

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION



BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

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STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

OIL CONSERVATION DIV.
EX-103

COMMINGLING ORDER PLC-105

UNOCAL Oil & Gas Division
3300 North Butler, Suite 200
Farmington, NM 87401

Attention: Brett H. Liggett

The above-named company is hereby authorized to commingle Basin Fruitland Coal Gas, South Blanco-Pictured Cliffs, Otero Chacra, Blanco-Mesaverde, South Blanco Tocito Gallup, Largo Gallup and Basin-Dakota Pool production from the following 178 wells listed on Exhibit "A" attached hereto.

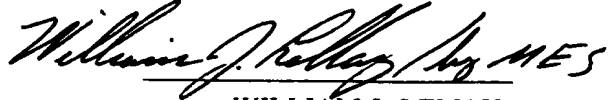
Production shall be allocated to each well by utilizing individual well allocation meters and deriving allocation factors as shown on Exhibit "B" attached hereto.

FURTHER: The operator shall notify the Aztec District Office of the Division upon implementation of the commingling process.

NOTE: This installation shall be installed and operated in accordance with the applicable provisions of Rule 309-B of the Division Rules and Regulations and the Division "Manual for the Installation and Operation of Commingling Facilities." It is the responsibility of the producer to notify the transporter of this commingling authority.

REMARKS: The commingled liquid production from the subject wells shall be stored in the CDP No. 4 tank battery facility, and commingled gas production sold at Central Delivery Point No. 4 custody transfer meter located in Unit M of Section 30, Township 27 North, Range 6 West, NMPM, Rio Arriba County, New Mexico.

DONE at Santa Fe, New Mexico, on this 21st day of March, 1994.


WILLIAM J. LEMAY,
Division Director

cc: Oil Conservation Division - Hobbs
Oil Conservation Division - Data Processing
NM State Land Office - Oil & Gas Division
US Bureau of Land Management - Carlsbad

Exhibit "A"
Commingling Order PLC-105

Rincon Unit Well No.	Producing Pool(s)	S-T-R
1E ✓	Blanco Mesaverde/Basin Dakota	30-27N-06W
2	South Blanco Pictured Cliffs	06-26N-06W
3	South Blanco Pictured Cliffs	06-26N-06W
4	South Blanco Pictured Cliffs	31-27N-06W
5	South Blanco Pictured Cliffs	32-27N-06W
9	South Blanco Pictured Cliffs	31-27N-06W
11	Basin Dakota	06-26N-06W
13	South Blanco Pictured Cliffs	06-26N-06W
16	South Blanco Pictured Cliffs	25-27N-07W
17	South Blanco Pictured Cliffs	02-26N-07W
18R	South Blanco Pictured Cliffs/Otero Chacra	35-26N-07W
19	Basin Fruitland Coal	30-27N-06W
21	Blanco Mesaverde	16-27N-06W
21A	Blanco Mesaverde	16-27N-06W
22	South Blanco Pictured Cliffs	23-27N-07W
23	Blanco Mesaverde	35-27N-07W
24	South Blanco Pictured Cliffs	32-27N-06W
25	South Blanco Pictured Cliffs	36-27N-07W
27	South Blanco Pictured Cliffs	13-27N-07W
29A	Blanco Mesaverde	22-27N-06W
32	Blanco Mesaverde	16-27N-06W
32A	Blanco Mesaverde	16-27N-06W
37	South Blanco Pictured Cliffs	26-27N-07W
38	South Blanco Pictured Cliffs	26-27N-07W
39	South Blanco Pictured Cliffs	26-27N-07W
40	South Blanco Pictured Cliffs	26-27N-07W

Rincon Unit Well No.	Producing Pool(s)	S-T-R
41	South Blanco Pictured Cliffs	35-27N-07W
42	South Blanco Pictured Cliffs	35-27N-07W
43	South Blanco Pictured Cliffs	25-27N-07W
44	South Blanco Pictured Cliffs	25-27N-07W
48	South Blanco Pictured Cliffs	30-27N-06W
49	South Blanco Pictured Cliffs	31-27N-06W
51	South Blanco Pictured Cliffs	06-26N-06W
52	South Blanco Pictured Cliffs	20-27N-06W
54	South Blanco Pictured Cliffs	14-27N-07W
55	South Blanco Pictured Cliffs	02-26N-07W
56	South Blanco Pictured Cliffs	02-26N-07W
57	Basin Dakota	01-26N-07W
58	South Blanco Pictured Cliffs	24-27N-07W
59	South Blanco Pictured Cliffs	24-27N-07W
60	South Blanco Pictured Cliffs	25-27N-07W
61	South Blanco Pictured Cliffs	30-27N-06W
62	South Blanco Pictured Cliffs	28-27N-06W
64	South Blanco Pictured Cliffs	23-27N-07W
65	South Blanco Pictured Cliffs	23-27N-07W
67	South Blanco Pictured Cliffs	22-27N-07W
68	South Blanco Pictured Cliffs	27-27N-07W
70	South Blanco Pictured Cliffs	27-27N-07W
72	South Blanco Pictured Cliffs	33-27N-07W
75	South Blanco Pictured Cliffs	34-27N-07W
76	South Blanco Pictured Cliffs	34-27N-07W
77	South Blanco Pictured Cliffs	34-27N-07W
78	Blanco Mesaverde	14-27N-07W
79	Blanco Mesaverde	17-26N-06W

Rincon Unit Well No.	Producing Pool(s)	S-T-R
79A	Blanco Mesaverde	17-27N-06W
80	Blanco Mesaverde	18-27N-06W
81	Blanco Mesaverde	17-27N-06W
81A	Blanco Mesaverde	17-27N-06W
84	Blanco Mesaverde	26-27N-07W
87	South Blanco Pictured Cliffs	13-27N-07W
88	South Blanco Pictured Cliffs/Blanco Mesaverde	13-27N-07W
88A	Blanco Mesaverde	13-27N-07W
90	South Blanco Pictured Cliffs	13-27N-07W
91	South Blanco Pictured Cliffs	02-26N-07W
97	South Blanco Pictured Cliffs/Blanco Mesaverde	11-26N-07W
97A	Blanco Mesaverde	18-27N-06W
98	South Blanco Pictured Cliffs/Blanco Mesaverde	18-27N-06W
103	South Blanco Pictured Cliffs	18-27N-06W
104	South Blanco Pictured Cliffs	21-27N-06W
105	South Blanco Pictured Cliffs	21-27N-06W
106	South Blanco Pictured Cliffs	16-27N-06W
107	South Blanco Pictured Cliffs/Blanco Mesaverde	16-27N-06W
108	Blanco Mesaverde/Basin Dakota	17-27N-06W
108A	Blanco Mesaverde	18-27N-06W
108E	Otero Chacra/Basin Dakota	19-27N-06W
109	South Blanco Pictured Cliffs	19-27N-06W
110	South Blanco Pictured Cliffs	19-27N-06W
111	South Blanco Pictured Cliffs	20-27N-06W
113	Blanco Mesaverde	20-27N-06W

Rincon Unit Well No.	Producing Pool(s)	S-T-R
114	South Blanco Pictured Cliffs	20-27N-06W
115	South Blanco Pictured Cliffs/Blanco Mesaverde	21-27N-06W
116	South Blanco Pictured Cliffs	21-27N-06W
120	South Blanco Pictured Cliffs	22-27N-06W
123	Blanco Mesaverde	13-27N-07W
124	Blanco Mesaverde	34-27N-07W
126	Blanco Mesaverde/Basin Dakota	27-27N-06W
127M	Blanco Mesaverde/Basin Dakota	28-27N-06W
128	Blanco Mesaverde/Basin Dakota	28-27N-06W
129	Blanco Mesaverde/Basin Dakota	29-27N-06W
129M	Blanco Mesaverde/Basin Dakota	29-27N-06W
130	Blanco Mesaverde/Basin Dakota	32-27N-06W
130E	South Blanco Tocito Gallup/Basin Dakota	32-27N-06W
133	Basin Dakota	14-27N-07W
135	Blanco Mesaverde/Basin Dakota	29-27N-06W
135A	South Blanco Pictured Cliffs/Blanco Mesaverde	29-27N-06W
135E	Otero Chacra/Basin Dakota	29-27N-06W
136	Basin Dakota	23-27N-07W
136E	Blanco Mesaverde/Basin Dakota	23-27N-07W
137	Blanco Mesaverde/Basin Dakota	24-27N-07W
137E	Blanco Mesaverde/Basin Dakota	24-27N-07W
138	Basin Dakota	25-27N-07W
139	Basin Dakota	25-27N-07W
149	Basin Dakota	30-27N-06W
150	Blanco Mesaverde/Basin Dakota	06-26N-06W
151	Basin Dakota	14-27N-07W

Rincon Unit Well No.	Producing Pool(s)	S-T-R
151M	Blanco Mesaverde/Basin Dakota	14-27N-07W
154	South Blanco Pictured Cliffs	30-27N-06W
155	Basin Dakota	17-27N-06W
156	Basin Dakota	16-27N-06W
157	Basin Dakota	18-27N-06W
159	Basin Dakota	18-27N-06W
159M	Blanco Mesaverde/Basin Dakota	18-27N-06W
161	Basin Dakota	17-27N-06W
162	South Blanco Pictured Cliffs	27-27N-06W
163	South Blanco Pictured Cliffs	29-27N-06W
164	Largo Gallup/Basin Dakota	02-26N-07W
166	Basin Dakota	32-27N-06W
167	Basin Dakota	13-27N-07W
167M	Blanco Mesaverde/Basin Dakota	13-27N-07W
168	Basin Dakota	36-27N-07W
169	Basin Dakota	26-27N-07W
170	Basin Dakota	20-27N-06W
170M	Blanco Mesaverde/Basin Dakota	20-27N-06W
171	Basin Dakota	21-27N-06W
171M	Blanco Mesaverde/Basin Dakota	21-27N-06W
172	Basin Dakota	26-27N-07W
174	Basin Dakota	19-27N-06W
174M	Blanco Mesaverde/Basin Dakota	19-27N-06W
175	Basin Dakota	20-27N-06W
175M	Blanco Mesaverde/Basin Dakota	20-27N-06W
177	Basin Dakota	13-27N-07W
178	Basin Dakota	23-27N-07W
179	Basin Dakota	16-27N-06W

Rincon Unit Well No.	Producing Pool(s)	S-T-R
180	Basin Dakota	21-27N-06W
180M	Blanco Mesaverde/Basin Dakota	21-27N-06W
186	Basin Dakota	33-27N-07W
187	Basin Dakota	35-27N-07W
190	South Blanco Pictured Cliffs	17-27N-06W
193	Basin Dakota	35-27N-07W
194	South Blanco Pictured Cliffs	16-27N-06W
195	South Blanco Pictured Cliffs	19-27N-06W
197	South Blanco Pictured Cliffs	28-27N-06W
199	South Blanco Pictured Cliffs	14-27N-07W
201	Basin Dakota	02-26N-07W
202	Basin Dakota	27-27N-07W
223	Otero Chacra/Blanco Mesaverde	34-27N-07W
223A	Otero Chacra/Blanco Mesaverde	34-27N-07W
229	Basin Dakota	34-27N-07W
233	Otero Chacra/Blanco Mesaverde	02-26N-07W
234	Otero Chacra/Blanco Mesaverde	02-26N-07W
240	Basin Fruitland Coal	21-27N-06W
243	Basin Fruitland Coal	27-27N-06W
251	Basin Fruitland Coal	28-27N-06W
252	Basin Fruitland Coal	18-27N-06W
253	Basin Fruitland Coal	17-27N-06W
254	Basin Fruitland Coal	20-27N-06W
255	Basin Fruitland Coal	20-27N-06W
256	Basin Fruitland Coal	16-27N-06W
257	Basin Fruitland Coal	16-27N-06W
258	Basin Fruitland Coal	17-27N-06W
259	Basin Fruitland Coal	29-27N-06W

Rincon Unit Well No.	Producing Pool(s)	S-T-R
261	Basin Fruitland Coal	29-27N-06W
263	Basin Fruitland Coal	19-27N-06W
264	Basin Fruitland Coal	19-27N-06W
265	Basin Fruitland Coal	30-27N-07W
274	Basin Fruitland Coal	36-27N-07W
276	Basin Fruitland Coal	13-27N-07W
277	Basin Fruitland Coal	13-27N-07W
278	Basin Fruitland Coal	14-27N-07W
279	Basin Fruitland Coal	14-27N-07W
281	Basin Fruitland Coal	23-27N-07W
286	Basin Fruitland Coal	26-27N-07W
291	Basin Fruitland Coal	34-27N-07W
292	Basin Fruitland Coal	35-27N-07W
293	Basin Fruitland Coal	35-27N-07W
294	Basin Fruitland Coal	02-26N-07W
300	Basin Fruitland Coal	06-26N-06W
30	Basin Fruitland Coal	25-27N-07W

Exhibit "B"

Gas and Liquid Allocation Calculations

LAF: Liquid Allocation Factor

GAF: Gas Allocation Factor

N: Total Number of Wells in the Gathering System

n: nth Individual Well in the Gathering System

$$LAF(n) = \frac{\text{Well Site Tank Liquid Volume, nth Well (bbl/mo)}}{\sum_{i=1}^N \text{Well Site Tank Liquid Volume, nth Well (bbl/mo)}}$$

$$GAF(n) = \frac{\text{Allocation Meter Volume, nth Well (Mcf/mo)}}{\sum_{i=1}^N \text{Allocation Meter Volume, nth Well (Mcf/mo)}}$$

N = 178 Wells for CDP No. 4

Liquids allocated from the CDP No. 4 tank back to the nth well:

$$Q_n(\text{liquids}) = (LAF_n)(\text{Total Liquids, CDP No. tank (bbl/mo)})$$

Gas allocated from central custody transfer meter at CDP No. 4 back to the nth well:

$$Q_n(\text{gas}) = (GAF_n)(\text{Total Gas, CDP No. 4 Transfer Meter (Mcf/mo)})$$