

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Form C-101  
May 27, 2004

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

Submit to appropriate District Office

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

<sup>1</sup> Operator Name and Address XTO Energy Inc. 200 N. Lorraine St., Ste 800 Midland, TX 79701		<sup>2</sup> OGRID Number 5380
<sup>3</sup> Property Code 301587	<sup>4</sup> Property Name North Vacuum ABO Unit	<sup>5</sup> Well No. 291
<sup>6</sup> Proposed Pool 1 North Vacuum ABO		<sup>7</sup> Proposed Pool 2

<sup>7</sup> Surface Location

UL or lot no. I	Section 22	Township 17S	Range 34E	Lot Idn	Feet from the 1964	North/South line South	Feet from the 512	East/West line East	County lea
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<sup>8</sup> Proposed Bottom Hole Location If Different From Surface

UL or lot no. 0	Section 22	Township 17S	Range 34E	Lot Idn	Feet from the 1000	North/South line South	Feet from the 2298	East/West line East	County lea
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Additional Well Information

<sup>11</sup> Work Type Code Horizontal	<sup>12</sup> Well Type Code O	<sup>13</sup> Cable/Rotary Rotary	<sup>14</sup> Lease Type Code S	<sup>15</sup> Ground Level Elevation 4034'
<sup>16</sup> Multiple	<sup>17</sup> Proposed Depth 10,300'	<sup>18</sup> Formation ABO	<sup>19</sup> Contractor Key Energy	<sup>20</sup> Spud Date ASAP
Depth to Groundwater 200'		Distance from nearest fresh water well +1000'		Distance from nearest surface water +1000'
Pit: Liner: Synthetic <input checked="" type="checkbox"/> 12 mils thick Clay <input type="checkbox"/> Pit Volume: 20000 bbls Drilling Method: Fresh Water <input checked="" type="checkbox"/> Brine <input type="checkbox"/> Diesel/Oil-based <input type="checkbox"/> Gas/Air <input type="checkbox"/>				
Closed-Loop System <input type="checkbox"/>				

<sup>21</sup> Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
17-1/2"	13-3/8"	40# H40 StC	400'	500	Circ to Surf
12-1/4"	9-5/8"	53.5# S95	5000'	2950	Circ to Surf
7-7/8"	5-1/2"	17#/15.5# K55	8800'-4195'	900	Circ to BOP of liner

<sup>22</sup> Describe the proposed program. If this application is to DEEPEN or PLUG BACK, give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

\* See Attached procedure for adding lateral.

\* MUD PROGRAM: 8.4 - 8.9 fresh water from Kickoff point 8448' - 56' to 8460' OGD

\* CIRP: will be set at 8460' with whipstock for Kickoff and directional drilling

\* BOP: Case III 7-1/16" 3000# w/ Hydril single pipe ram, blind ram and manifold.

Permit Expires 1 Year From Approval  
Date Unless Drilling Underway

\*\*\* HORIZONTAL

<sup>23</sup> I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that the drilling pit will be constructed according to NMOC guidelines ☒ a general permit ☐ or an (attached) alternative OCD-approved plan ☐

OIL CONSERVATION DIVISION

Approved by:

Chris Williams

Printed name: Sorina L. Flores

Title: OC DISTRICT SUPERVISOR/GENERAL MANAGER

Title: Drilling Tech

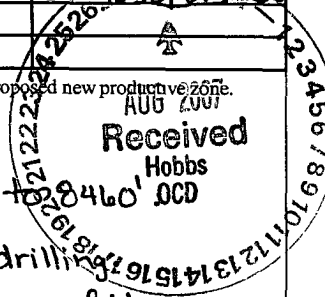
Approval Date: AUG 5 0 2007 Expiration Date:

E-mail Address: sorina.flores@xtoenergy.com

Date: 8/28/07

Phone: 432-620-6749

Conditions of Approval Attached ☐

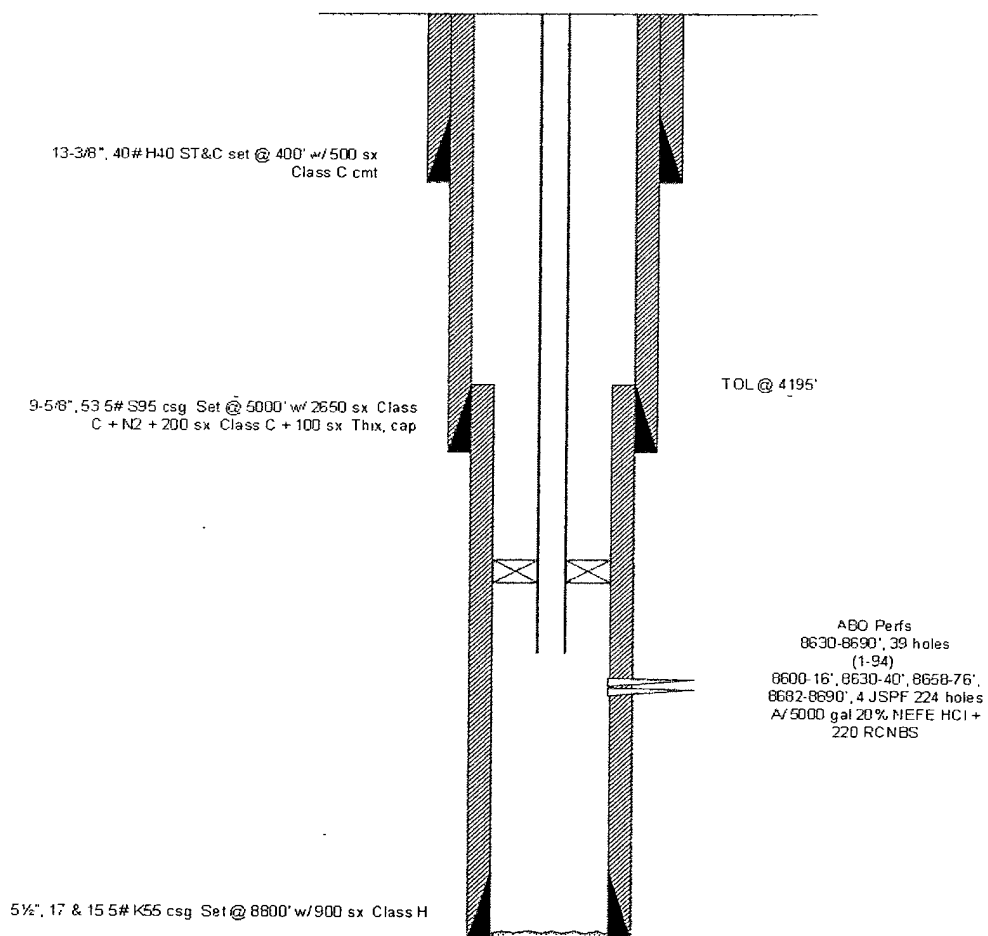


# Vacuum ABO Unit #291

N. Vacuum ABO Field  
Lea County, NM

Elevation  
KB- 4051'  
GL- 4032'

Spud - 11-25-85  
Rig Released - 12-12-85



6-28-07

**NVAC #291H**  
**Horizontal Sidetrack Procedure**  
**North Vacuum Abo Field**  
**Lea County, New Mexico**  
**AFE #714098**  
**XTO WELL ID #61561**

TD: 8800'  
PBTD: 8760' +/-  
8-5/8" Casing: 5000'  
5-1/2" Liner: 8800 – 4195' TOL, 5-1/2" 15.5# & 17# K-55  
see wellbore diagram for all details

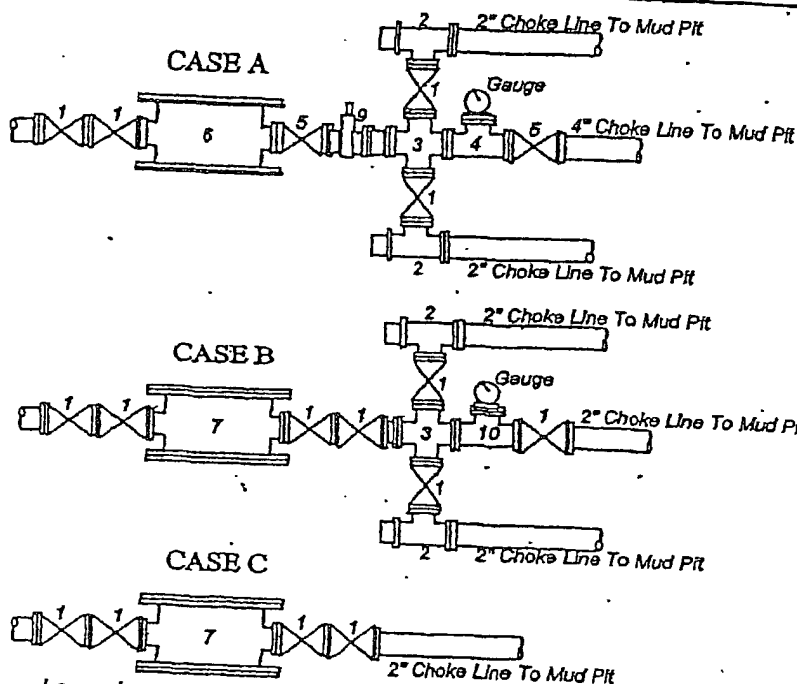
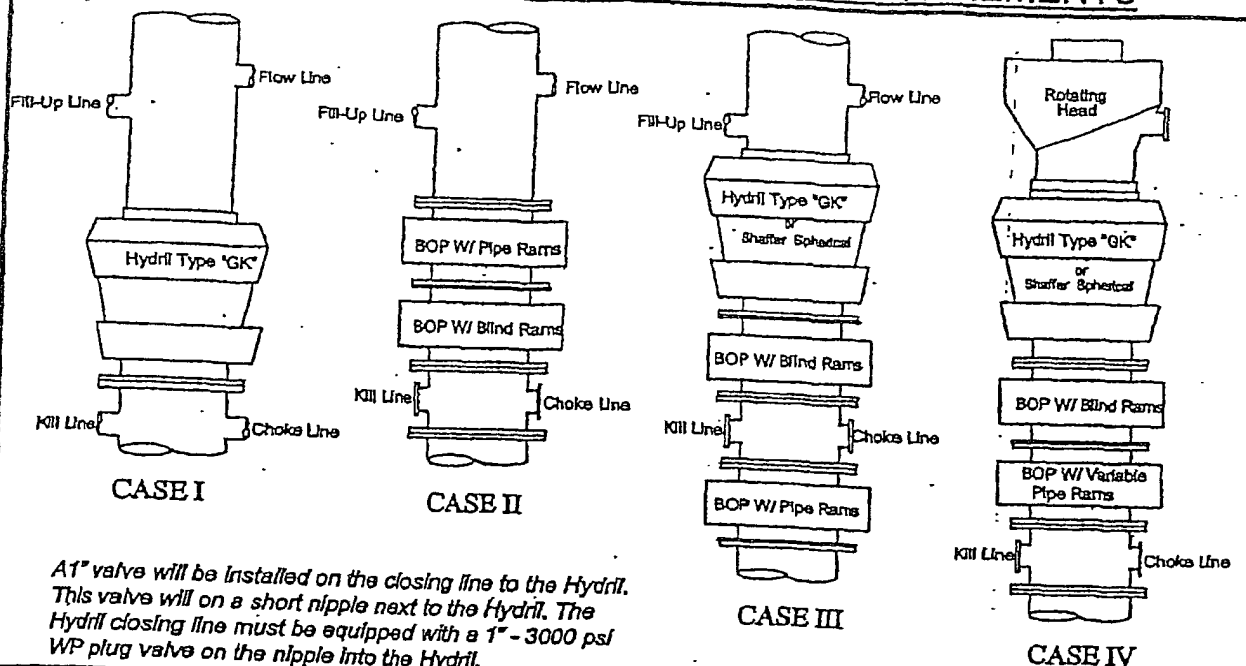
Surface Location: 19~~64~~' FSL & 5~~12~~' FEL, Sec 22, T17S, R34E  
Target BHL: 1000' FSL & 2298' FEL, Sec 22, T17S, R34E  
Drilled Date:  
Abo Perfs: 8600-8690' OA  
Ground Elev: 4034'  
Original KB Elev: 4051'  
Key Energy #36: 4046' (12'AGL)

1. MIRU Key Rig #36. Install BOP. Test to 250# & 1000#. Notify NMOGB – permit attached.
2. Unload and tally  $\pm 6200'$  2-7/8" 10.40# AOH & 4000' 3-1/2" 13.30# IF workstring.
3. R/U WSI WL. Run gauge ring and junk basket for 5-1/2" 17# (drift ID – 4.767") to 8600'. Log up and tie into csg collars @ 8541', 8497', 8453', 8410', 8366' (see attached log). P/U Weatherford Oil Tools wireline set 5-1/2" 17# RBP. Set RBP so that the top will be at 8460' RD WL.
4. PU 4-3/4" dummy milling assbly or 4-3/4" flat bottom mill with the 2-7/8" AOH & 3-1/2" IF drill pipe and TIH. Tag up on the RBP @ 8460', set down 20,000# of weight on the RBP. Circulate the hole with fresh water. TOOH with assbly.
5. PU Knight Oil Tools Whipstock System (3° face) with metal muncher mills. **Note: Make sure all mills will gauge to 4.75". Minimum DD is 4.767"**. Total length of the whipstock assembly in the set position is approximately 12'. Orient the UBHO sub and whipstock face on the surface. Insert the gyro stinger (Scientific Drilling) to ensure compatibility and to check orientation.
6. TIH with the whipstock assembly slowly, being careful when picking the string up off of the slips and when setting the slips. Fill DP every 2000'. Tag the RBP at 8460' with 2000# of weight. PU to first tool joint and RU Scientific Drilling gyro truck. Orient the whipstock to the desired azimuth and work the torque out of the drill string.
7. When desired orientation is achieved, tag the RBP with 2000# of weight, take a final check shot with gyro, then apply weight and set the anchor with 20,000# compression to shear the running bolt. RD WL truck.
8. Obtain values for free torque, PU & SO weights. Install ditch magnets at the surface. Lower milling assembly and make the starting cut through the casing wall at approximately 8448'.

9. Mill the remainder of the window, 8448-56', making the necessary rat hole (8460') to ensure that the string mill has fully opened the window, and that the window exit is smooth. Work the mills through the window. When the window is "clean", circulate the hole clean, TOOH and LD the window mills.
10. PU 4-3/4" bit ("47-type" – the Abo has 'chert' in it), PU 3-1/2" dir assbly w Non-Mag DC & GammaRay, run surface tests, and TIH. ***Mud loggers should be rigged up after cutting the window and prior to commencing the curve.*** Use Gyro for first few surveys. Follow well plan from Baker. Open hole lateral length is +/- 2100'. Be prepared to drill with an XCD/Xanthum fluid system to keep 'YP' higher for hole cleaning in the 8-5/8" area. **For trips out of the hole, circ hole clean with sweep(s). TOH slowly in the curve and lateral, if necessary consider pumping out.**
11. At TD, circulate the hole clean with polymer sweeps.
12. TOOH and LD directional tools.
13. TIH with 4-3/4" (4-1/2") swaging tool, single reamer about 7-8 jts behind swaging tool, wash and ream to TD. POH and place 2<sup>nd</sup> reamer 1 jt behind 1<sup>st</sup>, wash and ream to TD, pull back up through the window, RIH for push pull test to btm, circ hole clean.
14. TOOH & LDDP. RD Re-entry Rig. Prepare to move to the next location.

Chip  
8/28/07

# MINIMUM BLOWOUT PREVENTER REQUIREMENTS



BOP SIZE	BOP CASE	WORKING PRESSURE	CHOKE CASE
13-5/8"	IV	5000	A

*\*Rotating head required*

Bradenhead furnished by Conoco will be:  
Mfr: Wood Group  
Description: 13-3/8" x 13-5/8" 3M  
Type: SQW

## Legend:

1. 2" flanged all steel valve must be either Cameron "F", Halliburton Low Torque or Shafter Flo-Seal.
2. 2" flanged adjustable chokes, min. 1" full opening & equipped with hard trim.
3. 4" x 2" flanged steel cross.
4. 4" flanged steel tee.
5. 4" flanged all steel valve (Type as in no. 1).
6. Drilling Spool with 2" x 4" flanged outlet.
7. Drilling Spool with 2" x 2" flanged outlet.
8. 2" x 2" flanged steel cross.
9. 4" pressure operated gate valve.
10. 2" flanged steel tee.

## Notes

Choke manifold may be located in any convenient position. Use all steel fittings throughout. Make 90° turns with bull plugged tees only. No field welding will be permitted on any of the components of the choke manifold and related equipment upstream of the chokes. The choke spool and all lines and fittings must be at least equivalent to the test pressure of the preventers required. Independent closing control unit with clearly marked controls to be located on derrick floor near driller's position.

## State of New Mexico

## DISTRICT I

1625 N. FRENCH DR., HOBBS, NM 88240

Energy, Minerals and Natural Resources Department

Form C-102

Revised October 12, 2005

## DISTRICT II

1301 W. GRAND AVENUE, ARTESIA, NM 88210

## OIL CONSERVATION DIVISION

Submit to Appropriate District Office

1220 SOUTH ST. FRANCIS DR.

State Lease - 4 Copies

Santa Fe, New Mexico 87505

Fee Lease - 3 Copies

## DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

## DISTRICT IV

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

## WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number <b>30-025-29435</b>	Pool Code	Pool Name <b>North Vacuum ABO</b>
Property Code	Property Name <b>NVAU</b>	Well Number <b>291</b>
OGRID No. <b>5380</b>	Operator Name <b>XTO ENERGY</b>	Elevation <b>4034'</b>

## Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
<b>1</b>	<b>22</b>	<b>17-S</b>	<b>34-E</b>		<b>1964</b>	<b>SOUTH</b>	<b>512</b>	<b>EAST</b>	<b>LEA</b>

## Bottom Hole Location If Different From Surface

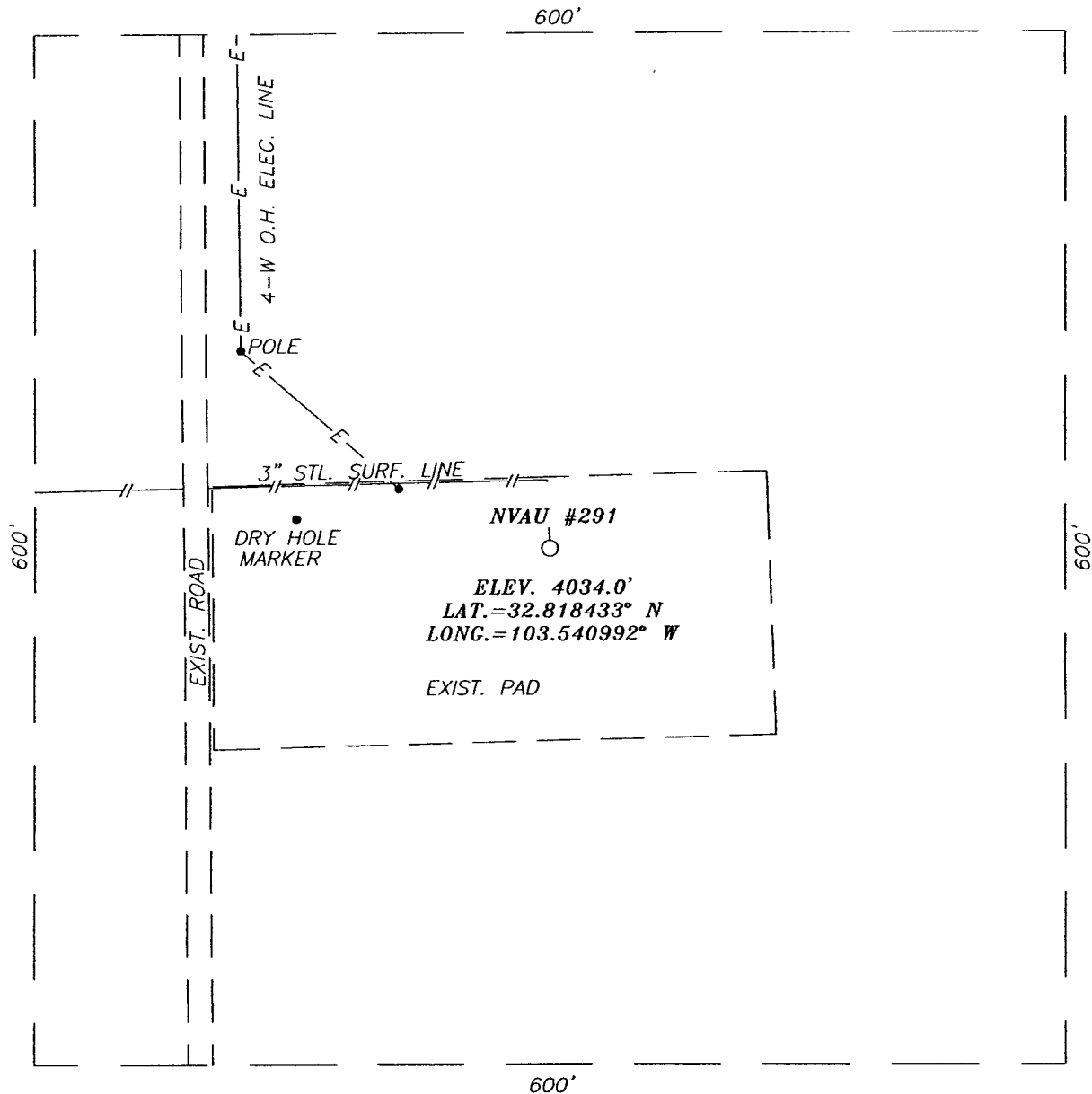
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
<b>0</b>	<b>22</b>	<b>17-S</b>	<b>34-E</b>		<b>1000</b>	<b>SOUTH</b>	<b>2298</b>	<b>EAST</b>	<b>LEA</b>

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
<b>160</b>			

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

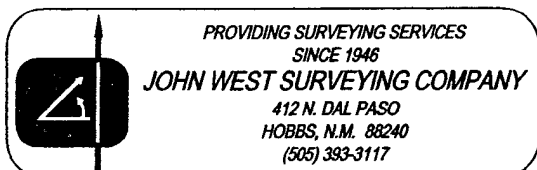
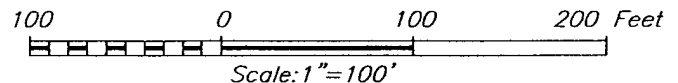
<p>GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=662369.3 N X=743418.1 E</p> <p>LAT.=32.818433° N LONG.=103.540992° W</p> <p>BOTTOM HOLE LOCATION Y=661384.3 N X=741641.2 E</p>	<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify that the information herein is true and complete to the best of 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.</p> <p><i>Sorina L. Flores</i> 8/15/07 Signature Date</p> <p><b>Sorina L. Flores</b> Printed Name</p> <p><b>SURVEYOR CERTIFICATION</b></p> <p>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.</p> <p>Date Surveyed: 8/06/07 Signature: <i>Ronald J. Eidson</i> Professional Surveyor Seal of New Mexico 3239</p> <p>Certificate No. <b>CARY EIDSON 12641</b> <b>RONALD J. EIDSON 3239</b></p>
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**SECTION 22, TOWNSHIP 17 SOUTH, RANGE 34 EAST, N.M.P.M.,**  
 LEA COUNTY, NEW MEXICO



**DIRECTIONS TO LOCATION**

FROM THE INTERSECTION OF ST. RD. #238 AND  
 MESCALERO RD. #L-125, GO WEST ON  
 MESCALERO APPROX. 1.8 MILES. TURN LEFT AND  
 GO SOUTH APPROX. 0.4 MILES. TURN LEFT AND  
 GO EAST APPROX. 0.2 MILES. TURN RIGHT AND  
 GO SOUTH APPROX. 0.2 MILES. LOCATIONS ARE  
 EAST OF THE LEASE ROAD.

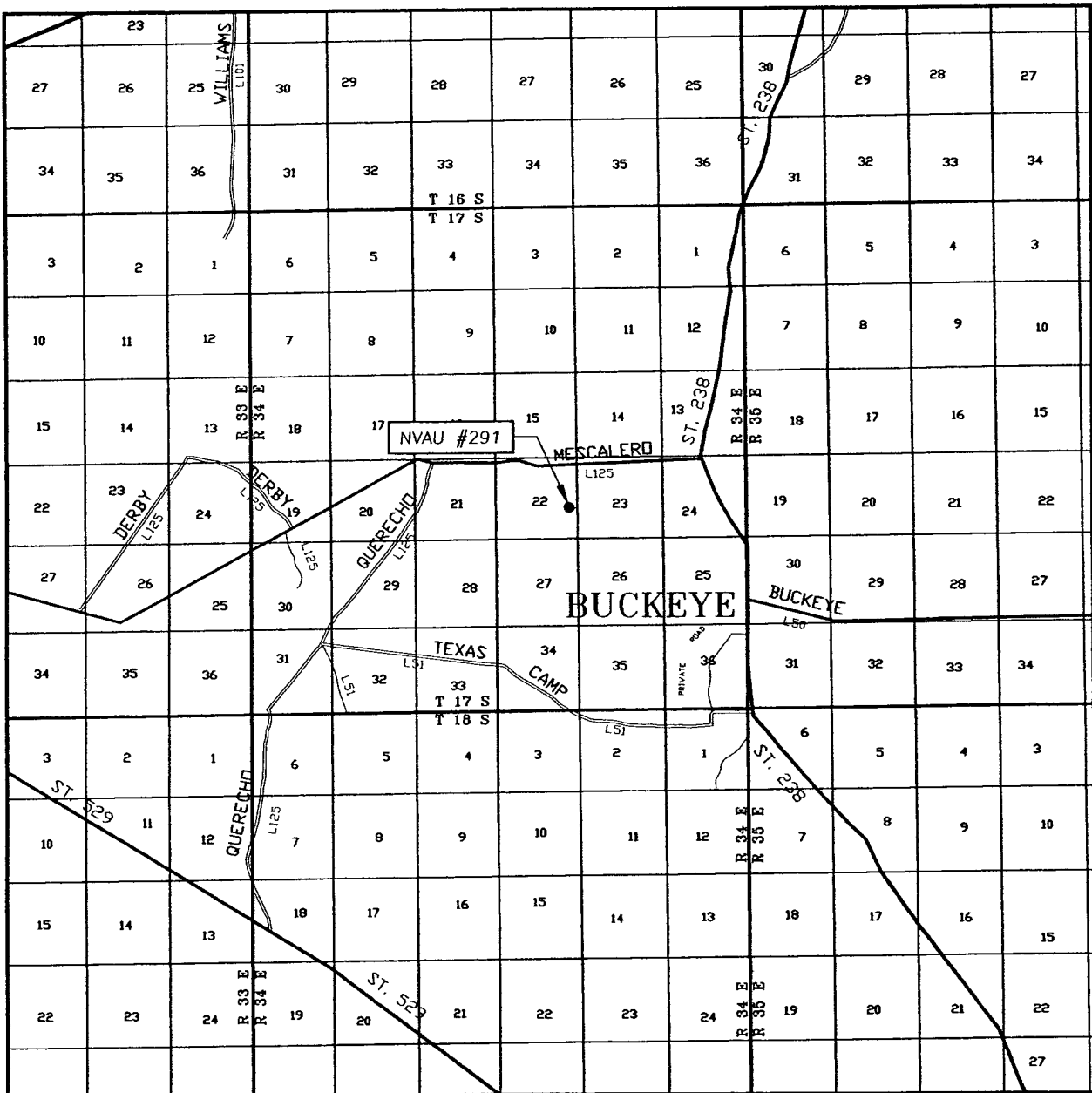


**XTO ENERGY**

NVAU #291 WELL  
 LOCATED 1964 FEET FROM THE SOUTH LINE  
 AND 512 FEET FROM THE EAST LINE OF SECTION 22,  
 TOWNSHIP 17 SOUTH, RANGE 34 EAST, N.M.P.M.,  
 LEA COUNTY, NEW MEXICO.

Survey Date: 8/1/07	Sheet 1 of 1 Sheets
W.O. Number: 07.11.0976	Dr By: AR
Date: 8/3/07	Disk: 07110976
	Rev 1: N/A
	Scale: 1"=100'

# VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 22 TWP. 17-S RGE. 34-E

SURVEY N.M.P.M.

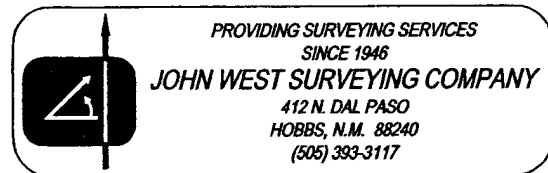
COUNTY LEA STATE NEW MEXICO

DESCRIPTION 1964' FSL & 512' FEL

ELEVATION 4034'

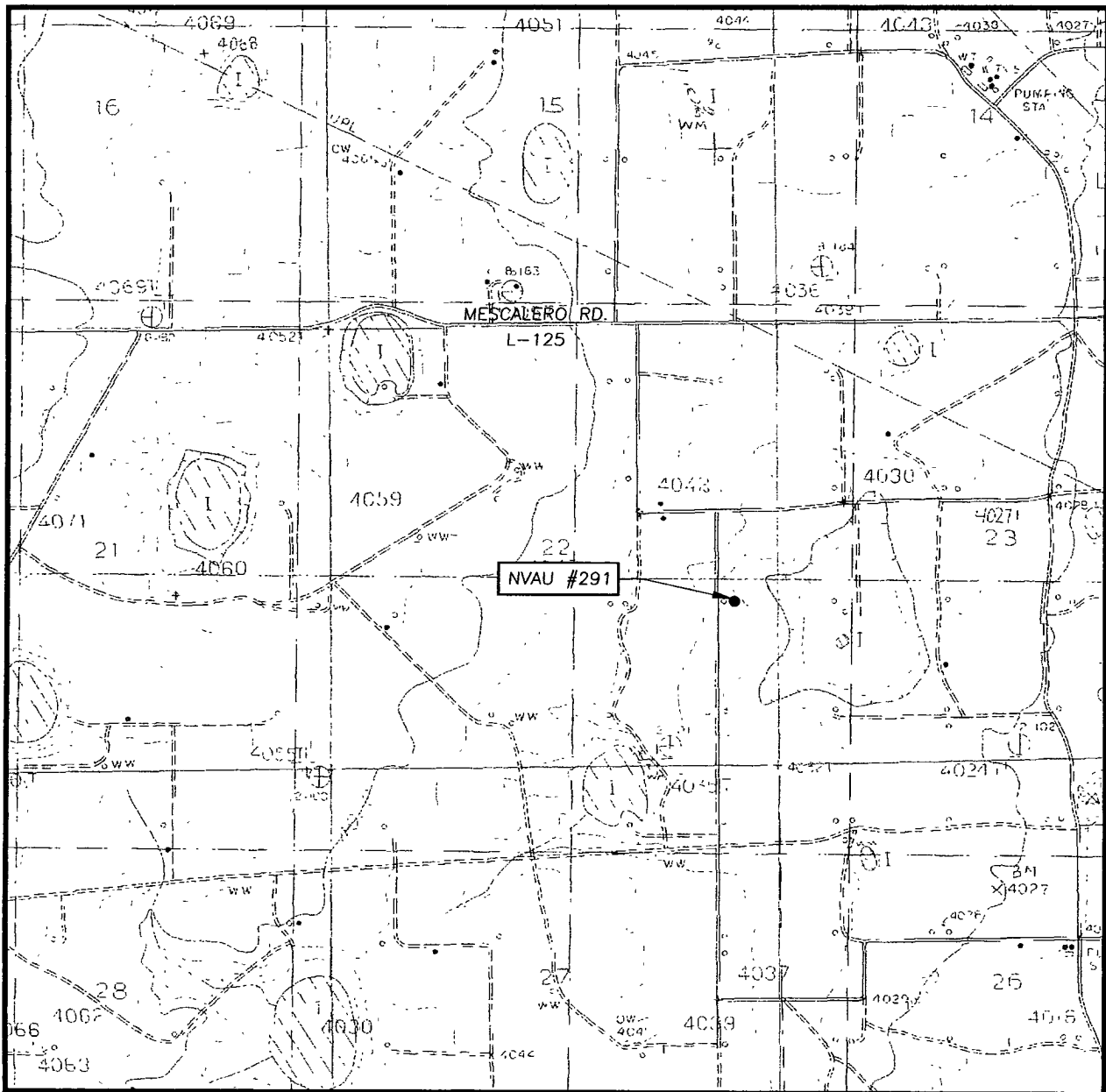
OPERATOR XTO ENERGY

LEASE NVAU





# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:  
BUCKEYE, N.M. - 10'

SEC. 22 TWP. 17-S RGE. 34-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

DESCRIPTION 1964' FSL & 512' FEL

ELEVATION 4034'

OPERATOR XTO ENERGY

LEASE NVAU

U.S.G.S. TOPOGRAPHIC MAP  
BUCKEYE, N.M.

