

DATE IN 10-29-03	SUSPENSE N/A	ENGINEER MES	LOGGED IN MS	TYPE NSL	P.M.E.S.O. APP NO. 330440288
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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



RECEIVED

OCT 29 2003

ADMINISTRATIVE APPLICATION CHECKLIST

Oil Conservation Division

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.

James Bruce
 Print or Type Name

Signature

Attorney for Applicant

Title

Date

jamesbruc@aol.com

e-mail Address

10/29/03

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) 982-2151 (FAX)

jamesbruc@aol.com

October 29, 2003

Michael E. Stogner
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Dear Mr. Stogner:

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:</u>	Hawk B-1 Well No. 39
<u>Location:</u>	1200 feet FSL & 80 feet FEL
<u>Well Units:</u>	SE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 8, Township 21 South, Range 37 East, N.M.P.M., Lea County, New Mexico

The well will be drilled to test the Grayburg formation (Penrose Skelly (Grayburg) Pool). The Penrose Skelly (Grayburg) Pool is an oil pool spaced on 40 acres.

The SE $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 8 will be **simultaneously dedicated** in the Grayburg formation to the proposed well and to the existing Hawk B-1 Well No. 18, and applicant requests approval of the simultaneous dedication.

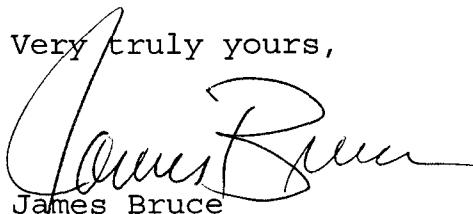
The application is based on geologic and engineering reasons. A complete discussion, with appropriate exhibits, is attached as Exhibit A. There are five existing Grayburg wells in the E $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 8 and the W $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 9, and the proposed well will be located in the approximate center of those wells. Based on drainage calculations and the low permeability in the reservoir, applicant believes that drilling the infill well will recover reserves which will not be recovered by the existing Grayburg wells.

Attached as Exhibit B is a land plat, highlighting the proposed well's location. The SE $\frac{1}{4}$ of Section 8 and S $\frac{1}{2}$ of Section 9 (and other acreage) is covered by a single federal lease (NM 90161),

which has **common royalty, overriding royalty, and working interest ownership**. Although the well is very unorthodox, due to common ownership in the SE¼ of Section 8 and S½ of Section 9 there are no adversely affected interest owners (the owners to the south, in Sections 16 and 17, are also not affected). No one has been notified of this application.

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

Very truly yours,

A handwritten signature in cursive script, appearing to read "James Bruce".

James Bruce

Attorney for Apache Corporation

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

40 acres – 1200' FSL & 80' FEL
Section 8, 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 **Hawk B-1 #39** well (**Exhibit 1**). The proposed total depth is 4175' in the San Andres formation.
2. The location is in the Penrose Skelly; Grayburg Oil Pool and encroaches toward the following wells (**Exhibit 2**).

OPER	WELL	LOC	RESERVOIR	CUM O/G/W	DAILY O/G/W
Apache	Hawk B-1 #21	08-I	Grayburg	9/45/39	14/120/101
Apache	Hawk B-1 #32	08-I	Grayburg	1/1/4	17/47/118
Apache	Hawk B-1 #20	09-L	Grayburg	5/22/19	17/46/23
Apache	Hawk B-1 #19	09-M	Grayburg	13/45/38	22/94/58
Apache	Hawk B-1 #18	08-P	Grayburg	9/71/64	14/188/144

Oil in MBO BOPD
Gas in MMCFG MCFGPD
Water in MBW BWPD

3. The proposed **Hawk B-1 #39** unorthodox Grayburg location of 1200' from south line and 80' from east line is based 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 and the supratidal rock being tight. The Grayburg environments varied rapidly so that porous and tight intervals do not necessarily correlate well-to-well. Tight dolomite and/or anhydrite intervals within the Grayburg create vertical hydraulic barriers between different zones of porosity. Average porosity of the Grayburg is less than 10%, and average permeability is less than 1 millidarcy. Grayburg wells are thus not usually capable of draining the 40 Acre proration unit.

Exhibit A

The reservoir was analyzed by mapping Hydrocarbon Pore Volume (HCPV) (**Exhibit 3**). HCPV is the product of feet of pay (h) times average porosity (PhiA) times oil saturation (So). The map is the arithmetic product of grids interpreted from those values. The values were obtained as follows:

1. Net Pay was read either from modern neutron-density logs or estimated from a map developed from gross pay (clean dolomite) times net to gross ratio.
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 recent water cut values.

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

OPER	WELL	LOC	AREA A	EUR MBO	EUR MMCFG
Apache	Hawk B-1 #21	08-I	6	18	140
Apache	Hawk B-1 #32	08-I	19	43	350
Apache	Hawk B-1 #20	09-L	38	59	340
Apache	Hawk B-1 #19	09-M	40	65	495
Apache	Hawk B-1 #18	08-P	33	54	420

Reserves for the proposed location were calculated by planimetering the undrained area of the HCPV 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	HCPV	AREA A	EUR MBO	EUR MMCFG
Hawk B-1 #39	08-P	1.79	29	37	222

DISTRICT I

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

DISTRICT II

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

DISTRICT III

1000 Rio Branson Ed., Artesia, 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

EXHIBIT I

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 HAWK B-1	Well Number 39
GRID No.	Operator Name APACHE CORPORATION	ELEVATION 3513'

Surface Location

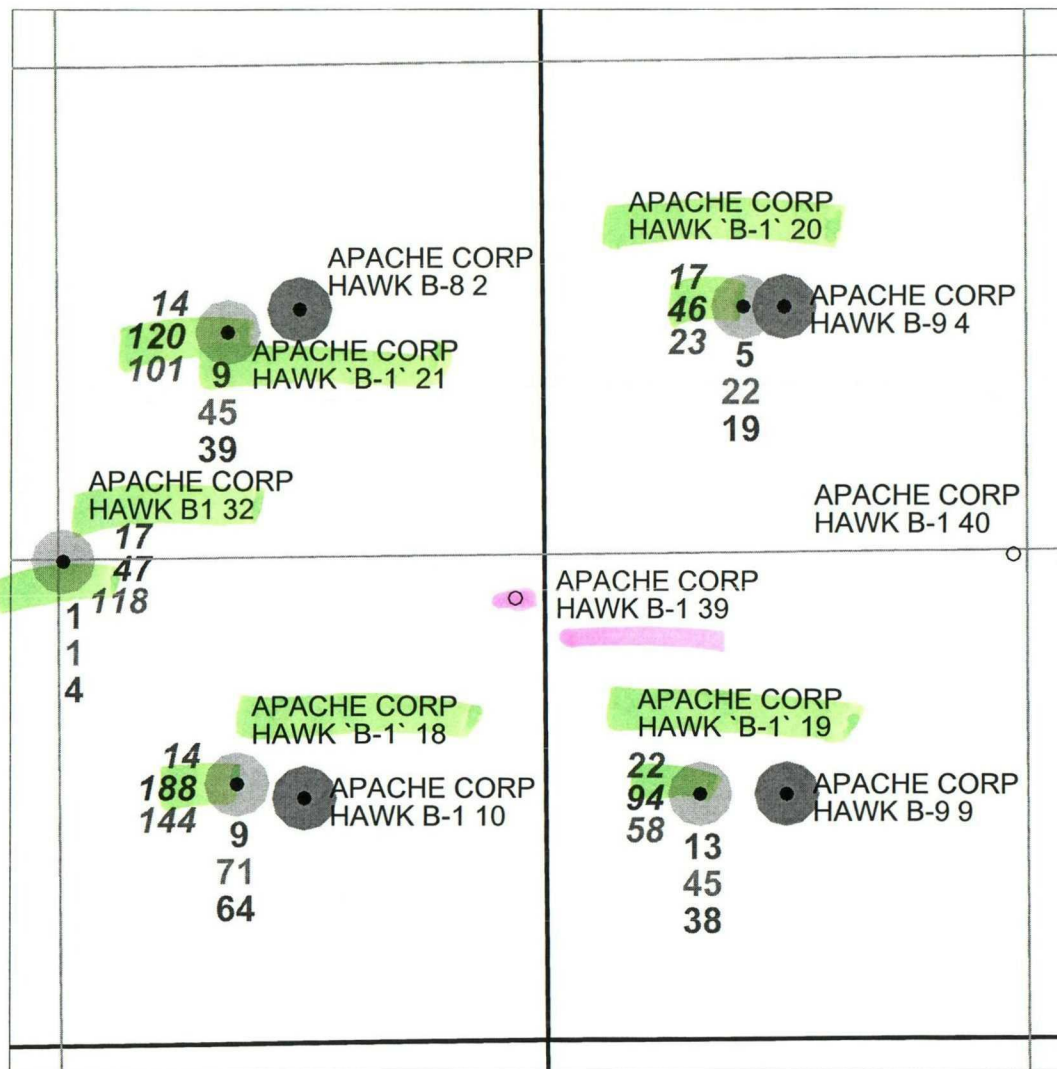
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	8	21-S	37-E		1200'	SOUTH	80'	EAST	LEA

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

	GEODETIC COORDINATES NAD 27 NME Y = 543673.4 N X = 856745.1 E LAT. 32°29'21.66"N LONG. 103°10'34.93"W	OPERATOR CERTIFICATION I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief. Signature _____ Printed Name _____ Title _____ Date _____
		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. August 06, 2003 Date Surveyed _____ A.W.B. Signature & Seal of Professional Surveyor _____ 03.11.0841 Certificate No. RONALD J. ROBINSON 3839 GARY KIDSON 12841
	3516.9' 3513.6' 3507.2' 3515.4' 500' 500' DETAIL	80' SEE DETAIL 1200'



WELL SYMBOLS

- Location Only
- Oil Well
- ☀ Gas Well
- ☀ Dry

POSTED WELL DATA

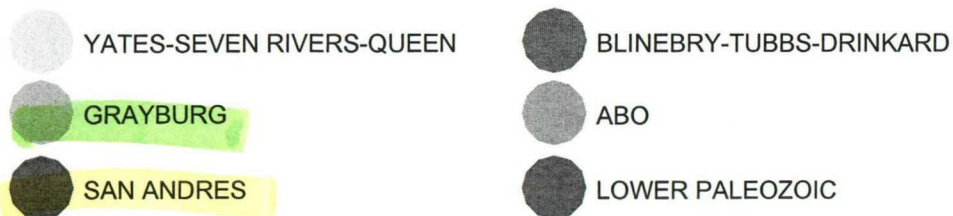
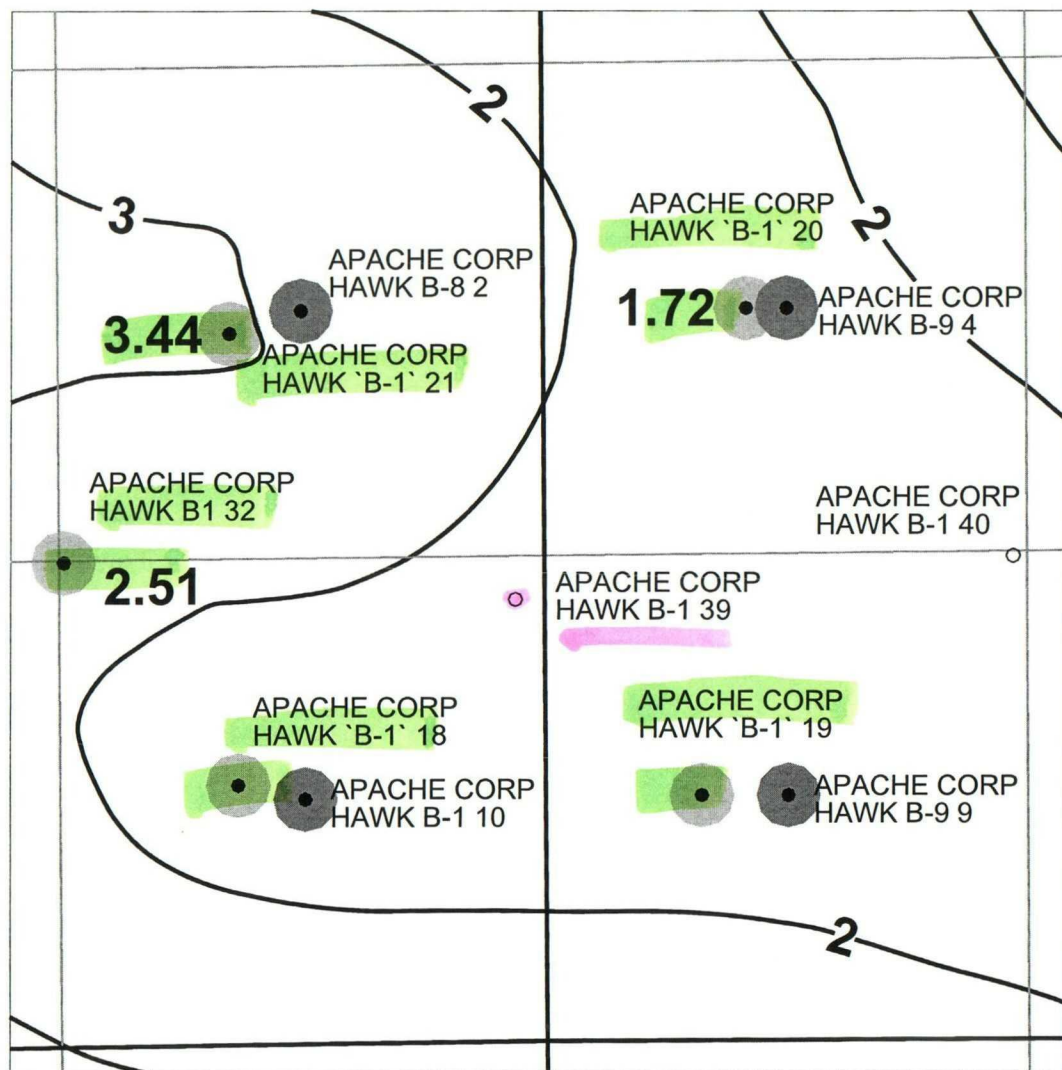
CURRENT BOPD
CURRENT MCFD
CURRENT BWPD

● OPERATOR
WELL LABEL
MBO
MMCFG
MBW

- YATES-SEVEN RIVERS-QUEEN
- GRAYBURG
- SAN ANDRES
- BLINEBRY-TUBBS-DRINKARD
- ABO
- LOWER PALEOZOIC

0 500 1,000 1,500
FEET

 <p>TWO WARREN PLACE, SUITE 1500 6120 SOUTH YALE TULSA, OKLAHOMA 74136-4224</p>	
<h2>HAWK B-1 39</h2>	
<p>SEC 8-T21S-R37E LEA COUNTY, NEW MEXICO</p>	
<h3>EXHIBIT 2</h3> <p>WELL INFORMATION</p>	
DATE: 9-17-03	DWG: PROD (CURTIS/OCD-NM2004 GRYBRG)




WELL SYMBOLS

- Location Only
- Oil Well
- ☀ Gas Well
- ☀ Dry

POSTED WELL DATA

GRAYBURG HCPV ● OPERATOR WELL LABEL

 TWO WARREN PLACE, SUITE 1500 6120 SOUTH YALE TULSA, OKLAHOMA 74136-4224	
HAWK B-1 39	
SEC 8-T21S-R37E LEA COUNTY, NEW MEXICO	
EXHIBIT 3 GRAYBURG HCPV	
DATE: 9-17-03	DWG: PROD (CURTIS/OCD-NM/2004 GRYBRG)

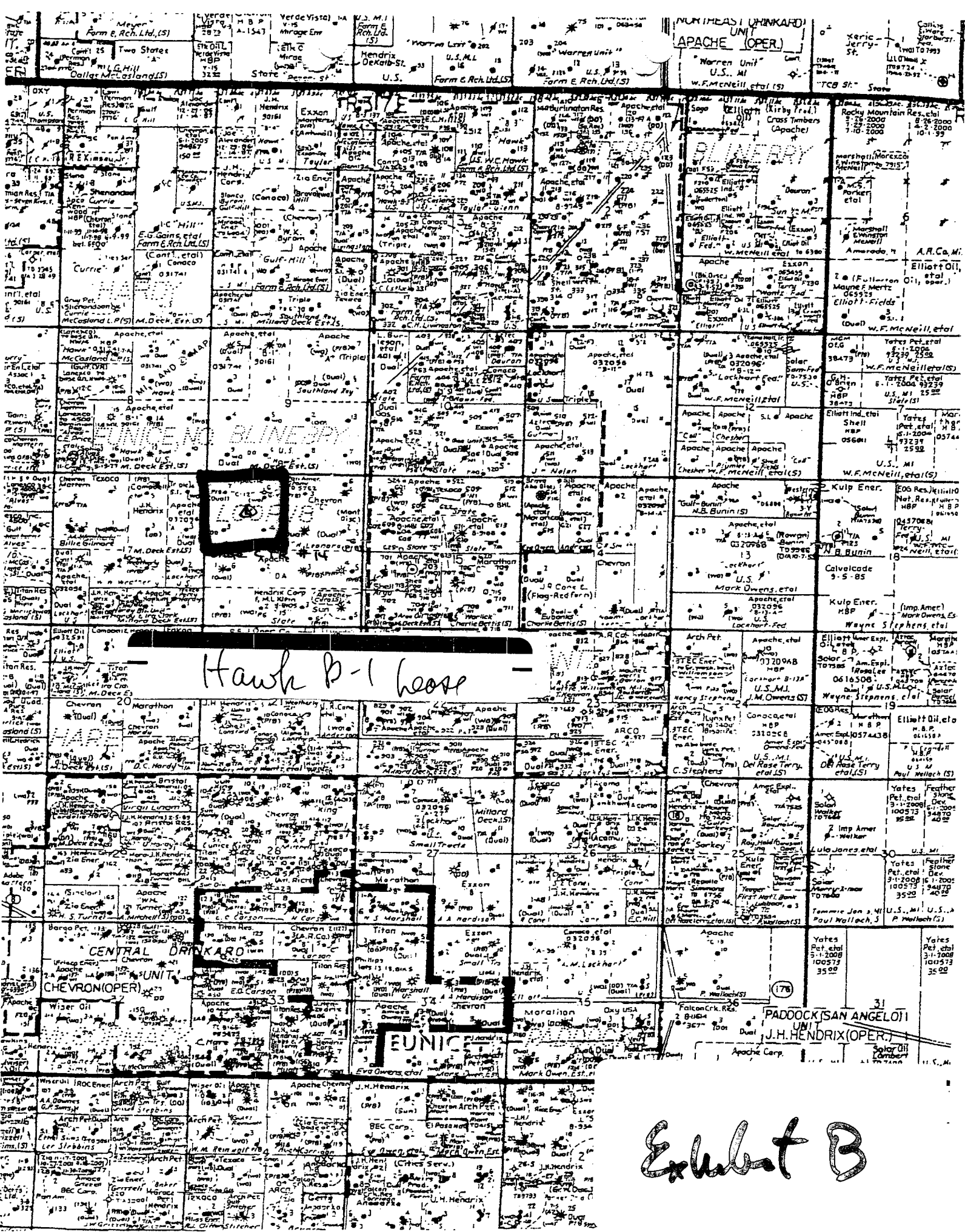


Exhibit B

CMD :
OG5SECTONGARD
INQUIRE LAND BY SECTION10/31/03 10:58:15
OGOMES -TPEN
PAGE NO: 2

Sec : 08 Twp : 21S Rng : 37E Section Type : NORMAL

L 40.00 Fee owned C C	K 40.00 Federal owned A A	J 40.00 Federal owned A A	I 40.00 Federal owned A A A
M 40.00 Fee owned A A	N 40.00 Federal owned A	O 40.00 Federal owned A	P 40.00 Federal owned A A

PF01 HELP
PF07 BKWDPF02
PF08 FWDPF03 EXIT
PF09 PRINTPF04 GoTo
PF10 SDIVPF05
PF11PF06
PF12

CMD : ONGARD 10/31/03 10:58:34
OG6IWCM INQUIRE WELL COMPLETIONS OGOMES -TPEN

API Well No : 30 25 35795 Eff Date : 02-24-2002 WC Status : A
Pool Idn : 50350 PENROSE SKELLY;GRAYBURG
OGRID Idn : 873 APACHE CORP
Prop Idn : 24427 HAWK B 1

Well No : 018
GL Elevation: 3506

	U/L	Sec	Township	Range	North/South	East/West	Prop/Act (P/A)
	---	---	-----	-----	-----	-----	-----
B.H. Locn : P	8	21S	37E	FTG	760 F S	FTG 840 F E	A

Lot Identifier:
Dedicated Acre: 40.00
Lease Type : F
Type of consolidation (Comm, Unit, Forced Pooling - C/U/F/O) :

E6317: No more recs. for this api well no.

PF01 HELP PF02 PF03 EXIT PF04 GoTo PF05 PF06
PF07 PF08 PF09 PF10 NEXT-WC PF11 HISTORY PF12 NXTREC

CMD : ONGARD 10/31/03 10:58:38
OG6ACRE C102-DEDICATE ACREAGE OGOMES -TPEN
Page No : 1

API Well No : 30 25 35795 Eff Date : 02-24-2002
Pool Idn : 50350 PENROSE SKELLY;GRAYBURG
Prop Idn : 24427 HAWK B 1 Well No : 018
Spacing Unit : 55891 OCD Order : Simultaneous Dedication:
Sect/Twp/Rng : 8 21S 37E Acreage : 40.00 Revised C102? (Y/N) :
Dedicated Land:

S Base U/L Sec Twp Rng Acreage L/W Ownership Lot Idn

P 8 21S 37E 40.00 N FD

E0005: Enter data to modify or PF keys to scroll

PF01 HELP PF02 PF03 EXIT PF04 GoTo PF05 PF06 CONFIRM
PF07 BKWD PF08 FWD PF09 PF10 LAND PF11 NXTSEC PF12 RECONF

CMD : ONGARD 10/31/03 10:58:48
 OG6IPRD INQUIRE PRODUCTION BY POOL/WELL OGOMES -TPEN
 Page No: 1

OGRID Identifier : 873 APACHE CORP
 Pool Identifier : 50350 PENROSE SKELLY;GRAYBURG
 API Well No : 30 25 35795 Report Period - From : 01 2000 To : 09 2003

API Well No	Property Name	Prod. Days MM/YY Prod	Production Volumes Gas Oil Water	Well Stat
30 25 35795	HAWK B 1	03 02 21	2131 446 4654	P
30 25 35795	HAWK B 1	04 02 30	5798 1358 6980	P
30 25 35795	HAWK B 1	05 02 31	5879 964 5291	P
30 25 35795	HAWK B 1	06 02 30	3752 1240 4657	P
30 25 35795	HAWK B 1	07 02 31	5040 775 4282	P
30 25 35795	HAWK B 1	08 02 31	6029 662 5449	P
30 25 35795	HAWK B 1	09 02 30	7763 616 5756	P

Reporting Period Total (Gas, Oil) :

M0025: Enter PF keys to scroll

PF01 HELP PF02 PF03 EXIT PF04 GoTo PF05 PF06 CONFIRM
 PF07 BKWD PF08 FWD PF09 PF10 NXTPOOL PF11 NXTOGD PF12

CMD : ONGARD 10/31/03 10:58:53
 OG6IPRD INQUIRE PRODUCTION BY POOL/WELL OGOMES -TPEN
 Page No: 2

OGRID Identifier : 873 APACHE CORP
 Pool Identifier : 50350 PENROSE SKELLY;GRAYBURG
 API Well No : 30 25 35795 Report Period - From : 01 2000 To : 09 2003

API Well No	Property Name	Prodn. Days MM/YY Prod	Production Volumes Gas Oil Water	Well Stat
30 25 35795	HAWK B 1	10 02 31	6671 637 5499	P
30 25 35795	HAWK B 1	11 02 29	5070 550 3684	P
30 25 35795	HAWK B 1	12 02 31	6082 535 4447	P
30 25 35795	HAWK B 1	01 03 30	5650 475 4356	P
30 25 35795	HAWK B 1	02 03 28	5510 392 4011	P
30 25 35795	HAWK B 1	03 03 31	5782 408 4605	P
30 25 35795	HAWK B 1	04 03 30	5528 387 4157	P

Reporting Period Total (Gas, Oil) :

E0049: User may continue scrolling.

PF01 HELP PF02 PF03 EXIT PF04 GoTo PF05 PF06 CONFIRM
 PF07 BKWD PF08 FWD PF09 PF10 NXTPOOL PF11 NXTOGD PF12

CMD : ONGARD 10/31/03 10:58:54
 OG6IPRD INQUIRE PRODUCTION BY POOL/WELL OGOMES -TPEN
 Page No: 3

OGRID Identifier : 873 APACHE CORP
 Pool Identifier : 50350 PENROSE SKELLY;GRAYBURG
 API Well No : 30 25 35795 Report Period - From : 01 2000 To : 09 2003

API Well No	Property Name	Prodn. Days MM/YY Prod	Production Volumes Gas Oil Water	Well Stat
30 25 35795	HAWK B 1	05 03 31	8195 406 4087	P
30 25 35795	HAWK B 1	06 03 30	36017 354	P
30 25 35795	HAWK B 1	07 03 31	5910 354 4336	P
30 25 35795	HAWK B 1	08 03 31	6028 326 4491	P

Reporting Period Total (Gas, Oil) : 132835 10885 80742

E0049: User may continue scrolling.

PF01 HELP PF02 PF03 EXIT PF04 GoTo PF05 PF06 CONFIRM
 PF07 BKWD PF08 FWD PF09 PF10 NXTPOOL PF11 NXTOGD PF12