

June 16, 1999

185

Supplemental Data for C-107-A, Rincon Unit Well No. 178

Well History: The Rincon Unit Well No. 185 was drilled and completed as a Dakota gas producer in March, 1963. Mesaverde reserves would be developed most economically at this time with a downhole commingled completion. An estimated completion date for the Mesaverde is September, 1999.

Production History: The average 1998 gas rate was 78 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 #185E was used for the #185 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.

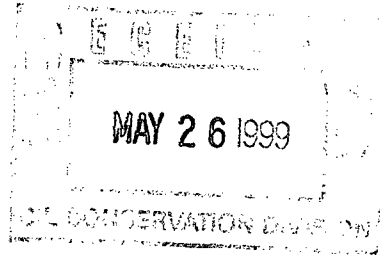
Allocation of Production: Unocal proposes to use an allocation based on an established Dakota annual decline rate of 7.5%. Dakota production will be extrapolated monthly using Bureau of Land Management recommended allocation methods with the remainder of the commingled production being allocated to the 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.

SPiRiT ENERGY 76

New Name. Same Spirit.
A Business Unit of Unocal

DHC 6/17/99
2363

May 21, 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
310 Old Santa Fe Trail, 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, 1000 Rio Brazos Road
Aztec, NM 87410

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 wells, Rio Arriba County, New Mexico.

Well	Lease	Legal Location
178	Federal	1450' FSL, 1850' FWL, SW Sec 23, T27N, R7W
185	Federal	990' FNL, 990' FEL, NE Sec 22, T27N, R7W

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:

☒ Administrative ☐ Hearing

EXISTING WELLBORE

☒ YES ☐ NO

UNION OIL COMPANY OF CALIFORNIA (UNOCAL)

1004 N. BIG SPRING, MIDLAND, TX 79702

Operator

Address

RINCON UNIT

185

A - 22 - 27N - 7W

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. 30-039-07008 Federal ☒ 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		7342 - 7496
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: Gas & Oil - Flowing: Estimated Current All Gas Zones: Measured Current Estimated Or Measured Original	a. (Current) 316 psia b. (Original) 339 psia	a. b.	a. 383 psia b. 2109 psia
6. Oil Gravity (EAPI) or Gas BTU Content	1333 BTU		1229 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 Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data * If Producing, give date and oil/gas/water rates of recent test (within 60 days)	Date: Rates:	Date: Rates:	Date: Rates:
	Date: SEE ATTACHED Rates:	Date: Rates:	Date: 2-99 Rates: 91 MCFD, .6 BOPD, 0 BWPD
8. Fixed Percentage Allocation Formula - % for each zone (total of %'s to equal 100%)	Oil: % Gas: %	Oil: % Gas: %	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 ☒ No
If not, have all working, overriding, and royalty interests been notified by certified mail? ☒ Yes ☐ No (R-9893)
Have all offset operators been given written notice of the proposed downhole commingling? ☒ Yes ☐ No

11. Will cross-flow occur? ☐ Yes ☒ 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? ☒ Yes ☐ No

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

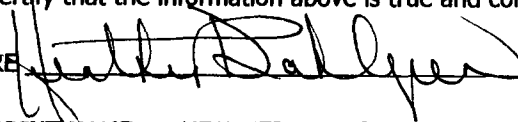
14. If this well is on, or communitized with, state or federal lands, either the Commissioner of Public Lands or the United States Bureau of Land Management has been notified in writing of this application. ☒ Yes ☐ No

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  TITLE: Senior Engineering Tech DATE: 5/21/99

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

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

Well Location and Acreage Dedication Plat

Section A.

Date OCTOBER 18, 1962

Operator EL PASO NATURAL GAS COMPANY Lease RINCON UNIT SF079360
 Well No. 185 Unit Letter A Section 22 Township 27-N Range 7-W NMPM
 Located 990 Feet From NORTH Line 990 Feet From EAST Line
 County RIO ARriba G. L. Elevation 6587 Dedicated Acreage 320 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 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:

OwnerLand 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 H.E. McANALLY

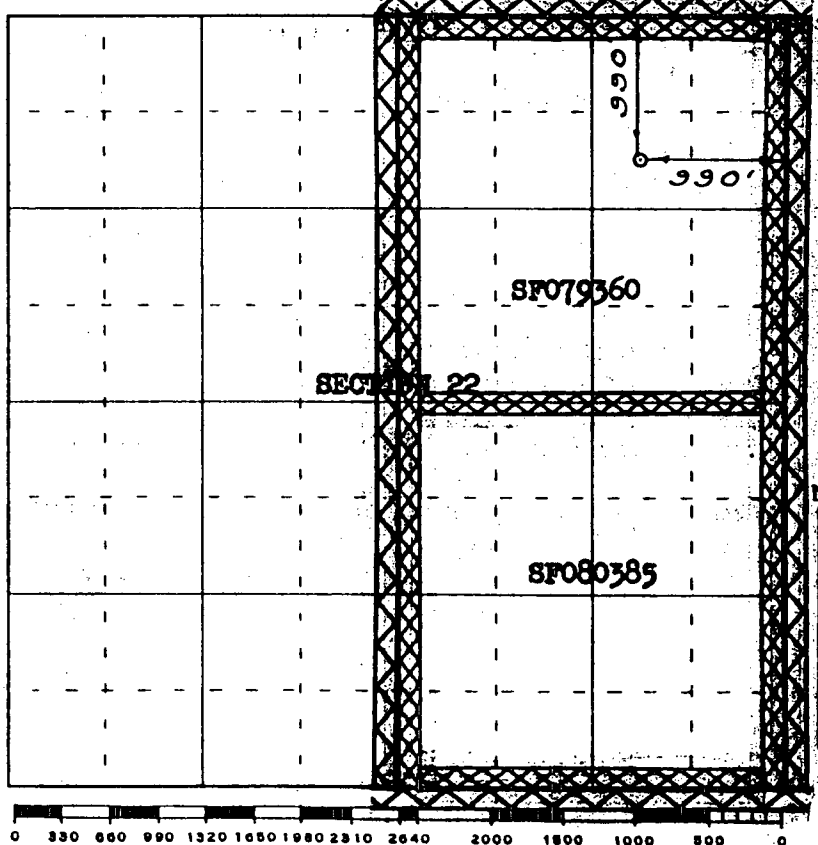
(Representative)

Box 990

(Address)

Farmington, New Mexico

Note: All distances must be from outer boundaries of section.



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.

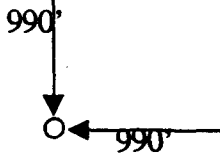
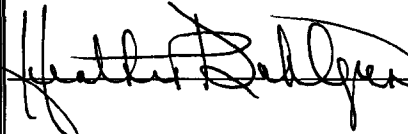
(Seal)

Farmington, New Mexico

Date Surveyed JUNE 25, 1962

Walter O. Kilburn
 Registered Professional Engineer and/or Land Surveyor

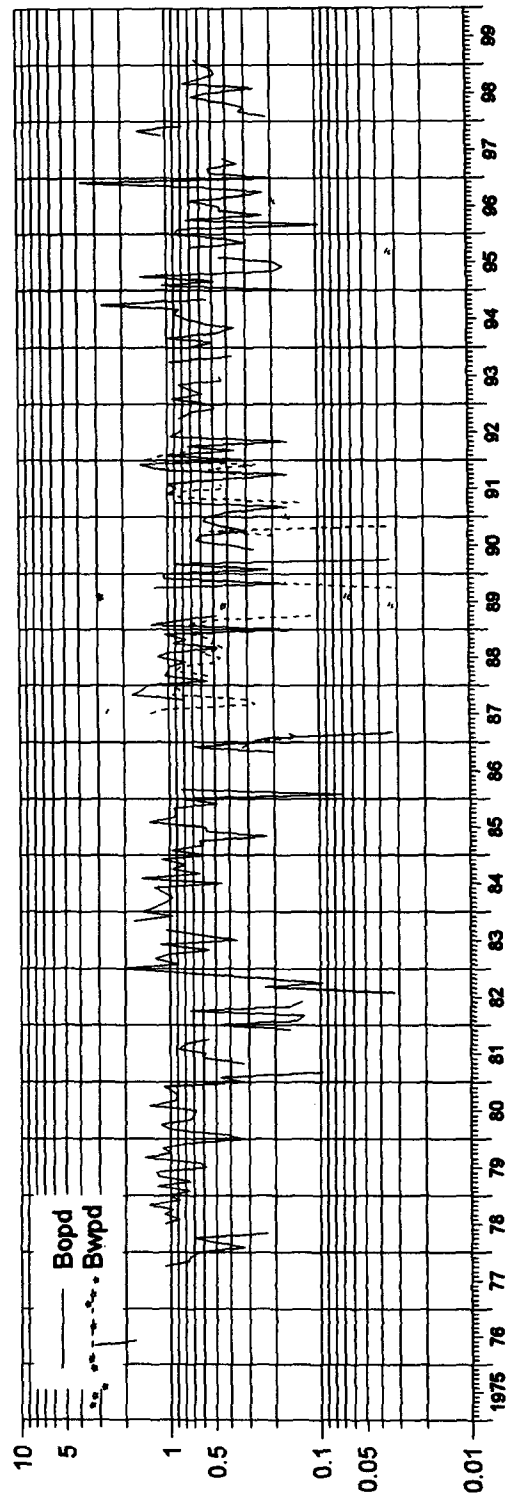
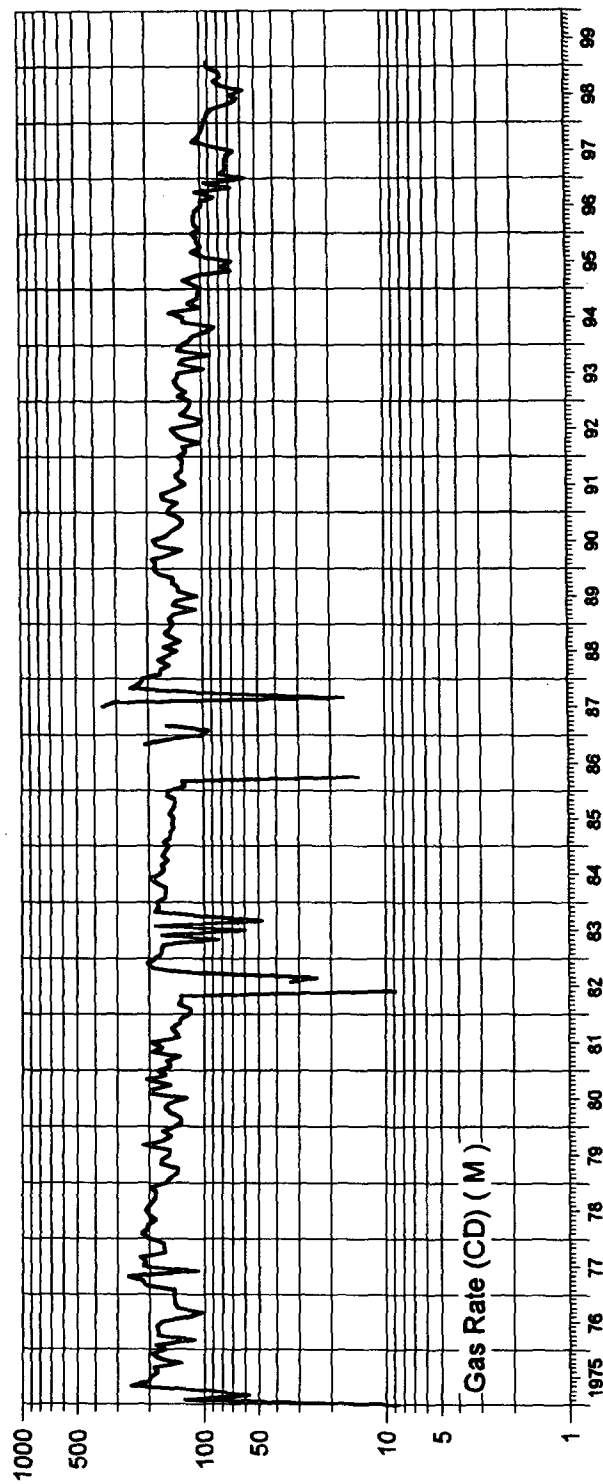
☐ AMENDED REPORT

16				17 OPERATOR CERTIFICATION <i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief</i>  Printed Name HEATHER DAHLGREN Title ENGINEERING TECHNICIAN Date 5-19-99
	Sec. 22	SF 079360		18 SURVEYOR CERTIFICATION <i>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</i> Date of _____ Survey _____ Signature and Seal of Professional Surveyor: _____ Certificate Number _____

UNION OIL COMPANY OF CALIFORNIA

RINCON UNIT 185:DK

RIO ARriba CO., NEW MEXICO



RINCON_UNIT_185: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	1764	6	0	57	0.2	0.0	2026763	15300
19970201	2167	14	0	77	0.5	0.0	2028930	15314
19970301	2238	16	0	72	0.5	0.0	2031168	15330
19970401	2183	10	0	73	0.3	0.0	2033351	15340
19970501	2261	13	0	73	0.4	0.0	2035612	15353
19970601	2173	0	0	72	0.0	0.0	2037785	15353
19970701	2027	0	0	65	0.0	0.0	2039812	15353
19970801	2630	0	0	85	0.0	0.0	2042442	15353
19970901	3276	0	0	109	0.0	0.0	2045718	15353
19971001	3142	33	0	101	1.1	0.0	2048860	15386
19971101	2965	46	0	99	1.5	0.0	2051825	15432
19971201	2986	24	0	96	0.8	0.0	2054811	15456
19980101	2939	0	0	95	0.0	0.0	2057750	15456
19980201	2575	6	0	92	0.2	0.0	2060325	15462
19980301	2806	10	0	91	0.3	0.0	2063131	15472
19980401	2569	9	0	86	0.3	0.0	2065700	15481
19980501	2193	13	0	71	0.4	0.0	2067893	15494
19980601	1877	20	0	63	0.7	0.0	2069770	15514
19980701	2116	16	0	68	0.5	0.0	2071886	15530
19980801	1789	8	0	58	0.3	0.0	2073675	15538
19980901	2277	23	0	76	0.8	0.0	2075952	15561
19981001	2564	18	0	83	0.6	0.0	2078516	15579
19981101	2297	14	0	77	0.5	0.0	2080813	15593
19981201	2428	15	0	78	0.5	0.0	2083241	15608
19990101	2839	18	0	92	0.6	0.0	2086080	15626
19990201	2559	18	0	91	0.6	0.0	2088639	15644

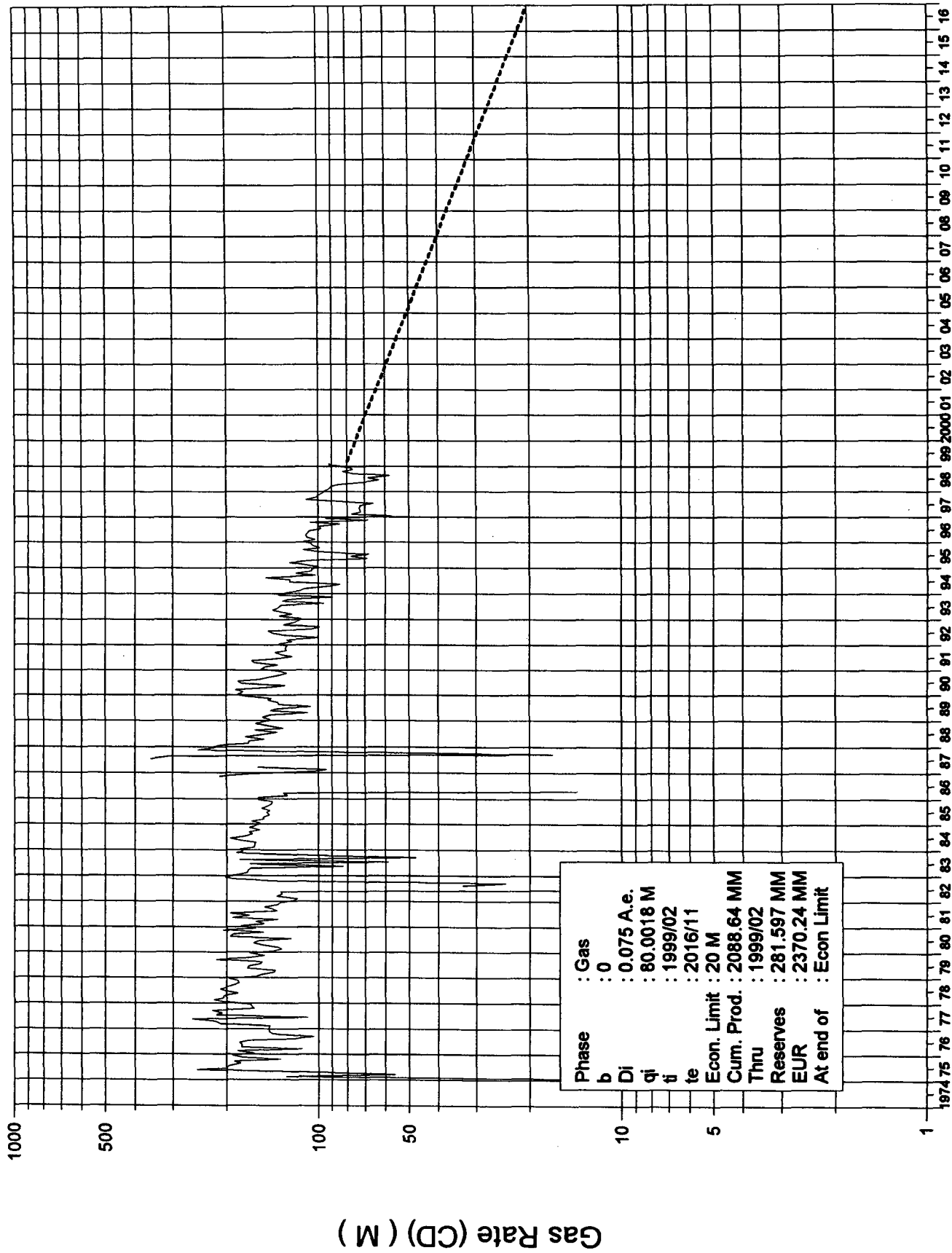
WELL NAME :**RINCON UNIT 185E MESAVERDE**

	ORIGINAL		CURRENT
Test Date:	Aug-95	Test Date:	Jun-98
GAS GRAVITY:	0.685	GAS GRAVITY:	0.685
CONDENSATE (YES=1):	1	CONDENSATE (YES=1):	1
RESERVOIR TEMP:	150 F	RESERVOIR TEMP:	150 F
SURFACE TEMP:	60 F	SURFACE TEMP:	60 F
DEPTH OF ZONE:	5136 ft	DEPTH OF ZONE:	5136 ft
% N2	0.38	% N2	0.38
% CO2	1.16	% CO2	1.16
% H2S	0.00	% H2S	0.00
Pc =	699.95	Pc =	699.95
Tc =	379.07	Tc =	379.07
SURFACE PRESS	300 psia	SURFACE PRESS	280 psia
BHP	339 psia	BHP	316 psia
Z	0.9613	Z	0.9638
BHP/Z	353 psia	BHP/Z	328 psia

WELL NAME :**RINCON UNIT 185 DAKOTA**

	ORIGINAL		CURRENT
Test Date:	Mar-63	Test Date:	Jun-98
GAS GRAVITY:	0.71	GAS GRAVITY:	0.714
CONDENSATE (YES=1):	1	CONDENSATE (YES=1):	1
RESERVOIR TEMP:	190 F	RESERVOIR TEMP:	190 F
SURFACE TEMP:	60 F	SURFACE TEMP:	60 F
DEPTH OF ZONE:	7420 ft	DEPTH OF ZONE:	7420 ft
% N2	0.20	% N2	0.20
% CO2	1.20	% CO2	1.20
% H2S	0.00	% H2S	0.00
Pc =	668.66	Pc =	668.66
Tc =	385.46	Tc =	385.46
SURFACE PRESS	1,694 psia	SURFACE PRESS	320 psia
BHP by Buildup Measurement	2,109 psig	BHP	383 psia
Z	0.8625	Z	0.9627
BHP/Z	2,445 psia	BHP/Z	398 psia

RINCON UNIT 185:DK



RU 185DK Forecast

Well	RU 185
Existing Completion Prior to DHC	DK
Annual Decline	7.50%
Monthly Decline Factor (Annual / 12)	0.6250
Average Monthly volume (Mcf) prior to DHC	2369
Average Yield (bbls/mcf) Oil	0.005
Average Yield (bbls/mcf) Water	0.000
Est. Volume Prior to DHC (Mcf) - Sept. 1999	2303
	1998 Annual Average
	1998 Annual Average
	1998 Annual Average

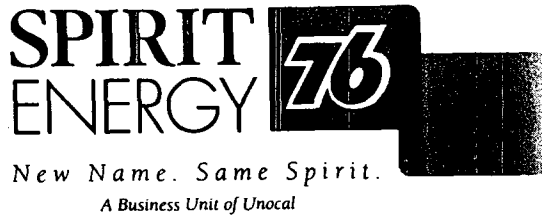
* Forecasted volumes to be adjusted for actual days on production & actual volume prior to commingling

Month	DK Forecast (Mcf)	DK Forecast (Mcf)	DK Forecast (Bbls-Oil)	DK Forecast (Bbls-Water)	
1	87	2648	13.2	0.0	
2	83	2517	12.6	0.0	
3	76	2303	11.5	0.0	
4	75	2289	11.4	0.0	
5	75	2274	11.4	0.0	
6	74	2260	11.3	0.0	
7	74	2246	11.2	0.0	
8	73	2232	11.2	0.0	
9	73	2218	11.1	0.0	
10	72	2204	11.0	0.0	
11	72	2190	11.0	0.0	
12	72	2177	10.9	0.0	
13	71	2163	10.8	0.0	
14	71	2150	10.7	0.0	
15	70	2136	10.7	0.0	
16	70	2123	10.6	0.0	
17	69	2109	10.5	0.0	
18	69	2096	10.5	0.0	
19	68	2083	10.4	0.0	
20	68	2070	10.4	0.0	
21	68	2057	10.3	0.0	
22	67	2044	10.2	0.0	
23	67	2032	10.2	0.0	
24	66	2019	10.1	0.0	

+ DK flush volume @ 15%
+ DK flush volume @ 10%

RINCON UNIT 185:DK - Gas Forecast @ 7.5% A.E.

DATE	Average Rate Mscf/d	Monthly Volume MMscf	Cumulative Volume MMscf	Remaining Reserves MMscf
1999/ 3	80	2.47	2091.1	279.1
1999/ 4	79	2.38	2093.5	276.7
1999/ 5	79	2.44	2095.9	274.3
1999/ 6	78	2.35	2098.3	272.0
1999/ 7	78	2.41	2100.7	269.6
1999/ 8	77	2.39	2103.1	267.2
1999/ 9	77	2.30	2105.4	264.9
1999/10	76	2.36	2107.7	262.5
1999/11	76	2.27	2110.0	260.2
1999/12	75	2.33	2112.3	257.9
2000/ 1	75	2.32	2114.7	255.6
2000/ 2	74	2.16	2116.8	253.4
2000/ 3	74	2.28	2119.1	251.1
2000/ 4	73	2.20	2121.3	248.9
2000/ 5	73	2.25	2123.6	246.7
2000/ 6	72	2.17	2125.7	244.5
2000/ 7	72	2.23	2128.0	242.3
2000/ 8	71	2.21	2130.2	240.1
2000/ 9	71	2.13	2132.3	237.9
2000/10	70	2.18	2134.5	235.8
2000/11	70	2.10	2136.6	233.7
2000/12	70	2.15	2138.7	231.5
2001/ 1	69	2.14	2140.9	229.4
2001/ 2	69	1.93	2142.8	227.4
2001/ 3	68	2.11	2144.9	225.3
2001/ 4	68	2.04	2147.0	223.3
2001/ 5	67	2.09	2149.0	221.2
2001/ 6	67	2.01	2151.0	219.2
2001/ 7	66	2.06	2153.1	217.1
2001/ 8	66	2.05	2155.2	215.1
2001/ 9	66	1.97	2157.1	213.1
2001/10	65	2.02	2159.1	211.1
2001/11	65	1.95	2161.1	209.1
2001/12	64	1.99	2163.1	207.2
2002/ 1	64	1.98	2165.1	205.2
2002/ 2	64	1.78	2166.8	203.4
2002/ 3	63	1.95	2168.8	201.4
2002/ 4	63	1.88	2170.7	199.6
2002/ 5	62	1.93	2172.6	197.6
2002/ 6	62	1.86	2174.5	195.8
2002/ 7	61	1.90	2176.4	193.9
2002/ 8	61	1.89	2178.3	192.0
2002/ 9	61	1.82	2180.1	190.1
2002/10	60	1.87	2182.0	188.3
2002/11	60	1.80	2183.8	186.5
2002/12	59	1.84	2185.6	184.6
2003/ 1	59	1.83	2187.4	182.8
2003/ 2	59	1.65	2189.1	181.2
2003/ 3	58	1.80	2190.9	179.3
2003/ 4	58	1.74	2192.6	177.6
2003/ 5	58	1.78	2194.4	175.8
2003/ 6	57	1.72	2196.1	174.1
2003/ 7	57	1.76	2197.9	172.3
2003/ 8	57	1.75	2199.6	170.6
2003/ 9	56	1.69	2201.3	168.9
2003/10	56	1.73	2203.1	167.2
2003/11	55	1.66	2204.7	165.5
2003/12	55	1.71	2206.4	163.8
2004/ 1	55	1.70	2208.1	162.1
2004/ 2	54	1.58	2209.7	160.5



May 20, 1999

Conoco
10 Desta Dr. W, Suite 100W
Midland, TX 79705

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 wells, Rio Arriba County, New Mexico.

Well	Lease	Legal Location
178	Federal	1450' FSL, 1850' FWL, SW Sec 23, T27N, R7W
185	Federal	990' FNL, 990' FEL, NE Sec 22, T27N, R7W

If Conoco, as an offset operator, has an objection to these proposals, please notify NMOCD within twenty days. If you have any questions regarding these applications, please contact Heather Dahlgren at 915/685-7665.

Sincerely,

Spirit Energy 76
A Business Unit of UNOCAL

Heather Dahlgren
Senior Engineering Technician