



west virginia department of environmental protection

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

Jim Justice, Governor  
Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

PERMIT MODIFICATION APPROVAL  
Horizontal 6A / New Drill

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


Re: Permit Modification Approval for WORTHINGTON D 10H  
47-049-02420-00-00

Shorten the horizontal well bore length

XTO ENERGY, INC.

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before 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: WORTHINGTON D 10H  
Farm Name: XTO ENERGY INC  
U.S. WELL NUMBER: 47-049-02420-00-00  
Horizontal 6A / New Drill  
Date Issued: 5/18/2017

Promoting a healthy environment.

05/19/2017

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

1) Well Operator: XTO Energy Inc. 494487940 Marion Lincoln Shinnston  
Operator ID County District Quadrangle

2) Operator's Well Number: Worthington D 10H Well Pad Name: Worthington

3) Farm Name/Surface Owner: XTO Energy Inc. Public Road Access: County Route 44 (Gray's Run Rd.)

4) Elevation, current ground: 1,194' Elevation, proposed post-construction: 1,194'

5) Well Type (a) Gas  Oil \_\_\_\_\_ Underground Storage \_\_\_\_\_  
Other \_\_\_\_\_

(b) If Gas Shallow  Deep \_\_\_\_\_  
Horizontal

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Target Formation: Marcellus, Depth 7,550', Anticipated Thickness: 150', Associated pressure: 4,650 psi

8) Proposed Total Vertical Depth: 7,550'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 17,428'

11) Proposed Horizontal Leg Length: 8,567'

12) Approximate Fresh Water Strata Depths: 159', 210', 535'

13) Method to Determine Fresh Water Depths: Offsetting Reports

14) Approximate Saltwater Depths: None Listed

15) Approximate Coal Seam Depths: 84', 364', 484', 535'

16) Approximate Depth to Possible Void (coal mine, karst, other): 535'

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

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

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18)

**CASING AND TUBING PROGRAM**

TYPE	Size (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	PE&B	95	40	40	59 cuft / CTS
Fresh Water	13.375	New	H40	48	585	585	528 cuft / CTS
Coal							
Intermediate	9.625	New	J55	36	3,200	3,200	1,303 cuft / CTS
Production	5.5	New	J55	20	17,428	17,428	3,797 Lead / 4,680 Tail
Tubing							
Liners							

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	28	.375	940	40	Standard	1.19
Fresh Water	13.375	17.5	.33	1730	480	Standard	1.19
Coal							
Intermediate	9.625	12.25	.352	3520	2600	Standard	1.19
Production	5.5	8.5	.361	12640	6290	SC 50 P102 (Class H TR)	1.13 / 1.18
Tubing							
Liners							

**PACKERS**

Kind:				
Sizes:				
Depths Set:				

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

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

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

1. Acid Stage - Typically 1500 gallons of 7.5% hydrochloric acid to clear the perforation path in the wellbore.  
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): 7.8+/-

22) Area to be disturbed for well pad only, less access road (acres): 2.6+/-

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 3rd joint from shoe to 1,000' above the kick-off point

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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

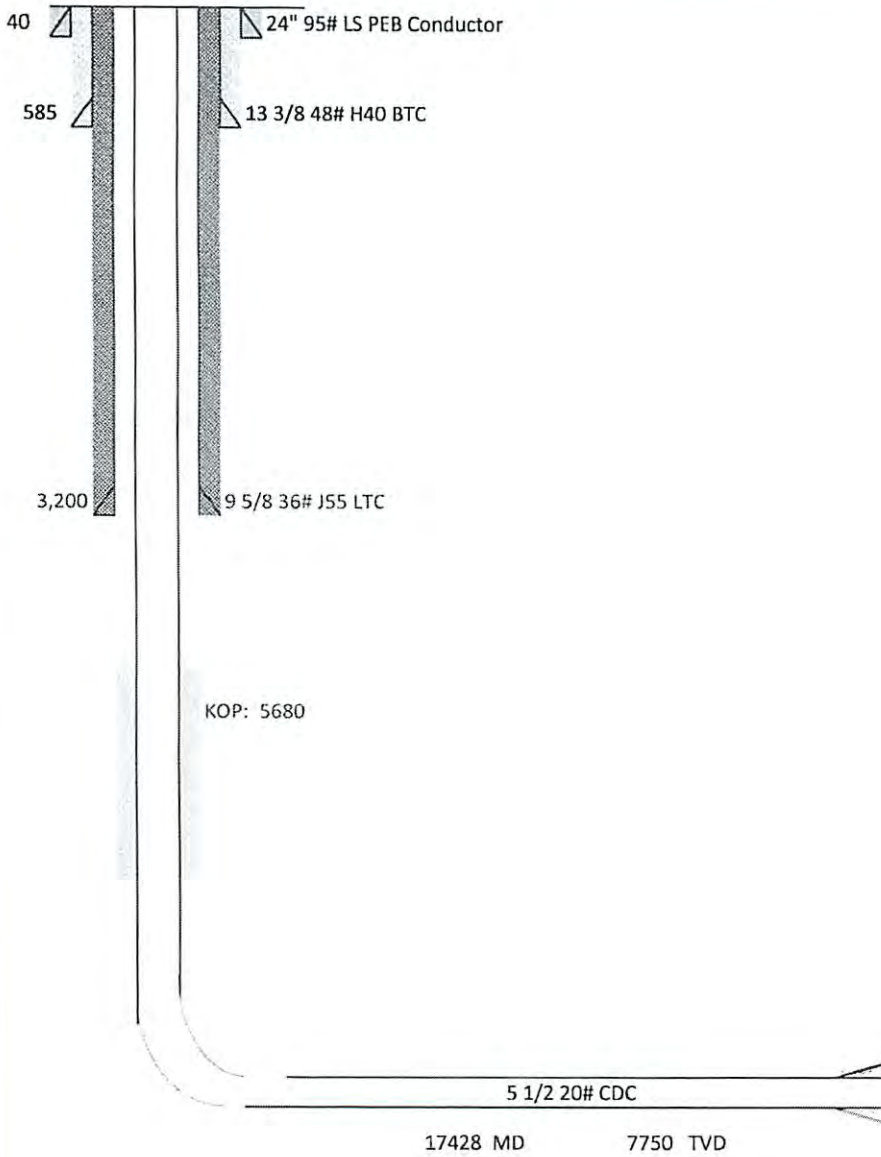
MAY 18 2017

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 and ensure good returns before cementing.

\*Note: Attach additional sheets as needed.

Worthington D 10H  
Marion County, West Virginia



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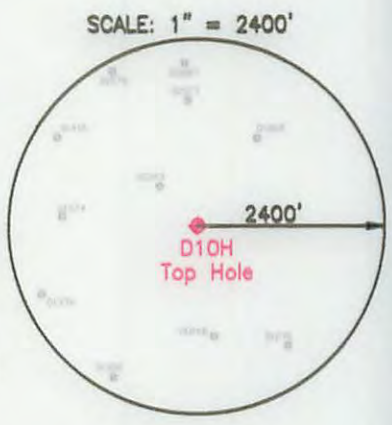
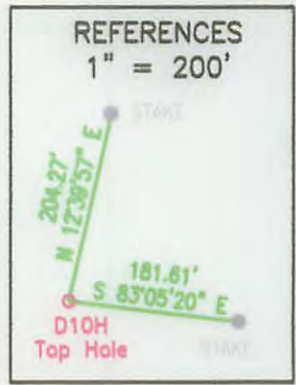
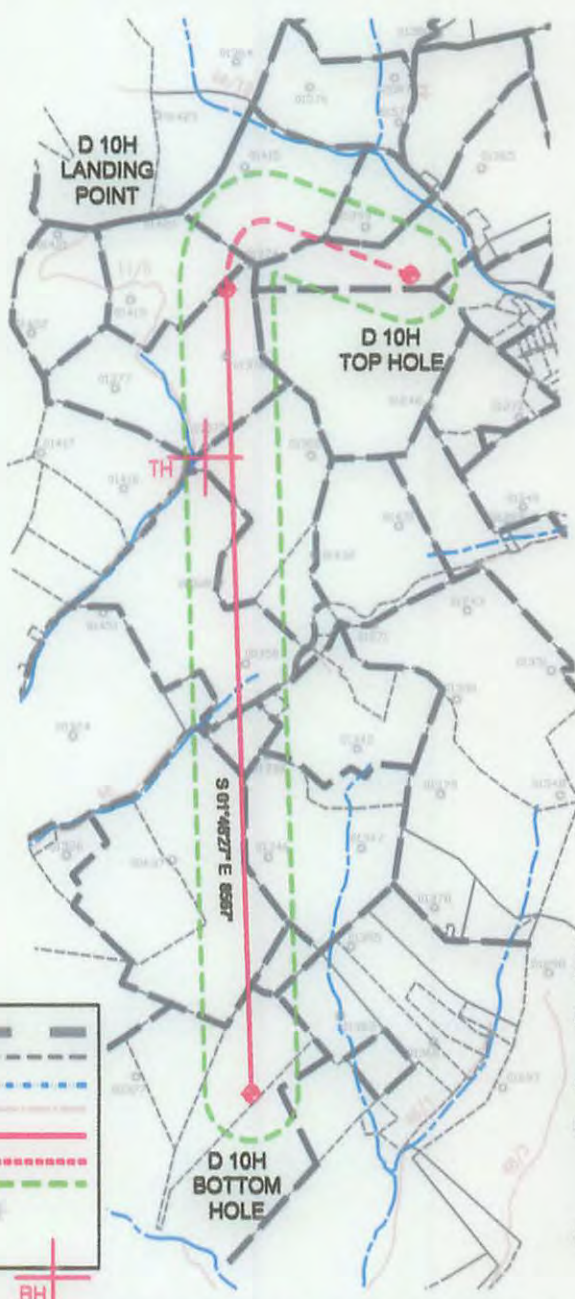
# WORTHINGTON D 10H

LATITUDE: 39°30'00"  
SCALE: 1" = 2000'

**State Plane Coordinate**  
West Virginia North  
**Top Hole Location**  
NAD 27 Feet  
N: 359384.670  
E: 1768046.846  
UTM Zone 17 (SPCS83) Meters  
N: 4370696.682  
E: 558340.831  
NAD 27  
N 39.4838096  
W 080.3218042

**Landing Point Location**  
NAD 27 Feet  
N: 359235.813  
E: 1768076.359  
UTM Zone 17 (SPCS83) Meters  
N: 4370641.321  
E: 557741.243  
NAD 27  
N 39.4833512  
W 080.3287803

**Bottom Hole Location**  
NAD 27 Feet  
N: 350672.977  
E: 1766346.651  
UTM Zone 17 (SPCS83) Meters  
N: 4368033.908  
E: 557867.066  
NAD 27  
N 39.4598494  
W 080.3275433



**LINE LEGEND**

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

- NOTES ON SURVEY**
1. NO DWELLINGS WITHIN 825' 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 MARION COUNTY IN MAY 2016 AND FILES PROVIDED BY XTO ENERGY, INC.
  6. WELLS SHOWN ARE TAKEN FROM RECORDS OF WVDEP.



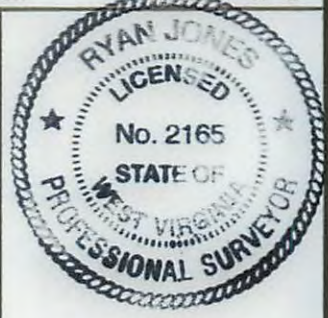
2402 PENNSYLVANIA 66 DELMONT, PA 15626  
(724) 757 - 2417 www.jonesconsultant.com

SHEET 1 OF 2

FILE #: JC2016-38  
DRAWING #: WORTHINGTON D 10H WELL  
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:   
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: 04/19/2017  
OPERATOR'S WELL #: WORTHINGTON D 10H  
API WELL #: 47 049 02420 MoD  
STATE COUNTY PERMIT

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

WATERSHED: LOWER WEST FORK RIVER (0502000206)  
COUNTY/DISTRICT: MARION / LINCOLN  
SURFACE OWNER: XTO ENERGY INC  
OIL & GAS ROYALTY OWNER: RADDISH, ET AL

ELEVATION: 1,194' (PROPOSED PAD FINISH GRADE)  
QUADRANGLE: SHINNSTON 7.5'  
ACREAGE: 104.40±  
ACREAGE: 585±

05/19/2017

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: 7,750' (TVD), 17,428' (TMD)

WELL OPERATOR: XTO ENERGY INC. Address: 190 THORN HILL ROAD City: WARRENDALE State: PA Zip Code: 15086

DESIGNATED AGENT: GARY REALL Address: P.O. BOX 1008 City: JANE LEW State: WV Zip Code: 26378

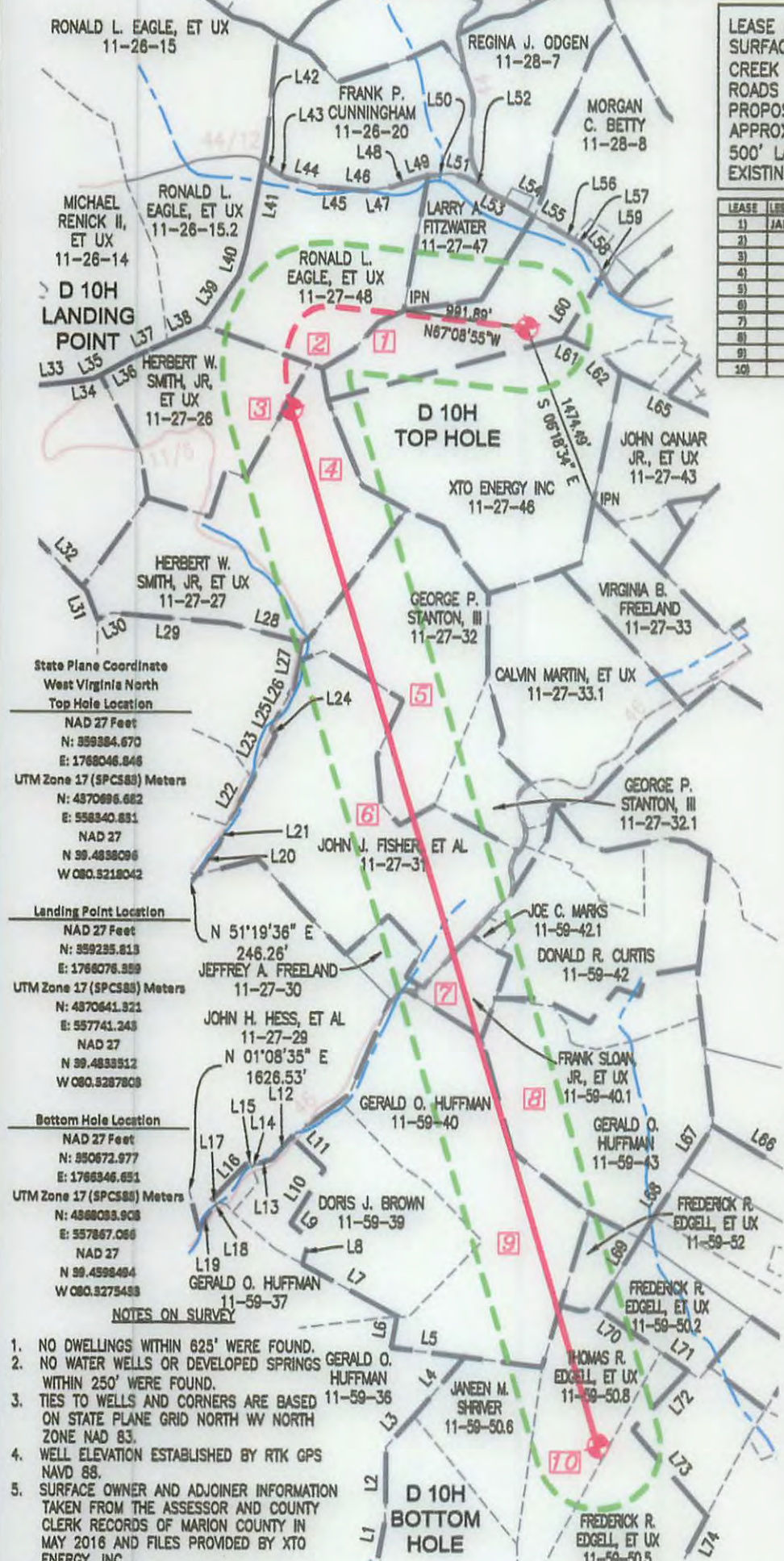
# WORTHINGTON D 10H

## LINE LEGEND

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

LEASE	LESSOR	MINERAL ACREAGE
1)	JAMES RUDOLPH HEATER LIVING TRUST, ET AL	39.696
2)	CAROLYN R. GROVER, ET AL	39.37
3)	GAYLE D JUSTICE, ET AL	24.90
4)	EXPLORATION PARTNERS, LLC, ET AL	64.35
5)	AMANDA M. HESS, ET AL	51.250
6)	AMANDA M. HESS, ET AL	67.900
7)	FREDERICK R. EDGELL, ET AL	7.900
8)	RONALD D. MARTIN, ET AL	96.900
9)	HARRY G. MOORHEAD, ET AL	94.000
20)	ROY W. EDGELL, ET AL	140.31825

LINE	BEARING	DISTANCE
L1	N 28°42'19" E	292.24'
L2	N 15°17'19" E	576.77'
L3	N 57°44'30" E	332.01'
L4	N 55°22'01" E	1612.14'
L5	N 67°58'00" W	1988.84'
L6	N 25°20'00" E	254.28'
L7	N 48°10'00" W	858.00'
L8	N 31°50'00" E	1191.00'
L9	N 34°10'00" W	108.00'
L10	N 48°50'00" E	507.37'
L11	N 31°40'00" W	383.00'
L12	S 85°28'50" W	230.62'
L13	S 88°18'50" W	140.58'
L14	S 65°57'07" W	34.01'
L15	N 08°48'02" W	57.23'
L16	S 58°57'17" W	434.53'
L17	S 61°04'14" E	62.10'
L18	S 69°08'27" W	87.69'
L19	S 43°21'48" W	214.27'
L20	N 51°19'36" E	297.00'
L21	N 36°19'36" E	199.82'
L22	N 44°07'43" E	414.91'
L23	N 42°19'59" E	398.00'
L24	N 37°14'01" W	48.50'
L25	N 39°45'59" E	173.28'
L26	N 43°45'59" E	231.00'
L27	N 23°51'39" E	347.23'
L28	N 80°44'01" W	610.50'
L29	N 70°14'01" W	915.75'
L30	S 78°45'59" W	123.75'
L31	N 05°38'18" W	245.19'
L32	N 28°42'48" W	685.63'
L33	S 80°12'28" E	155.23'
L34	S 83°09'03" E	290.40'
L35	N 78°50'57" E	61.88'
L36	N 78°50'57" E	278.37'
L37	N 80°50'57" E	316.36'
L38	N 80°50'57" E	315.26'
L39	N 49°30'41" E	488.38'
L40	N 31°50'57" E	191.40'
L41	N 25°23'40" E	721.15'
L42	S 37°24'42" E	130.68'
L43	S 47°18'08" E	67.06'
L44	S 60°40'07" E	278.70'
L45	S 70°34'08" E	221.16'
L46	S 88°28'13" E	122.05'
L47	S 83°23'12" E	218.22'
L48	N 86°38'44" E	201.34'
L49	N 88°07'14" E	104.75'
L50	S 78°48'48" E	183.84'
L51	S 59°47'54" E	134.63'
L52	S 42°58'14" E	187.94'
L53	S 47°11'55" E	190.44'
L54	S 46°02'10" E	228.15'
L55	S 45°17'39" E	251.08'
L56	S 48°35'12" E	118.87'
L57	S 44°15'59" E	90.76'
L58	S 25°31'01" E	172.89'
L59	S 11°01'08" E	108.13'
L60	S 47°08'47" W	588.30'
L61	S 50°08'18" E	341.44'
L62	S 31°05'10" E	199.86'
L63	S 46°23'58" E	837.70'
L64	N 43°23'36" W	803.12'
L65	S 47°28'29" W	391.86'
L66	S 48°03'09" W	866.10'
L67	S 48°27'10" W	849.25'
L68	S 40°32'57" E	816.14'
L69	S 40°32'57" E	257.82'
L70	S 57°48'51" W	635.39'
L71	S 28°48'05" E	803.06'
L72	S 42°17'11" W	1374.73'



**State Plane Coordinate**  
West Virginia North  
**Top Hole Location**  
NAD 27 Feet  
N: 359384.670  
E: 1768046.846  
UTM Zone 17 (SPCS83) Meters  
N: 4870896.682  
E: 558340.881  
NAD 27  
N 39.4838096  
W 080.3218042

**Landing Point Location**  
NAD 27 Feet  
N: 359235.613  
E: 1768076.399  
UTM Zone 17 (SPCS83) Meters  
N: 4870641.321  
E: 557741.243  
NAD 27  
N 39.4838512  
W 080.3287808

**Bottom Hole Location**  
NAD 27 Feet  
N: 350672.977  
E: 1768346.691  
UTM Zone 17 (SPCS83) Meters  
N: 4868093.908  
E: 557867.066  
NAD 27  
N 39.4598484  
W 080.3275493

- NOTES ON SURVEY**
- NO DWELLINGS WITHIN 625' WERE FOUND.
  - NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' WERE FOUND.
  - TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH WV NORTH ZONE NAD 83.
  - WELL ELEVATION ESTABLISHED BY RTK GPS NAVD 88.
  - SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF MARION COUNTY IN MAY 2016 AND FILES PROVIDED BY XTO ENERGY, INC.
  - WELLS SHOWN ARE TAKEN FROM RECORDS OF WVDEP.

## JONES CONSULTANTS, LLC

SURVEYING • MAPPING • LAND • GAS WELL • PIPELINE  
2402 PENNSYLVANIA 66 DELMONT, PA 15626  
(724) 757 - 2417 [www.jonesconsultant.com](http://www.jonesconsultant.com)

### SUPPLEMENTAL SURFACE AND LESSOR EXHIBIT

#### WORTHINGTON D 10H

Drawn By:	JRV	Date:	04/19/17	LINCOLN DISTRICT MARION COUNTY, WEST VIRGINIA	
Scale:	1" = 1200'	Sheet:	SHEET 2 OF 2	File No.:	JC2016-38
APP #	1600261				



05/19/2017

Worthington D 10H

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.	47-049-01393	1267	4140	Injun, 50', 30', Gordon, 5th Sand, Ball Town	1970-3854	1920-3850	NA	No
XTO Energy Inc.	47-049-01374	1520	4383	Big Injun, Pocono, 30', 50', Gordon, 5th Sand, Ball Town	2210-4268	2180-4100	NA	No
XTO Energy Inc.	47-049-01376	1305	4093	Big Injun, 30', 50', Gordon, 5th Sand, Balltown	1980-3870	1940-3860	NA	No
XTO Energy Inc.	47-049-01375	1191	2609	30', 50', Gantz, Pocono, Big Injun	1955-2574	1835-2580	NA	No
EQT Production Company	47-049-00308	1370	4275	Balltown	3879-4078	3879-4078	NA	No
EQT Production Company	47-049-00350	1244	2917					No
XTO Energy Inc.	47-049-01338	1314	4100	Big Injun, Pocono, 50', 30', Gordon, 5th Sand, Balltown	1949-4012	1905-4010	NA	No
XTO Energy Inc.	47-049-01346	1287	4020	Big Injun, Pocono, Gantz, 30', 50', Gordon, 5th Sand, Balltown	1892-3770	1870-3800	NA	No

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Office of Oil and Gas

MAY 11 2017

WV Department of  
Environmental Protection



4704902420 Mod

WW-6A1  
(5/13)

Operator's Well No. Worthington D 10H

**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:   
 Its: Regulatory Compliance Technician

Page 1 of \_\_\_\_\_

RECEIVED 05/19/2017  
 Office of Oil and Gas  
 MAY 11 2017  
 WV Department of  
 Environmental Protection

WORTHINGTON UNIT D 10H

Lease Ref.	Lessor	Lessee	Deed Book	Page	Royalty
4704902420 MOD 1	The James Rudolph Heater Revocable Living Trust	XTO Energy	1194	379	Min. 1/8
1	Sara M. Lee	XTO Energy	1193	244	Min. 1/8
1	Carolyn R. and Richard K. Grover	XTO Energy	1136 1173 1049	820 99 547	Min. 1/8
1	Katherine F. Parnell	XTO Energy	1193	240	Min. 1/8
1	Sarah Jane Basler	XTO Energy	1193	221	Min. 1/8
1	Marion Jo Pearcy	XTO Energy	1193	242	Min. 1/8
1	Adonis Keith Raddish	XTO Energy	1193	682	Min. 1/8
1	Devon Thomas Raddish	XTO Energy	1193	675	Min. 1/8
1	Rondell Mark Raddish	XTO Energy	1193	975	Min. 1/8
1	Willa Grim	XTO Energy	1185	906	Min. 1/8
1	Michael D. Ice	XTO Energy	1185	898	Min. 1/8
1	Eugene S. Lieving II	XTO Energy	1185	914	Min. 1/8
1	Linda Whitehouse	XTO Energy	1186	857	Min. 1/8
1	David Barton Ayers	XTO Energy	1185	890	Min. 1/8
1	Valerie Jean Brown	XTO Energy	1185	436	Min. 1/8
1	Susan Ayers Lilavois, aka Susan Ayers Lilivois	XTO Energy	1193	689	Min. 1/8
1	Richard Bell	XTO Energy	1137	896	Min. 1/8
1	Jeff Bell	XTO Energy	1162	386	Min. 1/8
1	Linda Renee Fox Rowe	XTO Energy	1138	1	Min. 1/8
1	WV Minerals	XTO Energy	1054 1164	59 61	Min. 1/8

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Office of Oil and Gas

MAY 11 2017

WV Department of  
Environmental Protection

4704902420/Mod

1	Jeffery Taylor, Special Commissioner on behalf of The Unknown Heirs of Letty L. Gerau, Richard Lantz Hupp, Francis Daye Hupp, Nina Helen Davis, Evelyn Davis, Densel R. Davis, Linda Vavrek, James Roberts, JoAnn Joy Davis Sanders Zagars, Nesbeth M. Robinson Smith, Norman Robinson, Wilda V. Robinson Hungate Balarinic, Sandra Lee Jennings, Shelia Ann Jordan and Rickey Jordan, Paul Clark Hawkins, and their Unknown Heirs and Beneficiaries, and the Unknown Heirs of Albana Barrett, Francis Schneider, Blanche E. Hawkins Matteis, Charlotte Marie Hawkins Doran, Charles C. Morgan, Jr., Charles Everett Hawkins, Catherine Hawkins Wilt, Virginia Hawkins Chepiga (Halbrick), Donald D. Nutt, Sr.	XTO Energy	1175	403	Min. 1/8
1	Jerome Krakowski	XTO Energy	1187	241	Min. 1/8
1	Valerie Krakowski	XTO Energy	1187	247	Min. 1/8
1	Victoria Krakowski	XTO Energy	1193	204	Min. 1/8
1	Ronald P. Roberts	XTO Energy	1185	804	Min. 1/8
1	Nancy Jean English aka Nancy Jean Vincent	XTO Energy	1190	140	Min. 1/8
1	Denise Neiderhiser	XTO Energy	1179	587	Min. 1/8
1	Edward R. Ferrick	XTO Energy	1155	237	Min. 1/8
1	Anna M Peagler	XTO Energy	1179	670	Min. 1/8
1	Thomas W. Visconti	XTO Energy	1178	170	Min. 1/8
1	Ernest Visconti	XTO Energy	1179	591	Min. 1/8
1	Mary C Gerau	XTO Energy	1139	526	Min. 1/8
1	Mary E. Talkington	XTO Energy	1190	152	Min. 1/8
1	James Howard Hupp	XTO Energy	1190	144	Min. 1/8
1	Michael W Hupp	Exploration Partners, LLC Leasehold assigned surface to the bottom of the uppermost member of the Onondaga Group to Linn Energy at 32-151 and to XTO Energy at 33-200.	1026	306	Min. 1/8
1	Virginia Parsons	XTO Energy	1191	523	Min. 1/8

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4704902420 Mpd	1	Sally Hyre	Exploration Partners, LLC Leasehold assigned surface to the bottom of the uppermost member of the Onondaga Group to Linn Energy at 32-151 and to XTO Energy at 33-200.	1026	306	Min. 1/8
	1	Mary Kertcher	XTO Energy	1159	463	Min. 1/8
	1	Beverly Cummings	XTO Energy	1191	539	Min. 1/8
	1	Herbert Clair Hupp	XTO Energy	1137	900	Min. 1/8
	1	Eleanor Davis	XTO Energy	1183	841	Min. 1/8
	1	Patricia V Sandy	XTO Energy	1137	916	Min. 1/8
	1	Susie Shively aka Susie Hupp	XTO Energy	1190	132	Min. 1/8
	1	Neil Jennings	XTO Energy	1139	505	Min. 1/8
	1	Deborah Marie Gerou Smith	XTO Energy	1160	233	Min. 1/8
	1	Barbara J Clark Gerou	XTO Energy	1157	856	Min. 1/8
	1	Pressley Wade Gerou	XTO Energy	1159	177	Min. 1/8
	1	Charles H Hupp	XTO Energy	1190	148	Min. 1/8
	1	Lillian M Platt	XTO Energy	1138	21	Min. 1/8
	1	Gail Paulaitis	XTO Energy	1138	9	Min. 1/8
	1	Edwin C Morgan	XTO Energy	1139	518	Min. 1/8
1	Diana J Hepler	XTO Energy	1139	535	Min. 1/8	
1	Kristina Gerou	XTO Energy	1154	904	Min. 1/8	
1	Jonathan Paul Gerou	XTO Energy	1155	245	Min. 1/8	
1	LBJ Energy Associates, LLC	XTO Energy	1193	224	Min. 1/8	

2	Carolyn R. Grover and Richard K. Grover, her husband	XTO Energy Inc.	1136 1173 1049	820 99 547	Min. 1/8
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4704902420 Mod	2	Sara J. Balsler and Donald Balsler, husband	Exploration Partners, LLC Leasehold assigned surface to the bottom of the uppermost member of the Onondaga Group to Linn Energy at 32-151 and to XTO Energy at 33-200.	968	1185	Min. 1/8
	2	Katharine H. Parnell and James M. Parnell	Exploration Partners, LLC Leasehold assigned surface to the bottom of the uppermost member of the Onondaga Group to Linn Energy at 32-151 and to XTO Energy at 33-200.	969	300	Min. 1/8
	2	Marion Jo Percy	Exploration Partners, LLC Leasehold assigned surface to the bottom of the uppermost member of the Onondaga Group to Linn Energy at 32-151 and to XTO Energy at 33-200.	970	540	Min. 1/8
	2	The James Rudolph Heater Revocable Living Trust	Exploration Partners, LLC Leasehold assigned surface to the bottom of the uppermost member of the Onondaga Group to Linn Energy at 32-151 and to XTO Energy at 33-200.	969	694	Min. 1/8
	2	Sara M. Lee	Exploration Partners, LLC Leasehold assigned surface to the bottom of the uppermost member of the Onondaga Group to Linn Energy at 32-151 and to XTO Energy at 33-200.	969	690	Min. 1/8
	2	Bernadine Taylor, widow	Exploration Partners, LLC Leasehold assigned surface to the bottom of the uppermost member of the Onondaga Group to Linn Energy at 32-151 and to XTO Energy at 33-200.	967	550	Min. 1/8
3	Gayle D. Justice and Mildred A. Justice, his wife	XTO Energy Inc.	1097	216	Min. 1/8	
3	Herbert W. Smith, Jr., and Marsha Smith (his wife)	Exploration Partners, LLC Leasehold assigned surface to the bottom of the uppermost member of the Onondaga Group to Linn Energy at 32-151 and to XTO Energy at 33-200.	976	252	Min. 1/8	
4	Exploration Partners, LLC	Exploration Partners, LLC Leasehold assigned surface to the bottom of the uppermost member of the Onondaga Group to Linn Energy at 32-151 and to XTO Energy at 33-200.	988	230	Min. 1/8	

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4	Herbert W. Smith, Jr. and Marsha Smith (his wife)	Exploration Partners, LLC Leasehold assigned surface to the bottom of the uppermost member of the Onondaga Group to Linn Energy at 32-151 and to XTO Energy at 33-200.	976	252	Min. 1/8
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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">4704902420 Mod</p> <p>5</p>	Amanda M. Hess and Elizabeth Hess and S. L. Hess, A. J. Hess and Cara Hess, his wife	<p>Assignment of Leases - DB 140-268 Effective 5/1/1905 - South Penn Oil Company assigns to Hope Natural Gas Company all RT&amp;I in and to leases</p> <p>Confirmatory Deed - DB 680-35 4/1/1965 - Hope Natural Gas Company assigns to Consolidated Gas Supply Corporation all assets, including the subject OGL. NOTE: This deed was executed subsequent to the merger between Hope Natural Gas Company and New York State Natural Gas Corporation, creating Consolidated Gas Supply Corp.</p> <p>Assignment of Oil and Gas Leases - AB 9-912 3/1/1984 - Consolidated Gas Supply Corp. assigns to Consolidated Gas Transmission Corp. all RT&amp;I in and to subject lease, and others. AB 46-654 Consolidated Gas Transmission Corporation to CNG Transmission Corporation (Name change)</p> <p>Bill of Sale and Assignment - AB 16-993 10/1/1995 - CNG Transmission Corp. assigns to Eastern States Oil and Gas, Inc., all RT&amp;I in and to subject lease, and others. NOTE: Pursuant to Certificate of Merger effective 8/20/1999 and recorded at CR 53-97, Eastern States Oil and Gas, Inc., merged with and into Blazer Energy Corp. Pursuant to Certificate of Company Name Change dated 5/6/2009 and recorded at CR 61-558, EQT Production Company demonstrated that Blazer Energy Corp. and Eastern States Oil &amp; Gas are predecessors-in-interest.</p> <p>Assignment of Leases - AB 43-631 Effective 6/14/2012 - EQT Production Company assigns to XTO Energy Inc., interest in subject lease, insofar as those depths and formations covered from 300' above the Top of the Tully Formation to 100' below the Top of the Onondaga Formation</p>	111	434	Min. 1/8
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Amanda M. Hess and Elizabeth Hess and S. L. Hess, A. J. Hess and Cara Hess, his wife

Assignment of Leases - DB 140-268  
Effective 5/1/1905 - South Penn Oil Company assigns to Hope Natural Gas Company all RT&I in and to leases

Confirmatory Deed - DB 680-35  
4/1/1965 - Hope Natural Gas Company assigns to Consolidated Gas Supply Corporation all assets, including the subject OGL.

NOTE: This deed was executed subsequent to the merger between Hope Natural Gas Company and New York State Natural Gas Corporation, creating Consolidated Gas Supply Corp.

Assignment of Oil and Gas Leases - AB 9-912  
3/1/1984 - Consolidated Gas Supply Corp. assigns to Consolidated Gas Transmission Corp. all RT&I in and to subject lease, and others. AB 46-654 Consolidated Gas Transmission Corporation to CNG Transmission Corporation (Name change)

Bill of Sale and Assignment - AB 16-993  
10/1/1995 - CNG Transmission Corp. assigns to Eastern States Oil and Gas, Inc., all RT&I in and to subject lease, and others.

NOTE: Pursuant to Certificate of Merger effective 8/20/1999 and recorded at CR 53-97, Eastern States Oil and Gas, Inc., merged with and into Blazer Energy Corp. Pursuant to Certificate of Company Name Change dated 5/6/2009 and recorded at CR 61-558, EQT Production Company demonstrated that Blazer Energy Corp. and Eastern States Oil & Gas are predecessors-in-interest.

Assignment of Leases - AB 43-631  
Effective 6/14/2012 - EQT Production Company assigns to XTO Energy Inc., interest in subject lease, insofar as those depths and formations covered from 300' above the Top of the Tully Formation to 100' below the Top of the Onondaga Formation

111

434

Min. 1/8

7

Frederick R. Edgell and wife, Joann Edgell, as joint tenants with the right of survivorship

XTO Energy Inc.

1131

884

Min. 1/8

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4704902420 MoD	8	Ronald D. Martin and Janet C. Martin (Wife)	Exploration Partners, LLC Leasehold assigned surface to the bottom of the uppermost member of the Onondaga Group to Linn Energy at 32-151 and to XTO Energy at 33-200.	940	34	Min. 1/8
	8	Brady J. Freeland and Virginia Freeland (Wife)	Exploration Partners, LLC Leasehold assigned surface to the bottom of the uppermost member of the Onondaga Group to Linn Energy at 32-151 and to XTO Energy at 33-200.	966	262	Min. 1/8
	8	Richard L. Freeland and Patricia A. Freeland (Wife)	Exploration Partners, LLC Leasehold assigned surface to the bottom of the uppermost member of the Onondaga Group to Linn Energy at 32-151 and to XTO Energy at 33-200.	966	484	Min. 1/8
	8	Louis M. Freeland and Janice Freeland (Wife)	Exploration Partners, LLC Leasehold assigned surface to the bottom of the uppermost member of the Onondaga Group to Linn Energy at 32-151 and to XTO Energy at 33-200.	966	250	Min. 1/8
	8	Patricia Ruth Broadwell and James W. Broadwell (Husband)	Exploration Partners, LLC Leasehold assigned surface to the bottom of the uppermost member of the Onondaga Group to Linn Energy at 32-151 and to XTO Energy at 33-200.	966	924	Min. 1/8
	8	Thomas E. Martin and Dorotha L. Martin (Wife)	Exploration Partners, LLC Leasehold assigned surface to the bottom of the uppermost member of the Onondaga Group to Linn Energy at 32-151 and to XTO Energy at 33-200.	940	22	Min. 1/8
	8	Charles E. Martin and Barbara (his wife)	Exploration Partners, LLC Leasehold assigned surface to the bottom of the uppermost member of the Onondaga Group to Linn Energy at 32-151 and to XTO Energy at 33-200.	941	436	Min. 1/8
	8	Joseph E. Martin and Goldie (his wife)	Exploration Partners, LLC Leasehold assigned surface to the bottom of the uppermost member of the Onondaga Group to Linn Energy at 32-151 and to XTO Energy at 33-200.	941	421	Min. 1/8
	8	Rebecca Staron and Robert (her husband)	Exploration Partners, LLC Leasehold assigned surface to the bottom of the uppermost member of the Onondaga Group to Linn Energy at 32-151 and to XTO Energy at 33-200.	941	448	Min. 1/8

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4704902420 8	Mary E. Hetrick and John (her husband)	Exploration Partners, LLC Leasehold assigned surface to the bottom of the uppermost member of the Onondaga Group to Linn Energy at 32-151 and to XTO Energy at 33-200.	941	1014	Min. 1/8
4704902420 9	Harry G. Moorhead and Ora Irene Moorhead, his wife	Consolidated Gas Supply to Conolidated Gas Transmission at 9-912 Consolidated Gas Transmission to CNG Development at 10-143 CNG Development Company performed a certificate of withdrawal of CNG Development Company under CNG Producing Company July 10, 1991. (WV SOS) CNG Producing to Dominion Exploration and Production (name change WV SOS) Dominion Exploration and Production to Antero Resources Appalchian Corp. at 34-1; Antero Resources Appalchian Corp. to XTO at AB 40-356	760	672	Min. 1/8
10	Roy W. Edgell, widower; Thomas R. Edgell and Carol M. Edgell, his wife; Fred R. Edgell and Joanne Edgell, his wife; Bety Beveridge, widow	Consolidated Gas Supply to Conolidated Gas Transmission at 9-912 Consolidated Gas Transmission to CNG Development at 10-143 CNG Development Company performed a certificate of withdrawal of CNG Development Company under CNG Producing Company July 10, 1991. (WV SOS) CNG Producing to Dominion Exploration and Production (name change WV SOS) Dominion Exploration and Production to Antero Resources Appalchian Corp. at 34-1; Antero Resources Appalchian Corp. to XTO at AB 40-356	806	258	Min. 1/8

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10	Carrie B. Snider, widow	Consolidated Gas Supply to Conolidated Gas Transmission at 9-912 Consolidated Gas Transmission to CNG Development at 10-143 CNG Development Company performed a certificate of withdrawal of CNG Development Company under CNG Producing Company July 10, 1991. (WV SOS) CNG Producing to Dominion Exploration and Production (name change WV SOS) Dominion Exploration and Production to Antero Resources Appalchian Corp. at 34-1; Antero Resources Appalchian Corp. to XTO at AB 40-356	760	656	Min. 1/8
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4704902420 MW



Blake Hueske  
XTO Energy Inc.  
810 Houston Street  
Fort Worth, TX 76102-6298  
(817) 885-6609  
(817) 885-1938 Fax  
Blake\_Hueske@xtoenergy.com

July 28, 2016

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

Re: Rights to Drill Under Road – Worthington Unit D 10H

To Whom It May Concern:

Based on extended research by XTO Energy's Land Department, and our contractors and third party title attorneys, we have all necessary mineral rights under Marion CR 46 in the location of our planned well bore for the Worthington Unit D 10H.

Sincerely,

A handwritten signature in black ink, appearing to read 'Blake Hueske', written over a horizontal line.

Blake Hueske  
Senior Staff Landman  
XTO Energy, Inc.

An ExxonMobil Subsidiary

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4704902420 MD

XTO Energy Inc.  
480 Industrial Park Road  
Jane Lew, WV 26378  
(304) 884-6000  
(304) 884-6809 Fax

WVDEP – Office of Oil & Gas  
601 57<sup>th</sup> St. SE  
Charleston, WV 25304

May 8, 2017

**RE: Worthington D 10H Modification Request**

To Whom It May Concern,

Please see the enclosed revised plat for our Worthington D 10H (47-049-02420) wellbore. Also enclosed are a revised WW-6A1 and area of review for the wellbore. If you should have any questions please feel free to contact me.

Sincerely,

Tim Sands  
Regulatory Compliance Technician  
XTO Energy, Inc.  
PO Box 1008  
Jane Lew, WV 26378  
[Tim\\_Sands@xtoenergy.com](mailto:Tim_Sands@xtoenergy.com)  
304-884-6036

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