Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD-ARTESIA

FORM APPROVED
OMB No. 1004-0137
Expires: July 31, 2010

**SUNDRY NOTICES AND REPORTS ON WELLS**

***Do not use this form for proposals to drill or to re-enter and Abandoned well. Use Form 3160-3 (APD) for such proposals***

***SUBMIT IN TRIPLICATE*** – *Other instructions on page 2.*

RECEIVED
NOV -4 2009
NMOCD ARTESIA

5. Lease Serial No.
**SHL: NM 0556859-A BHL: NM 10776**

6. If Indian, Allottee or Tribe Name

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

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

8. Well Name and No.
**NASH UNIT #40H**

2. Name of Operator
**XTO ENERGY INC**

9. API Well No.
**30-015-37166**

3. Address
**200 N. LORAINE ST., STE. 800**
**MIDLAND, TX 79701**

3b. Phone No. *(include area Code)*
**432-682-8873 / 432-620-6749**

10. Field and Pool or Exploratory Area
**NASH DRAW – BRUSHY CANYON**

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
**SHL: 2374' FSL & 1616' FWL Section 12 T23S, R29E, (K)**
**BHL: 2400' FNL & 690' FWL Section 1, T23S, R29E, (E)**

11. County or Parish, State
**EDDY COUNTY, NM**

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

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

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

9/15/2009: BLM BOND #: UTB 000138

CHANGING SHL TO: 2374' FSL & 1616' FWL UL: K, Sect. 12, T23S, R29E, Moving approx 75' to the Southwest from original location (50' SW from Nash Unit #39H). Drilling pad will be extended 50' to Southwest per meeting between Jeff Raines, XTO Drilling Construction Foreman, and Tanner Nygren, BLM Natural Resource Specialist. ***New directional plan attached.

BOP – Changing BOP f/13-5/8" 5M **to** 11" 5M double ram (blind & pipe) with Hydril supplied by drilling contractor. ** See attached schematic.

BOP TESTING PRESSURE – Reduce testing pressure of the double ram BOP f/5M **to** 3M. A 3M Bradenhead will be installed on well.

COA VII, Drilling, C. Pressure Control, Items 2 & 3:

XTO is requesting permission to test the 13-5/8" 3M Hydril to 1500 psi. The 13-5/8" 3M Hydril will be temporarily installed on the 13-3/8" surface casing and used for drilling the 12-1/4" (Anhydrite/Salt section) hole to 3300' where 9-5/8" casing will be cemented to surface. It's a customary/industry practice to test the Hydril to 50% of its actual pressure rating. The 13-5/8" 3M Hydril will then be removed and the 11" 5M double ram BOP with Hydril will be installed. **See attached email.

The 11" 5M BOP stack will be rigged up on an 11" 3M flange x 9-5/8" SOW Bradenhead. XTO is requesting the Hydril be tested to 2500 psi and all other rams, valves and manifold to 3000 psi (3M Bradenhead flange). These test pressures are sufficient for anticipated formation BHP of 2500 psi. Pressure control equip. for this well will be supplied by drilling contractor, McVay Drilling. Equipment consists of 13-5/8" 3M Hydril (transferred between rigs) and a conventional 11" 5M double ram BOP with Hydril.

14. I hereby certify that the foregoing is true and correct.
Name *(Printed/Typed)* **SORINA L. FLORES** Title **DRILLING TECH**
Signature Date **09/15/2009**

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

Approved by Title Date 10/25/2009

Conditions of approval, if any, are attached Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office **CARLSBAD FIELD OFFICE**

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

(Instructions on page 2)

BLM Sundry form 3160-5 (pg 2)
Operator: XTO Energy Inc

NASH UNIT #40H
30-015-37166
SHL: 2374' FSL & 1616' FWL Section 12 T23S, R29E, (K)
BHL: 2400' FNL & 690' FWL Section 1, T23S, R29E, (E)
BLM Bond #: UTB 000138

Notice of Intent: Change of Plans (cont.)

9/10/09:

13-3/8" STARTING HEAD REMOVAL – Note that permission has been granted to remove the 13-5/8" 3M Hydril and the 13-3/8" 3M Bradenhead once the 9-5/8" has been cemented. **See attached email correspondence between Chip Amrock, XTO Sr. Drilling Engineer, and Wesley Ingram, BLM Petroleum Engineer.

HOLE SIZE – Hole size will be 8-3/4" from 3300' to 7500'. The 7"casing will then be run and cemented. The hole size will then be reduced to 6-1/8" from 7500 – MD/TD. A 4-1/2" liner with swell packers and sleeves will be run and set in the open hole.

CASING – Change f/New 5-1/2" 17# LTC P-110 **to** New 7" 26# HCP-110 set @ 7500' MD, 6890-6900' TVD w/DVT @ 5500' cemented to surface. Due to completion changes, the 5-1/2" casing string is being eliminated. A 7" string will be run through the directional curve and cemented f/ 7500' to surface. A 4-1/2" liner system with swell packers and sleeves will be run to MD/TD.

V-DOOR – V-door will be to the Northeast.

## GENERAL INSTRUCTIONS

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

## SPECIFIC INSTRUCTIONS

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

*Item 13* - Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment.

## NOTICES

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

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

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

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

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

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

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

Response to this request is mandatory.

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

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

RECD/MIDLAND

AUG 27 2009

State of New Mexico
Energy, Minerals and Natural Resources Department

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

# OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

## WELL LOCATION AND ACREAGE DEDICATION PLAT

☒ AMENDED REPORT

| API Number | Pool Code | Pool Name |
|---|---|---|
| 30-015-37166 | 47545 | Nash Draw- Brushy Canyon |

| Property Code | Property Name | Well Number |
|---|---|---|
| | NASH UNIT | 40-H |

| OGRID No. | Operator Name | Elevation |
|---|---|---|
| 5380 | XTO ENERGY INC. | 2983' |

### Surface Location

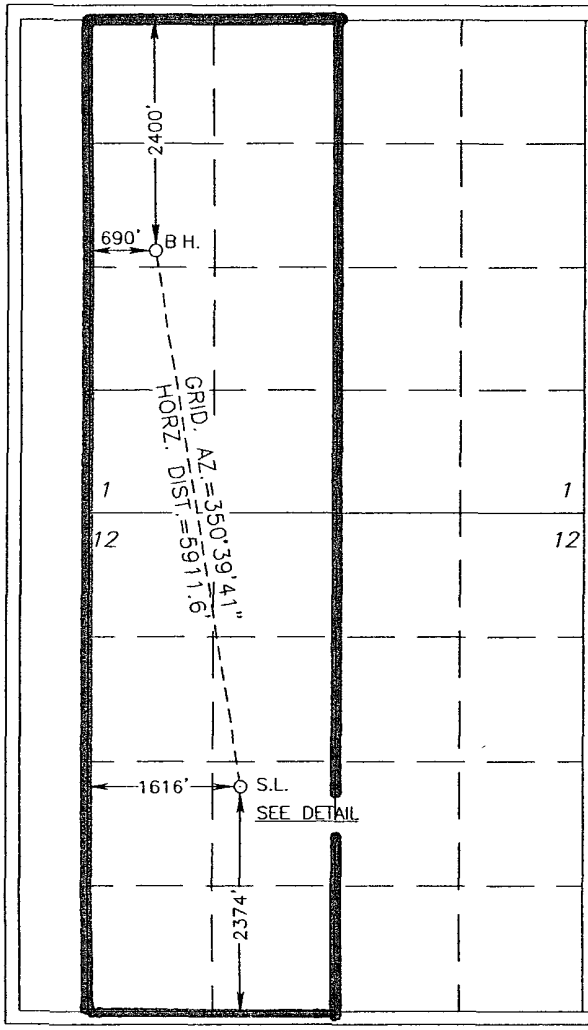
| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| K | 12 | 23-S | 29-E | | 2374 | SOUTH | 1616 | WEST | EDDY |

### 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 |
|---|---|---|---|---|---|---|---|---|---|
| E | 1 | 23-S | 29-E | | 2400 | NORTH | 690 | WEST | EDDY |

| Dedicated Acres | Joint or Infill | Consolidation Code | Order No. |
|---|---|---|---|
| 640 | | | |

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




SCALE-1"=2000'

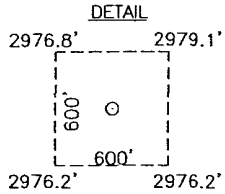
BOTTOM HOLE LOCATION
Y=485754.0 N
X=620199.9 E

GEODETIC COORDINATES
NAD 27 NME
SURFACE LOCATION

Y=479922.1 N
X=621159.2 E

LAT.=32.318813° N
LONG.=103.941129° W

DETAIL




### OPERATOR CERTIFICATION

*I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.*

Signature — Date: 9/15/09

Sorina L. Flores
Printed Name

### 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.*

RONALD J. EIDSON
NEW MEXICO
3239

Date Surveyed: AUGUST 19, 2009 LA

Signature & Seal of Professional Surveyor

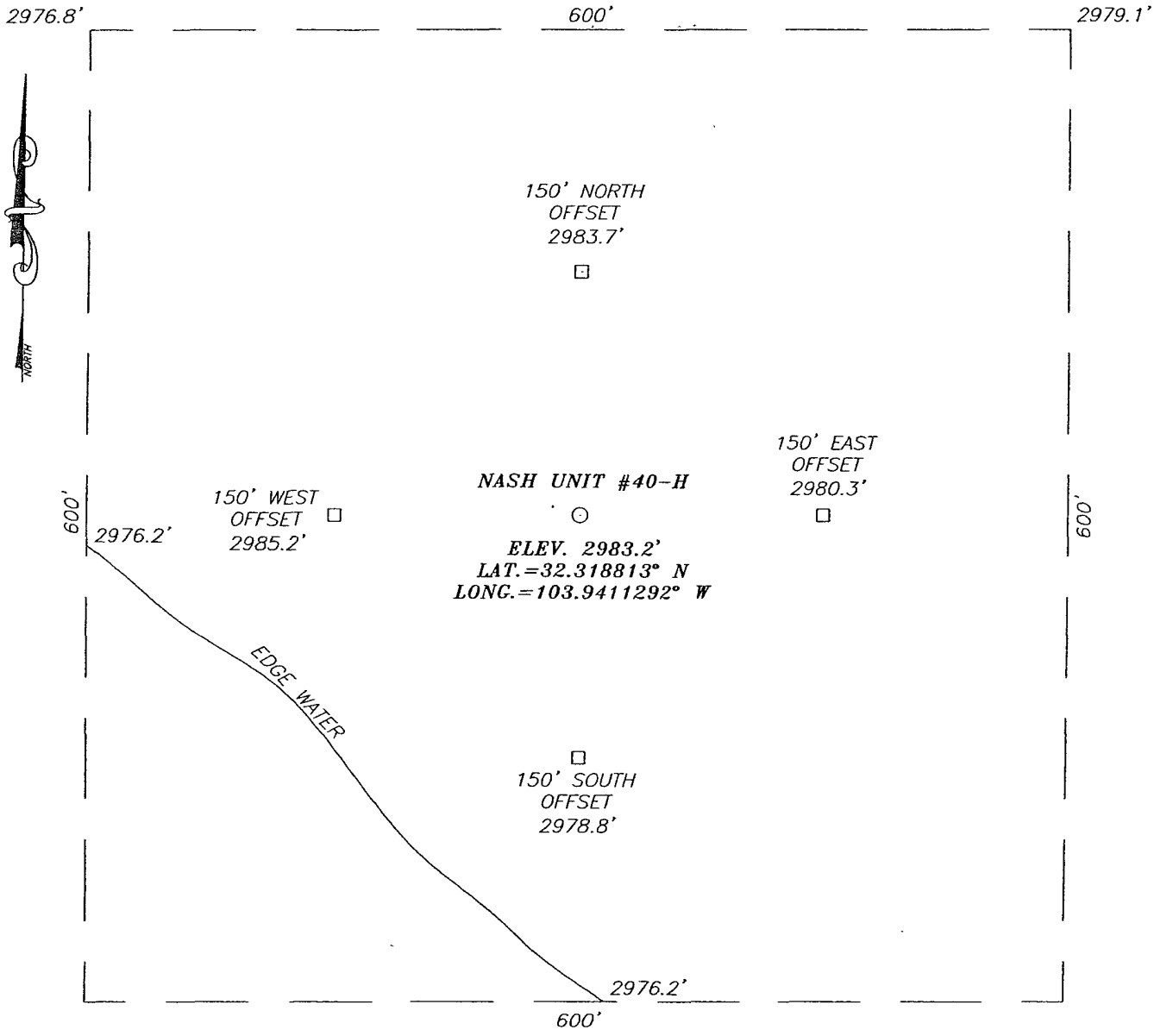
Ronald J. Eidson 8-25-09

09.11.0974

Certificate No. GARY EIDSON 12641
RONALD J. EIDSON 3239

# SECTION 12, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.,

EDDY COUNTY, NEW MEXICO




DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF ST. HWY. #128 AND RAWHIDE RD., GO SOUTH ON RAWHIDE RD. APPROX. 1.7 MILES. TURN RIGHT AND GO NORTHWEST APPROX. 0.4 MILES TO A PROPOSED ROAD SURVEY. FOLLOW ROAD SURVEY APPROX. 690 FEET TO THIS LOCATION.

100 0 100 200 Feet

Scale:1"=100'

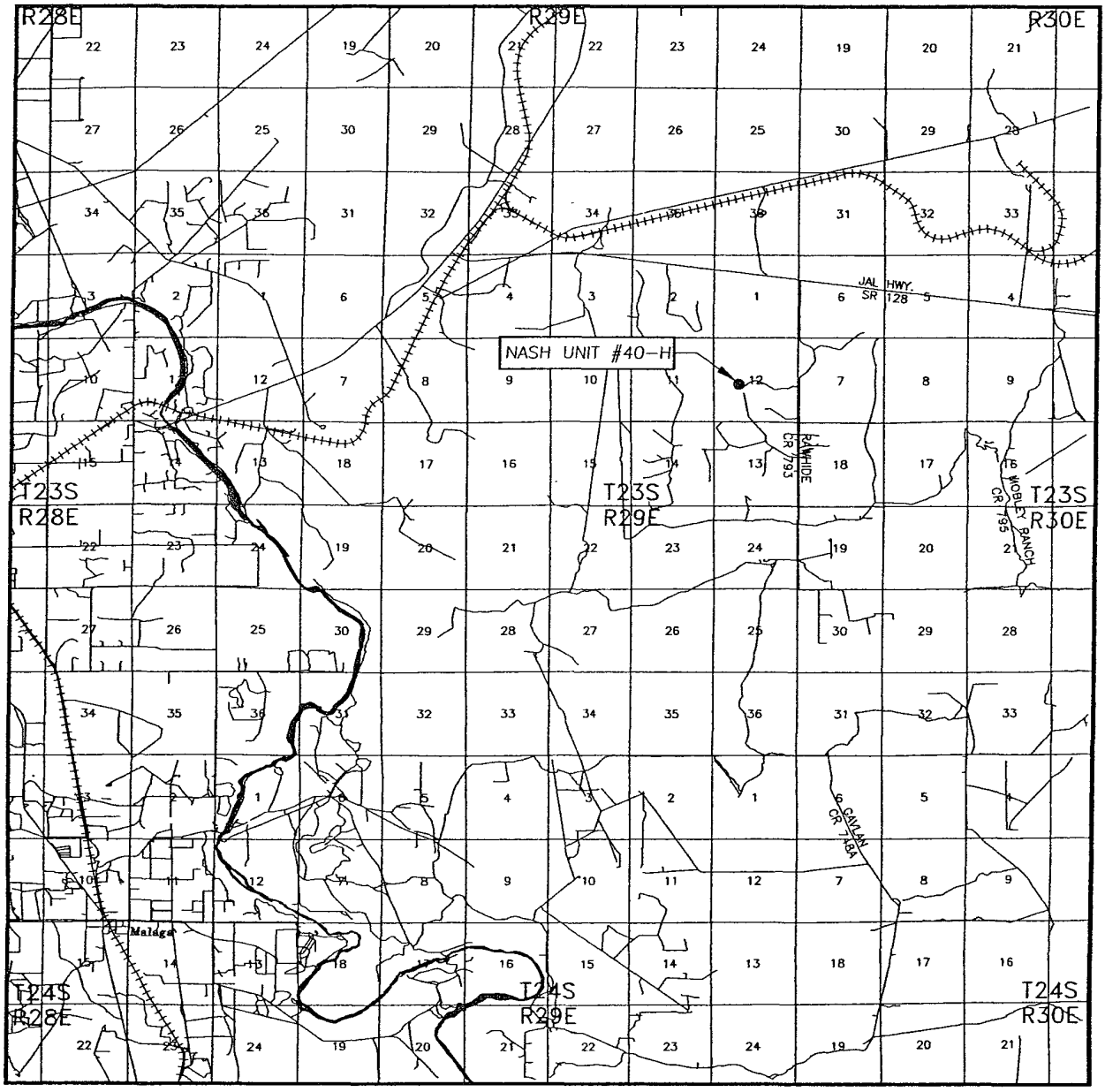

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117


XTO ENERGY

NASH UNIT #40-H
LOCATED 2374 FEET FROM THE SOUTH LINE
AND 1616 FEET FROM THE WEST LINE OF SECTION 12,
TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.

| | | |
|---|---|---|
| Survey Date: 8/19/09 | Sheet 1 of 1 Sheets | |
| W.O. Number: 09.11.0747 | Dr By: LA | Rev 1:N/A |
| Date: 8/24/09 | 09110747 | Scale:1"=100' |

# *VICINITY MAP*




SCALE: 1" = 2 MILES

SEC. 12 TWP. 23-S RGE. 29-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 2374' FSL & 1616' FWL

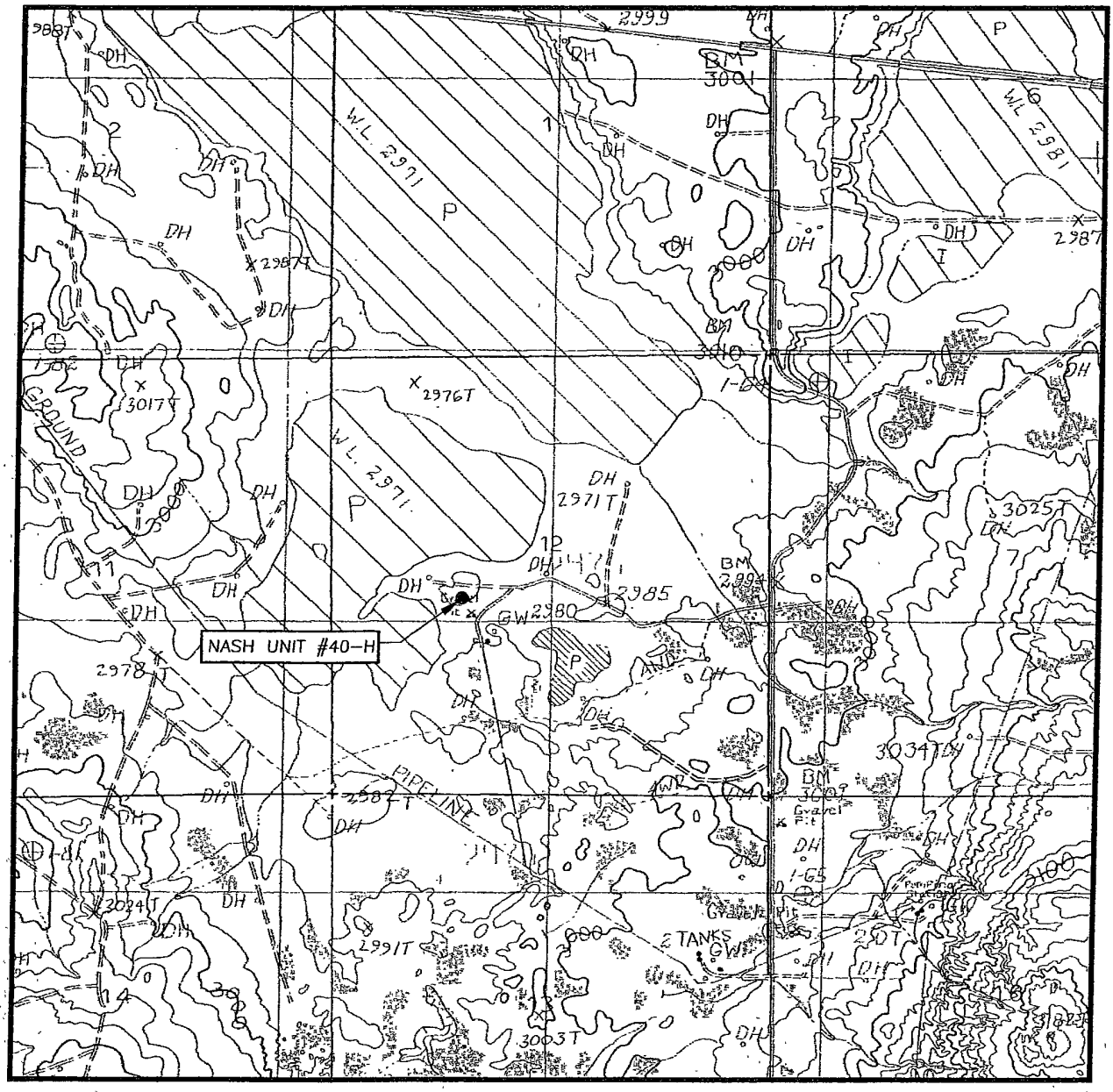
ELEVATION 2983'

OPERATOR XTO ENERGY

LEASE NASH UNIT


*PROVIDING SURVEYING SERVICES*
*SINCE 1946*
***JOHN WEST SURVEYING COMPANY***
*412 N. DAL PASO*
*HOBBS, N.M. 88240*
*(575) 393-3117*

# LOCATION VERIFICATION MAP




SCALE: 1" = 2000'

CONTOUR INTERVAL:
REMUDA BASIN, N.M. – 10'

SEC. 12 TWP. 23-S RGE. 29-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 2374' FSL & 1616' FWL

ELEVATION 2983'

OPERATOR XTO ENERGY

LEASE NASH UNIT

U.S.G.S. TOPOGRAPHIC MAP
REMUDA BASIN, N.M.


PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117

XTO ENERGY

# XTO

**Eddy County**
**Nash Unit #40**
**Nash Unit #40**
**OH**

**Plan: Plan #1**

# Pathfinder X & Y Planning Report

**27 August, 2009**

PATHFINDER

| | | | |
|---|---|---|---|
| **Company:** | XTO | **Local Co-ordinate Reference:** | Well Nash Unit #40 |
| **Project:** | Eddy County | **TVD Reference:** | WELL @ 3000 00ft (RKB= 17') |
| **Site:** | Nash Unit #40 | **MD Reference:** | WELL @ 3000 00ft (RKB= 17') |
| **Well:** | Nash Unit #40 | **North Reference:** | Grid |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan #1 | **Database:** | Midland Database |

**Project** Eddy County

| | | | |
|---|---|---|---|
| **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** Nash Unit #40

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 479,927 550 ft | **Latitude:** | 32° 19' 7 780 N |
| **From:** | Map | **Easting:** | 621,152 450 ft | **Longitude:** | 103° 56' 28 142 W |
| **Position Uncertainty:** | 0 00 ft | **Slot Radius:** | " | **Grid Convergence:** | 0 21 ° |

**Well** Nash Unit #40

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0 00 ft | **Northing:** | 479,922 100 ft | **Latitude:** | 32° 19' 7 725 N |
| | **+E/-W** | 0 00 ft | **Easting:** | 621,159 200 ft | **Longitude:** | 103° 56' 28 063 W |
| **Position Uncertainty** | | 0 00 ft | **Wellhead Elevation:** | ft | **Ground Level:** | 2,983 00 ft |

**Wellbore** OH

| **Magnetics** | **Model Name** | **Sample Date** | **Declination (°)** | **Dip Angle (°)** | **Field Strength (nT)** |
|---|---|---|---|---|---|
| | IGRF200510 | 11/05/2008 | 8 06 | 60 29 | 48,921 |

**Design** Plan #1

**Audit Notes:**

| | | | | | |
|---|---|---|---|---|---|
| **Version:** | | **Phase:** | PLAN | **Tie On Depth:** | 0 00 |
| **Vertical Section:** | **Depth From (TVD) (ft)** | **+N/-S (ft)** | **+E/-W (ft)** | **Direction (°)** | |
| | 0 00 | 0 00 | 0 00 | 350 66 | |

**Survey Tool Program** **Date** 08/27/2009

| **From (ft)** | **To (ft)** | **Survey (Wellbore)** | **Tool Name** | **Description** |
|---|---|---|---|---|
| 0 00 | 12,437 03 | Plan #1 (OH) | MWD | MWD - Standard |

| | | | |
|---|---|---|---|
| **Company:** | XTO | **Local Co-ordinate Reference:** | Well Nash Unit #40 |
| **Project:** | Eddy County | **TVD Reference:** | WELL @ 3000 00ft (RKB= 17') |
| **Site:** | Nash Unit #40 | **MD Reference:** | WELL @ 3000 00ft (RKB= 17') |
| **Well:** | Nash Unit #40 | **North Reference:** | Grid |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan #1 | **Database:** | Midland Database |

**Planned Survey**

| MD (ft) | Inc (°) | Azi (°) | TVD (ft) | TVDSS (ft) | N/S (ft) | E/W (ft) | V. Sec (ft) | DLeg (°/100ft) | Northing (ft) | Easting (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0 00 | 0 00 | 0 00 | -3,000 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 100 00 | 0 00 | 0 00 | 100 00 | -2,900 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 200 00 | 0 00 | 0 00 | 200 00 | -2,800 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 300 00 | 0 00 | 0 00 | 300 00 | -2,700 00 | 0 00 | 0.00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 400.00 | 0 00 | 0 00 | 400.00 | -2,600 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 500 00 | 0 00 | 0 00 | 500 00 | -2,500 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 600 00 | 0 00 | 0 00 | 600 00 | -2,400 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 700 00 | 0 00 | 0 00 | 700 00 | -2,300 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 800 00 | 0 00 | 0 00 | 800 00 | -2,200 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 900 00 | 0 00 | 0 00 | 900 00 | -2,100 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 1,000 00 | 0 00 | 0 00 | 1,000 00 | -2,000 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 1,100 00 | 0 00 | 0 00 | 1,100 00 | -1,900 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 1,200 00 | 0 00 | 0 00 | 1,200 00 | -1,800 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 1,300 00 | 0 00 | 0 00 | 1,300 00 | -1,700 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 1,400 00 | 0 00 | 0 00 | 1,400 00 | -1,600 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 1,500 00 | 0 00 | 0 00 | 1,500 00 | -1,500 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 1,600 00 | 0 00 | 0 00 | 1,600 00 | -1,400 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 1,700 00 | 0 00 | 0 00 | 1,700 00 | -1,300 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 1,800 00 | 0 00 | 0 00 | 1,800 00 | -1,200 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 1,900 00 | 0 00 | 0 00 | 1,900 00 | -1,100 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 2,000 00 | 0 00 | 0 00 | 2,000 00 | -1,000 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 2,100 00 | 0 00 | 0 00 | 2,100 00 | -900.00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 2,200 00 | 0 00 | 0 00 | 2,200 00 | -800 00 | 0 00 | 0 00 | 0.00 | 0 00 | 479,922 10 | 621,159 20 |
| 2,300 00 | 0 00 | 0 00 | 2,300 00 | -700 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 2,400 00 | 0 00 | 0 00 | 2,400 00 | -600 00 | 0 00 | 0 00 | 0.00 | 0 00 | 479,922 10 | 621,159 20 |
| 2,500 00 | 0 00 | 0 00 | 2,500 00 | -500 00 | 0.00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 2,600 00 | 0 00 | 0 00 | 2,600 00 | -400 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |

| | | | |
|---|---|---|---|
| **Company:** | XTO | **Local Co-ordinate Reference:** | Well Nash Unit #40 |
| **Project:** | Eddy County | **TVD Reference:** | WELL @ 3000 00ft (RKB= 17') |
| **Site:** | Nash Unit #40 | **MD Reference:** | WELL @ 3000 00ft (RKB= 17') |
| **Well:** | Nash Unit #40 | **North Reference:** | Grid |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan #1 | **Database:** | Midland Database |

**Planned Survey**

| MD (ft) | Inc (°) | Azi (°) | TVD (ft) | TVDSS (ft) | N/S (ft) | E/W (ft) | V. Sec (ft) | DLeg (°/100ft) | Northing (ft) | Easting (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2,700 00 | 0 00 | 0 00 | 2,700 00 | -300 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 2,800 00 | 0 00 | 0 00 | 2,800 00 | -200 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 2,900 00 | 0 00 | 0 00 | 2,900 00 | -100 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 3,000 00 | 0 00 | 0 00 | 3,000 00 | 0 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 3,100 00 | 0 00 | 0 00 | 3,100 00 | 100 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 3,200 00 | 0 00 | 0 00 | 3,200 00 | 200 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 3,300 00 | 0 00 | 0 00 | 3,300 00 | 300 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 3,400 00 | 0 00 | 0 00 | 3,400 00 | 400 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621 159 20 |
| 3,500 00 | 0 00 | 0 00 | 3,500 00 | 500 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 3,600 00 | 0 00 | 0 00 | 3,600 00 | 600 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 3,700 00 | 0 00 | 0 00 | 3,700 00 | 700 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 3,800 00 | 0 00 | 0 00 | 3,800 00 | 800 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 3,900 00 | 0 00 | 0 00 | 3,900 00 | 900.00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 4,000 00 | 0 00 | 0 00 | 4,000 00 | 1,000 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 4,100 00 | 0 00 | 0 00 | 4,100 00 | 1,100 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 4,200 00 | 0 00 | 0 00 | 4,200 00 | 1,200 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 4,300 00 | 0 00 | 0 00 | 4,300 00 | 1,300 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 4,400 00 | 0 00 | 0 00 | 4,400 00 | 1,400 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 4,500 00 | 0 00 | 0 00 | 4,500 00 | 1,500 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 4,600 00 | 0 00 | 0 00 | 4,600 00 | 1,600 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 4,700 00 | 0 00 | 0 00 | 4,700 00 | 1,700 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 4,800.00 | 0 00 | 0 00 | 4,800 00 | 1,800 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 4,900 00 | 0 00 | 0 00 | 4,900 00 | 1,900 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 5,000 00 | 0 00 | 0 00 | 5,000 00 | 2,000 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 5,100 00 | 0 00 | 0 00 | 5,100 00 | 2,100 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 5,200 00 | 0 00 | 0.00 | 5,200 00 | 2,200 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 5,300 00 | 0 00 | 0 00 | 5,300 00 | 2,300 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |

| | | | |
|---|---|---|---|
| **Company:** | XTO | **Local Co-ordinate Reference:** | Well Nash Unit #40 |
| **Project:** | Eddy County | **TVD Reference:** | WELL @ 3000 00ft (RKB= 17') |
| **Site.** | Nash Unit #40 | **MD Reference:** | WELL @ 3000 00ft (RKB= 17') |
| **Well:** | Nash Unit #40 | **North Reference:** | Grid |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan #1 | **Database:** | Midland Database |

**Planned Survey**

| MD (ft) | Inc (°) | Azi (°) | TVD (ft) | TVDSS (ft) | N/S (ft) | E/W (ft) | V. Sec (ft) | DLeg (°/100ft) | Northing (ft) | Easting (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 5,400 00 | 0 00 | 0 00 | 5,400 00 | 2,400 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 5,500 00 | 0 00 | 0 00 | 5,500 00 | 2,500 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 5,600 00 | 0 00 | 0 00 | 5,600 00 | 2,600 00 | 0 00 | 0 00 | 0.00 | 0 00 | 479,922.10 | 621,159 20 |
| 5,700 00 | 0 00 | 0 00 | 5,700 00 | 2,700 00 | 0 00 | 0.00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 5,800 00 | 0 00 | 0 00 | 5,800 00 | 2,800 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 5,900 00 | 0 00 | 0 00 | 5,900.00 | 2,900 00 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| 5,972 43 | 0 00 | 0 00 | 5,972 43 | 2,972 43 | 0 00 | 0 00 | 0 00 | 0 00 | 479,922 10 | 621,159 20 |
| **KOP-5972.43'MD,0.00°INC,0.00°AZI,5972.43'TVD** | | | | | | | | | | |
| 6,000 00 | 1 93 | 339 49 | 5,999 99 | 2,999 99 | 0 43 | -0 16 | 0 46 | 7 00 | 479,922 53 | 621,159 04 |
| 6,050 00 | 5 43 | 339 49 | 6,049 88 | 3,049 88 | 3 44 | -1 29 | 3 60 | 7 00 | 479 925 54 | 621,157 91 |
| 6,100 00 | 8 93 | 339 49 | 6,099 48 | 3,099 48 | 9 29 | -3 48 | 9 73 | 7 00 | 479,931 39 | 621,155 72 |
| 6,150 00 | 12 43 | 339 49 | 6,148 61 | 3,148 61 | 17 97 | -6 72 | 18 82 | 7 00 | 479,940 07 | 621,152 48 |
| 6,200 00 | 15 93 | 339 49 | 6,197 08 | 3,197 08 | 29 44 | -11 01 | 30 83 | 7 00 | 479,951 54 | 621,148 19 |
| 6,250 00 | 19 43 | 339 49 | 6,244 71 | 3,244 71 | 43 66 | -16 33 | 45 73 | 7 00 | 479,965 76 | 621,142 87 |
| 6,300 00 | 22 93 | 339 49 | 6,291 33 | 3,291 33 | 60.57 | -22 66 | 63 44 | 7 00 | 479,982 67 | 621,136 54 |
| 6,350 00 | 26 43 | 339 49 | 6,336 75 | 3,336 75 | 80 12 | -29 97 | 83 92 | 7 00 | 480,002 22 | 621,129 23 |
| 6,400 00 | 29 93 | 339 49 | 6,380 82 | 3,380.82 | 102 23 | -38 24 | 107 08 | 7 00 | 480,024 33 | 621,120 96 |
| 6,450 00 | 33 43 | 339 49 | 6,423 37 | 3,423 37 | 126 82 | -47 44 | 132 83 | 7 00 | 480,048 92 | 621,111 76 |
| 6,500 00 | 36 93 | 339 49 | 6,464 23 | 3,464 23 | 153 79 | -57 53 | 161 09 | 7 00 | 480,075 89 | 621,101 67 |
| 6,550 00 | 40 43 | 339 49 | 6,503 26 | 3,503 26 | 183 05 | -68.48 | 191 74 | 7 00 | 480,105.15 | 621,090 72 |
| 6,600 00 | 43 92 | 339 49 | 6,540 31 | 3,540 31 | 214 49 | -80 24 | 224 67 | 7 00 | 480,136 59 | 621,078 96 |
| 6,650 00 | 47 42 | 339 49 | 6,575 24 | 3,575 24 | 247 98 | -92 77 | 259 75 | 7 00 | 480,170 08 | 621,066 43 |
| 6,700 00 | 50 92 | 339 49 | 6,607 92 | 3,607 92 | 283 42 | -106 02 | 296 87 | 7 00 | 480,205 52 | 621,053 18 |
| 6,750 00 | 54 42 | 339 49 | 6,638 24 | 3,638 24 | 320 65 | -119 95 | 335 87 | 7 00 | 480,242 75 | 621,039 25 |
| 6,800 00 | 57 92 | 339 49 | 6,666 06 | 3,666 06 | 359 55 | -134 50 | 376 61 | 7 00 | 480,281 65 | 621,024 70 |
| 6,850 00 | 61 42 | 339 49 | 6,691 31 | 3,691 31 | 399 96 | -149 62 | 418 94 | 7 00 | 480,322 06 | 621,009 58 |
| 6,900 00 | 64 92 | 339 49 | 6,713 87 | 3,713 87 | 441.75 | -165 25 | 462 71 | 7 00 | 480,363 85 | 620,993 95 |

| | | | |
|---|---|---|---|
| **Company:** | XTO | **Local Co-ordinate Reference:** | Well Nash Unit #40 |
| **Project:** | Eddy County | **TVD Reference:** | WELL @ 3000 00ft (RKB= 17') |
| **Site:** | Nash Unit #40 | **MD Reference:** | WELL @ 3000 00ft (RKB= 17') |
| **Well:** | Nash Unit #40 | **North Reference:** | Grid |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan #1 | **Database:** | Midland Database |

**Planned Survey**

| MD (ft) | Inc (°) | Azi (°) | TVD (ft) | TVDSS (ft) | N/S (ft) | E/W (ft) | V. Sec (ft) | DLeg (°/100ft) | Northing (ft) | Easting (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 6,950 00 | 68 42 | 339 49 | 6,733 67 | 3,733 67 | 484 74 | -181 33 | 507 75 | 7 00 | 480,406 84 | 620,977 87 |
| 7,000 00 | 71 92 | 339 49 | 6,750 62 | 3,750.62 | 528 79 | -197 81 | 553 88 | 7 00 | 480,450 89 | 620,961 39 |
| 7,050 00 | 75 42 | 339 49 | 6,764 68 | 3,764 68 | 573 72 | -214 62 | 600 95 | 7 00 | 480,495 82 | 620,944 58 |
| 7,100 00 | 78 92 | 339 49 | 6,775 78 | 3,775 78 | 619 38 | -231 70 | 648 77 | 7 00 | 480,541 48 | 620,927 50 |
| 7,150 00 | 82 42 | 339 49 | 6,783 88 | 3,783 88 | 665 58 | -248 98 | 697 17 | 7 00 | 480,587 68 | 620,910 22 |
| 7,200 00 | 85 92 | 339 49 | 6,788.96 | 3,788 96 | 712 16 | -266.41 | 745 96 | 7 00 | 480,634 26 | 620,892 79 |
| 7,250 00 | 89 42 | 339 49 | 6,790 99 | 3,790 99 | 758 95 | -283 91 | 794 96 | 7 00 | 480,681 05 | 620,875 29 |
| 7,265 86 | 90 53 | 339 49 | 6,791 00 | 3,791 00 | 773 81 | -289 47 | 810 53 | 7 00 | 480,695 91 | 620,869 73 |
| **EOC-7265.86'MD,90.53°INC,339.49°AZI,6791.00'TVD,7.00°DLS, 810.52'VS, 773.80'N, -289.47'E** | | | | | | | | | | |
| 7,267 51 | 90 53 | 339 46 | 6,790 98 | 3,790 98 | 775 35 | -290 05 | 812 14 | 2 00 | 480,697 45 | 620,869 15 |
| 7,300 00 | 90 53 | 339 46 | 6,790 68 | 3,790 68 | 805 77 | -301 45 | 844 01 | 0 00 | 480,727 87 | 620,857 75 |
| 7,400 00 | 90 53 | 339 46 | 6,789 76 | 3,789 76 | 899 41 | -336 54 | 942 10 | 0 00 | 480,821 51 | 620,822 66 |
| 7,481 69 | 90.53 | 339 46 | 6,789 00 | 3,789 00 | 975 90 | -365 20 | 1,022 23 | 0 00 | 480,898 00 | 620,794 00 |
| 7,500 00 | 90 50 | 339 09 | 6,788 83 | 3,788 83 | 993 02 | -371 68 | 1,040 18 | 2 00 | 480,915 12 | 620,787 52 |
| 7,600 00 | 90 35 | 337 10 | 6,788 09 | 3,788 09 | 1,085 80 | -408 98 | 1,137 78 | 2.00 | 481,007 90 | 620,750 22 |
| 7,619 56 | 90 32 | 336 71 | 6,787 98 | 3,787 98 | 1,103 79 | -416 66 | 1,156 78 | 2 00 | 481,025 89 | 620,742 54 |
| 7,700 00 | 90 32 | 336 71 | 6,787 54 | 3,787 54 | 1,177 67 | -448 46 | 1,234 84 | 0 00 | 481,099 77 | 620,710 74 |
| 7,800 00 | 90 32 | 336 71 | 6,786 99 | 3,786 99 | 1,269 52 | -488 00 | 1,331 89 | 0 00 | 481,191 62 | 620,671 20 |
| 7,900 00 | 90 32 | 336 71 | 6,786 44 | 3,786 44 | 1,361 37 | -527 55 | 1,428 94 | 0 00 | 481,283 47 | 620,631 65 |
| 7,980 06 | 90 32 | 336 71 | 6,786 00 | 3,786 00 | 1,434 90 | -559 20 | 1,506 63 | 0 00 | 481,357 00 | 620,600 00 |
| 8,000 00 | 90 27 | 337 10 | 6,785 90 | 3,785 90 | 1,453 25 | -567 02 | 1,526 00 | 2 00 | 481,375 35 | 620,592 18 |
| 8,085 47 | 90 09 | 338 80 | 6,785 63 | 3,785 63 | 1,532 47 | -599 10 | 1,609 38 | 2 00 | 481,454 57 | 620,560 10 |
| 8,100 00 | 90 09 | 338 80 | 6,785 60 | 3,785 60 | 1,546 01 | -604 36 | 1,623 60 | 0 00 | 481,468 11 | 620,554 84 |
| 8,200 00 | 90 09 | 338 80 | 6,785 44 | 3,785 44 | 1,639 25 | -640 51 | 1,721 46 | 0 00 | 481,561 35 | 620,518 69 |
| 8,300 00 | 90 09 | 338 80 | 6,785 28 | 3,785 28 | 1,732 48 | -676 67 | 1,819 33 | 0 00 | 481,654 58 | 620,482 53 |
| 8,400 00 | 90 09 | 338 80 | 6,785 13 | 3,785 13 | 1,825 72 | -712 82 | 1,917 20 | 0 00 | 481,747 82 | 620,446 38 |
| 8,478 49 | 90 09 | 338 80 | 6,785 00 | 3,785 00 | 1,898 90 | -741 20 | 1,994 02 | 0 00 | 481,821 00 | 620,418 00 |

| | | | |
|---|---|---|---|
| **Company:** | XTO | **Local Co-ordinate Reference:** | Well Nash Unit #40 |
| **Project:** | Eddy County | **TVD Reference:** | WELL @ 3000 00ft (RKB= 17') |
| **Site:** | Nash Unit #40 | **MD Reference:** | WELL @ 3000 00ft (RKB= 17') |
| **Well:** | Nash Unit #40 | **North Reference:** | Grid |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan #1 | **Database:** | Midland Database |

**Planned Survey**

| MD (ft) | Inc (°) | Azi (°) | TVD (ft) | TVDSS (ft) | N/S (ft) | E/W (ft) | V. Sec (ft) | DLeg (°/100ft) | Northing (ft) | Easting (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 8,500 00 | 90 09 | 339 23 | 6,784 97 | 3,784 97 | 1,918 98 | -748 90 | 2,015 08 | 2 00 | 481,841 08 | 620,410 30 |
| 8,600.00 | 90 10 | 341 23 | 6,784 79 | 3,784 79 | 2,013 08 | -782 72 | 2,113 43 | 2 00 | 481,935 18 | 620,376 48 |
| 8,700 00 | 90 11 | 343 23 | 6,784.60 | 3,784 60 | 2,108 31 | -813 23 | 2,212 34 | 2 00 | 482,030 41 | 620,345 97 |
| 8,800 00 | 90 12 | 345 23 | 6,784 40 | 3,784 40 | 2,204 54 | -840 39 | 2,311 71 | 2 00 | 482,126 64 | 620,318 81 |
| 8,870 64 | 90 13 | 346 65 | 6,784 24 | 3,784 24 | 2,273 07 | -857 55 | 2,382 11 | 2 00 | 482,195 17 | 620,301 65 |
| 8,900 00 | 90 13 | 346 65 | 6,784 18 | 3,784 18 | 2,301 63 | -864 33 | 2,411 39 | 0 00 | 482,223 73 | 620,294 87 |
| 8,977 36 | 90 13 | 346 65 | 6,784 00 | 3,784 00 | 2,376 90 | -882 20 | 2,488 56 | 0 00 | 482,299 00 | 620,277 00 |
| 9,000 00 | 90 12 | 347 21 | 6,783 95 | 3,783 95 | 2,398 95 | -887 32 | 2,511 16 | 2 50 | 482,321 05 | 620,271 88 |
| 9,100 00 | 90 06 | 349 71 | 6,783 79 | 3,783 79 | 2,496 93 | -907 32 | 2,611 07 | 2 50 | 482,419 03 | 620,251 88 |
| 9,200 00 | 90 01 | 352 21 | 6,783 73 | 3,783 73 | 2,595 68 | -923 03 | 2,711 06 | 2 50 | 482,517 78 | 620,236 17 |
| 9,300 00 | 89 95 | 354 71 | 6,783 77 | 3,783 77 | 2,695 02 | -934 41 | 2,810 94 | 2 50 | 482,617 12 | 620,224 79 |
| 9,366 67 | 89 92 | 356 38 | 6,783.85 | 3,783 85 | 2,761 49 | -939 59 | 2,877 37 | 2 50 | 482,683 59 | 620,219 61 |
| 9,400 00 | 89 92 | 356 38 | 6,783 89 | 3,783 89 | 2,794 75 | -941 70 | 2,910 53 | 0 00 | 482,716 85 | 620,217 50 |
| 9,471 30 | 89 92 | 356 38 | 6,784 00 | 3,784 00 | 2,865 90 | -946 20 | 2,981 47 | 0 00 | 482,788 00 | 620,213 00 |
| 9,500 00 | 89 91 | 356 95 | 6,784.04 | 3,784 04 | 2,894 56 | -947 87 | 3,010 01 | 2 00 | 482,816 66 | 620,211 33 |
| 9,592 51 | 89 88 | 358 80 | 6,784 22 | 3,784 22 | 2,987 00 | -951 30 | 3,101 79 | 2 00 | 482,909 10 | 620,207 90 |
| 9,600 00 | 89 88 | 358 80 | 6,784 23 | 3,784 23 | 2,994 49 | -951 45 | 3,109.20 | 0 00 | 482,916 59 | 620,207 75 |
| 9,700 00 | 89 88 | 358 80 | 6,784 44 | 3,784 44 | 3,094 46 | -953 54 | 3,208 19 | 0 00 | 483,016 56 | 620,205 66 |
| 9,800 00 | 89 88 | 358 80 | 6,784 65 | 3,784 65 | 3,194 44 | -955 64 | 3,307 19 | 0 00 | 483,116.54 | 620,203 56 |
| 9,900 00 | 89 88 | 358 80 | 6,784 85 | 3,784 85 | 3,294 42 | -957 73 | 3,406 18 | 0 00 | 483,216 52 | 620,201 47 |
| 9,970 50 | 89 88 | 358 80 | 6,785 00 | 3,785 00 | 3,364 90 | -959 20 | 3,475 96 | 0 00 | 483,287 00 | 620,200 00 |
| 10,000 00 | 89 88 | 359 39 | 6,785 06 | 3,785 06 | 3,394 40 | -959 66 | 3,505 15 | 2 00 | 483,316 50 | 620,199 54 |
| 10,034 49 | 89 89 | 0 08 | 6,785 13 | 3,785 13 | 3,428 89 | -959 82 | 3,539 21 | 2 00 | 483,350 99 | 620,199 38 |
| 10,100 00 | 89 89 | 0 08 | 6,785 26 | 3,785 26 | 3,494 40 | -959 73 | 3,603 83 | 0 00 | 483,416 50 | 620,199 47 |
| 10,200 00 | 89 89 | 0 08 | 6,785 46 | 3,785 46 | 3,594 40 | -959 59 | 3,702 48 | 0 00 | 483,516 50 | 620,199 61 |
| 10,300 00 | 89 89 | 0 08 | 6,785 66 | 3,785 66 | 3,694 40 | -959 44 | 3,801 13 | 0 00 | 483,616 50 | 620,199 76 |
| 10,400 00 | 89 89 | 0 08 | 6,785 86 | 3,785 86 | 3,794 40 | -959 30 | 3,899 78 | 0 00 | 483,716 50 | 620,199 90 |

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|---|---|---|---|
| **Company:** | XTO | **Local Co-ordinate Reference:** | Well Nash Unit #40 |
| **Project:** | Eddy County | **TVD Reference:** | WELL @ 3000 00ft (RKB= 17') |
| **Site:** | Nash Unit #40 | **MD Reference:** | WELL @ 3000 00ft (RKB= 17') |
| **Well:** | Nash Unit #40 | **North Reference:** | Grid |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan #1 | **Database:** | Midland Database |

***Planned Survey***

| MD (ft) | Inc (°) | Azi (°) | TVD (ft) | TVDSS (ft) | N/S (ft) | E/W (ft) | V. Sec (ft) | DLeg (°/100ft) | Northing (ft) | Easting (ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 10,470 50 | 89 89 | 0 08 | 6,786 00 | 3,786 00 | 3,864 90 | -959 20 | 3,969.33 | 0 00 | 483,787 00 | 620,200 00 |
| 10,477 61 | 89 77 | 360 00 | 6,786 02 | 3,786 02 | 3,872 01 | -959 19 | 3,976 34 | 2 00 | 483,794 11 | 620,200 01 |
| 10,500 00 | 89 77 | 360 00 | 6,786 11 | 3,786 11 | 3,894 40 | -959 20 | 3,998 44 | 0 00 | 483,816 50 | 620,200 00 |
| 10,600 00 | 89 77 | 360 00 | 6,786.51 | 3,786 51 | 3,994 40 | -959 20 | 4,097 11 | 0 00 | 483,916 50 | 620,200 00 |
| 10,700 00 | 89 77 | 360 00 | 6,786.91 | 3,786 91 | 4,094 40 | -959 20 | 4,195 79 | 0 00 | 484,016 50 | 620,200 00 |
| 10,800 00 | 89 77 | 360 00 | 6,787 32 | 3,787 32 | 4,194 40 | -959 20 | 4,294 46 | 0 00 | 484,116 50 | 620,200 00 |
| 10,900 00 | 89 77 | 360 00 | 6,787.72 | 3,787 72 | 4,294 40 | -959 20 | 4,393 13 | 0 00 | 484,216 50 | 620,200 00 |
| 10,970 51 | 89 77 | 360 00 | 6,788 00 | 3,788 00 | 4,364 90 | -959 20 | 4,462 70 | 0 00 | 484,287 00 | 620,200 00 |
| 10,976 31 | 89 89 | 0 00 | 6,788 02 | 3,788 02 | 4,370 70 | -959 20 | 4,468 43 | 2 00 | 484,292 80 | 620,200 00 |
| 11,000 00 | 89 89 | 0 00 | 6,788 06 | 3,788 06 | 4,394 39 | -959 20 | 4,491 81 | 0 00 | 484,316.49 | 620,200 00 |
| 11,100 00 | 89 89 | 0 00 | 6,788 26 | 3,788 26 | 4,494 39 | -959 20 | 4,590 48 | 0 00 | 484,416 49 | 620,200 00 |
| 11,200 00 | 89 89 | 0 00 | 6,788 46 | 3,788 46 | 4,594 39 | -959 20 | 4,689 16 | 0 00 | 484,516 49 | 620,200 00 |
| 11,300 00 | 89 89 | 0 00 | 6,788 66 | 3,788 66 | 4,694 39 | -959 20 | 4,787 83 | 0 00 | 484,616 49 | 620,200 00 |
| 11,400 00 | 89 89 | 0 00 | 6,788 86 | 3,788 86 | 4,794 39 | -959 20 | 4,886 50 | 0 00 | 484,716 49 | 620,200 00 |
| 11,470 51 | 89 89 | 0 00 | 6,789 00 | 3,789 00 | 4,864 90 | -959 20 | 4,956 08 | 0 00 | 484,787 00 | 620,200 00 |
| 11,500 00 | 89 89 | 0 00 | 6,789 06 | 3,789 06 | 4,894 39 | -959 20 | 4,985 18 | 0 01 | 484,816 49 | 620,200 00 |
| 11,541 78 | 89 88 | 360 00 | 6,789.14 | 3,789 14 | 4,936 18 | -959 20 | 5,026 41 | 0 02 | 484,858 28 | 620,200 00 |
| 11,600 00 | 89 88 | 360 00 | 6,789 27 | 3,789 27 | 4,994 39 | -959 20 | 5,083 85 | 0 00 | 484,916 49 | 620,200 00 |
| 11,700 00 | 89 88 | 360 00 | 6,789 47 | 3,789 47 | 5,094 39 | -959 20 | 5,182 53 | 0 00 | 485,016 49 | 620,200 00 |
| 11,800 00 | 89 88 | 360 00 | 6,789 68 | 3,789 68 | 5,194 39 | -959 20 | 5,281 20 | 0 00 | 485,116 49 | 620,200 00 |
| 11,900 00 | 89 88 | 360 00 | 6,789 89 | 3,789 89 | 5,294 39 | -959 20 | 5,379 87 | 0 00 | 485,216 49 | 620,200 00 |
| 12,000 00 | 89 88 | 360 00 | 6,790 09 | 3,790.09 | 5,394 39 | -959 20 | 5,478 55 | 0 00 | 485,316 49 | 620,200 00 |
| 12,100 00 | 89 88 | 360 00 | 6,790 30 | 3,790 30 | 5,494 39 | -959 20 | 5,577 22 | 0 00 | 485,416 49 | 620,200 00 |
| 12,200 00 | 89 88 | 360 00 | 6,790 51 | 3,790 51 | 5,594 39 | -959 20 | 5,675.90 | 0 00 | 485,516 49 | 620,200 00 |
| 12,300 00 | 89 88 | 360 00 | 6,790 72 | 3,790 72 | 5,694 39 | -959 20 | 5,774 57 | 0 00 | 485,616 49 | 620,200 00 |
| 12,400 00 | 89.88 | 360 00 | 6,790 92 | 3,790 92 | 5,794 39 | -959 20 | 5,873 24 | 0 00 | 485,716 49 | 620,200 00 |
| 12,437 51 | 89 88 | 360.00 | 6,791.00 | 3,791 00 | 5,831 90 | -959 20 | 5,910 26 | 0 00 | 485,754 00 | 620,200 00 |

| | | | |
|---|---|---|---|
| **Company:** | XTO | **Local Co-ordinate Reference:** | Well Nash Unit #40 |
| **Project:** | Eddy County | **TVD Reference:** | WELL @ 3000 00ft (RKB= 17') |
| **Site:** | Nash Unit #40 | **MD Reference:** | WELL @ 3000 00ft (RKB= 17') |
| **Well:** | Nash Unit #40 | **North Reference:** | Grid |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan #1 | **Database:** | Midland Database |

| | | | |
|---|---|---|---|
| **Company:** | XTO | **Local Co-ordinate Reference:** | Well Nash Unit #40 |
| **Project:** | Eddy County | **TVD Reference:** | WELL @ 3000 00ft (RKB= 17') |
| **Site:** | Nash Unit #40 | **MD Reference:** | WELL @ 3000 00ft (RKB= 17') |
| **Well:** | Nash Unit #40 | **North Reference:** | Grid |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan #1 | **Database:** | Midland Database |

**Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| Target 4 (Nash #40) - plan hits target - Point | 0 00 | 0 00 | 6,784 00 | 2,376 90 | -882 20 | 482,299 000 | 620,277 000 | 32° 19' 31 279 N | 103° 56' 38 243 W |
| Target 2 (Nash #40) - plan hits target - Point | 0 00 | 0 00 | 6,786 00 | 1,434 90 | -559 20 | 481,357 000 | 620,600 000 | 32° 19' 21 945 N | 103° 56' 34 519 W |
| Target 1 (Nash #40) - plan hits target - Point | 0 00 | 0 00 | 6,789 00 | 975 90 | -365 20 | 480,898 000 | 620,794 000 | 32° 19' 17 396 N | 103° 56' 32 278 W |
| Target 6 (Nash #40) - plan hits target - Point | 0 00 | 0 00 | 6,785 00 | 3,364 90 | -959 20 | 483,287 000 | 620,200 000 | 32° 19' 41 059 N | 103° 56' 39 099 W |
| Target 7 (Nash #40) - plan hits target - Point | 0.00 | 0 00 | 6,786 00 | 3,864 90 | -959 20 | 483,787 000 | 620,200 000 | 32° 19' 46 007 N | 103° 56' 39 078 W |
| PBHL(Nash #40) - plan hits target - Point | 0 00 | 0 00 | 6,791 00 | 5,831 90 | -959 20 | 485,754 000 | 620,200 000 | 32° 20' 5 472 N | 103° 56' 38 994 W |
| Target 0 (nash#40) - plan misses by 15 03ft at 7279 55ft MD (6790 87 TVD, 786 63 N, -294 27 E) - Point | 0 00 | 0 00 | 6,791.00 | 791 90 | -280 20 | 480,714.000 | 620,879 000 | 32° 19' 15 572 N | 103° 56' 31 295 W |
| Target 10 (Nash #40) - plan hits target - Point | 0 00 | 0 00 | 6,790 00 | 5,364 90 | -959 20 | 485,287 000 | 620,200 000 | 32° 20' 0 851 N | 103° 56' 39 014 W |
| Target 3 (Nash #40) - plan hits target - Point | 0 00 | 0 00 | 6,785 00 | 1,898 90 | -741 20 | 481,821 000 | 620,418 000 | 32° 19' 26 544 N | 103° 56' 36 620 W |
| Target 9 (Nash #40) - plan hits target - Point | 0 00 | 0 00 | 6,789 00 | 4,864 90 | -959 20 | 484,787 000 | 620,200 000 | 32° 19' 55 903 N | 103° 56' 39 035 W |
| Target 5 (Nash #40) - plan hits target - Point | 0 00 | 0 00 | 6,784 00 | 2,865 90 | -946 20 | 482,788 000 | 620,213 000 | 32° 19' 36 120 N | 103° 56' 38 968 W |
| Target 8 (Nash #40) | 0 00 | 0 00 | 6,788 00 | 4,364 90 | -959 20 | 484,287 000 | 620,200 000 | 32° 19' 50 955 N | 103° 56' 39 056 W |

| | | | |
|---|---|---|---|
| **Company:** | XTO | **Local Co-ordinate Reference:** | Well Nash Unit #40 |
| **Project:** | Eddy County | **TVD Reference:** | WELL @ 3000 00ft (RKB= 17') |
| **Site:** | Nash Unit #40 | **MD Reference:** | WELL @ 3000 00ft (RKB= 17') |
| **Well:** | Nash Unit #40 | **North Reference:** | Grid |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan #1 | **Database:** | Midland Database |

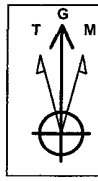
- plan hits target
- Point

**Plan Annotations**

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates +N/-S (ft) | +E/-W (ft) | Comment |
|---|---|---|---|---|
| 5,972 43 | 5,972 43 | 0 00 | 0.00 | KOP-5972 43'MD,0 00°INC,0 00°AZI,5972 43'TVD |
| 7,265 86 | 6,791 00 | 773 81 | -289 47 | EOC-7265.86'MD,90 53°INC,339 49°AZI,6791 00'TVD,7 00°DLS, 810 5 |
| 12,437 51 | 6,791 00 | 775 35 | -290 05 | TD at 12437 51 |

Checked By: _____ Approved By _____ Date _____

XTO ENERGY




Azimuths to Grid North
True North: -0.21°
Magnetic North: 7.85°

Magnetic Field
Strength: 48921.3snT
Dip Angle: 60.29°
Date: 11/05/2008
Model: IGRF200510

PATHFINDER

SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | DLeg | TFace | VSec | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2 | 5972.43 | 0.00 | 0.00 | 5972.43 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 | 7265.86 | 90.53 | 339.49 | 6791.00 | 773.81 | -289.47 | 7.00 | 339.49 | 816.53 | |
| 4 | 7287.51 | 90.53 | 339.46 | 6790.95 | 775.35 | -290.05 | 2.00 | -86.34 | 812.14 | |
| 5 | 7481.89 | 90.53 | 339.46 | 6789.00 | 975.90 | -365.29 | 0.00 | 0.00 | 1022.23 | Target 1 (Nash #40) |
| 6 | 7618.58 | 90.32 | 336.71 | 6787.98 | 1103.79 | -416.66 | 2.00 | -94.48 | 1158.78 | |
| 7 | 7989.06 | 90.32 | 336.71 | 6785.00 | 1434.99 | -559.20 | 0.00 | 0.00 | 1508.63 | Target 2 (Nash #40) |
| 8 | 8085.47 | 90.69 | 338.60 | 6784.63 | 1532.47 | -599.16 | 2.00 | 96.09 | 1609.38 | |
| 9 | 8476.48 | 90.09 | 338.60 | 6785.00 | 1895.90 | -741.20 | 0.00 | 0.00 | 1994.02 | Target 3 (Nash #40) |
| 10 | 8879.64 | 90.13 | 346.65 | 6784.24 | 2273.07 | -857.55 | 2.00 | 89.71 | 2382.11 | |
| 11 | 8977.35 | 90.13 | 346.65 | 6784.00 | 2370.90 | -882.20 | 0.00 | 0.00 | 2480.56 | Target 4 (Nash #40) |
| 12 | 9366.67 | 89.92 | 358.38 | 6783.85 | 2761.49 | -939.59 | 2.50 | 91.26 | 2877.37 | |
| 13 | 9471.39 | 89.92 | 356.38 | 6784.00 | 2865.90 | -946.20 | 0.00 | 0.00 | 2981.47 | Target 5 (Nash #40) |
| 14 | 9592.51 | 89.88 | 358.89 | 6784.22 | 2987.00 | -951.30 | 2.00 | 99.51 | 3101.79 | |
| 15 | 9970.50 | 89.88 | 358.89 | 6785.00 | 3364.90 | -959.20 | 0.00 | 0.00 | 3479.96 | Target 6 (Nash #40) |
| 16 | 10034.49 | 89.89 | 0.08 | 6785.13 | 3428.89 | -959.82 | 2.00 | 89.79 | 3539.21 | |
| 17 | 10478.59 | 89.89 | 0.08 | 6786.00 | 3864.00 | -959.20 | 0.00 | 0.00 | 3978.33 | Target 7 (Nash #40) |
| 18 | 10477.61 | 89.77 | 360.00 | 6786.02 | 3872.01 | -959.19 | 2.00 | -144.51 | 3978.34 | |
| 19 | 10976.51 | 89.77 | 360.00 | 6788.00 | 4364.90 | -959.20 | 0.00 | 0.00 | 4462.70 | Target 8 (Nash #40) |
| 20 | 10976.51 | 89.89 | 0.00 | 6788.02 | 4370.70 | -959.20 | 2.00 | 0.29 | 4468.43 | |
| 21 | 11479.61 | 89.89 | 0.00 | 6789.00 | 4864.80 | -959.20 | 0.00 | 0.00 | 4956.68 | Target 9 (Nash #40) |
| 22 | 11541.76 | 89.84 | 360.00 | 6789.14 | 4926.16 | -959.20 | 0.01 | 0.00 | 5026.41 | |
| 23 | 12437.51 | 89.84 | 360.00 | 6791.00 | 5831.90 | -959.20 | 0.00 | 0.00 | 5910.26 | PBHL(Nash #40) |

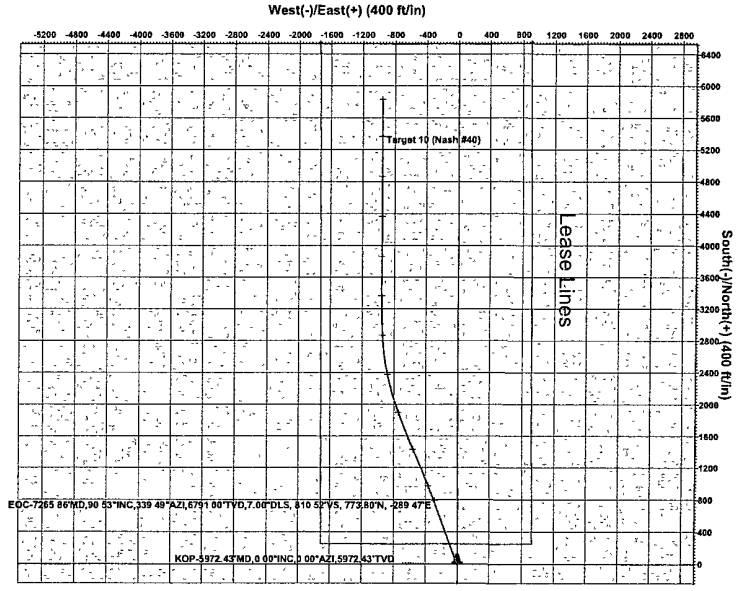
WELL DETAILS Nash Unit #40

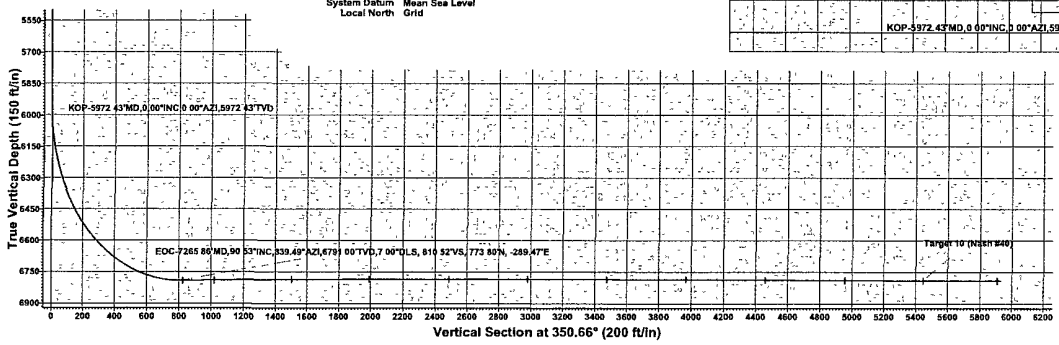
Ground Elevation 2983.00
RKB Elevation WELL @ 3006.00ft (RKB= 17')
Rig Name RKB= 17'

| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Slot |
|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 479922.190 | 621159.290 | 32° 19' 7.725 N | 103° 56' 28.963 W | |

PROJECT DETAILS Eddy County

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
Local North Grid




LEGEND

- Plan #1

Project: Eddy County
Site: Nash Unit #40
Well: Nash Unit #40
Wellbore: OH
Plan: Plan #1 (Nash Unit #40/OH)

Plan: Plan #1 (Nash Unit #40/OH)

Created By: Aaron Pullin Date 14:14, August 27 2009

Checked _____ Date

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

XTO Energy Inc.
Nash Well #40H
Projected TD: 12385 MD / TVD: 6800'
SHL: Section 12 T23S R29E (K)
BHL: Section 1 T23S R29E (C)
Eddy County, NM
Lease #: NM0556859-A

## 1. GEOLOGIC NAME OF SURFACE FORMATION:

A. Salido

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

| Formation | Subsea Depth | Well Depth | Water / Oil / Gas |
|---|---|---|---|
| Top Salido Salt | | 310' | Water |
| Base of Salt | | 3111' | Water |
| Top Delaware | | 3111' | Water/Oil/Gas |
| Cherry Canyon | | 3970' | Water/Oil/Gas |
| Top Brushy Canyon | | 5551' | Water/Oil/Gas |
| Base Brushy Canyon | | 6603' | Water/Oil/Gas |
| Brushy Canyon E5 Zone | | 6763' | Water/Oil/Gas |
| Target/Land Curve | | 6798' | Water/Oil/Gas |
| TD/MD | | 12385' | Water/Oil/Gas |

*** Hydrocarbons @ Brushy Canyon

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 13-3/8" casing @ 280' and circulating cement back to surface. Potash/fresh water sands will be protected by setting 9-5/8" casing at 3300' and circulating cement to surface. The Brushy Canyon intervals will be isolated by setting 7" casing to the end of the directional curve at 7500' +/- and cementing back to surface. A 6-1/8" lateral hole will be drilled to MD/TD and 4-1/2" casing with Halliburton swell packers will be run for completion.

## 3. CASING PROGRAM:

| Hole Size | Depth | OD Csg | Weight | Collar | Grade | New/Used | SF Burst | SF Collapse | SF Tension |
|---|---|---|---|---|---|---|---|---|---|
| 17-1/2" | 0' – 280' | 13-3/8" | 48# | STC | H-40 | New | 2.24 | .96 | 4.56 |
| 12-1/4" | 0' – 3300' | 9-5/8" | 36# | LTC | J-55 | New | 2.12 | 1.38 | 3.35 |
| 8-3/4" | 0' – 7500' | 7" | 26# | LTC | HCP-110 | New | 2.6 | 1.6 | 2.87 |
| 6-1/8" | 7350 – 12385' | 4-1/2" | 11.6# | LTC | P-110 | New | 2.77 | 1.96 | 4.73 |

**WELLHEAD:**

A. Starting head: 13-5/8" 3000 psi top flange x 13-3/8" SOW bottom (to be removed upon setting intermediate casing)
B. Lower casing head: 11" 3000 psi top flange x 9-5/8" SOW bottom
C. "B" section: Casing hanger 11" bowl x 7" casing
D. Tubing spool: 11" 3000 psi bottom flange x 7-1/16" 5000 psi top flange

**4. CEMENT PROGRAM: (Note yields and DV tool depts. If multiple stages)**

A. **Surface Casing:** 13-3/8", 48#, NEW H-40, STC casing to be set at ± 280'.

500 sx HalCem-C + 2% CaCl (14.80 ppg, 1.35 cu ft/sx, 6.39gal/sx wtr)
Compr Strengths: 12 hr -900 psi 24 hr – 1500 psi
***All volumes 100% excess. Cement to surface.

B. **Intermediate Casing:** 9-5/8",36#, NEW J-55, LTC casing to be set at ± 3300'.

**Stage 1:**

Lead: 20 bbls FW, then 900 sx EconoCem-HLC + 5% salt (mixed at 12.8 ppg, 1.92 $ft^3$/sk, 10.44 gal/sx wtr) Compr Strengths 12 hr – 319 psi 24 hr – 653 psi

Tail: 250 sx HalCem-C + 1% CaCl (mixed at 14.8 ppg, 1.34 $ft^3$/sk, 6.36 gal/sx wtr)
Compr Strengths: 12 hr – 900 psi 24 hr – 1500 psi
***All volumes 100% excess. Cement to surface.

C. **2nd Intermediate Casing:** 7", 26#, NEW HCP-110, LTC casing to be set at ± 7500' w/DVT @ 5500'

**Stage 1:**

Lead: 350 sx CorossaCem-H + 0.5% LAP-1 + 0.1% HR-800 + 5 lb/sx Gilsonite (14.4ppg, 1.23 cuft/sx, 5.18 gal/sx wtr).
Compr Strengths: 24 hr – 681 psi 48 hr – 1561 psi.

Tail (Csg Shoe Cmt): 100 sx HalCem-H + .5% LAP-1 + .25% CFR-3 + 5 pps Gilsonite + .25 lb/sx D-air 3000 (15.8 ppg, 1.17 cuft/sx, 4.58 gal/sx Compr Strengths - 24 hr – 2203 psi 48 hr – 2788 psi
*** Cement to 5500'.

**Stage 2: (thru DV Tool @ 5500')**
Lead: 580 sx EconoCem HLC + 5% Salt (mixed at 12.8 ppg, 1.92 cuft/sx, 10.44 gal/sx wtr)
Compr Strengths: 12 hr – 444 psi 24 hr – 755 psi

Tail: 150 sx HalCem C (mixed at 14.8 ppg, 1.33 cuft/sx, 6.34 gal/sx wtr)
Compr Strengths: 12 hr – 1440 psi 24 hr – 1909 psi *** Cement to Surface.

## 5. PRESSURE CONTROL EQUIPMENT:

The blow out preventer equipment (BOP) diagram is attached to this Drilling Plan. The blowout preventer will consist of a double ram blowout preventer and annular preventer rated to 5000 psi working pressure. All BOPs and accessory equipment will be tested according to Onshore Order #2 before drilling out. A hydraulic closing unit will be a part of this equipment and will be function tested daily. See 'Sundry' discussion for use of a 13-5/8" 3M hydril on the 13-3/8" csg and testing, then the use of the 11" 5M stack on the 9-5/8" & below and its testing.

## 6. PROPOSED MUD CIRCULATION SYSTEM:

| INTERVAL | Hole Size | Mud Type | MW (ppg) | Viscosity (sec/qt) | Fluid Loss (cc) |
|---|---|---|---|---|---|
| 0' to 280' | 17-1/2" | FW/Native | 8.5-8.8 | 35-40 | NC |
| 280' to 3300' +/- | 12-1/4" | Brine/Gel Sweeps | 9.8-10.2 | 30-32 | NC |
| 3300' to 7500' | 8-3/4" | Cut Brine/ Poly-Sweeps | 9.2-9.6 | 29-32 | NC-30 |
| 7500' to 12385' | 6-1/8" | Cut Brine/Poly-Starch | 8.6-9 | 32-38 | NC -30 |

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

Spud with fresh water/native mud. Drill out from under 13-3/8" surface casing with brine solution. Use fibrous materials as needed to control seepage and lost circulation. Pump viscous sweeps as needed for hole cleaning. Use available solids controls equipment to help keep mud weight down after mud up. Rig up Dynamic Energy Systems' solids control equipment to operate as a closed loop system.

## 7. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:

A. A Kelly cock will be in the drill string at all times.
B. A full opening drill pipe stabbing valve having appropriate connections will be on the rig floor at all times.
C. H2S monitors will be on location when drilling the 12-1/4" hole.

## 8. LOGGING, CORING AND TESTING PROGRAM:

A. Mud Logger: Suttles Mud Logging Unit (2 man) on @ 6000'.
Catch 10' samples from 6000' to 12385' (TD).
Send 1 set of dry samples to Midland Sample Library.

## 9. ABNORMAL PRESSURES AND TEMPERATURES / POTENTIAL HAZARDS:

None anticipated. Max bottom hole pressure should not exceed 2500psi. BHT of 175 F is anticipated. H2S can be present from 4600 – TD. Should these circumstances be encountered the operator and drilling contractor are prepared to take all necessary steps to ensure safety of all personnel and environment. Lost circulation could occur but is not expected to be a serious problem in this area and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid.

## 10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

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

## 11. SPECIAL INSTRUCTIONS:

A. Reports should be filled out on the XTO Drilling Report form, and the Casing/Cementing Detail Forms provided.

B. Deviation:
   Surface Hole: Maximum of 1° and not more than 1° change per 100'.
   Intermediate Hole: Maximum of 4° and not more than 1.5° change per 100'.
   Production hole: Maximum of 6° and not more than 1.5° change per 100'.
   **Note: Maximum distance between surveys is 500'.**

C. WOC a minimum of 12 hours before drilling out shoe joint on surface and intermediate casing strings. Use minimal WOB and RPM until drill collars are below the shoe joints.

D. Check BOP blind rams each trip and pipe rams each day. Strap out of hole for logging and/or casing jobs.

E. A trash trailer will be provided on each location. Keep trash picked up and the location as clean as possible. All drilling line, oil filters, etc. should be hauled away at the Drilling Contractor's expense. At the conclusion of drilling operations, the contents of the trash trailer will be disposed of into a commercial sanitary landfill.

F. The reserve pits should be lined with a plastic liner in order to contain the drill cuttings and drilling fluids. At the conclusion of the drilling operations, all re-usable drilling fluid should be moved to the next well in the drilling order.

## HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

**Hydrogen Sulfide Training:**

All regularly assigned personnel contracted or employed by XTO Energy. Inc. will receive training from qualified instructor(s) in the following areas prior to commencing drilling possible hydrogen sulfide bearing formations in this well:

The hazards and characteristics of hydrogen sulfide (H2S)
The proper use and maintenance of personal protective equipment and life support systems.
The proper use of H2S detectors, alarms, warning systems, briefing area, evacuation procedures & prevailing winds.
The proper techniques for first aid and rescue procedures.

**Supervisory personnel will be trained in the following areas:**

The effects of H2S on metal components. If high tensile tubulars are to be utilized, personnel will be trained in their special maintenance requirements.

Corrective action & shut-in procedures when drilling or reworking a well & blowout prevention / well control procedures.

The contents and requirements of the H2S Drilling Operations Plan

## H2S SAFETY EQUIPMENT AND SYSTEMS:

**Well Control Equipment:**

Flare Line w/continuous pilot. Choke manifold with a minimum of one remote choke.
Blind rams and pipe rams to accommodate all pipe sizes w/properly sized closing unit.
Auxiliary equipment to include: annular preventer, ude-gas separator, rotating head & flare.

**Protective Equipment for Essential Personnel:**

Mark II Survive-air 30 minute units located in dog house & at briefing areas, as indicated on wellsite diagram.

**H2S Detection and Monitoring Equipment:**

Two portable H2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 ppm are reached.

One portable H2S monitor positioned near flare line.

**H2S Visual Warning Systems:**

Wind direction indicators are shown on wellsite diagram.
Caution / Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

**Mud Program:**

The Mud Program has been designed to minimize the volume of H2S circulated to the surface. Proper mud weights, safe drilling practices and the use of H2S scavengers will minimize hazards when penetrating H2S bearing zones. A mud-gas separator will be utilized as needed.

**Metallurgy:**

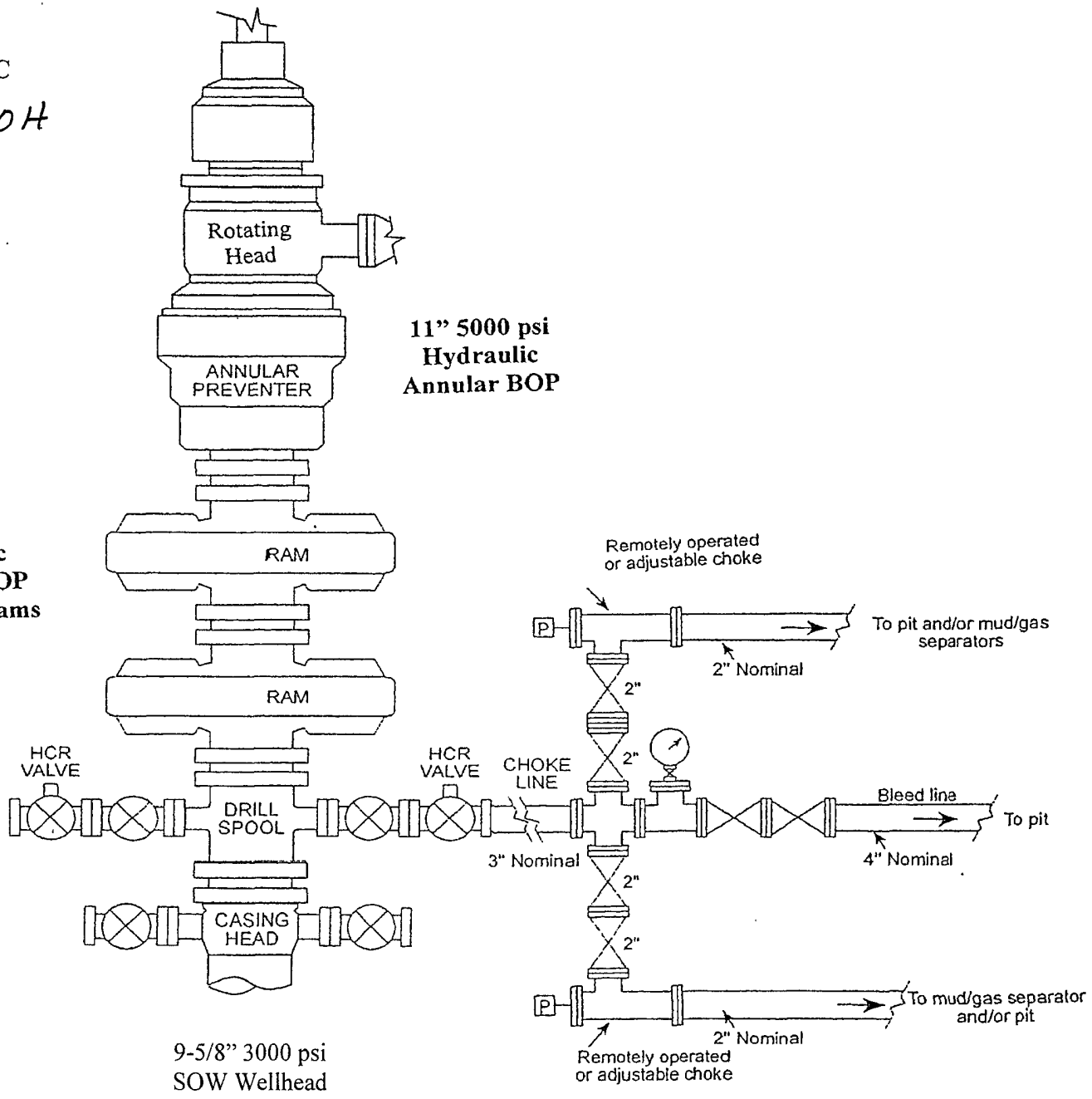
All drill strings, casing, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and line and valves will be suitable for H2S service.

**Communication:**

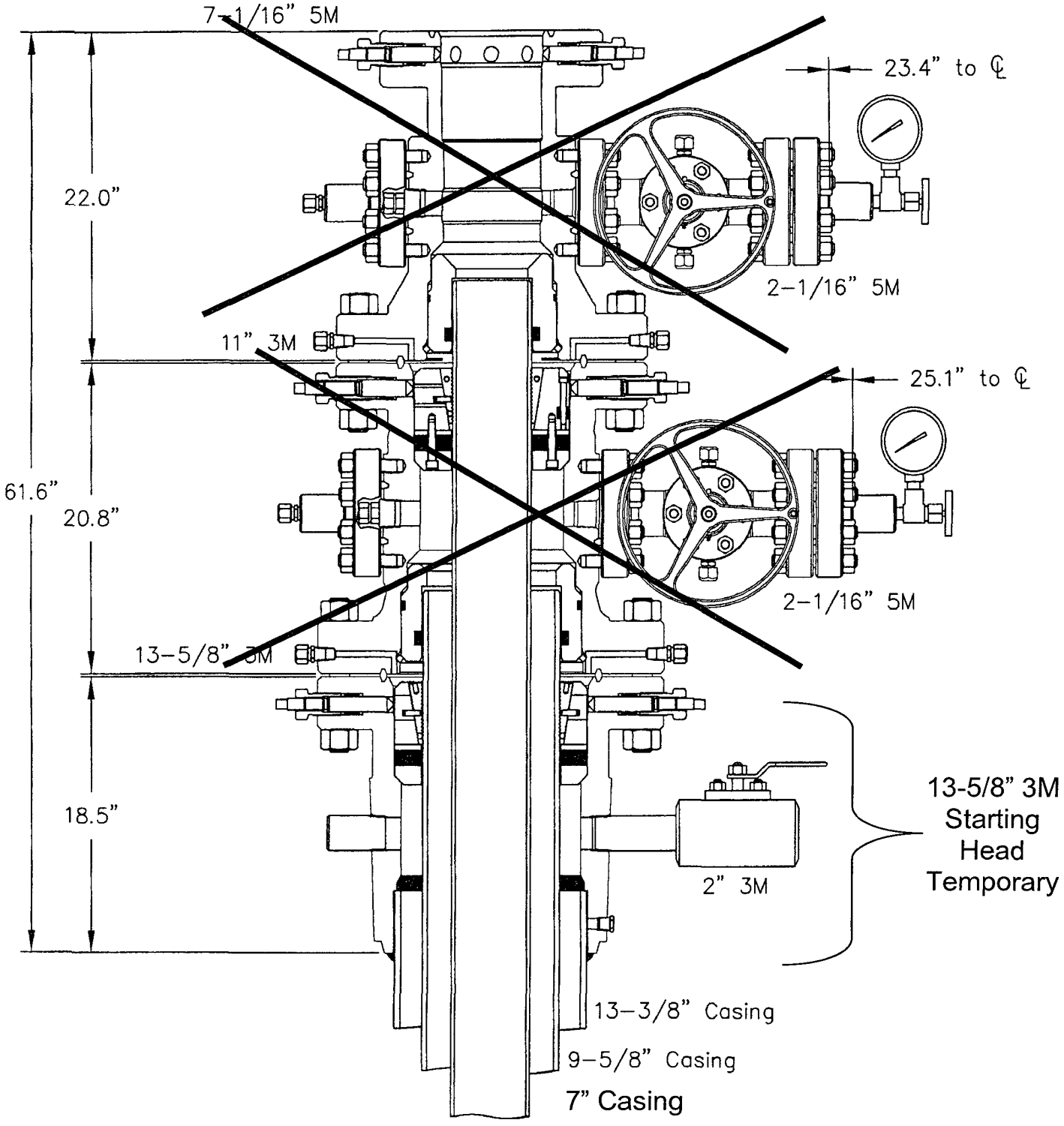
Cellular telephone communications in company vehicles, rig floor and mud logging trailer.

**XTO ENERGY INC**

**Nash Unit # 40H**




5000 psi Working Pressure
BOPE Configuration and Choke Manifold






PROPOSED

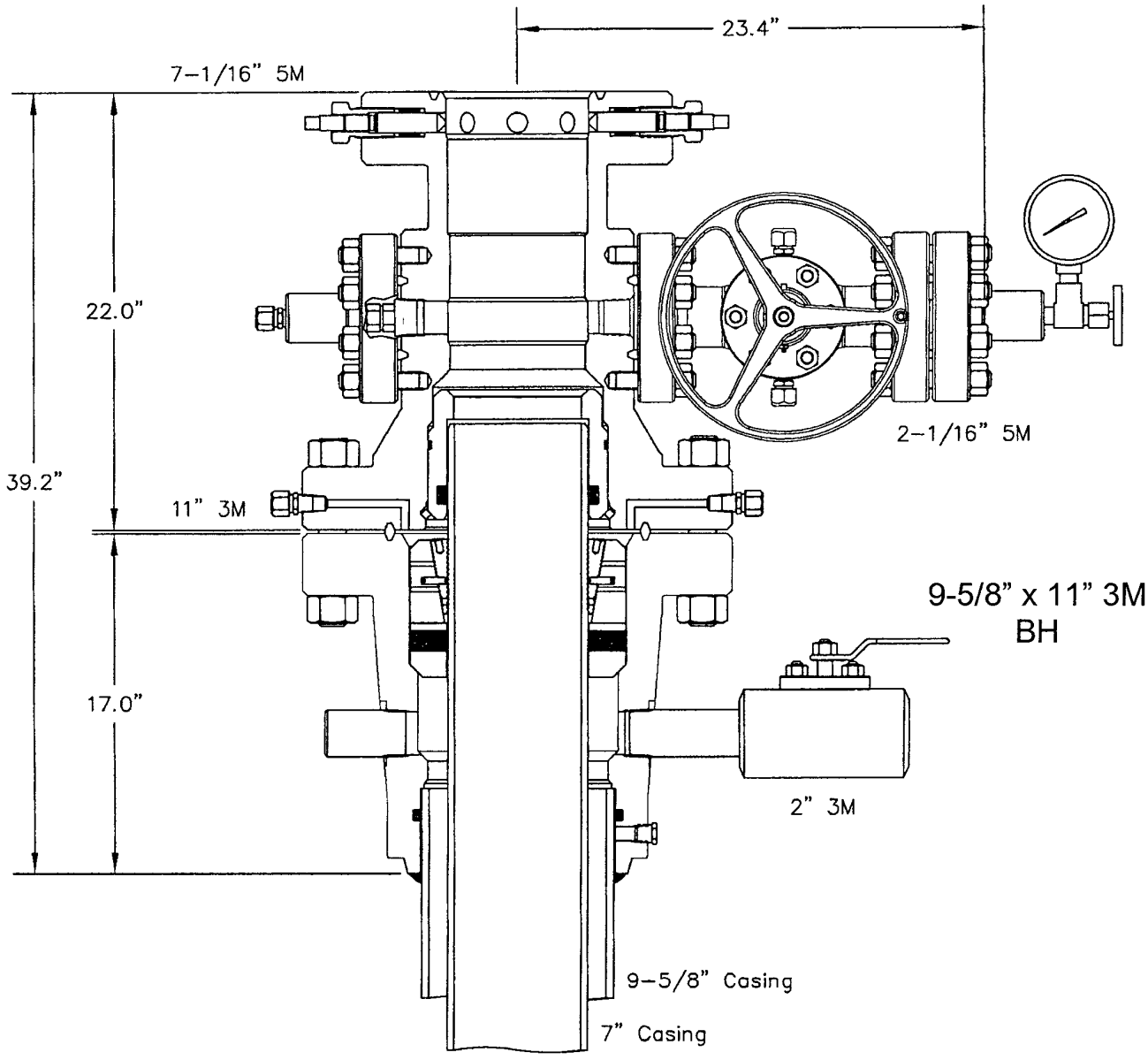
WOOD GROUP PRESSURE CONTROL

XTO Energy, Inc.
Brushy Canyon Horizontal

| | | |
|---|---|---|
| DRAWN | VJK | 22APR09 |
| APPRV | THH | 22APR09 |

DRAWING NO. AE16844

11" 3M x 7-1/16" 5M
Tubing Head






PROPOSED

| | | |
|---|---|---|
| WOOD GROUP PRESSURE CONTROL | XTO Energy, Inc.<br>Brushy Canyon | |
| Wellhead Assembly, With T-EBS Tubing Head | DRAWN | VJK 13AUG09 |
| | APPRV | THH 13AUG09 |
| | DRAWING NO. | AE17410 |

Wesley_Ingram@blm.gov
04/24/2009 12:36 PM

To Chip_Amrock@xtoenergy.com
cc
bcc
Subject Re: Wellhead Configuration for Nash Unit #39H, etc

Chip,

Now that I read your actual situation, this is what has been standard operation on BLM land as well. Since the casings are being cemented to surface, the need for the larger Bradenhead is eliminated. The one comment that I received is that if there was ever a need for the larger Bradenhead, it could be installed deeper in the cellar.

Your plans of removing the Bradenhead are acceptable.

Thanks, Wesley

Chip_Amrock@xtoenergy.com
04/24/2009 09:49 AM

To wesley_ingram@nm.blm.gov
cc
Subject Wellhead Configuration for Nash Unit #39H, etc

Wesley,

Appreciate talking to you this morning in regards to my question concerning the wellhead configuration for this well and others just like it, this is our first major BLM well with three strings of pipe in it, and we are double checking our drilling plans. As we drill one of these wells, we must set our wellhead equipment below ground level, so this does not obstruct the moving of the rig and its equipment to the next well on the same pad about 50' away, and then again for a third well.

This well has a 13-3/8" surface string, a 9-5/8" intrmediate string and 5-1/2" production string of pipe planned. This is also a similar pipe design for a Morrow type well that we have drilled that is not on Federal/BLM land. On a non-BLM well, when the 13-3/8" casing is set and the 'Bradenhead' is installed, a rental/or drilling contractor supplied 13-5/8" hydril is installed for the drilling of the 12-1/4" hole. Once the intermediate string has been cemented, the 13-5/8" hydril is removed, and

the '13-3/8" Bradenhead' is removed, and a 9-5/8" SOW type x 11" 3M or 5M flange 'Bradenhead' is installed, then the normal 'drilling contractor 11" double ram with hydril' BOP is installed, and the well is drilled to TD.

The question for the Nash wells is - are we required to leave the 13-3/8" 'Bradenhead' on the well? This affects the setting depth of the wellhead and the other wellhead segments that would be required and installed.

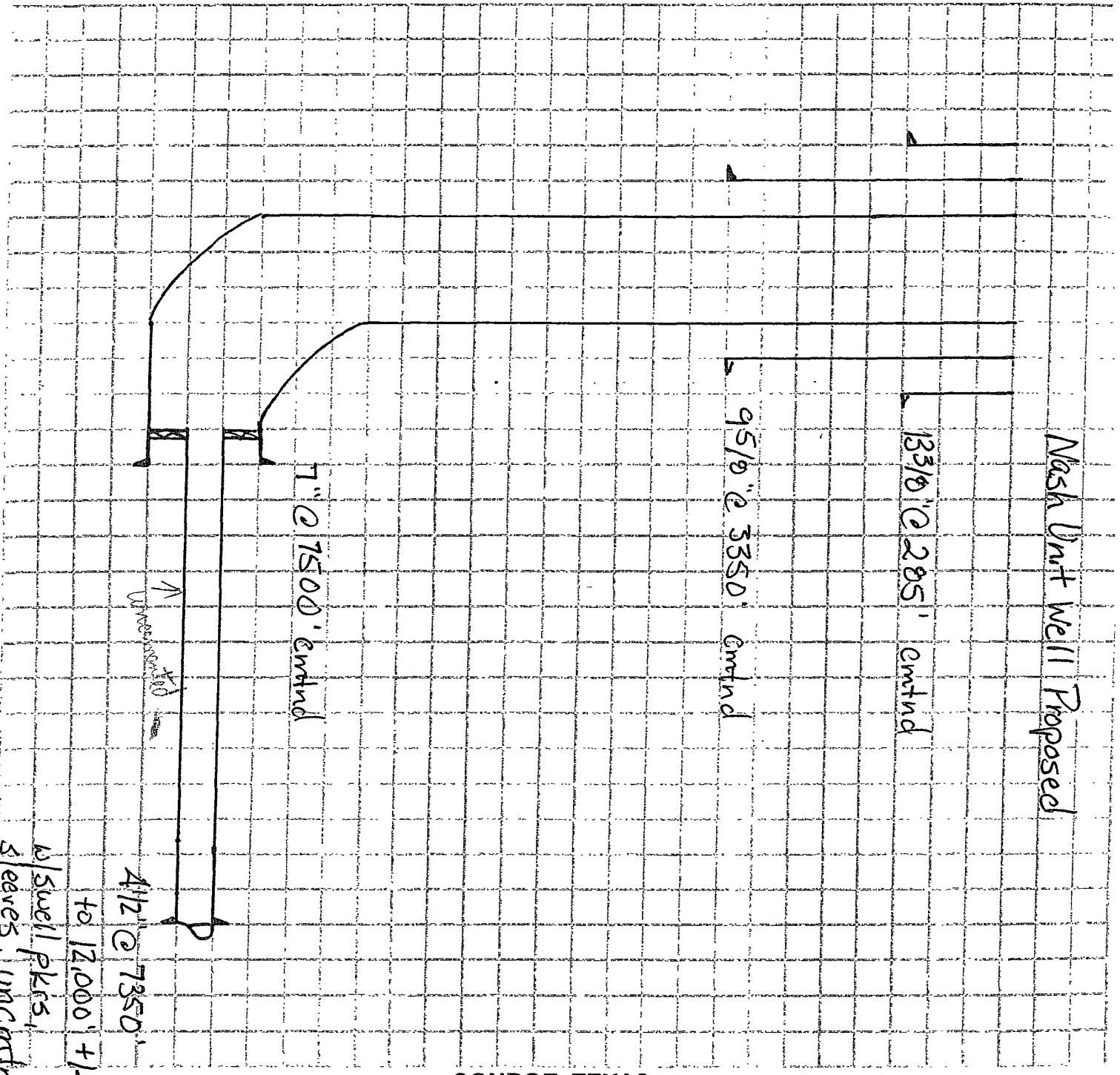
If more clarification is needed, please let me know.

Thanks,

Chip Amrock
Sr Drilling Engineer
XTO Energy - Permian Div
Office: 432-620-4323
Cell: 432-638-8372
Fax: 432-620-4307

MULTI-SHOT
Directional Services

DIRECTIONAL DRILLIN
DIRECTIONAL SURVEYIN
MWD SERVICE
STEERING TOOL
MOTOR





BAKER, MONTANA
406-778-3983
877-844-9850

BROUSSARD, LOUISIANA
337-839-8400
800-259-2867

CONROE, TEXAS
936-441-6630
1-800-769-5988
FAX 936-441-6620
www.multi-shotllc.com

CORPUS CHRISTI, TEXAS
361-289-7272
800-880-7468

DFW, TEXAS
972-772-3377
817-870-4847

DECATUR, TEXAS
800-880-7468

DENVER, COLORADO
303-542-1957

GRAND JUNCTION, COLORADO
970-257-1911

HOUSTON, TEXAS
281-951-4346

MIDLAND, TEXAS
432-683-6565

ROCK SPRINGS, WYOMING
307-231-0135

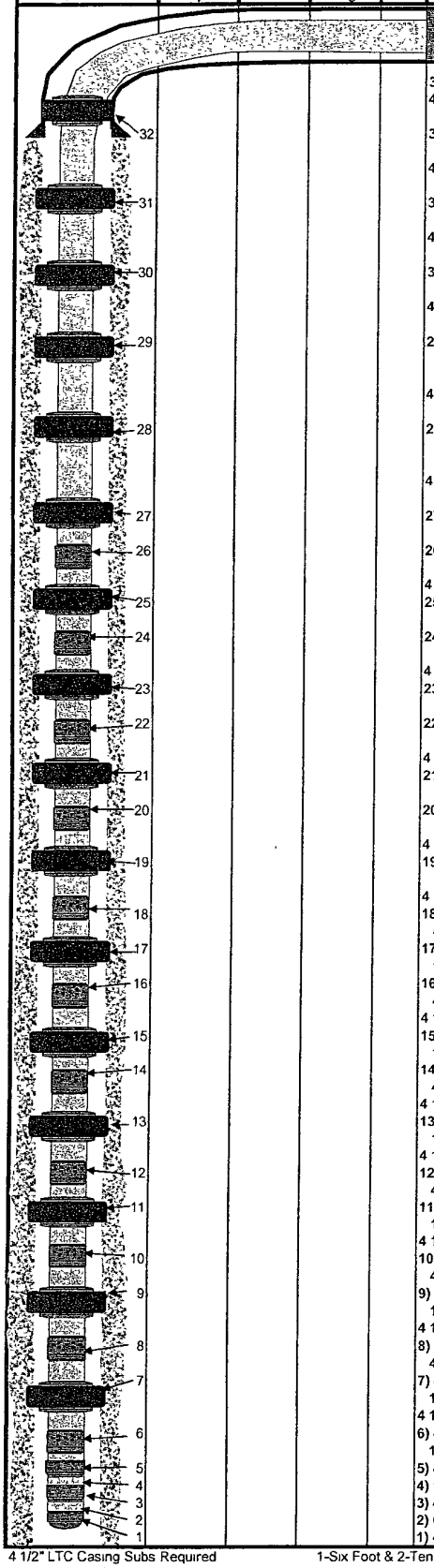
TYLER, TEXAS
800-880-7468

# HALLIBURTON

## XTO Energy

| | | | |
|---|---|---|---|
| Nash Draw TBA | | Company Rep. | Richard Lauderdale |
| Eddy County New Mexico | | Sales Rep. | Lynn Talley |
| 4-Aug-09 | | Office | 432-682-4305 |

**Proposed Installation**



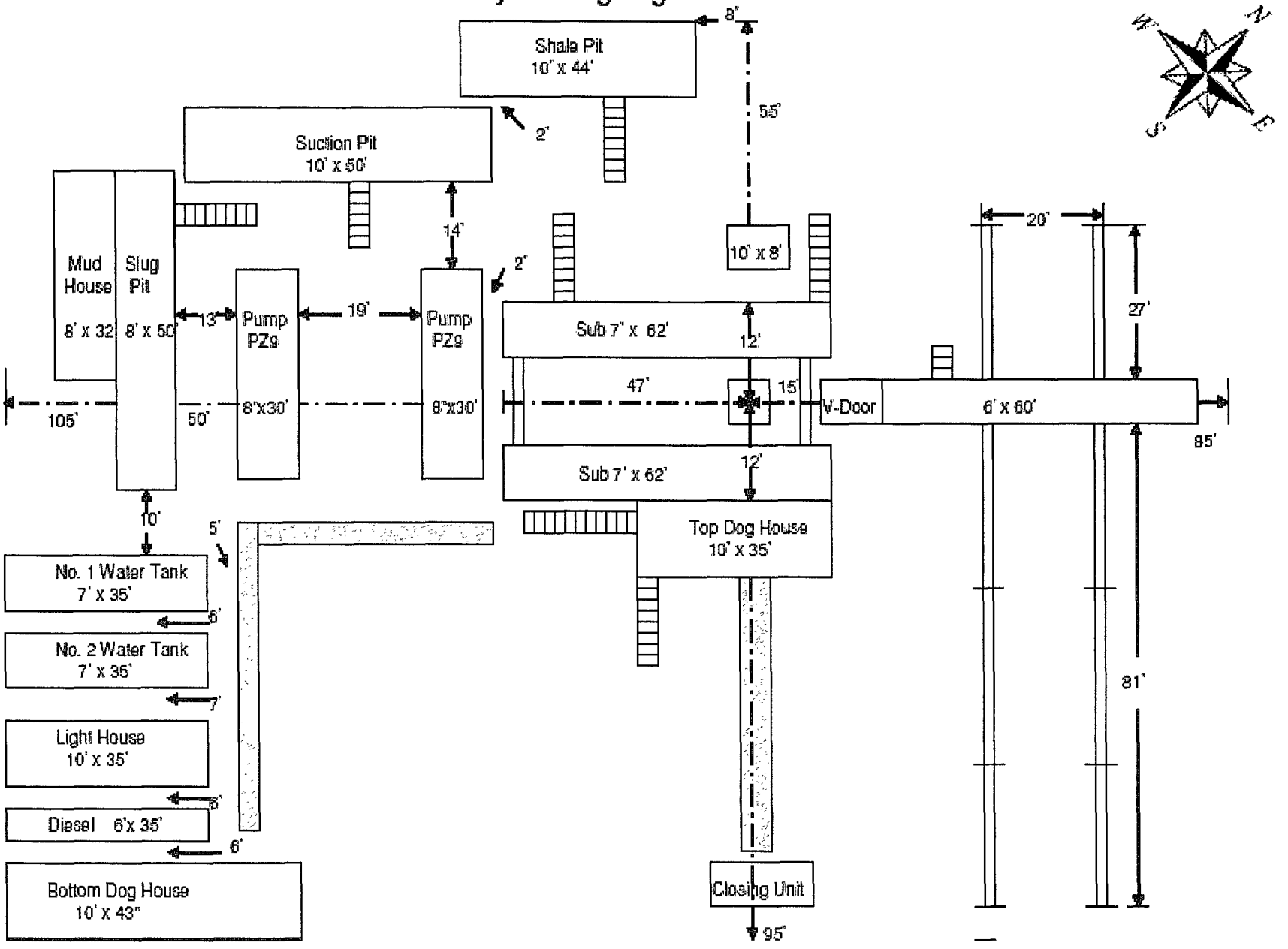
| Installation | Depth | Length | Jts. | Description | OD | ID |
|---|---|---|---|---|---|---|
| | | | | 33) 7" 29# VersaFlex Liner Hanger | | |
| | | | | 4 1/2" 11.6# N-80 Ultra FJ casing | | |
| 32 | | | | 32) 4.5x5.75x2.3m SP-S WBM Swellpacker | 5.750 | |
| | | | | 19' Ultra FJ Casing Sub Supplied By Customer | | |
| | | | | 4 1/2" 11.6# N-80 Ultra FJ casing | | |
| 31 | | | | 31) 4.5x5.75x2.3m SP-S WBM Swellpacker | 5.750 | |
| | | | | 19' Ultra FJ Casing Sub Supplied By Customer | | |
| | | | | 4 1/2" 11.6# N-80 Ultra FJ casing | | |
| 30 | | | | 30) 4.5x5.75x2.3m SP-S WBM Swellpacker | 5.750 | |
| | | | | 19' Ultra FJ Casing Sub Supplied By Customer | | |
| | | | | 4 1/2" 11.6# N-80 Ultra FJ casing | | |
| 29 | | | | 29) 4.5x5.75x2.3m SP-S WBM Swellpacker | 5.750 | |
| | | | | 19' Ultra FJ Casing Sub Supplied By Customer | | |
| | | | | 4 1/2" 11.6# N-80 Ultra FJ casing | | |
| 28 | | | | 28) 4.5x5.75x2.3m SP-S WBM Swellpacker | 5.750 | |
| | | | | 19' Ultra FJ Casing Sub Supplied By Customer | | |
| | | | | 4 1/2" 11.6# N-80 Ultra FJ casing | | |
| 27 | | | | 27) 4.5x5.75x2.3m SP-S WBM Swellpacker | 5.750 | |
| | | | | 19' Ultra FJ Casing Sub Supplied By Customer | | |
| 26 | | | | 26) 4 1/2" Delta Stim Sleeve Threaded Ultra FJ | 5.600 | 3.560 |
| | | | | 4' Ultra FJ Sub Below & 6' Ultra FJ Sub Above | | |
| | | | | 4 1/2" 11.6# N-80 Ultra FJ casing | | |
| 25 | | | | 25) 4.5x5.75x2.3m SP-S WBM Swellpacker | 5.750 | |
| | | | | 19' Ultra FJ Casing Sub Supplied By Customer | | |
| 24 | | | | 24) 4 1/2" Delta Stim Sleeve Threaded Ultra FJ | 5.600 | 3.310 |
| | | | | 4' Ultra FJ Sub Below & 6' Ultra FJ Sub Above | | |
| | | | | 4 1/2" 11.6# N-80 Ultra FJ casing | | |
| 23 | | | | 23) 4.5x5.75x2.3m SP-S WBM Swellpacker | 5.750 | |
| | | | | 19' Ultra FJ Casing Sub Supplied By Customer | | |
| 22 | | | | 22) 4 1/2" Delta Stim Sleeve Threaded Ultra FJ | 5.600 | 3.060 |
| | | | | 4' Ultra FJ Sub Below & 6' Ultra FJ Sub Above | | |
| | | | | 4 1/2" 11.6# N-80 Ultra FJ casing | | |
| 21 | | | | 21) 4.5x5.75x2.3m SP-S WBM Swellpacker | 5.750 | |
| | | | | 19' Ultra FJ Casing Sub Supplied By Customer | | |
| 20 | | | | 20) 4 1/2" Delta Stim Sleeve Threaded Ultra FJ | 5.600 | 2.810 |
| | | | | 4' Ultra FJ Sub Below & 6' Ultra FJ Sub Above | | |
| | | | | 4 1/2" 11 6# N-80 Ultra FJ casing | | |
| 19 | | | | 19) 4.5x5.75x2.3m SP-S WBM Swellpacker | 5.750 | |
| | | | | 19' Ultra FJ Casing Sub Supplied By Customer | | |
| | | | | 4 1/2" 11 6# N-80 Ultra FJ casing | | |
| 18 | | | | 18) 4 1/2" Delta Stim Sleeve Threaded Ultra FJ | 5.600 | 2.560 |
| | | | | 4' Ultra FJ Sub Below & 6' Ultra FJ Sub Above | | |
| 17 | | | | 17) 4.5x5.75x2.3m SP-S WBM Swellpacker | 5.750 | |
| | | | | 19' Ultra FJ Casing Sub Supplied By Customer | | |
| 16 | | | | 16) 4 1/2" Delta Stim Sleeve Threaded Ultra FJ | 5.600 | 2.310 |
| | | | | 4' Ultra FJ Sub Below & 6' Ultra FJ Sub Above | | |
| | | | | 4 1/2" 11.6# N-80 Ultra FJ casing | | |
| 15 | | | | 15) 4.5x5.75x2.3m SP-S WBM Swellpacker | 5.750 | |
| | | | | 19' Ultra FJ Casing Sub Supplied By Customer | | |
| 14 | | | | 14) 4 1/2" Delta Stim Sleeve Threaded Ultra FJ | 5.600 | 2.060 |
| | | | | 4' Ultra FJ Sub Below & 6' Ultra FJ Sub Above | | |
| | | | | 4 1/2" 11.6# N-80 Ultra FJ casing | | |
| 13 | | | | 13) 4.5x5.75x2.3m SP-S WBM Swellpacker | 5.750 | |
| | | | | 19' Ultra FJ Casing Sub Supplied By Customer | | |
| | | | | 4 1/2" 11.6# N-80 Ultra FJ casing | | |
| 12 | | | | 12) 4 1/2" Delta Stim Sleeve Threaded Ultra FJ | 5.600 | 1.810 |
| | | | | 4' Ultra FJ Sub Below & 6' Ultra FJ Sub Above | | |
| 11 | | | | 11) 4.5x5.75x2.3m SP-S WBM Swellpacker | 5.750 | |
| | | | | 19' Ultra FJ Casing Sub Supplied By Customer | | |
| | | | | 4 1/2" 11.6# N-80 Ultra FJ casing | | |
| 10 | | | | 10) 4 1/2" Delta Stim Sleeve Threaded Ultra FJ | 5.600 | 1.560 |
| | | | | 4' Ultra FJ Sub Below & 6' Ultra FJ Sub Above | | |
| 9 | | | | 9) 4.5x5.75x2.3m SP-S WBM Swellpacker | 5.750 | |
| | | | | 19' Ultra FJ Casing Sub Supplied By Customer | | |
| | | | | 4 1/2" 11.6# N-80 Ultra FJ casing | | |
| 8 | | | | 8) 4 1/2" Delta Stim Sleeve Threaded Ultra FJ | 5.600 | 1.310 |
| | | | | 4' Ultra FJ Sub Below & 6' Ultra FJ Sub Above | | |
| 7 | | | | 7) 4.5x5.75x2.3m SP-S WBM Swellpacker | 5.750 | |
| | | | | 19' Ultra FJ Casing Sub Supplied By Customer | | |
| | | | | 4 1/2" 11.6# N-80 Ultra FJ casing | | |
| 6 | | | | 6) 4 1/2" Blank Delta Stim Initiator Sleeve. Ultra FJ X 8rd. LTC | 5.750 | 3.000 |
| | | | | 10' LTC Sub Below & 6' Ultra FJ Sub Above | | |
| 5 | | | | 5) 4 1/2" Landing Collar | | 1.000 |
| 4 | | | | 4) 10'x 4 1/2" LTC sub | | |
| 3 | | | | 3) 4 1/2" 8rd. LTC Float Collar | | |
| 2 | | | | 2) 6'x 4 1/2" LTC sub | | |
| 1 | | | | 1) 4 1/2" 8rd. LTC Float Shoe | | |

4 1/2" LTC Casing Subs Required — 1-Six Foot & 2-Ten Foot

4 1/2" Ultra FJ Casing Subs Needed — 10-Four Foot, 11-Six Foot & 10-Nineteen Foot

# Nash Unit #40H

## McVay Drilling Rig No. 5



# PECOS DISTRICT
# CONDITIONS OF APPROVAL

| | |
|---|---|
| OPERATOR'S NAME: | XTO Energy |
| LEASE NO.: | NMNM10776 |
| WELL NAME & NO.: | Nash Unit No 40H |
| SURFACE HOLE FOOTAGE: | 2436' FSL & 1659' FWL |
| BOTTOM HOLE FOOTAGE | 2400' FNL & 690' FWL |
| LOCATION: | Section 12, T. 23 S., R 29 E., NMPM |
| 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.

If present, the spraying of noxious weeds must be completed by a licensed or certified applicator. In order to attempt to kill or remove noxious weeds, the proper mix of chemical is needed. Noxious weeds must be sprayed two weeks prior to any dirt working activities or disturbances to the site being sprayed. This will allow proper time to ensure the plants mortality.

V. SPECIAL REQUIREMENT(S)

## Cave and Karst

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

### Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

**Construction:**
In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

**No Blasting:**
No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

**Pad Berming:**
The pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the pad.

**Closed Mud System Using Steel Tanks with All Fluids and Cuttings Hauled Off.**
A closed mud system using steel tanks for all cuttings and fluids is required. All fluids and cuttings will be hauled off site for disposal. No pits are allowed.

**Tank Battery Liners and Berms:**
Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

**Leak Detection System:**
A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

**Automatic Shut-off Systems**:
Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

### Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

**Rotary Drilling with Fresh Water:**
Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

**Directional Drilling:**
Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

**Lost Circulation:**
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

**Abandonment Cementing:**
Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

**Pressure Testing:**
Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

**VRM**
To minimize the visual impacts the following COA(s) will apply: Above-ground structures including meter housing that are not subject to safety requirements are painted a flat non-reflective paint color Shale Green, Munsell Soil Color No. 5Y 4/2".

Low-profile tanks not greater than eight feet high shall be used to minimize visual impacts to the natural features of the landscape. The proposed construction will be limited to the approved pad size.

Upon completion of the well and installation of the production facilities (if the well is a producer) the pad will be reclaimed back to a size necessary for production operations only. The edges will be recontoured and the extra caliche and pad material will be hauled off-site. The BLM may require additional reclamation depending upon vegetation recovery. The reclaimed area will be recontoured and reseeded according to vegetation and soil type.

# VI. CONSTRUCTION

## V-DOOR SOUTHWEST

### A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5972 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 stockpile the topsoil of the well pad. The topsoil to be stripped is approximately 4 inches in depth. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

### C. RESERVE PITS

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

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the Carlsbad Field Office at (575) 234-5972.

### 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. 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 thirty (30) 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.

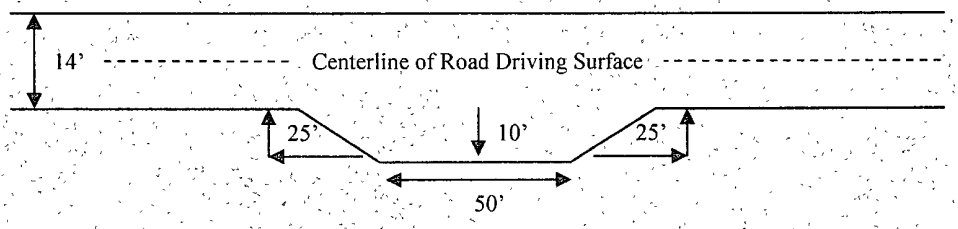
**Crowning**
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

**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 be constructed on all blind curves. Turnouts shall conform to the following diagram:

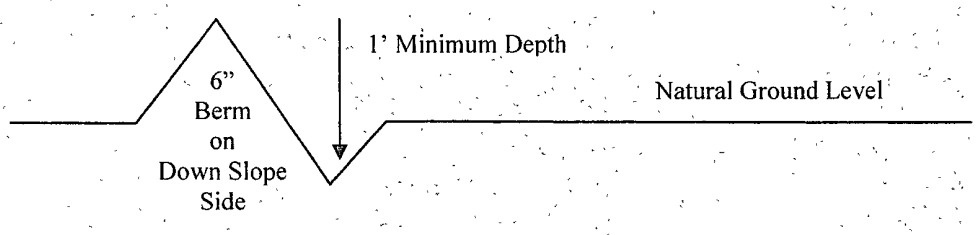
**Standard Turnout – Plan View**



**Drainage**
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off 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.

**Cross Section of a Typical 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 %);

**Formula for Spacing Interval of Lead-off Ditches**

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

**Culvert Installations**
Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

**Cattleguards**
An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road 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 cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

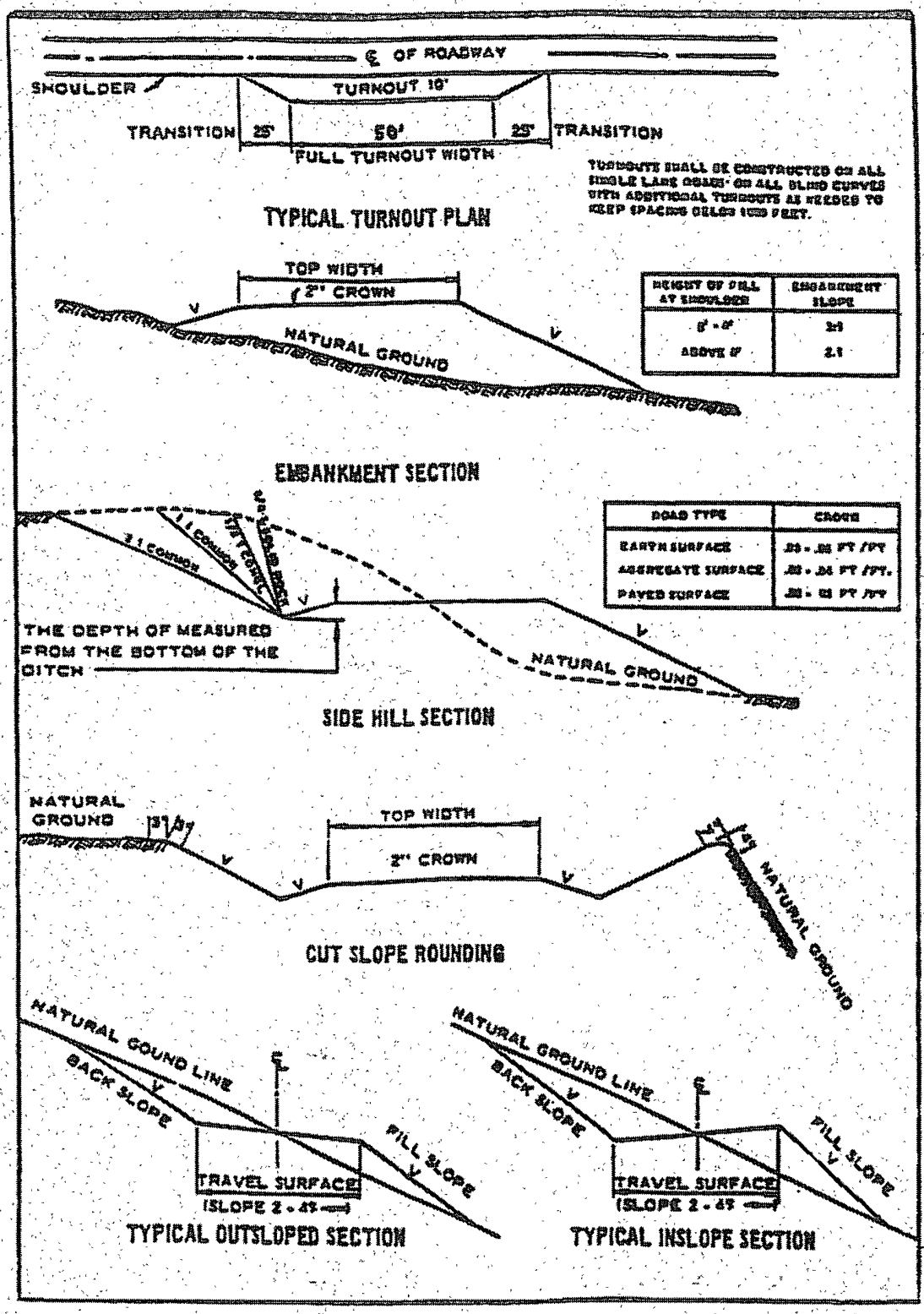
**Fence Requirement**

Where entry is required 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 fence(s).

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

# Figure 1 – Cross Sections and Plans For Typical Road Sections



# VII. DRILLING

## A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. **Although Hydrogen Sulfide has not been reported in this section, it is always a possible hazard. It has been reported in Section 13 and it is recommended that monitoring equipment be onsite. If Hydrogen Sulfide is encountered, please report measured amounts and formations to the BLM.**

2. 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.

3. 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.

4. **The record of the drilling rate along with the CAL/GR/N well log run from TD to surface will be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

## B. CASING

**Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.**

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

**Wait on cement (WOC) time for a primary cement job will be a minimum 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.**

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

**HIGH CAVE/KARST**
**R-111-P Potash**
**Possible lost circulation in the Delaware Mountain group and Bone Springs formation.**

1. The **13-3/8** inch surface casing shall be set at **approximately 280 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **If salt is penetrated, set casing shoe 25 feet above the top of salt. Fresh water mud to setting depth, brine mud below.**

    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 a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.

    **b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

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 and potash.**

3. The minimum required fill of cement behind the **7** inch intermediate casing is:

    a. First stage to DV tool, cement shall:

    ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool, cement shall:

☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash.**

4. The **4-1/2** inch production casign requires no cement behind the casing because of the use of swell packers. Top packer to be set a minimum of **150 feet** into the previous casing.

5. 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.

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

## C. 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. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi. Operator will install a **3M** annular and test to 1500psi.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** intermediate casing shoe shall be **5000 (5M)** psi. Operator will install **5M** system and test as **3M**.

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

   a. The tests shall be done by an independent service company.

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

   c. 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.**

d. 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.

## D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

**DHW 102809**

# VIII. 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.

**Containment Structures**
The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

**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, Munsell Soil Color Chart # 5Y 4/2

**VRM Facility Requirement**
Low-profile tanks not greater than eight-feet-high shall be used.

# IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE

## A. INTERIM RECLAMATION

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting 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.

The operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions 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 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.

Seed Mixture 4, for Gypsum Sites

The 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 will 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 will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will 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 |
|---|---|
| Alkali Sacaton (Sporobolus airoides) | 1.0 |
| DWS Four-wing saltbush (Atriplex canescens) | 5.0 |

DWS: DeWinged Seed

*Pounds of pure live seed:

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

(Insert Seed Mixture Here)

## X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.