page _____ of _____
API Number 47 - 033 - 02375
Operator's Well No. Martin, Vonda 1

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

Operator Name: XTO Energy Inc.

Watershed (HUC 10): 0502000303 Quad: Wallace

Farm Name: Martin, Vonda

1. List the procedures used for the treatment and discharge of fluids. Include a list of all operations that could contaminate the groundwater.

Fluids will not be discharged.

2. Describe procedures and equipment used to protect groundwater quality from the list of potential contaminant sources above.

NA

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WV Department of
Environmental Protection

3. List the closest water body, distance to closest water body, and distance from closest Well Head Protection Area to the discharge area.

NA

4. Summarize all activities at your facility that are already regulated for groundwater protection.

NA

5. Discuss any existing groundwater quality data for your facility or an adjacent property.

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Page _____ of _____
API Number 47 - 033 - 02375
Operator's Well No. Martin, Vonda 1

NA

6. Provide a statement that no waste material will be used for deicing or fill material on the property.

NA

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

NA

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8. Provide provisions and frequency for inspections of all GPP elements and equipment.

NA

Signature: [signature]

Date: July 6, 2016

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MARTIN VONDA E0003
WELL PLUGGING PROJECT
EROSION AND SEDIMENT CONTROL PLAN
XTO ENERGY, INC.

RECEIVED Office of Oil and Gas JUL 1 8 2016 WV Department of Environmental Protection

PROJECT OWNER/APPLICANT

XTO ENERGY, INC.
PO BOX 1008
JANE LEW, WV 26378
PH: (304) 884-6036
CONTACT: TIM SANDS

CIVIL ENGINEER

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
600 MARKETPLACE AVE - SUITE 200
BRIDGEPORT, WV 26330
PH: (304) 933-3115
CONTACT: STEVEN A. CAIN, P.E.

WVDEP

DISTRICT FOUR
PH: (304) 842-1500
CONTACT: RAY URSE - DISTRICT ENGINEER

SPILL HOTLINE

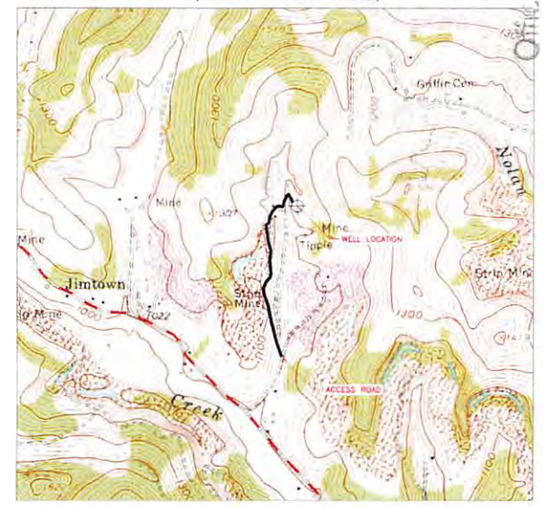
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP)
PH: (800) 642-3074

NATIONAL RESPONSE CENTER
PH: (800) 424-8802

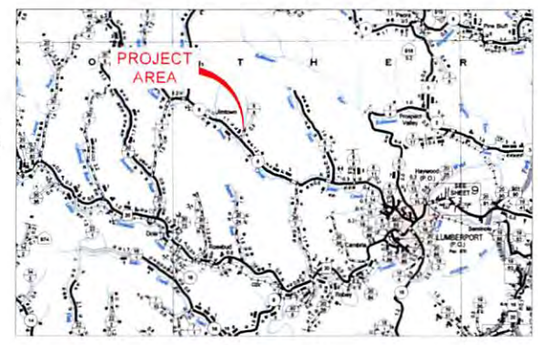
LOCAL EMERGENCY SERVICES

	NAME	TELEPHONE NO.
AMBULANCE		911
HOSPITAL EMERGENCY ROOM	UNITED HOSPITAL CENTER	(681) 342-1000
FIRE DEPARTMENT	LUMBERPORT FIRE DEPARTMENT	(304) 584-7721
POLICE DEPARTMENT		911
POISON CONTROL CENTER	WEST VIRGINIA POISON CENTER	(800) 222-1222

(LOCATION OF WELL)



LOCATION MAP
WALLACE USGS 7.5' QUAD
SCALE IN FEET
0 1000 2000
1 INCH = 1000 FEET
NORTH



VICINITY MAP
HARRISON COUNTY ROAD MAPS
SCALE IN FEET
0 1 MILE 2 MILE
1 INCH = 1 MILE
NORTH

SHEET INDEX	
SHEET 1 OF 5	COVER SHEET
SHEET 2 OF 5	EROSION AND SEDIMENT CONTROL PLAN NOTES
SHEET 3 OF 5	EROSION AND SEDIMENT CONTROL PLAN
SHEET 4 OF 5	EROSION AND SEDIMENT CONTROL PLAN
SHEET 5 OF 5	EROSION AND SEDIMENT CONTROL PLAN DETAILS

PLAN REPRODUCTION WARNING

THE PLANS HAVE BEEN CREATED ON ANSI D (22" X 34") SHEETS FOR REDUCTIONS REFER TO GRAPHIC SCALE.

THE PLANS HAVE BEEN CREATED FOR FULL SIZE PLOTTING. ANY SET OF THE PLANS THAT IS NOT PLOTTED IN FULL SIZE OR SHALL NOT BE CONSIDERED ADEQUATE FOR CONSTRUCTION PURPOSES.

"WARNING" - INFORMATION MAY BE LOST IN COPYING AND/OR GRAY SCALE PLOTTING.

WEST VIRGINIA 811
CALL BEFORE YOU DIG!

ESTIMATED QUANTITIES

	EST. QTY	UNITS	BID QTY	UNIT PRICE	TOTAL COST
STABILIZED CONSTRUCTION ENTRANCE	750	SF			
TIMBER MAT BRIDGE*	1	EA			
TEMPORARY SEEDING	7,204	SY			
12" COMPOST FILTER SOCK	125	LF			
ORANGE CONSTRUCTION FENCE	945	LF			

* SEE DIMENSIONS ON PLAN DRAWINGS

SDW 7/14/16

REVISION RECORD

NO.	DATE	DESCRIPTION

Civil & Environmental Consultants, Inc.

XTO ENERGY, INC.
MARTIN VONDA
WELL PLUGGING PROJECT
EAGLE DISTRICT
HARRISON COUNTY, WV

COVER SHEET

DATE	JUNE 2016	DRAWN BY: CTN
DWG. SCALE:	AS SHOWN	CHECKED BY: ZMH
PROJECT NO:		151-114
MTP/PTP/CP:		SAC

DRAWING NO. 1
SHEET 1 OF 5

STEVEN ALLEN CAIN REGISTERED STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER 19264
6-30-16

3302375P

EROSION AND SEDIMENT CONTROL NARRATIVE

1. PROJECT DESCRIPTION: THE PURPOSE OF THIS PROJECT IS TO INSTALL EROSION AND SEDIMENT CONTROL MEASURES FOR THE MARTIN VONDA E0003 WELL PLUG PROJECT. THE PROJECT IS LOCATED APPROXIMATELY 0.20 MILES FROM THE INTERSECTION OF COUNTY ROUTE 6 AND COUNTY ROUTE 6/8 IN JANTOWN, HARRISON COUNTY, WEST VIRGINIA. THE PROPOSED PROJECT INCLUDES PLUGGING AND ABANDONMENT OF THE MARTIN VONDA E0003 GAS WELL. THE WELLHEAD, CASING, AND PRODUCTION EQUIPMENT WILL BE REMOVED. ONCE CEMENT PLUGS 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 SEEDED, AS REQUIRED, WITH A MIX APPROVED BY THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION. THE PROJECT LIMITS OF DISTURBANCE IS APPROXIMATELY 2.48 ACRES AND THE STUDY AREA FOR THE PROJECT WAS APPROXIMATELY 4.39 ACRES.

2. EROSION AND SEDIMENTATION CONTROL MEASURES TO BE USED FOR THIS PROJECT ARE COMPOST FILTER SOCKS, STABILIZED CONSTRUCTION ENTRANCE, AND TIMBER 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 CONTRACTORS 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 OF THE ON-SITE DRAWINGS TO INCLUDE THE LOCATION OF THE ACCESS ROADS AND THE CONTROL MEASURES TO BE USED. THERE SHALL BE NO BORROW AREA OUTSIDE OF THE PROPOSED CONSTRUCTION AREA.

3. CRITICAL EROSION AREAS-CONTROL MAINTENANCE: ALL 3:1 SLOPES AND STEEPER, DITCHES AND OTHER CONTROLS SHALL BE CONSIDERED CRITICAL EROSION AREAS. THESE AREAS SHALL BE MONITORED & MAINTAINED DAILY AND AFTER EACH RAIN FALL OF 0.5 INCHES OR GREATER. THE LOCAL GOVERNING AUTHORITY WILL HAVE THE AUTHORITY TO RECOMMEND THE PLACEMENT OF ADDITIONAL EROSION CONTROL MEASURES IN THESE AREAS IF IT BECOMES EVIDENT DURING CONSTRUCTION THAT THE CONTROL MEASURES IN PLACE ARE NOT FUNCTIONING SUFFICIENTLY.

4. EROSION AND SEDIMENT CONTROL MEASURES: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE CURRENT WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL. THE CONTRACTOR SHALL OBTAIN A COPY OF THIS MANUAL FROM THE WVDEP WEBSITE AND CONSTRUCT ALL DEVICES BASED ON THIS MANUAL OR A HANDBOOK THAT IS COMPARABLE OR EXCEEDS THE SPECIFICATIONS OF THE WEST VIRGINIA MANUAL. THE MINIMUM STANDARDS OF THIS MANUAL SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE. SITE PLANS FOR ALL PROPOSED EROSION AND SEDIMENT CONTROL MEASURES, IT IS THE INTENT OF THESE PLANS TO PROVIDE A MINIMUM BASIS FOR ADEQUATE EROSION AND SEDIMENT PROTECTION ASSOCIATED WITH THE WELL PLUGGING ACTIVITIES. THIS EROSION AND SEDIMENT CONTROL PLAN MAY VARY FROM STANDARD PIPELINE OR WELL PAD CONTROL MEASURES.

5. STRUCTURAL PRACTICES:
-SILT SOCK/SILT FENCE/SUPER SILT FENCE: WILL BE CONSTRUCTED AS SHOWN ON THE PLANS.

6. VEGETATIVE PRACTICE TOPSOILING: TOPSOIL WILL BE STRIPPED FROM THE SITE AND STOCKPILED IN AN AREA DETERMINED IN THE FIELD. UPON THE COMPLETION OF THE PROJECT TOPSOIL WILL BE PLACED ON ALL DISTURBED AREAS AT A MAXIMUM DEPTH OF 4 INCHES. TEMPORARY SEEDING: ALL DENUDED AREAS LEFT DORMANT FOR MORE THAN 21 DAYS SHALL BE SEEDED WITH A FAST GERMINATING SEED. THE TIME OF YEAR WILL BE THE BASIS FOR THE SEED MIXTURE. PERMANENT SEEDING: ALL SEEDED AREAS WILL BE RESEED, MULCHED AND FERTILIZED AS NEEDED TO OBTAIN AN ADEQUATE STAND OF GRASS. PERMANENT SEEDING SHALL BE PLACED WITHIN SEVEN DAYS UPON ACHIEVING FINAL GRADE. WATER, MULCH, AND RESEED AS NECESSARY TO OBTAIN AN ADEQUATE STAND OF VEGETATION, IN THE OPINION OF THE ENGINEER.

7. MANAGEMENT STRATEGIES: CONSTRUCTION WILL BE SEQUENCED SO THAT OPERATIONS WILL BEGIN AND END AS SOON AS POSSIBLE. THE JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES. AFTER ACHIEVING ADEQUATE STABILIZATION THE TEMPORARY EROSION AND SEDIMENT CONTROLS SHALL BE REMOVED AND ANY AREAS DISTURBED DURING THIS PROCESS SHALL BE STABILIZED. THESE PLANS ARE TO REMAIN ON-SITE AT ALL TIMES DURING CONSTRUCTION. 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.

8. CONSTRUCTION ELEMENTS:

A. OBTAIN ALL PERMITS AND APPROVALS PRIOR TO CONSTRUCTION.

B. 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.

C. 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 PROJECTS CONSTRUCTION.

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

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

F. ADD GRAVEL TO ACCESS ROAD AS NEEDED, BUT NO GRADING OR IMPACTS TO EXISTING DRAINAGE FEATURES ARE TO BE MODIFIED.

G. 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.

H. 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.

I. CLEAR AND GRUB ALONG THE R-O-W. PRESERVE NATURAL VEGETATION AS MUCH AS POSSIBLE, WITHOUT SIGNIFICANT INTERFERENCE WITH CONSTRUCTION ACTIVITIES.

J. USE TIMBER MAT BRIDGES TO CROSS WATERBODIES AND WET AREAS, AS NEEDED.

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

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

M. MULCH AND FERTILIZE AS STATED IN THIS PLAN.

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

O. MAINTAIN ALL BEST MANAGEMENT PRACTICES (BMP'S) AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION.

P. ALL BMP'S 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 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)

Q. TEMPORARY BMP'S MUST BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMPS'S ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL RESULTING FROM REMOVAL OF BMP'S 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).

R. NO NEW OR PERMANENT CUT OR FILL SLOPES ARE TO 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 THE WERE VEGETATED IN THE EXISTING CONDITION ARE TO BE VEGETATED AFTER CONSTRUCTION.

12. PERMANENT STABILIZATION: ALL AREAS LEFT UNCOVERED BY EITHER BUILDINGS OR PAVEMENT SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING AND WITHIN 7 DAYS. AT NO TIME SHALL LAND LAY DORMANT FOR LONGER THAN 21 DAYS. SEE SEQUENCE OF EVENTS FOR RATES.

13. MAINTENANCE, AND OTHER CONSIDERATIONS AND GROUND WATER PROTECTION: ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED DAILY AND AFTER EACH RAINFALL OF 0.5 INCH OR MORE. THEY WILL BE INSPECTED FOR UNDERMINING, DETERIORATION, EROSION, AND EXCESS DEPOSITED MATERIAL. ALL DEFICIENCIES WILL BE CORRECTED IMMEDIATELY. EXCESS MATERIAL WILL BE SPREAD ON THE SITE IN A MANNER WHERE IT IS NOT LIKELY TO ERODE IN THE FUTURE. CLEANING PROCEDURES WILL BE COMPLETED AT REGULAR INTERVALS AND AT LEAST WHEN SEDIMENT REACHES 33% OF CAPACITY, OR AS SHOWN ON APPLICABLE DETAILS. RECORDS OF CLEANING AND CORRECTIONS WILL BE MAINTAINED BY THE CONTRACTOR. THE "GENERIC GROUNDWATER PROTECTION PLAN FOR CONSTRUCTION SITES" WILL BE USED AND AVAILABLE ON SITE AT ALL TIMES. AN AREA WILL BE PROVIDED FOR VEHICLE AND EQUIPMENT MAINTENANCE. MOBILE FUEL TRUCKS WITH APPROVED TANKS WILL BE USED ON THIS SITE. PORTABLE SANITARY FACILITIES WILL BE AVAILABLE FOR EMPLOYEES. IF CONCRETE IS USED, EXCESS CONCRETE WILL BE DISPOSED OF PROPERLY AND NOT ALLOWED TO REMAIN ON THIS SITE. MACHINERY WILL NOT BE ALLOWED IN LIVE STREAMS. FLUIDS SUCH AS DIESEL FUEL, GAS, OIL OR ANTIFREEZE WILL BE KEPT IN PROPER CONTAINERS AND ANY SPILLAGE WILL BE CLEANED AND TAKEN OFF SITE TO A PROPER FACILITY. SOLID OR HAZARDOUS WASTES WILL BE DISPOSED IN ACCORDANCE WITH APPROPRIATE STATE AND FEDERAL REGULATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE CHANGES AND NOTIFY WVDEP OF ANY CHANGES TO GPP. A FINAL INSPECTION WILL BE MADE AT THE CONCLUSION OF THE PROJECT AND ALL CORRECTIONS MADE BEFORE SIGN-OFF OF THE PROJECT SITE.

14. CRITICAL AREAS: THE AREA(S) SHOWN ALONG THE FIELD DELINEATED STREAMS, WETLANDS, AND PONDS, AS SHOWN ON THE PLANS, ARE DESIGNATED AS CRITICAL AREA(S), IF PRESENT. ALL 3:1 SLOPES AND STEEPER, DITCHES, AND OTHER CONTROLS SHALL BE CONSIDERED CRITICAL EROSION AREAS. THESE AREAS SHALL BE MONITORED AND MAINTAINED DAILY DURING CONSTRUCTION AND AFTER EACH RAINFALL OF 0.5 INCHES OR GREATER.COMPOST FILTER SOCKS ARE TO BE USED TO PROTECT THESE FIELD DELINEATED AREA(S) FROM SEDIMENT LEAVING THE SITE. ADDITIONALLY, ORANGE SAFETY FENCE IS RECOMMENDED TO BE INSTALLED ABOVE/AROUND THESE AREA(S) TO SERVE AS A PHYSICAL BARRIER, ENSURING THE AREA(S) ARE NOT DISTURBED. THE LOCAL GOVERNING AUTHORITY WILL HAVE THE AUTHORITY TO RECOMMEND THE PLACEMENTS OF ADDITIONAL EROSION CONTROL MEASURES IN THESE AREAS IF IT BECOMES EVIDENT DURING CONSTRUCTION THAT THE ONES IN PLACE ARE NOT FUNCTIONING SUFFICIENTLY.

15. MAINTENANCE PROGRAM: SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED OR SWEPT INTO ANY ROADSIDE DITCH, CULVERT OR SURFACE WATER.

GENERAL EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL ARRANGE FOR A PRE-CONSTRUCTION CONFERENCE WITH THE APPROPRIATE EROSION AND SEDIMENT CONTROL INSPECTOR 48 HOURS PRIOR TO BEGINNING WORK.
2. ALL EROSION CONTROL DEVICES AS SHOWN OR AS REQUIRED, ARE TO BE CONSTRUCTED TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL AND ARE TO BE IN PLACE PRIOR TO WORK.
3. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED CONTINUOUSLY, RELOCATED WHEN AND AS NECESSARY AND SHALL BE CHECKED AFTER EVERY RAINFALL. SEEDED AREAS SHALL BE CHECKED REGULARLY AND SHALL BE WATERED, FERTILIZED, RE-SEEDED AND MULCHED AS NECESSARY TO MAINTAIN A DENSE STAND OF GRASS.
4. ALL DRAIN INLETS SHALL BE PROTECTED FROM SILTATION. INEFFECTIVE PROTECTION DEVICES SHALL BE IMMEDIATELY REPLACED AND THE INLET CLEANED. FLUSHING IS NOT AN ACCEPTABLE METHOD OF CLEANING.
5. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 21 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE DORMANT FOR MORE THAN SIX MONTHS.
6. DURING THE CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES.
7. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.
8. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER. TRAPPED SEDIMENT AND THE DISTURBED SOIL RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
9. ALL DISTURBED AREAS NOT PAVED OR BUILT UPON SHALL BE HYDRO-SEEDED AND FERTILIZED. PERFORM PERMANENT TOP SOILING, SEEDING AND FERTILIZING AS SOON AFTER OBTAINING FINISH GRADE AS POSSIBLE. SEEDING SHALL COMPLY WITH THE FOLLOWING.

A. TOPSOIL- 4 INCH MINIMUM FOR PERMANENT TURF

B. FERTILIZER- 500 POUNDS PER ACRES OF 10-20-20 FERTILIZER OR EQUIVALENT POUNDAGE OF DIFFERENT ANALYSIS. WORK INTO SOIL PRIOR TO SEEDING.

C. LIME (PERMANENT SEEDING)- AGRICULTURAL LIME SPREAD AT RATE OF 4 TONS/ACRE. WORK INTO SOIL PRIOR TO SEEDING.

D. MULCH- WOOD FIBER OR CHOPPED STRAW AT RATE OF 2 TONS PER ACRE, HYDRO-MULCH AT RATE OF 30 BALES PER ACRE.

E. SEED- SEE DETAIL SEEDING CHARTS. TO BE SEEDED BY HYDRO-SEEDER.

GENERAL RECLAMATION NOTES

1. THE 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 WV AT 811.
2. TRAFFIC SHALL BE MAINTAINED ON ALL ADJOINING STREETS AND DRIVES AT ALL TIMES IN ACCORDANCE WITH WVDOT REQUIREMENTS.
3. DISTURBED AREAS CREATED DUE TO WELL PLUG REMOVAL SHALL BE RECLAIMED, MULCHED, AND SEEDED TO REDUCE EROSION AND SEDIMENTATION.
4. API IDENTIFICATION NUMBERS SHALL BE DISPLAYED AT THE WELL IN ACCORDANCE WITH STATE REQUIREMENTS.
5. LANDOWNER(S) SHALL BE GIVEN ADEQUATE NOTICE THAT CERTAIN SPECIFIED ACTIVITIES WILL BE OCCURRING ON THEIR PROPERTY.

WV Department of Environmental Protection
Office of Oil and Gas
JUL 17 2018

PERMANENT SEEDING MIXTURES SUITABLE FOR ESTABLISHMENT IN WEST VIRGINIA

SPECIES/MIXTURE	SEEDING RATE (LBS/AC)	SOIL DRAINAGE PREFERENCE	PH RANGE
CROWNVETCH/ TALL FESCUE	10 - 15 30	WELL - MOD. WELL	5.0 - 7.0
CROWNVETCH/ PERENNIAL RYEGRASS	10 - 15 20	WELL - MOD. WELL	5.0 - 7.5
FLATPEA/ PERENNIAL RYE/ TALL FESCUE	20 10	WELL SEE WELL	[illegible]
LADINO CLOVER/ SERICEA LESPEDEZA/ TALL FESCUE	30 20 2	WELL - MOD. WELL	4.5 - 7.5
TALL FESCUE/ LADINO CLOVER/ REDTOP	*40 3 3*	*WELL - MOD. WELL*	*5.0 - 7.5*
CROWNVETCH/ TALL FESCUE/ REDTOP	10 20 3	WELL - MOD. WELL	5.0 - 7.5
TALL FESCUE/ BIRDSFOOT TREFOIL/ REDTOP	40 10 3	WELL - MOD. WELL	5.0 - 7.5
SERICEA LESPEDEZA/ TALL FESCUE/ RESTOP	20 30 2	WELL - MOD. WELL	4.5 - 7.5
RESTOP/ TALL FESCUE/ CREEPING RED	30 3 30	WELL - MOD. WELL	5.0 - 7.5
TALL FESCUE	*50*	*WELL - POORLY*	*4.5 - 7.5*
PERENNIAL RYEGRASS/ TALL FESCUE/ CREEPING RED	*10 10 10*	*WELL - POORLY*	[illegible]
ANNUAL RYEGRASS/ * CLIMAX TIMOTHY/ RESTOP/ INTERMEDIATE RYEGRASS/ POTOMAC ORCHARDGRASS/ MEDIUM RED CLOVER (SEATED)	** 30 25 20 15 10	WELL - MOD. WELL	6.0 - 7.0

NOTE: MIXTURES LISTED IN BOLD ARE SUITABLE FOR USE IN SHADED WOODLAND SETTINGS. THOSE IN ITALICS ARE SUITABLE FOR USE IN FILTER STRIPS.

NOTE: FOR UNPREPARED SEEDBEDS OR SEEDING OUTSIDE THE OPTIMUM TIMEFRAMES, ADD 50% MORE SEED TO THE SPECIFIED RATE.

* LATHCO FLATPEA IS POTENTIALLY POISONOUS TO SOME LIVESTOCK. ALL LEGUMES SHOULD BE PLANTED WITH PROPER INOCULANTS PRIOR TO SEEDING. **

** SWISHER MEADOW MIX

TEMPORARY COVER SUITABLE FOR ESTABLISHMENT IN WEST VIRGINIA

SPECIES	SEEDING RATE (LBS/AC)	OPTIMUM SEEDING DATES	DRAINAGE	PH RANGE
ANNUAL RYEGRASS	40	3/1 - 6/15 OR 8/15 - 9/15	WELL - POORLY	5.5 - 7.5
FIELD BROMEGRASS	40	3/1 - 6/15 OR 8/15 - 9/15	WELL - MOD. WELL	6.0 - 7.0
SPRING OATS	96	3/1 - 6/15	WELL - POORLY	5.5 - 7.0
SUDANGRASS	40	5/15 - 8/15	WELL - POORLY	5.5 - 7.5
WINTER RYE	168	8/15 - 10/15	WELL - POORLY	5.5 - 7.5
WINTER WHEAT	180	8/15 - 11/15	WELL - MOD. WELL	5.5 - 7.0
JAPANESE MILLET	30	6/15 - 8/15	WELL	4.5 - 7.0
REDTOP	5	3/1 - 6/15	WELL	4.0 - 7.5
ANNUAL RYEGRASS	26	3/1 - 6/15	WELL - POORLY	5.5 - 7.5
SPRING OATS	64	3/1 - 6/15	WELL - POORLY	5.5 - 7.5

NOTE: THESE RATES SHOULD BE INCREASED BY 50% IF PLANTED APRIL 15 – AUGUST 1 AND OCTOBER 1 – MARCH 1.

STEVEN ALLEN CRIST REGISTERED PROFESSIONAL ENGINEER STATE OF WEST VIRGINIA 036-19

REVISIONS: NO. | DATE | DESCRIPTION

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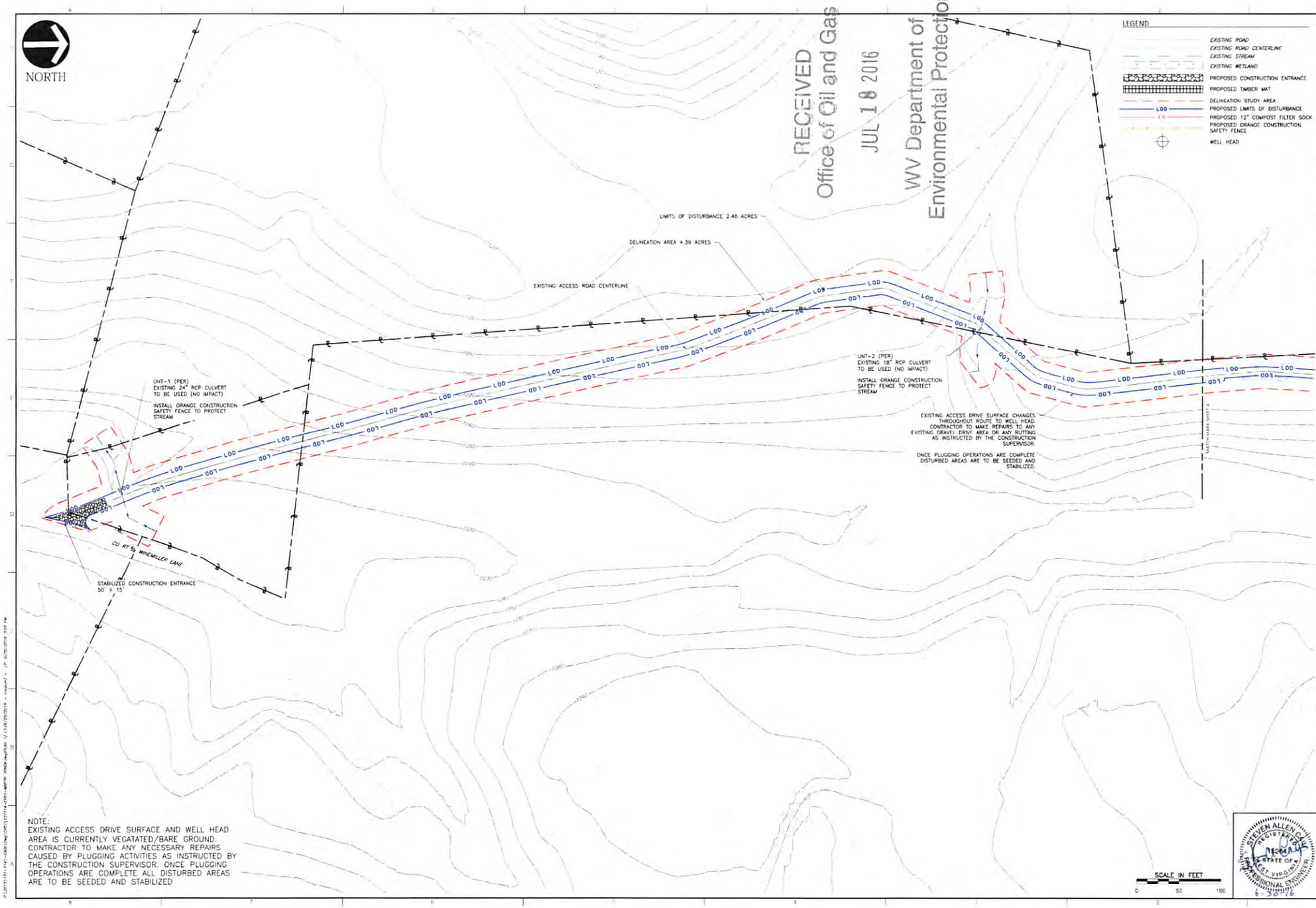
VONDA MARTIN 1
WELL PLUGGING PROJECT
EAGLE DISTRICT
HARRISON COUNTY, WV

EROSION & SEDIMENT CONTROL PLAN NOTES

DATE	JUL 2018	DRAWN BY: TTN
DRAWING	AS SHOWN	CHECKED BY: AMB
PROJECT NO.	1314-018	SCALE:

DRAWING NO. 2
SHEET 2 OF 10

3302375P



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Office of Oil and Gas
JUL 18 2016
WV Department of Environmental Protection

NOTE:
EXISTING ACCESS DRIVE SURFACE AND WELL HEAD AREA IS CURRENTLY VEGATATED/BARE GROUND. CONTRACTOR TO MAKE ANY NECESSARY REPAIRS CAUSED BY PLUGGING ACTIVITIES AS INSTRUCTED BY THE CONSTRUCTION SUPERVISOR. ONCE PLUGGING OPERATIONS ARE COMPLETE ALL DISTURBED AREAS ARE TO BE SEEDED AND STABILIZED

STEVEN ALLEN CLAY REGISTERED PROFESSIONAL ENGINEER STATE OF WEST VIRGINIA
6-30-16

REVISION SHEET LIST

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WELL PLUGGING PROJECT
EAGLE DISTRICT
HARRISON COUNTY, WV

EROSION & SEDIMENT CONTROL PLAN

DATE	JUNE 2016	DRAWN BY: CCN
DWG. NO.	AS SHOWN	CHK'D BY: PMH
PROJECT NO.		231-119
APPROVED BY:		SAC

DRAWING NO. 3
SHEET 3 OF 5

3302375P

NORTH

LEGEND

- EXISTING ROAD
- EXISTING ROAD CENTERLINE
- EXISTING STREAM
- EXISTING WETLAND
- PROPOSED CONSTRUCTION ENTRANCE
- PROPOSED TIMBER MAT
- DELINEATION STUDY AREA
- LOD — PROPOSED LIMITS OF DISTURBANCE
- SF — PROPOSED 12" COMPOST FILTER SOCK
- PROPOSED ORANGE CONSTRUCTION SAFETY FENCE
- WELL HEAD

LIMITS OF DISTURBANCE 2.48 ACRES

DELINEATION AREA 4.39 ACRES

WETLAND A (PEM) NO IMPACT

INSTALL ORANGE CONSTRUCTION SAFETY FENCE TO PROTECT WETLAND

LIMITS OF DISTURBANCE WIDTH REDUCED FROM 15' TO 10' FROM START OF WETLAND A TO END OF WETLAND C

WETLAND B (PEM) NO IMPACT

INSTALL ORANGE CONSTRUCTION SAFETY FENCE TO PROTECT WETLAND

WETLAND C (PEM) NO IMPACT

INSTALL ORANGE CONSTRUCTION SAFETY FENCE TO PROTECT WETLAND

EXISTING ACCESS DRIVE SURFACE CHANGES THROUGHOUT ROUTE TO WELL HEAD. CONTRACTOR TO MAKE REPAIRS TO ANY EXISTING GRAVEL DRIVE AREA OF ANY RUTTING AS INSTRUCTED BY THE CONSTRUCTION SUPERVISOR

ONCE PLUGGING OPERATIONS ARE COMPLETE DISTURBED AREAS ARE TO BE SEEDED AND STABILIZED

MATCH MARK SHEET 1

WETLAND D (PEM) NO IMPACT

INSTALL ORANGE CONSTRUCTION SAFETY FENCE TO PROTECT WETLAND

TIMBER MAT BRIDGE 75'x10'

WETLAND E (PEM) TEMPORARY IMPACT AREA = 0.01 ACRES

UNT-3 (PER) EXISTING 18" RCP CULVERT TO BE USED (NO IMPACT)

INSTALL ORANGE CONSTRUCTION SAFETY FENCE TO PROTECT STREAM

193 LF OF 12" COMPOST FILTER SOCK (TYP.)

67'

229'

111.4664'

153.1667'

API #47-033-02375
VONDA MARTIN 1
LAT: 39.403476
LON: -80.394274
N: 4361726.4 (UTM17)
E: 552152.2 (UTM17)
ELEV: 1111'

BRUSHY AREA AROUND WELL HEAD WILL NEED CLEARED TO ACHIEVE FULL WORKING AREA

NOTE:
EXISTING ACCESS DRIVE SURFACE AND WELL HEAD AREA IS CURRENTLY VEGATATED/BARE GROUND. CONTRACTOR TO MAKE ANY NECESSARY REPAIRS CAUSED BY PLUGGING ACTIVITIES AS INSTRUCTED BY THE CONSTRUCTION SUPERVISOR. ONCE PLUGGING OPERATIONS ARE COMPLETE ALL DISTURBED AREAS ARE TO BE SEEDED AND STABILIZED

SCALE IN FEET 0 50 100

STEVEN ALLEN CUNNINGHAM REGISTERED STATE OF WEST VIRGINIA PROFESSIONAL ENGINEER 6-30-16

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WELL PLUGGING PROJECT
EAGLE DISTRICT
HARRISON COUNTY, WV

EROSION & SEDIMENT CONTROL PLAN

DATE	JUNE 2016	DRAWN BY	CEN
DWG. SCALE	AS SHOWN	DWG. REF.	ZMH
PROJECT NO.			133-114
REFERENCE			SAC

DRAWING NO. 4

SHEET 4 OF 5

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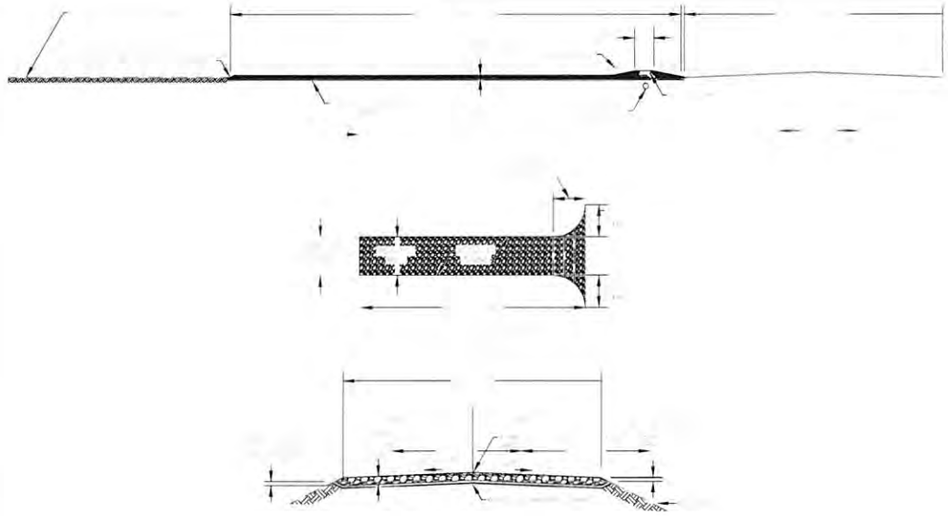

DETAIL 1
STABILIZED CONSTRUCTION ENTRANCE

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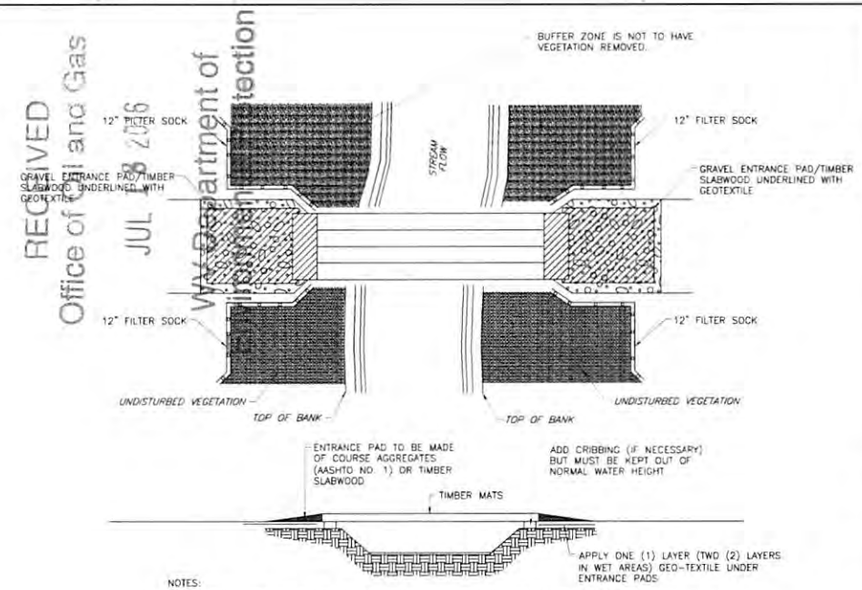


NOTES:

1.) ONLY CLEARING EQUIPMENT AND EQUIPMENT NECESSARY FOR INSTALLATION OF EQUIPMENT BRIDGES MAY CROSS WATER BODIES PRIOR TO BRIDGE INSTALLATION. LIMIT THE CROSSING OF EACH WATER BODY TO ONE PER PIECE OF CLEARING EQUIPMENT.

2.) INSTALL 12" FILTER SOCK ACROSS THE DISTURBED AREA OF THE RIGHT – OF – WAY.

3.) APPLY GEO – TEXTILE UNDER ENTRANCE PADS.

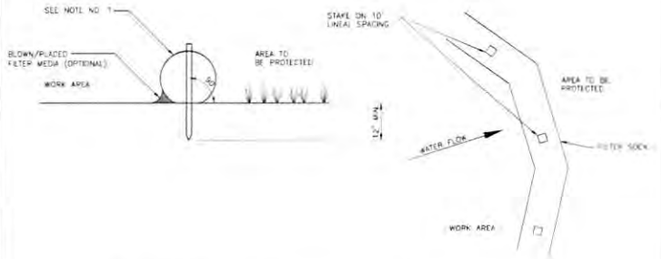
4.) EXCESS MUD IS TO BE REMOVED FROM THE ENTRANCE PADS AND MATS DURING CONSTRUCTION.

5.) SECURE GEO–TEXTILE TO UNDER SIDE OF TIMBER MATS AND WRAP/SECURE TO SIDES TO PREVENT SEDIMENT/MUD FROM MIGRATION THROUGH MATS TO PROTECTED AREA BELOW.

6.) DURING FINAL CLEAN UP WHEN MATS, CULVERT, CLEAN ROCK FILL, ETC. ARE REMOVED, INSTALL FILTER FENCE ACROSS THE ENTIRE RIGHT – OF –WAY ON BOTH SIDES OF STREAM.

DETAIL 2
TEMPORARY TIMBER MAT STREAM CROSSING DETAIL

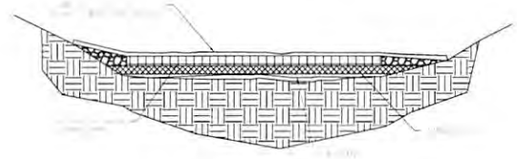
NOT TO SCALE



NOTE:
1. COMPOST FILTER SOCK TO BE FILTREXX SILTSOXX OR APPROVED EQUIVALENT.
2. 12", 18", 24", and 32" COMPOST FILTER SOCK TO BE USED. SEE PLAN SHEET FOR SIZES AND LOCATIONS.
3. ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF WHEN IT REACHES ½ THE ABOVE GROUND HEIGHT OF THE COMPOST FILTER SOCK.
4. COMPOST FILTER SOCK SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED COMPOST FILTER SOCK SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.
5. COMPOST FILTER SOCK SHALL BE INSTALLED ON THE CONTOUR PERPENDICULAR TO FLOW.

DETAIL 3
COMPOST FILTER SOCK

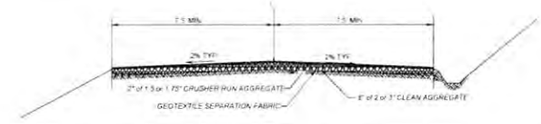
NOT TO SCALE



NOTE:
1. REMOVE DIRT FROM BRIDGE DECK AND PLACE IN SPOIL 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 AND OBSTRUCTION TO THE FLOW.
3. ALLOWS FOR MINIMAL WETLAND IMPACT DURING CONSTRUCTION AND QUICK RESTORATION TO PRE-CONSTRUCTION CONDITIONS.

DETAIL 4
TIMBER MAT BRIDGE FOR WETLAND CROSSING

NOT TO SCALE



DETAIL 5
TYPICAL CONSTRUCTION ACCESS ROAD REPAIR

NOT TO SCALE

NOTES: EXISTING ACCESS DRIVE IS CURRENTLY VEGETATED. THE CONTRACTOR SHALL MAKE REPAIRS TO MINOR RUTTING WITHIN THE ACCESS ROAD PER THIS DETAIL OR AS INSTRUCTED BY THE CONSTRUCTION SUPERVISOR. THE ACCESS ROAD IS TO BE STABILIZED AND MAINTAINED THROUGHOUT CONSTRUCTION AS DIRECTED BY THE CONSTRUCTION SUPERVISOR. ONCE THE WORK IS COMPLETE, ANY DISTURBED AREAS MUST BE SEEDED AND STABILIZED IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL PLAN NOTES.

STEVEN ALLEN COX
REGISTERED
STATE OF WEST VIRGINIA
PROFESSIONAL ENGINEER
4-30-16

REVISION RECORD

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EAGLE DISTRICT
HARRISON COUNTY, WV

EROSION & SEDIMENT CONTROL PLAN DETAILS

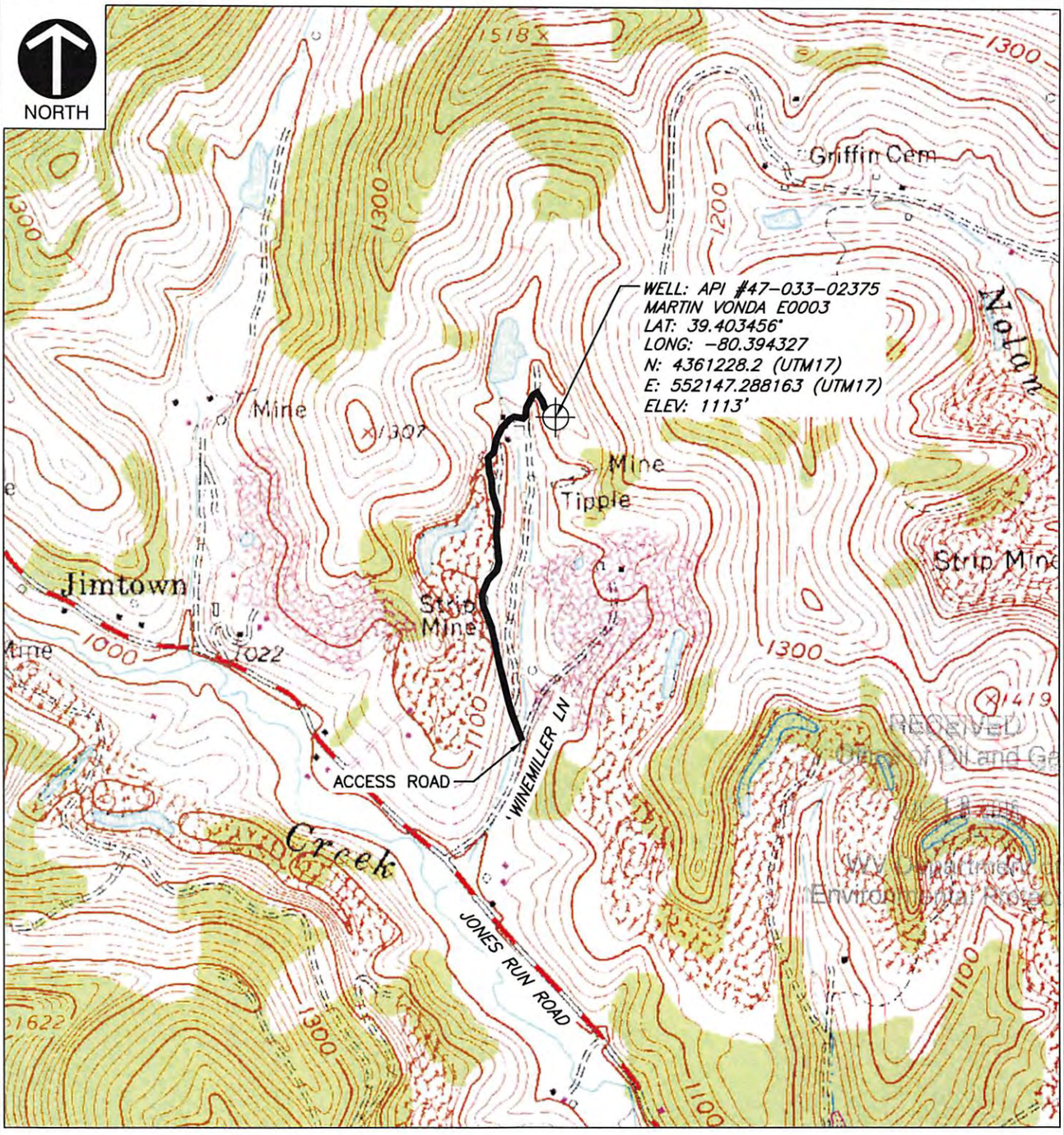
DATE	11-18-2015	DRAWN BY	CTN
SCALE	AS SHOWN	DESIGNED BY	ZMD
PROJECT NO.		CHECKED BY	CEL/JLS
			SAC

DRAWING NO.

5

SHEET OF

3302375P



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Office of Oil and Gas
NOV 13 2015
WV Department of
Environmental Protection

REFERENCE
1. USGS 7.5 MIN QUAD – WALLACE, WV

SCALE IN FEET
0 1000 2000

Civil & Environmental Consultants, Inc.
600 Market Place - Suite 200 - Bridgeport, WV 26330
Ph: 304.933.3119 · Fax: 304.933.3327
www.cecinc.com

XTO ENERGY, INC.
MARTIN VONDA PLUGGING PROJECT
HARRISON COUNTY, WEST VIRGINIA

PROJECT LOCATION MAP

DRAWN BY:	ZMD	CHECKED BY:	JDK	APPROVED BY:	DEM	FIGURE NO.:	1
DATE:	NOVEMBER 2015	DWG SCALE:	1" = 1000'	PROJECT NO:	151-114.0041		

P:\2015\151-114\-CADD\Dwg\CV01\151114-MARTIN VONDA LOCATION MAP.dwg[3] LS:(11/10/2015 - zdemarco) - LP: 11/10/2015 1:04 PM

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WW-7
8-30-06

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

API: 47-033-02375 **WELL NO.:** 1

FARM NAME: Vonda Martin

RESPONSIBLE PARTY NAME: XTO Energy, Inc.

COUNTY: Harrison **DISTRICT:** Eagle

QUADRANGLE: Wallace

SURFACE OWNER: Harrison County Coal Company

ROYALTY OWNER: Orson White/Billie J. Conrad/Ellen L Himes/E.D. Anderson

UTM GPS NORTHING: 4361726.4

UTM GPS EASTING: 552152.2 **GPS ELEVATION:** 339m (1111')

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JUL 18 2016
WV Department of
Environmental Protection

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 X : Post Processed Differential X

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.

Jacqueline Kuehn — Signature
Project Manager — Title
July 5, 2016 — Date