Form 3160-3
(June 2015)

NMOCD-REC'D 8/27/2020

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

**APPLICATION FOR PERMIT TO DRILL OR REENTER**

5. Lease Serial No.
NMNM017225A

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☐ Oil Well ☑ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.
CHEESECAKE 32 FEDERAL
121H

2. Name of Operator
XTO ENERGY INCORPORATED

9. API Well No.
30-015-47369

3a. Address
22777 Springwoods Village Parkway, Spring, TX 77389

3b. Phone No. *(include area code)*
(432) 620-6700

10. Field and Pool, or Exploratory
PURPLE SAGE WOLFCAMP GAS/PURP

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface LOT 5 / 170 FSL / 325 FEL / LAT 32.000587 / LONG -103.91303
At proposed prod. zone LOT 1 / 330 FSL / 200 FEL / LAT 32.001035 / LONG -103.895434

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 31/T26S/R30E/NMP

14. Distance in miles and direction from nearest town or post office*

12. County or Parish
EDDY

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
330 feet

16. No of acres in lease
969.15

17. Spacing Unit dedicated to this well
258.0

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
30 feet

19. Proposed Depth
10574 feet / 15709 feet

20. BLM/BIA Bond No. in file
FED: UTB000138

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
2919 feet

22. Approximate date work will start*
09/30/2020

23. Estimated duration
45 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature
(Electronic Submission)

Name *(Printed/Typed)*
CASSIE EVANS / Ph: (432) 620-6700

Date
05/26/2020

Title
Regulatory Analyst

Approved by *(Signature)*
(Electronic Submission)

Name *(Printed/Typed)*
Cody Layton / Ph: (575) 234-5959

Date
08/07/2020

Title
Assistant Field Manager Lands & Minerals

Office
Carlsbad Field Office

Application approval 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.
Conditions of approval, if any, are attached.

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.

Entered 8/27/2020 - JAG

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

**Approval Date: 08/07/2020**

## INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws 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, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: 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 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., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. 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 Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.



(Continued on page 3)

## Additional Operator Remarks

### Location of Well

0. SHL: LOT 5 / 170 FSL / 325 FEL / TWSP: 26S / RANGE: 30E / SECTION: 31 / LAT: 32.000587 / LONG: -103.91303 ( TVD: 0 feet, MD: 0 feet )

PPP: LOT 4 / 330 FSL / 330 FWL / TWSP: 26S / RANGE: 30E / SECTION: 32 / LAT: 32.001028 / LONG: -103.910917 ( TVD: 10574 feet, MD: 10909 feet )

BHL: LOT 1 / 330 FSL / 200 FEL / TWSP: 26S / RANGE: 30E / SECTION: 32 / LAT: 32.001035 / LONG: -103.895434 ( TVD: 10574 feet, MD: 15709 feet )

## BLM Point of Contact

Name: Jordan Navarrette

Title: LIE

Phone: (575) 234-5972

Email: jnavarrette@blm.gov

**Review and Appeal Rights**

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

# PECOS DISTRICT
# SURFACE USE
# CONDITIONS OF APPROVAL

| | |
|---|---|
| OPERATOR'S NAME: | XTO ENERGY INCORPORATED |
| WELL NAME & NO.: | CHEESECAKE 32 FEDERAL 121H |
| SURFACE HOLE FOOTAGE: | 170'/S & 325'/E |
| BOTTOM HOLE FOOTAGE | 330'/S & 200'/E |
| LOCATION: | Section 31, T.26 S., R.30 E., NMP |
| COUNTY: | Eddy County, New Mexico |

## TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

## I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

## II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

## III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

## IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult

with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

## V. SPECIAL REQUIREMENT(S)

**Desert Heronries:**
Surface disturbance will not be allowed within up to 200 meters of active heronries or by delaying activity for up to 120 days, or a combination of both.

Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

The whole North and East side of the location need a three-strand fence installed on the approved disturbance.

# VI. CONSTRUCTION

## A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the  at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

## B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

## C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

## D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the .

## E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which

creates the smallest possible surface disturbance, consistent with safety and operational needs.

## F. EXCLOSURE FENCING (CELLARS & PITS)

**Exclosure Fencing**
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

## G. ON LEASE ACCESS ROADS

**Road Width**
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

**Surfacing**
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

**Crowning**
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

**Ditching**
Ditching shall be required on both sides of the road.

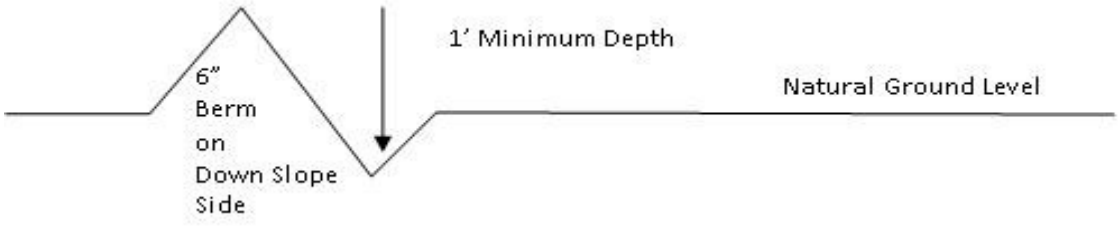
**Turnouts**

Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

**Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, leadoff ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.




All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

**Cattle guards**

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

**Fence Requirement**

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

**Public Access**

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

**Construction Steps**

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

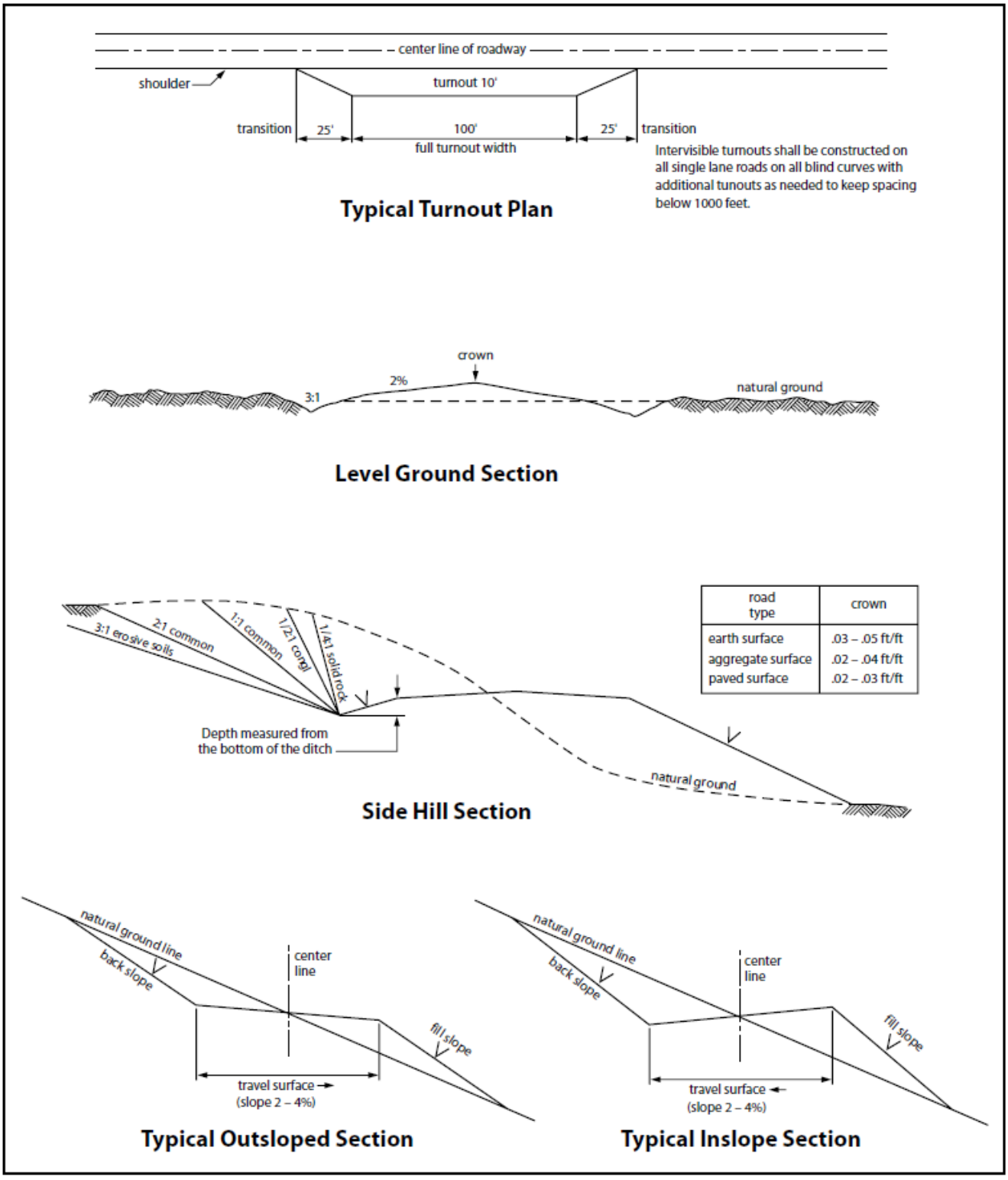



Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

# VII. PRODUCTION (POST DRILLING)

## A. WELL STRUCTURES & FACILITIES

**Placement of Production Facilities**
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

**Exclosure Netting (Open-top Tanks)**
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

**Chemical and Fuel Secondary Containment and Exclosure Screening**
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

**Open-Vent Exhaust Stack Exclosures**
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone*.) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

**Containment Structures**

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

**Painting Requirement**
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

## VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

## IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

**Seed Mixture 1 for Loamy Sites**

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed shall be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed shall be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture shall be evenly and uniformly planted over the disturbed area (small/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed shall be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre shall be doubled. The seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

| Species | lb/acre |
|---|---|
| Plains lovegrass (Eragrostis intermedia) | 0.5 |
| Sand dropseed (Sporobolus cryptandrus) | 1.0 |
| Sideoats grama (Bouteloua curtipendula) | 5.0 |
| Plains bristlegrass (Setaria macrostachya) | 2.0 |

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

# PECOS DISTRICT
# DRILLING CONDITIONS OF APPROVAL

| | |
|---|---|
| **OPERATOR'S NAME:** | **XTO Energy, Inc.** |
| **LEASE NO.:** | **NMNM-017225A** |
| **WELL NAME & NO.:** | **Cheesecake 32 Federal 121H** |
| **SURFACE HOLE FOOTAGE:** | **0170' FSL & 0325' FEL** |
| **BOTTOM HOLE FOOTAGE** | **0330' FSL & 0200' FEL Sec. 32, T.26 S., R.30 E.** |
| **LOCATION:** | **Section 31, T.26 S., R.30 E., NMPM** |
| **COUNTY:** | **Eddy County, New Mexico** |

COA

| | | | |
|---|---|---|---|
| H2S | ○ Yes | ◉ No | |
| Potash | ◉ None | ○ Secretary | ○ R-111-P |
| Cave/Karst Potential | ○ Low | ○ Medium | ◉ High |
| Cave/Karst Potential | ○ Critical | | |
| Variance | ○ None | ◉ Flex Hose | ○ Other |
| Wellhead | ○ Conventional | ◉ Multibowl | ○ Both |
| Other | ☐ 4 String Area | ☐ Capitan Reef | ☐ WIPP |
| Other | ☑ Fluid Filled | ☐ Cement Squeeze | ☐ Pilot Hole |
| Special Requirements | ☐ Water Disposal | ☐ COM | ☐ Unit |

**High Cave/Karst**
**Possibility of water flows in the Salado and Castile.**
**Possibility of lost circulation in the Rustler, Red Beds, and Delaware.**
**Abnormal pressure is possible in the 3rd Bone Spring and all subsequent formations.**

## A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

## B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **630** feet (a minimum of 70 feet (Eddy County) into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **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.

**9-5/8'' Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.**

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

    - Cement to surface. If cement does not circulate see 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.**

    ❖ In High Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

    - Cement should tie-back **200 feet** into the previous casing. Operator shall provide method of verification.

## 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).

2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. 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 OOGO2.III.A.2.i must be followed.

**BOP Break Testing Variance**

- Shelll testing is not approved for any portion of the hole with a MASP of 5000 psi or greater.
- 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 prior to the commencement of any BOP Break Testing operations.
- A full BOP test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOP test will be required.

# 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)

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (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
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for 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 intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. 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.

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

5. 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.

6. 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.
7. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

    b. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer.

    c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

    d. The results of the test shall be reported to the appropriate BLM office.

e. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

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.

**JAM 072720**

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

# Operator Certification Data Report

08/07/2020

## Operator Certification

*I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.*

**NAME:** Cassie Evans **Signed on:** 05/20/2020

**Title:** Regulatory Analyst

**Street Address:** 6401 Holiday Hill Road, Bldg 5

**City:** Midland **State:** TX **Zip:** 79707

**Phone:** (432)218-3671

**Email address:** cassie_evans@xtoenergy.com

## Field Representative

**Representative Name:**

**Street Address:**

**City:** **State:** **Zip:**

**Phone:**

**Email address:**

**APD ID:** 10400057285 **Submission Date:** 05/26/2020

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** CHEESECAKE 32 FEDERAL **Well Number:** 121H

**Well Type:** CONVENTIONAL GAS WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

## Section 1 - Geologic Formations

| Formation ID | Formation Name | Elevation | True Vertical Depth | Measured Depth | Lithologies | Mineral Resources | Producing Formation |
|---|---|---|---|---|---|---|---|
| 741335 | PERMIAN | 2919 | 0 | 0 | OTHER : Quaternary | NONE | N |
| 741336 | RUSTLER | 2739 | 180 | 180 | SILTSTONE | USEABLE WATER | N |
| 741337 | TOP SALT | 2170 | 749 | 749 | SALT | NONE | N |
| 741338 | BASE OF SALT | -44 | 2963 | 2963 | SALT | NONE | N |
| 741339 | DELAWARE | -241 | 3160 | 3160 | SANDSTONE | NATURAL GAS, OIL, OTHER : PRODUCED WATER | N |
| 741340 | BONE SPRING | -4032 | 6951 | 6951 | SANDSTONE | NATURAL GAS, OIL, OTHER : PRODUCED WATER | N |
| 741341 | BONE SPRING 1ST | -5010 | 7929 | 7929 | SANDSTONE | NATURAL GAS, OIL, OTHER : PRODUCED WATER | N |
| 741342 | BONE SPRING 2ND | -5658 | 8577 | 8577 | SANDSTONE | NATURAL GAS, OIL, OTHER : PRODUCED WATER | N |
| 741343 | BONE SPRING 3RD | -6901 | 9820 | 9820 | SANDSTONE | NATURAL GAS, OIL, OTHER : PRODUCED WATER | N |
| 741344 | WOLFCAMP | -7898 | 10817 | 10817 | SHALE | NATURAL GAS, OIL, OTHER, USEABLE WATER : PRODUCED WATER | Y |

## Section 2 - Blowout Prevention

**Pressure Rating (PSI):** 5M **Rating Depth:** 10574

**Equipment:** The blow out preventer equipment (BOP) for this well consists of a 13-5/8 minimum 5M Hydril and a 13-5/8 minimum 5M Double Ram BOP. MASP should not exceed 4162 psi. A. Starting Head: 13-5/8 5M top flange x 13-3/8 SOW bottom B. Tubing Head: 13-5/8 5M bottom flange x 7-1/16 10M top flange. Wellhead will be installed by manufacturers representatives. Manufacturer will monitor welding process to ensure appropriate temperature of seal. Manufacturer will witness installation of test plug for initial test. Operator will test the 9-5/8" casing to 70% of casing burst before drilling out.
**Requesting Variance?** YES

**Variance request:** XTO requests a variance to allow use of a flex hose as the choke line from the BOP to the Choke Manifold. If this hose is used, a copy of the manufacturer's certification and pressure test chart will be kept on the rig. Attached is an example of a certification and pressure test chart. The manufacturer does not require anchors. ONLY test broken pressure seals on the BOP equipment per the attached Approval to utilize a spudder rig to pre-set surface casing per the attached Batch drill this well if necessary. In doing so, XTO will set each casing string and ensure that the well is cemented properly and the well is static. With floats holding, no pressure on the csg annulus, and the installation of a 10K TA

cap as per GE recommendations, XTO will contact the BLM to skid the rig to drill the remaining wells on the pad. Once surface and intermediate strings are all completed, XTO will begin drilling the production hole on each of the wells.
**Testing Procedure:** All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nippling up on the 13-5/8 5M bradenhead and flange, the BOP test will be limited to 5000 psi. When nippling up on the 9-5/8, the BOP will be tested to a minimum of 5000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 5M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested each day.

**Choke Diagram Attachment:**

Cheesecake_32_Fed_5MCM_20200520105007.pdf

**BOP Diagram Attachment:**

Cheesecake_32_Fed_5MBOP_20200520105018.pdf

Cheesecake_32_Fed_MBD_20200520105055.pdf

## Section 3 - Casing

| Casing ID | String Type | Hole Size | Csg Size | Condition | Standard | Tapered String | Top Set MD | Bottom Set MD | Top Set TVD | Bottom Set TVD | Top Set MSL | Bottom Set MSL | Calculated casing length MD | Grade | Weight | Joint Type | Collapse SF | Burst SF | Joint SF Type | Joint SF | Body SF Type | Body SF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SURFACE | 17.5 | 13.375 | NEW | API | N | 0 | 630 | 0 | 630 | 2919 | 2289 | 630 | J-55 | 54.5 | ST&C | 4.01 | 1.23 | DRY | 17 | DRY | 17 |
| 2 | INTERMEDIATE | 12.25 | 9.625 | NEW | API | N | 0 | 9760 | 0 | 9760 | 2919 | -6841 | 9760 | L-80 | 40 | LT&C | 1.37 | 1.38 | DRY | 1.86 | DRY | 1.86 |
| 3 | PRODUCTION | 8.75 | 5.5 | NEW | API | N | 0 | 15708 | 0 | 10574 | 2919 | -7655 | 15708 | P-110 | 17 | BUTT | 1.15 | 1.12 | DRY | 2.65 | DRY | 2.65 |

**Casing Attachments**

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** CHEESECAKE 32 FEDERAL **Well Number:** 121H

**Casing Attachments**

**Casing ID:** 1 **String Type:** SURFACE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Cheesecake_32_FED_121H_Csg_20200520123939.pdf

**Casing ID:** 2 **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Cheesecake_32_FED_121H_Csg_20200520124125.pdf

**Casing ID:** 3 **String Type:** PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Cheesecake_32_FED_121H_Csg_20200520124440.pdf

## Section 4 - Cement

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** CHEESECAKE 32 FEDERAL **Well Number:** 121H

| String Type | Lead/Tail | Stage Tool Depth | Top MD | Bottom MD | Quantity(sx) | Yield | Density | Cu Ft | Excess% | Cement type | Additives |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SURFACE | Lead | | 0 | 630 | 660 | 1.32 | 14.8 | 871.2 | 100 | Class C | 2% CaCl |
| INTERMEDIATE | Lead | | 0 | 9760 | 2090 | 2.12 | 12.2 | 4430.8 | 65 | Class C | 2% CaCl |
| INTERMEDIATE | Tail | | 0 | 9760 | 500 | 1.19 | 14.5 | 595 | 65 | Class C | 2% CaCl |
| PRODUCTION | Lead | | 0 | 15708 | 30 | 2.69 | 10.5 | 80.7 | 30 | NeoCem | none |
| PRODUCTION | Tail | | 0 | 15708 | 1160 | 1.62 | 13.2 | 1879.2 | 30 | Versacem | none |

## Section 5 - Circulating Medium

**Mud System Type:** Closed

**Will an air or gas system be Used?** NO

**Description of the equipment for the circulating system in accordance with Onshore Order #2:**

**Diagram of the equipment for the circulating system in accordance with Onshore Order #2:**

**Describe what will be on location to control well or mitigate other conditions:** The necessary mud products for weight addition a fluid loss control will be on location at all times.

**Describe the mud monitoring system utilized:** A Pason or Totco will be used to detect changes in loss or gain of mud volumes.

## Circulating Medium Table

| Top Depth | Bottom Depth | Mud Type | Min Weight (lbs/gal) | Max Weight (lbs/gal) | Density (lbs/cu ft) | Gel Strength (lbs/100 sqft) | PH | Viscosity (CP) | Salinity (ppm) | Filtration (cc) | Additional Characteristics |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 630 | OTHER : FW/Native | 8.4 | 8.8 | | | | | | | 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 hrs to determine: density, viscosity, strength, filtration and pH as necessary. Solids |

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** CHEESECAKE 32 FEDERAL **Well Number:** 121H

| Top Depth | Bottom Depth | Mud Type | Min Weight (lbs/gal) | Max Weight (lbs/gal) | Density (lbs/cu ft) | Gel Strength (lbs/100 sqft) | PH | Viscosity (CP) | Salinity (ppm) | Filtration (cc) | Additional Characteristics |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | control equipment will be used to operate as a closed loop system. |
| 630 | 9760 | OIL-BASED MUD | 8.4 | 8.9 | | | | | | | 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 hrs to determine: density, viscosity, strength, filtration and pH as necessary. Solids control equipment will be used to operate as a closed loop system. |
| 9760 | 10574 | OIL-BASED MUD | 11.5 | 12 | | | | | | | 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 hrs to determine: density, viscosity, strength, filtration and pH as necessary. Solids control equipment will be used to operate as a closed loop system. |

## Section 6 - Test, Logging, Coring

**List of production tests including testing procedures, equipment and safety measures:**

Mud Logger: Mud Logging Unit (2 man) below intermediate casing. Open hole logging will include quad combo.

**List of open and cased hole logs run in the well:**

GAMMA RAY LOG,CEMENT BOND LOG,MUD LOG/GEOLOGICAL LITHOLOGY LOG,DIRECTIONAL SURVEY,

**Coring operation description for the well:**

No coring will take place on this well

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 6488 **Anticipated Surface Pressure:** 4161

**Anticipated Bottom Hole Temperature(F):** 160

**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO

**Describe:**

**Contingency Plans geoharzards description:**

**Operator Name:** XTO ENERGY INCORPORATED

**Well Name:** CHEESECAKE 32 FEDERAL **Well Number:** 121H

**Contingency Plans geohazards attachment:**

**Hydrogen Sulfide drilling operations plan required?** YES

**Hydrogen sulfide drilling operations plan:**

Cheesecake_32_Fed_H2S_Plan_20200520132415.pdf

Cheesecake_32_Fed_H2S_Dia_20200520132425.pdf

## Section 8 - Other Information

**Proposed horizontal/directional/multi-lateral plan submission:**

Cheesecake_32_FED_121H_DD_20200520132450.pdf

**Other proposed operations facets description:**

The surface fresh water sands will be protected by setting 13-3/8 inch casing @ 630' (119' above the salt) and circulating cement back to surface. The salt will be isolated by setting 9-5/8 inch casing at 9760' and circulating cement to surface. An 8-3/4 inch curve and 8-1/2 inch lateral hole will be drilled to MD/TD and 5-1/2 inch casing will be set at TD and cemented back up to the 9-5/8 inch casing shoe.

XTO requests to utilize centralizers only in the curve after the KOP and only a minimum of one every other joint.
9-5/8" Collapse analyzed using 50% evacuation based on regional experience.
5-1/2 tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35

**Other proposed operations facets attachment:**

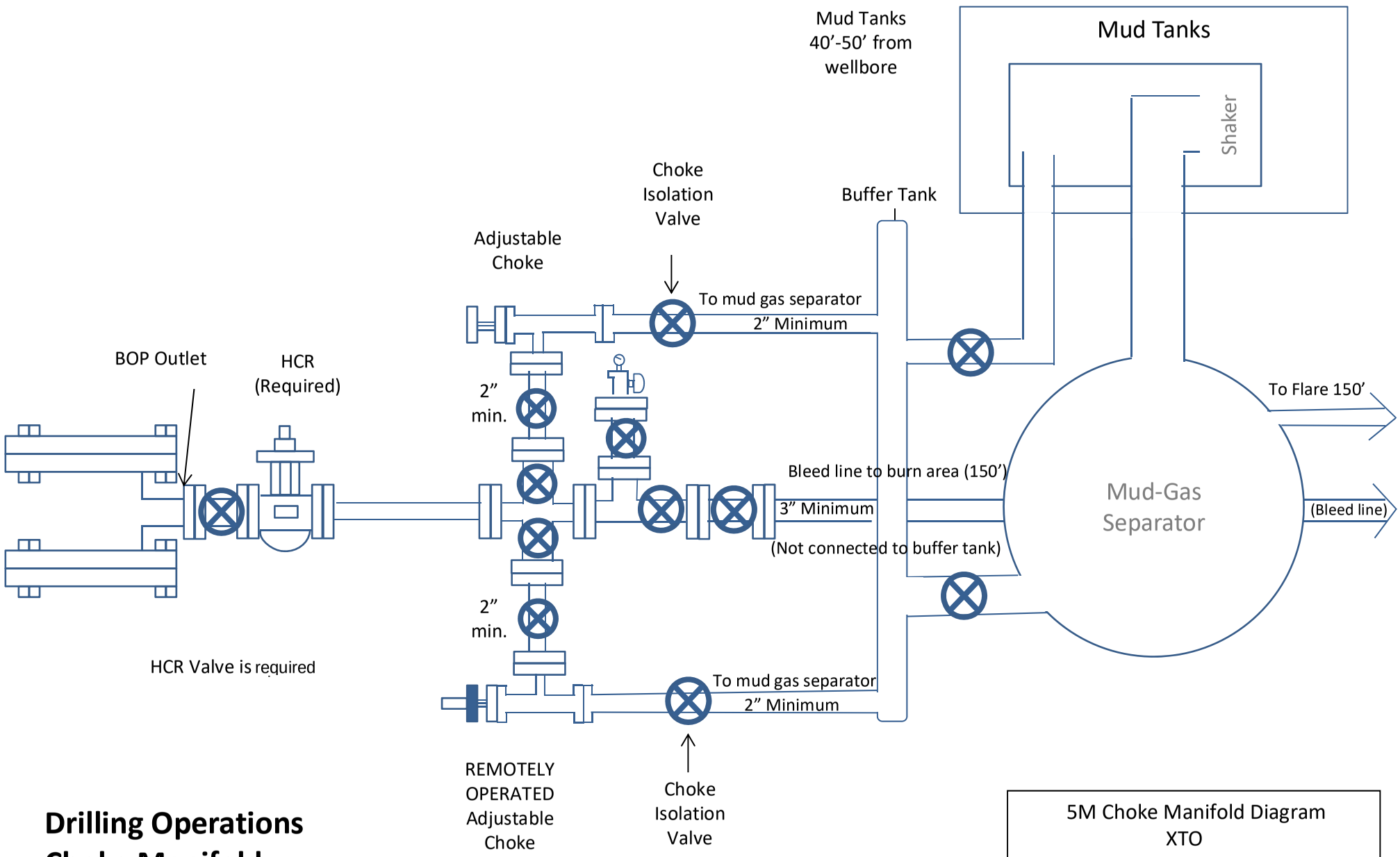
Cheesecake_32_FED_121H_GCP_20200520132531.pdf

**Other Variance attachment:**

Cheesecake_32_Fed_FH_20200520132552.pdf

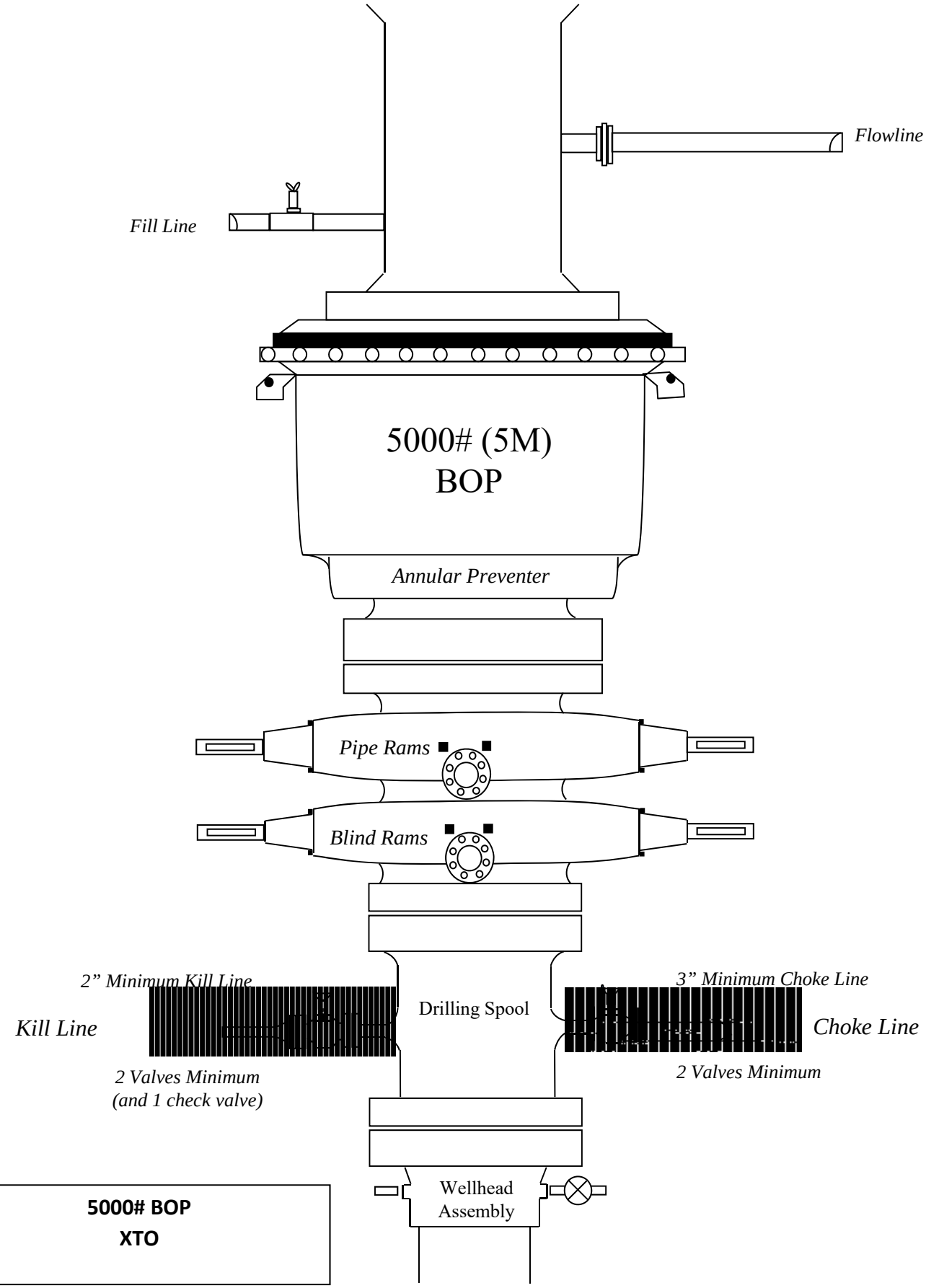
Cheesecake_32_Fed_Spudder_20200520132608.pdf

Cheesecake_32_Fed_BOP_Test_Var_20200520132619.pdf




**Drilling Operations**
**Choke Manifold**
**5M Service**

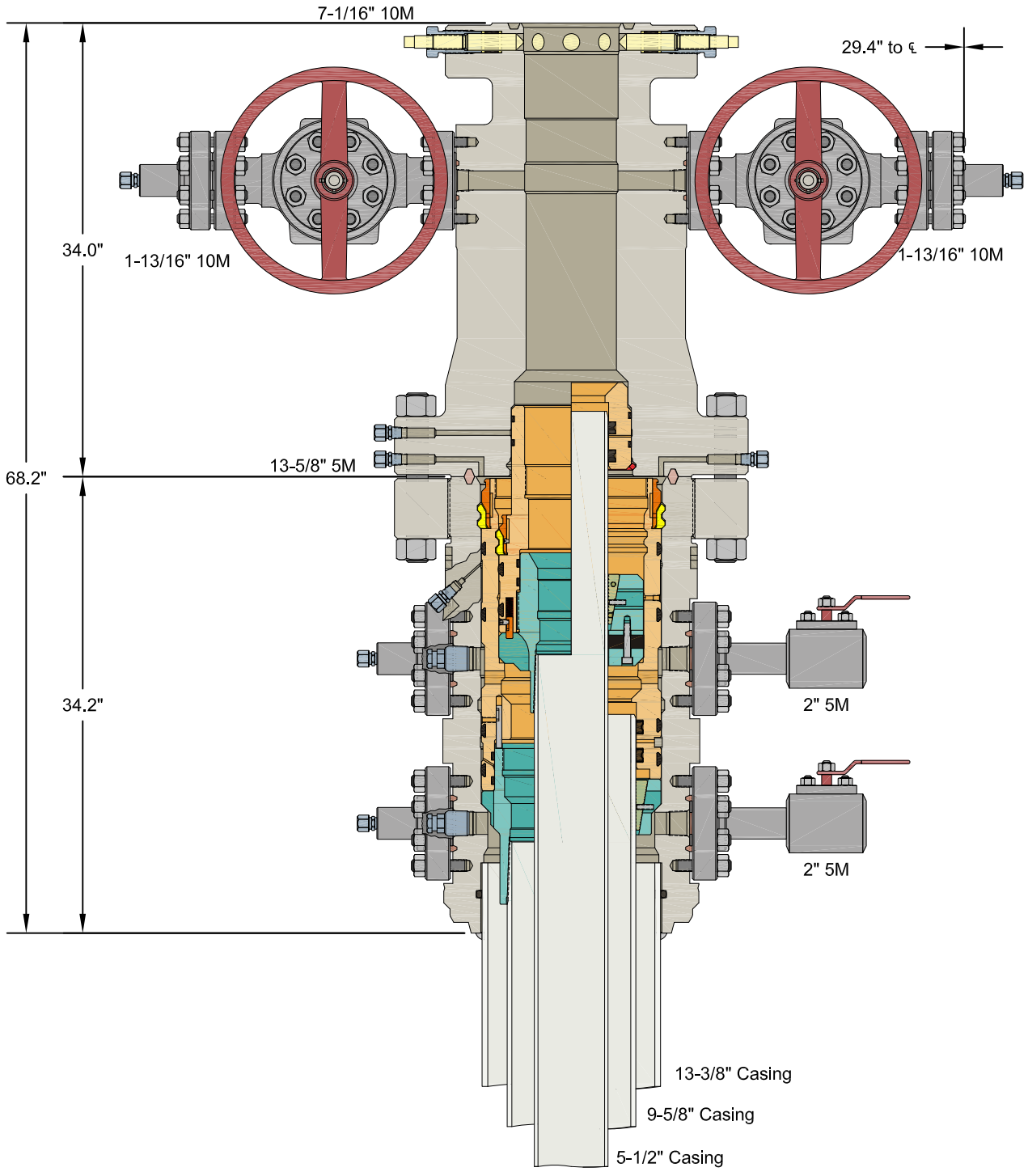
5M Choke Manifold Diagram
XTO


Flowline
Fill Line
5000# (5M)
BOP
Annular Preventer
Pipe Rams
Blind Rams
2" Minimum Kill Line
3" Minimum Choke Line
Kill Line
Drilling Spool
Choke Line
2 Valves Minimum
(and 1 check valve)
2 Valves Minimum
Wellhead
Assembly

**5000# BOP**

**XTO**

GE Oil & Gas




ALL DIMENSIONS ARE APPROXIMATE



XTO ENERGY, INC.

13-3/8" x 9-5/8" x 5-1/2" 10M RSH-2 Wellhead Assembly, With T-EBS-F Tubing Head

| | | |
|---|---|---|
| DRAWN | VJK | 16FEB17 |
| APPRV | KN | 16FEB17 |

FOR REFERENCE ONLY
DRAWING NO. 10012842

Casing Assumption Worksheet

*The surface fresh water sands will be protected by setting 13-3/8 inch casing @ 630' (119' above the salt) and circulating cement back to surface. The salt will be isolated by setting 9-5/8 inch casing at 9760' and circulating cement to surface. An 8-3/4 inch curve and 8-1/2 inch lateral hole will be drilled to MD/TD and 5-1/2 inch casing will be set at TD and cemented back up to the 9-5/8 inch casing shoe.*

| Hole Size | Depth | OD Csg | Weight | Collar | Grade | New/Used | SF Burst | SF Collapse | SF Tension |
|---|---|---|---|---|---|---|---|---|---|
| 17-1/2" | 0' – 630' | 13-3/8" | 54.5 | STC | J-55 | New | 1.23 | 4.01 | 17.00 |
| 12-1/4" | 0' – 9760' | 9-5/8" | 40 | LTC | L-80 | New | 1.38 | 1.37 | 1.86 |
| 8-3/4" x 8-1/2" | 0' – 15708' | 5-1/2" | 17 | BTC | P-110 | New | 1.12 | 1.15 | 2.65 |

XTO requests to utilize centralizers after KOP and only a minimum of one every 4th joint.
9-5/8" Collapse analyzed using 50% evacuation based on regional experience.
5-1/2" tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35

Permanent Wellhead – GE RSH Multibowl System

A. Starting Head (RSH System): 13-3/8" SOW bottom x 13-5/8" 5M top flange
B. Tubing Head: 13-5/8" 5M bottom flange x 7-1/16" 10M top flange
   · Wellhead will be installed by manufacturer's representatives.
   · Manufacturer will monitor welding process to ensure appropriate temperature of seal.
   · Manufacturer will witness installation of test plug for initial test.
   · Operator will test the 9-5/8" casing to 70% of casing burst before drilling out.

Approval to utilize a spudder rig to pre-set surface casing per the attached Description of Operations.

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

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 and the well is static. With floats holding, no pressure on the csg annulus, and the installation of a 10K TA cap as per GE recommendations, XTO will contact the BLM 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.

Casing Assumption Worksheet

*The surface fresh water sands will be protected by setting 13-3/8 inch casing @ 630' (119' above the salt) and circulating cement back to surface. The salt will be isolated by setting 9-5/8 inch casing at 9760' and circulating cement to surface. An 8-3/4 inch curve and 8-1/2 inch lateral hole will be drilled to MD/TD and 5-1/2 inch casing will be set at TD and cemented back up to the 9-5/8 inch casing shoe.*

| Hole Size | Depth | OD Csg | Weight | Collar | Grade | New/Used | SF Burst | SF Collapse | SF Tension |
|---|---|---|---|---|---|---|---|---|---|
| 17-1/2" | 0' – 630' | 13-3/8" | 54.5 | STC | J-55 | New | 1.23 | 4.01 | 17.00 |
| 12-1/4" | 0' – 9760' | 9-5/8" | 40 | LTC | L-80 | New | 1.38 | 1.37 | 1.86 |
| 8-3/4" x 8-1/2" | 0' – 15708' | 5-1/2" | 17 | BTC | P-110 | New | 1.12 | 1.15 | 2.65 |

XTO requests to utilize centralizers after KOP and only a minimum of one every 4th joint.
9-5/8" Collapse analyzed using 50% evacuation based on regional experience.
5-1/2" tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35

Permanent Wellhead – GE RSH Multibowl System

A. Starting Head (RSH System): 13-3/8" SOW bottom x 13-5/8" 5M top flange
B. Tubing Head: 13-5/8" 5M bottom flange x 7-1/16" 10M top flange
   · Wellhead will be installed by manufacturer's representatives.
   · Manufacturer will monitor welding process to ensure appropriate temperature of seal.
   · Manufacturer will witness installation of test plug for initial test.
   · Operator will test the 9-5/8" casing to 70% of casing burst before drilling out.

Approval to utilize a spudder rig to pre-set surface casing per the attached Description of Operations.

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

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 and the well is static. With floats holding, no pressure on the csg annulus, and the installation of a 10K TA cap as per GE recommendations, XTO will contact the BLM 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.

Casing Assumption Worksheet

*The surface fresh water sands will be protected by setting 13-3/8 inch casing @ 630' (119' above the salt) and circulating cement back to surface. The salt will be isolated by setting 9-5/8 inch casing at 9760' and circulating cement to surface. An 8-3/4 inch curve and 8-1/2 inch lateral hole will be drilled to MD/TD and 5-1/2 inch casing will be set at TD and cemented back up to the 9-5/8 inch casing shoe.*

| Hole Size | Depth | OD Csg | Weight | Collar | Grade | New/Used | SF Burst | SF Collapse | SF Tension |
|---|---|---|---|---|---|---|---|---|---|
| 17-1/2" | 0' – 630' | 13-3/8" | 54.5 | STC | J-55 | New | 1.23 | 4.01 | 17.00 |
| 12-1/4" | 0' – 9760' | 9-5/8" | 40 | LTC | L-80 | New | 1.38 | 1.37 | 1.86 |
| 8-3/4" x 8-1/2" | 0' – 15708' | 5-1/2" | 17 | BTC | P-110 | New | 1.12 | 1.15 | 2.65 |

XTO requests to utilize centralizers after KOP and only a minimum of one every 4th joint.
9-5/8" Collapse analyzed using 50% evacuation based on regional experience.
5-1/2" tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35

Permanent Wellhead – GE RSH Multibowl System

A. Starting Head (RSH System): 13-3/8" SOW bottom x 13-5/8" 5M top flange
B. Tubing Head: 13-5/8" 5M bottom flange x 7-1/16" 10M top flange
   · Wellhead will be installed by manufacturer's representatives.
   · Manufacturer will monitor welding process to ensure appropriate temperature of seal.
   · Manufacturer will witness installation of test plug for initial test.
   · Operator will test the 9-5/8" casing to 70% of casing burst before drilling out.

Approval to utilize a spudder rig to pre-set surface casing per the attached Description of Operations.

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

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 and the well is static. With floats holding, no pressure on the csg annulus, and the installation of a 10K TA cap as per GE recommendations, XTO will contact the BLM 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.

[redacted]

# HYDROGEN SULFIDE (H2S) CONTINGENCY PLAN

## Assumed 100 ppm ROE = 3000'

100 ppm H2S concentration shall trigger activation of this plan.

**Emergency Procedures**

In the event of a release of gas containing $H_2S$, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with $H_2S$ monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the
    - Detection of $H_2S$, and
    - Measures for protection against the gas,
    - Equipment used for protection and emergency response.

**Ignition of Gas source**

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide ($SO_2$). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever this is an ignition of the gas.

**Characteristics of $H_2S$ and $SO_2$**

| Common Name | Chemical Formula | Specific Gravity | Threshold Limit | Hazardous Limit | Lethal Concentration |
|---|---|---|---|---|---|
| **Hydrogen Sulfide** | **$H_2S$** | **1.189 Air = I** | **10 ppm** | **100 ppm/hr** | **600 ppm** |
| **Sulfur Dioxide** | **$SO_2$** | **2.21 Air = I** | **2 ppm** | **N/A** | **1000 ppm** |

**Contacting Authorities**

All XTO location personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. (Operator Name)'s response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

# CARLSBAD OFFICE – EDDY & LEA COUNTIES

3104 E. Greene St., Carlsbad, NM 88220
Carlsbad, NM 575-887-7329

**XTO PERSONNEL:**

| | |
|---|---|
| Kendall Decker, Drilling Manager | 903-521-6477 |
| Milton Turman, Drilling Superintendent | 817-524-5107 |
| Jeff Raines, Construction Foreman | 432-557-3159 |
| Toady Sanders, EH & S Manager | 903-520-1601 |
| Wes McSpadden, Production Foreman | 575-441-1147 |

**SHERIFF DEPARTMENTS:**

| | |
|---|---|
| Eddy County | 575-887-7551 |
| Lea County | 575-396-3611 |

**NEW MEXICO STATE POLICE:** 575-392-5588

**FIRE DEPARTMENTS:** 911

| | |
|---|---|
| Carlsbad | 575-885-2111 |
| Eunice | 575-394-2111 |
| Hobbs | 575-397-9308 |
| Jal | 575-395-2221 |
| Lovington | 575-396-2359 |

**HOSPITALS:** 911

| | |
|---|---|
| Carlsbad Medical Emergency | 575-885-2111 |
| Eunice Medical Emergency | 575-394-2112 |
| Hobbs Medical Emergency | 575-397-9308 |
| Jal Medical Emergency | 575-395-2221 |
| Lovington Medical Emergency | 575-396-2359 |

**AGENT NOTIFICATIONS:**

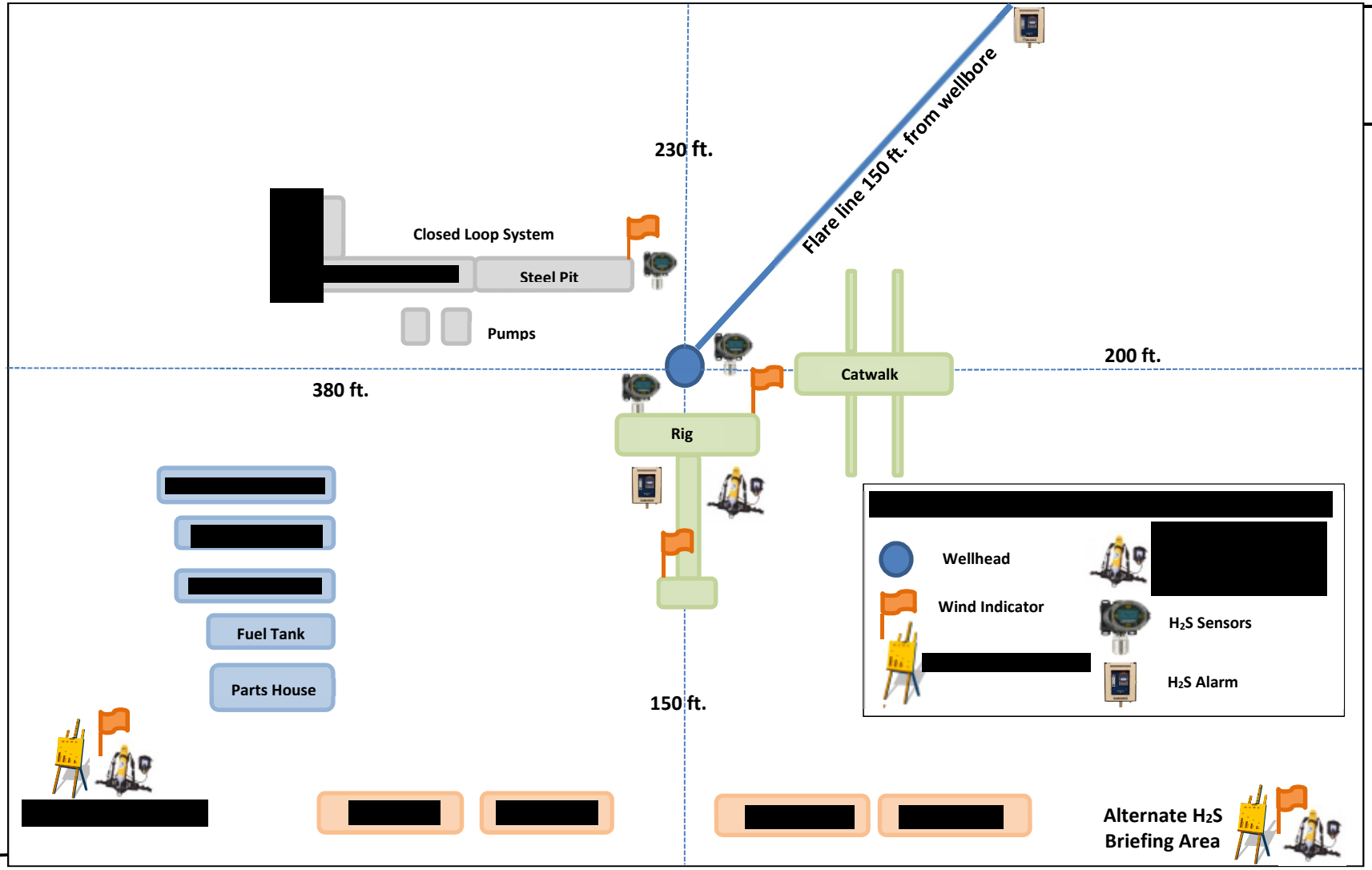
**For Lea County**:

| | |
|---|---|
| Bureau of Land Management – Hobbs | 575-393-3612 |
| New Mexico Oil Conservation Division – Hobbs | 575-393-6161 |

**For Eddy County**:

| | |
|---|---|
| Bureau of Land Management - Carlsbad | 575-234-5972 |
| New Mexico Oil Conservation Division - Artesia | 575-748-1283 |

# H2S Briefing Areas and Alarm Locations



# XTO Energy

**Eddy County, NM (NAD-27)**
**Cheesecake 32 FED**
**#121H**

**OH**

**Plan: PERMIT**

# Standard Planning Report

**27 April, 2020**

**Project:** Eddy County, NM (NAD-27)
**Site:** Cheesecake 32 FED
**Well:** #121H
**Wellbore:** OH
**Design:** PERMIT

WELL DETAILS: #121H

Rig Name:
Ref GL @ 2919.00usft
Ground Level: 2919.00

| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
|---|---|---|---|---|---|
| 0.00 | 0.00 | 364149.10 | 630440.20 | 32.0004616 | -103.9125508 |

SECTION DETAILS

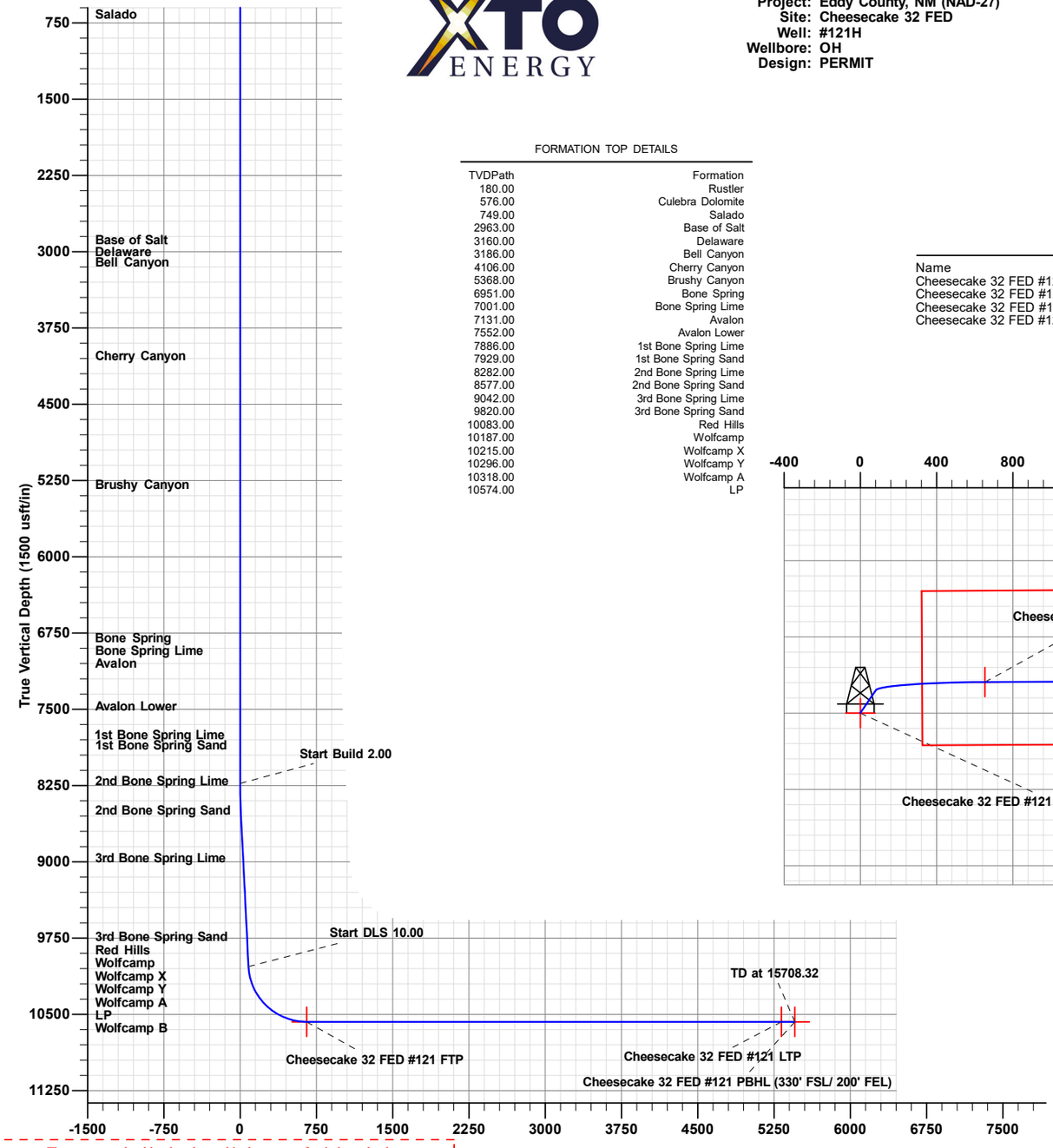
| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 8230.00 | 0.00 | 0.00 | 8230.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3 | 8479.79 | 5.00 | 34.15 | 8479.47 | 9.01 | 6.11 | 2.00 | 34.15 | 6.15 |
| 4 | 10036.88 | 5.00 | 34.15 | 10030.65 | 121.23 | 82.22 | 0.00 | 0.00 | 82.77 |
| 5 | 10908.67 | 90.00 | 89.74 | 10574.00 | 163.00 | 654.30 | 10.00 | 55.70 | 655.03 |
| 6 | 15708.32 | 90.00 | 89.74 | 10574.00 | 184.70 | 5453.90 | 0.00 | 0.00 | 5454.68 |

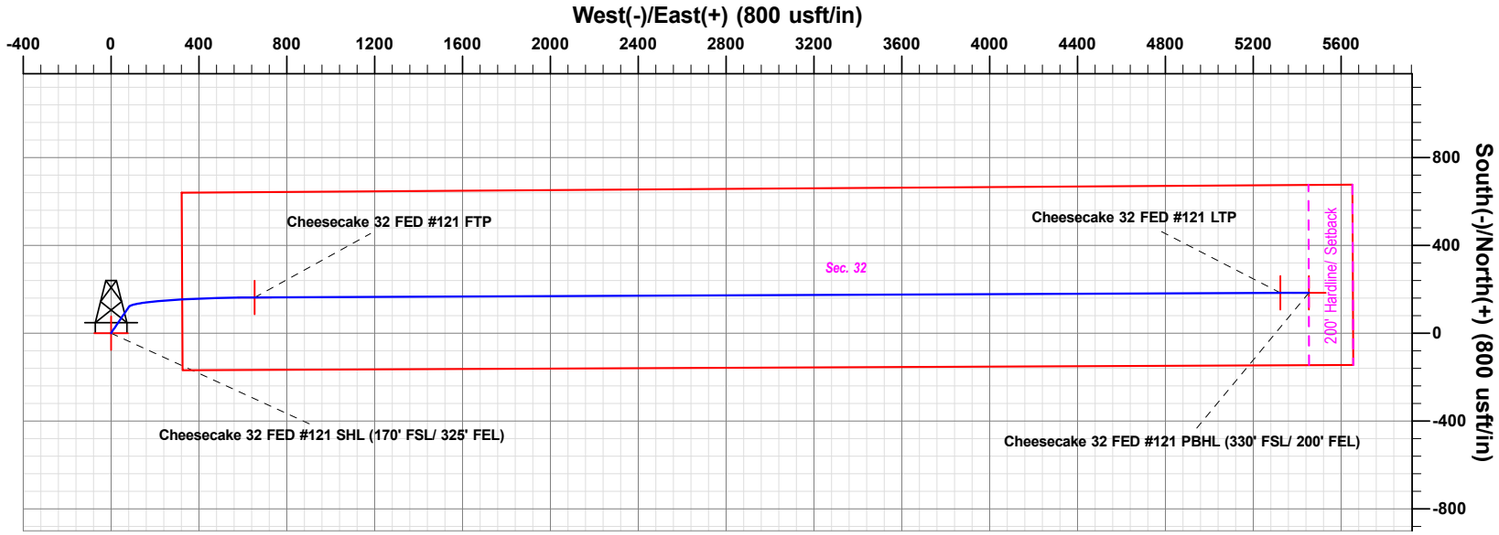
FORMATION TOP DETAILS

| TVDPath | Formation |
|---|---|
| 180.00 | Rustler |
| 576.00 | Culebra Dolomite |
| 749.00 | Salado |
| 2963.00 | Base of Salt |
| 3160.00 | Delaware |
| 3186.00 | Bell Canyon |
| 4106.00 | Cherry Canyon |
| 5368.00 | Brushy Canyon |
| 6951.00 | Bone Spring |
| 7001.00 | Bone Spring Lime |
| 7131.00 | Avalon |
| 7552.00 | Avalon Lower |
| 7886.00 | 1st Bone Spring Lime |
| 7929.00 | 1st Bone Spring Sand |
| 8282.00 | 2nd Bone Spring Lime |
| 8577.00 | 2nd Bone Spring Sand |
| 9042.00 | 3rd Bone Spring Lime |
| 9820.00 | 3rd Bone Spring Sand |
| 10083.00 | Red Hills |
| 10187.00 | Wolfcamp |
| 10215.00 | Wolfcamp X |
| 10296.00 | Wolfcamp Y |
| 10318.00 | Wolfcamp A |
| 10574.00 | LP |

DESIGN TARGET DETAILS

| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Shape |
|---|---|---|---|---|---|---|---|---|
| Cheesecake 32 FED #121 SHL (170' FSL/ 325' FEL) | 0.00 | 0.00 | 0.00 | 364149.10 | 630440.20 | 32.0004616 | -103.9125508 | Point |
| Cheesecake 32 FED #121 FTP | 10574.00 | 163.00 | 654.30 | 364312.10 | 631094.50 | 32.0009026 | -103.9104381 | Point |
| Cheesecake 32 FED #121 LTP | 10574.00 | 184.10 | 5323.90 | 364333.20 | 635764.10 | 32.0009095 | -103.8953747 | Point |
| Cheesecake 32 FED #121 PBHL (330' FSL/ 200' FEL) | 10574.00 | 184.70 | 5453.90 | 364333.80 | 635894.10 | 32.0009097 | -103.8949553 | Point |




PROJECT DETAILS: Eddy County, NM (NAD-27)

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level



Plan: PERMIT (#121H/OH)

Created By: Matthew May Date: 11:03, April 27 2020

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

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

☐ AMENDED REPORT

# WELL LOCATION AND ACREAGE DEDICATION PLAT

| [1] API Number | [2] Pool Code | [3] Pool Name |
|---|---|---|
| 30-015- | | |

| [4] Property Code | [5] Property Name | [6] Well Number |
|---|---|---|
| | CHEESECAKE 32 FED | 121H |

| [7] OGRID No. | [8] Operator Name | [9] Elevation |
|---|---|---|
| 005380 | XTO ENERGY, INC. | 2,919' |

## [10] Surface Location

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| 5 | 31 | 26S | 30E | | 170 | SOUTH | 325 | EAST | EDDY |

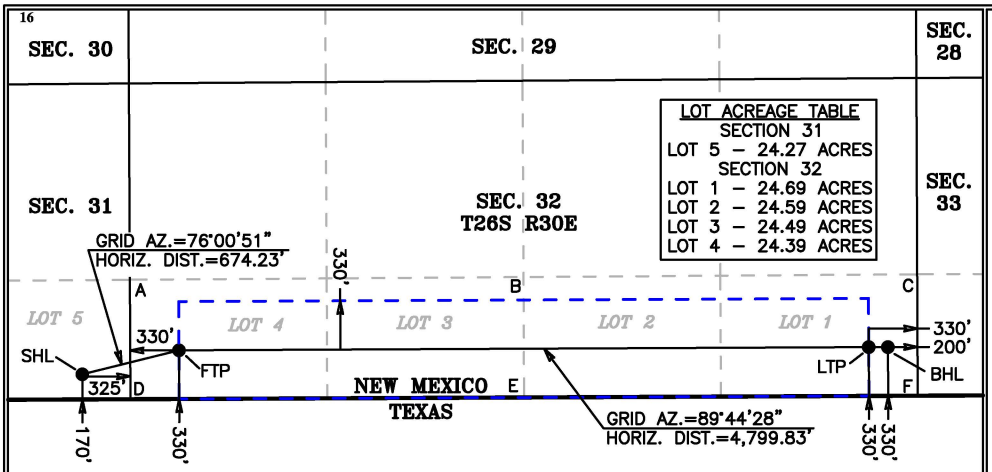
## [11] Bottom Hole Location If Different From Surface

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 32 | 26S | 30E | | 330 | SOUTH | 200 | EAST | EDDY |

| [12] Dedicated Acres | [13] Joint or Infill | [14] Consolidation Code | [15] Order No. |
|---|---|---|---|
| | | | |

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

[16]




| SHL (NAD83 NME) | | LTP (NAD83 NME) | | SHL (NAD27 NME) | | LTP (NAD27 NME) | |
|---|---|---|---|---|---|---|---|
| Y = | 364,206.4 | Y = | 364,390.4 | Y = | 364,149.1 | Y = | 364,333.2 |
| X = | 671,626.2 | X = | 676,950.2 | X = | 630,440.2 | X = | 635,764.1 |
| LAT. = | 32.000587 °N | LAT. = | 32.001035 °N | LAT. = | 32.000462 °N | LAT. = | 32.000910 °N |
| LONG. = | 103.913030 °W | LONG. = | 103.895853 °W | LONG. = | 103.912551 °W | LONG. = | 103.895375 °W |
| **FTP (NAD83 NME)** | | **BHL (NAD83 NME)** | | **FTP (NAD27 NME)** | | **BHL (NAD27 NME)** | |
| Y = | 364,369.3 | Y = | 364,391.0 | Y = | 364,312.1 | Y = | 364,333.8 |
| X = | 672,280.5 | X = | 677,080.2 | X = | 631,094.5 | X = | 635,894.1 |
| LAT. = | 32.001028 °N | LAT. = | 32.001035 °N | LAT. = | 32.000903 °N | LAT. = | 32.000910 °N |
| LONG. = | 103.910917 °W | LONG. = | 103.895434 °W | LONG. = | 103.910438 °W | LONG. = | 103.894955 °W |

| CORNER COORDINATES (NAD83 NME) | | | | CORNER COORDINATES (NAD27 NME) | | | |
|---|---|---|---|---|---|---|---|
| A - Y = | 364,846.5 N | , X = | 671,948.2 E | A - Y = | 364,789.3 N | , X = | 630,762.2 E |
| B - Y = | 364,865.0 N | , X = | 674,613.2 E | B - Y = | 364,807.8 N | , X = | 633,427.2 E |
| C - Y = | 364,883.5 N | , X = | 677,278.2 E | C - Y = | 364,826.3 N | , X = | 636,092.0 E |
| D - Y = | 364,037.9 N | , X = | 671,952.0 E | D - Y = | 363,980.6 N | , X = | 630,766.0 E |
| E - Y = | 364,049.9 N | , X = | 674,617.1 E | E - Y = | 363,992.6 N | , X = | 633,431.1 E |
| F - Y = | 364,061.9 N | , X = | 677,281.6 E | F - Y = | 364,004.7 N | , X = | 636,095.5 E |

## [17] OPERATOR CERTIFICATION

*I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.*

Signature Date

Printed Name

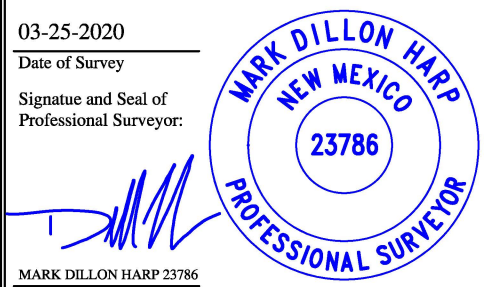
E-mail Address

## [18] SURVEYOR CERTIFICATION

*I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.*

03-25-2020
Date of Survey

Signatue and Seal of Professional Surveyor:




MARK DILLON HARP 23786
Certificate Number AW 2020020414

P:\PROJECTS\2020\2020020414-XTO-CHEESECAKE_32_STATE_121H-EDDY_CO\DWG\C-102\2020020414-XTO-CHEESECAKE_32_FED_121H_C-102.dwg

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1.13 Single User Db | **Local Co-ordinate Reference:** | Well #121H |
| **Company:** | XTO Energy | **TVD Reference:** | Ref GL @ 2919.00usft |
| **Project:** | Eddy County, NM (NAD-27) | **MD Reference:** | Ref GL @ 2919.00usft |
| **Site:** | Cheesecake 32 FED | **North Reference:** | Grid |
| **Well:** | #121H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | PERMIT | | |

**Project** Eddy County, NM (NAD-27)

| | | | |
|---|---|---|---|
| **Map System:** | US State Plane 1927 (Exact solution) | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | NAD 1927 (NADCON CONUS) | | |
| **Map Zone:** | New Mexico East 3001 | | |

**Site** Cheesecake 32 FED

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 364,149.10 usft | **Latitude:** | 32.0004616 |
| **From:** | Map | **Easting:** | 630,440.20 usft | **Longitude:** | -103.9125508 |
| **Position Uncertainty:** | 0.00 usft | **Slot Radius:** | 13-3/16 " | **Grid Convergence:** | 0.22 ° |

**Well** #121H

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.00 usft | **Northing:** | 364,149.10 usft | **Latitude:** | 32.0004616 |
| | **+E/-W** | 0.00 usft | **Easting:** | 630,440.20 usft | **Longitude:** | -103.9125508 |
| **Position Uncertainty** | | 0.00 usft | **Wellhead Elevation:** | 0.00 usft | **Ground Level:** | 2,919.00 usft |

**Wellbore** OH

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | IGRF2015 | 04/27/20 | 6.79 | 59.77 | 47,480 |

**Design** PERMIT

**Audit Notes:**

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

| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) |
|---|---|---|---|---|
| | 0.00 | 0.00 | 0.00 | 89.74 |

**Plan Sections**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 8,230.00 | 0.00 | 0.00 | 8,230.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 8,479.79 | 5.00 | 34.15 | 8,479.47 | 9.01 | 6.11 | 2.00 | 2.00 | 0.00 | 34.15 | |
| 10,036.88 | 5.00 | 34.15 | 10,030.65 | 121.23 | 82.22 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 10,908.67 | 90.00 | 89.74 | 10,574.00 | 163.00 | 654.30 | 10.00 | 9.75 | 6.38 | 55.70 | Cheesecake 32 FE |
| 15,708.32 | 90.00 | 89.74 | 10,574.00 | 184.70 | 5,453.90 | 0.00 | 0.00 | 0.00 | 0.00 | Cheesecake 32 FE |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1.13 Single User Db | **Local Co-ordinate Reference:** | Well #121H |
| **Company:** | XTO Energy | **TVD Reference:** | Ref GL @ 2919.00usft |
| **Project:** | Eddy County, NM (NAD-27) | **MD Reference:** | Ref GL @ 2919.00usft |
| **Site:** | Cheesecake 32 FED | **North Reference:** | Grid |
| **Well:** | #121H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | PERMIT | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Cheesecake 32 FED #121 SHL (170' FSL/ 325' FEL)** | | | | | | | | | |
| 100.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 180.00 | 0.00 | 0.00 | 180.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Rustler** | | | | | | | | | |
| 200.00 | 0.00 | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 300.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 400.00 | 0.00 | 0.00 | 400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 500.00 | 0.00 | 0.00 | 500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 576.00 | 0.00 | 0.00 | 576.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Culebra Dolomite** | | | | | | | | | |
| 600.00 | 0.00 | 0.00 | 600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 700.00 | 0.00 | 0.00 | 700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 749.00 | 0.00 | 0.00 | 749.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Salado** | | | | | | | | | |
| 800.00 | 0.00 | 0.00 | 800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 900.00 | 0.00 | 0.00 | 900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,000.00 | 0.00 | 0.00 | 1,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,100.00 | 0.00 | 0.00 | 1,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,200.00 | 0.00 | 0.00 | 1,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,300.00 | 0.00 | 0.00 | 1,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,400.00 | 0.00 | 0.00 | 1,400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,500.00 | 0.00 | 0.00 | 1,500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,600.00 | 0.00 | 0.00 | 1,600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,700.00 | 0.00 | 0.00 | 1,700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,800.00 | 0.00 | 0.00 | 1,800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,900.00 | 0.00 | 0.00 | 1,900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,000.00 | 0.00 | 0.00 | 2,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,100.00 | 0.00 | 0.00 | 2,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,200.00 | 0.00 | 0.00 | 2,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,300.00 | 0.00 | 0.00 | 2,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,400.00 | 0.00 | 0.00 | 2,400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,500.00 | 0.00 | 0.00 | 2,500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,600.00 | 0.00 | 0.00 | 2,600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,700.00 | 0.00 | 0.00 | 2,700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,800.00 | 0.00 | 0.00 | 2,800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,900.00 | 0.00 | 0.00 | 2,900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,963.00 | 0.00 | 0.00 | 2,963.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Base of Salt** | | | | | | | | | |
| 3,000.00 | 0.00 | 0.00 | 3,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,100.00 | 0.00 | 0.00 | 3,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,160.00 | 0.00 | 0.00 | 3,160.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Delaware** | | | | | | | | | |
| 3,186.00 | 0.00 | 0.00 | 3,186.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Bell Canyon** | | | | | | | | | |
| 3,200.00 | 0.00 | 0.00 | 3,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,300.00 | 0.00 | 0.00 | 3,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,400.00 | 0.00 | 0.00 | 3,400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,500.00 | 0.00 | 0.00 | 3,500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,600.00 | 0.00 | 0.00 | 3,600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,700.00 | 0.00 | 0.00 | 3,700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,800.00 | 0.00 | 0.00 | 3,800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,900.00 | 0.00 | 0.00 | 3,900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1.13 Single User Db | **Local Co-ordinate Reference:** | Well #121H |
| **Company:** | XTO Energy | **TVD Reference:** | Ref GL @ 2919.00usft |
| **Project:** | Eddy County, NM (NAD-27) | **MD Reference:** | Ref GL @ 2919.00usft |
| **Site:** | Cheesecake 32 FED | **North Reference:** | Grid |
| **Well:** | #121H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | PERMIT | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 4,000.00 | 0.00 | 0.00 | 4,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,100.00 | 0.00 | 0.00 | 4,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,106.00 | 0.00 | 0.00 | 4,106.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Cherry Canyon** | | | | | | | | | |
| 4,200.00 | 0.00 | 0.00 | 4,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,300.00 | 0.00 | 0.00 | 4,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,400.00 | 0.00 | 0.00 | 4,400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,500.00 | 0.00 | 0.00 | 4,500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,600.00 | 0.00 | 0.00 | 4,600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,700.00 | 0.00 | 0.00 | 4,700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,800.00 | 0.00 | 0.00 | 4,800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,900.00 | 0.00 | 0.00 | 4,900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,000.00 | 0.00 | 0.00 | 5,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,100.00 | 0.00 | 0.00 | 5,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,200.00 | 0.00 | 0.00 | 5,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,300.00 | 0.00 | 0.00 | 5,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,368.00 | 0.00 | 0.00 | 5,368.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Brushy Canyon** | | | | | | | | | |
| 5,400.00 | 0.00 | 0.00 | 5,400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,500.00 | 0.00 | 0.00 | 5,500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,600.00 | 0.00 | 0.00 | 5,600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,700.00 | 0.00 | 0.00 | 5,700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,800.00 | 0.00 | 0.00 | 5,800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,900.00 | 0.00 | 0.00 | 5,900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,000.00 | 0.00 | 0.00 | 6,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,100.00 | 0.00 | 0.00 | 6,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,200.00 | 0.00 | 0.00 | 6,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,300.00 | 0.00 | 0.00 | 6,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,400.00 | 0.00 | 0.00 | 6,400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,500.00 | 0.00 | 0.00 | 6,500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,600.00 | 0.00 | 0.00 | 6,600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,700.00 | 0.00 | 0.00 | 6,700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,800.00 | 0.00 | 0.00 | 6,800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,900.00 | 0.00 | 0.00 | 6,900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,951.00 | 0.00 | 0.00 | 6,951.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Bone Spring** | | | | | | | | | |
| 7,000.00 | 0.00 | 0.00 | 7,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,001.00 | 0.00 | 0.00 | 7,001.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Bone Spring Lime** | | | | | | | | | |
| 7,100.00 | 0.00 | 0.00 | 7,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,131.00 | 0.00 | 0.00 | 7,131.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Avalon** | | | | | | | | | |
| 7,200.00 | 0.00 | 0.00 | 7,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,300.00 | 0.00 | 0.00 | 7,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,400.00 | 0.00 | 0.00 | 7,400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,500.00 | 0.00 | 0.00 | 7,500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,552.00 | 0.00 | 0.00 | 7,552.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Avalon Lower** | | | | | | | | | |
| 7,600.00 | 0.00 | 0.00 | 7,600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,700.00 | 0.00 | 0.00 | 7,700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,800.00 | 0.00 | 0.00 | 7,800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,886.00 | 0.00 | 0.00 | 7,886.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **1st Bone Spring Lime** | | | | | | | | | |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1.13 Single User Db | **Local Co-ordinate Reference:** | Well #121H |
| **Company:** | XTO Energy | **TVD Reference:** | Ref GL @ 2919.00usft |
| **Project:** | Eddy County, NM (NAD-27) | **MD Reference:** | Ref GL @ 2919.00usft |
| **Site:** | Cheesecake 32 FED | **North Reference:** | Grid |
| **Well:** | #121H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | PERMIT | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 7,900.00 | 0.00 | 0.00 | 7,900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,929.00 | 0.00 | 0.00 | 7,929.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **1st Bone Spring Sand** | | | | | | | | | |
| 8,000.00 | 0.00 | 0.00 | 8,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,100.00 | 0.00 | 0.00 | 8,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,200.00 | 0.00 | 0.00 | 8,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,230.00 | 0.00 | 0.00 | 8,230.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,282.00 | 1.04 | 34.15 | 8,282.00 | 0.39 | 0.26 | 0.27 | 2.00 | 2.00 | 0.00 |
| **2nd Bone Spring Lime** | | | | | | | | | |
| 8,300.00 | 1.40 | 34.15 | 8,299.99 | 0.71 | 0.48 | 0.48 | 2.00 | 2.00 | 0.00 |
| 8,400.00 | 3.40 | 34.15 | 8,399.90 | 4.17 | 2.83 | 2.85 | 2.00 | 2.00 | 0.00 |
| 8,479.79 | 5.00 | 34.15 | 8,479.47 | 9.01 | 6.11 | 6.15 | 2.00 | 2.00 | 0.00 |
| 8,500.00 | 5.00 | 34.15 | 8,499.61 | 10.46 | 7.10 | 7.14 | 0.00 | 0.00 | 0.00 |
| 8,577.69 | 5.00 | 34.15 | 8,577.00 | 16.06 | 10.89 | 10.97 | 0.00 | 0.00 | 0.00 |
| **2nd Bone Spring Sand** | | | | | | | | | |
| 8,600.00 | 5.00 | 34.15 | 8,599.23 | 17.67 | 11.98 | 12.06 | 0.00 | 0.00 | 0.00 |
| 8,700.00 | 5.00 | 34.15 | 8,698.85 | 24.88 | 16.87 | 16.99 | 0.00 | 0.00 | 0.00 |
| 8,800.00 | 5.00 | 34.15 | 8,798.47 | 32.08 | 21.76 | 21.91 | 0.00 | 0.00 | 0.00 |
| 8,900.00 | 5.00 | 34.15 | 8,898.09 | 39.29 | 26.65 | 26.83 | 0.00 | 0.00 | 0.00 |
| 9,000.00 | 5.00 | 34.15 | 8,997.71 | 46.50 | 31.54 | 31.75 | 0.00 | 0.00 | 0.00 |
| 9,044.46 | 5.00 | 34.15 | 9,042.00 | 49.70 | 33.71 | 33.94 | 0.00 | 0.00 | 0.00 |
| **3rd Bone Spring Lime** | | | | | | | | | |
| 9,100.00 | 5.00 | 34.15 | 9,097.33 | 53.71 | 36.42 | 36.67 | 0.00 | 0.00 | 0.00 |
| 9,200.00 | 5.00 | 34.15 | 9,196.95 | 60.91 | 41.31 | 41.59 | 0.00 | 0.00 | 0.00 |
| 9,300.00 | 5.00 | 34.15 | 9,296.57 | 68.12 | 46.20 | 46.51 | 0.00 | 0.00 | 0.00 |
| 9,400.00 | 5.00 | 34.15 | 9,396.19 | 75.33 | 51.09 | 51.43 | 0.00 | 0.00 | 0.00 |
| 9,500.00 | 5.00 | 34.15 | 9,495.81 | 82.53 | 55.98 | 56.35 | 0.00 | 0.00 | 0.00 |
| 9,600.00 | 5.00 | 34.15 | 9,595.43 | 89.74 | 60.86 | 61.27 | 0.00 | 0.00 | 0.00 |
| 9,700.00 | 5.00 | 34.15 | 9,695.05 | 96.95 | 65.75 | 66.19 | 0.00 | 0.00 | 0.00 |
| 9,800.00 | 5.00 | 34.15 | 9,794.67 | 104.15 | 70.64 | 71.11 | 0.00 | 0.00 | 0.00 |
| 9,825.43 | 5.00 | 34.15 | 9,820.00 | 105.99 | 71.88 | 72.36 | 0.00 | 0.00 | 0.00 |
| **3rd Bone Spring Sand** | | | | | | | | | |
| 9,900.00 | 5.00 | 34.15 | 9,894.29 | 111.36 | 75.53 | 76.03 | 0.00 | 0.00 | 0.00 |
| 10,000.00 | 5.00 | 34.15 | 9,993.91 | 118.57 | 80.42 | 80.95 | 0.00 | 0.00 | 0.00 |
| 10,036.88 | 5.00 | 34.15 | 10,030.65 | 121.23 | 82.22 | 82.77 | 0.00 | 0.00 | 0.00 |
| 10,050.00 | 5.84 | 44.87 | 10,043.71 | 122.17 | 83.01 | 83.56 | 10.00 | 6.41 | 81.70 |
| 10,089.63 | 9.08 | 62.91 | 10,083.00 | 125.02 | 87.22 | 87.78 | 10.00 | 8.18 | 45.54 |
| **Red Hills** | | | | | | | | | |
| 10,100.00 | 10.01 | 65.63 | 10,093.23 | 125.77 | 88.77 | 89.34 | 10.00 | 9.01 | 26.22 |
| 10,150.00 | 14.71 | 73.80 | 10,142.06 | 129.34 | 98.83 | 99.42 | 10.00 | 9.39 | 16.33 |
| 10,197.00 | 19.26 | 77.83 | 10,187.00 | 132.64 | 112.15 | 112.75 | 10.00 | 9.69 | 8.58 |
| **Wolfcamp** | | | | | | | | | |
| 10,200.00 | 19.56 | 78.03 | 10,189.83 | 132.85 | 113.12 | 113.72 | 10.00 | 9.76 | 6.51 |
| 10,226.94 | 22.19 | 79.56 | 10,215.00 | 134.70 | 122.54 | 123.15 | 10.00 | 9.79 | 5.69 |
| **Wolfcamp X** | | | | | | | | | |
| 10,250.00 | 24.46 | 80.62 | 10,236.17 | 136.27 | 131.53 | 132.15 | 10.00 | 9.83 | 4.60 |
| 10,300.00 | 29.40 | 82.39 | 10,280.74 | 139.59 | 153.92 | 154.56 | 10.00 | 9.87 | 3.54 |
| 10,317.67 | 31.15 | 82.89 | 10,296.00 | 140.73 | 162.76 | 163.40 | 10.00 | 9.90 | 2.83 |
| **Wolfcamp Y** | | | | | | | | | |
| 10,343.74 | 33.73 | 83.54 | 10,318.00 | 142.38 | 176.64 | 177.29 | 10.00 | 9.91 | 2.50 |
| **Wolfcamp A** | | | | | | | | | |
| 10,350.00 | 34.35 | 83.68 | 10,323.19 | 142.77 | 180.13 | 180.77 | 10.00 | 9.92 | 2.30 |
| 10,400.00 | 39.31 | 84.69 | 10,363.19 | 145.79 | 209.94 | 210.60 | 10.00 | 9.93 | 2.01 |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1.13 Single User Db | **Local Co-ordinate Reference:** | Well #121H |
| **Company:** | XTO Energy | **TVD Reference:** | Ref GL @ 2919.00usft |
| **Project:** | Eddy County, NM (NAD-27) | **MD Reference:** | Ref GL @ 2919.00usft |
| **Site:** | Cheesecake 32 FED | **North Reference:** | Grid |
| **Well:** | #121H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | PERMIT | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 10,450.00 | 44.29 | 85.50 | 10,400.46 | 148.62 | 243.13 | 243.80 | 10.00 | 9.94 | 1.62 |
| 10,500.00 | 49.26 | 86.18 | 10,434.69 | 151.26 | 279.46 | 280.14 | 10.00 | 9.95 | 1.36 |
| 10,550.00 | 54.24 | 86.76 | 10,465.63 | 153.67 | 318.64 | 319.33 | 10.00 | 9.96 | 1.17 |
| 10,600.00 | 59.22 | 87.28 | 10,493.06 | 155.83 | 360.37 | 361.08 | 10.00 | 9.96 | 1.03 |
| 10,650.00 | 64.20 | 87.74 | 10,516.74 | 157.74 | 404.35 | 405.06 | 10.00 | 9.97 | 0.93 |
| 10,700.00 | 69.19 | 88.17 | 10,536.52 | 159.37 | 450.22 | 450.94 | 10.00 | 9.97 | 0.85 |
| 10,750.00 | 74.17 | 88.57 | 10,552.23 | 160.72 | 497.66 | 498.38 | 10.00 | 9.97 | 0.80 |
| 10,800.00 | 79.16 | 88.95 | 10,563.75 | 161.77 | 546.28 | 547.01 | 10.00 | 9.97 | 0.76 |
| 10,850.00 | 84.15 | 89.32 | 10,571.01 | 162.52 | 595.73 | 596.46 | 10.00 | 9.97 | 0.74 |
| 10,900.00 | 89.13 | 89.68 | 10,573.93 | 162.96 | 645.63 | 646.36 | 10.00 | 9.97 | 0.72 |
| 10,908.67 | 90.00 | 89.74 | 10,574.00 | 163.00 | 654.30 | 655.03 | 10.00 | 9.97 | 0.72 |
| **LP - Cheesecake 32 FED #121 FTP** | | | | | | | | | |
| 11,000.00 | 90.00 | 89.74 | 10,574.00 | 163.41 | 745.63 | 746.36 | 0.00 | 0.00 | 0.00 |
| 11,100.00 | 90.00 | 89.74 | 10,574.00 | 163.87 | 845.62 | 846.36 | 0.00 | 0.00 | 0.00 |
| 11,200.00 | 90.00 | 89.74 | 10,574.00 | 164.32 | 945.62 | 946.36 | 0.00 | 0.00 | 0.00 |
| 11,300.00 | 90.00 | 89.74 | 10,574.00 | 164.77 | 1,045.62 | 1,046.36 | 0.00 | 0.00 | 0.00 |
| 11,400.00 | 90.00 | 89.74 | 10,574.00 | 165.22 | 1,145.62 | 1,146.36 | 0.00 | 0.00 | 0.00 |
| 11,500.00 | 90.00 | 89.74 | 10,574.00 | 165.67 | 1,245.62 | 1,246.36 | 0.00 | 0.00 | 0.00 |
| 11,600.00 | 90.00 | 89.74 | 10,574.00 | 166.13 | 1,345.62 | 1,346.36 | 0.00 | 0.00 | 0.00 |
| 11,700.00 | 90.00 | 89.74 | 10,574.00 | 166.58 | 1,445.62 | 1,446.36 | 0.00 | 0.00 | 0.00 |
| 11,800.00 | 90.00 | 89.74 | 10,574.00 | 167.03 | 1,545.62 | 1,546.36 | 0.00 | 0.00 | 0.00 |
| 11,900.00 | 90.00 | 89.74 | 10,574.00 | 167.48 | 1,645.62 | 1,646.36 | 0.00 | 0.00 | 0.00 |
| 12,000.00 | 90.00 | 89.74 | 10,574.00 | 167.93 | 1,745.62 | 1,746.36 | 0.00 | 0.00 | 0.00 |
| 12,100.00 | 90.00 | 89.74 | 10,574.00 | 168.39 | 1,845.61 | 1,846.36 | 0.00 | 0.00 | 0.00 |
| 12,200.00 | 90.00 | 89.74 | 10,574.00 | 168.84 | 1,945.61 | 1,946.36 | 0.00 | 0.00 | 0.00 |
| 12,300.00 | 90.00 | 89.74 | 10,574.00 | 169.29 | 2,045.61 | 2,046.36 | 0.00 | 0.00 | 0.00 |
| 12,400.00 | 90.00 | 89.74 | 10,574.00 | 169.74 | 2,145.61 | 2,146.36 | 0.00 | 0.00 | 0.00 |
| 12,500.00 | 90.00 | 89.74 | 10,574.00 | 170.19 | 2,245.61 | 2,246.36 | 0.00 | 0.00 | 0.00 |
| 12,600.00 | 90.00 | 89.74 | 10,574.00 | 170.65 | 2,345.61 | 2,346.36 | 0.00 | 0.00 | 0.00 |
| 12,700.00 | 90.00 | 89.74 | 10,574.00 | 171.10 | 2,445.61 | 2,446.36 | 0.00 | 0.00 | 0.00 |
| 12,800.00 | 90.00 | 89.74 | 10,574.00 | 171.55 | 2,545.61 | 2,546.36 | 0.00 | 0.00 | 0.00 |
| 12,900.00 | 90.00 | 89.74 | 10,574.00 | 172.00 | 2,645.61 | 2,646.36 | 0.00 | 0.00 | 0.00 |
| 13,000.00 | 90.00 | 89.74 | 10,574.00 | 172.46 | 2,745.61 | 2,746.36 | 0.00 | 0.00 | 0.00 |
| 13,100.00 | 90.00 | 89.74 | 10,574.00 | 172.91 | 2,845.60 | 2,846.36 | 0.00 | 0.00 | 0.00 |
| 13,200.00 | 90.00 | 89.74 | 10,574.00 | 173.36 | 2,945.60 | 2,946.36 | 0.00 | 0.00 | 0.00 |
| 13,300.00 | 90.00 | 89.74 | 10,574.00 | 173.81 | 3,045.60 | 3,046.36 | 0.00 | 0.00 | 0.00 |
| 13,400.00 | 90.00 | 89.74 | 10,574.00 | 174.26 | 3,145.60 | 3,146.36 | 0.00 | 0.00 | 0.00 |
| 13,500.00 | 90.00 | 89.74 | 10,574.00 | 174.72 | 3,245.60 | 3,246.36 | 0.00 | 0.00 | 0.00 |
| 13,600.00 | 90.00 | 89.74 | 10,574.00 | 175.17 | 3,345.60 | 3,346.36 | 0.00 | 0.00 | 0.00 |
| 13,700.00 | 90.00 | 89.74 | 10,574.00 | 175.62 | 3,445.60 | 3,446.36 | 0.00 | 0.00 | 0.00 |
| 13,800.00 | 90.00 | 89.74 | 10,574.00 | 176.07 | 3,545.60 | 3,546.36 | 0.00 | 0.00 | 0.00 |
| 13,900.00 | 90.00 | 89.74 | 10,574.00 | 176.52 | 3,645.60 | 3,646.36 | 0.00 | 0.00 | 0.00 |
| 14,000.00 | 90.00 | 89.74 | 10,574.00 | 176.98 | 3,745.59 | 3,746.36 | 0.00 | 0.00 | 0.00 |
| 14,100.00 | 90.00 | 89.74 | 10,574.00 | 177.43 | 3,845.59 | 3,846.36 | 0.00 | 0.00 | 0.00 |
| 14,200.00 | 90.00 | 89.74 | 10,574.00 | 177.88 | 3,945.59 | 3,946.36 | 0.00 | 0.00 | 0.00 |
| 14,300.00 | 90.00 | 89.74 | 10,574.00 | 178.33 | 4,045.59 | 4,046.36 | 0.00 | 0.00 | 0.00 |
| 14,400.00 | 90.00 | 89.74 | 10,574.00 | 178.78 | 4,145.59 | 4,146.36 | 0.00 | 0.00 | 0.00 |
| 14,500.00 | 90.00 | 89.74 | 10,574.00 | 179.24 | 4,245.59 | 4,246.36 | 0.00 | 0.00 | 0.00 |
| 14,600.00 | 90.00 | 89.74 | 10,574.00 | 179.69 | 4,345.59 | 4,346.36 | 0.00 | 0.00 | 0.00 |
| 14,700.00 | 90.00 | 89.74 | 10,574.00 | 180.14 | 4,445.59 | 4,446.36 | 0.00 | 0.00 | 0.00 |
| 14,800.00 | 90.00 | 89.74 | 10,574.00 | 180.59 | 4,545.59 | 4,546.36 | 0.00 | 0.00 | 0.00 |
| 14,900.00 | 90.00 | 89.74 | 10,574.00 | 181.05 | 4,645.59 | 4,646.36 | 0.00 | 0.00 | 0.00 |
| 15,000.00 | 90.00 | 89.74 | 10,574.00 | 181.50 | 4,745.58 | 4,746.36 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1.13 Single User Db | **Local Co-ordinate Reference:** | Well #121H |
| **Company:** | XTO Energy | **TVD Reference:** | Ref GL @ 2919.00usft |
| **Project:** | Eddy County, NM (NAD-27) | **MD Reference:** | Ref GL @ 2919.00usft |
| **Site:** | Cheesecake 32 FED | **North Reference:** | Grid |
| **Well:** | #121H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | PERMIT | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 15,100.00 | 90.00 | 89.74 | 10,574.00 | 181.95 | 4,845.58 | 4,846.36 | 0.00 | 0.00 | 0.00 |
| 15,200.00 | 90.00 | 89.74 | 10,574.00 | 182.40 | 4,945.58 | 4,946.36 | 0.00 | 0.00 | 0.00 |
| 15,300.00 | 90.00 | 89.74 | 10,574.00 | 182.85 | 5,045.58 | 5,046.36 | 0.00 | 0.00 | 0.00 |
| 15,400.00 | 90.00 | 89.74 | 10,574.00 | 183.31 | 5,145.58 | 5,146.36 | 0.00 | 0.00 | 0.00 |
| 15,500.00 | 90.00 | 89.74 | 10,574.00 | 183.76 | 5,245.58 | 5,246.36 | 0.00 | 0.00 | 0.00 |
| 15,578.32 | 90.00 | 89.74 | 10,574.00 | 184.11 | 5,323.90 | 5,324.68 | 0.00 | 0.00 | 0.00 |
| **Cheesecake 32 FED #121 LTP** | | | | | | | | | |
| 15,600.00 | 90.00 | 89.74 | 10,574.00 | 184.21 | 5,345.58 | 5,346.36 | 0.00 | 0.00 | 0.00 |
| 15,708.32 | 90.00 | 89.74 | 10,574.00 | 184.70 | 5,453.90 | 5,454.68 | 0.00 | 0.00 | 0.00 |
| **Cheesecake 32 FED #121 PBHL (330' FSL/ 200' FEL)** | | | | | | | | | |

**Design Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| Cheesecake 32 FED #121 LTP<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 364,149.10 | 630,440.20 | 32.0004616 | -103.9125508 |
| Cheesecake 32 FED #121 PBHL (330' FSL/ 200' FEL)<br>- plan misses target center by 0.01usft at 15578.32usft MD (10574.00 TVD, 184.11 N, 5323.90 E)<br>- Point | 0.00 | 0.00 | 10,574.00 | 184.10 | 5,323.90 | 364,333.20 | 635,764.10 | 32.0009096 | -103.8953747 |
| Cheesecake 32 FED #121 PBHL (330' FSL/ 200' FEL)<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 10,574.00 | 184.70 | 5,453.90 | 364,333.80 | 635,894.10 | 32.0009098 | -103.8949553 |
| Cheesecake 32 FED #121 PBHL (330' FSL/ 200' FEL)<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 10,574.00 | 163.00 | 654.30 | 364,312.10 | 631,094.50 | 32.0009027 | -103.9104381 |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1.13 Single User Db | **Local Co-ordinate Reference:** | Well #121H |
| **Company:** | XTO Energy | **TVD Reference:** | Ref GL @ 2919.00usft |
| **Project:** | Eddy County, NM (NAD-27) | **MD Reference:** | Ref GL @ 2919.00usft |
| **Site:** | Cheesecake 32 FED | **North Reference:** | Grid |
| **Well:** | #121H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | PERMIT | | |

**Formations**

| Measured Depth (usft) | Vertical Depth (usft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---|---|---|---|---|---|
| 180.00 | 180.00 | Rustler | | | |
| 576.00 | 576.00 | Culebra Dolomite | | | |
| 749.00 | 749.00 | Salado | | | |
| 2,963.00 | 2,963.00 | Base of Salt | | | |
| 3,160.00 | 3,160.00 | Delaware | | | |
| 3,186.00 | 3,186.00 | Bell Canyon | | | |
| 4,106.00 | 4,106.00 | Cherry Canyon | | | |
| 5,368.00 | 5,368.00 | Brushy Canyon | | | |
| 6,951.00 | 6,951.00 | Bone Spring | | | |
| 7,001.00 | 7,001.00 | Bone Spring Lime | | | |
| 7,131.00 | 7,131.00 | Avalon | | | |
| 7,552.00 | 7,552.00 | Avalon Lower | | | |
| 7,886.00 | 7,886.00 | 1st Bone Spring Lime | | | |
| 7,929.00 | 7,929.00 | 1st Bone Spring Sand | | | |
| 8,282.00 | 8,282.00 | 2nd Bone Spring Lime | | | |
| 8,577.69 | 8,577.00 | 2nd Bone Spring Sand | | | |
| 9,044.46 | 9,042.00 | 3rd Bone Spring Lime | | | |
| 9,825.43 | 9,820.00 | 3rd Bone Spring Sand | | | |
| 10,089.63 | 10,083.00 | Red Hills | | | |
| 10,197.00 | 10,187.00 | Wolfcamp | | | |
| 10,226.94 | 10,215.00 | Wolfcamp X | | | |
| 10,317.67 | 10,296.00 | Wolfcamp Y | | | |
| 10,343.74 | 10,318.00 | Wolfcamp A | | | |
| 10,908.67 | 10,574.00 | LP | | | |

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

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

# GRADE D PRESSURE TEST CERTIFICATE

| | | | |
|---|---|---|---|
| Customer : | AUSTIN DISTRIBUTING | Test Date: | 6/8/2014 |
| Customer Ref. : | PENDING | Hose Serial No.: | D-060814-1 |
| Invoice No. : | 201709 | Created By: | NORMA |

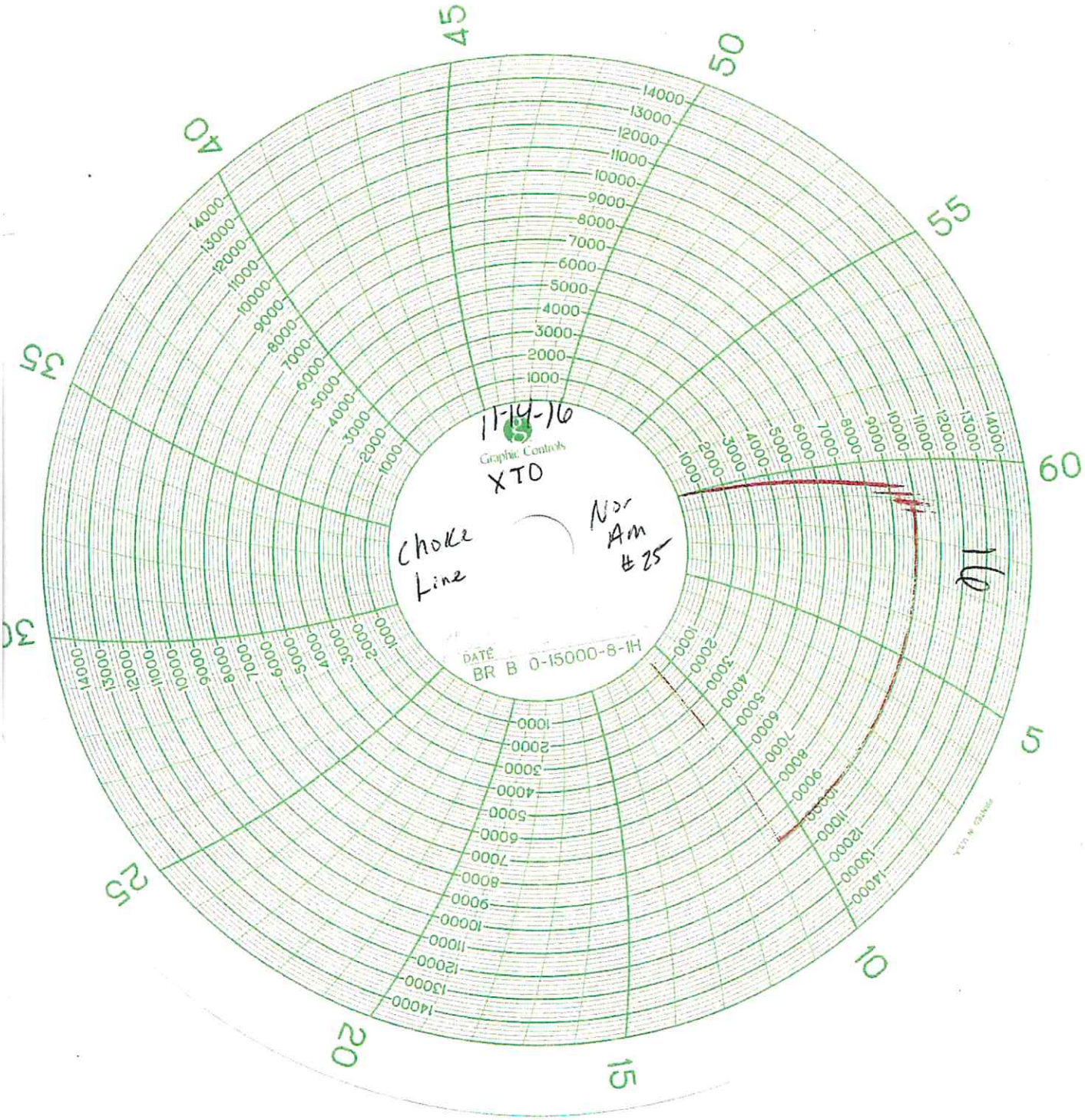
| | |
|---|---|
| Product Description: | FD3.042.0R41/16.5KFLGE/E LE |

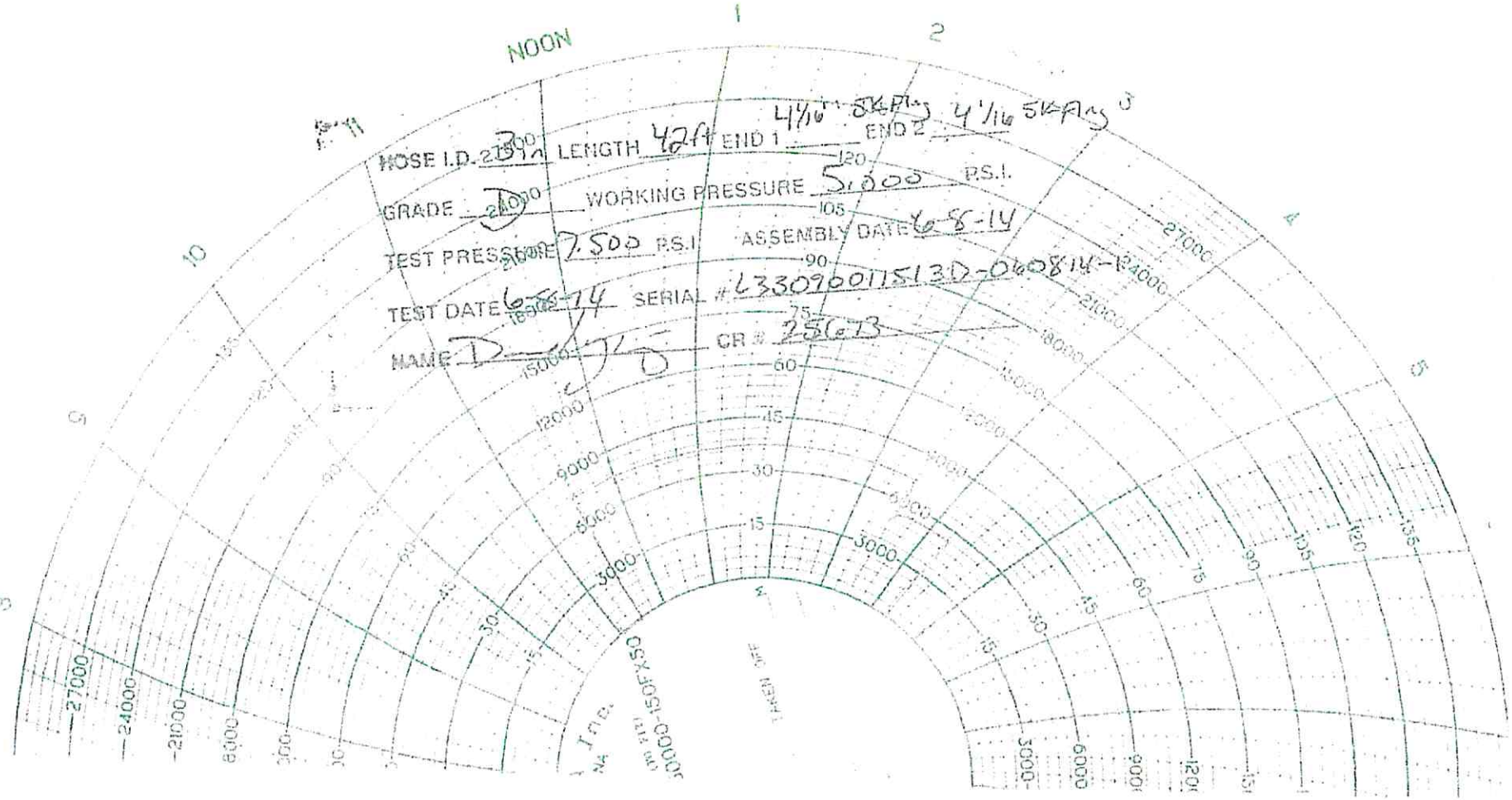
| | | | |
|---|---|---|---|
| End Fitting 1 : | 4 1/16 in.5K FLG | End Fitting 2 : | 4 1/16 in.5K FLG |
| Gates Part No. : | 4774-6001 | Assembly Code : | L33090011513D-060814-1 |
| Working Pressure : | 5,000 PSI | Test Pressure : | 7,500 PSI |

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

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

Form PTC - 01 Rev.0 2


11-14-16
Graphic Controls
XTO
Choke Line
Nor Am #25
DATE
BR B 0-15000-8-1H
16


NOON
HOSE I.D. 2 1/2"
LENGTH 42ft
END 1 4 1/16 5K FLG
END 2 4 1/16 5K FLG
GRADE D
WORKING PRESSURE 5,000 P.S.I.
TEST PRESSURE 7,500 P.S.I.
ASSEMBLY DATE 6-8-14
TEST DATE 6-8-14
SERIAL # 433090011513D-060814-1
NAME D-[illegible]
CR # 25673

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 nippled up and tested on the wellhead before drilling operations resume on each well.
    a. The larger rig will move back onto the location within 180 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.

**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 (OOGO) No. 2, 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. OOGO No. 2, Section I.D.2 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 OOGO No. 2, Section IV., XTO Energy submits this request for the variance.

**Supporting Documentation**

OOGO No. 2 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 OOGO No. 2 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. OOGO No. 2 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.



**Table C.4—Initial Pressure Testing, Surface BOP Stacks**

| Component to be Pressure Tested | Pressure Test—Low Pressure[ac] psig (MPa) | Pressure Test—High Pressure[ac] | |
|---|---|---|---|
| | | Change Out of Component, Elastomer, or Ring Gasket | No Change Out of Component, Elastomer, or Ring Gasket |
| Annular preventer[b] | 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[bd] | 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[e] | 250 to 350 (1.72 to 2.41) | RWP of ram preventers or wellhead system, whichever is lower | ITP |
| Choke manifold—downstream of chokes[e] | 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 | |

[a] 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.

[b] Annular(s) and VBR(s) shall be pressure tested on the largest and smallest OD drill pipe to be used in well program.

[c] 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.

[d] 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.

[e] 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.

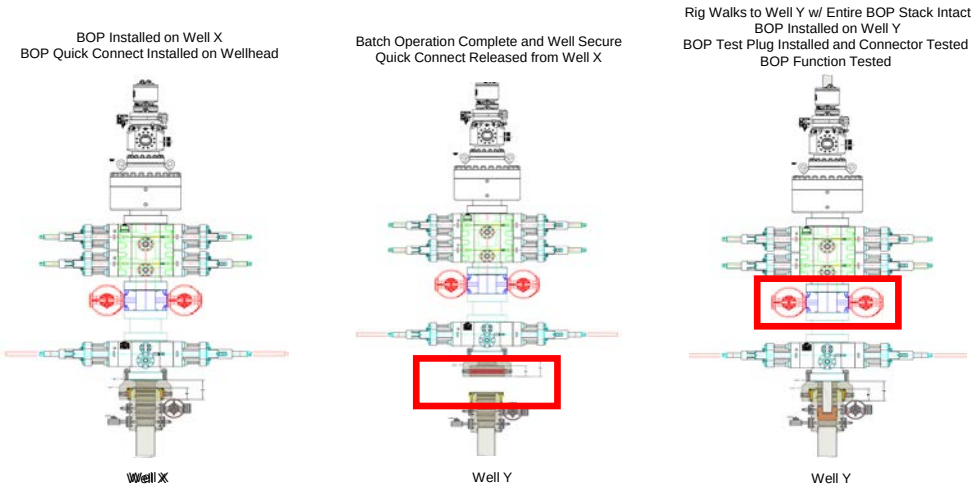
XTO Energy feels break testing and our current procedures meet the intent of OOGO No. 2 and often exceed it. There has been no evidence that break testing results in more components failing than seen on full BOP tests. XTO Energy's internal standards requires complete BOPE tests more often than that of OOGO No. 2 (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 OOGO No.2.

**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.

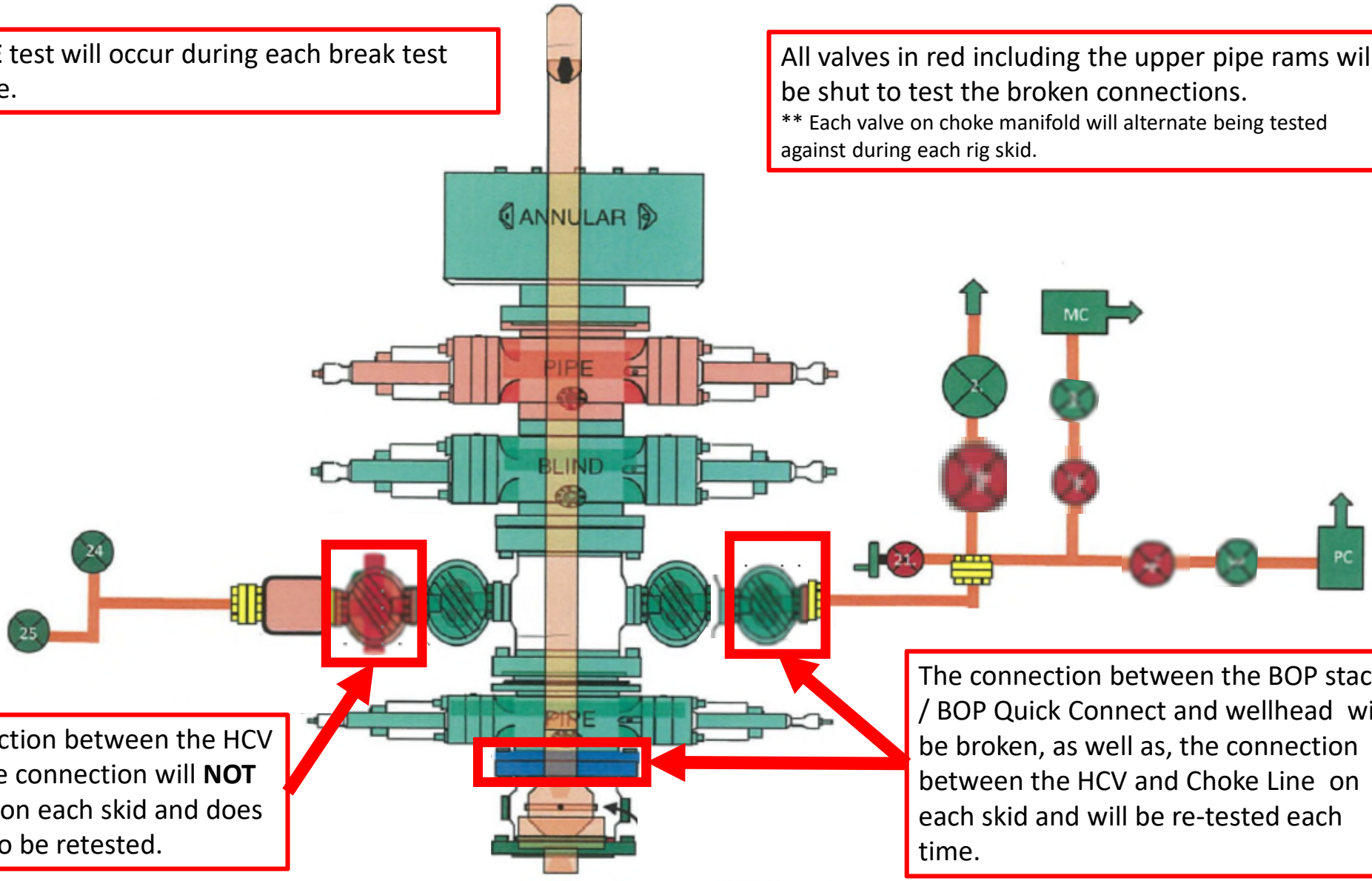
3. Full BOP test will be required if the intermediate hole section being drilled has a MASP over 5M.

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 rig 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.