west virginia department of environmental protection

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

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

February 12, 2015

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-3305845, 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.

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

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin
Chief

Operator's Well No: BOGGESS A SOUTH UNIT 10H
Farm Name: XTO ENERGY, INC.
API Well Number: 47-3305845
Permit Type: Horizontal 6A Well
Date Issued: 02/12/2015

API Number: 3305845

PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) 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. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.

2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.

3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.

4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.

5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations,* 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.

6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.

7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.

8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

9. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.

WW-6B
(9/13)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WELL WORK PERMIT APPLICATION

4 655

1) Well Operator: XTO Energy Inc.

494487940	Harrison	Eagle	Wallace
Operator ID	County	District	Quadrangle

2) Operator's Well Number: Boggess A South Unit 10H Well Pad Name: Boggess A Pad

3) Farm Name/Surface Owner: XTO Energy Inc. Public Road Access: Reese's Run (Harrison Co. Rt. 20/7)

4) Elevation, current ground: 1183' Elevation, proposed post-construction: 1183'

5) Well Type (a) Gas ■ Oil _____ Underground Storage _____
Other _____
(b)If Gas Shallow ■ Deep _____
Horizontal ■

SDW
9/30/2014

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):
Target Formation: Marcellus, Depth 7,089', Anticipated Thickness: 150', Associated pressure: 4,650 psi

8) Proposed Total Vertical Depth: 7,100'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 12,350'

11) Proposed Horizontal Leg Length: 4,850'

12) Approximate Fresh Water Strata Depths: 114', 125'

13) Method to Determine Fresh Water Depths: Offsetting Reports

14) Approximate Saltwater Depths: 1012'

15) Approximate Coal Seam Depths: Pittsburgh Coal was strip mined at this location

16) Approximate Depth to Possible Void (coal mine, karst, other): None anticipated - Pittsburgh Coal was strip mined

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes ☐ No ☑

(a) If Yes, provide Mine Info: Name: _____
Depth: _____
Seam: _____
Owner: _____

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18)

CASING AND TUBING PROGRAM

TYPE	Size	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill-up (Cu. Ft.)
Conductor	20"	New	H-40	94#	40'	40'	40 cuft - C.T.S
Fresh Water	13 3/8"	New	MS-50	48#	300'	300'	300 cuft - C.T.S.
Coal							
Intermediate	9 5/8"	New	J-55	36#	2,700'	2,700'	Lead 600/Tail 600' - C.T.S.
Production	5 1/2"	New	CYP-110	17#	12,350'	12,350'	2700 cuft
Tubing							
Liners							

SDW
2/4/2015

TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	24"	0.438"	960	Type 1	1.19
Fresh Water	13 3/8"	17.5"	0.33"	2,160	Type 1	1.19
Coal						
Intermediate	9 5/8"	12.25"	0.352"	3,520	Type 1	Lead 1.26/Tail 1.19
Production	5 1/2"	8.75" 8.5"/7.875"	0.304"	10,640	Type 1	1.32
Tubing						
Liners						

PACKERS

Kind:				
Sizes:				
Depths Set:				

WW-6B
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19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill a new horizontal Marcellus well, utilizing synthetic mud and a closed loop system for both drilling and completion. Install new casing with centralizers.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

1. Acid Stage - Typically 1500 gallons of 7.5% hydrochloric acid to clear the perforation path in the wellbore. 1500 gals 15% HCl acid. 2. Sand / Proppant Stages - Several stages of pumping water combined with sand at a targeted 80 bpm rate. The maximum pressure and rate used is 10,000 psig and 120 bpm. The sand size may vary from 100 mesh to30/50 mesh size. 12,500 bbls slick water with 220,000 lbs 40/70, 270,000 lbs 100 mesh sands and 2,200 gals FR 133, 1,500 gals Bioplex 301 and 1,500 gals Bioplex 301 and 1,190 gals antiscale 30. 3. Flush Stage - Slickwater water stage to fill the wellbore to flush the sand from the wellbore. Depending on the water quality, a biocide, friction reducer, iron control, and scale inhibitor may be injected during the completion as well.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 6.78+/-

22) Area to be disturbed for well pad only, less access road (acres): 5.26+/-

23) Describe centralizer placement for each casing string:

Conductor: none
Fresh Water: 1"-6" above float shoe, 1 at float collar, & 1 at every 4th joint to surface
Intermediate: 1"-6" above float shoe, 1 at float collar, & 1 at every 4th joint to surface
Production: 1 at every 4th joint from the kickoff point to 1000' above the kickoff point

24) Describe all cement additives associated with each cement type:

Conductor - Type 1 - no additives
Fresh Water - Tail - Type 1 - 2% Calcium Chloride, Super Flake
Intermediate - Lead - Type 1 - 2% Calcium Chloride, Super Flake
Tail - Type 1 - 2% Calcium Chloride, Super Flake
Production - Tail 50/50 POZ - Type 1 - Sodium Chloride, Bentonite, Super Flake, Air-Out, R-1, AG-350

25) Proposed borehole conditioning procedures:

See attached sheet

*Note: Attach additional sheets as needed.

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Boggess A 10H Detailed Casing and Cementing Program

Type	Hole Size (inches)	Casing Design/Program: Csg Size (in)	Length (ft)	Top/Bottom of String	Grade	Weight (ppf)	Wall Thickness	Burst Pressure Rating	Centralizer Placement	Cementing Program: Type	Yield (cu. ft/sk)	Additives (trade names are Superior Well Services)	Estimated Volume (cu. ft.)
Conductor	24	20	40	0' / 40	H 40	94	0.438	960	none	Type 1	1.19	none	
Coal													
Surface / Fresh Water	17.5	13 3/8	[illegible]	0' / 500	MS 50	48	0.330"	2160	1.6" above float shoe 1-at float collar 1-every 4th jt to surface	Tail -Type 1	1.19	Calcium chloride, Super Flake	[illegible]
Intermediate	12.25	9 5/8	[illegible]	0' / 2700'	J-55	36	0.352"	3520	1-6" above float shoe 1-at floor collar 1-every 4th jt to surface	Lead-Type 1	1.78	Calcium Chloride, Super Flake	[illegible]
										Tail -Type 1	1.19	Calcium chloride, Super Flake	630
Production	8 7/8 8 5/ / 8/5	5 1/2	12,350	0' / 12350'	CYP-110	17	0.304	10640	centralizers will be run every 3rd joint from top of cement to landing point	Tail-50/50 POZ Type 1	1.32	Sodium chloride, bentonite, Super Flake, Air Out, R-1, AC-350	2700
Tubing													
Liners													

Boggess A 10H Proposed Directional Data

Hole Section	Hole Size	Drilling Fluid	Condition Procedures: Drilling	At TD	Running Casing	Prior to Cementing
Conductor	24	Air/Water	Hole will be circulated with high pressure air	Hole will be blown clean with air prior to pulling out of hole to run casing	Hole will be filled with fluid and circulated to surface if conditions require	Casing will be filled with fluid and returns taken at surface prior to pumping cement
Coal	20	Air/Water	Hole will be circulated with high pressure air	Hole will be blown clean with air prior to pulling out of hole to run casing	Hole will be filled with fluid and circulated to surface if conditions require	Casing will be filled with fluid and returns taken at surface prior to pumping cement
Fresh Water	17.5	Air/Water	Hole will be circulated with high pressure air	Hole will be blown clean with air prior to pulling out of hole to run casing	Hole will be filled with fluid and circulated to surface if conditions require	Casing will be filled with fluid and returns taken at surface prior to pumping cement
Intermediate	12.25	Air/Water	Hole will be circulated with high pressure air	Hole will be blown clean with air prior to pulling out of hole to run casing	Hole will be filled with fluid and circulated to surface if conditions require	Casing will be filled with fluid and returns taken at surface prior to pumping cement
Production	8 7/8 8 5/7 8/5"	Air / Non-aqueous based mud	cuttings out of the hole, ROP will be approximately 11 5ppg-14.0ppg for stability and ecodefiance. As required, the hole will be circulated at high pump	The hole will be circulated at maximum possible pump rate and the drill string will be rotated at the maximum rpm	Hole will be circulated as necessary while running casing	Hole will be circulated at least one bottoms up prior to pumping cement
Tubing						
Liners						

Boggess A 10H Proposed Directional Data

Other directional data
KOP 6500
LP 7500
approx. TD 12350 (rounded up)

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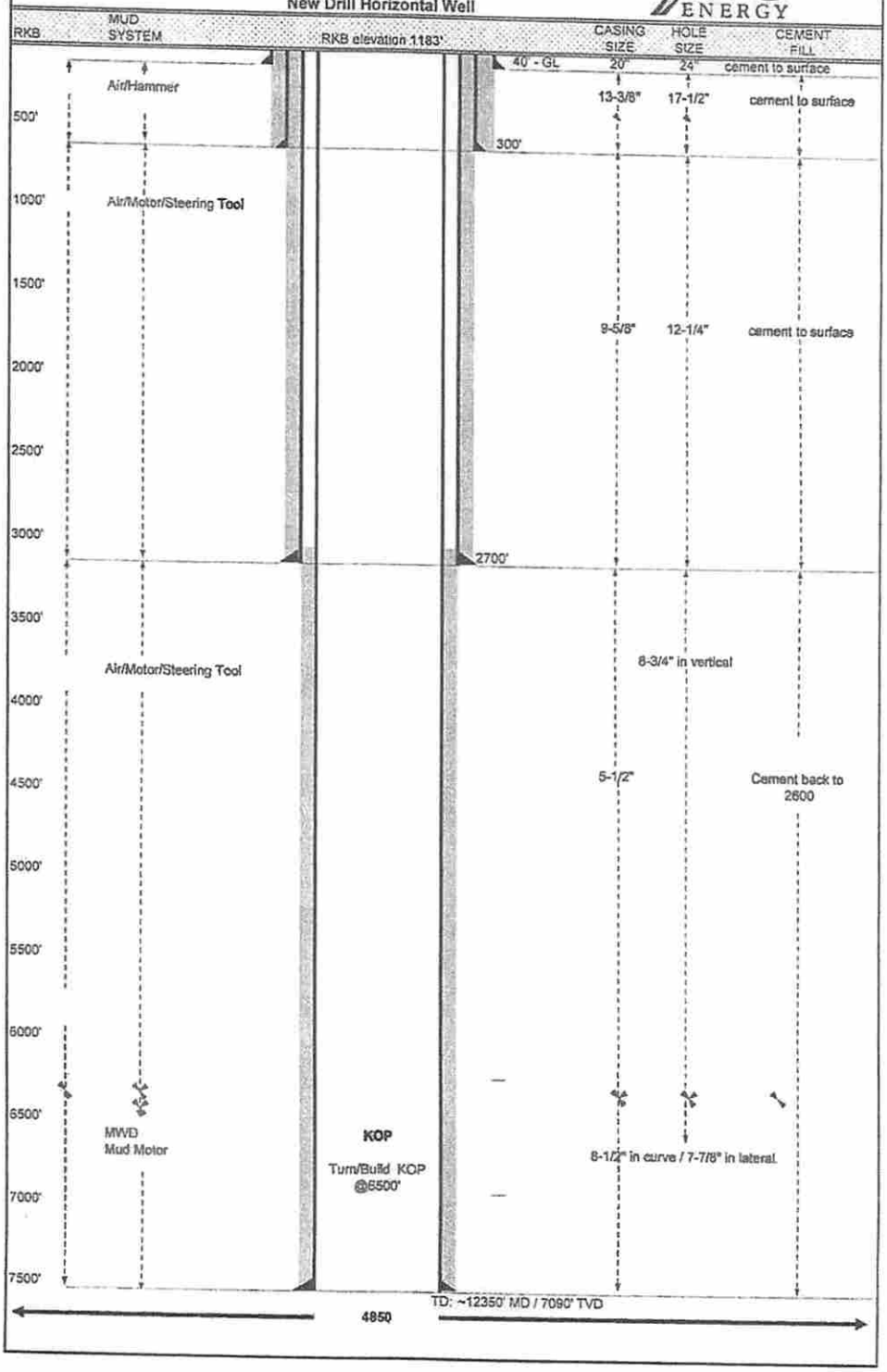
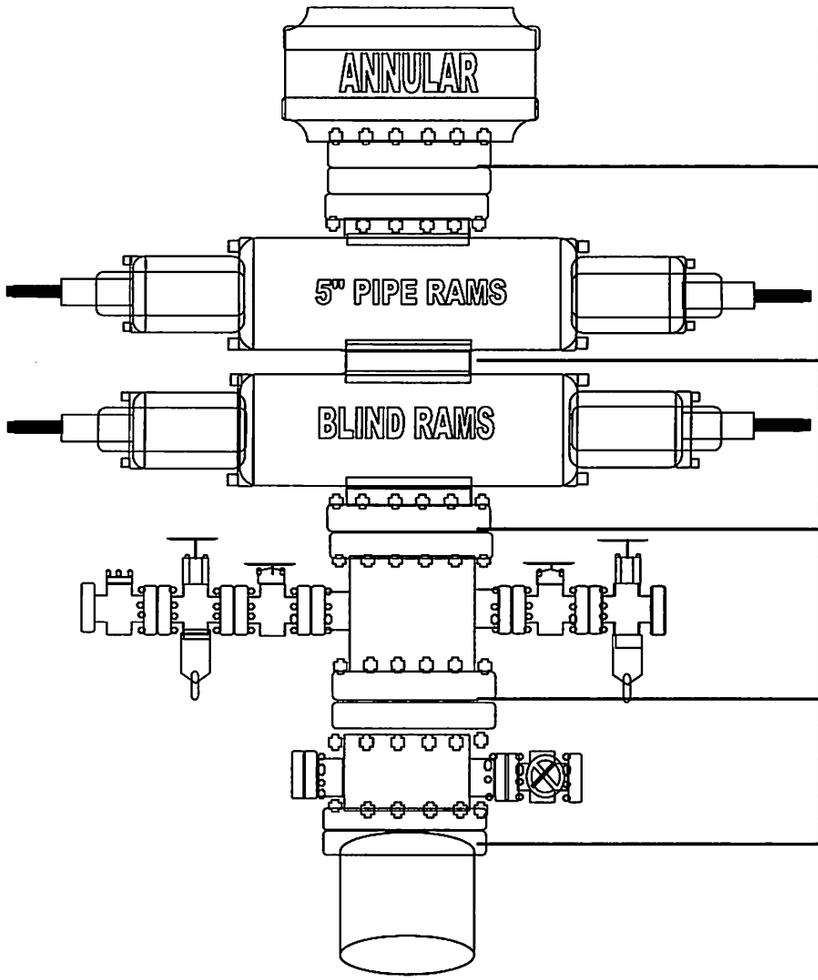
Boggess A 10H

Harrison County, West Virginia

New Drill Horizontal Well



BOP Equipment Specifications/Diagram/Testing Schedule



Type	Model	Size	Pressure Rating	Testing Schedule	
				-full pressure test to 100% of rating	
				Vertical Hole	Horizontal Hole
Annular	Shaffer Spherical	11"	5,000 psi	. upon installation . every 30 days	. upon installation . after each bit trip . weekly
Pipe Ram	Cameron Type U	11"	5,000 psi	. upon installation . every 30 days	. upon installation . after each bit trip . weekly
Blind Ram	Cameron Type U	5"	5,000 psi	. upon installation . every 30 days	. upon installation . after each bit trip . weekly
Mud Cross					
Wellhead		11"	5,000 psi		

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XTO ENERGY

Memo to File

1/2/13

Re: Boggess Unit A Location Coal

On Wednesday January 2, 2013 I called Kenny Ashton with the WVGES and asked about potential coal seams and mining operations under our planned Boggess Unit A location. I provided him with the following NAD 83 coordinates: 39.376147, -80.385799.

Later that day Mr. Ashton called back and said that the Pittsburgh coal at this location had been stripped. He also said that we are in no danger of hitting the nearby O & R mine because our surface location is at the same elevation of the mine.

Tim Sands

Regulatory Compliance Technician

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JUL 15 2013

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XTO Energy Inc. • 486 Industrial Park Road • P.O. Box 1008 • Jane Lew, WV 26378 • (304) 884-6000 • Fax: (304) 884-6809

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WW-9
(9/13)

API Number 47 - _____ - _____
Operator's Well No. Boggess A South Unit 10H

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) Tenmile Creek Quadrangle Wallace

Elevation 1183' County Harrison District Eagle

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: _____

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

Proposed Disposal Method For Treated Pit Wastes:

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- ____ Land Application
- ■ Underground Injection (UIC Permit Number 4707302523, 4705500319, 4708505151, 4708509721, 3416729577, 3412124037, 3405320968)
- ____ Reuse (at API Number _____)
- ____ Off Site Disposal (Supply form WW-9 for disposal location)
- ____ Other (Explain _____

Will closed loop system be used? If so, describe: Depending on brand, system would entail 2 centrifuges & another cutting drying method: grinder, drying shakers or verti-g mud.

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air/water to 7100', then switch to synthetic

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

Additives to be used in drilling medium? See additional page

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. 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

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 _____

Company Official (Typed Name) Gary Beall

Company Official Title Production Superintendent

Subscribed and sworn before me this 26th day of September, 2014

_____ Notary Public

My commission expires 12/22/18

OFFICIAL SEAL
NOTARY PUBLIC
State of West Virginia
TIMOTHY SANDS
XTO Energy Inc.
PO Box 1008
Jane Lew, WV 26378
My Commission Expires December 22, 2018

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OFFICIAL SEAL
NOTARY PUBLIC
State of West Virginia
TIMOTHY SANDS
XTO Energy Inc
PO Box 1008
Jane Lew, WV 26378
My Commission Expires December 22, 2019

Form WW-9

Operator's Well No. Boggess A South Unit 10H

XTO Energy Inc.

Proposed Revegetation Treatment: Acres Disturbed 6.78 +/- (already re-vegetated) Prevegetation pH _____

Lime 2-6 Tons/acre or to correct to pH _____

Fertilizer type 10-20-20

Fertilizer amount 678 - 1000 lbs/acre

Mulch 3 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Timothy	50	Tall Fescue	40
		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: [signature]

Comments: Pre-Seed/Mulch all disturbed areas as soon as reasonably possible per regulation. Upgrade E+S as needed per WV DEP E+S manual.

Title: Oil + Gas Inspector Date: 9/30/2014

Field Reviewed? (X) Yes ( ) No

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XTO Drilling Additives

Product Name	CAS #	Approximate Amount on Location (lbs)
Bentone 910	14808-60-7	2500
Cedar Fiber	n/a	5000
CyberDrill	93762-80-2	20000
Calcium Chloride	10043-52-4	20000
CyberCoat	111-40-0 26952-14-7 62442-97-7	3000
CyberMul	70321-73-2	3000
CyberPlus	71-36-3	3000
Lime	1305-62-0	15000
New Carb	1317-65-3	3000
Walnut Shells	n/a	2500
New Bar	7727-43-7 1332-58-7 14808-60-7 471-34-1	200000
OptiThin	68442-97-7	8000
Oil Dry	12174-11-7 14808-60-7 01309-48-4	600
OptiClean	9016-45-9 68131-71-5 1310-73-2 27176-87-0 1300-72-7 7758-29-4	1800
OptiG	12002-43-6	5000
SynDril 470	64741-86-2	81000

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XTO Energy Inc.
Well Site Safety Plan

Boggess A Pad
1103 Reeses Run Road
Lumberport, WV 26386

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2/4/2015
Changes to Collision Avoidance

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Boggess A Unit

Possible water wells or sources:

1) Ethan D. and Brandy L. Galicic; 1175 Reese's Run Rd., Lumberport, WV 26386
2) Melisha A. Harbert, 1004 Reese's Run Rd., Lumberport, WV 26386
3) Richard B. Jones 230 Candle Light Dr., Clarksburg, WV 26301
4) Richard B. Jones 230 Candle Light Dr., Clarksburg, WV 26301

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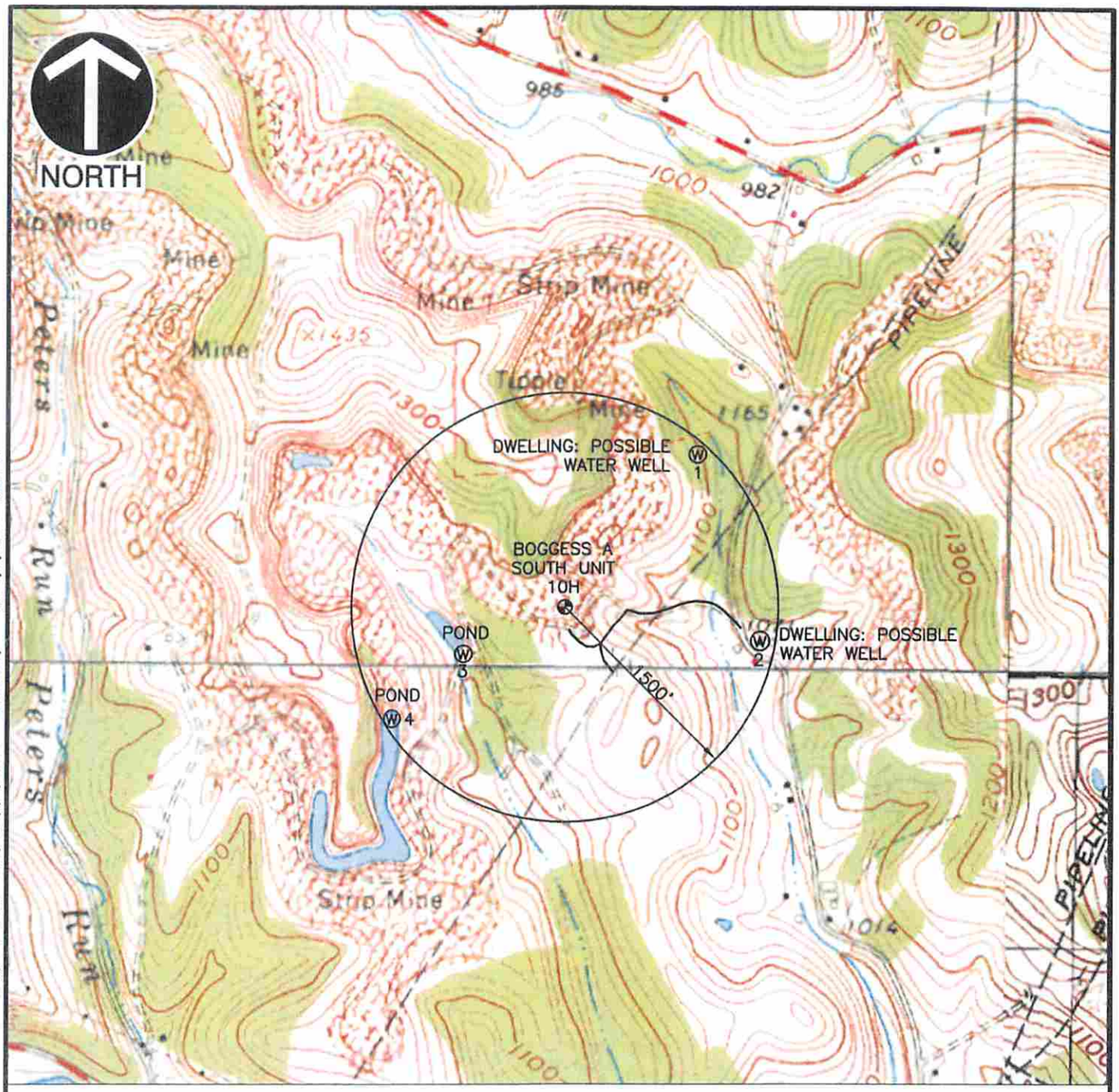

REFERENCE

1. TOPOGRAPHIC INFORMATION BASED UPON BOGGESS UNIT. SURVEY CONDUCTED BY ADAMS LAND SURVEYING, PLLC IN SEPT. 07, 2012 AND UPDATED BY CIVIL AND ENVIRONMENTAL CONSULTANTS, INC. ON SEPT 03, 2014.
2. U.S.G.S. 7.5' TOPOGRAPHIC MAP, WALLACE QUADRANGLE, WV, DATED: 1960, PHOTOREVISED: 1978

SCALE IN FEET
0 1000 2000

Civil & Environmental Consultants, Inc.
99 Cambridge Place - Bridgeport, WV 26330
Ph: 304.933.3119 · Fax: 304.933.3327
www.cecinc.com

XTO ENERGY INC.
BOGGESS A UNIT
EAGLE DISTRICT
HARRISON COUNTY, WV

WATERSHED: REESE'S RUN, A TRIBUTARY OF TENMILE CREEK

DRAWN BY:	DAM	CHECKED BY:	REA	APPROVED BY:	DEM	FIGURE NO.:	
DATE:	SEPT. 3, 2014	DWG SCALE:	1"=1000'	PROJECT NO:	142-355		

P:\2014\142-355\-CADD\Dwg\142355-SRV-WELL PLAT 10H-WATER TOPO.dwg{10H WATER TOPO} LS:(9/4/2014 - dmartinez) - LP: 9/5/2014 1:36 PM

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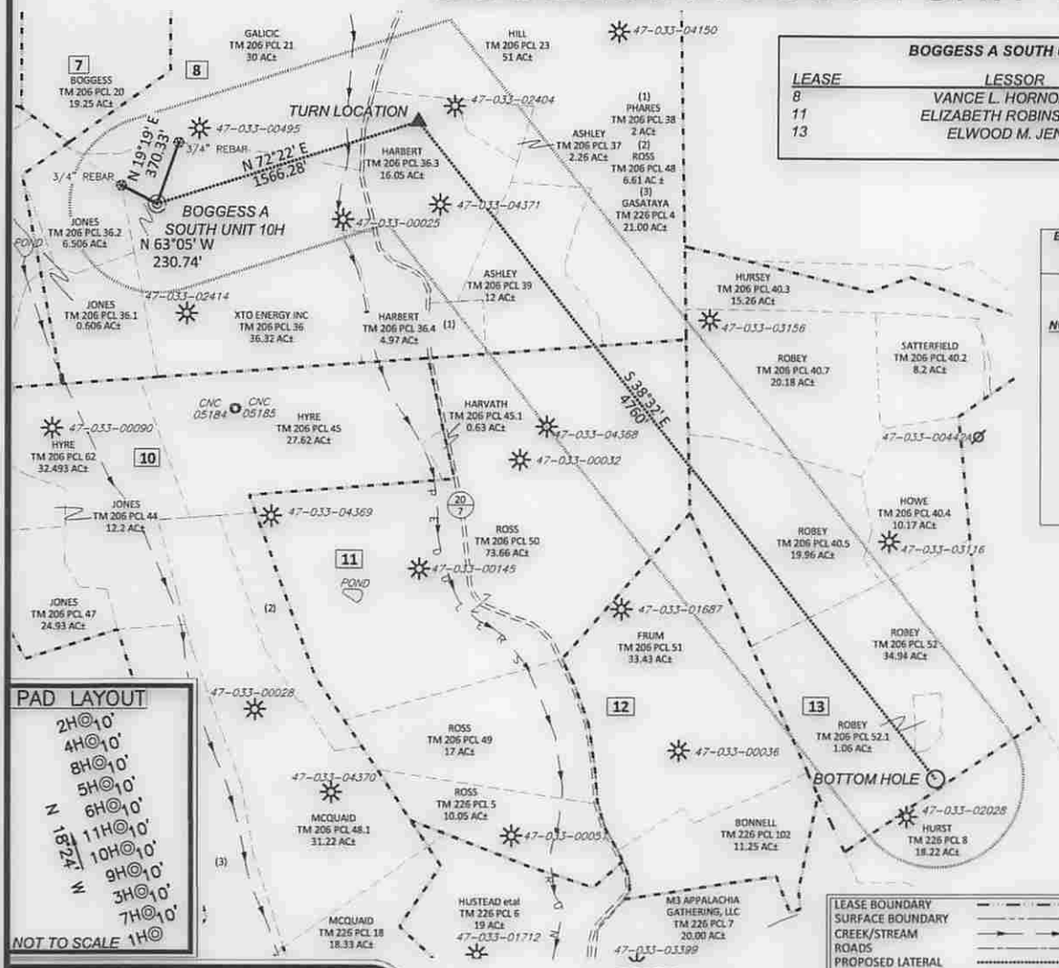
SURVEYED LONGITUDE 80°23'09.7" — 3,119'

BOGGESS A SOUTH UNIT 10H

LATITUDE: 39°25'00"

LONGITUDE: 80°22'30"



BOGGESS A SOUTH UNIT 10H		
LEASE	LESSOR	ACREAGE
8	VANCE L. HORNOR etal	186.5±
11	ELIZABETH ROBINSON etal	101±
13	ELWOOD M. JENKS	108±

BOGGESS A SOUTH UNIT 10H SURFACE HOLE

STATE PLANE COORDINATES NORTH ZONE-NAD 27
(N) 320352
(E) 1749532

L & L DECIMAL NAD 27
39.376164
80.386033

UTM (NAD 83) ZONE 17 METERS
(N) 4358711
(E) 552698

BOGGESS A SOUTH UNIT 10H TURN LOCATION

STATE PLANE COORDINATES NORTH ZONE-NAD 27
(N) 320826
(E) 1751025

L & L DECIMAL NAD 27
39.377506
80.380769

UTM (NAD 83) ZONE 17 METERS
(N) 4358863
(E) 553351

BOGGESS A SOUTH UNIT 10H BOTTOM HOLE

STATE PLANE COORDINATES NORTH ZONE-NAD 27
(N) 317103
(E) 1753990

L & L DECIMAL NAD 27
39.367364
80.370153

UTM (NAD 83) ZONE 17 METERS
(N) 4357744
(E) 554273

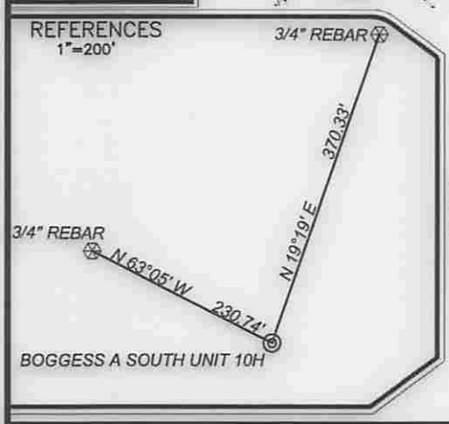
PAD LAYOUT

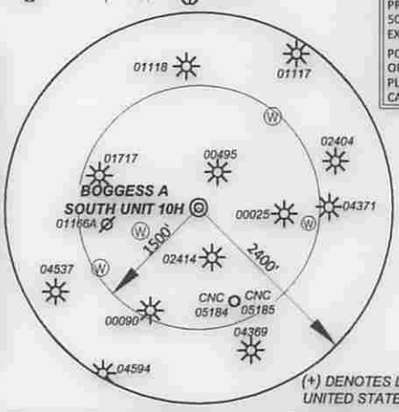
2H 10'
4H 10'
8H 10'
5H 10'
6H 10'
11H 10'
10H 10'
9H 10'
3H 10'
7H 10'
1H

N 18°24' W

NOT TO SCALE

REFERENCES
1"=200'





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

LEASE BOUNDARY	
SURFACE BOUNDARY	
CREEK/STREAM	
ROADS	
PROPOSED LATERAL	
500' LATERAL OFFSET	
EXISTING GAS/OIL WELLS	
POSSIBLE WATER WELL OR OTHER SOURCE	W
PLUGGED WELL	
CANCELLED PERMIT	CNC

NOTES ON SURVEY

1. NO OCCUPIED DWELLINGS OR BUILDINGS 2500 SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY WITHIN 625' OF THE CENTER OF THE WELL PAD WERE OBSERVED.
2. NO WATER WELLS OR DEVELOPED SPRINGS USED FOR HUMAN OR DOMESTIC ANIMAL CONSUMPTION WERE FOUND WITHIN 250'.
3. SURFACE OWNERSHIP TAKEN FROM THE HARRISON COUNTY TAX ASSESSOR AND COUNTY CLERK OFFICES IN JULY, 2014.
4. WELL LATITUDE AND LONGITUDE FROM SURVEY GRADE (OPUS SOLUTION).
5. TIES TO CORNERS AND REFERENCES BASED ON WV STATE PLANE COORDINATE SYSTEM, NAD 27 NORTH ZONE.
6. LEASE INFORMATION PROVIDED BY XTO ENERGY, INC.

TOP HOLE WELL No. BOGGESS A SOUTH UNIT 10H

14,753'

SURVEYED LATITUDE 39°22'34.2"

99 Cambridge Place Bridgeport, WV 26330
Toll Free 855-488-9539
Fax 304-933-3327

CEC
Civil & Environmental Consultants, Inc.

RICHARD E. ADAMS LICENSED No. 986 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Division of Environmental Protection.

Richard E. Adams

DATE JAN. 26, 2015

SCALE 1" = 1000' ACCURACY 1/2500

OPERATORS WELL No. BOGGESS A SOUTH UNIT 10H

47 - 033 - ____
API No.

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

TYPE OF WELL:

GAS:
Production X Storage ___ *Deep ___ *Shallow ___

PROPOSED WORK ON LOCATION:

Drill X Drill Deeper ___ Redrill ___ Convert ___
Fracture/ Stimulate X *Plug off to Formation ___
Perforate New Formation ___ Plug and Abandon ___
Clean/ Replug ___ Other Than Above ___
If "Other" Please see Details below—
DETAILS OF PROPOSED WORK ____

*TARGET FORMATION MARCELLUS
ESTIMATED DEPTH TVD: 7,100', TMD: 12,350'

WELL AREA & LOCATION INFORMATION:

ELEVATION SOURCE GPS (OPUS)
ELEVATION 1183'
WATERSHED REESES RUN DISTRICT EAGLE
COUNTY HARRISON TOPO QUAD WALLACE
SURFACE OWNER XTO ENERGY INC.
ACREAGE 36.32 ±
ROYALTY OWNER VANCE L. HORNOR, G.P. HORNOR, J.H. HORNOR, M.L. HORNOR, V.L. HORNOR INVESTMENT COMPANY, etal
LEASE ACREAGE 395.5 ±

RECEIVED JAN 2 5 WV Department of Environmental Protection

WELL OPERATOR XTO ENERGY INC.
ADDRESS 810 HOUSTON STREET
FORT WORTH, TEXAS 76102

DESIGNATED AGENT GARY BEALL
ADDRESS P.O. BOX 1008
JANE LEW, WV 26385

BOGGESS A SOUTH UNIT 10H

SURVEYED LONGITUDE 80°23'09.7" — 3,119'

LATITUDE: 39°25'00"

LONGITUDE: 80°55'30"

2,521'

SURVEYED LATITUDE 39°25'34.5"

BOGGESS A SOUTH UNIT 10H		
LEASE	LESSOR	ACREAGE
8	VANCE L. HORNOR etal	186.5±
11	ELIZABETH ROBINSON etal	101±
13	ELWOOD M. JENKS	108±

BOGGESS A SOUTH UNIT 10H SURFACE HOLE

STATE PLANE COORDINATES NORTH ZONE-NAD 27
(N) 320362
(E) 1745525

L & L DECIMAL NAD 27
39.376164
80.380769

UTM (NAD 83) ZONE 17 METERS
(N) 4358811
(E) 553351

BOGGESS A SOUTH UNIT 10H TURN LOCATION

STATE PLANE COORDINATES NORTH ZONE-NAD 27
(N) 320362
(E) 1751025

L & L DECIMAL NAD 27
39.376164
80.380769

UTM (NAD 83) ZONE 17 METERS
(N) 4358811
(E) 553351

BOGGESS A SOUTH UNIT 10H BOTTOM HOLE

STATE PLANE COORDINATES NORTH ZONE-NAD 27
(N) 317103
(E) 1723990

L & L DECIMAL NAD 27
39.367364
80.370153

UTM (NAD 83) ZONE 17 METERS
(N) 4357174
(E) 554373

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TOP HOLE WELL No. BOGGESS A SOUTH UNIT 10H

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RICHARD E. ADAMS
LICENSED
No. 986
STATE OF WEST VIRGINIA
PROFESSIONAL SURVEYOR

Richard E. Adams

CEC
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99 Cambridge Place Bridgeport, WV 26330
Toll Free 855-488-9339
Fax 304-933-3327

DATE Jan. 26, 2015
SCALE 1" = 1000' ACCURACY 1/2500
OPERATORS WELL No. BOGGESS A SOUTH UNIT 10H
API No. 47 - 033 -

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Production X Storage ___ *Deep ___ *Shallow ___

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Fracture/ Stimulate X *Plug off to Formation ___
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DETAILS OF PROPOSED WORK

*TARGET FORMATION MARCELLUS
ESTIMATED DEPTH TVD: 7,100', TMD: 12,350'

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JAN 26 2015
WV Department of Environmental Protection