SPIRIT ENERGY 76

New Name. Same Spirit.

A Business Unit of Unocal

DHC 6/10/99

2354

May 19, 1999

U.S. Department of the Interior
Bureau of Land Management
Attn.: Joe Hewitt
1235 La Plata Highway
Farmington, NM 87401

Commissioner of Public Lands
State of New Mexico
Attn.: Pete Martinez
P.O. Box 1148
Santa Fe, NM 87504-1148

New Mexico Oil Conservation Division
Attn.: David Catanach
2040 S. Pacheco Street
Santa Fe, NM 87505
Cc: NMOCD, Aztec, NM

Gentlemen,

Union Oil Company of California (UNOCAL) requests approval to down hole commingle production from the Blanco Mesaverde and Basin Dakota formations in the following Rincon Unit well, Rio Arriba County, New Mexico.

Well	Lease	Legal Location
176	Federal	990' FNL, 1180' FEL, NE Sec 31, T27N, R6W

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

Form C-107-A with supporting data is attached.

If you have any questions please contact Heather Dahlgren at 915/685-7665.

Sincerely,

Spirit Energy 76
A Business Unit of UNOCAL

Heather Dahlgren
Senior Engineering Technician

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
DISTRICT II
811 South First St., Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd, Aztec, NM 87410
DISTRICT IV
2040 S. Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 S. Pacheco
Santa Fe, New Mexico 87505-6429

APPLICATION FOR DOWNHOLE COMMINGLING

Form C-107-A
Revised March 17, 1999
APPROVAL PROCESS:
_X_ Administrative ___ Hearing
EXISTING WELLBORE
_X_ YES ___ NO

UNION OIL COMPANY OF CALIFORNIA (UNOCAL) — Operator
1004 N. BIG SPRING, MIDLAND, TX 79702 — Address

RINCON UNIT	176	A – 31 – 27N – 6W	RIO ARRIBA
Lease	Well No.	Unit Ltr. - Sec - Twp - Rge	County

Spacing Unit Lease Types: (check 1 or more)

OGRID NO. 023708 Property Code 011510 API NO. 30-039-82373 Federal _X_, State ____, (and/or) Fee ____

The following facts are submitted in support of downhole commingling:	Upper Zone	Intermediate Zone	Lower Zone
1. Pool Name and Pool Code	BLANCO MESAVERDE - 72319		BASIN DAKOTA - 71599
2. Top and Bottom of Pay Section (Perforations)	TO BE DETERMINED		7374 - 7548
3. Type of production (Oil or Gas)	GAS		GAS
4. Method of Production (Flowing or Artificial Lift)	FLOWING		FLOWING
5. Bottomhole Pressure Oil Zones - Artificial Lift: Estimated Current Gas & Oil - Flowing: Measured Current All Gas Zones: Estimated Or Measured Original	a. (Current) 238 psia	a.	a. 633 psia
	b. (Original) 569 psia	b.	b. 2845 psia
6. Oil Gravity (°API) or Gas BTU Content	1166 BTU		1233 BTU
7. Producing or Shut-In?	Not completed Shut-in		Producing
Production Marginal? (yes or no)	YES		YES
* If Shut-In, give date and oil/gas/ water rates of last production	Date: Rates:	Date: Rates:	Date: Rates:
Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data * If Producing, give date andoil/gas/ water rates of recent test (within 60 days)	Date: Rates:	Date: Rates:	Date: 2-99 Rates: 128 MCFD, .4 BOPD, .0 BWPD
8. Fixed Percentage Allocation Formula -% for each zone (total of %'s to equal 100%)	SEE ATTACHED Oil: % Gas: %	Oil: % Gas: %	SEE ATTACHED Oil: % Gas: %

9. If allocation formula is based upon something other than current or past production, or is based upon some other method, submit attachments with supporting data and/or explaining method and providing rate projections or other required data.

10. Are all working, overriding, and royalty interests identical in all commingled zones? ___ Yes _X_ No
If not, have all working, overriding, and royalty interests been notified by certified mail? _X_ Yes ___ No (R-9893)
Have all offset operators been given written notice of the proposed downhole commingling? _X_ Yes ___ No

11. Will cross-flow occur? ___ Yes _X_ No If yes, are fluids compatible, will the formations not be damaged, will any cross-flowed production be recovered, and will the allocation formula be reliable. ___ Yes ___ No (If No, attach explanation)

12. Are all produced fluids from all commingled zones compatible with each other? _X_ Yes ___ No

13. Will the value of production be decreased by commingling? ___ Yes _X_ No (If Yes, attach explanation)

14. If this well is on, or communitized with, state or federal lands, either the Commissioner of Public Lands or the United States Bureau of Land Management has been notified in writing of this application. _X_ Yes ___ No

15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). SEE ATTACHED

16. ATTACHMENTS:
* C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
* Production curve for each zone for at least one year. (If not available, attach explanation.)
* For zones with no production history, estimated production rates and supporting data.
* Data to support allocation method or formula.
* Notification list of all offset operators.
* Notification list of working, overriding, and royalty interests for uncommon interest cases.
* Any additional statements, data, or documents required to support commingling.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE [signature] TITLE: Senior Engineering Tech DATE: 5/19/99

TYPE OR PRINT NAME HEATHER DAHLGREN TELEPHONE NO. (915) 685-7665

May 19, 1999

Supplemental Data for C-107-A, Rincon Unit Well No. 176

Well History: The Rincon Unit Well No. 176 was drilled and completed as a Dakota gas producer in October, 1962. Mesaverde reserves would be developed most economically at this time with a downhole commingled completion. An estimated completion date for the Mesaverde is August 1999.

Production History: The average 1998 gas rate was 140 Mcfd from the Dakota with trace oil and water production. An estimated initial rate for the first 30 days of Mesaverde production is 300 Mcfd and 4 Bopd. This estimate is an average based on actual IP's and production from six recent Mesaverde completions on the Rincon Unit.

Pressure Data: Original and current bottom hole pressures were calculated from surface shut-in casing pressures. Pressure data from the offset Mesaverde well Rincon Unit #176E was used for the #176 Mesaverde completion. Current pressures are based on a three day shut-in in June of 1998. Please see attachments for the bottom hole pressure data.

Allocation of Production: Unocal proposes to use an allocation based on an established Dakota annual decline rate of 8.75%. Dakota production will be extrapolated monthly using Bureau of Land Management recommended allocation methods with the remainder of the commingled production being allocated to the Mesaverde formation. Please see attachments for the Dakota forecast. Initial flush production volumes have been added to the Dakota due to the anticipated extended shut-in during the workover. While tabular data has been provided for the first five years of the Dakota forecast, we anticipate being able to convert to a fixed allocation factor within 12 to 24 months. Unocal proposes using a yield factor for allocating liquid production. This factor is based on the average oil and water yield for 1998.

NMOCD Reference Cases for Rule 303(D) Exceptions

Unocal, Rincon Unit, Rio Arriba County, New Mexico

Rincon Unit Well	Legal Description						NMOCD Order No.	Issue Date
	UL	S	TWN		RNG.			
167M	C	13	27	N	7	W	DHC-863	11/5/1992
175M	F	20	27	N	6	W	DHC-864	11/24/1992
158M	J	22	27	N	6	W	DHC-909	4/27/1993
159M	F	18	27	N	6	W	DHC-904	6/18/1993
129M	P	29	27	N	6	W	DHC-903	6/18/1993
1E	G	30	27	N	6	W	DHC-902	6/18/1993
127M	D	28	27	N	6	W	DHC-916	8/17/1993
184M	P	15	27	N	7	W	DHC-911	8/25/1993
170M	I	20	27	N	6	W	DHC-920	9/17/1993
126M	P	27	27	N	6	W	DHC-914	9/17/1993
151M	O	14	27	N	7	W	DHC-918	9/17/1993
136E	D	23	27	N	7	W	DHC-912	9/17/1993
125M	F	26	27	N	6	W	DHC-95	9/17/1993
137E	J	24	27	N	7	W	DHC-913	9/17/1993
180M	D	21	27	N	6	W	DHC-940	10/25/1993
174M	F	19	27	N	6	W	DHC-966	1/31/1994
128M	O	28	27	N	6	W	DHC-1042	8/31/1994
133E	D	14	27	N	7	W	DHC-1043	8/31/1994
185E	J	22	27	N	7	W	DHC-1038	8/31/1994
178E	I	23	27	N	7	W	DHC-1040	8/31/1994
138E	P	25	27	N	7	W	DHC-1044	8/31/1994
139E	F	25	27	N	7	W	DHC-1041	8/31/1994
149M	F	30	27	N	7	W	DHC-1037	8/31/1994
131E	C	36	27	N	7	W	DHC-1039	8/31/1994
302	C	11	26	N	7	W	DHC-1050	11/3/1994
303	E	33	27	N	6	W	DHC-1086	2/3/1995
171M	J	21	27	N	6	W	DHC-1101	3/7/1995
229E	M	34	27	N	7	W	DHC-1124	5/16/1995
186M	L	33	27	N	6	W	DHC-1176	12/21/1995
187E	P	35	27	N	7	W	DHC-1176	12/21/1995
134	B	12	26	N	7	W	DHC-1190	3/7/1996
170	M	20	27	N	6	W	DHC-1192	3/7/1996
168E	I	36	27	N	7	W	DHC-1191	3/7/1996
203	M	27	27	N	7	W	DHC-1261	5/23/1996
183	K	31	27	N	6	W	DHC-1376	10/16/1996
168	A	36	27	N	7	W	DHC-1778	2/4/1998
139	K	25	27	N	6	W	DHC-1777	2/4/1998
181	G	22	27	N	6	W	DHC-1779	2/4/1998
166E	F	32	27	N	6	W	DHC-1784	2/24/1998
201E	J	2	26	N	7	W	DHC-1841	3/6/1998
57E	O	1	26	N	7	W	DHC-1865	4/1/1998
57	A	1	26	N	7	W	DHC-1892	4/9/1998
131	K	36	27	N	7	W	DHC-1906	4/14/1998
137	K	24	27	N	7	W	DHC-1907	4/14/1998
137E	J	24	27	N	7	W	DHC-913	4/14/1998
169	K	26	27	N	7	W	DHC-1917	4/27/1998
192	K	1	26	N	7	W	DHC-1918	4/27/1998
192E	D	1	26	N	7	W	DHC-2097	9/15/1998

Form C-128 (6-57)

NEW MEXICO OIL CONSERVATION COMMISSION

Well Location and Acreage Dedication Plat

Section A.

Date JULY 12, 1962

Operator EL PASO NATURAL GAS COMPANY Lease RINCON UNIT SF079364

Well No. 176 Unit Letter A Section 31 Township 27-N Range 6-W NMPM

Located 990 Feet From NORTH Line, 1180 Feet From EAST Line

County RIO ARRIBA G. L. Elevation 6649 Dedicated Acreage 349.93 Acres

Name of Producing Formation DAKOTA Pool BASIN DAKOTA

1. Is the Operator the only owner in the dedicated acreage outlined on the plat below?
   Yes X No ____
2. If the answer to question one is "no", have the interests of all the owners been consolidated by communitization agreement or otherwise? Yes ____ No ____. If answer is "yes", Type of Consolidation.
3. If the answer to question two is "no", list all the owners and their respective interests below:

Owner	Land Description

Section B.

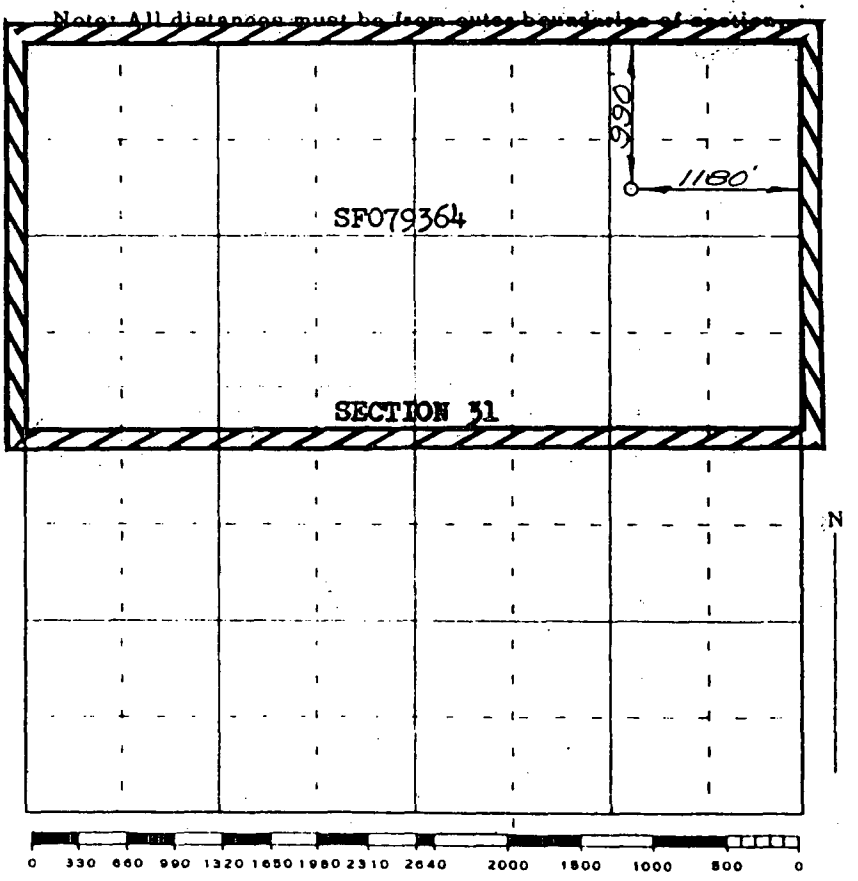
This is to certify that the information in Section A above is true and complete to the best of my knowledge and belief.

El Paso Natural Gas Company
(Operator)

Original Signed D. W. Meehan
(Representative)

Box 990
(Address)

Farmington, New Mexico



Scale 4 inches equal 1 mile

This is to certify that the above plat was prepared from field notes of actual surveys made by me or under my supervision and that the same are true and correct to the best of my knowledge and belief.

Date Surveyed JUNE 25, 1962

Russell H. McNease
Registered Professional Engineer and/or Land Surveyor

(Seal)

Farmington, New Mexico

District I
PO Box 1980, Hobbs, NM 88241-1980
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-102
Revised October 18, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-039-82373	72319	BLANCO MESAVERDE

[4] Property Code	[5] Property Name	[6] Well Number
011510	RINCON UNIT	176

[7] OGRID No.	[8] Operator Name	[9] Elevation
023708	UNION OIL COMPANY OF CALIFORNIA (UNOCAL)	6649'

[10] Surface Location

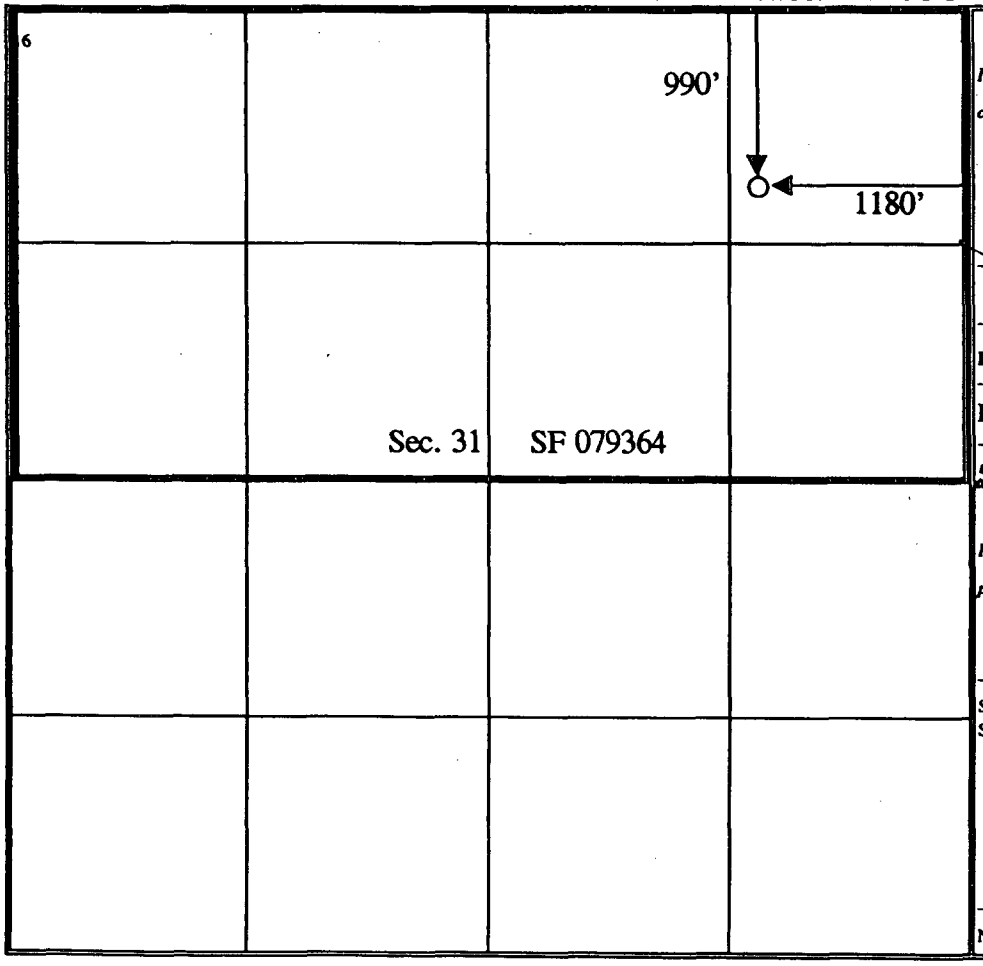
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	31	27N	6W		990	N	1180	E	Rio Arriba

[11] 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

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
349.93	Y	U	Unitization

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



[17] 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 HEATHER DAHLGREN

Title ENGINEERING TECHNICIAN

Date 5-17-99

[18] 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

Date of Survey

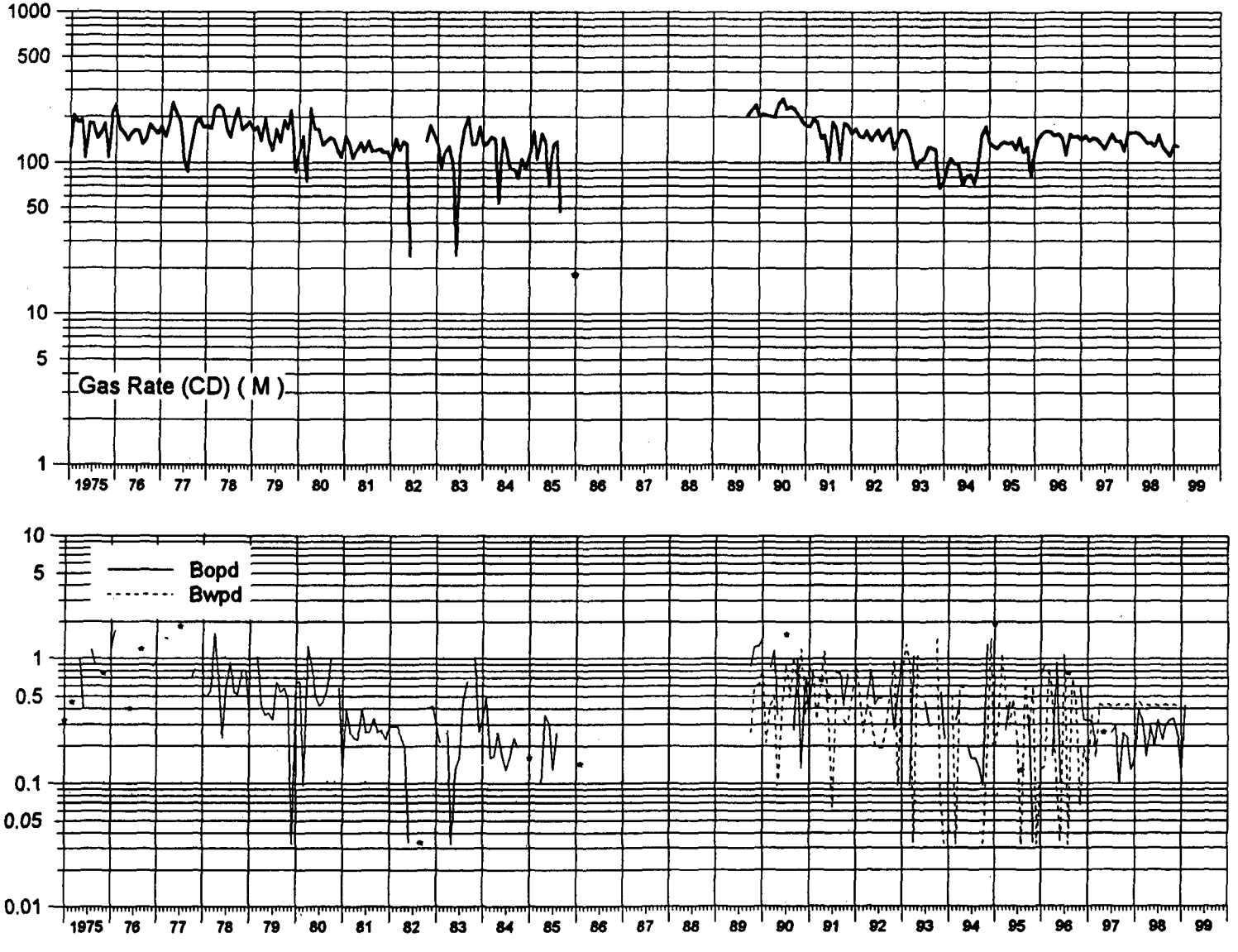
Signature and Seal of Professional Surveyor:

Certificate Number

UNION OIL COMPANY OF CALIFORNIA

RINCON UNIT 176:DK

RIO ARRIBA CO., NEW MEXICO



RINCON_UNIT_176:DK

DATE	GAS VOL PROD Mcf	OIL VOL PROD bbl	WATER VOL PROD bbl	Gas Rate (CD) Mcf/d	Oil Rate (CD) bbl/d	Water Rate (CD) bbl/d	Cum Gas Prod Mcf	Cum Oil Prod bbl
19970101	4359	10	4	141	0.3	0.1	2153438	7515
19970201	4217	9	10	151	0.3	0.4	2157655	7524
19970301	4287	6	5	138	0.2	0.2	2161942	7530
19970401	4375	0	13	146	0.0	0.4	2166317	7530
19970501	4432	8	13	143	0.3	0.4	2170749	7538
19970601	3970	0	13	132	0.0	0.4	2174719	7538
19970701	3785	8	13	122	0.3	0.4	2178504	7546
19970801	4336	9	13	140	0.3	0.4	2182840	7555
19970901	4633	3	13	154	0.1	0.4	2187473	7558
19971001	4270	8	13	138	0.3	0.4	2191743	7566
19971101	4187	7	13	140	0.2	0.4	2195930	7573
19971201	3693	4	13	119	0.1	0.4	2199623	7577
19980101	4865	5	13	157	0.2	0.4	2204488	7582
19980201	4408	11	13	157	0.4	0.5	2208896	7593
19980301	4923	10	13	159	0.3	0.4	2213819	7603
19980401	4644	5	13	155	0.2	0.4	2218463	7608
19980501	4515	9	13	146	0.3	0.4	2222978	7617
19980601	4014	6	13	134	0.2	0.4	2226992	7623
19980701	4240	10	13	137	0.3	0.4	2231232	7633
19980801	3967	7	13	128	0.2	0.4	2235199	7640
19980901	4557	9	13	152	0.3	0.4	2239756	7649
19981001	3951	10	13	127	0.3	0.4	2243707	7659
19981101	3546	10	13	118	0.3	0.4	2247253	7669
19981201	3410	8	13	110	0.3	0.4	2250663	7677
19990101	4047	4	13	131	0.1	0.4	2254710	7681
19990201	3584	12	0	128	0.4	0.0	2258294	7693

WELL NAME : **RINCON UNIT 176E MESAVERDE OFFSET**

	ORIGINAL		CURRENT	
Test Date:	Sep-95		Jun-98	
GAS GRAVITY:	0.688		0.688	
CONDENSATE (YES=1):	1		1	
RESERVOIR TEMP:	150	F	150	F
SURFACE TEMP:	60	F	60	F
DEPTH OF ZONE:	5232	ft	5232	ft
% N2	0.38		0.38	
% CO2	1.16		1.16	
% H2S	0.00		0.00	
Pc =	669.95		669.95	
Tc =	379.07		379.07	
SURFACE PRESS	500	psia	210	psia
BHP	569	psia	238	psia
Z	0.9359		0.9725	
BHP/Z	608	psia	244	psia

WELL NAME : **RINCON UNIT 176 DAKOTA**

	ORIGINAL		CURRENT	
Test Date:	Oct-62		Jun-98	
GAS GRAVITY:	0.72		0.72	
CONDENSATE (YES=1):	1		1	
RESERVOIR TEMP:	190	F	190	F
SURFACE TEMP:	60	F	60	F
DEPTH OF ZONE:	7461	ft	7461	ft
% N2	1.09		1.09	
% CO2	0.52		0.52	
% H2S	0.00		0.00	
Pc =	664.09		664.09	
Tc =	383.92		383.92	
SURFACE PRESS	2,280	psia	525	psia
BHP	2,845	psia	633	psia
Z	0.8693		0.9403	
BHP/Z	3,273	psia	673	psia

RU 176DK Forecast

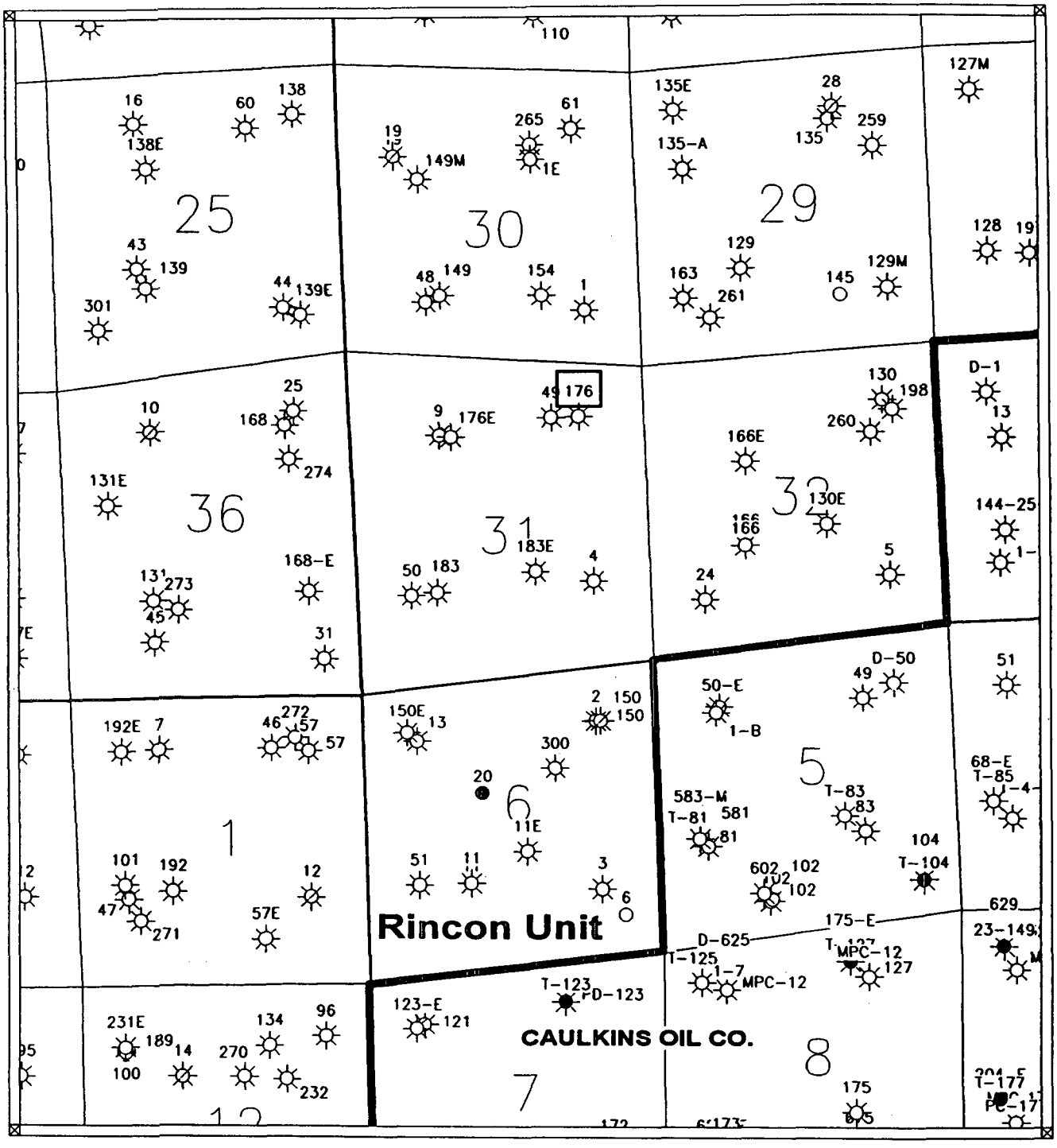
Well	RU 176	
Existing Completion Prior to DHC	DK	
Annual Decline	8.75%	
Monthly Decline Factor (Annual / 12)	0.7292	
Average Monthly volume (Mcf) prior to DHC	4253	1998 Annual Average
Average Yield (bbls/mcf) Oil	0.002	1998 Annual Average
Average Yield (bbls/mcf) Water	0.003	1998 Annual Average
Est. Volume Prior to DHC (Mcf) - Aug. 1999	3864	

* Forecasted volumes to be adjusted for actual days on production & actual volume prior to commingling

Month	DK Forecast (Mcfd)	DK Forecast (Mcf)	DK Forecast (Bbls-Oil)	DK Forecast (Bbls-Water)	
1	146	4444	8.4	13.3	+ DK flush volume @ 15%
2	139	4219	8.0	12.7	+ DK flush volume @ 10%
3	127	3864	7.3	11.6	
4	126	3836	7.3	11.5	
5	125	3808	7.2	11.4	
6	124	3780	7.2	11.3	
7	123	3753	7.1	11.3	
8	122	3725	7.1	11.2	
9	122	3698	7.0	11.1	
10	121	3671	7.0	11.0	
11	120	3644	6.9	10.9	
12	119	3618	6.9	10.9	
13	118	3591	6.8	10.8	
14	117	3565	6.8	10.7	
15	116	3539	6.7	10.6	
16	115	3513	6.7	10.5	
17	115	3488	6.6	10.5	
18	114	3462	6.6	10.4	
19	113	3437	6.5	10.3	
20	112	3412	6.5	10.2	
21	111	3387	6.4	10.2	
22	111	3362	6.4	10.1	
23	110	3338	6.3	10.0	
24	109	3314	6.3	9.9	

RINCON UNIT 176:DK - Gas Forecast @ 8.75% A.E.

DATE	Average Rate Mscf/d	Monthly Volume MMscf	Cumulative Volume MMscf	Remaining Reserves MMscf
1999/ 3	130	4.01	2262.3	435.3
1999/ 4	129	3.86	2266.2	431.5
1999/ 5	127	3.95	2270.1	427.5
1999/ 6	127	3.80	2273.9	423.7
1999/ 7	125	3.89	2277.8	419.8
1999/ 8	125	3.86	2281.7	416.0
1999/ 9	124	3.72	2285.4	412.3
1999/10	123	3.80	2289.2	408.5
1999/11	122	3.66	2292.9	404.8
1999/12	121	3.74	2296.6	401.1
2000/ 1	120	3.72	2300.3	397.3
2000/ 2	119	3.46	2303.8	393.9
2000/ 3	118	3.66	2307.4	390.2
2000/ 4	117	3.52	2311.0	386.7
2000/ 5	116	3.60	2314.6	383.1
2000/ 6	116	3.47	2318.0	379.6
2000/ 7	115	3.55	2321.6	376.1
2000/ 8	114	3.53	2325.1	372.6
2000/ 9	113	3.39	2328.5	369.2
2000/10	112	3.47	2332.0	365.7
2000/11	111	3.34	2335.3	362.4
2000/12	110	3.42	2338.7	358.9
2001/ 1	109	3.39	2342.1	355.5
2001/ 2	109	3.05	2345.2	352.5
2001/ 3	107	3.33	2348.5	349.2
2001/ 4	107	3.21	2351.7	345.9
2001/ 5	106	3.29	2355.0	342.7
2001/ 6	106	3.17	2358.2	339.5
2001/ 7	104	3.24	2361.4	336.3
2001/ 8	104	3.22	2364.6	333.0
2001/ 9	103	3.09	2367.7	329.9
2001/10	102	3.17	2370.9	326.8
2001/11	102	3.05	2373.9	323.7
2001/12	101	3.12	2377.0	320.6
2002/ 1	100	3.10	2380.1	317.5
2002/ 2	99	2.79	2382.9	314.7
2002/ 3	98	3.04	2386.0	311.7
2002/ 4	98	2.93	2388.9	308.8
2002/ 5	97	3.00	2391.9	305.8
2002/ 6	96	2.89	2394.8	302.9
2002/ 7	95	2.96	2397.7	299.9
2002/ 8	95	2.94	2400.7	297.0
2002/ 9	94	2.82	2403.5	294.2
2002/10	93	2.89	2406.4	291.3
2002/11	93	2.78	2409.2	288.5
2002/12	92	2.84	2412.0	285.6
2003/ 1	91	2.83	2414.8	282.8
2003/ 2	91	2.54	2417.4	280.3
2003/ 3	89	2.77	2420.2	277.5
2003/ 4	89	2.68	2422.8	274.8
2003/ 5	88	2.74	2425.6	272.1
2003/ 6	88	2.64	2428.2	269.4
2003/ 7	87	2.70	2430.9	266.8
2003/ 8	86	2.68	2433.6	264.1
2003/ 9	86	2.58	2436.2	261.5
2003/10	85	2.64	2438.8	258.9
2003/11	85	2.54	2441.3	256.3
2003/12	84	2.60	2443.9	253.7
2004/ 1	83	2.58	2446.5	251.1
2004/ 2	83	2.40	2448.9	248.7



Scale 1:33250.74

1000. 0. 1000. 2000. 3000. 4000. 5000. feet

0.1 0. 0.1 0.2 0.3 0.4 0.5 miles

n

LEASE MAP
RINCON UNIT NO. 176
OPERATOR: UNION OIL CO. OF CALIFORNIA

	Scale 1:33250.74	
HADAHLGREN	5/14/1999	176dk.CPF

SPIRIT ENERGY 76

SPIRIT ENERGY 76

New Name. Same Spirit.

A Business Unit of Unocal

May 19, 1999

Caulkins Oil Co.
P.O. Box 340
Bloomfield, NM 87413

Gentlemen:

Union Oil Company of California (UNOCAL) has requested from the State of New Mexico Oil Conservation Division, approval to down hole commingle production from the Blanco Mesaverde and Basin Dakota formations in the following Rincon Unit well, Rio Arriba County, New Mexico.

Well	Legal Location
176	990' FNL, 1180' FEL, NE Sec 31, T27N, R6W

If Caulkins Oil Co., as an offset operator, has an objection to this proposal, please notify NMOCD within twenty days. If you have any questions regarding this application, please contact Heather Dahlgren at 915/685-7665.

Sincerely,

Spirit Energy 76
A Business Unit of UNOCAL

Heather Dahlgren
Senior Engineering Technician

RINCON UNIT 176:DK