

DHC 12-29-93

Unocal Oil & Gas Division
Unocal Corporation
3300 North Butler Avenue
Suite 200
Farmington, New Mexico 87401
Telephone (505) 326-7600
Fax: (505) 326-6145

UNOCAL OIL CONSERVATION DIVISION
RECEIVED



DEC 06 1993 08 35

December 6, 1993

CERTIFIED RETURN RECEIPT REQUESTED

Farmington District

New Mexico Oil Conservation Division
Attn: Mr. William J. LeMay
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

New Mexico Oil Conservation Division
Attn: Mr. Frank Chavez
1000 Rio Brazos Road
Aztec, New Mexico 87410

Dear Sirs:

Union Oil Company of California (UNOCAL) requests permission to downhole commingle production from the Blanco Mesaverde and Basin Dakota formations in the following well:

Rincon Unit No. 174M
1775' FNL, 1540' FWL
Section 19, T27N, R6W
Rio Arriba County, New Mexico

As provided by Order No. R-9893, administrative approval may be granted without notice and hearing.

During completion of the Rincon Unit No. 174M, a mill and drill collars became lodged in the well after partially drilling out a bridge plug at 5370'. Several attempts were made to fish this junk out of the hole, but were unsuccessful. A review of these efforts indicated that further fishing attempts would likely result in the loss of the wellbore.

Since fluid and pressure had been observed from the Dakota formation when drilling out the bridge plug, a seven day flow test against back pressure was initiated to insure that the well was producing from both the Blanco Mesaverde and Basin Dakota horizons. Both the gas volume (724 MCFD) and the oil volume (11 BOPD) indicate that the Dakota formation is in communication through the fish.

Since the four Blanco Mesaverde/Basin Dakota wells within a one mile radius recently drilled offsetting the Rincon Unit No. 174M qualified for downhole commingling, we propose to allocate production based on the average allocation factors of these wells.

As required for an exception to rule 303-A, the following information is attached:

1. An acreage dedication plat showing offset lease ownership.
2. A wellbore diagram with completion detail.
3. Commingled production data from the 174M test.
4. Bottomhole pressure data from each zone adjusted to a common datum from the offset wells.
5. Gas analyses from each zone from the offset wells.
6. Allocation formulas for commingled production from the offset wells.
7. A proposed allocation formula for commingled production for the Rincon Unit No. 174M.
8. A copy of the notification letter sent to all offset operators and the Bureau of Land Management.

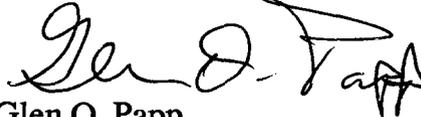
The Blanco Mesaverde formation is uneconomic to drill as a stand alone well. To develop these reserves, a dual or commingled completion is required. We estimate an ultimate recovery of approximately 750 MMCF from the Mesaverde horizon, which would otherwise remain undeveloped. Also, commingling will allow for better lift of liquids production and benefits from compression.

Both zones produce essentially dry gas. Therefore, the respective formation fluids are compatible. Also, no crossflow will occur between the commingled zones.

If you have any questions, please contact Dana Delventhal at (505)326-7600. Thank you for your consideration in this matter.

Sincerely,

Union Oil Company of California
dba UNOCAL



Glen O. Papp
Field Superintendent

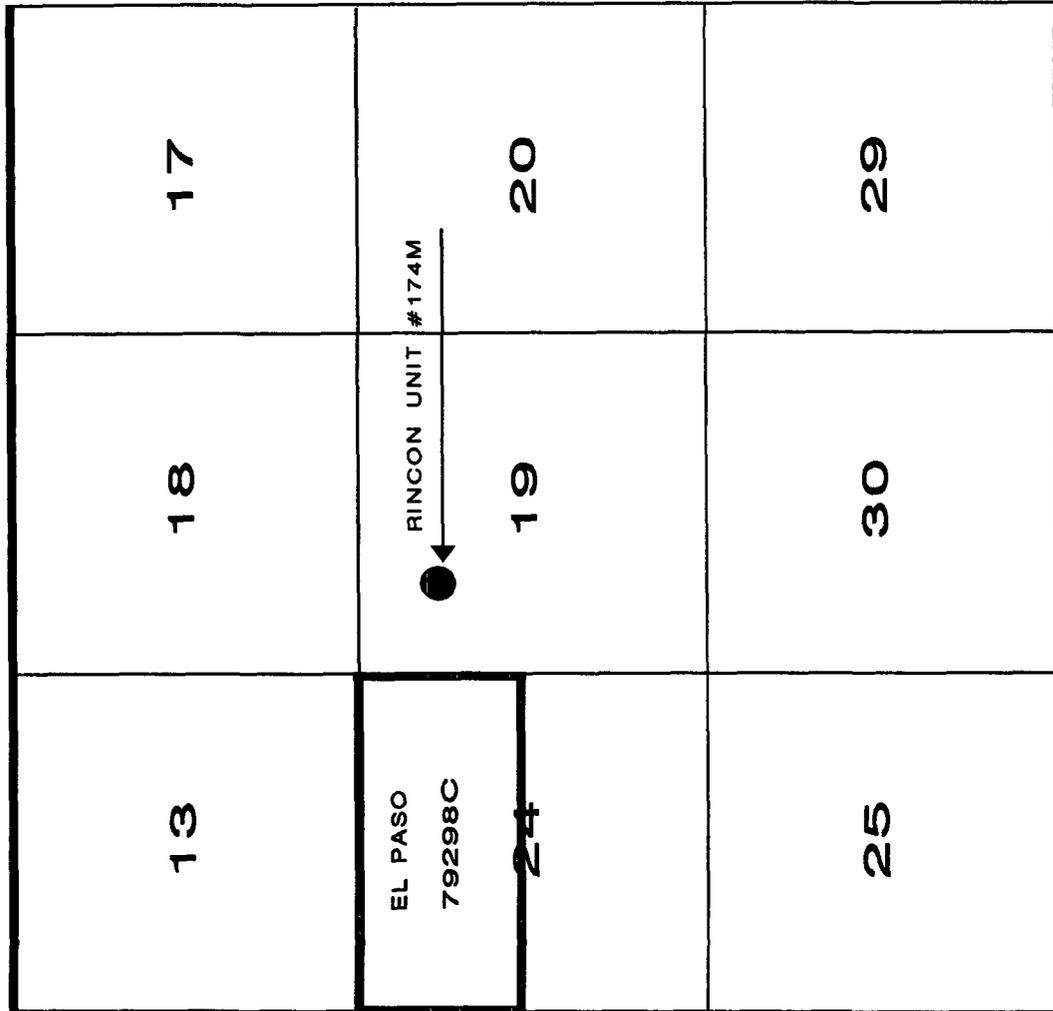
Attachments

GOP/DLD/df

OFFSET LEASE OWNERSHIP

R 7 W

R 6 W



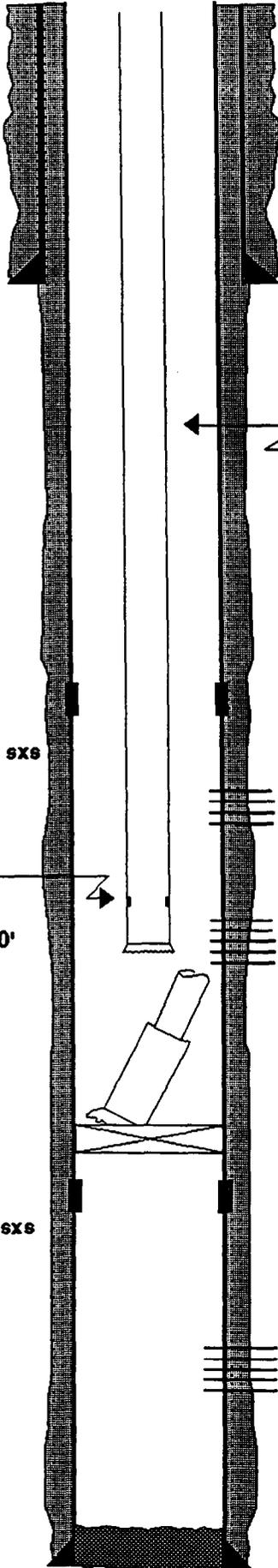
T 27 N

RINCON UNIT NO. 174-M
1775' FNL, 1540' FWL, SEC 19, T27N-R6W
RIO ARRIBA COUNTY, NM

KB Datum 13' Above GL

12-1/4" Hole

7-7/8" Hole



8-5/8" 24# J-55 @ 356'
 CMT W/ 240 SX - CIRC TO SURF

169 Jts, 2-3/8", 4.7# EUE J-55 tbg.
 (FHD @ 5291')

DV TOOL @ 3381'
 Cmt'd Stage #3 w/ 913 sxs
 Circ to surface

'F' Nipple @ 5259'

Sawtooth Collar @ 5290'

UPPER MESAVERDE
 4756-4812' (224 Shots) W/ 4 SPF

LOWER MESAVERDE
 5040-50, 5054-78, 5170-78, 5182-90, 5304-40'
 W/ 4 SPF (344 Shots)

Top of Fish @ 5306'

Fish: Supermill, 2 - 3-1/2" Drill Collars, X-Over, Fire-sub,
 1'+/- of 2-3/8" Tbg

BP @ 5370' - Partially Drilled, Reported Pressure & Fluids
 Past Plug when drilling out

DV TOOL @ 5834'
 Cmt'd Stage #2 w/ 365 sxs

DAKOTA
 7300-16, 7336-44, 7426-50, 7472-80, 7484-7508'
 7514-24, 7534-44 W/ 4 SPF (400 Shots)

PBTB = 7602'
 TD = 7648'

5-1/2", 17# N-80 & K-55 @ 7647'
 Cmt'd Stage #1 w/ 375 sxs

UNOCAL OIL & GAS
SAN JUAN BASIN FIELD
BLOOMFIELD

Revised 6/23/93..rc

WELL TEST REPORT

FROM 6/14/93 - 6/22/93

RINCON 174M - DK/MV

PUMPER: CHET CORWIN

RLC

DATE:	TBG/CSG#	SEP #	HOURS PROD.	INLET CHOKE	OUTLET CHOKE	TANK GAUGE	MCF/D	BO/BW PD
=====	=====	=====	=====	=====	=====	=====	=====	=====
06/14/93	590/590	S.I.P.						
06/15/93	200/450	160	24	OPEN	OPEN	2'00"	855	36/05
06/16/93	200/370	160	24	OPEN	OPEN	3'00"	789	22/03
06/17/93	200/350	160	24	OPEN	OPEN	3'08"	737	17/02
06/18/93	200/320	160	24	OPEN	OPEN	4'05"	710	14/1.4
06/19/93	200/310	160	24	OPEN	OPEN		684	11/1.5
06/20/93	200/310	160	24	OPEN	OPEN		684	11/1.5
06/21/93	200/300	160	24	OPEN	OPEN	5'08"	684	11/1.5
06/22/93	200/300	150	24	OPEN	OPEN	6'01"	646	08/1.1

* REMARKS: * WELL SHUT IN PRESSURES / WELL TURNED ON 6/14/93

RINCON UNIT NO. 167 M

After a 7 day SI period:

$$\text{Mesaverde BHP} = 1007 \text{ psi @ } 5765'$$

$$\text{Dakota BHP} = 2025 \text{ psi @ } 7705'$$

$$\text{Gas Gradient} = \frac{(0.01875)(0.69)(2620)}{(0.869)(655)} = 0.06 \text{ psi/ft}$$

Adjusting to a common datum of 5765':

$$\text{Mesaverde BHP} = 1007 \text{ psi}$$

$$\text{Dakota BHP} = 2025 - [(0.06)(7705 - 5765)] = 1909 \text{ psi}$$

Therefore the reservoir pressures fall within the 50% requirement.

RINCON UNIT NO. 175 M

After a 7 day SI period:

$$\text{Mesaverde BHP} = 735 \text{ psi @ } 5424'$$

$$\text{Dakota BHP} = 1209 \text{ psi @ } 7441'$$

$$\text{Gas Gradient} = \frac{(0.01875)(0.69)(2100)}{(0.88)(655)} = 0.05 \text{ psi/ft}$$

Adjusting to a common datum of 5424':

$$\text{Mesaverde BHP} = 735 \text{ psi}$$

$$\text{Dakota BHP} = 1209 - [(0.05)(7441 - 5424)] = 1108 \text{ psi}$$

Therefore the reservoir pressures fall within the 50% requirement.

RINCON UNIT NO. 159 M

After a 7 day SI period:

$$\text{Mesaverde BHP} = 603 \text{ psi @ } 5571'$$

$$\text{Dakota BHP} = 646 \text{ psi @ } 7659'$$

$$\text{Gas Gradient} = \frac{(0.01875)(0.66)(1500)}{(0.88)(655)} = 0.03 \text{ psi/ft}$$

Adjusting to a common datum of 5571':

$$\text{Mesaverde BHP} = 603 \text{ psi}$$

$$\text{Dakota BHP} = 646 - [(0.03)(7659 - 5571)] = 583 \text{ psi}$$

Therefore the reservoir pressures fall within the 50% requirement.

RINCON UNIT NO. 1 E

After a 7 day SI period:

$$\text{Mesaverde BHP} = 1156 \text{ psi @ } 5150'$$

$$\text{Dakota BHP} = 1812 \text{ psi @ } 7581'$$

$$\text{Gas Gradient} = \frac{(0.01875)(0.65)(2500)}{(0.88)(655)} = 0.05 \text{ psi/ft}$$

Adjusting to a common datum of 5150':

$$\text{Mesaverde BHP} = 1156 \text{ psi}$$

$$\text{Dakota BHP} = 1812 - [(0.05)(7581 - 5150)] = 1690 \text{ psi}$$

Therefore the reservoir pressures fall within the 50% requirement.



117 FARMINGTON AVENUE - FARMINGTON, NM 87401

(505) 325-6622

ANALYSIS NO. UN020016

WELL/LEASE INFORMATION

COMPANY: UNOCAL CORPORATION
WELL NAME: RINCON 167M
LOCATION:
COUNTY: RIO ARRIBA, NM
FORMATION: MESAVERDE
SMPL SRC:
REMARKS: 7 DAY FLOW TEST

LINE PRESSURE: 60 PSIG
SAMPLE TEMP.: 89 DEG.F
WELL FLOWING: YES
DATE SAMPLED: 8/20/92
SAMPLED BY: KIVA MEASURING

ANALYSIS

COMPONENT	MOLE%	GPM
NITROGEN	0.369	0.0000
CO2	0.578	0.0000
METHANE	79.732	0.0000
ETHANE	11.164	2.9864
PROPANE	4.953	1.3650
I-BUTANE	0.764	0.2499
N-BUTANE	1.203	0.3793
I-PENTANE	0.408	0.1493
N-PENTANE	0.292	0.1058
HEXANE+	0.537	0.2342
TOTAL	100.000	5.4699
COMPRESSIBILITY FACTOR (1/Z)		1.0036
BTU/CU.FT. (DRY) CORRECTED FOR (1/Z)		1254.5
BTU/CU.FT. (WET) CORRECTED FOR (1/Z)		1232.7
REAL SPECIFIC GRAVITY		0.7218

ANALYSIS RUN AT 14.73 PSIA & 60 DEGREES F

CYLINDER PRESSURE: 49 PSIG
DATE RUN: 8/25/92
ANALYSIS RUN BY: CHELLE DURBIN



ANALYSIS NO. UNO20012

WELL/LEASE INFORMATION

COMPANY: UNOCAL CORPORATION

WELL NAME: RINCON 167M

LINE PRESSURE: 280 PSIG

LOCATION:

SAMPLE TEMP.: 61 DEG.F

COUNTY: RIO ARRIBA, NM

WELL FLOWING:

FORMATION: DAKOTA

DATE SAMPLED: 8/11/92

SMPL SRC: TEST UNIT

SAMPLED BY: KIVA MEASURING

REMARKS:

ANALYSIS

COMPONENT	MOLE%	GPM
NITROGEN	0.141	0.0000
CO2	1.177	0.0000
METHANE	89.838	0.0000
ETHANE	5.722	1.5306
PROPANE	1.708	0.4707
I-BUTANE	0.319	0.1043
N-BUTANE	0.459	0.1447
I-PENTANE	0.196	0.0717
N-PENTANE	0.137	0.0496
HEXANE+	0.303	0.1322
TOTAL	100.000	2.5039
COMPRESSIBILITY FACTOR	(1/Z)	1.0027
BTU/CU.FT. (DRY) CORRECTED FOR	(1/Z)	1111.3
BTU/CU.FT. (WET) CORRECTED FOR	(1/Z)	1092.0
REAL SPECIFIC GRAVITY		0.6374

ANALYSIS RUN AT 14.73 PSIA & 60 DEGREES F

CYLINDER PRESSURE: 254 PSIG

DATE RUN: 8/17/92

ANALYSIS RUN BY: CHELLE DURBIN



(505) 325-6622

ANALYSIS NO. UNO20021

WELL/LEASE INFORMATION

COMPANY: UNOCAL CORPORATION

WELL NAME: RINCON #175M

LOCATION:

COUNTY: RIO ARRIBA, NM

FORMATION: MESAVERDE

SMPL SRC:

REMARKS:

LINE PRESSURE: 250 PSIG

SAMPLE TEMP.: 80 DEG.F

WELL FLOWING:

DATE SAMPLED: 9/16/92; 11:00 AM

SAMPLED BY: KIVA MEASURING

ANALYSIS

COMPONENT	MOLE%	GPM
NITROGEN	2.369	0.0000
CO2	0.948	0.0000
METHANE	81.749	0.0000
ETHANE	8.765	2.3446
PROPANE	3.718	1.0247
I-BUTANE	0.630	0.2061
N-BUTANE	0.893	0.2816
I-PENTANE	0.325	0.1189
N-PENTANE	0.218	0.0790
HEXANE+	0.385	0.1679
TOTAL	100.000	4.2228
COMPRESSIBILITY FACTOR	(1/Z)	1.0031
BTU/CU.FT. (DRY) CORRECTED FOR	(1/Z)	1171.7
BTU/CU.FT. (WET) CORRECTED FOR	(1/Z)	1151.3
REAL SPECIFIC GRAVITY		0.6961

ANALYSIS RUN AT 14.73 PSIA & 60 DEGREES F

CYLINDER PRESSURE: 212 PSIG

DATE RUN: 9/17/92

ANALYSIS RUN BY: CHELLE DURBIN



(505) 325-6622

ANALYSIS NO. UNO20019

WELL/LEASE INFORMATION

COMPANY: UNOCAL CORPORATION

WELL NAME: RINCON #175M

LINE PRESSURE: 249 PSIG

LOCATION:

SAMPLE TEMP.: 66 DEG.F

COUNTY: RIO ARRIBA, NM

WELL FLOWING: YES

FORMATION: DAKOTA

DATE SAMPLED: 9/9/92

SMPL SRC:

SAMPLED BY: KIVA MEASURING

REMARKS: TAKEN AT TEST UNIT

ANALYSIS

COMPONENT	MOLE%	GPM
NITROGEN	0.225	0.0000
CO2	1.220	0.0000
METHANE	87.784	0.0000
ETHANE	7.548	2.0191
PROPANE	1.823	0.5024
I-BUTANE	0.339	0.1109
N-BUTANE	0.429	0.1353
I-PENTANE	0.191	0.0699
N-PENTANE	0.126	0.0456
HEXANE+	0.315	0.1374
TOTAL	100.000	3.0206
COMPRESSIBILITY FACTOR	(1/Z)	1.0028
BTU/CU.FT. (DRY) CORRECTED FOR	(1/Z)	1125.6
BTU/CU.FT. (WET) CORRECTED FOR	(1/Z)	1106.0
REAL SPECIFIC GRAVITY		0.6481

ANALYSIS RUN AT 14.73 PSIA & 60 DEGREES F

CYLINDER PRESSURE: 238 PSIG

DATE RUN: 9/10/92

ANALYSIS RUN BY: CHELLE DURBIN



WELL ANALYSIS COMPARISON

LEASE: RINCON 159M

SEPTEMBER 15, 1992

DATE:	9/5/92	9/13/92
NO.:	20018	20020
	DAKOTA	MESAVERDE
	MOLE %	MOLE %
	-----	-----
NITROGEN	0.269	0.306
CO2	1.051	1.055
METHANE	87.444	86.667
ETHANE	7.204	7.354
PROPANE	2.410	2.706
I-BUTANE	0.433	0.493
N-BUTANE	0.570	0.653
I-PENTANE	0.221	0.254
N-PENTANE	0.142	0.166
HEXANE+	0.256	0.346
BTU'S	1137.4	1151.4
	-----	-----
GPM	3.1566	3.3841
	-----	-----
SPEC GRAV	0.6534	0.6628
	-----	-----



WELL ANALYSIS COMPARISON

LEASE: RINCON #1E

SEPTEMBER 30, 1992

DATE:	9/18/92	9/25/92
NO.:	20022	20023
	DAKOTA	MESAVERDE
	MOLE %	MOLE %
	-----	-----
NITROGEN	0.206	0.413
CO2	1.186	1.104
METHANE	90.732	87.977
ETHANE	5.709	6.411
PROPANE	1.283	2.466
I-BUTANE	0.209	0.439
N-BUTANE	0.323	0.602
I-PENTANE	0.124	0.210
N-PENTANE	0.093	0.156
HEXANE+	0.135	0.222
BTU'S	1087.8	1129.7
	-----	-----
GPM	2.1889	2.9582
	-----	-----
SPEC GRAV	0.6231	0.6509
	-----	-----

RINCON UNIT NO. 167 N

ALLOCATION FORMULA
(BASED ON C-116)

<u>GAS PRODUCTION:</u>	Mesaverde Rate	137 MCFD
	Dakota Rate	<u>524</u> MCFD
	Total Rate	<u>661</u> MCFD

Therefore,	Mesaverde	21%
	Dakota	79%

<u>OIL PRODUCTION:</u>	Mesaverde Rate	0 BOPD
	Dakota Rate	<u>4</u> BOPD
	Total Rate	<u>4</u> BOPD

Therefore,	Mesaverde	0%
	Dakota	100%

RINCON UNIT NO. 175 N

ALLOCATION FORMULA

(BASED ON C-116)

<u>GAS PRODUCTION:</u>	Mesaverde Rate	408 MCFD
	Dakota Rate	<u>628</u> MCFD
	Total Rate	<u>1036</u> MCFD

Therefore,	Mesaverde	39%
	Dakota	61%

<u>OIL PRODUCTION:</u>	Mesaverde Rate	0 BOPD
	Dakota Rate	<u>2</u> BOPD
	Total Rate	<u>2</u> BOPD

Therefore,	Mesaverde	0%
	Dakota	100%

RINCON UNIT NO. 159 M
ALLOCATION FORMULA
(BASED ON C-116)

<u>GAS PRODUCTION:</u>	Mesaverde Rate	764 MCFD
	Dakota Rate	<u>598</u> MCFD
	Total Rate	<u>1362</u> MCFD

Therefore,	Mesaverde	56%
	Dakota	44%

<u>OIL PRODUCTION:</u>	Mesaverde Rate	0 BOPD
	Dakota Rate	<u>0</u> BOPD
	Total Rate	<u>0</u> BOPD

Therefore,	Mesaverde	50%
	Dakota	50%

RINCON UNIT NO. 1 E
ALLOCATION FORMULA
(BASED ON C-116)

<u>GAS PRODUCTION:</u>	Mesaverde Rate	457 MCFD
	Dakota Rate	<u>748</u> MCFD
	Total Rate	<u>1205</u> MCFD

Therefore,	Mesaverde	38%
	Dakota	62%

<u>OIL PRODUCTION:</u>	Mesaverde Rate	0 BOPD
	Dakota Rate	<u>0</u> BOPD
	Total Rate	<u>0</u> BOPD

Therefore,	Mesaverde	50%
	Dakota	50%

Unocal Oil & Gas Division
Unocal Corporation
3300 North Butler Avenue
Suite 200
Farmington, New Mexico 87401
Telephone (505) 326-7600
Fax: (505) 326-6145



December 6, 1993

Farmington District

Meridian Oil Production Inc.
P.O. Box 4289
Farmington, New Mexico 87499

Dear Sirs:

Union Oil Company of California (UNOCAL) has requested permission from the New Mexico Oil Conservation Division to downhole commingle production from the Blanco Mesaverde and Basin Dakota formations in the following well:

Rincon Unit No. 174M
1775' FNL, 1540' FWL
Section 19, T27N, R6W
Rio Arriba County, New Mexico

If you have any objections to this proposal, please notify the NMOCD within twenty (20) days. If you have any questions about this application, please contact Dana Delventhal at (505)326-7600.

Sincerely,

Union Oil Company of California
dba UNOCAL

A handwritten signature in cursive script, appearing to read "Glen O. Papp", with a stylized flourish at the end.

Glen O. Papp
Field Superintendent

GOP/DLD/df

Unocal Oil & Gas Division
Unocal Corporation
3300 North Butler Avenue
Suite 200
Farmington, New Mexico 87401
Telephone (505) 326-7600
Fax: (505) 326-6145



December 6, 1993

Farmington District

United States Department of the Interior
Bureau of Land Management
1235 La Plata Highway
Farmington, New Mexico 87401

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Sincerely,

Union Oil Company of California
dba UNOCAL

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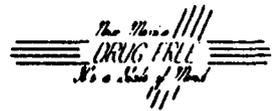
Glen O. Papp
Field Superintendent

GOP/DLD/df



RECEIVED
SERVICES DIVISION

STATE OF NEW MEXICO



ENERGY, MINERALS and NATURAL RESOURCES DIVISION

OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6174

'93 DEC 20 AM 9 49
Date: 12/17/93

Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504-2088

RE: Proposed MC _____	Proposed DHC <u>X</u> _____
Proposed NSL _____	Proposed SWD _____
Proposed WFX _____	Proposed PMX _____
Proposed NSP _____	Proposed DD _____

Gentlemen:

I have examined the application received on 12/9/93
for the Unocal Kinson Unit #17411
OPERATOR LEASE & WELL NO.

F-19-27N-6W and my recommendations are as follows:
UL-S-T-R

Approve

Yours truly,
[Signature]