

2006 MAR 27 PM 12 27



George F. Pritchard  
Project Manager / Geologist

North America Upstream  
Midcontinent Business Unit  
11111 S. Wilcrest, Rm S1052  
Houston, Texas 77099  
Tel (281) 561-4918  
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gpritchard@chevron.com

2006 MAR 27 PM 12 27

4-13-2006 (9:21 AM)

March 22, 2006

Request for Administrative Approval of  
Unorthodox Oil Well Location and  
Simultaneous Dedication

Mr. Mark E. Fesmire  
c/o Mr. Michael E. Stogner  
New Mexico Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

*Talked w/ George Pritchard who  
called to check on the status of  
this & recently held well application  
(3-27/2-29),*

Dear Mr. Fesmire:

Chevron respectfully requests administrative approval of an unorthodox oil well location for the following well:

**C.L. Hardy #7**  
2310' FSL & 1310' FWL, C N/2 SW/4 of  
Section 20, T21S, R37E, Unit Letter L  
Lea County, New Mexico

The proposed well will be as an infill producer in the Penrose Skelly, Grayburg Pool [Pool Code 50350], which is an oil pool spaced on 40 acres. This well is a continuation to our infill drilling in the same Pool. Chevron's technical analysis of the reservoir still supports the contention that typical Grayburg wells cannot drain 40 acres.

The NW/4 SW/4 of Section 20 will be simultaneously dedicated in the Penrose Skelly, Grayburg Pool to the proposed well and to the C. L. Hardy #5. The C. L. Hardy #5 was recompleted in June 2003 and is currently producing as Penrose Skelly, Grayburg producer. Chevron also requests approval of the simultaneous dedication.

This application is based on geological and engineering analysis. The analysis and justification for this request is attached as Exhibit 1, along with other supporting documentation. There are five wells that have produced the Grayburg formation in the SW/4 of Section 20. The proposed well will be located in a 20 acre location approximate center north of those wells. Based on drainage calculations, Chevron believes that drilling the infill well will recover reserves that would not be recovered by existing Grayburg producers.

March 22, 2006  
Page 2

A land plat highlighting the proposed well's location is attached as Exhibit 2. The SW/4 of Section 20 is covered by a single fee lease and has common royalty and working interest ownerships. For that reason and the proposed location of the infill well, there are no adversely affected interest owners and no one has been notified of this application.

If you have any questions concerning this application or need additional information, please contact me by phone at (281) 561-4918 or by email at [gpritchard@chevron.com](mailto:gpritchard@chevron.com). If I am not available, you can also reach Michael Gelbs by phone at (281) 561-4794 or by email at [mike.gelbs@chevron.com](mailto:mike.gelbs@chevron.com). Thank you for consideration of this matter.

Sincerely,

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

George F. Pritchard  
Project Manager / Geologist

Attachments

cc: NMOCD District 1 – Hobbs, NM  
Mike Gelbs  
George Pritchard  
Well File

## **NOTIFICATION LIST**

Application of Chevron U.S.A. Inc. for Administrative Approval of an Unorthodox Oil Well Location and Simultaneous Dedication:

**C. L. Hardy #7**

2310' FSL & 1310' FWL

Section 20, T21S, R37E, Unit Letter L

Lea County, New Mexico

**Offset Operators, Working Interest Owners, SW/4 Section 208:**

- |    |   |                  |
|----|---|------------------|
| 1. | Chevron U.S.A. Inc.<br>11111 S. Wilcrest<br>Houston, TX 77099 | Operator/100% WI |
|----|---|------------------|

DATE IN <u>3/27/06</u>	SUSPENSE	ENGINEER <u>MIKE STAGNER</u>	LOGGED IN <u>3/27/06</u>	TYPE <u>NSL</u>	APP NO. <u>PTDS016D8652606</u>
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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



**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
- [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.**

George F. Pritchard  
 Print or Type Name

Signature

Project Manager / Geologist  
 Title

3/22/2006  
 Date

gpritchard@chevron.com  
 e-mail Address

## **EXHIBIT 1**

### **ENGINEERING AND GEOLOGICAL JUSTIFICATION**

Application of Chevron U.S.A. Inc. for Administrative Approval of an Unorthodox Oil Well Location and Simultaneous Dedication:

**C. L. Hardy #7**

2310' FSL & 1310' FWL

Section 20, T21S, R37E, Unit Letter L

Lea County, New Mexico

### **PRIMARY OBJECTIVE: GRAYBURG**

#### **SUPPORTING DATA:**

1. Chevron U.S.A. Inc. (Chevron) is the operator of the proposed C. L. Hardy #7 well (Exhibit 3). The proposed total depth is 4300' in the top of the San Andres formation.
2. The completion will be in the Penrose Skelly, Grayburg Oil Pool and the proposed location encroaches toward the following wells (Exhibit 4).

Operator	Well	API #	Location	Formation	Cum Prod		Current Prod		Status
					MBO	MMCF	BOPD	MCFPD	
Chevron	C.L. Hardy #1	3002506684	20-N	Grayburg	0	60	--	--	inactive Pre-1970
Chevron	C.L. Hardy #2	3002506683	20-N	Grayburg	31	579	--	--	inactive 2/1970; Drnkrd
Chevron	C.L. Hardy #3	3002506686	20-K	Grayburg	14	295	20	381	inactive 1971, recompl 2/2003
Chevron	C.L. Hardy #4	3002506705	20-M	Grayburg	20	210	10	358	inactive Pre-1970, recompl 10/2003
Chevron	C.L. Hardy #5	3002506687	20-L	Grayburg	8	197	2	416	active 6/2003
Chevron	C.L. Hardy #6	3002536740	20-K	Grayburg	6	53	22	375	active 10/2004

3. The proposed C. L. Hardy #7 unorthodox Grayburg location is based primarily on drainage considerations:
  - a. Grayburg Reservoir

The Grayburg is a series of alternating subtidal and supratidal dolomites with the subtidal rock having porosity and hydrocarbons while the supratidal rock is tight. The Grayburg depositional environments varied rapidly so that many porous and tight intervals are not continuous from well to well on 40-acre spacing. Tight dolomite and/or anhydrite intervals

within the Grayburg create vertical and horizontal flow barriers between different zones of porosity. Additionally, average porosity of the Grayburg is less than 10%, and the average permeability is less than 1 millidarcy. For all of these reasons, Grayburg wells are not usually capable of draining a 40-acre proration unit.

The reservoir was also analyzed by mapping the Hydrocarbon Pore Volume (HCPV) (Exhibit 5). HCPV is the product of feet of net pay (h) times average porosity ( $\phi$ ) times oil saturation ( $S_o$ ). The attached map is the arithmetic product of grids interpreted from those values. The values were obtained as follows:

1. Net pay was read from either modern neutron-density logs or estimated from a map developed from gross pay times net-to-gross ratio (Exhibit 4).
2. Average porosity was calculated from modern well logs using a minimum of 6% crossplot porosity and a maximum of 20%.
3. Oil saturation was calculated from a fractional flow curve using representative water cut values.

The following table provides drainage areas calculated from the HCPV map and reserves of the offsetting wells.

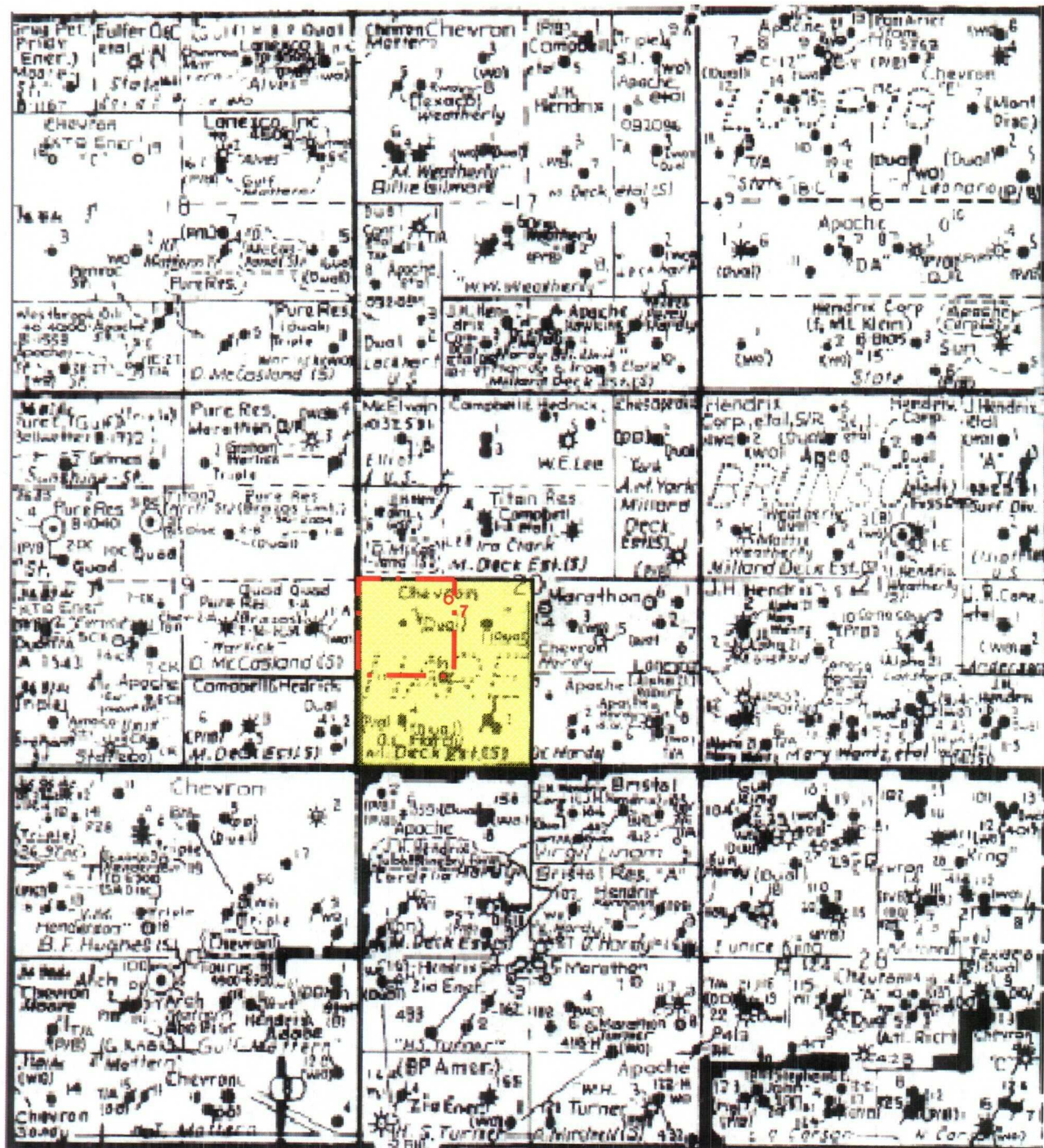
Operator	Well	API #	Location	Formation	Drainage Acres	EUR	
						MBO	MMCF
Chevron	C.L. Hardy #1	3002506684	20-N	Grayburg	0		60
Chevron	C.L. Hardy #2	3002506683	20-N	Grayburg	5	31	579
Chevron	C.L. Hardy #3	3002506686	20-K	Grayburg	6	36	786
Chevron	C.L. Hardy #4	3002506705	20-M	Grayburg	5	33	720
Chevron	C.L. Hardy #5	3002506687	20-L	Grayburg	3	23	880
Chevron	C.L. Hardy #6	3002536740	20-K	Grayburg	5	34	436

As seen above, the average drainage area of the offsetting locations is only 5 acres, and additional reserves can be recovered by drilling the proposed infill well at an approximate equidistant location from the existing offsetting producers. Reserves for the proposed location were calculated using the HCPV map, a 5 acre drainage area, and a 15% recovery factor. The results are as follows:

Operator	Well	Location	HCPV	Drainage Acres	EUR	
					MBO	MMCF
Chevron	C. L. Hardy	20-L	7.8	5	31	680

4. The SW/4 of Section 20 is covered by a single fee lease which has common royalty and working interest ownerships. Chevron is the operator and 100% working interest owner of the Grayburg wells toward which the proposed well will encroach. Therefore, there are no offset interest owners or adversely affected parties to notify of this application.
5. The proposed C. L. Hardy #7 will share a 40-acre proration unit and will be simultaneously dedicated with the C. L. Hardy #5 [30-025-06687] as a Penrose Skelly, Grayburg producer in Section 20, Unit Letter L.
6. Approval of this application will allow for the recovery of oil and gas reserves which would not otherwise be recovered.

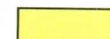




## Chevron USA Inc.



C. L. Hardy #5  
 1980 FSL & 660 FWL, Unit L  
 C. L. Hardy #7 (proposed)  
 2310 FSL & 1310 FWL, Unit L  
 Section 20, T21S-R37E  
 Lea County, New Mexico



Eunice King Lease



40 Acre Proration Unit

Scale: ~1"=2000'



DISTRICT I  
1025 N. FRENCH DR., ROBBS, NM 86240

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 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
Property Code	Property Name C.L. HARDY	Well Number 7
OGRID No.	Operator Name CHEVRON U.S.A. INC.	Elevation 3506'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
L	20	21-S	37-E		2310	SOUTH	1310	WEST	LEA

Bottom Hole Location If Different From Surface

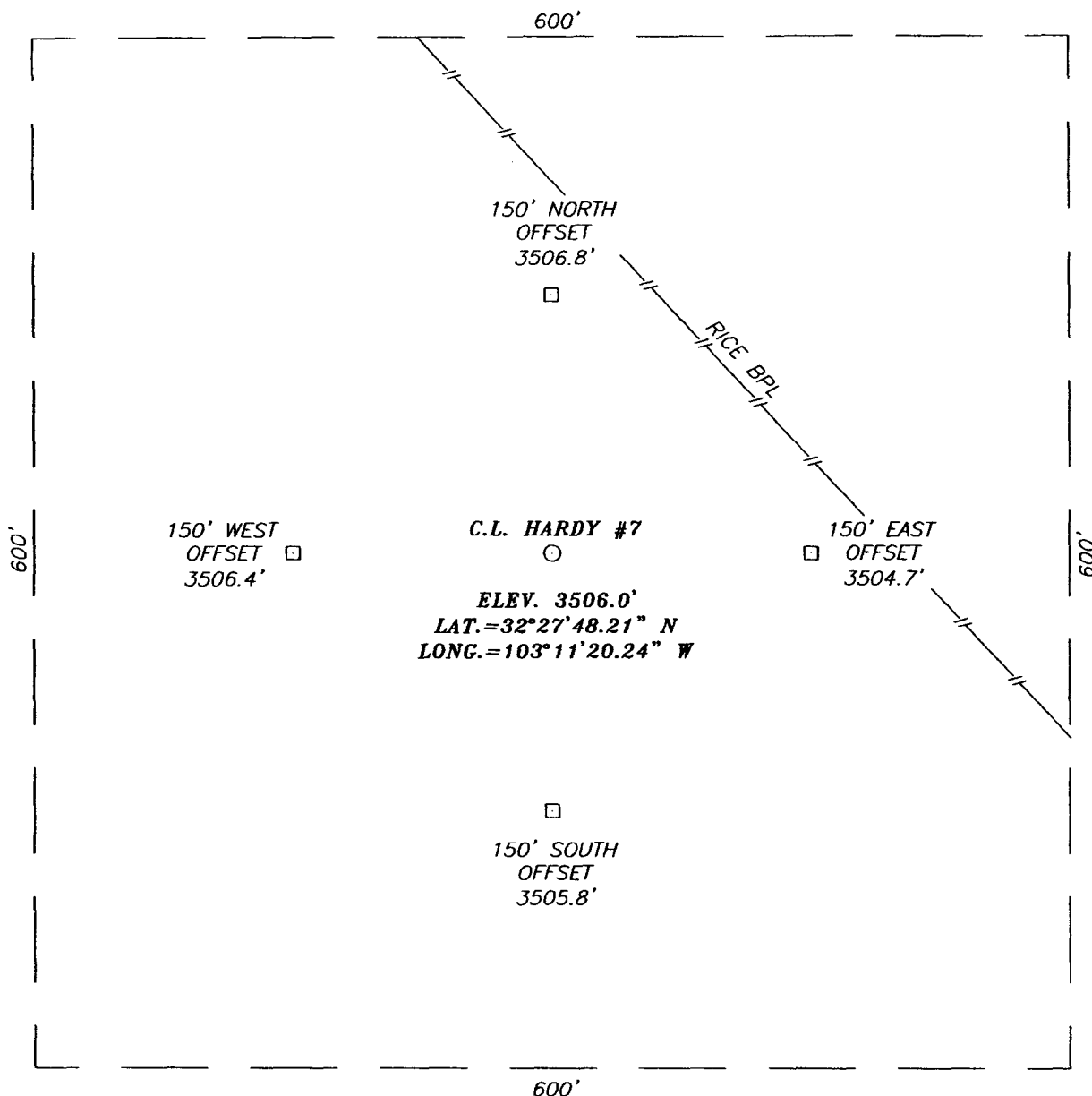
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres	Joint or Infill	Consolidation Code	Order No.						

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 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><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>FEBRUARY 16, 2006</p> <p>Date Surveyed _____ DSR</p> <p>Signature &amp; Seal of Professional Surveyor _____</p> <p>Certificate No. GARY EIDSON 12641</p>
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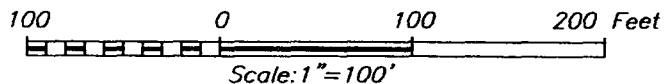
Amended 640-acre Section

**SECTION 20, TOWNSHIP 21 SOUTH, RANGE 37 EAST, N.M.P.M.,**  
 LEA COUNTY, NEW MEXICO



**DIRECTIONS TO LOCATION**

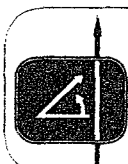
FROM THE INTERSECTION OF ST. HWY 8-176 AND CO. RD. E-33 (N. TURNER), (APPROX. 1.0 MILE WEST OF EUNICE, N.M.), GO NORTH ON CO. RD. E-33 APPROX. 1.62 MILES, TURN LEFT AND GO WEST APPROX. 0.9 MILES. TURN LEFT AND GO SOUTH APPROX. 0.26 MILES. TURN LEFT AND GO EAST 0.1 MILE. THIS LOCATION IS APPROX. 425 FEET NORTH.



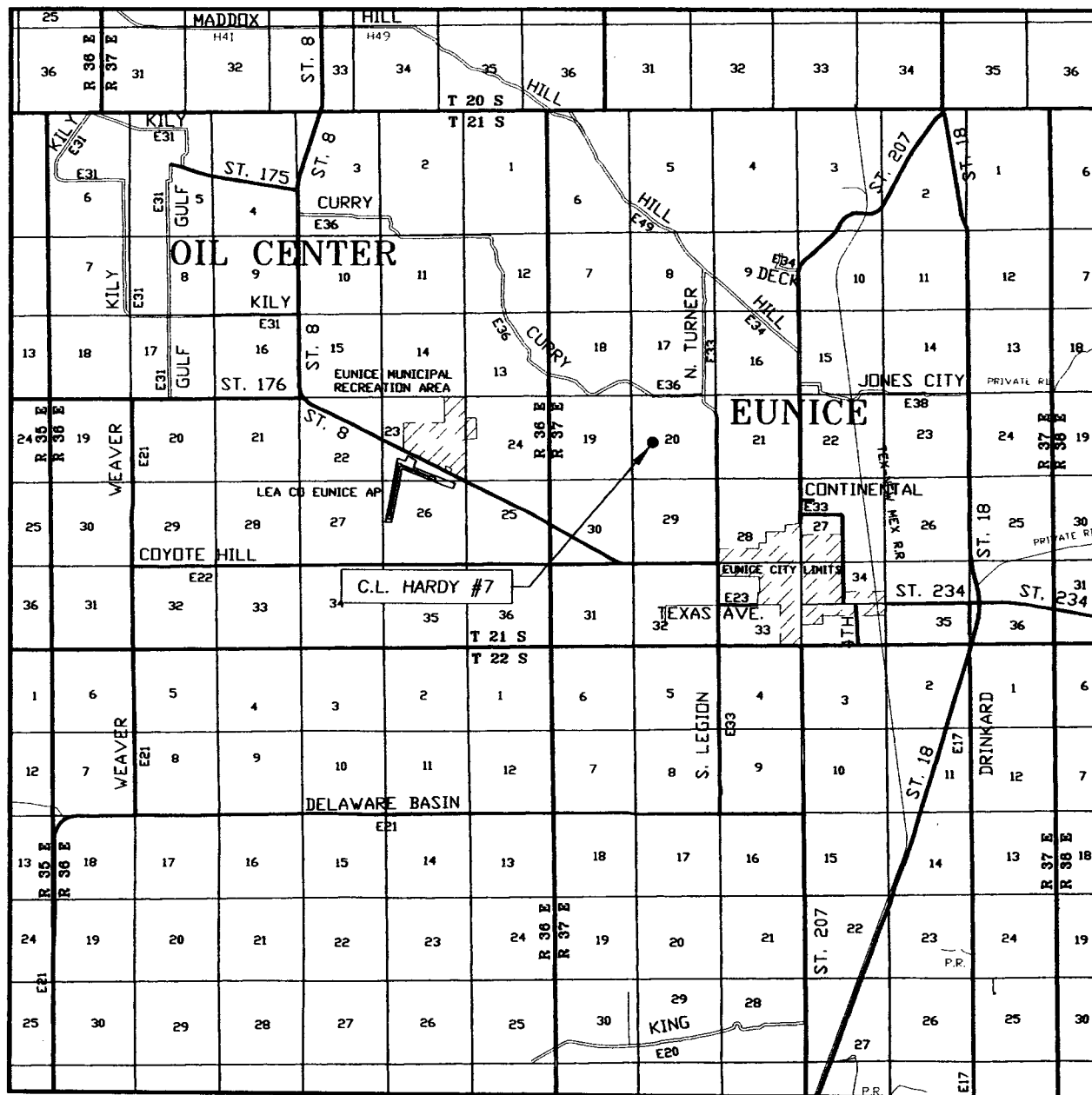
**CHEVRON U.S.A. INC.**

C.L. HARDY #7 WELL  
 LOCATED 2310 FEET FROM THE SOUTH LINE  
 AND 1310 FEET FROM THE WEST LINE OF SECTION 20,  
 TOWNSHIP 21 SOUTH, RANGE 37 EAST, N.M.P.M.,  
 LEA COUNTY, NEW MEXICO.

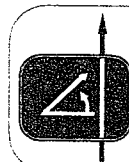
Survey Date: 02/16/06	Sheet 1 of 1 Sheets
W.O. Number: 06.11.0318	Dr By: D.S.R. Rev 1:N/A
Date: 03/04/06	Disk: CD#1 06110318 Scale: 1"=100'



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

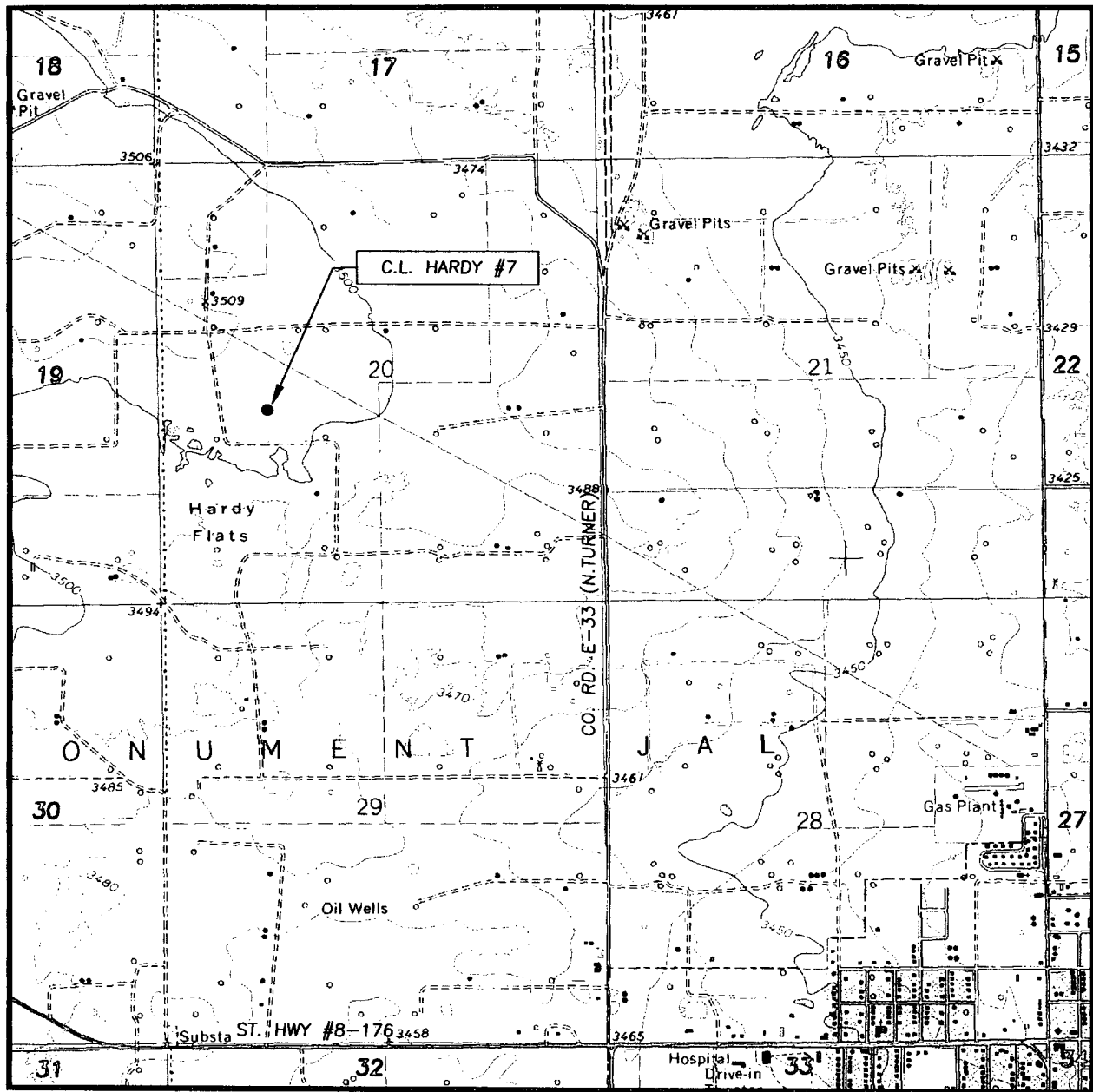


SEC. 20 TWP. 21-S RGE. 37-E  
SURVEY \_\_\_\_\_ N.M.P.M. \_\_\_\_\_  
COUNTY LEA STATE NEW MEXICO  
DESCRIPTION 2310' FSL & 1310' FWL  
ELEVATION 3506'  
OPERATOR CHEVRON U.S.A. INC.  
LEASE C.L. HARDY



**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:  
EUNICE, N.M. - 10'

SEC. 20 TWP. 21-S RGE. 37-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

DESCRIPTION 2310' FSL & 1310' FWL

ELEVATION 3506'

OPERATOR CHEVRON U.S.A. INC.

LEASE C.L. HARDY

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



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

**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 South St. Francis Dr., Santa Fe, NM 87505

**State of New Mexico**  
**Energy, Minerals & Natural Resources Department**

**Form C-102**  
**Revised June 10, 2003**

**OIL CONSERVATION DIVISION**

**1220 South St. Francis Dr.**  
**Santa Fe, NM 87505**

Submit to: **Appropriate District Office**

**Exhibit 3.1**

☐ **AMENDED REPORT**

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

<sup>1</sup> API Number 30-025-06687	<sup>2</sup> Pool Code 50360	<sup>3</sup> Pool Name Penrose Skelly; Grayburg
<sup>4</sup> Property Code	<sup>5</sup> Property Name C L Hardy	<sup>6</sup> Well Number 5
<sup>7</sup> OGRID No. 4323	<sup>8</sup> Operator Name Chevron U.S.A., Inc.	<sup>9</sup> Elevation 3501' gl

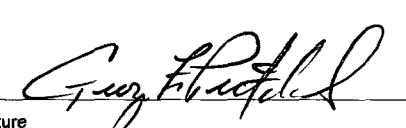
**<sup>10</sup> Surface Location**

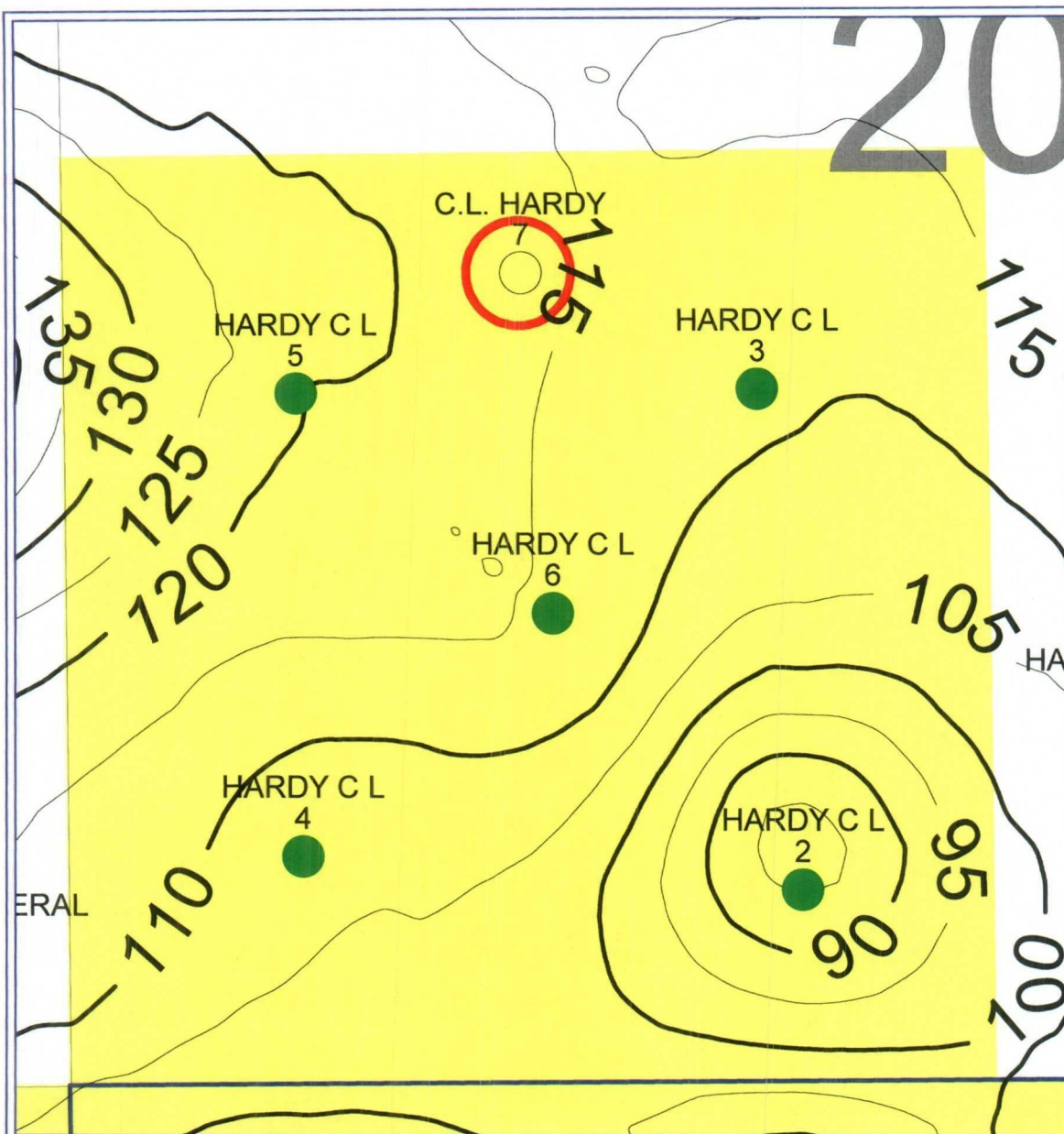
UL or Lot No. L	Section 20	Township 21S	Range 37E	Lot Idn	Feet from the 1980	North/South line South	Feet from the 660	East/West line West	County Lea
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**<sup>11</sup> Bottom Hole Location If Different From Surface**

UL or Lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
<sup>12</sup> Dedicated Acres 40	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> 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**

<div><p><sup>16</sup></p><p>40-acre proration unit</p><p>660'</p><p>5</p><p>1980'</p><p>C L Hardy Lease</p></div>	<div><p><sup>17</sup></p><p><b>OPERATOR CERTIFICATION</b></p><p><i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</i></p><p> Signature George F. Pritchard</p><p>Printed Name <b>Geologist</b></p><p>Title <b>March 20, 2006</b></p></div> <div><p><sup>18</sup></p><p><b>SURVEYOR CERTIFICATION</b></p><p><i>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.</i></p><p>Signature and Seal of Professional Surveyor:</p><p>Certificate Number</p></div>
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PETRA 3/22/2006 7:27:31 AM

## CHEVRON U.S.A.

### EXHIBIT 4

#### PENROSE-SKELLY FIELD CL HARDY #7

Sec. 20, T21S-R37E, Lea CO. New Mexico

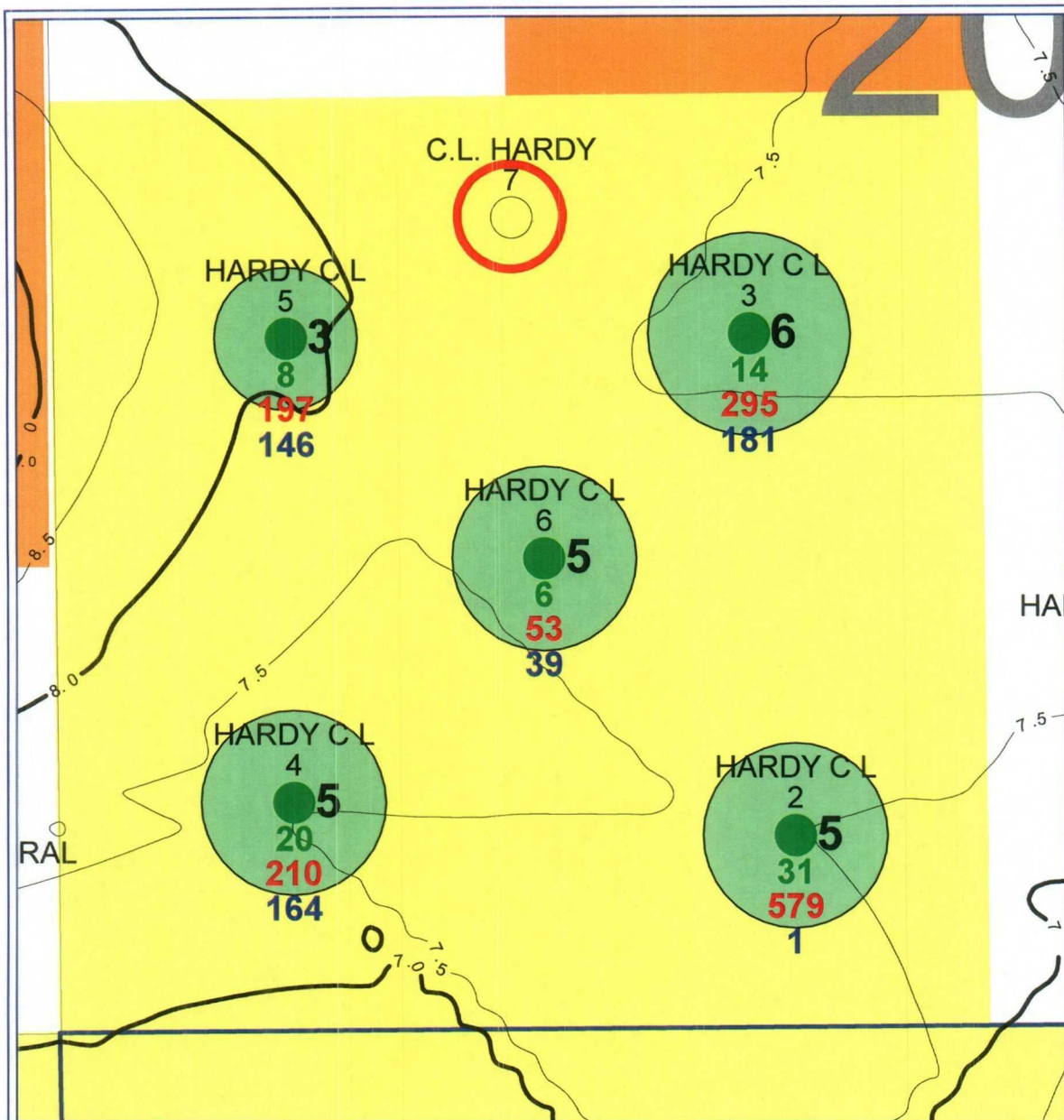
Grayburg Net Pay CI=5. [Gr<40, Por>6%]

#### POSTED WELL DATA

Well Name  
Well Number



March 22, 2006



PETRA 3/24/2006 11:11:45 AM

## CHEVRON U.S.A.

### EXHIBIT 5

#### PENROSE-SKELLY FIELD C L HARDY #7

Sec. 20, T21S-R37E, Lea CO. New Mexico

Grayburg HCPV CI=0.5 & EUR - Drainage

#### POSTED WELL DATA

Well Name  
Well Number

● GFP\_GRAYBURG - EUR-GRAYBURG-ACRES[GFP]

GFP\_GRAYBURG - GRAYBURG-CUM\_OIL\_MBO[PI]  
GFP\_GRAYBURG - GRAYBURG-CUM\_GAS\_MMCF[PI]  
GFP\_GRAYBURG - GRAYBURG-CUM\_WATER\_MBO[PI]



March 24, 2006