

**KELLAHIN & KELLAHIN**  
**Attorney at Law**

**W. Thomas Kellahin**  
New Mexico Board of Legal  
Specialization Recognized Specialist  
in the area of Natural resources-  
oil and gas law

P.O. Box 2265  
Santa Fe, New Mexico 87504  
117 North Guadalupe  
Santa Fe, New Mexico 87501

Telephone 505-982-4285  
Facsimile 505-982-2047  
tkellahin@aol.com

January 2, 2003

**HAND DELIVERED**

Mr. Michael E. Stogner  
Oil Conservation Division  
1220 South Saint Francis Drive  
Santa Fe, New Mexico 87501

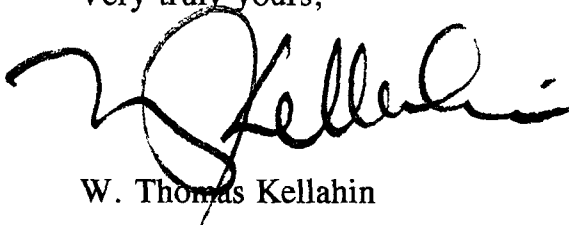
RE: **State C Tract 12 Well No. 12**  
**1330 feet FNL & 990 feet FWL**  
**Unit E, SW/4NW/4 Section 16, T21S, R37E**  
Administrative Application of  
Apache Corporation for approval  
of an unorthodox oil well location,  
Penrose Skelly Grayburg Pool,  
Lea County, New Mexico

03 JAN -2 PM 2:39  
OIL CONSERVATION DIV.

Dear Mr. Stogner:

Please find enclosed our administrative application for approval of  
an unorthodox oil well location for Apache Corporation's State C Tract 12  
Well No. 12.

Very truly yours,



W. Thomas Kellahin

fx: Apache Corporation  
Attn: Mario Moreno

**STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION**

**IN THE MATTER OF THE ADMINISTRATIVE  
APPLICATION OF APACHE CORPORATION  
FOR APPROVAL OF AN UNORTHODOX OIL WELL  
LOCATION, LEA COUNTY, NEW MEXICO**

**ADMINISTRATIVE APPLICATION**

Comes now Apache Corporation, by and through its attorneys, Kellahin and Kellahin, and in accordance with Division General Rule 104.F, applies to the New Mexico Oil Conservation Division for administrative approval of an unorthodox oil well location for its State C-Tract 12 Well No. 12 ("Well No. 12") to be drilled and completed for production from the Grayburg formation at an unorthodox well location 1330 feet FNL and 330 feet FWL of Section 16, T21S, R37E, Eddy County, New Mexico, and simultaneously dedicated with the Apache operated State C Tract 12 Well No 11 and the State C Tract 12 Well No. 1 to a standard 40-acre proration and spacing unit consisting of the Unit E of this section for production from the Penrose Skelly Grayburg Pool, and in support states:

(1) Apache Corporation ("Apache") is the current operator for the SW/4NW/4 (Unit I) of Section 16, T21S, R37E that includes the State C Tract 12 Well No. 1 and the State C Tract 12 Well No 11. See Exhibit 1 (Form C-102) and Exhibit 2 (location map)

(2) Section 16 is within the current boundary of the Penrose Skelly Grayburg Pool which is subject to Division Rule 104.

(3) Apache's proposed location encroaches towards the NW/4NW/4 which contains Apache operated State C Tract A-12 Well No. 8 which currently produces 20 barrels of oil per day from the Grayburg. See Exhibit 3 (production map)

**Administrative Application of  
Apache Corporation  
Page 2**

(4) This proposed unorthodox well location is based upon a combination of geologic and drainage reasons:

(a) Grayburg Production:

All 4 Grayburg Wells produced from the Upper Grayburg.

The proposed unorthodox well location is approximately equidistant between the older producers which should minimize depletion risk in the Upper Grayburg. (See Exhibit 3-A)

Petroleum engineering calculations demonstrate the potential to recover approximately 70,000 barrels of additional oil that will not be recovered from the existing wells. (See Exhibit 3-B)

(c) Grayburg Formation:

The Grayburg is separated into the Upper and Lower Grayburg (See Exhibit 4)

(b) Upper Grayburg Geology:

Based upon thickness, the proposed unorthodox well location represented the best remaining location among the 4 existing wells. (See Exhibit 5).

The risk of depletion in the Upper Grayburg is less in the SW/4NW/4 spacing unit due to greater production from roughly equal net pay in the offsetting wells. (See Exhibit-A and 5).

(e) Lower Grayburg Geology:

Apache's activity in offsetting section has demonstrate that commercial reserves are also present in the Lower Grayburg. Sufficient Lower Grayburg porosity can be encountered in the SW/4NW/4 of Section 16 to support drilling a well at the proposed unorthodox location which cannot be obtained at any standard location in the spacing unit. (See Exhibit 6).

**NOTICE**

(5) Notice has been send to the adjoining interest owners towards whom the location encroaches. (See Exhibits 7)

**CORRELATIVE RIGHTS**

(6) The working interest owners in the NW/4NW/4 and the SW/NW/4 of Section 16 are the same: Apache

(7) The royalty and overriding royalty owners are the same.

(8) The Operator is the same.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'W. Thomas Kellahin', written over a horizontal line.

W. Thomas Kellahin  
Kellahin and Kellahin  
P.O. Box 2265  
Santa Fe, New Mexico 87504-2265  
(505) 982-4285  
Attorneys for Applicant

## DISTRICT I

P.O. Box 1980, Hobbs, NM 88241-1980

## DISTRICT II

P.O. Drawer DD, Artesia, NM 88211-0719

## DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

## DISTRICT IV

P.O. BOX 2088, SANTA FE, N.M. 87504-2088

## State of New Mexico

Energy, Minerals and Natural Resources Department

## OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

Form C-102

Revised February 10, 1994

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
Property Code	Property Name STATE C TRACT 12	Well Number 12
OGRID No.	Operator Name APACHE CORPORATION	Elevation 3476'

## Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	16	21-S	37-E		1330	NORTH	330	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

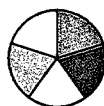
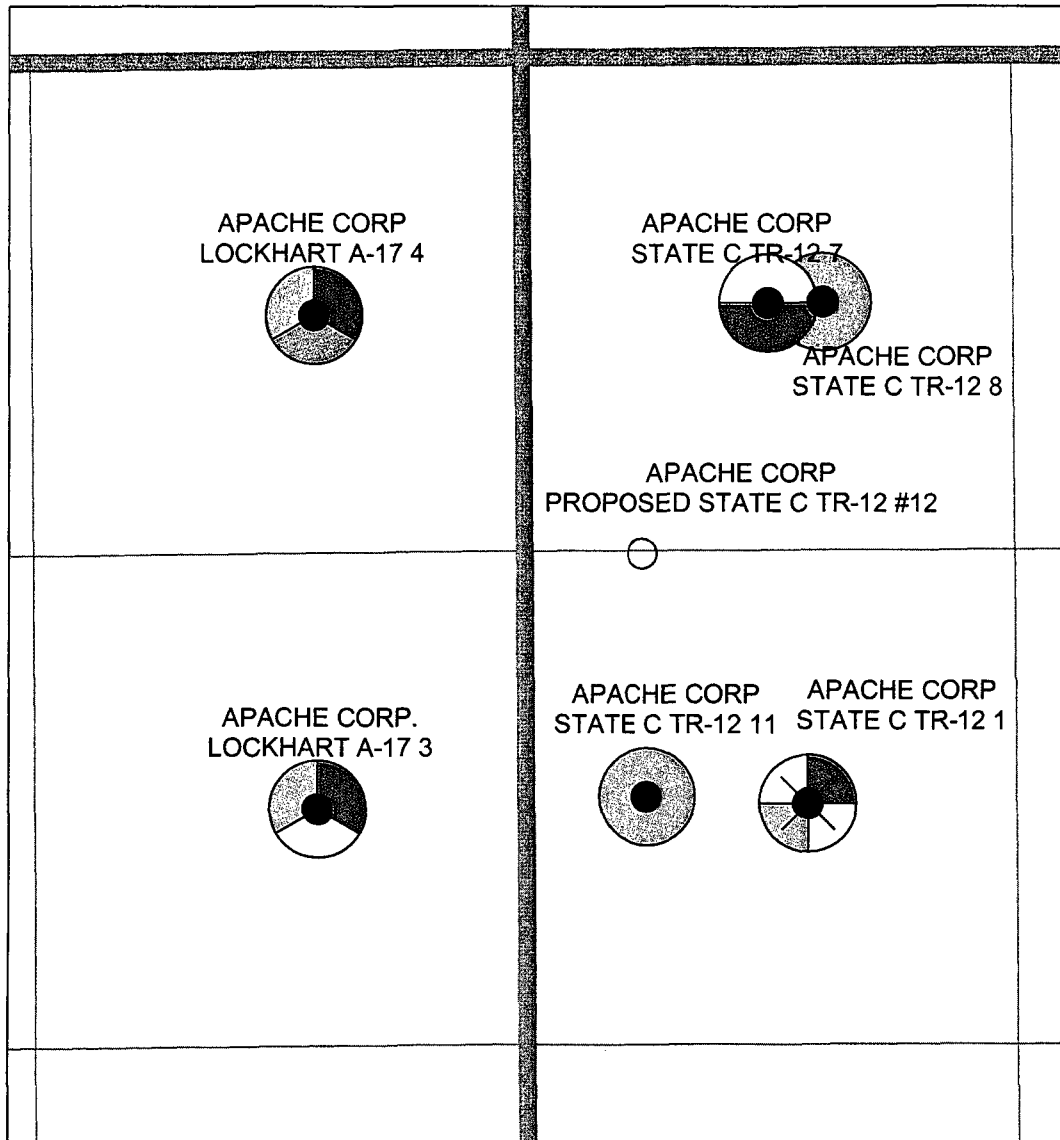
Dedicated Acres	Joint or Infill	Consolidation Code	Order No.

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><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <p>Signature _____</p> <p>Printed Name _____</p> <p>Title _____</p> <p>Date _____</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>NOVEMBER 27, 2002</p> <p>Date Surveyed _____</p> <p>Signature &amp; Seal of Professional Surveyor _____</p> <p>RONALD F. EIDSON PROFESSIONAL SURVEYOR NEW MEXICO 12/02/02</p> <p>Certificate No. ... RONALD F. EIDSON 3239 GARY EIDSON 12641</p>

EXHIBIT

2



YATES, SEVEN RIVERS, QUEEN

BLINEBRY PRODUCER

TUBB PRODUCER

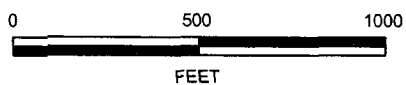
DRINKARD PRODUCER

GRAYBURG PRODUCER

#### WELL SYMBOLS

○ Location Only

● Oil Well



TWO WARREN PLACE, SUITE 1500  
8120 SOUTH YALE  
TULSA, OKLAHOMA 74138-4224

**STATE C TRACT 12 #12**

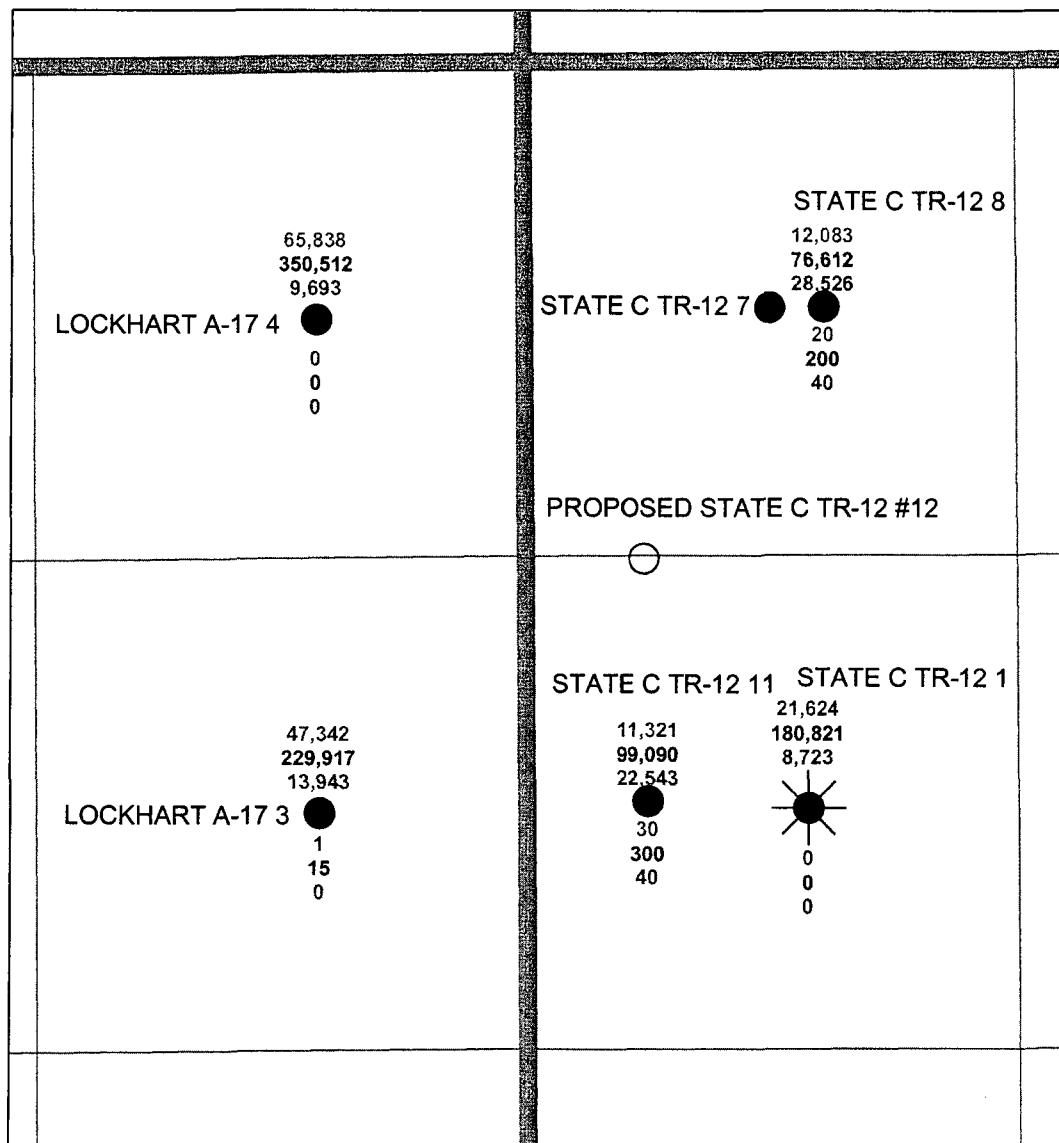
**SEC. 16-T21S-R37E  
LEA COUNTY, NEW MEXICO**

## EXHIBIT 2 WELL INFORMATION

DATE: 12/17/02

DWG:

STATE C TR 12 12 (CURTIS)



#### POSTED WELL DATA

CUM OIL  
CUM GAS  
CUM WATER

DAILY OIL  
DAILY GAS  
DAILY WATER

#### WELL SYMBOLS

- Location Only
- Oil Well



TWO WARREN PLACE, SUITE 1500  
6120 SOUTH YALE  
TULSA, OKLAHOMA 74138-4224

**STATE C TRACT 12 #12**

**SEC 16-T21S-R37E  
LEA COUNTY, NEW MEXICO**

**EXHIBIT 3-A**  
**GRAYBURG PRODUCTION**

DATE: 12/17/02

DWG:STATE C TR 12 12 PROD (CURTIS)



**TULSA EXPLORATION DEPARTMENT**  
**INTER-OFFICE MEMO**

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**DATE:** January 2, 2003  
**TO:** Tom Kellahin  
**FROM:** Bob Curtis  
**SUBJECT:** Reserve Calculations for NSLs

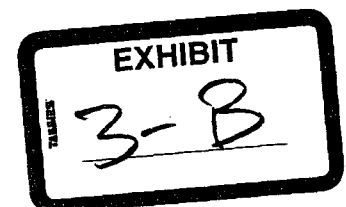
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**Estimated Ultimate Recoveries:**

<b>Lockhart A-17 #7:</b>	<b>70 MBO and 280 MMCFG</b>
<b>Lockhart A-17 #8:</b>	<b>91 MBO and 280 MMCFG</b>
<b>State C Tract 12 #13:</b>	<b>81 MBO and 320 MMCFG</b>
<b>DC Hardy #6:</b>	<b>61 MBO and 330 MMCFG</b>

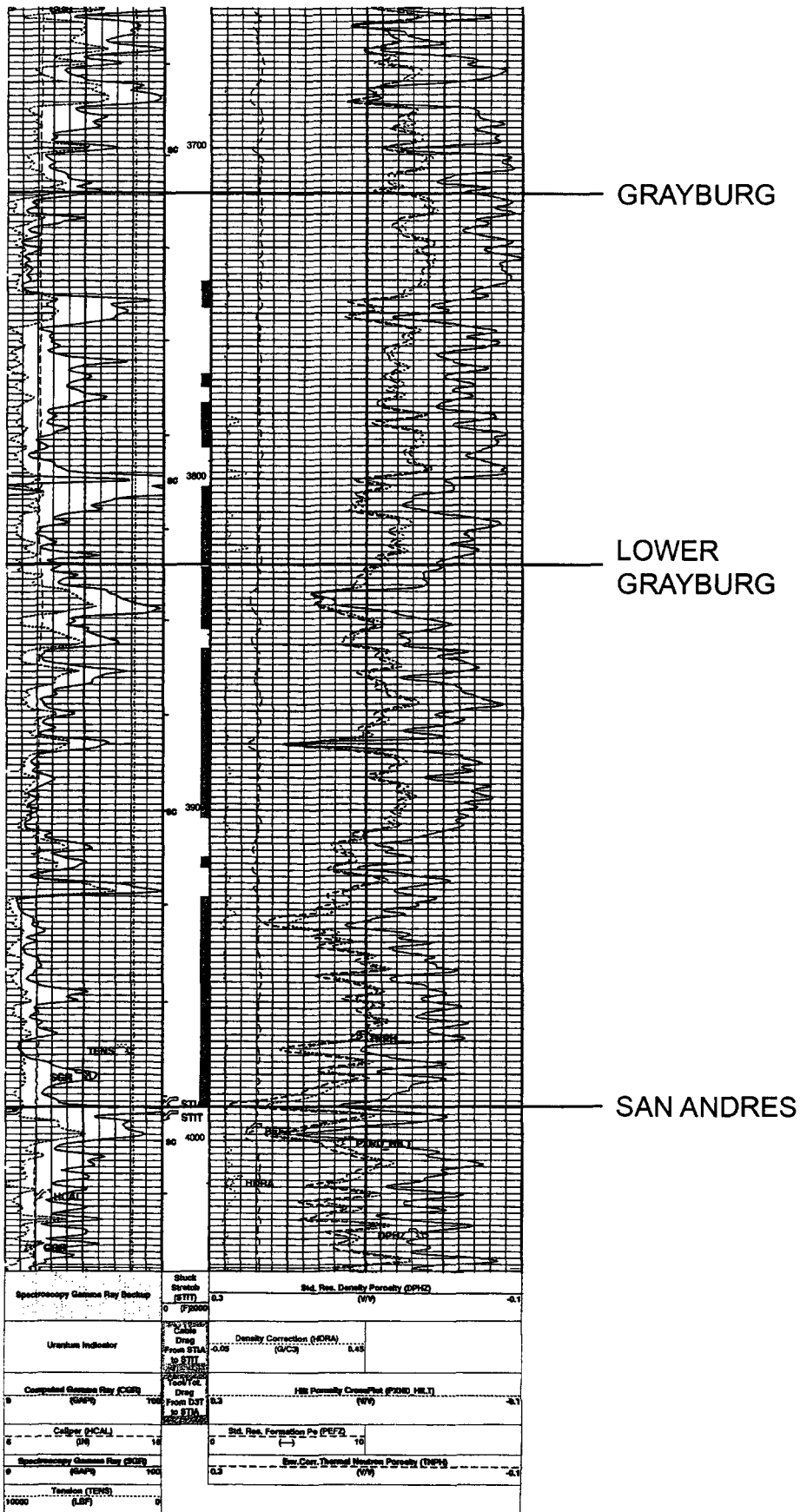
Reserves were determined volumetrically. Apache calculated the average porosity throughout the 'field', individually in both the Upper and Lower Grayburg, and then mapped it. Apache also estimated the current oil saturation throughout the 'field', individually in both the Upper and Lower Grayburg using a transform of the current water cut, and then mapped it. Feet of porosity (h) from the net pay maps, average porosity ( $\Phi_A$ ), and oil saturation ( $S_o$ ) grids were then multiplied in the computer to arrive at a hydrocarbon pore volume (HCPV) isopach map across the 'field'. HCPV for each reservoir at each location were estimated from the mathematically derived maps. Drainage area was assumed to be 29 acres, formation volume factor was assumed to be 1.38, and recovery factor was assumed to be 15% for each reservoir at each location. Estimated reserves in each reservoir were then reduced based upon distance to and estimated reserves, by reservoir, of productive offsets. Reserves predicted in each well are the sum of the Upper and Lower Grayburg estimates.

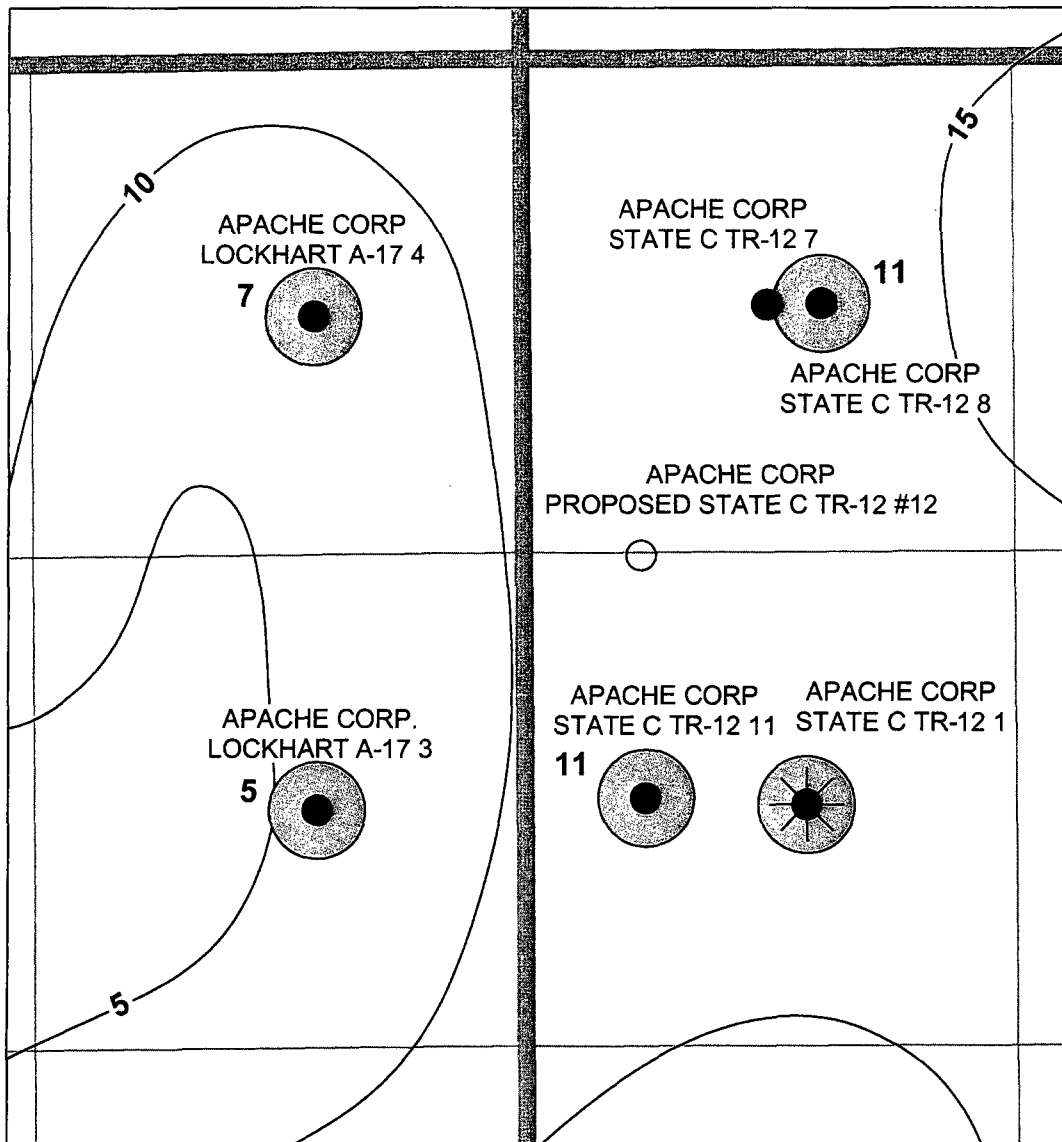
The locations requested are those with the greatest estimated ultimate recoveries. Moving away from the proposed location of any well will result in lower predicted reserves.





APACHE CORP.  
 STATE "C" TRACT 12 11  
 Sec. 16 T21S R37E  
 LEA COUNTY, NEW MEXICO





POSTED WELL DATA

## UPPER GRAYBURG PAY

### WELL SYMBOLS

- Location Only
- Oil Well
- ✱ Oil & Gas Well



U. GRAYBURG PRODUCER



TWO WARREN PLACE, SUITE 1500  
8120 SOUTH YALE  
TULSA, OKLAHOMA 74138-4224

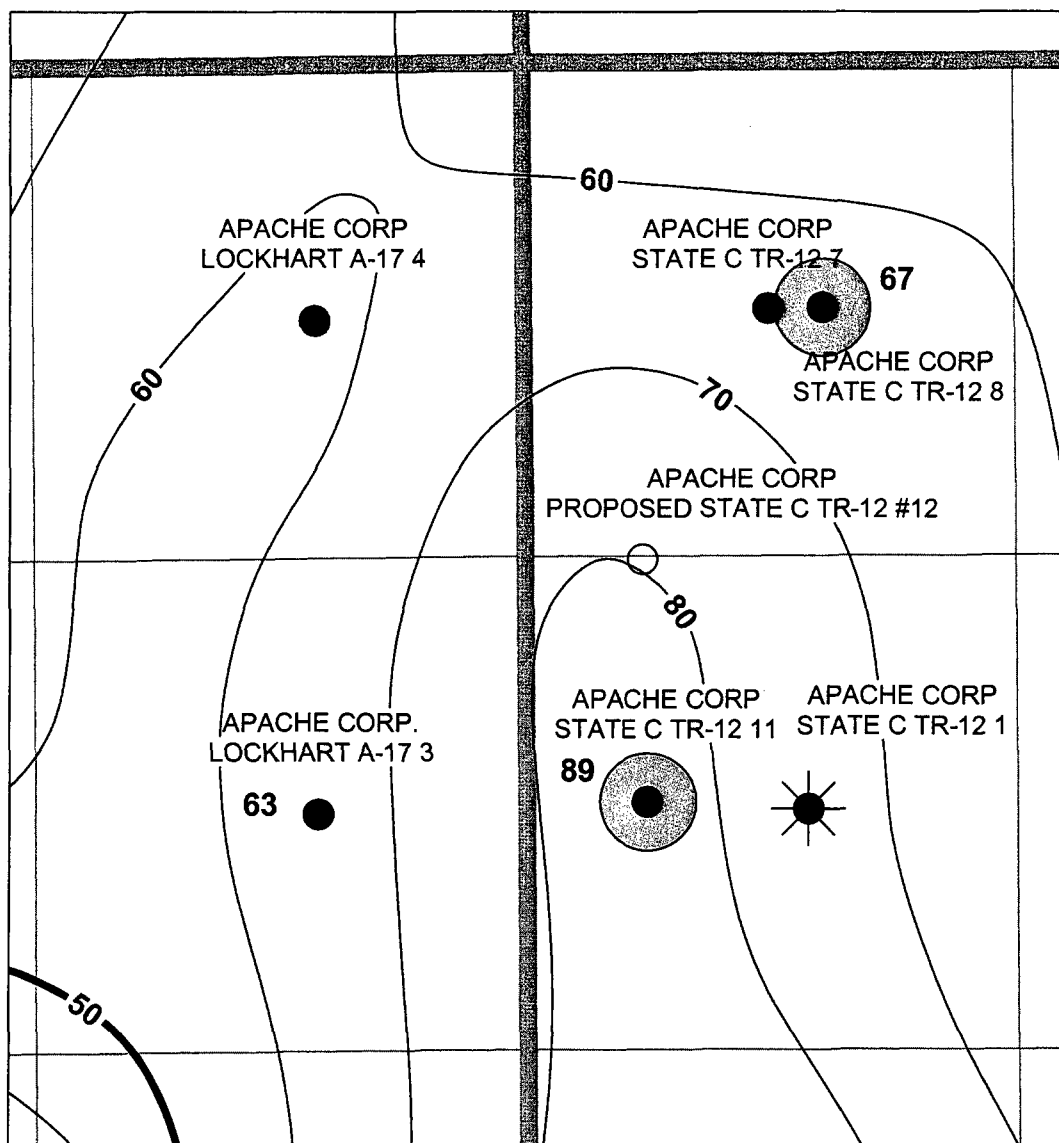
**STATE C TRACT 12 #12**

**SEC 16-T218-R37E  
LEA COUNTY, NEW MEXICO**

**EXHIBIT 5  
UPPER GRAYBURG PAY  
CUTOFF: 6% DOLOMITE**

DATE: 12-16-02

DWG: STATE C TR 12 12 U. GBRG (CURTIS)



POSTED WELL DATA

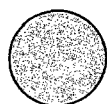
LOWER GRAYBURG PAY ●

WELL SYMBOLS

○ Location Only

● Oil Well

★ Oil & Gas Well



□ L. GRAYBURG PRODUCER



TWO WARREN PLACE, SUITE 1500  
8120 SOUTH YALE  
TULSA, OKLAHOMA 74138-4224

**STATE C TRACT 12 #12**

**SEC 16-T21S-R37E  
LEA COUNTY, NEW MEXICO**

**EXHIBIT 6  
LOWER GRAYBURG PAY  
CUTOFF: 6% DOLOMITE**

DATE: 12-16-02 DWG: STATE C TR 12 12 L GBRG (CURTIS/OC-D-NM)

**NOTIFICATION LIST**

Application of Apache Corporation for Administrative  
Approval of an unorthodox well location:

**State C Tract 12 # 12 Well**  
330' FWL & 1330' FNL  
Section 16, Township 21 South, Range 37 East, NMPM  
Lea County, New Mexico

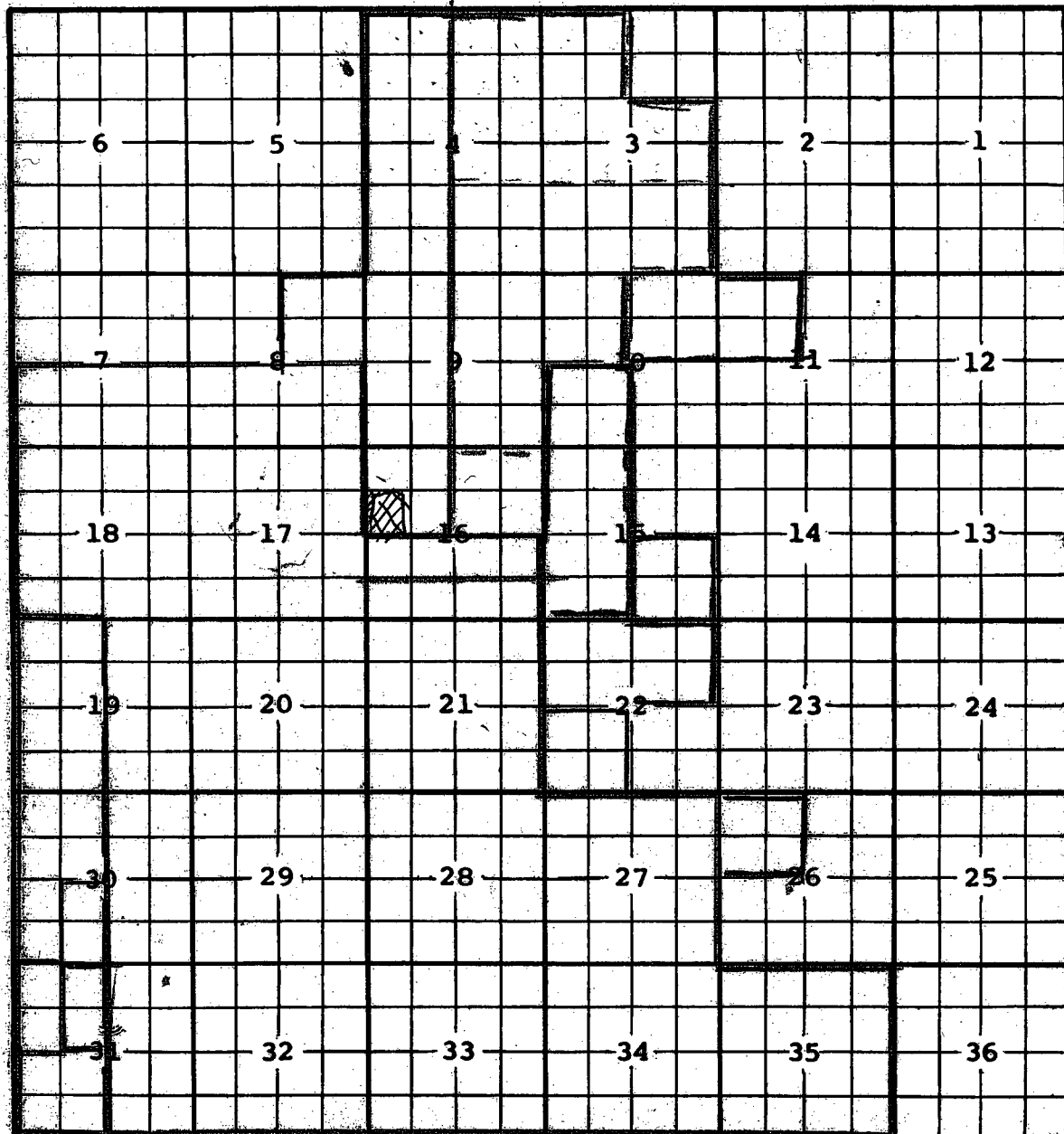
**OFFSET OPERATORS, WORKING INTEREST OWNERS, Royalty Owners**

1. Apache Corporation WI  
Two Warren Place, Suite 1500  
6120 South Yale Avenue  
Tulsa, Oklahoma 74136
2. State of New Mexico RI  
P O Box 1148  
Santa Fe, New Mexico 87504-1148



COUNTY LeaPOOL Penrose-SkellyTOWNSHIP 21 SouthRANGE 37 East

NMPM



Description:  $\frac{S}{2}$  Sec. 7;  $\frac{S}{2}$  Sec. 8;  $\frac{S}{2}$  Sec. 16; All Sec. 17 & 18;  $\frac{E}{2}$  Sec. 19;

All Sec. 20, 21, 27, 28 & 29;  $\frac{E}{2}$  Sec. 30;  $\frac{E}{2}$  Sec. 31; All Sec. 32 thru 35; Vertical limits contracted to Grayburg formation only (R-767-A, 4-1-56)

Ext:  $\frac{W}{4}$  Sec. 4;  $\frac{NE}{4}$  Sec. 8;  $\frac{W}{4}$  Sec. 9;  $\frac{NW}{4}$  Sec. 16 (R-947, 1-30-57) -  $\frac{E}{2}$   $\frac{NW}{4}$  Sec. 31 (R-1017, 6-28-57)  
 -  $\frac{E}{2}$   $\frac{SW}{4}$  Sec. 30 (R-1105, 12-30-57) -  $\frac{W}{4}$  Sec. 19;  $\frac{NW}{4}$  &  $\frac{W}{4}$   $\frac{SW}{4}$  Sec. 30 (R-1129, 2-20-58)  
 $\frac{SW}{4}$  Sec. 31 (R-1143, 3-25-58) -  $\frac{W}{4}$   $\frac{NW}{4}$  Sec. 31 (R-1312, 1-1-59)

Ext:  $\frac{SW}{4}$  Sec. 22 (R-7396, 12-8-83) Ext:  $\frac{SW}{4}$  Sec. 10,  $\frac{W}{2}$  Sec. 15,  $\frac{NW}{4}$  Sec. 26 (R-10091, 3-28-94) Ext:  $\frac{N}{2}$  Sec. 22 (R-10776, 2-28-97)

Ext: Lots 3, 4, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16 and  $\frac{3}{4}$  Sec. 3; Lots 1, 2, 7, 8, 9, 10, 15, 16 and  $\frac{SE}{4}$  Sec. 4,  $\frac{E}{2}$  Sec. 9,  $\frac{NW}{4}$  Sec. 10,  $\frac{SE}{4}$  Sec. 15,  $\frac{NE}{4}$  Sec. 16 (R-11633, 8-10-01) Ext:  $\frac{NE}{4}$  Sec. 10,  $\frac{NW}{4}$  Sec. 11 (R-11728, 2-20-02)