

6/13/08 DATE IN	SUSPENSE	BROOKS ENGINEER	6/13/08 LOGGED IN	NSL TYPE	PKURO815551081 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



*Chevron USA Inc*  
*HT Mattern NCTC*  
*#20*  
*5863*

**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.

Casey R. Mobley  
Print or Type Name

Signature

*Casey R. Mobley*

Project Manager / Geologist  
Title

11/6/2006  
Date

Casey.Mobley@Chevron.com  
e-mail Address

RECEIVED  
2008 JUN 3 PM 2 05



**Casey R. Mobley**  
Project Manager / Geologist

**North America Upstream**  
Midcontinent Business Unit  
11111 S. Wilcrest, Rm S1037  
Houston, Texas 77099  
Tel (281) 561-4830  
Fax (281) 561-3576  
Casey.Mobley@Chevron.com

June 1, 2008

**Request for Administrative Approval of  
Unorthodox Oil Well Location**

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

Dear Mr. Fesmire:

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

**H.T. Mattern C #20**  
1650' FSL & 1330' FEL, NW/4 SE/4 of  
Section 18, T21S, R37E, Unit Letter J  
Lea County, New Mexico

The proposed well will be 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 of our 5 year 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 SE/4 of Section 18 will be simultaneously dedicated in the Penrose Skelly, Grayburg Pool to the proposed well and to the H.T. Mattern C #7 and H.T. Mattern C #4 pursuant to statewide Rule 104.B(1). The H.T. Mattern C #7 was drilled in 1978 and was re-completed in 2002 as a Penrose Skelly, Grayburg producer. The H.T. Mattern C #4 was drilled in 1948 as a Penrose Skelly, Grayburg producer.

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 SE/4 of Section 18. The proposed well will be located in the approximate center point of those wells and 330' off the lease line. Based on drainage calculations, Chevron believes that drilling the infill well will recover reserves that would not be recovered by existing Grayburg producers.

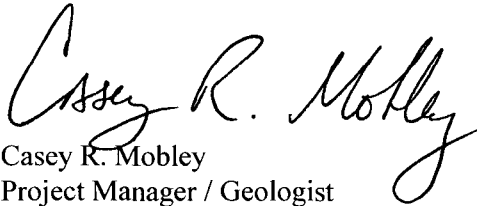
A land plat highlighting the proposed well's location is attached as Exhibit 2. The N/2 of the S/2 of Section 18 is covered by a single fee lease and has common royalty and working interest ownerships. For that reason and the proposed location of the infill well, there are no adversely affected interest owners and no one has been notified of this application.

June 1, 2008

Page 2

If you have any questions concerning this application or need additional information, please contact me by phone at (281) 561-4830 or by email at [Casey.Mobley@Chevron.com](mailto:Casey.Mobley@Chevron.com). If I am not available, you can also reach Meilin Du by phone at (281) 561-3564 or by email at [meilin.du@chevron.com](mailto:meilin.du@chevron.com). Thank you for consideration of this matter.

Sincerely,

A handwritten signature in black ink that reads "Casey R. Mobley". The signature is written in a cursive, flowing style.

Casey R. Mobley  
Project Manager / Geologist

Attachments

cc: NMOCD District 1 – Hobbs, NM  
Meilin Du  
Ed Van Reet  
Well File

## **NOTIFICATION LIST**

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

**H.T. Mattern C #20**

1650' FSL & 1330' FEL, NW/4 SE/4 of  
Section 18, T21S, R37E, Unit Letter J  
Lea County, New Mexico

**Offset Operators, Working Interest Owners, NW/4, SE/4 Section 18:**

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

## **EXHIBIT 1**

### **ENGINEERING AND GEOLOGICAL JUSTIFICATION**

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

**H.T. Mattern C #20**

1650' FSL & 1330' FEL, NW/4 SE/4 of  
Section 18, T21S, R37E, Unit Letter J  
Lea County, New Mexico

**PRIMARY OBJECTIVE: GRAYBURG**

**SUPPORTING DATA:**

1. Chevron U.S.A. Inc. (Chevron) is the operator of the proposed H.T. Mattern C #20 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	HT Mattern NCT C #1	30025066570001	18I 21S 37E	Grayburg	177	1867	0	119	Oil
Chevron	HT Mattern NCT C #2	30025066580001	18K 21S 37E	Grayburg	69	179	3	53	Oil
Gulf	HT Mattern NCT C #3	30025066590000	18L 21S 37E	Grayburg	4	0	-	-	Inactive Oil
Gulf	HT Mattern NCT C #4	30025066600000	18L 21S 37E	Grayburg	26	37	-	-	Inactive Oil
Chevron	HT Mattern NCT C #7	30025251110001	18J 21S 37E	Grayburg	16	291	2	55	Oil
Chevron	HT Mattern NCT C #8	30025251120002	18A 21S 37E	Grayburg	8	45	1	16	Oil
Chevron	HT Mattern NCT C #15	30025275290002	18B 21S 37E	Grayburg	5	44	1	16	Oil
Chevron	HT Mattern NCT C #16	30025275300002	18G 21S 37E	Grayburg	13	99	3	30	Oil
Chevron	HT Mattern NCT C #17	30025371080000	18F 21S 37E	Grayburg	9	70	1	26	Oil
Chevron	HT Mattern NCT C #18	30025371090000	18 21S 37E	Grayburg	4	59	1	37	Oil
Chevron	HT Mattern NCT C #19	30025377770000	18 21S 37E	Grayburg	4	36	2	30	Oil
Chevron	LG Warlick #3	30025239530001	18P 21S 37E	Grayburg	52	355	3	26	Oil
Chevron	LG Warlick #1	30025066540000	18O 21S 37E	Grayburg	51	342	-	-	Inactive Oil

3. The proposed H.T. Mattern C #20 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.

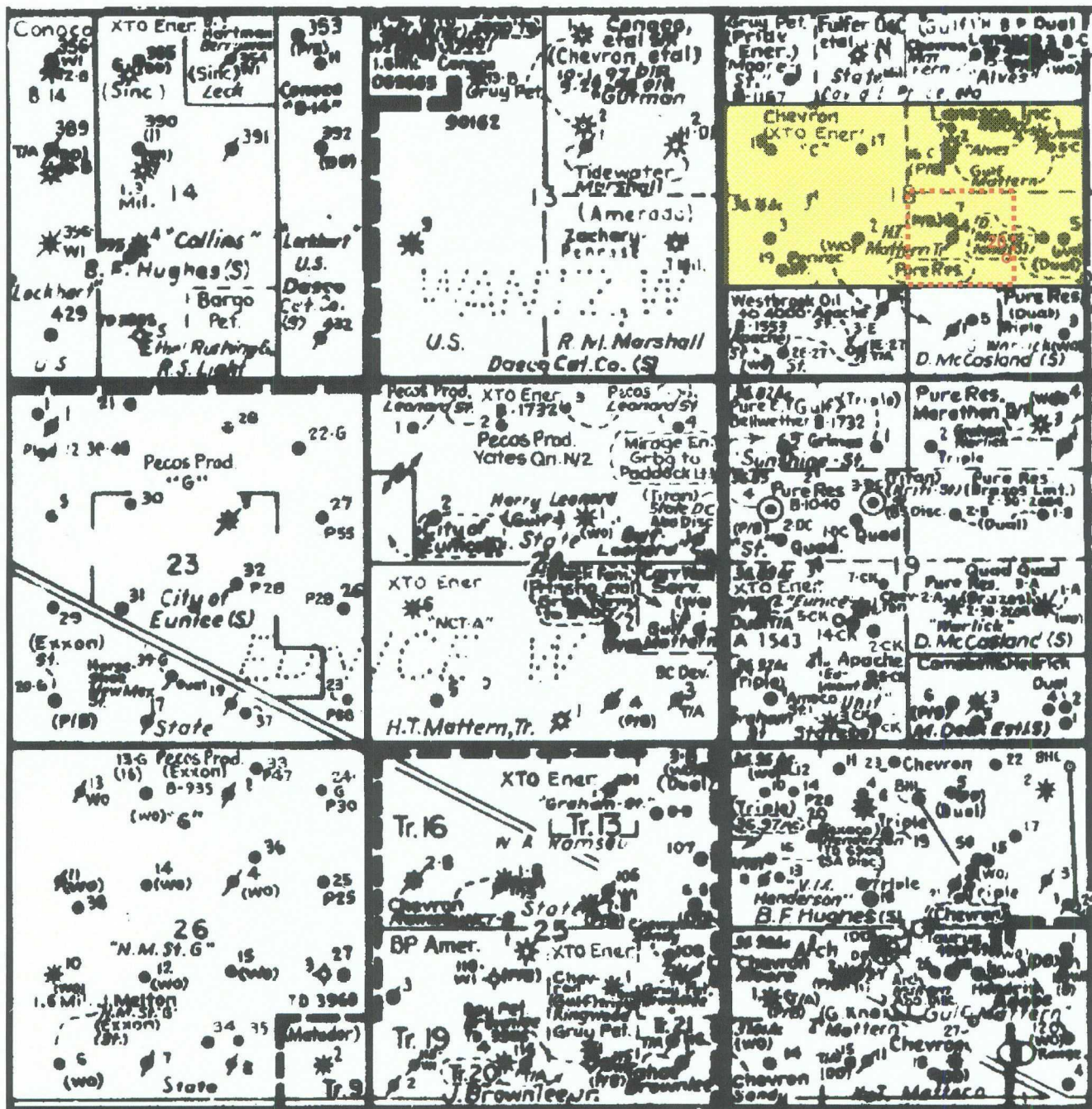
Operator	Well	API #	Location	Formation	Drainage Acres	EUR	
						MBO	MMCF
Chevron	HT Mattern NCT C #1	30025066570001	18I 21S 37E	Grayburg	<b>34</b>	177	2074
Chevron	HT Mattern NCT C #2	30025066580001	18K 21S 37E	Grayburg	<b>19</b>	78	338
Gulf	HT Mattern NCT C #3	30025066590000	18L 21S 37E	Grayburg	<b>1</b>	4	0
Gulf	HT Mattern NCT C #4	30025066600000	18L 21S 37E	Grayburg	<b>6</b>	26	37
Chevron	HT Mattern NCT C #7	30025251110001	18J 21S 37E	Grayburg	<b>7</b>	25	473
Chevron	HT Mattern NCT C #8	30025251120002	18A 21S 37E	Grayburg	<b>3</b>	14	60
Chevron	HT Mattern NCT C #15	30025275290002	18B 21S 37E	Grayburg	<b>3</b>	7	58
Chevron	HT Mattern NCT C #16	30025275300002	18G 21S 37E	Grayburg	<b>5</b>	15	119
Chevron	HT Mattern NCT C #17	30025371080000	18F 21S 37E	Grayburg	<b>4</b>	14	126
Chevron	HT Mattern NCT C #18	30025371090000	18 21S 37E	Grayburg	<b>3</b>	11	137
Chevron	HT Mattern NCT C #19	30025377770000	18 21S 37E	Grayburg	<b>3</b>	11	112
Chevron	LG Warlick #3	30025239530001	18P 21S 37E	Grayburg	<b>9</b>	52	356
Chevron	LG Warlick #1	30025066540000	18O 21S 37E	Grayburg	<b>10</b>	51	342

As seen above, the average drainage area of the offsetting locations is only 8 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, an 8 acre drainage area, and a 15% recovery factor. The results are as follows:

Operator	Well	Location	HCPV	Drainage Acres	EUR	
					MBO	MMCF
Chevron	HT Mattern C #20	18-J	5.5	8	37	326

4. The N/2 of the SE/4 of Section 18 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 H.T. Mattern C #20 will share a 40-acre proration unit and, pursuant to statewide Rule 104.B(1), will be simultaneously dedicated with the H.T. Mattern C #7 and H.T. Mattern C #4 as a Penrose Skelly, Grayburg producer in Section 18, Unit Letter J.
6. Approval of this application will allow for the recovery of oil and gas reserves which would not otherwise be recovered.

# Exhibit 2




Chevron USA Inc.



H.T. Mattern C #20 (proposed)  
1650 FSL & 1330 FEL  
Section 18, T21S-R37E  
Lea County, New Mexico

 H.T. Mattern C Lease

 40 Acre Proration Unit

Scale: 1"=2000' Approx.



DISTRICT I  
1626 N. FRENCH DR., HOBBES, NM 88240

State of New Mexico  
Energy, Minerals and Natural Resources Department

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

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 H.T. MATTERN C	Well Number 20
OGRID No.	Operator Name CHEVRON USA INC.	Elevation 3502'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	18	21-S	37-E		1650	SOUTH	1330	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

LOT 1									
36.71 AC									
LOT 2									
36.74 AC									
LOT 3									
36.76 AC									
LOT 4									
36.79 AC									

GEODETIC COORDINATES  
NAD 27 NME  
Y=538783.4 N  
X=850269.6 E  
LAT.=32.476102' N  
LONG.=103.197535' W

1330'

1650'

OPERATOR CERTIFICATION

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.

Signature \_\_\_\_\_ Date \_\_\_\_\_

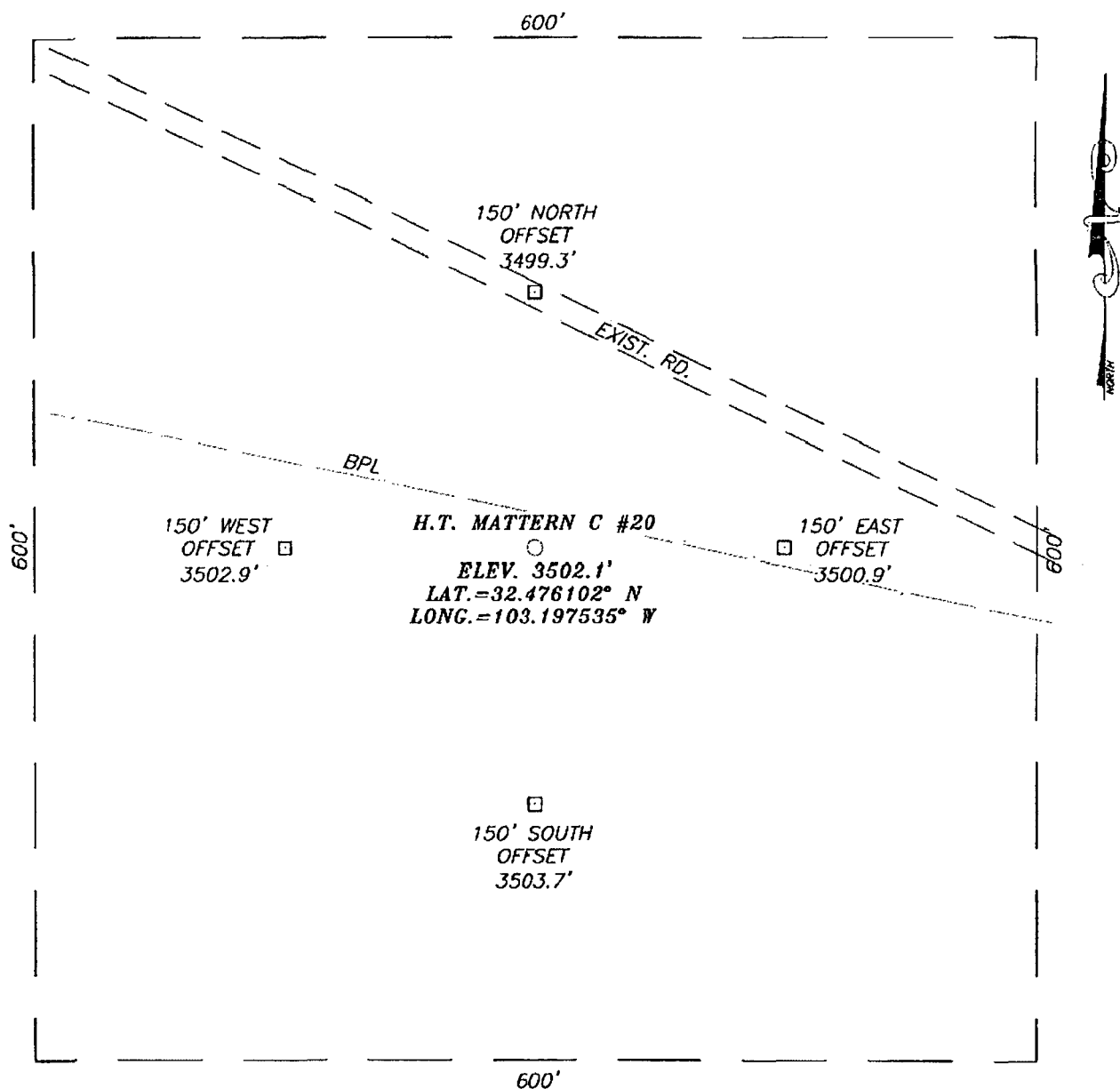
Printed Name \_\_\_\_\_

SURVEYOR CERTIFICATION

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.

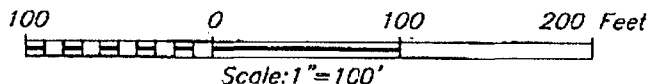
RONALD J. EIDSON  
OCTOBER 10, 2007  
Date Surveyed 10/18/07  
Signature & Seal of Professional Surveyor  
07.11.1324  
Certificate No. GARY G. EIDSON 12641  
RONALD J. EIDSON 3239

**SECTION 18, TOWNSHIP 21 SOUTH, RANGE 37 EAST, N.M.P.M.,**  
 LEA COUNTY. NEW MEXICO



**DIRECTIONS TO LOCATION**

FROM THE INTERSECTION OF N. TURNER RD. (CO. RD. #E-33) AND CURRY RD. (CO. RD. #E-36) GO WEST ON CURRY RD. APPROX. 1.0 MILE TO JOE RD. TURN RIGHT AND GO NORTH APPROX. 0.2 MILES. AT WEST SIDE OF FIRST TRAILER HOUSE TURN RIGHT AND GO NORTH APPROX. 0.1 MILE. FOLLOW ROAD LEFT AND GO WEST APPROX. 0.1 MILE. THIS LOCATION IS APPROX. 200 FEET SOUTH.



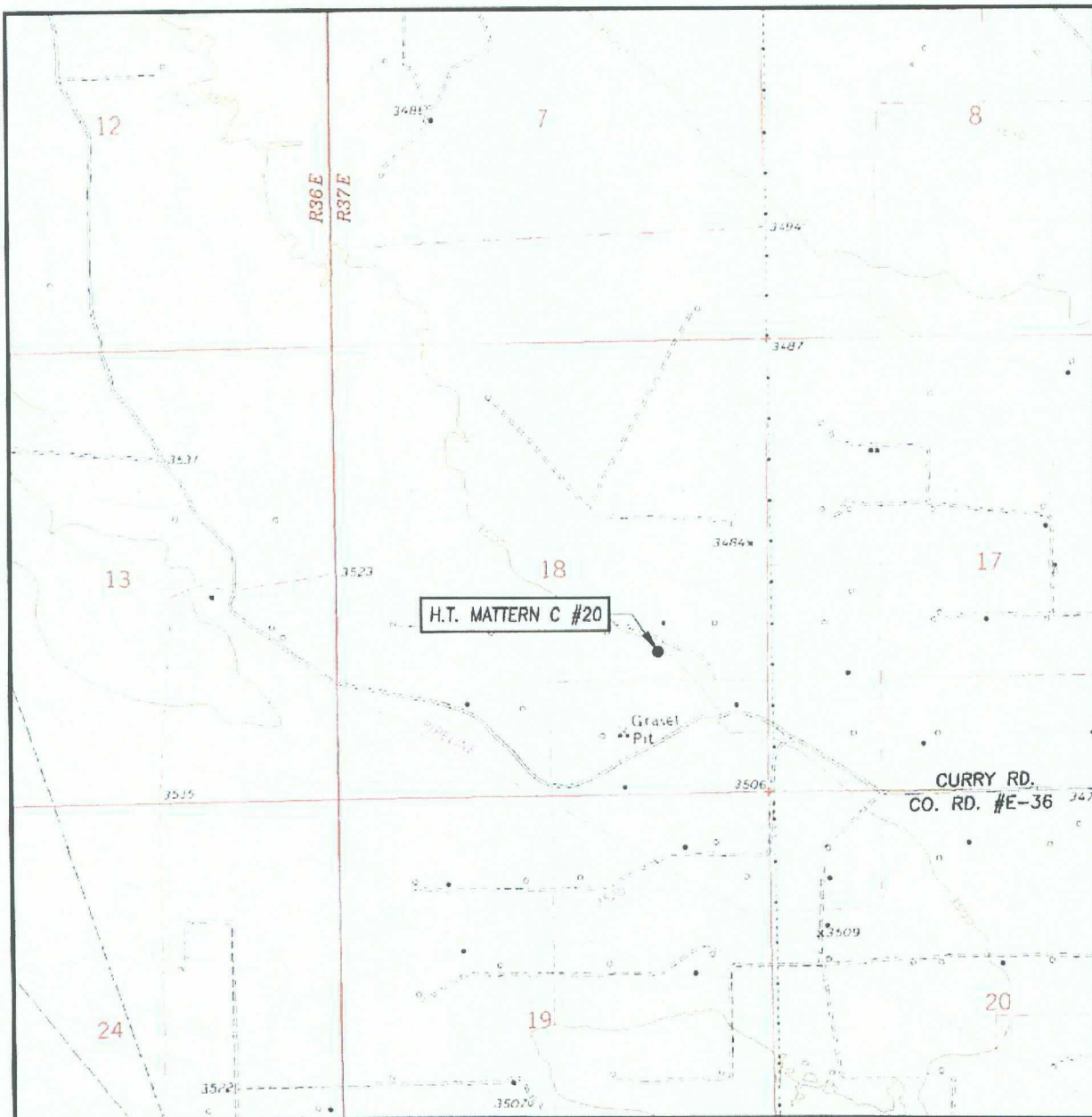
**CHEVRON USA INC.**

H.T. MATTERN C #20 WELL  
 LOCATED 1650 FEET FROM THE SOUTH LINE  
 AND 1330 FEET FROM THE EAST LINE OF SECTION 18,  
 TOWNSHIP 21 SOUTH, RANGE 37 EAST, N.M.P.M.,  
 LEA COUNTY, NEW MEXICO.

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

Survey Date: 10/10/07	Sheet 1 of 1 Sheets
W.O. Number: 07.11.1324	Dr By: DSS
Date: 10/16/07	Disk: .
07111324	Scale: 1"=100'

# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

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

SEC. 18 TWP. 21-S RGE. 37-E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

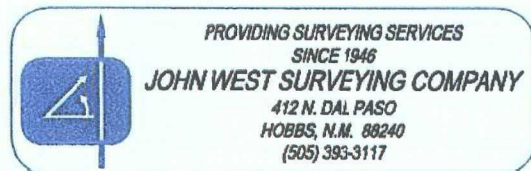
DESCRIPTION 1650' FSL & 1330' FEL

ELEVATION 3502'

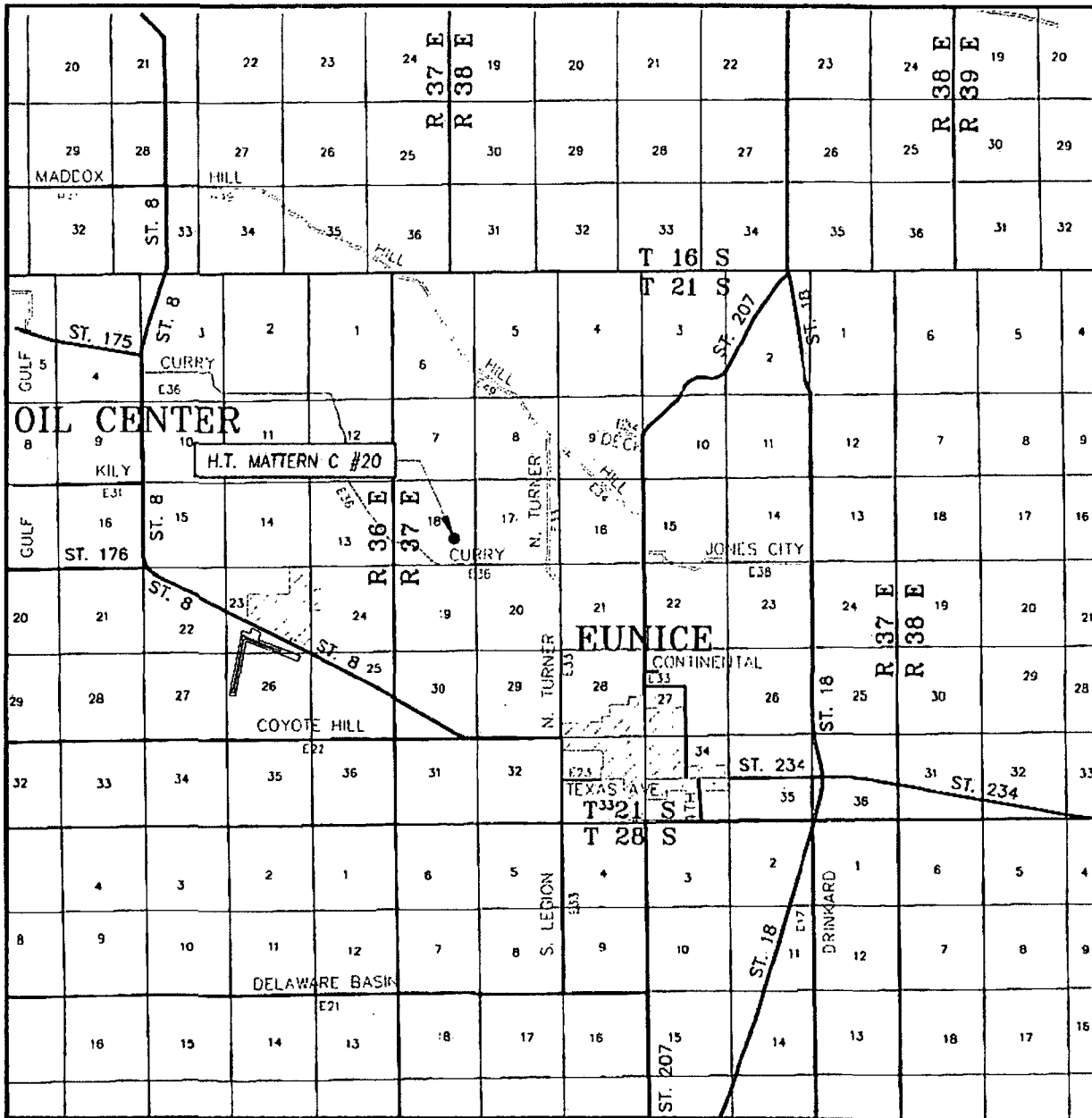
OPERATOR CHEVRON USA INC.

LEASE H.T. MATTERN C

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



# VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 18 TWP. 21-S RGE. 37-E

SURVEY N.M.P.M.

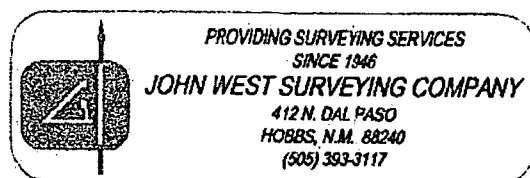
COUNTY LEA STATE NEW MEXICO

DESCRIPTION 1650' FSL & 1330' FEL

ELEVATION 3502'

OPERATOR CHEVRON USA INC.

LEASE H.T. MATTERN C



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

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102  
Revised June 10, 2003

**District II**  
1301 W. Grand Avenue, Artesia, NM 88210

**OIL CONSERVATION DIVISION**

Submit to ~~Appropriate District Office~~

**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410

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

**Exhibit 3.1**

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

☐ AMENDED REPORT

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

<sup>1</sup> API Number 30-025-	<sup>2</sup> Pool Code 50350	<sup>3</sup> Pool Name Penrose Skelly; Grayburg
<sup>4</sup> Property Code	<sup>5</sup> Property Name H.T. Mattern C	<sup>6</sup> Well Number 20
<sup>7</sup> OGRID No. 4323	<sup>8</sup> Operator Name Chevron U.S.A., Inc.	<sup>9</sup> Elevation 3502'

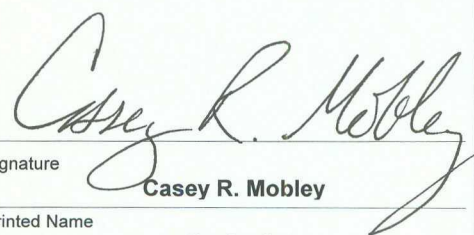

<sup>10</sup> Surface Location

UL or Lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	18	21S	37E		1650	South	1330	East	Lea

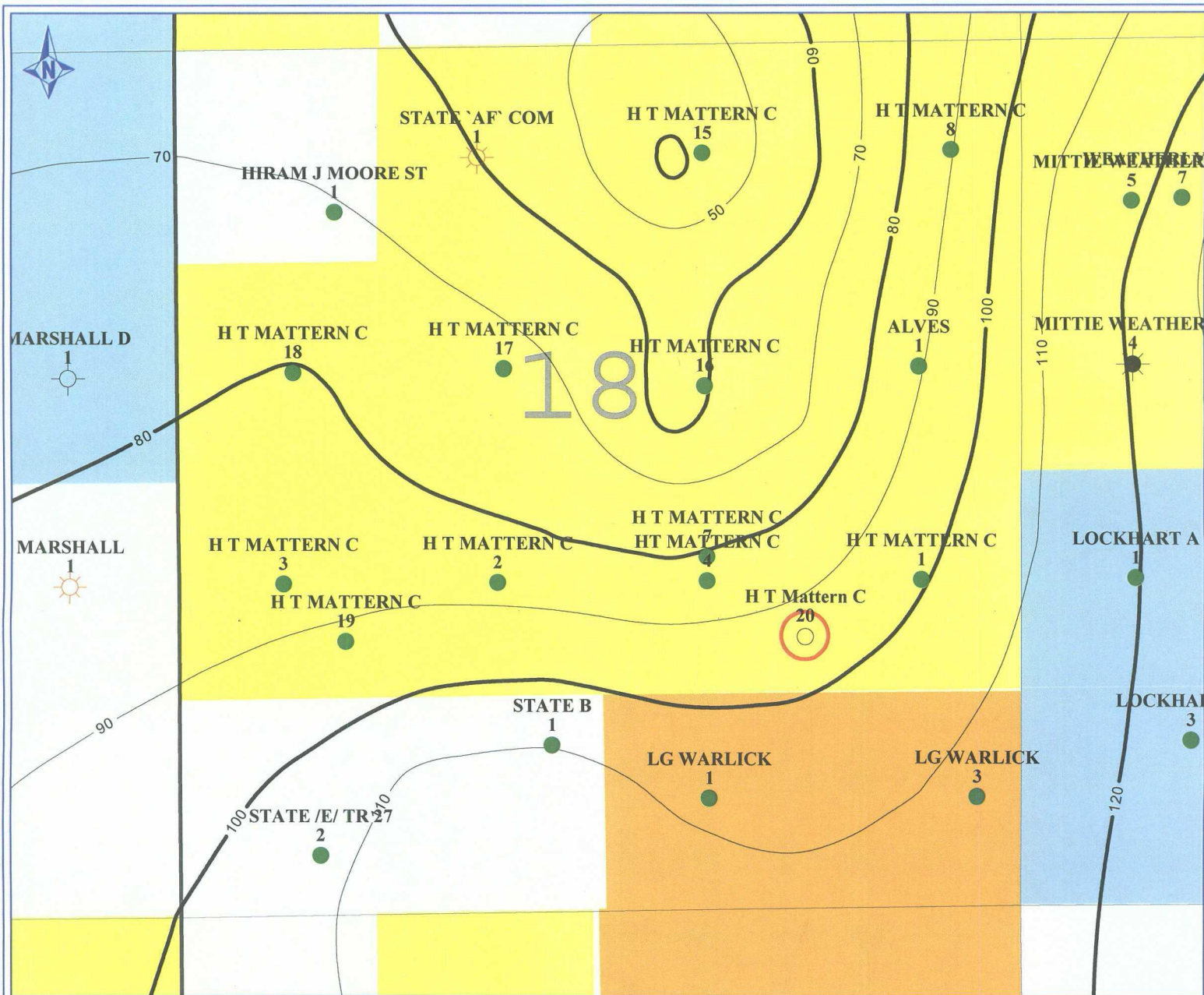
<sup>11</sup> Bottom Hole Location If Different From Surface

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

<sup>16</sup>	H.T. Mattern C Lease	<sup>17</sup> <b>OPERATOR CERTIFICATION</b> <i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</i>  Signature Casey R. Mobley Printed Name Geologist Title June 1, 2008
		<sup>18</sup> <b>SURVEYOR CERTIFICATION</b> <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> Signature and Seal of Professional Surveyor:  Certificate Number





PETRA 5/22/2008 3:44:17 PM



**Chevron U.S.A. Inc.**

## EXHIBIT 4

PENROSE-SKELLY FIELD HT MATTERN C #20

Sec 18, T21S-R37E, Lea Co., New Mexico

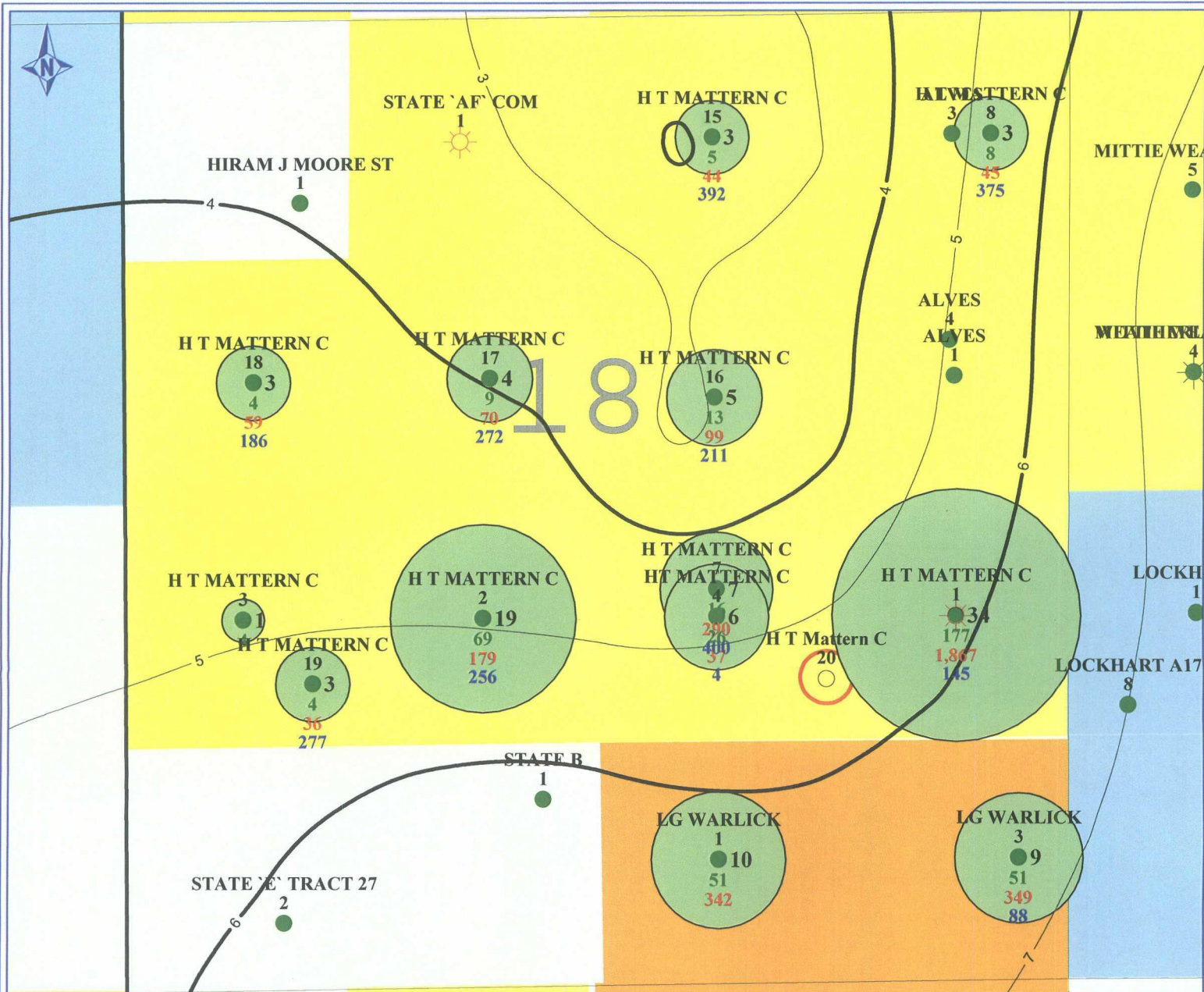
Grayburg Net Pay CI=10' [GR<40, Por>6%]

### POSTED WELL DATA

Well Name  
Well Number



May 22, 2008



PETRA 5/27/2008 10:31:01 AM



**Chevron U.S.A. Inc.**

## EXHIBIT 5

PENROSE-SKELLY FIELD HT MATTERN C #20

Sec 18, T21S-R37E, Lea Co., New Mexico

Grayburg HCPV CI=1.0 & EUR - Drainage

### POSTED WELL DATA

Well Name  
Well Number

● GRBG Drained Area

Grayburg Cum Oil Prod (MBO)  
Grayburg Cum Gas Prod (MMCF)  
Grayburg Cum Water Prod (MBO)



May 27, 2008