<u>CASE 2966:</u> Application of HARLAN PROD. CO. for a waterflood project in Grayburg-Jackson Pool.

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Application, TYANSCRIPTS, SMAll Exhibits FTC.

OIL CONSERVATION COMMISSION SANTA FE, NEW LEXICO

Date Jan 8, 1964 Hearing Date 9 am Jan 8,64 My recommendations for an order in the above numbered Cases are as follows: CASE ruber an order authorizing Harlan production Co to institute a war flood project in the ley the ingiction of water into the Obien Farmation of the graying Jackson Pool Eddey Co through the faceowing water Etz - State # 2, 1980'FSL \$ 660' FWL 16-175-30E Etz - State # 9 1370' FNL \$ 660' FWL 16-175-30E Etz - State # 10 1370' FNL \$ 1980' FWI 16-175-30E Etz - State # 10 1370' FNL \$ 1980' FWI 16-175-30E Mc Intyre "D"#7 1980'FNL\$ 660'FEL 17-175-30E the standard waterflowd arder ,

Jan Anne

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

February 11, 1964

Mr. R. L. Stamets Oil Conservation Commission Drawer DD Artesia, New Mexico

> Rai Case No. 2966 Order No. R-2635

Dear Dick:

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As Order No. R-2635 specifies the exact footage location for the Etz State Wells No. 9 and 10, specific approval of unorthodox locations for these wells is not necessary.

Very truly yours,

J. M. DURRETT, Jr. Attorney

JMD/ear

SFOCE Memo From R. L. STAMETS GEOLOGIST AND DEPUTY OIL & GAS INSPECTOR To Jim Durre H Does Order R-2635 great appreced of unerthedy lections for Harlan Pred Co.'s Etz st No 9 & No 10, Cwells to be drilled). It does not come right out and say in. Dep

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

January 13, 1964

Mr. Jason Kellahin Kellahin & Fox Attorneys at Law Post Office Box 1713 Santa Fe, New Mexico

Dear Sir:

Enclosed herewith is Commission Order No. R-2635, entered in Case No. 2966, approving the Harlan Production Grayburg Jackson Waterflood 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 322 barrels per day.

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 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.

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

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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,

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A. L. PORTER, Jr. Secretary-Director

ALP/DSN/ir

cc: Oil Conservation Commission Artesia, New Mexico

BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

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

> CASE No. 2966 Order No. R-2635

APPLICATION OF HARLAN PRODUCTION COMPANY FOR A WATERFLOOD PROJECT, EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on January 8, 1964, at Santa Fe, New Mexico, before Daniel S. Mutter, 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 13th day of January, 1964, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Daniel J. 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 the applicant, Harlan Production Company, seales authority to institute a waterflood project in the Grayburg-Jackson Pool by the injection of water into the Queen formation through four wells in Sections 16 and 17, Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico.

(3) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(4) That the proposed waterflood project is in the interest of conservation and should result in recovery of otherwise unrecoverable oil, thereby preventing waste.

(5) That the subject application should be approved and the project should be governed by the provisions of Rule 701 of the Commission Rules and Regulations. -2-CASE No. 2966 Order No. R-2635

IT IS THEREFORE ORDERED:

(1) That the applicant, Harlan Production Company, is hereby authorized to institute a waterflood project in the Grayburg-Jackson Pool by the injection of water into the Queen formation through the following-described wells in Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico:

Section 16

Etz state Well No. 2, 1980 feet from the South line and 660 feet from the West line; Etz state Well No. 9, 1370 feet from the North line and 660 feet from the West line; Etz state Well No. 10, 1370 feet from the North line

and 1980 feet from the West line.

Section 17

MuIntyre "D" Well No. 7, 1980 feet from the North line and 660 feet from the East line.

(2) That the subject waterflood project shall be governed by the provisions of Rule 701 of the Commission Rules and Regulations, including the allowable provisions thereof, and including the provisions with respect to expansion of the waterflood project.

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

esr/

STATE OF NEW MEXICO OLL CONSERVATION COMMISSION

MPBELL, Chairman JA

LKER. Member eiter,

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



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BY MR. KELLAHIN: Would you state your name, please? Q My name is N. T. Emanuel. А By whom are you employed and in what position? Q 243-6691 Harlan Production Company as a Petroleum Engineer at Α WILKINS and CROWNOVER Monahans, Texas. Phone . Have you ever testified before the Oil Conservation Q Commission? No, sir. Ά Mexico For the benefit of the Examiner, would you outline Q Service New briefly your education and experience in the petroleum field? Court Reporting My education background is at the University of Oklahoma Α 3 lbuquerqi in the Petroleum Engineering School. My first engineering experience was with Continental Oil Company in Indiana and Illinois, beginning DEARNLEY, MEIER, General in 1945. Later, I joined Warren Petroleum in Wichita Falls, and later was employed with Gulf. I have actively engaged in engineer-Buildi ing capacity with waterflood with Ambassador and Harlan Production Simms I have been employed with Harlan for the past seven Company. years. 1120 What kind of work have you done with Harlan? Q Suite Α Petroleum Engineering and supervisory work. Q Was your job with Continental Oil Company and Gulf and Warren Petroleum in the same field? Yes, sir. Α As a Petroleum Engineer? Q

A Yes, sir. Q How long have you worked in the New Mexico area, Mr. Emanuel? Α Approximately four years. 243-6601 Q The area involved in Case Number 2966 under your supervision? Phone . Yes. Α All right. Q MR. KELLAHIN: Are the witness' qualifications acceptable? New Mexico MR. NUTTER: Yes, they are. General Court Reporting Service (By Mr. Kellahin) Now, Mr. Emanuel, what is proposed 0 by Harlan Production Company in Case 2966? Albuquerque, We propose to initiate a waterflood in the Queen Sand А found at approximately 2,075 feet under Sections 16 and 17, Township 17 South, Range 30 East, in the Grayburg-Jackson Field, Simms Building Eddy County, New Mexico. Now, Mr. Emanuel, referring to what has been marked as Q Exhibit Number One, would you identify that exhibit and discuss it? А Exhibit Number One is a proposed plan of waterflood Suite 1120 operation, and summary of production data. Is that the same as the formal application that was 0 submitted to the Commission? Α Yes. Now, referring to what has been marked as Exhibit Number Q

Two, unless you have something else to say in connection with this,

DEARNLEY, MEIER, WILKINS and CROWNOVER



	r	would you refer to this
		would you refer to this
		A I see.
		Q Would you refer to Exhibit Number Two, and would you
		identify that exhibit and state what is shown there?
	<i>Ιόφ</i>	A Exhibit Number Two includes the area comprising
TER	243-6691	approximately 400 acres; shown on this plat are wells that have
701	Phone 2	established production, or have tested extensively the Queen or
NA	$D_{h_{i}}$	Red Sand.
WILKINS and CROWNOVER ourt Reporting Service	0	Q There is no other production within a radius of three
id C	Mexico	miles in which the Queen Sand is productive; this plat or exhibit
S an	New 1	covers the entire area?
INS orting	ue, N	A Yes.
WILKINS and Court Reporting Service	lbuquerque,	Q Does the exhibit show all of the Queen Sand wells in
	Albug	the immediate vicinity; is that right?
EIER , General	7	A Yes, sir, it does.
MEIER, General 1	suilding	Q Now, it shows the immediate offsetting operators; is that
5	Build	correct?
DEARNLEY	Simms	A There are two offset operators, Kersey and Company, and-
ARI		who operate two wells on the Randall State Lease, and R. G. Collier
DE	1120	who operate one.
,	Suite 1120	Q R. G. or R. D.?
	-1	A R. D. Other than these two operators, we operate all of
		the area under consideration.
		Q And the Wooley well is plugged and abandoned?
		A That is right.



And the Tidewater well and the O. H. Randall are both 0 abandoned? Α Abandoned. Have you line agreements with Kersey Company and R. D. 0 Phone 243-6691 Collier? Exhibits G through M. Α Yes. This is attached to Exhibit Number One? Q А Exhibit Number One. They are waivers from all offset operators. Now, referring back to Exhibit Number Two, does it also New Mexico show the proposed injection wells? General Court Reporting Service The proposed injection wells are shown on Exhibit Two. Α Etz State Number Two will be a proposed injection well. The Harlan Albuquerque, McIntyre Number 7 is a proposed injection well. These two wells mentioned are converted producers. Unorthodox locations Number Nine and Ten shown on this exhibit are to be drilled. There will be Building four injection wells to initiate this program, which we propose to delay further development pending this pilot flood response. Suite 1120 Simms Q Will all of the wells go on injection at approximately the same time? А Yes. That is your plan? Q That is right. А Now, referring to what has been marked as Exhibit Number 0 Three, would you identify that exhibit and discuss it? Exhibit Number Three is an aerial map showing the Queen Α

DEARNLEY, MEIER, WILKINS and CROWNOVER

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Sand area bounded in yellow. As you can see, from this plat, a deeper production is in the immediate area, but none of these wells have tested commercial Queen or Red Sand production. And to the best of your knowledge, there is no Queen production other than your own wells within the immediate vicinity of this projection? That is right. Do you know what the closest Queen production would be? Approximately four or five miles northwest. Now, referring to what has been marked as Exhibit Number Four, through Seven, would you discuss those exhibits? Exhibit Number Four is the proposed water injection Etz State Number Two. This well is an original producer drilled in 1936 by Etz Oil Company, at a total depth of 3270 feet, and for a

period of time, produced from the lower Grayburg-Jackson zone or pays. This well was plugged back in 1961 to 2226 feet. We propose to inject water through two and three-eighths inch tubing below a packer set in the bottom joint of the seven inch casing. Exhibit Five is proposed water injection well, our D. W. McIntyre Number-D Number 7. This was an original producing well drilled by Repollo Oil Company in December, 1944. We propose to inject water through 2 3/8 inch tubing below a packer set in the bottom joint of the 8 5/8 inch oil string casing, which was cemented with 100 sax.

Exhibit Six is a proposed water injection well, Etz



DEARNLEY, MEIER, WILKINS and CROWNOVER

General Court Reporting Service

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phone

Mexico

New

Albuquerque,

Building

Suite 1120 Simms

State Number 9, and an unorthodox location which we propose to cement 2 3/8 inch OD tubing at the top of the pay in open hole, at 2,078 feet, with a Halliburton full flow packer shoe, and circulate cement to the surface. We also plan to use a cement basket at 243-660 the top of the salt. In case circulation is not obtained, we plan to spot cement from the top. Phone ? Exhibit Seven is a proposed water injection well, Etz State Number Ten. The completion of this well is identical to the one referred to in Exhibit Six. New Mexico Etz State 9 and 10 have not yet been drilled? Q General Court Reporting Service That is right. Α The other wells are - will be converted producers? Q Albuquerque, A Yes. Presently drilled? Q That is right. А Now, this land involved here, part of it is State and Building Q the McIntyre lease, is that State or Federal lease? Simms Referring again to Exhibit Two, the west line of Section Α 16, and the east line of Section 17, is the boundary between Federal Suite 1120 and State land. The McIntyre D & F leases, being on the Federal land. Has your proposed waterflood program been submitted to the Q USGS? Yes, it has. Α

I have discussed this with Mr. Kanoff in the Artesia

DEARNLEY, MEIER, WILKINS and CROWNOVER

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office and the proposal as shown causes equal distribution of water across the Federal-State lease line. And we feel that loss of oil will not occur one way or the other.

Q In other words, would you say that all of the interests involved here will be adequately protected by your proposed program? A That is right.

Q What type of water will you use in this injection program? A Fresh water from the Caprock Water Company line which brings water into this area from the Lea County Water Basin.

Q Do you have a contract with the Caprock Water Company? A Yes, we do. And a line is connected to the lease at the present time.

Q What volume of water do you anticipate you will inject?
A We estimate approximately 200 barrels per well per day
for the initial injection.

Q Has your proposed program been submitted to the office of the State Engineer?

A Yes, it has. We have a letter dated December 31, 1963 from Mr. Reynolds, State Engineer, and--

Q By Mr. Frank Irby, is it not?

A By Mr. Frank Irby, yes. In which he refers- - reference is made to the application of Harlan Production Company, which seeks approval of their proposed plan of waterflood in Section 16 and 17, Township 17 South, Range 30 East, Grayburg-Jackson Pield. The formation to be flooded is the Queen or Red Sand, found at



DEARNLEY, MEIER, WILKINS and CROWNOVER General Court Reporting Service

Phone :

New Mexico

Albuquerque,

Building

Simms

Suite 1120

PAGE 10 approximately 2,075 feet. It is noted in the application that each injection well will be equipped with tubing and packer, with a packer set in the bottom of the cemented oil string. The application and the exhibits attached thereto indicate that no threat of contamination to the fresh waters which may exist in the area 243-669 DEARNLEY, MEIER, WILKINS and CROWNOVER will occur if the plan is followed. Therefore, this office offers Phone no objection to the granting of the application. Now, do you anticipate that they will be any expansion 0 of this waterflood project in the future? Mexico Yes, we do. But, are not in the position to project what Α General Court Reporting Service New might be that development at this time. Do you ask that in any order entered by the Commission Q lbuquerque, make a provision for expansion of the project by administrative approval? Yes, we will. А Were Exhibits One through Seven prepared by you or Building Q under your supervision? Simms . They were prepared by me. Α MR. KELLAHIN: At this time, I would like to offer in Suite 1120 evidence Exhibits One through Seven. MR. NUTTER: Applicant's Exhibits One through Seven will be admitted in evidence. (Whereupon, Applicant's Exhibits One, through Seven were admitted into evidence by the Examiner) That is all I have on direct examination, MR. KELLAHIN:



Mr. Nutter. MR. NUTTER: Anyone have any questions of Mr. Emanuel? MR. DURRETT: Yes, I have a question. 243-6691 CROSS EXAMINATION BY MR. DURRETT: Phone Mr. Emanuel, are these wells which are marked Si:: and Q 2-J, which are southeast of your Number Ten that you have on your Exhibit Number Two, are those producing from the Queen? Mexico That is right. A Service New . Do you expect them to receive a response from your flood 0 Court Reporting as you have your injection wells located? Albuquerque, They undoubtedly will enter into the second phase of Α development of injection wells which we are not prepared to submit General at this time. Building But, at this time, you don't expect them to receive a Q response from the flood that you are proposing today necessarily, Simms do you? We expect the principal response to be in well Number Α Suite 1120 8 and Number 7. Then, on the McIntyre F Number One, as a matter of information, on the sand conditions there, I might add that this is a small sand lens in which to the south there is a very definite pinch out as the structure becomes higher. Then, dipping to the north, the sand has a tendency to thicken. We are aware of water wet sand conditions down dip to the north, which may be a hazard

DEARNLEY, MEIER, WILKINS and CROWNOVER



to our project. Sands to the north tend to become better developed and make- - may carry water down dip. One other question, am I correct that your waterflood that you are proposing, you do propose that it be governed by Rule 701, the usual allowable provisions? Phone 243-669 Yes. DEARNLEY, MEIER, WILKINS and CROWNOVER A Thank you. MR. DURRETT: EXAMINATION New Maxico Mr. Emanuel, referring to Exhibit Number Three, you have General Court Reporting Service BY MR. NUTTER: Q Albuquerque, the yellow area outlined. Now, as far as you know, there is no other Queen pro-Yes, sir. Α duction except within this yellow area? Building Other than three or four miles to the west; is that That is right. А Simms Q That is right. The High Lonesome Field which may be in correct? excess of, oh, seven or eight miles northwest, to my knowledge, Suite 1120 is the nearest Queen Sand production. Now, when you mentioned that later on you may expand the waterflood project, you are not thinking of expanding outside the <u>yellow area, you are just thinking of conversion of additional wells</u> ÷

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	within this yellow area; is that it?									
Ī	A	We think probably other injection wells may be may								
<i>5691</i>	need to	be drilled within the yellow boundaries that show there.								
	Q Is the Number 5-A presently abandoned or temporarily									
	abandon	abandoned, or what is the status there?								
243-6691	A Number Five well originally produced from the Queen Sand									
Phone .	approximately 17,000 barrels of oil.									
Ph	Q	And is currently plugged and abandoned?								
ço	A	Yes.								
New Mexico	Q	Temporarily?								
	A	Permanent plug.								
	Q	It is P & A?								
provi	A	Yes.								
Albuquerque,	Q	Mr. Emanuel, we received a waiver of objection from Mr.								
Y		ollier on November 5th, he 💪 ed it November 4th, which he								
ding	was waiving objection to a Number One W which was to be located in									
Building	the extreme southwest corner of the 40 acre tract where Well Number									
Simms	Two is now. I note that he attached that attached to									
) Sin	Exhibit Number One you have a waiver from Collier, but he is referring									
1120	there to the injection of water into the Number Two. Have you									
Suite	abandoned plans for drilling that well in the extreme northwest									
	quarter of that tract?									
	A Yes, we have. Number One W which was initially proposed									
	was not	acceptable to the United States Geological Survey. So, in								
	order t	to balance injection across the line, we converted - we								

DEARNLEY, MEIER, WILKINS and CROWNOVER General Court Reporting Service



PAGE 14

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			propose to convert Number Two.
EIER, WILKINS and CROWNOVER General Court Reporting Sorvice		Phone 243-6691	Q I see. This waiver of November 4th is of no effect any
			more?
			A That is right. Exhibit M of Exhibit One is a waiver
			dated November 21, 1963, which properly identifies the plan as
			submitted.
			Q And supersedes this previous one?
		hd	A Yes.
		0	Q Good. Now, I note that you do have it contained in
	ice	Mexic	Exhibit One. I would like for it to be in the record, though. The
	r Serv	New Mexico	area under consideration here has produced approximately 313,000
NE	orting		barrels on primary; is that correct?
ILK	t Rep	Albuquerque,	A The Harlan operated leases have produced approximately
	Cour	Albue	313,000 barrels primary.
MEIER,	eneral	7	Q You anticipate that the secondary recovery potential
ME	ซ้	ding	by flooding is approximately five hundred thousand barrels?
Ľ,		Building	A That is right.
NLE		smi	Q All right.
DEARNLE		0 Sir	MR. NUTTER: Does anyone have any further questions of
DE		Suite 1120 Simms	Mr. Emanuel? He may be excused. Do you have anything further, Mr.
		Suite	Kellahin?
		~	MR. KELLAHIN: That is all, Mr. Nutter. Thank you.
			MR. NUTTER: Does anyone have anything they wish to offer
			in Case 2966?
			MR. DURRETT: Mr. Kellahin, did you introduce Mr. Irby's

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ER			letter as an exhibit?
			MR. KELLAHIN: No, I didn't, The original, of course,
			was directed to the Commission.
			MR. DURRETT: If the Examiner please, I would like to
		Phone 243-6691	state for the record that we have received the original of the
			letter from Mr. Irby that has been referred to in testimony here
AC			today, and that it will be placed in the file as part of the
7NG			record.
n O			
CR		exico	MR. NUTTER: Thank you, Mr. Durrett. If there is nothing
nd	rvice	\mathbb{Z}	further in Case 2966, we will take that case under advisement.
MEIER, WILKINS and CROWNOVER	ig Sei	New	* * * *
NIX.	Court Reporting		STATE OF NEW MEXICO X
ILI'	t Re	quere	COUNTY OF BERNALILIO
AA '	Coui	Albuquerque,	I, ROY D. WILKINS, Notary Public in and for the County
IER	General		
MEI	Ge	Simms Building	of Bernalillo, State of New Mexico, do hereby certify that the
Y, N			foregoing and attached Transcript of Hearing before the New Mexico
LE			Oil Conservation Commission was reported by me, and that the same
RN			is a true and correct record of the said proceedings, to the best
DEARNLE			of my knowledge, skill, and ability.
Ŋ		Suite 1120	
			WITNESS my Hand and Seal of Office, this 10th day of
			January, 1964.
			NOTARY PUBLIC
			My Commission Humings I do hereby sertify that the foregoing is
			My commission Expires: a complete roomed of the proceedings in September 6, 1967. the Exercise bouring of fine Row 2.766 p
			heard by us on 1969.
			New Mexico Oil Conservation Commission

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PROPOSED WATER INJECTION WELL

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W.D. McIntyre "D" No. 7 SE, NE, Sec. 17, T-17-3, R-30-E

Original Producing Well Drilled by Repollo Oil Co. 12/11/44



Exhibit "D"

PROPOSED WATER INJECTION WELL,

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Etz-State No. 10

Unorthodox Location 1325 FNL & 1980 FWL, Sec. 16, T-17-S, R-30-E







PROPOSED WATER INJECTION WELL

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Etz-State No. 2 NW, SW, Sec. 16, T-17-S, R-30-E

Original Producing Well Drilled By Etz Oil Co. 7/11/36



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Exhibit "A"

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New Mexico

011 Conservation Commission

Santa Fe, New Mexico

PROPOSED PLAN OF WATERFLOOD

Operations

and

Summary of Production Data

Submitted by:

Harlan Production Company

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December 2, 1963

for any time day with a more and a second disease in the	
BEFORE EXAMINER HUTTER	7
OIL CONSETTATION	1
OL CONSERVATION CONTRACTOR	į
244425 SUMDIT NO. (CAUE HD. 2.966	
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- 1. Plan of Operation
 - A. The zone to be flooded is the Guesa or ded Soud Cound at approximately 2075 Fast under Section 16 and 17, P-17-5, R-30-D, Grayburg Jackson Field, Eddy County, New Maxico.

Eleven wells comprising approximately [0]0 across have conmercially produced from this pay section (Exhibit $[A^{4}]$). The Kersov and Company Randol State Lease (2 producing wells) and R. G. Collier McCullough State (1 producing well) are the only wells completed in the Gasen sand owned by other operators. No other production from this zone is known within a redius of 3 miles (Exhibit $[B^{4}]$).

This sand lays along the north flank of the Greyburg Jackson structure. Bown dip and to the north there is evidence of thickening as the sand becomes water wet. One continuous zone of porosity indicates from 3 to N feet of oil saturation. All wells were drilled with cable tools the first being completed in 1941. There are no cores or electric logs available.

B. The Flood Plan is shown in Exhibit "A". Equal distribution of water injection across the Federal and State lease line (Mest line Section 16) is obtained by converting two producers. Two new drilled unorthodox locations are planned for injection wells. Final flood development will be made after pilot flood experience is known.

Maivers expressing no objections to this waterfloed program from all offset operators are attached (Exhibit "C" through "M").

C. Input Mells

Harlan Production Company Etz-State No. 2 is a producing well to be converted to injection. The well is located in Unit L 660' FNL and 1900' FSL, Section Mó, T-17-S, R-30-E. We propose to inject through tubing and below packer set in bottom of commented oil string casing (Exhibit 307).

Harlan Production Company McIntyre 'D' (Federal) No. 7 is an inactive producing well to be converted to injection. The well is located in Unit H 660' FEL and 1980' FNL, Section 17, 1-17-S, R-30-E. We propose to inject through tubing and below packer set in bottom of commented oil string casing (Exhibit "D").

--<u>i</u>...

Harlan Production Company Etz-State No. 9 is an unorthodox location for a new water injection Well. The location is in Unit E, 1370' FML and 660' FML, Section 16, 7-37-3, B-30-W We manage to intest through tubbury with R-30-E. We propose to inject through tubing with coment circulated to surface (3mibit april). Harlan Production Company Stz-State No. 10 is an unorthodox location for a new water injection well. The location is Unit F, 1370' FNL and 1960' FWL, Section 16, T-17-5, R-30-E. Injection through tubing with cement circulated to surface is planned (Exhibit "F"). Froqueing Wells Etz-State No. 2-J Unit J, Section 16 Etz-State No. 6 Unit G, Section 16 Etz-State No. 7 Unit F, Section 16 Etz-State No. 6 Unit E, Section 16 Etz-State No. 6 Unit E, Section 16 D. Producing Wells McIntyre "F" Federal No. 1 Unit H, Section 17 E. The Caprock Water System line will furnish the project fresh water from the Lea County Water Basin. F. Initial input rates of 200 barrels per well per day into the 4 injection wells is proposed. The production ranges from 1/2 to 3 barrels oil and no water II. Summary of Production Data per well per day or 10 barrels per day for the 5 active Primary production from the Herlan Production Company Queen pumping wells. sand producing area to January 1, 1963 is 313,620 barrels. The secondary recovery potential by waterflooding is estimated at 500,000 barrels.

Company	Lease and Well	Unit	Section Location	Cumulative Production to 1-1-63
Harlan Harlan Harlan Harlan Harlan Harlan Harlan	Etz-State No. 2-J Etz-State No. 2 Etz-State No. 6 Etz-State No. 5-A Etz-State No. 7 Etz-State No. 6 McIntyre "F" No. 7 McIntyre "F" No. 1	J L G T F E H I	16 16 16 16 16 17 17 Total	54,641 38,897* 55,617 17,153 38,089 55,239 22,213* 31,771 313,620
Kersey & Co. Kersey & Co. R.G. Collier	Randel State 17 Randel State 19 McCullough State 2	C D M	16 16 16 Total	25 ,337 24 ,51 4 5142 50 ,393

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*Proposed injection wells

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Exhibit "A"

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W.D. McIntyre "D" No. 7 SE, NE, Sec. 17, T-17-S, R-30-E

Original Producing Well Drilled by Repollo Oil Co. 12/11/44





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Etz-State No. 9

Unorthodox Location 1325 FNL & 660 FWL, Sec. 16, T-17-S, R-30-E



Exhibit "E"

• 4.

Etz-State No. 10

Unorthodox Location 1325 FNL & 1980 FWL, Sec. 16, T-17-S, R-30-E

·	
Estimated top salt at 500	Cement basket at top of salt to support Cement spotted from surface if circulation not obtained
Estimated base of salt at 1300	2 3/8" OD EUE tubing set in 6 1/4" hole cement circulated with 360 cu.ft: Incor with 2% Gel
	Halliburton Full Flow Packer Shoe set at 2078 in 6 1/4" Hole Est. Top Pay 2080
	Est. Bottom Pay 2095

Exhibit "F"

North a Heel 11 des manadio - Construires Smela Xay la tilentes

Gentheres:

Herita: Production Company has independ Houses and Gompany Which it places to drill He. 9 and Mo. 26 op the Simultate Lease in Whi Greyburg-Joshson Field, Eddy Genery, How Howloo and requests a Weiver of this application.

Well 35. 9 is to be located 1570 feet from NL and 660 feet from WL, Section 16, T-17-S, R-30-N.

Well No. 10 is to be located 1370 feet from NL and 1980 feet from WL, Section 16, T-17-S, R-30-F.

Harlan Froduction Company also informed Kersey that these wells are to be drilled for water injection purposes only through the Queen Sand formation.

Kersey and Company waives notice of hearing and protest of this application.

and Company

Nov. 19, 1963

Exhibit "G"

EXHIBIT "H"

KERSEY & COMPANY DRILLING AND OIL PRODUCTION Phone 88 43671 + P. 0, Box 316 + M6 W. Grand ARTESIA. NEW MEXICO 80210

November 12, 1963

Mr. R. D. Collier P. O. Box 798 Artesia, New Mexico

Gentlemen:

Harlan Production Company runs the acreage to the south of our State No. 17-19 wells.

They want to start a water flood on this acreage and they will place two injection wells just south of our line and inject water into them at no cost to us. We will get all the benefits of the flood with none of the expense for flooding. A plat is enclosed showing their proposed plan.

This letter is written in duplicate. If you are agreeable to this plan please sign and return one copy of this to me.

Yours very truly,

KERSEY & COMPANY

Hard Kensey

Harold Kersey

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Exhibit "H"

EXHIBIT "I"

November 12, 1963

Mr. C. V. Hicks Rt. 1, Box 2468 Roswell, New Mexico

Dear Charlie:

Harlan Production Company runs the acreage to the south of our State No. 17 & 19 wells.

They want to start a water flood on this acreage and they will place two injection wells just south of our line and inject water into them at no cost to us. We will get all the benefits of the flood with none of the expense for flooding. A plat is enclosed showing their proposed plan.

This letter is written in duplicate. If you are agreeable to this plan please sign and return one copy of this to me.

Yours very truly,

KERSEY & COMPANY

Harold Kersey

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W. Hicks

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KARIBIT "J"

KERSEY & COMPANY

These SHE 640HE + P. G. Den H4 + SHE W. Manual ARTERIA, NEW MEXICO BOSTS

November 12, 1963

Mr. Roland McLean 7061 E. 3rd St. Tucson, Arizona 85710

Dear Roland:

Harlan Production Company runs the acreage to the south of our State No. 17 & 19 wells.

They want to start a water flood on this acreage and they will place two injection wells just south of our line and inject water into them at no cost to us. We will get all the benefits of the flood with none of the expense for flooding. A plat is enclosed showing their proposed plan.

This letter is written in duplicate. If you are agreeable to this plan please sigh and return one copy of this to me.

Yours very truly,

KERSEY & COMPANY

Harold Kersey

Roland

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Exhibit "J"

EXHIBIT "K"

KERSEY & COMPANY

BE 6801 + P. G. Des 164 + 308 W. Grand ARTERA NEW MELICO BANK

November 12, 1963

Edward C. & Wilma Donohue P. O. Drawer 1372 El Paso 48, Taxas 79948

Dear Ed:

Herlan Production Company runs the acreage to the

south of our State No. 17 & 19 wells.

They went to start a water flood on this acreage and they will place two injection wells just south of our line and inject water into them at no cost to us. We will get all the benefits of the flood with none of the expense for flooding. A plat is enclosed showing their proposed plan.

This letter is written in duplicate. If you are agreeable to this plan please sign and return one copy of this

to me.

Yours very truly,

KERSEY & COMPANY

Herold Kersey

Edward C. Donotius

Mornese an

SAUTENT SIN

November 12, 1953

Mr. Olen F. Featherstone 236 Petroleum Bullding Rogwoll, New Maxico 88201

Dear Nr. Featherstone:

Harlan Production Company runs the acreage to the south of our State No. 17 \$ 19 wells.

They went to start a water flood on this screage and they will place two injection wells just south of our line and inject water into them at no cost to us. We will get all the benefits of the flood with none of the expense for flooding. A plat is enclosed showing their proposed plan.

This letter is written in duplicate. If you are agreeable to this plan please sign and return one copy of this to me.

therston

DIFIC DEFICE

Yours very truly,

KERSEY & COMPANY

Harold Kersey

EXHIRIT "M"

New Mexico Oil Conservation Commission Santa Fe, New Mexico

Gentlemen:

Harlan Production Company has informed R. D. Collier that it plans to convert to water injection its Etz-State Well No. 2 in the Grayburg-Jackson Field, Eddy County, New Mexico and requests a waiver of this application.

Well No. 2 is located 1980 feet from 3L and 660 feet from WL, Section 16, T-17-S, R-30-E.

Harlan Production Company also informed Mr. Collier that this well is to be used for water injection from 2067 to 2075 feet into the Queen Sand formation.

R. D. Collier waives notice of hearing and protest of this application.

R. D. Collier *R. D. Collier Mod 21, 1963* Date

Exhibit "M"

and Selleting Selleting •

New Mexico

011 Conservation Commission

Santa Fe, New Mexico

PROPOSED PLAN OF WATERFLOOD

Operations

and

Summary of Production Data

Submitted by: Harlan Production Company December 2, 1963

DOCKET MALLED

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- I. Plan of Operation
 - A. The zone to be flooded is the Queen or Red Sand found at approximately 2075 feet under Section 16 and 17, T-17-S, R-30-E, Grayburg Jackson Field, Eddy County, New Mexico.

Eleven wells comprising approximately 440 acres have commercially produced from this pay section (Exhibit "A"). The Kersey and Company Randel State Lease (2 producing wells) and R. G. Collier McCullough State (1 producing well) are the only wells completed in the Queen sand owned by other operators. No other production from this zone is known within a radius of 3 miles (Exhibit B).

This sand lays along the north flank of the Grayburg Jackson structure. Down dip and to the north there is evidence of thickening as the sand becomes water wet. One continuous zone of porosity indicates from 3 to 18 feet of oil saturation. All wells were drilled with cable tools, the first being completed in 1941. There are no cores or electric logs available.

B. The Flocd Plan is shown in Exhibit "A". Equal distribution of water injection across the Federal and State lease line (West line, Section 16) is obtained by converting two producers. Two new drilled unorthodox locations are planned for injection wells. Final flood development will be made after pilot flood experience is known.

Waivers expressing no objections to this waterflood program from all offset operators are attached (Exhibit "G" through "M").

C. Input Wells

Harlan Production Company Etz-State Nc. 2 is a producing well to be converted to injection. The well is located in Unit L 660 ' FWL and 1980' FSL, Section 16, T-17-S, R-30-E. We propose to inject through tubing and below packer set in bottom of cemented oil string casing (Exhibit "C").

Harlan Production Company McIntyre "D" (Federal) No. 7 is an inactive producing well to be converted into injection. The well is located in Unit H 660' FEL and 1980' FNL, Section 17, T-17-S, R-30-E. We propose to inject through tubing and below packer set in bottom of cemented oil string casing (Exhibit "D"). Harlan Production Company Etz-State No. 9 is an unorthodox location for a new water injection well. The location is in Unit E, 1370' FNL and 660' FWL, Section 16, T-17-S, R-30-E. We propose to inject through tubing with cement circulated to surface (Exhibit "E").

Harlan Production Company Etz-State No. 10 is an unorthodox location for a new water injection well. The location is in Unit F, 1370' FNL and 1980' FWL, Section 16, T-17-S, R-30-E. Injection through tubing with cement circulated to surface is planned. (Exhibit "F")

- D. Producing Wells Etz-State No. 2-J Unit J, Section 16 Etz-State No. 6 Unit G, Section 16 Etz-State No. 7 Unit F, Section 16 Etz-State No. 8 Unit E, Section 16 McIntyre "F" Federal No. 1 Unit H, Section 17
- E. The Caprock Water System line will furnish the project fresh water from the Lea County Water Basin.
- F. Initial input rates of 200 barrels per well per day into the 4 injection wells is proposed.
- II. Summary of Production Data

The production ranges from 1/2 to 3 barrels oil and no water per well per day or 10 barrels per day for the 5 active pumping wells.

Primary production from the Harlan Production Company Queen sand producing area to January 1, 1963 is 313,620 barrels.

The secondary recovery potential by water flooding is estimated at 500,000 barrels.

Company	Lease and Well	Unit	Section Location	Cumulative Production to 1-1-63
Harlan Harlan Harlan Harlan Harlan Harlan Harlan	Etz-State Nc. 2-J Etz-State No. 2 Etz-State No. 6 Etz-State No. 5-A Etz-State No. 7 Etz-State No. 8 McIntyre "D" No. 7 McIntyre "F" No. 1	J L G I F E H I	16 16 16 16 16 17 17 Total	54,641 38,897* 55,617 17,153 38,089 55,239 22,213* 31,771 313,620
Kersey & Co. Kersey & Co. R.G. Collier	Randel State 17 Randel State 19 McCullough State 2	C D M	16 16 16 Total	25,337 24,514 542 50,393

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*Proposed injection wells

-3-



Exhibit "A"

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Etz-State No. 2 NW, SW, Sec. 16, T-17-S, R-30-E

Original Producing Well Drilled By Etz Oil Co. 7/11/36



W.D. McIntyre "D" No. 7 SE, NE, Sec. 17, T-17-S, R-30-E

Original Producing Well Drilled by Repollo 011 Co. 12/11/44



Exhibit "D"

Etz-State No. 9

Unorthodox Location 1325 FNL & 660 FWL, Sec. 16, T-17-S, R-30-E





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PROPOSED WATER INJECTION WELL

11.

"F

Etz-State No. 10

Unorthodox Location 1325 FNL & 1980 FWL, Sec. 16, T-17-S, R-30-E



-----Est. Bottom Pay 2095

Exhibit "F"

EXHIBIT "G"

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Hawed Kusey nov. 19, 1963

Exhibit "G"

EXHIBIT "H"

KERSEY & COMPANY DRILLING AND OIL PRODUCTION Phone SE 45811 + P. O. Box 316 + 848 W. Grand ARTESIA. NEW MEXICO 80210

November 12, 1963

Mr. R. D. Collier P. O. Box 798 Artesia, New Mexico

Gentlemen:

Harlan Production Company runs the acreage to the south of our State No. 17-19 wells.

They want to start a water flood on this acreage and they will place two injection wells just south of our line and inject water into them at no cost to us. We will get all the benefits of the flood with none of the expense for flooding. A plat is enclosed showing their proposed plan.

This letter is written in duplicate. If you are agreeable to this plan please sign and return one copy of this to me.

Yours very truly,

KERSEY & COMPANY

wed kennen

Harold Kersey

Exhibit "H"

EXHIBIT "I"

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November 12, 1963

Mr. C. W. Hicks Rt. 1, Box 2468 Roswell, New Mexico

11.

Dear Charlie:

Harlan Production Company runs the acreage to the south of our State No. 17 & 19 wells.

They want to start a water flood on this acreage and they will place two injection wells just south of our line and inject water into them at no cost to us. We will get all the benefits of the flood with none of the expense for flooding. A plat is enclosed showing their proposed plan.

This letter is written in duplicate. If you are agreeable to this plan please sign and return one copy of this to me.

Yours very truly,

KERSEY & COMPANY

Harold Kersey

W. Jicks 6. H.

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EXHIBIT "J"

KERSEY & COMPANY

DRILLING AND OIL PRODUCTION Phone BR 6-3671 + P. O. Box 316 6 886 W. Grand ARTESIA NEW MEXICO 88210

November 12, 1963

Mr. Roland McLean 7061 E. 3rd St. Tucson, Arizona 85710

Harlan Production Company runs the acreage to the Dear Roland:

south of our State No. 17 & 19 wells. They want to start a water flood on this acreage and they will place two injection wells just south of our line and inject water into them at no cost to us. We will get all the benefits of the flood with none of the expense for flooding. A plat is enclosed showing their proposed plan. This letter is written in duplicate. If you are

Exhibit "J"

agreeable to this plan please sigh and return one copy of

this to me.

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Yours very truly,

KERSEY & COMPANY

KERSEY & COMPANY Hawka Kersey Harold Kersey

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Poland McLean

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ETHIBIT "K"

KERBEY & COMPANY

HAINS AND ON PUR Sall + P. G. Ben Mit + Mit W. Grand ARTERIA. NEW MENCO BOSIS

November 12, 1963

Edward C. & Vilma Bonchue P. O. Drawer 1372 El Paso 48, Taxas 79948

Bear Ed:

Herlen Production Company runs the acreage to the

south of our State No. 17 \$ 19 wells. They went to start a water flood on this acreage and they will place two injection wells just south of our line and inject water into them at no cost to us. We will get all

the benefits of the flood with none of the expense for flooding. A plat is enclosed showing their proposed plan.

This letter is written in duplicate. If you are agreeable to this plan please sign and return one copy of this

to me.

Yours very truly,

KERSEY & COMPANY

Nerold Kersey

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EXHIBIT "L"

November 12, 1963

Hr. Olen F. Featherstone 236 Pstroleum Bullding Roguell, New Maxico 88201

Bear Mr. Featherstone:

Harlan Production Company runs the acreage to the south of our State No. 17 & 19 wells.

They want to start a water flood on this acreage and they will place two injection wells just south of our line and inject water into them at no cost to us. We will get all the benefits of the flood with none of the expense for flooding. A plat is enclosed showing their proposed plan.

This letter is written in duplicate. If you are agreeable to this plan please sign and return one copy of this to me.

Yours vary cruly,

KERSEY & COMPANY

Harold Kersey

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EXHIBIT "M"

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R. D. Collier unives notice of bearing and protest of this application.

How 21, 1963

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DOCKET NO. 1-64

DOCKET: EXAMINER HEARING - WEDNESDAY - JANUARY 8, 1964

9:00 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM, STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

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

- CASE 2963: Application of Tom Brown Drilling Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the West Antelope Sink Unit Area comprising 3680 acres, more or less, of State land in Township 19 South, Range 23 East, Eddy County, New Mexico.
- <u>CASE 2964:</u> Application of Socony Mobil Oil Company, Inc. for an exception to Rule 506, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to the statewide limiting gas-oil ratio of 2,000 feet of gas per barrel of oil as promulgated by Commission Rule 506 for its State Bridges Well No. 96, located in Unit H of Section 26, Township 17 South, Range 34 East, Vacuum-Pennsylvanian Pool, Lea County, New Mexico.
- CASE 2965: Application of Stanley J. Stanley for recission of Order No. R-2585, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order rescinding Order No. R-2585 and authorizing the applicant to assume ownership and operation of the Bunce-Federal Well No. 1, located 1586 feet from the North line and 1503 feet from the East line of Section 19, Township 29 North, Range 10 West, San Juan County, New Mexico.
- CASE 2966: Application of Harlan Production Company for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in the Grayburg-Jackson Pool, Eddy County, New Mexico, by the injection of water into the Queen formation through four wells located in Sections 16 and 17, Township 17 South, Range 30 East.
- <u>CASE 2720 (Reopened)</u>: In the matter of Case No. 2720 being reopened pursuant to the provisions of Order No. R-2397, which order established special rules governing the production of oil and gas wells in the Double-X Delaware Pool, Lea County, New Mexico, including classification of wells as gas wells when the gasliquid hydrocarbon ratio exceeds 30,000 to one.
- CASE 2682 (Reopened): In the matter of Case 2682 being reopened pursuant to the provisions of Order No. R-2375, which order established temporary 80-acre oil proration units for the Simpson-Gallup Oil Pool, San Juan County, New Mexico, for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 40-acre proration units.
 - CASE 2967: Application of Standard Oil Company of Texas for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Jurnegan Point Unit Area comprising 7680 acres, more or less, of State and Fee land in Township 24 South, Ranges 24 and 25 East, Eddy County, New Mexico.

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New Mexico Oil Conservation Commission Santa Fe, New Mexico

Gentlemen:

Harlan Production Company has informed R. D. Collier that it plans to drill Well No. 1-W on its Etz-State lease in the Grayburg-Jackson Field, Eddy County, New Mexico and requests a waiver of this application.

Well No. 1-W is to be located 1370 feet from S L and 50 feet from W L, Section 16, T-17-S, R-30-E.

Harlan Production Company also informed Mr. Collier that this well is to be drilled for water injection purposes only through the Queen Sand formation.

R. D. Collier waives notice of hearing and protest of this application.

R. D. Collier Monember 4,1963



Exhibit "A"

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STATE OF NEW MEXICO 11 1 27

STATE ENGINEER OFFICE

S. E. REYHOLDS STATE ENGINEER

December 31, 1963

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 the Harlan Production Company which seeks approval of their proposed plan of water flood in Sections 16 and 17, Township 17 South, Range 30 East, Grayburg Jackson Field, The formation to be flooded is the Queen or Red Sand found at approximately 2075 feet. It is noted in the application that each injection well will be equipped with tubing and packer with the packer set in the bottom of the cemented oil string. The application and the exhibits attached thereto indicate that no threat of contamination to the fresh waters which may exist in the area will occur if the plan is followed. Therefore, this office offers no objection to the granting of the application.

Very truly yours,

S. E. Reynolds State Engineer

FEI/ma cc-Jason W. Kellahin F. H. Hennighausen

By: **State S.** M Frank E. Irby Chief Water Rights Division

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JMD/esr

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:

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CASE No.	2966
Order No.	R-2635

APPLICATION OF HARLAN PRODUCTION COMPANY FOR A WATERFLOOD PROJECT, EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on January 8 , 1964, at Santa Fe, New Mexico, before <u>Daniel S. Nutter</u>, 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 day of <u>January</u>, 1964, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, <u>Deniel S. Nutter</u>, 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, Harlan Production Company, seeks authority to institute a waterflood project in the Grayburg-Jackson Pool by the injection of water into the Queen formation through four wells located in Sections 16 and 17, Township 17 South, Range 30 East, NMPM, Eddy County, New Mexico.

(3) That the wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(4) That the proposed waterflood project is in the interest of conservation and should result in recovery of otherwise unrecoverable oil, thereby preventing waste. -2-CASE No. 2966

(5) That the subject application should be approved and the project should be governed by the provisions of Rule 701 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Harlan Production Company, is hereby authorized to institute a waterflood project in the Grayburg-Jackson Pool by the injection of water into the Queen formation through the following-described four wells in Januahya 17 Danih, Range 30 Cast, OMPM, Celly County, New Inspis: Destin 16 It state well ho Z, 1980 fut from the South line and 660 fut from the West line. It state well ho Z, 1980 fut from the houth line and 660 fut from the west line. It state well ho Z, 1980 fut from the houth line and 660 fut from the west line. It state well ho Z, 1980 fut from the houth line and 1980 fut from the west line. It state well ho 7, 1980 fut from the houth line and 1980 fut do fut from the hout line and 1980 fut from the west line. It state well ho 7, 1980 fut from the houth line and 1980 fut do fut from the Cost line.

(2) That the subject waterflood project shall be governed by the privisions of Rule 701 of the Commission Rules and Regulations, including the allowable provisions thereof, and including the provisions with respect to expansion of the waterflood project.

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

HARLAN PRODUCTION COMPANY

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315 SO, ALLEN P. O. BOX 355 MONAHANS, TEXAS

Juply 16, 1964

Mr. A. L. Porter, Jr. Secretary-Director Oil Conservation Commission P.O. Box 871 Santa Fe, New Mexico

Re: Case No. 2966 Order No. R-2635 HARLAN PRODUCTION COMPANY Waterflood Project Eddy County, New Mexico

Dear Sir:

On January 13, 1964 the above named order authorized Harlan Production Company to institute a waterflood project in the Grayburg-Jackson Pool by injection of water into the Queen formation through the following-described wells in Township 17 South, Range 30 East, NMPM Eddy County, New Mexico:

Section 16

Etz-State Well No. 2, 1980 feet from the South line and 660 feet from the West line;

Etz-State Well No. 9, 1370 feet from the North line and 660 feet from the West line;

Etz-State Well No. 10, 1370 feet from the North line and 1980 feet from the West line.

Section 17

McIntyre "D" Well No. 7, 1980 feet from the North line and 660 feet from the East line.

This is to advise that active injection was commenced into the above wells July 16, 1964. Monthly progress reports covering this project will be forthcoming.

Yours very truly,

HARLAN PRODUCTION COMPANY

N. T. Enanuer il alle contract

Petroleum Engineer

NTE/mm

cc: Oil Conservation Commission Artesia, New Mexico