

Reviewed

Julian
12/19/18

WR-35
Rev. 8/23/13

Page ___ of ___

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47-049-02420 County Marion District Lincoln
Quad Shinnston Pad Name Worthington Field/Pool Name Marcellus
Farm name XTO Energy Inc. Well Number Worthington D 10H
Operator (as registered with the OOG) XTO Energy Inc.
Address PO Box 1008 City Jane Lew State WV Zip 26378

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4370696.682 Easting 558340.831
Landing Point of Curve Northing 4370622.554 Easting 557744.509
Bottom Hole Northing 4368023.199 Easting 557862.908

Elevation (ft) 1,194' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary
Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
SOBM

Date permit issued 2/28/17 Date drilling commenced 10/27/17 Date drilling ceased 5/29/1
Date completion activities began 6/27/18 Date completion activities ceased 7/19/18
Verbal plugging (Y/N) _____ Date permission granted _____ Granted by _____

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft None Seen Open mine(s) (Y/N) depths 469-479
Salt water depth(s) ft None Seen Void(s) encountered (Y/N) depths N
Coal depth(s) ft 203-208, 222-226, 469-479 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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API 47-049 - 02420 Farm name XTO Energy Inc. Well number Worthington D 10H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade w/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	30"	24"	40	New	PE&B, 94.62 #		Y
Surface	22"	18 5/8"	397.4	New	J-55, 87.50 #		Y
Coal	17 1/2"	13 3/8"	512.1	New	H-40, 48 #	466' & ~446'	N
Intermediate 1	12 1/4"	9 5/8"	3181.4	New	J-55, 36 #		Y
Intermediate 2							
Intermediate 3							
Production	8 3/4" / 8 1/2"	5 1/2"	17,146.3	New	P-110, 23 #		TOC- 1,895'
Tubing							
Packer type and depth set							

*

Comment Details Coal String - 69 bbis on basket on backside to surface. Cement basket at 466', stop ring and basket ~446'.

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Redi Mix	5 yards				0	8
Surface	A	385	15.60	1.20	462	0	8
Coal	A	175/345	15.60/15.60	1.20/1.20	210/414	0	8
Intermediate 1	A	1,125	15.60	1.21	1,361.25	0	8
Intermediate 2							
Intermediate 3							
Production	35/65 POZ Ld / H Tail	893/1694	15.20/15.60	1.10/1.57	982 / 2,660	TOC- 1,895'	8
Tubing							

Drillers TD (ft) 17,207 Loggers TD (ft) 17,207
 Deepest formation penetrated Marcellus Plug back to (ft) _____
 Plug back procedure _____

Kick off depth (ft) 4,915'

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

Surface - Every 3rd Joint

Intermediate - Every Joint

Production - Every Joint

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED Protechnics

* Verbal permission given by Sam Ward for added casing string

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Perforation Record Worthington D 10H 47-049-02420

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
6/27/2018	1	16,875	17,006	48	Marcellus
6/28/2018	2	16,674	16,805	48	Marcellus
6/28/2018	3	16,473	16,604	48	Marcellus
6/28/2018	4	16,272	16,404	48	Marcellus
6/28/2018	5	16,071	16,204	48	Marcellus
6/29/2018	6	15,870	16,001	48	Marcellus
6/29/2018	7	15,669	15,800	48	Marcellus
6/29/2018	8	15,468	15,599	48	Marcellus
6/29/2018	9	15,267	15,398	48	Marcellus
7/1/2018	10	15,066	15,197	48	Marcellus
7/2/2018	11	14,865	14,996	48	Marcellus
7/2/2018	12	14,664	14,795	48	Marcellus
7/5/2018	13	14,463	14,594	48	Marcellus
7/5/2018	14	14,262	14,393	48	Marcellus
7/5/2018	15	14,061	14,192	48	Marcellus
7/5/2018	16	13,862	13,989	48	Marcellus
7/6/2018	17	13,659	13,790	48	Marcellus
7/6/2018	18	13,458	13,590	48	Marcellus
7/6/2018	19	13,257	13,388	48	Marcellus
7/6/2018	20	13,056	13,187	48	Marcellus
7/7/2018	21	12,855	12,986	48	Marcellus
7/7/2018	22	12,654	12,785	48	Marcellus
7/7/2018	23	12,453	12,584	48	Marcellus
7/7/2018	24	12,252	12,383	48	Marcellus
7/7/2018	25	12,055	12,184	48	Marcellus
7/8/2018	26	11,850	11,981	48	Marcellus
7/8/2018	27	11,649	11,780	48	Marcellus
7/8/2018	28	11,449	11,584	48	Marcellus
7/8/2018	29	11,247	11,378	48	Marcellus
7/9/2018	30	11,044	11,172	48	Marcellus
7/9/2018	31	10,845	10,976	48	Marcellus
7/9/2018	32	10,644	10,770	48	Marcellus
7/9/2018	33	10,443	10,574	48	Marcellus
7/16/2018	34	10,243	10,376	48	Marcellus
7/17/2018	35	10,041	10,172	48	Marcellus
7/17/2018	36	9,837	9,971	48	Marcellus
7/17/2018	37	9,639	9,770	48	Marcellus
7/17/2018	38	9,438	9,569	48	Marcellus
7/18/2018	39	9,237	9,368	48	Marcellus
7/18/2018	40	9,040	9,167	48	Marcellus
7/18/2018	41	8,835	8,966	48	Marcellus
7/19/2018	42	8,634	8,761	48	Marcellus

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Stimulation Information Per Stage Worthington D 10H 47-049-02420

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
1	6/27/2018	81.5	9,234.60	6,756.00	4,655.00	404,680.00	14,395.00	
2	6/28/2018	85.5	9,098.40	7,223.70	5,106.00	399,480.00	11,316.00	
3	6/28/2018	83.7	8,985.20	6,327.20	6,196.00	400,380.00	12,866.00	
4	6/28/2018	84.9	9,083.00	6,698.10	5,004.00	400,940.00	11,593.00	
5	6/28/2018	85.3	8,611.00	6,542.40	5,260.00	397,800.00	11,363.00	
6	6/29/2018	83.3	8,748.40	6,546.40	4,986.00	398,680.00	11,699.00	
7	6/29/2018	84.6	8,753.00	7,279.20	5,856.00	399,100.00	13,089.00	
8	6/29/2018	84.8	9,486.00	8,259.20	5,536.00	397,000.00	11,728.00	
9	6/29/2018	84.9	9,085.20	7,340.90		251,240.00	9,054.00	
10	7/2/2018	85.4	8,787.20	6,601.70	5,918.00	401,900.00	12,112.00	
11	7/2/2018	84.4	8,592.00	8,087.80	5,372.00	398,720.00	11,400.00	
12	7/4/2018	85.6	8,504.60	6,861.40	6,285.00	406,600.00	11,990.00	
13	7/5/2018	84.8	8,627.70	7,240.00	5,711.00	399,320.00	11,442.00	
14	7/5/2018	85.2	8,551.40	7,516.90	5,349.00	391,240.00	12,250.00	
15	7/5/2018	85	8,706.10	6,937.50	5,063.00	392,560.00	11,531.00	
16	7/5/2018	84.6	8,319.30	7,263.70	5,550.00	404,920.00	11,507.00	
17	7/6/2018	84.9	8,574.90	7,264.10	5,749.00	394,580.00	11,390.00	
18	7/6/2018	85.4	8,254.40	6,674.90	5,586.00	399,920.00	11,515.00	
19	7/6/2018	85.4	8,216.40	6,578.70	6,075.00	409,060.00	11,849.00	
20	7/6/2018	81.8	8,085.40	6,652.40	5,704.00	399,640.00	11,721.00	
21	7/7/2018	83	8,495.90	7,622.90	5,569.00	397,280.00	11,749.00	
22	7/7/2018	85.1	8,335.90	7,900.00	5,739.00	395,780.00	11,505.00	
23	7/7/2018	85.1	8,351.60	7,630.90	5,477.00	397,740.00	11,758.00	
24	7/7/2018	84.9	8,417.20	8,072.40	5,780.00	402,060.00	11,746.00	
25	7/8/2018	85	8,159.70	6,726.80	6,049.00	398,920.00	11,595.00	
26	7/8/2018	84.8	8,387.00	7,690.90	5,426.00	398,760.00	11,740.00	
27	7/8/2018	85.3	8,117.80	6,790.10	5,426.00	399,820.00	12,075.00	
28	7/8/2018	83.6	8,141.10	7,375.70	5,423.00	398,570.00	11,227.00	
29	7/8/2018	84.4	7,950.80	7,228.00	5,744.00	398,020.00	11,460.00	
30	7/9/2018	85.2	7,935.80	7,522.00	5,796.00	397,740.00	11,487.00	
31	7/9/2018	85.3	8,131.70	7,013.00	5,687.00	401,800.00	12,202.00	
32	7/9/2018	83.6	8,514.70	8,434.80	5,594.00	393,560.00	12,166.00	
33	7/16/2018	85.2	8,655.90	8,078.40	5,679.00	394,280.00	11,078.00	
34	7/16/2018	85.2	8,778.40	8,636.20	5,657.00	396,640.00	12,300.00	
35	7/17/2018	85.7	8,719.20	8,022.00	5,708.00	402,340.00	12,389.00	
36	7/17/2018	85.5	8,640.50	8,679.30	5,511.00	398,020.00	11,493.00	
37	7/17/2018	85.2	8,656.20	9,208.50	6,079.00	403,280.00	11,487.00	
38	7/18/2018	82.7	8,074.60	7,372.80	6,222.00	401,220.00	12,138.00	
39	7/18/2018	84.9	8,242.70	7,146.80	6,074.00	398,740.00	11,195.00	
40	7/18/2018	85.2	7,964.60	7,910.30	5,571.00	402,740.00	11,348.00	
41	7/19/2018	85.1	7,854.80	6,875.60	5,522.00	401,700.00	12,177.00	
42	7/19/2018	84.3	7,958.00	8,234.10	5,359.00	400,360.00	11,039.00	

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PRODUCING FORMATION(S)	DEPTHS	
Marcellus	7,573'	TVD 17,207' MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2000 psi Bottom Hole 5544 psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 4209 mcfpd Oil 0 bpd NGL 0 bpd Water 406 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		
	See	attached			

Please insert additional pages as applicable.

Drilling Contractor Patterson-UTI Drilling
Address 207 Carlton Dr. City Eighty Four State PA Zip 15330

Logging Company Baker Hughes
Address 400 Technology Dr. Ste 120 City Canonsburg State PA Zip 15317

Cementing Company C&J Energy Services
Address 380 Southeppoint Blvd Ste. 210 City Canonsburg State PA Zip 15317

Stimulating Company C&J Energy Services
Address 8300 Route 119 North City Black Lick State PA Zip 15716

Please insert additional pages as applicable.

Completed by Tim Sands Telephone 304-884-6000
Signature [Signature] Title Regulatory Coordinator Date 10/24/18

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

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Lithology Worthington D 10H 47-049-02420

Lithology / Formation Name	Top Depth in FT TVD	Bottom Depth in FT TVD	Top Depth in FT MD	Bottom Depth in FT MD	Describe Rock Type and Record Quantity and Type of Fluid (Freshwater, Brine, Oil, Gas, H2S, ETC)
sdv shale	40	110	40	110	
sand	110	140	110	140	
shale	140	195	140	195	
sdv shale	195	203	195	203	
coal	203	208	203	208	
sdv shale	208	222	208	222	
coal	222	226	222	226	
sdv shale	226	257	226	257	
sand	257	270	257	270	
sdv shale	270	350	270	350	
shale	350	375	350	375	
sdv shale	375	390	375	390	
shale	390	397	390	397	
sdv shale	397	410	397	410	
shale	410	469	410	469	
open mine	469	479	469	479	
shale	479	591	479	591	
sand	591	619	591	619	
shale	619	790	619	790	
sand	790	842	790	842	
sandy shale	842	980	842	980	
shale	980	1070	980	1070	
sand	1070	1116	1070	1116	
shale	1116	1180	1116	1180	
red rock	1180	1200	1180	1200	
sand	1200	1245	1200	1245	
sandy shale	1245	1570	1245	1570	
shale	1570	1694	1570	1694	
red rock	1694	1736	1694	1736	
sandy shale	1736	1952	1736	1952	
sand	1952	1981	1952	1981	
sandy shale	1981	2478	1981	2478	
shale	2478	2950	2478	2950	
sand	2950	3420	2950	3420	
shale	3420	3705	3420	3705	
sand	3705	3765	3705	3765	
shale	3765	4000	3765	4000	
silt stone	4000	4310	4000	4310	
shale	4310	7395	4310	8192	
Hamilton	7395	7446	8192	8299	
Upper Marcellus	7446	7553	8299	8590	
Lower Marcellus	7553	7573	8590	17207	

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/27/2018
Job End Date:	7/19/2018
State:	West Virginia
County:	Marion
API Number:	47-049-02420-00-00
Operator Name:	XTO Energy/ExxonMobil
Well Name and Number:	Worthington D10H
Latitude:	39.48389400
Longitude:	-80.32161200
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,438
Total Base Water Volume (gal):	20,783,490
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

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	100.00000	90.53170	
HC-7.5	C&J Energy Services	Bulk Acid					
				Listed Below			

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FR-16	C&J Energy Services	Friction Reducer				Listed Below				
Sand	C&J Energy Services	Sand - Bulk - Pennsylvania				Listed Below				
CI-3	C&J Energy Services	Acid Corrosion Inhibitors				Listed Below				
Sand	C&J Energy Services	Sand - Bulk - Pennsylvania				Listed Below				
BIO-CLEAR 2000	C&J Energy Services	Biocides				Listed Below				
BR-11	C&J Energy Services	Gel Breakers				Listed Below				
GA-7F	C&J Energy Services	Gelling Agents				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	99.90000	7.76284				
			Crystalline Silica, quartz	14808-60-7	99.90000	0.91692				

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					Water	7732-18-5	92.50000	0.60415	
					Aluminum Oxide	1344-28-1	1.10000	0.08548	
					Hydrochloric Acid	7647-01-0	7.50000	0.04899	
					Water	7732-18-5	96.00000	0.02294	
					Distillates (Petroleum), Hydrotreated Light	64742-47-8	35.00000	0.01996	
					Water	7732-18-5	30.00000	0.01711	
					2-Propenoic acid, polymer with 2-propenamide, sodium salt	25987-30-8	30.00000	0.01711	
					Polyethylene glycol	25322-68-3	50.00000	0.01594	
					Aluminum Oxide	1344-28-1	1.10000	0.01010	
					2,2-Dibromo-3-nitrilopropionamide (DBNPA)	10222-01-2	30.00000	0.00956	
					Water	7732-18-5	28.50000	0.00908	
					Titanium Oxide	13463-67-7	0.10000	0.00777	
					Iron Oxide	1309-37-1	0.10000	0.00777	
					Guar Gum	9000-30-0	60.00000	0.00748	
					Distillates (Petroleum), Hydrotreated Light	64742-47-8	60.00000	0.00748	
					Ethylene Glycol	107-21-1	5.00000	0.00285	
					Sodium Acetate Anhydrous	127-09-3	3.00000	0.00171	
					Phosphonic Acid Salt	Proprietary	6.00000	0.00143	
					Sorbitan Monooleate	1338-43-8	2.00000	0.00114	
					Alcohols, C12-15-branched and linear, ethoxylated propoxylated	120313-48-6	2.00000	0.00114	
					Poly(oxy-1,2-ethandiyl), alpha-isodecyl-omega-hydroxy-phosphate	108818-88-8	2.00000	0.00114	
					Iron Oxide	1309-37-1	0.10000	0.00092	
					Titanium Oxide	13463-67-7	0.10000	0.00092	
					Bentonite	1302-78-9	5.00000	0.00062	

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* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water
** Information is based on the maximum potential for concentration and thus the total may be over 100%
*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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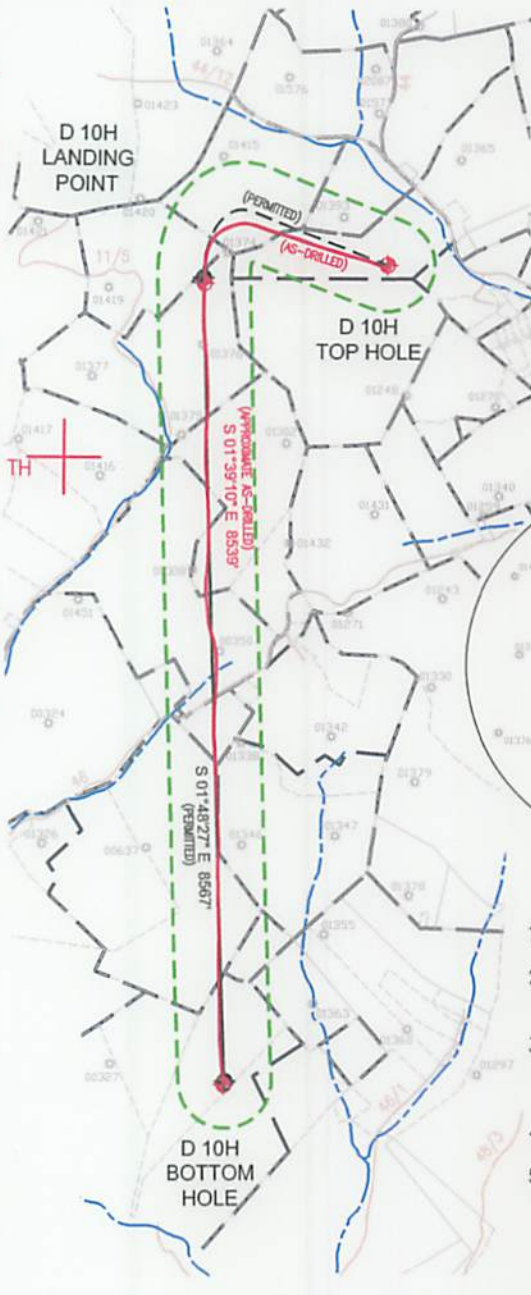
LATITUDE: 39°30'00"
SCALE: 1" = 2000'

SCALE: 1" = 2000'
LONGITUDE: 80°17'30"

PERMITTED

AS-DRILLED

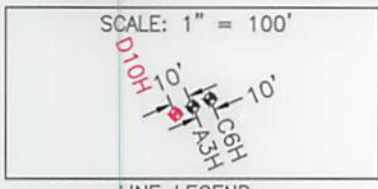
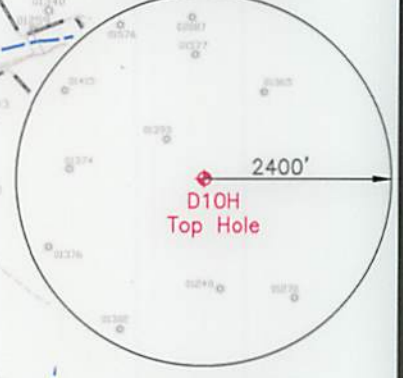
<p>State Plane Coordinate West Virginia North Top Hole Location</p> <p>NAD 27 Feet N: 359384.670 E: 1768046.846</p> <p>UTM Zone 17 (SPCS83) Meters N: 4370696.682 E: 558340.831 NAD 27 N 39.4838096 W 080.3218042</p> <p>Landing Point Location</p> <p>NAD 27 Feet N: 359235.813 E: 1766076.359</p> <p>UTM Zone 17 (SPCS83) Meters N: 4370641.321 E: 557741.243 NAD 27 N 39.4833512 W 080.3287803</p> <p>Bottom Hole Location</p> <p>NAD 27 Feet N: 350672.977 E: 1766346.651</p> <p>UTM Zone 17 (SPCS83) Meters N: 4368033.908 E: 557867.066 NAD 27 N 39.4598494 W 080.3275433</p>	<p>State Plane Coordinate West Virginia North Top Hole Location</p> <p>NAD 27 Feet N: 359384.670 E: 1768046.846</p> <p>UTM Zone 17 (SPCS83) Meters N: 4370696.682 E: 558340.831 NAD 27 N 39.4838096 W 080.3218042</p> <p>Landing Point Location</p> <p>NAD 27 Feet N: 359174.053 E: 1766086.049</p> <p>UTM Zone 17 (SPCS83) Meters N: 4370622.554 E: 557744.509 NAD 27 N 39.4831819 W 080.3287440</p> <p>Bottom Hole Location</p> <p>NAD 27 Feet N: 350638.066 E: 1766332.422</p> <p>UTM Zone 17 (SPCS83) Meters N: 4368023.199 E: 557862.908 NAD 27 N 39.4597532 W 080.3275926</p>
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REFERENCES



SCALE: 1" = 2400'



LINE LEGEND

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

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 MARION COUNTY IN MAY 2016 AND FILES PROVIDED BY XTO ENERGY, INC.
6. WELLS SHOWN ARE TAKEN FROM RECORDS OF WWDEP.



2402 PENNSYLVANIA 66 DELMONT, PA 15626
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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 AS-DRILLED WELL ON UNITED STATES TOPOGRAPHIC MAPS
WWDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304



DATE: 05/29/2019
OPERATOR'S WELL #: WORTHINGTON D 10H
API WELL #: 47 049 02420
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

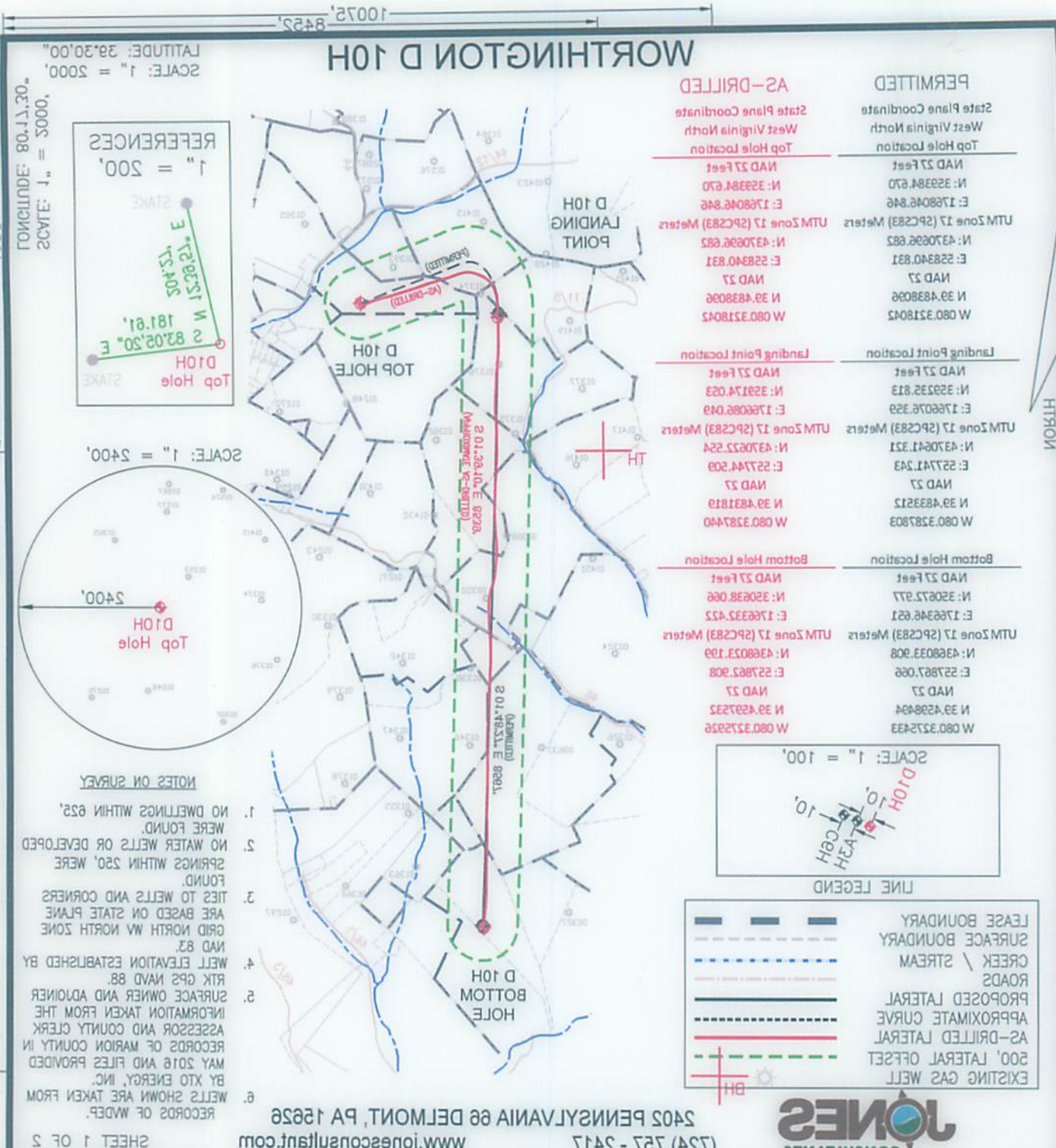
ELEVATION: 1,194' FINISH GRADE
QUADRANGLE: SHINNSTON 7.5'
ACREAGE: 104.40±
ACREAGE: 585±

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: 7,573' (TVD), 17,207' (TMD)

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

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



NOTES ON SURVEY

1. NO DWELLINGS WITHIN 65' 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 W/ NORTH ZONE NAD 83.
4. WELL ELEVATION ESTABLISHED BY RTK GPS NAD 88.
5. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF MARION COUNTY IN MAY 2018 AND FILES PROVIDED BY XTO ENERGY, INC.
6. WELLS SHOWN ARE TAKEN FROM RECORDS OF WDEP.

AS-DRILLED	PERMITTED
State Plane Coordinate West Virginia North	State Plane Coordinate West Virginia North
Top Hole Location	Top Hole Location
NAD 23 Feet N: 329384.670 E: 1768046.846	NAD 23 Feet N: 329384.670 E: 1768046.846
UTM Zone 17 (29C283) Meters N: 4370862.682 E: 228340.831	UTM Zone 17 (29C283) Meters N: 4370862.682 E: 228340.831
NAD 23 N: 39483806 W: 080321802	NAD 23 N: 39483806 W: 080321802
Landing Point Location	Landing Point Location
NAD 23 Feet N: 3292174.029 E: 1768086.049	NAD 23 Feet N: 3292174.029 E: 1768086.049
UTM Zone 17 (29C283) Meters N: 4370822.224 E: 22744.209	UTM Zone 17 (29C283) Meters N: 4370822.224 E: 22744.209
NAD 23 N: 394831819 W: 080323740	NAD 23 N: 394831819 W: 080323740
Bottom Hole Location	Bottom Hole Location
NAD 23 Feet N: 320638.066 E: 1768332.422	NAD 23 Feet N: 320638.066 E: 1768332.422
UTM Zone 17 (29C283) Meters N: 4368023.198 E: 227862.308	UTM Zone 17 (29C283) Meters N: 4368023.198 E: 227862.308
NAD 23 N: 394827232 W: 080322926	NAD 23 N: 394827232 W: 080322926

JONES CONSULTANTS

SCALE: 1" = 100'

LINE LEGEND

- EXISTING GAS WELL
- 500' LATERAL OFFSET
- AS-DRILLED LATERAL
- APPROXIMATE CURVE
- PROPOSED LATERAL
- ROADS
- CREEK \ STREAM
- SURFACE BOUNDARY
- LEASE BOUNDARY



I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAN 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.: 2165

FILE #: JC2018-38
DRAWING #: WORTHINGTON D 10H WELL
SCALE: 1" = 2000'
MINIMUM DEGREE
OF ACCURACY: 1:2500
PROVEN SOURCE
OF ELEVATION: RTK GPS

DATE: 05/29/2019

OPERATOR'S WELL #: WORTHINGTON D 10H

API WELL #: 47 STATE COUNTY PERMIT 02420

WATERSHED: LOWER WEST FORK RIVER (052000208)

COUNTY/DISTRICT: MARION \ LINCOLN

SURFACE OWNER: XTO ENERGY INC

OIL & GAS ROYALTY OWNER: RADDISH, ET AL

WELL TYPE: Oil Waste Disposal Production Deep Gas Liquid Injection Storage Shallow

QUADRANGLE: SHININGTON T.S.
ELEVATION: 1184' FINISH GRADE
ACREAGE: 104.40±
ACREAGE: 88±

TARGET FORMATION: MARCELLUS
ESTIMATED DEPTH: 2523' (TVD), 17202' (TMD)

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

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

WELL OPERATOR: XTO ENERGY INC.
Address: 100 THORN HILL ROAD
City: WARRENDALE State: PA Zip Code: 15086

OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304

WDEP
ON UNITED STATES TOPOGRAPHIC MAPS
(+) DENOTES LOCATION OF AS-DRILLED WELL



WORTHINGTON D 10H

LINE LEGEND

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

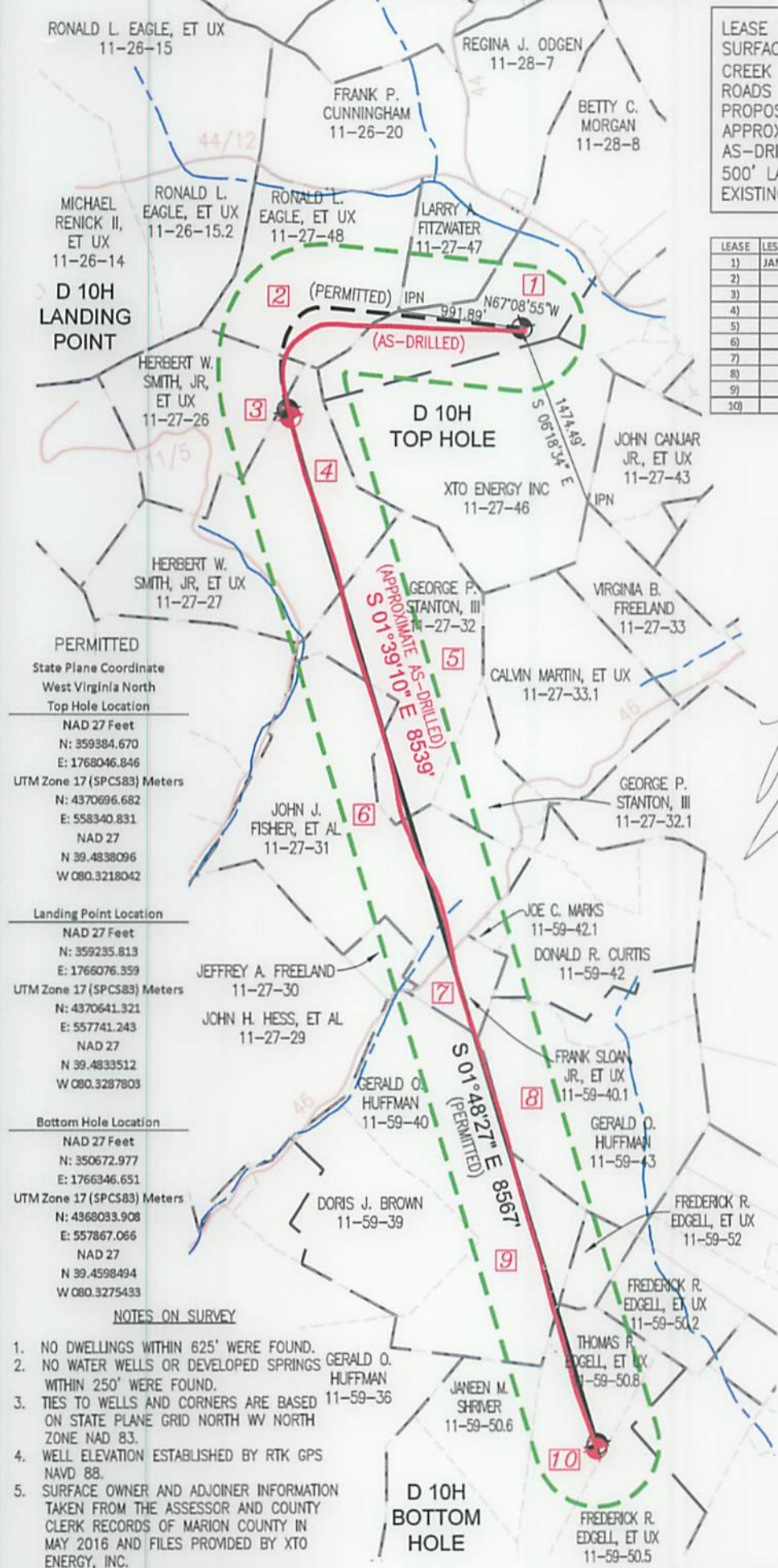
LEASE	LESSOR	MINERAL ACREAGE
1)	JAMES RUDOLPH HEATER LIVING TRUST, ET AL	19.658
2)	CAROLYN R. GROVER, ET AL	39.17
3)	GAYLE D JUSTICE, ET AL	34.60
4)	EXPLORATION PARTNERS, LLC, ET AL	64.55
5)	AMANDA M. HESS, ET AL	51.250
6)	AMANDA M. HESS, ET AL	67.500
7)	FREDERICK R. EDGELL, ET AL	7.500
8)	RONALD D. MARTIN, ET AL	66.500
9)	HARRY G. MOORHEAD, ET AL	94.000
10)	ROY W. EDGELL, ET AL	140.51825



AS-DRILLED
 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: 359174.053
 E: 1766086.049
 UTM Zone 17 (SPCS83) Meters
 N: 4370622.554
 E: 557744.509
 NAD 27
 N 39.4831819
 W 080.3287440

Bottom Hole Location
 NAD 27 Feet
 N: 350638.066
 E: 1766332.422
 UTM Zone 17 (SPCS83) Meters
 N: 4368023.199
 E: 557862.908
 NAD 27
 N 39.4597532
 W 080.3275926



D 10H LANDING POINT

D 10H TOP HOLE

D 10H BOTTOM HOLE

PERMITTED
 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: 1766076.359
 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

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 MARION COUNTY IN MAY 2016 AND FILES PROVIDED BY XTO ENERGY, INC.
6. WELLS SHOWN ARE TAKEN FROM RECORDS OF WVDEP.

JONES CONSULTANTS, LLC

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 (724) 757 - 2417 www.jonesconsultant.com

SUPPLEMENTAL SURFACE AND LESSOR EXHIBIT
WORTHINGTON D 10H

Drawn By: JRV	Date: 05/29/19	LINCOLN DISTRICT MARION COUNTY, WEST VIRGINIA
Scale: 1" = 1200'	Sheet: SHEET 2 OF 2	File No.: JC2016-38
AFE # 1600261		



WORTHINGTON D 10H

LINE LEGEND

	LEASE BOUNDARY
	SURFACE BOUNDARY
	GREEK / STREAM
	ROADS
	PROPOSED LATERAL
	APPROXIMATE CURVE
	A2-DRILLED LATERAL
	500' LATERAL OFFSET
	EXISTING GAS WELL

LESSOR	LEASE	MINERAL ACRES
ROY W. EDGELL, ET AL.	10	140.21823
HARRY G. MOOREHEAD, ET AL.	9	94.000
ROYAL D. MARTIN, ET AL.	8	68.500
FREDERICK R. EDGELL, ET AL.	7	7.500
AMANDA M. HESS, ET AL.	6	67.300
AMANDA M. HESS, ET AL.	5	21.250
EXPLORATION PARTNERS, LLC, ET AL.	4	64.25
DAVE D. JUSTICE, ET AL.	3	34.60
CAROLYN R. GROVER, ET AL.	2	39.77
JAMES RUDOLPH HEATER LIVING TRUST, ET AL.	1	78.828



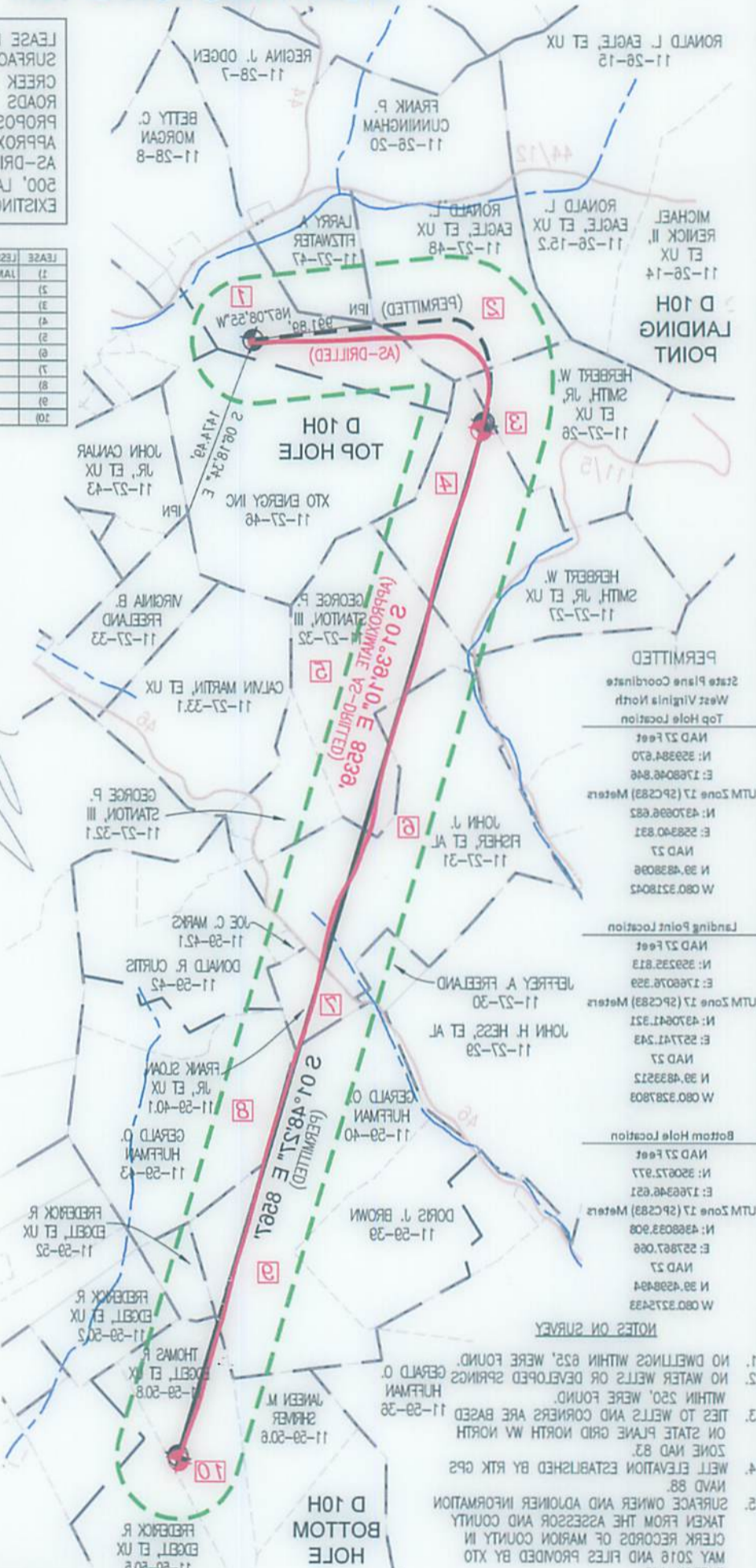
State Plane Coordinate
West Virginia North
Top Hole Location

UTM Zone 17 (29C283) Meters

Bottom Hole Location

UTM Zone 17 (29C283) Meters

Notes on Survey



- NOTES ON SURVEY**
1. NO DWELLINGS WITHIN 65' WERE FOUND.
 2. 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.
 3. TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH W. NORTH ZONE NAD 83.
 4. WELL ELEVATION ESTABLISHED BY RTK GPS NAD 88.
 5. TIES TO WELLS AND CORNERS ARE BASED WITHIN 250' WERE FOUND.
 6. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' WERE FOUND.
 7. NO DWELLINGS WITHIN 65' WERE FOUND.

JONES CONSULTANTS, LLC

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WORTHINGTON D 10H	
SUPPLEMENTAL SURFACE AND LESSOR EXHIBIT	
Drawn By: JRV	Date: 02/28/18
LINCOLN DISTRICT MARION COUNTY, WEST VIRGINIA	
Scale: 1" = 1200'	Sheet: 2 OF 2
File No: 102018-38	Sheet: 2 OF 2

