

7.27.05 DATE IN	SUSPENSE	Stagner ENGINEER	8.2.05 LOGGED IN	NSL TYPE	PSM 0521437516 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



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.

James Bruce
Print or Type Name

Signature

Attorney for applicant
Title

Date

jamesbruc@aol.com
e-mail Address

Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

JUL 27 2005

RECEIVED

JAMES BRUCE
ATTORNEY AT LAW

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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

July 28, 2005

Hand Delivered

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 Name:</u>	Hawk B-1 Well No. 45
<u>Well Location:</u>	1332 feet FSL & 2629 feet FWL
<u>Well Unit:</u>	NE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 8, Township 21 South, Range 37 East, N.M.P.M., Lea County, New Mexico

The well will test the Blinebry (Blinebry Oil and Gas Pool), Tubb (Tubb Oil and Gas Pool), Drinkard (Drinkard Pool), and Abo (Wantz Abo Pool) formations, and applicant requests unorthodox location approval in all of four zones.

The application is based on geological and engineering reasons in the Blinebry and Drinkard formations. A complete discussion, with exhibits, is attached as Exhibit A. As to the Blinebry and Drinkard, the well is located in the approximate center of Blinebry and/or Drinkard wells in Unit Letters J, K, N, and the proposed location will drain additional undrained reserves. The Blinebry and Tubb zones are expected to be oil productive.

The Tubb will be tested as applicant drills to total depth, and the Abo is a secondary objective which will be inexpensive to test with the drilling of this well.

Unit K will be simultaneously dedicated, in the Drinkard formation, to the proposed well and the existing Hawk B-1 Well No. 15, and applicant requests simultaneous dedication approval.

Exhibit B is a land plat, highlighting the proposed well's location. The The E $\frac{1}{2}$ SW $\frac{1}{4}$ and SE $\frac{1}{4}$ of Section 8, and the S $\frac{1}{2}$ and E $\frac{1}{2}$ NW $\frac{1}{4}$ of Section 9, are covered by U.S. Lease NM 90161. The operating rights owners in the lease are as follows:

Apache Corporation
Chevron Texaco Inc.
BP America Production Company

Also, royalty and overriding royalty interests in the leases are common. As a result, notice of this application was not given to any offset interest owner.

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

Very truly yours,

A handwritten signature in cursive script that reads "James Bruce". The signature is written in dark ink and is positioned above the printed name.

James Bruce

Attorney for Apache Corporation

Hawk Federal B-1 Well No. 45
1332' FSL & 2629' FWL
Section 8, Township 21 South, Range 37 East, NMPM
Lea County, New Mexico

PRIMARY OBJECTIVES: Blinebry, Tubb, and Drinkard

SECONDARY OBJECTIVE: Abo

1. Apache Corporation (Apache) is the operator of the proposed **Hawk B-1 #45** well (**Exhibit 1**).
2. The proposed unorthodox location is offset by the following wells which are, or have been productive from various reservoirs which will be penetrated by the proposed well. (**Exhibit 2**)

OPER	WELL	LOC	RESERVOIR	CUM O/G/W	DAILY O/G/W	POOL
Conoco	Hawk B-1 #14	8-J	BLBY	79/1295/102	0/0/0	Blinebry Oil and Gas
Conoco	Hawk B-1 #14	8-J	DRKD	23/387/2	0/0/0	Drinkard
Apache	Hawk B-1 #22	8-J	GRBG	9/57/71	17/249/166	Penrose Skelly Grayburg
Apache	Hawk B-1 #42	8-J	Testing Abo			
Apache	Hawk B-1 #15	8-K	DKRD	24/1864/6	4/67/1	Drinkard
Apache	Hawk B-1 #29	8-K	GRBG	10/159/297	13/212/361	Penrose Skelly Grayburg
Apache	Hawk B-1 #16	8-N	GRBG	12/99/12	6/34/1	Penrose Skelly Grayburg
Apache	Hawk B-1 #16	8-N	BLBY	15/70/32	0/0/0	Blinebry Oil and Gas
Apache	Hawk B-1 #16	8-N	DRKD	51/734/177	0/0/0	Drinkard
Apache	Hawk B-1 #12	8-0	GRBG	78/819/40	3/63/0	Penrose Skelly Grayburg
Apache	Hawk B-1 #12	8-0	DRKD	76/0/0	0/0/0	Drinkard
Apache	Hawk B-1 #12	8-0	YSRQ	1/1299/0	0/0/0	Eumont-Yates, Seven Rivers, Queen (Gas)

MBO BOPD
MMCFG MCFGPD
MBW BWPD

3. The proposed **Hawk B-1 # 45** unorthodox location of 1332' from south line and 2629' from west line is predicated by geological, location, and drainage considerations:

a. Geology

The Blinebry, Tubb, and Drinkard Formations are members of the Yeso Group, Permian Leonardian in age. Fluid contacts, specifically Blinebry



GOC at -2255 and Drinkard OWC at -3225, employed by Shell in the unitization hearing for the NorthEast Drinkard Unit, just to the east, have been used here. Production from the three reservoirs is assigned to individual Blinebry Oil and Gas, Tubb Oil and Gas, and Drinkard Pools but downhole commingling is pre-approved pending submission of allocations to the Hobbs District Office.

All three formations are shallow marine carbonates, consisting primarily of dolomite. The Tubb has appreciable clastic content and the Drinkard becomes limey toward its base. Anhydrite can occur throughout the interval. Pay zones are thin, erratically distributed, and separated by thick impermeable intervals. Porosity and permeability are low. Wells are not generally capable of draining a full 40 Acre Spacing Unit. In fact, Apache's calculations indicate drainage area usually approximates 20 Acres.

Structure is significant in that it controls the fluid distribution and amount of pay above and below the Blinebry gas-oil contact and above the Drinkard oil-water contact.

Apache approached its evaluation by mapping log derived SoPhiH for each of four major reservoirs: Blinebry Gas Cap, Blinebry Oil Leg, Tubb, and Drinkard. This analysis required modern neutron-density and resistivity logs for any well to be used. Many wells thus had to be excluded from analysis because of the vintage of downhole logs or lack of a full logging suite. Sufficient new well control exists near the proposed location to feel comfortable with this interpretation.

1. Blinebry Gas Cap (Exhibit 3)

Thickness of the Blinebry Gas Cap is partially related to the subsea top of the Blinebry. The higher the top, the thicker the gas cap can be. Using a 5% threshold, porosity averages 9.8% and water saturation averages 29.5% in 138 nearby wells selected for analysis. SoPhiH at this location is expected to be 1.0'.

2. Blinebry Oil Leg (Exhibit 4)

Thickness of the Blinebry Oil Leg is partially related to the subsea top of the Blinebry, the higher the top, the thinner the oil leg might be. Using a 5% threshold, porosity averages 8.5% and water saturation averages 31.6% in 171 nearby wells selected for analysis. SoPhiH at this location is expected to be 2.1'.

3. Tubb (Exhibit 5)

The Tubb is generally considered to be a gas reservoir, although no gas-oil or gas-water contact has been suggested and oil completions are common. Using a 5% porosity threshold and a 50 APIU Gamma Ray threshold because of the greater amount of clastic material,

porosity averages 8.0% and water saturation averages 31.1% in 208 nearby wells selected for analysis. SoPhiH at this location is expected to be 5.2'. No well in the four affected spacing units has ever produced the Tubb.

4. Drinkard (Exhibit 6)

The thickness of the Drinkard pay is also related to its subsea position, the higher the top, the thicker the interval can be. Using a 5% threshold, porosity averages 9.1% and water saturation averages 25.6% in 191 nearby wells selected for analysis. SoPhiH at this location is expected to be 7.0'.

5. Abo

The Abo is immediately sub adjacent to the Drinkard. This location is included in Wantz; Abo Pool. It is a secondary objective that will cost less than \$50,000 to drill and complete in this wellbore but it cannot be drilled as a primary target. No well in the four affected spacing units has ever produced the Abo and only the Hawk B-1 #15 even penetrated it.

6. Uphole Reservoirs

If potentially commercial reservoirs are encountered in the Yates, Seven Rivers, Queen, Grayburg, and/or San Andres, separate wellbores will be proposed to exploit those reservoirs.

b. Location

Apache's intent was to place the well in one of the spacing units with no currently productive Blinbry, Tubb, or Drinkard well, but surface conditions prevented that.

c. Drainage

The proposed **Hawk B-1 #45** is a "true" 20 Acre infill location between existing Blinbry, Tubb, and Drinkard producers. It is approximately equidistant from those wells and should encounter an undrained reservoir volume.

Reservoir engineering used the SoPhiH maps to estimate drainage of each offsetting well in each reservoir. Recoverable reserves for this location are calculated as the volume under a 20 A radius (less if the direct offsets were not capable of draining 20 A) with reduced reservoir pressure where drainage has occurred. Drainage offsetting this location is as follows:

SEC	LEASE NAME	WELL	PROD ZONE NAME	EUR			DRAINED ACRES
				OIL	WATER	GAS	
8	Hawk B-1	14	BLINEBRY GAS CAP	8,570	51,115	857	90
8	Hawk B-1	15	BLINEBRY GAS CAP				
8	Hawk B-1	16	BLINEBRY GAS CAP				
8	Hawk B-1	12	BLINEBRY GAS CAP				
8	Hawk B-1	14	BLINEBRY OIL LEG	70,426	51,114	438	38
8	Hawk B-1	15	BLINEBRY OIL LEG				
8	Hawk B-1	16	BLINEBRY OIL LEG	14,514	31,588	70	9
8	Hawk B-1	12	BLINEBRY OIL LEG				
8	Hawk B-1	14	TUBB				
8	Hawk B-1	15	TUBB				
8	Hawk B-1	16	TUBB				
8	Hawk B-1	12	TUBB				
8	Hawk B-1	14	DRINKARD	22,622	1,633	387	5
8	Hawk B-1	15	DRINKARD	23,691	5,673	1,864	3
8	Hawk B-1	16	DRINKARD	50,774	176,966	734	10
8	Hawk B-1	12	DRINKARD	75,730	0	0	17

Volumetrics for the proposed location are as follows:

		PROD ZONE NAME	RESERVOIR	DRAINAGE	EUR	
			PRESSURE	ACRES	OIL (BO)	GAS (BCFG)
HAWK B-1	45	BLINEBRY GAS CAP	500	0	0	0
		BLINEBRY OIL LEG	1600	20	21,042	210
		TUBB	2500	20	7,270	727
		DRINKARD	2500	9	46,867	305
		TOTAL			75,179	1,242

4. Notice

Apache is the operator of the Blinebry, Tubb, and Drinkard wells toward which the proposed well will encroach and would also operate any Abo wells. All four reservoirs are contained within one oil and gas lease (Hawk Federal which includes, among other acreage, the E $\frac{1}{2}$ SW $\frac{1}{4}$ and SE $\frac{1}{4}$ §8) with common working, royalty and overriding royalty interest owners. Therefore, there are no adversely affected parties and no one was notified of the application.

- Approval of this application will afford the interest owners in this spacing unit an opportunity to recover oil and gas which would not otherwise be recovered and to do so without violating correlative rights.

EXHIBIT 1

DISTRICT I

1825 N. FRENCH DR., BOGGS, NM 88240

DISTRICT II

1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV

1820 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 JUNE 10, 2003
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 45
OGRID No.	Operator Name APACHE CORPORATION	Elevation 3512'

Surface Location

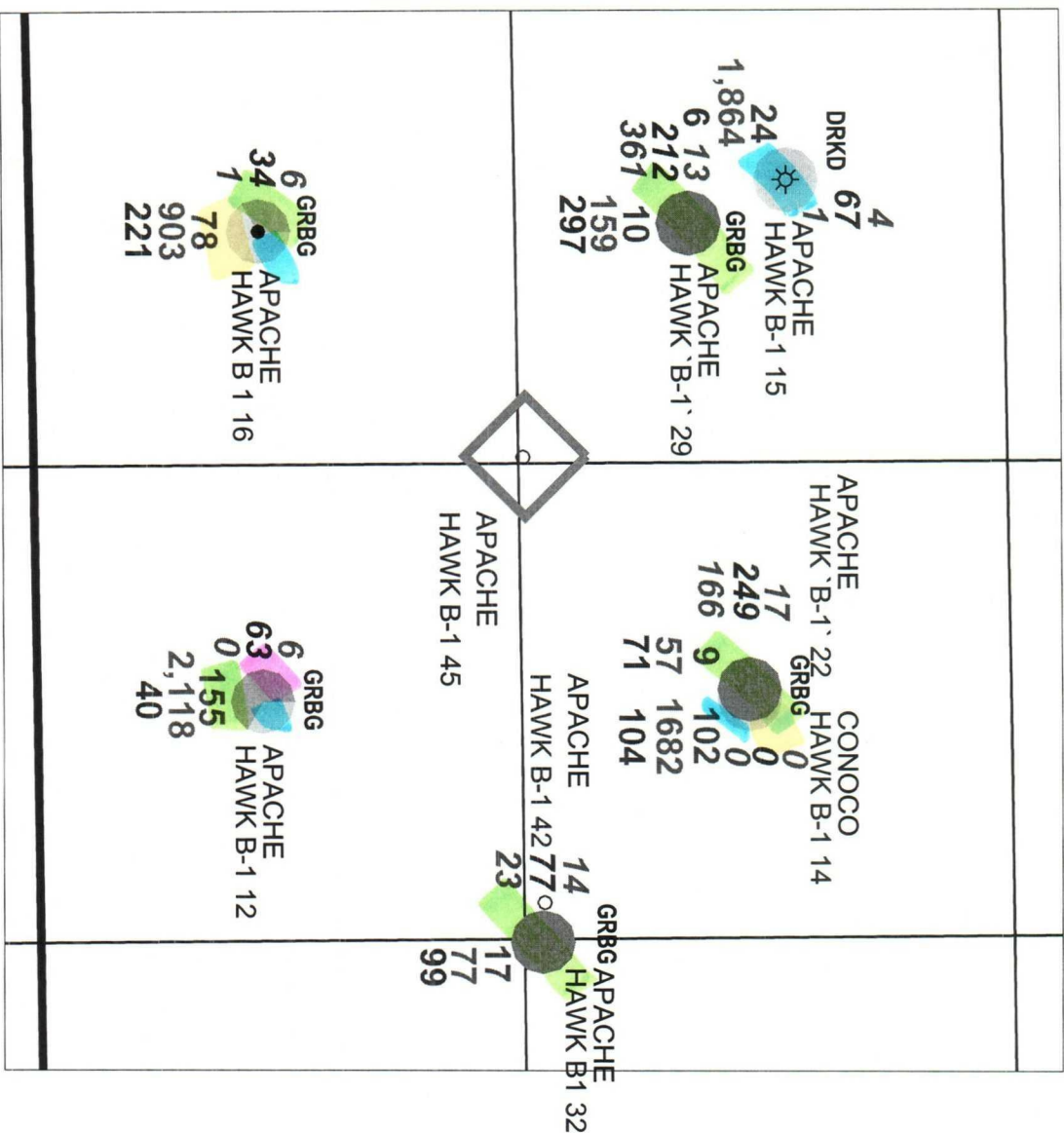
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	8	21-S	37-E		1332	SOUTH	2629	WEST	LEA

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>GEODETIC COORDINATES NAD 27 NME</p> <p>Y=543783.2 N X=854175.0 E</p> <p>LAT.=32°29'23.02" N LONG.=103°11'04.92" W</p>	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify that 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>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 13, 2005</p> <p>Date Surveyed _____ JR</p> <p>Signature & Seal of Professional Surveyor </p> <p>Certificate No. GARY EDSON 12841</p>



- YATES-SEVEN RIVERS-QUEEN
- GRAYBURG
- SAN ANDRES
- PADDOCK
- BLINEBRY
- TUBB
- DRINKARD
- ABO
- FUSSELMAN



WELL SYMBOLS

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

POSTED WELL DATA

PRODUCING FORMATION

CURRENT BOPD

CURRENT MCFD

CURRENT BWPD

MBW

MMCFG

MBW

OPERATOR

WELL LABEL

Apache CORPORATION

CENTRAL REGION

TWO WARREN PLACE, SUITE 1500

6120 SOUTH YALE

TULSA, OKLAHOMA 74136-4224

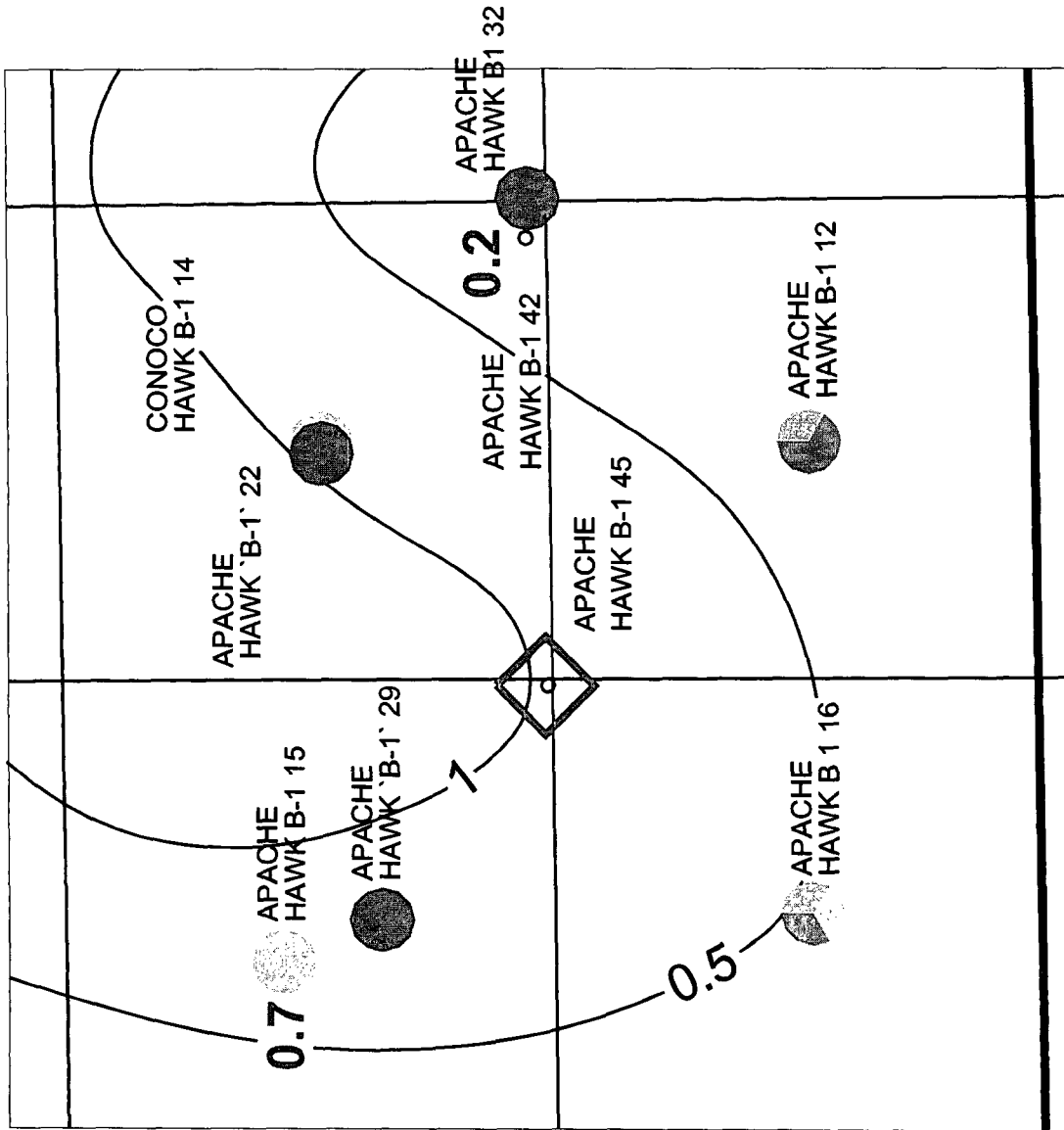
HAWK B-1 #45

SEC 8-T21S-R37E

LEA COUNTY, NEW MEXICO

EXHIBIT 2

WELL INFORMATION



- YATES-SEVEN RIVERS-QUEEN
- GRAYBURG
- SAN ANDRES
- PADDOCK
- BLINEBRY
- TUBB
- DRINKARD
- ABO
- FUSSELMAN



GAMMA RAY LTE 40 APIU
XPHI GTE 5%
SW LTE 50%

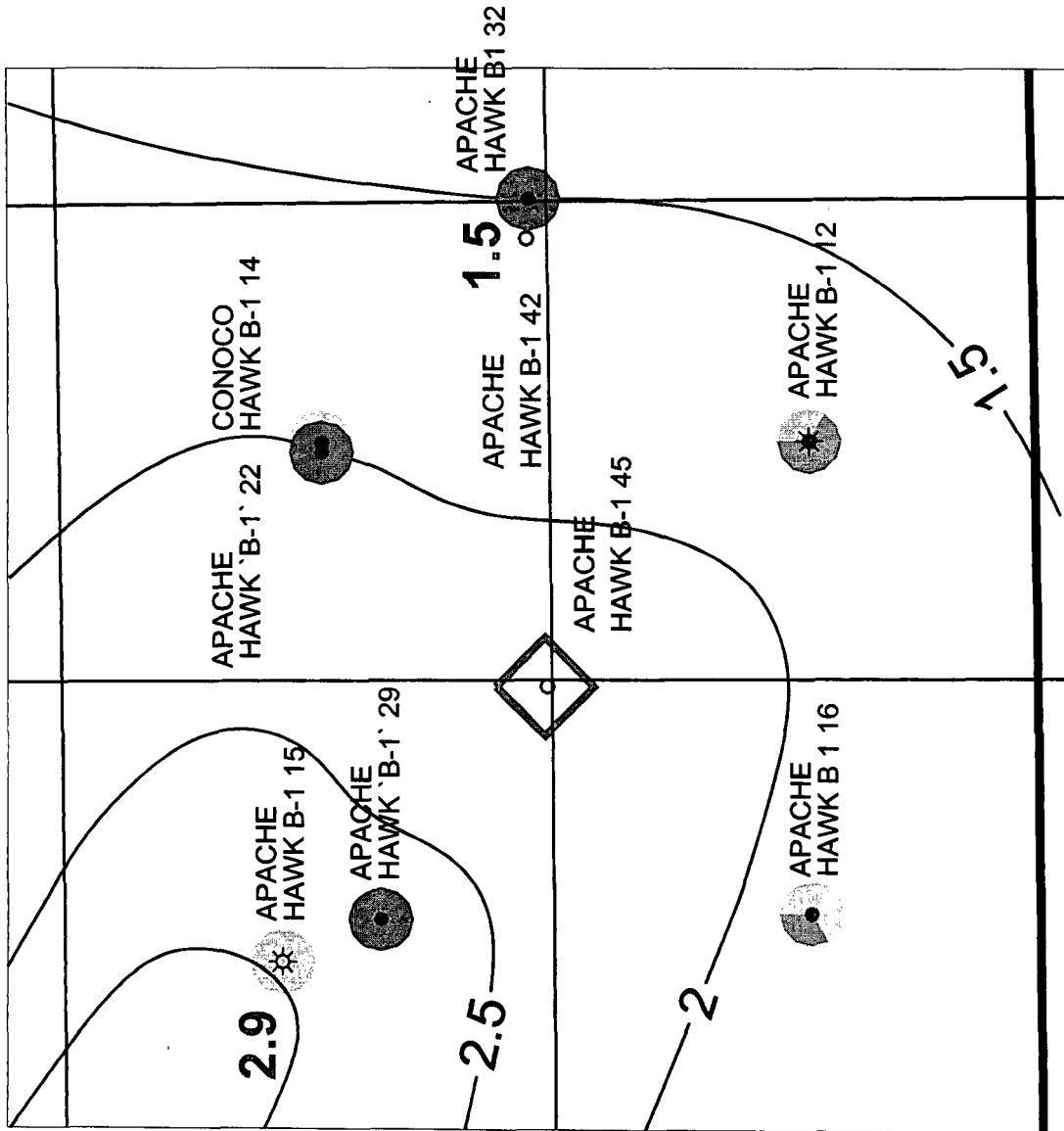
WELL SYMBOLS

- Location Only
- Oil Well
- ☼ Gas Well
- ⊖ Dry

POSTED WELL DATA

BLBY GAS CAP
SOPHIH ● OPERATOR
WELL LABEL

Apache CORPORATION CENTRAL REGION	TWO WARREN PLACE, SUITE 1500 6120 SOUTH YALE TULSA, OKLAHOMA 74136-4224
HAWK B-1 #45	
SEC 8-T21S-R37E LEA COUNTY, NEW MEXICO	
EXHIBIT 3	
BLBY GAS CAP SOPHIH	
DATE: 6/30/05	DWG: CURTIS\OCD-NM\2005\GULF HILL 8\EX 3



- YATES-SEVEN RIVERS-QUEEN
- GRAYBURG
- SAN ANDRES
- PADDOCK
- BLINEBRY
- TUBB
- DRINKARD
- ABO
- FUSSELMAN



GAMMA RAY LTE 40 APIU
 XPHI GTE 5%
 SW LTE 50%

WELL SYMBOLS

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

POSTED WELL DATA

BLBY OIL LEG
 SOPHIH ● OPERATOR
 WELL LABEL

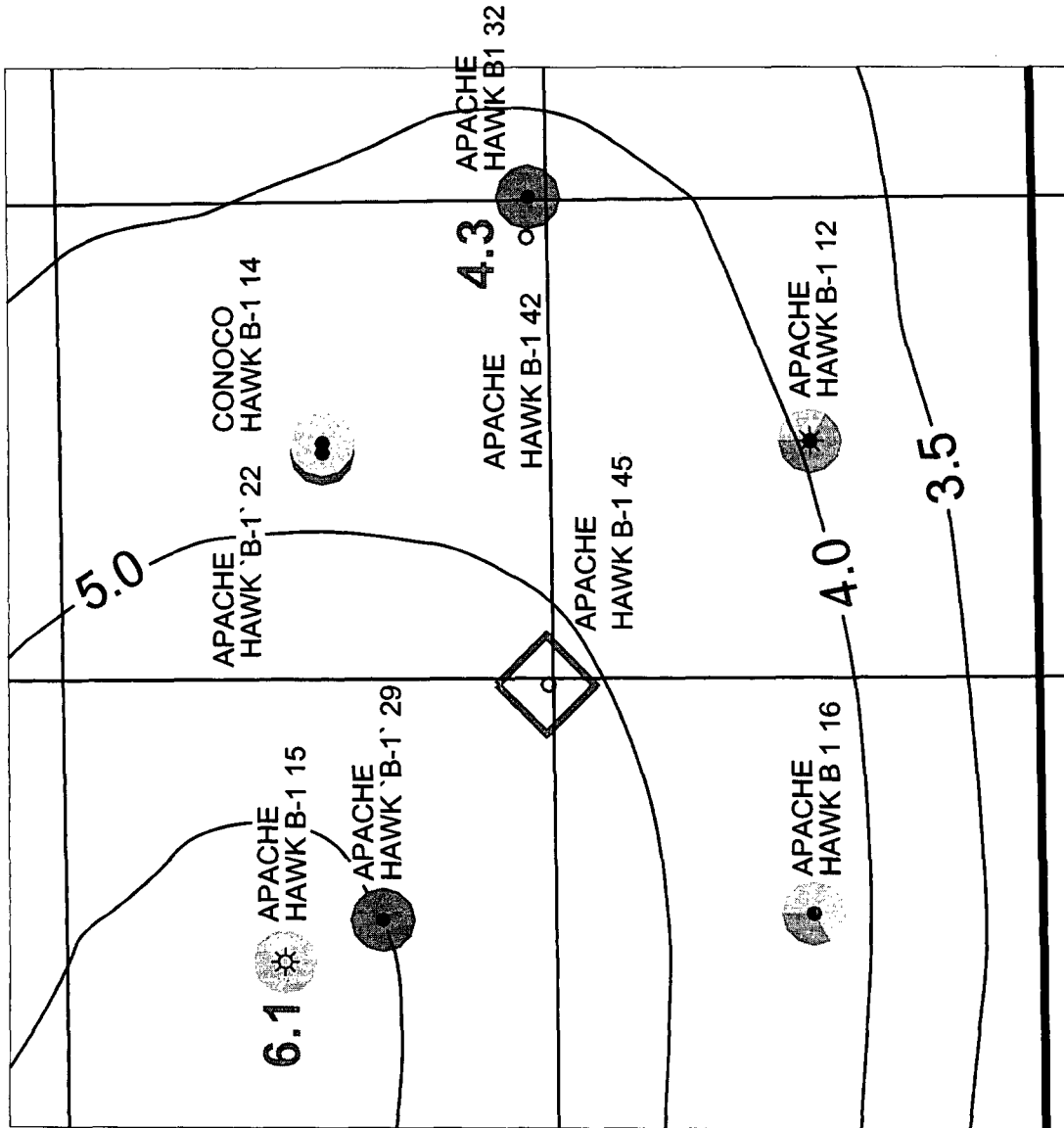


TWO WARREN PLACE, SUITE 1500
 6120 SOUTH YALE
 TULSA, OKLAHOMA 74136-4224

HAWK B-1 #45

SEC 8-T21 S-R37E
 LEA COUNTY, NEW MEXICO

EXHIBIT 4
 BLBY OIL LEG SOPHIH



- YATES-SEVEN RIVERS-QUEEN
- GRAYBURG
- SAN ANDRES
- PADDOCK
- BLINEBRY
- TUBB
- DRINKARD
- ABO
- FUSSELMAN



GAMMA RAY LTE 50 APIU
XPHI GTE 5%
SW LTE 50%

WELL SYMBOLS

- Location Only
- Oil Well
- ☼ Gas Well
- ⊙ Dry

POSTED WELL DATA

TUBB
SOPHIH ● OPERATOR
WELL LABEL



TWO WARREN PLACE, SUITE 1500
6120 SOUTH YALE
TULSA, OKLAHOMA 74136-4224

CORPORATION
CENTRAL REGION

HAWK B-1 #45

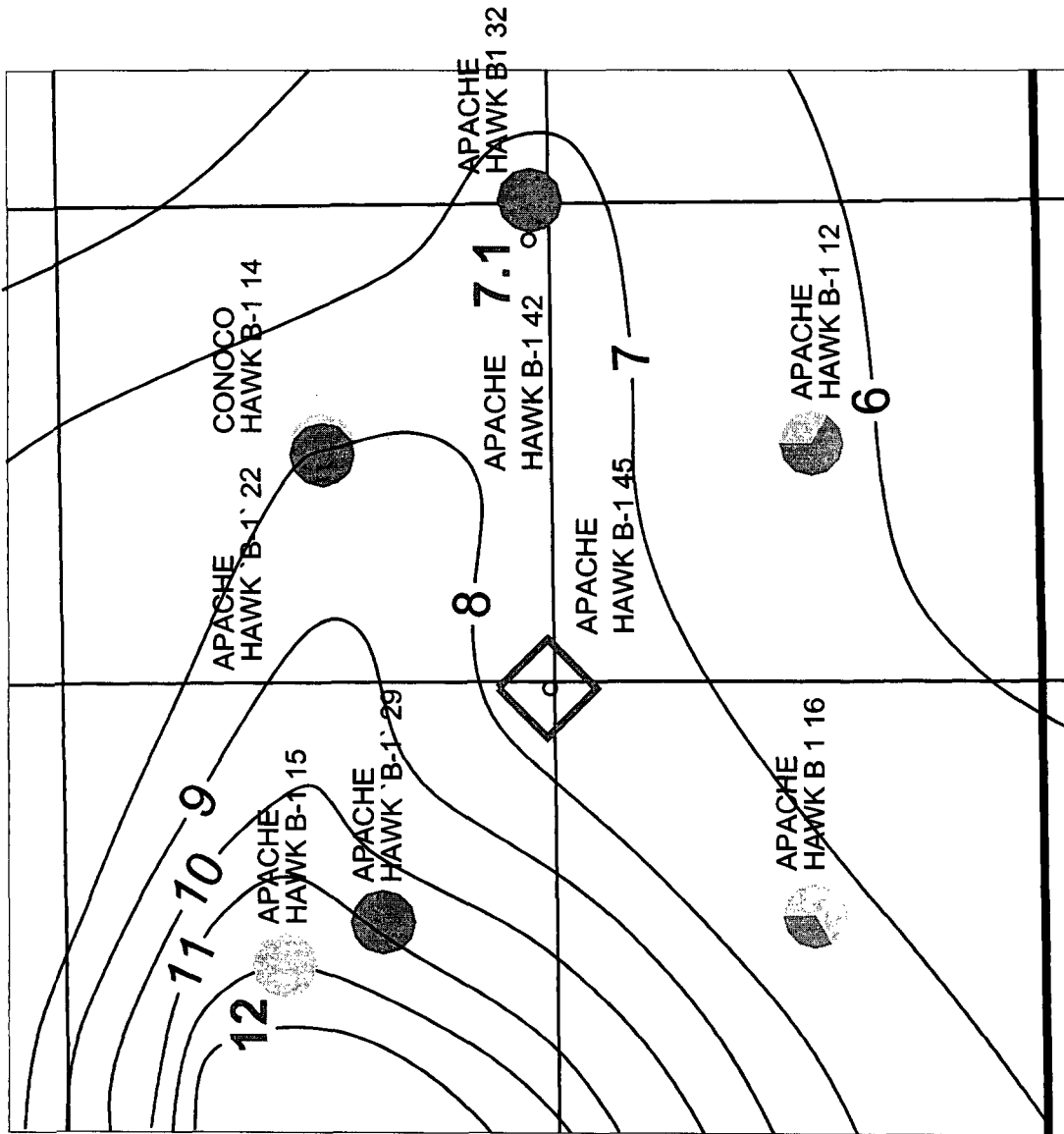
SEC 8-T21 S-R37E
LEA COUNTY, NEW MEXICO

EXHIBIT 5

TUBB SOPHIH

DATE: 6/30/05

DWG: CURTIS/OCD-NM/2005/GULF HILL 8/EX 5



- YATES-SEVEN RIVERS-QUEEN
- GRAYBURG
- SAN ANDRES
- PADDOCK
- BLINEBRY
- TUBB
- DRINKARD
- ABO
- FUSSELMAN




GAMMA RAY LTE 40 APIU
XPHI GTE 5%
SW LTE 50%

WELL SYMBOLS

- Location Only
- Oil Well
- ☼ Gas Well
- ☼ Dry

POSTED WELL DATA

DRKD
SOPHIH ● OPERATOR
WELL LABEL



APACHE
CORPORATION
CENTRAL REGION

TWO WARREN PLACE, SUITE 1500
6120 SOUTH YALE
TULSA, OKLAHOMA 74136-4224

HAWK B-1 #45

SEC 8-T21S-R37E
LEA COUNTY, NEW MEXICO

EXHIBIT 6

DRKD SOPHIH

DATE: 6/30/05

DWG: CURTIS/OCD-NM/2005/GULF HILL 8EX 6

May-03-2004 02:41pm

From-APACHE CORP

9184914854

T-641 P.002/002 F-640

