

CASE 2458: Application of ZAPATA
PETROLEUM for waterflood project
in Maljamar (Grayburg-San Andres).

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lication, Transcript,
all Exhibits, Etc.

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. 2458
Order No. R-2157

APPLICATION OF ZAPATA PETROLEUM
CORPORATION FOR A WATERFLOOD
PROJECT IN THE MALJAMAR POOL,
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on December 11, 1961, at Santa Fe, New Mexico, before Elvis A. Utz, 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 3rd day of January, 1962, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Elvis A. Utz, 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 the applicant, Zapata Petroleum Corporation, seeks permission to institute a waterflood project in the Maljamar (Grayburg-San Andres) Pool in an area comprising the S/2 of Section 17 and the N/2 of Section 20, all in Township 17 South, Range 33 East, NMPN, Lea County, New Mexico, by the injection of water into the Grayburg-San Andres formation.

(3) That the proposed waterflood project should be authorized and should be governed by the provisions of Rule 701 of the Commission Rules and Regulations, including those provisions regarding allocation of allowables.

IT IS THEREFORE ORDERED:

(1) That the applicant, Zapata Petroleum Corporation, is hereby authorized to institute a waterflood project in the Maljamar (Grayburg-San Andres) Pool in an area comprising the S/2 of Section 17 and the N/2 of Section 20, all in Township 17 South,

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CASE No. 2458
Order No. R-2157

Range 33 East, NMPPM, Lea County, New Mexico, by the injection of water into the Grayburg-San Andres formation through the following-described wells:

Zapata-Western State Well No. 6, located in
Unit D of said Section 20;

Zapata-Western State Well No. 8, located in
Unit N of said Section 17; and

Zapata-Western State Well No. 15, located in
Unit L of said Section 17.

(2) That the operation of the waterflood herein authorized shall be governed by Rule 701 of the Commission Rules and Regulations, including those provisions regarding allocation of allowables.

(3) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rule 704 and Rule 1119 of the Commission Rules and Regulations.


(4) 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 hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


EDWIN L. MECHEM, Chairman


E. S. WALKER, Member


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



esr/

ZAPATA PETROLEUM CORPORATION
CASING RECORD
Proposed Injection Wells
Western State Lease
Maljamar Field - Lea County, New Mexico

Well No.	Location		Total Depth	Date Completed	Perforated Intervals	SURFACE CASING					PRODUCTION CASING				
	Unit	S-T-R				Size	Weight	Grade	Depth	Sx. Cement	Size	Weight	Grade	Depth	Sx. Top Cement
6	D	20-17-33	4450	7-23-55	4198-4208 4258-4270 4288-4302 4304-4316 4339-4375	10-3/4"	40#	H-40	277	Circ.	7"	23#	J-55	4450	2500 Circ.
8	N	17-17-33	4500	10-25-55	4198-4216 4302-4310 4334-4354 4372-4416 4432-4460	10-3/4"	40#	H-40	297	Circ.	7"	29#	J-55	4497	2000 515'
15	L	17-17-33	4472	3-2-57	4203-4218 4238-4250 4326-4348 4364-4396	9-5/8"	36#	H-40	279	Circ.	5-1/2"	15.5#	J-55	4470	2500 725'

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 2458
CASE NO. 2458

ZAPATA PETROLEUM CORPORATION
 PRODUCTION DATA
 WESTERN STATE LEASE
 MALJAMAR FIELD
 LEA COUNTY, NEW MEXICO

BEFORE EXAMINER UTZ
 OIL CONSERVATION COMMISSION
 EXHIBIT NO. 3
 CASE NO. 2428

	<u>1953</u>	<u>1954</u>	<u>1955</u>
Jan.		1,720	1,024
Feb.		1,697	977
Mar.	363	1,789	1,098
Apr.	581	1,942	776
May	430	2,139	894
June	589	1,779	3,479
July	850	1,344	5,858
Aug.	1,786	1,565	7,246
Sept.	2,006	1,703	6,958
Oct.	2,176	1,814	7,820
Nov.	2,089	2,004	9,892
Dec.	2,226	1,500	9,437
	<u>1956</u>	<u>1957</u>	<u>1958</u>
Jan.	10,292	16,412	10,359
Feb.	9,437	13,635	9,032
Mar.	12,242	15,068	10,143
Apr.	13,138	13,924	9,306
May	14,631	14,128	6,870
June	15,494	12,268	6,756
July	15,320	12,474	7,827
Aug.	15,517	11,495	7,747
Sept.	15,453	10,610	7,821
Oct.	15,730	10,897	7,115
Nov.	15,195	10,316	9,507
Dec.	16,113	10,420	9,406
	<u>1959</u>	<u>1960</u>	<u>1961</u>
Jan.	9,213	5,737	7,620
Feb.	6,716	5,163	6,118
Mar.	7,205	5,786	6,143
Apr.	7,032	4,501	5,680
May	6,952	5,267	5,737
June	6,554	4,310	5,512
July	6,395	8,899	6,206
Aug.	6,616	9,536	5,555
Sept.	6,333	7,000	4,713
Oct.	6,993	7,678	4,652
Nov.	5,777	6,837	4,969
Dec.	6,089	6,465	

Cumulative production 12-1-61 - 734,099

4,969-10.3 Ave

ZAPATA PETROLEUM CORPORATION
WELL TEST
WESTERN STATE LEASE
MALJAMAR FIELD
LEA COUNTY, NEW MEXICO

<u>Well No.</u>	<u>Date</u>	<u>Producing Status</u>	<u>Oil Prod.</u>	<u>Water Prod.</u>	<u>GOR</u>
✓ 1-X	10-15-61	Pump	25.0	0	3430
✓ 2	10-29-61	Flow	20.5	0	4810
3	11-1-61	Flow	4.5	0	6550
4	12-2-61	Pump	10.5	0	4950
5	10-25-61	Pump	10.0	0	4810
6	11-26-61	Flow	5.0	0	5200
7	11-8-61	Pump	7.0	0	5920
8	11-24-61	Pump	8.0	0	4110
9	11-12-61	Pump	6.5	1.0	2460
10	10-19-61	Flow	4.0	0	3310
11	11-30-61	Pump	4.5	0	4940
12	11-20-61	Pump	5.0	0	5250
13	11-4-61	Pump	6.0	0	4880
14	11-14-61	Flow	4.0	0	7240
15	11-28-61	Pump	10.5	0	8510
✓ 16	12-4-61	Flow	34.5	0	3490 - <i>Drilled 1958</i>

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 4
CASE NO. 2458

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EXHIBIT 2

ZAPATA PETROLEUM CORPORATION
CASING RECORD
PROPOSED INJECTION WELLS
WESTERN STATE LEASE
MALJAMAR FIELD
LEA COUNTY, NEW MEXICO

WELL NO.	KDB ELEV.	TOTAL DEPTH	HOLE SIZE	PERFORATED INTERVALS	SURFACE CASING			PRODUCTION CASING		
					SIZE	DEPTH	SXS.CEMENT	SIZE	DEPTH	SX.CEMENT
6	4216'	4450'	8-3/4"	4198-4208' 4258-4270' 4288-4302' 4304-4316' 4339-4375'	10-3/4"	277'	Circ.	7"	4450'	2500
8	4223'	4500'	8-3/4"	4198-4216' 4302-4310' 4334-4354' 4372-4416' 4432-4460'	10-3/4"	297'	Circ.	7"	4497'	2000
15	4218'	4472'	7-7/8"	4203-4218' 4238-4250' 4326-4348' 4364-4396'	9-5/8"	279'	Circ.	5-1/2"	4470'	2500

ZAPATA PETROLEUM CORPORATION
CASING RECORD
PROPOSED INJECTION WELLS
PHILLIPS STATE B LEASE
MALJAMAR FIELD
LEA COUNTY, NEW MEXICO

WELL NO.	KDB ELEV.	TOTAL DEPTH	HOLE SIZE	PERFORATED INTERVALS	SURFACE CASING			PRODUCTION CASING		
					SIZE	DEPTH	SXS.CEMENT	SIZE	DEPTH	SXS.CEMENT
3	4166'	4421'	7-7/8"	4080-4092' 4113-4128' 4144-4154' 4168-4173' 4180-4190' 4247-4252'	8-5/8"	348'	175 & cir.	5-1/2"	4420'	150
5	4163'	4458'	7-7/8"	4080-4090' 4118-4130' 4172-4180' 4204-4232' 4378-4408'	8-5/8"	354'	175 & cir.	5-1/2"	4457'	150

TREAT-RITE WATER LABORATORIES, INC.
Box 548, Muehans, Texas

RESULT OF WATER ANALYSIS

To: Mr. Frank Darden
1125 Fort Worth National Bank Bldg.
Fort Worth, Texas

Laboratory No: M55926
Sample Received: 5-6-59
Results Reported: 5-15-59

Company: Yucca Water Company
Eddy County, New Mexico

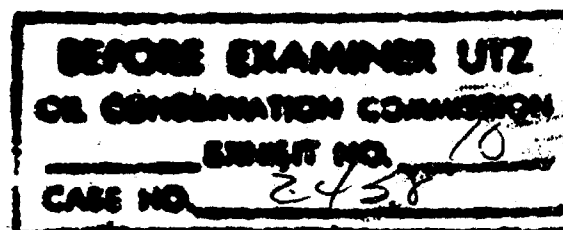
Lease: Williams

Source of Sample, and Date Taken:

No. 1: Raw water - taken from water well #1. 5-6-59

CHEMICAL AND PHYSICAL PROPERTIES

Specific Gravity at 60° F.	1.0014
PH When sampled	7.4
PH When received	7.5
Total Alkalinity as CaCO_3	150
Supersaturation as CaCO_3	-
Undersaturation as CaCO_3	2
Total Hardness as CaCO_3	165
Calcium as CaCO_3	141
Magnesium as CaCO_3	24
Sodium and/or potassium	16
Sulfate as SO_4	19
Chloride as Cl	22
Silica as SiO_2	11.6
Iron as Fe	0.12
Manganese as Mn	0
Barium as Ba	None
Turbidity Electric	1.0
Color as Pt	2.3
Dissolved solids at 103° C.	245
Total solids at 103° C.	246
Temperature ° F	66
Carbon Dioxide Calculated	12.5
Dissolved Oxygen Winkler	7.2
Hydrogen Sulphide	None
Residual Chlorine	None
Resistivity OHMS/cc	2,050
Chlorides, as NaCl	37
Total Solids, Calculated	302



NOTE: All results reported as parts per million. Divide by 17.1 to convert to grains per gallon.

ZAPATA PETROLEUM CORPORATION
ESTIMATED RESERVOIR AND RECOVERY DATA
WESTERN STATE LEASE
MALJAMAR FIELD
LEA COUNTY, NEW MEXICO

Grayburg - San Andres

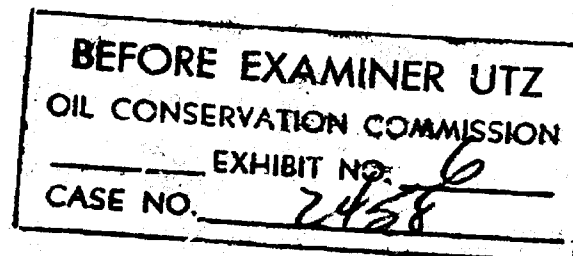
	<u>Barrels Per</u> <u>Acre-Foot</u>
Total pore space for 11.5% porosity	892.2
Connate water saturation (35%)	312.3
Original oil saturation (65%)	579.9
Formation volume factor (1.2)	
Original STO in place	483.2
Primary oil produced to 12-1-61	35.8
Remaining primary oil	15.0
Waterflood oil reserves	51.7
Residual oil after waterflooding (42.8% of pore space)	380.7

Primary Reserves

Area	640 acres
Average net pay	32 ft.
Primary acre-feet	20,520
Cumulative 12-1-61	734,099 BO
Remaining primary reserves	307,905 BO
Ultimate primary reserves	1,042,004 BO

Waterflood Reserves

Area	631 acres
Average net pay	32 ft.
Waterflood acre-feet	20,192
Waterflood recovery per acre-foot	51.7
Ultimate waterflood reserves	1,043,926 BO



ZAPATA PETROLEUM CORPORATION
ESTIMATED RESERVOIR AND RECOVERY DATA
WESTERN STATE LEASE
MALJAMAR FIELD
LEA COUNTY, NEW MEXICO

Grayburg - San Andres

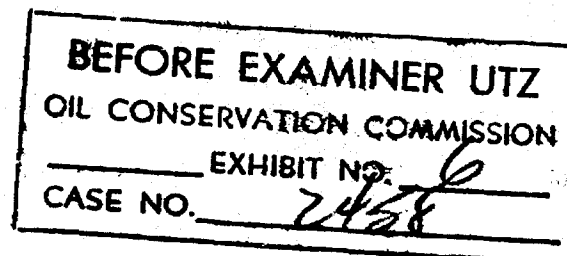
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FARMINGTON, N. M.
PHONE 325-1182

ALBUQUERQUE, N. M.
PHONE 243-6691

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
December 11, 1961

IN THE MATTER OF:

Application of Zapata Petroleum Corporation
for a waterflood project in the Maljamar
(Grayburg-San Andres) Pool, Lea County,
New Mexico. Applicant, in the above-styled
cause, seeks permission to institute a
waterflood project in the Maljamar (Gray-
burg-San Andres) Pool in Sections 17 and 20,
Township 17 South, Range 33 East, Lea
County, New Mexico, with the injection of
water initially to be through three wells
located in said Sections 17 and 20; said
project is to be governed by Rule 701.

Case 2458

BEFORE:

Elivs A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: We will take up next Case 2458.

MR. WHITFIELD: Application of Zapata Petroleum
Corporation for a waterflood project in the Maljamar (Grayburg-
San Andres) Pool, Lea County, New Mexico.

MR. CAMPBELL: Jack M. Campbell, Campbell and Russell,
Roswell, New Mexico, appearing on behalf of the applicants. I
have one witness to be sworn.

(Witness sworn)

MR. UTZ: Are there any other appearances in this
case? You may proceed.



KENNETH R. HUDDLESTON, called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. CAMPBELL:

Q State your name, please.

A Kenneth R. Huddleston.

Q Where do you live, Mr. Huddleston?

A In Midland, Texas.

Q By whom are you employed and in what capacity?

A By Zapata Petroleum, 901 West Missouri, petroleum engineer.

Q Will you give the examiner a brief statement of your educational and professional background, please?

A Graduated from Texas A and M, 1951, employed by Ohio Oil Company from June, 1953 until July, 1957. At that time was employed by the Zapata Petroleum Corporation.

Q Have you done work in the Permian Basin area?

A All of that time was in the Permian Basin, except from 1955 until 1957.

Q Are you acquainted with the application of Zapata in this case?

A Yes, sir, I am.

(Whereupon, Applicant's Exhibit 1 was marked for identification.)

Q I hand you what has been identified as Exhibit Number

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1, and ask you to state what that is, please.

A This is a plat of the East Maljamar field area. The lease circled in red is our Western State lease located in the South Half of Section 17, North Half of Section 20, Township 17 South, Range 33 East.

Q This is all one lease, is it?

A Yes, sir, that's correct.

Q Your company is the operator of that lease?

A Yes, sir, that's correct.

Q Go ahead and state what the circled wells indicated?

A The wells circled in red are the proposed injection wells for our pilot, and the wells circled in green are the proposed injection wells of our offset operator.

Q Have you made some studies of the wells on this lease with regard to their completion and production history?

A Yes, sir, we have.

(Whereupon, Applicant's Exhibit 2 was marked for identification.)

Q I hand you what's been identified as Applicant's Exhibit Number 2 and ask you please to state what that is.

A This is a resume of the well histories showing their location, when they were completed, where the surface pipe was set at, the total depth to which they were set, and the total depth of the wells and the size of casing, and the total depth at which it was set and the amount of cement with which it was



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cemented, with perforations and treatment records potentials and work-overs.

Q From an examination of the history of the completion and production and work-overs of these wells, does it appear that they received initial treatments and that the wells have been worked over within economic limits to obtain the greatest possible primary recovery from the wells?

A Yes, sir, these wells, with the exception of one or two, fracked and completed and several worked over in '57, '58, '60.

Q Have you compiled the per monthly production from this lease and the total cumulative production from December 1, 1961?

A Yes, sir, this was compiled.

(Whereupon, Applicant's Exhibit 3 was marked for identification.)

Q I'll hand you what has been identified as Exhibit 3, and ask you if that is that compilation?

A Yes, sir, that is correct.

Q Referring to Exhibit 3, does this indicate that since 1958 there has been a consistent decline in the cumulative monthly production from this lease?

A Yes, sir, that's correct.

Q What has the cumulative production been from the lease to December 1, 1961?



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A 734,099 barrels of oil.

Q Have you made a test of these wells recently to determine the present producing status of each of the 16 wells situated upon this lease?

A Yes, sir, we have.

(Whereupon, Applicant's Exhibit 4 was marked for identification)

Q I hand you what has been identified as Applicant's Exhibit Number 4, and ask you to state if that is that compilation?

A Yes, sir, this is a copy of the well tests that were conducted starting on about the 15th of October.

Q I refer you to the wells 1-X and 2, and well 16 which appear to have been daily producing wells, would you make a comment concerning those particular wells?

A 1-X and 2 have been recently worked over, and were fracked. Well No. 16 was not drilled until in '58 and hasn't gone as sharp a decline as the other wells have yet.

Q Based upon your knowledge of the decline of primary production from these wells since they have been completed on the lease, and I'm speaking now of all the wells, do you anticipate that there will be a steady decline in the producing rate of the three wells that have been referred to?

A Yes, sir, they'll decline as these other wells have, I'm sure.



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Q What is the average production per well on this lease, based upon these tests as indicated by Exhibit 4?

A A little over ten barrels per day.

Q Do you believe that within the time required to get reaction from any of those wells from injection with water, that the wells will average below ten barrels per day?

A Yes, sir, I do, because the November production averaged 10.3 barrels of oil per day per well.

Q Have you, Mr. Huddleston, based upon the primary oil production, prepared a decline curve for your Western State lease that's involved in this application?

A Yes, sir, we have.

(Whereupon, Applicant's Exhibit 5 was marked for identification)

Q I hand you what has been identified as Exhibit No. 5, and ask you to state if that is that decline curve?

A Yes, sir, this is the decline curve that we prepared on this Western State lease.

Q I refer you to a rather sharp increase in production about the middle of 1960, following which there has been a consistent decline in the cumulative production. Would you refer to that and give the Examiner your explanation of that situation?

A At this time this lease was owned and operated by Western Oil Fields and they worked over several of the wells



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on the lease, as is indicated by the resume of the well record, and they continued these work-overs until they realized it was uneconomical to continue doing so, and at that time the lease went back on its normal decline.

Q Do you believe that your projection of anticipated further decline in production is a reasonable projection based upon the history of primary production on this lease?

A Yes, sir, I do.

Q Mr. Huddleston, have you made any calculations with regard to the estimated primary and waterflood reserves and the possible ultimate recovery, both primary and cumulative, on this lease?

A Yes, sir, I have.

(Whereupon, Applicant's Exhibit 6 was marked for identification)

Q I refer you to what has been identified as Applicant's Exhibit Number 6, and ask you if that is your calculation.

A Yes, sir, that's correct.

Q Will you explain briefly to the Examiner the basis for the calculation of your reserves and the data that you had available to make these calculations?

A This data was taken primarily from core analysis and gamma ray neutron logs that were run on the wells.

Q Which well had the core analysis?

A The well number 4. The primary reserves, of course,



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was arrived at by an extrapolation of the production decline curve. Our waterflood reserves were calculated to be approximately a hundred percent times ultimate primary reserves.

Q You calculated your ultimate reserves as slightly over a million barrels, is that correct?

A Yes, sir. We calculated the ultimate primary reserves to be a million forty-two thousand four barrels of oil.

Q And your ultimate waterflood reserves?

A A million forty-three thousand nine hundred twenty-six barrels of oil.

Q Do you believe that the reserves for secondary, as you have indicated, are recoverable only by the secondary methods that you propose here?

A Yes, sir, that's correct.

Q Now, will you refer to Exhibit Number 1, which is the plat, and identify for the Examiner the wells which you propose to use initially for injection wells?

A The wells number 6, 8, and 15, with well number 11 being the closed five-spot well.

Q Have you prepared and made as part of your application the casing records on these three proposed injection wells?

A Yes, sir, that's correct.

(Whereupon, Applicant's Exhibit 7 was marked for identification)

Q I hand you what has been identified as Applicant's



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Exhibit Number 7, and ask you to state if this is the casing record on these three wells?

A Yes, sir, this is the casing record on our three proposed injection wells on the Western State lease.

Q I refer you to those casing records, and will you state to the Examiner what they reflect with regard to cement that was used on the completion of these wells?

A Yes, sir, the number 6 well had ten and three-quarters pipe set at 277, cement was circulated; had 7-inch set at 4450 and cement was also circulated on the oil string. Well number 8 had ten and three-quarters pipe set at 297, the cement was circulated; 7-inch oil string set at 4497 and the top of cement is 515 feet by temperature survey. Well number 15 had nine and five-eighths set at 279, with cement circulated, and five and a half set at 4470, and top of the cement at 725.

Q Do you believe that the treatment given these wells is sufficient to protect any formations in the water injection program?

A Yes, sir, I do.

Q You mentioned that you intend to use well number 11 as the initial five-spot well. Will you state to the Examiner what you plan to do in connection with preparing that well for production under the secondary program?

A The well itself is in satisfactory condition to be used as a five-spot well. There is a dry hole located



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100 feet West of the well and it will have to be replugged to prevent possible migration of oil.

Q What was the depth of that well?

A It was drilled to 1309.

Q What is it you intend to do?

A We plan to clean the well out to the top of the cement plug at 4200 feet and cement it back with cement plug to approximately 4000 feet.

Q Do you have available for the Examiner logs on the three proposed injection wells?

A Yes, sir, we do.

(Whereupon, Applicant's Exhibit 8-A, 8-B, 8-C marked for identification.)

Q I'm going to hand you an exhibit marked 8-A, and ask you which well log that is?

A This is a log of our Phillips or Western State Number 15. We changed the name of this lease in order to avoid confusion with a lease that we had already designated as Phillips State.

Q And Exhibit 8-B?

A This is a log of the Phillips State Number 6.

Q And Exhibit 8-C?

A Log of Western States Number 8.

Q What have you shown on these logs, Mr. Huddleston?

A We've indicated the intervals that are perforated and



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from which these wells are producing on the detailed section of the logs.

MR. UTZ: On all of them?

A Yes, sir, I believe so. There they are, right there.

Q Do you also have available for the Examiner a log on the Phillips State Number 11 which is the five-spot well on this pattern?

A Yes, sir, we do.

(Whereupon, Applicant's Exhibit 9 was marked for identification)

Q I hand you what has been identified as Applicant's Exhibit Number 9, and ask you to state whether that is the log on well Number 11?

A Yes, sir, this is the log on the Western State Number 11. It also has perforations marked in the zones which it is producing from.

Q Now, Mr. Huddleston, at what rate do you intend to inject water in these three injection wells initially from the fill-up?

A Initially we plan to inject 400 barrels of water a day during fill-up.

Q Then what do you propose to do after fill-up, particularly in relationship to Commission Rule 701?

A After we have reached fill-up, we plan to inject at a rate which will conform with Rule 701.



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ALBUQUERQUE, N. M.
PHONE 243-5691

Q What range do you expect that to be?

A We think that that will be in the range of 150 to 300 barrels of water per day per well.

Q What is the source of your water?

A We plan to purchase water from Yucca Water Company.

Q Has Yucca Water Company furnished you with an analysis of the water they propose to sell to you to use for this program?

A Yes, sir, that's correct.

(Whereupon, Applicant's Exhibit 10 was marked for identification)

Q I hand you what has been identified as Applicant's Exhibit Number 10, and ask you to state if that is the analysis furnished to you by Yucca Water Company?

A Yes, sir, that's correct.

Q Exhibit Number 1 indicated that there will be an injection program by Murphy H. Baxter adjacent to your proposed flood. Are you negotiating a line agreement with Murphy H. Baxter in connection with that situation?

A Yes, sir, we're at this time negotiating a line agreement.

Q And will the injection of any water be held up until such time as the agreement is consummated between the parties?

A Yes, sir, that's correct.

Q Do you believe, Mr. Huddleston, based upon the information that you have furnished the Examiner and upon your know-



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PHONE 243-6691

ledge of this property, that the institution of a pilot water-flood program here will be in the best interest of conservation?

A Yes, sir, I do.

Q Do you believe that when the line agreement is entered into, that the correlative rights of the parties involved will be adequately protected?

A Yes, sir, I do.

Q Were all of these exhibits prepared by you or under your supervision?

A Yes, sir.

MR. CAMPBELL: I would like to offer Applicant's Exhibits 1 through 10.

(Whereupon, Applicant's Exhibits 1 through 10 offered in evidence)

MR UTZ: Applicant's Exhibits 1 through 10, including 8-A, 8-B, and 8-C will be entered into the record.

MR. CAMPBELL: That's all the questions I have at this time, Mr. Examiner.

CROSS EXAMINATION

BY MR. UTZ:

Q When do you anticipate fill-up in this unit?

A We anticipate the fill-up will be in a period from six to nine months.

Q From what date?

A From the date we start injecting water.



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PHONE 243-6691

Q You don't know what that date is?

A We anticipate that it will probably take us two months to be injecting water upon approval by the Commission.

Q Somewhere around August, then, next year?

A Yes, sir.

Q After fill-up, you would reduce your rates to about, what did you estimate, 150 to what?

A Three hundred barrels of water a day.

Q Per well?

A Yes, sir.

Q In regard to the wells Number 1-X, 2 and 16 which are still producing sizable amounts of oil, it is your contention that they will be depleted to the point that you can consider them stripper wells by next August?

A Yes, sir, I think so, because the Number 2 well was dead, or the Number 1 well was dead at the time we took the lease over and we installed pumping equipment and that accounts for part of its producing rate.

Q The Number 16 is capable of producing top allowable at this time, is it not?

A Yes, sir, that's correct.

Q Well, the entire 640 is now known as the Phillips State lease?

A The Western State.

Q The Western State?



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PHONE 243-6691

A Yes, we had a Phillips State lease. We had to designate it as Western State to avoid confusion.

Q Then all wells will be known as Zapata Western State Number so and so?

A Yes, sir, that's correct.

Q And the ownership, royalty, working interest, and so forth is common under the entire lease?

A Yes, sir, that's correct.

MR. UTZ: Any other questions of the witness?

MR. CAMPBELL: I have one other question.

RE-DIRECT EXAMINATION

BY MR. CAMPBELL:

Q Mr. Huddleston, in the event Murphy H. Baxter commences to inject water in the wells immediately to the West of your lease, will it be necessary, in your opinion, for you to commence this program in order to protect your correlative rights?

A Yes, sir.

Q One other question. Zapata appears to own some leasehold interest in Section 19 lying to the Southwest of your Western State lease, is that correct?

A Yes, sir, that's correct.

Q Do you contemplate, at a future date, that you will commence some sort of a waterflood program on that particular lease?

A Yes, sir, we do.



MR. CAMPBELL: That's all I have.

MR. UTZ: Any other question? The witness may be excused.

(Witness excused.)

MR. UTZ: Any other statements in this case? The case will be taken under advisement.

STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) SS

I, ADA DEARNLEY, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing was reported by me in Stenotype and that the same was reduced to typewritten transcript under my personal supervision and contains a true and correct record of said proceedings, to the best of my knowledge, skill and ability.

DATED this 11th day of December, 1961, in the City of Albuquerque, County of Bernalillo, State of New Mexico

Ada Dearnley
NOTARY PUBLIC

My Commission Expires:
June 19, 1963.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2455 heard by me on Dec. 11, 1961.

Thomas A. Utz
Examiner
New Mexico Oil Conservation Commission

DEARNLEY-MEIER REPORTING SERVICE, Inc.

FARMINGTON, N. M.
PHONE 325-1182

ALBUQUERQUE, N. M.
PHONE 243-669

Case 2458

Heard. 12-11-61

Rec. 12-19-61

1. Grant Zapata's request for an H-0 flood for the following area.

(a) Western H. Line consisting of:

S/2 Sec. 17-17S-33E.

N/2 " 40-17S-33E.

Approx. 640 Ac.

(b) The following wells should be approved for injections:

Zapata - Western H. #6 D-20-17S-33E

" " " #8 N-17-17S-33E.

" " " #15 L-17-17S-33E.

2. The project shall be governed by Rule 201.

Thos. H. [Signature]

OIL CONSERVATION COMMISSION

P. O. BOX 871
SANTA FE, NEW MEXICO

January 4, 1962

Mr. Jack Campbell
Box 766
Roswell, New Mexico

Dear Mr. Campbell:

Enclosed herewith is Commission Order No. R-2157, entered in Case No. 2458, approving the Zapata Petroleum Corporation Maljamar Water Flood Project.

According to our calculations, when all of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 462 barrels per day. This is based upon the assumption that the wells on each of the 40-acre tracts in the waterflood project area are completed in and producing from the Maljamar (Grayburg-San Andres) Pool.

Please report any error in this calculated maximum allowable immediately, both to the Santa Fe office of the Commission and the appropriate District proration office.

In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 701, it behooves him to promptly notify both of the aforementioned Commission offices by letter of any change in the status of wells in the project area, i.e., when active injection commences, when

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OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

Mr. Jack Campbell
January 4, 1962
-2-

additional injection or producing wells are drilled, when additional wells are acquired through purchase or unitization, when wells have received a response to water injection, etc.

Your cooperation in keeping the Commission so informed as to the status of the project and the wells therein will be appreciated.

Very truly yours,

A. L. PORTER, Jr.,
Secretary-Director

ALP/og
Encls.

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STATE OF NEW MEXICO

STATE ENGINEER OFFICE

SANTA FE

S. E. REYNOLDS
STATE ENGINEER

December 7, 1961

ADDRESS CORRESPONDENCE TO:
STATE CAPITOL
SANTA FE, N. M.

Mr. A. L. Porter, Jr.
Secretary-Director
Oil Conservation Commission
Santa Fe, New Mexico

Dear Mr. Porter:

Reference is made to the application of Zapata Petroleum Corporation submitted through Campbell and Russell on November 27, 1961 seeking authority to commence the injection of water into the Grayburg and San Andres formations in Sections 17 and 20, Township 17 South, Range 33 East in the Maljamar Field. The Zapata Corporation has responded to my letter of November 30th addressed to their attorney concerning this matter. The information submitted by the corporation indicates that injection will be through tubing and beneath the packer, thereby eliminating pressure on the casing. A casing and cementing record on each string of casing in each well has been submitted, as well as other requested information.

After study of the information submitted, I have reached the conclusion that the injection in the proposed manner would not constitute a threat of contamination to any fresh waters which may exist in the area. Therefore, this office offers no objection to the granting of the application.

Yours truly,

S. E. Reynolds
State Engineer

By: *Frank E. Irby*
Frank E. Irby
Chief
Water Rights Division

FEI/ma
cc-Campbell & Russell
Zapata Petroleum Corp.

CASE 2131: (Reopened)

In the matter of the application of Robinson Brothers Oil Producers for the establishment of 320-acre gas proration units in the TV-Pennsylvanian Gas Pool, Chaves County, New Mexico. Case 2131 will be reopened pursuant to Order No. R-1839 to permit the applicant and other interested parties to appear and show cause why the TV-Pennsylvanian Gas Pool should not be developed on 160-acre proration units.

CASE 2456:

Application of Great Western Drilling Company for a unit agreement and for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Maljamar Unit Agreement, covering 1,360 acres, more or less, in Township 17 South, Ranges 32 and 33 East, Lea County, New Mexico. Applicant further seeks authority to institute a waterflood project in the Maljamar (Grayburg-San Andres) Pool by the injection of water into the Grayburg-San Andres formation initially through six wells located in Sections 7 and 18, Township 17 South, Range 33 East, and in Sections 12 and 13, Township 17 South, Range 32 East, Lea County, New Mexico, said project to be governed by the provisions of Rule 701.

CASE 2457:

Application of Murphy H. Baxter for a waterflood project in the Maljamar (Grayburg-San Andres) Pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks permission to institute a waterflood project in the Maljamar (Grayburg-San Andres) Pool in Section 13, Township 17 South, Range 32 East and Sections 17 and 18, Township 17 South, Range 33 East, Lea County, New Mexico, with the injection of water initially to be through four wells located in Section 18, Township 17 South, Range 33 East; said project is to be governed by Rule 701.

CASE 2458:

Application of Zapata Petroleum Corporation for a waterflood project in the Maljamar (Grayburg-San Andres) Pool, Lea County, New Mexico. Applicant, in the above-styled cause, seeks permission to institute a waterflood project in the Maljamar (Grayburg-San Andres) Pool in Sections 17 and 20, Township 17 South, Range 33 East, Lea County, New Mexico, with the injection of water initially to be through three wells located in said Sections 17 and 20; said project is to be governed by Rule 701.

iqg/

DOCKET: EXAMINER HEARING - MONDAY - DECEMBER 11, 1961

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Elvis A. Utz, Examiner, or Daniel S. Nutter, as alternate examiner:

CASE 2447: (Continued)

Application of Humble Oil & Refining Company for approval of a pressure maintenance project in the Cha Cha-Gallup Oil Pool, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks permission to institute a pressure maintenance project in the Cha Cha-Gallup Oil Pool by the injection of water into certain wells located on the Navajo Indian Reservation in Sections 13 through 29 and 33 through 36, Township 29 North, Range 14 West, San Juan, New Mexico. Applicant further seeks the promulgation of special rules and regulations governing said project.

CASE 2429: (Continued)

Application of Standard Oil Company of Texas for approval of the Jurnegan Point Unit Agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Jurnegan Point Unit Agreement embracing 10,240.84 acres, more or less, of State and fee lands in Township 24 South, Ranges 24 and 25 East, Eddy County, New Mexico.

CASE 2450:

Application of Texaco Inc. for an exception to Rule 309-A, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 309-A to permit the Abo production from its State "AB" Lease, located in Section 6, Township 18 South, Range 35 East, Lea County, New Mexico, to be transported prior to measurement on said lease to applicant's State "R" (NCT-1) Lease, located in said Section 6.

CASE 2462:

Application of Texaco Inc. for three triple completions, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order authorizing the triple completion of its V. M. Henderson Well Nos. 7, 8 and 9, located in Units F, E, and G, respectively, Section 30, Township 21 South, Range 37 East, NMPM, Lea County, New Mexico, in such a manner as to permit the production of oil from each well from the Penrose-Skelly, Paddock, and Drinkard Pools through parallel strings of 2 3/8-inch tubing cemented in common well bores.

CASE 2451: Application of The Ohio Oil Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks permission to complete its Lea Unit Well No. 6, located in Unit J of Section 11, Township 20 South, Range 34 East, Lea County, New Mexico, as a dual completion (conventional) adjacent to the Lea-Pennsylvanian Gas and Lea-Devonian Pools, with the production of gas from the Pennsylvanian formation and the production of oil from the Devonian formation through parallel strings of 2 3/8-inch tubing.

CASE 2452: Application of Southwest Production Company for an order pooling all mineral interests in the Basin-Dakota Gas Pool in the W/2 of Section 7, Township 30 North, Range 11 West, San Juan County, New Mexico. Interested parties include Maleta Y. Brimhall, Phoenix, Arizona, and Barbara Brimhall Burnham, Aztec, New Mexico.

CASE 2453: Application of Southwest Production Company for an order pooling all mineral interests in the Basin-Dakota Gas Pool in the E/2 of Section 7, Township 30 North, Range 11 West, San Juan County, New Mexico. Interested parties include Harold Marion Brimhall and his wife, Maleta Y. Brimhall, both of Phoenix, Arizona.

CASE 2454: Application of Socony Mobil Oil Company, Inc., for an exception to Rule 303 (a), Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 303 (a) to permit the commingling of the production from the Denton-Devonian and the Denton-Wolfcamp Pools on its T. D. Pope lease, comprising the S/2 of Section 26 and the W/2 of Section 36, Township 14 South, Range 37 East, Lea County, New Mexico. Applicant proposes to meter the production from one pool only and to allocate production to the other pool according to the subtraction method; the API gravity of the crude from one of the pools is greater than 45°.

CASE 2455: Application of Hondo Oil & Gas Company for an unorthodox oil well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox oil well location in the Empire Abo Pool 660 feet from the East line and 2590 feet from the North line of Section 25, Township 17 South, Range 28 East, Eddy County, New Mexico.

November 30, 1961

Mr. John F. Russell
Attorney at Law
Roswell, N. M.

Dear Mr. Russell:

Receipt of your letter under date of November 27, 1961 transmitting a copy of the application of the Zapata Petroleum Corporation for a water flood project is hereby acknowledged. In view of the fact that none of the exhibits which accompanied the original application were submitted to this office, it will not be possible for us to make our recommendations to the Commission at this time. If you care to submit copies of the exhibits, they will be carefully studied and recommendations made to the Commission forthwith; and if not, I will endeavor to attend the hearing when it is set down and appraise the situation from the testimony given there.

Yours truly,

S. E. Reynolds
State Engineer

By:

Frank E. Irby
Chief
Water Rights Division

FBI/ma
cc-Mr. A. L. Porter, Jr. ✓

*Do not
submit
12-1-61
J*

Case 2458

LAW OFFICES OF
CAMPBELL & RUSSELL
J. P. WHITE BUILDING - P. O. BOX 265
ROSWELL, NEW MEXICO

TELEPHONES
MAIN 2-4641
MAIN 2-4642

JACK M. CAMPBELL
JOHN F. RUSSELL

November 27, 1961

Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

ATTN: Mr. Dick Morris

Dear Mr. Morris:

We transmit herewith in triplicate the application of Zapata Petroleum Corporation covering the hearing which has been scheduled for December 11.

Very truly yours,

CAMPBELL & RUSSELL

John F. Russell
John F. Russell

JFR:np

Enclosures

*Not
mailed
12/1-61*

BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF)
ZAPATA PETROLEUM CORPORATION FOR AN)
ORDER AUTHORIZING THE INJECTION OF)
WATER INTO GRAYBURG AND SAN ANDRES)
FORMATIONS FOR THE PURPOSE OF SECONDARY)
RECOVERY IN SECTIONS 17 and 20, TOWN-)
SHIP 17 SOUTH, RANGE 33 EAST, IN THE)
MALJAMAR FIELD, LEA COUNTY, NEW MEXICO.)

No. 2458

APPLICATION

COMES NOW Zapata Petroleum Corporation, by its attorneys,
Campbell & Russell, and states:

1. It is the owner of operating rights to the Grayburg and San Andres formations under its Western State Lease covering the S $\frac{1}{2}$ of Section 17 and the N $\frac{1}{2}$ of Section 20 in Township 17 South, Range 33 East, in the Maljamar Field, Lea County, New Mexico.
2. It proposes to commence the injection of water in certain wells identified on Exhibit 1 attached hereto, said exhibit being a plat also showing the location of all other wells within a radius of two miles from said proposed injection wells and the lessees within said two mile radius.
3. It is filing with the Commission copies of logs of all proposed injection wells.
4. It attaches hereto as Exhibits 2 and 2-A a record of the casing program of the proposed injection wells.
5. It proposes to flood the Grayburg and San Andres formations at depths ranging from 4080 feet to 4460 feet from the surface at injection rates ranging from 150 to 300 BWPD per injection well after fillup. Water, from the Olaga formation, will be purchased from Yucca Water Company.

WHEREFORE, Applicant requests that the Commission set this matter down for hearing before its Examiner, publish notice as required by law and, after hearing, issue its Order authorizing the injection of water as requested.

Respectfully submitted,

ZAPATA PETROLEUM CORPORATION

By John J. Russell
CAMPBELL & RUSSELL
P. O. Drawer 640
Roswell, New Mexico

Dated: November 20, 1961