



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

Wednesday, August 28, 2019
WELL WORK PERMIT
Horizontal 6A / New Drill

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

Re: Permit approval for ICE WEST UNIT 2H
47-033-05965-00-00

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 WEST UNIT 2H
Farm Name: XTO ENERGY INC
U.S. WELL NUMBER: 47-033-05965-00-00
Horizontal 6A New Drill
Date Issued: 8/27/2019

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.



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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.

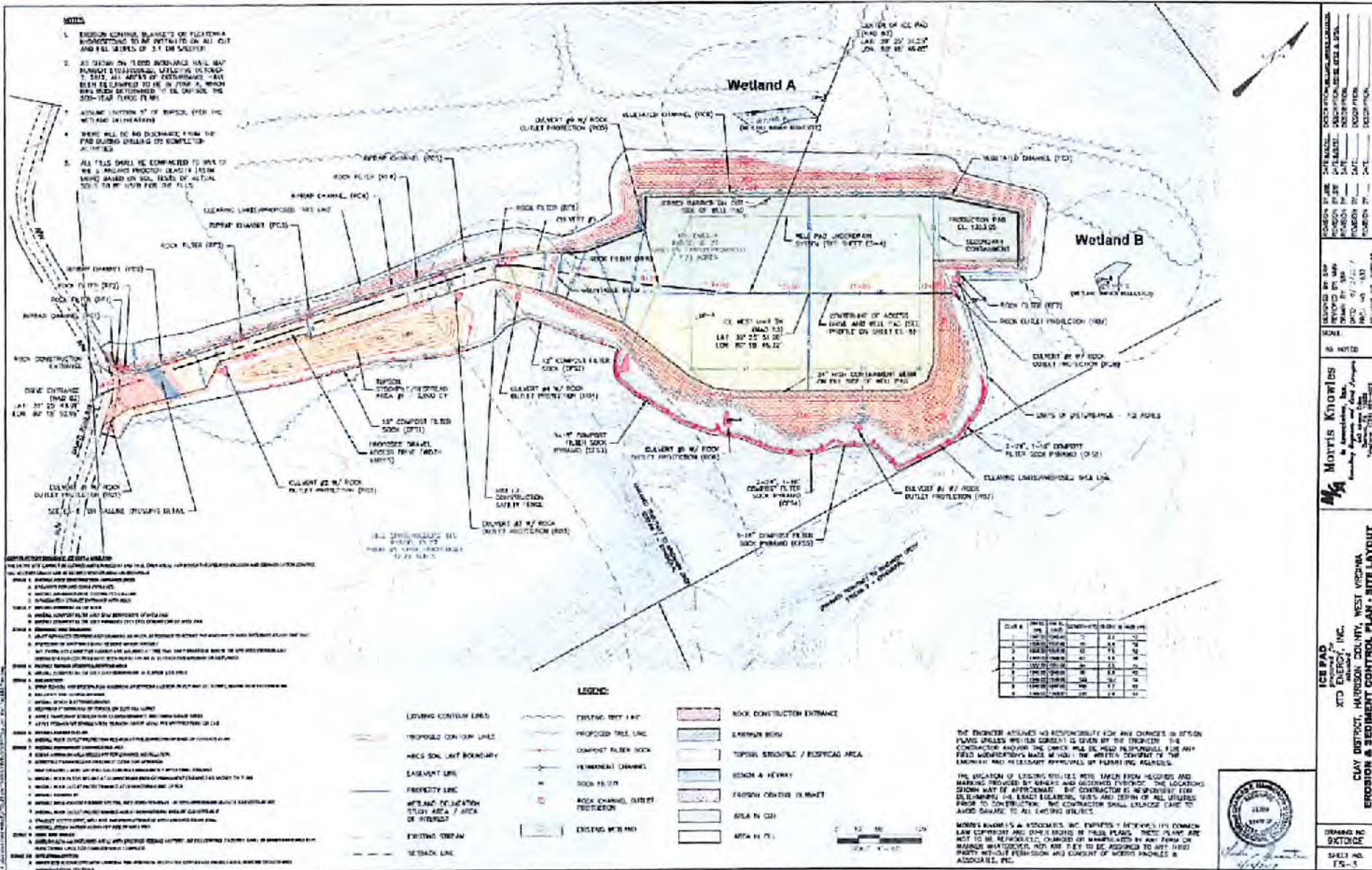
Thus ORDERED, the 15th day of May, 2018.

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

XTO Energy - Ice Pad Wetland Waiver Attachment 1



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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Environmental Protection

WW-6B
(04/15)

API NO. 47- _____ - _____
 OPERATOR WELL NO. Ice West Unit 2H
 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	19,062	19,062 ✓	3,776 / 6,382
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	6,120	65.35 POZ/Class H	1.1 / 1.57
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

WW-6B
(10/14)

API NO. 47- _____ - _____
OPERATOR WELL NO. Ice West Unit 2H
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

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.

*Note: Attach additional sheets as needed.

Page 3 of 3
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Ice West Unit 2H – 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 West Unit 2H

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
Diversified Resources, Inc.	4703303814	1060	3565	Injun, 50', 30', Gordon, 4th, 5th, Balltown	1556' - 3595'	1556' - 3565'	NA	No
XTO Energy Inc.	4703303960	1323	3880	Balltown, Speechley, Elizabeth, 5th, 4th, 50', Gantz	1788' - 3670'	1788' - 3670'	NA	No
Consol Gas Company	4703303843	1106	3785	Balltown, Speechley, Elizabeth, 5th, 30', 50', Injun	1536' - 3590'	1536' - 3590'	NA	No
Consol Gas Company	4703303913	1268	3850	Balltown, Speechley, Elizabeth, 5th, 4th, Gordon, 50', Injun, Pocono	1696' - 3552'	1696' - 3552'	NA	No
Alliance Petroleum Corporation	4703304247	1345	4030	Squaw, Gantz, 50', Gordon, Fifth, Balltown	1842 - 3827	1842 - 3827	NA	No
XTO Energy Inc.	4703304362	1060	3572	BA, FM, FO, GO	2322 - 3391	2322 - 3391	NA	No
Alliance Petroleum Corporation	4703302332	1233	3700	Balltown	3514-3532	3514-3532	NA	No

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Overlays basemap: none

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Environmental Protection

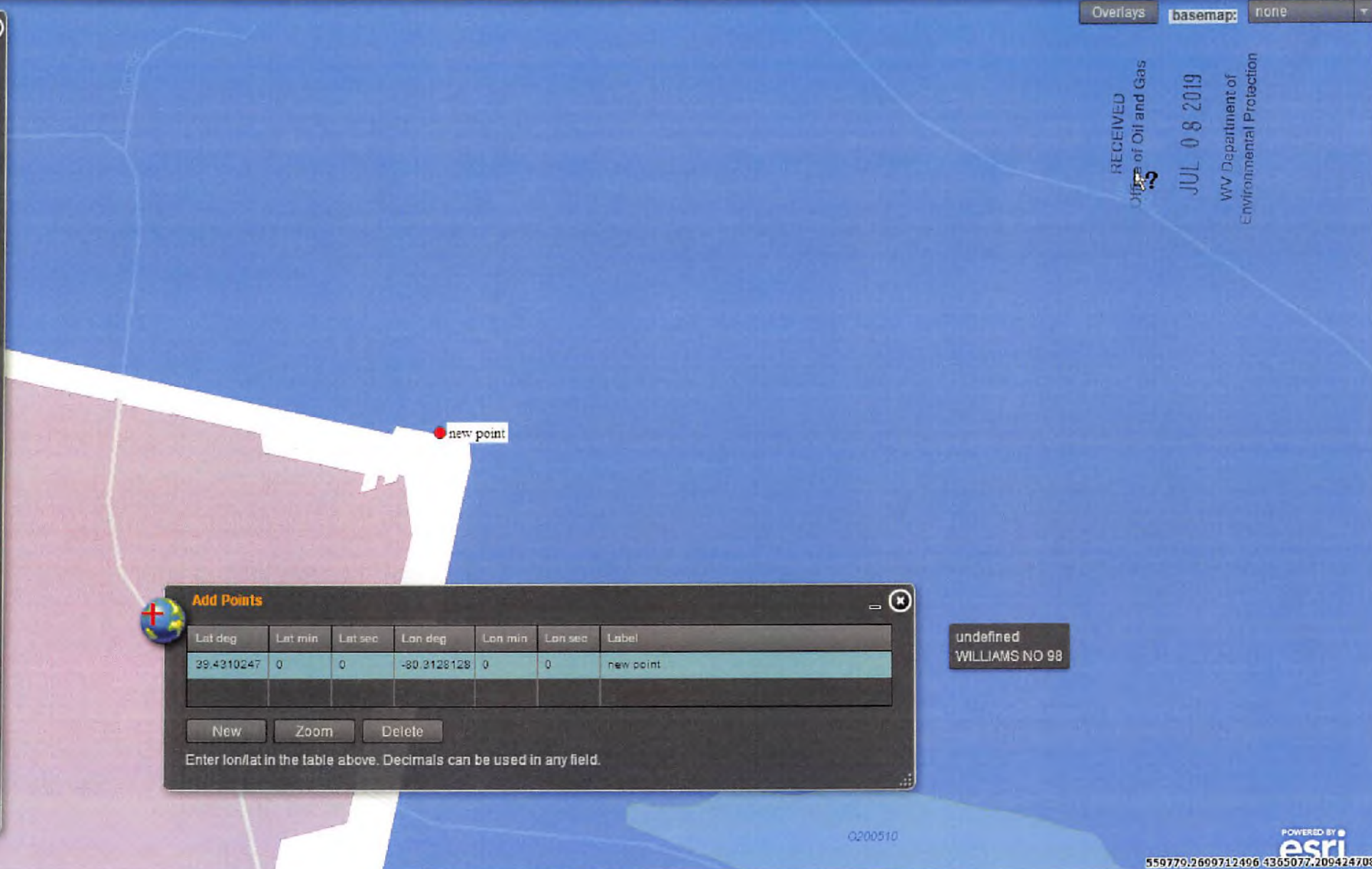
Mining Layers

Permit Search Identify Layers

Layer	Permit Id	Name
underground min		WILLIAMS NO 98

Attribute	Value
mine_name	WILLIAMS NO 98
map_year	1979
source	0
wvges_comm	FINAL WILLIAMS MINE, N. ARROW
Shape_Length	58487.874251
mine_id	3534738
state_perm	
doc_id	353473
type	4
map_image	353/353473
st_length_	73216.240376
Shape_Area	19540210.148241
Coal	PGH
company_na	CONSOLIDATION COAL
st_area_sh	32828901.8932

1 features selected. Get Details for undefined



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

New Zoom Delete

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

undefined
WILLIAMS NO 98

Q200510



WV Flood Tool

Remember: When In Doubt, It's Not Out!

Views

Layers

Search

Tools

Public Expert Risk MAP Flood Reference Basemaps

Coordinate use COORDINATE window to search



Coordinate Search

Decimal Degrees Latitude
 Longitude

DD/MM/SS Latitude ° ' "
 Longitude ° ' "

UTM Zone 17N Easting
 Northing

Locate the Coordinate



Flood Hazard Area: Location is NOT WITHIN any identified flood hazard area. Unshaded flood hazard areas may be present.

Flood Zone: Out of Flood Zone

Stream: N/A

Watershed (HUC8): West Fork (5020002)

FEMA Issued Flood Map: 54033C0062D [NFHL](#)

Map Effective Date: 10/2/2012

Contacts: Harrison

Community: Harrison County

CID: 540053 CRS Class: 10

Location (long, lat): (-80.312824, 39.430905)

Location (UTM 17N): (559142, 4364821)

External Viewers:

Elevation: About 1354 ft (Source: SAMS 2003)

Address: N/A

Parcel ID: 17-05-0148-0027-0001 [Disclaimer](#)

Flood Risk Information [Related Resources](#)

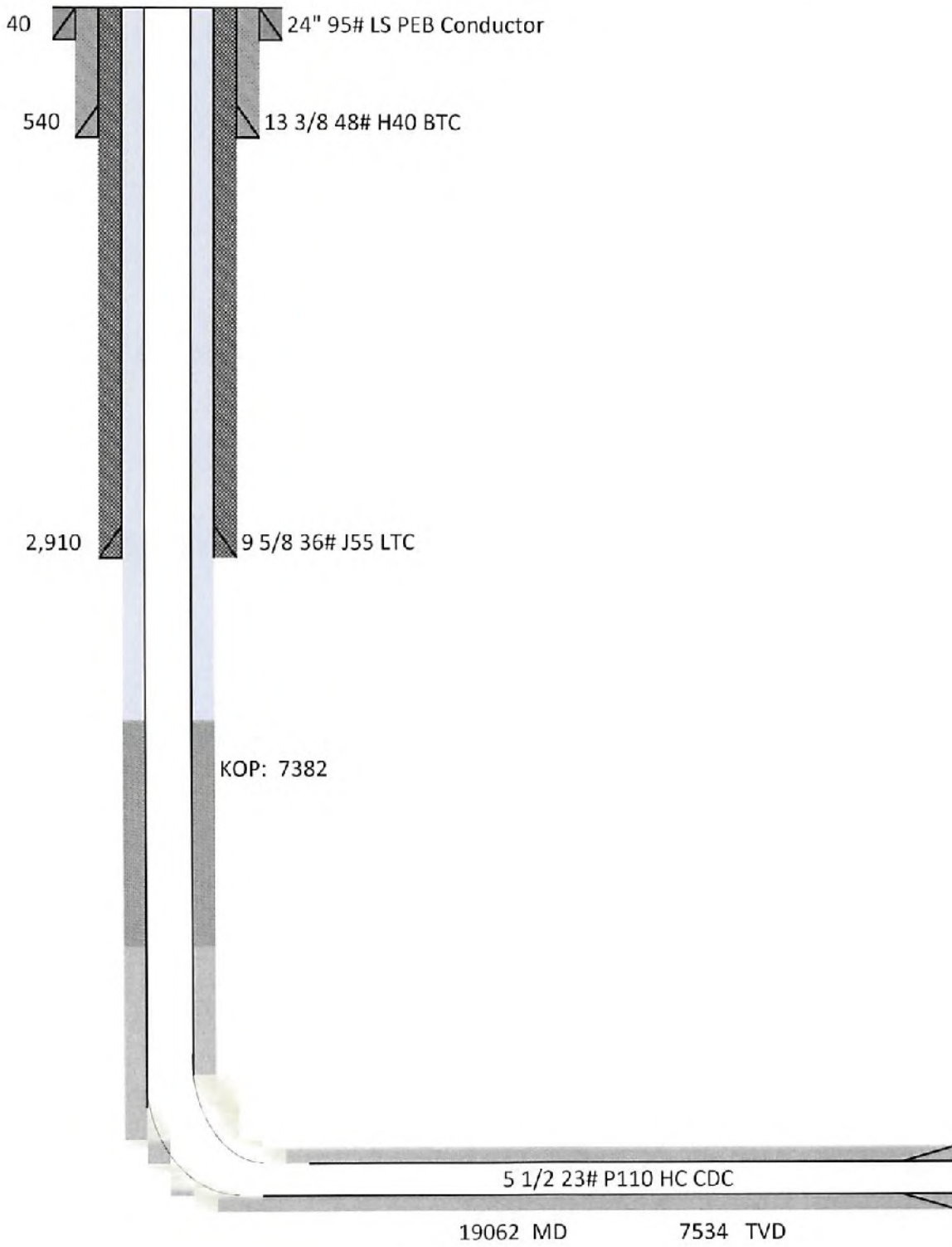
Flood Risk Assessment [N/A](#)

3D Flood Visualization [N/A](#)

Scale 1:9,028
 x: -80.317952 y: 39.432363

@BING Hybrid Map

Ice West Unit 2H
Harrison County, West Virginia



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Environmental Protection

WW-9
(4/16)

API Number 47 - _____ - _____
Operator's Well No. Ice West Unit 2H

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, 3412124088, 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

Subscribed and sworn before me this 2nd day of July, 20 19

Yvonne A. Dutches Notary Public

My commission expires July 9, 2023

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
Yvonne A. Dutches
421 Long Run Road
Office Post Creek, WV 26385
My Commission Expires July 09, 2023

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
Yvonne A. Dutches
421 Long Run Road
Post Creek, WV 26385
My Commission Expires July 09, 2023

JUL 08 2019

Form WW-9

Operator's Well No. Ice West Unit 2H

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: S. P. D. Warriner

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.

Title: OOB Inspector

Date: 6/22/2019

Field Reviewed? (X) Yes () No

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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
Cl-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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WV Department of
Environmental Protection

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)

SDW
6/27/2019

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.

Revised (3/15)

- 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 West Unit 2H

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

NAD 83 Coordinates

39.431025

-80.312813

RECEIVED
Office of Oil and Gas

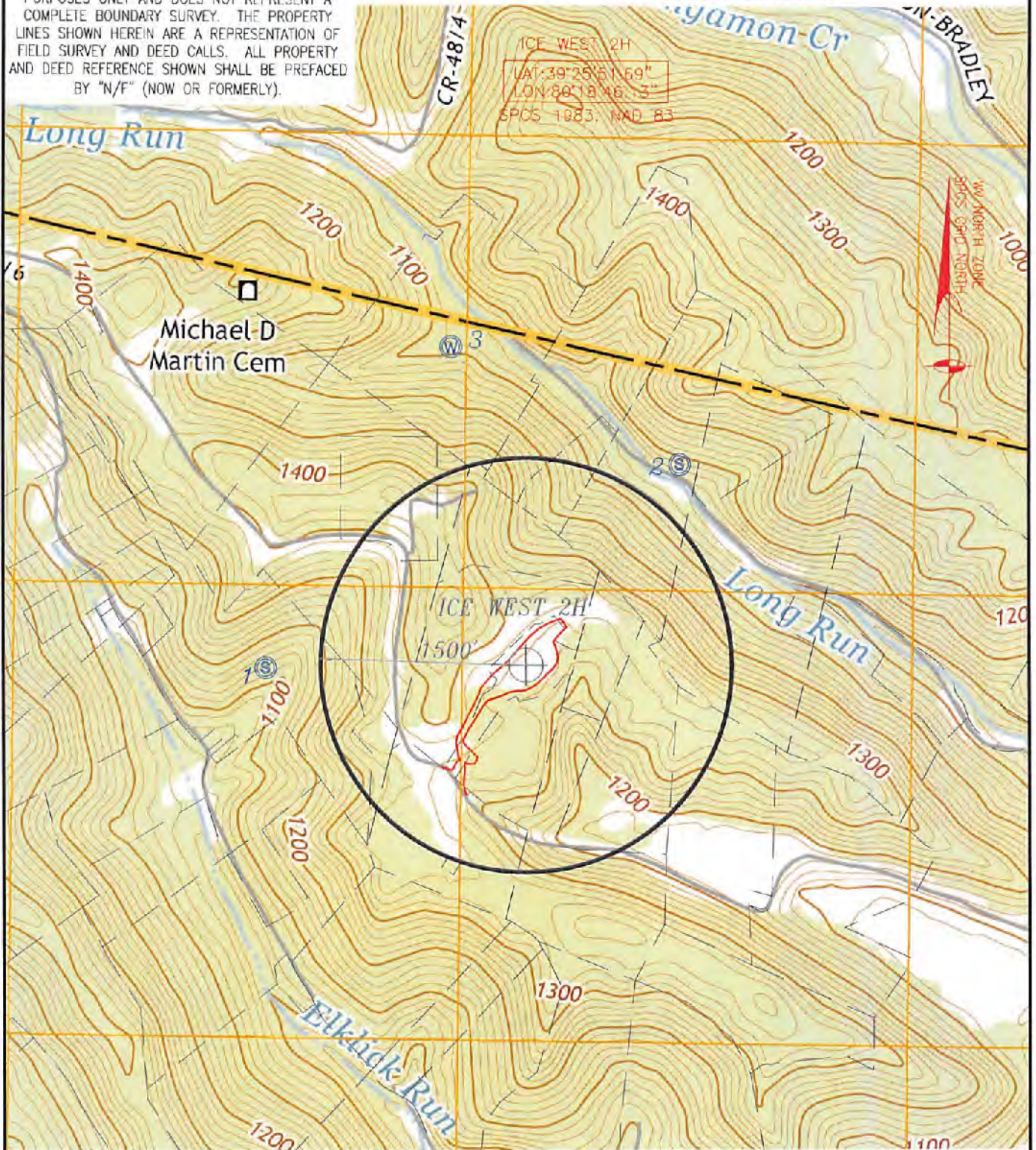
JUL 08 2019
WV Department of
Environmental Protection

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

- W WATER WELL
- S 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	1900'	S 89°34'38" W	Tax Map 5-147, Parcel 87
2	Faris W. & Margaret J. Coffindafer	24 Glenview Drive	Bridgeport	WV	26330	1836'	N 37°33'50" E	Tax Map 5-148, Parcel 4
3	Tina M. Veltri	48 White Oak Drive	Bridgeport	WV	26330	2376'	N 13°19'24" W	Tax Map 11-58, Parcel 37

ICE WEST UNIT 2H WATER OVERALL

CLAY DISTRICT, HARRISON COUNTY, WEST VIRGINIA | 2/27/2019 | JC2016-101 | 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

RECEIVED
Office of Oil and Gas
JUL 08 2019
WV Department of Environmental Protection

SCALE: 1" = 2400'

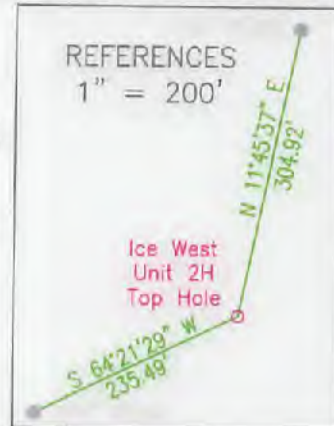
ICE WEST UNIT 2H

LATITUDE: 39°27'30" SCALE: 1" = 2000'
(USE FOR BOTH TOP AND BOTTOM HOLES)

NOTES ON SURVEY

1. NO DWELLINGS WITHIN 625' WERE FOUND.
2. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' WERE FOUND.
3. TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH WV NORTH ZONE NAD 83.
4. WELL ELEVATION ESTABLISHED BY RTK GPS NAVD 88.
5. 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.
6. WELLS SHOWN ARE TAKEN FROM RECORDS OF WVDEP AND SURVEYED LOCATIONS OF WELLS WITHIN 500' OF WELL BORE.

REFERENCES
1" = 200'



NORTH



LINE LEGEND

LEASE BOUNDARY	---
SURFACE BOUNDARY	- - - -
CREEK / STREAM	~ ~ ~ ~
ROADS	— — — —
PROPOSED LATERAL	— — — —
APPROXIMATE CURVE	- - - -
500' LATERAL OFFSET	- - - -
EXISTING GAS WELL	+

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: 340106.013	N: 338329.265	N: 341544.080
E: 1770356.295	E: 1769436.598	E: 1759181.321
UTM Zone 17 (SPCS83) Meters	UTM Zone 17 (SPCS83) Meters	UTM Zone 17 (SPCS83) Meters
N: 4364834.901	N: 4364288.919	N: 4365216.277
E: 559142.308	E: 558871.123	E: 555730.368
NAD 27	NAD 27	NAD 27
N 39.4309389	N 39.4260380	N 39.4346026
W 80.3130042	W 80.3162029	W 80.3526128



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

SHEET 1 OF 2

FILE #: JC2016-101
DRAWING #: ICE WEST UNIT 2H 2018
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1:2500
PROVEN SOURCE OF ELEVATION: RTK GPS

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: [Signature]
R.P.E.: _____ P.S.: 2165



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304



DATE: 7/22/2019
OPERATOR'S WELL #: ICE WEST UNIT 2H
API WELL #: 47 033 05965
STATE COUNTY PERMIT

Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow

WATERSHED: LOWER WEST FORK RIVER (0502000206) ELEVATION: 1,360' (EXISTING FINISH GRADE)
COUNTY/DISTRICT: HARRISON / CLAY QUADRANGLE: SHINNSTON 7.5'
SURFACE OWNER: XTO ENERGY INC ACREAGE: 7.23±
OIL & GAS ROYALTY OWNER: JANICE M. BRENNAN, ET AL ACREAGE: 755.2±

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 7,534' (TVD), 19,062' (TMD)
WELL OPERATOR: XTO ENERGY INC. DESIGNATED AGENT: GARY BEALL
Address: 190 THORN HILL ROAD Address: P.O. BOX 1008
City: WARRENDALE State: PA Zip Code: 15086 City: JANE LEW State: WV Zip Code: 26378

ICE WEST UNIT 2H

NOTES ON SURVEY

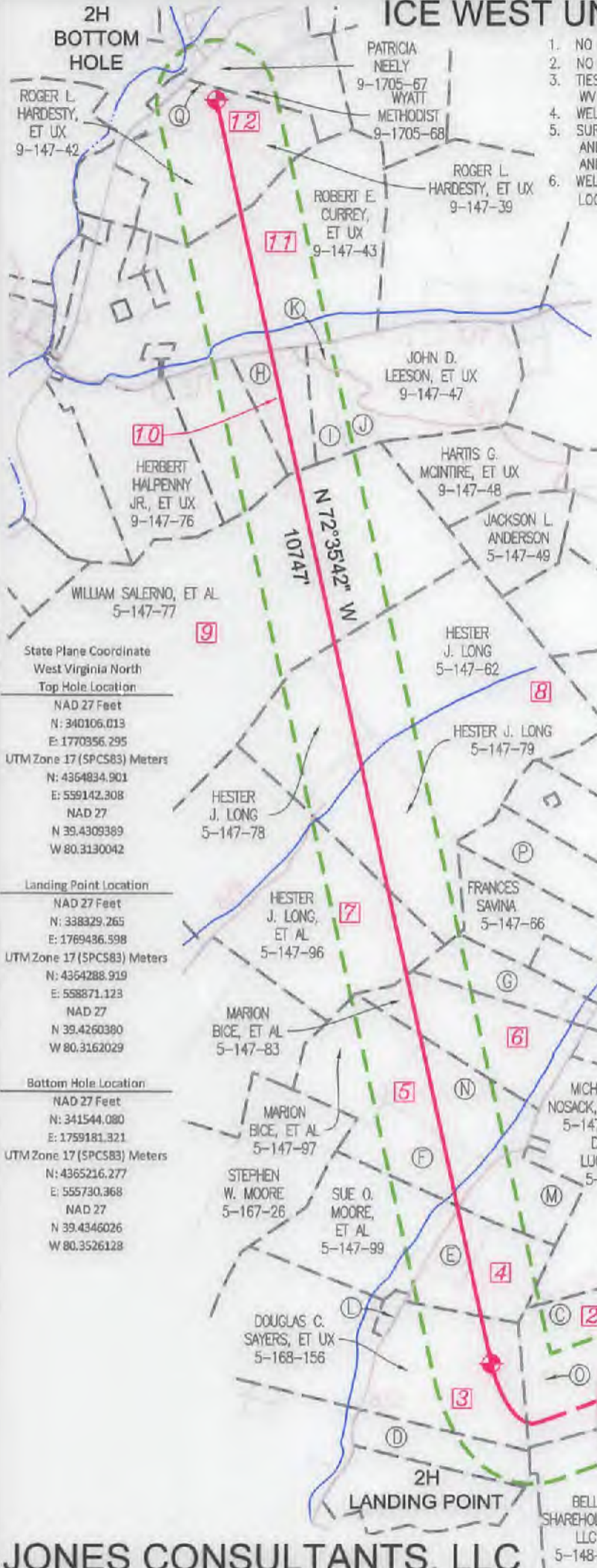
1. NO DWELLINGS WITHIN 625' WERE FOUND.
2. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' WERE FOUND.
3. TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH WY NORTH ZONE NAD 83.
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5. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR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

LINE LEGEND

LEASE BOUNDARY	
SURFACE BOUNDARY	
CREEK / STREAM	
ROADS	
PROPOSED LATERAL	
APPROXIMATE CURVE	
500' LATERAL OFFSET	

ICE WEST UNIT 2H		
LEASE	LESSOR	MINERAL ACREAGE
1)	JANICE M. BRENNAN, ET AL	39.50
2)	HOWARD FORTNEY, ET AL	21.00
3)	RUTH D. ROGERS	59.00
4)	RUTH D. ROGERS	45.00
5)	GEORGE B. BICE, ET UX	70.00
6)	FRED M. BICE, ET UX	22.00
7)	T.M. HELDRETH, ET AL	70.00
8)	SHINNSTON FIRST UNITED CHURCH, ET AL	109.00
9)	THOMAS M. DAVIS, ET AL	135.00
10)	JAMES L. HARDESTY, ET UX	30.00
11)	JAMES L. HARDESTY, ET UX	120.00
12)	HAYMAKER PROPERTIES, LP	34.74

	SURFACE OWNER	TAX PARCEL
A	XTO ENERGY INC	5-148-27
B	XTO ENERGY INC	5-148-27.1
C	JOHN E. NAV JR., ET UX	5-148-28
D	WILFORD G. GOFF	5-168-3
E	JOHN HENDERSON, ET UX	5-147-100
F	RICHARD M. SHANHOLTZ, ET AL	5-147-98
G	ROBERT MCINTIRE, ET UX	5-147-82
H	JENNIFER MCCROBY	9-147-61
I	WILLIAM M. MCCROBY	9-147-45.1
J	DARRELL G. MARTIN, ET UX	9-147-45
K	SHANNON H. HOUSE, ET AL	9-147-44
L	DOUGLAS WILFONG, ET UX	5-167-29
M	MARION BICE, ET AL	5-147-85
N	MARION BICE, ET AL	5-147-84
O	EQUITABLE GAS COMPANY	5-148-28.1
P	WILLIAM J. MCCULLOUGH, ET AL	5-147-55
Q	PATRICIA NEELY	9-147-38.1



State Plane Coordinate
West Virginia North
Top Hole Location
NAD 27 Feet
N: 340106.013
E: 1770356.295

UTM Zone 17 (SPCS83) Meters
N: 4364834.901
E: 559142.308
NAD 27
N 39.4309389
W 80.3130042

Landing Point Location
NAD 27 Feet
N: 338329.265
E: 1769486.598

UTM Zone 17 (SPCS83) Meters
N: 4354288.919
E: 558871.123
NAD 27
N 39.4260380
W 80.3162029

Bottom Hole Location
NAD 27 Feet
N: 341544.080
E: 1759181.321

UTM Zone 17 (SPCS83) Meters
N: 4365216.277
E: 555730.368
NAD 27
N 39.4346026
W 80.3526128



Handwritten signature: Ryan Jones

JONES CONSULTANTS, LLC

SURVEYING • MAPPING • LAND • GAS WELL • PIPELINE
2402 PENNSYLVANIA 66 DELMONT, PA 15628
(724) 757 - 2417 www.jonesconsultant.com



SUPPLEMENTAL SURFACE AND LESSOR EXHIBIT

ICE WEST UNIT 2H

Drawn By: JRV	Date: 7/22/19	CLAY DISTRICT HARRISON COUNTY, WEST VIRGINIA
Scale: 1" = 1200'	Sheet:	File No.:
AFE # DD.2009.03671	SHEET 2 OF 2	JC2016-101



WW-6A1
(5/13)

Operator's Well No. Ice West Unit 2H

**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
-------------------------	-----------------------	-----------------------	---------	-----------

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:

[Signature]

Its:

Regulatory Coordinator

Page 1 of _____

RECEIVED
Office of Oil and Gas

JUL 08 2019

WV Department of
Environmental Protection

4703306965

Ice West Unit 2H 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 RECEIVED Office of Oil and Gas JUL 08 2019	1/8 or greater WV Department of Environmental Protection
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
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

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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	Howard Fortney; Opal Fortney; G. Clarence Fortney; Grace Fortney, wife; E.M. Pigott, Guardian of Melvin Fortney; Stella Fortney; Daniel Fortney;	Hope Natural Gas Co. Hope Natural Gas Co to Consolidated Gas Supply - All Depths DB 903-179. Consolidated Gas Supply to Consolidated Gas Transmission - All Depths DB 1136-250. Consolidated Gas Transmission to CNG Transmission Corp - Name Change DB 51-795. CNG Transmission Corp to Eastern States O&G - All Depths DB 1276-1187. Eastern States O&G to EQT Production Company - Merger DB 59-854. EQT to XTO - 300 feet above the top of the Tully Formation to 100 feet below the top of the Onondaga Formation DB 1513-98.	1133-338	1/8 or greater ✓
2	Donald M. and Joyce Fortney	XTO Energy, Inc.	1488-494	1/8 or greater
2	James M. and Diana Fortney	XTO Energy, Inc.	1488-490	1/8 or greater
3	Ruth D. Rogers	George Jackson. George Jackson to David C. Nichols, POA - All Depths 1203-266. David C. Nichols POA to Antero Resources - 350' Top Tully to 100' below Onondaga DB 1486-511. Antero Resources to XTO - 100' above Rhinestreet to 100' below Marcellus DB 1535-456.	1129-869	1/8 or greater ✓
4	Ruth D. Rogers	Jackson L. Smith Enterprise, a West Virginia Corporation, d/b/a West Virginia Energies. West Virginia Energies to Sheldon & Assoc. - All Depths DB 1212-1013. 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 Onondaga Limestone to Basement DB 1429-148. Bluestone to Antero - Merger DB 35-1236. Antero to XTO - 100' above top of Rhinestreet to 100' below the Marcellus DB 1535-456.	1211-1003	1/8 or greater ✓
5	George B. Bice and Amanda Bice, wife	Charles W. Swisher. Charles Swisher to South Penn Oil - All Depths DB 118-116. South Penn Oil to Hope Nat. Gas - All Depths DB 240-210. Hope Nat. Gas merged Consolidated Gas Supply DB 903-179. Consolidated Gas Supply to Consolidated Gas Trans - All Depths 1136-250. Consolidated Gas Trans to CNG Transmission Corp - Name Change DB 51-795. CNG Trans. Corp to Eastern States O&G - All Depths DB 1276-1187. Eastern States O&G to EQT Production Co. - Name Change DB 59-854. EQT to XTO - 300' above top Tully to 100' below the Onondaga DB 1494-1094.	116-461	1/8 or greater ✓
6	Fred M. Bice and Gladys Bice, wife	Doran & Associates, Inc. Doran & Assoc. to Appalachian Energy - All Depths DB 1097-1137. Appalachian Energy to Pennstar Gas - Name Change 8/21/1992. Pennstar Gas to Pentex - Name Change 1/12/1993. Pentex to Linn Energy - All Depths DB 1370-374. Linn to XTO - All Depths DB 1419-959.	1090-85	1/8 or greater ✓
7	T.M. Heldreth and Vernie Heldreth, wife	Geo. H. Berry. Geo. H. Berry to South Penn Oil - All Depths - DB 111-463. South Penn Oil to Hope Nat. Gas - All Depths DB 240-210. Hope Nat. Gas merged Consolidated Gas Supply DB 903-179. Consolidated Gas Supply to Consolidated Gas Trans - All Depths 1136-250. Consolidated Gas Trans to CNG Transmission Corp - Name Change DB 51-795. CNG Trans. Corp to Eastern States O&G - All Depths DB 1276-1187. Eastern States O&G to EQT Production Co. - Name Change DB 59-854. EQT to XTO - 300' above top Tully to 100' below the Onondaga DB 1494-1094.	113-354	1/8 or greater ✓
7	Madonna Lee Matheny, a widow	XTO Energy Inc.	1514-116	1/8 or greater

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4703305965	8	Shinnston First United Methodist Church, by Drexel Westfall, Chairman of Trustees	Excel Development Corporation. Excel to Exploration Partners, Inc. - All Depths DB 1231-1141. Exploration Partners, Inc. to Exploration Partners, LLC - All Depths DB 1412-846. Exploration Partners, LLC to Linn Energy - All Formations above the shallowest depth of the uppermost member of the Onondaga Group, Including Marcellus DB 1413-652. Linn Energy to XTO - All Depths DB 1419-959.	1213-165	1/8 or greater
	8	Martha A. Moon, widow	Excel Development Corporation. Excel to Exploration Partners, Inc. - All Depths DB 1231-1141. Exploration Partners, Inc. to Exploration Partners, LLC - All Depths DB 1412-846. Exploration Partners, LLC to Linn Energy - All Formations above the shallowest depth of the uppermost member of the Onondaga Group, Including Marcellus DB 1413-652. Linn Energy to XTO - All Depths DB 1419-959.	1214-398	1/8 or greater
	8	Robert P. Summers and Janet N. Summers, wife	Excel Development Corporation. Excel to Exploration Partners, Inc. - All Depths DB 1231-1141. Exploration Partners, Inc. to Exploration Partners, LLC - All Depths DB 1412-846. Exploration Partners, LLC to Linn Energy - All Formations above the shallowest depth of the uppermost member of the Onondaga Group, Including Marcellus DB 1413-652. Linn Energy to XTO - All Depths DB 1419-959.	1214-398	1/8 or greater
	8	Patricia A. Smith and David D. Smith, husband	Excel Development Corporation. Excel to Exploration Partners, Inc. - All Depths DB 1231-1141. Exploration Partners, Inc. to Exploration Partners, LLC - All Depths DB 1412-846. Exploration Partners, LLC to Linn Energy - All Formations above the shallowest depth of the uppermost member of the Onondaga Group, Including Marcellus DB 1413-652. Linn Energy to XTO - All Depths DB 1419-959.	1214-414	1/8 or greater
	8	Gary L. Pigott and Patricia A. Pigott, wife	Excel Development Corporation. Excel to Exploration Partners, Inc. - All Depths DB 1231-1141. Exploration Partners, Inc. to Exploration Partners, LLC - All Depths DB 1412-846. Exploration Partners, LLC to Linn Energy - All Formations above the shallowest depth of the uppermost member of the Onondaga Group, Including Marcellus DB 1413-652. Linn Energy to XTO - All Depths DB 1419-959.	1214-382	1/8 or greater
	8	Jack P. Kidd and Justine F. Kidd, wife	Excel Development Corporation. Excel to Exploration Partners, Inc. - All Depths DB 1231-1141. Exploration Partners, Inc. to Exploration Partners, LLC - All Depths DB 1412-846. Exploration Partners, LLC to Linn Energy - All Formations above the shallowest depth of the uppermost member of the Onondaga Group, Including Marcellus DB 1413-652. Linn Energy to XTO - All Depths DB 1419-959.	1215-153	1/8 or greater
	8	Jerry J. Thayer and Charles O. Thayer, husband	Excel Development Corporation. Excel to Exploration Partners, Inc. - All Depths DB 1231-1141. Exploration Partners, Inc. to Exploration Partners, LLC - All Depths DB 1412-846. Exploration Partners, LLC to Linn Energy - All Formations above the shallowest depth of the uppermost member of the Onondaga Group, Including Marcellus DB 1413-652. Linn Energy to XTO - All Depths DB 1419-959.	1214-822	1/8 or greater
	8	Virginia M. Vance and Hoy W. Vance, husband	Excel Development Corporation. Excel to Exploration Partners, Inc. - All Depths DB 1231-1141. Exploration Partners, Inc. to Exploration Partners, LLC - All Depths DB 1412-846. Exploration Partners, LLC to Linn Energy - All Formations above the shallowest depth of the uppermost member of the Onondaga Group, Including Marcellus DB 1413-652. Linn Energy to XTO - All Depths DB 1419-959.	1215-157	1/8 or greater
	8	Ann Hobbs and Michael E. Hobbs, husband	Excel Development Corporation. Excel to Exploration Partners, Inc. - All Depths DB 1231-1141. Exploration Partners, Inc. to Exploration Partners, LLC - All Depths DB 1412-846. Exploration Partners, LLC to Linn Energy - All Formations above the shallowest depth of the uppermost member of the Onondaga Group, Including Marcellus DB 1413-652. Linn Energy to XTO - All Depths DB 1419-959.	1215-586	1/8 or greater

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8	David Reed and Shirley Reed, wife	Excel Development Corporation. Excel to Exploration Partners, Inc. - All Depths DB 1231-1141. Exploration Partners, Inc. to Exploration Partners, LLC - All Depths DB 1412-846. Exploration Partners, LLC to Linn Energy - All Formations above the shallowest depth of the uppermost member of the Onondaga Group, Including Marcellus DB 1413-652. Linn Energy to XTO - All Depths DB 1419-959.	1215-129	1/8 or greater
8	Terry Colie, single	Excel Development Corporation. Excel to Exploration Partners, Inc. - All Depths DB 1231-1141. Exploration Partners, Inc. to Exploration Partners, LLC - All Depths DB 1412-846. Exploration Partners, LLC to Linn Energy - All Formations above the shallowest depth of the uppermost member of the Onondaga Group, Including Marcellus DB 1413-652. Linn Energy to XTO - All Depths DB 1419-959.	1214-390	1/8 or greater
9	Thomas M. Davis, a married man dealing in his sole and separate property	XTO Energy, Inc.	1513-592	1/8 or greater
9	Marthan D. Stephenson, a married woman dealing in her sole and separate property	XTO Energy, Inc.	1515-1036	1/8 or greater
9	James Carney Davis and Mary Wade Davis, wife	James F. Scott. James Scott to Scott O&G Co. - All Depths DB 1122-118. Scott O&G Co. to Convest Energy - All Depths DB 1131-130. Convest Energy to Convest 1982-B Income Program et al - All Depths DB 1131-561. Convest 1982-B Income et al to Convest Production Co. - All Depths DB 1151-943. Convest Production Co. to BNG - All Depths DB 1179-1039. BNG to Stonewall Gas Co. - All Depths DB 1257-413. Stonewall Gas Co merged Dominion E&P - DB 59-1086. Dominion et al to Antero Resources - 100' above top of Rhinestreet to 500' below top of Helderberg DB 1423-1068. Antero Resources to XTO - 100' above top of Rhinestreet to 100' below base Marcellus DB 1480-463.	1099-17	1/8 or greater
9	Barbara Joanne Ash and Claude M. Ash, husband	XTO Energy, Inc.	1502-1215	1/8 or greater
9	Joanne Davis Ash and C.M. Ash, husband	James F. Scott. James Scott to Scott O&G Co. - All Depths DB 1122-118. Scott O&G Co. to Convest Energy - All Depths DB 1131-88. Convest Energy to Convest 1982-B Income Program et al - All Depths DB 1131-564. Convest 1982-B Income et al to Convest Production Co. - All Depths DB 1151-943. Convest Production Co. to BNG - All Depths DB 1179-1039. BNG to Stonewall Gas Co. - All Depths DB 1257-413. Stonewall Gas Co merged Dominion E&P - DB 59-1086. Dominion et al to Antero Resources - 100' above top of Rhinestreet to 500' below top of Helderberg DB 1423-1068. Antero Resources to XTO - 100' above top of Rhinestreet to 100' below base Marcellus DB 1480-463.	1130-399	1/8 or greater
9	Robert Clement Davis, single	James F. Scott. James Scott to Scott O&G Co. - All Depths DB 1122-118. Scott O&G Co. to Convest Energy - All Depths DB 1131-88. Convest Energy to Convest 1982-B Income Program et al - All Depths DB 1131-564. Convest 1982-B Income et al to Convest Production Co. - All Depths DB 1151-943. Convest Production Co. to BNG - All Depths DB 1179-1039. BNG to Stonewall Gas Co. - All Depths DB 1257-413. Stonewall Gas Co merged Dominion E&P - DB 59-1086. Dominion et al to Antero Resources - 100' above top of Rhinestreet to 500' below top of Helderberg DB 1423-1068. Antero Resources to XTO - 100' above top of Rhinestreet to 100' below base Marcellus DB 1480-463.	1145-492	1/8 or greater
9	Albert Berkeley Davis and Nellie Mae Davis, wife	James F. Scott. James Scott to Scott O&G Co. - All Depths DB 1122-118. Scott O&G Co. to Convest Energy - All Depths DB 1131-130. Convest Energy to Convest 1982-B Income Program et al - All Depths DB 1131-561. Convest 1982-B Income et al to Convest Production Co. - All Depths DB 1151-943. Convest Production Co. to BNG - All Depths DB 1179-1039. BNG to Stonewall Gas Co. - All Depths DB 1257-413. Stonewall Gas Co merged Dominion E&P - DB 59-1086. Dominion et al to Antero Resources - 100' above top of Rhinestreet to 500' below top of Helderberg DB 1423-1068. Antero Resources to XTO - 100' above top of Rhinestreet to 100' below base Marcellus DB 1480-463.	1099-14	1/8 or greater
9	George E. Riser, by his Attorney-in-Fact, Carolyn L. O'Connor, and Ella L. Riser, wife	XTO Energy, Inc.	1503-416	1/8 or greater

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47 03305965	9	Charles W. Riser and Esther E. Riser, wife	XTO Energy, Inc.	1502-473	1/8 or greater
	9	Ronald D. Riser and Wilma B. Riser, wife	XTO Energy, Inc.	1502-477	1/8 or greater
	9	Frances E. Floyd, widow	James F. Scott. James Scott to Scott O&G Co. - All Depths DB 1122-118. Scott O&G Co. to Convest Energy - All Depths DB 1131-130; DB 1131-88. Convest Energy to Convest 1982-B Income Program et al - All Depths DB 1131-561. Convest 1982-B Income et al to Convest Production Co. - All Depths DB 1151-943. Convest Production Co. to BNG - All Depths DB 1179-1039. BNG to Stonewall Gas Co. - All Depths DB 1257-413. Stonewall Gas Co merged Dominion E&P - DB 59-1086. Dominion et al to Antero Resources - 100' above top of Rhinestreet to 500' below top of Helderberg DB 1423-1068. Antero Resources to XTO - 100' above top of Rhinestreet to 100' below base Marcellus DB 1480-463.	1099-23	1/8 or greater
	9	Betty Lee Hanes a/k/a Betty L. Hanes, a widow	XTO Energy, Inc.	1507-357	1/8 or greater
	9	Marie D. Crim, widow	James F. Scott. James Scott to Scott O&G Co. - All Depths DB 1122-118. Scott O&G Co. to Convest Energy - All Depths DB 1131-130. Convest Energy to Convest 1982-B Income Program et al - All Depths DB 1131-561. Convest 1982-B Income et al to Convest Production Co. - All Depths DB 1151-943. Convest Production Co. to BNG - All Depths DB 1179-1039. BNG to Stonewall Gas Co. - All Depths DB 1257-413. Stonewall Gas Co merged Dominion E&P - DB 59-1086. Dominion et al to Antero Resources - 100' above top of Rhinestreet to 500' below top of Helderberg DB 1423-1068. Antero Resources to XTO - 100' above top of Rhinestreet to 100' below base Marcellus DB 1480-463.	1099-13	1/8 or greater
	9	Connie Sue Perkins, widow	XTO Energy, Inc.	1501-762	1/8 or greater
	9	Georgia V. Carpenter, widow	James F. Scott. James Scott to Scott O&G Co. - All Depths DB 1122-118. Scott O&G Co. to Convest Energy - All Depths DB 1131-130. Convest Energy to Convest 1982-B Income Program et al - All Depths DB 1131-561. Convest 1982-B Income et al to Convest Production Co. - All Depths DB 1151-943. Convest Production Co. to BNG - All Depths DB 1179-1039. BNG to Stonewall Gas Co. - All Depths DB 1257-413. Stonewall Gas Co merged Dominion E&P - DB 59-1086. Dominion et al to Antero Resources - 100' above top of Rhinestreet to 500' below top of Helderberg DB 1423-1068. Antero Resources to XTO - 100' above top of Rhinestreet to 100' below base Marcellus DB 1480-463.	1099-12	1/8 or greater
	9	Mary M. Book and Donald W. Book, husband	XTO Energy, Inc.	1502-469	1/8 or greater
	9	James E. Drummond	James F. Scott. James Scott to Scott O&G Co. - All Depths DB 1122-118. Scott O&G Co. to Convest Energy - All Depths DB 1131-130. Convest Energy to Convest 1982-B Income Program et al - All Depths DB 1131-561. Convest 1982-B Income et al to Convest Production Co. - All Depths DB 1151-943. Convest Production Co. to BNG - All Depths DB 1179-1039. BNG to Stonewall Gas Co. - All Depths DB 1257-413. Stonewall Gas Co merged Dominion E&P - DB 59-1086. Dominion et al to Antero Resources - 100' above top of Rhinestreet to 500' below top of Helderberg DB 1423-1068. Antero Resources to XTO - 100' above top of Rhinestreet to 100' below base Marcellus DB 1480-463.	1099-22	1/8 or greater
	9	Margaret Phyllis Rumer a/k/a Margaret P. Rumer and Douglass W. Rumer, husband	XTO Energy, Inc.	1514-1010	1/8 or greater
9	Donna Rose Osbourn a/k/a Donna R. Osbourn and Roger A. Osbourne, husband	XTO Energy, Inc.	1514-741	1/8 or greater	

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9	Charles M. Davis and Helen J. Davis, wife	James F. Scott. James Scott to Scott O&G Co. - All Depths DB 1122-118. Scott O&G Co. to Convest Energy - All Depths DB 1131-130. Convest Energy to Convest 1982-B Income Program et al - All Depths DB 1131-561. Convest 1982-B Income et al to Convest Production Co. - All Depths DB 1151-943. Convest Production Co. to BNG - All Depths DB 1179-1039. BNG to Stonewall Gas Co. - All Depths DB 1257-413. Stonewall Gas Co merged Dominion E&P - DB 59-1086. Dominion et al to Antero Resources - 100' above top of Rhinestreet to 500' below top of Helderberg DB 1423-1068. Antero Resources to XTO - 100' above top of Rhinestreet to 100' below base Marcellus DB 1480-463.	1099-15	1/8 or greater
9	Meghann Jo Martin a/k/a Meghann Jo Meluzio and Jeremy Martin, husband	XTO Energy, Inc.	1500-265	1/8 or greater
9	James Milton Davis, Jr., single	XTO Energy, Inc.	1500-273	1/8 or greater
9	Amy Lauren Meluzio, single	XTO Energy, Inc.	1500-269	1/8 or greater
9	Carol M. Ash a/k/a Carol Mae Hebb Davis, a/k/a Carol M. Davis, a widow	XTO Energy, Inc.	1515-735	1/8 or greater
9	Irene Davis	James F. Scott. James Scott to Scott O&G Co. - All Depths DB 1122-118. Scott O&G Co. to Convest Energy - All Depths DB 1131-130. Convest Energy to Convest 1982-B Income Program et al - All Depths DB 1131-561 Convest 1982-B Income et al to Convest Production Co. - All Depths DB 1151-943. Convest Production Co. to BNG - All Depths DB 1179-1039. BNG to Stonewall Gas Co. - All Depths DB 1257-413. Stonewall Gas Co merged Dominion E&P - DB 59-1086. Dominion et al to Antero Resources - 100' above top of Rhinestreet to 500' below top of Helderberg DB 1423-1068. Antero Resources to XTO - 100' above top of Rhinestreet to 100' below base Marcellus DB 1480-463.	1099-16	1/8 or greater
9	James M. Davis and Irene H. Davis, wife	James F. Scott. James Scott to Scott O&G Co. - All Depths DB 1122-118. Scott O&G Co. to Convest Energy - All Depths DB 1131-130. Convest Energy to Convest 1982-B Income Program et al - All Depths DB 1131-561. Convest 1982-B Income et al to Convest Production Co. - All Depths DB 1151-943. Convest Production Co. to BNG - All Depths DB 1179-1039. BNG to Stonewall Gas Co. - All Depths DB 1257-413. Stonewall Gas Co merged Dominion E&P - DB 59-1086. Dominion et al to Antero Resources - 100' above top of Rhinestreet to 500' below top of Helderberg DB 1423-1068. Antero Resources to XTO - 100' above top of Rhinestreet to 100' below base Marcellus DB 1480-463.	1099-18	1/8 or greater
9	Laura E. Davis	James F. Scott. James Scott to Scott O&G Co. - All Depths DB 1122-118. Scott O&G Co. to Convest Energy - All Depths DB 1131-130. Convest Energy to Convest 1982-B Income Program et al - All Depths DB 1131-561. Convest 1982-B Income et al to Convest Production Co. - All Depths DB 1151-943. Convest Production Co. to BNG - All Depths DB 1179-1039. BNG to Stonewall Gas Co. - All Depths DB 1257-413. Stonewall Gas Co merged Dominion E&P - DB 59-1086. Dominion et al to Antero Resources - 100' above top of Rhinestreet to 500' below top of Helderberg DB 1423-1068. Antero Resources to XTO - 100' above top of Rhinestreet to 100' below base Marcellus DB 1480-463.	1099-19	1/8 or greater
9	Martha Blagg and Joseph Blagg, husband	James F. Scott. James Scott to Scott O&G Co. - All Depths DB 1122-118. Scott O&G Co. to Convest Energy - All Depths DB 1131-130. Convest Energy to Convest 1982-B Income Program et al - All Depths DB 1131-561. Convest 1982-B Income et al to Convest Production Co. - All Depths DB 1151-943. Convest Production Co. to BNG - All Depths DB 1179-1039. BNG to Stonewall Gas Co. - All Depths DB 1257-413. Stonewall Gas Co merged Dominion E&P - DB 59-1086. Dominion et al to Antero Resources - 100' above top of Rhinestreet to 500' below top of Helderberg DB 1423-1068. Antero Resources to XTO - 100' above top of Rhinestreet to 100' below base Marcellus DB 1480-463.	1099-11	1/8 or greater
9	Carol Sue Smith a/k/a Carol Sue Edwards a widow	XTO Energy, Inc.	1506-717	1/8 or greater

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9	Penelope S. Barcus a/k/a Penelope Lou Smith a/k/a Penelope L. Barcus a/k/a Penelope Lou Barcus and James William Barcus, husband	XTO Energy, Inc.	1507-376	1/8 or greater
9	Gretchen K. Smith, a/k/a Gretchen Knox, a widow	XTO Energy, Inc.	1513-1265	1/8 or greater
9	Virginia S. Warder Trust Dated 12/12/1991, by Paul S. Warder, acting as Trustee	XTO Energy, Inc.	1513-586	1/8 or greater
9	Prudence Ann Newton, single	XTO Energy, Inc.	1514-267	1/8 or greater
9	Allison R. Smith, single	XTO Energy, Inc.	1515-4040	1/8 or greater
9	Cynthia B. Noe, single	XTO Energy, Inc.	1517-291	1/8 or greater
9	Matthew P. Smith, married man dealing in his sole and separate property	XTO Energy, Inc.	1521-856	1/8 or greater
9	Mary Elizabeth Davis	James F. Scott. James Scott to Scott O&G Co. - All Depths DB 1122-118. Scott O&G Co. to Convest Energy - All Depths DB 1131-130. Convest Energy to Convest 1982-B Income Program et al - All Depths DB 1131-561. Convest 1982-B Income et al to Convest Production Co. - All Depths DB 1151-943. Convest Production Co. to BNG - All Depths DB 1179-1039. BNG to Stonewall Gas Co. - All Depths DB 1257-413. Stonewall Gas Co merged Dominion E&P - DB 59-1086. Dominion et al to Antero Resources - 100' above top of Rhinestreet to 500' below top of Helderberg DB 1423-1068. Antero Resources to XTO - 100' above top of Rhinestreet to 100' below base Marcellus DB 1480-463.	1099-20	1/8 or greater
9	Linda L. Ash and Raymond F. Ash, Sr., husband	XTO Energy, Inc.	1502-645	1/8 or greater
9	Thomas R. Mason, married man, dealing in his sole and separate property	XTO Energy, Inc.	1503-9	1/8 or greater
9	Donna Lou Mason	James F. Scott. James Scott to Scott O&G Co. - All Depths DB 1122-118. Scott O&G Co. to Convest Energy - All Depths DB 1131-130. Convest Energy to Convest 1982-B Income Program et al - All Depths DB 1131-561. Convest 1982-B Income et al to Convest Production Co. - All Depths DB 1151-943. Convest Production Co. to BNG - All Depths DB 1179-1039. BNG to Stonewall Gas Co. - All Depths DB 1257-413. Stonewall Gas Co merged Dominion E&P - DB 59-1086. Dominion et al to Antero Resources - 100' above top of Rhinestreet to 500' below top of Helderberg DB 1423-1068. Antero Resources to XTO - 100' above top of Rhinestreet to 100' below base Marcellus DB 1478-1211.	1099-24	1/8 or greater
10	James L. Hardesty and Amanda C. Hardesty, wife	XTO Energy, Inc.	358-275	1/8 or greater
10	Barbara Ann Efaw, a/k/a Barbara A. Efaw and Dennis L. Efaw, husband	XTO Energy, Inc.	1504-531	1/8 or greater
10	Sandra Darlene Akers, a/k/a Sandra D. Akers and James R. Akers, husband	XTO Energy, Inc.	1504-527	1/8 or greater
11	James L. Hardesty and Amanda C. Hardesty, wife	XTO Energy, Inc.	119-266	1/8 or greater
12	Haymaker Properties, LP, a Texas corporation	XTO Energy Inc.	1609-627	1/8 or greater

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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 West Unit 2H

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 8/6, 8/2, & 3/7, in the location of our planned well-bore for the Ice West Unit 2H.

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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(1/12)

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

Date of Notice Certification: 7/2/19

API No. 47: _____
Operator's Well No. Ice West Unit 2H
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>559142 308</u>
County: <u>Harrison</u>		Northing: <u>4364834 901</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>		

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.

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: *PLEASE CHECK ALL THAT APPLY <input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED <input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED <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 <input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH) <input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION <input checked="" type="checkbox"/> 5. PUBLIC NOTICE <input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION	OOG OFFICE USE ONLY <input type="checkbox"/> RECEIVED/ NOT REQUIRED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED/ NOT REQUIRED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED
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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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Office of Oil and Gas

JUL 08 2019

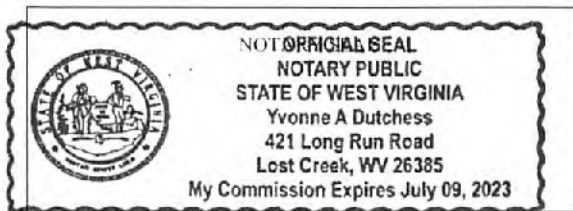
WV Department of
Environmental Protection

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>304-884-8000</u>	Email:	<u></u>



Subscribed and sworn before me this 2nd day of July 2019
Yvonne A. Dutchess 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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Office of Oil and Gas

JUL 08 2019

WV Department of
Environmental Protection

WW-6A
(9-13)

API NO. 47- _____
OPERATOR WELL NO. Ice West Unit 2H
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: 7/2/19 **Date Permit Application Filed:** 7/2/19

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

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Office of Oil and Gas

JUL 08 2019

WV Department of
Environmental Protection

WW-6A
(8-13)

API NO. 47- _____ - _____
OPERATOR WELL NO. Ice West Unit 2H
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.e, 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

WW-6A
(8-13)

API NO. 47-_____ - _____
OPERATOR WELL NO. Ice West Unit 2H
Well Pad Name: Ice Pad

examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

Water Well Testing:

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

Water Testing Laboratories:

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

Written Comment:

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

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. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

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Office of Oil and Gas

JUL 08 2019

WV Department of
Environmental Protection

WW-6A
(8-13)

API NO. 47- _____ - _____
OPERATOR WELL NO. Ice West Unit 2H
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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WV Department of
Environmental Protection

WW-6A
(8-13)

API NO. 47- _____ - _____
OPERATOR WELL NO. Ice West Unit 2H
Well Pad Name: Ice Pad

Notice is hereby given by:

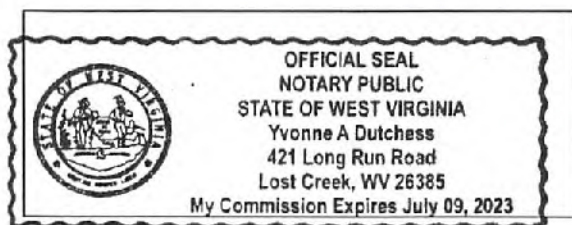
Well Operator: XTO Energy, Inc.
Telephone: 304-884-6000
Email: _____

Address: PO Box 1008
Jane Lew, WV 26376
Facsimile: 304-884-6809

By: Tim Sands Tim Sar

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 2nd day of July 2019.
Yvonne A. Dutchess Notary Public
My Commission Expires July 9, 2023

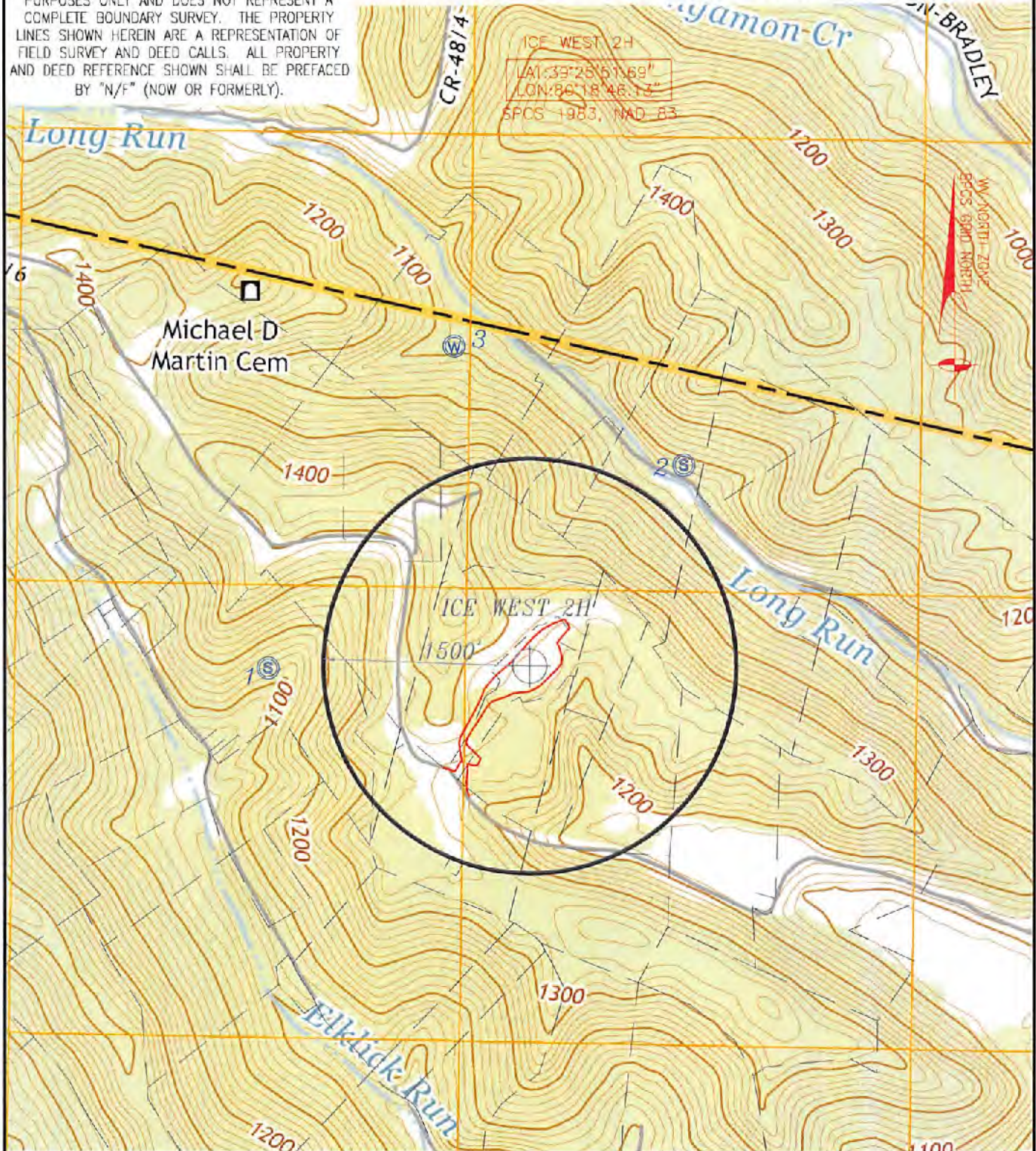
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Office of Oil and Gas
JUL 08 2019
WV Department of
Environmental Protection

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

- W WATER WELL
- S 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	1900'	S 89°34'38" W	Tax Map 5-147, Parcel 87
2	Faris W. & Margaret J. Coffindafer	24 Glenview Drive	Bridgeport	WV	26330	1836'	N 37°33'50" E	Tax Map 5-148, Parcel 4
3	Tina M. Veltri	48 White Oak Drive	Bridgeport	WV	26330	2376'	N 13°19'24" W	Tax Map 11-58, Parcel 37

ICE WEST UNIT 2H WATER OVERALL

CLAY DISTRICT, HARRISON COUNTY, WEST VIRGINIA 2/27/2019 JC2016-101 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'



RECEIVED
 DEPARTMENT OF Oil and Gas
 FEB 28 2019
 WV Department of Environmental Protection
 190 THORN HILL ROAD
 WARRENDALE, PA 15086

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF ENTRY FOR PLAT SURVEY

Notice Time Requirement: Notice shall be provided at least **SEVEN (7)** days but no more than **FORTY-FIVE (45)** days prior to entry

Date of Notice: 12/20/16 **Date of Planned Entry:** _____

Delivery method pursuant to West Virginia Code § 22-6A-10a

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

Pursuant to West Virginia Code § 22-6A-10(a), Prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

Notice is hereby provided to:

SURFACE OWNER(s)
 Name: XTO Energy Inc.
 Address: PO Box 1008
Jane Lew, WV 26378
 Name: Bell Shareholders LLC
 Address: 200 Chapel Brook Dr.
Brookport, WV 26330
 Name: _____
 Address: _____

COAL OWNER OR LESSEE
 Name: See attached
 Address: _____

MINERAL OWNER(s)
 Name: See attached
 Address: _____

*please attach additional forms if necessary

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>39.431170, -80.312397</u>
County: <u>Harrison</u>	Public Road Access: <u>CR 8/6 (Nutter Run)</u>
District: <u>Clay</u>	Watershed: <u>Lower West Fork River</u>
Quadrangle: <u>Shinnston</u>	Generally used farm name: <u>XTO Energy Inc.</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production 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). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: <u>XTO Energy Inc.</u>	Address: <u>PO Box 1008</u>
Telephone: <u>304-884-6000</u>	<u>Jane Lew, WV 26378</u>
Email: _____	Facsimile: <u>304-884-6809</u>

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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WV Department of
Environmental Protection

Surface Owner

XTO Energy Inc.

PO Box 1008

Jane Lew, WV 26378

Bell Shareholders LLC

200 Chapel Brook Dr.

Bridgeport, WV 26330

Coal Owner or Lessee

Bell Shareholders LLC

200 Chapel Brook Dr.

Bridgeport, WV 26330

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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Office of Oil and Gas

JUL 08 2019

WV Department of
Environmental Protection

WW-6A5
(1/12)

Operator Well No. Ice West Unit 2H

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: 7/2/19 **Date Permit Application Filed:** 7/2/19

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

CERTIFIED MAIL HAND
RETURN RECEIPT REQUESTED 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>559142.308</u>
County:	<u>Harrison</u>		Northing:	<u>4364834.901</u>
District:	<u>Clay</u>	Public Road Access:	<u>CR B/6 (Nutter Run)</u>	
Quadrangle:	<u>Shinnston</u>	Generally used farm name:	<u>XTO Energy Inc.</u>	
Watershed:	<u>Lower West Fork River (0502000205)</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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JUL 08 2019

WV Department of
Environmental Protection



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways1900 Kanawha Boulevard East • Building Five • Room 110
Charleston, West Virginia 25305-0430 • (304) 558-3505Byrd E. White, III
Secretary of Transportation

July 10, 2019

Jimmy Wriston, P. E.
Deputy Secretary/
Acting CommissionerJames A. Martin, Chief
Office of Oil and Gas
Department of Environmental Protection
601 57th Street, SE
Charleston, WV 25304Subject: DOH Permit for the Ice Pad, Harrison County
Ice West Unit 2H Well site

Dear Mr. Martin,

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

This operator is in compliance with §22-6A-20 of the WV Code. 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,

Handwritten signature of Gary K. Clayton in blue ink.

Gary K. Clayton, P.E.
Regional Maintenance Engineer
Central Office O&G CoordinatorCc: Tim Sands
XTO Energy, Inc.
CH, OM, D-6
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-3	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-propenamides, sodium salt	25987-30-6	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	0.00952	
			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	

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ICE PAD AS-BUILT

CR 8/6, CLAY DISTRICT, HARRISON COUNTY, WEST VIRGINIA



SITE INFO

SITE DESCRIPTION

LOCATED SOUTHWEST OF COUNTY ROUTE 44/BRAYS RUN ROAD
 TOTAL AREA OF SITE - 10.44 ACRES
 AREA OF ACCESS ROAD - 0.51 ACRES
 AREA OF PAD - 3.48 ACRES
 AREA OF SITE TO UNDER 80 ESCAMBARION - 6.61 ACRES

AREA OF DISTURBANCE PER PARCEL:
 XTO ENERGY - 1642 ACRES

PRE-CONSTRUCTION RUNOFF VOLUME - 38,103 CF
 POST-CONSTRUCTION RUNOFF VOLUME - 35,988 CF

SCHEDULE OF MAJOR CONSTRUCTION
 CONSTRUCTION - SUMMER 2017
 COMPLETION - SUMMER 2018

RECEIVING STREAM & SURFACE WATER
 ON-SITE DRAINAGE FLOWS TO GUNT TO BINGHAM CREEK

SHEET NO.	TITLE
1	TITLE SHEET
2	AS-BUILT DRAWING - PLAN
3	AS-BUILT DRAWING - PROFILE

**WVDEP OOG
ACCEPTED AS-BUILT**

VSL 8/8/2019

PREPARED FOR:

XTO ENERGY, INC.
 480 INDUSTRIAL PARK ROAD
 JANE LEW, WV 26378
 TELEPHONE: (304) 884-6040

PREPARED BY:

Morris Knowles & Associates, Inc.
 Consulting Engineers & Land Surveyors
 443 ATHENA DRIVE DELMONT, PA 15626
 TELEPHONE: (724) 468-4622 FAX: (724) 468-8940

Charles F. Hammon August 6, 2019
 CHARLES F. HAMMON, REGISTERED PROFESSIONAL ENGINEER (DATE)

NOTES:

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- THE LOCATION OF EXISTING UTILITIES WERE TAKEN FROM RECORDS AND MARKING PROVIDED BY OWNER AND UNDERGROUND UTILITIES. THE LOCATIONS SHOWN MAY BE APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS, DEPTHS AND BOUNDS OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL EXERCISE CARE TO AVOID DAMAGE TO ALL EXISTING UTILITIES.



REVISION BY:	DATE:	DESCRIPTION:

DESIGNED BY:	SCALE:
DRY: MM DRAWN BY: JSC CHECKED BY: JSC PROJECT NO.: 18-17 DRAWING NO.: 18-17-000	N/A

MORRIS KNOWLES & ASSOCIATES, INC.
 Consulting Engineers & Land Surveyors
 443 ATHENA DRIVE DELMONT, PA 15626
 TELEPHONE: (724) 468-4622 FAX: (724) 468-8940

ICE PAD prepared for
XTO ENERGY, INC.
 CLAY DISTRICT, HARRISON COUNTY, WEST VIRGINIA
TITLE SHEET

DRAWING NO.
9XTCICE
 SHEET NO.
1

