

11/30/07 DATE IN	 SUSPENSE	B. Bruce ENGINEER	12/3/07 LOGGED IN	NSL TYPE	PKUR0733728950 APP NO.
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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



*Apache  
Turner #6  
5759*

**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 \_\_\_\_\_

**[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

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**[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.

James Bruce

Print or Type Name

Signature

Attorney for Applicant

Title

Date

jamesbruc@aol.com

e-mail Address

11/30/07

**JAMES BRUCE**  
ATTORNEY AT LAW

POST OFFICE BOX 1056  
SANTA FE, NEW MEXICO 87504

369 MONTEZUMA, NO. 213  
SANTA FE, NEW MEXICO 87501

(505) 982-2043 (Phone)  
(505) 660-6612 (Cell)  
(505) 982-2151 (Fax)

[jamesbruc@aol.com](mailto:jamesbruc@aol.com)

November 30, 2007

Hand delivered

Mark E. Fesmire, P.E.  
Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

Dear Mr. Fesmire:

Pursuant to Division Rule 104.F(2), Apache Corporation applies for administrative approval of an unorthodox oil well location for the following well:

<u>Well Name:</u>	TurnerWell No. 6
<u>Well Location:</u>	360 feet FSL & 1090 feet FEL
<u>Well Unit:</u>	SE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 29, Township 21 South, Range 37 East, N.M.P.M., Lea County, New Mexico

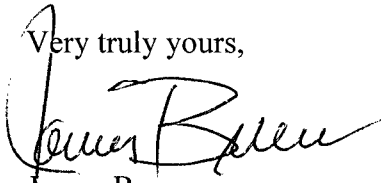
The well will test the Grayburg formation (Penrose Skelly Pool). The pool is developed on statewide rules, with 40 acre spacing, and wells to be located no closer than 330 feet to a quarter-quarter section line.

The application is based on geological and engineering reasons. A complete discussion, with exhibits, is attached as Exhibit A. The well is in the approximate center of existing Grayburg wells, and the proposed location will drain additional undrained reserves.

Exhibit B is a land plat. The Turner fee lease covers the SE $\frac{1}{4}$  of Section 29, among other acreage. However, ownership in the lease is not common. The operator of the Grayburg formation in the SW $\frac{1}{4}$ SE $\frac{1}{4}$  of Section 29 is Chevron U.S.A. Inc., which has been notified of the application, as shown by Exhibit C.

Please call me if you need any further information on this matter.

Very truly yours,

A handwritten signature in black ink, appearing to read "James Bruce". The signature is fluid and cursive, with the first name "James" and last name "Bruce" clearly distinguishable.

James Bruce

Attorney for Apache Corporation

Application of Apache Corporation for administrative  
approval of an unorthodox well location:

40 acres – 360' FSL & 1090' FEL  
Section 29, Township 21 South, Range 37 East, NMPM  
Lea County, New Mexico

PRIMARY OBJECTIVE: GRAYBURG

In support:

1. Apache Corporation (Apache) is the operator of the proposed **Turner #6 (Exhibit 1)**. The proposed total depth is 4200' to test the Grayburg formation.
2. The proposed location encroaches toward the following wells in the Penrose Skelly; Grayburg Pool (**Exhibit 2**). The exhibit displays only those wells of sufficient depth to test the Grayburg. Wells with Grayburg production are highlighted with gray circles.

API					Daily	Cum
30-025-	Op.	Well	Loc	Pool	O/G/W	O/G/W
06880	Chevron	C DRKD U #122	P-29	Penrose Skelly; Grayburg	0/0/0	79/0/0
37484	Apache	Turner #5	O-29	Penrose Skelly; Grayburg	8/448/0	1/62/0
06881	Chevron	C DRKD U #121	O-29	Penrose Skelly; Grayburg	0/0/0	77/0/0
06940	Chevron	McCormack #11	A-32	Penrose Skelly; Grayburg	0/0/0	4/7/14
06930	Chevron	McCormack #1	A-32	Penrose Skelly; Grayburg	2/191/28	149/868/221
37837	Chevron	WT McCormack #24	B-32	Penrose Skelly; Grayburg	5/210/35	4/76/46
37180	Chevron	WT McCormack #22	B-32	Penrose Skelly; Grayburg	8/213/70	8/151/81
06931	Chevron	WT McCormack #02	B-32	Penrose Skelly; Grayburg	5/181/85	117/764/160

BOPD      MBO  
MCFPD      MMCFG  
BWPD      MBW

3. The proposed **Turner #6** unorthodox Grayburg location at 360' from south line and 1090' from east line was necessitated by surface obstructions. Apache's desired location was 330' from south line and 990' from east line but pipelines and power lines prevented staking the desired location. The 100' move to the west was the nearest location that could be staked. Geological conditions at the staked location are expected to be comparable to the original location.

a) **Grayburg Reservoir**

The Grayburg is a series of alternating subtidal and supratidal dolomites, with the subtidal rock having porosity and hydrocarbons and the supratidal rock being tight. Average porosity of the Grayburg is less than 10% and average permeability is less than 1 millidarcy. The Grayburg environments varied rapidly so that porous and tight intervals do not necessarily correlate well-to-well. Tight dolomite and/or anhydrite

EXHIBIT 

intervals within the Grayburg additionally create vertical hydraulic barriers between different zones of porosity. Grayburg wells are not capable of draining an entire 40 Acre Spacing Unit.

The reservoir was analyzed by mapping hydrocarbon pore volume (SoPhiH) (**Exhibit 3**). SoPhiH is the product of feet of net pay (H) times average porosity (PhiA) times oil saturation (So). The values were obtained as follows:

1. Net Pay was read from modern neutron-density logs from which cross-plotted porosity (XPhi) can be calculated, using a minimum of 5% and a maximum of 20%. Additionally, gamma ray (40 APIU) and water saturation (10% - 50%, using a standard equation with  $a=1$  and  $m=n=2$ ) cutoffs were also employed.
2. Average Porosity was calculated for intervals meeting those criteria.
3. Oil Saturation is the additive inverse of water saturation.

The following table provides drainage areas calculated from the SoPhiH map and reserves of the offsetting wells. Values determined from modern logs are in bold font.

Op.	Well	Loc	Reservoir	SoPhiH Ft	Area A	EUR MBO	EUR MMCFG
Chevron	C DRKD U #122	P-29	Grayburg	9.37	12	79	0
<b>Apache</b>	<b>Turner #5</b>	<b>O-29</b>	<b>Grayburg</b>	<b>8.48</b>	<b>21</b>	<b>8</b>	<b>825</b>
Chevron	C DRKD U #121	O-29	Grayburg	9.68	12	77	0
Chevron	McCormack #11	A-32	Grayburg	10.31	-	4	7
Chevron	McCormack #01	A-32	Grayburg	10.34	21	149	1010
Chevron	WT McCormack #24	B-32	Grayburg	10.00	13	5	610
<b>Chevron</b>	<b>WT McCormack #22</b>	<b>B-32</b>	<b>Grayburg</b>	<b>11.20</b>	<b>6</b>	<b>10</b>	<b>310</b>
Chevron	WT McCormack #02	B-32	Grayburg	9.94	17	117	1200

The intent of the well is to recover reserves that cannot be recovered by the existing wells. The location was placed near the center of a vacant area between the existing wells and then moved due to surface conditions and cultural obstructions.

Reserves for the proposed **Turner #6** were calculated by planimetry the undrained area of the SoPhiH isopach which lies under a drainage circle (the size of which is the average of the direct offset drainage areas) centered on the proposed location. Any competitive drainage is shared between the proposed well and the existing offset wells. The results are as follows:

WELL	LOC	Est SoPhiH	AREA A	EUR MBO	EUR MMCFG
Turner #6	P-29	10.12	6	45	400

4. Notice

Chevron USA, Inc is the operator of the Grayburg wells toward which the proposed **Turner #6** will encroach. They have been notified at:

**Chevron U.S.A. Inc.**  
11111 S. Wilcrest  
Houston, TX 77099  
Attn: Mr. Doug Schmidt

5. Approval of this application will afford the interest owners in these spacing units an opportunity to recover oil and gas which would not otherwise be recovered.

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

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102

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

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

Revised October 12, 2005  
Submit to Appropriate District Office  
State Lease - 4 Copies  
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	Pool Code	Pool Name
Property Code	Property Name TURNER	Well Number 6
OGRID No.	Operator Name APACHE CORPORATION	Elevation 3465'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	29	21-S	37-E		360	SOUTH	1090	EAST	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
Dedicated Acres	Joint or Infill	Consolidation Code	Order No.						

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

<p>GEODETIC COORDINATES NAD 27 NME</p> <p>Y=526981.5 N X=855928.4 E</p> <p>LAT.=32.443500° N LONG.=103.179603° W</p> <p>LAT.=32°26'36.60" N LONG.=103°10'46.57" W</p>				<p>OPERATOR CERTIFICATION</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>Signature _____ Date _____</p> <p>Printed Name _____</p>	
				<p>SURVEYOR CERTIFICATION</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>JUNE 24, 2006</p> <p>Date Surveyed _____ MR</p> <p>Signature &amp; Seal of _____ Professional Surveyor</p> <p><i>GARY R. EDSON</i> 06.11.1077</p>	
				<p>Certificate No. GARY EDSON 12641 RONALD J. EDSON 3239</p>	
				<p>360' 1090'</p>	





# TURNER #6

Exhibit 3

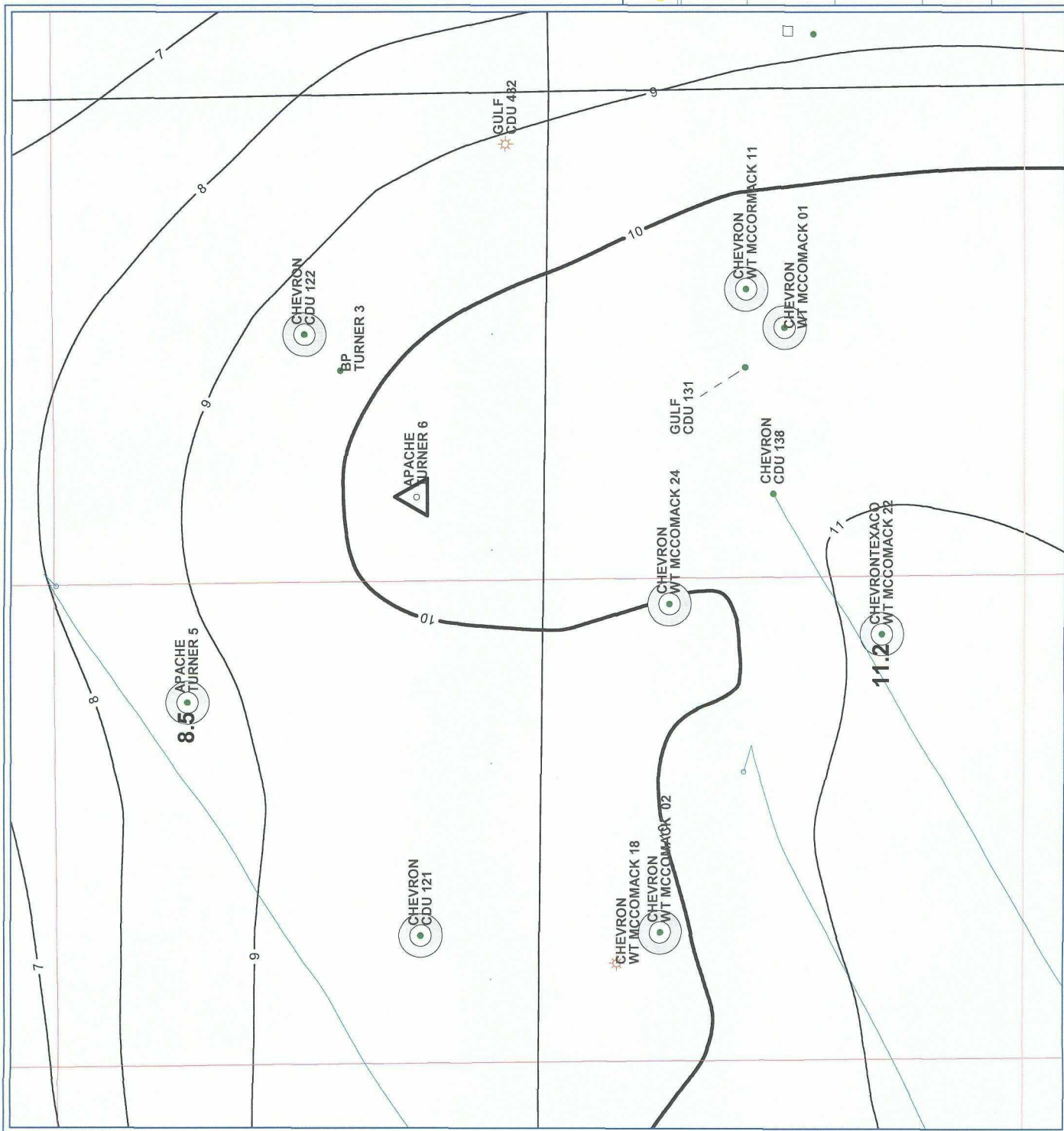
Grayburg SoPHIH

POSTED WELL DATA

GRBG\_PAY - SOPHIH ● Operator Well Label

ATTRIBUTE MAP

□ Zone: PROCFM - O GRAYBURG IS PRESENT





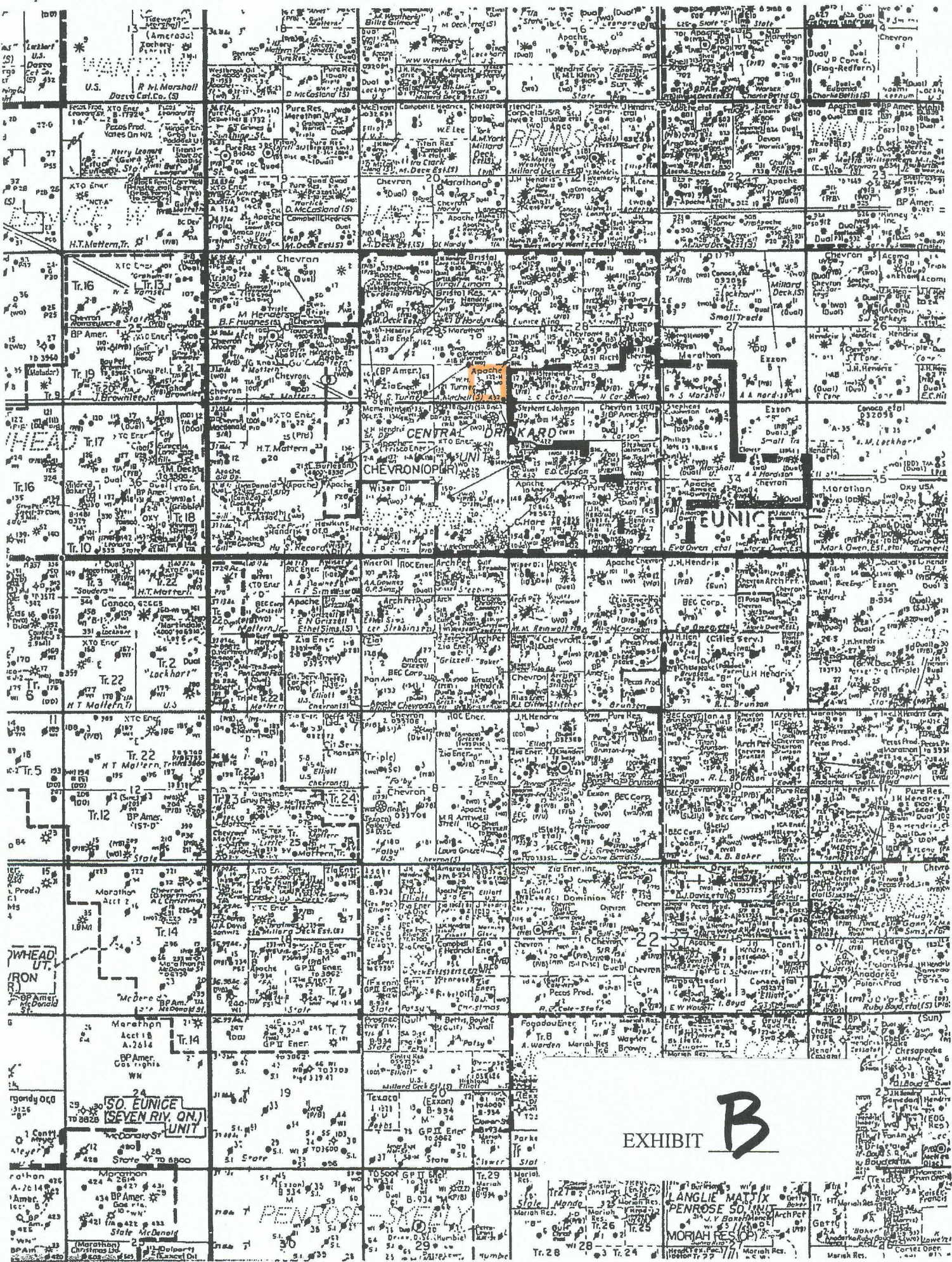


EXHIBIT **B**



**JAMES BRUCE**  
ATTORNEY AT LAW

POST OFFICE BOX 1056  
SANTA FE, NEW MEXICO 87504

369 MONTEZUMA, NO. 213  
SANTA FE, NEW MEXICO 87501

(505) 982-2043 (Phone)  
(505) 660-6612 (Cell)  
(505) 982-2151 (Fax)

[jamesbruc@aol.com](mailto:jamesbruc@aol.com)

November 30, 2007

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

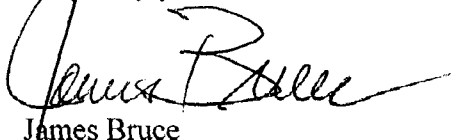
Chevron U.S.A. Inc.  
11111 South Wilcrest  
Houston, Texas 77099

Attention: Doug Schmidt

Ladies and gentlemen:

Apache Corporation has filed an application with the New Mexico Oil Conservation Division seeking an unorthodox oil well location in the Grayburg formation in the SE¼SE¼ of Section 29, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico. A copy of the application is enclosed. If you object to the application, you must notify the Division in writing no later than Thursday, December 20, 2007 (the Division's address is 1220 South St. Francis Drive, Santa Fe, New Mexico 87505). Failure to object will preclude you from contesting this matter at a latter date.

Very truly yours,



James Bruce

Attorney for Apache Corporation

EXHIBIT C