

DATE IN 12/13/10	SUSPENSE	ENGINEER D/CB	LOGGED IN 12/13/10	TYPE NSL	PTG-W APP NO. 1034755182
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ABOVE THIS LINE FOR DIVISION USE ONLY

## NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

1220 South St. Francis Drive, Santa Fe, NM 87505



Devon 15025  
Thistle Unit #184  
6314

## ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

## Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]  
 [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]  
 [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]  
 [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]  
 [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]  
 [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

## [1] TYPE OF APPLICATION - Check Those Which Apply for [A]

- [A] Location - Spacing Unit - Simultaneous Dedication  
☒ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

- [B] Commingling - Storage - Measurement  
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

- [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery  
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

- [D] Other: Specify \_\_\_\_\_

Property Code  
30884

Brushy Canyon

[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or ☐ Does Not Apply

- [A] ☒ Working, Royalty or Overriding Royalty Interest Owners  
 [B] ☒ Offset Operators, Leaseholders or Surface Owner  
 [C] ☐ Application is One Which Requires Published Legal Notice  
 [D] ☐ Notification and/or Concurrent Approval by BLM or SLO  
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office  
 [E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,  
 [F] ☐ Waivers are Attached

## [3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.

[4] CERTIFICATION: I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Katie A. McDonnell  
Print or Type Name

Katie A. McDonnell  
Signature

Landman  
Title

12-13-2010  
Date

Katie.mcdonnell@dev.com  
e-mail Address



Devon Energy Corporation  
20 North Broadway  
Oklahoma City, Oklahoma 73102-8260  
Fax: 405-552-8113

**FAX**

**To:** David Brooks, OCD

**From:** Katie McDonnell  
Office: 405-552-8040

**Fax:** 505-476-3462

**Date:** December 13, 2010

**Phone:** 505-476-3440

**Pages:** 20 (including cover page)

**Re:** Thistle Unit 18H NSL Application

☐ Urgent

☐ For Review

☐ Please Comment

☐ Please Reply

☐ Please Recycle

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● Comments:



Devon Energy Corporation  
20 North Broadway  
Oklahoma City, OK 73102-8260

405 235 3611 Phone  
www.devonenergy.com

December 13, 2010.

New Mexico Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, NM 87505  
Attn: David Brooks

RE: Thistle Unit #18H  
Section 28-T23S-R33E  
Lea County, New Mexico

Gentlemen:

Devon Energy Production Company, L.P. ("Devon"), as Operator, intends to drill the referenced horizontal Delaware well to a total vertical depth of 8,974' with a total measured depth of 13,514'. As reflected on the attached C-102, the well has been permitted at a surface location of 150' FNL and 1,470' FWL with a permitted bottom hole location of 330' FSL and 1,980' FWL of Section 28. We will penetrate the top of the Delaware formation at an unorthodox location of 150' FNL and 1,470' FWL (surface hole location), although the highest perforation in the well will not be closer than 330' to the outer boundary of the project area.

The surface hole location will be non-standard in order to maximize the length of the horizontal portion of the wellbore within the target Delaware interval. By spotting the surface hole location 150' from the section line, this allows room to build the curve and land horizontally at a standard location within the target Delaware interval. Perforations in the horizontal wellbore in the target Delaware interval will be at least 330' from the section lines.

Inasmuch as the referenced well will penetrate the top of the Delaware formation at an unorthodox location from that permitted by the Statewide Pool Rules, Devon respectfully requests that the Commission administratively approve this application for an unorthodox location in accordance with Division Rule 104(F)(3). This unorthodox location affects the leasehold owners/operators in Unit letter D of said section 28 and Unit letters M and N of section 21-T23S-R33E. Devon is the operator of that portion of the Thistle Unit comprised of section 28. Pecos Operating Company, LLC is operator of the Brinninstool Unit #2, a Morrow gas well in the W/2 of section 21-T23S-R33E. In accordance with NMOCD Rules, the affected offset operator & leasehold owners in said affected Unit letters have been given notice of this application. Additionally, Devon requests Commission approval to designate a 160 acre project area consisting of four (4) standard oil spacing units comprised of the E/2 W/2 (Unit letters C, F, K, & N) of said Section 28.

Attached for your review you will find a land plat, copies of letters of notification to the affected parties, a structure map covering the Top Delaware formation, a State of New Mexico form C-102, and a Well Profile Planning Report prepared by CUDD Drilling & Measurement Services.

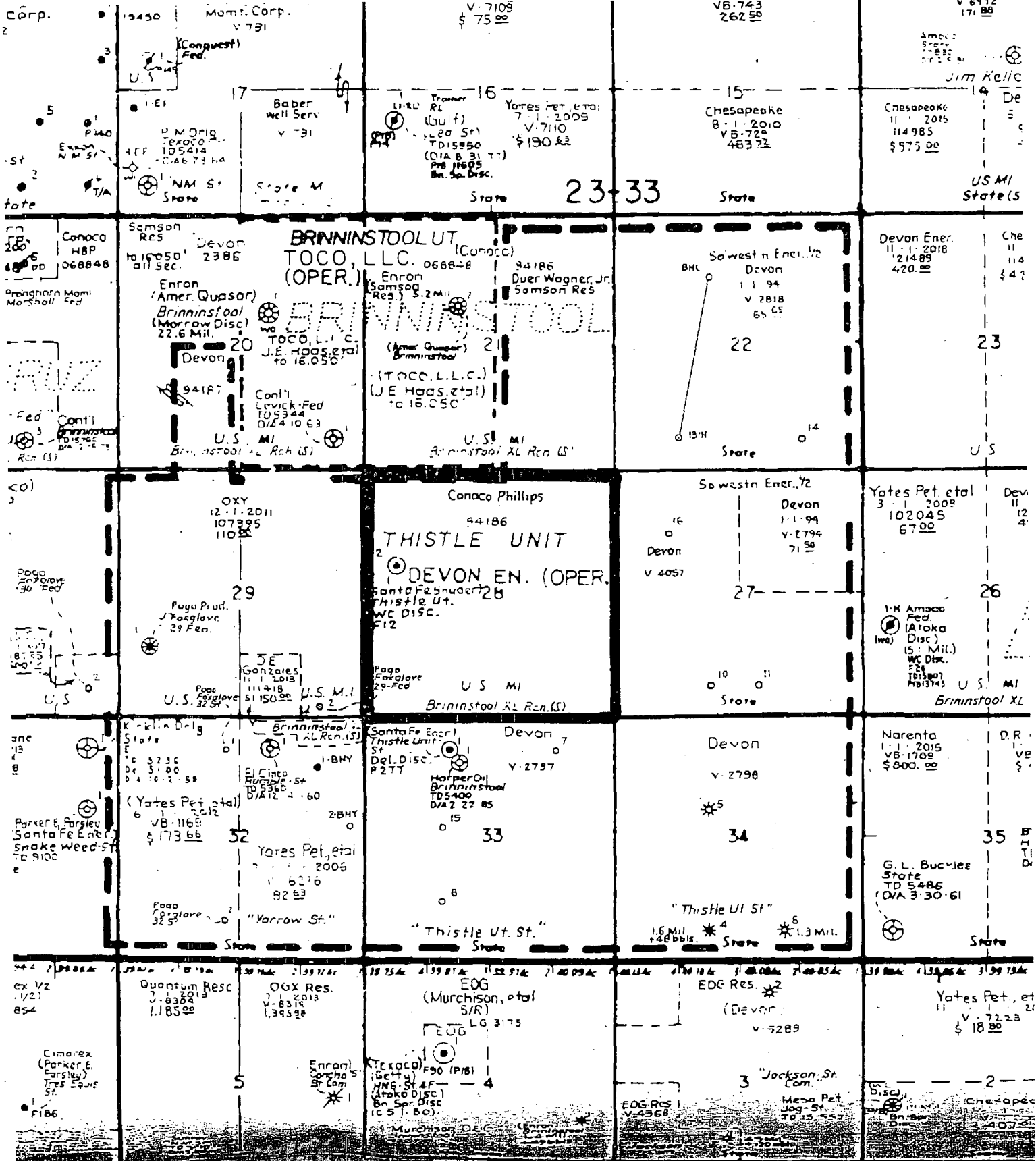
Feel free to contact the undersigned at (405)552-8040 if there are any concerns or questions regarding this application.

Yours very truly,

DEVON ENERGY PRODUCTION COMPANY, L.P.

A handwritten signature in cursive script that reads "Katie A. McDonnell".

Katie A. McDonnell  
Landman





Devon Energy Corporation  
20 North Broadway  
Oklahoma City, OK 73102-8260

405 235 3611 Phone  
www.devonenergy.com

December 13, 2010

Trainer Partners, Ltd.  
P.O. Box 3778  
Midland, TX 79702

Re: Thistle Unit #18H  
Section 28-T23S-R33E  
Lea County, NM

Gentlemen:

Attached you will find Devon Energy Production Company, L.P.'s administrative application for approval of an unorthodox well location covering the referenced well. Our records indicate that Trainer Partners, Ltd. as a working interest owner in that portion of the Thistle Unit, located in Section 28-T23S-R33E, as well as a leasehold owner in the W/2 of section 21-T23S-R33E, is an affected owner of an offset spacing unit and is entitled to notice of this application in accordance with Division Rule 104(f). In accordance with NMOCD Rules, objections to this application must be filed with the New Mexico Oil Conservation Division within 20 days from the date the OCD receives the application. If you have no objection to this application, please so indicate by signing and returning one copy of this letter to the undersigned via facsimile to 405-552-8113.

If there are any questions or if additional information is required, feel free to call me at (405) 552-8040.

Yours very truly,

DEVON ENERGY PRODUCTION COMPANY, L.P.

Katie A. McDonnell  
Landman

*Trainer Partners, Ltd. has no objection to this administrative application for unorthodox location.*

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



Devon Energy Corporation  
20 North Broadway  
Oklahoma City, OK 73102-8260

405 235 3611 Phone  
[www.devonenergy.com](http://www.devonenergy.com)

December 13, 2010

Randall Trainer  
P.O. Box 3778  
Midland, TX 79702

Re: Thistle Unit #18H  
Section 28-T23S-R33E  
Lea County, NM

Gentlemen:

Attached you will find Devon Energy Production Company, L.P.'s administrative application for approval of an unorthodox well location covering the referenced well. Our records indicate that Randall M. Trainer, as a leasehold owner in the W/2 of Section 21-T23S-R33E, is an affected owner of an offset spacing unit and is entitled to notice of this application in accordance with Division Rule 104(f). In accordance with NMOCD Rules, objections to this application must be filed with the New Mexico Oil Conservation Division within 20 days from the date the OCD receives the application. If you have no objection to this application, please so indicate by signing and returning one copy of this letter to the undersigned via facsimile to 405-552-8113.

If there are any questions or if additional information is required, feel free to call me at (405) 552-8040.

Yours very truly,

DEVON ENERGY PRODUCTION COMPANY, L.P.

Katie A. McDonnell  
Landman

I, Randall M. Trainer, have no objection to this administrative application for unorthodox location.

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



Devon Energy Corporation  
20 North Broadway  
Oklahoma City, OK 73102-8260

405 235 3611 Phone  
[www.devonenergy.com](http://www.devonenergy.com)

December 13, 2010

C.W. Trainer  
8090 E. Kalil Drive  
Scottsdale, AZ 85260

Re: Thistle Unit #18H  
Section 28-T23S-R33E  
Lea County, NM

Gentlemen:

Attached you will find Devon Energy Production Company, L.P.'s administrative application for approval of an unorthodox well location covering the referenced well. Our records indicate that C.W. Trainer, as a leasehold owner in the W/2 of Section 21-T23S-R33E, is an affected owner of an offset spacing unit and is entitled to notice of this application in accordance with Division Rule 104(f). In accordance with NMOC Rules, objections to this application must be filed with the New Mexico Oil Conservation Division within 20 days from the date the OCD receives the application. If you have no objection to this application, please so indicate by signing and returning one copy of this letter to the undersigned via facsimile to 405-552-8113.

If there are any questions or if additional information is required, feel free to call me at (405) 552-8040.

Yours very truly,

DEVON ENERGY PRODUCTION COMPANY, L.P.

Katie A. McDonnell  
Landman

I, C.W. Trainer, have no objection to this administrative application for unorthodox location.

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



Devon Energy Corporation  
20 North Broadway  
Oklahoma City, OK 73102-8260

405 235 3611 Phone  
www.devonenergy.com

December 13, 2010

Michael Shea Trainer  
5322 Solar Ridge  
Colorado Springs, CO 80917

Re: Thistle Unit #18H  
Section 28-T23S-R33E  
Lea County, NM

Gentlemen:

Attached you will find Devon Energy Production Company, L.P.'s administrative application for approval of an unorthodox well location covering the referenced well. Our records indicate that Michael Shea Trainer, as a leasehold owner in the W/2 of Section 21-T23S-R33E, is an affected owner of an offset spacing unit and is entitled to notice of this application in accordance with Division Rule 104(f). In accordance with NMOCD Rules, objections to this application must be filed with the New Mexico Oil Conservation Division within 20 days from the date the OCD receives the application. If you have no objection to this application, please so indicate by signing and returning one copy of this letter to the undersigned via facsimile to 405-552-8113.

If there are any questions or if additional information is required, feel free to call me at (405) 552-8040.

Yours very truly,

DEVON ENERGY PRODUCTION COMPANY, L.P.

Katie A. McDonnell  
Landman

I, Michael Shea Trainer, have no objection to this administrative application for unorthodox location.

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_





Devon Energy Corporation  
20 North Broadway  
Oklahoma City, OK 73102-8260

405 235 3611 Phone  
[www.devonenergy.com](http://www.devonenergy.com)

December 13, 2010

Terri Jan Trainer  
79 Marathon Road  
Hobbs, NM 88240

Re: Thistle Unit #18H  
Section 28-T23S-R33E  
Lea County, NM

Gentlemen:

Attached you will find Devon Energy Production Company, L.P.'s administrative application for approval of an unorthodox well location covering the referenced well. Our records indicate that Terri Jan Trainer, as a leasehold owner in the W/2 of Section 21-T23S-R33E, is an affected owner of an offset spacing unit and is entitled to notice of this application in accordance with Division Rule 104(f). In accordance with NMOC Rules, objections to this application must be filed with the New Mexico Oil Conservation Division within 20 days from the date the OCD receives the application. If you have no objection to this application, please so indicate by signing and returning one copy of this letter to the undersigned via facsimile to 405-552-8113.

If there are any questions or if additional information is required, feel free to call me at (405) 552-8040.

Yours very truly,

DEVON ENERGY PRODUCTION COMPANY, L.P.

Katie A. McDonnell  
Landman

I, Terri Jan Trainer, have no objection to this administrative application for unorthodox location.

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



Devon Energy Corporation  
20 North Broadway  
Oklahoma City, OK 73102-8260

405 235 3611 Phone  
[www.devonenergy.com](http://www.devonenergy.com)

December 13, 2010

U. V. Jones  
P.O. Box 7107  
Midland, TX 79708

Re: Thistle Unit #18H  
Section 28-T23S-R33E  
Lea County, NM

Gentlemen:

Attached you will find Devon Energy Production Company, L.P.'s administrative application for approval of an unorthodox well location covering the referenced well. Our records indicate that U.V. Jones, as a leasehold owner in the W/2 of Section 21-T23S-R33E, is an affected owner of an offset spacing unit and is entitled to notice of this application in accordance with Division Rule 104(f). In accordance with NMOCD Rules, objections to this application must be filed with the New Mexico Oil Conservation Division within 20 days from the date the OCD receives the application. If you have no objection to this application, please so indicate by signing and returning one copy of this letter to the undersigned via facsimile to 405-552-8113.

If there are any questions or if additional information is required, feel free to call me at (405) 552-8040.

Yours very truly,

DEVON ENERGY PRODUCTION COMPANY, L.P.

Katie A. McDonnell  
Landman

I, U.V. Jones, have no objection to this administrative application for unorthodox location.

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



Devon Energy Corporation  
20 North Broadway  
Oklahoma City, OK 73102-8260

405 235 3611 Phone  
[www.devonenergy.com](http://www.devonenergy.com)

December 13, 2010

Doug Crenshaw  
P.O. Box 1523  
Lovington, NM 88260

Re: Thistle Unit #18H  
Section 28-T23S-R33E  
Lea County, NM

Gentlemen:

Attached you will find Devon Energy Production Company, L.P.'s administrative application for approval of an unorthodox well location covering the referenced well. Our records indicate that Doug Crenshaw, as a leasehold owner in the W/2 of Section 21-T23S-R33E, is an affected owner of an offset spacing unit and is entitled to notice of this application in accordance with Division Rule 104(f). In accordance with NMOCD Rules, objections to this application must be filed with the New Mexico Oil Conservation Division within 20 days from the date the OCD receives the application. If you have no objection to this application, please so indicate by signing and returning one copy of this letter to the undersigned via facsimile to 405-552-8113.

If there are any questions or if additional information is required, feel free to call me at (405) 552-8040.

Yours very truly,

DEVON ENERGY PRODUCTION COMPANY, L.P.

Katie A. McDonnell  
Landman

I, Doug Crenshaw, have no objection to this administrative application for unorthodox location.

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



Devon Energy Corporation  
20 North Broadway  
Oklahoma City, OK 73102-8260

405 235 3611 Phone  
[www.devonenergy.com](http://www.devonenergy.com)

December 13, 2010

Melody Prichard  
5806 Stonecrest  
Midland, TX 79707

Re: Thistle Unit #18H  
Section 28-T23S-R33E  
Lea County, NM

Gentlemen:

Attached you will find Devon Energy Production Company, L.P.'s administrative application for approval of an unorthodox well location covering the referenced well. Our records indicate that Melody Prichard, as a leasehold owner in the W/2 of Section 21-T23S-R33E, is an affected owner of an offset spacing unit and is entitled to notice of this application in accordance with Division Rule 104(f). In accordance with NMOC Rules, objections to this application must be filed with the New Mexico Oil Conservation Division within 20 days from the date the OCD receives the application. If you have no objection to this application, please so indicate by signing and returning one copy of this letter to the undersigned via facsimile to 405-552-8113.

If there are any questions or if additional information is required, feel free to call me at (405) 552-8040.

Yours very truly,

DEVON ENERGY PRODUCTION COMPANY, L.P.

Katie A. McDonnell  
Landman

I, Melody Prichard, have no objection to this administrative application for unorthodox location.

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



Devon Energy Corporation  
20 North Broadway  
Oklahoma City, OK 73102-8260

405 235 3611 Phone  
www.devonenergy.com

December 13, 2010

Pecos Operating Company, LLC  
400 W. Illinois, Ste 1210  
Midland, TX 79701

Re: Thistle Unit #18H  
Section 28-T23S-R33E  
Lea County, NM

Gentlemen:

Attached you will find Devon Energy Production Company, L.P.'s administrative application for approval of an unorthodox well location covering the referenced well. Our records indicate that Pecos Operating Company, LLC, as operator of the Brinninstool Unit #2 located in the W/2 of Section 21-T23S-R33E, is an affected owner of an offset spacing unit and is entitled to notice of this application in accordance with Division Rule 104(f). In accordance with NMOCD Rules, objections to this application must be filed with the New Mexico Oil Conservation Division within 20 days from the date the OCD receives the application. *If you have no objection to this application, please so indicate by signing and returning one copy of this letter to the undersigned via facsimile to 405-552-8113.*

If there are any questions or if additional information is required, feel free to call me at (405) 552-8040.

Yours very truly,

DEVON ENERGY PRODUCTION COMPANY, L.P.

Katie A. McDonnell  
Landman

Pecos Operating Company, LLC has no objection to this administrative application for unorthodox location.

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



Devon Energy Corporation  
20 North Broadway  
Oklahoma City, OK 73102-8260

405 235 3611 Phone  
[www.devonenergy.com](http://www.devonenergy.com)

December 13, 2010

Samson Resources  
Samson Plaza  
Two West Second Street  
Tulsa, OK 74103

Re: Thistle Unit #18H  
Section 28-T23S-R33E  
Lea County, NM

Gentlemen:

Attached you will find Devon Energy Production Company, L.P.'s administrative application for approval of an unorthodox well location covering the referenced well. Our records indicate that Samson Resources, as a leasehold owner in the W/2 of Section 21-T23S-R33E, is an affected owner of an offset spacing unit and is entitled to notice of this application in accordance with Division Rule 104(f). In accordance with NMOC Rules, objections to this application must be filed with the New Mexico Oil Conservation Division within 20 days from the date the OCD receives the application. If you have no objection to this application, please so indicate by signing and returning one copy of this letter to the undersigned via facsimile to 405-552-8113.

If there are any questions or if additional information is required, feel free to call me at (405) 552-8040.

Yours very truly,

DEVON ENERGY PRODUCTION COMPANY, L.P.

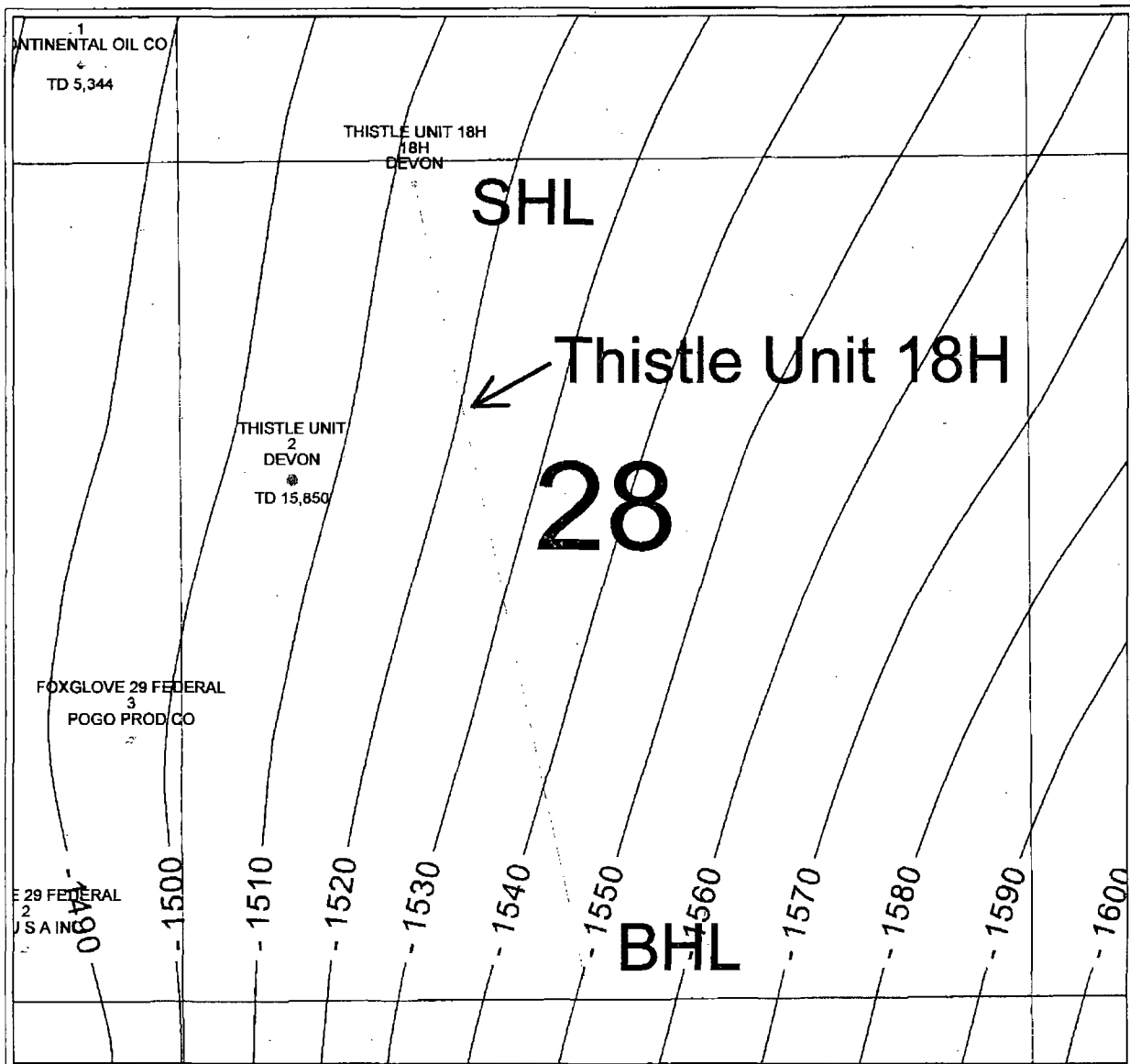
Katie A. McDonnell  
Landman

Samson Resources has no objection to this administrative application for unorthodox location.

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_



PETRA 12/2/2010 5:31:05 PM

**Devon Energy**

Thistle Unit 18H

Non-Standard Location

Structure - Top Delaware

0 1,000  
FEET

December 2, 2010

## 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

State of New Mexico  
Energy, Minerals and Natural Resources Department

## OIL CONSERVATION DIVISION

1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

Form C-102

Revised July 16, 2010

Submit one copy to appropriate  
District Office

## WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name <i>under Basin Brinninston Plow</i>
Property Code	Property Name THISTLE UNIT	Well Number 18H
GRID No.	Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	Elevation 3682'

## Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	28	23 S	33 E		150	NORTH	1470	WEST	LEA

## 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
N	28	23 S	33 E		330	SOUTH	1980	WEST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
3685.4' OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<p>1470'</p> <p>3684.7'</p> <p>3681.4'</p> <p>3682.8'</p> <p>4825.9'</p> <p>1980'</p> <p>330'</p> <p>N: 467400.2180 E: 774884.0320</p> <p><b>SURFACE LOCATION</b> Lat - N 32°16'57.17" Long - W 103°34'51.79" NMSPC- N 467338.216 E 773820.305 (NAD-83)</p> <p>N: 467013.8940 E: 777619.7150</p> <p>N: 464873.7880 E: 777041.0490</p> <p>N: 462220.1110 E: 773024.8880</p> <p>N: 462235.6210 E: 777052.3480</p>	<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p>Signature _____ Date _____</p> <p>Printed Name _____</p> <p>Email Address _____</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>SEP 15 2010 NEW MEXICO GARY L. JONES Professional Surveyor</p> <p>Date Surveyed _____</p> <p>Signature &amp; Seal of Professional Surveyor _____</p> <p>Certificate No. Gary L. Jones 7977</p> <p>BASIN SURVEYS 23343</p>
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## **Devon Energy**

**Lea Co., New Mexico (Nad 83)**

**Thistle Unit #18H**

**Thistle Unit #18H**

**Lateral #1**

**Plan: Design #2**

## **Standard Survey Report**

**30 September, 2010**





## CUDD Drilling &amp; Measurement Services

## Survey Report



Company: Devon Energy  
 Project: Lea Co., New Mexico (Nad:83)  
 Site: Thistle Unit #18H  
 Well: Thistle Unit #18H  
 Wellbore: Lateral #1  
 Design: Design #2

Local Coordinate Reference:  
 TVD Reference:  
 MD Reference:  
 North Reference:  
 Survey Calculation Method:  
 Database:

Site Thistle Unit #18H  
 WELL @ 3702.00ft (Original Well Elev)  
 WELL @ 3702.00ft (Original Well Elev)  
 Grid:  
 Minimum Curvature  
 EDM 2003.21 Single User Db

Project: Lea Co., New Mexico (Nad:83)

Map System: US State Plane 1983  
 Geo Datum: North American Datum 1983  
 Map Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

Site: Thistle Unit #18H, Sec 28, T-23S, R-33E

Site Position: Northing: 467,338.22 ft Latitude: 32° 16' 57.166 N  
 From: Map Easting: 773,820.31 ft Longitude: 103° 34' 51.791 W  
 Position Uncertainty: 0.00 ft Slot Radius: " Grid Convergence: 0.40 "

Well: Thistle Unit #18H  
 Well Position: +N-S 0.00 ft Northing: 467,338.22 ft Latitude: 32° 16' 57.166 N  
 +E-W 0.00 ft Easting: 773,820.31 ft Longitude: 103° 34' 51.791 W  
 Position Uncertainty: 0.00 ft Wellhead Elevation: 3,702.00 ft Ground Level: 3,686.00 ft

Wellbore: Lateral #1  
 Magnetometer Model Name Sample Date Declination (°) Dip Angle (°) Field Strength (mT)  
 IGRF200510 09/30/10 7.67 60.28 48,753

Design: Design #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 0.00 173.52

Survey Tool Program Date: 09/30/10

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	8,200.00	Design #2 (Lateral #1)	NS-GYRO-MS	North sensing gyrocompassing m/s
8,200.00	13,513.89	Design #2 (Lateral #1)	CUDD MWD	MWD - Standard CUDD MWD

## Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,305.00	0.00	0.00	1,305.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
1,358.00	0.00	0.00	1,358.00	0.00	0.00	0.00	0.00	0.00	0.00
Top of Salt									
2,158.00	0.00	0.00	2,158.00	0.00	0.00	0.00	0.00	0.00	0.00
Base of Salt									
5,167.00	0.00	0.00	5,167.00	0.00	0.00	0.00	0.00	0.00	0.00
Delaware									
6,125.00	0.00	0.00	6,125.00	0.00	0.00	0.00	0.00	0.00	0.00
Cherry Canyon									

devon

## CUDD Drilling &amp; Measurement Services

## Survey Report



Company: Devon Energy  
 Project: Lea Co., New Mexico (Nad 83)  
 Site: Thistle Unit #18H  
 Well: Thistle Unit #18H  
 Wellbore: Lateral #1  
 Design: Design #2

Local Co-ordinate Reference:  
 TVD Reference:  
 MD Reference:  
 North Reference:  
 Survey Calculation Method:  
 Database:

Site Thistle Unit #18H  
 WELL @ 3702.00ft (Original Well Elev)  
 WELL @ 3702.00ft (Original Well Elev)  
 Grid:  
 Minimum Curvature  
 EDM 2003.21: Single User Db.

## Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,455.00	0.00	0.00	7,455.00	0.00	0.00	0.00	0.00	0.00	0.00
Brushy Canyon									
8,361.68	0.00	0.00	8,361.68	0.00	0.00	0.00	0.00	0.00	0.00
KOP - Build 10.0°/100'									
9,256.38	89.47	173.52	8,934.62	-564.03	64.03	567.65	10.00	10.00	0.00
EOC - Hold 1:89.47° @ A:173.52									
13,513.89	89.47	173.52	8,974.00	-4,794.18	544.26	4,824.98	0.00	0.00	0.00
PBHL - TD (TU#18H)									

## Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N-S (ft)	+E-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PBHL - TD (TU#18H)	0.00	0.00	8,974.00	-4,794.18	544.26	462,544.04	774,364.57	32° 16' 9.689 N	103° 34' 45.844 W
- plan hits target center									
- Point									

## Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,305.00	1,305.00	Rustler		0.53	173.00
1,358.00	1,358.00	Top of Salt		0.53	173.00
2,158.00	2,158.00	Base of Salt		0.53	173.00
5,167.00	5,167.00	Delaware		0.53	173.00
6,125.00	6,125.00	Cherry Canyon		0.53	173.00
7,455.00	7,455.00	Brushy Canyon		0.53	173.00

## Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates	Comment
8,361.68	8,361.68	0.00 0.00	KOP - Build 10.0°/100'
9,256.38	8,934.62	-564.03 64.03	EOC - Hold 1:89.47° @ A:173.52

Checked By: \_\_\_\_\_

Approved By: \_\_\_\_\_

Date: \_\_\_\_\_



Project: Lea Co., New Mexico (Nad 83)  
 Site: Thistle Unit #18H  
 Well: Thistle Unit #18H  
 Wellbore: Lateral #1  
 Design: Design #2

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Dip ang	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	8361.68	0.00	0.00	8361.68	0.00	0.00	0.00	0.00	0.00	
3	9256.36	89.47	173.52	8934.62	-694.04	64.03	10.00	173.52	567.86	
4	13513.89	89.47	173.52	8974.00	-4794.18	544.29	0.00	0.00	4624.96	PB-L - TD (TUM18H)

## ANNOTATIONS

TVD	MD	Annotation
8361.68	8361.68	KOP - Build 10.0711007
8934.62	9256.36	EOC - Hold 189.47° @ A:173.52

## WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude	Shape Point
PB-L - TD (TUM18H)	8974.00	-4794.18	544.29	462544.04	774364.56	32° 16' 9.686 N	103° 34' 45.644 W	

## WELL DETAILS: Thistle Unit #18H

Ground Level:					
3696.00					
WELL @ 3702.00ft (Original Well Elev)					
+N/S	+E/W	Northing	Easting	Latitude	Longitude
0.00	0.00	467338.22	773620.31	32° 18' 57.165 N	103° 34' 51.791 W

## PROJECT DETAILS: Lea Co., New Mexico (Nad 83)

Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: New Mexico Eastern Zone  
 System Datum: Mean Sea Level

## Plan: Design #2 (Thistle Unit #18H Lateral #1)

Created By: Mike Stanley Date: 13/28, September 30 2010  
 Checked: \_\_\_\_\_ Date: \_\_\_\_\_  
 Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_  
 Approved: \_\_\_\_\_ Date: \_\_\_\_\_



Adjusts to Grid North  
 True North: -0.40°  
 Magnetic North: 7.22°  
 Magnetic Field  
 Strength: 48753.25nT  
 Dip Angle: 60.28°  
 Date: 09/30/2010  
 Model: IGRF200510

