

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

5. Lease Serial No.
NMLC064827A

6. Landman, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2

NOV 29 2018

7. If Unit or CA/Agreement, Name and/or No.
891000558X8. Well Name and No.
JAMES RANCH UNIT DI 1A 204H9. API Well No.
30-015-43240-00-X110. Field and Pool or Exploratory Area
LOS MEDANOS11. County or Parish, State
EDDY COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	PD

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

BOPCO, L.P. requests permission to make the following changes to the approved APD.

1. Change the BHL fr/980'FNL & 2310'FWL to 1650'FNL & 2440'FWL
2. Drilling Program
3. Directional Drill Plan

Attachments:

1. C102
2. Drilling Program
3. Directional Survey
4. BOP/CM/FH

Accepted For Record
NMOCD

12-11-18

Carlsbad Field Office
OCD Artesia

14. I hereby certify that the foregoing is true and correct.	
Electronic Submission #436861 verified by the BLM Well Information System For BOPCO LP, sent to the Carlsbad Committed to AFMSS for processing by PRISCILLA PEREZ on 09/27/2018 (18PP2746SE)	
Name (Printed/Typed) KELLY KARDOS	Title REGULATORY COORDINATOR
Signature (Electronic Submission)	Date 09/25/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By MUSTAFA HAQUE	Title PETROLEUM ENGINEER	Date 11/29/2018
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.		Office Carlsbad

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED **

Ref 12-7-18.

District I
1625 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 Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico **NM OIL CONSERVATION**
Energy, Minerals & Natural Resources Department **ARTESIA DISTRICT**
OIL CONSERVATION DIVISION **NOV 29 2018**
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102

Revised August 1, 2011

Submit one copy to appropriate

District Office

RECEIVED

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-43240	² Pool Code 97905	³ Pool Name WC, Bone Spring
⁴ Property Code 315048	⁵ Property Name JAMES RANCH UNIT DI 1A	
⁷ OGRID No. 260737	⁸ Operator Name XTO ENERGY, INC.	⁶ Well Number 20411
		⁹ Elevation 3157'

¹⁰ Surface Location

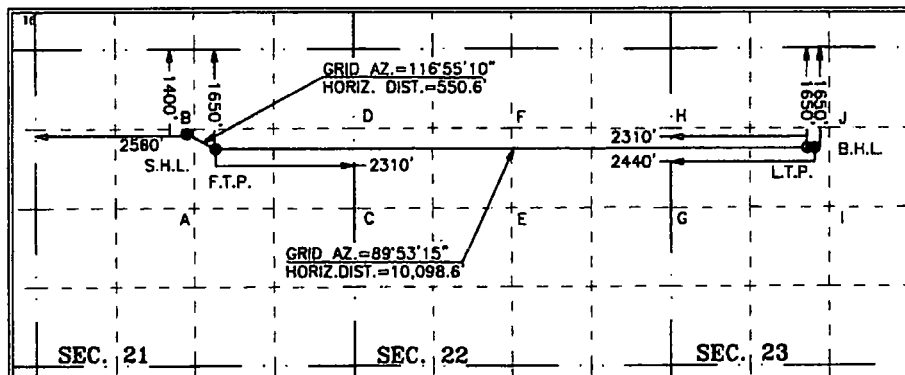
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
F	21	22 S	30 E		1,400	NORTH	2,560	WEST	EDDY

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
F	23	22 S	30 E		1,650	NORTH	2,440	WEST	EDDY

¹² Dedicated Acres 320	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.



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: *Greg Hards* Date: 2/23/18

Printed Name: *Greg Hards*

E-mail Address: *greg.hards@xtoenergy.com*

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.

05-24-2017

Date of Survey

Signature and Seal of Professional Surveyor:

MARK DILLON HARP 23786
Certificate Number



RR 2017050654

RP 12-7-18

DRILLING PLAN: BLM COMPLIANCE
(Supplement to BLM 3160-3)

XTO Energy Inc.
James Ranch Unit DI 1A 204H
Projected TD: 21101' MD / 10666' TVD
SHL: 1400' FNL & 2560' FWL , Section 21, T22S, R30E
BHL: 1650' FNL & 2440' FWL , Section 23, T22S, R30E
Eddy County, NM

1. Geologic Name of Surface Formation

A. Quaternary

2. Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas

Formation	Well Depth (TVD)	Water/Oil/Gas
Rustler	186'	Water
Top of Salt	551'	Water
Base of Salt	3266'	Water
Delaware	3531'	Water
Bone Spring	7369'	Water
1st Bone Spring Ss	8383'	Water/Oil/Gas
2nd Bone Spring Ss	9118'	Water/Oil/Gas
3rd Bone Spring Ss	10317'	Water/Oil/Gas
Target/Land Curve	10666'	Water/Oil/Gas

*** Hydrocarbons @ Brushy Canyon

*** Groundwater depth 40' (per NM State Engineers Office).

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 16" inch casing @ 526' (25' above the salt) and circulating cement back to surface. The salt will be isolated by setting 11-3/4" inch casing at 2291' and circulating cement to surface. The second intermediate will isolate from the salt down to the next casing seat by setting 8-5/8" inch casing at 8200' and a DV tool at 3341'. A 7-7/8" inch curve and lateral hole will be drilled to MD/TD and 5-1/2 inch casing will be set at TD and cemented back up to surface per Potash regulations.

3. Casing Design

See COA

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
18-3/4"	0' - 526'	18"	75	STC	J-55	New	2.62	4.24	18.00
14-3/4"	0' - 3291'	14-3/4"	47	STC	J-55	New	1.37	1.48	3.08
10-5/8"	0' - 8200'	10-5/8"	32	BTC	J-55	New	1.30	1.50	2.21
7-7/8"	0' - 21101'	7-7/8"	17	BTC	P-110	New	1.12	1.39	2.21

- XTO requests to utilize centralizers only in the curve after the KOP and only a minimum of one every other joint.
- 11-3/4" Collapse analyzed using 50% evacuation based on regional experience.
- 8-5/8" Collapse analyzed using 33% evacuation based on regional experience.
- 5-1/2" Tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35

Wellhead:

Temporary Wellhead

- 16" SOW bottom x 16-3/4" 2M top flange.

Permanent Wellhead - GE RSH Multibowl System

A. Starting Head: 13-5/8" 5M top flange x 11-3/4" SOW bottom

B. Tubing Head: 13-5/8" 5M bottom flange x 7-1/16" 10M top flange

- Wellhead will be installed by manufacturer's representatives.
- Manufacturer will monitor welding process to ensure appropriate temperature of seal.
- Operator will test the 8-5/8" casing per BLM Onshore Order 2
- Wellhead Manufacturer representative will not be present for BOP test plug installation

4. Cement Program

Surface Casing: 16", 75 New J-55, STC casing to be set at ~~+/- 828'~~

Lead: 1380 ~~see~~ EconoCem-HLTRRC (mixed at 12.9 ppg, **1.87 ft³/sx** 10.13 gal/sx water)

Tail: 180 ~~see~~ Halcem-C + 2% CaCl (mixed at 14.8 ppg, **1.35 ft³/sx** 6.39 gal/sx water)

Compressives: 12-hr = 900 psi 24 hr = 1500 psi

1st Intermediate Casing: 11-3/4", 47 New J-55, STC casing to be set at ~~+/- 3251'~~

see Coa

Lead: 1380 ~~see~~ EconoCem-HLTRRC (mixed at 12.9 ppg, **1.87 ft³/sx** 10.13 gal/sx water)

Tail: 180 ~~see~~ Halcem-C + 2% CaCl (mixed at 14.8 ppg, **1.35 ft³/sx** 6.39 gal/sx water)

Compressives: 12-hr = 900 psi 24 hr = 1500 psi

2nd Intermediate Casing: 8-5/8", 32 New J-55, BTC casing to be set at ~~+/- 8200'~~

BCP/DV Tool to be set at **3341'**

1st Stage

Lead: 970 ~~see~~ Halcem-C + 2% CaCl (mixed at 12.9 ppg, **1.88 ft³/sx** 9.61 gal/sx water)

Tail: 150 ~~see~~ Halcem-C + 2% CaCl (mixed at 14.8 ppg, **1.33 ft³/sx** 6.39 gal/sx water)

Compressives: 12-hr = 900 psi 24 hr = 1500 psi

2nd Stage

Lead: 830 ~~see~~ Halcem-C + 2% CaCl (mixed at 12.9 ppg, **1.88 ft³/sx** 9.61 gal/sx water)

Tail: 150 ~~see~~ Halcem-C + 2% CaCl (mixed at 14.8 ppg, **1.33 ft³/sx** 6.39 gal/sx water)

Compressives: 12-hr = 900 psi 24 hr = 1500 psi

Production Casing: 5-1/2", 17 New P-110, BTC casing to be set at ~~+/- 21101'~~

Lead: 150 ~~see~~ NeoCem (mixed at 10.5 ppg, **2.68 ft³/sx** 12.26 gal/sx water)

Tail: 1810 ~~see~~ VersaCem (mixed at 13.2 ppg, **1.81 ft³/sx** 8.38 gal/sx water)

Compressives: 12-hr = 1375 psi 24 hr = 2285 psi

5. Pressure Control Equipment

The blow out preventer equipment (BOP) on surface casing temporary wellhead will consist of a 21-1/4" minimum 2M Hydril. MASP should not exceed 1004 psi.

Once the permanent WH is installed on the 11-3/4" casing, the blow out preventer equipment (BOP) will consist of a 13-5/8" minimum 5M Hydril and a 13-5/8" minimum 5M Double Ram BOP. MASP should not exceed 3033 psi.

All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nipping up on the 11-3/4", 5M bradenhead and flange, the BOP test will be limited to 5000 psi. When nipping up on the 8-5/8", the BOP will be tested to a minimum of 5000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 5M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested each day.

A variance is requested to allow use of a flex hose as the choke line from the BOP to the Choke Manifold. If this hose is used, a copy of the manufacturer's certification and pressure test chart will be kept on the rig. Attached is an example of a certification and pressure test chart. The manufacturer does not require anchors.

6. Proposed Mud Circulation System

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' - 526'	18-3/4"	FW/Native	8.4-8.8	35-40	NC
526' - 3291'	14-3/4"	Brine	8.8-10.2	30-32	NC
3291' to 8200'	10-5/8"	FW / Cut Brine	8.7-8.9	30-32	NC
8200' to 21101'	7-7/8"	Cut Brine / Polymer	8.4 - 8.7	29-32	NC - 20

The necessary mud products for weight addition and fluid loss control will be on location at all times.

Spud with fresh water/native mud. Drill out from under 16" surface casing with brine solution. A ppg-10.2ppg brine mud will be used while drilling through the salt formation. Use fibrous materials as needed to control seepage and lost circulation. Pump viscous sweeps as needed for hole cleaning. Pump speed will be recorded on a daily drilling report after mudding up. A Pason or Totco will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system.

7. Auxiliary Well Control and Monitoring Equipment

- A. A Kelly cock will be in the drill string at all times.
- B. A full opening drill pipe stabbing valve having appropriate connections will be on the rig floor at all times.
- C. H2S monitors will be on location when drilling below the 11-3/4" casing.

8. Logging, Coring and Testing Program

Mud Logger: Mud Logging Unit (2 man) below intermediate casing.

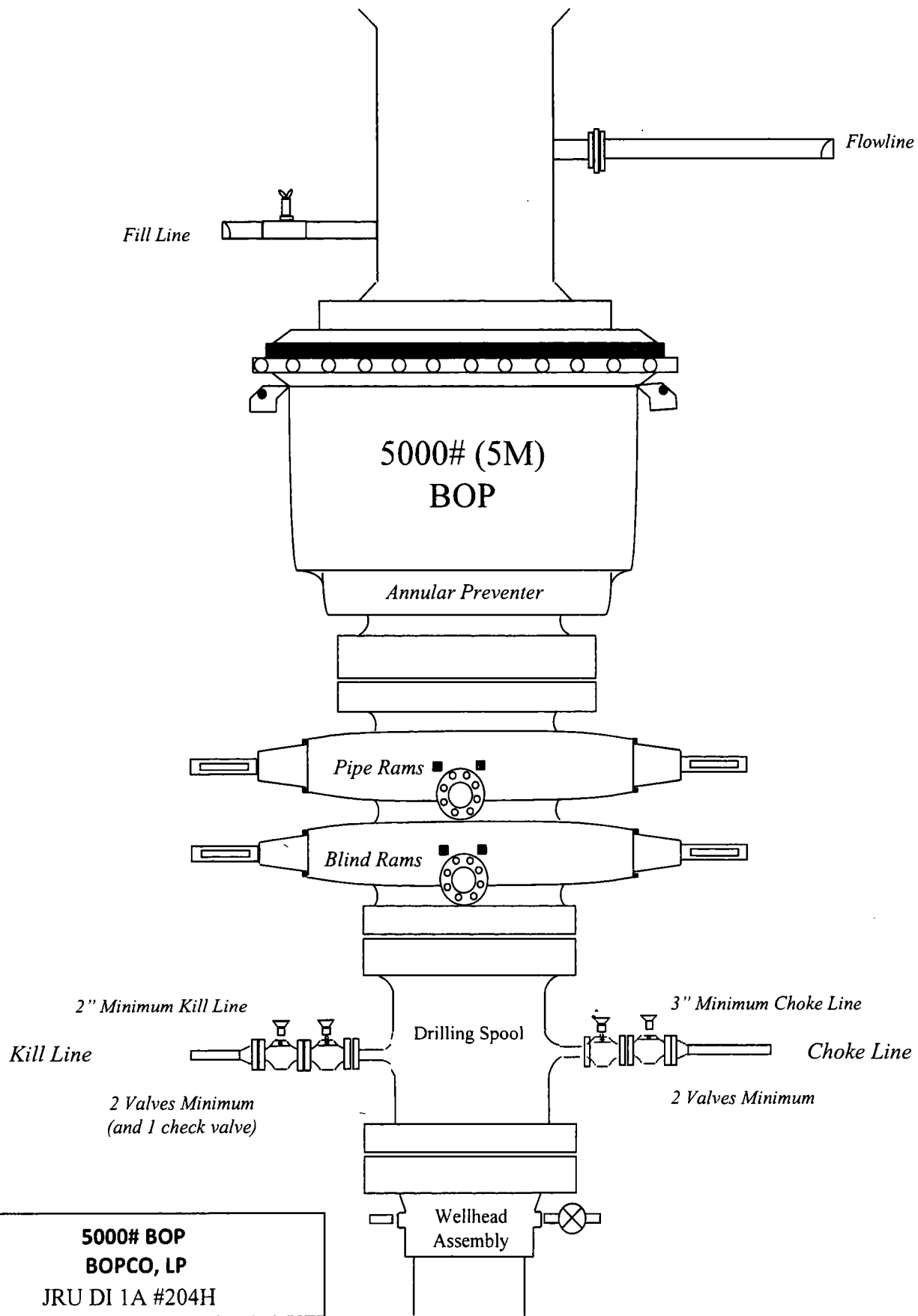
Open hole logging will not be done on this well.

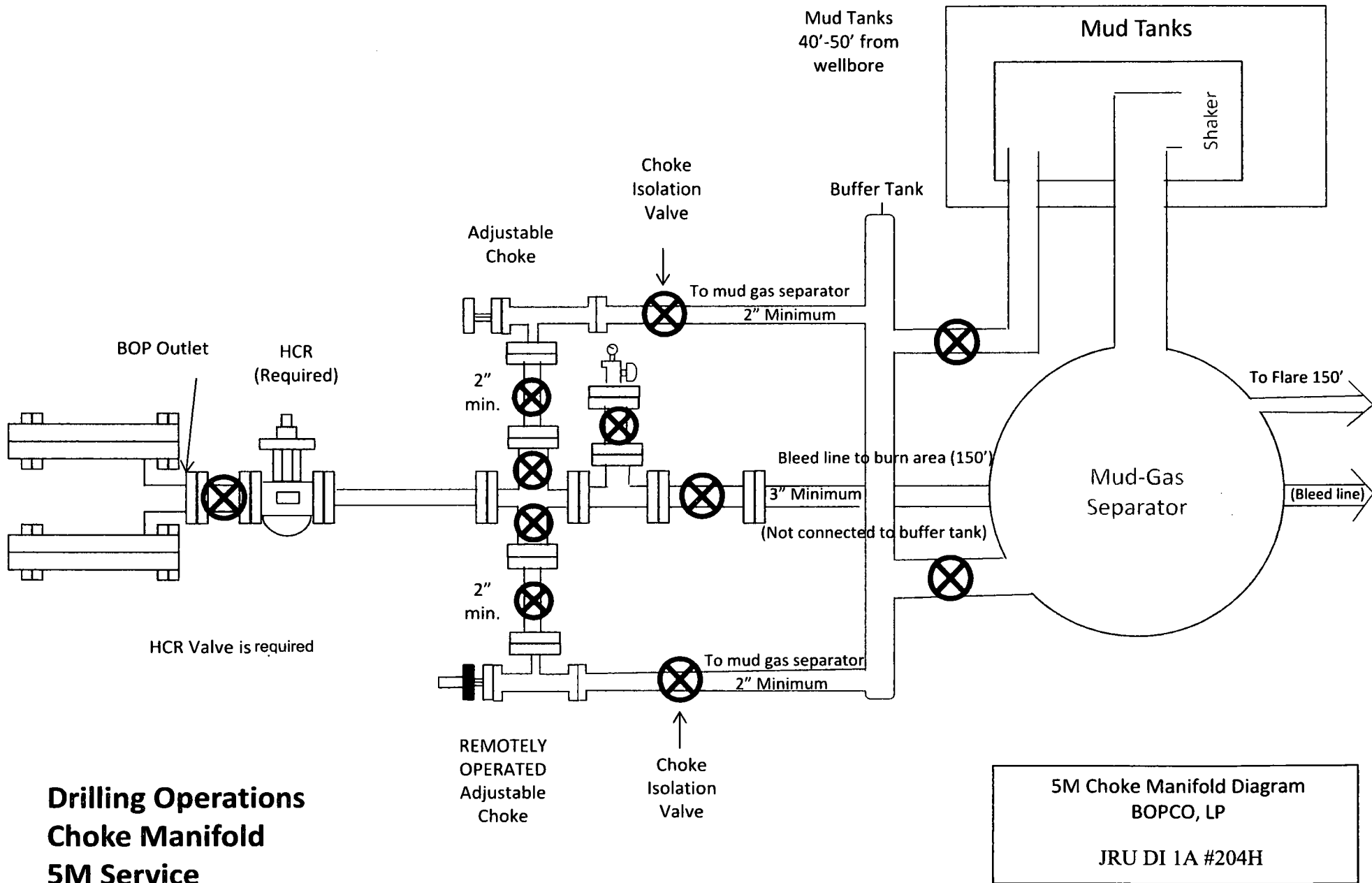
9. Abnormal Pressures and Temperatures / Potential Hazards

None Anticipated. BHT of 150 to 170 F is anticipated. No H2S is expected but monitors will be in place to detect any H2S occurrences. Should these circumstances be encountered the operator and drilling contractor are prepared to take all necessary steps to ensure safety of all personnel and environment. Lost circulation could occur but is not expected to be a serious problem in this area and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid. The maximum anticipated bottom hole pressure for this well is 5380 psi.

10. Anticipated Starting Date and Duration of Operations

Road and location construction will begin after Santa Fe and BLM have approved the APD. Anticipated spud date will be as soon after Santa Fe and BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 40 days. If production casing is run, an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.







XTO Energy

**Eddy County, NM (NAD-27)
James Ranch Unit DI 1A
204H**

OH

Plan: PERMIT

Standard Planning Report

28 February, 2018



Project: Eddy County, NM (NAD-27)
Site: James Ranch Unit DI 1A
Well: 204H
Wellbore: OH
Design: PERMIT

WELL DETAILS: 204H

Rig Name:
RKB # 27 @ 3184.00usft
Ground Level: 3157.00
Easting 638043.00 Latitude 32.380986 Longitude -103.886169
+N/-S 0.00 +E/-W 0.00 Northing 502606.10

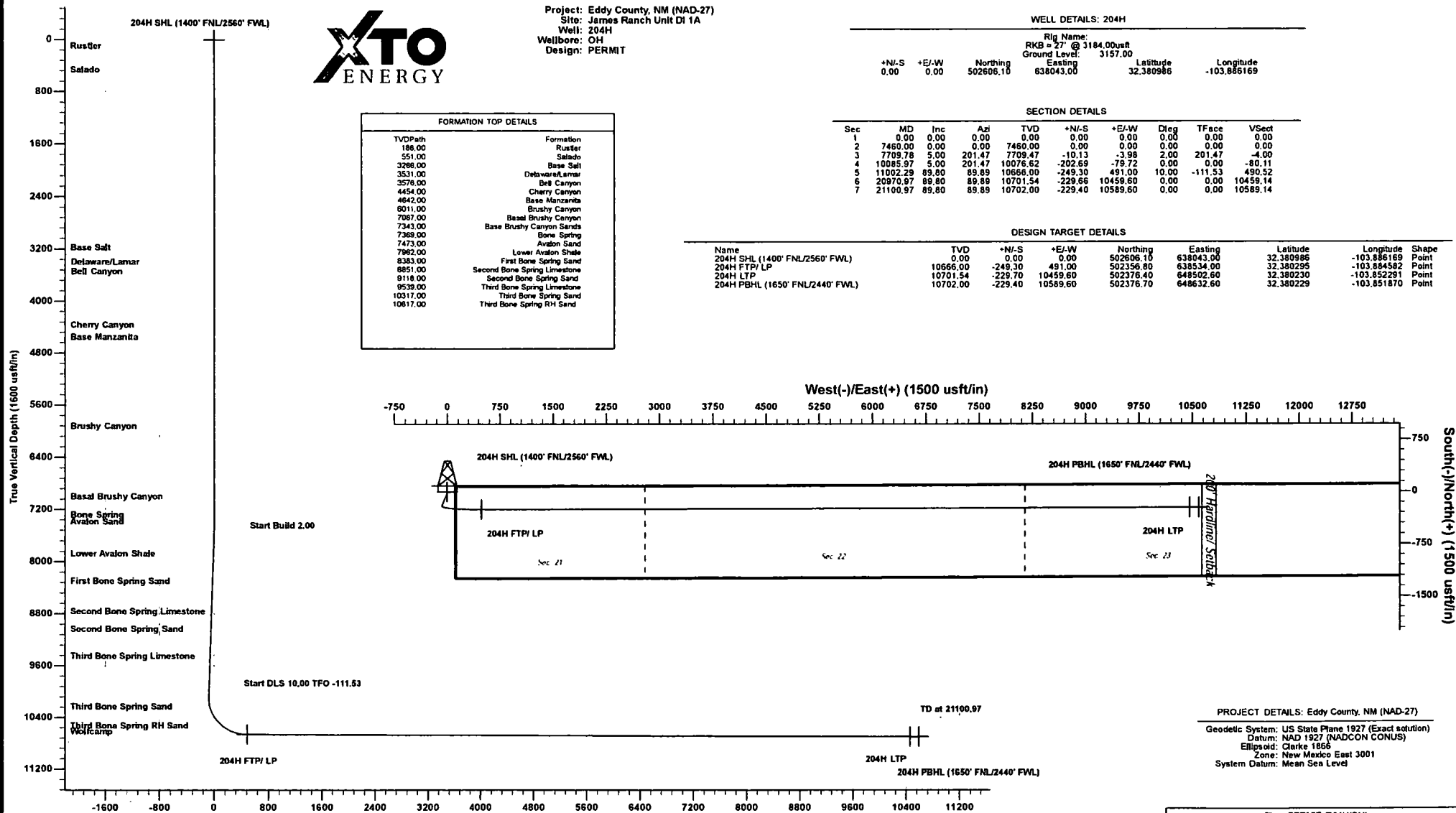
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Diep	TFace	VSecd
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	7460.00	0.00	0.00	7460.00	0.00	0.00	0.00	0.00	0.00
3	7709.78	5.00	201.47	7709.47	-10.13	-3.98	2.00	201.47	-4.00
4	10085.97	5.00	201.47	10076.62	-202.69	-79.72	0.00	0.00	-80.11
5	11002.29	89.80	89.89	10666.00	-249.30	491.00	10.00	-111.53	490.52
6	20970.97	89.80	89.89	10701.54	-229.66	10459.60	0.00	0.00	10459.14
7	21100.97	89.80	89.89	10702.00	-229.40	10589.60	0.00	0.00	10589.14

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
204H SHL (1400' FNL/2560' FWL)	0.00	0.00	0.00	502606.10	638043.00	32.380986	-103.886169	Point
204H FTP/LP	10666.00	-249.30	491.00	502356.80	638534.00	32.380295	-103.884582	Point
204H LTP	10701.54	-229.70	10459.60	502376.40	648502.60	32.380230	-103.852291	Point
204H PBHL (1650' FNL/2440' FWL)	10702.00	-229.40	10589.60	502376.70	648632.60	32.380229	-103.851870	Point

FORMATION TOP DETAILS	
TVDPath	Formation
186.00	Rustler
551.00	Salado
3296.00	Base Salt
3531.00	Delaware/Lamar
3576.00	Bell Canyon
4454.00	Cherry Canyon
4842.00	Base Manzanita
5911.00	Brushy Canyon
7087.00	Basal Brushy Canyon
7343.00	Base Brushy Canyon Sands
7369.00	Bone Spring
7473.00	Avalon Sand
7962.00	Lower Avalon Shale
8383.00	First Bone Spring Sand
8851.00	Second Bone Spring Limestone
9118.00	Second Bone Spring Sand
9539.00	Third Bone Spring Limestone
10317.00	Third Bone Spring Sand
10617.00	Third Bone Spring RH Sand



Note: All Plan details including boundary lines and offset well data is subject to customers approval.

Vertical Section at 89.89° (1600 usft/in)

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

Plan: PERMIT (204H/OH)

Created By: Matthew May Date: 10/28, February 28 2018



Database: EDM 5000.1 Single User Db
Company: XTO Energy
Project: Eddy County, NM (NAD-27)
Site: James Ranch Unit DI 1A
Well: 204H
Wellbore: OH
Design: PERMIT

Local Co-ordinate Reference: Well 204H
TVD Reference: RKB = 27' @ 3184.00usft
MD Reference: RKB = 27' @ 3184.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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		

Site James Ranch Unit DI 1A

Site Position:	Northing:	502,686.10 usft	Latitude:	32.381206
From: Map	Easting:	638,042.80 usft	Longitude:	-103.886169
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:
				0.24 °

Well	204H				
Well Position	+N/-S	-80.00 usft	Northing:	502,606.10 usft	Latitude:
	+E/-W	0.20 usft	Easting:	638,043.00 usft	Longitude:
Position Uncertainty	0.00 usft		Wellhead Elevation:	0.00 usft	Ground Level:
					3,157.00 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2015	2/28/2018	7.04	60.15	47,928

Design PERMIT

Audit Notes:

Version: **Phase:** PLAN **Tie On Depth:** 0.00

Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	89.89

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	
7,460.00	0.00	0.00	7,460.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,709.79	5.00	201.47	7,709.47	-10.13	-3.98	2.00	2.00	0.00	201.47	
10,085.97	5.00	201.47	10,076.62	-202.69	-79.72	0.00	0.00	0.00	0.00	
11,002.29	89.80	89.89	10,666.00	-249.30	491.00	10.00	9.25	-12.18	-111.53	204H FTP/ LP
20,970.97	89.80	89.89	10,701.54	-229.66	10,459.60	0.00	0.00	0.00	0.00	204H LTP
21,100.97	89.80	89.89	10,702.00	-229.40	10,589.60	0.00	0.00	0.00	0.00	204H PBHL (1650'



Database: EDM 5000.1 Single User Db
Company: XTO Energy
Project: Eddy County, NM (NAD-27)
Site: James Ranch Unit DI 1A
Well: 204H
Wellbore: OH
Design: PERMIT

Local Co-ordinate Reference: Well 204H
TVD Reference: RKB = 27' @ 3184.00usft
MD Reference: RKB = 27' @ 3184.00usft
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
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
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
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
3,100.00	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
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
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
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
4,200.00	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



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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)
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
5,800.00	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
6,800.00	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
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
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
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,460.00	0.00	0.00	7,460.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.80	201.47	7,500.00	-0.26	-0.10	-0.10	2.00	2.00	0.00
7,600.00	2.80	201.47	7,599.94	-3.18	-1.25	-1.26	2.00	2.00	0.00
7,709.79	5.00	201.47	7,709.47	-10.13	-3.98	-4.00	2.00	2.00	0.00
7,800.00	5.00	201.47	7,799.34	-17.44	-6.86	-6.89	0.00	0.00	0.00
7,900.00	5.00	201.47	7,898.96	-25.54	-10.05	-10.10	0.00	0.00	0.00
8,000.00	5.00	201.47	7,998.58	-33.65	-13.23	-13.30	0.00	0.00	0.00
8,100.00	5.00	201.47	8,098.20	-41.75	-16.42	-16.50	0.00	0.00	0.00
8,200.00	5.00	201.47	8,197.82	-49.85	-19.61	-19.70	0.00	0.00	0.00
8,300.00	5.00	201.47	8,297.44	-57.96	-22.80	-22.91	0.00	0.00	0.00
8,400.00	5.00	201.47	8,397.06	-66.06	-25.98	-26.11	0.00	0.00	0.00
8,500.00	5.00	201.47	8,496.68	-74.16	-29.17	-29.31	0.00	0.00	0.00
8,600.00	5.00	201.47	8,596.30	-82.27	-32.36	-32.52	0.00	0.00	0.00
8,700.00	5.00	201.47	8,695.92	-90.37	-35.55	-35.72	0.00	0.00	0.00
8,800.00	5.00	201.47	8,795.54	-98.48	-38.73	-38.92	0.00	0.00	0.00
8,900.00	5.00	201.47	8,895.16	-106.58	-41.92	-42.12	0.00	0.00	0.00
9,000.00	5.00	201.47	8,994.78	-114.68	-45.11	-45.33	0.00	0.00	0.00
9,100.00	5.00	201.47	9,094.40	-122.79	-48.29	-48.53	0.00	0.00	0.00
9,200.00	5.00	201.47	9,194.02	-130.89	-51.48	-51.73	0.00	0.00	0.00
9,300.00	5.00	201.47	9,293.64	-139.00	-54.67	-54.94	0.00	0.00	0.00
9,400.00	5.00	201.47	9,393.26	-147.10	-57.86	-58.14	0.00	0.00	0.00
9,500.00	5.00	201.47	9,492.88	-155.20	-61.04	-61.34	0.00	0.00	0.00
9,600.00	5.00	201.47	9,592.50	-163.31	-64.23	-64.54	0.00	0.00	0.00
9,700.00	5.00	201.47	9,692.12	-171.41	-67.42	-67.75	0.00	0.00	0.00
9,800.00	5.00	201.47	9,791.74	-179.51	-70.61	-70.95	0.00	0.00	0.00
9,900.00	5.00	201.47	9,891.36	-187.62	-73.79	-74.15	0.00	0.00	0.00
10,000.00	5.00	201.47	9,990.98	-195.72	-76.98	-77.36	0.00	0.00	0.00
10,085.97	5.00	201.47	10,076.62	-202.69	-79.72	-80.11	0.00	0.00	0.00
10,100.00	4.67	185.21	10,090.61	-203.83	-80.00	-80.39	10.00	-2.34	-115.88
10,150.00	6.51	135.28	10,140.40	-207.87	-78.18	-78.58	10.00	3.69	-99.86
10,200.00	10.63	115.54	10,189.84	-211.87	-72.03	-72.43	10.00	8.23	-39.47
10,250.00	15.27	107.18	10,238.56	-215.81	-61.57	-61.98	10.00	9.30	-16.71
10,300.00	20.09	102.71	10,286.18	-219.65	-46.89	-47.31	10.00	9.63	-8.95



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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)
10,350.00	24.98	99.92	10,332.35	-223.36	-28.10	-28.53	10.00	9.77	-5.58
10,400.00	29.90	98.00	10,376.72	-226.91	-5.35	-5.79	10.00	9.84	-3.85
10,450.00	34.84	96.58	10,418.94	-230.28	21.19	20.75	10.00	9.88	-2.84
10,500.00	39.79	95.47	10,458.69	-233.44	51.33	50.88	10.00	9.91	-2.21
10,550.00	44.76	94.57	10,495.67	-236.37	84.82	84.37	10.00	9.93	-1.80
10,600.00	49.73	93.82	10,529.61	-239.05	121.42	120.97	10.00	9.94	-1.51
10,650.00	54.70	93.17	10,560.23	-241.45	160.85	160.39	10.00	9.95	-1.30
10,700.00	59.68	92.60	10,587.32	-243.56	202.81	202.34	10.00	9.95	-1.15
10,750.00	64.66	92.08	10,610.66	-245.35	246.98	246.50	10.00	9.96	-1.04
10,800.00	69.64	91.60	10,630.07	-246.83	293.01	292.54	10.00	9.96	-0.95
10,850.00	74.62	91.15	10,645.41	-247.97	340.57	340.09	10.00	9.96	-0.90
10,900.00	79.60	90.73	10,656.56	-248.76	389.29	388.81	10.00	9.97	-0.85
10,950.00	84.58	90.31	10,663.44	-249.21	438.79	438.32	10.00	9.97	-0.83
11,002.29	89.80	89.89	10,666.00	-249.30	491.00	490.52	10.00	9.97	-0.81
11,100.00	89.80	89.89	10,666.35	-249.11	588.71	588.23	0.00	0.00	0.00
11,200.00	89.80	89.89	10,666.71	-248.91	688.71	688.23	0.00	0.00	0.00
11,300.00	89.80	89.89	10,667.06	-248.71	788.71	788.23	0.00	0.00	0.00
11,400.00	89.80	89.89	10,667.42	-248.52	888.71	888.23	0.00	0.00	0.00
11,500.00	89.80	89.89	10,667.77	-248.32	988.71	988.23	0.00	0.00	0.00
11,600.00	89.80	89.89	10,668.13	-248.12	1,088.71	1,088.23	0.00	0.00	0.00
11,700.00	89.80	89.89	10,668.49	-247.93	1,188.71	1,188.23	0.00	0.00	0.00
11,800.00	89.80	89.89	10,668.84	-247.73	1,288.71	1,288.23	0.00	0.00	0.00
11,900.00	89.80	89.89	10,669.20	-247.53	1,388.71	1,388.23	0.00	0.00	0.00
12,000.00	89.80	89.89	10,669.56	-247.33	1,488.71	1,488.23	0.00	0.00	0.00
12,100.00	89.80	89.89	10,669.91	-247.14	1,588.70	1,588.23	0.00	0.00	0.00
12,200.00	89.80	89.89	10,670.27	-246.94	1,688.70	1,688.23	0.00	0.00	0.00
12,300.00	89.80	89.89	10,670.63	-246.74	1,788.70	1,788.23	0.00	0.00	0.00
12,400.00	89.80	89.89	10,670.98	-246.55	1,888.70	1,888.23	0.00	0.00	0.00
12,500.00	89.80	89.89	10,671.34	-246.35	1,988.70	1,988.22	0.00	0.00	0.00
12,600.00	89.80	89.89	10,671.70	-246.15	2,088.70	2,088.22	0.00	0.00	0.00
12,700.00	89.80	89.89	10,672.05	-245.95	2,188.70	2,188.22	0.00	0.00	0.00
12,800.00	89.80	89.89	10,672.41	-245.76	2,288.70	2,288.22	0.00	0.00	0.00
12,900.00	89.80	89.89	10,672.77	-245.56	2,388.70	2,388.22	0.00	0.00	0.00
13,000.00	89.80	89.89	10,673.12	-245.36	2,488.70	2,488.22	0.00	0.00	0.00
13,100.00	89.80	89.89	10,673.48	-245.17	2,588.70	2,588.22	0.00	0.00	0.00
13,200.00	89.80	89.89	10,673.83	-244.97	2,688.70	2,688.22	0.00	0.00	0.00
13,300.00	89.80	89.89	10,674.19	-244.77	2,788.69	2,788.22	0.00	0.00	0.00
13,400.00	89.80	89.89	10,674.55	-244.58	2,888.69	2,888.22	0.00	0.00	0.00
13,500.00	89.80	89.89	10,674.90	-244.38	2,988.69	2,988.22	0.00	0.00	0.00
13,600.00	89.80	89.89	10,675.26	-244.18	3,088.69	3,088.22	0.00	0.00	0.00
13,700.00	89.80	89.89	10,675.62	-243.98	3,188.69	3,188.22	0.00	0.00	0.00
13,800.00	89.80	89.89	10,675.97	-243.79	3,288.69	3,288.22	0.00	0.00	0.00
13,900.00	89.80	89.89	10,676.33	-243.59	3,388.69	3,388.22	0.00	0.00	0.00
14,000.00	89.80	89.89	10,676.69	-243.39	3,488.69	3,488.22	0.00	0.00	0.00
14,100.00	89.80	89.89	10,677.04	-243.20	3,588.69	3,588.21	0.00	0.00	0.00
14,200.00	89.80	89.89	10,677.40	-243.00	3,688.69	3,688.21	0.00	0.00	0.00
14,300.00	89.80	89.89	10,677.76	-242.80	3,788.69	3,788.21	0.00	0.00	0.00
14,400.00	89.80	89.89	10,678.11	-242.60	3,888.69	3,888.21	0.00	0.00	0.00
14,500.00	89.80	89.89	10,678.47	-242.41	3,988.68	3,988.21	0.00	0.00	0.00
14,600.00	89.80	89.89	10,678.83	-242.21	4,088.68	4,088.21	0.00	0.00	0.00
14,700.00	89.80	89.89	10,679.18	-242.01	4,188.68	4,188.21	0.00	0.00	0.00
14,800.00	89.80	89.89	10,679.54	-241.82	4,288.68	4,288.21	0.00	0.00	0.00
14,900.00	89.80	89.89	10,679.89	-241.62	4,388.68	4,388.21	0.00	0.00	0.00
15,000.00	89.80	89.89	10,680.25	-241.42	4,488.68	4,488.21	0.00	0.00	0.00



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15,100.00	89.80	89.89	10,680.61	-241.23	4,588.68	4,588.21	0.00	0.00	0.00
15,200.00	89.80	89.89	10,680.96	-241.03	4,688.68	4,688.21	0.00	0.00	0.00
15,300.00	89.80	89.89	10,681.32	-240.83	4,788.68	4,788.21	0.00	0.00	0.00
15,400.00	89.80	89.89	10,681.68	-240.63	4,888.68	4,888.21	0.00	0.00	0.00
15,500.00	89.80	89.89	10,682.03	-240.44	4,988.68	4,988.21	0.00	0.00	0.00
15,600.00	89.80	89.89	10,682.39	-240.24	5,088.68	5,088.21	0.00	0.00	0.00
15,700.00	89.80	89.89	10,682.75	-240.04	5,188.68	5,188.20	0.00	0.00	0.00
15,800.00	89.80	89.89	10,683.10	-239.85	5,288.67	5,288.20	0.00	0.00	0.00
15,900.00	89.80	89.89	10,683.46	-239.65	5,388.67	5,388.20	0.00	0.00	0.00
16,000.00	89.80	89.89	10,683.82	-239.45	5,488.67	5,488.20	0.00	0.00	0.00
16,100.00	89.80	89.89	10,684.17	-239.25	5,588.67	5,588.20	0.00	0.00	0.00
16,200.00	89.80	89.89	10,684.53	-239.06	5,688.67	5,688.20	0.00	0.00	0.00
16,300.00	89.80	89.89	10,684.89	-238.86	5,788.67	5,788.20	0.00	0.00	0.00
16,400.00	89.80	89.89	10,685.24	-238.66	5,888.67	5,888.20	0.00	0.00	0.00
16,500.00	89.80	89.89	10,685.60	-238.47	5,988.67	5,988.20	0.00	0.00	0.00
16,600.00	89.80	89.89	10,685.96	-238.27	6,088.67	6,088.20	0.00	0.00	0.00
16,700.00	89.80	89.89	10,686.31	-238.07	6,188.67	6,188.20	0.00	0.00	0.00
16,800.00	89.80	89.89	10,686.67	-237.88	6,288.67	6,288.20	0.00	0.00	0.00
16,900.00	89.80	89.89	10,687.02	-237.68	6,388.67	6,388.20	0.00	0.00	0.00
17,000.00	89.80	89.89	10,687.38	-237.48	6,488.66	6,488.20	0.00	0.00	0.00
17,100.00	89.80	89.89	10,687.74	-237.28	6,588.66	6,588.20	0.00	0.00	0.00
17,200.00	89.80	89.89	10,688.09	-237.09	6,688.66	6,688.20	0.00	0.00	0.00
17,300.00	89.80	89.89	10,688.45	-236.89	6,788.66	6,788.19	0.00	0.00	0.00
17,400.00	89.80	89.89	10,688.81	-236.69	6,888.66	6,888.19	0.00	0.00	0.00
17,500.00	89.80	89.89	10,689.16	-236.50	6,988.66	6,988.19	0.00	0.00	0.00
17,600.00	89.80	89.89	10,689.52	-236.30	7,088.66	7,088.19	0.00	0.00	0.00
17,700.00	89.80	89.89	10,689.88	-236.10	7,188.66	7,188.19	0.00	0.00	0.00
17,800.00	89.80	89.89	10,690.23	-235.90	7,288.66	7,288.19	0.00	0.00	0.00
17,900.00	89.80	89.89	10,690.59	-235.71	7,388.66	7,388.19	0.00	0.00	0.00
18,000.00	89.80	89.89	10,690.95	-235.51	7,488.66	7,488.19	0.00	0.00	0.00
18,100.00	89.80	89.89	10,691.30	-235.31	7,588.66	7,588.19	0.00	0.00	0.00
18,200.00	89.80	89.89	10,691.66	-235.12	7,688.65	7,688.19	0.00	0.00	0.00
18,300.00	89.80	89.89	10,692.02	-234.92	7,788.65	7,788.19	0.00	0.00	0.00
18,400.00	89.80	89.89	10,692.37	-234.72	7,888.65	7,888.19	0.00	0.00	0.00
18,500.00	89.80	89.89	10,692.73	-234.53	7,988.65	7,988.19	0.00	0.00	0.00
18,600.00	89.80	89.89	10,693.08	-234.33	8,088.65	8,088.19	0.00	0.00	0.00
18,700.00	89.80	89.89	10,693.44	-234.13	8,188.65	8,188.19	0.00	0.00	0.00
18,800.00	89.80	89.89	10,693.80	-233.93	8,288.65	8,288.18	0.00	0.00	0.00
18,900.00	89.80	89.89	10,694.15	-233.74	8,388.65	8,388.18	0.00	0.00	0.00
19,000.00	89.80	89.89	10,694.51	-233.54	8,488.65	8,488.18	0.00	0.00	0.00
19,100.00	89.80	89.89	10,694.87	-233.34	8,588.65	8,588.18	0.00	0.00	0.00
19,200.00	89.80	89.89	10,695.22	-233.15	8,688.65	8,688.18	0.00	0.00	0.00
19,300.00	89.80	89.89	10,695.58	-232.95	8,788.65	8,788.18	0.00	0.00	0.00
19,400.00	89.80	89.89	10,695.94	-232.75	8,888.64	8,888.18	0.00	0.00	0.00
19,500.00	89.80	89.89	10,696.29	-232.55	8,988.64	8,988.18	0.00	0.00	0.00
19,600.00	89.80	89.89	10,696.65	-232.36	9,088.64	9,088.18	0.00	0.00	0.00
19,700.00	89.80	89.89	10,697.01	-232.16	9,188.64	9,188.18	0.00	0.00	0.00
19,800.00	89.80	89.89	10,697.36	-231.96	9,288.64	9,288.18	0.00	0.00	0.00
19,900.00	89.80	89.89	10,697.72	-231.77	9,388.64	9,388.18	0.00	0.00	0.00
20,000.00	89.80	89.89	10,698.08	-231.57	9,488.64	9,488.18	0.00	0.00	0.00
20,100.00	89.80	89.89	10,698.43	-231.37	9,588.64	9,588.18	0.00	0.00	0.00
20,200.00	89.80	89.89	10,698.79	-231.18	9,688.64	9,688.18	0.00	0.00	0.00
20,300.00	89.80	89.89	10,699.14	-230.98	9,788.64	9,788.18	0.00	0.00	0.00
20,400.00	89.80	89.89	10,699.50	-230.78	9,888.64	9,888.17	0.00	0.00	0.00



Database: EDM 5000.1 Single User Db
Company: XTO Energy
Project: Eddy County, NM (NAD-27)
Site: James Ranch Unit DI 1A
Well: 204H
Wellbore: OH
Design: PERMIT

Local Co-ordinate Reference: Well 204H
TVD Reference: RKB = 27' @ 3184.00usft
MD Reference: RKB = 27' @ 3184.00usft
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)
20,500.00	89.80	89.89	10,699.86	-230.58	9,988.64	9,988.17	0.00	0.00	0.00
20,600.00	89.80	89.89	10,700.21	-230.39	10,088.63	10,088.17	0.00	0.00	0.00
20,700.00	89.80	89.89	10,700.57	-230.19	10,188.63	10,188.17	0.00	0.00	0.00
20,800.00	89.80	89.89	10,700.93	-229.99	10,288.63	10,288.17	0.00	0.00	0.00
20,900.00	89.80	89.89	10,701.28	-229.80	10,388.63	10,388.17	0.00	0.00	0.00
20,970.97	89.80	89.89	10,701.54	-229.66	10,459.60	10,459.14	0.00	0.00	0.00
21,000.00	89.80	89.89	10,701.64	-229.60	10,488.63	10,488.17	0.00	0.00	0.00
21,100.97	89.80	89.89	10,702.00	-229.40	10,589.60	10,589.14	0.00	0.00	0.00

Design Targets**Target Name**

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
204H SHL (1400' FNL - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	502,606.10	638,043.00	32.380986	-103.886169
204H FTP/ LP - plan hits target center - Point	0.00	0.00	10,666.00	-249.30	491.00	502,356.80	638,534.00	32.380295	-103.884582
204H LTP - plan misses target center by 0.04usft at 20970.97usft MD (10701.54 TVD, -229.66 N, 10459.60 E) - Point	0.00	0.00	10,701.54	-229.70	10,459.60	502,376.40	648,502.60	32.380230	-103.852292
204H PBHL (1650' FN - plan hits target center - Point	0.00	0.00	10,702.00	-229.40	10,589.60	502,376.70	648,632.60	32.380229	-103.851870



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Well: 204H
Wellbore: OH
Design: PERMIT

Local Co-ordinate Reference: Well 204H
TVD Reference: RKB = 27' @ 3184.00usft
MD Reference: RKB = 27' @ 3184.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
186.00	186.00	Rustler			
551.00	551.00	Salado			
3,266.00	3,266.00	Base Salt			
3,531.00	3,531.00	Delaware/Lamar			
3,576.00	3,576.00	Bell Canyon			
4,454.00	4,454.00	Cherry Canyon			
4,642.00	4,642.00	Base Manzanita			
6,011.00	6,011.00	Brushy Canyon			
7,087.00	7,087.00	Basal Brushy Canyon			
7,343.00	7,343.00	Base Brushy Canyon Sands			
7,369.00	7,369.00	Bone Spring			
7,473.00	7,473.00	Avalon Sand			
7,963.28	7,962.00	Lower Avalon Shale			
8,385.88	8,383.00	First Bone Spring Sand			
8,855.67	8,851.00	Second Bone Spring Limestone			
9,123.69	9,118.00	Second Bone Spring Sand			
9,546.29	9,539.00	Third Bone Spring Limestone			
10,333.17	10,317.00	Third Bone Spring Sand			
10,765.25	10,617.00	Third Bone Spring RH Sand			



GATES E & S NORTH AMERICA, INC
DU-TEX
134 44TH STREET
CORPUS CHRISTI, TEXAS 78405

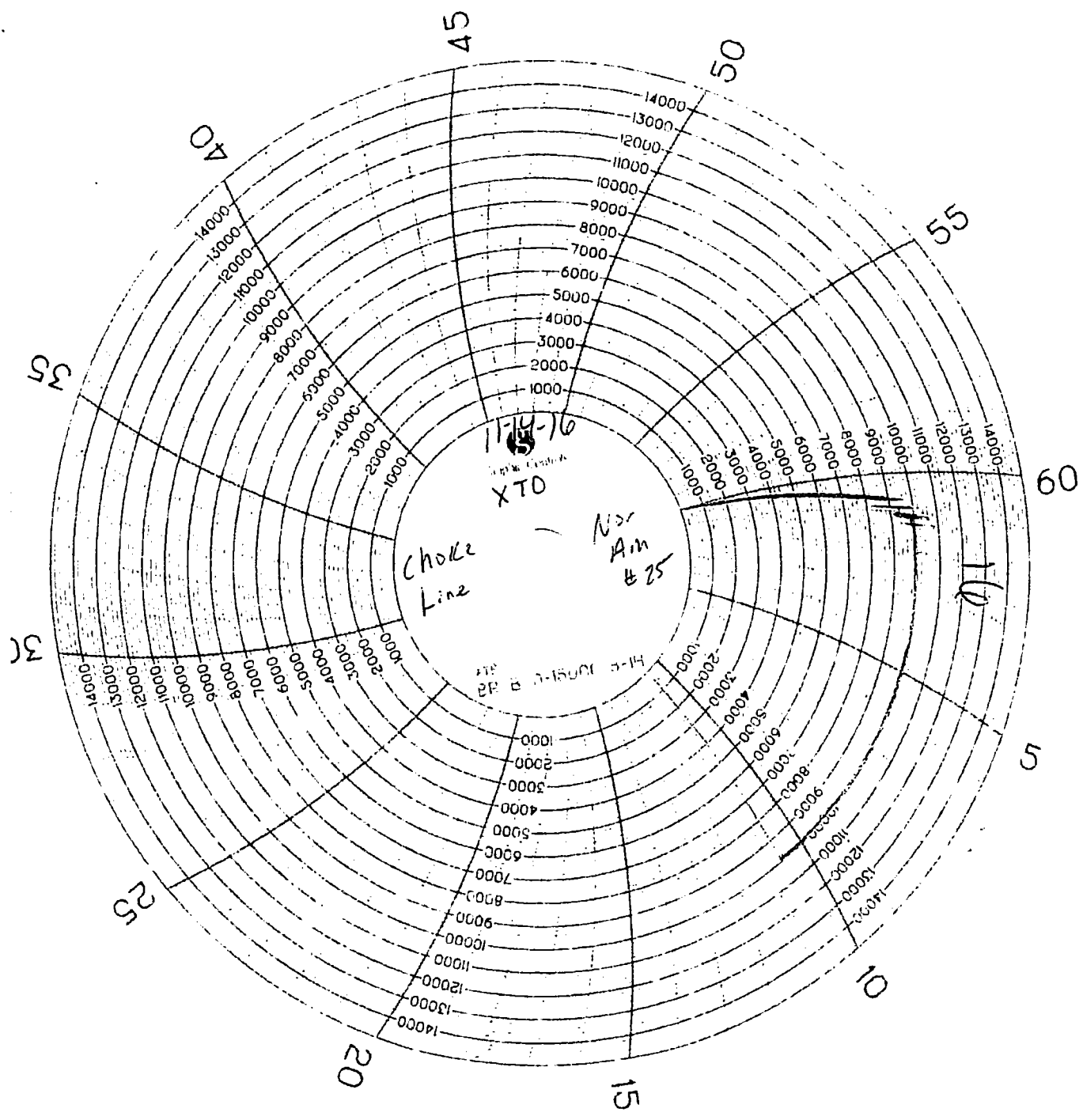
PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL: crpe&s@gates.com
WEB: www.gates.com

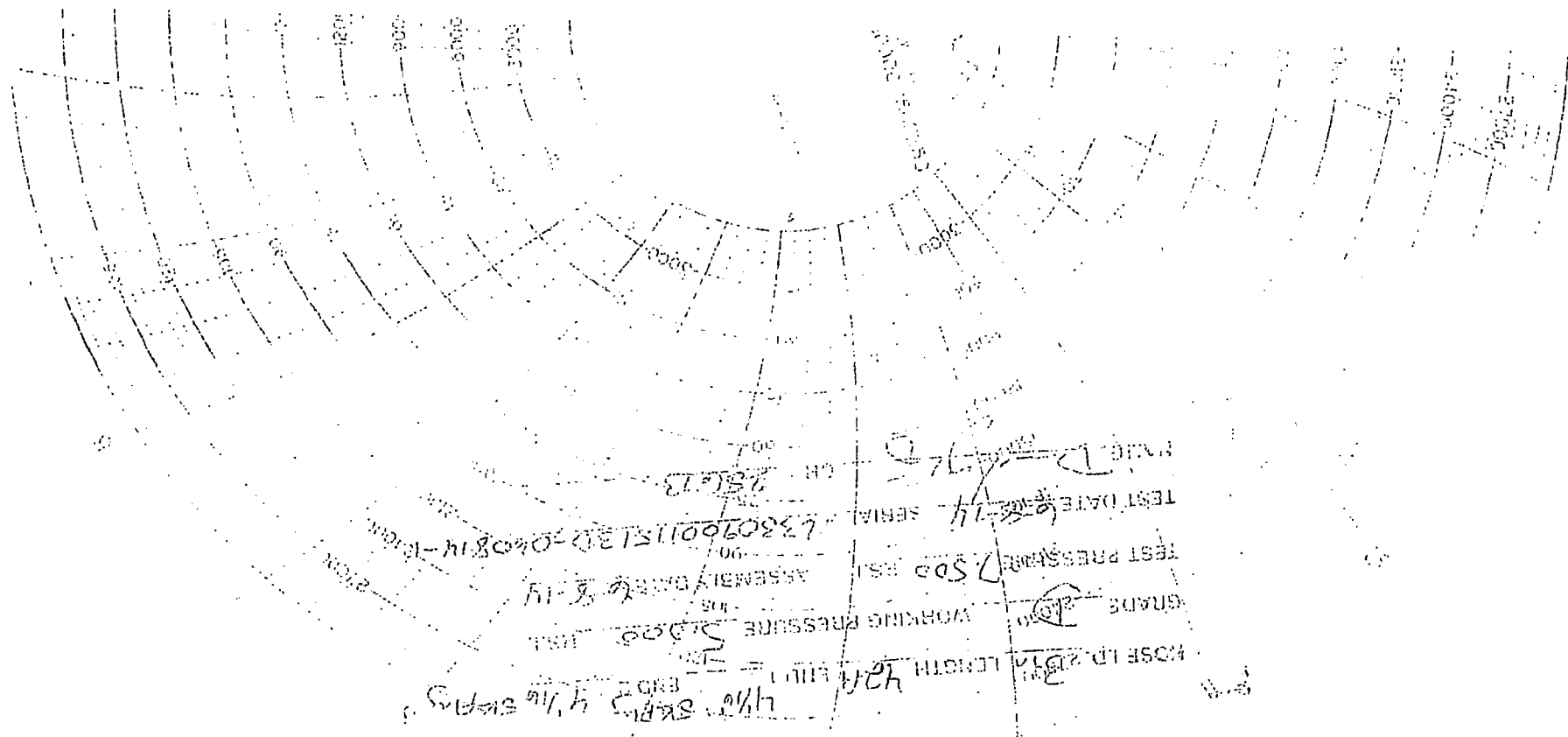
GRADE D PRESSURE TEST CERTIFICATE

Customer :	AUSTIN DISTRIBUTING	Test Date:	6/8/2014
Customer Ref. :	PENDING	Hose Serial No.:	D-060814-1
Invoice No. :	201709	Created By:	NORMA
Product Description:	FD3.042.0R41/16.5KFLGE/E LE		
End Fitting 1 :	4 1/16 in.5K FLG	End Fitting 2 :	4 1/16 in.5K FLG
Gates Part No. :	4774-6001	Assembly Code :	L33090011513D-060814-1
Working Pressure :	3700 PSI	Test Pressure :	9200 PSI

Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 7,500 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9.

Quality :	QUALITY	Technical Supervisor :	PRODUCTION
Date :	6/8/2014	Date :	6/8/2014
Signature :		Signature :	





Hood

PECOS DISTRICT

DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BOPCO, L.P.
LEASE NO.:	NMNM06808
WELL NAME & NO.:	JAMES RANCH UNIT DI 1A 204H
SURFACE HOLE FOOTAGE:	1400' FNL & 2560' FWL
BOTTOM HOLE FOOTAGE:	1650' FNL & 2440' FWL
LOCATION:	Section 21, T. 22 S., R 30 E., NMPM
COUNTY:	Eddy County, New Mexico

COA

H2S	☐ Yes	☒ No	
Potash	☐ None	☐ Secretary	☒ R-111-P
Cave/Karst Potential	☐ Low	☐ Medium	☒ High
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☒ Conventional	☐ Multibowl	☐ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

All Previous COAs still apply.

A. CASING

1. The 16 inch surface casing shall be set at approximately **526** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **24 hours in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

- d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the 11-3/4 inch intermediate casing shall be set at approximately 3551 feet is:

- Cement to surface. If cement does not circulate see B.1.a, c-d above.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst and potash.

Casing Shall be kept at a minimum 2/3 full of 9.4 ppg fluid.

3. The minimum required fill of cement behind the 8-5/8 inch intermediate casing is:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
 - b. Second stage above DV tool:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst and potash.
 - ❖ In High Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
4. The minimum required fill of cement behind the 5-1/2 inch production casing is:
 - Cement as proposed. Operator shall provide method of verification.

B. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.
 - a. **In the case where the only BOP installed is an annular preventer, it shall be tested to a minimum of 2000 psi (which may require upgrading to 3M or 5M annular).**
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **11-3/4** inch intermediate casing shoe shall be **5000 (5M)** psi.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
 - b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
 - c. BOPE tests (minimum of 4 hours)
- ☒ Chaves and Roosevelt Counties
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)
- ☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
(575) 361-2822
- ☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)
393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure

rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).

- b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log (one log per well pad is acceptable) run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for

details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
 - c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.
 - d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

- e. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes. This test shall be performed prior to the test at full stack pressure.
- g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.