

Reviewed
Jul 6 m
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 47-049-02422 County Marion District Lincoln
Quad Shinnston Pad Name Worthington Field/Pool Name Marcellus
Farm name XTO Energy Inc. Well Number Worthington A 3H
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 4370697.944 Easting 558343.605
Landing Point of Curve Northing 4371352.212 Easting 558130.205
Bottom Hole Northing 4371972.503 Easting 555464.868

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 2/28/2017 Date drilling commenced 10/5/2017 Date drilling ceased 5/17/18
Date completion activities began 6/21/18 Date completion activities ceased 6/27/18
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 - 02422 Farm name XTO Energy Inc. Well number Worthington A 3H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/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"	400	New	J-55, 87.5#		Y
Coal	17 1/2"	13 3/8"	548	New	H-40, 48#		N
Intermediate 1	12 1/4"	9 5/8"	3,178	New	J-55, 36#		Y
Intermediate 2							
Intermediate 3							
Production	8 1/2"	5 1/2"	12,510	New	CYP-110, 23#		TOC - est 862'
Tubing							
Packer type and depth set							

Comment Details Coal String - 70 bbls pumped down backside - 55 bbls to surface.

Hole problems with original lateral - plugged back and drilled sidetrack.

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	520	15.60	1.20	624	0	8
Intermediate 1	A	1125	15.60	1.21	1361.25	0	8
Intermediate 2							
Intermediate 3							
Production	CJ916 & 35% CJ305	1790	15.60	1.57	2810.3	Est. 862'	8
Tubing							

Drillers TD (ft) 17,802' Loggers TD (ft) 17,802'
 Deepest formation penetrated Marcellus Plug back to (ft) _____
 Plug back procedure _____

Kick off depth (ft) 5,101'

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 _____

* Verbal permission given by Sam Ward for added casing string

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Perforation Record Worthington A 3H 47-049-02422

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	6/21/2018	12,253	12,390	48	Marcellus
2	6/22/2018	12,044	12,181	48	Marcellus
3	6/22/2018	11,835	11,972	48	Marcellus
4	6/23/2018	11,626	11,763	48	Marcellus
5	6/23/2018	11,417	11,554	48	Marcellus
6	6/23/2018	11,208	11,345	48	Marcellus
7	6/23/2018	10,999	11,136	48	Marcellus
8	6/24/2018	10,790	10,927	48	Marcellus
9	6/24/2018	10,581	10,718	48	Marcellus
10	6/25/2018	10,372	10,509	48	Marcellus
11	6/25/2018	10,163	10,300	48	Marcellus
12	6/25/2018	9,954	10,091	48	Marcellus
13	6/25/2018	9,745	9,882	48	Marcellus
14	6/26/2018	9,536	9,673	48	Marcellus
15	6/26/2018	9,327	9,464	48	Marcellus
16	6/26/2018	9,118	9,255	48	Marcellus
17	6/26/2018	8,909	9,046	48	Marcellus
18	6/27/2018	8,700	8,837	48	Marcellus

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Stimulation Information Per Stage Worthington A 3H 47-049-02422

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	6/22/2018	85.9	7,050.3	5,291.2	4,815.0	398,760	11,946	
2	6/22/2018	86.4	7,411.4	5,413.3	4,864.0	404,080	11,919	
3	6/22/2018	84.8	7,931.3	5,926.3	4,943.0	403,120	11,662	
4	6/23/2018	85.4	7,738.4	5,995.2	5,244.0	401,940	11,352	
5	6/23/2018	85.7	7,739.6	5,670.6	5,536.0	401,840	11,220	
6	6/23/2018	85.1	7,604.4	5,960.4	4,998.0	399,480	11,077	
7	6/24/2018	85.5	7,838.6	5,714.9	5,171.0	400,200	12,408	
8	6/24/2018	85.8	7,531.6	5,953.2	5,320.0	405,900	11,455	
9	6/24/2018	85.5	7,501.2	6,427.2	5,036.0	401,060	11,379	
10	6/25/2018	85.1	7,716.8	6,528.0	5,415.0	400,580	11,275	
11	6/25/2018	85.6	7,437.4	6,308.4	5,176.0	397,840	11,785	
12	6/25/2018	85.7	7,301.3	6,454.3	4,889.0	400,160	10,847	
13	6/25/2018	84.8	7,400.6	6,428.5	5,322.0	398,700	12,132	
14	6/26/2018	85.4	7,264.9	6,499.3	5,212.0	396,420	11,926	
15	6/26/2018	85.5	7,330.9	6,436.7	5,515.0	399,840	11,014	
16	6/26/2018	86.9	7,162.0	6,757.0	5,198.0	396,740	10,732	
17	6/26/2018	85.3	7,250.7	7,037.1	5,193.0	400,260	11,364	
18	6/27/2018	85.1	8,207.7	6,435.0	5,057.0	397,340	11,047	

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API 47- 049 - 02422 Farm name XTO Energy Inc. Well number Worthington A 3H

PRODUCING FORMATION(S)	DEPTHS		
Marcellus	7589	TVD	17802 MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump
 SHUT-IN PRESSURE Surface Test not yet completed psi Bottom Hole _____ psi DURATION OF TEST _____ hrs
 OPEN FLOW Gas _____ mcfpd Oil _____ bpd NGL _____ bpd Water _____ 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.

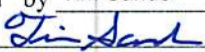
Drilling Contractor Patterson-UTI Drilling
 Address 207 Carlton Dr. City Eighty Four State PA Zip 15330

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  Title Regulatory Coordinator Date 9/20/2018

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

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Lithology Worthington A 3H 47-049-02422

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	7408	4310	8211	
Hamilton	7408	7472	8211	8324	
Upper Marcellus	7472	7570	8324	8650	
Lower Marcellus	7570	7589	8650	17802	

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SCALE: 1" = 2400'

WORTHINGTON A 3H

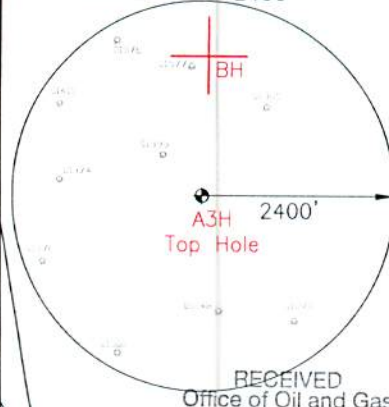
LATITUDE: 39°30'00"
SCALE 1" = 3000'

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.

LINE LEGEND

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



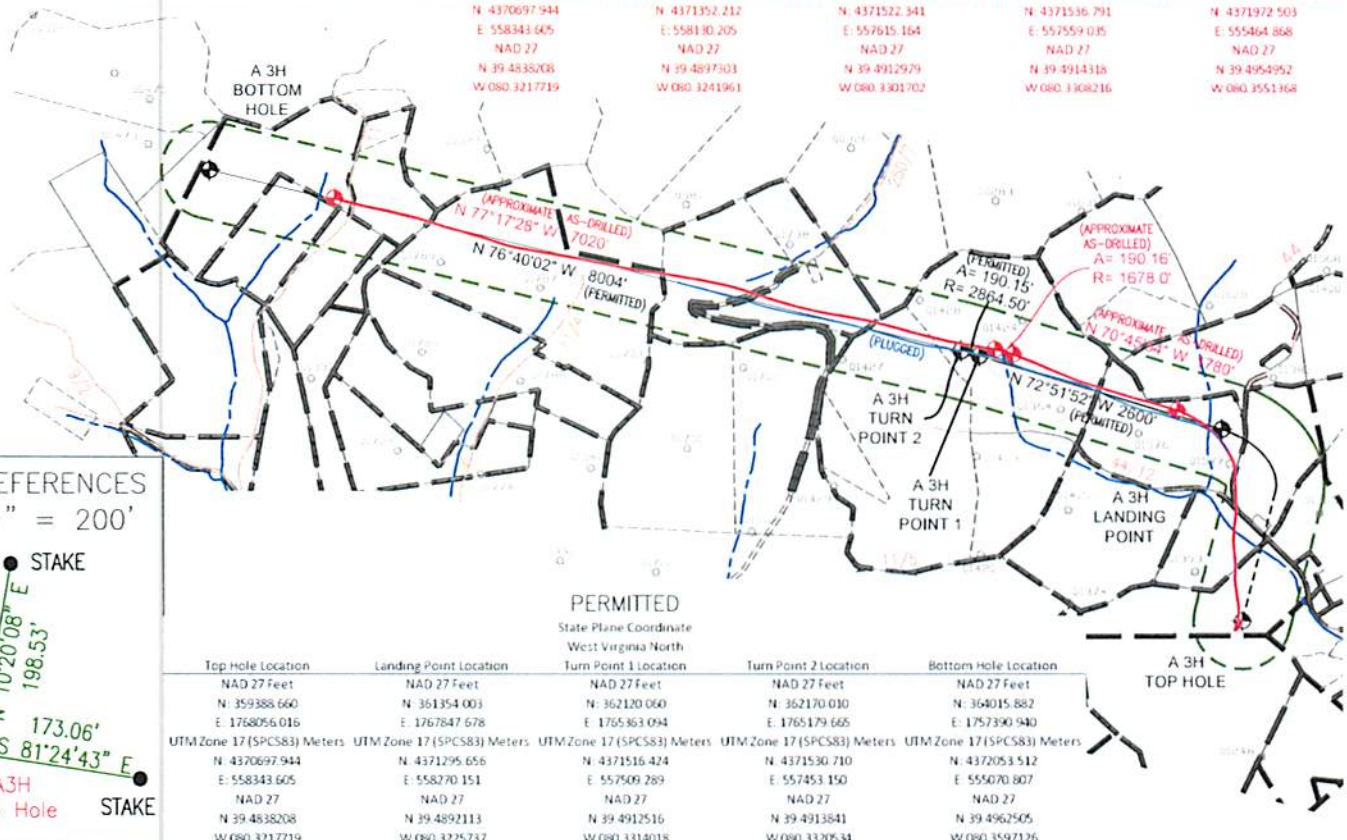
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Top Hole Location	Landing Point Location	Turn Point 1 Location	Turn Point 2 Location	Bottom Hole Location
NAD 27 Feet N: 359388.660 E: 1768056.016	NAD 27 Feet N: 361547.243 E: 1767391.559	NAD 27 Feet N: 362133.681 E: 1765710.832	NAD 27 Feet N: 362184.171 E: 1765527.443	NAD 27 Feet N: 363728.496 E: 1768679.566
UTM Zone 17 (SPCS83) Meters N: 4370697.944 E: 558343.605 NAD 27 N 39 4838208 W 080 3217719	UTM Zone 17 (SPCS83) Meters N: 4371352.212 E: 558130.205 NAD 27 N 39 4897303 W 080 3241961	UTM Zone 17 (SPCS83) Meters N: 4371522.341 E: 557815.164 NAD 27 N 39 4912979 W 080 3301702	UTM Zone 17 (SPCS83) Meters N: 4371536.791 E: 557559.035 NAD 27 N 39 4914318 W 080 3308216	UTM Zone 17 (SPCS83) Meters N: 4371972.503 E: 555464.868 NAD 27 N 39 4954952 W 080 3551168

NORTH



REFERENCES



Top Hole Location	Landing Point Location	Turn Point 1 Location	Turn Point 2 Location	Bottom Hole Location
NAD 27 Feet N: 359388.660 E: 1768056.016	NAD 27 Feet N: 361354.003 E: 1767847.678	NAD 27 Feet N: 362120.060 E: 1765363.094	NAD 27 Feet N: 362170.030 E: 1765179.665	NAD 27 Feet N: 364015.882 E: 1757390.940
UTM Zone 17 (SPCS83) Meters N: 4370697.944 E: 558343.605 NAD 27 N 39 4838208 W 080 3217719	UTM Zone 17 (SPCS83) Meters N: 4371295.056 E: 558270.151 NAD 27 N 39 4892113 W 080 3225737	UTM Zone 17 (SPCS83) Meters N: 4371516.424 E: 557509.289 NAD 27 N 39 4912516 W 080 3314018	UTM Zone 17 (SPCS83) Meters N: 4371530.710 E: 557453.150 NAD 27 N 39 4913841 W 080 3320534	UTM Zone 17 (SPCS83) Meters N: 4372053.512 E: 555670.807 NAD 27 N 39 4962505 W 080 3597126



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

SHEET 1 OF 2

FILE #: JC2016-36
DRAWING #: WORTHINGTON A 3H WELL
SCALE: 1" = 3000'
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: *Ryan Jones*
R.P.E.: _____ P.S.: 2165



PLACE SEAL HERE

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



DATE: 08/20/2018
OPERATOR'S WELL #: WORTHINGTON A 3H
API WELL #: 47 049 02422
STATE COUNTY PERMIT

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

WATERSHED: LOWER WEST FORK RIVER (0502000206) ELEVATION: 1,194' FINISH GRADE
COUNTY/DISTRICT: MARION / LINCOLN QUADRANGLE: SHINNSTON 7.5'
SURFACE OWNER: XTO ENERGY INC ACREAGE: 104.40±
OIL & GAS ROYALTY OWNER: RADDISH, ET AL ACREAGE: 478±

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: 7,589' (TVD), 17,802' (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

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/22/2018
Job End Date:	6/27/2018
State:	West Virginia
County:	Marion
API Number:	47-049-02422-00-00
Operator Name:	XTO Energy/ExxonMobil
Well Name and Number:	Worthington A3H
Latitude:	39.48390500
Longitude:	-80.32158300
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,587
Total Base Water Volume (gal):	8,763,258
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	90.32110	
FR-16	C&J Energy Services	Friction Reducer					
				Listed Below			

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				2-Propenoic acid, polymer with 2-propenamide, sodium salt	25987-30-8	30.00000	0.01637	
				Polyethylene glycol	25322-68-3	50.00000	0.01586	
				Aluminum Oxide	1344-28-1	1.10000	0.01061	
				2,2-Dibromo-3-nitrilopropionamide (DBNPA)	10222-01-2	30.00000	0.00952	
				Water	7732-18-5	28.50000	0.00904	
				Titanium Oxide	13463-67-7	0.10000	0.00794	
				Iron Oxide	1309-37-1	0.10000	0.00794	
				Ethylene Glycol	107-21-1	5.00000	0.00273	
				Sodium Acetate Anhydrous	127-09-3	3.00000	0.00164	
				Phosphonic Acid Salt	Proprietary	6.00000	0.00145	
				Poly(oxy-1,2-ethandiyl), alpha-isodecyl-omega-hydroxy-phosphate	108818-88-8	2.00000	0.00109	
				Sorbitan Monooleate	1338-43-8	2.00000	0.00109	
				Alcohols, C12-15-branched and linear, ethoxylated propoxylated	120313-48-6	2.00000	0.00109	
				Iron Oxide	1309-37-1	0.10000	0.00097	
				Titanium Oxide	13463-67-7	0.10000	0.00097	
				Ethoxylated Sorbitan Monooleate	9005-65-6	1.00000	0.00055	
				Ammonium Chloride	12125-02-9	2.00000	0.00048	
				Monoethanolamine hydrochloride	2002-24-6	2.00000	0.00048	
				Ethylene Glycol	107-21-1	40.00000	0.00048	
				Water	7732-18-5	30.00000	0.00036	
				Methanol	67-56-1	1.00000	0.00024	
				Dimethylformamide	68-12-2	20.00000	0.00024	
				Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7	15.00000	0.00018	
				Cinnamaldehyde	104-55-2	15.00000	0.00018	

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					111-76-2	15.00000	0.00018
					112-30-1	5.00000	0.00006
					127087-87-0	5.00000	0.00006
					79-06-1	0.10000	0.00006
					111-87-5	2.50000	0.00003
					67-63-0	2.50000	0.00003
					78-40-0	2.50000	0.00003
					68513-87-1	1.00000	0.00001

* 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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SCALE: 1" = 2400'

WORTHINGTON A 3H

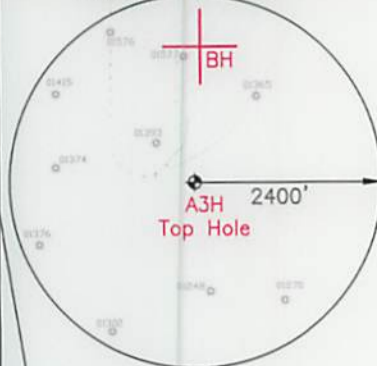
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LINE LEGEND

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



TH
AS-DRILLED

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PERMITTED
State Plane Coordinate
West Virginia North

Top Hole Location	Landing Point Location	Turn Point 1 Location	Turn Point 2 Location	Bottom Hole Location
NAD 27 Feet N: 359388.660 E: 1768056.016	NAD 27 Feet N: 361354.003 E: 1767847.678	NAD 27 Feet N: 362120.060 E: 1765363.094	NAD 27 Feet N: 362170.010 E: 1765179.665	NAD 27 Feet N: 364015.882 E: 1757390.940
UTM Zone 17 (SPCS83) Meters N: 4370697.944 E: 558343.605	UTM Zone 17 (SPCS83) Meters N: 4371295.656 E: 558270.151	UTM Zone 17 (SPCS83) Meters N: 4371516.424 E: 557509.289	UTM Zone 17 (SPCS83) Meters N: 4371530.710 E: 557453.150	UTM Zone 17 (SPCS83) Meters N: 4372053.512 E: 555070.807
NAD 27 N 39.4838208 W 080.3217719	NAD 27 N 39.4892113 W 080.3225737	NAD 27 N 39.4912516 W 080.3314018	NAD 27 N 39.4913841 W 080.3320534	NAD 27 N 39.4962505 W 080.3597126



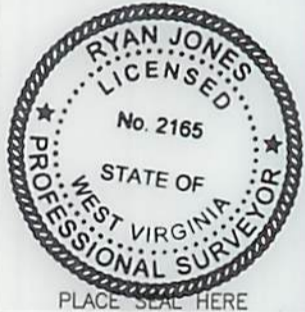
2402 PENNSYLVANIA 66 DELMONT, PA 15626
(724) 757 - 2417 www.jonesconsultant.com

SHEET 1 OF 2

FILE #: JC2016-36
DRAWING #: WORTHINGTON A 3H 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: 05/29/2019
OPERATOR'S WELL #: WORTHINGTON A 3H
API WELL #: 47 049 02422
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: 478±

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: 7,589' (TVD), 17,802' (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

8443' 19148' 2400'

WORTHINGTON A 3H

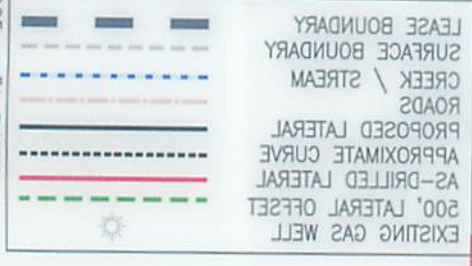
SCALE: 1" = 2400'

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 W/ NORTH ZONE HAD 83.
4. 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.
5. WELLS SHOWN ARE TAKEN FROM RECORDS OF WDEP.



LINE LEGEND



SCALE 1" = 2000'

LONGITUDE: 80.11.30"



Top Hole Location	Landmark Point Location	Turn Point 1 Location	Turn Point 2 Location	Bottom Hole Location
NAD 23 Feet E: 128082.018 N: 32988.600	NAD 23 Feet E: 128191.229 N: 36127.243	NAD 23 Feet E: 128270.688 N: 36133.681	NAD 23 Feet E: 128300.940 N: 36137.010	NAD 23 Feet E: 128300.940 N: 36137.010
UTM Zone 12 (29C283) Meters E: 52842.602 N: 3948320.116	UTM Zone 12 (29C283) Meters E: 528130.202 N: 3948320.116	UTM Zone 12 (29C283) Meters E: 528222.164 N: 3948320.116	UTM Zone 12 (29C283) Meters E: 528259.802 N: 3948320.116	UTM Zone 12 (29C283) Meters E: 528259.802 N: 3948320.116
NAD 23 E: 52842.602 N: 3948320.116	NAD 23 E: 528130.202 N: 3948320.116	NAD 23 E: 528222.164 N: 3948320.116	NAD 23 E: 528259.802 N: 3948320.116	NAD 23 E: 528259.802 N: 3948320.116
W 080 332323 N 39 483201	W 080 331408 N 39 483201	W 080 332024 N 39 483201	W 080 332024 N 39 483201	W 080 332128 N 39 483201



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(724) 757 - 2417

SHEET 1 OF 2



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

FILE #: JCS016-36
DRAWING #: WORTHINGTON A 3H WELL
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1:2500
PROVEN SOURCE OF ELEVATION: RTK GPS

CHARLESTON, WV 25304
801 57TH STREET
OFFICE OF OIL & GAS
WDEP
UNITED STATES TOPOGRAPHIC MAPS
(+) DENOTES LOCATION OF WELL ON

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

WATERSHED: LOWER WEST FORK RIVER (050200206)
COUNTY/DISTRICT: MARION / LINCOLN
SURFACE OWNER: XTO ENERGY INC
OIL & GAS ROYALTY OWNER: RADTSH, ET AL

DESIGNATED AGENT: GARY BEALL
Address: 100 THORN HILL ROAD
City: WARRENDALE State: PA Zip Code: 15086

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

TARGET FORMATION: MARCELLUS
ESTIMATED DEPTH: 7,580' (TVD), 17,802' (TMD)
CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE

ACREAGE: 4.84
ACREAGE: 10.4404
QUADRANGLE: SHINGSTON T5
ELEVATION: 1,194' FINISH GRADE

API WELL #: 47
STATE COUNTY PERMIT: 040 02422

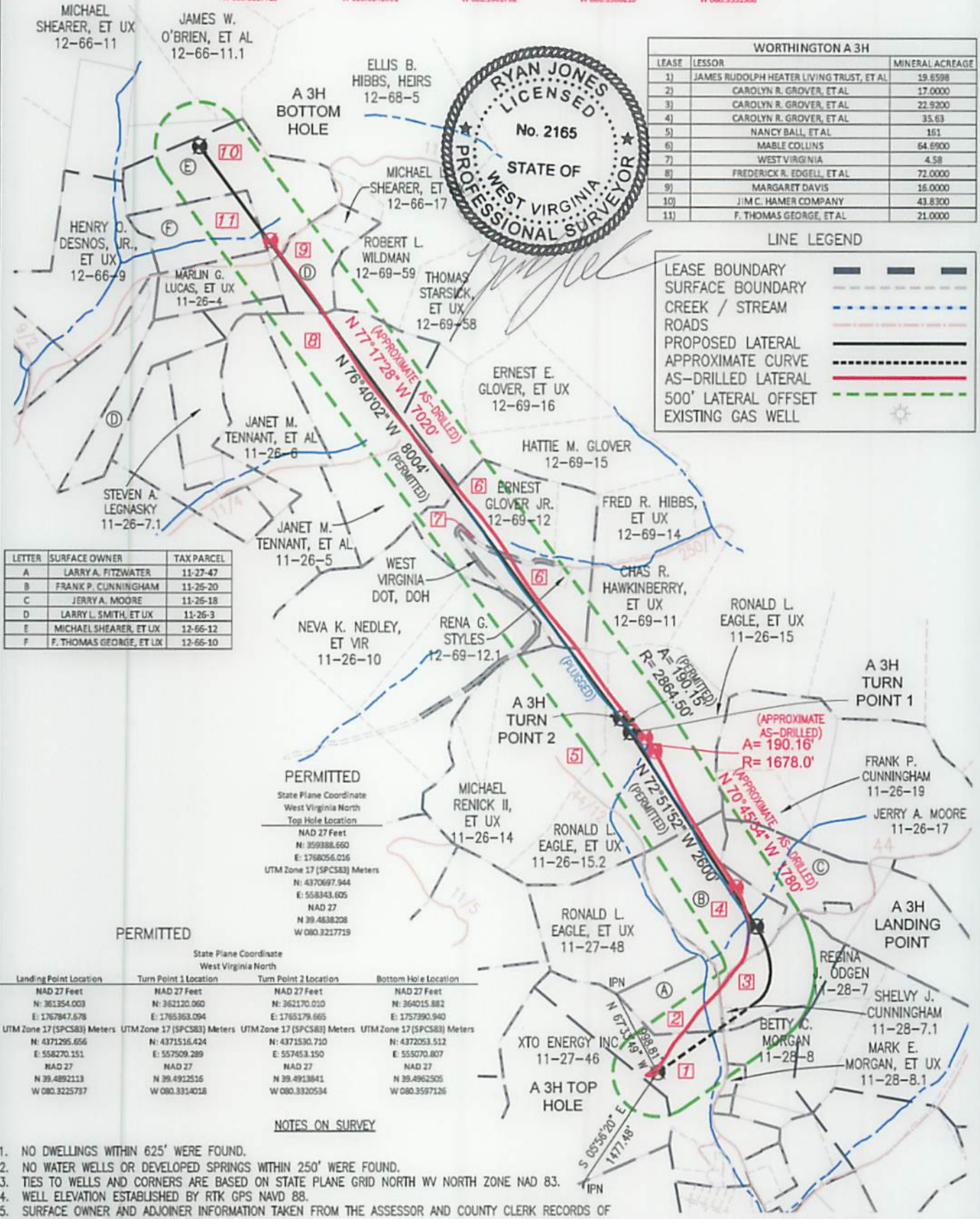
OPERATOR'S WELL #: WORTHINGTON A 3H
DATE: 05/29/2019

WORTHINGTON A 3H

AS-DRILLED

State Plane Coordinate
West Virginia North

Top Hole Location	Landing Point Location	Turn Point 1 Location	Turn Point 2 Location	Bottom Hole Location
NAD 27 Feet N: 359388.660 E: 1768056.016	NAD 27 Feet N: 361547.243 E: 1767391.559	NAD 27 Feet N: 362133.681 E: 1765710.832	NAD 27 Feet N: 362184.171 E: 1765527.443	NAD 27 Feet N: 363728.496 E: 1758679.566
UTM Zone 17 (SPCS83) Meters N: 4370697.944 E: 558343.605	UTM Zone 17 (SPCS83) Meters N: 4371352.212 E: 558130.205	UTM Zone 17 (SPCS83) Meters N: 4371522.341 E: 557815.164	UTM Zone 17 (SPCS83) Meters N: 4371536.791 E: 557559.035	UTM Zone 17 (SPCS83) Meters N: 4371972.503 E: 555464.868
NAD 27 N 39.4892208 W 080.3217719	NAD 27 N 39.4897303 W 080.3241961	NAD 27 N 39.4912979 W 080.3301702	NAD 27 N 39.4914318 W 080.3308215	NAD 27 N 39.4954952 W 080.3551368



LETTER	SURFACE OWNER	TAX PARCEL
A	LARRY A. FITZWATER	11-27-47
B	FRANK P. CUNNINGHAM	11-25-20
C	JERRY A. MOORE	11-26-18
D	LARRY L. SMITH, ET UX	11-26-3
E	MICHAEL SHEARER, ET UX	12-66-12
F	F. THOMAS GEORGE, ET UX	12-66-10

PERMITTED

State Plane Coordinate
West Virginia North

Landing Point Location	Turn Point 1 Location	Turn Point 2 Location	Bottom Hole Location
NAD 27 Feet N: 361354.003 E: 1767847.678	NAD 27 Feet N: 362120.060 E: 1765363.094	NAD 27 Feet N: 362170.010 E: 1765179.665	NAD 27 Feet N: 364015.882 E: 1757390.940
UTM Zone 17 (SPCS83) Meters N: 4371295.656 E: 558270.151	UTM Zone 17 (SPCS83) Meters N: 4371516.424 E: 557509.289	UTM Zone 17 (SPCS83) Meters N: 4371530.710 E: 557453.150	UTM Zone 17 (SPCS83) Meters N: 4372053.512 E: 555070.807
NAD 27 N 39.4892113 W 080.3225737	NAD 27 N 39.4912516 W 080.3314018	NAD 27 N 39.4913841 W 080.3320534	NAD 27 N 39.4962505 W 080.3597125

- 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 WDEP.

WORTHINGTON A 3H		
LEASE	LESSOR	MINERAL ACREAGE
1)	JAMES RUDOLPH HEATER LIVING TRUST, ET AL	19.6598
2)	CAROLYN R. GROVER, ET AL	17.0000
3)	CAROLYN R. GROVER, ET AL	22.9200
4)	CAROLYN R. GROVER, ET AL	35.63
5)	NANCY BALL, ET AL	161
6)	MABLE COLLINS	64.6900
7)	WEST VIRGINIA	4.58
8)	FREDERICK R. EDGELL, ET AL	72.0000
9)	MARGARET DAVIS	16.0000
10)	JIM C. HAMER COMPANY	43.8300
11)	F. THOMAS GEORGE, ET AL	21.0000

LINE LEGEND

- LEASE BOUNDARY: Solid black line
- SURFACE BOUNDARY: Dashed black line
- CREEK / STREAM: Blue dashed line
- ROADS: Red dashed line
- PROPOSED LATERAL: Solid red line
- APPROXIMATE CURVE: Dashed black line with center point
- AS-DRILLED LATERAL: Solid red line with center point
- 500' LATERAL OFFSET: Dashed green line
- EXISTING GAS WELL: Sun symbol

JONES CONSULTANTS, LLC

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(724) 757 - 2417 www.jonesconsultant.com



XTO ENERGY

190 THORN HILL ROAD
WARRENDALE, PA 15086

0' 1500'



SUPPLEMENTAL SURFACE AND LESSOR EXHIBIT

WORTHINGTON A 3H

Drawn By: JRV	Date: 05/29/19	LINCOLN DISTRICT MARION COUNTY, WEST VIRGINIA
Scale: SCALE 1" = 1500'	Sheet: SHEET 2 OF 2	File No.: JC2016-36
AFE # 1305457		

WORTHINGTON A 3H

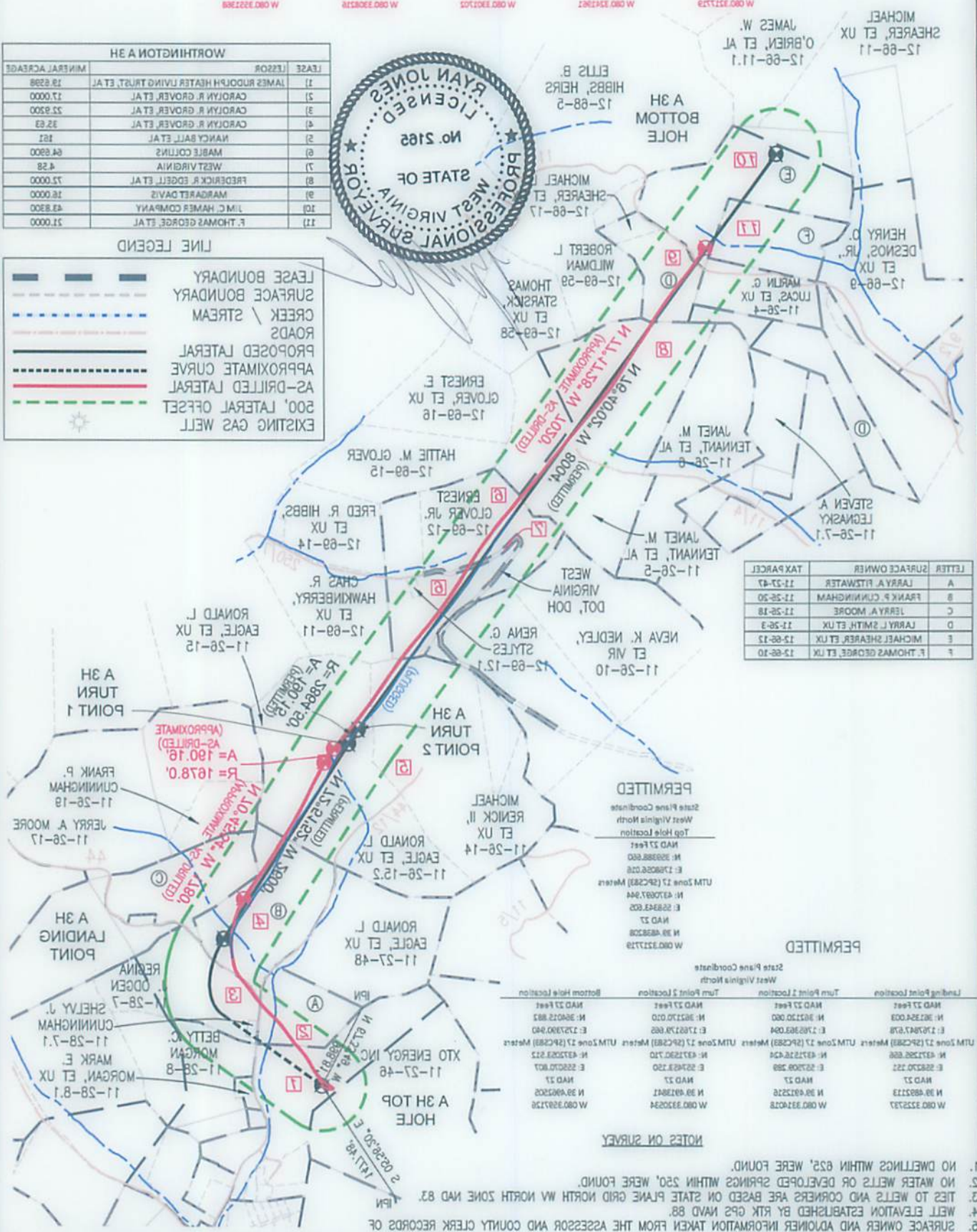
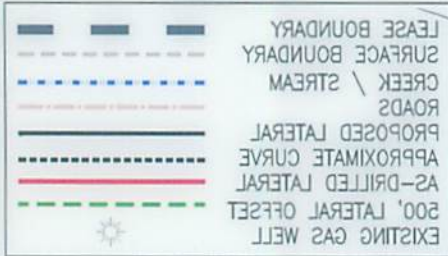
AS-DRILLED

State Plane Coordinates
West Virginia North

Top Hole Location	Turn Point 1 Location	Turn Point 2 Location	Bottom Hole Location
W 080 332373 N 39 483212 E 25258 222	W 080 332373 N 39 483212 E 25258 222	W 080 332373 N 39 483212 E 25258 222	W 080 332373 N 39 483212 E 25258 222
W 080 332373 N 39 483212 E 25258 222	W 080 332373 N 39 483212 E 25258 222	W 080 332373 N 39 483212 E 25258 222	W 080 332373 N 39 483212 E 25258 222
W 080 332373 N 39 483212 E 25258 222	W 080 332373 N 39 483212 E 25258 222	W 080 332373 N 39 483212 E 25258 222	W 080 332373 N 39 483212 E 25258 222

LEASE	LESSOR	MINERAL ACRES
11	JAMES RUDOLPH HEATER LIVING TRUST, ET AL	19.5598
12	CAROLYN R GROVER, ET AL	17.0000
13	CAROLYN R GROVER, ET AL	23.9300
14	CAROLYN R GROVER, ET AL	32.63
15	CAROLYN R GROVER, ET AL	182
16	HANCY BALL, ET AL	64.8900
17	MABLE COLLINS	4.28
18	WEST VIRGINIA	17.0000
19	FREDERICK R EDGELL, ET AL	16.0000
20	MARGARET DAVIS	48.9300
21	LIM C HAMER COMPANY	21.0000
22	F THOMAS GEORGE, ET AL	

LINE LEGEND



LETTER	SURFACE OWNER	TAX PARCEL
A	LARRY A FITZWATER	11-27-43
B	FRANK P CUNNINGHAM	11-28-20
C	JERRY A MOORE	11-28-18
D	LARRY L SMITH, ET UX	11-28-3
E	MICHAEL SHEARER, ET UX	12-68-12
F	F THOMAS GEORGE, ET UX	12-68-10

Top Hole Location	Turn Point 1 Location	Turn Point 2 Location	Bottom Hole Location
W 080 332373 N 39 483212 E 25258 222	W 080 332373 N 39 483212 E 25258 222	W 080 332373 N 39 483212 E 25258 222	W 080 332373 N 39 483212 E 25258 222
W 080 332373 N 39 483212 E 25258 222	W 080 332373 N 39 483212 E 25258 222	W 080 332373 N 39 483212 E 25258 222	W 080 332373 N 39 483212 E 25258 222
W 080 332373 N 39 483212 E 25258 222	W 080 332373 N 39 483212 E 25258 222	W 080 332373 N 39 483212 E 25258 222	W 080 332373 N 39 483212 E 25258 222

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 W NORTH ZONE NAD 83.
- WELL ELEVATION ESTABLISHED BY RTK GPS NAD 88.
- 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.
- WELLS SHOWN ARE TAKEN FROM RECORDS OF WDEP.

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WORTHINGTON A 3H

SURFACE AND LESSOR EXHIBIT

SUPPLEMENTAL

Drawn by: JRV
Date: 05/28/18

Scale: 1" = 1500'
Sheet: 2 of 2

File No.: JCS2018-28

XTO ENERGY

100 THORN HILL ROAD
WARRENDALE, PA 15086

0' 1500'

2002 GRID NORTH