EXHIBITS FOR HEARING BEFORE

NEW MEXICO OIL CONSERVATION COMMISSION

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EXAMINER HEARING

January 7, 1958

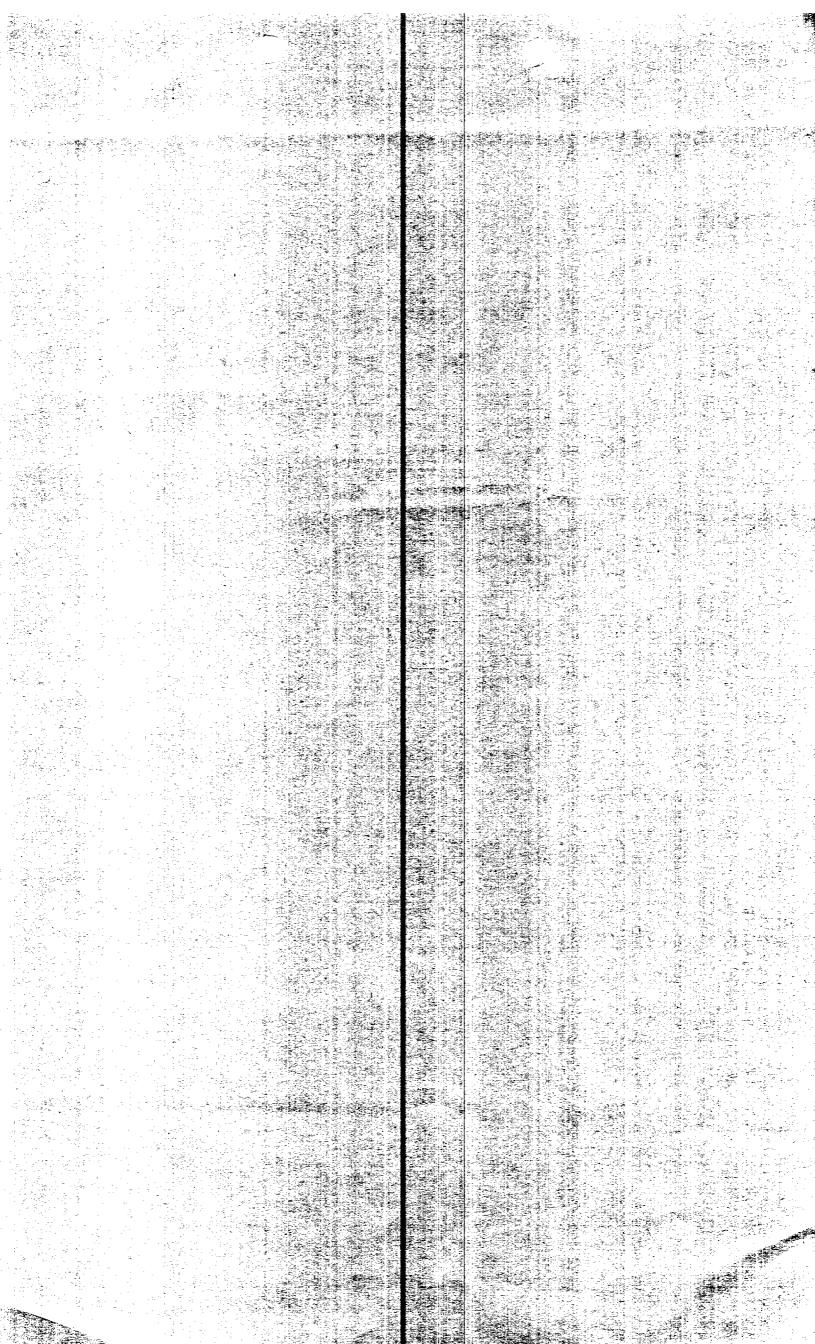
Decket No. 38-57 Case 1368

AMBASSADOR OIL CORPORATION

FILOT WATER FLOOD SQUARE LAKE POOL

Eddy County New Mexico

B	EFORE THE	
OIL CONSE	WATION CO	MMISSION
SANTA	FE, NEW M	EXICO
ap	EXHIBIT	No
CASE	136	<u>x</u>



LIST OF EXHIBITS

- 1. Map showing location of all input wells, location of all oil and gas wells, and names of leases in the general vicinity of the proposed project.
- 2. Tabulation of Engineering data.

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3. Summary of well log data on proposed injection wells, as taken from New Mexico Oil Conservation Commission Well Records and/or United States Geological Survey Well Records.

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ENGINEERING DATA

Name of formations to be flooded: Lower Grayburg and upper San Andres of Permian System. Average depth to top of zones to be flooded: Approximately 3160 in pilot area. Average depth to bottom of zones to be flooded: Approximately 3400 in pilot area. Structural Peatures: Structure - Stratigraphic Trap on an eastward plunging nose. Gas Cap - None Water Drive - None, very little water produced with oil and from a few wells. Characteristics of Reservoir Fluids: Gravity of 011 - 34° to 37° API. Oil undersaturated, high salt content. Original solution GOR - 250 cu. ft. per bbl. Original formation pressure - 950 p.s.1. Primary Producing History: Discovery date - 1941 Major Development of Field - 1945 Development Spacing - Center of 40 acre units. Type reservoir drive - Solution gas. State of depletion - Stripper stage with wells, averaging 2 to 4 bbls/well/day. Cumulative production of injection wells in proposed pilot flood area to January 1, 1957. A.O.C. Carper Bruning #1 E 56,807 bbls. A.O.C. Fidel Grier #2 I 50,442 " A.O.C. Texas Trading Orier #4 K 48,091 " #1 M 57,852 " #1 M 67,852 柯 辨 State #3 C 20,997 ŧ# #1 0 18,900 A.O.C. Carper Wheatley Water Source and Treatment: Source - The Queen Sand (known as the Red Sand) encountered at 2571 to approximately 2610 in test well just completed. The water has been analyzed and found to be a heavy brine having the following characteristics: 197,003 parts per million 7,123 Chlorides Calcium 59 # 1.1 10,500 Magnesium -1**4** ** **\$**# Sulfates 750 24 N. 98 23 Iron e, **a** 辨 **?**? Carbon Dioxide 68 鵣 ×4. Ħ CaCO2 Total Hardness 61,200 6.5 pН Treatment - The water will be injected in a closed system at the beginning of the project, passing through individual filtersat each well. Coment lined pipe is to be used in the distribution system. As the pilot flood progresses, samples will be taken frequently and tested, to see if further treatment of the water is required.

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Proposed Pilot Flood Spacing - 80 acre, five spot by conversion al alternate wells in 40 acre units.

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Injection Rates and Pressures: Estimated injection rate - 500-800 BPD/WELL Estimated injection pressure - GRAVITY AT INCEPTION

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WELL RECORD SUMMARY OF PROPOSED WATER INJECTION WELLS

SQUARE LAKE FIELD, EDDY COUNTY, NEW MEXICO

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(A.O.C.	A.O.C.	A.O.C.	h.o.c.	<	¥.0.C.	
Carper- Wheatley	Texas Trading- -State	Texas Trading- Orier	Texas Trading- Orier	Carper- Bruning	Fidel-Grier	LEASE
	NE NN!	₩ ₩ Sw	Swiswi		netset	Baue
SWESSEE Sec 29 TI6S H31E	NE IN Sec 32 TIGS R31E	HE SW Sec 22 TISS R31E	suisui sec 29 miss mile	SWARY Sec 29 TI6S R31E	HELSEL Sec 30 TI55 R31E	DESCRIPTION
	μ μ	E.	tis tu	,	R N T	NELL NURBER
3944.0	3923.9	3924.3	3868.0	3899.2	3855.6	SLEVATION
ى بە		() 1	S Sar	UT Nim	151	SIZE
17番		14#	у Сп	1	144	CASINO WEIGHT DEPTH
3156	3255	3239	3162	0215	3055	DEPTH
100	100	100	100	100	100	SACKS CEMENT USED

(Continued)

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	3295	3270	3850	3218	08TE	3135	TOP
	3310	3285	3258	3228	3200	3151	BOLLON
	3350	3450	3260	3314	3222	3184	TOP
	3385	3467	3262	3386	3248	3198	PRODUC BOTTOM T
	3497		3300	3386	3358	3203	DDUCTIVE
· .	3522	·	3340	3404	374	3206	E HORIZONS
			3435		3380	3265	TOP
			3452		3402	3270	BOTTOM
						3313	TOP
						3313 3329	TOL BOLLOW
	3522	3470	3474	3458	4045	3352	TOTAL DEPTH

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ENGINEERING DATA

Name of formations to be flooded: Lower Grayburg and Upper San Andres of Permian System. Average depth to top of zones to be flooded: Approximately 3160 in pilot area. Average depth to bottom of zones to be flooded: Approximately 3400 in pilot area. Structural Postures: Structure - Stratigraphic trap on an eastward plunging nose. Gas Cap - None. Water Drive - None, very little water produced with oil and from a few wells. Characteristics of Reservoir Fluids: Gravity of Oil - 34° to 37° API. Oil undersaturated, high salt content. Original solution GOR - 250 cu. ft. per bbl. Original formation pressure - 950 p.s.i. Primary Producing History: Discovery date - 1941. Major development of field - 1945. Development spacing - Center of 40 acre units. Type reservoir drive - Solution gas. State of depletion - Stripper stage with wells, averaging 2 to 4 bbls/well/day. Cumulative production of injection wells in proposed pilot flood area to January 1, 1957. A.O.C. Carper Bruning #12 56,807 bbls. A.O.C. Fidel Grier #21 A.O.C. Texas Trading Grier #4 K 60,442 48,091 Ħ ** #1 M 67,852 -枬 State #3 C y #1 0 *1 20,997 # A.O.C. Carper Wheatley 18,900 Water Source and Treatment: Source - The Queen Sand (known as the Red Sand) encountered at 2571 to approximately 2510 in test well just completed. The water has been analyzed and found to be a heavy brine having the following characteristics: Chlorides 197,000 parts per million 7,120 溅 Calcium ŧt 楝 ** Magnesium 10,500 Ħ 體 Ħ 750 Sulfates 称 44 55 24 Iron Ħ 攋 # Carbon Dioxide 68 轉 Ħ 51,200 Cacoz Total Nardness pH 6.5 Treatment - The water will be injected in a closed system at the beginning of the project, passing through individual filters at each well. Cement lined pipe is to be used in the distribution system. As the pilot floed progresses, samples will be taken frequently and tested, to see if further treatment of the water is required.

Proposed Pilot Flood Spacing - 80 acre, five spot by conversion at alternate wells in 40 acre units.

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Injection Rates and Pressures: Estimated injection rate - 500-800 BPD/well. Estimated injection pressure - Gravity at inception.

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<pre>Page 1 in the sec of the sec</pre>	L L S NOLL	RECORD SUM SQUARE LAX 3855.6 3899.2 3899.2	SUMMARY OF LAKE FIELD, 6 53 1 2 53 1		PROPOSED W RODT COUN	WATER IN NTY, NEW Comment 100		S Hortzons 3184-3198', 3313-3329', 3222-3248',	RECTION WELLS MEXICO 3135-3151*, 3184-3198*, 3203-3206*, 3265-3270*, 3313-3329* 3180-3200*, 3222-3248*, 3358-3374*, 3380-3402	Total Depth 3404
	ч	3899.2	CT NP	書作で	3120	100	3180-3200°, 3380-3402	3222-32481,	3358-33740,	
Carper Drilling Co. al "D" SE/4 MM/4, 29-T168-R31E	H	3924.0								
AOC - Texas Trading Co Federal "A" SW/4 SW/4, Sec. 29-T16S-R31E	-	0-3885	CT C	15#	3162	100	321 8- 3228•,	3218-3228•, 3314-3386•, 3386-3404•,	33863404+,	
AOC - Texas Trading Co Pederal "A" ME/48W/4 Sec. 29-T168-R51E	# =	3924-3	54	1	3239	100	3250-3258", 3436-3452	3250-3258°, 3260-3262°, 3300-3340°, 3436-3452	330 0-33 40',	
ACC - Texas Trading Co., State of Hew Hexieo "N", ME/4 MM/4 See. 32-T168-R313	ω iii	3923-9	ST.		3255	100	3270-32851, 3450-34671	3450 -346 7*		
ACC - Carper Drilling Co. R. Wheetley-Wederal, SW/4 SE/4 Sec. 29-T16S-R31E	سو	3944.0	UI VI	17#	3156	100	3295-33101,	3295-33101, 3350-33851, 3497-35221	3497-3522"	
AOC - Vickers Petroleum Co., Pederal NE/4 NE/4 Sec. 30- T168-R31E	N	3864.5	U1	14	3057	100	3095-3100°, 3264-3278°,	3153-3166°, 3293-3303°	3095-31001, 3153-31661, 3208-32111, 3264-32781, 3293-33031	

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AOC - Vickers Petroleum Co., Federal, SE/4 NE/4 Sec. 30- T16S-R31E	AOC - Vickers Petroleum Co., Pederal - Center NE/4, Sec. 30-T16S-R31E	AOC - Vickers Petroleum Co., Pederal - SW/4 ME/4 Sec. 30- T165-R31E	
H	7	ω	Well No.
3856 * 2	3843.2	3830.0	Elev. Size
5	5	5	Sixe
파	15놹	14	Wit
14# 3100	15# 3075	14# 3020	Ht. Depth
100	100	100	Sacks Cement Used
3105-31301,	3085-30891,	3075-30801, 3120-3145	Productive Horizons
3105-31301, 3132-31901, 3290-33111	3085-30891, 3096-30991, 3128-31361	3120-3145	Hor t rons
3290-3311 1	3128-31361		
3326	3207	3164	Total Depth

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