

<b>Well Name:</b> JRU APACHE FEDERAL COM	<b>Well Location:</b> T22S / R30E / SEC 13 / SESE / 32.385912 / -103.828571	<b>County or Parish/State:</b> EDDY / NM
<b>Well Number:</b> 903H	<b>Type of Well:</b> OIL WELL	<b>Allottee or Tribe Name:</b>
<b>Lease Number:</b> NMNM89051	<b>Unit or CA Name:</b>	<b>Unit or CA Number:</b>
<b>US Well Number:</b> 3001555855	<b>Operator:</b> XTO PERMIAN OPERATING LLC	

**Notice of Intent**

**Sundry ID:** 2829313

**Type of Submission:** Notice of Intent

**Type of Action:** APD Change

**Date Sundry Submitted:** 12/30/2024

**Time Sundry Submitted:** 04:14

**Date proposed operation will begin:** 01/10/2025

**Procedure Description:** JRU APACHE FEDERAL COM 903H APD ID# 10400085429 SUNDRY LANGUAGE XTO Permian Operating, LLC. respectfully requests approval to make the following changes to the approved APD. Changes to include name of the well, SHL, KOP, FTP, LTP, BHL, casing design, cement program, mud circulation system and proposed total depth. The API number for this well is 30-015-55855. The well name is changing from "JRU APACHE FEDERAL COM 903H" to "JAMES RANCH UNIT APACHE 903H" FROM: TO: SHL: 386' FSL & 922' FEL OF SECTION 13-T22S-R30E 386' FSL & 962' FEL OF SECTION 13-T22S-R30E KOP: 386' FSL & 922' FEL OF SECTION 13-T22S-R30E 1304' FSL & 330' FEL OF SECTION 13-T22S-R30E FTP: 1650' FSL & 330' FEL OF SECTION 13-T22S-R30E 1304' FSL & 330' FEL OF SECTION 13-T22S-R30E LTP: 1650' FSL & 100' FWL OF SECTION 14-T22S-R30E 1304' FSL & 100' FWL OF SECTION 14-T22S-R30E BHL: 1650' FSL & 50' FWL OF SECTION 14-T22S-R30E 1304' FSL & 50' FWL OF SECTION 14-T22S-R30E The proposed total depth is changing from 21781' MD/10858' TVD to 20557.83' MD/10433' TVD. There will be no changes required to the facilities/surface usage that was approved along with the APD. See attached drilling program for the updated casing design, cement program and the mud circulation system.

**NOI Attachments**

**Procedure Description**

Sundry\_Attachments\_\_\_James\_Ranch\_Unit\_Apache\_903H\_20250228160740.pdf

**Well Name:** JRU APACHE FEDERAL COM

**Well Location:** T22S / R30E / SEC 13 / SESE / 32.385912 / -103.828571

**County or Parish/State:** EDDY / NM

**Well Number:** 903H

**Type of Well:** OIL WELL

**Allottee or Tribe Name:**

**Lease Number:** NMNM89051

**Unit or CA Name:**

**Unit or CA Number:**

**US Well Number:** 3001555855

**Operator:** XTO PERMIAN OPERATING LLC

### Conditions of Approval

#### Additional

James\_Ranch\_Unit\_Apache\_903H\_COA\_20250402105640.pdf

### Operator

*I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a*

**Operator Electronic Signature:** SRINIVAS LAGHUVARAPU

**Signed on:** FEB 28, 2025 04:08 PM

**Name:** XTO PERMIAN OPERATING LLC

**Title:** REGULATORY ANALYST

**Street Address:** 22777 SPRINGWOODS VILLAGE PARKWAY

**City:** SPRING

**State:** TX

**Phone:** (720) 539-1673

**Email address:** SRINIVAS.N.LAGHUVARAPU@EXXONMOBIL.COM

### Field

**Representative Name:**

**Street Address:**

**City:**

**State:**

**Zip:**

**Phone:**

**Email address:**

### BLM Point of Contact

**BLM POC Name:** CHRISTOPHER WALLS

**BLM POC Title:** Petroleum Engineer

**BLM POC Phone:** 5752342234

**BLM POC Email Address:** cwalls@blm.gov

**Disposition:** Approved

**Disposition Date:** 04/03/2025

**Signature:** Chris Walls

Form 3160-5  
(June 2019)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB No. 1004-0137  
Expires: October 31, 2021

**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.**

<b>SUBMIT IN TRIPLICATE - Other instructions on page 2</b>		5. Lease Serial No.
1. Type of Well <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
2. Name of Operator		7. If Unit of CA/Agreement, Name and/or No.
3a. Address	3b. Phone No. (include area code)	8. Well Name and No.
4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description)		9. API Well No.
		10. Field and Pool or Exploratory Area
		11. Country or Parish, State

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

TYPE OF SUBMISSION	TYPE OF ACTION			
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

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 recomplete 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.)

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)	Title
Signature	Date

**THE SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by	Title	Date
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	

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)

## GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area or regional procedures and practices, are either shown below, will be issued by or may be obtained from the local Federal office.

## SPECIFIC INSTRUCTIONS

*Item 4* - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

*Item 13*: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

## NOTICES

The privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

**AUTHORITY**: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

**PRINCIPAL PURPOSE**: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c) and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

**ROUTINE USES**: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

**EFFECT OF NOT PROVIDING THE INFORMATION**: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

**BURDEN HOURS STATEMENT**: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

## Additional Information

### Additional Remarks

KOP: 386' FSL & 922' FEL OF SECTION 13-T22S-R30E 1304' FSL & 330' FEL OF SECTION 13-T22S-R30E  
FTP: 1650' FSL & 330' FEL OF SECTION 13-T22S-R30E 1304' FSL & 330' FEL OF SECTION 13-T22S-R30E  
LTP: 1650' FSL & 100' FWL OF SECTION 14-T22S-R30E 1304' FSL & 100' FWL OF SECTION 14-T22S-R30E  
BHL: 1650' FSL & 50' FWL OF SECTION 14-T22S-R30E 1304' FSL & 50' FWL OF SECTION 14-T22S-R30E

The proposed total depth is changing from 21781 MD/10858 TVD to 20557.83 MD/10433 TVD.

There will be no changes required to the facilities/surface usage that was approved along with the APD.

See attached drilling program for the updated casing design, cement program and the mud circulation system.

### Location of Well

0. SHL: SESE / 386 FSL / 922 FEL / TWSP: 22S / RANGE: 30E / SECTION: 13 / LAT: 32.385912 / LONG: -103.828571 ( TVD: 0 feet, MD: 0 feet )  
PPP: NWSW / 1653 FSL / 0 FWL / TWSP: 22S / RANGE: 30E / SECTION: 13 / LAT: 32.38941 / LONG: -103.842888 ( TVD: 10906 feet, MD: 16800 feet )  
PPP: NESW / 1652 FSL / 1335 FWL / TWSP: 22S / RANGE: 30E / SECTION: 13 / LAT: 32.389403 / LONG: -103.838563 ( TVD: 10918 feet, MD: 15500 feet )  
PPP: NESE / 1650 FSL / 330 FEL / TWSP: 22S / RANGE: 30E / SECTION: 13 / LAT: 32.389383 / LONG: -103.826652 ( TVD: 10957 feet, MD: 11500 feet )  
BHL: NWSW / 1650 FSL / 50 FWL / TWSP: 22S / RANGE: 30E / SECTION: 14 / LAT: 32.389437 / LONG: -103.86008 ( TVD: 10858 feet, MD: 21781 feet )

CONFIDENTIAL

## PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b> XTO <b>LEASE NO.:</b> NMNM089051 <b>LOCATION:</b> Sec. 13, T.22 S, R 30 E <b>COUNTY:</b> <span style="border: 1px solid black; padding: 2px;">Eddy County, New Mexico</span>
<b>WELL NAME &amp; NO.:</b> James Ranch Unit Apache 903H <b>SURFACE HOLE FOOTAGE:</b> 386'/S & 962'/E <b>BOTTOM HOLE FOOTAGE:</b> 1304'/S & 50'/W

*Previously known as **JRU Apache Fed Com 903H**\_\_. Changes approved through engineering via **Sundry 2829313**\_\_ on **4-2-2025**\_. Any previous COAs not addressed within the updated COAs still apply.*

COA

H <sub>2</sub> S	<input checked="" type="radio"/> No		<input type="radio"/> Yes	
<b>Potash / WIPP</b>	<input type="radio"/> None	<input type="radio"/> Secretary	<input checked="" type="radio"/> R-111-Q	<input checked="" type="checkbox"/> Open Annulus <input checked="" type="checkbox"/> WIPP
	4-String Design: Engineered Weak Point			
<b>Cave / Karst</b>	<input type="radio"/> Low	<input checked="" type="radio"/> Medium	<input type="radio"/> High	<input type="radio"/> Critical
<b>Wellhead</b>	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both	<input type="radio"/> Diverter
<b>Cementing</b>	<input checked="" type="checkbox"/> Primary Squeeze	<input type="checkbox"/> Cont. Squeeze	<input checked="" type="checkbox"/> EchoMeter	<input type="checkbox"/> DV Tool
<b>Special Req</b>	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> Water Disposal	<input type="checkbox"/> COM	<input checked="" type="checkbox"/> Unit
<b>Waste Prev.</b>	<input type="radio"/> Self-Certification	<input checked="" type="radio"/> Waste Min. Plan	<input type="radio"/> APD Submitted prior to 06/10/2024	
<b>Additional Language</b>	<input checked="" type="checkbox"/> Flex Hose	<input checked="" type="checkbox"/> Casing Clearance	<input type="checkbox"/> Pilot Hole	<input checked="" type="checkbox"/> Break Testing
	<input checked="" type="checkbox"/> Four-String	<input checked="" type="checkbox"/> Offline Cementing	<input type="checkbox"/> Fluid-Filled	

### A. HYDROGEN SULFIDE

Hydrogen Sulfide (H<sub>2</sub>S) monitors shall be installed prior to drilling out the surface shoe. If H<sub>2</sub>S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet 43 CFR 3176 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

*APD is within the R-111-Q defined boundary. Operator must follow all procedures and requirements listed within the updated order.*

## B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **737** feet (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite, above the salt, and below usable fresh water) 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 **8 hours** 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 **9-5/8** inch **1<sup>st</sup> Intermediate** casing 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, or potash.**
3. The minimum required fill of cement behind the **7-5/8** inch **2<sup>nd</sup> Intermediate** casing is: Operator has proposed to cement in two stages by conventionally cementing the first stage and performing a bradenhead squeeze on the second stage, contingent upon no returns to surface.
  - a. **First stage:** Operator will cement with intent to reach the top of the **Brushy Canyon at 6012'**.
  - b. **Second stage:** Operator will perform bradenhead squeeze and top-out. Cement should tie-back **500 feet** into the previous casing but not higher than USGS Marker Bed No. 126. **Operator must verify top of cement per R-111-Q requirements.** Submit results to the BLM. If cement does not circulate, contact the appropriate BLM office.

**Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, or potash.**

Operator has proposed to pump down **Intermediate 1 X Intermediate 2** annulus after primary cementing stage. **Operator must run Echo-meter to verify Cement Slurry/Fluid top in the annulus OR operator shall run a CBL from TD of the Intermediate 1 casing to tieback requirements listed above after the second stage BH to verify TOC.** Submit results to the BLM. No displacement fluid/wash out shall be utilized at the top of the cement slurry between second stage BH and top out. Operator must use a limited flush fluid volume of 1 bbl following backside cementing procedures.

If cement does not reach surface, the next casing string must come to surface.

- ❖ **A monitored open annulus will be incorporated during completion by leaving the Intermediate Casing x Production Casing annulus un-cemented and monitored inside the Intermediate String.** Operator must follow monitoring requirements listed within R-111-Q. Tieback requirements shall be met within **180 days**.

Operator has proposed to pump down **intermediate x production** annulus post completion. **Operator must run Echo-meter to verify Cement Slurry/Fluid top in the annulus OR operator shall run a CBL from TD of the production casing to surface after the second stage BH to verify TOC.** Submit results to the BLM. No displacement fluid/wash out shall be utilized at the top of the cement slurry during second stage bradenhead when running Echo-meter if cement is required to surface. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.

Operator has proposed an open annulus completion in R-111-Q. Operator shall provide a method of verification pre-completion top of cement. **Submit results to the BLM. Pressure monitoring device and Pressure Safety Valves must be installed at surface on both the intermediate annulus and the production annulus for the life of the well.**

**In the event of a casing failure during completion, the operator must contact the BLM at (575-706-2779) and (575-361-2822 Eddy County).**

4. The minimum required fill of cement behind the **5-1/2** inch production casing is:
  - Cement should tie-back **500 feet** into the previous casing but not higher than USGS Marker Bed No. 126. **Operator must verify top of cement per R-111-Q requirements.** Submit results to the BLM. If cement does not circulate, contact the appropriate BLM office.

### C. 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).
  
1. Operator has proposed a multi-bowl wellhead assembly. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.
  - 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 43 CFR 3172 must be followed.

### D. SPECIAL REQUIREMENT (S)

#### Unit Wells

The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers. If a participating area has not been established, the operator can use the general unit designation but will replace the unit number with the participating area number when the sign is replaced.

#### Commercial Well Determination

A commercial well determination shall be submitted after production has been established for at least six months. **(This is not necessary for secondary recovery unit wells)**

#### WIPP Requirements

The proposed surface well or bottom hole is located within 330 feet of the WIPP Land Withdrawal Area boundary. As a result, the operator is required to submit daily drilling reports, logs and deviation survey information to the Bureau of Land Management Engineering Department and the U.S. Department of Energy per requirements of the Joint Powers Agreement until a total vertical depth of 7,000 feet is reached. These reports will have at a minimum, the depth of any excess mud returns (brine flows), the rate of penetration and a clearly marked section showing the deviation for each 500-foot interval. Operator may be required to do more frequent deviation surveys based on the daily information submitted and may be required to take other corrective measures. Information will also be provided to the New Mexico Oil Conservation Division after drilling activities have been completed. Upon completion of the

well, the operator shall submit a complete directional survey. Any future entry into the well for purposes of completing additional drilling will require supplemental information.

Any oil and gas well operator drilling within one mile of the WIPP Boundary must notify WIPP as soon as possible if any of the following conditions are encountered during oil and gas operations: R-111-Q Amendment - Notification to Operators (Potash)

- a) Indication of any well collision event,
- b) Suspected well fluid flow (oil, gas, or produced water) outside of casing,
- c) Sustained annulus pressure between the 1st intermediate and next innermost casing string in excess of 500 psi above the baseline pressure of the well, or above 1500 psi total,
- d) Increasing pressure buildup rates (psi/day) across multiple successive bleed-off cycles on the annulus between the 1st intermediate and next innermost casing during well production, or
- e) Sustained losses in excess of 50% through the salt formation during drilling.

The operator can email the required information to [OilGasReports@wipp.ws](mailto:OilGasReports@wipp.ws). Attached files must not be greater than 20 MB. Call WIPP Tech Support at 575-234-7422, during the hours 7:00am to 4:30pm, if there are any issues sending to this address.

#### **BOPE Break Testing Variance**

- BOPE Break Testing is ONLY permitted for intervals utilizing a 5M BOPE or less. **(Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP.)**
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer **(575-706-2779)** prior to the commencement of any BOPE Break Testing operations.
- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).
- The BLM is to be contacted **(575-361-2822 Eddy County)** 4 hours prior to BOPE tests.
- As a minimum, a full BOPE test shall be performed at 21-day intervals.
- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per **43 CFR 3172**.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

**Offline Cementing**

Contact the BLM prior to the commencement of any offline cementing procedure.

Engineer may elect to vary this language. Speak with Chris about implementing changes and whether that change seems reasonable.

**Casing Clearance**

String does not meet 0.422" clearance requirement per 43 CFR 3172. Cement tieback requirement increased 100' for Production casing tieback. Operator may contact approving engineer to discuss changing casing set depth or grade to meet clearance requirement.

## 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)

**Contact Eddy County Petroleum Engineering Inspection Staff:**

Email or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220;  
[BLM\\_NM\\_CFO\\_DrillingNotifications@BLM.GOV](mailto:BLM_NM_CFO_DrillingNotifications@BLM.GOV); (575) 361-2822

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
    - i. Notify the BLM when moving in and removing the Spudder Rig.
    - ii. Notify the BLM when moving in the 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
    - iii. BOP/BOPE test to be conducted per **43 CFR 3172** as soon as 2<sup>nd</sup> 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. For intervals in which cement to surface is required, cement to surface should be verified with a visual check and density or pH check to differentiate cement from spacer and drilling mud. The results should be documented in the driller's log and daily reports.

#### 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 of both lead and tail cement, 2) until cement has been in place at least 8 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-Q 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 **43 CFR 3172**.
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:
  - i. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - ii. 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.
  - iii. Manufacturer representative shall install the test plug for the initial BOP test.
  - iv. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.
  - v. 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.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - i. 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 cement), 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).

- ii. 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 cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)
- iii. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR 3172** 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 8 hours or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- iv. 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.
- v. The results of the test shall be reported to the appropriate BLM office.
- vi. 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.
- vii. 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.
- viii. 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 **43 CFR 3172**.

**C. DRILLING MUD**

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

**D. WASTE MATERIAL AND FLUIDS**

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area. Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

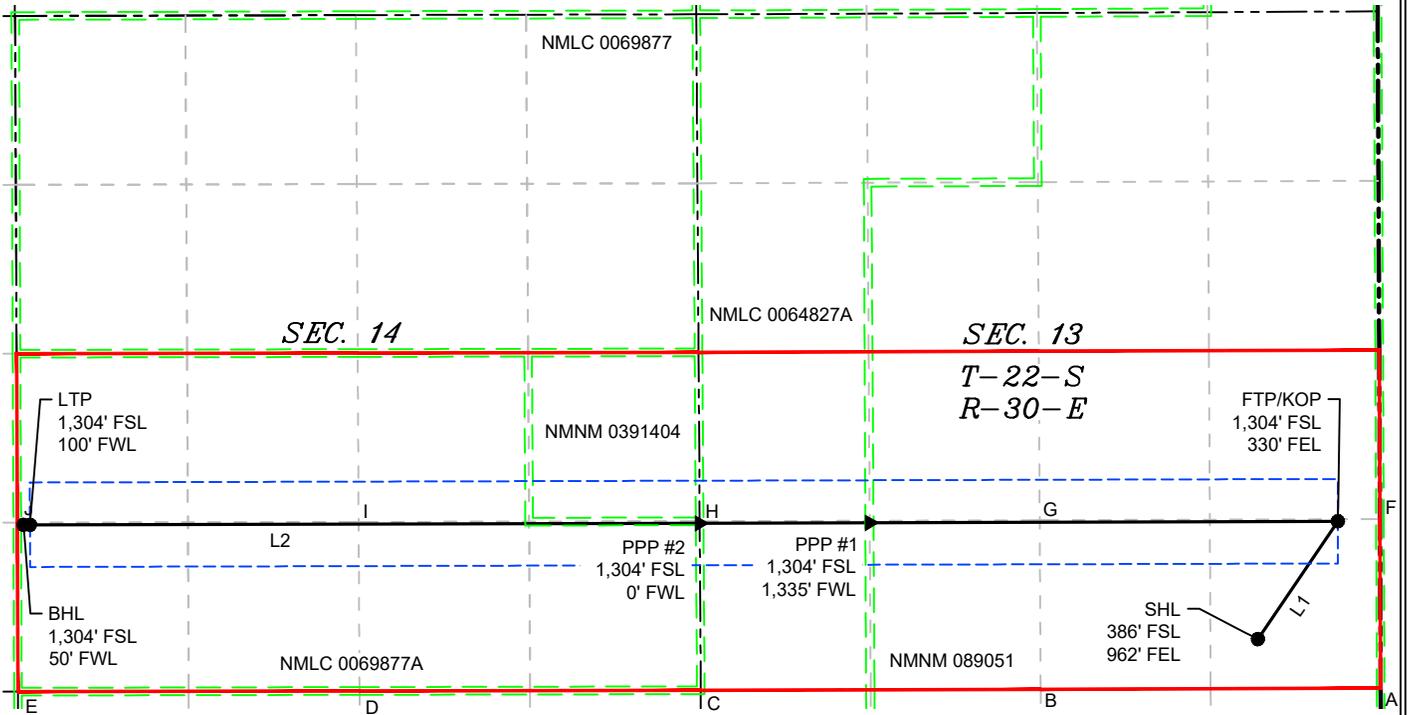
**Approved by Zota Stevens on 4/2/2025**  
575-234-5998 / zstevens@blm.gov



ACREAGE DEDICATION PLATS

This grid represents a standard section. You may superimpose a non-standard section, or larger area, over this grid. Operators must outline the dedicated acreage in a red box, clearly show the well surface location and bottom hole location, if it is a directionally drilled, with the dimensions from the section lines in the cardinal directions. If this is a horizontal wellbore show on this plat the location of the First Take Point and Last Take Point, and the point within the Completed interval (other then the First Take Point and Last Take Point) that is closest to any outer boundary of the tract.

Surveyor shall use the latest United States government survey or dependent resurvey. Well locations will be in reference to the New Mexico Principal Meridian. If the land in not surveyed, contact the OCD Engineering Bureau. Independent subdivision surveys will not be acceptable.



LINE TABLE		
LINE	AZIMUTH	LENGTH
L1	034°17'24.29"	1,114.22
L2	269°50'49.35"	10,318.61

LEGEND

- SECTION LINE
- PROPOSED WELL BORE
- NEW MEXICO MINERAL LEASE
- 330' BUFFER
- ALLOCATION AREA

COORDINATE TABLE

SHL (NAD 83 NME)		FTP/KOP (NAD 83 NME)		PPP1 (NAD 83 NME)		PPP2 (NAD 83 NME)		LTP (NAD 83 NME)	
Y =	504,492.8 N	Y =	505,413.3 N	Y =	505,401.6 N	Y =	505,397.3 N	Y =	505,385.9 N
X =	697,109.9 E	X =	697,737.6 E	X =	694,061.6 E	X =	692,727.0 E	X =	687,469.0 E
LAT. =	32.385909 °N	LAT. =	32.388432 °N	LAT. =	32.388447 °N	LAT. =	32.388452 °N	LAT. =	32.388486 °N
LONG. =	103.828700 °W	LONG. =	103.826653 °W	LONG. =	103.838561 °W	LONG. =	103.842885 °W	LONG. =	103.859918 °W

BHL (NAD 83 NME)

Y =	505,385.8 N
X =	687,419.0 E
LAT. =	32.388486 °N
LONG. =	103.860080 °W

SHL (NAD 27 NME)		FTP/KOP (NAD 27 NME)		PPP1 (NAD 27 NME)		PPP2 (NAD 27 NME)		LTP (NAD 27 NME)	
Y =	504,432.1 N	Y =	505,352.7 N	Y =	505,340.9 N	Y =	505,336.7 N	Y =	505,325.2 N
X =	655,928.3 E	X =	656,556.1 E	X =	652,880.2 E	X =	651,545.5 E	X =	646,287.6 E
LAT. =	32.385787 °N	LAT. =	32.388309 °N	LAT. =	32.388324 °N	LAT. =	32.388329 °N	LAT. =	32.388363 °N
LONG. =	103.828207 °W	LONG. =	103.826159 °W	LONG. =	103.838067 °W	LONG. =	103.842391 °W	LONG. =	103.859424 °W

BHL (NAD 27 NME)

Y =	505,325.1 N
X =	646,237.6 E
LAT. =	32.388363 °N
LONG. =	103.859586 °W

CORNER COORDINATES (NAD 83 NME)

A - Y =	506,750.2 N	A - X =	698,061.8 E
B - Y =	506,741.3 N	B - X =	695,389.1 E
C - Y =	506,732.3 N	C - X =	692,717.9 E
D - Y =	506,727.2 N	D - X =	690,042.0 E
E - Y =	506,721.9 N	E - X =	687,363.8 E
F - Y =	505,430.3 N	F - X =	698,067.5 E
G - Y =	505,421.3 N	G - X =	695,396.5 E
H - Y =	505,412.6 N	H - X =	692,726.6 E
I - Y =	505,407.3 N	I - X =	690,049.1 E
J - Y =	505,401.8 N	J - X =	687,369.0 E

CORNER COORDINATES (NAD 27 NME)

A - Y =	506,689.5 N	A - X =	656,880.3 E
B - Y =	506,680.6 N	B - X =	654,207.6 E
C - Y =	506,671.6 N	C - X =	651,536.5 E
D - Y =	506,666.5 N	D - X =	648,860.6 E
E - Y =	506,661.2 N	E - X =	646,182.4 E
F - Y =	505,369.7 N	F - X =	656,886.0 E
G - Y =	505,360.7 N	G - X =	654,215.0 E
H - Y =	505,351.9 N	H - X =	651,545.1 E
I - Y =	505,346.6 N	I - X =	648,867.6 E
J - Y =	505,341.1 N	J - X =	646,187.5 E

\\618.013 XTO Energy - NM\002 James Ranch Unit\10 - APACHE DI - EDDY\Wells\46 - 903H\DWG\APACHE 903H C-102.dwg

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

XTO Energy Inc.  
JAMES RANCH UNIT APACHE 903H  
Projected TD: 20557.83' MD / 10433' TVD  
SHL: 386' FSL & 962' FEL , Section 13, T22S, R30E  
BHL: 1304' FSL & 50' FWL , Section 14, 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	477'	Water
Top of Salt	777'	Water
MB 126	1461'	Water
Base of Salt	3629'	Water
Delaware	3890'	Water
Brushy Canyon	6398'	Water/Oil/Gas
Bone Spring	7807'	Water
1st Bone Spring Ss	8654'	Water/Oil/Gas
2nd Bone Spring Ss	9262'	Water/Oil/Gas
3rd Bone Spring Sh	9878'	Water/Oil/Gas
Target/Land Curve	10433'	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 13.375 inch casing @ 752' (25' above the salt) and circulating cement back to surface. The salt will be isolated by setting 9.625 inch casing at 3729' and circulating cement to surface. The second intermediate will isolate from the salt down to the next casing seat by setting 7.625 inch casing at 9516.8'. A 6.75 inch curve and 6.75 inch lateral hole will be drilled to 20557.83 MD/TD and 5.5 inch production casing will be set at TD.

3. Casing Design

Hole Size	TVD	OD Csg	Weight	Grade	Collar	New/Used	SF Burst	SF Collapse	SF Tension
17.5	0' – 752'	13.375	54.5	J-55	BTC	New	2.45	3.40	22.18
12.25	0' – 3729'	9.625	40	J-55	BTC	New	1.67	2.42	4.22
8.75	0' – 3829'	7.625	29.7	RY P-110	Flush Joint	New	2.92	2.99	1.97
8.75	3829' – 9516.8'	7.625	29.7	HC L-80	Flush Joint	New	2.12	3.37	2.40
6.75	0' – 9416.8'	5.5	20	RY P-110	Semi-Premium / Freedom	New	1.26	2.22	2.24
6.75	9416.8' - 20557.83'	5.5	20	RY P-110	Semi-Flush / Talon	New	1.26	2.01	6.54

XTO requests the option to utilize a spudder rig (Atlas Copco RD20 or Equivalent) to set and cement surface casing.

**Wellhead:****Permanent Wellhead**

Multibowl System for 4 String desing as per attachment.

**4. Cement Program**

XTO requests the option to offline cement and remediate (if needed) surface and intermediate casing strings where batch drilling is approved and if unplanned remediation is needed. XTO will ensure well is static with no pressure on the csg annulus, as with all other casing strings where batch drilling operations occur before moving off the rig. The TA cap will also be installed when applicable per Cactus procedure and pressure inside the casing will be monitored via the valve on the TA cap as per standard batch drilling ops. Offline cement operations will then be conducted after the rig is moved off the current well to the next well in the batch sequence.

**Surface Casing: 13.375, 54.5 New BTC, J-55 casing to be set at +/- 752'**

Lead: 330 sxs EconoCem-HLTRRC (mixed at 12.9 ppg, 1.87 ft<sup>3</sup>/sx, 10.13 gal/sx water)

Tail: 300 sxs Class C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft<sup>3</sup>/sx, 6.39 gal/sx water)

Top of Cement: Surface

Compressives: 12-hr = 250 psi 24 hr = 500 psi

**1st Intermediate Casing: 9.625, 40 New BTC, J-55 casing to be set at +/- 3729'**

Lead: 1540 sxs Class C (mixed at 12.9 ppg, 1.39 ft<sup>3</sup>/sx, 10.13 gal/sx water)

Tail: 130 sxs Class C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft<sup>3</sup>/sx, 6.39 gal/sx water)

Top of Cement: Surface

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

**2nd Intermediate Casing: 7.625, 29.7 New casing to be set at +/- 9516.8'**

Tail: 150 sxs Class C (mixed at 14.8 ppg, 1.35 ft<sup>3</sup>/sx, 6.39 gal/sx water)

TOC:@ 7807

Compressives: 12-hr = 900 psi 24 hr = 1150 psi

**2nd Stage**

Tail: 580 sxs Class C (mixed at 14.8 ppg, 1.33 ft<sup>3</sup>/sx, 6.39 gal/sx water)

Top of Cement: 3229

Compressives: 12-hr = 900 psi 24 hr = 1150 psi

XTO requests to pump a two stage cement job on the intermediate casing string with the first stage being pumped conventionally with the calculated (TOC:@ 7807') and the second stage performed as a bradenhead squeeze with planned cement from the Brushy Canyon to 3229 (~500' inside 1st Intermediate csg string but below MB126 @ 1461 ').

XTO will include the Echo-meter verified fluid top and the volume of displacement fluid above the cement slurry in the annulus in all post-drill sundries on wells utilizing this cement program.

XTO will report to the BLM the volume of fluid (limited to 5 bbls) used to flush intermediate casing valves following backside cementing procedures.

XTO requests the option to conduct the bradenhead squeeze and TOC verification offline as per standard approval from BLM when unplanned remediation is needed and batch drilling is approved. In the event the bradenhead is conducted, we will ensure the first stage cement job is cemented properly and the well is static with floats holding and no pressure on the csg annulus as with all other casing strings where batch drilling operations occur before moving off the rig. The TA cap will also be installed per Cactus procedure and pressure inside the casing will be monitored via the valve on the TA cap as per standard batch drilling ops.

**Production Casing: 5.5, 20 New Semi-Flush / Talon, RY P-110 casing to be set at +/- 20557.83'**

Lead: 30 sxs NeoCem (mixed at 11.5 ppg, 2.69 ft<sup>3</sup>/sx, 15.00 gal/sx water) Top of Cement: 9016.8 feet  
 Tail: 770 sxs VersaCem (mixed at 13.2 ppg, 1.51 ft<sup>3</sup>/sx, 8.38 gal/sx water) Top of Cement: 9830.49 feet  
 Compressives: 12-hr = 1375 psi 24 hr = 2285 psi

XTO requests the option to offline cement and remediate (if needed) surface and intermediate casing strings where batch drilling is approved and if unplanned remediation is needed. XTO will ensure well is static with no pressure on the csg annulus, as with all other casing strings where batch drilling operations occur before moving off the rig. The TA cap will also be installed when applicable per Cactus procedure and pressure inside the casing will be monitored via the valve on the TA cap as per standard batch drilling ops. Offline cement operations will then be conducted after the rig is moved off the current well to the next well in the batch sequence.

**5. Pressure Control Equipment**

Once the permanent WH is installed on the casing, the blow out preventer equipment (BOP) will consist of 5M Hydril and 10M 3-Ram BOP.

All BOP testing will be done by an independent service company. Operator will test as per CFR 43-3172

A variance is requested to allow use of a flex hose as the choke line from the BOP to the Choke Manifold. .

XTO requests a variance to be able to batch drill this well if necessary. In doing so, XTO will set casing and ensure that the well is cemented properly (unless approval is given for offline cementing) and the well is static. With floats holding, no pressure on the csg annulus, and the installation of a 10K TA cap as per Cactus recommendations, XTO will contact the BLM to skid the rig to skid the rig to drill the remaining wells on the pad. Once surface and both intermediate strings are all completed, XTO will begin drilling the production hole on each of the wells.

A break testing variance is requested to ONLY test broken pressure seals on the BOP equipment when moving from wellhead to wellhead which is in compliance with API Standard 53.

**6. Proposed Mud Circulation System**

INTERVAL	Hole Size	Mud Type	MW	Viscosity	Fluid Loss	Comments
			(ppg)	(sec/qt)	(cc)	
0' - 752'	17.5	FW/Native	8.5-9	35-40	NC	Fresh water or native water
752' - 3729'	12.25	Sat Brine	10-10.5	30-32	NC	Fully Saturated salt across salado
3729' to 9516.8'	8.75	BDE/OBM or FW/Brine	9-9.5	30-32	NC	Depending on well conditions
9516.8' to 20557.83'	6.75	OBM	10.2-10.7	50-60	NC - 20	N/A

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 surface casing with saturated salt brine solution. A saturated salt brine 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 13.375 casing.

**8. Logging, Coring and Testing Program**

Open hole logging will not be done on this well.

**9. Abnormal Pressures and Temperatures / Potential Hazards**

None Anticipated. BHT of 170 to 190 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 5534 psi.

**10. Anticipated Starting Date and Duration of Operations**

Anticipated spud date will be after BLM approval. Move in operations and drilling is expected to take 40 days.

# Well Plan Report - James Ranch Unit Apache 903H

**Measured Depth:** 20557.83 ft

**Site:** F

**TVD RKB:** 10433.00 ft

**Slot:** James Ranch Unit  
Apache 903H

**Location**

**Cartographic Reference System:** New Mexico East - NAD 27

**Northing:** 504432.10 ft

**Easting:** 655928.30 ft

**RKB:** 3401.00 ft

**Ground Level:** 3369.00 ft

**North Reference:** Grid

**Convergence Angle:** 0.27 Deg

**Plan Sections** James Ranch Unit Apache 903H

Measured Depth (ft)	Inclination (Deg)	Azimuth (Deg)	TVD RKB (ft)	Y Offset (ft)	X Offset (ft)	Build Rate (Deg/100ft)	Turn Rate (Deg/100ft)	Dogleg Rate (Deg/100ft)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3700.00	0.00	0.00	3700.00	0.00	0.00	0.00	0.00	0.00	
4305.63	12.11	34.29	4301.13	52.69	35.93	2.00	0.00	2.00	
9008.06	12.11	34.29	8898.87	867.91	591.87	0.00	0.00	0.00	
9613.69	0.00	0.00	9500.00	920.60	627.80	-2.00	0.00	2.00	
9830.49	0.00	0.00	9716.80	920.60	627.80	0.00	0.00	0.00	
10955.49	90.00	269.85	10433.00	918.69	-88.39	8.00	0.00	8.00	
20506.98	90.00	269.85	10433.00	893.18	-9639.85	0.00	0.00	0.00	LTP 22
20557.83	90.00	269.85	10433.00	893.05	-9690.70	0.00	0.00	0.00	BHL 22

**Position Uncertainty** James Ranch Unit Apache 903H

Measured	TVD	Highside	Lateral	Vertical	Magnitude	Semi-major	Semi-minor	Semi-minor	Tool
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Depth (ft)	Inclination (°)	Azimuth (°)	RKB (ft)	Error (ft)	Bias (ft)	Error (ft)	Bias (ft)	Error (ft)	Bias (ft)	of Bias (ft)	Error (ft)	Error (ft)	Azimuth (°)	Used
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	MWD+IFR1+MS
100.000	0.000	0.000	100.000	0.700	0.000	0.350	0.000	2.300	0.000	0.000	0.751	0.220	112.264	MWD+IFR1+MS
200.000	0.000	0.000	200.000	1.112	0.000	0.861	0.000	2.310	0.000	0.000	1.259	0.627	122.711	MWD+IFR1+MS
300.000	0.000	0.000	300.000	1.497	0.000	1.271	0.000	2.325	0.000	0.000	1.698	0.986	125.469	MWD+IFR1+MS
400.000	0.000	0.000	400.000	1.871	0.000	1.658	0.000	2.347	0.000	0.000	2.108	1.344	126.713	MWD+IFR1+MS
500.000	0.000	0.000	500.000	2.240	0.000	2.034	0.000	2.374	0.000	0.000	2.503	1.701	127.419	MWD+IFR1+MS
600.000	0.000	0.000	600.000	2.607	0.000	2.405	0.000	2.407	0.000	0.000	2.888	2.059	127.873	MWD+IFR1+MS
700.000	0.000	0.000	700.000	2.971	0.000	2.773	0.000	2.444	0.000	0.000	3.267	2.417	128.190	MWD+IFR1+MS
800.000	0.000	0.000	800.000	3.334	0.000	3.138	0.000	2.485	0.000	0.000	3.642	2.775	128.423	MWD+IFR1+MS
900.000	0.000	0.000	900.000	3.696	0.000	3.502	0.000	2.531	0.000	0.000	4.014	3.133	128.602	MWD+IFR1+MS
1000.000	0.000	0.000	1000.000	4.058	0.000	3.865	0.000	2.581	0.000	0.000	4.384	3.491	128.744	MWD+IFR1+MS
1100.000	0.000	0.000	1100.000	4.419	0.000	4.228	0.000	2.635	0.000	0.000	4.752	3.849	128.859	MWD+IFR1+MS
1200.000	0.000	0.000	1200.000	4.779	0.000	4.589	0.000	2.691	0.000	0.000	5.119	4.207	128.954	MWD+IFR1+MS
1300.000	0.000	0.000	1300.000	5.140	0.000	4.950	0.000	2.751	0.000	0.000	5.484	4.565	129.034	MWD+IFR1+MS
1400.000	0.000	0.000	1400.000	5.500	0.000	5.311	0.000	2.813	0.000	0.000	5.849	4.924	129.102	MWD+IFR1+MS
1500.000	0.000	0.000	1500.000	5.860	0.000	5.672	0.000	2.878	0.000	0.000	6.213	5.282	129.161	MWD+IFR1+MS
1600.000	0.000	0.000	1600.000	6.219	0.000	6.032	0.000	2.946	0.000	0.000	6.577	5.640	129.212	MWD+IFR1+MS
1700.000	0.000	0.000	1700.000	6.579	0.000	6.392	0.000	3.016	0.000	0.000	6.939	5.999	129.257	MWD+IFR1+MS
1800.000	0.000	0.000	1800.000	6.938	0.000	6.752	0.000	3.087	0.000	0.000	7.302	6.357	129.297	MWD+IFR1+MS
1900.000	0.000	0.000	1900.000	7.298	0.000	7.112	0.000	3.161	0.000	0.000	7.664	6.715	129.333	MWD+IFR1+MS
2000.000	0.000	0.000	2000.000	7.657	0.000	7.471	0.000	3.236	0.000	0.000	8.026	7.074	129.365	MWD+IFR1+MS
2100.000	0.000	0.000	2100.000	8.016	0.000	7.831	0.000	3.314	0.000	0.000	8.387	7.432	129.394	MWD+IFR1+MS
2200.000	0.000	0.000	2200.000	8.375	0.000	8.190	0.000	3.392	0.000	0.000	8.748	7.791	129.420	MWD+IFR1+MS
2300.000	0.000	0.000	2300.000	8.734	0.000	8.550	0.000	3.473	0.000	0.000	9.109	8.149	129.444	MWD+IFR1+MS
2400.000	0.000	0.000	2400.000	9.093	0.000	8.909	0.000	3.554	0.000	0.000	9.470	8.507	129.466	MWD+IFR1+MS
2500.000	0.000	0.000	2500.000	9.452	0.000	9.268	0.000	3.638	0.000	0.000	9.831	8.866	129.486	MWD+IFR1+MS
2600.000	0.000	0.000	2600.000	9.811	0.000	9.627	0.000	3.722	0.000	0.000	10.191	9.224	129.505	MWD+IFR1+MS
2700.000	0.000	0.000	2700.000	10.170	0.000	9.986	0.000	3.808	0.000	0.000	10.552	9.583	129.522	MWD+IFR1+MS
2800.000	0.000	0.000	2800.000	10.529	0.000	10.345	0.000	3.895	0.000	0.000	10.912	9.941	129.538	MWD+IFR1+MS
2900.000	0.000	0.000	2900.000	10.888	0.000	10.705	0.000	3.984	0.000	0.000	11.272	10.299	129.552	MWD+IFR1+MS
3000.000	0.000	0.000	3000.000	11.247	0.000	11.063	0.000	4.074	0.000	0.000	11.632	10.658	129.566	MWD+IFR1+MS

3100.000	0.000	0.000	3100.000	11.606	0.000	11.422	0.000	4.165	0.000	0.000	11.992	11.016	129.579	MWD+IFR1+MS
3200.000	0.000	0.000	3200.000	11.965	0.000	11.781	0.000	4.258	0.000	0.000	12.352	11.375	129.591	MWD+IFR1+MS
3300.000	0.000	0.000	3300.000	12.323	0.000	12.140	0.000	4.352	0.000	0.000	12.712	11.733	129.603	MWD+IFR1+MS
3400.000	0.000	0.000	3400.000	12.682	0.000	12.499	0.000	4.447	0.000	0.000	13.071	12.092	129.613	MWD+IFR1+MS
3500.000	0.000	0.000	3500.000	13.041	0.000	12.858	0.000	4.544	0.000	0.000	13.431	12.450	129.623	MWD+IFR1+MS
3600.000	0.000	0.000	3600.000	13.400	0.000	13.217	0.000	4.641	0.000	0.000	13.790	12.809	129.633	MWD+IFR1+MS
3700.000	0.000	0.000	3700.000	13.758	0.000	13.576	0.000	4.741	0.000	0.000	14.150	13.167	129.642	MWD+IFR1+MS
3800.000	2.000	34.292	3799.980	14.554	0.000	13.537	0.000	4.841	0.000	0.000	14.573	13.525	130.228	MWD+IFR1+MS
3900.000	4.000	34.292	3899.838	15.043	0.000	13.903	0.000	4.944	0.000	0.000	15.092	13.883	131.479	MWD+IFR1+MS
4000.000	6.000	34.292	3999.452	15.507	0.000	14.267	0.000	5.049	0.000	0.000	15.602	14.239	132.365	MWD+IFR1+MS
4100.000	8.000	34.292	4098.702	15.946	0.000	14.630	0.000	5.158	0.000	0.000	16.101	14.594	133.022	MWD+IFR1+MS
4200.000	10.000	34.292	4197.465	16.361	0.000	14.992	0.000	5.273	0.000	0.000	16.589	14.947	133.527	MWD+IFR1+MS
4305.632	12.113	34.292	4301.131	16.793	0.000	15.373	0.000	5.403	0.000	0.000	17.114	15.319	134.010	MWD+IFR1+MS
4400.000	12.113	34.292	4393.398	17.153	0.000	15.712	0.000	5.512	0.000	0.000	17.470	15.654	134.346	MWD+IFR1+MS
4500.000	12.113	34.292	4491.172	17.482	0.000	16.072	0.000	5.627	0.000	0.000	17.793	16.013	134.528	MWD+IFR1+MS
4600.000	12.113	34.292	4588.945	17.815	0.000	16.433	0.000	5.744	0.000	0.000	18.120	16.373	134.725	MWD+IFR1+MS
4700.000	12.113	34.292	4686.719	18.150	0.000	16.796	0.000	5.863	0.000	0.000	18.449	16.734	134.919	MWD+IFR1+MS
4800.000	12.113	34.292	4784.493	18.486	0.000	17.158	0.000	5.985	0.000	0.000	18.780	17.096	-44.891	MWD+IFR1+MS
4900.000	12.113	34.292	4882.266	18.825	0.000	17.522	0.000	6.110	0.000	0.000	19.112	17.459	-44.703	MWD+IFR1+MS
5000.000	12.113	34.292	4980.040	19.166	0.000	17.886	0.000	6.237	0.000	0.000	19.447	17.822	-44.519	MWD+IFR1+MS
5100.000	12.113	34.292	5077.814	19.508	0.000	18.251	0.000	6.366	0.000	0.000	19.783	18.186	-44.338	MWD+IFR1+MS
5200.000	12.113	34.292	5175.588	19.852	0.000	18.616	0.000	6.497	0.000	0.000	20.121	18.551	-44.161	MWD+IFR1+MS
5300.000	12.113	34.292	5273.361	20.198	0.000	18.982	0.000	6.631	0.000	0.000	20.460	18.916	-43.986	MWD+IFR1+MS
5400.000	12.113	34.292	5371.135	20.545	0.000	19.348	0.000	6.768	0.000	0.000	20.801	19.281	-43.815	MWD+IFR1+MS
5500.000	12.113	34.292	5468.909	20.894	0.000	19.715	0.000	6.906	0.000	0.000	21.143	19.648	-43.648	MWD+IFR1+MS
5600.000	12.113	34.292	5566.682	21.244	0.000	20.082	0.000	7.047	0.000	0.000	21.486	20.014	-43.483	MWD+IFR1+MS
5700.000	12.113	34.292	5664.456	21.595	0.000	20.450	0.000	7.191	0.000	0.000	21.831	20.381	-43.322	MWD+IFR1+MS
5800.000	12.113	34.292	5762.230	21.948	0.000	20.818	0.000	7.337	0.000	0.000	22.177	20.749	-43.164	MWD+IFR1+MS
5900.000	12.113	34.292	5860.003	22.302	0.000	21.187	0.000	7.485	0.000	0.000	22.524	21.117	-43.010	MWD+IFR1+MS
6000.000	12.113	34.292	5957.777	22.657	0.000	21.556	0.000	7.635	0.000	0.000	22.872	21.485	-42.859	MWD+IFR1+MS
6100.000	12.113	34.292	6055.551	23.013	0.000	21.925	0.000	7.788	0.000	0.000	23.221	21.854	-42.712	MWD+IFR1+MS
6200.000	12.113	34.292	6153.325	23.370	0.000	22.294	0.000	7.944	0.000	0.000	23.571	22.223	-42.568	MWD+IFR1+MS
6300.000	12.113	34.292	6251.098	23.728	0.000	22.664	0.000	8.101	0.000	0.000	23.922	22.592	-42.428	MWD+IFR1+MS

6400.000	12.113	34.292	6348.872	24.086	0.000	23.034	0.000	8.261	0.000	0.000	24.274	22.962	-42.291	MWD+IFR1+MS
6500.000	12.113	34.292	6446.646	24.446	0.000	23.405	0.000	8.424	0.000	0.000	24.627	23.332	-42.157	MWD+IFR1+MS
6600.000	12.113	34.292	6544.419	24.807	0.000	23.775	0.000	8.588	0.000	0.000	24.981	23.702	-42.027	MWD+IFR1+MS
6700.000	12.113	34.292	6642.193	25.168	0.000	24.146	0.000	8.756	0.000	0.000	25.335	24.073	-41.901	MWD+IFR1+MS
6800.000	12.113	34.292	6739.967	25.531	0.000	24.517	0.000	8.925	0.000	0.000	25.690	24.443	-41.778	MWD+IFR1+MS
6900.000	12.113	34.292	6837.740	25.894	0.000	24.889	0.000	9.097	0.000	0.000	26.046	24.815	-41.659	MWD+IFR1+MS
7000.000	12.113	34.292	6935.514	26.258	0.000	25.260	0.000	9.271	0.000	0.000	26.403	25.186	-41.544	MWD+IFR1+MS
7100.000	12.113	34.292	7033.288	26.622	0.000	25.632	0.000	9.448	0.000	0.000	26.761	25.557	-41.432	MWD+IFR1+MS
7200.000	12.113	34.292	7131.062	26.987	0.000	26.004	0.000	9.628	0.000	0.000	27.119	25.929	-41.324	MWD+IFR1+MS
7300.000	12.113	34.292	7228.835	27.353	0.000	26.377	0.000	9.809	0.000	0.000	27.477	26.301	-41.219	MWD+IFR1+MS
7400.000	12.113	34.292	7326.609	27.719	0.000	26.749	0.000	9.993	0.000	0.000	27.837	26.674	-41.118	MWD+IFR1+MS
7500.000	12.113	34.292	7424.383	28.086	0.000	27.122	0.000	10.180	0.000	0.000	28.197	27.046	-41.021	MWD+IFR1+MS
7600.000	12.113	34.292	7522.156	28.454	0.000	27.494	0.000	10.369	0.000	0.000	28.557	27.419	-40.928	MWD+IFR1+MS
7700.000	12.113	34.292	7619.930	28.822	0.000	27.867	0.000	10.561	0.000	0.000	28.918	27.792	-40.838	MWD+IFR1+MS
7800.000	12.113	34.292	7717.704	29.190	0.000	28.240	0.000	10.755	0.000	0.000	29.280	28.165	-40.752	MWD+IFR1+MS
7900.000	12.113	34.292	7815.477	29.559	0.000	28.614	0.000	10.951	0.000	0.000	29.642	28.538	-40.670	MWD+IFR1+MS
8000.000	12.113	34.292	7913.251	29.929	0.000	28.987	0.000	11.150	0.000	0.000	30.005	28.911	-40.592	MWD+IFR1+MS
8100.000	12.113	34.292	8011.025	30.299	0.000	29.361	0.000	11.352	0.000	0.000	30.368	29.285	-40.517	MWD+IFR1+MS
8200.000	12.113	34.292	8108.799	30.669	0.000	29.734	0.000	11.556	0.000	0.000	30.731	29.659	-40.446	MWD+IFR1+MS
8300.000	12.113	34.292	8206.572	31.040	0.000	30.108	0.000	11.762	0.000	0.000	31.095	30.033	-40.380	MWD+IFR1+MS
8400.000	12.113	34.292	8304.346	31.411	0.000	30.482	0.000	11.971	0.000	0.000	31.460	30.407	-40.316	MWD+IFR1+MS
8500.000	12.113	34.292	8402.120	31.783	0.000	30.856	0.000	12.183	0.000	0.000	31.825	30.781	-40.257	MWD+IFR1+MS
8600.000	12.113	34.292	8499.893	32.155	0.000	31.230	0.000	12.397	0.000	0.000	32.190	31.155	-40.202	MWD+IFR1+MS
8700.000	12.113	34.292	8597.667	32.528	0.000	31.604	0.000	12.614	0.000	0.000	32.555	31.530	-40.150	MWD+IFR1+MS
8800.000	12.113	34.292	8695.441	32.901	0.000	31.979	0.000	12.833	0.000	0.000	32.922	31.904	-40.103	MWD+IFR1+MS
8900.000	12.113	34.292	8793.214	33.274	0.000	32.353	0.000	13.055	0.000	0.000	33.288	32.279	-40.059	MWD+IFR1+MS
9008.061	12.113	34.292	8898.869	33.678	0.000	32.759	0.000	13.298	0.000	0.000	33.686	32.684	-39.967	MWD+IFR1+MS
9100.000	10.274	34.292	8989.056	34.113	0.000	33.102	0.000	13.509	0.000	0.000	34.042	33.026	-39.946	MWD+IFR1+MS
9200.000	8.274	34.292	9087.744	34.592	0.000	33.471	0.000	13.741	0.000	0.000	34.473	33.393	-40.215	MWD+IFR1+MS
9300.000	6.274	34.292	9186.934	35.035	0.000	33.837	0.000	13.971	0.000	0.000	34.906	33.756	-40.449	MWD+IFR1+MS
9400.000	4.274	34.292	9286.506	35.435	0.000	34.199	0.000	14.199	0.000	0.000	35.335	34.115	-40.639	MWD+IFR1+MS
9500.000	2.274	34.292	9386.337	35.790	0.000	34.556	0.000	14.425	0.000	0.000	35.757	34.469	-40.786	MWD+IFR1+MS
9600.000	0.274	34.292	9486.308	36.102	0.000	34.908	0.000	14.650	0.000	0.000	36.172	34.817	-40.892	MWD+IFR1+MS

9613.692	0.000	0.000	9500.000	35.451	0.000	35.644	0.000	14.681	0.000	0.000	36.218	34.865	-40.903	MWD+IFR1+MS
9700.000	0.000	0.000	9586.308	35.747	0.000	35.934	0.000	14.875	0.000	0.000	36.505	35.164	-40.990	MWD+IFR1+MS
9800.000	0.000	0.000	9686.308	36.093	0.000	36.274	0.000	15.104	0.000	0.000	36.844	35.511	-41.086	MWD+IFR1+MS
9830.492	0.000	0.000	9716.800	36.197	0.000	36.377	0.000	15.174	0.000	0.000	36.945	35.616	-41.108	MWD+IFR1+MS
9900.000	5.561	269.847	9786.199	36.325	-0.000	36.422	0.000	15.334	0.000	0.000	37.195	35.884	-39.752	MWD+IFR1+MS
10000.000	13.561	269.847	9884.729	36.495	-0.000	36.736	0.000	15.619	0.000	0.000	38.016	36.478	-24.116	MWD+IFR1+MS
10100.000	21.561	269.847	9979.992	36.435	-0.000	37.039	0.000	16.074	0.000	0.000	39.151	36.927	-12.886	MWD+IFR1+MS
10200.000	29.561	269.847	10070.132	35.864	-0.000	37.326	0.000	16.756	0.000	0.000	40.203	37.270	-7.908	MWD+IFR1+MS
10300.000	37.561	269.847	10153.394	34.861	-0.000	37.595	0.000	17.699	0.000	0.000	41.095	37.566	-5.296	MWD+IFR1+MS
10400.000	45.561	269.847	10228.159	33.535	-0.000	37.847	0.000	18.902	0.000	0.000	41.804	37.830	-3.753	MWD+IFR1+MS
10500.000	53.561	269.847	10292.970	32.026	-0.000	38.081	0.000	20.334	0.000	0.000	42.330	38.071	-2.798	MWD+IFR1+MS
10600.000	61.561	269.847	10346.568	30.511	-0.000	38.298	0.000	21.944	0.000	0.000	42.687	38.292	-2.229	MWD+IFR1+MS
10700.000	69.561	269.847	10387.907	29.196	-0.000	38.501	0.000	23.670	0.000	0.000	42.898	38.496	-1.964	MWD+IFR1+MS
10800.000	77.561	269.847	10416.184	28.301	-0.000	38.688	0.000	25.451	0.000	0.000	42.997	38.684	-1.983	MWD+IFR1+MS
10900.000	85.561	269.847	10430.848	28.024	-0.000	38.859	0.000	27.225	0.000	0.000	43.026	38.853	-2.292	MWD+IFR1+MS
10955.492	90.000	269.847	10432.997	27.615	0.000	38.944	0.000	27.615	0.000	0.000	43.030	38.936	-2.603	MWD+IFR1+MS
11000.000	90.000	269.847	10432.997	27.722	0.000	39.011	0.000	27.722	0.000	0.000	43.033	39.002	-2.885	MWD+IFR1+MS
11100.000	90.000	269.847	10432.997	27.920	0.000	39.190	0.000	27.920	0.000	0.000	43.039	39.176	-3.573	MWD+IFR1+MS
11200.000	90.000	269.847	10432.997	28.142	0.000	39.402	0.000	28.142	0.000	0.000	43.047	39.382	-4.356	MWD+IFR1+MS
11300.000	90.000	269.847	10432.997	28.385	0.000	39.645	0.000	28.385	0.000	0.000	43.057	39.617	-5.266	MWD+IFR1+MS
11400.000	90.000	269.847	10432.997	28.646	0.000	39.918	0.000	28.646	0.000	0.000	43.070	39.879	-6.353	MWD+IFR1+MS
11500.000	90.000	269.847	10432.997	28.927	0.000	40.220	0.000	28.927	0.000	0.000	43.087	40.168	-7.688	MWD+IFR1+MS
11600.000	90.000	269.847	10432.997	29.226	0.000	40.551	0.000	29.226	0.000	0.000	43.108	40.481	-9.381	MWD+IFR1+MS
11700.000	90.000	269.847	10432.997	29.543	0.000	40.910	0.000	29.543	0.000	0.000	43.137	40.816	-11.608	MWD+IFR1+MS
11800.000	90.000	269.847	10432.997	29.877	0.000	41.296	0.000	29.877	0.000	0.000	43.177	41.167	-14.659	MWD+IFR1+MS
11900.000	90.000	269.847	10432.997	30.228	0.000	41.709	0.000	30.228	0.000	0.000	43.235	41.528	-19.013	MWD+IFR1+MS
12000.000	90.000	269.847	10432.997	30.594	0.000	42.148	0.000	30.594	0.000	0.000	43.325	41.882	-25.394	MWD+IFR1+MS
12100.000	90.000	269.847	10432.997	30.977	0.000	42.612	0.000	30.977	0.000	0.000	43.473	42.204	-34.473	MWD+IFR1+MS
12200.000	90.000	269.847	10432.997	31.374	0.000	43.100	0.000	31.374	0.000	0.000	43.710	42.462	134.431	MWD+IFR1+MS
12300.000	90.000	269.847	10432.997	31.786	0.000	43.611	0.000	31.786	0.000	0.000	44.052	42.639	124.030	MWD+IFR1+MS
12400.000	90.000	269.847	10432.997	32.212	0.000	44.145	0.000	32.212	0.000	0.000	44.481	42.751	116.249	MWD+IFR1+MS
12500.000	90.000	269.847	10432.997	32.651	0.000	44.700	0.000	32.651	0.000	0.000	44.972	42.825	110.926	MWD+IFR1+MS
12600.000	90.000	269.847	10432.997	33.102	0.000	45.277	0.000	33.102	0.000	0.000	45.507	42.876	107.277	MWD+IFR1+MS

12700.000	90.000	269.847	10432.997	33.566	0.000	45.874	0.000	33.566	0.000	0.000	46.074	42.915	104.689	MWD+IFR1+MS
12800.000	90.000	269.847	10432.997	34.042	0.000	46.490	0.000	34.042	0.000	0.000	46.669	42.946	102.782	MWD+IFR1+MS
12900.000	90.000	269.847	10432.997	34.529	0.000	47.125	0.000	34.529	0.000	0.000	47.288	42.973	101.326	MWD+IFR1+MS
13000.000	90.000	269.847	10432.997	35.027	0.000	47.777	0.000	35.027	0.000	0.000	47.928	42.997	100.182	MWD+IFR1+MS
13100.000	90.000	269.847	10432.997	35.536	0.000	48.447	0.000	35.536	0.000	0.000	48.588	43.019	99.259	MWD+IFR1+MS
13200.000	90.000	269.847	10432.997	36.054	0.000	49.133	0.000	36.054	0.000	0.000	49.265	43.040	98.500	MWD+IFR1+MS
13300.000	90.000	269.847	10432.997	36.581	0.000	49.835	0.000	36.581	0.000	0.000	49.960	43.060	97.863	MWD+IFR1+MS
13400.000	90.000	269.847	10432.997	37.118	0.000	50.553	0.000	37.118	0.000	0.000	50.672	43.080	97.322	MWD+IFR1+MS
13500.000	90.000	269.847	10432.997	37.664	0.000	51.284	0.000	37.664	0.000	0.000	51.398	43.099	96.856	MWD+IFR1+MS
13600.000	90.000	269.847	10432.997	38.217	0.000	52.030	0.000	38.217	0.000	0.000	52.139	43.118	96.450	MWD+IFR1+MS
13700.000	90.000	269.847	10432.997	38.779	0.000	52.789	0.000	38.779	0.000	0.000	52.894	43.138	96.092	MWD+IFR1+MS
13800.000	90.000	269.847	10432.997	39.349	0.000	53.560	0.000	39.349	0.000	0.000	53.661	43.157	95.776	MWD+IFR1+MS
13900.000	90.000	269.847	10432.997	39.925	0.000	54.344	0.000	39.925	0.000	0.000	54.442	43.177	95.493	MWD+IFR1+MS
14000.000	90.000	269.847	10432.997	40.509	0.000	55.139	0.000	40.509	0.000	0.000	55.234	43.197	95.238	MWD+IFR1+MS
14100.000	90.000	269.847	10432.997	41.099	0.000	55.946	0.000	41.099	0.000	0.000	56.038	43.217	95.007	MWD+IFR1+MS
14200.000	90.000	269.847	10432.997	41.696	0.000	56.763	0.000	41.696	0.000	0.000	56.853	43.238	94.798	MWD+IFR1+MS
14300.000	90.000	269.847	10432.997	42.299	0.000	57.591	0.000	42.299	0.000	0.000	57.678	43.259	94.606	MWD+IFR1+MS
14400.000	90.000	269.847	10432.997	42.908	0.000	58.428	0.000	42.908	0.000	0.000	58.513	43.280	94.430	MWD+IFR1+MS
14500.000	90.000	269.847	10432.997	43.522	0.000	59.275	0.000	43.522	0.000	0.000	59.357	43.302	94.268	MWD+IFR1+MS
14600.000	90.000	269.847	10432.997	44.142	0.000	60.130	0.000	44.142	0.000	0.000	60.211	43.324	94.118	MWD+IFR1+MS
14700.000	90.000	269.847	10432.997	44.767	0.000	60.995	0.000	44.767	0.000	0.000	61.073	43.347	93.978	MWD+IFR1+MS
14800.000	90.000	269.847	10432.997	45.397	0.000	61.867	0.000	45.397	0.000	0.000	61.944	43.370	93.849	MWD+IFR1+MS
14900.000	90.000	269.847	10432.997	46.032	0.000	62.748	0.000	46.032	0.000	0.000	62.823	43.394	93.728	MWD+IFR1+MS
15000.000	90.000	269.847	10432.997	46.671	0.000	63.636	0.000	46.671	0.000	0.000	63.710	43.418	93.614	MWD+IFR1+MS
15100.000	90.000	269.847	10432.997	47.315	0.000	64.531	0.000	47.315	0.000	0.000	64.603	43.442	93.508	MWD+IFR1+MS
15200.000	90.000	269.847	10432.997	47.963	0.000	65.433	0.000	47.963	0.000	0.000	65.504	43.467	93.408	MWD+IFR1+MS
15300.000	90.000	269.847	10432.997	48.615	0.000	66.342	0.000	48.615	0.000	0.000	66.412	43.493	93.314	MWD+IFR1+MS
15400.000	90.000	269.847	10432.997	49.271	0.000	67.258	0.000	49.271	0.000	0.000	67.326	43.519	93.225	MWD+IFR1+MS
15500.000	90.000	269.847	10432.997	49.930	0.000	68.179	0.000	49.930	0.000	0.000	68.246	43.546	93.140	MWD+IFR1+MS
15600.000	90.000	269.847	10432.997	50.593	0.000	69.107	0.000	50.593	0.000	0.000	69.172	43.573	93.060	MWD+IFR1+MS
15700.000	90.000	269.847	10432.997	51.260	0.000	70.040	0.000	51.260	0.000	0.000	70.104	43.600	92.985	MWD+IFR1+MS
15800.000	90.000	269.847	10432.997	51.930	0.000	70.978	0.000	51.930	0.000	0.000	71.042	43.628	92.913	MWD+IFR1+MS
15900.000	90.000	269.847	10432.997	52.603	0.000	71.922	0.000	52.603	0.000	0.000	71.984	43.657	92.844	MWD+IFR1+MS

16000.000	90.000	269.847	10432.997	53.279	0.000	72.871	0.000	53.279	0.000	0.000	72.932	43.686	92.779	MWD+IFR1+MS
16100.000	90.000	269.847	10432.997	53.958	0.000	73.825	0.000	53.958	0.000	0.000	73.885	43.715	92.716	MWD+IFR1+MS
16200.000	90.000	269.847	10432.997	54.640	0.000	74.783	0.000	54.640	0.000	0.000	74.842	43.745	92.657	MWD+IFR1+MS
16300.000	90.000	269.847	10432.997	55.324	0.000	75.746	0.000	55.324	0.000	0.000	75.804	43.776	92.600	MWD+IFR1+MS
16400.000	90.000	269.847	10432.997	56.012	0.000	76.713	0.000	56.012	0.000	0.000	76.770	43.807	92.545	MWD+IFR1+MS
16500.000	90.000	269.847	10432.997	56.701	0.000	77.684	0.000	56.701	0.000	0.000	77.740	43.839	92.493	MWD+IFR1+MS
16600.000	90.000	269.847	10432.997	57.394	0.000	78.659	0.000	57.394	0.000	0.000	78.715	43.871	92.443	MWD+IFR1+MS
16700.000	90.000	269.847	10432.997	58.088	0.000	79.638	0.000	58.088	0.000	0.000	79.693	43.903	92.394	MWD+IFR1+MS
16800.000	90.000	269.847	10432.997	58.785	0.000	80.621	0.000	58.785	0.000	0.000	80.675	43.936	92.348	MWD+IFR1+MS
16900.000	90.000	269.847	10432.997	59.484	0.000	81.607	0.000	59.484	0.000	0.000	81.661	43.970	92.303	MWD+IFR1+MS
17000.000	90.000	269.847	10432.997	60.185	0.000	82.597	0.000	60.185	0.000	0.000	82.650	44.004	92.260	MWD+IFR1+MS
17100.000	90.000	269.847	10432.997	60.888	0.000	83.590	0.000	60.888	0.000	0.000	83.642	44.039	92.219	MWD+IFR1+MS
17200.000	90.000	269.847	10432.997	61.593	0.000	84.587	0.000	61.593	0.000	0.000	84.638	44.074	92.179	MWD+IFR1+MS
17300.000	90.000	269.847	10432.997	62.300	0.000	85.586	0.000	62.300	0.000	0.000	85.636	44.110	92.140	MWD+IFR1+MS
17400.000	90.000	269.847	10432.997	63.009	0.000	86.588	0.000	63.009	0.000	0.000	86.638	44.146	92.103	MWD+IFR1+MS
17500.000	90.000	269.847	10432.997	63.720	0.000	87.594	0.000	63.720	0.000	0.000	87.643	44.183	92.067	MWD+IFR1+MS
17600.000	90.000	269.847	10432.997	64.432	0.000	88.602	0.000	64.432	0.000	0.000	88.650	44.220	92.032	MWD+IFR1+MS
17700.000	90.000	269.847	10432.997	65.146	0.000	89.613	0.000	65.146	0.000	0.000	89.660	44.257	91.998	MWD+IFR1+MS
17800.000	90.000	269.847	10432.997	65.862	0.000	90.626	0.000	65.862	0.000	0.000	90.673	44.296	91.966	MWD+IFR1+MS
17900.000	90.000	269.847	10432.997	66.579	0.000	91.642	0.000	66.579	0.000	0.000	91.688	44.334	91.934	MWD+IFR1+MS
18000.000	90.000	269.847	10432.997	67.298	0.000	92.660	0.000	67.298	0.000	0.000	92.706	44.373	91.904	MWD+IFR1+MS
18100.000	90.000	269.847	10432.997	68.018	0.000	93.681	0.000	68.018	0.000	0.000	93.726	44.413	91.874	MWD+IFR1+MS
18200.000	90.000	269.847	10432.997	68.740	0.000	94.704	0.000	68.740	0.000	0.000	94.749	44.453	91.845	MWD+IFR1+MS
18300.000	90.000	269.847	10432.997	69.463	0.000	95.729	0.000	69.463	0.000	0.000	95.773	44.494	91.817	MWD+IFR1+MS
18400.000	90.000	269.847	10432.997	70.187	0.000	96.756	0.000	70.187	0.000	0.000	96.800	44.535	91.790	MWD+IFR1+MS
18500.000	90.000	269.847	10432.997	70.913	0.000	97.786	0.000	70.913	0.000	0.000	97.829	44.577	91.763	MWD+IFR1+MS
18600.000	90.000	269.847	10432.997	71.639	0.000	98.817	0.000	71.639	0.000	0.000	98.860	44.619	91.738	MWD+IFR1+MS
18700.000	90.000	269.847	10432.997	72.367	0.000	99.850	0.000	72.367	0.000	0.000	99.893	44.662	91.713	MWD+IFR1+MS
18800.000	90.000	269.847	10432.997	73.097	0.000	100.885	0.000	73.097	0.000	0.000	100.927	44.705	91.688	MWD+IFR1+MS
18900.000	90.000	269.847	10432.997	73.827	0.000	101.922	0.000	73.827	0.000	0.000	101.964	44.749	91.665	MWD+IFR1+MS
19000.000	90.000	269.847	10432.997	74.559	0.000	102.961	0.000	74.559	0.000	0.000	103.002	44.793	91.642	MWD+IFR1+MS
19100.000	90.000	269.847	10432.997	75.291	0.000	104.002	0.000	75.291	0.000	0.000	104.042	44.837	91.619	MWD+IFR1+MS
19200.000	90.000	269.847	10432.997	76.025	0.000	105.044	0.000	76.025	0.000	0.000	105.084	44.883	91.597	MWD+IFR1+MS

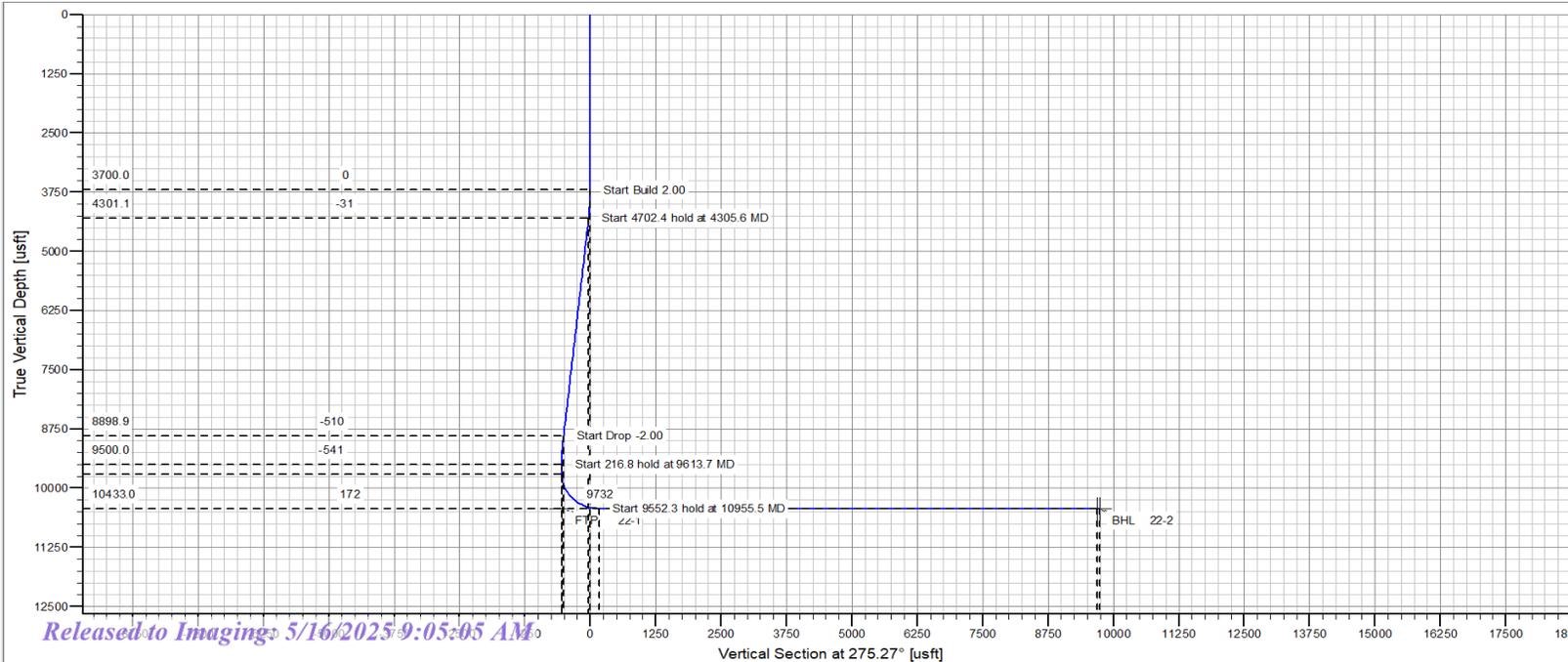
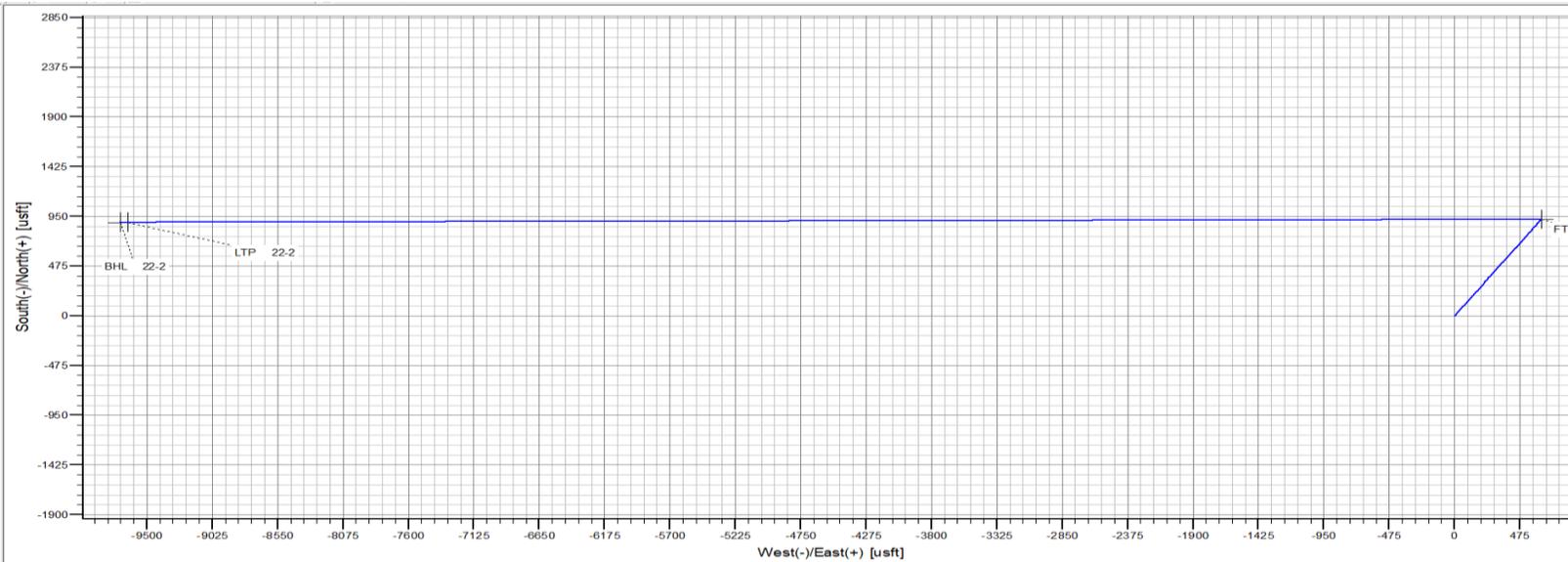
19300.000	90.000	269.847	10432.997	76.759	0.000	106.087	0.000	76.759	0.000	0.000	106.127	44.928	91.576	MWD+IFR1+MS
19400.000	90.000	269.847	10432.997	77.495	0.000	107.133	0.000	77.495	0.000	0.000	107.172	44.974	91.555	MWD+IFR1+MS
19500.000	90.000	269.847	10432.997	78.231	0.000	108.180	0.000	78.231	0.000	0.000	108.219	45.021	91.535	MWD+IFR1+MS
19600.000	90.000	269.847	10432.997	78.969	0.000	109.228	0.000	78.969	0.000	0.000	109.266	45.068	91.515	MWD+IFR1+MS
19700.000	90.000	269.847	10432.997	79.707	0.000	110.278	0.000	79.707	0.000	0.000	110.316	45.115	91.496	MWD+IFR1+MS
19800.000	90.000	269.847	10432.997	80.446	0.000	111.329	0.000	80.446	0.000	0.000	111.367	45.163	91.477	MWD+IFR1+MS
19900.000	90.000	269.847	10432.997	81.187	0.000	112.381	0.000	81.187	0.000	0.000	112.419	45.212	91.459	MWD+IFR1+MS
20000.000	90.000	269.847	10432.997	81.927	0.000	113.435	0.000	81.927	0.000	0.000	113.472	45.261	91.441	MWD+IFR1+MS
20100.000	90.000	269.847	10432.997	82.669	0.000	114.490	0.000	82.669	0.000	0.000	114.527	45.310	91.423	MWD+IFR1+MS
20200.000	90.000	269.847	10432.997	83.412	0.000	115.547	0.000	83.412	0.000	0.000	115.583	45.360	91.406	MWD+IFR1+MS
20300.000	90.000	269.847	10432.997	84.155	0.000	116.604	0.000	84.155	0.000	0.000	116.640	45.411	91.389	MWD+IFR1+MS
20400.000	90.000	269.847	10432.997	84.899	0.000	117.663	0.000	84.899	0.000	0.000	117.699	45.462	91.373	MWD+IFR1+MS
20506.983	90.000	269.847	10432.997	85.696	0.000	118.797	0.000	85.696	0.000	0.000	118.833	45.517	91.355	MWD+IFR1+MS
20557.828	90.000	269.847	10432.997	86.074	0.000	119.336	0.000	86.074	0.000	0.000	119.371	45.543	91.347	MWD+IFR1+MS

**Plan Targets**

James Ranch Unit Apache 903H

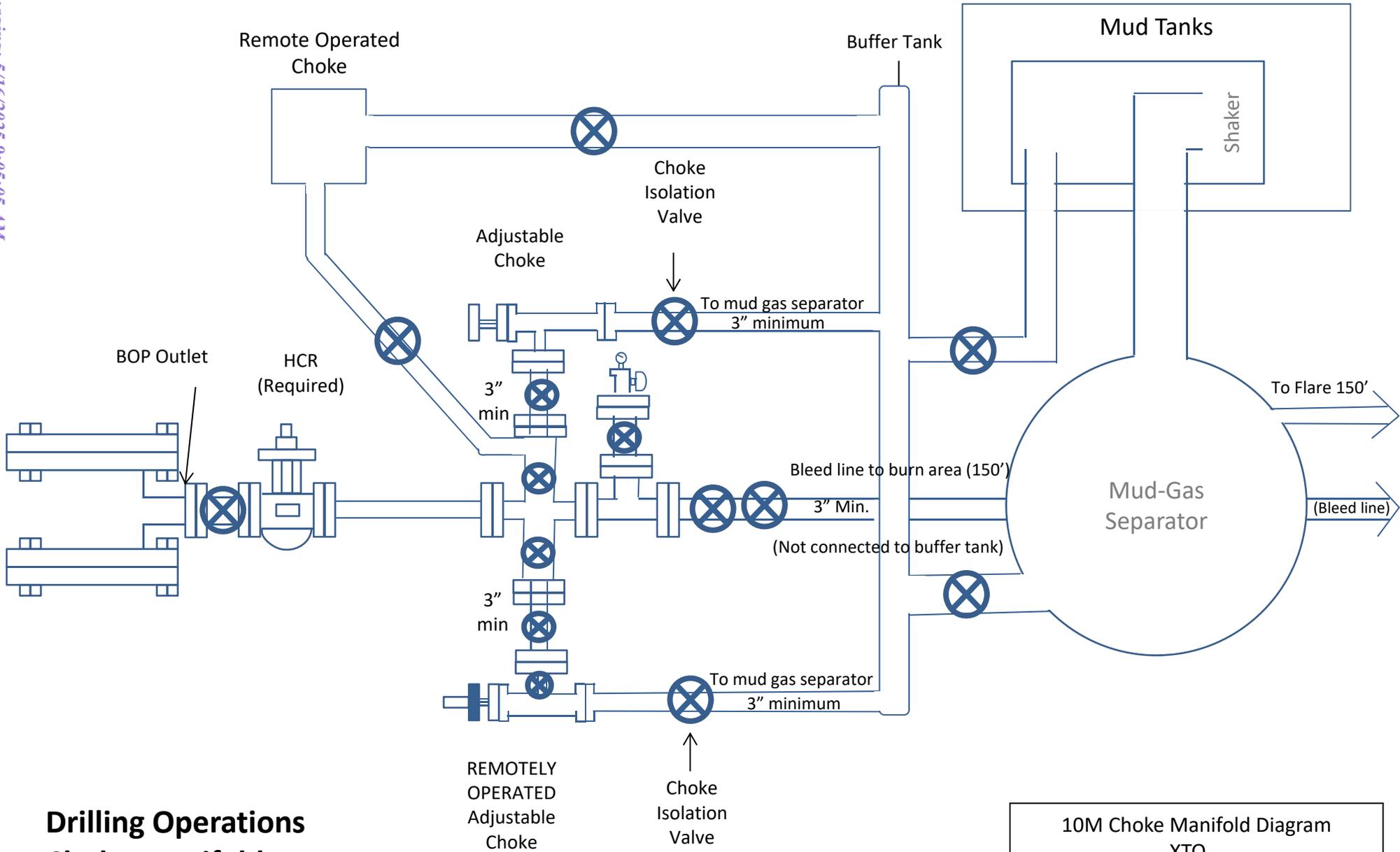
Target Name	Measured Depth (ft)	Grid Northing (ft)	Grid Easting (ft)	TVD MSL (ft)	Target Shape
FTP 22	10696.78	505352.70	656556.10	7032.00	CIRCLE
LTP 22	20507.84	505325.20	646287.60	7032.00	CIRCLE
BHL 22	20557.87	505325.10	646237.60	7032.00	CIRCLE

# JAMES RANCH UNIT APACHE 903H



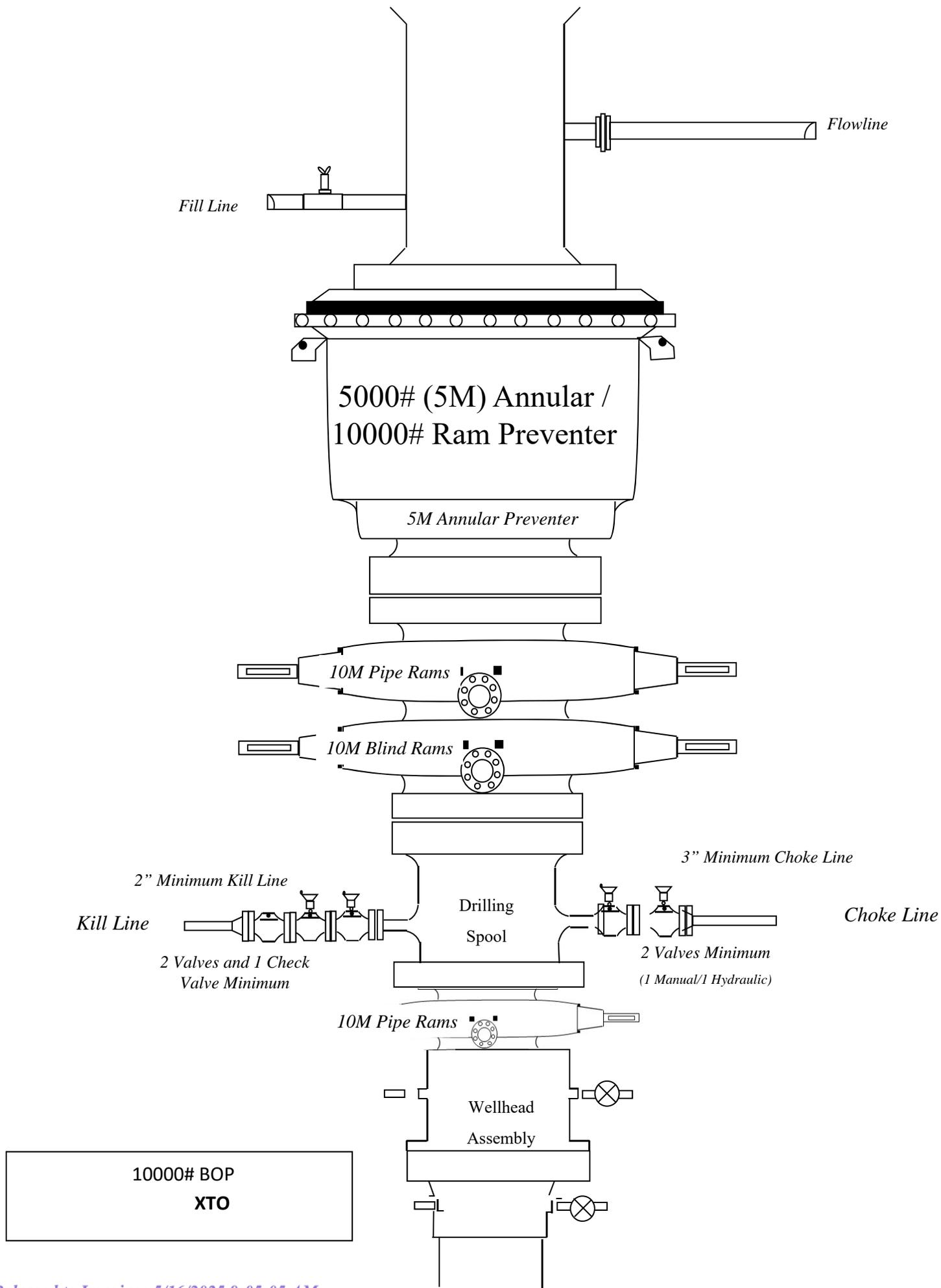
Formation	TVDSS (feet)	MD TVD (feet)
Alluvium	surface	surface
Rustler	2,924'	477'
Salado/Top of Salt	2,624'	777'
MB 126	1,940'	1,461'
Castile Anhydrite 1 Top	880'	2,521'
Castile Anhydrite 1 Base	455'	2,946'
Castile Anhydrite 2 Top	219'	3,182'
Castile Anhydrite 2 Base	124'	3,277'
Base Salt	-228'	3,629'
Delaware/Lamar	-489'	3,890'
Bell Canyon	-530'	3,931'
Cherry Canyon	-1,635'	5,036'
Brushy Canyon Ss.	-2,997'	6,398'
Bone Spring Lm.	-4,406'	7,807'
Avalon Ss.	-4,471'	7,872'
Upper Avalon Carb.	-4,694'	8,095'
Upper Avalon Sh.	-4,779'	8,180'
Middle Avalon Carb.	-4,923'	8,324'
Lw. Avalon Sh.	-4,997'	8,398'
First Bone Spring Carb.	-5,253'	8,654'
First Bone Spring Ss.	-5,424'	8,825'
Second Bone Spring Carb.	-5,861'	9,262'
Second Bone Spring A Ss.	-6,130'	9,531'
Second Bone Spring A/B Carb.	-6,294'	9,695'
Second Bone Spring B Ss.	-6,343'	9,744'
Third Bone Spring Carb.	-6,477'	9,878'
Harkey Ss.	-6,687'	10,088'
Third Bone Spring Shale	-6,782'	10,183'
Landing Point	-7,032'	10,433'
Horizontal TD	-6,942'	10,343'
Third Bone Spring Ss.	-7,163'	10,564'

Bleed line will discharge 100' from wellhead for non-H2S situations and 150' from wellhead for H2S situations.



# Drilling Operations Choke Manifold 10M Service

10M Choke Manifold Diagram  
XTO





# U. S. Steel Tubular Products

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## 5.500" 20.00lb/ft (0.361" Wall) P110 RY USS-FREEDOM HTQ<sup>®</sup>



MECHANICAL PROPERTIES	Pipe	USS-FREEDOM HTQ <sup>®</sup>		--
Minimum Yield Strength	110,000	--	psi	--
Maximum Yield Strength	125,000	--	psi	--
Minimum Tensile Strength	125,000	--	psi	--
DIMENSIONS	Pipe	USS-FREEDOM HTQ <sup>®</sup>		--
Outside Diameter	5.500	6.300	in.	--
Wall Thickness	0.361	--	in.	--
Inside Diameter	4.778	4.778	in.	--
Standard Drift	4.653	4.653	in.	--
Alternate Drift	--	--	in.	--
Nominal Linear Weight, T&C	20.00	--	lb/ft	--
Plain End Weight	19.83	--	lb/ft	--
SECTION AREA	Pipe	USS-FREEDOM HTQ <sup>®</sup>		--
Critical Area	5.828	5.828	sq. in.	--
Joint Efficiency	--	100.0	%	--
PERFORMANCE	Pipe	USS-FREEDOM HTQ <sup>®</sup>		--
Minimum Collapse Pressure	11,100	11,100	psi	--
Minimum Internal Yield Pressure	12,640	12,640	psi	--
Minimum Pipe Body Yield Strength	641,000	--	lb	--
Joint Strength	--	641,000	lb	--
Compression Rating	--	641,000	lb	--
Reference Length [4]	--	21,370	ft	--
Maximum Uniaxial Bend Rating [2]	--	91.7	deg/100 ft	--
MAKE-UP DATA	Pipe	USS-FREEDOM HTQ <sup>®</sup>		--
Make-Up Loss	--	4.13	in.	--
Minimum Make-Up Torque [3]	--	15,000	ft-lb	--
Maximum Make-Up Torque [3]	--	21,000	ft-lb	--
Maximum Operating Torque[3]	--	29,500	ft-lb	--

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### Notes

- Other than proprietary collapse and connection values, performance properties have been calculated using standard equations defined by API 5C3 and do not incorporate any additional design or safety factors. Calculations assume nominal pipe OD, nominal wall thickness, and Specified Minimum Yield Strength (SMYS).
- Uniaxial bending rating shown is structural only, and equal to compression efficiency.
- Torques have been calculated assuming a thread compound friction factor of 1.0 and are recommended only. Field make-up torques may require adjustment based on actual field conditions (e.g. make-up speed, temperature, thread compound, etc.).
- Reference length is calculated by joint strength divided by plain end weight with 1.5 safety factor.

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**U. S. Steel Tubular Products**

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**5.500" 20.00lb/ft (0.361" Wall) P110 RY USS-TALON HTQ™ RD**



MECHANICAL PROPERTIES	Pipe	USS-TALON HTQ™ RD		[6]
Minimum Yield Strength	110,000	--	psi	--
Maximum Yield Strength	125,000	--	psi	--
Minimum Tensile Strength	125,000	--	psi	--
DIMENSIONS	Pipe	USS-TALON HTQ™ RD		--
Outside Diameter	5.500	5.900	in.	--
Wall Thickness	0.361	--	in.	--
Inside Diameter	4.778	4.778	in.	--
Standard Drift	4.653	4.653	in.	--
Alternate Drift	--	--	in.	--
Nominal Linear Weight, T&C	20.00	--	lb/ft	--
Plain End Weight	19.83	--	lb/ft	--
SECTION AREA	Pipe	USS-TALON HTQ™ RD		--
Critical Area	5.828	5.828	sq. in.	--
Joint Efficiency	--	100.0	%	[2]
PERFORMANCE	Pipe	USS-TALON HTQ™ RD		--
Minimum Collapse Pressure	11,100	11,100	psi	--
Minimum Internal Yield Pressure	12,640	12,640	psi	--
Minimum Pipe Body Yield Strength	641,000	--	lb	--
Joint Strength	--	641,000	lb	--
Compression Rating	--	641,000	lb	--
Reference Length	--	21,370	ft	[5]
Maximum Uniaxial Bend Rating	--	91.7	deg/100 ft	[3]
MAKE-UP DATA	Pipe	USS-TALON HTQ™ RD		--
Make-Up Loss	--	5.58	in.	--
Minimum Make-Up Torque	--	17,000	ft-lb	[4]
Maximum Make-Up Torque	--	20,000	ft-lb	[4]
Maximum Operating Torque	--	39,500	ft-lb	[4]

UNCONTROLLED

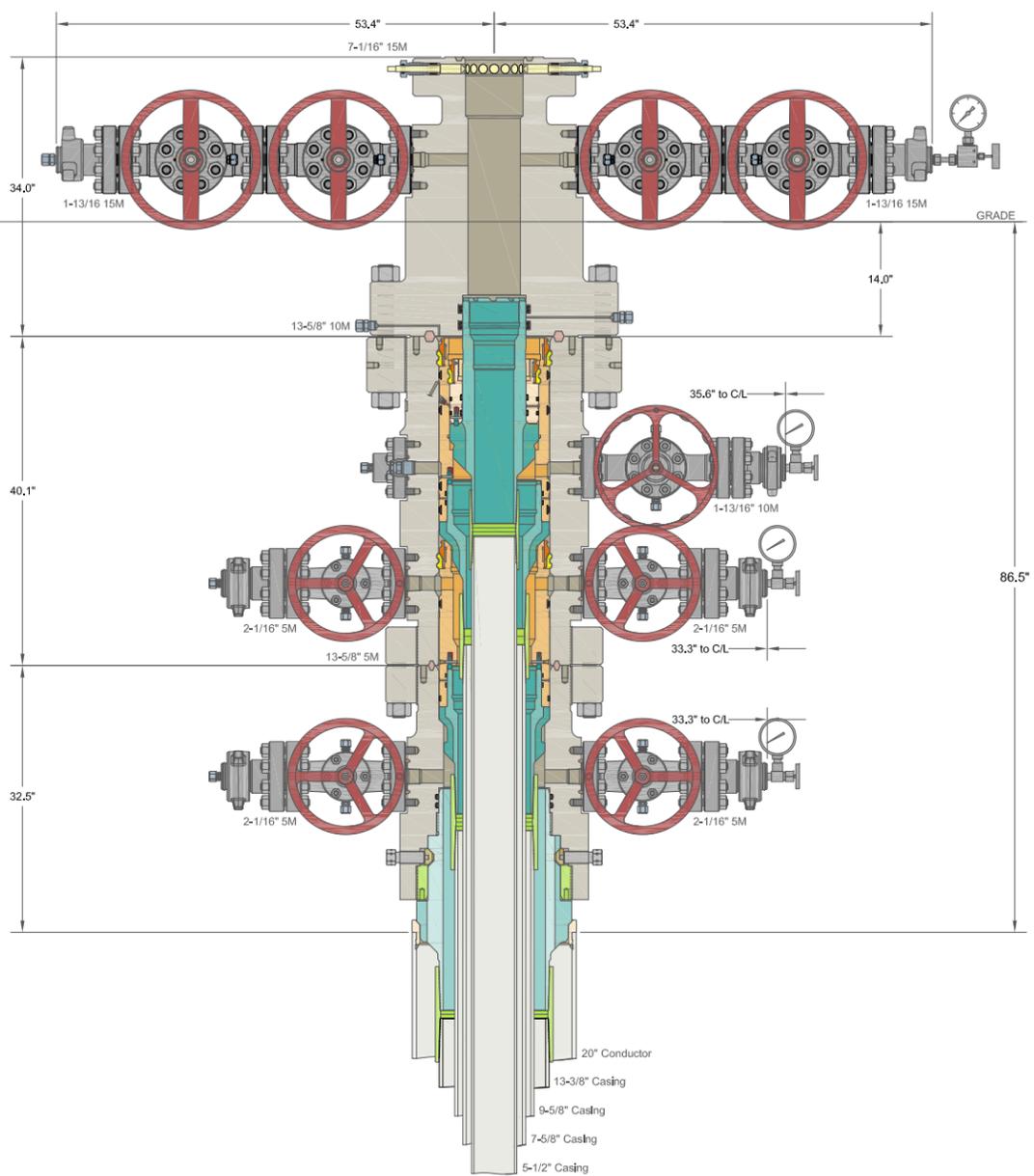
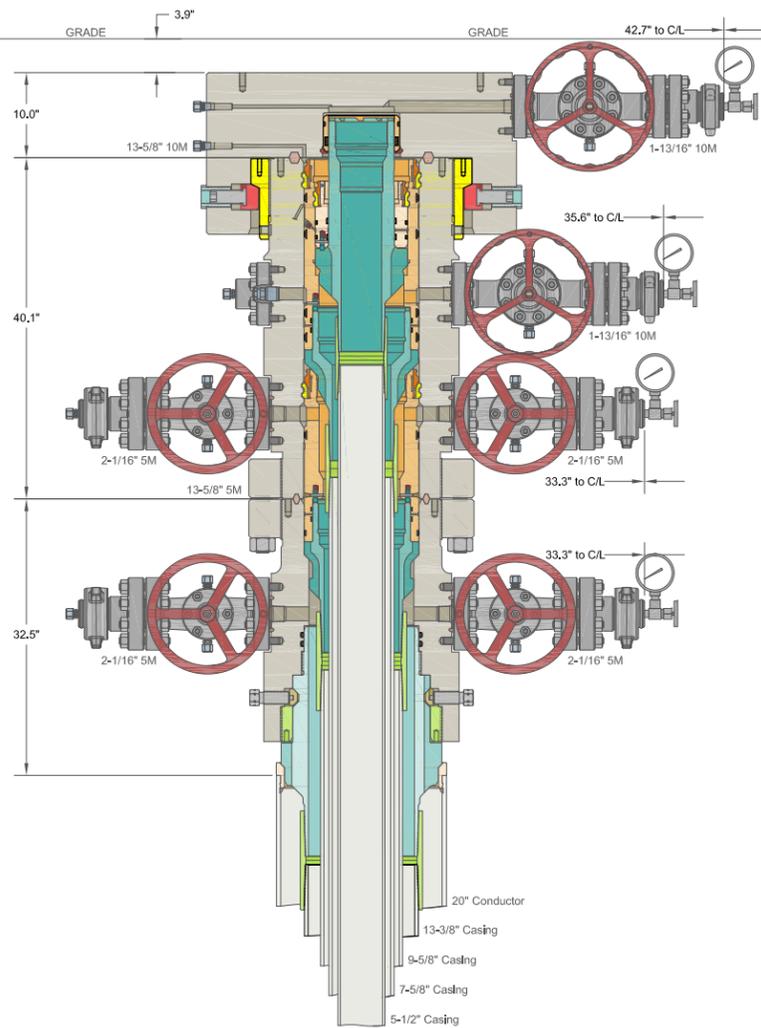
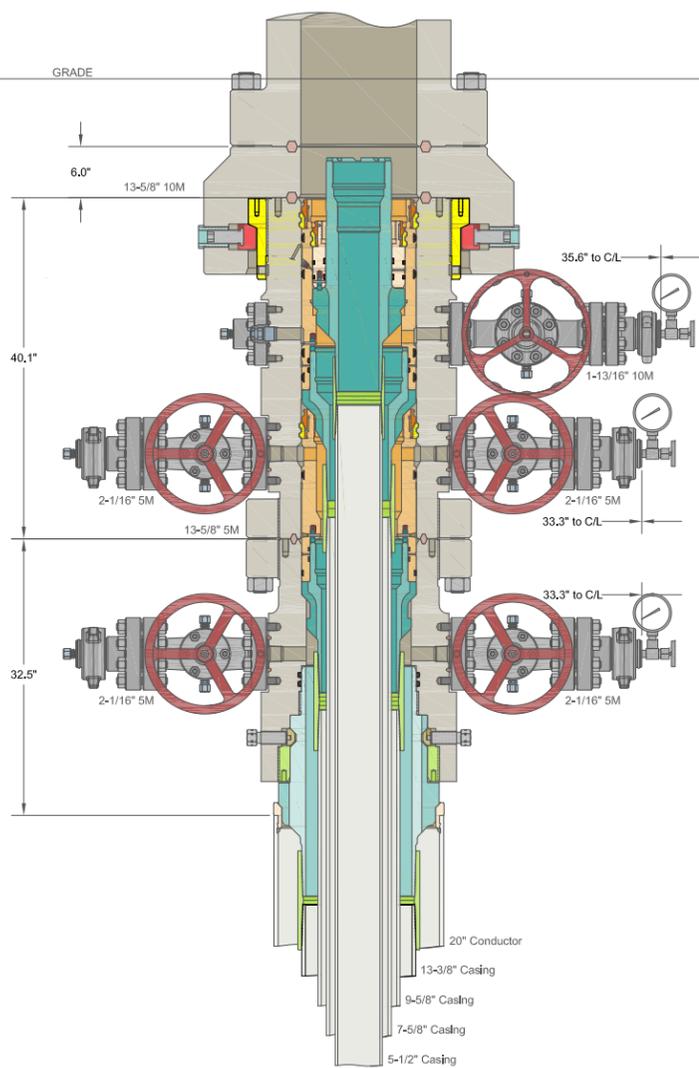
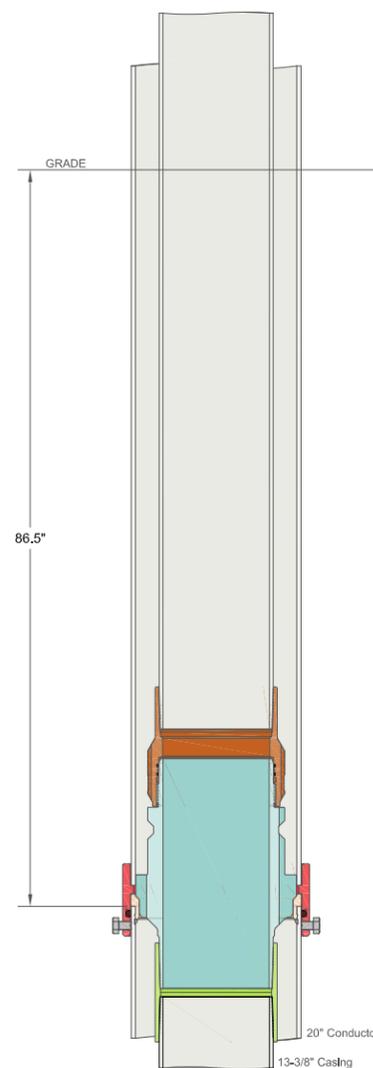
**Notes**

- Other than proprietary collapse and connection values, performance properties have been calculated using standard equations defined by API 5C3 and do not incorporate any additional design or safety factors. Calculations assume nominal pipe OD, nominal wall thickness, and Specified Minimum Yield Strength (SMYS).
- Joint efficiencies are calculated by dividing the connection critical area by the pipe body area.
- Uniaxial bend rating shown is structural only.
- Torques have been calculated assuming a thread compound friction factor of 1.0 and are recommended only. Field make-up torques may require adjustment based on actual field conditions (e.g. make-up speed, temperature, thread compound, etc.).
- Reference length is calculated by Joint Strength divided by Nominal Linear Weight, T&C with a 1.5 Safety factor.
- Coupling must meet minimum mechanical properties of the pipe.

**Legal Notice**

All material contained in this publication is for general information only. This material should not therefore be used or relied upon for any specific application without independent competent professional examination and verification of accuracy, suitability and applicability. Anyone making use of this material does so at their own risk and assumes any and all liability resulting from such use. U. S. Steel disclaims any and all expressed or implied warranties of fitness for any general or particular application.

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 460 Wildwood Forest Drive, Suite 300S  
 Spring, Texas 77380  
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 connections@uss.com  
 www.usstubular.com



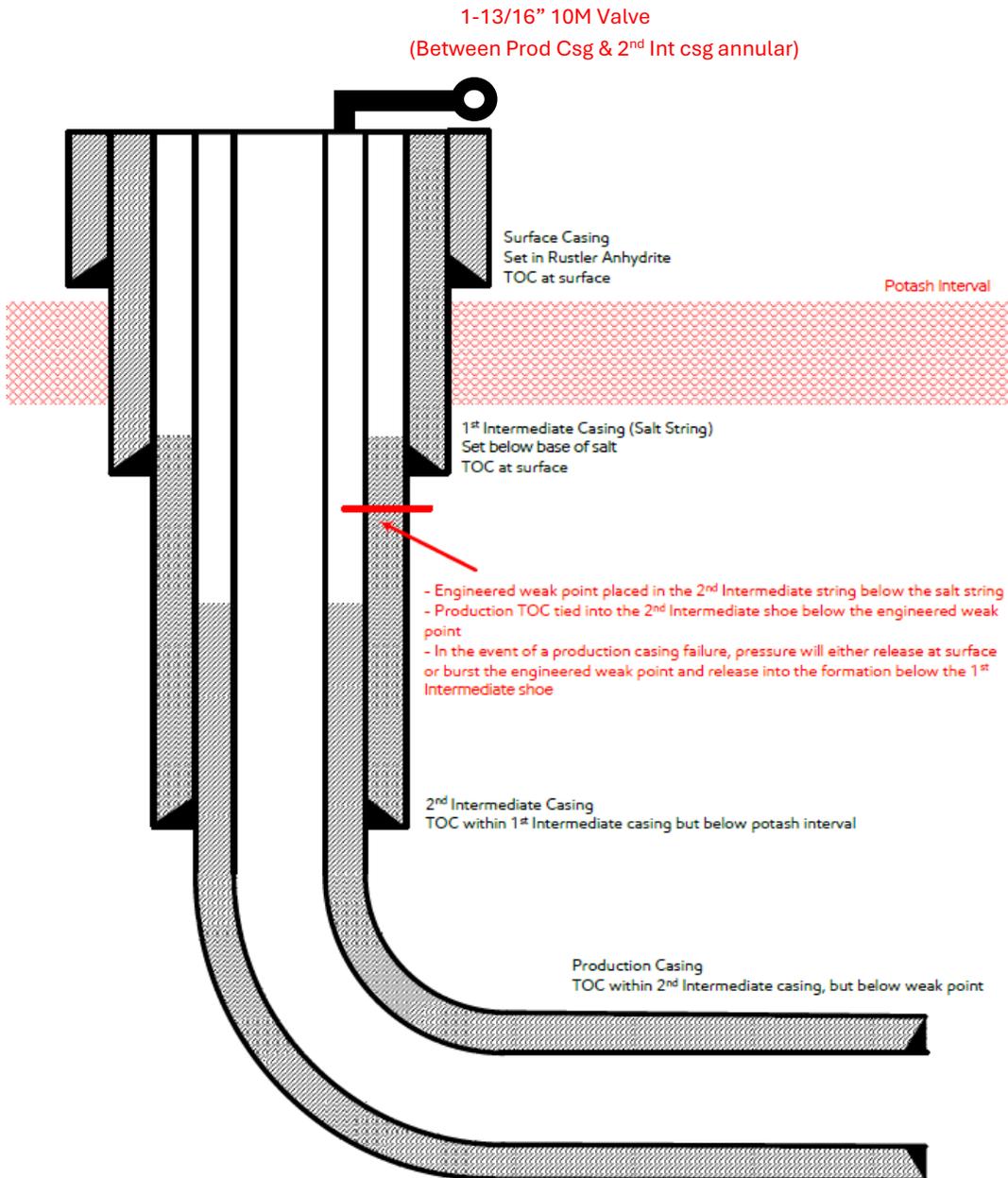
ALL DIMENSIONS APPROXIMATE

### CACTUS WELLHEAD LLC

XTO ENERGY INC  
DELAWARE BASIN

(20") x 13-3/8" x 9-5/8" x 7-5/8" x 5-1/2" MBU-4T-CFL-R-DBLO  
 With 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS-SB Tubing Head  
 And Drilling & Skid Configurations

DRAWN	VJK	31MAR22
APPRV		
DRAWING NO.	SDT-3301	



[Figure F] 4 String – 2<sup>nd</sup> Intermediate casing engineered weak point

Update May 2024:

XTO is aware of R-111-Q update and will comply with these requirements including (but not limited to):

- 1) Alignment with KPLA requirements per schematic below, with engineering weak point casing design and utilizing new casing that meets API standards.
- 2) Contingency plans in place to divert fluids away from salt interval in event of production casing failure.
- 3) Intermediate 2 casing will consist of a primary cement job with TOC at the top of the Brushy Canyon formation within the Delaware Mountain Group.
  - a. Bradenhead squeeze to be completed after primary cement job to tie back TOC to intermediate 1 “Salt string” & below Marker Bed 126 “Potash Interval”.
- 4) Production cement to be tied back no less than 500’ inside previous casing shoe (intermediate 2 casing) and below the engineered weak point.

State of New Mexico  
Energy, Minerals and Natural Resources Department

Submit Electronically  
Via E-permitting

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

**NATURAL GAS MANAGEMENT PLAN**

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

**Section 1 – Plan Description**  
**Effective May 25, 2021**

**I. Operator:** XTO PERMIAN OPERATING, LLC      **OGRID:** 373075      **Date:** 08/19/2024

**II. Type:**  Original    Amendment due to  19.15.27.9.D(6)(a) NMAC    19.15.27.9.D(6)(b) NMAC    Other.

If Other, please describe: \_\_\_\_\_

**III. Well(s):** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	3 yr Anticipated decline Oil BBL/D	Anticipated Gas MCF/D	3 yr anticipated decline Gas MCF/D	Anticipated Produced Water BBL/D	3 yr anticipated decline Water BBL/D
James Ranch Unit Apache 149H	TBD	13 22S 30E	507 FSL, 864 FEL	600	100	2500	1500	5000	200
James Ranch Unit Apache 150H	TBD	13 22S 30E	477 FSL, 863 FEL	600	100	2500	1500	5000	200
James Ranch Unit Apache 142H	TBD	24 22S 30E	1524 FNL, 829 FEL	600	100	2500	1500	5000	200
James Ranch Unit Apache 135H	TBD	24 22S 30E	2228 FSL, 871 FEL	600	100	2500	1500	5000	200
James Ranch Unit Apache 136H	TBD	24 22S 30E	2227 FSL, 971 FEL	600	100	2500	1500	5000	200
James Ranch Unit Apache 137H	TBD	24 22S 30E	2257 FSL, 971 FEL	600	100	2500	1500	5000	200
James Ranch Unit Apache 138H	TBD	24 22S 30E	2167 FSL, 971 FEL	600	100	2500	1500	5000	200
James Ranch Unit Apache 139H	TBD	24 22S 30E	2258 FSL, 871 FEL	600	100	2500	1500	5000	200
James Ranch Unit Apache 140H	TBD	24 22S 30E	2288 FSL, 871 FEL	600	100	2500	1500	5000	200
James Ranch Unit Apache 141H	TBD	24 22S 30E	2197 FSL, 971 FEL	600	100	2500	1500	5000	200

James Ranch Unit Apache 131H	TBD	24 22S 30E	419 FSL, 890 FEL	600	100	2500	1500	5000	200
James Ranch Unit Apache 132H	TBD	24 22S 30E	389 FSL, 889 FEL	600	100	2500	1500	5000	200
James Ranch Unit Apache 133H	TBD	24 22S 30E	359 FSL, 889 FEL	600	100	2500	1500	5000	200
James Ranch Unit Apache 134H	TBD	24 22S 30E	329 FSL, 889 FEL	600	100	2500	1500	5000	200
James Ranch Unit Apache 111H	TBD	13 22S 30E	2576 FSL, 867 FEL	2000	200	5000	1400	7000	400
James Ranch Unit Apache 112H	TBD	13 22S 30E	2516 FSL, 868 FEL	2000	200	5000	1400	7000	400
James Ranch Unit Apache 113H	TBD	13 22S 30E	416 FSL, 962 FEL	2000	200	5000	1400	7000	400
James Ranch Unit Apache 114H	TBD	24 22S 30E	350 FNL, 949 FEL	2000	200	5000	1400	7000	400
James Ranch Unit Apache 115H	TBD	24 22S 30E	408 FNL, 848 FEL	2000	200	5000	1400	7000	400
James Ranch Unit Apache 701H	TBD	13 22S 30E	2577 FSL, 967 FEL	1000	100	2000	1300	4500	400
James Ranch Unit Apache 702H	TBD	13 22S 30E	2517 FSL, 968 FEL	1000	100	2000	1300	4500	400
James Ranch Unit Apache 703H	TBD	13 22S 30E	2486 FSL, 868 FEL	1000	100	2000	1300	4500	400
James Ranch Unit Apache 704H	TBD	13 22S 30E	2547 FSL, 967 FEL	1000	100	2000	1300	4500	400
James Ranch Unit Apache 705H	TBD	13 22S 30E	2487 FSL, 968 FEL	1000	100	2000	1300	4500	400
James Ranch Unit Apache 706H	TBD	13 22S 30E	2456 FSL, 869 FEL	1000	100	2000	1300	4500	400
James Ranch Unit Apache 707H	TBD	24 22S 30E	320 FNL, 950 FEL	1000	100	2000	1300	4500	400
James Ranch Unit Apache 708H	TBD	24 22S 30E	380 FNL, 949 FEL	1000	100	2000	1300	4500	400
James Ranch Unit Apache 709H	TBD	24 22S 30E	348 FNL, 849 FEL	1000	100	2000	1300	4500	400
James Ranch Unit Apache 710H	TBD	24 22S 30E	410 FNL, 948 FEL	1000	100	2000	1300	4500	400
James Ranch Unit Apache 711H	TBD	24 22S 30E	318 FNL, 850 FEL	1000	100	2000	1300	4500	400
James Ranch Unit Apache 801H	TBD	13 22S 30E	2546 FSL, 867 FEL	2000	100	6000	1000	7000	300
James Ranch Unit Apache 802H	TBD	13 22S 30E	446 FSL, 963 FEL	2000	100	6000	1000	7000	300

James Ranch Unit Apache 803H	TBD	13 22S 30E	476 FSL, 963 FEL	2000	100	6000	1000	7000	300
James Ranch Unit Apache 804H	TBD	24 22S 30E	378 FNL, 849 FEL	2000	100	6000	1000	7000	300
James Ranch Unit Apache 901H	TBD	13 22S 30E	2457 FSL, 969 FEL	2000	200	5000	1100	8000	500
James Ranch Unit Apache 902H	TBD	13 22S 30E	506 FSL, 964 FEL	2000	200	5000	1100	8000	500
James Ranch Unit Apache 903H	TBD	13 22S 30E	386 FSL, 962 FEL	2000	200	5000	1100	8000	500
James Ranch Unit Apache 904H	TBD	24 22S 30E	440 FNL, 948 FEL	2000	200	5000	1100	8000	500
James Ranch Unit Apache 906H	TBD	24 22S 30E	2287 FSL, 971 FEL	2000	200	5000	1100	8000	500
James Ranch Unit Apache 805H	TBD	24 22S 30E	909 FEL, 1526 FNL	2000	100	6000	1000	7000	300
James Ranch Unit Apache 116H	TBD	24 22S 30E	909 FEL, 1556 FNL	2000	200	5000	1400	7000	400
James Ranch Unit Apache 905H	TBD	24 22S 30E	908 FEL, 1616 FNL	2000	200	5000	1100	8000	500
James Ranch Unit Apache 806H	TBD	24 22S 30E	906 FEL, 1646 FNL	2000	100	6000	1000	7000	300
James Ranch Unit Apache 117H	TBD	24 22S 30E	907 FEL, 1676 FNL	2000	200	5000	1400	7000	400
James Ranch Unit Apache 907H	TBD	24 22S 30E	930 FEL, 389 FSL	2000	200	5000	1100	8000	500
James Ranch Unit Apache 807H	TBD	24 22S 30E	929 FEL, 359 FSL	2000	100	6000	1000	7000	300
James Ranch Unit Apache 808H	TBD	24 22S 30E	929 FEL, 329 FSL	2000	100	6000	1000	7000	300

**IV. Central Delivery Point Name:** Longhorn Compressor Station [See 19.15.27.9(D)(1) NMAC]

**V. Anticipated Schedule:** Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
James Ranch Unit Apache 149H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 150H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 142H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 135H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 136H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 137H	TBD	TBD	TBD	TBD	TBD	TBD

James Ranch Unit Apache 138H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 139H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 140H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 141H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 131H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 132H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 133H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 134H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 111H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 112H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 113H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 114H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 115H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 701H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 702H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 703H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 704H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 705H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 706H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 707H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 708H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 709H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 710H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 711H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 801H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 802H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 803H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 804H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 901H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 902H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 903H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 904H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 906H	TBD	TBD	TBD	TBD	TBD	TBD

James Ranch Unit Apache 805H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 116H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 905H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 806H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 117H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 907H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 807H	TBD	TBD	TBD	TBD	TBD	TBD
James Ranch Unit Apache 808H	TBD	TBD	TBD	TBD	TBD	TBD

**VI. Separation Equipment:**  Attach a complete description of how Operator will size separation equipment to optimize gas capture.

**VII. Operational Practices:**  Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

**VIII. Best Management Practices:**  Attach a complete description of Operator’s best management practices to minimize venting during active and planned maintenance.

**Section 2 – Enhanced Plan**  
**EFFECTIVE APRIL 1, 2022**

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

**IX. Anticipated Natural Gas Production:**

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

**X. Natural Gas Gathering System (NGGS):**

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

**XI. Map.**  Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

**XII. Line Capacity.** The natural gas gathering system  will  will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

**XIII. Line Pressure.** Operator  does  does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

Attach Operator’s plan to manage production in response to the increased line pressure.

**XIV. Confidentiality:**  Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

**Section 3 - Certifications****Effective May 25, 2021**

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

***If Operator checks this box, Operator will select one of the following:***

**Well Shut-In.**  Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

**Venting and Flaring Plan.**  Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

**Section 4 - Notices**

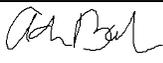
1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

**I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.**

Signature: 

Printed Name: **Adrian Baker**

Title: **Environmental and Regulatory Advisor**

E-mail Address: **adrian.baker@exxonmobil.com**

Date: **9/26/24**

Phone: **4322363808**

**OIL CONSERVATION DIVISION  
(Only applicable when submitted as a standalone form)**

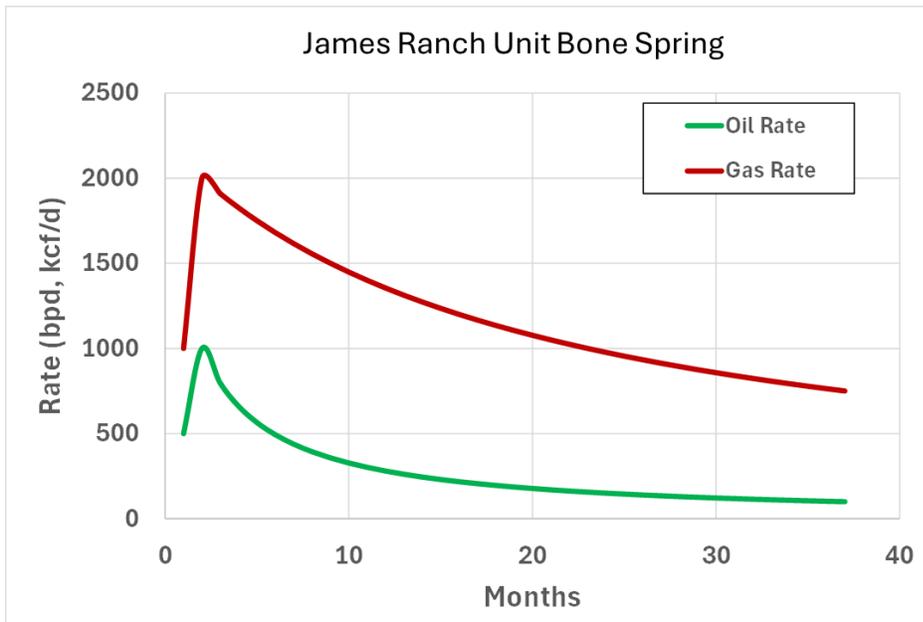
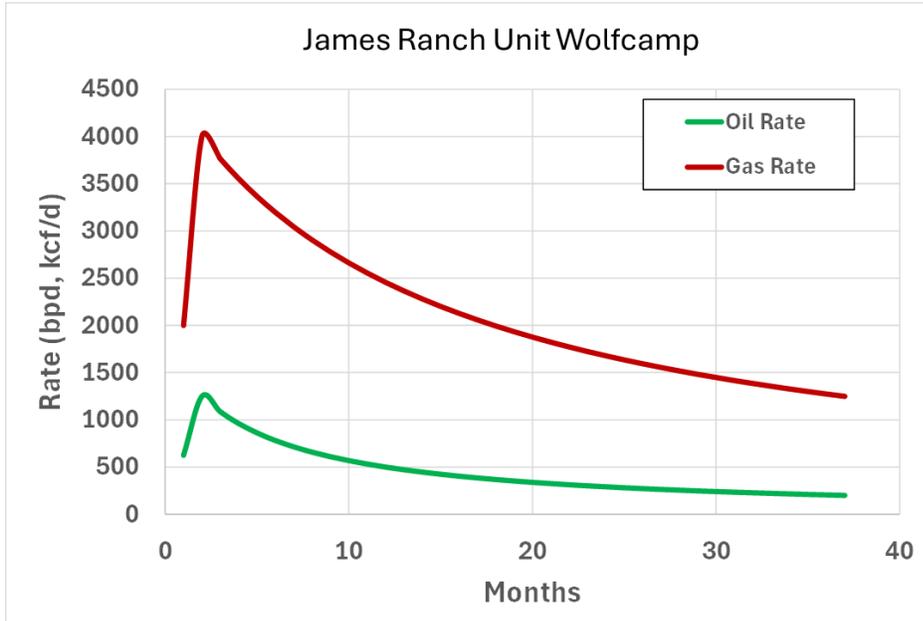
Approved By:

Title:

Approval Date:

Conditions of Approval:

JRU Decline Curves – Wolfcamp and Bone Spring



## VI. Separation Equipment:

XTO Permian Operating LLC. utilizes a "stage separation" process in which oil and gas separation is carried out through a series of separators operating at successively reduced pressures. Hydrocarbon liquids are produced into a high-pressure inlet separator, then carried through one or more lower pressure separation vessels before entering the storage tanks. The purpose of this separation process is to attain maximum recovery of liquid hydrocarbons from the fluids and allow maximum capture of produced gas into the sales pipeline. XTO utilizes a series of Low-Pressure Compression units to capture gas off the staged separation and send it to the sales pipeline. This process minimizes the amount of flash gas that enters the end-stage storage tanks that is subsequently vented or flared.

## VII. Operational Practices

XTO Permian Operating LLC will employ best management practices and control technologies to maximize the recovery and minimize waste of natural gas through venting and flaring.

- During drilling operations, XTO will utilize flares to capture and control natural gas, where technically feasible. If flaring is deemed technically in-feasible, XTO will employ best management practices to minimize or reduce venting to the extent possible.
- During completions operations, XTO will utilize Green Completion methods to capture gas produced during well completions that is otherwise vented or flared. If capture is technically in-feasible, flares will be used to control flow back fluids entering into frac tanks during initial flowback. Upon indication of first measurable hydrocarbon volumes, XTO Permian Operating LLC will turn operations to onsite separation vessels and flow to the gathering pipeline.
- During production operations, XTO Permian Operating LLC will take every practical effort to minimize waste of natural gas through venting and flaring by:
  - Designing and constructing facilities in a manner consistent to achieve maximum capture and control of hydrocarbon liquids & produced gas
  - Utilizing a closed-loop capture system to collect, and route produced gas to sales line via low pressure compression, or to a flare/combustor
  - Flaring in lieu of venting, where technically feasible
  - Utilizing auto-igniters or continuous pilots, with thermocouples connected to Scada, to quickly detect and resolve issues related to malfunctioning flares/combustors
  - Employ the use of automatic tank gauging to minimize storage tank venting during loading events
  - Installing air-driven or electric-driven pneumatics & combustion engines, where technically feasible to minimize venting to the atmosphere
  - Confirm equipment is properly maintained and repaired through a preventative maintenance and repair program to ensure equipment meets all manufacturer specifications

- Conduct and document AVO inspections on the frequency set forth in Part 27 to detect and repair any onsite leaks as quickly and efficiently as is feasible.

#### VIII. Best Management Practices during Maintenance

XTO Permian Operating LLC. will utilize best management practices to minimize venting during active and planned maintenance activities. XTO is operating under guidance that production facilities permitted under NOI permits have no provisions to allow high pressure flaring and high-pressure flaring is only allowed in disruption scenarios so long as the duration is less than eight hours. When technically feasible, flaring during maintenance activities will be utilized in lieu of venting to the atmosphere. XTO will work with third-party operators during scheduled maintenance of downstream pipeline or processing plants to address those events ahead of time to minimize venting. Actions considered include identifying alternative capture approaches or planning to temporarily reduce production or shut in the well to address these circumstances.



**BLACK GOLD®**

**GATES ENGINEERING & SERVICES NORTH AMERICA**  
7603 Prairie Oak Dr.  
Houston, TX. 77086

PHONE: +1 (281) 602-4100  
FAX: +1 (281) 602-4147  
EMAIL: gesna.quality@gates.com  
WEB: www.gates.com/oilandgas

*NEW CHOKE HOSE  
INSTALLED 02-10-2024*

**CERTIFICATE OF CONFORMANCE**

This is to verify that the items detailed below meet the requirements of the Customer's Purchase Order referenced herein, and are in Conformance with applicable specifications, and that Records of Required Tests are on file and subject to examination. The following items were inspected and hydrostatically tested at **Gates Engineering & Services North America** facilities in Houston, TX, USA.

<b>CUSTOMER:</b>	NABORS DRILLING TECHNOLOGIES USA DBA NABORS DRILLING USA
<b>CUSTOMER P.O.#:</b>	15582803 (TAG NABORS PO #15582803 SN 74621 ASSET 66-1531)
<b>CUSTOMER P/N:</b>	IMR RETEST SN 74621 ASSET #66-1531
<b>PART DESCRIPTION:</b>	RETEST OF CUSTOMER 3" X 45 FT 16C CHOKE & KILL HOSE ASSEMBLY C/W 4 1/16" 10K FLANGES
<b>SALES ORDER #:</b>	529480
<b>QUANTITY:</b>	1
<b>SERIAL #:</b>	74621 H3-012524-1

**SIGNATURE:** *F. OSMOS*

**TITLE:** QUALITY ASSURANCE

**DATE:** 1/25/2024



H3-15/16

1/25/2024 11:48:06 AM

# TEST REPORT

### CUSTOMER

Company: Nabors Industries Inc.  
 Production description: 74621/66-1531  
 Sales order #: 529480  
 Customer reference: FG1213

### TEST OBJECT

Serial number: H3-012524-1  
 Lot number:  
 Description: 74621/66-1531  
 Hose ID: 3" 16C CK  
 Part number:

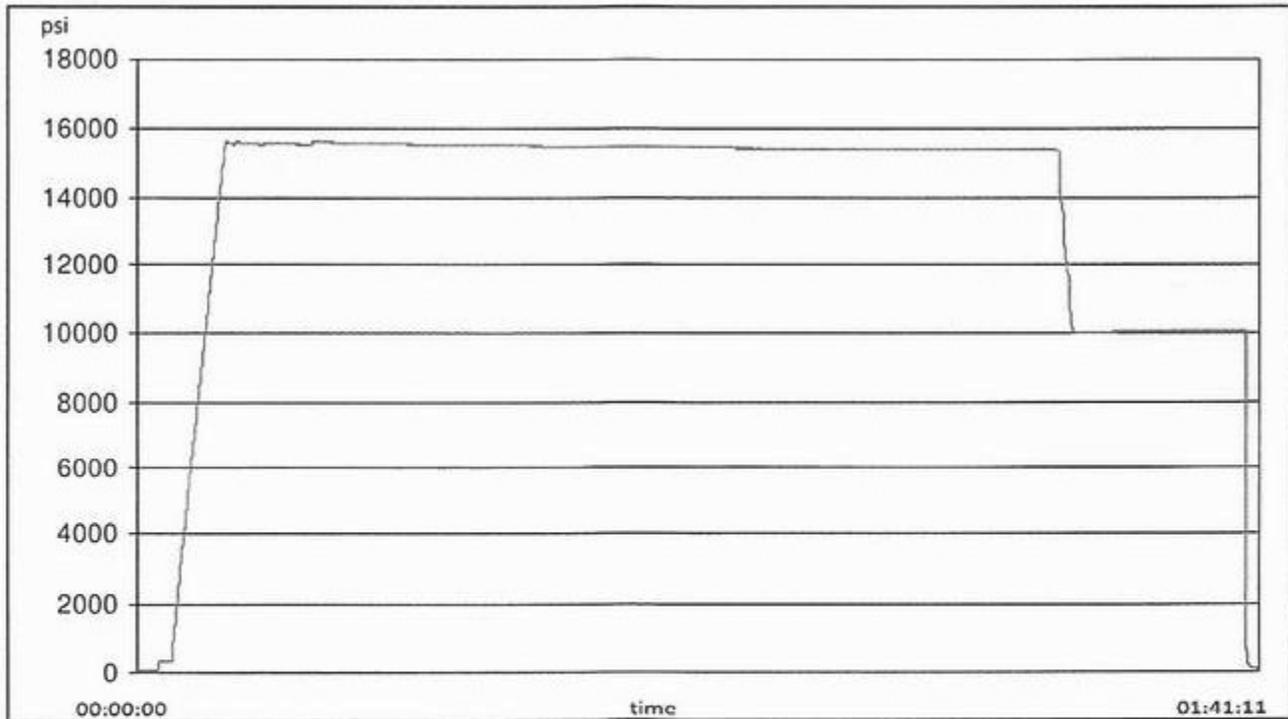
### TEST INFORMATION

Test procedure: GTS-04-053  
 Test pressure: 15000.00 psi  
 Test pressure hold: 3600.00 sec  
 Work pressure: 10000.00 psi  
 Work pressure hold: 900.00 sec  
 Length difference: 0.00 %  
 Length difference: 0.00 inch

Fitting 1: 3.0 x 4-1/16 10K  
 Part number:  
 Description:  
 Fitting 2: 3.0 x 4-1/16 10K  
 Part number:  
 Description:

Visual check:  
 Pressure test result: PASS  
 Length measurement result: Length: 45 feet

Test operator: Travis





H3-15/16

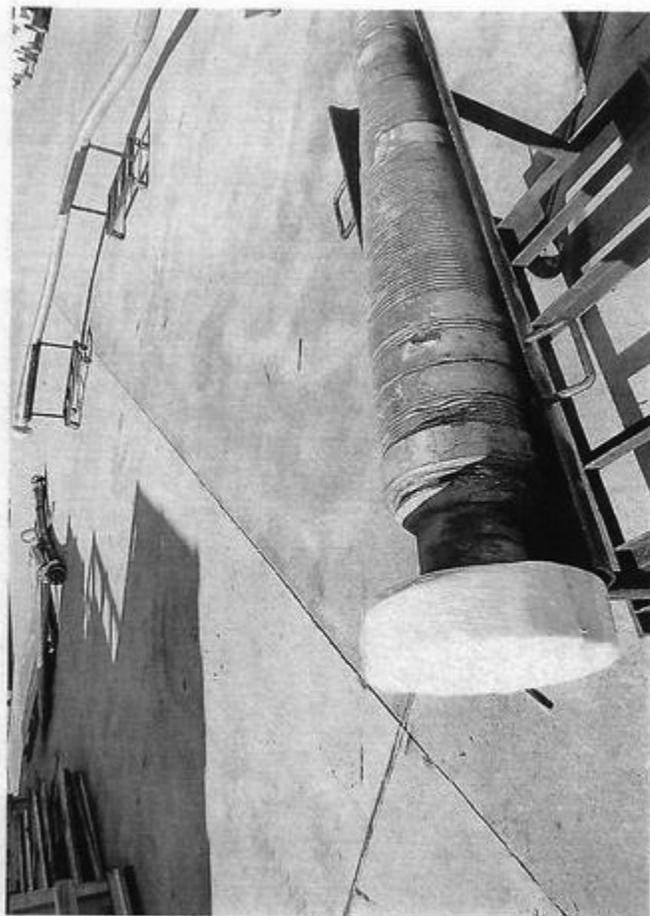
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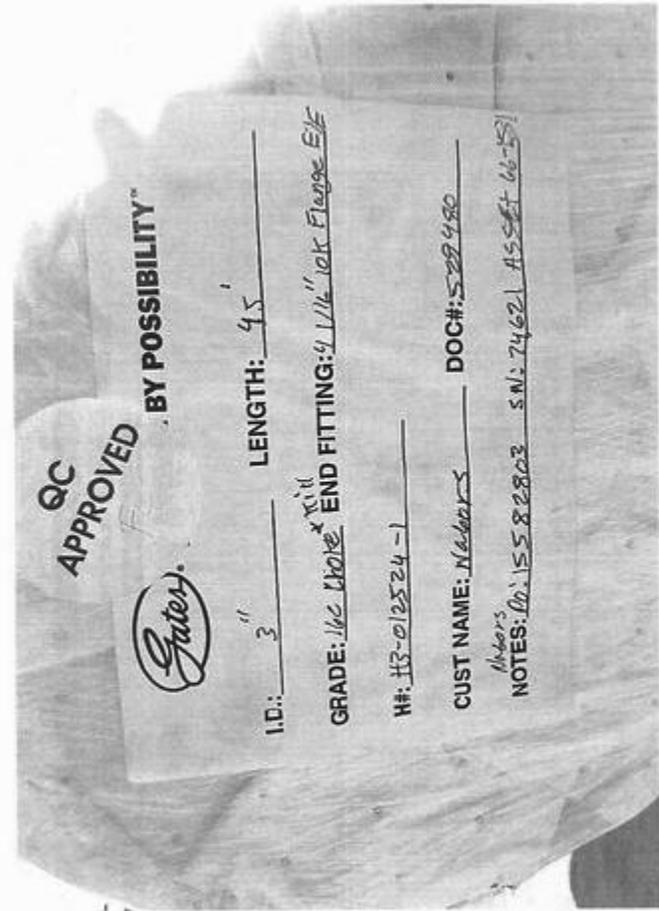
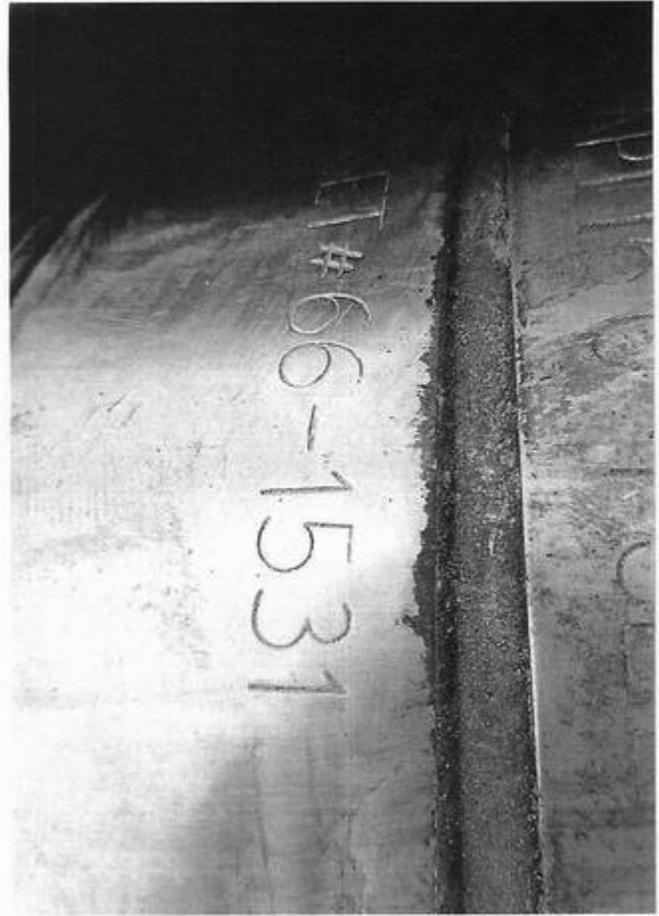
# TEST REPORT

## GAUGE TRACEABILITY

Description	Serial number	Calibration date	Calibration due date
S-25-A-W	110D3PHO	2023-06-06	2024-06-06
S-25-A-W	110IQWDG	2023-05-16	2024-05-16

### Comment





**Subject:** Request for a Variance Allowing break Testing of the Blowout Preventer Equipment (BOPE)

XTO Energy requests a variance to ONLY test broken pressure seals on the BOPE and function test BOP when skidding a drilling rig between multiple wells on a pad.

**Background**

Onshore Oil and Gas Order CFR Title 43 Part 3170, Drilling Operations, Sections III.A.2.i.iv.B states that the BOP test must be performed whenever any seal subject to test pressure is broken. The current interpretation of the Bureau of Land Management (BLM) requires a complete BOP test and not just a test of the affected component. CFR Title 43 Part 3170 states, "Some situation may exist either on a well-by-well basis or field-wide basis whereby it is commonly accepted practice to vary a particular minimum standard(s) established in this order. This situation can be resolved by requesting a variance...". XTO Energy feels the break testing the BOPE is such a situation. Therefore, as per CFR Title 43 Part 3170, XTO Energy submits this request for the variance.

**Supporting Documentation**

CFR Title 43 Part 3170 became effective on December 19, 1988 and has remained the standard for regulating BLM onshore drilling operations for over 30 years. During this time there have been significant changes in drilling technology. BLM continues to use the variance request process to allow for the use of modern technology and acceptable engineering practices that have arisen since CFR Title 43 Part 3170 was originally released. The XTO Energy drilling rig fleet has many modern upgrades that allow the intact BOP stack to be moved between well slots on a multi-well pad, as well as, wellhead designs that incorporate quick connects facilitating release of the BOP from the wellhead without breaking any BOP stack components apart. These technologies have been used extensively offshore, and other regulators, API, and many operators around the world have endorsed break testing as safe and reliable.

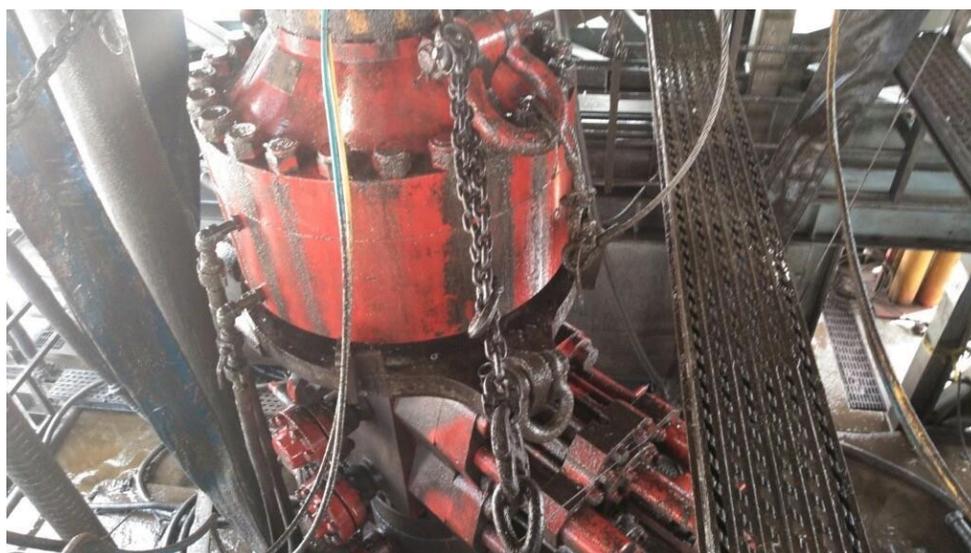


Figure 1: Winch System attached to BOP Stack



Figure 2: BOP Winch System

American Petroleum Institute (API) standards, specification and recommended practices are considered the industry standard and are consistently utilized and referenced by the industry. CFR Title 43 Part 3170 recognizes API recommended Practices (RP) 53 in its original development. API Standard 53, *Well Control Equipment Systems for Drilling Wells* (Fifth Edition, December 2018, Annex C, Table C.4) recognizes break testing as an acceptable practice. Specifically, API Standard 53, Section 5.3.7.1 states “A pressure test of the pressure containing component shall be performed following the disconnection or repair, limited to the affected component.” See Table C.4 below for reference.

62 API STANDARD 53			
Table C.4—Initial Pressure Testing, Surface BOP Stacks			
Component to be Pressure Tested	Pressure Test—Low Pressure <sup>a,c</sup> psig (MPa)	Pressure Test—High Pressure <sup>a,c</sup>	
		Change Out of Component, Elastomer, or Ring Gasket	No Change Out of Component, Elastomer, or Ring Gasket
Annular preventer <sup>b</sup>	250 to 350 (1.72 to 2.41)	RWP of annular preventer	MASP or 70% annular RWP, whichever is lower.
Fixed pipe, variable bore, blind, and BSR preventers <sup>b,d</sup>	250 to 350 (1.72 to 2.41)	RWP of ram preventer or wellhead system, whichever is lower	ITP
Choke and kill line and BOP side outlet valves below ram preventers (both sides)	250 to 350 (1.72 to 2.41)	RWP of side outlet valve or wellhead system, whichever is lower	ITP
Choke manifold—upstream of chokes <sup>e</sup>	250 to 350 (1.72 to 2.41)	RWP of ram preventers or wellhead system, whichever is lower	ITP
Choke manifold—downstream of chokes <sup>e</sup>	250 to 350 (1.72 to 2.41)	RWP of valve(s), line(s), or MASP for the well program, whichever is lower	
Kelly, kelly valves, drill pipe safety valves, IBOPs	250 to 350 (1.72 to 2.41)	MASP for the well program	
<sup>a</sup> Pressure test evaluation periods shall be a minimum of five minutes. No visible leaks. The pressure shall remain stable during the evaluation period. The pressure shall not decrease below the intended test pressure. <sup>b</sup> Annular(s) and VBR(s) shall be pressure tested on the largest and smallest OD drill pipe to be used in well program. <sup>c</sup> For pad drilling operations, moving from one wellhead to another within the 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken. <sup>d</sup> For surface offshore operations, the ram BOPs shall be pressure tested with the ram locks engaged and the closing and locking pressure vented during the initial test. For land operations, the ram BOPs shall be pressure tested with the ram locks engaged and the closing and locking pressure vented at commissioning and annually. <sup>e</sup> Adjustable chokes are not required to be full sealing devices. Pressure testing against a closed choke is not required.			

The Bureau of Safety and Environmental Enforcement (BSEE), Department of Interior, has also utilized the API standards, specification and best practices in the development of its offshore oil and gas regulations and incorporates them by reference within its regulations.

Break testing has been approved by the BLM in the past with other operators based on the detailed information provided in this document.

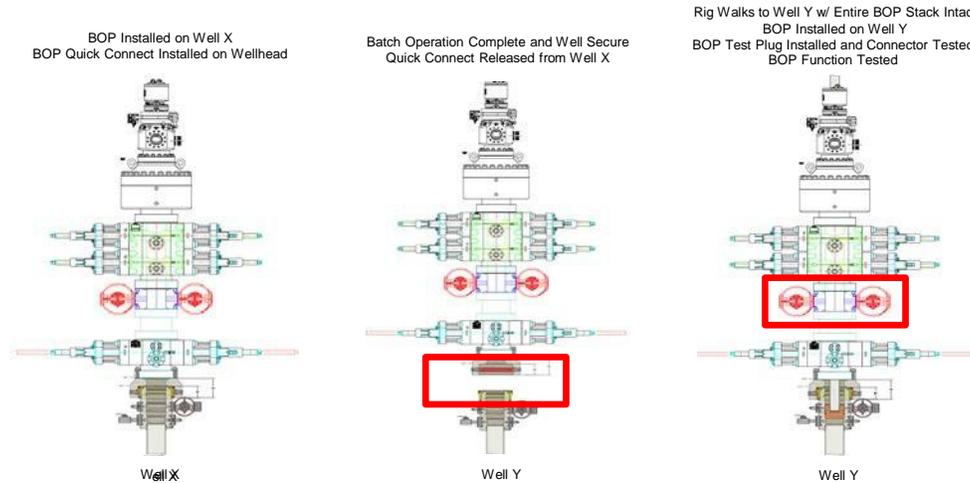
XTO Energy feels break testing and our current procedures meet the intent of CFR Title 43 Part 317 0and often exceed it. There has been no evidence that break testing results in more components failing than seen on full BOP tests. XTO Energy's internal standards requires complete BOPE tests more often than that of CFR Title 43 Part 3170 (Every 21 days). In addition to function testing the annular, pipe rams and blind rams after each BOP nipple up, XTO Energy performs a choke drill with the rig crew prior to drilling out every casing shoe. This is additional training for the rig crew that exceeds the requirements of the CFR Title 43 Part 3170.

### **Procedures**

1. XTO Energy will use this document for our break testing plan for New Mexico Delaware basin. The summary below will be referenced in the APD or Sundry Notice and receive approval prior to implementing this variance.
2. XTO Energy will perform BOP break testing on multi-wells pads where multiple intermediate sections can be drilled and cased within the 21-day BOP test window.
  - a. A full BOP test will be conducted on the first well on the pad.
  - b. The first intermediate hole section drilled on the pad will be the deepest. All of the remaining hole sections will be the same depth or shallower.
    - i. Our Lower WC targets set the intermediate casing shoe no deeper than the Wolfcamp B.
    - ii. Our Upper WC targets set the intermediate casing shoe shallower than the Wolfcamp B.
  - c. A Full BOP test will be required if the intermediate hole section being drilled has a MASP over 5M.
  - d. A full BOP test will be required prior to drilling any production hole.
3. After performing a complete BOP test on the first well, the intermediate hole section will be drilled and cased, two breaks would be made on the BOP equipment.
  - a. Between the HCV valve and choke line connection
  - b. Between the BOP quick connect and the wellhead
4. The BOP is then lifted and removed from the wellhead by a hydraulic system.
5. After skidding to the next well, the BOP is moved to the wellhead by the same hydraulic system and installed.
6. The connections mentioned in 3a and 3b will then be reconnected.
7. Install test plug into the wellhead using test joint or drill pipe.
8. A shell test is performed against the upper pipe rams testing the two breaks.
9. The shell test will consist of a 250 psi low test and a high test to the value submitted in the APD or Sundry (e.g. 5,000 psi or 10,000psi).
10. Function test will be performed on the following components: lower pipe rams, blind rams, and annular.

11. For a multi-well pad the same two breaks on the BOP would be made and on the next wells and steps 4 through 10 would be repeated.
12. A second break test would only be done if the intermediate hole section being drilled could not be completed within the 21 day BOP test window.

*Note: Picture below highlights BOP components that will be tested during batch operations*



### Summary

A variance is requested to **ONLY** test broken pressure seals on the BOP equipment when moving from wellhead to wellhead which is in compliance with API Standard 53. API Standard 53 states, that for pad drilling operation, moving from one wellhead to another within 21 days, pressure testing is required for pressure-containing and pressure-controlling connections when the integrity of a pressure seal is broken.

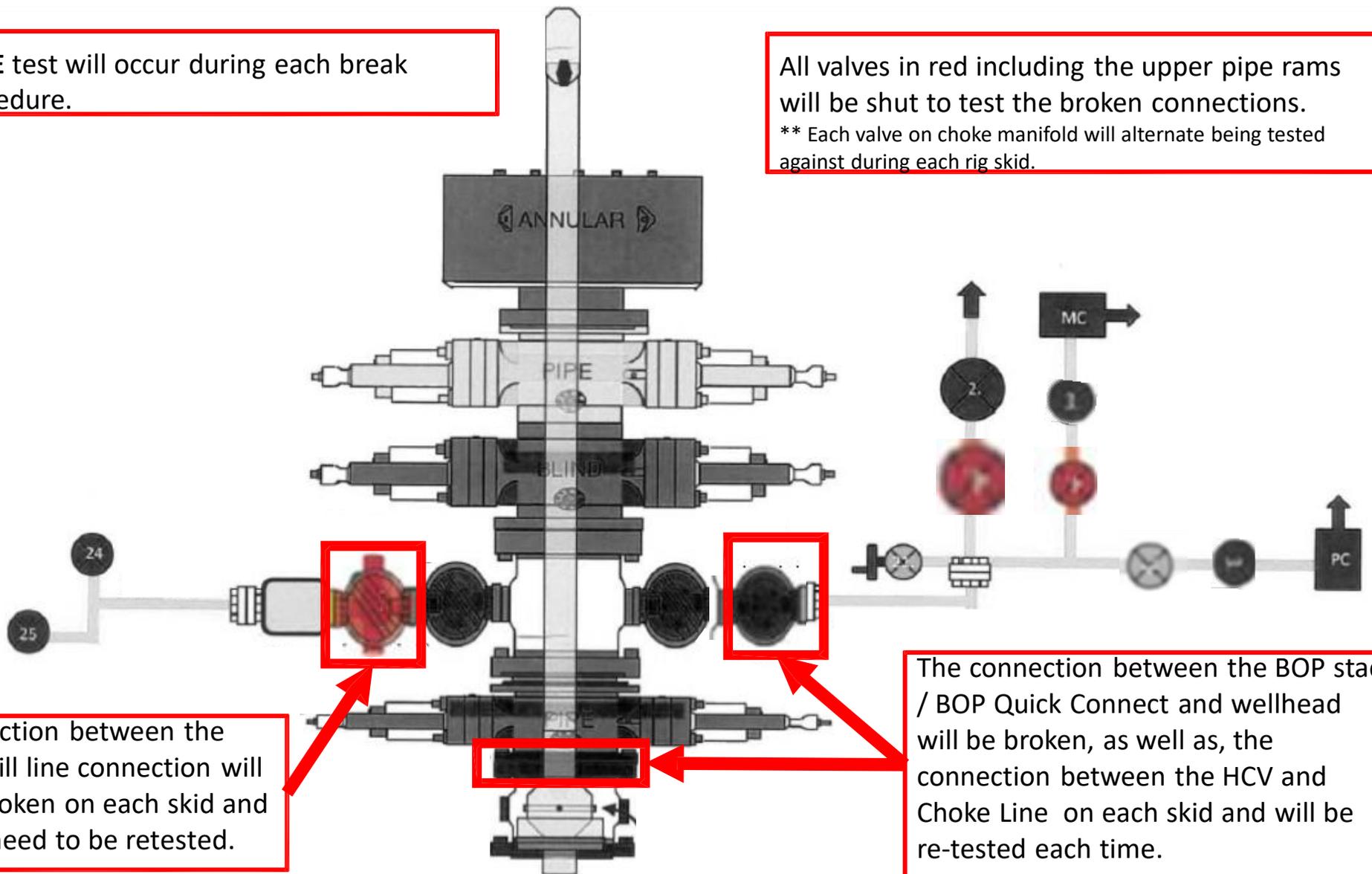
The BOP will be secured by a hydraulic carrier or cradle. The BLM will be contacted if a Well Control event occurs prior to the commencement of a BOPE Break Testing operation.

Based on discussions with the BLM on February 27th 2020 and the supporting documentation submitted to the BLM, we will request permission to **ONLY** retest broken pressure seals if the following conditions are met:

1. After a full BOP test is conducted on the first well on the pad.
2. The first intermediate hole section drilled on the pad will be the deepest. All of the remaining hole sections will be the same depth or shallower.
3. Full BOP test will be required if the intermediate hole section being drilled has a MASP over 5M.
4. Full BOP test will be required prior to drilling the production hole.

Only **ONE** test will occur during each break test procedure.

All valves in red including the upper pipe rams will be shut to test the broken connections.  
\*\* Each valve on choke manifold will alternate being tested against during each skid.



The connection between the HCV and kill line connection will **NOT** be broken on each skid and does not need to be retested.

The connection between the BOP stack / BOP Quick Connect and wellhead will be broken, as well as, the connection between the HCV and Choke Line on each skid and will be re-tested each time.

XTO respectfully requests approval to utilize a spudder rig to pre-set surface casing.

Description of Operations:

1. Spudder rig will move in to drill the surface hole and pre-set surface casing on the well.
  - a. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
  - b. The spudder rig will utilize fresh water-based mud to drill the surface hole to TD. Solids control will be handled entirely on a closed loop basis. No earth pits will be used.
2. The wellhead will be installed and tested as soon as the surface casing is cut off and WOC time has been reached.
3. A blind flange at the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with needle valves installed on two wing valves.
  - a. A means for intervention will be maintained while the drilling rig is not over the well.
4. Spudder rig operations are expected to take 2-3 days per well on the pad.
5. The BLM will be contacted and notified 24 hours prior to commencing spudder rig operations.
6. Drilling Operations will begin with a larger rig and a BOP stack equal to or greater than the pressure rating that was permitted will be nipped up and tested on the wellhead before drilling operations resume on each well.
  - a. The larger rig will move back onto the location within 90 days from the point at which the wells are secured and the spudder rig is moved off location.
  - b. The BLM will be notified 24 hours before the larger rig moves back on the pre-set locations
7. XTO will have supervision on the rig to ensure compliance with all BLM and NMOCD regulations and to oversee operations.
8. Once the rig is removed, XTO will secure the wellhead area by placing a guard rail around the cellar area.

## XTO Permian Operating, LLC Offline Cementing Variance Request

XTO requests the option to cement the surface and intermediate casing strings offline as a prudent batch drilling efficiency of acreage development.

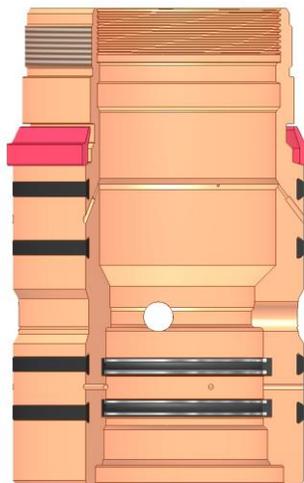
### 1. Cement Program

No changes to the cement program will take place for offline cementing.

### 2. Offline Cementing Procedure

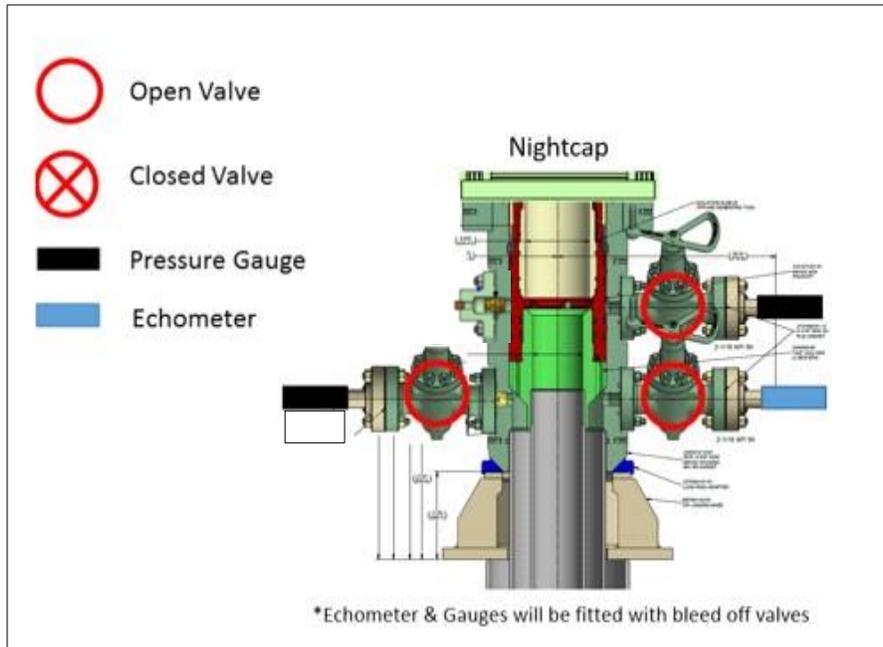
The operational sequence will be as follows. If a well control event occurs, the BLM will be contacted for approval prior to conducting offline cementing operations.

1. Run casing as per normal operations. While running casing, conduct negative pressure test and confirm integrity of the float equipment (float collar and shoe)
2. Land casing with mandrel
3. Fill pipe with kill weight fluid, do not circulate through floats and confirm well is static
4. Set annular packoff shown below and pressure test to confirm integrity of the seal. Pressure ratings of wellhead components and valves is 5,000 psi.
5. After confirmation of both annular barriers and internal barriers, nipple down BOP and install cap flange.
  - a. If any barrier fails to test, the BOP stack will not be nipped down until after the cement job is completed with cement 500ft above the highest formation capable of flow with kill weight mud above or after it has achieved 50-psi compressive strength if kill weight fluid cannot be verified.



Annular packoff with both external and internal seals

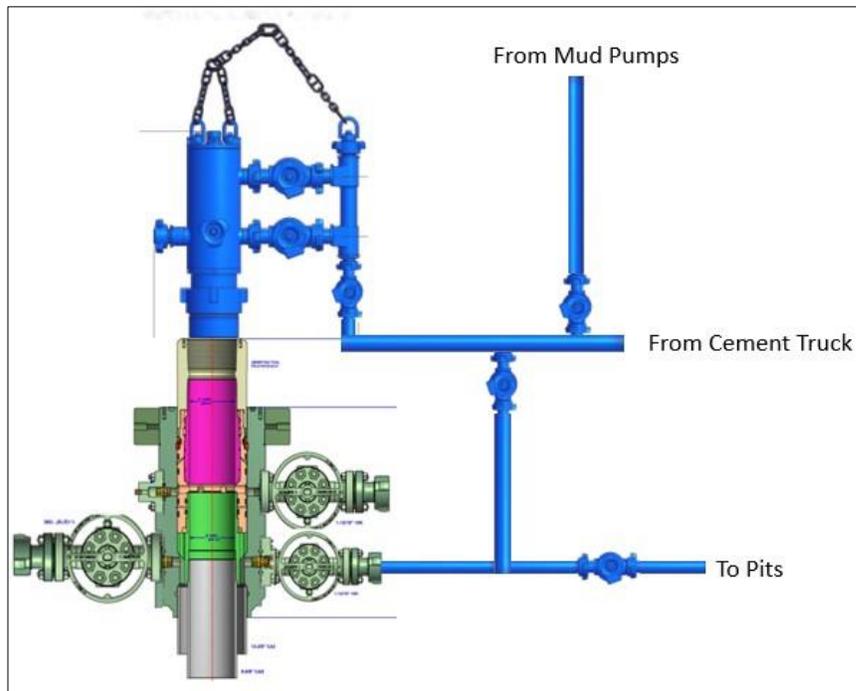
## XTO Permian Operating, LLC Offline Cementing Variance Request



Wellhead diagram during skidding operations

6. Skid rig to next well on pad.
7. Confirm well is static before removing cap flange, flange will not be removed and offline cementing operations will not commence until well is under control. If well is not static, casing outlet valves will provide access to both the casing ID and annulus. Rig or third party pump truck will kill well prior to cementing or nipping up for further remediation.
  - a. Well Control Plan
    - i. The Drillers Method will be the primary well control method to regain control of the wellbore prior to cementing, if wellbore conditions do not permit the drillers method other methods of well control may be used
    - ii. Rig pumps or a 3<sup>rd</sup> party pump will be tied into the upper casing valve to pump down the casing ID
    - iii. A high pressure return line will be rigged up to lower casing valve and run to choke manifold to control annular pressure
    - iv. Once influx is circulated out of the hole, kill weight mud will be circulated
    - v. Well will be confirmed static
    - vi. Once confirmed static, cap flange will be removed to allow for offline cementing operations to commence
8. Install offline cement tool
9. Rig up cement equipment

### XTO Permian Operating, LLC Offline Cementing Variance Request



Wellhead diagram during offline cementing operations

10. Circulate bottoms up with cement truck
  - a. If gas is present on bottoms up, well will be shut in and returns rerouted through gas buster to handle entrained gas
  - b. Max anticipated time before circulating with cement truck is 6 hrs
11. Perform cement job taking returns from the annulus wellhead valve
12. Confirm well is static and floats are holding after cement job
13. Remove cement equipment, offline cement tools and install night cap with pressure gauge for monitoring.

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<https://www.emnrd.nm.gov/ocd/contact-us>

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

CONDITIONS

Action 448751

**CONDITIONS**

Operator: XTO PERMIAN OPERATING LLC. 6401 HOLIDAY HILL ROAD MIDLAND, TX 79707	OGRID: 373075
	Action Number: 448751
	Action Type: [C-103] NOI Change of Plans (C-103A)

**CONDITIONS**

Created By	Condition	Condition Date
ward.rikala	Operator must comply with all of the R-111-Q requirements.	5/16/2025
ward.rikala	Administrative order required for non-standard spacing unit prior to production.	5/16/2025
ward.rikala	Administrative order required for non-standard location prior to production.	5/16/2025
ward.rikala	Any previous COA's not addressed within the updated COA's still apply.	5/16/2025