BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION OF NEW MEXICO FOR THE PURPOSE OF CONSIDERING:

> CASE No. 2718 Order No. R-2403

APPLICATION OF CONTINENTAL OIL COMPANY, AS OPERATOR, FOR APPROVAL OF A SUPPLEMENTAL COOPERATIVE AGREEMENT UNITIZING CERTAIN LEASES, A PLAN OF OPERATION FOR CONTINUED GAS AND WATER INJECTION, MODIFICATION OF ALLOCATION METHOD FOR TRANSFER OF ALLOWABLES, CERTAIN ADMINISTRATIVE PROCEDURES, AND PERMISSION TO PRODUCE MORE THAN 16 WELLS INTO A SINGLE TANK BATTERY, MALJAMAR COOPERATIVE AGREEMENT AREA, MALJAMAR POOL, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on December 6, 1962, at Santa Fe, New Mexico, before Daniel S. Nutter, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 31st day of <u>December</u>, 1962, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel S. Nutter, and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That, by Order No. 485, the Commission approved the Maljamar Cooperative Repressuring Agreement, said agreement having been entered into on August 5, 1941, by the parties signatory thereto, for pressure maintenance in the Grayburg-San Andres formations under the Maljamar Cooperative Repressuring Agreement area in the Maljamar Pool, Lea County, New Mexico, unitizing gas in the area, making provisions for gas injection wells, and the expansion thereof by administrative approval. The order further provided that the proration units within the committed area

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should not exceed the production of 44 barrels of oil daily; provided for expansion of the committed area by administrative approval; provided for the management of said project by the Operators Committee; and included other provisions for the conduct of the repressuring program.

- (3) That, by Order No. 595, the Commission amended Order No. 485 and provided a method of allocation to the committed area and the reallocation to the respective proration units on a basis which included an acreage allowable up to 15 barrels per day, a maximum marginal well allowable of 20 barrels per day, and a void space allowable determined by reservoir conditions as reflected by each well's bettomhole pressure and gas-oil ratio.
- (4) That numerous other orders have been entered approving additional injection wells for expansion of the repressuring program and for non-standard locations for both injection and producing wells. The order number or data of administrative approval providing for the present injection wells or non-standard locations is set out in the attached Exhibit "A".
- (5) That, by Order No. R-841, the Commission approved the injection of water into the Pearl "B" Well No. 26, located 2615 feet from the South line and 25 feet from the West line of Section 30, Township 17 South, Range 33 East, NMPM, Lea County, New Mexico. By Order No. R-1075 the Commission authorized the expansion of Order No. R-641 to include the drilling and conversion of certain other wells to water injection wells, said wells also being listed on Exhibit "A" attached. The order further provided for administrative approval for expansion of the water injection program.
- (6) That by adoption of Supplement No. 4 to the Maljamar Cooperative Repressuring Agreement, the applicant, Continental Oil Company, was elected Chairman of the Operators Committee and the name was changed to the Maljamar Cooperative Agreement.
- (7) That the owners in the Maljamar Cooperative Agreement area have adopted Supplement No. 5 to the Maljamar Cooperative Agreement with Continental Oil Company as Operator of the Participating Area. The effect of Supplement No. 5 is to unitize all liquid hydrocarbons in the Grayburg-San Andres formations underlying the Participating Area, and to adopt a Plan of Operations for the expansion of the pressure maintenance program by gas and water injection.
- (8) That the pressure maintenance program heretofore carried out has been successful and that approval of Supplement No. 5 and the Plan of Operation contemplated thereunder, and a revision of the allocation method for transferring allowables should increase the efficiency and ultimate recovery of the pressure maintenance

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defined, is fully unitized as provided in said Supplement No. 5, and all gas produced and utilized as provided in said Supplements No. 4 and No. 5 is fully unitized as provided therein.

(4) That the Cooperative Area, heretofore approved by this Commission for pressure maintenance of the Grayburg-Sam Andres formations and hereinafter called MCA Unit Area, consists of the following lands:

TOWNSHIP 17 SOUTH, RANGE 32 EAST, NMPM

LEA COUNTY, NEW MEXICO

Sections 14 to 23, inclusive

Sections 25 to 35, inclusive

TOWNSHIP 17 SOUTH, RANGE 33 EAST, NMPM

LEA COUNTY, NEW MEXICO Section 30: W/2

containing 13,786.66 acres, more or less.

That the following-described lands lying within such Cooperative Area are hereby designated and recognized as constituting the Participating Area for the Grayburg-San Andres formations:

TOWNSHIP 17 SOUTH, RANGE 32 EAST, NMPM LEA COUNTY, NEW MEXICO Section 15: SW/4 SW/4 S/2 S/2, W/2 NW/4, and NE/4 NW/4section 16: E/2 E/2 and NW/4 NE/4, Section 17: SE/4 NW/4, and S/2 SW/4 SW/4 SW/4 Section 18: Section 19: All Section 20: All Section 21: **A11** NW/4 NW/4, S/2 NW/4, S/2 NE/4, section 22: and S/2 W/2, S/2 NE/4, and SE/4Section 23: N/2, N/2 SW/4, N/2 SE/4 and Section 25: SE/4 SE/4 N/2, SW/4, and NW/4 SE/4Section 26: Section 27: All Section 28: All Section 29: All Section 30: Section 31: A11 NE/4 NW/4 Section 33: N/2W/2 NW/4, NE/4 NW/4, and Section 34: NW/4 NE/4

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> TOWNSHIP 17 SOUTH, RANGE 33 EAST, NMPM LEA COUNTY, NEW MEXICO Section 30: NW/4 and N/2 SW/4

containing 8,055.16 acres, more or less.

That the Participating Area described above and the following-described lands lying outside of the Participating Area but within the Cooperative Area, are hereby designated and recognized as constituting the committed acreage to the Maljamar Cooperative Agreement:

TOWNSHIP 17 SOUTH, RANGE 32 EAST, NUPM LEA COUNTY, NEW MEXICO 14: SW/4 (156.25 acres of 160-Section 14: acre tract), and E/2 NE/4, N/2 SE/4, and SE/4 NW/4 SW/4 NE/4, W/2 SE/4, N/2 NW/4, Section 16: Section 17: 3W/4 NW/4, and N/2 3W/4E/2, E/2 W/2, and Lots 1, 2 and 3 N/2 NE/4 and NE/4 NW/4 Section 18: Section 22: Section 23: N/2 NE/4SW/4 SE/4, and S/2 SW/4 NE/4 SE/4, and S/2 SE/4 Section 25: Section 26: E/2, SE/4 NW/4, E/2 SW/4, and Lots 1, 2, 3 and 4 NE/4 and N/2 NW/4, below Section 31: Section 32: 5,000 feet only 3/2 Section 33: N/2 SE/4 below 5,000 feet section 34: only, NE/4 NE/4, S/2 NS/4, and SE/4 NW/4 Section 35: W/2TOWNSHIP 17 SOUTH, RANGE 33 EAST, NMPM LEA COUNTY, NEW MEXICO Section 30: Lot 4, and SE/4 3W/4

- (5) That the fully Unitized Area shall be those lands designated above as the Participating Area of the MCA Unit for the Grayburg-San Andres formation.
- (6) That the Participating Area may be enlarged as provided in said Supplement No. 5 and additional acreage committed to the MCA Unit; provided, however, that administrative approval for the expansion of the Participating Area or the committed acreage must be obtained from the Secretary-Director of the Commission; and provided, further, that any extension of the Cooperative Area, or of the Unitized Area beyond the boundaries of the Cooperative Area as described herein, shall be made only after notice and hearing.

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(7) That the MCA Unit operator shall file with the Commission an executed original or executed counterpart of the
Supplement No. 5 within thirty (30) days after the effective
date thereof. In the event of subsequent joinder by any party
or expansion of the Participating Area, the unit operator shall
file with the Commission within thirty (30) days thereafter
bunterparts of the unit agreement reflecting the subscription
of those interests having subsequently joined or ratified.

IT IS FURTHER ORDERED:

- (1) That the applicant, Continental Oil Company, as operator, is hereby authorized to continue the gas and water injection project authorized by Orders 485, 595, and R-841, and to continue and expand the water injection project as further authorized by Order No. R-1075 and as proposed by the Plan of Operations submitted with Supplement No. 5.
- That the MCA Unit approved gas and water injection well; shall be those wells listed in Exhibit "A" attached hereto. Additional wells may be drilled for gas or water injection, gas injection wells may be converted to water injection, water injection wells may be converted to gas injection wells, and producing wells may be converted to injection wells and injection wells to producing wells within the boundaries of the Maljamar Cooperative Agreement Area upon administrative approval of the Secretary-Director of the Commission without notice or hearing; provided, however, that all information required by Rule 701-B of the Johnston Rules and Regulations shall be included in the application for administrative approval; and provided, further, that all offset operators to the well, if any there be, whose acreage is not included within the Participating Area, and the State Engineer shall also be notified by registered or certified mail of such request for administrative approval. The Secretary-Director may approve the application if no such offset operator or the State Engineer has objected within 20 days. The Secretary-Director may grant immediate approval of the application upon receipt of written waivers of objection from all such offset operators and the State Engineer.
- (3) That the allocation to the Participating Area and other committed leases within the MCA Unit Area and the reallocation to the respective proration units therein shall be made upon the following plan:
 - (a) The unit operator shall submit to the Commission for approval the nomination in total barrels daily and schedule of reallocation to the respective proration units. Said nomination and schedule shall be submitted to the Commission and a duplicate shall be supplied to the Hobbs District Office of

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the Commission not later than the twentieth day of each month preceding the next propation month.

- (b) Each proration unit shall be assigned an acreage allowable in whatsoever amount it is capable of producing up to but not exceeding fifteen (15) barrels daily, unless the unit operator nominates a lesser amount per proration unit.
- (c) Each proration unit capable of producing the acreage allowable but incapable of producing the acreage allowable plus the allowable assignable through the application of the void space formula hereinafter provided shall be assigned an allowable equal to that volume of oil shown on its production test.
- (d) All proration units capable of producing said acreage allowable plus the allowable allocated through the application of the void space formula shall be assigned a proportionate part of the total void space allowable so that each said proration unit will share in the void space allocation in inverse proportion to the amount of reservoir space voided as reflected by its production tests in strict accordance with the following formula:

Void Space FactorX Void Space = Mumber ofSummation of MCA Unit Re-AllowableBarrelsciprocal Void Space Factors

The reciprocal void space factors to be determined from the attached Exhibit "B", being a table of BARRELS OF RESERVOIR SPACE VOIDED IN PRODUCING ONE BARREL OF STOCK TANK OIL, AND THE RECIPROCAL FACTOR THERETO, AT GIVEN GAS-OIL RATIOS AND RESERVOIR PRESSURES."

(e) A promation unit upon which is located a newly completed or reconditioned well shall be assigned an allowable in accordance with its acreage and void space allowable from the first day of production of new oil.

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filed in due form, approve production in excess of two times the top unit allowable if all offset operators have been notified of the application and no objection has been received within ten days. The Secretary-Director may grant immediate approval of such application upon receipt of written waivers of objection from all such offset operators.

- (7) That all previous orders pertaining to the MCA Unit are hereby superseded insofar as they are inconsistent with this order.
- (8) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year herein-above designated.

STATE OF NEW MEXICO OIL CONSERVATION COMMISSION

TOM BOLACK, Chairman

B. S. WALKER, Member

A. L. PORTER, Jr., Member & Secretary

ONDER AUTHORIZ

INJECTION

NMOCC ORDERS AND ADMINISTRATIVE APPROVALS AFFECTING

MCA UNIT INJECTION WELLS AND NON-STANDARD LOCATIONS

-	ORDER:
	PRESENT WELL NAME
	LOCATION
	ORDER AUTHORIZ-

GAS INJECTION WELLS

Baish B No. Baish B No. Baish A No. Baish B No. IP 10 Wm. Mitchell B No. IP Maljamar Oil & Gas Company Baish A-8 Wm. Mitchell B-IP No. Wm. Mitchell B-IP No. 18 Wm. Mitchell B No. 17 Miller A-6 Barney Cockburn Vm. Mitchell B No. IP Wm. Mitchell B-IP No. 12 A No. ΙP ĮP HP ĮÞ 19 ည 36 S Wm. En. EB. Continental Oil Company Baish A No. 8 Baish B No. Baish A Baish B Baish A No. Baish B No. 16 Wm. Mitchell B Miller A No. 6 Mitchell B Mitchell B Mitchell B Mitchell B Mitchell B No. No. ZO. 18 No. No. No. No. No. 5 44 36 なれる 33 17 1980' FNL, 660' FWL, Sec. 21, T17S, R32E Sec. 25' FSL, 50' FWL, Sec. 22, T17S, R32E 2530' FNL, 215' FEL, Sec. 20, 660 2615' FN&WL, Sec. 22, T17S, R32E 25' FSL, 2590' Sec. 20, T17S Sec. Sec. 19, T17S, R32E 2615' FSL, 2610' FWL, Sec. 26, T17S, R32E 2555' FNL, 2615' FWL, 2615 Sec. 1980' FNL, 660' FWL, 2610' FSL, 2640' FEL, PS&EL, 21, T178, R32E 20, T17S, R32E 19, T178, R32E T17S R32E R32E Approval 4-6-45 Approval 4-6-45 Approval 4-6-45 Administrative Approval 4-6-45 Approval 4-6-45 Administrative Approval 4-6-45 Approval 4-6-45 Administrative Approval 4-6-45 Administrative Administrative Approval 11-27-51 Administrative Administrative Approval 4-6-45 Administrative Administrative dministrative 485 485 Approval 4-6-45 Administrative Approval 4-6-45 Approval 4-6-45 Approval 4-6-45 Administrative Approval 4-6-45 Administrative Approval 11-27-51 Administrative Administrative Approval 4-6-45 Approval 4-6-45 Administrative Approval 4-25-57 Administrative Administrative Approval 4-6-45 Administrative Approval 4-6-45 Administrative Administrative

EXHIBIT	ORDER
G	NO.
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Pearl 22 B IP 42	Pearsall BXY No. IP 22	Pearsall A No. IP 23	Mitchell B No. IP 17	Miller A No. 11	Miller A No. 5	Baish B IP No. 35	Baish B IP No. 30	Baish B IP No. 29	Baish B No. IP 15	Baish B No. IP 14	Baish B No. IP 11	Kewanee Oil Company Baish B-11	Simon R IP No. 37	Simon R IP No. 28	Simon R IP No. 21	Simon N IP No. 13	Carper Drilling Company Simon 8-N	WELL NAME IN ORIGINAL ORDER
Pearl B No. 22	Pearsall BXY No. 2	Pearsall A No. 15	King B No. 6	Miller A No. 11	Miller A No. 5	Queen B No. 42	Queen B No. 9	Queen B No. 41	Queen B No. 40	Queen B No. 39	Queen B No. 38	Queen B No. 11	Simon R IP No. 37	Simon R IP No. 28	Simon R IP No. 21	Simon N IP No. 13	Simon N-8, IP No. 3	PRESENT WELL NAME
2615' FSL, 2615' FEL, Sec. 25, T178, R32E	FN&WL,	ec. 17, 1778,	o' FSL, 40'	ec. 23, T17S, 980' FS&EL,	60' FSL, 1980'	5' FNL, 2560'	980' FNL, 660'	590' FSL, 25'	6151 FSL, 2570	S. 1009	00	FSL	Sec. 30, T17S, R32E 50' FNL, 2635' FWL, Sec. 30, T17S, R32E	FSL 140		2580' FNL, 2595' FWL,		LOCATION
763	Approval 4-6-45 Administrative	Approval 4-6-45 Administrative	Administrative	•	Approval 4-6-45	Approval 4-6-45 Administrative	_	Approval 4-6-45 Administrative	Administrative	Approval 4-6-45 Administrative	Administrative	•	Approval 4-6-45 Administrative Approval 4-6-45	Approval 4-6-45 Administrative	Administrative	ativ	•	ORDER AUTHORIZ-

Administrative Approval 4-6-45 R-146

Approval 4-6-45 Administrative Approval 4-6-45

Administrative Approval 4-18-58 Administrative Approval 4-18-58 Administrative

Administrative Approval 4-6-45 Administrative Approval 4-6-45

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Administrative

485

ING INJECTION

485

15 and 15	EXHIBIT_	ORDER NO.
	"A"). R-240J

WELL NAME IN ORIGINAL ORDER	PRESENT WELL NAME	LOCATION	ORDER AUTHORIZ- ING NSL	ORDER AUTHORIZ-
Kewanee Oil Company (Continued) Pearl 24 B IP 44	Pearl B No. 24	1345' PN&WL	763	R-146
Pearl 25 B IP 45	Pearl B No. 25	1345' FNL, 2615' FEL, Sec. 25, T17S, R32E .	770	R=483
	WATER	INJECTION WELLS		
Kewanee Pearl 21 B	Continental Oil Company Pearl B No. 21	2665' FNL, 1295' FEL,	763	R-1075*
Kewanee Pearl 26 B	Pearl B No. 26	2615' FSL, 25' FWL,	770	R-841
New Well	New Well	25' FWI, 1325' FSI,	R-1075	R-1075*
Buffalo Baish A No. 21	Baish A No. 21	1395' FSL, 1347' FWL,	821	R-1075*
New Well	New Well	1325' FSL, 2615' FWL,	R-1075	R-1075*
Kewanee Baish B IP No. 11	Queen B No. 38	80 FNI, 25 FWI,	Administrative	R-1075*
New Well	New Well	25' FSL, 1325' FWL,	R-1075	R-1075*
Kewenee Baish B No. IP 35	Queen B No. 42	75' FNL, 2560' FEL,	Administrative	R-1075*
New Well	New Well	1325' FNL, 25' FWL,	R-1075	R-1075*
New Well	New Well	1325' PN&WL,	R-1075	R-1075*
New Well	New Well	1325' FNL, 2635' FWL, Sec. 28, T17S, R32E	R-1075	R-1075*

*Approved but not in operation as injection wells.

	1300	1250	1200	1150	1100	1050	1000	950	8	850	80	750	8	650	8	550	8	% **	3
\$	1.11	1.10	1.10 .909	1.09 .917	1.08 .926	1.07	1.06	1.07	1.09 .917	1.11	1.13 .885	1.16 .862	1,20 .833	1.25 .800	1.30 .769	1.37 .730	1.46	1.58 .633	
8	1.27 .787	1.27 .787	1.28 .781	1.28 .781	1.28 .781	1.28 .781	1.28 .781	1.31 .763	1.34	1.38 .725	1.42	1.47 .680	1.54	1.61 .621	1.70 .588	1.81	1.95 .513	2.12	
6	1. ⁴ 3 .699	1. H . 694	1.45	1.46	1.47 .680	1.48	1.50 .667	1.54	1.59 .630	1.64 .610	1.71	1.78 .562	1.87 .535	1.97	2.10	2.25 . ##	2.43 .412	2.66 .376	
2 00	1.59 .630	1.61 .621	1.63 .613	1.65	1.67 .599	1.69 .592	1.72 .581	1.78	1.84	1.91 .524	. 500 . 500	2.09 .478	2.21 .452	2.34	. <u>.</u> 2	2.69 .372	2.92 .342	3.21 .312	
800	1.75 .571	1.77 .565	1.80 .556	1.83	1.86 .538	1.90	1.94	2,01	2.09	2.18	2.28 .439	2.40	2.54	2.70 .370	2.89 *346	3.12 .321	3.40	3.75 .267	
8 8	1.91	1.94	1.98 505	2.02	2.06	2.11	2.16 .463	2.24 5.24	2.34	2.45	2.57 .389	2.71	2.87 .348	3.07 .326	3.29 -304	3.56 .281	3.89 .257	4.29 .233	
Gas (il	2.07	2.11	2.15	2.20 .455	2.25	2.31 • 43 3	2.37	2.47	2.58 .388	2.71 .369	2.85 .351	3.01	3.20 •313	3.43	3.68	3.99 .251	4.37 .229	4.83 .207	
Ratios	2.39 .418	2. ₽	2.51 .398	2.57 .389	2.65 .377	2.73 .368	2.81 .356	.3€2 3±0	3.08 .325	3.24	3.42	3.63 .275	3.87 .258	. 24.15 4.15	4.48 .223	4.87 .205	5.33 1881.	5.92 .169	
304 1	.370	2.78 .360	2.86 .3 5 0	2.9 4	3.04 .329	3.14 .318	3.25 .308	3.41 .293	3.58 .279	3.78 .265	 %8	.235	.220	. 205	5.27 .190	5.7	6.30 .159	7.00 .143	1
2009	3.02	3.11 .322	3.21	3.31 .302	3.43	3.55	3.69	3.87 .2 5 4	4.08 .245	+.31 .232	4.57 .219	.206	5.21 .192	5.61 .178	6.06 .165	6.62	7.27	8.09 124) -
0081 1	3.34	3.45	3.56 .281	3.68	3.82	3.97	.242	٠ ٢ ١ ١ ١ ١ ١ ١	4.58 .218	. 207	5.14	5.48 .182	5.88	. 16 84	6.86	7.49	8.24 .121	9.18 .10 9	
2000	3.66	3.78 .265	.3.91	1-05 1-05	4.21 .238	. 238 8	۰. 57 ۱. 219	. 208 208	5.06 . 197	5.30 5.30	5.71 .175	₽5	.153		7.65 .131	8.36 .120	9.21 .109	10.26 097	e e
2200	3.98 .251	4.12 .243	4.26 .235	. 226	4.60 .217	. 208 208	 800	5.27 .190	5. 57 . 180	5.91 .169	6.29	6.71	7.21 .139	7.79 .128	118	 8.7	.048	11.35	
	 250	. 223	4.62 .216	7	. 28	5.21 .192	5. H	*** 	6.07 .165	6. W	. 146	7.33	7.88 .127	8. 52 .117		.099	.090	12.43	,
2600	4.61 .217	. 209	4.97 .201	5.16	5.39 .186	5.63 .178	5.88	6.21 .161	6. 57 . 152	6.98	7.43 .135	.12 \$	8.55	9.25	10.03	10.98	12.11	13.52	

BARRELS OF RESERVOIR SPACE WIDED IN PRODUCING ONE BARREL OF STOCK TANK-OIL, AND THE RECIPROCAL FACTOR THEREOF, AT GIVEN GAS OIL RATIOS AND RESERVOIR PRESSURES

Order No. R-2403 Exhibit "B" Page 1