

DATE IN 10-29-03	SUSPENSE NA	ENGINEER MES	LOGGED IN MS	TYPE NSL	B.MESD APP NO. 330733911
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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

Oil Conservation Division

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

jamesbruc@aol.com
 e-mail Address

Date

10/29/03

JAMES BRUCE
ATTORNEY AT LAW

POST OFFICE BOX 1056
SANTA FE, NEW MEXICO 87504

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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>	Percy Hardy Well No. 9
<u>Location:</u>	330 feet FSL & 1520 feet FEL
<u>Well Unit:</u>	SW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 17, 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), which is spaced on statewide rules.

The SW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 17 will be **simultaneously dedicated** to the proposed well and to the existing Percy Hardy Well No. 4, 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. The existing Percy Hardy Well Nos. 4 and 5, which are producing from the Grayburg formation, will drain less than 40 acres each. Due to the location of those wells in the northern part of their well units, applicant believes that drilling the infill well will recover reserves which will not be recovered by the existing wells.

Attached as Exhibit B is a land plat, highlighting the proposed well's location. The S $\frac{1}{2}$ SE $\frac{1}{4}$ of Section 17 is covered by a single fee lease, which has common royalty, overriding royalty, and working interest ownership. In addition, the well is not encroaching on the wells in Section 20. Therefore, there are no offset interest owners or adversely affected parties to notify.

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". The signature is written in dark ink and is positioned above the printed name.

James Bruce

Attorney for Apache Corporation

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

40 acres – 330' FSL & 1520' FEL
Section 17, 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 **Percy Hardy #9** well (**Exhibit 1**). The proposed total depth is 4200' in the Grayburg formation.
2. Being that the offset from the south line in standard the proposed well only encroaches toward one Penrose Skelly; Grayburg Oil well (**Exhibit 2**).

OPER	WELL	LOC	RESERVOIR	CUM O/G/W	DAILY O/G/W
Apache	Percy Hardy #5	17-P	Grayburg	107/815/117	3/30/10
				Oil in MBO	BOPD
				Gas in MMCFG	MCFGPD
				Water in MBW	BWPD

3. The proposed non-standard Grayburg location is requested based on undrained reserve 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 nonporous shale intervals within the Grayburg additionally 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 capable of draining the 40 Acre proration unit.

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:

Exhibit 1

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	EUR MBO	EUR MMCFG
Apache	Percy Hardy #4	17-O	28	97	910
Apache	Percy Hardy #5	17-P	24	109	817
Cross Timbers	York #2	20-A	13	21	118
Campbell & Hedrick	Lee, W.E. #7	20-B	8	7	130

Reserves for the proposed location are calculated by planimentering 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
Percy Hardy #9	17-O	4.5	26	102	820

EXHIBIT 1

DISTRICT I

P.O. Box 1888, Hobbs, NM 88241-1888

DISTRICT II

P.O. Drawer 88, Artesia, NM 88211-0719

DISTRICT III

1000 Rio Brancos Rd., Artec, 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 18, 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 PERCY HARDY	Well Number 9
OGRID No.	Operator Name APACHE CORPORATION	ELEVATION 3475'

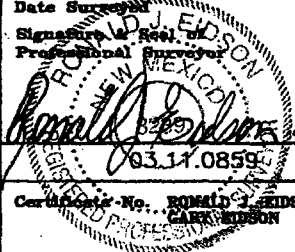
Surface Location

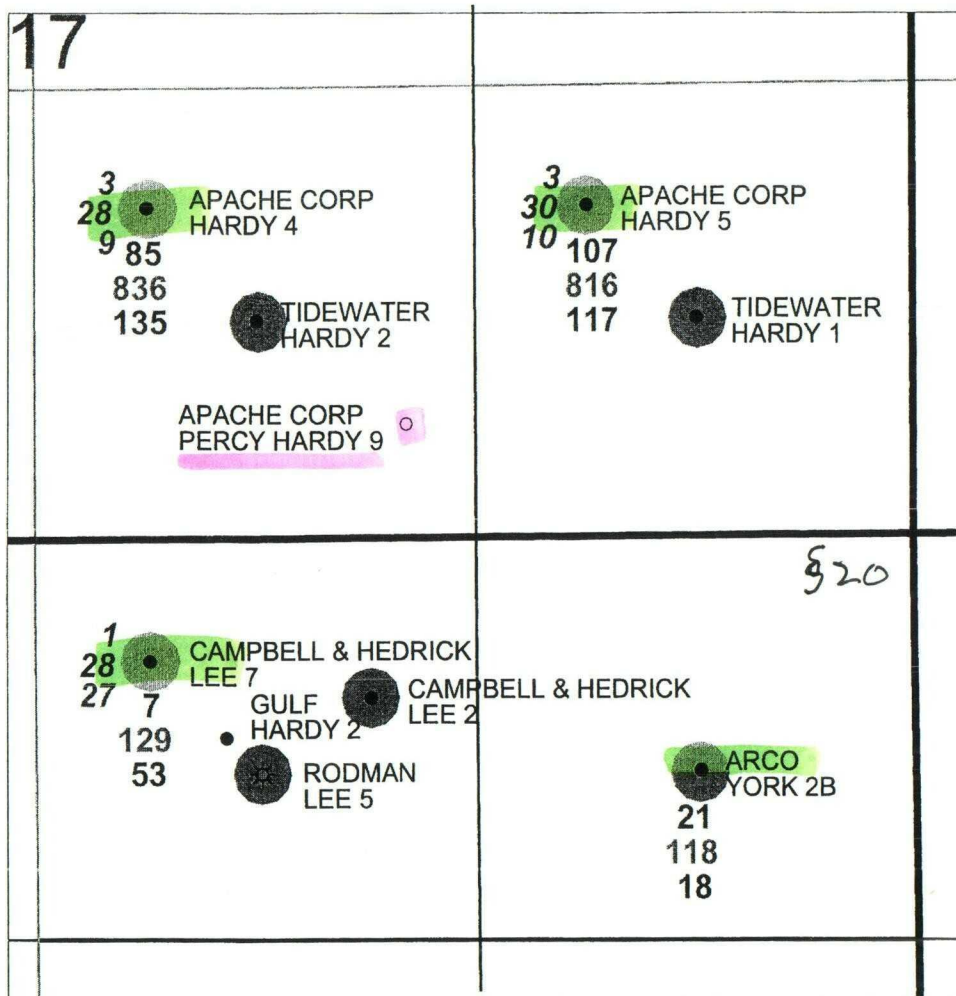
UL or lot No.	Section	Township	Range	Lot Ida	Feet from the	North/South line	Feet from the	East/West line	County
0	17	21-S	37-E		330'	SOUTH	1520'	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Ida	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 = 537509.4 N X = 855367.2 E LAT. 32°28'20.82"N LONG. 103°10'51.79"W								
1520' 330'								OPERATOR CERTIFICATION I hereby certify that 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  Certification No. RONALD J. EDSON 3239 CARR EDSON 12641



WELL SYMBOLS

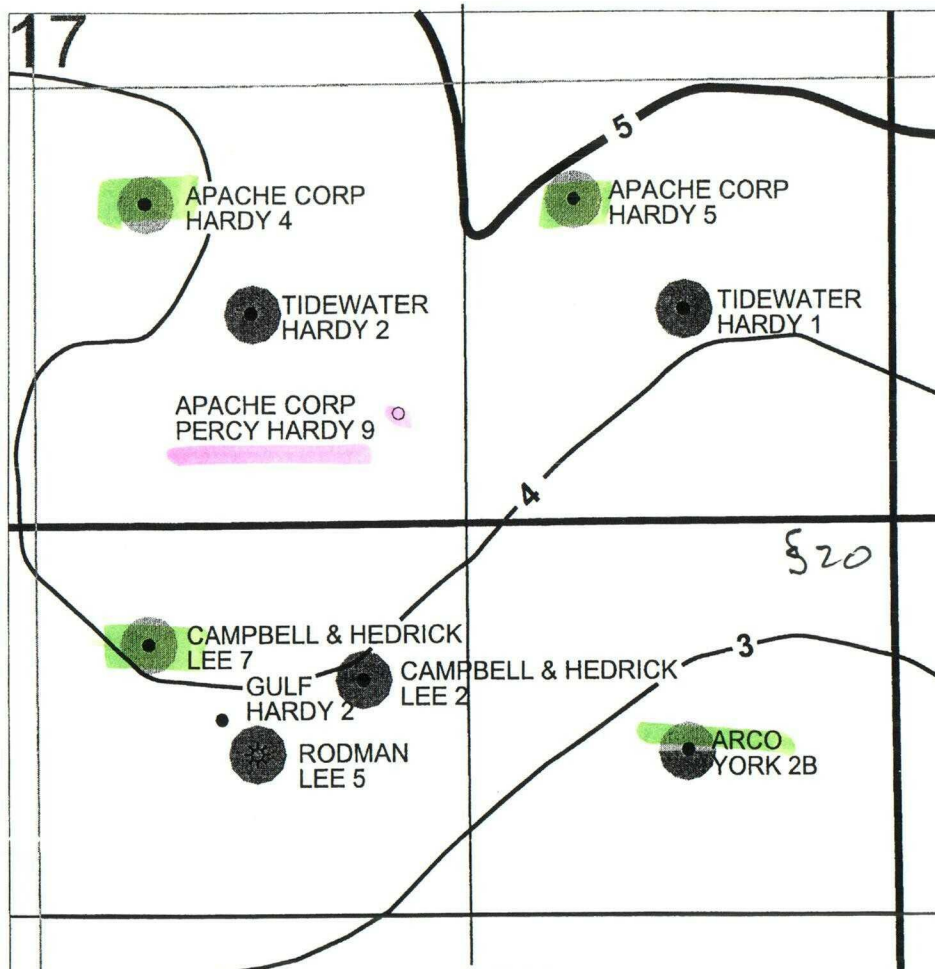
- Location Only
- Oil Well
- ☀ Gas Well
- ☉ Dry

POSTED WELL DATA

CURRENT BOPD
CURRENT MCFD
CURRENT BWPD

● OPERATOR
 WELL LABEL
MBO
MMCFG
MBW

 CORPORATION CENTRAL REGION	TWO WARREN PLACE, SUITE 1500 6120 SOUTH YALE TULSA, OKLAHOMA 74136-4224
	PERCY HARDY # 9 SEC 17-T21S-R37E LEA COUNTY, NEW MEXICO
EXHIBIT 2 WELL INFORMATION	
DATE: 9-17-03	DWG: PROD (CURTIS\OCD-NM\2004 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
	PERCY HARDY # 9 SEC 17-T21S-R37E LEA COUNTY, NEW MEXICO
EXHIBIT 3 GRAYBURG HCPV	
DATE: 9-17-03	DWG: PROD (CURTIS/OCD-NM/2004 GRYBRG)

