

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM 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.
NMNM06808

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

8. Well Name and No.
JAMES RANCH UNIT D11 169H9. API Well No.
30-015-426281. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other2. Name of Operator
BOPCO, L.P.Contact: STEPHANIE RABADUE
E-Mail: stephanie_rabadue@xtoenergy.com3a. Address
PO BOX 2760
MIDLAND, TX 797023b. Phone No. (include area code)
Ph: 432-620-671410. Field and Pool or Exploratory Area
WILDCAT 907-52230216
97905 Bone Spring4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
Sec 21 T22S R30E Mer NMP 1433FNL 1450FEL11. 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 recompletion 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. respectfully requests the following changes to the referenced well:

1. Change of drilling 'slot'. The drill island has been built, the concrete cellars have been set, the EA has been written for the entire island. This is a change of slot designation only which requires no additional surface disturbance. Environmental Assessment for ENTIRE drill island previously cleared.

2. Drilling Program and Casing Design. See attached amended drilling program, directional drill survey, and associated C-102.

SEE ATTACHED FOR
CONDITIONS OF APPROVALNM OIL CONSERVAT
ARTESIA DISTRICT
SURVEY, SS
DEC 12 2017

11/03/2017 Engineering review completed by m Haque.

12/6/2017 POTASH APPROVES

Surface good 12/01/17 [Signature] OK per Bud Bales 12-1-2017 RECEIVED

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #391704 verified by the BLM Well Information System
For BOPCO, L.P., sent to the Carlsbad
Committed to AFMSS for processing by MUSTAFA HAQUE on 10/31/2017 ()

Name (Printed/Typed) STEPHANIE RABADUE

Title REGULATORY ANALYST

Signature (Electronic Submission)

Date 10/12/2017

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By

[Signature]

Title

Car FIELD MANAGER

Date

12/06/17

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 FIELD OFFICE

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)

** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED **

Rev 12-15-17

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
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 30-015-42628	² Pool Code 97905	³ Pool Name wildcat G-07 522302161; Bone Spring
⁴ Property Code 40211	⁵ Property Name JAMES RANCH UNIT DI I	
⁷ OGRID No. 260737	⁸ Operator Name BOPCO, LP	⁹ Elevation 3167'

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
G	21	22 S	30 E		1,433	NORTH	1,450	EAST	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
C	23	22 S	30 E		20	NORTH	2,440	WEST	EDDY

¹² Dedicated Acres 280	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.

¹⁶				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 undivided 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 Stephanie Rabreau 6-16-17 Signature Date Stephanie Rabreau Printed Name Stephanie.Rabreau@xtoenergy.com 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. 05-23-2017 Date of Survey Signature and Seal of Professional Surveyor: MARK DILLON HARP 23786 Certificate Number				MARK DILLON HARP NEW MEXICO 23786 PROFESSIONAL SURVEYOR	

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

XTO Energy Inc.
James Ranch Unit DII 169H
Projected TD: 18521' MD / 9551' TVD
SHL: 1433' FNL & 1450' FEL, SECTION 21, T22S, R30E
BHL: 20' FNL & 2440' FEL, SECTION 23, T22S, R30E
Eddy County, NM

1. GEOLOGIC NAME OF SURFACE FORMATION:

A. Permian

2. ESTIMATED TOPS OF GEOLOGICAL MARKERS & DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:

Formation	Well Depth (TVD)	Water / Oil / Gas
Rustler	187'	Water
Top of Salt	556'	
Base of Salt/Delaware	3364'	
Bell Canyon	3592'	Water
Brushy Canyon	6021'	Water/Oil/Gas
Bone Spring	7372'	Water/Oil/Gas
1 st Bone Spring Ss	8379'	Water/Oil/Gas
2 nd Bone Spring Lm	8860'	Water/Oil/Gas
2 nd Bone Spring Ss	9141'	Water/Oil/Gas
Target/Land Curve	9501'	Water/Oil/Gas

*** Hydrocarbons @ Brushy Canyon

*** Estimated groundwater depth 120'.

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 13-3/8" casing @ 536' and circulating cement back to surface. The salt will be isolated by setting 9-5/8" casing at 3556' and circulating cement to surface. An 8-3/4" hole will be drilled to the base of the curve (10079'MD) and an 8-1/2" lateral hole will be drilled to MD/TD and 5-1/2" casing will be set at TD and cemented back to surface.

3. CASING PROGRAM:

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
17-1/2"	0' – 536'	13-3/8"	48#	STC	H-40	New	7.05	3.14	12.52
12-1/4"	0' – 3556'	9-5/8"	36#	LTC	J-55	New	1.87	1.81	3.54
8-3/4" x 8-1/2"	0' – 18521'	5-1/2"	17#	BTC	P-110	New	1.12	1.64	2.46

- 9-5/8" collapse assumes ½ evacuation and fresh water internally.
- XTO requests to utilize centralizers only in the curve after the KOP and only a minimum of one every other joint.
- 5-1/2" tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35.

WELLHEAD:

Permanent Wellhead – GE RSH Multibowl System

- A. Starting Head: 13-5/8" 5M top flange x 13-3/8" 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.
 - Manufacturer will witness installation of test plug for initial test.
 - Operator will test the 9-5/8" casing to 70% of casing burst before drilling out.

CEMENT PROGRAM:

- A. **Surface Casing:** 13-3/8", 48#, NEW H-40, STC casing to be set at $\pm 536'$.

Lead: 20 bbls FW, then 290 sx ExtendaCem-CZ (mixed at 12.8 ppg, 1.68 ft³/sk, 8.72 gal/sx wtr)

Tail: 220 sx HalCem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft³/sk, 6.39 gal/sx wtr)
***All volumes 100% excess in open hole. Cement to surface. Top of Tail @ 350'.

- B. **Intermediate Casing:** 9-5/8", 36#, NEW J-55, LTC casing to be set at $\pm 3556'$.

Lead: 20 bbls FW, then 1018 sx EconoCem-HLC + 5% salt + 5 lbm/sk Kol-Seal (mixed at 12.9 ppg, 1.88 ft³/sk, 9.61 gal/sx wtr)

Tail: 236 sx HalCem-C (mixed at 14.8 ppg, 1.33 ft³/sk, 6.34 gal/sx wtr)
***All volumes 100% excess in open hole. Cement to surface. Top of Tail @ 3056'.

- C. **Production Casing:** 5-1/2", 17#, NEW P-110, BTC casing to be set at $\pm 18521'$. Casing will be cemented to surface.

Lead: 20 bbls FW, then 988 sx Tuned Light + 0.5 lbm/sk CFR-3 + 1.5 lbm/sk salt + 0.1% HR601 (mixed at 10.5 ppg, 2.69 ft³/sk, 12.26 gal/sx wtr)

Tail: 1646 sx VersaCem PBHS2 + 0.5% LAP-1 + 0.25 lbm/sk D-air 5000 + 0.2% HR 601 + 0.4% CFR-3 + 1 pps Salt (mixed at 13.2 ppg, 1.61 ft³/sk, 8.38 gal/sx wtr)
***All volumes 20% excess in open hole. Cement to surface.

low
cement -
SEE COA

D. PRESSURE CONTROL EQUIPMENT: -DSEE COA

The blow out preventer equipment (BOP) for the permanent wellhead consists of a 13-5/8" minimum 3M Hydril and a 13-5/8" minimum 3M Double Ram BOP. MASP should not exceed 2481 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 13-5/8" 5M bradenhead and flange, the BOP test will be limited to 3000psi. All BOP tests will include a low pressure test as per BLM regulations. The 3M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested each day.

Because the 9-5/8" casing will be run with a mandrel hanger through the 13-3/8" BOP without breaking any connections, no additional pressure test would be required.

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.

E. PROPOSED MUD CIRCULATION SYSTEM:

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' to 536'	17-1/2"	FW/Native	8.4 – 8.8	35 - 40	NC
536' to 3556'	12-1/4"	Brine/Gel Sweeps	9.8 – 10.2	30 - 32	NC
3556' to 18521'	8-3/4" x 8-1/2"	OBM	8.8 – 9.2	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 13-3/8" surface casing with brine solution. A 9.8ppg-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.

F. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:

- i. A Kelly cock will be in the drill string at all times.
- ii. A full opening drill pipe stabbing valve having appropriate connections will be on the rig floor at all times.
- iii. H2S monitors will be on location when drilling below the 18-5/8" casing.

G. LOGGING, CORING AND TESTING PROGRAM:

Mud Logger: Mud Logging Unit (2 man) on @ 3556'.
Catch 20' samples from 3556' to TD

Open hole logging to include Density/Neutron/Sonic/Spectral Gamma from curve to intermediate casing shoe.

H. ABNORMAL PRESSURES AND TEMPERATURES / POTENTIAL HAZARDS:

None anticipated. BHT of 160 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.

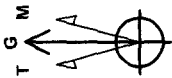
I. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

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, Inc.

Project: Eddy County, NM (NAD 27)
 Site: James Ranch Unit DI 1
 Well: DI 1 169H
 Wellbore: OH
 Design: Plan #1

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
 Datum: GE 3165' = KB 24' @ 3189.00usft (Noram 25)



Azimuths to Grid North
 True North: -0.24°
 Magnetic North: 6.96°
 Magnetic Field
 Strength: 48222.0snT
 Dip Angle: 60.23°
 Date: 5/25/2017
 Model: HDGM



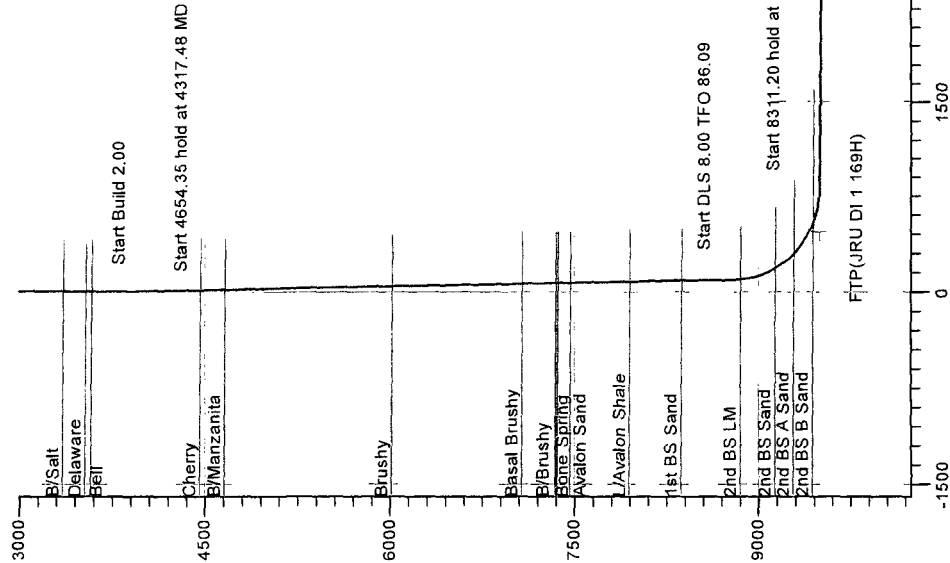
DESIGN TARGET DETAILS

Name	TVD	+N-S	+E-W	Nothing	Easting	Latitude	Longitude
SHL(JRU DI 1 169H)	0.00	0.00	0.00	502574.70	639393.10	32° 22' 51.183 N	103° 52' 54.466 W
FTP(JRU DI 1 169H)	9501.00	1414.00	456.90	503988.70	639850.00	32° 23' 5.156 N	103° 52' 49.068 W
LTP(JRU DI 1 169H)	9550.32	1431.70	9109.30	504006.40	648502.40	32° 23' 4.957 N	103° 51' 8.165 W
PBHL(JRU DI 1 169H)	9551.09	1432.00	9239.30	504006.70	648632.40	32° 23' 4.955 N	103° 51' 6.649 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	TFace	VSeet	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	3600.00	0.00	0.00	3600.00	0.00	0.00	0.00	0.00	0.00	
3	4317.48	14.35	4.00	4310.01	89.16	6.23	2.00	4.00	6.41	
4	8971.83	14.35	4.00	8819.15	1239.88	86.66	0.00	0.00	89.20	
5	10079.97	89.66	89.88	9501.00	1414.29	798.26	8.00	86.09	80.116	LTP(JRU DI 1 169H)
6	18391.17	89.66	89.88	9550.32	1431.70	9109.30	0.00	0.00	912.21	PBHL(JRU DI 1 169H)
7	18521.17	89.66	89.88	9551.09	1431.97	9239.30	0.00	0.00	924.21	

True Vertical Depth (1500 usft/in)



FORMATION TOP DETAILS

Formation	MDPath
Rustler	187.00
Salado	556.00
B/Salt	3364.00
Delaware	3544.00
Bell	3592.00
Cherry	4488.06
B/Manzanita	4687.09
Brushy	5021.22
Basal Brushy	6083.81
B/Brushy	7179.10
Bone Spring	7354.37
Avalon Sand	7459.89
L/Avalon Shale	7372.37
1st BS Sand	7478.47
2nd BS LM	7581.70
2nd BS Sand	8082.37
2nd BS A Sand	8379.48
2nd BS B Sand	8518.01
	8860.54
	9014.61
	9142.06
	9320.16
	9292.74
	9448.15

Start 130.00 hold at 18391.17 MD

Plan #1

TD at 18521.17

FTP(JRU DI 1 169H)

PBHL(JRU DI 1 169H)

Vertical Section at 89.88° (1500 usft/in)



LEAM DRILLING SERVICES
 2010 East Davis, Conroe, Texas 77301
 Phone: 936/756-7577, Fax: 936/756-7595

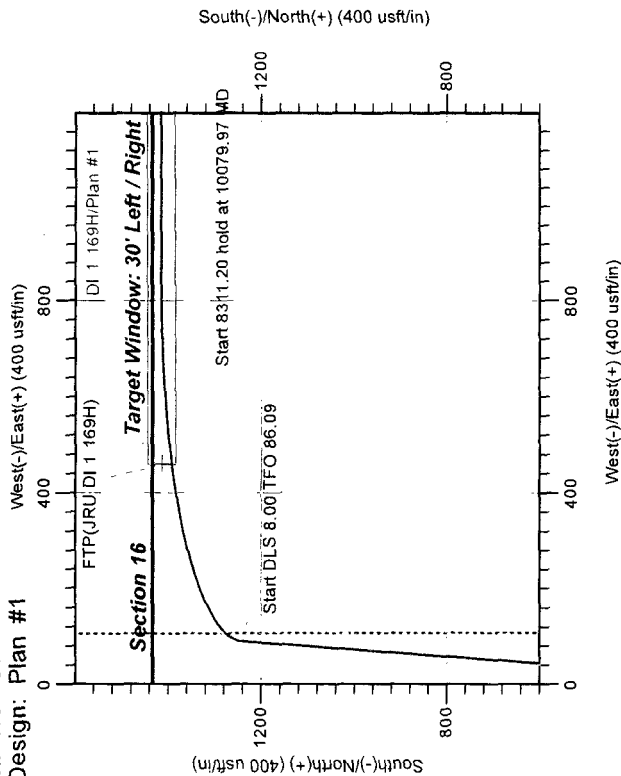
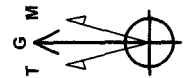
Plan: Plan #1 (DI 1 169H/OH)
 James Ranch Unit DI 1
 Created By: David Vogler
 Date: 7:56, June 01 2017
 Approved: _____
 Date: _____

XTO Energy, Inc.

Project: Eddy County, NM (NAD 27)
 Site: James Ranch Unit DI 1
 Well: DI 1 169H
 Wellbore: OH
 Design: Plan #1

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
 Datum: GE 3165 = KB 24 @ 3189.00usft (Noram 25)

Azimuths to Grid North
 True North: -0.24°
 Magnetic North: 6.96°
 Magnetic Field
 Strength: 48222.0nT
 Dip Angle: 60.23°
 Date: 5/25/2017
 Model: HDGM

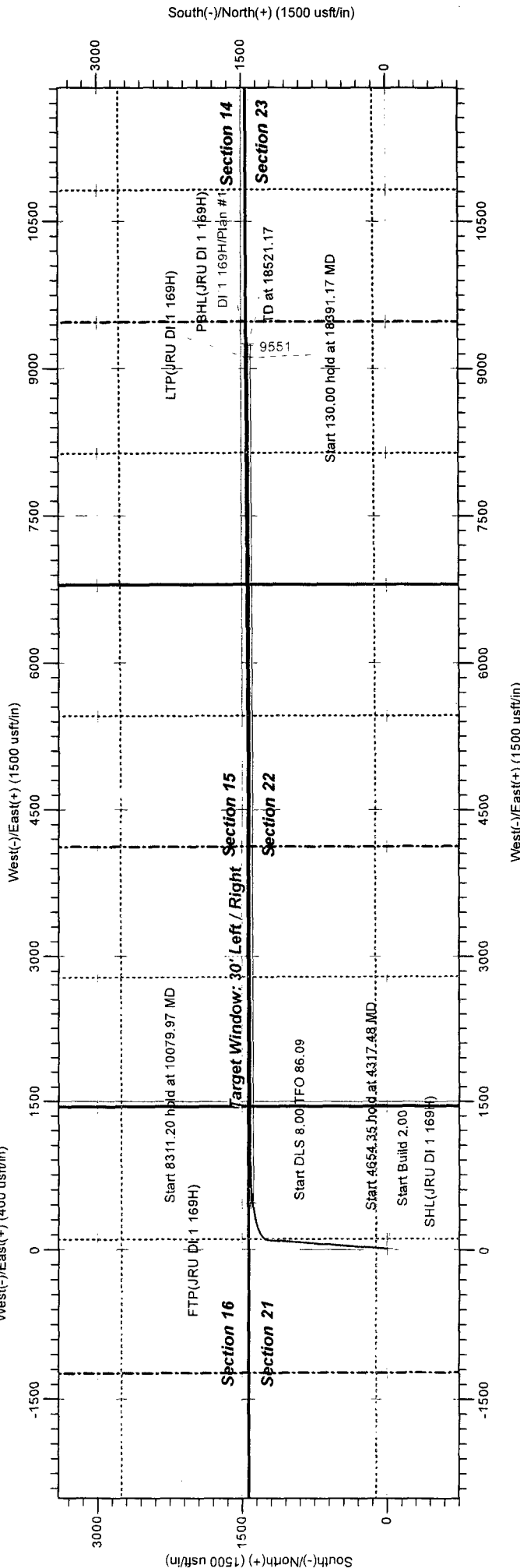


DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL(JRU DI 1 169H)	0.00	0.00	0.00	502574.70	639393.10	32° 22' 51.183 N	103° 52' 54.466 W
FTP(JRU DI 1 169H)	9501.00	1414.00	456.90	503988.70	639850.00	32° 23' 5.156 N	103° 52' 49.068 W
LTP(JRU DI 1 169H)	9550.32	1431.70	9109.30	504006.40	648502.40	32° 23' 4.957 N	103° 51' 8.165 W
PBHL(JRU DI 1 169H)	9551.09	1432.00	9239.30	504006.70	648632.40	32° 23' 4.955 N	103° 51' 6.648 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	3600.00	0.00	0.00	3600.00	0.00	0.00	0.00	0.00	0.00	
3	4317.48	14.35	4.00	4310.01	89.16	6.23	2.00	4.00	6.41	
4	8971.83	14.35	4.00	8819.15	1239.88	86.66	0.00	0.00	89.20	
5	10079.97	89.66	89.88	9501.00	1414.29	798.26	8.00	86.09	801.16	LTP(JRU DI 1 169H)
6	18391.17	89.66	89.88	9550.32	1431.70	9109.30	0.00	0.00	9112.21	PBHL(JRU DI 1 169H)
7	18521.17	89.66	89.88	9551.09	1431.97	9239.30	0.00	0.00	9242.21	



LEAM DRILLING SERVICES
 2010 East Davis, Conroe, Texas 77301
 Phone: 936/756-7577, Fax: 936/756-7595

Plan: Plan #1 (DI 1 169H/OH)
 James Ranch Unit DI 1
 Created By: David Vogler
 Date: 7/57, June 01 2017
 Approved: _____
 Date: _____

LEAM Drilling Systems LLC

Planning Report

Database: EDM 5000.1 MULTI User DB
Company: XTO Energy, Inc.
Project: Eddy County, NM (NAD 27)
Site: James Ranch Unit DI 1
Well: DI 1 169H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well DI 1 169H
TVD Reference: GE 3165' = KB 24' @ 3189.00usft (Noram 25)
MD Reference: GE 3165' = KB 24' @ 3189.00usft (Noram 25)
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 1		
Site Position:		Northing:	502,574.70 usft
From:	Map	Easting:	639,393.10 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 22' 51.183 N
		Longitude:	103° 52' 54.466 W
		Grid Convergence:	0.24 °

Well	DI 1 169H		
Well Position	+N/-S	0.00 usft	Northing: 502,574.70 usft
	+E/-W	0.00 usft	Easting: 639,393.10 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 22' 51.183 N
		Longitude:	103° 52' 54.466 W
		Ground Level:	3,165.00 usft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	HDGM	5/25/2017	(°) 7.20
			Dip Angle
			(°) 60.23
			Field Strength
			(nT) 48,222

Design	Plan #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°) 89.88

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	
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,317.48	14.35	4.00	4,310.01	89.16	6.23	2.00	2.00	0.00	4.00	
8,971.83	14.35	4.00	8,819.15	1,239.88	86.66	0.00	0.00	0.00	0.00	
10,079.97	89.66	89.88	9,501.00	1,414.29	798.26	8.00	6.80	7.75	86.09	
18,391.17	89.66	89.88	9,550.32	1,431.70	9,109.30	0.00	0.00	0.00	0.00	LTP(JRU DI 1 169H)
18,521.17	89.66	89.88	9,551.09	1,431.97	9,239.30	0.00	0.00	0.00	0.00	PBHL(JRU DI 1 169H)

LEAM Drilling Systems LLC

Planning Report

Database: EDM 5000.1 MULTI User DB
 Company: XTO Energy, Inc.
 Project: Eddy County, NM (NAD 27)
 Site: James Ranch Unit DI 1
 Well: DI 1 169H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well DI 1 169H
 TVD Reference: GE 3165' = KB 24' @ 3189.00usft (Noram 25)
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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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL(JRU DI 1 169H)									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
187.00	0.00	0.00	187.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
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
556.00	0.00	0.00	556.00	0.00	0.00	0.00	0.00	0.00	0.00
Salado									
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
3,364.00	0.00	0.00	3,364.00	0.00	0.00	0.00	0.00	0.00	0.00
B/Salt									
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
3,544.00	0.00	0.00	3,544.00	0.00	0.00	0.00	0.00	0.00	0.00
Delaware									
3,592.00	0.00	0.00	3,592.00	0.00	0.00	0.00	0.00	0.00	0.00
Bell									
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	2.00	4.00	3,699.98	1.74	0.12	0.13	2.00	2.00	0.00
3,800.00	4.00	4.00	3,799.84	6.96	0.49	0.50	2.00	2.00	0.00
3,900.00	6.00	4.00	3,899.45	15.66	1.09	1.13	2.00	2.00	0.00
4,000.00	8.00	4.00	3,998.70	27.81	1.94	2.00	2.00	2.00	0.00
4,100.00	10.00	4.00	4,097.47	43.42	3.03	3.12	2.00	2.00	0.00

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 Wellbore: OH
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4,200.00	12.00	4.00	4,195.62	62.45	4.37	4.49	2.00	2.00	0.00
4,300.00	14.00	4.00	4,293.06	84.89	5.93	6.11	2.00	2.00	0.00
4,317.48	14.35	4.00	4,310.01	89.16	6.23	6.41	2.00	2.00	0.00
4,400.00	14.35	4.00	4,389.95	109.56	7.66	7.88	0.00	0.00	0.00
4,480.62	14.35	4.00	4,468.06	129.49	9.05	9.32	0.00	0.00	0.00
Cherry									
4,500.00	14.35	4.00	4,486.83	134.28	9.39	9.66	0.00	0.00	0.00
4,600.00	14.35	4.00	4,583.71	159.01	11.11	11.44	0.00	0.00	0.00
4,687.09	14.35	4.00	4,668.08	180.54	12.62	12.99	0.00	0.00	0.00
B/Manzanita									
4,700.00	14.35	4.00	4,680.59	183.73	12.84	13.22	0.00	0.00	0.00
4,800.00	14.35	4.00	4,777.47	208.46	14.57	15.00	0.00	0.00	0.00
4,900.00	14.35	4.00	4,874.35	233.18	16.30	16.78	0.00	0.00	0.00
5,000.00	14.35	4.00	4,971.23	257.90	18.03	18.55	0.00	0.00	0.00
5,100.00	14.35	4.00	5,068.11	282.63	19.75	20.33	0.00	0.00	0.00
5,200.00	14.35	4.00	5,164.99	307.35	21.48	22.11	0.00	0.00	0.00
5,300.00	14.35	4.00	5,261.87	332.07	23.21	23.89	0.00	0.00	0.00
5,400.00	14.35	4.00	5,358.75	356.80	24.94	25.67	0.00	0.00	0.00
5,500.00	14.35	4.00	5,455.63	381.52	26.67	27.45	0.00	0.00	0.00
5,600.00	14.35	4.00	5,552.51	406.24	28.40	29.23	0.00	0.00	0.00
5,700.00	14.35	4.00	5,649.39	430.97	30.12	31.00	0.00	0.00	0.00
5,800.00	14.35	4.00	5,746.27	455.69	31.85	32.78	0.00	0.00	0.00
5,900.00	14.35	4.00	5,843.15	480.41	33.58	34.56	0.00	0.00	0.00
6,000.00	14.35	4.00	5,940.03	505.14	35.31	36.34	0.00	0.00	0.00
6,083.81	14.35	4.00	6,021.22	525.86	36.76	37.83	0.00	0.00	0.00
Brushy									
6,100.00	14.35	4.00	6,036.91	529.86	37.04	38.12	0.00	0.00	0.00
6,200.00	14.35	4.00	6,133.79	554.59	38.76	39.90	0.00	0.00	0.00
6,300.00	14.35	4.00	6,230.67	579.31	40.49	41.68	0.00	0.00	0.00
6,400.00	14.35	4.00	6,327.55	604.03	42.22	43.46	0.00	0.00	0.00
6,500.00	14.35	4.00	6,424.43	628.76	43.95	45.23	0.00	0.00	0.00
6,600.00	14.35	4.00	6,521.31	653.48	45.68	47.01	0.00	0.00	0.00
6,700.00	14.35	4.00	6,618.19	678.20	47.40	48.79	0.00	0.00	0.00
6,800.00	14.35	4.00	6,715.07	702.93	49.13	50.57	0.00	0.00	0.00
6,900.00	14.35	4.00	6,811.95	727.65	50.86	52.35	0.00	0.00	0.00
7,000.00	14.35	4.00	6,908.83	752.37	52.59	54.13	0.00	0.00	0.00
7,100.00	14.35	4.00	7,005.71	777.10	54.32	55.91	0.00	0.00	0.00
7,179.10	14.35	4.00	7,082.34	796.65	55.68	57.31	0.00	0.00	0.00
Basal Brushy									
7,200.00	14.35	4.00	7,102.59	801.82	56.04	57.68	0.00	0.00	0.00
7,300.00	14.35	4.00	7,199.47	826.54	57.77	59.46	0.00	0.00	0.00
7,400.00	14.35	4.00	7,296.35	851.27	59.50	61.24	0.00	0.00	0.00
7,459.89	14.35	4.00	7,354.37	866.07	60.54	62.31	0.00	0.00	0.00
B/Brushy									
7,478.47	14.35	4.00	7,372.37	870.67	60.86	62.64	0.00	0.00	0.00
Bone Spring									
7,500.00	14.35	4.00	7,393.23	875.99	61.23	63.02	0.00	0.00	0.00
7,581.70	14.35	4.00	7,472.38	896.19	62.64	64.47	0.00	0.00	0.00
Avalon Sand									
7,600.00	14.35	4.00	7,490.11	900.71	62.96	64.80	0.00	0.00	0.00
7,700.00	14.35	4.00	7,586.99	925.44	64.68	66.58	0.00	0.00	0.00
7,800.00	14.35	4.00	7,683.87	950.16	66.41	68.36	0.00	0.00	0.00
7,900.00	14.35	4.00	7,780.75	974.89	68.14	70.14	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

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Company: XTO Energy, Inc.
Project: Eddy County, NM (NAD 27)
Site: James Ranch Unit DI 1
Well: DI 1 169H
Wellbore: OH
Design: Plan #1

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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)
8,000.00	14.35	4.00	7,877.63	999.61	69.87	71.91	0.00	0.00	0.00
8,082.37	14.35	4.00	7,957.44	1,019.97	71.29	73.38	0.00	0.00	0.00
L/Avalon Shale									
8,100.00	14.35	4.00	7,974.51	1,024.33	71.60	73.69	0.00	0.00	0.00
8,200.00	14.35	4.00	8,071.39	1,049.06	73.33	75.47	0.00	0.00	0.00
8,300.00	14.35	4.00	8,168.27	1,073.78	75.05	77.25	0.00	0.00	0.00
8,400.00	14.35	4.00	8,265.15	1,098.50	76.78	79.03	0.00	0.00	0.00
8,500.00	14.35	4.00	8,362.03	1,123.23	78.51	80.81	0.00	0.00	0.00
8,518.01	14.35	4.00	8,379.48	1,127.68	78.82	81.13	0.00	0.00	0.00
1st BS Sand									
8,600.00	14.35	4.00	8,458.91	1,147.95	80.24	82.59	0.00	0.00	0.00
8,700.00	14.35	4.00	8,555.79	1,172.67	81.97	84.36	0.00	0.00	0.00
8,800.00	14.35	4.00	8,652.67	1,197.40	83.69	86.14	0.00	0.00	0.00
8,900.00	14.35	4.00	8,749.55	1,222.12	85.42	87.92	0.00	0.00	0.00
8,971.83	14.35	4.00	8,819.15	1,239.88	86.66	89.20	0.00	0.00	0.00
9,000.00	14.67	12.91	8,846.42	1,246.84	87.70	90.25	8.00	1.15	31.63
9,014.61	14.97	17.33	8,860.54	1,250.45	88.68	91.24	8.00	2.03	30.26
2nd BS LM									
9,050.00	16.01	27.20	8,894.65	1,259.15	92.27	94.85	8.00	2.95	27.89
9,100.00	18.14	38.79	8,942.46	1,271.36	100.30	102.90	8.00	4.24	23.18
9,150.00	20.80	47.76	8,989.61	1,283.39	111.75	114.38	8.00	5.33	17.95
9,200.00	23.83	54.67	9,035.87	1,295.21	126.57	129.22	8.00	6.05	13.81
9,250.00	27.10	60.05	9,081.01	1,306.74	144.69	147.36	8.00	6.54	10.76
9,300.00	30.53	64.32	9,124.82	1,317.93	166.00	168.70	8.00	6.86	8.55
9,320.16	31.94	65.81	9,142.06	1,322.33	175.48	178.19	8.00	7.03	7.36
2nd BS Sand									
9,350.00	34.07	67.80	9,167.08	1,328.73	190.43	193.14	8.00	7.13	6.67
9,400.00	37.70	70.68	9,207.59	1,339.08	217.83	220.57	8.00	7.25	5.77
9,450.00	41.38	73.13	9,246.14	1,348.94	248.08	250.84	8.00	7.37	4.89
9,500.00	45.11	75.24	9,282.56	1,358.25	281.04	283.82	8.00	7.46	4.22
9,514.57	46.21	75.80	9,292.74	1,360.85	291.13	293.91	8.00	7.51	3.87
2nd BS A Sand									
9,550.00	48.88	77.09	9,316.66	1,366.97	316.54	319.33	8.00	7.54	3.64
9,600.00	52.67	78.74	9,348.28	1,375.06	354.41	357.22	8.00	7.58	3.30
9,650.00	56.48	80.23	9,377.26	1,382.48	394.46	397.28	8.00	7.62	2.98
9,700.00	60.30	81.60	9,403.46	1,389.19	436.50	439.34	8.00	7.66	2.73
9,750.00	64.14	82.86	9,426.75	1,395.16	480.32	483.17	8.00	7.68	2.53
9,760.81	64.98	83.13	9,431.40	1,396.35	490.01	492.87	8.00	7.69	2.43
FTP(JRU DI 1 169H)									
9,800.00	68.00	84.05	9,447.03	1,400.36	525.72	528.58	8.00	7.70	2.35
9,803.01	68.23	84.12	9,448.15	1,400.65	528.49	531.36	8.00	7.71	2.30
2nd BS B Sand									
9,850.00	71.85	85.17	9,464.19	1,404.77	572.46	575.33	8.00	7.72	2.24
9,900.00	75.72	86.24	9,478.15	1,408.36	620.33	623.21	8.00	7.73	2.15
9,950.00	79.59	87.28	9,488.84	1,411.11	669.09	671.97	8.00	7.74	2.07
10,000.00	83.46	88.29	9,496.21	1,413.02	718.49	721.38	8.00	7.75	2.02
10,050.00	87.34	89.29	9,500.22	1,414.08	768.31	771.20	8.00	7.75	1.99
10,079.97	89.66	89.88	9,501.00	1,414.29	798.26	801.16	8.00	7.75	1.98
10,100.00	89.66	89.88	9,501.12	1,414.34	818.30	821.19	0.00	0.00	0.00
10,200.00	89.66	89.88	9,501.71	1,414.54	918.29	921.19	0.00	0.00	0.00
10,300.00	89.66	89.88	9,502.31	1,414.75	1,018.29	1,021.18	0.00	0.00	0.00
10,400.00	89.66	89.88	9,502.90	1,414.96	1,118.29	1,121.18	0.00	0.00	0.00
10,500.00	89.66	89.88	9,503.49	1,415.17	1,218.29	1,221.18	0.00	0.00	0.00

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10,600.00	89.66	89.88	9,504.09	1,415.38	1,318.29	1,321.18	0.00	0.00	0.00
10,700.00	89.66	89.88	9,504.68	1,415.59	1,418.28	1,421.18	0.00	0.00	0.00
10,800.00	89.66	89.88	9,505.27	1,415.80	1,518.28	1,521.18	0.00	0.00	0.00
10,900.00	89.66	89.88	9,505.87	1,416.01	1,618.28	1,621.17	0.00	0.00	0.00
11,000.00	89.66	89.88	9,506.46	1,416.22	1,718.28	1,721.17	0.00	0.00	0.00
11,100.00	89.66	89.88	9,507.05	1,416.43	1,818.28	1,821.17	0.00	0.00	0.00
11,200.00	89.66	89.88	9,507.65	1,416.64	1,918.27	1,921.17	0.00	0.00	0.00
11,300.00	89.66	89.88	9,508.24	1,416.85	2,018.27	2,021.17	0.00	0.00	0.00
11,400.00	89.66	89.88	9,508.83	1,417.06	2,118.27	2,121.17	0.00	0.00	0.00
11,500.00	89.66	89.88	9,509.43	1,417.27	2,218.27	2,221.16	0.00	0.00	0.00
11,600.00	89.66	89.88	9,510.02	1,417.48	2,318.27	2,321.16	0.00	0.00	0.00
11,700.00	89.66	89.88	9,510.61	1,417.69	2,418.26	2,421.16	0.00	0.00	0.00
11,800.00	89.66	89.88	9,511.21	1,417.90	2,518.26	2,521.16	0.00	0.00	0.00
11,900.00	89.66	89.88	9,511.80	1,418.11	2,618.26	2,621.16	0.00	0.00	0.00
12,000.00	89.66	89.88	9,512.39	1,418.31	2,718.26	2,721.15	0.00	0.00	0.00
12,100.00	89.66	89.88	9,512.99	1,418.52	2,818.26	2,821.15	0.00	0.00	0.00
12,200.00	89.66	89.88	9,513.58	1,418.73	2,918.25	2,921.15	0.00	0.00	0.00
12,300.00	89.66	89.88	9,514.17	1,418.94	3,018.25	3,021.15	0.00	0.00	0.00
12,400.00	89.66	89.88	9,514.77	1,419.15	3,118.25	3,121.15	0.00	0.00	0.00
12,500.00	89.66	89.88	9,515.36	1,419.36	3,218.25	3,221.15	0.00	0.00	0.00
12,600.00	89.66	89.88	9,515.95	1,419.57	3,318.25	3,321.14	0.00	0.00	0.00
12,700.00	89.66	89.88	9,516.55	1,419.78	3,418.24	3,421.14	0.00	0.00	0.00
12,800.00	89.66	89.88	9,517.14	1,419.99	3,518.24	3,521.14	0.00	0.00	0.00
12,900.00	89.66	89.88	9,517.74	1,420.20	3,618.24	3,621.14	0.00	0.00	0.00
13,000.00	89.66	89.88	9,518.33	1,420.41	3,718.24	3,721.14	0.00	0.00	0.00
13,100.00	89.66	89.88	9,518.92	1,420.62	3,818.24	3,821.14	0.00	0.00	0.00
13,200.00	89.66	89.88	9,519.52	1,420.83	3,918.24	3,921.13	0.00	0.00	0.00
13,300.00	89.66	89.88	9,520.11	1,421.04	4,018.23	4,021.13	0.00	0.00	0.00
13,400.00	89.66	89.88	9,520.70	1,421.25	4,118.23	4,121.13	0.00	0.00	0.00
13,500.00	89.66	89.88	9,521.30	1,421.46	4,218.23	4,221.13	0.00	0.00	0.00
13,600.00	89.66	89.88	9,521.89	1,421.67	4,318.23	4,321.13	0.00	0.00	0.00
13,700.00	89.66	89.88	9,522.48	1,421.88	4,418.23	4,421.12	0.00	0.00	0.00
13,800.00	89.66	89.88	9,523.08	1,422.08	4,518.22	4,521.12	0.00	0.00	0.00
13,900.00	89.66	89.88	9,523.67	1,422.29	4,618.22	4,621.12	0.00	0.00	0.00
14,000.00	89.66	89.88	9,524.26	1,422.50	4,718.22	4,721.12	0.00	0.00	0.00
14,100.00	89.66	89.88	9,524.86	1,422.71	4,818.22	4,821.12	0.00	0.00	0.00
14,200.00	89.66	89.88	9,525.45	1,422.92	4,918.22	4,921.12	0.00	0.00	0.00
14,300.00	89.66	89.88	9,526.04	1,423.13	5,018.21	5,021.11	0.00	0.00	0.00
14,400.00	89.66	89.88	9,526.64	1,423.34	5,118.21	5,121.11	0.00	0.00	0.00
14,500.00	89.66	89.88	9,527.23	1,423.55	5,218.21	5,221.11	0.00	0.00	0.00
14,600.00	89.66	89.88	9,527.82	1,423.76	5,318.21	5,321.11	0.00	0.00	0.00
14,700.00	89.66	89.88	9,528.42	1,423.97	5,418.21	5,421.11	0.00	0.00	0.00
14,800.00	89.66	89.88	9,529.01	1,424.18	5,518.20	5,521.11	0.00	0.00	0.00
14,900.00	89.66	89.88	9,529.60	1,424.39	5,618.20	5,621.10	0.00	0.00	0.00
15,000.00	89.66	89.88	9,530.20	1,424.60	5,718.20	5,721.10	0.00	0.00	0.00
15,100.00	89.66	89.88	9,530.79	1,424.81	5,818.20	5,821.10	0.00	0.00	0.00
15,200.00	89.66	89.88	9,531.38	1,425.02	5,918.20	5,921.10	0.00	0.00	0.00
15,300.00	89.66	89.88	9,531.98	1,425.23	6,018.19	6,021.10	0.00	0.00	0.00
15,400.00	89.66	89.88	9,532.57	1,425.44	6,118.19	6,121.09	0.00	0.00	0.00
15,500.00	89.66	89.88	9,533.16	1,425.64	6,218.19	6,221.09	0.00	0.00	0.00
15,600.00	89.66	89.88	9,533.76	1,425.85	6,318.19	6,321.09	0.00	0.00	0.00
15,700.00	89.66	89.88	9,534.35	1,426.06	6,418.19	6,421.09	0.00	0.00	0.00
15,800.00	89.66	89.88	9,534.94	1,426.27	6,518.18	6,521.09	0.00	0.00	0.00
15,900.00	89.66	89.88	9,535.54	1,426.48	6,618.18	6,621.09	0.00	0.00	0.00

LEAM Drilling Systems LLC

Planning Report

Database: EDM 5000.1 MULTI User DB
 Company: XTO Energy, Inc.
 Project: Eddy County, NM (NAD 27)
 Site: James Ranch Unit DI 1
 Well: DI 1 169H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well DI 1 169H
 TVD Reference: GE 3165' = KB 24' @ 3189.00usft (Noram 25)
 MD Reference: GE 3165' = KB 24' @ 3189.00usft (Noram 25)
 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)
16,000.00	89.66	89.88	9,536.13	1,426.69	6,718.18	6,721.08	0.00	0.00	0.00
16,100.00	89.66	89.88	9,536.72	1,426.90	6,818.18	6,821.08	0.00	0.00	0.00
16,200.00	89.66	89.88	9,537.32	1,427.11	6,918.18	6,921.08	0.00	0.00	0.00
16,300.00	89.66	89.88	9,537.91	1,427.32	7,018.17	7,021.08	0.00	0.00	0.00
16,400.00	89.66	89.88	9,538.50	1,427.53	7,118.17	7,121.08	0.00	0.00	0.00
16,500.00	89.66	89.88	9,539.10	1,427.74	7,218.17	7,221.08	0.00	0.00	0.00
16,600.00	89.66	89.88	9,539.69	1,427.95	7,318.17	7,321.07	0.00	0.00	0.00
16,700.00	89.66	89.88	9,540.28	1,428.16	7,418.17	7,421.07	0.00	0.00	0.00
16,800.00	89.66	89.88	9,540.88	1,428.37	7,518.16	7,521.07	0.00	0.00	0.00
16,900.00	89.66	89.88	9,541.47	1,428.58	7,618.16	7,621.07	0.00	0.00	0.00
17,000.00	89.66	89.88	9,542.06	1,428.79	7,718.16	7,721.07	0.00	0.00	0.00
17,100.00	89.66	89.88	9,542.66	1,429.00	7,818.16	7,821.06	0.00	0.00	0.00
17,200.00	89.66	89.88	9,543.25	1,429.21	7,918.16	7,921.06	0.00	0.00	0.00
17,300.00	89.66	89.88	9,543.85	1,429.41	8,018.15	8,021.06	0.00	0.00	0.00
17,400.00	89.66	89.88	9,544.44	1,429.62	8,118.15	8,121.06	0.00	0.00	0.00
17,500.00	89.66	89.88	9,545.03	1,429.83	8,218.15	8,221.06	0.00	0.00	0.00
17,600.00	89.66	89.88	9,545.63	1,430.04	8,318.15	8,321.06	0.00	0.00	0.00
17,700.00	89.66	89.88	9,546.22	1,430.25	8,418.15	8,421.05	0.00	0.00	0.00
17,800.00	89.66	89.88	9,546.81	1,430.46	8,518.14	8,521.05	0.00	0.00	0.00
17,900.00	89.66	89.88	9,547.41	1,430.67	8,618.14	8,621.05	0.00	0.00	0.00
18,000.00	89.66	89.88	9,548.00	1,430.88	8,718.14	8,721.05	0.00	0.00	0.00
18,100.00	89.66	89.88	9,548.59	1,431.09	8,818.14	8,821.05	0.00	0.00	0.00
18,200.00	89.66	89.88	9,549.19	1,431.30	8,918.14	8,921.05	0.00	0.00	0.00
18,300.00	89.66	89.88	9,549.78	1,431.51	9,018.13	9,021.04	0.00	0.00	0.00
18,391.17	89.66	89.88	9,550.32	1,431.70	9,109.30	9,112.21	0.00	0.00	0.00
LTP(JRU DI 1 169H)									
18,400.00	89.66	89.88	9,550.37	1,431.72	9,118.13	9,121.04	0.00	0.00	0.00
18,500.00	89.66	89.88	9,550.97	1,431.93	9,218.13	9,221.04	0.00	0.00	0.00
18,521.17	89.66	89.88	9,551.09	1,431.97	9,239.30	9,242.21	0.00	0.00	0.00
PBHL(JRU DI 1 169H)									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL(JRU DI 1 169H) - hit/miss target - Shape - Point	0.00	0.00	0.00	0.00	0.00	502,574.70	639,393.10	32° 22' 51.183 N	103° 52' 54.466 W
FTP(JRU DI 1 169H) - plan misses target center by 79.07usft at 9760.81usft MD (9431.40 TVD, 1396.35 N, 490.01 E) - Point	0.00	0.00	9,501.00	1,414.00	456.90	503,988.70	639,850.00	32° 23' 5.156 N	103° 52' 49.068 W
LTP(JRU DI 1 169H) - plan hits target center - Point	0.00	0.00	9,550.32	1,431.70	9,109.30	504,006.40	648,502.40	32° 23' 4.957 N	103° 51' 8.165 W
PBHL(JRU DI 1 169H) - plan misses target center by 0.03usft at 18521.17usft MD (9551.09 TVD, 1431.97 N, 9239.30 E) - Rectangle (sides W60.00 H8,783.00 D0.00)	0.34	89.88	9,551.09	1,432.00	9,239.30	504,006.70	648,632.40	32° 23' 4.955 N	103° 51' 6.649 W

LEAM Drilling Systems LLC

Planning Report

Database: EDM 5000.1 MULTI User DB
Company: XTO Energy, Inc.
Project: Eddy County, NM (NAD 27)
Site: James Ranch Unit DI 1
Well: DI 1 169H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well DI 1 169H
TVD Reference: GE 3165' = KB 24' @ 3189.00usft (Noram 25)
MD Reference: GE 3165' = KB 24' @ 3189.00usft (Noram 25)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
187.00	187.00	Rustler		0.34	89.88
556.00	556.00	Salado		0.34	89.88
3,364.00	3,364.00	B/Salt		0.34	89.88
3,544.00	3,544.00	Delaware		0.34	89.88
3,592.00	3,592.00	Bell		0.34	89.88
4,480.62	4,468.06	Cherry		0.34	89.88
4,687.09	4,668.08	B/Manzanita		0.34	89.88
6,083.81	6,021.22	Brushy		0.34	89.88
7,179.10	7,082.34	Basal Brushy		0.34	89.88
7,459.89	7,354.37	B/Brushy		0.34	89.88
7,478.47	7,372.37	Bone Spring		0.34	89.88
7,581.70	7,472.38	Avalon Sand		0.34	89.88
8,082.37	7,957.44	L/Avalon Shale		0.34	89.88
8,518.01	8,379.48	1st BS Sand		0.34	89.88
9,014.61	8,860.54	2nd BS LM		0.34	89.88
9,320.16	9,142.06	2nd BS Sand		0.34	89.88
9,514.57	9,292.74	2nd BS A Sand		0.34	89.88
9,803.01	9,448.15	2nd BS B Sand		0.34	89.88



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	MORHA

Product Description	FD3-042.08X1/16.5KFLGE/LF
---------------------	---------------------------

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	5,000 PSI	Test Pressure	7,500 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	Signature	Quality	Signature
Date	6/8/2014	Date	6/8/2014
Technical Supervisor	Signature	Technical Supervisor	Signature
PRODUCTION	6/8/2014	PRODUCTION	6/8/2014

17-14-16

XTO

choke
line

Nor
Am
#25

110

NOTE

JOSE ID. 2131

LENGTH 401

ID 1

4 1/2 SKR 4 1/2 SUPPS

GRADE 210

WORKING PRESSURE 5000 PSI

ASSEMBLY DATE 6-5-14

TEST PRESSURE 7 SDI PSI

TEST DATE 6-5-14

Serial

63809001513D-060814-1800

25013

1410 ID 2131

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PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BOPCO, L.P.
LEASE NO.:	NMNM-06808
WELL NAME & NO.:	James Ranch Unit DI 1 169H
SURFACE HOLE FOOTAGE:	1433' FNL & 1450' FEL
BOTTOM HOLE FOOTAGE	20' FNL & 2440' FWL Sec. 23, T. 22 S., R 30 E.
LOCATION:	Section 21, T. 22 S., R 30 E., NMPM
COUNTY:	Eddy County, New Mexico

All previous COAs still apply except for the following:

A. CASING

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.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

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.

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.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

R-111-P-Potash

High Cave/Karst

Possibility of water flows in the Salado and Castile.

Possibility of lost circulation in the Rustler and Delaware.

A MINIMUM OF TWO CASING STRINGS CEMENTED TO SURFACE IS REQUIRED IN HIGH CAVE/KARST AREAS. THE CEMENT MUST BE IN A SOLID SHEATH. THEREFORE, ONE INCH OPERATIONS ARE NOT SUFFICIENT TO PROTECT CAVE KARST RESOURCES. A CASING DESIGN THAT HAS A ONE INCH JOB PERFORMED DOES NOT COUNT AS A SOLID SHEATH.

ON A THREE STRING DESIGN; IF THE PRIMARY CEMENT JOB ON THE SURFACE CASING DOES NOT CIRCULATE, THEN THE NEXT TWO CASING STRINGS MUST BE CEMENTED TO SURFACE.

1. The 13-3/8 inch surface casing shall be set at approximately **536** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**
 - 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 is to include the lead cement slurry.**
 - 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.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:
☒ Cement to surface. If cement does not circulate see A.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.**
3. The minimum required fill of cement behind the 5 1/2 inch production casing is:
☒ Cement to surface. Operator shall provide method of verification. **Excess calculates to 12% - Additional cement may be required.**

4. 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.
5. 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 53.
2. Variance approved to use flex line from BOP to choke manifold. 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.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M) psi**.
4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. 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.
 - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

- c. 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.
- d. The results of the test shall be reported to the appropriate BLM office.
- 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 if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

MHH 11032017