

District I1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720**District II**811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720**District III**1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170**District IV**1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form C-101
August 1, 2011

Permit 273838

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address XTO ENERGY, INC 6401 Holiday Hill Road Midland, TX 79707		2. OGRID Number 5380
		3. API Number 30-015-46433
4. Property Code 317788	5. Property Name REMUDA SOUTH 25 STATE	6. Well No. 163H

7. Surface Location

UL - Lot F	Section 25	Township 23S	Range 29E	Lot Idn	Feet From 2310	N/S Line N	Feet From 1950	E/W Line W	County Eddy
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8. Proposed Bottom Hole Location

UL - Lot N	Section 36	Township 23S	Range 29E	Lot Idn N	Feet From 200	N/S Line S	Feet From 1750	E/W Line W	County Eddy
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9. Pool Information

PURPLE SAGE;WOLFCAMP (GAS)	98220
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Additional Well Information

11. Work Type New Well	12. Well Type GAS	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3075
16. Multiple N	17. Proposed Depth 19078	18. Formation Wolfcamp	19. Contractor	20. Spud Date 8/1/2020
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits**21. Proposed Casing and Cement Program**

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	20	16	64	350	365	0
Int1	14.75	11.75	42	3150	1207	0
Int2	10.875	8.625	32	10500	1749	0
Prod	7.875	5.5	20	19078	1047	10000

Casing/Cement Program: Additional Comments

DV tool may be set in 2nd intermediate.

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	5000	5000	Cameron

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒ if applicable.	OIL CONSERVATION DIVISION	
Signature:		
Printed Name: Electronically filed by Deeann Kemp	Approved By: Raymond Podany	
Title: Regulatory	Title: Geologist	
Email Address: DeeAnn_Kemp@xtoenergy.com	Approved Date: 11/7/2019	Expiration Date: 11/7/2021
Date: 10/29/2019	Phone: 432-620-6724	Conditions of Approval Attached

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Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-	² Pool Code	³ Pool Name
⁴ Property Code	⁵ Property Name REMUDA SOUTH 25 STATE	⁶ Well Number 163H
⁷ OGRID No. 005380	⁸ Operator Name XTO ENERGY, INC.	⁹ Elevation 3,075'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	25	23 S	29 E		2,310	NORTH	1,950	WEST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	36	23 S	29 E		200	SOUTH	1,750	WEST	EDDY

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

	GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y= 464,609.6 X= 621,584.0 LAT.= 32.276716°N LONG.= 103.939936°W FIRST TAKE POINT NAD 27 NME Y= 463,932.4 X= 621,383.8 LAT.= 32.274856°N LONG.= 103.940591°W CORNER COORDINATES TABLE NAD 27 NME A - Y= 464,259.7 N, X= 622,286.2 E B - Y= 464,260.3 N, X= 620,960.0 E C - Y= 461,608.0 N, X= 622,291.1 E D - Y= 461,607.3 N, X= 620,962.6 E E - Y= 458,946.6 N, X= 622,304.5 E F - Y= 458,944.7 N, X= 620,976.7 E G - Y= 456,287.9 N, X= 622,317.8 E H - Y= 456,285.1 N, X= 620,991.5 E CORNER COORDINATES TABLE NAD 83 NME A - Y= 464,319.1 N, X= 663,469.2 E B - Y= 464,319.7 N, X= 662,143.0 E C - Y= 461,667.3 N, X= 663,474.1 E D - Y= 461,666.6 N, X= 662,145.6 E E - Y= 459,005.9 N, X= 663,487.6 E F - Y= 459,004.0 N, X= 662,159.8 E G - Y= 456,347.1 N, X= 663,501.0 E H - Y= 456,344.3 N, X= 662,174.7 E LAST TAKE POINT NAD 27 NME Y= 456,616.0 X= 621,413.0 LAT.= 32.254744°N LONG.= 103.940583°W BOTTOM HOLE LOCATION NAD 27 NME Y= 456,486.0 X= 621,413.8 LAT.= 32.254386°N LONG.= 103.940582°W	GEODETIC COORDINATES NAD 83 NME SURFACE LOCATION Y= 464,669.0 X= 662,766.9 LAT.= 32.276838°N LONG.= 103.940427°W FIRST TAKE POINT NAD 83 NME Y= 463,991.8 X= 662,566.8 LAT.= 32.274979°N LONG.= 103.941082°W LAST TAKE POINT NAD 83 NME Y= 456,675.2 X= 662,596.2 LAT.= 32.254866°N LONG.= 103.941073°W BOTTOM HOLE LOCATION NAD 83 NME Y= 456,545.2 X= 662,597.0 LAT.= 32.254509°N LONG.= 103.941072°W	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature _____ Date _____ Printed Name _____ E-mail Address _____
	¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. 10-24-2019 Date of Survey _____ Signature and Seal of Professional Surveyor: _____ MARK DILLON HARP 23786 Certificate Number _____		

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GAS CAPTURE PLAN

Date: 11/7/2019

☒ Original

Operator & OGRID No.: [5380] XTO ENERGY, INC

☐ Amended - Reason for
Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
REMUDA SOUTH 25 STATE #163H	30-015-46433	F-25-23S-29E	2310N 1950W	2600	Flared	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to LUCID ENERGY DELAWARE, LLC and will be connected to LUCID ENERGY DELAWARE, LLC High Pressure gathering system located in Eddy County, New Mexico. It will require 0' of pipeline to connect the facility to High Pressure gathering system. XTO ENERGY, INC provides (periodically) to LUCID ENERGY DELAWARE, LLC a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, XTO ENERGY, INC and LUCID ENERGY DELAWARE, LLC have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at LUCID ENERGY DELAWARE, LLC Processing Plant located in Sec. 13, Twn. 24S, Rng. 33E, Eddy County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on LUCID ENERGY DELAWARE, LLC system at that time. Based on current information, it is XTO ENERGY, INC's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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Form APD Comments

Permit 273838

PERMIT COMMENTS

Operator Name and Address: XTO ENERGY, INC [5380] 6401 Holiday Hill Road Midland, TX 79707	API Number: 30-015-46433
	Well: REMUDA SOUTH 25 STATE #163H

Created By	Comment	Comment Date
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Form APD Conditions

Permit 273838

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: XTO ENERGY, INC [5380] 6401 Holiday Hill Road Midland, TX 79707		API Number: 30-015-46433
		Well: REMUDA SOUTH 25 STATE #163H

OCD Reviewer	Condition
rpodany	Will require a directional survey with the C-104
rpodany	Cement is required to circulate on both surface and intermediate1 strings of casing



XTO Energy

Eddy County, NM (NAD-27)

Remuda South 25 State

#163H

OH

Plan: PERMIT

Standard Planning Report

27 October, 2019



Project: Eddy County, NM (NAD-27)
Site: Remuda South 25 State
Well: #163H
Wellbore: OH
Design: PERMIT

PROJECT DETAILS: Eddy County, NM (NAD-27)
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

WELL DETAILS: #163H

			Rig Name:			
			RKB=-23' @ 3098.00usft			
			Ground Level:	3075.00		
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	464609.60	621584.00	32.276716	-103.939935	

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
RS 25 STATE #163H: SHL (2310' FNL/1950' FWL)	0.00	0.00	0.00	464609.60	621584.00	32.276716	-103.939935	Point
RS 25 STATE #163H: FTP/LP	11298.00	-677.25	-200.21	463932.40	621383.80	32.274856	-103.940591	Point
RS 25 STATE #163H: LTP	11338.28	-7994.19	-171.01	456616.00	621413.00	32.254744	-103.940583	Point
RS 25 STATE #163H: PBHL (200' FSL/1750' FWL)	11339.00	-8124.20	-170.21	456486.00	621413.80	32.254386	-103.940582	Point

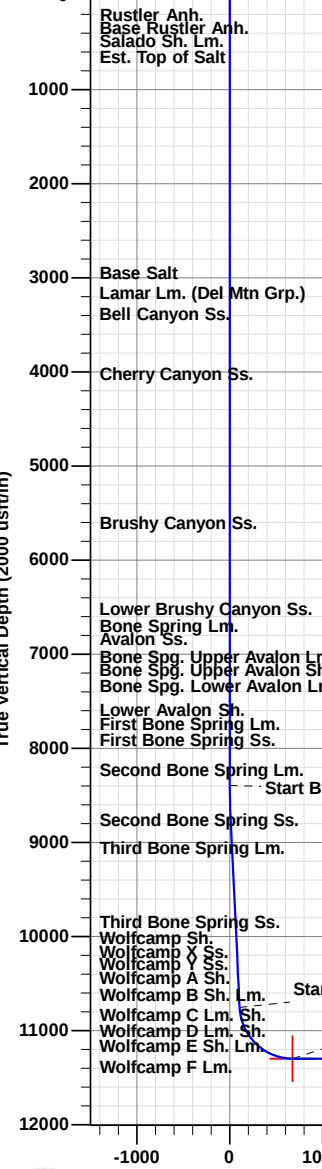
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	8395.00	0.00	0.00	8395.00	0.00	0.00	0.00	0.00	0.00
3	8645.01	5.00	236.48	8644.70	-6.02	-9.09	2.00	236.48	5.98
4	10762.28	5.00	236.48	10753.90	-107.94	-162.93	0.00	0.00	107.28
5	11631.71	89.68	179.77	11298.00	-677.25	-200.21	10.00	-56.83	676.44
6	18948.82	89.68	179.77	11338.28	-7994.19	-170.74	0.00	0.00	7993.44
7	19078.83	89.68	179.77	11339.00	-8124.20	-170.21	0.00	0.00	8123.45

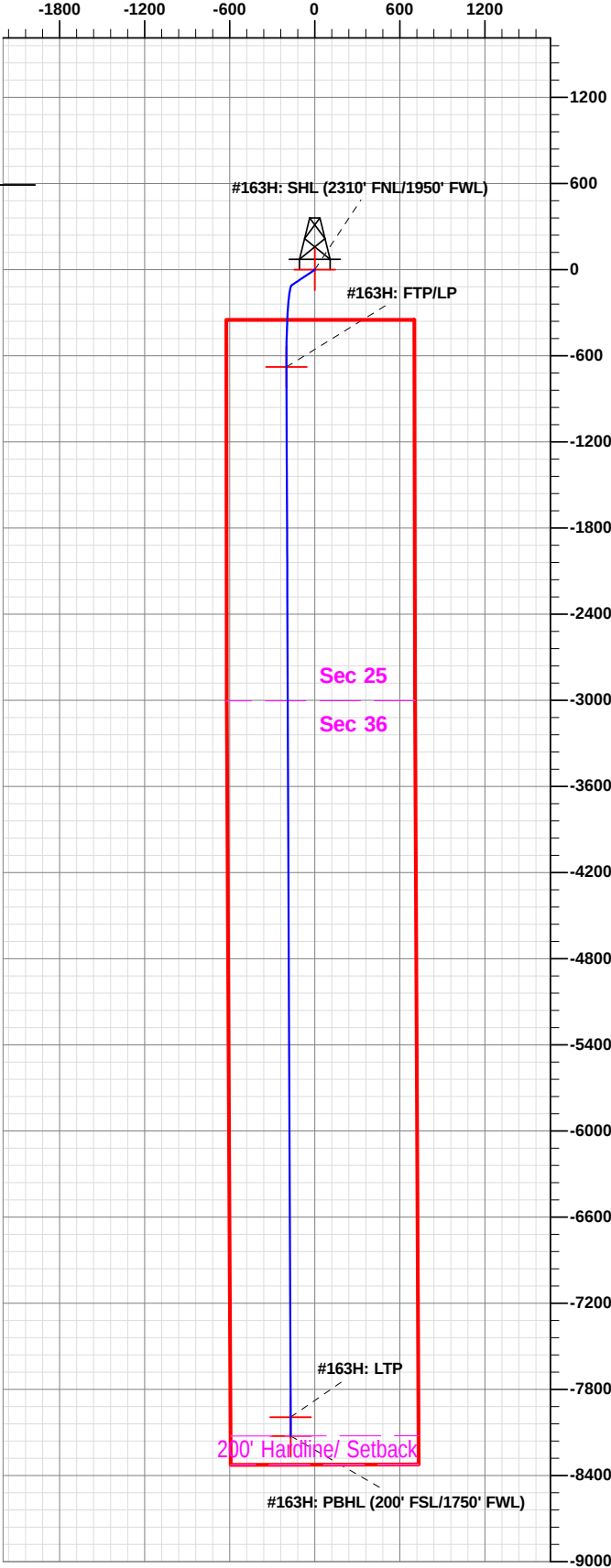
FORMATION TOP DETAILS

TVDPATH	Formation
2.00	Dewey Lake (Alluvium)
159.00	Rustler Anh.
198.00	Base Rustler Anh.
285.00	Salado Sh. Lm.
406.00	Est. Top of Salt
3056.00	Base Salt
3272.00	Lamar Lm. (Del Mtn Grp.)
3310.00	Bell Canyon Ss.
4133.00	Cherry Canyon Ss.
5714.00	Brushy Canyon Ss.
6729.00	Lower Brushy Canyon Ss.
6959.00	Bone Spring Lm.
7069.00	Avalon Ss.
7134.00	Bone Spg. Upper Avalon Lm.
7333.00	Bone Spg. Upper Avalon Sh.
7444.00	Bone Spg. Lower Avalon Lm
7698.00	Lower Avalon Sh.
7846.00	First Bone Spring Lm.
8018.00	First Bone Spring Ss.
8334.00	Second Bone Spring Lm.
8869.00	Second Bone Spring Ss.
9164.00	Third Bone Spring Lm.
9951.00	Third Bone Spring Ss.
10277.00	Wolfcamp Sh.
10310.00	Wolfcamp X Ss.
10384.00	Wolfcamp Y Ss.
10429.00	Wolfcamp A Sh.
10732.00	Wolfcamp B Sh. Lm.
10938.00	Wolfcamp C Lm. Sh.
11109.00	Wolfcamp D Lm. Sh.
11236.00	Wolfcamp E Sh. Lm.
11298.00	LP
11339.00	TD

#163H: SHL (2310' FNL/1950' FWL)



West(-)/East(+) (1200 usft/in)



Vertical Section at 179.77° (2000 usft/in)

The customer should only rely on this document after independently verifying all paths, targets, coordinates, lease and hard lines represented. Any decisions made or wells drilled utilizing this or any other information supplied by Prototype are at the sole risk and responsibility of the user.

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Form C-102
Revised August 1, 2011
Submit one copy to appropriate
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☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-		² Pool Code	³ Pool Name	
⁴ Property Code	⁵ Property Name REMUDA SOUTH 25 STATE			⁶ Well Number 163H
⁷ OGRID No. 005380	⁸ Operator Name XTO ENERGY, INC.			⁹ Elevation 3,075'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	25	23 S	29 E		2,310	NORTH	1,950	WEST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	36	23 S	29 E		200	SOUTH	1,750	WEST	EDDY

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

[illegible]



Prototype Well Planning LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #163H
Company:	XTO Energy	TVD Reference:	RKB=23' @ 3098.00usft
Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB=23' @ 3098.00usft
Site:	Remuda South 25 State	North Reference:	Grid
Well:	#163H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

Project	Eddy County, NM (NAD-27)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		Using geodetic scale factor

Site	Remuda South 25 State				
Site Position:		Northing:	464,609.60 usft	Latitude:	32.276716
From:	Map	Easting:	621,584.00 usft	Longitude:	-103.939936
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.21 °

Well	#163H					
Well Position	+N/-S	0.00 usft	Northing:	464,609.60 usft	Latitude:	32.276716
	+E/-W	0.00 usft	Easting:	621,584.00 usft	Longitude:	-103.939936
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,075.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/27/2019	6.87	60.02	47,690

Design	PERMIT			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.77

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8,395.00	0.00	0.00	8,395.00	0.00	0.00	0.00	0.00	0.00	0.00	
8,645.01	5.00	236.48	8,644.70	-6.02	-9.09	2.00	2.00	0.00	236.48	
10,762.28	5.00	236.48	10,753.90	-107.94	-162.93	0.00	0.00	0.00	0.00	
11,631.71	89.68	179.77	11,298.00	-677.25	-200.21	10.00	9.74	-6.52	-56.83	RS 25 STATE #163H:
18,948.82	89.68	179.77	11,338.28	-7,994.19	-170.74	0.00	0.00	0.00	0.00	RS 25 STATE #163H:
19,078.83	89.68	179.77	11,339.00	-8,124.20	-170.21	0.00	0.00	0.00	0.00	RS 25 STATE #163H:



Prototype Well Planning LLC

Planning Report

Database: EDM 5000.1 Single User Db
Company: XTO Energy
Project: Eddy County, NM (NAD-27)
Site: Remuda South 25 State
Well: #163H
Wellbore: OH
Design: PERMIT

Local Co-ordinate Reference: Well #163H
TVD Reference: RKB=23' @ 3098.00usft
MD Reference: RKB=23' @ 3098.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
Dewey Lake (Alluvium)									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
159.00	0.00	0.00	159.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler Anh.									
198.00	0.00	0.00	198.00	0.00	0.00	0.00	0.00	0.00	0.00
Base Rustler Anh.									
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
285.00	0.00	0.00	285.00	0.00	0.00	0.00	0.00	0.00	0.00
Salado Sh. Lm.									
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
406.00	0.00	0.00	406.00	0.00	0.00	0.00	0.00	0.00	0.00
Est. Top of Salt									
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,056.00	0.00	0.00	3,056.00	0.00	0.00	0.00	0.00	0.00	0.00
Base Salt									
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,272.00	0.00	0.00	3,272.00	0.00	0.00	0.00	0.00	0.00	0.00
Lamar Lm. (Del Mtn Grp.)									
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,310.00	0.00	0.00	3,310.00	0.00	0.00	0.00	0.00	0.00	0.00
Bell Canyon Ss.									
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00



Prototype Well Planning LLC

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Wellbore: OH
Design: PERMIT

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North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,133.00	0.00	0.00	4,133.00	0.00	0.00	0.00	0.00	0.00	0.00
Cherry Canyon Ss.									
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,714.00	0.00	0.00	5,714.00	0.00	0.00	0.00	0.00	0.00	0.00
Brushy Canyon Ss.									
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,729.00	0.00	0.00	6,729.00	0.00	0.00	0.00	0.00	0.00	0.00
Lower Brushy Canyon Ss.									
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,959.00	0.00	0.00	6,959.00	0.00	0.00	0.00	0.00	0.00	0.00
Bone Spring Lm.									
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,069.00	0.00	0.00	7,069.00	0.00	0.00	0.00	0.00	0.00	0.00
Avalon Ss.									
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,134.00	0.00	0.00	7,134.00	0.00	0.00	0.00	0.00	0.00	0.00
Bone Spg. Upper Avalon Lm.									
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,333.00	0.00	0.00	7,333.00	0.00	0.00	0.00	0.00	0.00	0.00
Bone Spg. Upper Avalon Sh.									
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,444.00	0.00	0.00	7,444.00	0.00	0.00	0.00	0.00	0.00	0.00



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Bone Spg. Lower Avalon Lm									
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,698.00	0.00	0.00	7,698.00	0.00	0.00	0.00	0.00	0.00	0.00
Lower Avalon Sh.									
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,846.00	0.00	0.00	7,846.00	0.00	0.00	0.00	0.00	0.00	0.00
First Bone Spring Lm.									
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8,018.00	0.00	0.00	8,018.00	0.00	0.00	0.00	0.00	0.00	0.00
First Bone Spring Ss.									
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00
8,334.00	0.00	0.00	8,334.00	0.00	0.00	0.00	0.00	0.00	0.00
Second Bone Spring Lm.									
8,395.00	0.00	0.00	8,395.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.10	236.48	8,400.00	0.00	0.00	0.00	2.00	2.00	0.00
8,500.00	2.10	236.48	8,499.98	-1.06	-1.60	1.06	2.00	2.00	0.00
8,600.00	4.10	236.48	8,599.83	-4.05	-6.11	4.02	2.00	2.00	0.00
8,645.01	5.00	236.48	8,644.70	-6.02	-9.09	5.98	2.00	2.00	0.00
8,700.00	5.00	236.48	8,699.47	-8.67	-13.08	8.62	0.00	0.00	0.00
8,800.00	5.00	236.48	8,799.09	-13.48	-20.35	13.40	0.00	0.00	0.00
8,870.17	5.00	236.48	8,869.00	-16.86	-25.45	16.76	0.00	0.00	0.00
Second Bone Spring Ss.									
8,900.00	5.00	236.48	8,898.71	-18.30	-27.62	18.18	0.00	0.00	0.00
9,000.00	5.00	236.48	8,998.33	-23.11	-34.88	22.97	0.00	0.00	0.00
9,100.00	5.00	236.48	9,097.95	-27.92	-42.15	27.75	0.00	0.00	0.00
9,166.30	5.00	236.48	9,164.00	-31.11	-46.97	30.93	0.00	0.00	0.00
Third Bone Spring Lm.									
9,200.00	5.00	236.48	9,197.57	-32.74	-49.42	32.54	0.00	0.00	0.00
9,300.00	5.00	236.48	9,297.19	-37.55	-56.68	37.32	0.00	0.00	0.00
9,400.00	5.00	236.48	9,396.81	-42.36	-63.95	42.11	0.00	0.00	0.00
9,500.00	5.00	236.48	9,496.43	-47.18	-71.21	46.89	0.00	0.00	0.00
9,600.00	5.00	236.48	9,596.05	-51.99	-78.48	51.68	0.00	0.00	0.00
9,700.00	5.00	236.48	9,695.67	-56.81	-85.75	56.46	0.00	0.00	0.00
9,800.00	5.00	236.48	9,795.29	-61.62	-93.01	61.24	0.00	0.00	0.00
9,900.00	5.00	236.48	9,894.91	-66.43	-100.28	66.03	0.00	0.00	0.00
9,956.31	5.00	236.48	9,951.00	-69.14	-104.37	68.72	0.00	0.00	0.00
Third Bone Spring Ss.									
10,000.00	5.00	236.48	9,994.53	-71.25	-107.55	70.81	0.00	0.00	0.00
10,100.00	5.00	236.48	10,094.15	-76.06	-114.81	75.60	0.00	0.00	0.00
10,200.00	5.00	236.48	10,193.77	-80.87	-122.08	80.38	0.00	0.00	0.00
10,283.55	5.00	236.48	10,277.00	-84.90	-128.15	84.38	0.00	0.00	0.00
Wolfcamp Sh.									
10,300.00	5.00	236.48	10,293.38	-85.69	-129.34	85.17	0.00	0.00	0.00
10,316.68	5.00	236.48	10,310.00	-86.49	-130.56	85.97	0.00	0.00	0.00
Wolfcamp X Ss.									
10,390.96	5.00	236.48	10,384.00	-90.07	-135.95	89.52	0.00	0.00	0.00
Wolfcamp Y Ss.									
10,400.00	5.00	236.48	10,393.00	-90.50	-136.61	89.95	0.00	0.00	0.00



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10,436.13	5.00	236.48	10,429.00	-92.24	-139.24	91.68	0.00	0.00	0.00
Wolfcamp A Sh.									
10,500.00	5.00	236.48	10,492.62	-95.31	-143.88	94.74	0.00	0.00	0.00
10,600.00	5.00	236.48	10,592.24	-100.13	-151.14	99.52	0.00	0.00	0.00
10,700.00	5.00	236.48	10,691.86	-104.94	-158.41	104.31	0.00	0.00	0.00
10,740.29	5.00	236.48	10,732.00	-106.88	-161.34	106.23	0.00	0.00	0.00
Wolfcamp B Sh. Lm.									
10,762.28	5.00	236.48	10,753.90	-107.94	-162.93	107.28	0.00	0.00	0.00
10,800.00	7.74	212.33	10,791.40	-110.99	-165.66	110.33	10.00	7.25	-64.02
10,850.00	12.24	199.45	10,840.63	-118.84	-169.23	118.16	10.00	9.01	-25.75
10,900.00	17.02	193.57	10,889.00	-130.96	-172.72	130.27	10.00	9.56	-11.76
10,950.00	21.90	190.23	10,936.13	-147.26	-176.09	146.55	10.00	9.75	-6.68
10,952.02	22.10	190.13	10,938.00	-148.00	-176.22	147.29	10.00	9.81	-5.20
Wolfcamp C Lm. Sh.									
11,000.00	26.82	188.07	10,981.67	-167.61	-179.33	166.89	10.00	9.84	-4.30
11,050.00	31.76	186.53	11,025.26	-191.87	-182.41	191.14	10.00	9.89	-3.07
11,100.00	36.72	185.37	11,066.58	-219.84	-185.31	219.10	10.00	9.92	-2.32
11,150.00	41.69	184.46	11,105.32	-251.32	-188.01	250.56	10.00	9.93	-1.83
11,154.95	42.18	184.38	11,109.00	-254.62	-188.26	253.86	10.00	9.94	-1.63
Wolfcamp D Lm. Sh.									
11,200.00	46.66	183.70	11,141.17	-286.06	-190.48	285.30	10.00	9.95	-1.49
11,250.00	51.63	183.07	11,173.87	-323.80	-192.70	323.03	10.00	9.95	-1.28
11,300.00	56.61	182.51	11,203.16	-364.26	-194.66	363.47	10.00	9.96	-1.11
11,350.00	61.60	182.01	11,228.82	-407.12	-196.35	406.32	10.00	9.96	-0.99
11,365.47	63.14	181.87	11,236.00	-420.82	-196.82	420.02	10.00	9.97	-0.93
Wolfcamp E Sh. Lm.									
11,400.00	66.58	181.56	11,250.67	-452.05	-197.75	451.26	10.00	9.97	-0.89
11,450.00	71.56	181.14	11,268.52	-498.73	-198.85	497.92	10.00	9.97	-0.84
11,500.00	76.55	180.75	11,282.25	-546.78	-199.64	545.98	10.00	9.97	-0.79
11,550.00	81.54	180.37	11,291.75	-595.85	-200.12	595.04	10.00	9.97	-0.76
11,600.00	86.52	180.00	11,296.95	-645.57	-200.28	644.76	10.00	9.97	-0.74
11,631.71	89.68	179.77	11,298.00	-677.25	-200.21	676.44	10.00	9.97	-0.73
LP									
11,700.00	89.68	179.77	11,298.38	-745.54	-199.94	744.73	0.00	0.00	0.00
11,800.00	89.68	179.77	11,298.93	-845.54	-199.54	844.73	0.00	0.00	0.00
11,900.00	89.68	179.77	11,299.48	-945.54	-199.13	944.73	0.00	0.00	0.00
12,000.00	89.68	179.77	11,300.03	-1,045.54	-198.73	1,044.73	0.00	0.00	0.00
12,100.00	89.68	179.77	11,300.58	-1,145.53	-198.33	1,144.73	0.00	0.00	0.00
12,200.00	89.68	179.77	11,301.13	-1,245.53	-197.93	1,244.73	0.00	0.00	0.00
12,300.00	89.68	179.77	11,301.68	-1,345.53	-197.52	1,344.72	0.00	0.00	0.00
12,400.00	89.68	179.77	11,302.23	-1,445.53	-197.12	1,444.72	0.00	0.00	0.00
12,500.00	89.68	179.77	11,302.78	-1,545.52	-196.72	1,544.72	0.00	0.00	0.00
12,600.00	89.68	179.77	11,303.33	-1,645.52	-196.31	1,644.72	0.00	0.00	0.00
12,700.00	89.68	179.77	11,303.88	-1,745.52	-195.91	1,744.72	0.00	0.00	0.00
12,800.00	89.68	179.77	11,304.43	-1,845.52	-195.51	1,844.72	0.00	0.00	0.00
12,900.00	89.68	179.77	11,304.98	-1,945.51	-195.11	1,944.72	0.00	0.00	0.00
13,000.00	89.68	179.77	11,305.53	-2,045.51	-194.70	2,044.71	0.00	0.00	0.00
13,100.00	89.68	179.77	11,306.08	-2,145.51	-194.30	2,144.71	0.00	0.00	0.00
13,200.00	89.68	179.77	11,306.63	-2,245.51	-193.90	2,244.71	0.00	0.00	0.00
13,300.00	89.68	179.77	11,307.19	-2,345.50	-193.49	2,344.71	0.00	0.00	0.00
13,400.00	89.68	179.77	11,307.74	-2,445.50	-193.09	2,444.71	0.00	0.00	0.00
13,500.00	89.68	179.77	11,308.29	-2,545.50	-192.69	2,544.71	0.00	0.00	0.00
13,600.00	89.68	179.77	11,308.84	-2,645.50	-192.29	2,644.70	0.00	0.00	0.00



Prototype Well Planning LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #163H
Company:	XTO Energy	TVD Reference:	RKB=23' @ 3098.00usft
Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB=23' @ 3098.00usft
Site:	Remuda South 25 State	North Reference:	Grid
Well:	#163H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,700.00	89.68	179.77	11,309.39	-2,745.50	-191.88	2,744.70	0.00	0.00	0.00
13,800.00	89.68	179.77	11,309.94	-2,845.49	-191.48	2,844.70	0.00	0.00	0.00
13,900.00	89.68	179.77	11,310.49	-2,945.49	-191.08	2,944.70	0.00	0.00	0.00
14,000.00	89.68	179.77	11,311.04	-3,045.49	-190.67	3,044.70	0.00	0.00	0.00
14,100.00	89.68	179.77	11,311.59	-3,145.49	-190.27	3,144.70	0.00	0.00	0.00
14,200.00	89.68	179.77	11,312.14	-3,245.48	-189.87	3,244.70	0.00	0.00	0.00
14,300.00	89.68	179.77	11,312.69	-3,345.48	-189.47	3,344.69	0.00	0.00	0.00
14,400.00	89.68	179.77	11,313.24	-3,445.48	-189.06	3,444.69	0.00	0.00	0.00
14,500.00	89.68	179.77	11,313.79	-3,545.48	-188.66	3,544.69	0.00	0.00	0.00
14,600.00	89.68	179.77	11,314.34	-3,645.47	-188.26	3,644.69	0.00	0.00	0.00
14,700.00	89.68	179.77	11,314.89	-3,745.47	-187.85	3,744.69	0.00	0.00	0.00
14,800.00	89.68	179.77	11,315.44	-3,845.47	-187.45	3,844.69	0.00	0.00	0.00
14,900.00	89.68	179.77	11,315.99	-3,945.47	-187.05	3,944.68	0.00	0.00	0.00
15,000.00	89.68	179.77	11,316.54	-4,045.47	-186.64	4,044.68	0.00	0.00	0.00
15,100.00	89.68	179.77	11,317.09	-4,145.46	-186.24	4,144.68	0.00	0.00	0.00
15,200.00	89.68	179.77	11,317.65	-4,245.46	-185.84	4,244.68	0.00	0.00	0.00
15,300.00	89.68	179.77	11,318.20	-4,345.46	-185.44	4,344.68	0.00	0.00	0.00
15,400.00	89.68	179.77	11,318.75	-4,445.46	-185.03	4,444.68	0.00	0.00	0.00
15,500.00	89.68	179.77	11,319.30	-4,545.45	-184.63	4,544.68	0.00	0.00	0.00
15,600.00	89.68	179.77	11,319.85	-4,645.45	-184.23	4,644.67	0.00	0.00	0.00
15,700.00	89.68	179.77	11,320.40	-4,745.45	-183.82	4,744.67	0.00	0.00	0.00
15,800.00	89.68	179.77	11,320.95	-4,845.45	-183.42	4,844.67	0.00	0.00	0.00
15,900.00	89.68	179.77	11,321.50	-4,945.44	-183.02	4,944.67	0.00	0.00	0.00
16,000.00	89.68	179.77	11,322.05	-5,045.44	-182.62	5,044.67	0.00	0.00	0.00
16,100.00	89.68	179.77	11,322.60	-5,145.44	-182.21	5,144.67	0.00	0.00	0.00
16,200.00	89.68	179.77	11,323.15	-5,245.44	-181.81	5,244.67	0.00	0.00	0.00
16,300.00	89.68	179.77	11,323.70	-5,345.44	-181.41	5,344.66	0.00	0.00	0.00
16,400.00	89.68	179.77	11,324.25	-5,445.43	-181.00	5,444.66	0.00	0.00	0.00
16,500.00	89.68	179.77	11,324.80	-5,545.43	-180.60	5,544.66	0.00	0.00	0.00
16,600.00	89.68	179.77	11,325.35	-5,645.43	-180.20	5,644.66	0.00	0.00	0.00
16,700.00	89.68	179.77	11,325.90	-5,745.43	-179.80	5,744.66	0.00	0.00	0.00
16,800.00	89.68	179.77	11,326.45	-5,845.42	-179.39	5,844.66	0.00	0.00	0.00
16,900.00	89.68	179.77	11,327.00	-5,945.42	-178.99	5,944.65	0.00	0.00	0.00
17,000.00	89.68	179.77	11,327.56	-6,045.42	-178.59	6,044.65	0.00	0.00	0.00
17,100.00	89.68	179.77	11,328.11	-6,145.42	-178.18	6,144.65	0.00	0.00	0.00
17,200.00	89.68	179.77	11,328.66	-6,245.41	-177.78	6,244.65	0.00	0.00	0.00
17,300.00	89.68	179.77	11,329.21	-6,345.41	-177.38	6,344.65	0.00	0.00	0.00
17,400.00	89.68	179.77	11,329.76	-6,445.41	-176.98	6,444.65	0.00	0.00	0.00
17,500.00	89.68	179.77	11,330.31	-6,545.41	-176.57	6,544.65	0.00	0.00	0.00
17,600.00	89.68	179.77	11,330.86	-6,645.40	-176.17	6,644.64	0.00	0.00	0.00
17,700.00	89.68	179.77	11,331.41	-6,745.40	-175.77	6,744.64	0.00	0.00	0.00
17,800.00	89.68	179.77	11,331.96	-6,845.40	-175.36	6,844.64	0.00	0.00	0.00
17,900.00	89.68	179.77	11,332.51	-6,945.40	-174.96	6,944.64	0.00	0.00	0.00
18,000.00	89.68	179.77	11,333.06	-7,045.40	-174.56	7,044.64	0.00	0.00	0.00
18,100.00	89.68	179.77	11,333.61	-7,145.39	-174.16	7,144.64	0.00	0.00	0.00
18,200.00	89.68	179.77	11,334.16	-7,245.39	-173.75	7,244.64	0.00	0.00	0.00
18,300.00	89.68	179.77	11,334.71	-7,345.39	-173.35	7,344.63	0.00	0.00	0.00
18,400.00	89.68	179.77	11,335.26	-7,445.39	-172.95	7,444.63	0.00	0.00	0.00
18,500.00	89.68	179.77	11,335.81	-7,545.38	-172.54	7,544.63	0.00	0.00	0.00
18,600.00	89.68	179.77	11,336.36	-7,645.38	-172.14	7,644.63	0.00	0.00	0.00
18,700.00	89.68	179.77	11,336.91	-7,745.38	-171.74	7,744.63	0.00	0.00	0.00
18,800.00	89.68	179.77	11,337.47	-7,845.38	-171.34	7,844.63	0.00	0.00	0.00
18,900.00	89.68	179.77	11,338.02	-7,945.37	-170.93	7,944.62	0.00	0.00	0.00
18,948.82	89.68	179.77	11,338.28	-7,994.19	-170.74	7,993.44	0.00	0.00	0.00



Prototype Well Planning LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well #163H
Company:	XTO Energy	TVD Reference:	RKB=23' @ 3098.00usft
Project:	Eddy County, NM (NAD-27)	MD Reference:	RKB=23' @ 3098.00usft
Site:	Remuda South 25 State	North Reference:	Grid
Well:	#163H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PERMIT		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
19,000.00	89.68	179.77	11,338.57	-8,045.37	-170.53	8,044.62	0.00	0.00	0.00	
19,078.83	89.68	179.77	11,339.00	-8,124.20	-170.21	8,123.45	0.00	0.00	0.00	
TD										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
RS 25 STATE #163H: SI - hit/miss target - Shape - Point	0.00	0.00	0.00	0.00	0.00	464,609.60	621,584.00	32.276716	-103.939936	
RS 25 STATE #163H: F - plan hits target center - Point	0.00	0.01	11,298.00	-677.25	-200.21	463,932.40	621,383.80	32.274856	-103.940592	
RS 25 STATE #163H: L1 - plan misses target center by 0.28usft at 18948.82usft MD (11338.28 TVD, -7994.19 N, -170.74 E) - Point	0.00	0.01	11,338.28	-7,994.19	-171.01	456,616.00	621,413.00	32.254744	-103.940584	
RS 25 STATE #163H: PI - plan hits target center - Point	0.00	0.00	11,339.00	-8,124.20	-170.21	456,486.00	621,413.80	32.254387	-103.940583	



Prototype Well Planning LLC

Planning Report

Database: EDM 5000.1 Single User Db
Company: XTO Energy
Project: Eddy County, NM (NAD-27)
Site: Remuda South 25 State
Well: #163H
Wellbore: OH
Design: PERMIT

Local Co-ordinate Reference: Well #163H
TVD Reference: RKB=23' @ 3098.00usft
MD Reference: RKB=23' @ 3098.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2.00	2.00	Dewey Lake (Alluvium)			
159.00	159.00	Rustler Anh.			
198.00	198.00	Base Rustler Anh.			
285.00	285.00	Salado Sh. Lm.			
406.00	406.00	Est. Top of Salt			
3,056.00	3,056.00	Base Salt			
3,272.00	3,272.00	Lamar Lm. (Del Mtn Grp.)			
3,310.00	3,310.00	Bell Canyon Ss.			
4,133.00	4,133.00	Cherry Canyon Ss.			
5,714.00	5,714.00	Brushy Canyon Ss.			
6,729.00	6,729.00	Lower Brushy Canyon Ss.			
6,959.00	6,959.00	Bone Spring Lm.			
7,069.00	7,069.00	Avalon Ss.			
7,134.00	7,134.00	Bone Spg. Upper Avalon Lm.			
7,333.00	7,333.00	Bone Spg. Upper Avalon Sh.			
7,444.00	7,444.00	Bone Spg. Lower Avalon Lm			
7,698.00	7,698.00	Lower Avalon Sh.			
7,846.00	7,846.00	First Bone Spring Lm.			
8,018.00	8,018.00	First Bone Spring Ss.			
8,334.00	8,334.00	Second Bone Spring Lm.			
8,870.17	8,869.00	Second Bone Spring Ss.			
9,166.30	9,164.00	Third Bone Spring Lm.			
9,956.31	9,951.00	Third Bone Spring Ss.			
10,283.55	10,277.00	Wolfcamp Sh.			
10,316.68	10,310.00	Wolfcamp X Ss.			
10,390.96	10,384.00	Wolfcamp Y Ss.			
10,436.13	10,429.00	Wolfcamp A Sh.			
10,740.29	10,732.00	Wolfcamp B Sh. Lm.			
10,952.02	10,938.00	Wolfcamp C Lm. Sh.			
11,154.95	11,109.00	Wolfcamp D Lm. Sh.			
11,365.47	11,236.00	Wolfcamp E Sh. Lm.			
11,631.71	11,298.00	LP			
19,078.83	11,339.00	TD			