V-Door NE of SW C/K VRM d III 7034 ATS-09-119

OCD-ARTESIA FEB 19 2009

Form 3160-3
(August 2007)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

165

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. NM 0556859-A	NM-0554221 BHL: NM-554221
6. If Indian, Allotee or Tribe Name	
7 If Unit or CA Agreement, Name and No.	
8. Lease Name and Well No. Nash Unit, Well #39H	303152
9 API Well No. 30-015-36951	
10 Field and Pool, or Exploratory NASH DRAW - Delaware BS (Avalon Sand)	
11. Sec., T. R. M. or Blk. and Survey or Area Section 12, T23S, R29E (SL) Section 11, T23S R29E (BHL)	
12. County or Parish EDDY	13. State NM

1a. Type of work: ☑ DRILL ☐ REENTER

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

2. Name of Operator XTO ENERGY, INC. / (5380) **R-111-POTASH**

3a. Address 200 N. LORAINE, SUITE 800 MIDLAND, TX 79701

3b Phone No. *(include area code)* 432 684-6381/620-6749

4. Location of Well *(Report location clearly and in accordance with any State requirements *)*

At surface 2415 FSL & 1645 FWL (K) Section 12

At proposed prod. zone 500 FNL & 1575 FWL (C) Section 11

14. Distance in miles and direction from nearest town or post office*
17 miles SE of Carlsbad

15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line, if any) 500' BHL	16. No. of acres in lease 5123- unit	17 Spacing Unit dedicated to this well 320
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft	19 Proposed Depth ~~10,000~~ MD; ~~6800~~ TVD 12437 6785	20 BLM/BIA Bond No. on file ~~10431257O BLM~~ UTB000138
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 2982.5' GL operator	22. Approximate date work will start* 12/01/2008	23. Estimated duration 40 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

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

25. Signature	Name *(Printed/Typed)* Ann E. Ritchie	Date 10/30/2008

Title: Regulatory Agent

Approved by *(Signature)* /S/ Linda S. C. Rundell	Name *(Printed/Typed)* /S/ Linda S. C. Rundell	Date FEB 12 2009
Title STATE DIRECTOR	Office NM STATE OFFICE	

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

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.

(Continued on page 2)

*(Instructions on page 2)

CARLSBAD CONTROLLED WATER BASIN

SEE ATTACHED FOR CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

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
30-015-36951	47545	Nash Draw, Delaware/BS (Avalon Snd)

Property Code	Property Name	Well Number
303152	NASH UNIT	39H

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

Surface Location

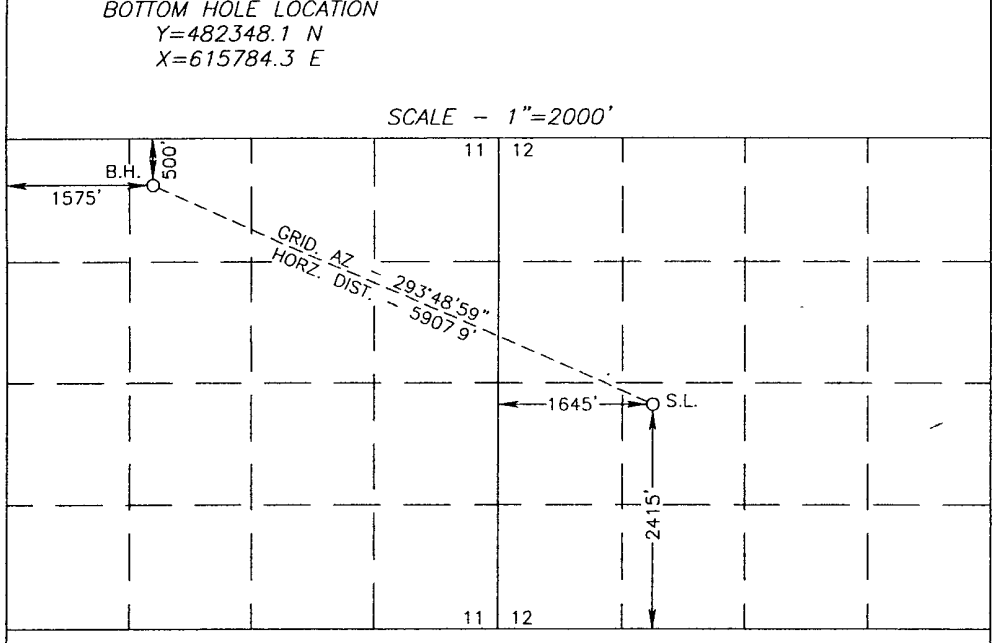
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	12	23-S	29-E		2415	SOUTH	1645	WEST	EDDY

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
C	11	23-S	29-E		500	NORTH	1575	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320			B-111-POTASH

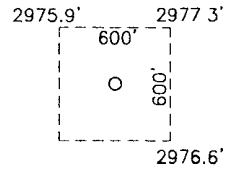
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



GEODETIC COORDINATES
NAD 27 NME
SURFACE LOCATION

Y=479963.0 N
X=621187.9 E

LAT.=32.318925° N
LONG.=103.941035° W



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: 10/23/08

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
MARCH 26, 2008
NEW MEXICO
3239
REGISTERED PROFESSIONAL SURVEYOR

Date Surveyed: LA

Signature & Seal of Professional Surveyor

Ronald J. Eidson 10/20/08

08.0313.186

Certificate No. GARY EIDSON 12641
RONALD J. EIDSON 3239

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 Surviveair 30 minute units located in the dog house and at briefing areas, as indicated on wellsite diagram.

H2S Dection 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 S)2 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.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE
620 E. GREENE STREET
CARLSBAD, NM 88220

STATEMENT ACCEPTING RESPONSIBILITY FOR OPERATIONS

Operator Name: XTO ENERGY INC

Street or Box: 200 N. Loraine St., Ste. 800

City, State: Midland, TX

Zip Code: 79701

The undersigned accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof, as described below: BHL# NM-0554221

Lease No: ~~NM-0556859-A~~ (5/31/75)

Legal Description of Land: Nash Unit #39H

Section: ~~12~~ 11 Township: 23 South Range: 29 East Eddy, New Mexico

Bond Coverage: $1,184,600.00

Statewide Oil and Gas Surety Bond, XTO ENERGY INC. XA

BLM Bond File No.: ~~104312570~~ UTB 000138

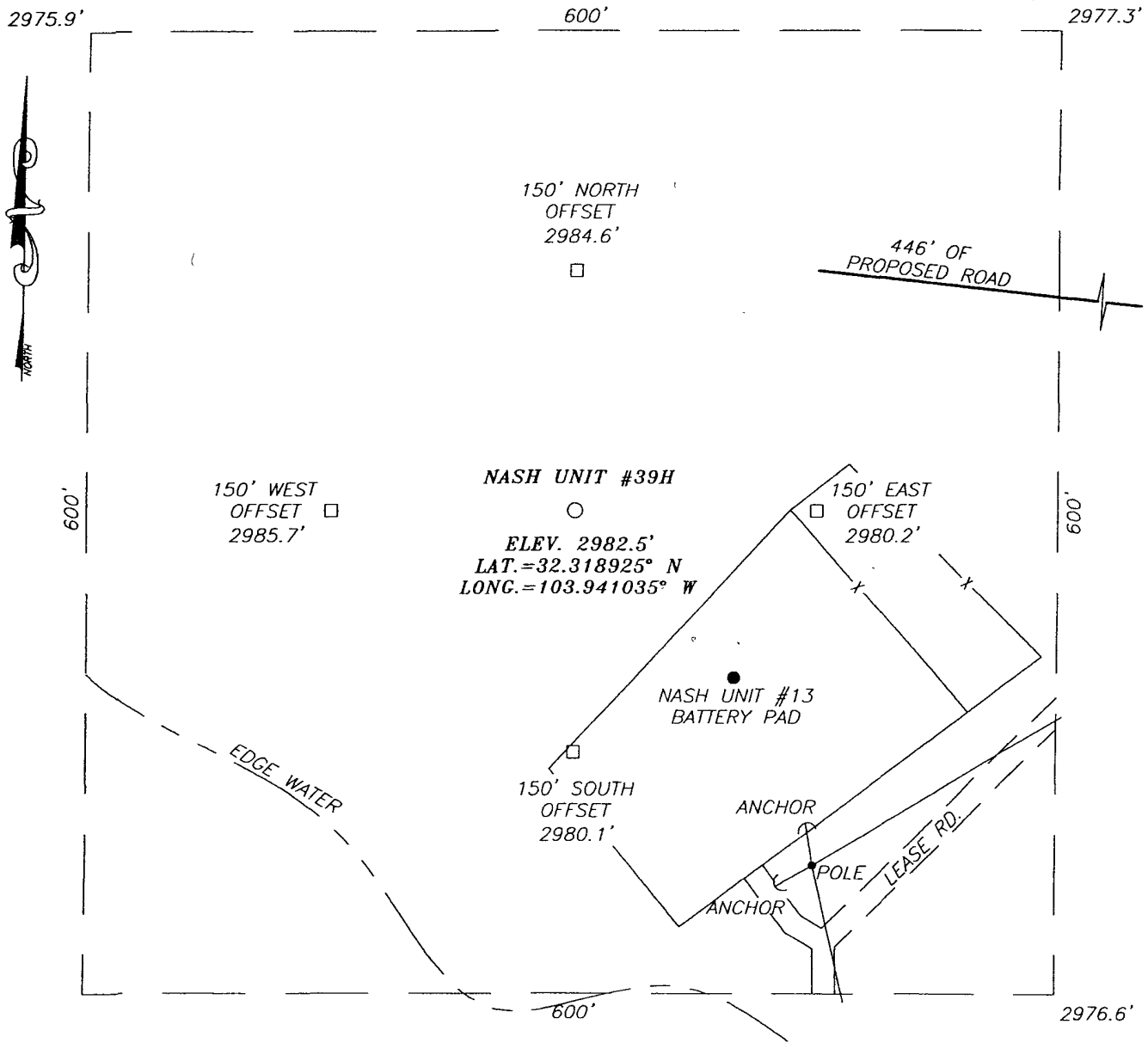
Signature: Boogie Armes Printed Name: Boogie Armes

Title: Sr. Drilling Superintendent

Date: 10/30/08

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. 1.2 MILES. TURN RIGHT AND GO WEST APPROX. 0.5 MILES TO THE EXISTING XTO NASH #13 WELL PAD. THIS LOCATION IS APPROX. 143 FEET NORTH.

100 0 100 200 Feet

Scale: 1"=100'

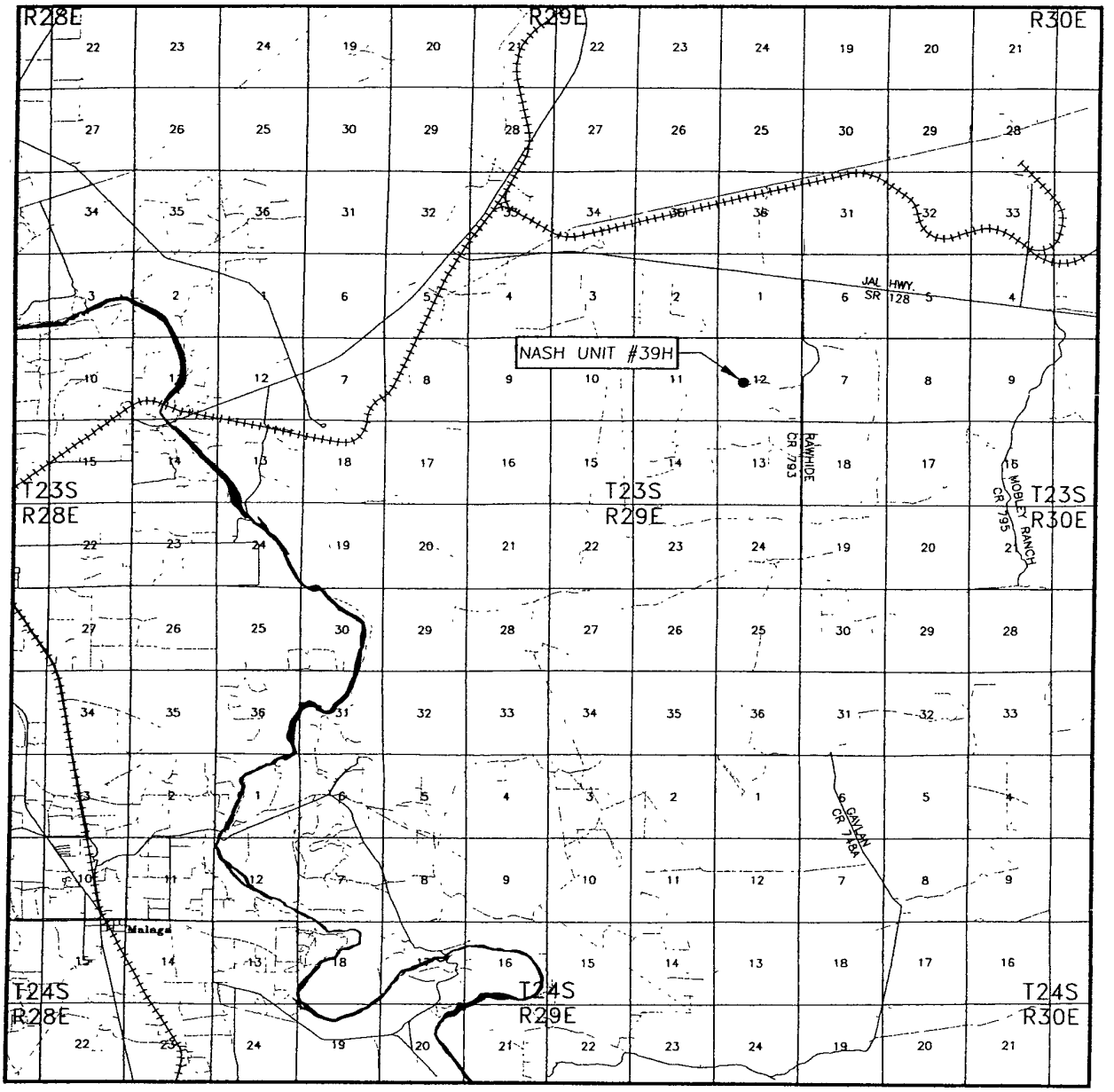
PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(505) 393-3117

XTO ENERGY

NASH UNIT #39H WELL
LOCATED 2415 FEET FROM THE SOUTH LINE
AND 1645 FEET FROM THE WEST LINE OF SECTION 12,
TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.

Survey Date: 3/26/08	Sheet 1 of 1 Sheets		
W.O. Number: 08.11.0293	Dr By: LA	Rev 1: N/A	
Date: 3/29/08		08110293	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 2415' FSL & 1645' FWL

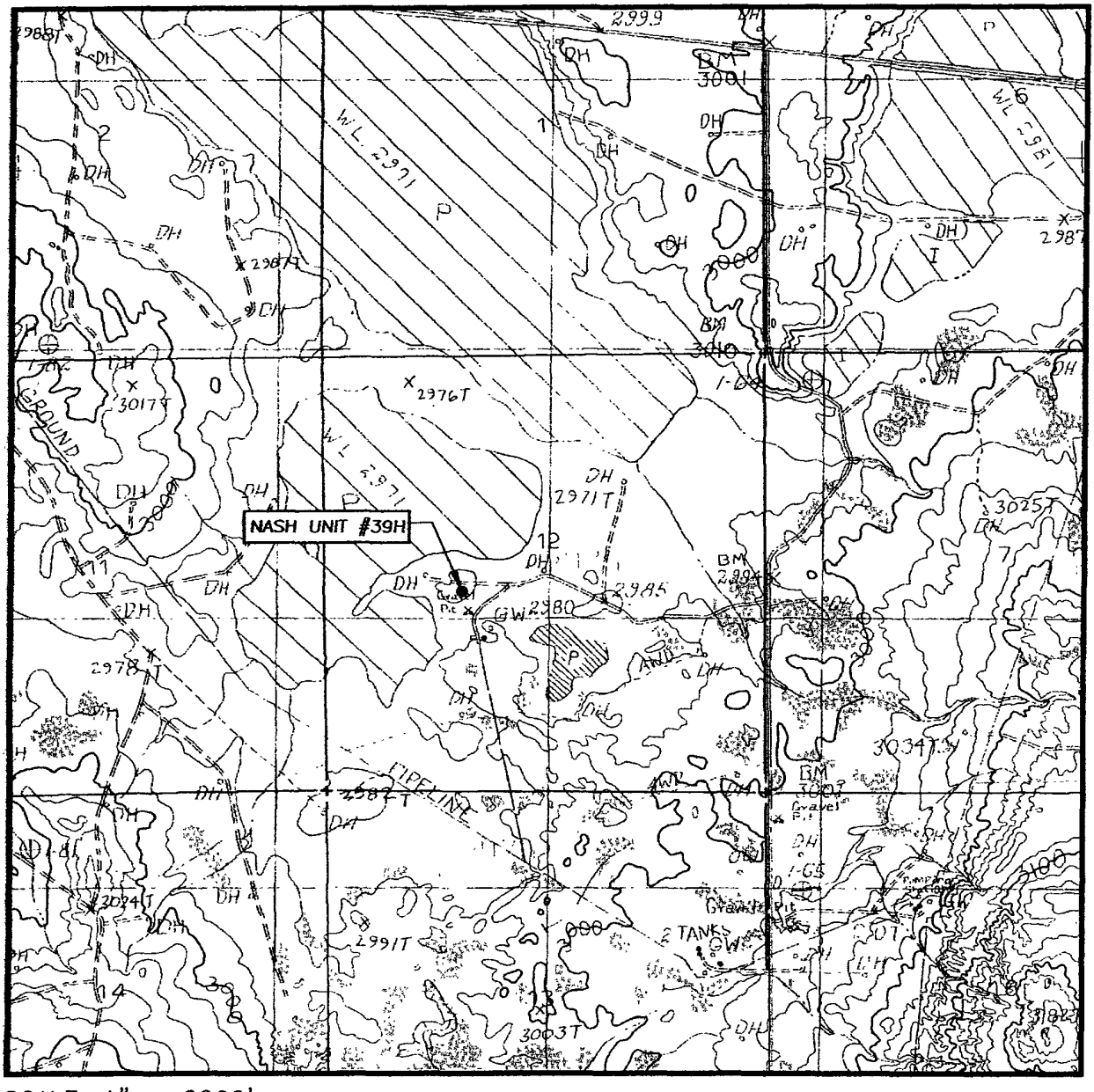
ELEVATION 2983'

OPERATOR XTO ENERGY

LEASE NASH UNIT

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(505) 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 2415' FSL & 1645' 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
(505) 393-3117

XTO Energy, Inc.

NASH, Well #39H

BHL #

NM-0554221

Lease Number: ~~NM-0556859-A~~

Drilling Prognosis

Surface Location: (K) Sec 12, T23S, R29E, 2415' FSL & 1645' FWL

BHL: (C) Sec 11, T23S, R29E, 500' FL & 1575' FWL

Eddy County, New Mexico

Projected TD: 10,000' MD/6800' TVD

Drilling Plan: BLM Compliance
(Supplement to BLM 3160-3)

XTO Energy, Inc.
Nash, Well #39H
Section 12, T23S, R29E (K) SL
Section 11, T23S, R29E (C) BHL, Eddy County, NM

1. **Estimated Tops of Geological Markers:**

Salado Salt	310'
Base Salt	3111'
Top Delaware	3111'
Cherry Canyon	3970'
Top Brushy Canyon	5551'
Base Brushy Canyon	6603'
Brushy Canyon	6763'
Target/Lad Curve	6803'
TD – MD	10,000'

2. **Estimated depths to water, &oil or gas formations considered possibly productive:**
Fresh Water: Above 200'
Oil and Gas: Brushy Canyon

3. **Pressure Control Equipment:** The blow out preventer equipment (BOP) diagrams are attached to this Drilling Plan. They consist of a 5000 psi double ram type preventer for drilling the intermediate hole. The blowout preventer stack for the production hole will consist of at 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.

4. **Proposed Casing Program:**

Hole Size	Interval	Casing Size	Weight	Grade, Joint
17 1/2"	0-350'	13 3/8"	48#	H-40 STC - New
12 1/4"	0-3130'	9 5/8"	36#	J55 LTC-New
7 7/8"	0-10,000'	5 1/2"	17#	N80 & P110 LT C-New

See COA

4000' 6000' per operator 11/20/08

0-350'	Collapse Rating psi 740; Burst Rating psi 1730; Jt. Str (M-lbs) 322; Collapse - .96; Burst – 2.24; Testion – 4.50; mud @ 8.8 ppg
0-3150'	Collapse Rating psi 2570; Burst Rating psi 3950' Jt Str (M-Lbs) 520; Collapse – 1.38; Burst – 2.12; Tension – 3.35, mud @ 10.2 ppg
0-5000'	Collapse Rating psi 6290; Burst Rating psi 7740', Jt Str (M-lbs) 338; Collapsse – 1.12; Burst – 1.125; Tension – 1.6
5000-10000'	Collapse Rating psi 7480; Burst Rating psi 10,640; Jt Str (M-lbs) 445; Collaspe – 1.30; Burst – 1.6; Tension – 11.5

Optimum makeup torque for 17#, 80 LTC casing is 3840 ft/#, minimum 2610 ft/#, max - 4350 ft/#; P110 is 4620 ft/#, mi 3470 ft/E, max 5780 ft/#/

5. **Proposed Cementing Program:**

Surface Casing: 13 3/8", 48#, H-40, STC casing to be set at 350', cementing with 500 sx HalCem C + 2% CaCl (14.80 ppg, 1.35 cu ft/sx, 6.39 gal/sx wtr, comp strength 2 hr-900 psi, 24hr-1500 psi – all cement volumes 100% excess, cementing to surface.

Intermediate Casing: 9 5/8", 36#, J55, LTC casing to be set @ 3130'
Lead: 20 bbls FW, then 800 sx EconoCem HLC – 5% salt (mixed at 12.4 ppg, 2.12 ft3/sk, 11.93 gal/sk wtr) Compr Strengths 12 hr – 250 psi, 24 hr – 400 psi
Tail: 250 sx HalCem-C, 1% CaCl (Mixed at 14.8 ppg, 1.34 ft3/sk, 6.36 gal/sk wtr) Compr Strenghts – 12 hr- 900 psi, 24 hr – 1500 psi
All volumes 100% excess, cementing to surface.

Production Casing: 5 1/2", 17# , N80 & P110, LTC new casing to be set @ 10,000'
First Stage Cement fill from 10000' to DV Tool @ 5000'+/-
Lead – 150 sx EconoCem H, w/0.4% Halad R9 + 0.1% HR-7 (mixed at 11.9 ppg 2.48 cu ft/sk, 14.39 gal/sx wtr) Compr Srengths – 24 hrs 340 psi, 48 hr 515 psi
Tail – 1200 sx CoroCem H, 0.5% LAP-1 + 0.4$ CFR-3, 0.2% HR-7, .25 lb/sx D air 3000, 5 lb/sx gilsonite (14.9 ppg, 1.30 cu ft/sx, 5.63 gal/sx wtr). Compr Strenghs – 24 hr 290 psi, 48 hr 930 psi
Second Stage – cement fill from DV tool @ +/- 5000' – 2000'
Lead – 20 bbls FW, 400 sx EconoCem C, 0.4% Halad R-9 (11.9 ppg, 2.47 ft3/sk, 14.28 gal/sk wtr), Compr Strengths – 24 hr 170 psi, 48 hr 245 psi
Tail – 150 sx HalCem C (mixed at 14.8 ppg, 1.33 ft3/sk, 6.33 gal/sk wtr), Compr Strengths 24 hr – 1500 psi

Remarks: Adjust cement volumes for the production casing based on log caliper volume plus 30% in the open hole section. Desired cement top on the second stage cement job is 2000'.

6. **Proposed Mud System :**

Depth	Description	Mud Weight	Viscosity	Water Loss
0-350'	FW/Native	8.5-8.8	35-40	NC
350-3150'+/-	Brine/Gel Sweeps	9.8-10.2	30-32	NC
3130-6000'	Cut Brine/Sweeps	9.2-9.4	29-32	NC 20
6000-10000'	Cut Brine/PolyStarch	9.2-9.4	32-38	18-15-10

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.

7. Auxiliary equipment will include an upper kelly cock valve, safety valve to fit drill pipe and pressure gauges.

Special Intructions:

Deviation: Surface Hole – maximum of 1degree and not more than 1 degree change per 100'. Intermediate Hole: Maximum of 4 degree ad not more than 1.5 degree change per 100'. Production Hole – Maximum of 6 degree and not more than 1.5 degree cange per 100'. Maximum distance between surveys is 500'.

See COA

WOC a minimum of 12 hrs before drilling out shoe on surface and intermediate casing. Centralizers: Surface casing – centralizers every 4th joint; 2000-5900' turbolizers every 4th joint; 5900-9914' 93 turbolizers; 9914-10,000' 4 turbolizers.

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

A trash trailer will be provided on each location. Location will be kept as clean as possible. All drilling line, oil filters, etc. will be hauled away by Drilling Contractor. At the conclusion of drilling operations the contents of the trash trailer will be disposed of into a commercial sanitary landfill.

See COA

Testing, Logging and Coring Program:

A. Mud Logger: Suttles Mud Logging Unit (2 man) on @ 3130'
Catch 10 samples from 3110-1000'; send 2 set of dry samples to Midland Sample Library.

B. Open Hole logs by Halliburton WL as follows:
GR/Cal/DLL/Sonic from middle of curve to intermediate casing point, CMR
Leave one copy of field prints with area production office

2500 psig per operator 10/10/08

8. **Abnormal Pressures and Temperatures**: None anticipated. Maximum bottom hole pressure should not exceed 5200 psia. BHT of 175 F is anticipated. H2S can be present I 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.

It is estimated that this well will be drilled and cased in approximately 40 days. Drilling will commence as soon approval is received and services can be contracted.

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 and 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 tubular are to be utilized, personnel will be trained in their special maintenance requirements.

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

The contents and requirements of the H2S Drilling Operations Plan

XTO

Eddy County
Nash Unit #39H
Nash Unit #39H
OH

Plan: Plan #2

Patfinder X & Y Survey Report

05 November, 2008

Est. BHP- 2500 psi

Pathfinder Energy Services

Patfinder X & Y Survey Report

Company:	XTO	**Local Co-ordinate Reference:**	Well Nash Unit #39H
Project:	Eddy County	**TVD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Site:	Nash Unit #39H	**MD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Well:	Nash Unit #39H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 2003.16 Single User Db

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 #39H

Site Position:		**Northing:**	479,963.000 ft	**Latitude:**	32° 19' 8.129 N
From:	Map	**Easting:**	621,187.900 ft	**Longitude:**	103° 56' 27.727 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	"	**Grid Convergence:**	0 21 °

Well Nash Unit #39H

Well Position	**+N/-S**	0.00 ft	**Northing:**	479,963 000 ft	**Latitude:**	32° 19' 8.129 N
	+E/-W	0.00 ft	**Easting:**	621,187.900 ft	**Longitude:**	103° 56' 27.727 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	10/20/2008	8.07	60.29	48,926

Design Plan #2

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	293.92

Survey Tool Program **Date** 11/5/2008

From (ft)	**To (ft)**	**Survey (Wellbore)**	**Tool Name**	**Description**
0.00	12,436.69	Plan #2 (OH)	MWD	MWD - Standard

Pathfinder Energy Services

Patfinder X & Y Survey Report

Company:	XTO	**Local Co-ordinate Reference:**	Well Nash Unit #39H
Project:	Eddy County	**TVD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Site:	Nash Unit #39H	**MD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Well:	Nash Unit #39H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 2003.16 Single User Db

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	479,963.00	621,187.90
100.00	0.00	0.00	100.00	-2,900.00	0 00	0.00	0.00	0.00	479,963.00	621,187.90
200.00	0.00	0.00	200.00	-2,800.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
300.00	0.00	0.00	300.00	-2,700.00	0.00	0 00	0.00	0.00	479,963.00	621,187.90
400.00	0.00	0.00	400.00	-2,600.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
500.00	0.00	0.00	500.00	-2,500.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
600.00	0.00	0.00	600.00	-2,400.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
700.00	0.00	0.00	700.00	-2,300.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
800.00	0.00	0.00	800.00	-2,200.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
900.00	0.00	0.00	900.00	-2,100.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
1,000.00	0.00	0.00	1,000.00	-2,000.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
1,100.00	0.00	0.00	1,100.00	-1,900.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
1,200.00	0.00	0.00	1,200.00	-1,800.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
1,300.00	0.00	0.00	1,300.00	-1,700.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
1,400.00	0.00	0.00	1,400.00	-1,600.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
1,500.00	0.00	0.00	1,500.00	-1,500.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
1,600.00	0.00	0.00	1,600.00	-1,400.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
1,700.00	0.00	0.00	1,700.00	-1,300.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
1,800.00	0.00	0.00	1,800.00	-1,200.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
1,900.00	0.00	0.00	1,900.00	-1,100.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
2,000.00	0.00	0.00	2,000.00	-1,000.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
2,100.00	0.00	0.00	2,100.00	-900.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
2,200.00	0.00	0.00	2,200.00	-800.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
2,300.00	0.00	0.00	2,300.00	-700.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
2,400.00	0.00	0.00	2,400.00	-600.00	0.00	0.00	0 00	0.00	479,963.00	621,187.90
2,500.00	0.00	0.00	2,500.00	-500.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
2,600.00	0.00	0.00	2,600.00	-400.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90

Pathfinder Energy Services

Patfinder X & Y Survey Report

Company:	XTO	**Local Co-ordinate Reference:**	Well Nash Unit #39H
Project:	Eddy County	**TVD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Site:	Nash Unit #39H	**MD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Well:	Nash Unit #39H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 2003.16 Single User Db

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	479,963.00	621,187.90
2,800.00	0.00	0.00	2,800.00	-200.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
2,900.00	0.00	0.00	2,900.00	-100.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
3,100.00	0.00	0.00	3,100.00	100.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
3,200.00	0.00	0.00	3,200.00	200.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
3,300.00	0.00	0.00	3,300.00	300.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
3,400.00	0.00	0.00	3,400.00	400.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
3,500.00	0.00	0.00	3,500.00	500.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
3,600.00	0.00	0.00	3,600.00	600.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
3,700.00	0.00	0.00	3,700.00	700.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
3,800.00	0.00	0.00	3,800.00	800.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
3,900.00	0.00	0.00	3,900.00	900.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
4,000.00	0.00	0.00	4,000.00	1,000.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
4,100.00	0.00	0.00	4,100.00	1,100.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
4,200.00	0.00	0.00	4,200.00	1,200.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
4,300.00	0.00	0.00	4,300.00	1,300.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
4,400.00	0.00	0.00	4,400.00	1,400.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
4,500.00	0.00	0.00	4,500.00	1,500.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
4,600.00	0.00	0.00	4,600.00	1,600.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
4,700.00	0.00	0.00	4,700.00	1,700.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
4,800.00	0.00	0.00	4,800.00	1,800.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
4,900.00	0.00	0.00	4,900.00	1,900.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
5,000.00	0.00	0.00	5,000.00	2,000.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
5,100.00	0.00	0.00	5,100.00	2,100.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
5,200.00	0.00	0.00	5,200.00	2,200.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
5,300.00	0.00	0.00	5,300.00	2,300.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90

Pathfinder Energy Services

Patfinder X & Y Survey Report

Company:	XTO	**Local Co-ordinate Reference:**	Well Nash Unit #39H
Project:	Eddy County	**TVD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Site:	Nash Unit #39H	**MD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Well:	Nash Unit #39H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 2003.16 Single User Db

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	479,963.00	621,187.90
5,500.00	0.00	0.00	5,500.00	2,500.00	0 00	0.00	0.00	0.00	479,963.00	621,187.90
5,600.00	0 00	0.00	5,600.00	2,600 00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
5,700.00	0.00	0.00	5,700.00	2,700.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
5,800.00	0.00	0.00	5,800.00	2,800.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
5,900.00	0.00	0.00	5,900.00	2,900.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
5,967.00	0.00	0.00	5,967.00	2,967.00	0.00	0.00	0.00	0.00	479,963.00	621,187.90
KOP @ 5967.00'MD,0.00°INC,0.00°AZI,Using 0.00°DLS										
6,000.00	2.31	311.46	5,999.99	2,999.99	0.44	-0.50	0.63	7.00	479,963.44	621,187.40
6,050.00	5.81	311.46	6,049.86	3,049.86	2.79	-3.15	4.01	7.00	479,965.79	621,184.75
6,100.00	9.31	311.46	6,099.41	3,099.41	7.14	-8.08	10.29	7.00	479,970.14	621,179.82
6,150.00	12.82	311.46	6,148.48	3,148.48	13.49	-15.27	19.43	7.00	479,976.49	621,172.63
6,200.00	16.32	311.46	6,196.86	3,196.86	21.82	-24.70	31 42	7.00	479,984.82	621,163.20
6,250.00	19.82	311.46	6,244.39	3,244.39	32.09	-36.32	46.21	7.00	479,995.09	621,151.58
6,300.00	23.32	311.46	6,290.88	3,290.88	44.25	-50.09	63.73	7.00	480,007.25	621,137 81
6,350.00	26.82	311.46	6,336.16	3,336.16	58.28	-65.97	83.93	7.00	480,021.28	621,121.93
6,400.00	30.32	311.46	6,380.07	3,380.07	74.11	-83.89	106.73	7.00	480,037.11	621,104.01
6,450.00	33.83	311.46	6,422.43	3,422.43	91.69	-103.78	132.04	7.00	480,054.69	621,084.12
6,500.00	37.33	311.46	6,463.09	3,463.09	110.95	-125.58	159.77	7.00	480,073.95	621,062.32
6,550.00	40.83	311.46	6,501.90	3,501.90	131.81	-149.20	189.82	7.00	480,094.81	621,038.70
6,600.00	44.33	311.46	6,538.71	3,538.71	154.21	-174.55	222.07	7.00	480,117.21	621,013.35
6,650.00	47.83	311.46	6,573.38	3,573.38	178.05	-201.53	256.41	7.00	480,141.05	620,986.37
6,700.00	51.33	311.46	6,605.79	3,605 79	203.25	-230.06	292.70	7.00	480,166.25	620,957.84
6,750.00	54.84	311.46	6,635.82	3,635.82	229.72	-260.01	330.81	7.00	480,192.72	620,927.89
6,800.00	58.34	311.46	6,663.35	3,663.35	257.34	-291.28	370.60	7.00	480,220.34	620,896.62
6,850.00	61.84	311.46	6,688.28	3,688.28	286.03	-323.76	411.92	7.00	480,249.03	620,864.14
6,900.00	65.34	311.46	6,710.52	3,710.52	315.68	-357.31	454.61	7.00	480,278.68	620,830.59

Pathfinder Energy Services

Patfinder X & Y Survey Report

Company:	XTO	**Local Co-ordinate Reference:**	Well Nash Unit #39H
Project:	Eddy County	**TVD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Site:	Nash Unit #39H	**MD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Well:	Nash Unit #39H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 2003.16 Single User Db

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	68.84	311.46	6,729.98	3,729.98	346.17	-391.82	498.52	7.00	480,309.17	620,796.08
7,000.00	72.34	311.46	6,746.59	3,746.59	377.39	-427.16	543.48	7.00	480,340.39	620,760.74
7,050.00	75.85	311.46	6,760.29	3,760.29	409.22	-463.19	589.32	7.00	480,372.22	620,724.71
7,100.00	79.35	311.46	6,771.02	3,771.02	441.55	-499.78	635.87	7.00	480,404.55	620,688.12
7,150.00	82.85	311.46	6,778.76	3,778.76	474.25	-536.80	682.97	7.00	480,437.25	620,651.10
7,200.00	86.35	311.46	6,783.46	3,783.46	507.20	-574.09	730.42	7.00	480,470.20	620,613.81
7,250.00	89.85	311.46	6,785.12	3,785.12	540.28	-611.54	778.06	7.00	480,503.28	620,576.36
7,266.24	90.99	311.46	6,785.00	3,785.00	551.04	-623.71	793.55	7.00	480,514.04	620,564.19
Land Curve @ 7266.24'MD,90.99°INC,311.46°AZI,6785.00'TVD,7.00°DLS										
7,266.71	90.99	311.45	6,784.99	3,784.99	551.34	-624.06	793.99	3.00	480,514.34	620,563.84
7,300.00	90.99	311.45	6,784.42	3,784.42	573.38	-649.01	825.73	0.00	480,536.38	620,538.89
7,400.00	90.99	311.45	6,782.69	3,782.69	639.56	-723.96	921.07	0.00	480,602.56	620,463.94
7,439.95	90.99	311.45	6,782.00	3,782.00	666.00	-753.90	959.16	0.00	480,629.00	620,434.00
Target 1 (Nash #39)										
7,500.00	90.83	309.65	6,781.05	3,781.05	705.03	-799.52	1,016.69	3.00	480,668.03	620,388.38
7,570.33	90.64	307.55	6,780.15	3,780.15	748.90	-854.48	1,084.71	3.00	480,711.90	620,333.42
7,600.00	90.64	307.55	6,779.82	3,779.82	766.98	-878.00	1,113.55	0.00	480,729.98	620,309.90
7,700.00	90.64	307.55	6,778.70	3,778.70	827.93	-957.28	1,210.72	0.00	480,790.93	620,230.62
7,800.00	90.64	307.55	6,777.59	3,777.59	888.87	-1,036.55	1,307.90	0.00	480,851.87	620,151.35
7,900.00	90.64	307.55	6,776.48	3,776.48	949.81	-1,115.83	1,405.07	0.00	480,912.81	620,072.07
7,942.98	90.64	307.55	6,776.00	3,776.00	976.00	-1,149.90	1,446.84	0.00	480,939.00	620,038.00
Target 2 (Nash #39)										
8,000.00	90.60	305.84	6,775.38	3,775.38	1,010.07	-1,195.62	1,502.44	3.00	480,973.07	619,992.28
8,052.96	90.57	304.25	6,774.84	3,774.84	1,040.48	-1,238.98	1,554.40	3.00	481,003.48	619,948.92
8,100.00	90.57	304.25	6,774.38	3,774.38	1,066.95	-1,277.85	1,600.68	0.00	481,029.95	619,910.05
8,200.00	90.57	304.25	6,773.39	3,773.39	1,123.23	-1,360.51	1,699.05	0.00	481,086.23	619,827.39
8,300.00	90.57	304.25	6,772.40	3,772.40	1,179.51	-1,443.16	1,797.42	0.00	481,142.51	619,744.74
8,400.00	90.57	304.25	6,771.41	3,771.41	1,235.79	-1,525.82	1,895.79	0.00	481,198.79	619,662.08

Pathfinder Energy Services

Patfinder X & Y Survey Report

Company:	XTO	**Local Co-ordinate Reference:**	Well Nash Unit #39H
Project:	Eddy County	**TVD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Site:	Nash Unit #39H	**MD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Well:	Nash Unit #39H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 2003.16 Single User Db

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)
8,441.24	90.57	304.25	6,771.00	3,771.00	1,259.00	-1,559.90	1,936.36	0.00	481,222.00	619,628.00
Target 3 (Nash #39)										
8,500.00	90 70	302.49	6,770.35	3,770.35	1,291.32	-1,608.97	1,994.32	3.00	481,254.32	619,578.93
8,556.58	90.84	300.80	6,769.59	3,769.59	1,321.00	-1,657.12	2,050.37	3.00	481,284.00	619,530.78
8,600.00	90.84	300.80	6,768.95	3,768.95	1,343.24	-1,694.42	2,093.48	0.00	481,306.24	619,493.48
8,700.00	90.84	300.80	6,767.49	3,767.49	1,394.44	-1,780.31	2,192.75	0.00	481,357.44	619,407.59
8,800.00	90.84	300.80	6,766.03	3,766.03	1,445.64	-1,866.19	2,292.02	0.00	481,408.64	619,321.71
8,900.00	90.84	300.80	6,764.57	3,764.57	1,496.84	-1,952.08	2,391 28	0.00	481,459.84	619,235.82
8,939.38	90.84	300.80	6,764.00	3,764.00	1,517.00	-1,985.90	2,430.38	0.00	481,480.00	619,202.00
Target 4 (Nash #39)										
9,000.00	90.77	298.98	6,763.15	3,763.15	1,547.21	-2,038.45	2,490.66	3.00	481,510.21	619,149.45
9,092.01	90.66	296.23	6,762.00	3,762.00	1,589.83	-2,119.97	2,582.46	3.00	481,552.83	619,067.93
9,100.00	90.66	296.23	6,761.91	3,761.91	1,593.36	-2,127.14	2,590.44	0.00	481,556.36	619,060.76
9,200.00	90.66	296.23	6,760.76	3,760.76	1,637.55	-2,216.84	2,690.36	0.00	481,600.55	618,971.06
9,300.00	90.66	296.23	6,759.60	3,759.60	1,681.74	-2,306.54	2,790.27	0.00	481,644.74	618,881.36
9,400.00	90.66	296.23	6,758.45	3,758 45	1,725.93	-2,396.24	2,890.18	0.00	481,688.93	618,791.66
9,438.64	90.66	296.23	6,758.00	3,758.00	1,743.00	-2,430.90	2,928.79	0.00	481,706.00	618,757.00
Target 5 (Nash #39)										
9,500.00	90.68	294.38	6,757.28	3,757.28	1,769.22	-2,486.36	2,990.12	3.00	481,732.22	618,701.54
9,569.91	90.69	292.29	6,756.45	3,756.45	1,796.91	-2,550.55	3,060.02	3.00	481,759.91	618,637.35
9,600.00	90.69	292.29	6,756.08	3,756.08	1,808.32	-2,578.39	3,090.10	0.00	481,771.32	618,609.51
9,700.00	90.69	292.29	6,754.87	3,754.87	1,846.24	-2,670.91	3,190.05	0.00	481,809.24	618,516.99
9,800.00	90.69	292.29	6,753.66	3,753.66	1,884.17	-2,763.43	3,290.00	0.00	481,847.17	618,424.47
9,900.00	90.69	292.29	6,752.44	3,752.44	1,922.09	-2,855.96	3,389.95	0.00	481,885.09	618,331.94
9,936.69	90.69	292.29	6,752.00	3,752.00	1,936.00	-2,889.90	3,426.62	0.00	481,899.00	618,298.00
Target 6 (Nash #39)										
10,000.00	90.69	290.39	6,751.23	3,751.23	1,959.03	-2,948.87	3,489.86	3.00	481,922.03	618,239.03
10,064.49	90.69	288.45	6,750.46	3,750.46	1,980.47	-3,009.68	3,554.15	3.00	481,943.47	618,178.22

Pathfinder Energy Services

Patfinder X & Y Survey Report

Company:	XTO	**Local Co-ordinate Reference:**	Well Nash Unit #39H
Project:	Eddy County	**TVD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Site:	Nash Unit #39H	**MD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Well:	Nash Unit #39H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 2003.16 Single User Db

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)
10,100.00	90.69	288.45	6,750.03	3,750.03	1,991.71	-3,043.36	3,589.49	0.00	481,954.71	618,144.54
10,200.00	90.69	288.45	6,748.83	3,748.83	2,023.36	-3,138 21	3,689.03	0.00	481,986 36	618,049.69
10,300.00	90.69	288.45	6,747.63	3,747.63	2,055.01	-3,233.07	3,788.57	0.00	482,018.01	617,954.83
10,400.00	90.69	288.45	6,746.43	3,746.43	2,086.66	-3,327.92	3,888.11	0.00	482,049.66	617,859.98
10,435.83	90.69	288.45	6,746.00	3,746.00	2,098.00	-3,361.90	3,923.77	0.00	482,061.00	617,826.00
Target 7 (Nash #39)										
10,500.00	90.69	286.53	6,745.23	3,745.23	2,117.28	-3,423.10	3,987.53	3.00	482,080.28	617,764.80
10,600.00	90.69	283.53	6,744 03	3,744.03	2,143.21	-3,519.66	4,086.31	3.00	482,106.21	617,668.24
10,700.00	90.69	280.53	6,742.83	3,742.83	2,164.04	-3,617.45	4,184.15	3.00	482,127.04	617,570.45
10,770.77	90.68	278.40	6,741.98	3,741.98	2,175.68	-3,687.25	4,252.68	3.00	482,138.68	617,500.65
10,800.00	90.68	278.40	6,741.64	3,741 64	2,179.95	-3,716.16	4,280.84	0.00	482,142.95	617,471.74
10,900.00	90.68	278.40	6,740.44	3,740.44	2,194.56	-3,815.08	4,377.19	0.00	482,157.56	617,372.82
10,937.22	90.68	278.40	6,740.00	3,740.00	2,200.00	-3,851.90	4,413.05	0.00	482,163.00	617,336.00
Target 8 (Nash #39)										
10,957.54	90.93	278.96	6,739.71	3,739.71	2,203.07	-3,871.98	4,432.65	3.00	482,166.07	617,315.92
11,000.00	90.93	278.96	6,739.02	3,739.02	2,209.68	-3,913.92	4,473.67	0.00	482,172.68	617,273.98
11,100.00	90.93	278.96	6,737.40	3,737.40	2,225.25	-4,012.69	4,570.27	0.00	482,188.25	617,175.21
11,200 00	90.93	278.96	6,735.77	3,735.77	2,240.82	-4,111.45	4,666.87	0.00	482,203.82	617,076.45
11,300.00	90.93	278.96	6,734.15	3,734.15	2,256.40	-4,210.22	4,763.47	0.00	482,219.40	616,977.68
11,400.00	90.93	278.96	6,732.53	3,732.53	2,271.97	-4,308.99	4,860.07	0.00	482,234.97	616,878.91
11,432.31	90.93	278.96	6,732.00	3,732.00	2,277.00	-4,340.90	4,891.28	0.00	482,240.00	616,847.00
Target 9 (Nash #39)										
11,500.00	90.92	276.93	6,730.91	3,730.91	2,286.35	-4,407.93	4,956.34	3.00	482,249.35	616,779.97
11,565.50	90.91	274.96	6,729.86	3,729.86	2,293.14	-4,473.06	5,018.64	3.00	482,256 14	616,714.84
11,600.00	90.91	274.96	6,729.31	3,729.31	2,296.12	-4,507.43	5,051.26	0.00	482,259.12	616,680.47
11,700.00	90.91	274.96	6,727.72	3,727.72	2,304.77	-4,607.04	5,145.83	0.00	482,267.77	616,580.86
11,800.00	90.91	274.96	6,726 13	3,726.13	2,313.43	-4,706.65	5,240.40	0.00	482,276.43	616,481.25

Pathfinder Energy Services

Patfinder X & Y Survey Report

Company:	XTO	**Local Co-ordinate Reference:**	Well Nash Unit #39H
Project:	Eddy County	**TVD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Site:	Nash Unit #39H	**MD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Well:	Nash Unit #39H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 2003.16 Single User Db

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)
11,900.00	90.91	274.96	6,724.54	3,724.54	2,322.08	-4,806.26	5,334.96	0.00	482,285.08	616,381.64
11,933.77	90.91	274.96	6,724.00	3,724.00	2,325.00	-4,839.90	5,366.90	0.00	482,288.00	616,348.00
Target 10 (Nash #39)										
12,000.00	90.91	274.96	6,722.95	3,722.95	2,330.73	-4,905.88	5,429.53	0.00	482,293.73	616,282.02
12,100.00	90.91	274.96	6,721.36	3,721.36	2,339.38	-5,005.49	5,524.10	0.00	482,302.38	616,182.41
12,200.00	90.91	274.96	6,719.77	3,719.77	2,348.03	-5,105.10	5,618.67	0.00	482,311.03	616,082.80
12,300.00	90.91	274.96	6,718.17	3,718.17	2,356.69	-5,204.71	5,713.23	0.00	482,319.69	615,983.19
12,400.00	90.91	274.96	6,716.58	3,716.58	2,365.34	-5,304.33	5,807.80	0.00	482,328.34	615,883.57
12,432.82	90.91	274.96	6,716.06	3,716.06	2,368.18	-5,337.02	5,838.84	0.00	482,331.18	615,850.88
PBHL(Nash #39)										
12,436.70	90.91	274.96	6,716.00	3,716.00	2,368.51	-5,340.88	5,842.51	0.00	482,331.51	615,847.02
TD @ 12436.70' MD										

Pathfinder Energy Services

Patfinder X & Y Survey Report

Company:	XTO	**Local Co-ordinate Reference:**	Well Nash Unit #39H
Project:	Eddy County	**TVD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Site:	Nash Unit #39H	**MD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Well:	Nash Unit #39H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 2003.16 Single User Db

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 1 (Nash #39) - plan hits target - Point	0.00	0.00	6,782.00	666.00	-753.90	480,629.000	620,434.000	32° 19' 14.747 N	103° 56' 36.484 W
Target 3 (Nash #39) - plan hits target - Point	0.00	0.00	6,771.00	1,259.00	-1,559.90	481,222.000	619,628.000	32° 19' 20.644 N	103° 56' 45.852 W
Target 6 (Nash #39) - plan hits target - Point	0.00	0.00	6,752.00	1,936.00	-2,889.90	481,899.000	618,298.000	32° 19' 27.391 N	103° 57' 1.324 W
Target 10 (Nash #39) - plan hits target - Point	0.00	0.00	6,724.00	2,325.00	-4,839.90	482,288.000	616,348.000	32° 19' 31.309 N	103° 57' 24.033 W
Target 8 (Nash #39) - plan hits target - Point	0.00	0.00	6,740.00	2,200.00	-3,851.90	482,163.000	617,336.000	32° 19' 30.038 N	103° 57' 12.524 W
Target 7 (Nash #39) - plan hits target - Point	0.00	0.00	6,746.00	2,098.00	-3,361.90	482,061 000	617,826.000	32° 19' 29.011 N	103° 57' 6.818 W
Target 5 (Nash #39) - plan hits target - Point	0.00	0.00	6,758.00	1,743.00	-2,430.90	481,706.000	618,757.000	32° 19' 25.465 N	103° 56' 55.982 W
Target 2 (Nash #39) - plan hits target - Point	0.00	0.00	6,776.00	976.00	-1,149.90	480,939.000	620,038.000	32° 19' 17.829 N	103° 56' 41.086 W
Target 9 (Nash #39) - plan hits target - Point	0.00	0.00	6,732.00	2,277.00	-4,340.90	482,240.000	616,847.000	32° 19' 30.817 N	103° 57' 18.220 W
Target 4 (Nash #39) - plan hits target - Point	0.00	0.00	6,764.00	1,517.00	-1,985.90	481,480.000	619,202.000	32° 19' 23.213 N	103° 56' 50.806 W
PBHL(Nash #39) - plan misses by 10.22ft at 12432.82ft MD (6716.06 TVD, 2368.18 N, -5337.02 E) - Point	0.00	0.00	6,716.00	2,358.00	-5,337.90	482,321.000	615,850.000	32° 19' 31.653 N	103° 57' 29.835 W

Pathfinder Energy Services

Patfinder X & Y Survey Report

Company:	XTO	**Local Co-ordinate Reference:**	Well Nash Unit #39H
Project:	Eddy County	**TVD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Site:	Nash Unit #39H	**MD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Well:	Nash Unit #39H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 2003.16 Single User Db

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 1 (Nash #39) - plan hits target - Point	0.00	0.00	6,782.00	666.00	-753.90	480,629.000	620,434.000	32° 19' 14.747 N	103° 56' 36.484 W
Target 3 (Nash #39) - plan hits target - Point	0.00	0.00	6,771.00	1,259.00	-1,559.90	481,222.000	619,628.000	32° 19' 20.644 N	103° 56' 45.852 W
Target 6 (Nash #39) - plan hits target - Point	0 00	0.00	6,752.00	1,936 00	-2,889.90	481,899.000	618,298.000	32° 19' 27.391 N	103° 57' 1 324 W
Target 10 (Nash #39) - plan hits target - Point	0.00	0.00	6,724.00	2,325.00	-4,839.90	482,288.000	616,348.000	32° 19' 31.309 N	103° 57' 24.033 W
Target 8 (Nash #39) - plan hits target - Point	0.00	0.00	6,740.00	2,200.00	-3,851.90	482,163.000	617,336.000	32° 19' 30.038 N	103° 57' 12.524 W
Target 7 (Nash #39) - plan hits target - Point	0.00	0.00	6,746.00	2,098.00	-3,361.90	482,061.000	617,826.000	32° 19' 29.011 N	103° 57' 6.818 W
Target 5 (Nash #39) - plan hits target - Point	0.00	0.00	6,758.00	1,743.00	-2,430.90	481,706.000	618,757.000	32° 19' 25.465 N	103° 56' 55.982 W
Target 2 (Nash #39) - plan hits target - Point	0.00	0.00	6,776.00	976 00	-1,149.90	480,939.000	620,038.000	32° 19' 17.829 N	103° 56' 41.086 W
Target 9 (Nash #39) - plan hits target - Point	0 00	0.00	6,732.00	2,277.00	-4,340.90	482,240.000	616,847.000	32° 19' 30.817 N	103° 57' 18.220 W
Target 4 (Nash #39) - plan hits target - Point	0.00	0.00	6,764.00	1,517.00	-1,985.90	481,480.000	619,202.000	32° 19' 23.213 N	103° 56' 50.806 W
PBHL(Nash #39) - plan misses by 10.22ft at 12432.82ft MD (6716.06 TVD, 2368.18 N, -5337.02 E) - Point	0.00	0.00	6,716.00	2,358.00	-5,337.90	482,321.000	615,850.000	32° 19' 31.653 N	103° 57' 29.835 W

Pathfinder Energy Services

Patfinder X & Y Survey Report

Company:	XTO	**Local Co-ordinate Reference:**	Well Nash Unit #39H
Project:	Eddy County	**TVD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Site:	Nash Unit #39H	**MD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Well:	Nash Unit #39H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 2003.16 Single User Db

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 1 (Nash #39) - plan hits target - Point	0.00	0.00	6,782.00	666.00	-753.90	480,629.000	620,434.000	32° 19' 14.747 N	103° 56' 36.484 W
Target 3 (Nash #39) - plan hits target - Point	0.00	0.00	6,771.00	1,259.00	-1,559.90	481,222.000	619,628.000	32° 19' 20.644 N	103° 56' 45.852 W
Target 6 (Nash #39) - plan hits target - Point	0.00	0.00	6,752.00	1,936.00	-2,889.90	481,899.000	618,298.000	32° 19' 27.391 N	103° 57' 1.324 W
Target 10 (Nash #39) - plan hits target - Point	0.00	0.00	6,724.00	2,325.00	-4,839.90	482,288.000	616,348.000	32° 19' 31.309 N	103° 57' 24.033 W
Target 8 (Nash #39) - plan hits target - Point	0.00	0.00	6,740.00	2,200.00	-3,851.90	482,163.000	617,336.000	32° 19' 30.038 N	103° 57' 12.524 W
Target 7 (Nash #39) - plan hits target - Point	0.00	0.00	6,746.00	2,098.00	-3,361.90	482,061.000	617,826.000	32° 19' 29.011 N	103° 57' 6.818 W
Target 5 (Nash #39) - plan hits target - Point	0.00	0.00	6,758.00	1,743.00	-2,430.90	481,706.000	618,757.000	32° 19' 25.465 N	103° 56' 55.982 W
Target 2 (Nash #39) - plan hits target - Point	0.00	0.00	6,776.00	976.00	-1,149.90	480,939.000	620,038.000	32° 19' 17.829 N	103° 56' 41.086 W
Target 9 (Nash #39) - plan hits target - Point	0.00	0.00	6,732.00	2,277.00	-4,340.90	482,240.000	616,847.000	32° 19' 30.817 N	103° 57' 18.220 W
Target 4 (Nash #39) - plan hits target - Point	0.00	0.00	6,764.00	1,517.00	-1,985.90	481,480.000	619,202.000	32° 19' 23.213 N	103° 56' 50.806 W
PBHL(Nash #39) - plan misses by 10.22ft at 12432.82ft MD (6716.06 TVD, 2368.18 N, -5337.02 E) - Point	0.00	0.00	6,716.00	2,358.00	-5,337.90	482,321.000	615,850.000	32° 19' 31.653 N	103° 57' 29.835 W

Pathfinder Energy Services

Patfinder X & Y Survey Report

Company:	XTO	**Local Co-ordinate Reference:**	Well Nash Unit #39H
Project:	Eddy County	**TVD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Site:	Nash Unit #39H	**MD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Well:	Nash Unit #39H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 2003.16 Single User Db

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 1 (Nash #39) - plan hits target - Point	0.00	0.00	6,782.00	666 00	-753.90	480,629.000	620,434.000	32° 19' 14.747 N	103° 56' 36.484 W
Target 3 (Nash #39) - plan hits target - Point	0.00	0.00	6,771.00	1,259.00	-1,559.90	481,222.000	619,628.000	32° 19' 20.644 N	103° 56' 45.852 W
Target 6 (Nash #39) - plan hits target - Point	0.00	0.00	6,752.00	1,936.00	-2,889.90	481,899.000	618,298.000	32° 19' 27.391 N	103° 57' 1.324 W
Target 10 (Nash #39) - plan hits target - Point	0.00	0.00	6,724.00	2,325.00	-4,839.90	482,288.000	616,348.000	32° 19' 31.309 N	103° 57' 24.033 W
Target 8 (Nash #39) - plan hits target - Point	0.00	0.00	6,740.00	2,200.00	-3,851.90	482,163 000	617,336 000	32° 19' 30.038 N	103° 57' 12.524 W
Target 7 (Nash #39) - plan hits target - Point	0.00	0.00	6,746.00	2,098.00	-3,361.90	482,061.000	617,826.000	32° 19' 29.011 N	103° 57' 6.818 W
Target 5 (Nash #39) - plan hits target - Point	0.00	0.00	6,758.00	1,743.00	-2,430.90	481,706.000	618,757.000	32° 19' 25.465 N	103° 56' 55.982 W
Target 2 (Nash #39) - plan hits target - Point	0.00	0.00	6,776.00	976.00	-1,149.90	480,939.000	620,038.000	32° 19' 17.829 N	103° 56' 41.086 W
Target 9 (Nash #39) - plan hits target - Point	0.00	0.00	6,732.00	2,277.00	-4,340.90	482,240.000	616,847.000	32° 19' 30.817 N	103° 57' 18.220 W
Target 4 (Nash #39) - plan hits target - Point	0.00	0.00	6,764.00	1,517.00	-1,985.90	481,480.000	619,202.000	32° 19' 23.213 N	103° 56' 50.806 W
PBHL(Nash #39) - plan misses by 10.22ft at 12432.82ft MD (6716.06 TVD, 2368.18 N, -5337.02 E) - Point	0.00	0.00	6,716.00	2,358.00	-5,337.90	482,321.000	615,850.000	32° 19' 31.653 N	103° 57' 29.835 W

Pathfinder Energy Services

Patfinder X & Y Survey Report

Company:	XTO	**Local Co-ordinate Reference:**	Well Nash Unit #39H
Project:	Eddy County	**TVD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Site:	Nash Unit #39H	**MD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Well:	Nash Unit #39H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 2003.16 Single User Db

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 1 (Nash #39) - plan hits target - Point	0 00	0.00	6,782.00	666.00	-753.90	480,629.000	620,434.000	32° 19' 14.747 N	103° 56' 36.484 W
Target 3 (Nash #39) - plan hits target - Point	0.00	0.00	6,771.00	1,259.00	-1,559.90	481,222.000	619,628.000	32° 19' 20.644 N	103° 56' 45.852 W
Target 6 (Nash #39) - plan hits target - Point	0.00	0.00	6,752.00	1,936.00	-2,889.90	481,899.000	618,298.000	32° 19' 27.391 N	103° 57' 1.324 W
Target 10 (Nash #39) - plan hits target - Point	0.00	0.00	6,724.00	2,325.00	-4,839.90	482,288.000	616,348.000	32° 19' 31.309 N	103° 57' 24.033 W
Target 8 (Nash #39) - plan hits target - Point	0.00	0.00	6,740.00	2,200.00	-3,851.90	482,163.000	617,336.000	32° 19' 30.038 N	103° 57' 12.524 W
Target 7 (Nash #39) - plan hits target - Point	0.00	0.00	6,746.00	2,098.00	-3,361.90	482,061.000	617,826.000	32° 19' 29.011 N	103° 57' 6.818 W
Target 5 (Nash #39) - plan hits target - Point	0.00	0.00	6,758.00	1,743.00	-2,430.90	481,706.000	618,757.000	32° 19' 25.465 N	103° 56' 55.982 W
Target 2 (Nash #39) - plan hits target - Point	0.00	0.00	6,776.00	976.00	-1,149.90	480,939.000	620,038.000	32° 19' 17.829 N	103° 56' 41.086 W
Target 9 (Nash #39) - plan hits target - Point	0.00	0.00	6,732.00	2,277.00	-4,340.90	482,240 000	616,847.000	32° 19' 30.817 N	103° 57' 18.220 W
Target 4 (Nash #39) - plan hits target - Point	0.00	0.00	6,764.00	1,517.00	-1,985.90	481,480.000	619,202.000	32° 19' 23.213 N	103° 56' 50.806 W
PBHL(Nash #39) - plan misses by 10.22ft at 12432.82ft MD (6716.06 TVD, 2368.18 N, -5337.02 E) - Point	0.00	0.00	6,716.00	2,358.00	-5,337.90	482,321.000	615,850.000	32° 19' 31.653 N	103° 57' 29.835 W

Pathfinder Energy Services

Patfinder X & Y Survey Report

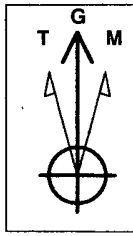
Company:	XTO	**Local Co-ordinate Reference:**	Well Nash Unit #39H
Project:	Eddy County	**TVD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Site:	Nash Unit #39H	**MD Reference:**	WELL @ 3000.00ft (Norton #2- 17' RKB)
Well:	Nash Unit #39H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #2	**Database:**	EDM 2003.16 Single User Db

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
5,967.00	5,967.00	0.00	0.00	KOP @ 5967 00'MD,0.00°INC,0.00°AZI,Using 0.00°DLS
7,266.24	6,785.00	551.04	-623.71	Land Curve @ 7266.24'MD,90.99°INC,311.46°AZI,6785.00'TVD,7.00°[
12,436.70	6,716.00	2,368.51	-5,340.88	TD @ 12436 70' MD

Checked By: _____ Approved By: _____ Date: _____

XTO ENERGY



Azimuths to Grid North
True North: -0.21°
Magnetic North: 7.86°

Magnetic Field
Strength: 48925.6snT
Dip Angle: 60.29°
Date: 10/20/2008
Model: IGRF200510

PATHFINDER ENERGY SERVICES

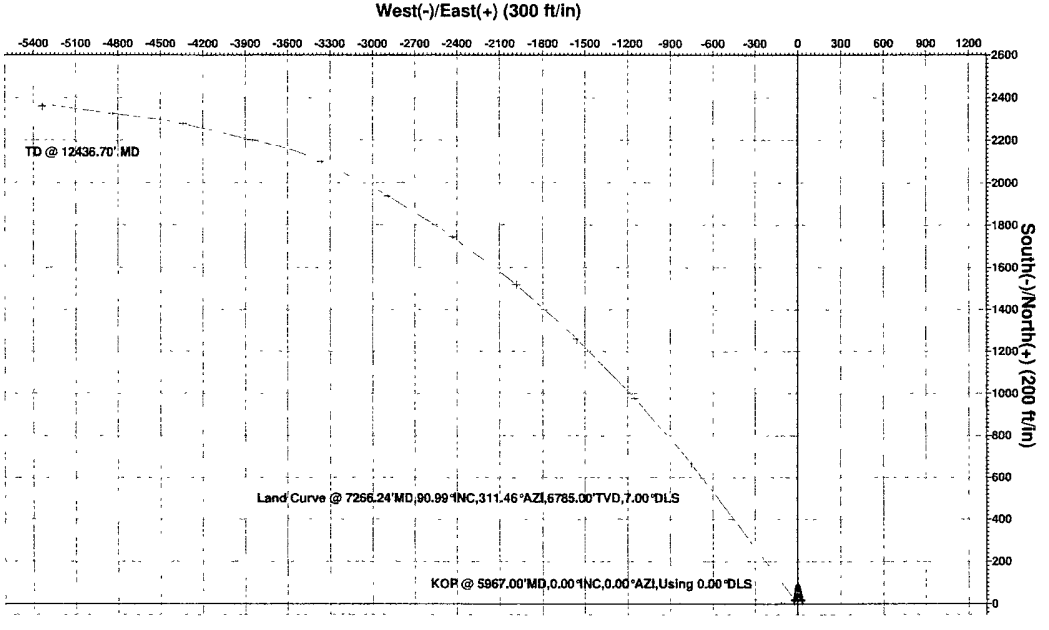
SECTION DETAILS

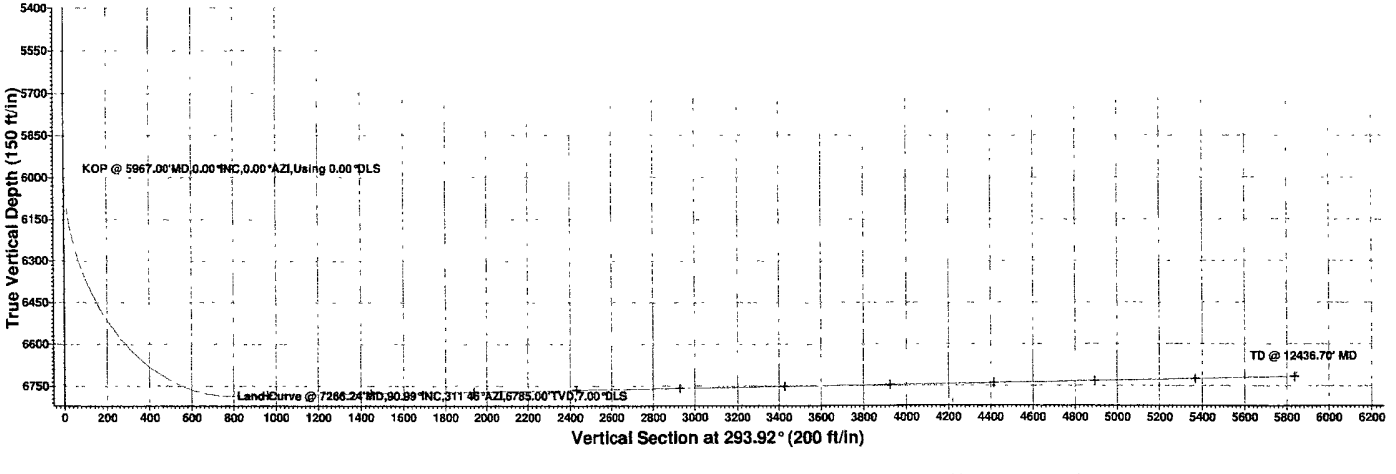
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	5967.00	0.00	0.00	5967.00	0.00	0.00	0.00	0.00	0.00	
3	7266.24	90.99	311.46	6785.00	551.04	-623.71	7.00	311.46	793.54	
4	7266.71	90.99	311.45	6784.99	551.34	-624.05	3.00	-91.84	793.99	
5	7439.95	90.99	311.45	6782.00	666.00	-753.90	0.00	0.00	959.16	Target 1 (Nash #39)
6	7570.33	90.64	307.55	6780.15	748.80	-854.48	3.00	-95.13	1084.71	
7	7942.99	90.64	307.55	6776.00	976.00	-1149.90	0.00	0.00	1446.84	Target 2 (Nash #39)
8	8052.86	90.57	304.25	6774.84	1040.48	-1238.98	3.00	-91.21	1554.40	
9	8441.24	90.57	304.25	6771.00	1259.00	-1559.90	0.00	0.00	1936.36	Target 3 (Nash #39)
10	8556.56	90.84	300.80	6769.59	1321.00	-1657.12	3.00	-85.52	2050.37	
11	8939.38	90.84	300.80	6764.00	1517.00	-1985.90	0.00	0.00	2430.38	Target 4 (Nash #39)
12	9092.01	90.66	296.23	6762.00	1589.83	-2119.97	3.00		2582.46	
13	9438.54	90.66	296.23	6758.00	1743.00	-2430.90	0.00	0.00	2928.79	Target 5 (Nash #39)
14	9568.91	90.69	292.29	6756.45	1796.91	-2550.55	3.00	-89.50	3060.02	
15	9936.69	90.69	292.29	6752.00	1936.00	-2889.90	0.00	0.00	3425.62	Target 6 (Nash #39)
16	10064.49	90.69	288.45	6750.46	1980.47	-3009.68	3.00	-90.08	3554.15	
17	10435.83	90.69	288.45	6746.00	2096.00	-3361.90	0.00	0.00	3923.77	Target 7 (Nash #39)
18	10770.77	90.68	278.40	6741.98	2175.58	-3687.25	3.00	-89.97	4252.68	
19	10937.22	90.68	278.40	6740.00	2200.00	-3851.90	0.00	0.00	4413.05	Target 8 (Nash #39)
20	10957.64	90.93	278.96	6739.71	2203.07	-3871.88	3.00	65.97	4432.65	
21	11432.31	90.93	278.96	6732.00	2277.00	-4340.90	0.00	0.00	4891.28	Target 9 (Nash #39)
22	11565.50	90.91	274.96	6729.86	2293.14	-4473.06	3.00	-90.25	5018.54	
23	11933.77	90.91	274.96	6724.00	2325.00	-4839.90	0.00	0.00	5366.90	Target 10 (Nash #39)
24	12436.70	90.91	274.96	6716.00	2368.51	-5340.89	0.00	0.00	5842.51	PBHL(Nash #39)

WELL DETAILS Nash Unit #39H

Ground Elevation : 2983.00
RKB Elevation: WELL @ 3000.00ft (Norton #2- 17' RKB)
Rig Name: Norton #2- 17' RKB

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	479963.000	621187.900	32° 19' 8.129 N	103° 56' 27.727 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

Project: Eddy County
Site: Nash Unit #39H
Well: Nash Unit #39H
Wellbore: OH
Plan: Plan #2 (Nash Unit #39H/OH)

Plan: Plan #2 (Nash Unit #39H/OH)

Created By: Aaron Pullin Date: 15:01, November 05 2008

Checked: _____ Date:

XTO Energy, Inc.

Nash Unit, Well #39H
Section 12, T23S, R29E (K)
Eddy County, NM

Vendors & Contacts

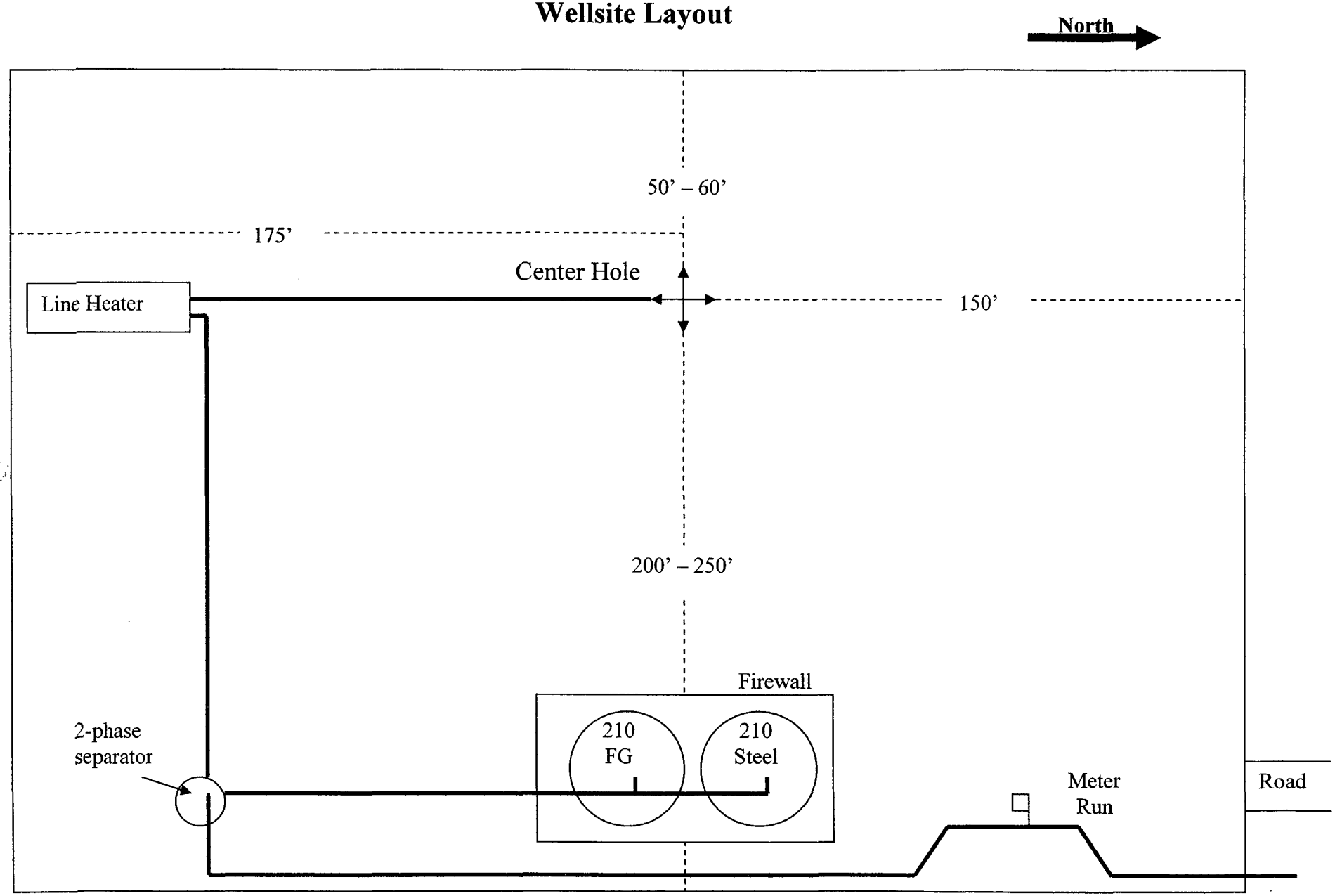
Services:

New Mexico OCD	Hobbs	575 393 6161
Drilling Contractor	Sweat/Artesia	575 631 7366
Fresh/Brine Water	Pate/Hobbs	575 397 6264
Pit Liner, Water Line	All American Pit/Midland	432 238 4479
Mudd Logger @ 4500'	Suttles/Hobbs	
Drilling Mud/Chemicals	Nova/Hobbs	800 530 8786
Cementing Services		
Float Equipment	Antelope/Odessa	432 530 2313
Casing Crews	Lewis Casing/Odessa	432 366 8077
Supplies	Wilson Supply/Artesia	575 746 3100
Open Hole Logging	Halliburton/Midland	432 682 4305
H2S Equipment	Indian Fire & Safety/Hobbs	575 393 3093
Wellhead Equipment	Wood Group	432 368 0661
Casing/Wellhead	Sandy Brazil/Midland	432 620 4310/853 5675
Casing Inspection	Arc Inspection/Odessa	432 556 3879
Portable toilets	BOS Services/Denver City	806 759 9277

XTO Personnel

Don Eubank	Drilling Manager	432 664 8593 - cell; 432 620 6128 – office
Boogie Armes	Drilling Superintendent	432 556 7403 – cell; 432 620 6739 – office
Bob Chance	Drilling Superintendent	432 296 3926 – cell; 432 620-4321 – office
Chip Aanrack	Drillihg Engineer	432 638 8372 – cell; 432 620-4328 – office
Cody Grasmick	Drilling Engineer	432 238 -0053 – cell; 432 620-4328 – office
Scott Kelley	Geologist	817 789 2397 – cell; 817 885 2893 – office
Dudley McMira	Safety Coordinator	432 557 7976 – cell; 432.620 6713 - office

Wellsite Layout



XTO Energy, Inc.

Closed Loop System

Nash, Well #39H
Section 12, T23S, R29E (K) - SL
Section 11, T23S, R29E (C) - BHL
Eddy County, New Mexico

Equipment Design Plan

Closed Loop System will consist of-
1 - (minimum) Double panel shaker with rig inventory
1 - (minimum) Centrifuge, certain wells and flow rates may require 2 centrifuges
1 - minimum centrifugal pump to transfer fluids
2 - (minimum) 500 bbl FW & 3 - frac BW Tanks
3 - 20 cu yards steel haul off bins (calc'd cutting is 381 cu yards
1 - Desander desilter (if needed, 1 mud cleaner (if needed), 1 centrifuge(2 if needed)
2 - pumps - P/9
3 steel working pits, 1100 bbl system

Operation Plan

All equipment will be inspected numerous times a day by each tour to make sure all equipment is operating correctly. Routine maintenance will be done to keep system running properly.

Any leak in system will be repaired and/or contained immediately and the OCD notified within 48 hours of the remediation process start.

Closure Plan

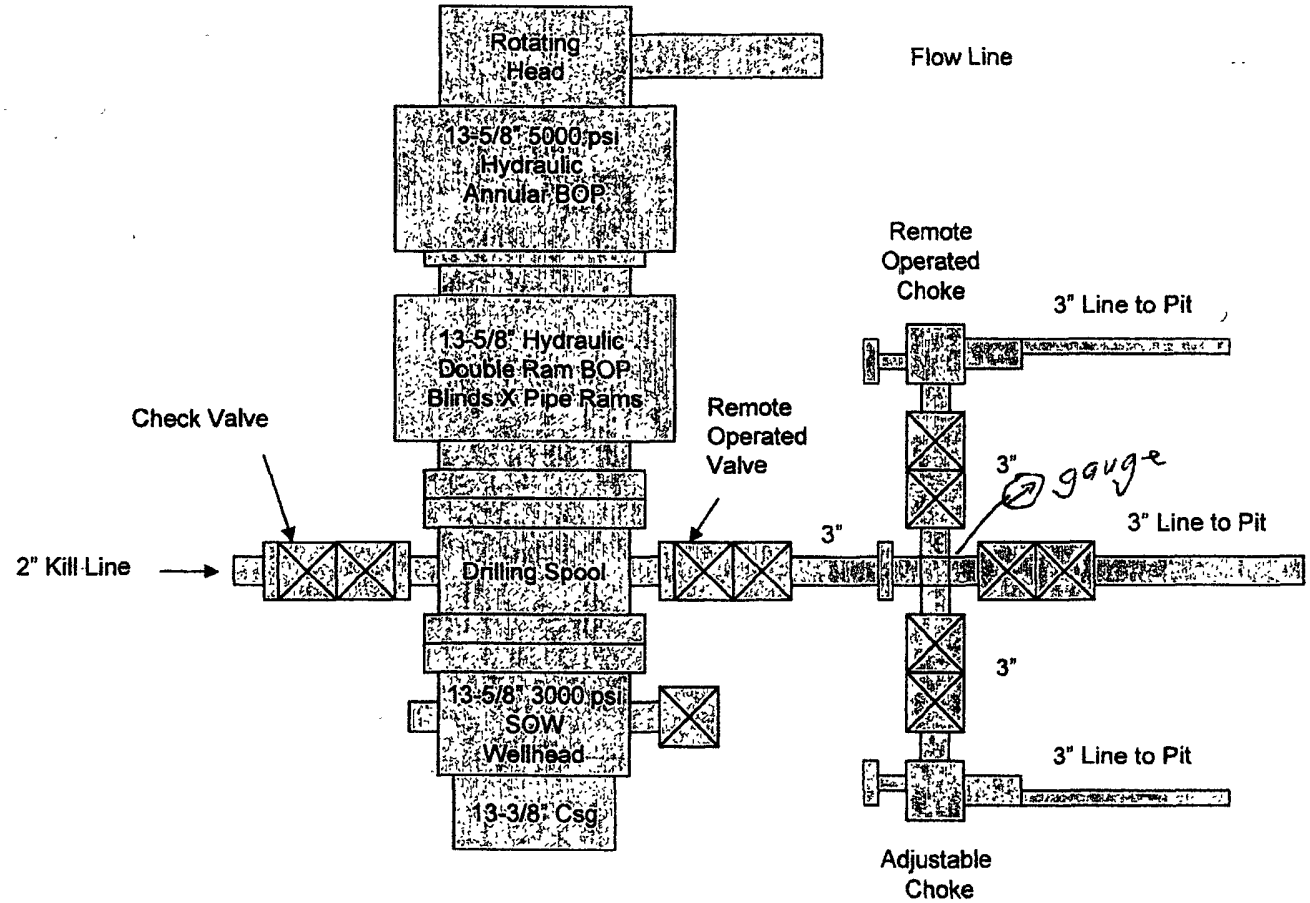
While drilling all cuttings and fluids associated with drilling will be hauled off and disposed of via Control Recovery Incorporated facilities Permit R-9166 located near miles marker 66 on Hwy 62/180.

OPERATING AND MAINTENANCE PLAN

Closed Loop equipment will be inspected and monitored closely on a daily basis by each tour and any necessary maintenance performed. Any leak in the system will be repaired and/or contained immediately. Within 48 hours should a spill, release or leak occur, the NMOCD District II office in Artesia (575-748-1283) will be notified. Please note that notifications may be made earlier to the district office should a greater release occur. This is in accordance with the reporting requirements specified in NMOCD's Rule 116.

CLOSURE PLAN

During and after drilling operations, liquids (which apply), all drill cuttings and drilling fluids will be hauled and disposed of at CRI (Controlled Recovery Incorporated - Permit R-9166).



5000 psi Working Pressure
BOPE Configuration
And Choke Manifold

November 20, 2008

Sorina Flores
XTO Energy Inc.
200 N. Loraine St., Ste. 800
Midland, TX 79701
432-620-6749
sorina_flores@xtoenergy.com

Bureau of Land Management
620 E. Greene
Carlsbad, NM 88220
575-887-6544

Dear Sirs:

XTO Energy Inc. does not anticipate encountering H2S while drilling the Nash #39H located in Section 12, T23S, R29E, in Eddy County, New Mexico. As a precaution, I have attached an H2S contingency plan along with a gas analysis of our well stream. If you need anything further, please contact me at the telephone number or email listed above.

Thank you,

Sorina Flores
Drilling Tech.

HYDROGEN SULFIDE (H2S) CONTINGENCY PLAN

Assumed 100 ppm ROE = 3000'

100 ppm H2S concentration shall trigger activation of this plan.

Emergency Procedures

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

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

Ignition of Gas source

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

Characteristics of H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

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

EUNICE OFFICE – EDDY & LEA COUNTIES

EMSU @ Oil Center, NM, 8/10ths mile west of Hwy 8 on Hwy 175
Eunice, NM 575-394-2089

XTO ENERGY INC PERSONNEL:

Boogie Armes, Sr. Drilling Superintendent	432-556-7403
Bob Chance, Drilling Superintendent	432-296-3926
Chip Amrock, Sr. Drilling Engineer	432-638-8372
Jeff Raines, Construction Foreman	432-557-3159
Dudley McMinn, EH & S Manager	432-557-7976
Rick Wilson, Production Foreman	575-441-1147
Jerry Parker, Buckeye Production Foreman	575-441-1628
David Paschal, Eunice Monument Production Foreman	575-390-7167
Gene Hudson, Maintenance Foreman	575-441-1634
Guy Haykus, Production Superintendent	575-634-5677

SHERIFF DEPARTMENTS:

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

NEW MEXICO STATE POLICE: 575-392-5588

FIRE DEPARTMENTS:

	911
Carlsbad	575-885-2111
Eunice	575-394-2111
Hobbs	575-397-9308
Jal	575-395-2221
Lovington	575-396-2359

HOSPITALS:

	911
Carlsbad Medical Emergency	575-885-2111
Eunice Medical Emergency	575-394-2112
Hobbs Medical Emergency	575-397-9308
Jal Medical Emergency	575-395-2221
Lovington Medical Emergency	575-396-2359

AGENT NOTIFICATIONS:

Bureau of Land Management	575-393-3612
New Mexico Oil Conservation Division	575-393-6161
Mosaic Potash - Carlsbad	575-887-2871

CONTRACTORS:

ABC Rental – Light Towers	575-394-3155
Bulldog Services – Trucking/Forklift	575-391-8543
Champion – Chemical	575-393-7726
Indian Fire & Safety	575-393-3093
Key – Dirt Contractor	575-393-3180
Key Tools – Light Towers	575-393-2415
Sweatt – Dirt Contractor	575-397-4541
RWI – Contract Gang	575-393-5305

XTO ENERGY, INC.

H2S
BATTERY SURVEY

Location	Results	Comments	Type Gas
Bar 4 Fed #1	0	Oil & Water tanks	
Bridges St. 514	0	Oil & Water tanks	
Bridges St. 120	2,100 ppm	Oil & Water tanks	Sour
Bridges St. 126	10,000 ppm	Oil & Water tanks	Sour
Bridges St. 12	16,000 ppm	Oil tanks	Sour
Bridges St. 95	200 ppm	Oil tanks	Sour
Bridges St. 14	4,200 ppm	Oil & Water tanks	Sour
Federal DM #1	180,000 ppm	Oil & Water tanks	Sour
Greenstar 22 #1	0	Oil & Water tanks	
Gulf 5 Fed #1	0	Oil & Water tanks	
NVA North Prod wtr station	300 ppm	Water tanks	Sour
NVAE	350 ppm	Oil & Water tanks	Sour
NVA 204	600 ppm	Oil & Water tanks	Sour
NVA 134	600 ppm	Oil & Water tanks	Sour
NVA 120	200 ppm	Oil & Water tanks	Sour
NVA 131	8,000 ppm	Oil & Water tanks	Sour
NVA 203	100 ppm	Oil & Water tanks	Sour
NVA South Prod wtr station	9,000 ppm	Water tanks	Sour
NVA 95	100 ppm	Oil tanks	Sour
Remuda Basin 24 #1	0	Oil & Water tanks	
Remuda Basin 19	0	Oil & Water tanks	
Ross Draw 25 #1	0	Oil & Water tanks	
Yates 8	0	Oil & Water tanks	
Nash 15,33,9,36,13,34,19,24,1,6,38	0	Oil & Water tanks	
SDE 31	20	Oil & Water tanks	Sour
SDE 19	0	Oil & Water tanks	
SEMGSAU Batt. #1	16,000 ppm	Oil & Water tanks	Sour
SEMGSAU Batt. #2	8,000 ppm	Oil & Water tanks	Sour
Sprinkle "B" Fed #2	50 ppm	Oil & Water tanks	Sour
State N	200 ppm	Oil & Water tanks	Sour
State XX	0	Oil & Water tanks	
State K	25 ppm	Oil & Water tanks	Sour
NM State BO	9,000 ppm	Oil & Water tanks	Sour
State M	0	Oil & Water tanks	
State Sec 27 SWD	2,200 ppm	Water tanks	Sour
State L & PP	0	Oil & Water tanks	
NM J State	100 ppm	Oil & Water tanks	Sour
Tex-Mack "5" State Comm	0	Oil & Water tanks	

Surface Use Plan

(Additional data for form 3160-3)

XTO Energy, Inc.
Nash, Well #39H
SL (K) Sec 12, T23S, R29E, 2415 FSL & 1645 FWL
BHL (C) Sec 11, T23S, R29E, 500 FL & 1575 FWL
Eddy County, NM
NMNM 100555

1. EXISTING ROADS –

   The road log to the location is as follows:

   From the intersection of St. Hwy 128 and Rawhide Rd., go south on Rawhide Rd, approx 1.2 miles. Turn right and go west approx. 0.5 iles to the existing XTO Nash #13 pad. This location is approx 143' north. All roads will be maintained in a condition equal to or better than current conditions. Any new roads will be constructed to BLM specifications.

2. PLANNED ACCESS ROAD —Approximately 446' of new E-W access road will be built from the existing N-S lease road to the Nash Unit battery, caliche road to the north/east. All lease roads will be graded in compliance with BLM standards and made a uniform width of 20', including shoulders.

3. LOCATION OF EXISTING WELLS – The Nash Unit, Well #13 is location to the SE, as well as the existing Nash Unit battery.

   Water wells: None known; Disposal wells: none known; Drilling wells: none known Producing Wells: Closest well more than one mile. Abandoned wells: none known

4. LOCATION OF EXISTING OR PROPOSED FACILITIES – In the event this well is productive existing facilities. Permanent tanks and gas measurement meter(s) will be utilized for each well as per BLM specifications.

5. LOCATION AND TYPE OF WATER SUPPLY - All water (fresh or otherwise) needed for the drilling and completion of this well will be purchased from a commercial source and trucked to the location via the existing and proposed access road. No water source wells will be drilled, and no surface water will be utilized.

6. SOURCE OF CONSTRUCTION MATERIALS - Construction material (caliche) required for the access road and well site pad will be obtained on location, if available, or from an approved pit. No surface materials will be disturbed except those necessary fir actual grading and construction of the drill site and access road.

7. METHODS FOR HANDLING WASTE DISPOSAL –

• Closed Loop System. Waste Material will be stored then hauled to a state approved disposal facility. Drilling fluids will be contained in steel pits, fluids will be cleaned & reused. Water produced during testing will be contained in steel pits and disposal at a state approved facility. Any oil or condensate will be stored in test tanks until sold & hauled from site.

• Receptacles for solid wastes (paper, plastic, etc) will be provided and equipped to prevent scattering by wind, animals, etc. This waste will be hauled to an approved landfill site. Salts remaining after completion will be picked up by supplier including broken sacks.

• Any other waste generated by the drilling, completion, testing of this well will be through a closed loop system.

• A Porta-John will be provided for the crews. This will be properly maintained during the drilling operations and removed upon completion of the well, and cleaned out periodically.

8. ANCILLARY FACILITIES – Upon completion, and/or testing of this well rental tanks, facilities will be utilized until permanent storage is established. No camps or airstrips will be constructed.

9. WELLSITE LAYOUT – Enclosed, please see "Drilling Rig Layout"

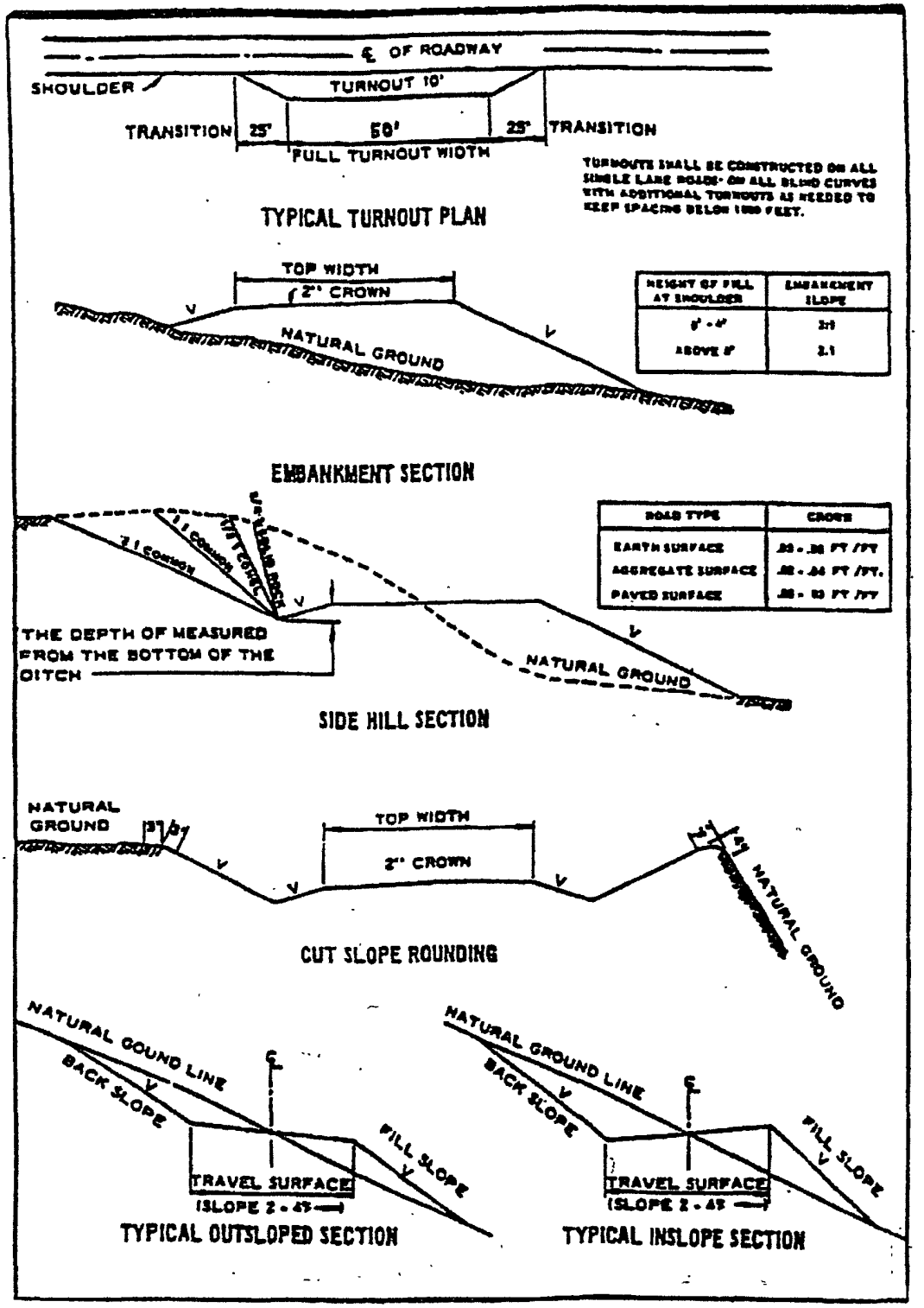
10. PLANS FOR SURFACE RESTORATION - Reclamation of the surface location will be in accordance with the requirements set forth by the BLM. As stated earlier all waste generated by this operation will be disposed of in an approved manner, and the site restored as closely as possible to its pre-operation appearance. The topsoil at the wellsite & access road is light/medium brown colored fine sand. Due to the topography of the area no problems are anticipated in achieving this status and no erosion or other detrimental effects are expected as a result of this operation.

The vegetation at the wellsite is a sparse grass cover of three-awn, grama, bluestem, dropseed, burrograss, muhly and misc. native grasses. Plants are sparse mesquite, yucca, sage, shinnery oak brush, broomweed, and cacti w/misc. weeds. The wildlife consists of rabbits, coyotes, rattlesnakes, lizards, dove and quail all typical of the semi-arid desert land. There are no ponds or streams. No dwelling with 1.5 miles of location.

Arc Survey has been submitted.

11. OTHER INFORMATION - The surface ownership of the drill site and the access routes are under the control/ownership of: Bureau of Land Management, 620 E. Greene St., Carlsbad, NM 88220, 505-887-6544. Barry Hunt w/the BLM can be reached @ the BLM number or @ 505-361-4078. Surface letter statement attached. Drilling contractor: Pending .

Cross Sections and Plans For Typical Road Sections



UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE
620 E. GREENE STREET
CARLSBAD, NM 88220

OPERATOR CERTIFICATION

I HEARBY CERTIFY THAT I, OR SOMEONE UNDER MY DIRECT SUPERVISION, HAVE INSPECTED THE DRILL SITE AND ACCESS ROUTE PROPOSED HEREIN; THAT I AM FAMILIAR WITH THE CONDITIONS WHICH CURRENTLY EXIST; THAT I HAVE FULL KNOWLEDGE OF STATE AND FEDERAL laws applicable to this operation; that the statements made in the APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S>C. 1001 for the filing of false statements.

Executed this 18 day of November, 2008

Well: Nash Unit #39H, Sec. 12, T23S, R29E, Eddy Co., NM

Operator Name: XTO ENERGY INC

Signature: _____ **Printed Name:** Don Eubank

Title: Drilling Manager Date: _____

Email (optional): don_eubank@xtoenergy.com

Street or Box: 200 N. Loraine St., Ste. 800

City, State, Zip Code: Midland, TX 79701

Telephone: 432-682-8873

Field Representative (if not above signatory): _____

Address (if different from above): _____

Telephone (if different from above): _____

Email (optional): _____

Agents not directly employed by the operator must submit a letter from the operator authorizing that the agent to act or file this application on their behalf.

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	XTO Energy, Inc
LEASE NO.:	NM0554221
WELL NAME & NO.:	Nash Draw No 39H
SURFACE HOLE FOOTAGE:	2415' FSL & 1645' FWL Section 12, T23S, R29E.
BOTTOM HOLE FOOTAGE	500' FNL & 1575' FWL
LOCATION:	Section 11, 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.

V. SPECIAL REQUIREMENT(S)

1. **The entire pad will have a berm constructed around it to prevent any spills or leaks from leaving the pad and entering the salt playa.**

2. Conditions of Approval 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.

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.

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 (505) 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 (505) 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.

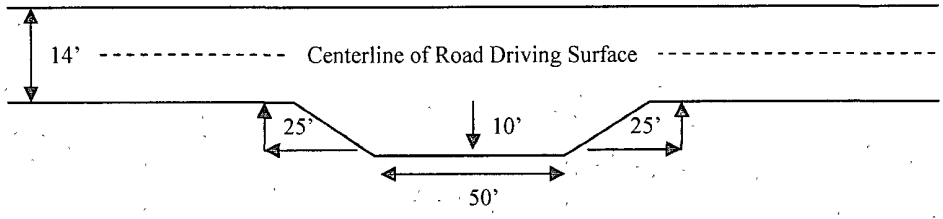
Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

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:

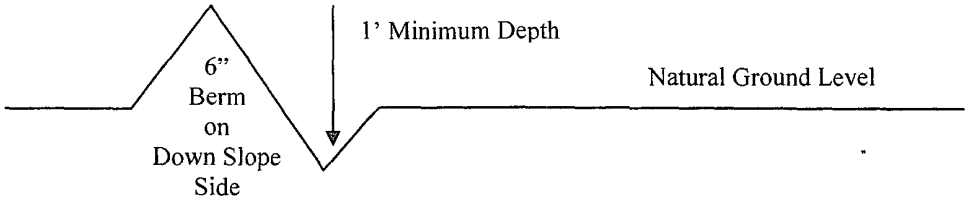
Standard Turnout – Plan View



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:

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

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.

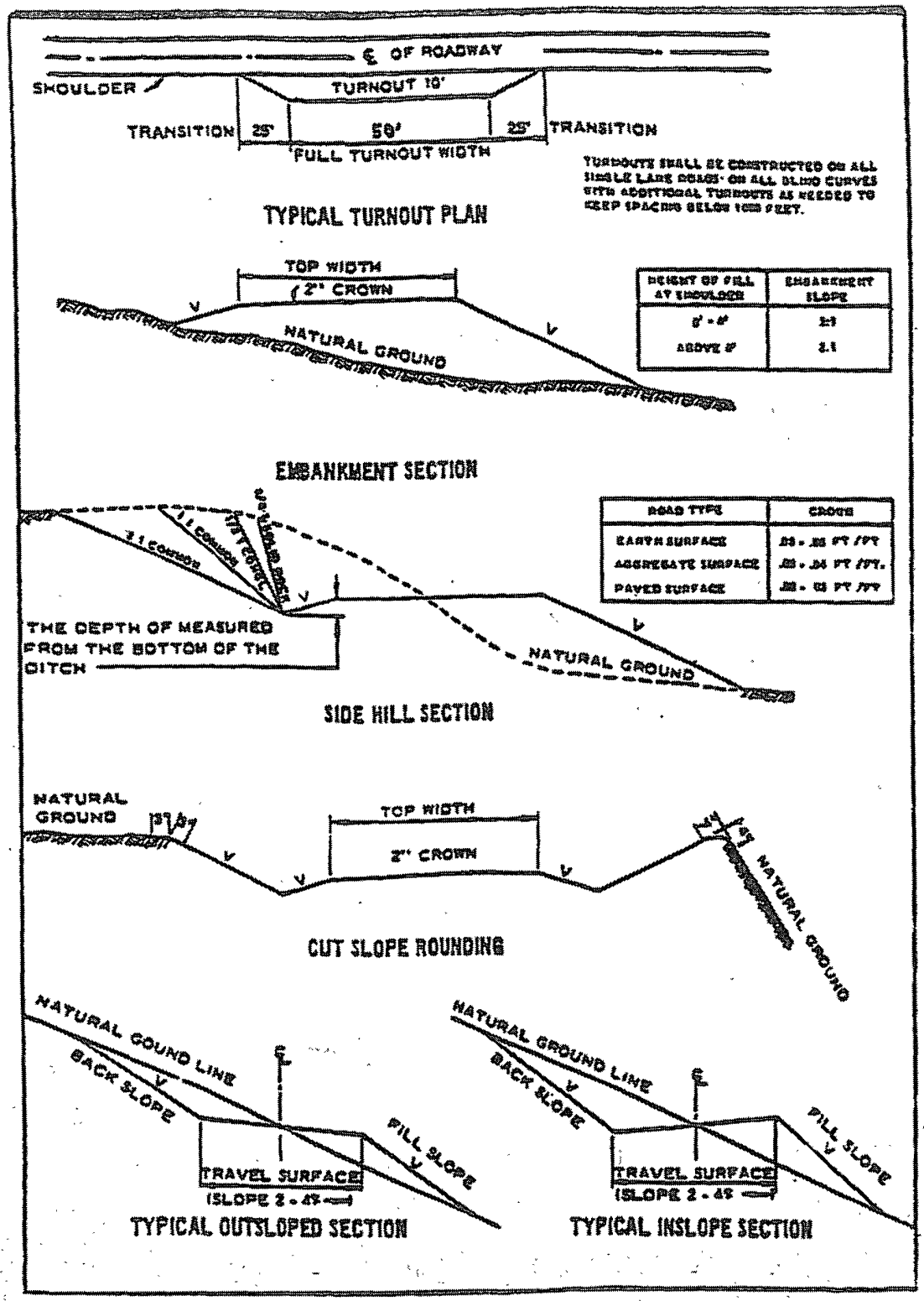
A gate shall be constructed and fastened securely to H-braces.

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. **Gamma-Ray/Neutron logs shall be run from the base of the Salado formation to the surface. The logs shall be run at a speed which allows the logs to be legible and no faster than manufacturer of the logging tools recommended speed. (R-111-P area only)**

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 18 hours for a water basin, 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.

R-111-P potash
High cave/karst
Possible lost circulation in the Delaware Mountain Group and the Bone Spring formations.

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. **This casing must not be set in the salt since that is not a competent formation and Onshore Order II requires casing to be set across a competent formation. 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. Not applicable if current cementing program without lead slurry is used.

    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.
    Casing is required to be set a minimum of 100' below the salt and not more than 600' below the salt. The proposed depth is too close to the base of the salt.
    Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to R-111-P potash area.

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

Centralizers required on horizontal leg, must be type for horizontal service and minimum of one every other joint.

3. The minimum required fill of cement behind the **5-1/2** inch production 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 circulate. If cement does not circulate, contact the appropriate BLM office, before proceeding with second stage cement job. **Additional cement will be required to bring cement to surface – required in R-111-P potash area.**

   No completion activities are to take place on this well until the lead slurry on the second stage reaches a 500 psi compressive strength.

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

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

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 **5000 (5M)** psi. **Operator using 5M system as a 2M system for intermediate hole.**

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.

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.

WWI 120208

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.