



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

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Tuesday, August 27, 2019
WELL WORK PERMIT
Horizontal 6A / New Drill

XTO ENERGY, INC.
810 HOUSTON STREET
FORT WORTH, TX 76102

Re: Permit approval for ICE EAST UNIT 13H
47-033-05956-00-00

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: ICE EAST UNIT 13H
Farm Name: XTO ENERGY INC
U.S. WELL NUMBER: 47-033-05956-00-00
Horizontal 6A New Drill
Date Issued: 8/27/2019

Promoting a healthy environment.

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 one hundred (100) 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. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. 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.
10. 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.

API Number: _____

PERMIT CONDITIONS

11. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov.



west virginia department of environmental protection

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Austin Caperton, Cabinet Secretary
dep.wv.gov

**ORDER
ISSUED UNDER
WEST VIRGINIA CODE, CHAPTER 22, ARTICLE 6A**

TO: XTO Energy, Inc.
810 Houston Street
Fort Worth, TX 76102

DATE: May 15, 2018
ORDER NO.: 2018-W-1

INTRODUCTION

This Order (hereinafter "Order") is issued by the Office of Oil and Gas (hereinafter "OOG"), by and through its Chief, pursuant to the authority of W. Va. Code §§ 22-1-1, 22-6-1 and 22-6A-1 *et seq.* to XTO Energy, Inc. (hereinafter "XTO" or "Operator"), collectively the "Parties."

FINDINGS OF THE CHIEF

In support of this Order, the Chief hereby finds the following:

1. OOG, an office within the West Virginia Department of Environmental Protection, is the agency with the duty and authority to execute and enforce W. Va. Code §22-6-1 and §22-6A-1 *et seq.*, and the rules and regulations promulgated thereunder.
2. XTO is a "person" as defined by W. Va. Code §22-6-1(n), with a corporate address as 810 Houston Street, Fort Worth, Texas 76102
3. On May 19, 2017, XTO submitted a well work permit application identified as API# 47-033-05898. Then on November 1, 2017 and January 10, 2018, XTO Energy, Inc. also submitted well work permit applications identified as API#s 47-033-05913 and 47-033-05919. The three proposed wells are to be located on the Ice Pad in Clay District of Harrison County, West Virginia.
4. On May 19, 2017, XTO requested a waiver for Wetlands A and B outlined in Attachment 1, from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit applications identified as API#s 47-033-05898, 47-033-05913 and 47-033-05919.

CONCLUSIONS OF LAW

1. West Virginia Code §22-1-6(d) requires, in part, that “in addition to other powers, duties and responsibilities granted and assigned to the secretary by this chapter, the secretary is authorized and empowered to...(3) Enter private lands to make surveys and inspections for environmental protection purposes; to investigate for violations of statutes or rules which the Office of Oil and Gas is charged with enforcing; to serve and execute warrants and processes; to make arrests; issue orders, which for the purposes of this chapter include consent agreements; and to otherwise enforce the statutes or rules which the Office of Oil and Gas is charged with enforcing.”

2. West Virginia Code §22-6A-2(a)(6) requires, in part, that “Concomitant with the broad powers to condition the issuance of well work permits, the secretary should also have broad authority to waive certain minimum requirements of this article when, in his or her discretion, such waiver is appropriate: *Provided*, That the secretary shall submit a written report of the number of waivers granted to the Legislature commencing January 1, 2013, and each year thereafter.”

3. West Virginia Code §22-6A-12(b) requires, in part, that “no well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the Office of Oil and Gas shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The Office of Oil and Gas may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary.”

ORDER

West Virginia Code §22-6A-12(b) requires, in part, that “no well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland. The Office of Oil and Gas grants the request for a waiver for Wetlands A and B from well location restriction requirements in W. Va. Code §22-6A-12(b) for the well work permit applications identified as API#s 47-033-05898, 47-033-05913 and 47-033-05919. The Office of Oil and Gas hereby **ORDERS** that XTO shall meet the following site construction and operational requirements for the Ice Well Pad:

- a. A berm shall be constructed around the perimeter of the pad to contain any potential spills and storm water runoff. Berm is to be at least twenty-four inches (24”) in height;
- b. Erosion control blankets shall be installed on all slopes and down gradient locations of the pad as erosion and sediment controlling BMPs;
- c. Wetland A is not at risk sedimentation due to its location upslope of the well pad.
- d. Wetland B shall be protected by the berm constructed around the pad but due to its location across the slope from the pad it is unlikely to be at risk for sedimentation or impact. Extra care shall be provided during construction to ensure no impact to the wetland shall occur.
- e. Disturbed areas not used for operations shall be seeded and mulched per the seeding tables in the WVDEP-OOG Erosion and Sediment Control Manual;
- f. Drill cuttings and associated drilling mud shall be disposed of in a permitted landfill;
- g. Waste generated by the flowback treatment systems shall be sent to offsite disposal at a permitted landfill;
- h. Weekly site inspections shall be conducted to monitor and maintain the integrity of the BMP storm water controls;
- i. Weekly storm water and spill prevention inspections shall be conducted focusing on storm water and spill prevention BMPs and maintenance of these BMPs;
- j. Inspections of the storm water and spill prevention measures shall be conducted after any major storm event defined as a half inch (½”) rain within any twenty-four (24) hour period;
- k. Pad inspections shall be conducted no less than once a week to identify and mitigate potential deficiencies;
- l. All records from inspections shall be maintained on site for the life of the project and be available upon request.

Thus ORDERED, the 15th day of May, 2018.

IN THE NAME OF THE STATE OF WEST VIRGINIA:

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

By: 
JAMES A. MARTIN, CHIEF

WW-6B
(04/15)

API NO. 47- _____
OPERATOR WELL NO. Ice East Unit 13H
Well Pad Name: Ice Pad

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

1) Well Operator: XTO Energy Inc. 494487940 Harrison Clay Shinnston
Operator ID County District Quadrangle

2) Operator's Well Number: Ice East Unit 13H Well Pad Name: Ice Pad

3) Farm Name/Surface Owner: XTO Energy Inc. Public Road Access: CR 8/6 (Nutter Run)

4) Elevation, current ground: 1,360' Elevation, proposed post-construction: 1,360'

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

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation: Marcellus, Depth 7,508', Anticipated Thickness: 150', Associated pressure: 4,650 psi

8) Proposed Total Vertical Depth: 7,639' ✓

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 17,698' ✓

11) Proposed Horizontal Leg Length: 9,050' ✓

12) Approximate Fresh Water Strata Depths: 115' - 470' ✓

13) Method to Determine Fresh Water Depths: Offsetting Reports & Local Stream Elevations. See additional page.

14) Approximate Saltwater Depths: 1,200'

15) Approximate Coal Seam Depths: 390', 490'

16) Approximate Depth to Possible Void (coal mine, karst, other): 480' - 490'

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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4703305956

Ice Pad - APIs Used for Estimating Water Depths

API	Elevation	Fresh Water Depth
4703304605	1300	217
4703304584	1125	208
4703304639	1258	140
4703301550	1366	180
4703300609	1102	60

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(04/15)

API NO. 47- _____ - _____
 OPERATOR WELL NO. Ice East Unit 13H
 Well Pad Name: Ice Pad

18) CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	24	New	A-252	95	40	40 /	92 / CTS
Fresh Water	13.375	New	H-40	48	540	540 /	488 / CTS
Coal							
Intermediate	9.625	New	J55	36	2,910	2,910 /	1,185 / CTS
Production	5.5	New	P110	20	17,698	17,698 /	3,264 / 6,737
Tubing							
Liners							

*SDW
6/27/2019*

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	24	30	0.375	940	40	Class A	1.19
Fresh Water	13.375	17.5	0.33	1,730	440	Class A	1.19
Coal							
Intermediate	9.625	12.25	0.352	3,520	2,370	Class A	1.19
Production	5.5	8.5	0.361	14,360	6,200	65 55 POZ/Class H	1.1 / 1.57
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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WW-6B
(10/14)

API NO. 47- _____ - _____
OPERATOR WELL NO. Ice East Unit 13H
Well Pad Name: Ice Pad

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.
2. Sand / Proppant Stages - Several stages of pumping water combined with sand at a targeted 80 bpm rate. The highest pressure and rate anticipated is 9,500 psig and 100 bpm. The sand size may vary from 100 mesh to 30/50 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 1,190 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): 10.4 +/-

22) Area to be disturbed for well pad only, less access road (acres): 6.6 +/-

23) Describe centralizer placement for each casing string:

Conductor: None
Fresh Water: Every 3rd joint from shoe to surface
Mine: Every 3rd joint from shoe to surface (if applicable)
Intermediate: Every 3rd joint from shoe to surface
Production: Every joint from shoe to TOC

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

Conductor: None
Fresh Water: Calcium Chloride and super flake
Mine: Calcium Chloride and super flake (if applicable)
Intermediate: Calcium Chloride and super flake
Production: Calcium Chloride, Bentonite, super flake, Air-Out, CR-1, FL-300, SEC10

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25) Proposed borehole conditioning procedures:

Conductor: Hole is auger drilled: No conditioning required.
Fresh Water: Condition hole with air at TD until visibly clean, run casing, circulate and clear 1.5x pipe volume with fresh water before cementing.
Mine: Condition hole with air at TD until visibly clean, run casing, circulate and clear 1.5x pipe volume with water before cementing (if applicable).
Intermediate: Condition hole with air at TD until visibly clean, run casing, circulate and clear 1.5x pipe volume with water before cementing.
Production: Circulate hole with synthetic based drilling fluid at TD (1 bottoms up for each 2,000' of lateral drilled). TOOH and circulate minimum of 1 bottoms up and until returns are minimal at the base of the curve. Run casing, circulate 1.5 x casing volume and ensure good returns before cementing.

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*Note: Attach additional sheets as needed.

Ice East Unit 13H – Mine Void Encounter Plan

Per communications with the WV Geology and Economic Survey there is a possible mine void in the Pittsburgh Coal seam under the Ice Pad in Harrison County, WV. In preparation for drilling through a mine void, we will nipple up a diverter to be able to handle any flow should the void actually be encountered. We expect it to come in around 480-490' TVD from GL. We plan to set 13 3/8" casing as a surface/coal protective string ~50' below the base of this void.

A cement basket will be run as close as possible to the top of the void.

A cement balance job will be performed to cement the shoe and the annulus below the mine if circulation cannot be established. A grout cement job will be performed on the annulus to cement above the mine.

Once cemented in place, we will continue on with our normal casing design, which would be to set 9 5/8" intermediate casing at ~2,910'.

Jim Bower
Drilling Engineer
XTO Appalachia
Cell: 724-814-4410
James_bower@xtoenergy.com

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Ice East Unit 13H

Operator	API	Elevation	Total Depth	Producing Zones	Perforated Depths	Producing Zone Depths	Producing Zones Not Perforated	Known or reasonably expected to penetrate a depth that could be within the range of the fracture propagation?
XTO Energy Inc.	4703305898	NA	NA	NA	NA	NA	NA	Not yet drilled
XTO Energy Inc.	4703305913	NA	NA	NA	NA	NA	NA	Not yet drilled
XTO Energy Inc.	4703305919	NA	NA	NA	NA	NA	NA	Not yet drilled
Ross & Wharton Gas Co., Inc	4703302570	1170	4899	Balltown	3677	3677	NA	No
Waco Oil & Gas Co Inc.	4703304625	1258	NA	NA	NA	NA	NA	Plugged
Waco Oil & Gas Co Inc.	4703304639	1258	4322	BF, BA, SL, TF	2370 - 4322	2370 - 4322	NA	No
Waco Oil & Gas Co Inc.	4703304585	1314	4322	FF, 5S, TF, BF, BA, SL	2325 - 4322	2325 - 4322	NA	No
XTO Energy Inc.	4703305188	NA	NA	NA	NA	NA	NA	Never Drilled
XTO Energy Inc.	4703305189	NA	NA	NA	NA	NA	NA	Plugged
XTO Energy Inc.	4703305431	1339	7455	Marcellus	7440	7440	NA	Yes -XTO well
Waco Oil & Gas Co Inc.	4703304624	1325	4322	WE, TF, FF, 5S, 4S, BA, BR	2294 - 4055	2294 - 4055	NA	No
Waco Oil & Gas Co Inc.	4703304589	1310	4322	FF, 4S, TF, BF, BA, SL	2500 - 4232	2500 - 4232	NA	No
Doran & Associates, Inc.	4703302071	1130	4949	Plugged	Plugged	Plugged	Plugged	Plugged
Waco Oil & Gas Co Inc.	4703304658	1108	4112	BI, TF, FF, 4S, 5S, BA, BF, SL	1611 - 4000	1611 - 4000	NA	No
Plugged	4703300017	960	2512	Plugged	Plugged	Plugged	Plugged	Plugged

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Mining Layers

Permit Search Identity Layers

Layer	Permit ID	Name
underground_mine		WILLIAMS NO 98

Attribute	Value
mine_name	WILLIAMS NO 98
map_year	1979
source	0
wingds_comm	FINAL WILLIAMS MINE, N. ARROW
Shape_Length	52487.874251
mine_id	9594798
state_perm	
doc_id	393473
Type	+
map_image	359259473
st_length	73216.240370
Shape_Area	195402110.148241
Coal	PGH
company_na	CONSOLIDATION COAL
st_area_sq	32829901.8932

1 features selected Get Details for undefined

1000 ft

Add Points

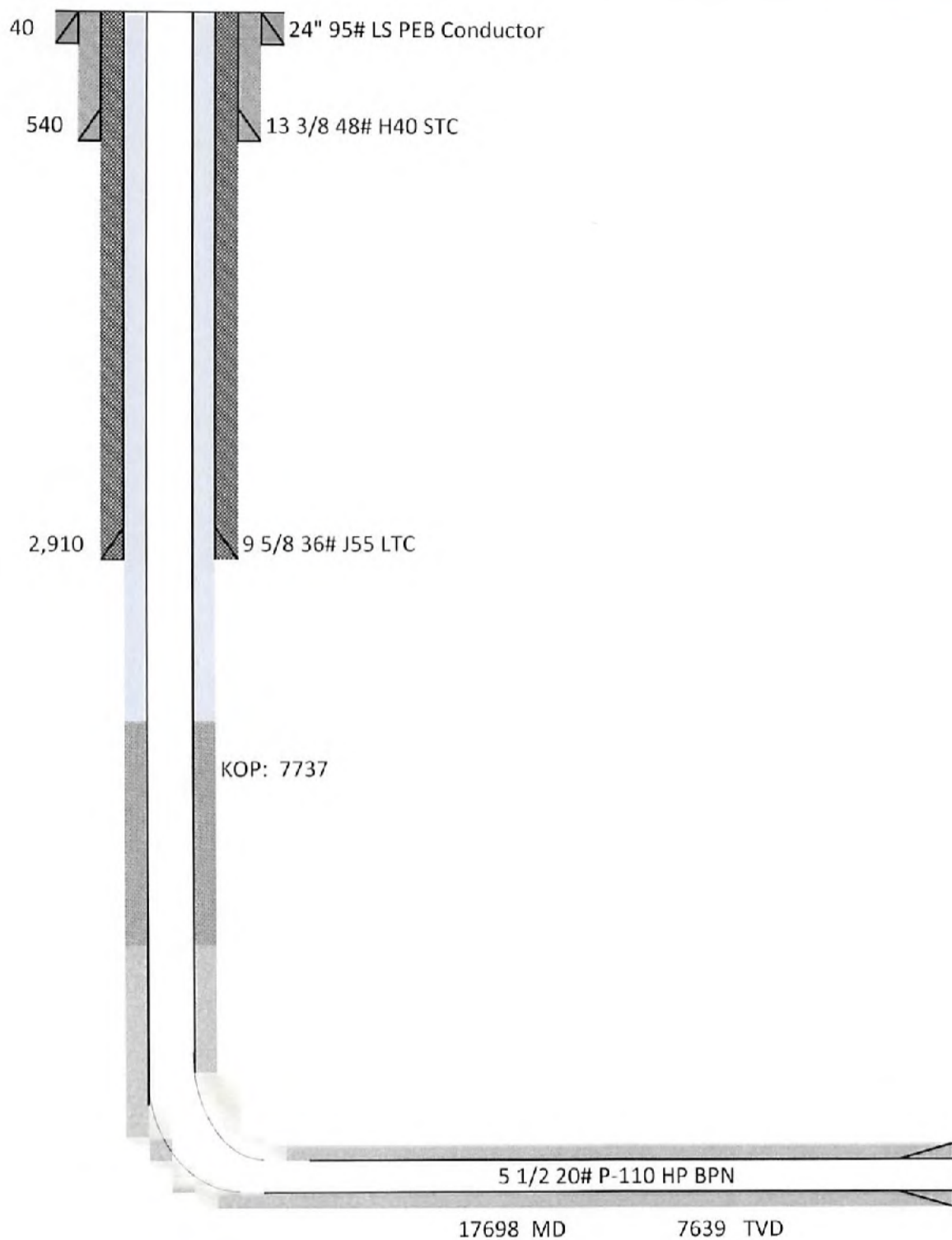
Lat deg	Lat min	Lat sec	Lon deg	Lon min	Lon sec	Label
39.4310247	0	0	-80.3128128	0	0	new point

Enter lon/lat in the table above. Decimals can be used in any field.

New Zoom Delete

undefined
WILLIAMS NO 98

Ice East Unit 13H
Harrison County, West Virginia



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WW-9
(4/16)

API Number 47 - _____
Operator's Well No. Ice East Unit 13H

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) Lower West Fork River (0502000206) Quadrangle Shinnston

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.? NA

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection (UIC Permit Number 4708509721, 4708505151, 3416729577, 3412124086, 3412123995)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain _____)

*SDW
6/27/2019*

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 vertig 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

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.

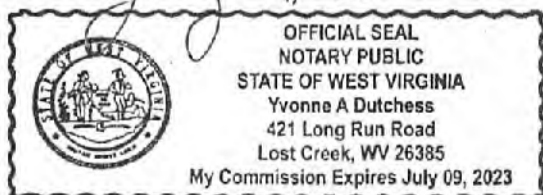
Company Official Signature *Tim Sands*
Company Official (Typed Name) Tim Sands
Company Official Title Regulatory Coordinator

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Subscribed and sworn before me this 15th day of July, 2019

Yvonne A. Dutchess Notary Public

My commission expires July 9, 2023



Form WW-9

Operator's Well No. Ice East Unit 13H

XTO Energy Inc.

Proposed Revegetation Treatment: Acres Disturbed 10.4 +/- Prevegetation pH _____

Lime 3 Tons/acre or to correct to pH _____

Fertilizer type 10-20-20

Fertilizer amount 1000 lbs/acre

Mulch 3 Tons/acre

Seed Mixtures

Temporary

Permanent

Seed Type lbs/acre

Seed Type lbs/acre

Per plans

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: SEP Warratt

Comments: Pre-seed/mulch all disturbed areas as soon as reasonably possible per regulation. Upgrade E&S as necessary per WV DEP E&S manual.

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Title: OOG Inspector

Date: 6/27/2019

Field Reviewed? (X) Yes () No

XTO Drilling Additives

Product Name	CAS#
Anco Mul XL	8002-43-5
Kensol 48H	64742-47-8
ANCO BAR (Barite)	7727-43-7
ANCO Drill (A, N)	25083-02-03
Anco Mul Ow	68442-77-3
Anco Mul P	70321-73-2
Anco Mul S	71.36-3 & 64742-95-6
Anco Mul Thin	111-76-2
	112-34-5
	104-76-7
	84989-14-0
	57-55-6
ANCO Phalt S	NA
ANCO Trol	NA
Calcium Carbonate	14808-60-7
	1317-65-3
Calcium Chloride	10043-52-4
Cedar Fiber	11132-73-3
CI-300A	NA
Graphite	7782-42-5
	14808-60-7
GSX-602 Petrogel 100	14808-60-7
	67-63-0
Lime	1305-62-0
	1305-78-8
	7631-86-9
	1309-48-4
Mica (F,C)	12001-26-2
	14808-60-7
Oil Dry	12174-11-7
	14808-60-7
Potassium Chloride (KCl)	7447-40-7
Salt	7647-14-5
Synthetic Based Mud	
Thunder Plug	
Walnut (F,M & C)	NA
Claytone II	

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Revised (3/15)

Site Safety Plan Table of Contents

For H6A Well Work Permits and Deep Well Work Permits

Please prepare a Site Safety Plan to accompany each applicable H6A and/or Deep well work permit, adhering to the following organizational and informational structure. Plans submitted must contain an index of the content entirety including page-number references.

1. Contacts, Schedules, and Meetings

- A. Emergency point of contact for the well operator covering all phases of activities and including 24 hour contact information (35-8 5.7.b.4)
- B. List of telephone numbers for (35-8 5.6.4):
 - 1) Operator
 - 2) Contractors
 - 3) DEP office and oil/gas inspector
 - 4) Local emergency response units
 - 5) Local ER personnel
 - 6) All schools and public facilities within a one mile radius of proposed well site (35-8 5.7.b.5)
- C. Method of notification of public of H₂S gas presence and how access will be controlled. (applicable horizontal wells include all residents and emergency response personnel who may be affected by an event. Such events may include the presence of H₂S, blow-outs, and flaring) (35-8 5.7.f.1)
- D. Pre-spud meeting held prior to drilling operations, including (35-8 5.7.h):
 - 1) Attendance log, including personnel to be employed and involved in drilling operations
 - 2) Notification of County oil and gas inspector or other designated Office of Oil and Gas representative
- E. Describe schedule for conducting regular well site safety meetings. Log attendance at all meetings and also initiate check in check out during drilling, completion, and workover phases. (35-8 5.7.h)

2. Maps and Diagrams

- A. Plan view map of location, access road, pit(s), flare lines, nearby dwellings, note the north direction and the prevailing wind direction (35-8 5.7.b.1)
- B. Topographic map of well location, including
 - 1) 1 mile radius of well location
 - 2) UTM NAD 83 coordinates of well site entrance (35-8 5.7.b.2)
 - 3) UTM NAD 83 coordinates of the point the access road intersects the public route (35-8 5.7.b.2)
 - 4) Identify public route number and/or route name (35-8 5.7.b.2)
- C. Evacuation plan for the removal of personnel from the drilling location and residents in the surrounding area who have the potential to be affected by an emergency. (35-8 5.7.b.3)

3. Well Work

- A. Detailed written descriptions of well work and procedure to be used during the drilling, completion, and production phases, including schematic plan views of each (35-8 5.7.a)
- B. Statement detailing how a copy of the plan will be provided to the local emergency planning committee or county emergency services office within at least 7 days from land disturbance or well work. (35-8 5.7.a)

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4. Chemical Inventory & MSDS

- A. Material Safety Data Sheets for all chemicals anticipated to be used in all aspects of the operation (can be provided on CD or USB drive) (35-8 5.7.a)
- B. Statement that all MSDS are to be readily available at the well site and their location indicated in the site safety plan including contact information for person(s) responsible maintaining them on site. (35-8 5.7.g)
- C. Inventory of all materials on site for mixing of mud including numbers and type of mixing units - mixed mud amount and weight, amount of weighting material and volume of mixing fluid. (35-8 5.7.d.1 & 5.7.d.2)

5. BOP and Well Control

- A. BOP equipment and casing heads with types, sizes and ratings to be utilized and available during the drilling for both intermediate and lateral drilling phases (35-8 5.7.c.1 & 5.7.c.8)
- B. Procedure and schedule for testing the BOP stack for intermediate drilling phase the BOP tested upon initial set up and the annular tested to 70% of capacity and the ram preventers tested to 80%. Same testing % for bottom and horizontal phase except testing to be done upon initial installation, weekly and after each bit trip (35-8 5.7.c.2)
- C. BOP equipment and assembly installation schedule (35-8 5.7.c.3)
- D. List and names of all personnel with well control training (35-8 5.7.c.4)
- E. Description of system of maintaining detailed records of and for immediate notification to OOG inspector for all significant drilling issues, including but not limited to (35-8 5.7.c.5):
 - 1) Lost circulation
 - 2) Hydrogen sulfide gas
 - 3) Fluid entry
 - 4) Abnormal pressures
- F. Notification of the oil and gas inspector or designated representative as soon as possible of any unusual drilling events, hydrogen sulfide gas* or large kicks that occur during drilling operations).
*(Mandatory immediate notification is required of any encounter of hydrogen sulfide gas - 22-6A wells >10ppm H₂S Gasses!) (35-8 5.7.c.5)
- G. Schematic and detailed written description of the wellhead assembly to be placed on the well upon completion (35-8 5.7.c.6)
- H. Method and type of kill procedures as recognized by the IADC – Wild Well Control Kill Sheet. (35-8 5.7.d.3)

6. Hydrogen Sulfide (H₂S)

- A. Detection, monitoring and warning equipment including location of the monitoring detection equipment on the site (35-8 5.7.e.1)
- B. Statement of H₂S personnel training provided (35-8 5.7.e.2)
- C. Method to notify the OOG of H₂S presence (35-8 5.7.e.4)
- D. Establish and maintain Protection Zones. Describe detailed written general procedures proposed in drilling phases. (application horizontal wells must include the completion, work-over, and production phases) (35-8 5.7.f.2)
- E. List of personal protective equipment (PPE) and the amount of each piece of PPE that will be maintained and available on site. (35-8 5.7.e.3)

7. Flaring

- A. Proposed written description and plan including schematic of installation for duration of flaring activities. (35-8 5.7.f.1)

8. Collision Avoidance Safeguards, Practices and Standards Plans

Protocol and established safeguards designed to prevent underground collisions during any drilling on multi-well pads (35-8 5.7). Collision avoidance plans are measures in keeping wellbores separated and in preventing HSE risk. Such plans describe the survey accuracy and the survey maintenance by systematic management efforts throughout the drilling of the proposed wellbore. These plans submitted shall be well specific to the proposed wellbore and shall address all items within the components section as outlined below. The scope of these plans shall provide survey designs throughout the proposed wellbore including the QC / QA activities and the counter-actions necessary; minimum separation factors (SF), standards and thresholds apply as specified in the components section. These plans shall include proposed counter-actions necessary if a collision occurs or if surveys observe an imminent risk for a collision; all wellbore collisions shall be treated as high-risk events. Approved plans are conditions and terms of the well permit and any modifications are subject to approval by the Office of Oil and Gas (OOG).

A. Established definitions:

- 1) Proposed Wellbore – Involves sections of the vertical top-hole, the KOP, the lateral landing, and the lateral drilling to the total measured depth TMD.
- 2) Nudge – Technique generally used in the vertical top-hole section. The well path is nudged from vertical to pass areas of possible magnetic interferences and to reduce the risk of collision by maintaining separation with other wellbores.
- 3) KOP – Kick off Point. Diverting a well path from one trajectory to another.
- 4) MWD – Measurement While Drilling.
- 5) LWD – Logging While Drilling.
- 6) SF – Separation Factor or Clearance Factor:

$$SF^* = CC \div [UR_{ref} + UR_{off}]$$

CC - well separation distance (center to center of wellbores)

UR_{ref} - radius ellipse of uncertainty on reference well

UR_{off} - radius ellipse of uncertainty on offset well

Note: ellipses are half-axes or radii.

*Calculation options may be considered

- 7) TMD – Total Measured Depth.
- 8) Gyro – High accuracy well bore survey instrument unaffected by magnetic interference.
- 9) QC / QA – Quality Control and Quality Assurance.
- 10) HSE – Health Safety and the Environment.

B. Established descriptions of risk:

- | | | |
|--------------------|---------|--------------------------|
| 1) SF ≤ 1.0 | Level 1 | Extreme collision risk |
| 2) SF = 1.0 to 1.5 | Level 2 | High collision risk |
| 3) SF = 1.5 to 2.0 | Level 3 | Moderate collision risk |
| 4) SF > 2.0 | Level 4 | Low to no collision risk |

C. Plan components:

- 1) Describe the scope of work and the type of survey techniques by use of gyros, MWD, LWD, or others and include the following:
 - a) The survey intervals or frequencies proposed as adjustments to address each level of risk covering the vertical top-hole section of the proposed wellbore.

- b) Provide TOOL ALIGNMENT and MULESHOE procedures** when drilling in critical areas covering the vertical top-hole section of the proposed wellbore. These procedures are visual verification for alignment and orientation QC/QA purposes. Provide the responsible personnel (minimum two representatives) and their titles of those involved for QC/QA purposes during the drilling activities.
 - **Provide other orientations or survey methods and procedures if utilized.
 - c) Description of any nudge activity proposed in the vertical top-hole section.
 - d) The survey tools to be utilized from the KOP to the lateral landing and the lateral section to the TMD.
 - e) Description of any software utilized for the directional and anti-collision planning proposed.
- 2) The following shall be addressed in the plan for the proposed wellbore:
- a) Vertical top-hole section beginning at the surface and to the lateral landing -
 - i) Minimum SF standards (thresholds) required -
SF \geq 1.5 shall be obtained early as practical and maintained.
(Indicate the frequency of survey intervals proposed)
 - ii) Minimum SF standards (thresholds) required -
SF \geq 2.0*** applies when in proximity to any fractured or any producing well that exists on the well pad.
(Indicate the frequency of survey intervals proposed)
***Risk management and technological mitigations, i.e. downhole plugs, are critical and should be considered along with other safety measures necessary. The OOG may require additional safety measures of a specific well application for permitting as deemed necessary.
 - b) Lateral section beginning at the lateral landing and to the TMD -
 - i) Provide a general protocol to declination, grid correction, and magnetic interference correction during the drilling of the proposed lateral. Also provide the responsible personnel (minimum two representatives) and their titles of those involved for QC/QA purposes during the drilling activities.
 - ii) For any existing horizontal or vertical wells found adjacent to this lateral section, provide the protocols for separation safeguards and the spacing planned during the drilling of this section. A reconnaissance review is required for each proposed lateral; OOG may establish a minimum footage for review as deemed necessary.
- 3) Provide a well pad surface diagram depicting the wellhead arrangement (API labeled) of all existing wells adjacent to the proposed wellbore. Indicate the surface footage separation between wellheads and each wellbore status.
- 4) Describe the gyro surveying or other type surveying conducted within each existing wellbore located on the pad.
- 5) Provide descriptive actions if a collision should occur or if surveys should observe imminent risk for a collision.
- 6) Provide method to notify the OOG Oil and Gas Inspector immediately of any underground collision or if the SF Level 1 is determined within the extreme collision risk zone (ellipses of uncertainty overlap).
- 7) Provide other supportive resources or proposed safety measures as needed.

9. Deep Well Additional Requirements

- A. List of anticipated freshwater, saltwater, oil and gas, hydrogen sulfide, thief zones, high pressure and volume zones and their expected depths.

Revised (3/15)

- B. Detailed casing and cementing program that employs a minimum of three strings of casing which are sufficient weight and quality for the anticipated conditions.
- C. Flaring activities: Size, construction and length of flare line-anchor method and choke assembly description, Flare lighting system and back up igniters, Notify local fire department (if possible) prior to igniting flares, Minimum clearing distance beyond end of flare.
- D. List of names, addresses, and telephone numbers of all residents, businesses, churches, schools and emergency facilities within 1 mile radius that may be affected by specific events during the drilling process. Such events may include presence of hydrogen sulfide, and flaring, etc.

10. Deep Vertical Well Requirements per Policy Statement (Deep Well Drilling Procedures and Site Safety Plan Requirements)

The following selections are needed from the above contents:

- 1. A - E (E. drilling phase only)
- 2. A - C
- 3. A (drilling phase only)
- 4. B - C
- 5. A - H
- 6. A - E
- 9. A - D.

XTO Energy Inc.
Well Site Safety Plan

Well: Ice East Unit 13H

Pad: Ice Pad
1284 Odells Knob Road
Shinnston, WV 26431

NAD 83 Coordinates
39.431103
-80.312713

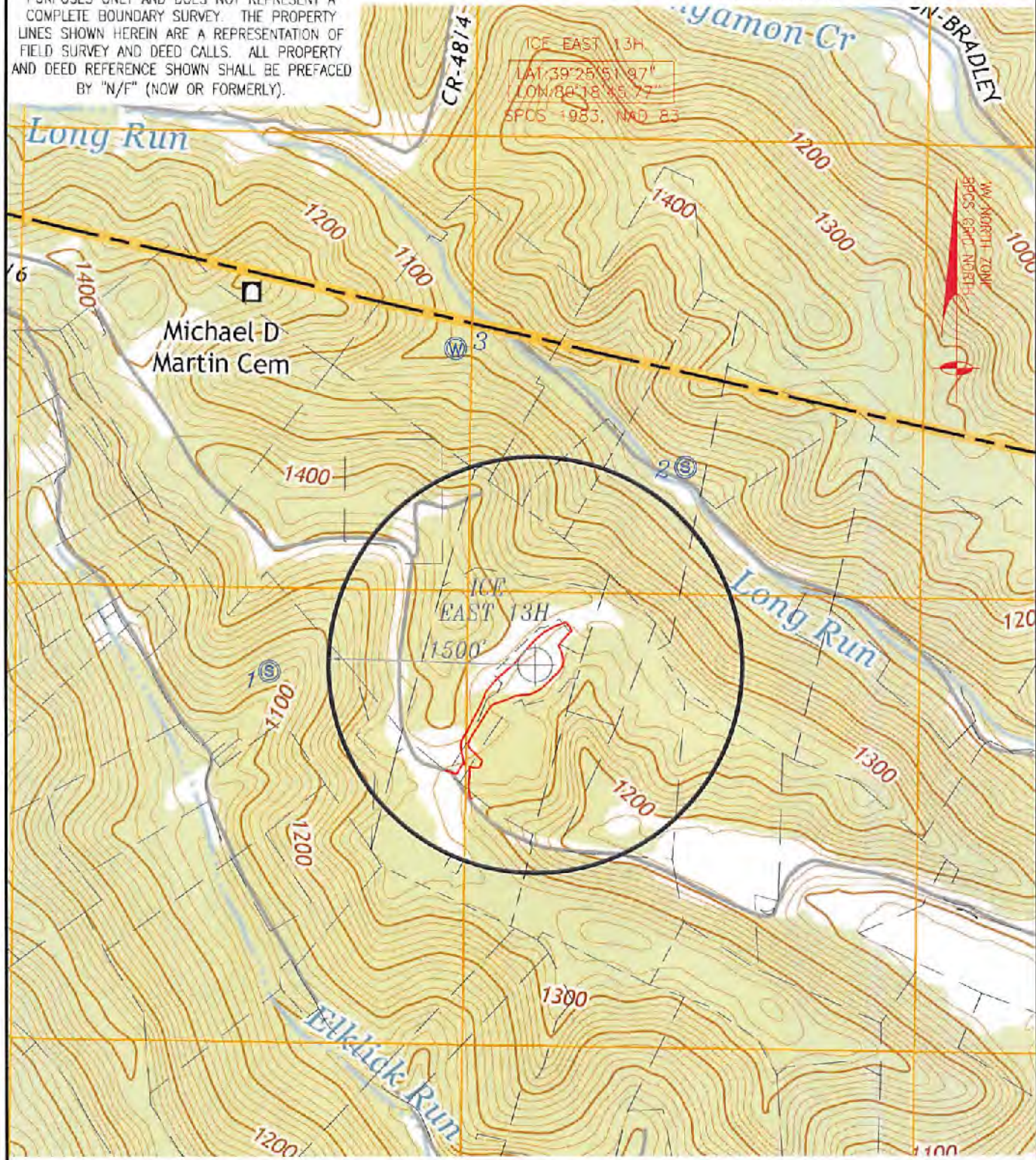
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FORM W-9

NOTE: THIS PLAT IS FOR WELL LOCATION PURPOSES ONLY AND DOES NOT REPRESENT A COMPLETE BOUNDARY SURVEY. THE PROPERTY LINES SHOWN HEREIN ARE A REPRESENTATION OF FIELD SURVEY AND DEED CALLS. ALL PROPERTY AND DEED REFERENCE SHOWN SHALL BE PREFACED BY "N/F" (NOW OR FORMERLY).

LEGEND

- WATER WELL
- SPRING/POND/STREAM
- SURFACE BOUNDARY



POINT	NAME	ADDRESS	CITY	STATE	ZIP CODE	DISTANCE	BEARING	PARCEL I.D.
1	Michael & Cynthia Nosack	712 Bices Run Road	Shinnston	WV	26431	1929'	S 88°44'45" W	Tax Map 5-147, Parcel 87
2	Faris W. & Margaret J. Coffindaffer	24 Glenview Drive	Bridgeport	WV	26330	1797'	N 37°23'42" E	Tax Map 5-148, Parcel 4
3	Tina M. Veltri	48 White Oak Drive	Bridgeport	WV	26330	2356'	N 14°09'10" W	Tax Map 11-58, Parcel 37

ICE EAST UNIT 13H WATER OVERALL

CLAY DISTRICT, HARRISON COUNTY, WEST VIRGINIA | 12/11/2017 | JC2018-81 | SHEET 1 OF 2



2402 PENNSYLVANIA 66
 DELMONT, PA 15626
 (724) 757 - 2417
 www.jonesconsultant.com

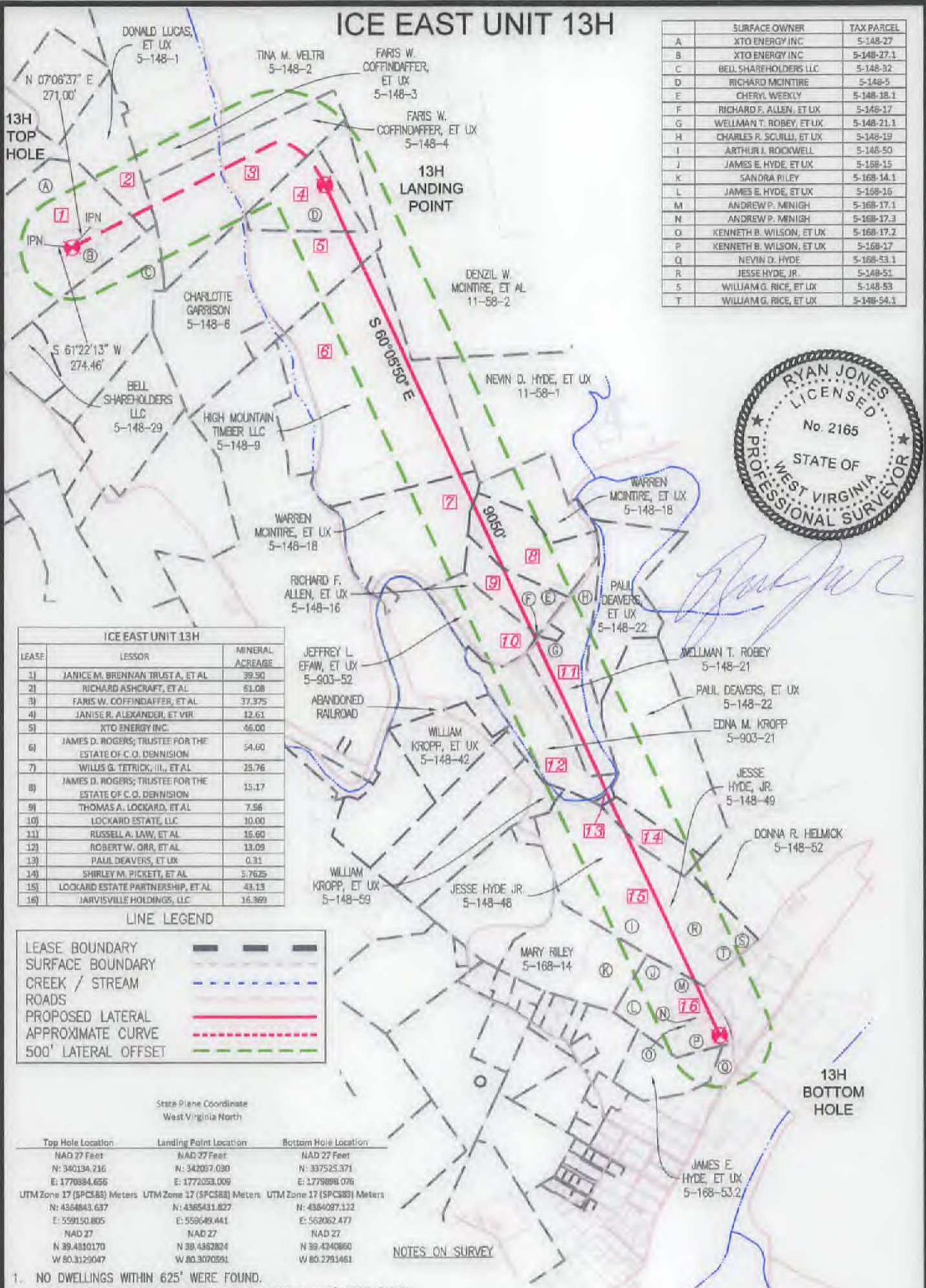
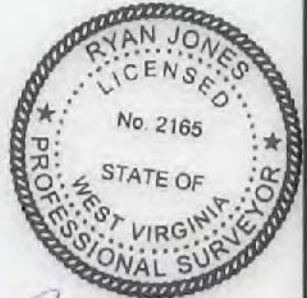
Shinnston Quad (2014)
 Marion County, WV
 Scale: 1" = 1000'



190 THORN HILL ROAD
 WARRENDALE, PA 15086

ICE EAST UNIT 13H

	SURFACE OWNER	TAX PARCEL
A	XTO ENERGY INC	5-148-27
B	XTO ENERGY INC	5-148-27.1
C	BELL SHAREHOLDERS LLC	5-148-32
D	RICHARD MCINTIRE	5-148-5
E	CHERYL WEEKLY	5-148-18.1
F	RICHARD F. ALLEN, ET UX	5-148-17
G	WELLMAN T. ROBEY, ET UX	5-148-21.1
H	CHARLES R. SCULLI, ET UX	5-148-19
I	ARTHUR J. ROCKWELL	5-148-50
J	JAMES E. HYDE, ET UX	5-168-15
K	SANDRA RILEY	5-168-14.1
L	JAMES E. HYDE, ET UX	5-168-16
M	ANDREW P. MINIGH	5-168-17.1
N	ANDREW P. MINIGH	5-168-17.3
O	KENNETH B. WILSON, ET UX	5-168-17.2
P	KENNETH B. WILSON, ET UX	5-168-17
Q	NEVIN D. HYDE	5-168-53.1
R	JESSE HYDE, JR.	5-148-51
S	WILLIAM G. RICE, ET UX	5-148-53
T	WILLIAM G. RICE, ET UX	5-148-54.1



ICE EAST UNIT 13H		
LEASE	LESSOR	MINERAL ACREAGE
1	JANICE M. BRENNAN TRUSTA, ET AL	39.90
2	RICHARD ASHCRAFT, ET AL	61.08
3	FARIS W. COFFINDAFFER, ET AL	37.375
4	JANISE R. ALEXANDER, ET VIR	12.61
5	XTO ENERGY INC.	46.00
6	JAMES D. ROGERS; TRUSTEE FOR THE ESTATE OF C.O. DENNISON	54.60
7	WILLIS G. TETRICK, III, ET AL	28.76
8	JAMES D. ROGERS; TRUSTEE FOR THE ESTATE OF C.O. DENNISON	15.17
9	THOMAS A. LOCKARD, ET AL	7.56
10	LOCKARD ESTATE, LLC	10.00
11	RUSSELL A. LAW, ET AL	16.60
12	ROBERT W. ORR, ET AL	13.09
13	PAUL DEEVERS, ET UX	0.31
14	SHIRLEY M. PICKETT, ET AL	5.7625
15	LOCKARD ESTATE PARTNERSHIP, ET AL	43.13
16	JARVISVILLE HOLDINGS, LLC	16.369

LINE LEGEND

- LEASE BOUNDARY: Dashed line
- SURFACE BOUNDARY: Dotted line
- CREEK / STREAM: Blue dashed line
- ROADS: Solid black line
- PROPOSED LATERAL: Solid red line
- APPROXIMATE CURVE: Dashed red line
- 500' LATERAL OFFSET: Dashed green line

State Plane Coordinate
West Virginia North

Top Hole Location	Landing Point Location	Bottom Hole Location
NAD 27 Feet	NAD 27 Feet	NAD 27 Feet
N: 340194.216	N: 342067.030	N: 337525.371
E: 1770884.656	E: 1772053.009	E: 1779898.076
UTM Zone 17 (SPCS88) Meters	UTM Zone 17 (SPCS88) Meters	UTM Zone 17 (SPCS88) Meters
N: 4364843.637	N: 4365431.827	N: 4364097.122
E: 559150.805	E: 559649.441	E: 562062.477
NAD 27	NAD 27	NAD 27
N 39.4810170	N 39.4862824	N 39.4240860
W 80.3129047	W 80.3070591	W 80.2791461

NOTES ON SURVEY

- NO DWELLINGS WITHIN 625' WERE FOUND.
- NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' WERE FOUND.
- TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH WV NORTH ZONE NAD 83.
- WELL ELEVATION ESTABLISHED BY RTK GPS NAVD 88.
- SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF HARRISON COUNTY IN MARCH 2019 AND FILES PROVIDED BY XTO ENERGY INC.
- WELLS SHOWN ARE TAKEN FROM RECORDS OF WDEP AND SURVEYED LOCATIONS OF WELLS WITHIN 500' OF WELL BORE.

JONES CONSULTANTS, LLC

 190 THORN HILL ROAD WARRENDALE, PA 15086 0' 1200' 	SURVEYING • MAPPING • LAND • GAS WELL • PIPELINE 2402 PENNSYLVANIA 66 DELMONT, PA 15626 (724) 757 - 2417 www.jonesconsultant.com	
	<p align="center">SUPPLEMENTAL SURFACE AND LESSOR EXHIBIT</p> <p align="center">ICE EAST UNIT 13H</p>	
Drawn By: JRV Date: 7/22/19 Scale: 1" = 1200' AFE # DD.2017.02328	Date: 7/22/19 Sheet: HARRISON COUNTY, WEST VIRGINIA File No.: CLAY DISTRICT SHEET 2 OF 2 JC2018-81	

WW-6A1
(5/13)

Operator's Well No. Ice East Unit 13H

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
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See attached

**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: XTO Energy Inc.

By: _____

Its: _____

Regulatory Coordinator

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Ice East Unit 13H Lease Ref.	Original Lessor	Current Lessee	Book/Page #	Royalty
1	Janice M. Brennan Trust A by Edward Patrick Brennan, a/k/a Edward P. Brennan and John Frank Brennan, a/k/a John F. Brennan Trustees.	XTO Energy, Inc.	1515-123	1/8 or greater ✓
1	Janice M. Brennan and John E. Brennan, husband	Jackson L. Smith Enterprises, dba WV Energies. Jackson L. Smith Enterprises, dba WV Energies to Sheldon & Assoc. - All Depths DB 1219-564. Sheldon & Assoc to Diversified Resources - Name Change DB 54-987. Diversified Resources to Bluestone Energy Partners - 350' Above top of Onondaga Limestone to Basement DB 1429-148. Bluestone to Antero - Merger DB 35-1236. Antero to XTO Energy - 100' above top of Rhinestreet to 100' below base Marcellus DB 1497-765	1219-475	1/8 or greater
1	Anita Lynn Beasley and Bryan Keith Beasley, husband	XTO Energy, Inc.	1517-89	1/8 or greater
1	Richard Allen Harris	XTO Energy, Inc.	1517-736	1/8 or greater
1	Dustin Scott Harris	XTO Energy, Inc.	1517-730	1/8 or greater
1	Jason Paul Lee	XTO Energy, Inc.	1533-1113	1/8 or greater
1	Joyce L. Harris	Jackson L. Smith Enterprises, dba WV Energies. Jackson L. Smith Enterprises, dba WV Energies to Sheldon & Assoc. - All Depths DB 1220-528 Sheldon & Assoc to Diversified Resources - Name Change DB 54-987 Diversified Resources to M&R Investments - All Depths DB 1391-1166 M&R Investments to Bluestone Energy Partners - 350' Above top of Onondaga Limestone to Basement DB 1429-148 Bluestone to Antero - Merger DB 35-1236 Antero to XTO Energy - 100' above top of Rhinestreet to 100' below base Marcellus DB 1497-765	1219-979	1/8 or greater
1	Deborah C. Ryan f/k/a Deborah C. Rainey	XTO Energy, Inc.	1514-761	1/8 or greater
1	Deborah C. Rainey, single	Jackson L. Smith Enterprises, dba WV Energies. Jackson L. Smith Enterprises, dba WV Energies to Sheldon & Assoc. - All Depths DB 1220-528. Sheldon & Assoc to Diversified Resources - Name Change DB 54-987. Diversified Resources to M&R Investments - All Depths DB 1391-1166. M&R Investments to Bluestone Energy Partners - 350' Above top of Onondaga Limestone to Basement DB 1429-148. Bluestone to Antero - Merger DB 35-1236. Antero to XTO Energy - 100' above top of Rhinestreet to 100' below base Marcellus DB 1497-765.	1220-392	1/8 or greater
1	Pamela A. and Richard L. Brooks	XTO Energy, Inc.	1514-753	1/8 or greater
1	David J. and Melanie S. Decker	XTO Energy, Inc.	1514-757	1/8 or greater
1	Mark E. and Julie A. Decker	XTO Energy, Inc.	1514-745	1/8 or greater
1	Kristie L. and Eric S. Stinespring	XTO Energy, Inc.	1514-749	1/8 or greater

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1	Carolyn Decker, single	Jackson L. Smith Enterprises, dba WV Energies. Jackson L. Smith Enterprises, dba WV Energies to Sheldon & Assoc. - All Depths DB 1220-528. Sheldon & Assoc to Diversified Resources - Name Change DB 54-987. Diversified Resources to M&R Investments - All Depths DB 1391-1166. M&R Investments to Bluestone Energy Partners - 350' Above top of Onondaga Limestone to Basement DB 1429-148. Bluestone to Antero - Merger DB 35-1236. Antero to XTO Energy - 100' above top of Rhinestreet to 100' below base Marcellus DB 1497-765.	1219-1240	1/8 or greater
1	Dickie Harris, single	Jackson L. Smith Enterprises, dba WV Energies. Jackson L. Smith Enterprises, dba WV Energies to Sheldon & Assoc. - All Depths DB 1220-528. Sheldon & Assoc to Diversified Resources - Name Change DB 54-987. Diversified Resources to M&R Investments - All Depths DB 1391-1166. M&R Investments to Bluestone Energy Partners - 350' Above top of Onondaga Limestone to Basement DB 1429-148. Bluestone to Antero - Merger DB 35-1236. Antero to XTO Energy - 100' above top of Rhinestreet to 100' below base Marcellus DB 1497-765.	1220-430	1/8 or greater
2	Richard Ashcraft and Mary Ashcraft, his wife	XTO Energy, Inc.	1219-852	1/8 or greater ✓
2	Robert H. Ashcraft, single	XTO Energy, Inc.	1219-876	1/8 or greater
2	Playford Ice and Jean Ice, his wife	XTO Energy, Inc.	1219-880	1/8 or greater
2	Virginia Deem and Ralph Deem, her husband	XTO Energy, Inc.	1219-888	1/8 or greater
2	Theda Hayes and Howard Hayes, her husband	XTO Energy, Inc.	1219-892	1/8 or greater
2	Edward Ashcraft and Maxine Ashcraft, his wife	XTO Energy, Inc.	1219-896	1/8 or greater
2	Susan Margaret Ice	XTO Energy, Inc.	1221-651	1/8 or greater
2	Donald G. Lucas and Brenda Lucas, his wife	XTO Energy, Inc.	1246-200	1/8 or greater
2	Michael J. Novotny, Special Commissioner for Herschel B. Ice, and/or Unknown Heirs	XTO Energy, Inc.	1258-577	1/8 or greater
2	Garrett Bard and Joan Bard, his wife	XTO Energy, Inc.	1258-581	1/8 or greater
2	Bonnie Greenfield and Dennis Greenfield, her husband	XTO Energy, Inc.	1258-585	1/8 or greater
3	Faris W. Coffindaffer and Margaret J. Coffindaffer, his wife	XTO Energy, Inc.	1492-90	1/8 or greater ✓
3	Angela M. Shabosky, a single woman	XTO Energy, Inc.	1498-54	1/8 or greater
3	Mary Catherine Johnson, a single woman, by her Attorney-In-Fact, Frances O. Phares	XTO Energy, Inc.	1498-56	1/8 or greater
3	Anna Caruso, a/k/a Anne Caruso, a married woman dealing in her sole and separate property, by her Attorney-In-Fact, Frances O. Phares	XTO Energy, Inc.	1498-54	1/8 or greater
3	Frances O. Phares, a married woman dealing in her sole and separate property	XTO Energy, Inc.	1498-58	1/8 or greater
3	John F. Oliverio, a single man	XTO Energy, Inc.	1498-64	1/8 or greater
3	Frank A. Oliverio, a married man dealing in his sole and separate property, by his Attorney-In-Fact, Frances O. Phares	XTO Energy, Inc.	1498-60	1/8 or greater
4	Janise R. Alexander and James R. Alexander, husband	XTO Energy, Inc.	1371-488	1/8 or greater ✓
5	XTO Energy, Inc.	XTO Energy, Inc.	1526-395	1/8 or greater ✓
6	James D. Rogers; Trustee for the Estate of C.O. Dennison	XTO Energy Inc.	1368-1288	1/8 or greater

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7	Willis G. Tetrick, III and Sandra C. Tetrick, wife; Amy T. Buckley, widow; John Y. Sutton and Carolyn B. Sutton, wife; James M. Sutton and Deborah L. Sutton, wife; Lisa D. Buckley single; Willis G. Tetrick, IV, single; Kevin C. Tetrick and Kelly B. Seab-Tetrick, wife; Michael Y. Sutton, single; Forest E. Sutton, single; Margaret A. Wickland and Christopher B. Wickland, husband; Marley R. Sutton, single; Parker H. Sutton, single; Preston H. Sutton, single; Jason H. Sutton, single;	XTO Energy Inc.	1521-1233	1/8 or greater ✓
8	James D. Rogers; Trustee for the Estate of C.O. Dennison	XTO Energy Inc.	1368-1288	1/8 or greater ✓
9	Thomas A. Lockard and Kay Lockard, his wife	XTO Energy Inc.	1494-601	1/8 or greater ✓
9	Dorothy Murphy and Edward F. Murphy, her husband	XTO Energy Inc.	1494-603	1/8 or greater ✓
9	Laura Jean Romine, f/k/a Jean Lockard and B. Judson Romine, her husband	XTO Energy Inc.	1495-256	1/8 or greater
9	Edward P. Lockard, a single man	XTO Energy Inc.	1495-258	1/8 or greater
9	The Lockard Family Trust "A", dated April 7, 2004, by Janice L. Lockard, acting as Trustee and Janice L. Lockard, widow	XTO Energy Inc.	1495-260	1/8 or greater
9	Christina Dale Money Penny, a married woman dealing in her sole and separate property	XTO Energy Inc.	1515-722	1/8 or greater
10	Lockard Estate, LLC, an Arkansas limited liability company	XTO Energy Inc.	1521-1230	1/8 or greater ✓
10	Louise Jordan Michaels, a widow, by her Attorney-In-Fact, Rebecca M. Schultz	XTO Energy Inc.	1484-470	1/8 or greater ✓
11	Russell A. Law and Shirley Law, wife	XTO Energy, Inc.	1510-185	1/8 or greater
11	Sara Sue Law, widow	XTO Energy, Inc.	1513-122	1/8 or greater
11	Jerry M. Hess, a married man dealing in his sole and separate property	XTO Energy, Inc.	1507-598	1/8 or greater
11	Sally Hess, a widower	XTO Energy, Inc.	1507-602	1/8 or greater
12	Robert W. Orr and Susan E. Orr, wife	XTO Energy, Inc.	1509-978	1/8 or greater ✓
12	Elane Burtleson, widow	XTO Energy, Inc.	1509-847	1/8 or greater
12	Marcia Whitcomb, a married woman dealing in her sole and separate property	XTO Energy, Inc.	1509-974	1/8 or greater
13	Paul Deavers and Rhonda Deavers, his wife	XTO Energy, Inc.	1478-42	1/8 or greater ✓
14	Shirley M. Pickett and Thomas H. Pickett, her husband	XTO Energy, Inc.	1492-94	1/8 or greater ✓
14	Sandra Sue Smith, a married woman dealing in her sole and separate property	XTO Energy, Inc.	1627-364	1/8 or greater
14	Sharon Jean Goode a/k/a Sharon R. Goode, a married woman dealing in her sole and separate property	XTO Energy, Inc.	1626-177	1/8 or greater
14	Gregory King and Linda King, husband and wife	XTO Energy, Inc.	1629-1191	1/8 or greater
14	Mary K. Cottrell, a married woman dealing in her sole and separate property	XTO Energy, Inc.	1627-396	1/8 or greater

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14	Judith Ann Johnson and George Ernest Johnson, her husband	XTO Energy, Inc.	1494-605	1/8 or greater
14	James Russell Bice and Judith Bice, husband and wife	XTO Energy, Inc.	1622-1323	1/8 or greater
14	Florence Edith Burnett, a widow	XTO Energy, Inc.	1494-282	1/8 or greater
14	Margaret B. Rowe and Eric Donald Rowe, her husband	XTO Energy, Inc.	1494-285	1/8 or greater
14	Mary Ann Mozelewski and Ralph C. Mozelewski Jr., her husband	XTO Energy, Inc.	1491-218	1/8 or greater
14	Sara B. Hosmer and John F. Hosmer, her husband	XTO Energy, Inc.	1494-276	1/8 or greater
14	William O. Barnard III and Nancy O. Barnard, his wife	XTO Energy, Inc.	1492-1161	1/8 or greater
14	Vivian Carroll Spearman, a widow	XTO Energy, Inc.	1494-279	1/8 or greater
14	Sherrel M. Hensley, a single woman	XTO Energy, Inc.	1491-235	1/8 or greater
14	Maxine Tetrick Critchfield and Charles Vincent Critchfield, her husband	XTO Energy, Inc.	1492-1158	1/8 or greater
14	Evelyn Anna Schaller a/k/a Evelyn Anna Heller, a divorced woman not having since remarried	XTO Energy, Inc.	1626-180	1/8 or greater
14	Jason Richard Dahl, a married man dealing in his sole and separate property	XTO Energy, Inc.	1627-378	1/8 or greater
14	Collette C. Ingenthron, a married woman dealing in her sole and separate property	XTO Energy, Inc.	1627-375	1/8 or greater
14	Lillian Maack a/k/a Tootie Maack, a married woman dealing in her sole and separate property	XTO Energy, Inc.	1626-553	1/8 or greater
14	Richard Heller, a married man dealing in his sole and separate property	XTO Energy, Inc.	1626-174	1/8 or greater
14	Susan G. Hallam f/k/a Susan Nichols a/k/a Susan Teate, a married woman dealing in her sole and separate property	XTO Energy, Inc.	1626-556	1/8 or greater
14	John William Teate, a married man dealing in his sole and separate property	XTO Energy, Inc.	1626-438	1/8 or greater
14	John M. Geddes, a married man dealing in his sole and separate property	XTO Energy, Inc.	1627-367	1/8 or greater
14	Charles D. Clevenger, a married man dealing in his sole and separate property	XTO Energy, Inc.	1624-797	1/8 or greater
14	Anthony L. Clevenger, a married man dealing in his sole and separate property	XTO Energy, Inc.	1623-1345	1/8 or greater
14	Randell Rice and Karen Rice, husband and wife	XTO Energy, Inc.	1627-372	1/8 or greater
14	Kevin Ray Rice, a married man dealing in his sole and separate property	XTO Energy, Inc.	1622-1326	1/8 or greater
14	Amy Rice, a single woman	XTO Energy, Inc.	1624-794	1/8 or greater
14	Cena L. Hunt, a married woman dealing in her sole and separate property	XTO Energy, Inc.	1622-1332	1/8 or greater
14	Rebecca Sue Glisan, a widow by death not having since remarried	XTO Energy, Inc.	1623-1326	1/8 or greater
14	Marilyn L. Spade-McDowell, a married woman dealing in her own sole and separate property	XTO Energy, Inc.	1622-1335	1/8 or greater
14	Howard S. Clevenger, a single man	XTO Energy, Inc.	1628-313	1/8 or greater
14	Jay E. Clevenger and Beth Clevenger, husband and wife	XTO Energy, Inc.	1622-1320	1/8 or greater
14	Kerry Edward Woodruff, a married man dealing in his sole and separate property	XTO Energy, Inc.	1627-361	1/8 or greater
14	Marsha L. Young and Richard Loren Young, her husband	XTO Energy, Inc.	1494-1190	1/8 or greater
14	Judy Kay Hughes, a single woman	XTO Energy, Inc.	1504-1138	1/8 or greater
14	Ronald Eugene Hunt, a married man dealing in his sole and separate property	XTO Energy, Inc.	1627-402	1/8 or greater

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14	Randy Lynn Hunt, a single man	XTO Energy, Inc.	1627-399	1/8 or greater
14	Richard Lee Reise, a single man	XTO Energy, Inc.	1501-273	1/8 or greater
14	Gayle G. Ream, a single woman dealing in her sole and separate property	XTO Energy, Inc.	1489-1017	1/8 or greater
14	Amaryllis L. Castle and Dr. Richard Castle, her husband	XTO Energy, Inc.	1491-576	1/8 or greater
14	Amaryllis L. Castle and Dr. Richard Castle, her husband	XTO Energy, Inc.	1491-576	1/8 or greater
14	Joseph E. Reid, a/k/a Joseph Reid and Helen L. Reid, a/k/a Helen Reid, his wife	XTO Energy, Inc.	1501-277	1/8 or greater
14	Helen L. Reid, a/k/a Helen Reid, (wife of Joseph Reid)	XTO Energy, Inc.	1501-277	1/8 or greater
15	Lockard Estate Partnership by Rebecca S. Choco, Roberta L. Gill, Sam P. Lockard and William A. Lockard	XTO Energy Inc.	1373-1133	1/8 or greater ✓
15	Lockard Estate, LLC, an Arkansas limited liability company	XTO Energy, Inc.	1521-1233	1/8 or greater
16	Jarvisville Holdings, LLC, an Arkansas limited liability company	XTO Energy, Inc.	1521-1224	1/8 or greater ✓



XTO Energy, Inc.
22777 Springwoods
Village Pkwy
Spring, TX 77389-1425

June 6, 2019

Office of Oil & Gas
WVDEP
601 57th Street
Charleston, WV 25304

Re: Rights to Drill under Roads – Ice East Unit 13H

To Whom It May Concern:

Based on research by XTO Energy's Land Department, our contractor's and 3rd party title attorneys, we have all necessary mineral rights under Harrison County routes 8/1 & 8, in the location of our planned well-bore for the Ice East Unit 13H.

Sincerely,

A handwritten signature in blue ink that reads 'Kaitlyn Lee'.

Kaitlyn Lee
Landman
22777 Springwoods Village Pkwy.
Spring, TX 77389-1425

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WW-6AC
(1/12)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE CERTIFICATION

Date of Notice Certification: 7/1/19

API No. 47- _____
Operator's Well No. Ice East Unit 13H
Well Pad Name: Ice Pad

Notice has been given:

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State: <u>West Virginia</u>	UTM NAD 83 Easting: <u>559150.605</u>
County: <u>Harrison</u>	UTM NAD 83 Northing: <u>4364843.637</u>
District: <u>Clay</u>	Public Road Access: <u>CR 8/6 (Nutter Run)</u>
Quadrangle: <u>Shinnston</u>	Generally used farm name: <u>XTO Energy Inc.</u>
Watershed: <u>Lower West Fork River (0502000208)</u>	

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 40px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
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Required Attachments:

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

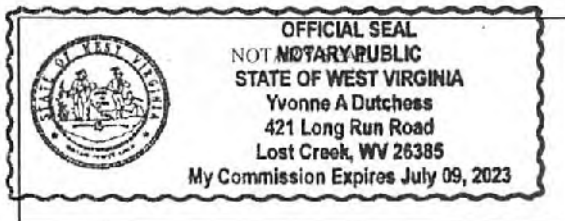
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WW-6AC
(1/12)

Certification of Notice is hereby given:

THEREFORE, I Tim Sands, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, 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 and imprisonment.

Well Operator:	<u>XTO Energy Inc.</u>	Address:	<u>PO Box 1008</u>
By:	<u><i>T. Sands</i></u>		<u>Jane Lew, WV 26378</u>
Its:	<u>Regulatory Coordinator</u>	Facsimile:	<u>304-884-6809</u>
Telephone:	<u>304-884-6000</u>	Email:	<u></u>



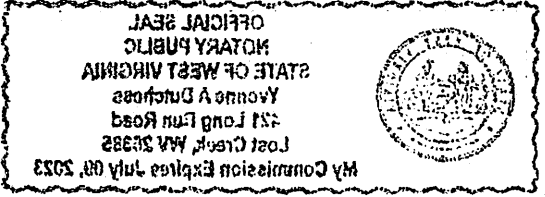
Subscribed and sworn before me this 15th day of July 2019.
Yvonne A. Dutches Notary Public
 My Commission Expires July 9, 2023

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as 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 or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

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WW-6A
(9-13)

API NO. 47- _____ - _____
 OPERATOR WELL NO. Ice East Unit 13H
 Well Pad Name: Ice Pad

**STATE OF WEST VIRGINIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
 NOTICE OF APPLICATION**

Notice Time Requirement: notice shall be provided no later than the filing date of permit application.

Date of Notice: 7/1/19 **Date Permit Application Filed:** 7/1/19

Notice of:

- PERMIT FOR ANY WELL WORK CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

- PERSONAL SERVICE REGISTERED MAIL METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Application Notice WSSP Notice E&S Plan Notice Well Plat Notice is hereby provided to:

SURFACE OWNER(s)

Name: XTO Energy Inc.
 Address: PO Box 1008
Jane Lew, WV 26378
 Name: _____
 Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)

Name: _____
 Address: _____
 Name: _____
 Address: _____

SURFACE OWNER(s) (Impoundments or Pits)

Name: _____
 Address: _____

COAL OWNER OR LESSEE

Name: Consol Mining Company, LLC
 Address: 1000 Consol Energy Drive
Canonsburg, PA 15317

COAL OPERATOR

Name: _____
 Address: _____

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)

Name: None within 1500'
 Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD

Name: _____
 Address: _____

*Please attach additional forms if necessary

WW-6A
(8-13)

API NO. 47- _____
OPERATOR WELL NO. Ice East Unit 13H
Well Pad Name: Ice Pad

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

This Notice Shall Include:

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and or water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Location Restrictions

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

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WW-6A
(8-13)

API NO. 47- _____
OPERATOR WELL NO. Ice East Unit 13H
Well Pad Name: Ice Pad

Time Limits and Methods for Filing Comments.

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

Comment Requirements

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

Permit Denial or Condition

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

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WW-6A
(8-13)

API NO. 47-
OPERATOR WELL NO. Ice East Unit 13H
Well Pad Name: Ice Pad

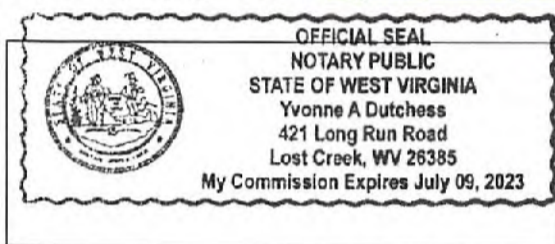
Notice is hereby given by:

Well Operator: XTO Energy, Inc.
Telephone: 304-884-6000
Email: _____

Address: PO Box 1008
Jane Lew, WV 26378
Facsimile: 304-884-6809

By Tim Sands of XTO
Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as 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 or your personal information, please contact DEP's Chief Privacy Officer at deprivacyofficer@wv.gov.



Subscribed and sworn before me this 15 day of July 2019.
Yvonne A. Dutchess Notary Public
My Commission Expires July 9, 2023

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Office of Oil and Gas
JUL - 2 2019
WV Department of
Environmental Protection

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WEST VIRGINIA

NOTARY PUBLIC

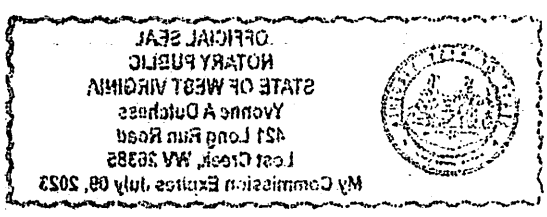
STATE OF WEST VIRGINIA

Yvonne A. Outchess

451 Long Run Road

East Creek, WV 26385

My Commission Expires July 08, 2023



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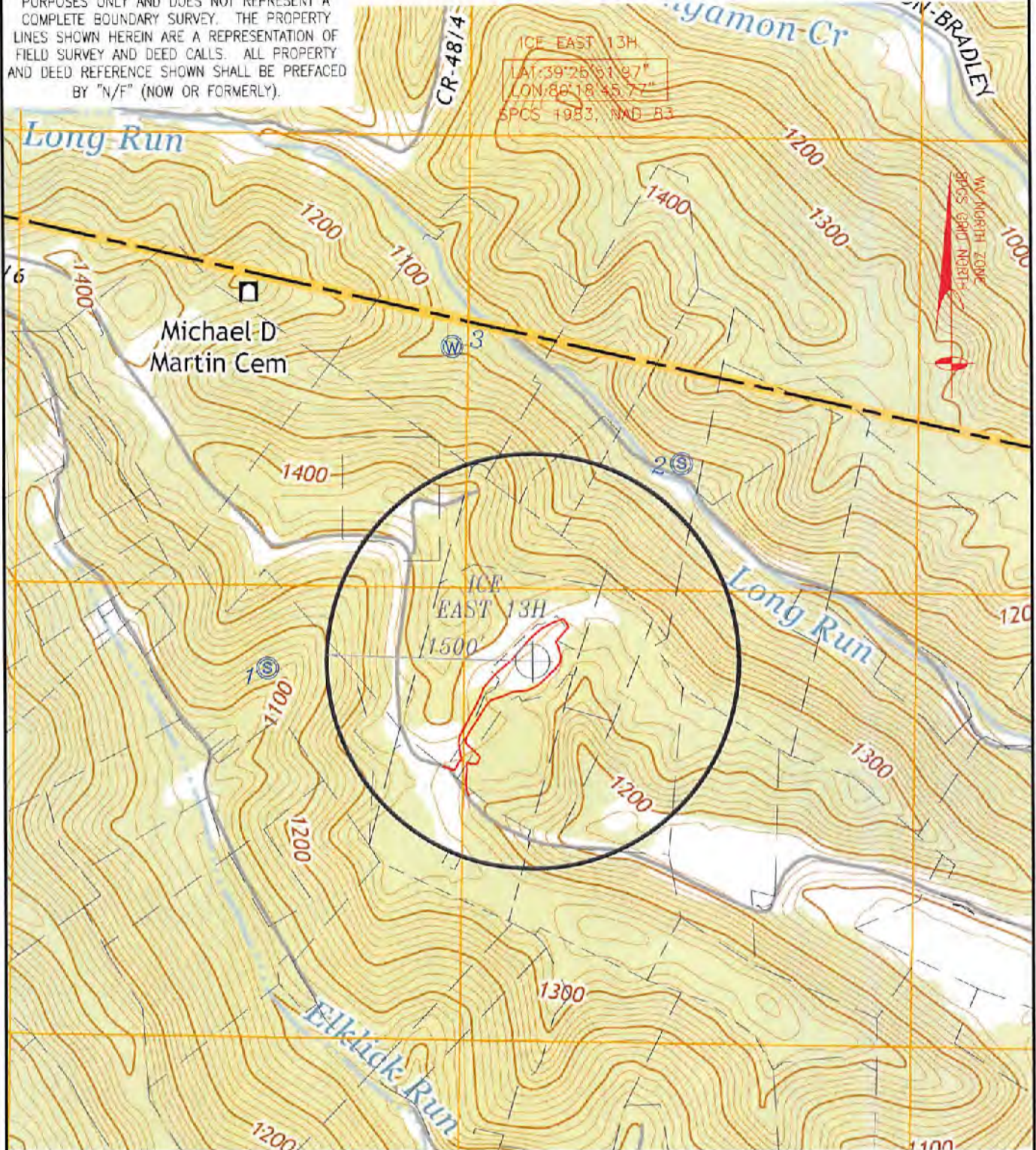
WV Department of
Environmental Protection

FORM W-9

NOTE: THIS PLAT IS FOR WELL LOCATION PURPOSES ONLY AND DOES NOT REPRESENT A COMPLETE BOUNDARY SURVEY. THE PROPERTY LINES SHOWN HEREIN ARE A REPRESENTATION OF FIELD SURVEY AND DEED CALLS. ALL PROPERTY AND DEED REFERENCE SHOWN SHALL BE PREFACED BY "N/F" (NOW OR FORMERLY).

LEGEND

- WATER WELL
- SPRING/POND/STREAM
- SURFACE BOUNDARY



POINT	NAME	ADDRESS	CITY	STATE	ZIP CODE	DISTANCE	BEARING	PARCEL I.D.
1	Michael & Cynthia Nosack	712 Bices Run Road	Shinnston	WV	26431	1929'	S 88°44'45" W	Tax Map 5-147, Parcel 87
2	Faris W. & Margaret J. Coffindafer	24 Glenview Drive	Bridgeport	WV	26330	1797'	N 37°23'42" E	Tax Map 5-148, Parcel 4
3	Tina M. Veltri	48 White Oak Drive	Bridgeport	WV	26330	2356'	N 14°09'10" W	Tax Map 11-58, Parcel 37

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ICE EAST UNIT 13H WATER OVERALL

WV Department of Environmental Protection

CLAY DISTRICT, HARRISON COUNTY, WEST VIRGINIA | 12/11/2017 | JC2018-81 | SHEET 1 OF 2



2402 PENNSYLVANIA 66
 DELMONT, PA 15626
 (724) 757 - 2417
 www.jonesconsultant.com

Shinnston Quad (2014)
 Marion County, WV
 Scale: 1" = 1000'



190 THORN HILL ROAD
 WARRENDALE, PA 15086

Surface Owner

XTO Energy Inc.
 PO Box 1008
 Jane Lew, WV 26378

Coal Owner or Lessee

Consol Mining Company, LLC
 1000 Consol Energy Drive
 Canonsburg, PA 15317

Mineral Owners

Janice M. Brennan Trust A
 PO Box 98
 Shinnston, WV 26431

Helen M. Burton
 8086 Powell Avenue
 Stonewood, WV 26301

Deborah C. Ryan
 5 Debbie Lane
 Conway, AR 72032

Dickie Harris
 3 Debbie Lane
 Conway, AR 72032

David J. & Melanie S. Decker
 181 Randolph Lane
 Steubenville, OH 43952

Anita L. Beasley
 22 Bradley Drive
 Cabot, AR 72023

Mark E. & Julie A. Decker
 856 Township Road 375
 Toronto, OH 43964

Richard A. Harris
 83 Highway 319
 Vilonia, AR 72173

Richard L. & Pamela A. Brooks
 2876 State Route 213
 Steubenville, OH 43952

Dustin S. Harris
 704 5th St.
 Conway, AR 72032

Eric S. & Kristie L. Stinespring
 2888 State Rout 213
 Steubenville, OH 43952

Jason P. Lee
 17 Thorn Cemetary Road
 Greenbrier, AR 72058

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WW-6A5
(1/12)Operator Well No. Ice East Unit 13H

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF PLANNED OPERATION

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**

Date of Notice: 7/1/19 **Date Permit Application Filed:** 7/1/19

Delivery method pursuant to West Virginia Code § 22-6A-16(c)

CERTIFIED MAIL
 RETURN RECEIPT REQUESTED

HAND
 DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

Notice is hereby provided to the SURFACE OWNER(s)

(at the address listed in the records of the sheriff at the time of notice):

Name: XTO Energy Inc.
 Address: PO Box 1008
Jane Lew, WV 26378

Name: _____
 Address: _____

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>559150.805</u>
County:	<u>Harrison</u>		Northing:	<u>4364843.637</u>
District:	<u>Clay</u>	Public Road Access:	<u>CR 8/6 (Nutter Run)</u>	
Quadrangle:	<u>Shinnston</u>	Generally used farm name:	<u>XTO Energy Inc.</u>	
Watershed:	<u>Lower West Fork River (0502000206)</u>			

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by W. Va. Code § 22-6A-10(b) to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Operator: XTO Energy Inc.
 Telephone: 304-884-6000
 Email: _____

Address: PO Box 1008
Jane Lew, WV 26378
 Facsimile: 304-884-6809

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as 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.

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 Office of Oil and Gas
 JUL - 2 2019
 WV Department of
 Environmental Protection



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110
 Charleston, West Virginia 25305-0430 • (304) 558-3505

Thomas J. Smith, P. E.
 Secretary of Transportation/
 Commissioner of Highways

November 28, 2018

Jill M. Newman
 Deputy Commissioner

James A. Martin, Chief
 Office of Oil and Gas
 Department of Environmental Protection
 601 57th Street, SE
 Charleston, WV 25304

Subject: DOH Permit for the Ice Well Pad, Harrison County
 Ice East Unit 13H

Dear Mr. Martin,

This well site will be accessed from Permit #04-2017-0076 issued to XTO Energy, Inc. for access to the State Road for a well site located off of Harrison County Route 8/6 SLS.

The operator has signed a STATEWIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated October 1, 2018.

Very Truly Yours,

Gary K. Clayton, P.E.
 Regional Maintenance Engineer
 Central Office O&G Coordinator

Cc: Tim Sands
 XTO Energy, Inc.
 CH, OM, D-4
 File

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	XTO Energy/ExxonMobil	Carrier Fluid	Water	7732-18-5	100	90.3211	
FR-16	C&J Energy Services	Friction Reducer		Listed Below			
Sand	C&J Energy Services	Sand - Bulk - Penns		Listed Below			
CI-9	C&J Energy Services	Acid Corrosion Inhibitors		Listed Below			
BIO-CLEAR 2000	C&J Energy Services	Biocides		Listed Below			
HC-7.5	C&J Energy Services	Bulk Acid		Listed Below			
Sand	C&J Energy Services	Sand - Bulk - Penns		Listed Below			
SI-6	C&J Energy Services	Paraffin & Scale Additives		Listed Below			
Items above are Trade Names with the exception of Base Water. Items below are the individual ingredients.							
			Crystalline Silica, quartz	14808-60-7	99.9	7.93235	
			Crystalline Silica, quartz	14808-60-7	99.9	0.96377	
			Water	7732-18-5	92.5	0.61264	
			Aluminum Oxide	1344-28-1	1.1	0.08734	
			Hydrochloric Acid	7647-01-0	7.5	0.04967	
			Water	7732-18-5	96	0.02312	
			Distillates (Petroleum), Hydrotreated Light	64742-47-8	35	0.0191	
			Water	7732-18-5	30	0.01637	
			2-Propenoic acid, polymer with 2-propenamide, sodium salt	25987-30-8	30	0.01637	
			Polyethylene glycol	25322-68-3	50	0.01586	
			Aluminum Oxide	1344-28-1	1.1	0.01061	
			2,2-Dibromo-3-nitropropionamide (DBNPA)	10222-01-2	30	0.00962	
			Water	7732-18-5	28.5	0.00904	
			Titanium Oxide	13463-67-7	0.1	0.00794	
			Iron Oxide	1309-37-1	0.1	0.00794	
			Ethylene Glycol	107-21-1	5	0.00273	
			Sodium Acetate	127-09-3	3	0.00164	
			Phosphonic Acid Salt	Proprietary	6	0.00145	
			Poly(oxy-1,2-ethandiyl), alpha-isodecyl-omega-hydroxy-phosphate	108818-88-8	2	0.00109	
			Sorbitan Monooleate	1338-43-8	2	0.00109	
			Alcohols, C12-15- branched and linear, ethoxylated propoxylated	120313-48-6	2	0.00109	
			Iron Oxide	1309-37-1	0.1	0.00097	
			Titanium Oxide	13463-67-7	0.1	0.00097	
			Ethoxylated Sorbitan	9005-65-6	1	0.00055	
			Ammonium Chloride	12125-02-9	2	0.00048	
			Monoethanolamine hydrochloride	2002-24-6	2	0.00048	
			Ethylene Glycol	107-21-1	40	0.00048	
			Water	7732-18-5	30	0.00036	
			Methanol	67-56-1	1	0.00024	
			Dimethylformamide	68-12-2	20	0.00024	
			Tar bases, quinoline derivs, benzyl chloride- quaternized	72480-70-7	15	0.00018	
			Cinnamaldehyde	104-55-2	15	0.00018	
			2-Butoxyethanol	111-76-2	15	0.00018	
			1-DECANOL	112-30-1	5	0.00006	
			Poly(oxy-1,2-ethandiyl),alpha-(4-nonylphenyl)-omega hydroxy-, branched	127087-87-0	5	0.00006	
			2-Propenamide as residual	79-06-1	0.1	0.00006	
			1-OCTANOL	111-87-5	2.5	0.00003	
			Isopropanol	67-63-0	2.5	0.00003	
			Triethyl Phosphate	78-40-0	2.5	0.00003	
			Tar Bases, Quinoline	68513-87-1	1	0.00001	

WVDP 006
ACCEPTED AS-BUILT
 8/8/2018



Know what's below
 Call before you dig

CALL BEFORE YOU DIG
 1-800-345-6145
 IN WEST VIRGINIA
 THE GENERAL CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES INVOLVED IN THE SITE NO MORE THAN 48 HOURS AND NO LESS THAN 48 HOURS IN ADVANCE OF EXCAVATION ACTIVITY AND NO LESS THAN 48 HOURS IN ADVANCE OF EXCAVATION ACTIVITY.

WEST VIRGINIA RECORDS
 2 WORKING DAYS NOTICE



- LEGEND:**
- EXISTING CENTER LINES
 - SOIL TYPE LINE
 - PROPERTY LINE
 - WETLAND DETERMINATION STUDY AREA / AREA OF INTEREST
 - EXISTING GRAVEL PAVEMENT
 - EXISTING STRIPWAY
 - EXISTING STAKEWAY
 - EXISTING SIDEWALK
 - EXISTING WETLAND
 - EXISTING MEADOW
 - ORIGINAL LTO
 - ADDITIONAL LTO



THE ENGINEER ASSUMES NO RESPONSIBILITY FOR ANY CHANGES IN DESIGN PLANS UNLESS WRITTEN CONSENT IS GIVEN BY THE ENGINEER. THE CONTRACTOR AND/OR THE OWNER WILL BE HOLD RESPONSIBLE FOR ANY FIELD MODIFICATIONS MADE WITHOUT THE WRITTEN CONSENT OF THE ENGINEER AND NECESSARY APPROVALS BY PERMITTING AGENCIES. DRAWINGS PROVIDED BY OTHERS AND CORRECTED ERRORS. THE LOCATION OF EXISTING UTILITIES WERE TAKEN FROM RECORDS AND SHOWN MAY BE APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT LOCATION, SIZE AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL DEPOSE CURB TO AVOID DAMAGE TO ALL EXISTING UTILITIES.

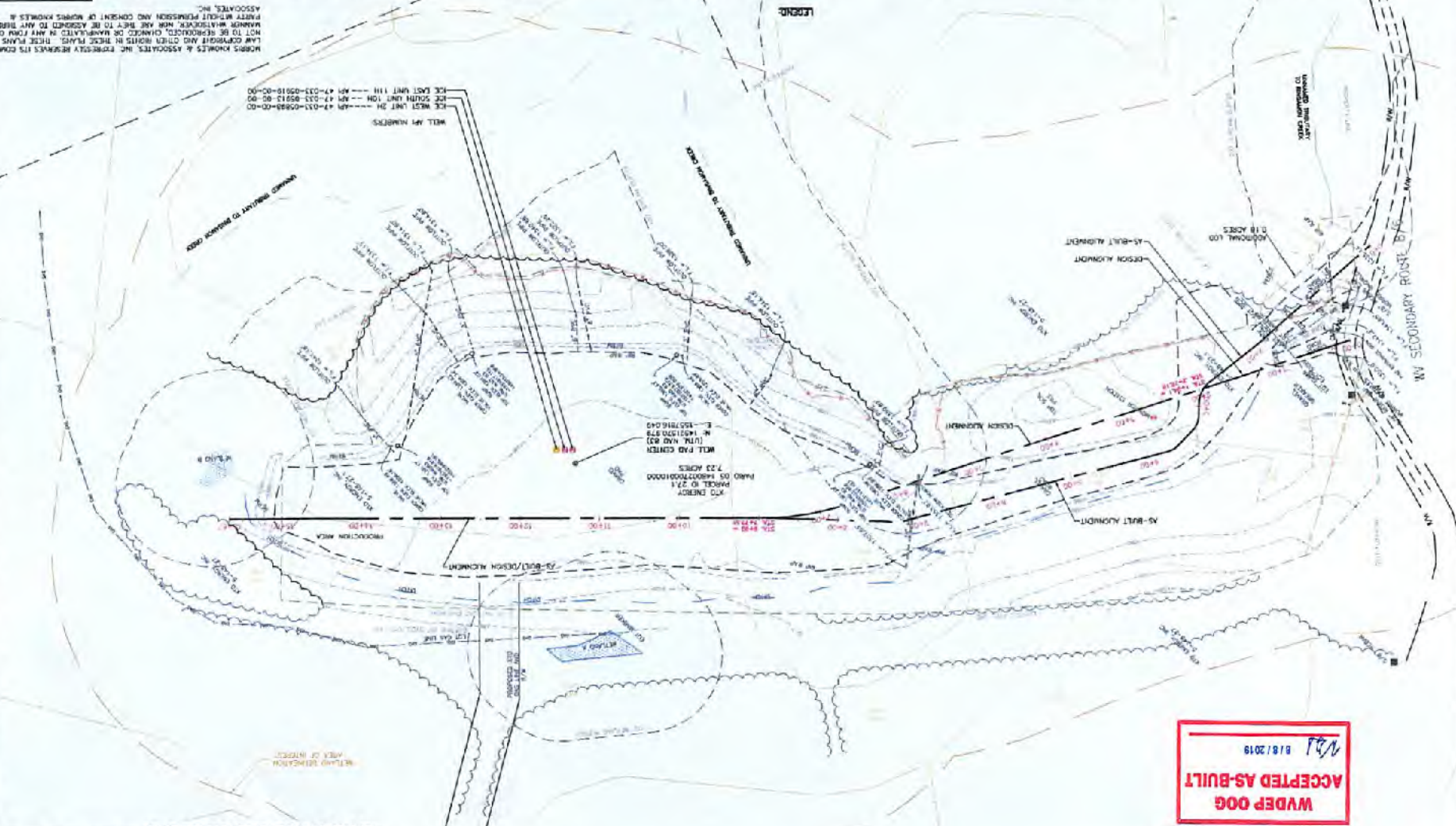
DATE: 8/8/2018
 SHEET NO. 2
 PROJECT: CLAY DISTRICT, HARRISON COUNTY, WEST VIRGINIA
 DRAWING NO. AS-BUILT DRAWING - PLAN

ICE PAD
 Prepared For:
XTO ENERGY, INC.
 CLAY DISTRICT, HARRISON COUNTY, WEST VIRGINIA
AS-BUILT DRAWING - PLAN

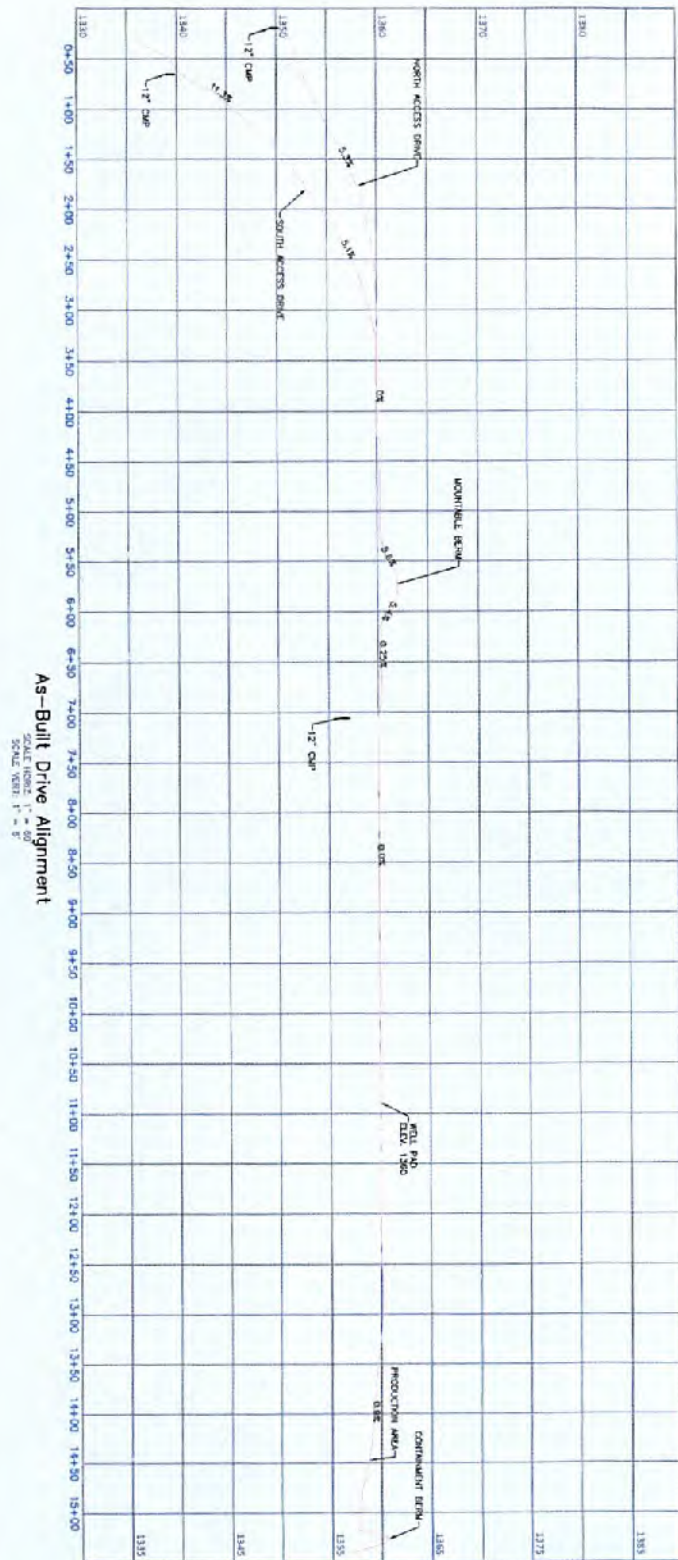
Morris Knowles
 Registered Professional Engineer
 No. 11753
 State of West Virginia

AS NOTED
 SCALE:
 REVISIONS BY: JAW
 DATE: 8/7/2018
 REVISIONS BY: JAW
 DATE: 8/7/2018
 REVISIONS BY: JAW
 DATE: 8/7/2018

REVISION BY:	DATE:	DESCRIPTION:

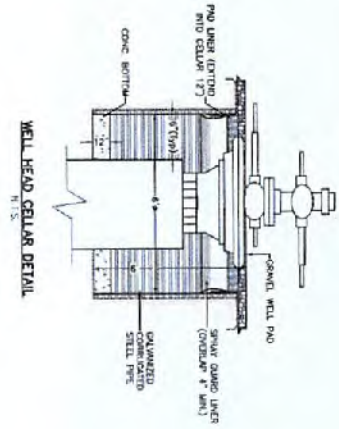


NOTE:
 THE OWNER AND CONTRACTOR SHALL REMAIN IN PLACE TO DISCHARGE WATER FROM THE WETLAND AREA OF INTEREST.



As-Built Drive Alignment

SCALE HORIZ. 1" = 50'
SCALE VERT. 1" = 5'



WELL HEAD CELLAR DETAIL
N.T.S.



REVISION NO. 3
DATE 9/10/2019

ICE PAD prepared for XTO ENERGY, INC. situated CLAY DISTRICT, HARRISON COUNTY, WEST VIRGINIA AS-BUILT DRAWING - PROFILE

MKA Morris Knowles & Associates, Inc.
Geotechnical Engineers and Soil Foremen
443 Adams Drive
Dunsmuir, PA 15116
Telephone: (724) 468-6123 Fax: (724) 468-6840

DESIGNED BY: SRP
REVIEWED BY: MMY
DRAWN BY: SRP
DATE: 8/8/2019
PROJ. NO.: 1637
DRAWING NO.: 9XTCICE

REVISION BY	DATE	DESCRIPTION