

CASE 3362: Application of CARTER
FOUNDATION PRODUCTION CO. for a
waterflood project, Lea County.

ASE NO.

3362

Application,
Transcripts,
Small Exhibits
ETC.

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SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
January 5, 1966

EXAMINER HEARING

IN THE MATTER OF:
Application of Carter Foundation Production
Company for a waterflood project, Lea County,
New Mexico. Applicant, in the above-styled
cause, seeks authority to institute a
waterflood project by the injection of water
into the Queen formation through five wells
located at unorthodox locations in Sections
34 and 35, Township 23 South, Range 37 East,
Langlie-Mattix Pool, Lea County, New Mexico.

Case No. 3362

BEFORE:

Daniel S. Nutter, Chief Engineer
J. D. Ramey, Supervisor and Oil and Gas Inspector

TRANSCRIPT OF HEARING



MR. DURRETT: Application of Carter Foundation Production Company for a waterflood project, Lea County, New Mexico.

MR. McKENNA: Mr. Examiner, Thomas F. McKenna appearing on behalf of Carter Foundation Production Company and we have one witness, Mr. Robert Fitting.

(Witness sworn.)

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

ROBERT D. FITTING, a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. McKENNA:

Q Would you state your name, please, sir?

A Robert D. Fitting.

Q And can you tell the Examiner where you're employed in Midland, Texas?

A In Midland, Texas; I have a consulting engineering geological firm. We've been in business since 1950.

Q Mr. Fitting, are you a petroleum engineer and a geologist?

A Yes, I am.

Q Have you testified before this Commission or before an Examiner previously?

A Yes, I have.

Q Have your qualifications been accepted?

A Yes, sir.

MR. McKENNA: May we proceed?

MR. NUTTER: Yes.

Q (By Mr. McKenna) Now, Mr. Fitting, are you familiar with the application and the subject matter of Case Number 3362?

A Yes, sir, I am.

Q Will you briefly explain the purpose of the application of Carter Foundation in this case?

A The purpose of the Carter Foundation Production Company is to drill at unorthodox locations, five wells to initiate a pilot waterflood program using water from the Santa Rosa in a water well which they drilled on their Blinbry lease.

Q Would you say that the purpose of this application is to seek authority to institute a waterflood project and also to secure approval of unorthodox well locations, is that correct?

A Yes, sir.

Q Do you have the descriptive data or the footage data on the various wells?

A The five wells that we applied for: the Number 11 is in proration unit "O", located in the Southwest quarter of the Southeast quarter of Section 34, Township 23 South, Range 37

East, and it's specifically located 1300 feet from the South line and 1240 feet from the East line of Section 34; Well Number 13 is located in proration unit "M" in the Southwest quarter of the Southwest quarter of Section 35, Township 23 South, Range 37 East, and it's specifically located 1300 feet from the South and West lines of Section 35; Well Number 14 is in proration unit "I", is located in the Northeast quarter of the Southeast quarter of Section 34, Township 23 South, Range 37 East, and it's specifically located 2660 feet from the North line and 20 feet from the East line of Section 34; Number 15 is located in Proration unit "E" and is located in the Southwest quarter of the Northwest quarter of Section 35, Township 23 South, Range 37 East, and is specifically located 1340 feet from the North line and 1200 feet from the West line of Section 35; Well Number 16 in proration unit "G", is located in the Southwest quarter of the Northeast quarter of Section 34, Township 23 South, Range 37 East, and is specifically located 1340 feet from the North line and East lines of Section 34.

Now, one other comment. The locations for the Number 11 and Number 15 were moved from the original planned location because they were in an unorthodox location at a tank battery and had to be moved a hundred feet.

Q Mr. Fitting, you have in your hand what has been

marked as Exhibit 1. Are these wells specified on one of the plats attached to this exhibit?

A Yes, sir. There is a location plat for these wells shown. It's labeled, "Location Plats", and it shows all of the five wells and locations on the map.

Q Now, how many leases are involved in this proposed project area?

A In the proposed project area all five wells are located on one lease; the Blinebry Federal Lease. It specifically affects an additional tract called the Cade Federal Lease but the wells are not located on that lease.

For convenience and to show what Carter Foundation Production Company has in the area, you will note that the additional acreage has been outlined on the maps. Also in the first page of the exhibit, the project area lists all four leases owned by Carter Foundation Production Company. However, the only ones affected by this hearing are the ones labeled "A" and "B", the Blinebry and the Cade.

Q Now, as to the Cade Lease, do you have any plans about separating the production as to this lease?

A Yes, sir, it is the intention of Carter Foundation Production Company to produce these wells for a short period of time before putting them on injection, and for that reason it would be necessary to separate on well Number 13 that

affects the Cade and portion of the Blinebry Federal.

Three parts of the production would go to the Cade Federal and one part to the Blinebry Federal on Well 14. Three quarters would go to the Blinebry Federal Lease, and one quarter to the Cade.

Q As to Exhibit 1, which you are referring to, was this prepared by you personally or at your direction?

A At my direction.

Q I see. Now, can you explain to the Examiner why you felt it necessary to seek unorthodox locations for these injection wells?

A In the Langlie-Mattix Field it covers some, I've forgotten the exact number of wells in the field, but it is a substantial area, and in the area of the Langlie-Mattix they have attempted several secondary recovery projects where the old wells have been used for injection purposes, and they have had difficulty in trying to maintain injection into the Penrose Sand zone, the Queen Sand member, and we would like to drill these wells on the 160 acre 5 spot to determine whether or not there is any water changing, and whether or not the previous programs of 5 spot water flood are actually applicable in this area.

Q Now, Mr. Fitting, again referring to your exhibit, can you tell me what the past production has been for the

wells involved or that will be involved in this project?

A I have prepared the primary production history from all of the leases of Carter Foundation Production Company from the Langlie-Mattix Pay Zone, both in a tabular form, and as a monthly per well times extrapolation on decline graphs. These are included on the in-numbered pages, but they are graphs of each one of the leases.

The wells were first drilled on the Blinebry in March of 1950, and the Cade in June of 1950, and they have produced to the point where the leases are approximately 86 percent depleted in their primary producing life.

Q Do you have any idea what you believe you will recover by virtue of this program?

A It is estimated that we should recover the primary, ultimate primary oil recovery over again by secondary means. We estimate that under the Blinebry Lease we should recover 550,000 barrels, and under the Cade 150,000 for a total for the year, 700,000 barrels.

Q Do you have any estimate of the flood life of the program?

A The flood life is difficult to estimate using a pilot program in the beginning, but I would not think it would exceed 10 years.

Q Mr. Fitting, again referring to your exhibit, I notice

a diagrammatic sketch of a proposed injection well completion which is to the rear of your Exhibit 1. Is this the method that you will follow in completing your injection wells?

A Yes, sir, these wells will be drilled with 8 5/8" surface casing or approximately that size will be set, it may be that larger casing will be used, but the nominal size is 8 5/8". The cement would be circulated to the surface. The 7 1/2 to possible 7" casing would be set through the pay and the cement circulated if possible. Under the diagrammatic sketch it shows 3 or 4 hundred sacks of cement which is sufficient to protect it to the salt section. The 2" tubing would be coated as well as the packers set in the well.

Q Where did you intend to get the water for this?

A A water well has been drilled or--correction, a water well has been completed which was a reentry of Carter Foundation Production Company's Well Number 7 "E". That shows on the last map in the exhibit, labeled "WSW" in the Northwest quarter of the Northwest quarter of Section 35. It was an abandoned Ellenburger test, and it was reentered and Santa Rosa water was developed through an interval from, oh, approximately 607 feet in depth.

Q I understand you don't have at this time a chemical analysis of the water, but I understand you will be glad to supply this information.



A Yes, I will. I failed to bring it with me. The water is neither fresh nor salt, it's in between. It might be considered potable, I don't know.

Q Do you see any harm to the formation immediately below the Queen?

A No, sir. The next one is the Devonian and it's 8,000 feet.

Q Is there any production rising above the zone that you plan to inject?

A No, sir.

Q Do you feel as an engineer, that this proposal will work; that it's a sound program?

A I have little question in my mind that it will work.

Q Is it your opinion that it's a sound economic thing to do?

A Yes, sir, it's about the only thing to do.

Q Is it true or not, that the Langlie-Mattix Pool is generally becoming a secondary effort in any event?

A It is nearly depleted of the primary production and at the present time there is an effort made by many of the operators to install large secondary units.

At the present time, south of here, Shell has one program going; George Buckles has another program to the north, and Anadarko has a unit formed and they are injecting

water now.

Q Do you see any injury to Correlative Rights by virtue of this program that you seek approval of?

A No, sir.

Q Is it in keeping with the principles of conservation?

A Yes, sir.

Q Is there anything else that you would like to mention to the Examiner concerning this proposal?

A No, sir.

MR. MCKENNA: Mr. Examiner, I believe I'm through with the witness and I will offer in evidence Exhibit Number 1.

(Whereupon, Applicant's Exhibit 1 offered into evidence.)

MR. NUTTER: Exhibit 1 is the entire brochure?

MR. MCKENNA: Yes.

MR. NUTTER: Applicant's Exhibit 1 will be admitted into evidence.

(Whereupon, Applicant's Exhibit 1 admitted into evidence.)

MR. NUTTER: Are there any questions of Mr. Fitting?

CROSS-EXAMINATION

BY MR. IRBY:

Q Mr. Fitting, you mentioned the two leases on which these wells will serve as the Blinbry Federal and Cade Federal.

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The plat indicates other leases adjacent to these or cornering these, in the name of Carter Foundation. Are these other leases to be a part of this unit?

A No, sir, not at this time. I believe that in the future we would probably come back and try to get an expansion of this program to cover a portion of these other leases.

Q Then is it your understanding as it is mine, that when you come back for this expansion it will require another hearing?

A Yes, sir.

Q Now, these are all to be new wells, none of them are conversions?

A None of them are conversions, but I believe it is the intention to produce them for a little while; how long a period I don't know.

Q Comparatively short?

A Comparatively short I would think.

Q You estimated the life of the flood at ten years. Does that include this producing period?

A I would think so, but the guess of the life of a flood starting in this fashion may be a pretty bad guess.

Q Then, in all probability the production period would not exceed a year?

A I would not think so.

Q Now, you mentioned the plastic coating in the tubing and the packer. What type of packer is this to be?

A As I recall, the A. F. E. called for a Larkin Tension Packer; a short hook wall tension packer.

Q And you have taken a water sample but you don't have the analysis with you?

A I don't have it with me. It is hard water, but whether or not--I've made application to the State Engineer and also to the Capitan Water District, the new water district, that the--

Q The Capitan Basin is a basin declared by the State Engineer?

A Well, application has been made to them to use this water, but as of yesterday we hadn't received any additional word from them.

Q Well, since we're on this subject I'll pursue it just a little further. With regard to the water supply well you filed an application, an exploratory application to--

A To drill it or to complete it?

Q --to tap the Santa Rosa in this well which was down to some, I believe, 13,000 feet total depth?

A That's right.

Q And this exploratory application was granted?

A Right.

Q And as I understand you, you made your prorations there and you tested this well and you're getting a production of approximately 40 gallons per minute, amounting to some 65--roughly, 66 acre feet per annum at that rate of production contrary to the letter from either you or Carter, I don't know which?

A Probably me.

Q A misplacement of a decimal?

A Right; my error.

Q All right. Now, you're up to this point with your application to appropriate that this core has been going on concerning the volume, annual volume of water to be taken, whether it's 66 or 666, and I presume that the Roswell District Office is about ready to issue your notice of publication. Then after publication must be a period for protest. If this application to appropriate is protested, and the protestant is successful, then what are you going to do about your water?

A That is a good question. I would think that we would probably develop it from some other horizon. We currently are using Ellenburger produced water for injection into the Simpson. We thought we would have an answer on the Simpson injection by now and we had the production up to where it looks like it should be continued, so we're going to have to find some other horizon in addition to the Simpson, to

inject the Ellenburger water.

Q The production of this well, if you have tested it at full capacity, is slightly over your estimated needs for these five injection wells. Now, I think we can anticipate that this factor is going to drop off in production and you're going to be confronted with another situation of acquiring additional water until you're able to do it by drilling a supplemental well to recover your losses in this well.

A That's right, and there also is this factor, we have about 3,000 barrels a day from the Ellenburger. We are currently injecting into the McKee or the Simpson, and as that pressure gets higher we probably won't be able to get this volume. As we fill it up the pressure will go on up higher and we don't have the equipment to go on higher with it, so we would have the excess water from the Ellenburger to put into this project.

Q Your 250 barrel per well per day, I presume this is a figure computed from a basis of permeability in the Santa Rosa, I mean in the flooded formation?

A It's a little difficult for me to estimate in this area as all of the wells, all of the previous wells, are cabled to completion, and we don't have any core analysis, and most of this has been by comparison to other water floods in this general Langlie-Mattix pay.

Q Your estimate of 250 barrels per well per day is within reason after your comparison to these other nearby wells?

A Yes, sir.

Q Now, in which case you have this--this is a typical schematic of the well completion applicable to all five of your wells?

A Yes, sir.

Q And you're setting this casing at approximately 325 feet. Now, how are you going to protect the Santa Rosa?

A The anticipation when I talked to management of the Carter Foundation was to attempt to circulate, to drill the salt section to gauge if possible, and then attempt to circulate the cement the entire way. The control of the Carter Foundation Production Company in the field is Roy Carter, and his basic assumption is that he ought to have all pipes protected with cement, and if it possibly can be circulated, he will so do.

Q This is the very thing that is disturbing me because it is frequent, at least upon the reports we get, that it's quite frequent that you're unable to circulate through the salt section. Of course, it depends on the manner in which the well is drilled, to a great extent, and I'm worrying about the section from the top of your cement in case you're unable to

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bring it up above the salt section between that point and the bottom of this 8 5/8".

A It it wouldn't circulate, I see no reason for not running a DV tool.

Q What I want is complete separation of the Santa Rosa because we both know this is marginal quality water and it's also limited in quantity, and I'm very desirous of protecting that limited amount of water because it's within an economical reach of other uses, and I want to protect that against any contamination that might get in there and migrate, and I would appreciate, well, in fact, I would request that our Roswell District Office be kept fully advised with respect to the operations, promptly, with regard to this Santa Rosa formation. If we can protect that I think everything else you have here looks pretty good.

A I don't have with me the well record on these older wells that we've been drilling here. The first well in this area was drilled in 1935 by Carter Foundation, and whether or not there is protection of the Santa Rosa in all those wells with cement, I don't know.

Q I don't know either, and this also disturbs me, but I'm afraid I don't have the authority to go back to those wells, but I do have the authority to take care of anything in the future.

A I had talked to Mr. Carter last week concerning this problem of protection of the Santa Rosa water and it was his intention to try to circulate the cement through the salt section, I do know that.

MR. McKENNA: You will keep the Roswell Office informed?

A Yes, sir.

Q (By Mr. Irby) That's good. Let's see if I have any more. The packer setting in all instances will be on the end or near the end of the tubing and will be below the cement surrounding the 5 1/2?

A Yes, sir, it better be.

MR. IRBY: That's all the questions I have.

CROSS-EXAMINATION

BY MR. NUTTER:

Q Mr. Fitting, awhile ago you were talking about something about, for example, the injection well Number 13, that three quarters of it would go to the Cade Federal and one quarter to the Blinebry. Did you mean that was the water that was injected?

A No, sir, the production during its producing history, the first part that is produced, would have to divide the production.

Q Because it is so close to the lease line?

A Because it was so close to the lease line. These are all Federal Leases but the Cade has a 5 percent excess royalty, is the only difference here.

Q I presume they're override?

A Just one.

Q Just on the Cade?

A Just on the Cade.

Q And Blinebry Federal?

A And Blinebry Federal is straight Federal Lease. The Mattix Federal is one that had some excess royalty, and it terminated to the twenty years limitation, and it's in the Courts now.

Q Do the Cade overriding people agree to this kind of distribution from a well like the Number 13?

A They have not been approached, no, sir.

Q Now, in computing the maximum allowable for the project area, it's been the policy of the Commission to limit the allowable to a given basic lease for transfer purposes--

A Yes, sir.

Q --and unless the leases are unitized or consolidated by some other type of agreement, so in this case, we would have two leases involved here.

A We thought we would be to 42 barrels on the 40 acre,

plus the 14 barrels additional on the additional well on the 40 acre, until we could find out what was going to happen, and then reapply and have a hearing.

Q With some type of consolidation of the lease?

A Yes, sir.

Q I imagine what would have to be done would be for the Blinebry to stand on its on and for the Cade to stand on its on. As I have computed it here on this plat, you have 12, forty acre tracts in the Blinebry Lease plus four extra wells?

A There are 11 currently drilled wells on the Blinebry.

Q Your Number 16 will develop the 40?

A Yes, sir.

Q Plus 4 additional, and give that lease a maximum of 560 barrels, and the Cade would have 3 developed 40's on it and receive a maximum allowable of 126?

A Yes, sir.

Q Pending unitization?

A That would be fine if we could get those wells to make that much oil. I think they would be satisfied. I think it will require further hearing after the response from these wells are known. It's possible that the pattern may be changed at that time.

Q I see. Let me review these locations with you there,

Mr. Fitting. Number 11 was 1300 South, 1240 East; Number 13 was 1300 South and 1300 West; Number 14, 2660 North and 20 East; Number 15, 1340 North, 1200 West; and the Number 16, 1340 North, 1340 East?

A That's right.

MR. NUTTER: Any further questions of Mr. Fitting?
You may be excused. Do you have anything further Mr. McKenna?
Does anyone have anything they wish to offer in Case 3362?
The Commission will take the case under advisement and call Case 3358.

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E X H I B I T S

<u>NUMBER</u>	<u>MARKED FOR IDENTIFICATION</u>	<u>OFFERED</u>	<u>ADMITTED</u>
Applt's. 1	2	10	10

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STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) ss

I, BOBBY J. DAVIS, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me: and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

Witness my Hand and Seal this 10th day of January, 1966.

B. J. Davis
NOTARY PUBLIC

My Commission Expires:

March 13, 1969.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3367, heard by me on 1/5, 1966.

[Signature], Examiner
New Mexico Oil Conservation Commission

CARTER FOUNDATION PRODUCTION COMPANY

FIELD OFFICE

P. O. BOX 900

KERMIT, TEXAS

Amon G. Carter Jr., President
Walter Claer, Vice President
Katrine Deakins, Secretary-Treasurer

Sept. 23rd, 1966

Roy E. Carter,
Field Manager

HOME OFFICE ADDRESS
P. O. BOX 1036
FORT WORTH, TEXAS

Oil Conservation Commission,
State of New Mexico,
P. O. Box 2088,
Santa Fe, New Mexico.

Blaine-Cade Flood,
Case No. 3362,
Order No. R-3027.

Gentlemen:---

This is to advise that we did on Sept. 2nd, 1966, begin the injection of water into Blainebry Well No. 11, one of the wells listed in the above mentioned order and being located 1300 feet from the South Line and 1240 from the East Line of Section 34, Township 23 South, Range 37 East, Lea County, New Mexico.

We also plan to begin injection of water into Well No. Blainebry 15, one of the wells listed in the above mentioned order and being located 1340 feet from the North Line and 1200 feet from the West Line of Section 35, Township 23 South, Range 37 East, Lea County, New Mexico, this injection to begin Sept. 27th, 1966.

Yours very truly,

cc - Oil Conservation Commission,
P. O. Box 1980,
Hobbs, New Mexico.

[Handwritten signature: Roy E. Carter]

OIL CONSERVATION COMMISSION
P. O. BOX 171
SANTA FE, NEW MEXICO

January 13, 1966

Mr. Thomas F. McKenna
McKenna & Sommer
302 East Palace Avenue
Santa Fe, New Mexico

Dear Sir:

Enclosed herewith is Commission Order No. R-3027, entered in Case No. 3362, approving the Carter Foundation Production Company Blaine-Cade Waterflood Project.

Injection is to be through the five authorized water injection wells which shall be equipped with packers and plastic-coated tubing.

As to allowable, our calculations indicate that when all of the authorized injection wells have been placed on active injection, the maximum allowable which the Blaine-Federal Lease will be eligible to receive under the provisions of Rule 701-E-3 is 560 barrels per day and the maximum for the Cade-Federal Lease is 126 barrels per day.

Please report any error in these calculated maximum allowables 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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Mr. Thomas F. McKenna
1/13/66

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/DSN/ir

cc: Mr. Frank Irby
State Engineer Office
Santa Fe, New Mexico

Oil Conservation Commission
Hobbs, New Mexico

Case File No. 3362

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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. 3362
Order No. R-3027

APPLICATION OF CARTER FOUNDATION PRODUCTION
COMPANY FOR A WATERFLOOD PROJECT, LEA COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on
January 5, 1966, at Santa Fe, New Mexico, before Examiner
Daniel S. Hutter.

NOW, on this 13th day of January, 1966, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, 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, Carter Foundation Production Com-
pany, seeks permission to institute a waterflood project in the
Langlie-Mattix Pool by the injection of water into the Queen
formation through five injection wells at unorthodox locations
in Sections 34 and 35, Township 23 South, Range 37 East, NMPM,
Lea 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 should result in
the recovery of otherwise unrecoverable oil, thereby preventing
waste.

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CASE No. 3362

Order No. R-3027

(5) That the subject application should be approved and the project should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Carter Foundation Production Company, is hereby authorized to institute a waterflood project in the Langlie-Mattix Pool by the injection of water into the Queen formation through the following-described wells at the following-described unorthodox locations in Township 23 South, Range 37 East, NMPM, Lea County, New Mexico

Carter Foundation Production
Company Blinbry Federal

Well No. 11, located 1300 feet from the South line
and 1240 feet from the East line of Section 34;

Well No. 13, located 1300 feet from the South line
and 1300 feet from the West line of Section 35;

Well No. 14, located 2660 feet from the North line
and 20 feet from the East line of Section 34;

Well No. 15, located 1340 feet from the North line
and 1200 feet from the West line of Section 35; and

Well No. 16, located 1340 feet from the North line
and 1340 feet from the East line of Section 34.

(2) That the subject waterflood project is hereby designated the Carter Foundation Blinbry-Cade Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(3) That monthly progress reports of the waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

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CASE No. 3362

Order No. R-3027

(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

Jack M. Campbell

JACK M. CAMPBELL, Chairman

Guyton B. Hays

GUYTON B. HAYS, Member

A. L. Porter, Jr.

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



osr/

ROBERT D. FITTING & ASSOCIATES

Petroleum Engineering & Geological Consultants

MIDLAND, TEXAS 79704

December 16, 1965

12 1 11

Case 3362

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

Gentlemen:

The Carter Foundation Production Company requests a Hearing to obtain permission to drill wells near the quarter-quarter Section Line and to use these wells in the injection of water into the Langlie-Mattix pay zone in their Blinbry Lease, Langlie-Mattix Field, in Sections 34 and 35, Township 23-South, Range 37-East, Lea County, New Mexico.

Attached is a plat, showing all wells within a two-mile radius of the requested injection program with appropriate designations as to present producing horizons and of all other horizons that have produced oil or gas.

A diagrammatic sketch of a typical casing program and the probable perforations of these injection wells is enclosed for reference. Plastic lined tubing will be used. The injection water will be from the Santa Rosa formation at an approximate depth of 600'. It is estimated that approximately 250 barrels of water per day will be injected into each input well.

A copy of this application has been furnished the State Engineer's office, Box 1079, Santa Fe, New Mexico.

Please advise the date the Hearing will be scheduled.

Yours very truly,

Carter Foundation Production Company

By:

Robert D. Fitting

Robert D. Fitting

DOCKET MAILED

RDF:jd

Encl -

cc: State Engineer, P. O. Box 1079, Santa Fe, New Mexico
New Mexico Oil Conservation Commission, Box 1980, Hobbs, New Mexico
Mr. A. R. Brown, U.S.G.S., Box 1838, Hobbs, New Mexico
Mr. Thomas F. McKenna, 302 E. Palace Avenue, Santa Fe, New Mexico

Date 12-23-65

TEXACO
INC.

PETROLEUM PRODUCTS

DOMESTIC PRODUCING DEPARTMENT
MIDLAND DIVISION



P. O. BOX 3109
MIDLAND, TEXAS 79704

January 3, 1966

CARTER FOUNDATION WATERFLOOD
LANGLIE-MATTIX OIL POOL
LEA COUNTY, NEW MEXICO

New Mexico Oil
Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico

Attn: Mr. A. L. Porter, Jr.
Secretary-Director

Gentlemen:

Texaco Inc., as an operator in the Langlie-Mattix Oil Pool of Lea County, New Mexico, respectfully recommends your approval of waterflood operations according to the specific provisions of Oil Conservation Commission statewide rule 701 for the projects to be proposed by Carter Foundation Production Company at the examiner hearing of Case 3362 January 5, 1966.

Texaco Inc. operates producing leases adjacent to the project area and production performance indicates the need of secondary recovery operations as a conservation measure.

Yours very truly,


J. H. Markley
Division Manager

CLW:jl

cc: New Mexico Oil
Conservation Commission
P. O. Box 1980
Hobbs, New Mexico

DOCKET: EXAMINER HEARING -- WEDNESDAY -- JANUARY 5, 1966

9 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 3358: Application of General American Oil Company of Texas for a waterflood expansion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its Burch-Yccoly Waterflood Project, authorized by Order No. R-2327 in the Grayburg-Jackson Pool, by the conversion to water injection, in stages, of from 10 to 15 wells in Sections 23 and 26, Township 17 South, Range 29 East, Eddy County, New Mexico.

CASE 3359: Application of Sinclair Oil & Gas Company for a dual completion, non-standard location, non-standard gas proration unit, and an exception to Rule 104 C I, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion (conventional) of its Fren Oil Company Well No. 21 to produce oil from the Cedar Lake-Abo Pool and to produce gas from an undesignated Morrow gas pool through parallel strings of tubing. Applicant further seeks approval of a 200-acre non-standard gas proration unit for said well comprising the E/2 SW/4, SW/4 SE/4, and E/2 SE/4 of Section 19, Township 17 South, Range 31 East, for said well which is located at an unorthodox gas well location 560 feet from the South line and 3350 feet from the East line of said Section 19. Applicant further seeks an exception to Commission Rule 104 C I for said well which is located closer than 660 feet to another well producing from the Abo formation on the same 40-acre tract.

CASE 3360: Application of L. R. French, Jr. for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete his Aztec Uncle Well No. 1 located in Unit C of Section 28, Township 18 South, Range 33 East, Lea County, New Mexico, to produce oil from the Strawn formation through the casing-tubing annulus and to produce gas from the Morrow formation through tubing. In the alternative, applicant seeks authority to dually complete the well with a single string of tubing and to commingle the Strawn oil and Morrow gas in the wellbore by means of a dual-flow choke-assembly.

CASE 3152 (Reopened)

In the matter of Case No. 3152 being reopened pursuant to the provisions of Order No. R-2821, which order established 80-acre spacing units for the Osudo-Wolfcamp Pool, Lea 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 spacing units.

CASE 3153 (Reopened)

In the matter of Case No. 3153 being reopened pursuant to the provisions of Order No. R-2822, which order established 80-acre spacing units for the Osudo-Strawn Pool, Lea County, New Mexico,

January 5, 1966 Examiner Hearing

for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units.

CASE 3246 (Reopened)

In the matter of Case No. 3246 being reopened pursuant to the provisions of Order No. R-2935, which order established special rules for the Mesa-Queen Pool, Lea County, New Mexico, for production of oil and gas wells in said pool, including classification of oil wells and gas wells, spacing units for oil wells and gas wells, and the establishment of a gas-liquid ratio limitation of 5,000 cubic feet of gas per barrel of oil. All interested parties may appear and show cause why the special rules should be continued in effect.

CASE 2720 (Reopened)

In the matter of Case No. 2720 being reopened pursuant to the provisions of Order No. R-2397-B which continued the original order for an additional year, establishing 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 gas-liquid hydrocarbon ratio exceeds 30,000 to one.

CASE 3361: Application of Tidewater Oil Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water in its A. B. Coates "C" Well No. 15 located in Unit O of Section 24, Township 25 South, Range 37 East, Justis Field, Lea County, New Mexico, through a perforated interval below 8,000 feet.

CASE 3353: Application of Tesoro Petroleum Corporation to amend Order No. R-2807, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks an amendment to Order No. R-2807, which authorized a waterflood project in the Hospah Unit Area, to permit the production of oil from previously designated water injection wells, to approve unorthodox locations for additional producing wells, and to authorize additional injection wells, all in Section 36, Township 18 North, Range 9 West, McKinley County, New Mexico.

CASE 2945 (Reopened)

In the matter of Case No. 2945 being reopened pursuant to the provisions of Order No. R-2623, which order established 640-acre spacing units for the Antelope Ridge-Devonian Gas Pool, Lea County, New Mexico, for a period of two years. All interested parties may appear and show cause why said pool should not be developed on 160-acre or 320-acre spacing units.

January 5, 1966 Examiner Hearing

CASE 3350 (Continued and readvertised)

Application of International Oil & Gas Corporation for the creation of two new oil pools and for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new oil pool for Bone Spring production and a new oil pool for Wolfcamp production in Section 21, Township 18 South, Range 32 East, Lea County, New Mexico, and for the establishment of special rules for each of said pools including provision for 80-acre proration units.

CASE 3362: Application of Carter Foundation Production Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Queen formation through five wells located at unorthodox locations in Sections 34 and 35, Township 23 South, Range 37 East, Langlie-Mattix Pool, Lea County, New Mexico.

CARTER FOUNDATION PRODUCTION COMPANY
WATERFLOOD AND UNORTHODOX LOCATION HEARING
BLINEBRY, CADE, HUNT AND MATTIX LEASES
HEARING DATE: JANUARY 5, 1966

ENTIRE RESERVOIR

Name of Field: Langlie Mattix

Location: Township 23-S through 26-S, Range 36-E through 38-E,
Lea County, New Mexico

Name of Formation: Queen (Penrose)

Composition of Pay: Sand and Sandy Limestone

Type of Structure: Anticlinal - Stratigraphic Trap

Type of Drive: Solution Gas

Original Bottom Hole Pressure: 1450 PSI @ -200'

Current Bottom Hole Pressure: 200 PSI (Est.)

Depletion Status of Reservoir: Near Total Primary Depletion

PROJECT AREA

Leases: ① Blinebry - E/2 of Section 34, the NW/4 and the SW/4 of
the SW/4 of Section 35, T-23-S, R-37-E (520 acres)

② Cade - E/2 and the NW/4 of the SW/4 of Section 35, T-23-S,
R-37-E (120 acres)

③ Elma May Hunt - SE/4 of the SW/4 of Section 26, T-23-S,
R-37-E (40 acres)

④ Mattix - NW/4 and the E/2 of the SW/4 and the W/2 of the
SE/4 of Section 3, T-24-S, R-37-E (640 acres)

Total Acres - 1320

Local Structure - See Map

Average Depth to Top of Pay: 3500'

Net Effective Pay Thickness: 80'

Estimated Average Porosity: 12%

Est. life of 1

*26% depletion
44% 1st zone
550000 Bl. 7th zone
150000 Cade 7th
700000 1st zone*

Estimated Average Permeability: 15 md.

Estimated Connate Water Content: 35%

Gravity of Crude: 35°

Primary Production History:

1. Date First Well Completed & Number of Present Wells

④ Blinebry - March 1950	11 Wells
⑥ Cade - June 1950	3 Wells
⑥ Hunt - September 1954	1 Well
⑥ Mattix - July 1935	6 Wells
Total -	21 Wells

2. See Tabulated Production History and Production Decline Graphs

3. Average Current Daily Per Well Production

Oil: 3 Barrels

Water: Nil

Gas: 15 MCF

Monthly Average Gas-Oil Ratio: 4510

4. Stage of Primary Depletion of Project Area: 86 Per Cent

Planned Injection:

1. Type of Injection Fluid: Water

2. Source of Injected Water: Santa Rosa Water Well on Blinebry Lease

3. Injection Pattern: Probably a 5-Spot Pattern, depending on Pilot Waterflood Results

4. Maximum Injection Pressure: 2000 PSI

5. Estimated Maximum Per Well Rate of Injection: 300 Barrels

6. All Injection Wells to be drilled, cased through pay section, cement circulated to surface and tubing plastic coated (See Plat).

Results Expected:

1. Estimated Original Oil in Place: 5,190,000 Barrels
Cade & Blinebry 3,500,000 Bbls

2. Estimated Additional Oil Recovery by Waterflood: 1,038,000 Barrels

Blinebry	550,000 Bbls
Cade	150,000 Bbls
	<u>700,000 Bbls</u>

PRODUCTION HISTORY
CARTER FOUNDATION PRODUCTION COMPANY
LANGLIE-MATTIX FIELD
LEA COUNTY, NEW MEXICO

Blinebry Federal

<u>Year</u>	<u>No. Wells End of Year</u>	<u>Yearly Oil Production</u>
1950	6	37173
1951	7	74240
1952	8	41282
1953	9	44307
1954	9	25640
1955	10	32246
1956	10	26929
1957	10	43661
1958	10	33220
1959	10	23721
1960	10	16843
1961	11	20785
1962	11	20878
1963	11	15674
1964	11	14139
1965	11	7498*

Cade Federal

<u>Year</u>	<u>No. Wells End of Year</u>	<u>Yearly Oil Production</u>
1950	1	15970
1951	3	17843
1952	3	16806
1953	3	11731
1954	3	8603
1955	3	5866
1956	3	6173
1957	3	12320
1958	3	8595
1959	3	8123
1960	3	5607
1961	3	5694
1962	3	5838
1963	3	4399
1964	3	4321
1965	3	2573*

Elma May Hunt

<u>Year</u>	<u>No. Wells End of Year</u>	<u>Yearly Oil Production</u>
1954	1	2674
1955	1	11309
1956	1	5369
1957	1	3485
1958	1	1937
1959	1	1909
1960	1	1392
1961	1	892
1962	1	807
1963	1	757
1964	1	707
1965	1	667*

Mattix Federal

<u>Year</u>	<u>No. Wells End of Year</u>	<u>Yearly Oil Production</u>
1950	1	5692
1951	2	10448
1952	3	11088
1953	3	9400
1954	3	7230
1955	3	6224
1956	3	5441
1957	3	9045
1958	3	8737
1959	3	7435
1960	3	5554
1961	5	8350
1962	6	19474
1963	6	11554
1964	6	9341
1965	6	4577*

*Production to 11-1-65

PRODUCTION HISTORY

OPERATOR: Carter Foundation Production
Company

FIELD: Langlie-Mattix

LEASE: Blinebry Federal

COUNTY: Lea

	<u>No.</u>	<u>Oil</u>	<u>Oil</u>	<u>Per</u>	<u>Gas</u>	<u>Per</u>	<u>Gas-Oil</u>
	<u>Wells</u>	<u>Allow.</u>	<u>Prod.</u>	<u>Well</u>	<u>Prod.</u>	<u>Well</u>	<u>Ratio</u>
		<u>Bbls.</u>	<u>Bbls.</u>	<u>Prod.</u>	<u>MCF</u>	<u>Prod.</u>	
Year: <u>1964</u>							
Jan.	11	1457	1277	116	2991	272	2342
Feb.	11	1363	867	79	2802	255	3232
Mar.	11	1457	1223	111	2790	254	2281
April	11	1410	1268	115	3686	335	2907
May	11	1271	1382	126	3290	299	2381
June	11	1230	1415	129	2693	245	1903
July	11	1271	1213	110	3416	311	2816
Aug.	11	1271	1227	112	2209	201	1800
Sept.	11	1230	1219	111	4452	405	3652
Oct.	11	1271	1014	92	3783	344	3731
Nov.	11	1230	912	83	3638	331	3989
Dec.	11	1271	1122	102	3585	326	3195

Year Total:		14,139		39,335
Cum. Total:		470,738		

Year: 1965

Jan.	11	1271	1166	106	2977	271	2553
Feb.	11	1148	837	76	3175	289	3793
Mar.	11	1271	756	69	3786	344	5008
April	11	1230	767	69	3135	285	4074
May	11	1426	816	74	2273	207	2786
June	11	1380	807	72	2076	189	2572
July	11	1426	705	64	1068	97	1515
Aug.	11	1271	675	61	768	70	1138
Sept.	11	1230	358	33	1166	106	3257
Oct.	11	1271	611	56	880	80	1440
Nov.							
Dec.							

Year Total to 11-1-65:		7,498		21,304
Cum. Total to 11-1-65:		478,236		

PRODUCTION HISTORY

OPERATOR: Carter Foundation Production
Company

FIELD: Langlie-Mattix

LEASE: Cade Federal

COUNTY: Lea

	<u>No.</u> <u>Wells</u>	<u>Oil</u> <u>Allow.</u> <u>Bbls.</u>	<u>Oil</u> <u>Prod.</u> <u>Bbls.</u>	<u>Per</u> <u>Well</u> <u>Prod.</u>	<u>Gas</u> <u>Prod.</u> <u>MCF</u>	<u>Per</u> <u>Well</u> <u>Prod.</u>	<u>Gas-Oil</u> <u>Ratio</u>
Year: <u>1964</u>							
Jan.	3	403	345	115	1516	505	4394
Feb.	3	377	355	118	1149	383	3237
Mar.	3	403	386	129	2346	782	6078
April	3	390	403	134	2065	688	5124
May	3	403	422	141	2549	850	6040
June	3	390	391	130	2657	886	6795
July	3	403	399	133	2544	848	6376
Aug.	3	403	367	122	2676	892	7292
Sept.	3	390	382	127	2513	838	6579
Oct.	3	403	350	117	1600	533	4571
Nov.	3	390	318	106	1395	465	4387
Dec.	3	403	203	68	697	232	3433
Year Total:			4,321		23,707		
Cum. Total:			138,889				

Year: 1965

Jan.	3	403	310	103	1267	421	4077
Feb.	3	364	250	83	1458	486	5832
Mar.	3	403	271	90	1636	545	6037
April	3	390	310	103	2216	739	7148
May	3	434	171	57	1450	483	8480
June	3	420	215	72	1166	389	5423
July	3	434	229	76	1203	401	5253
Aug.	3	341	296	99	1280	427	4324
Sept.	3	330	245	82	1145	382	4673
Oct.	3	341	276	92	1207	402	4373
Nov.							
Dec.							
Year Total to 11-1-65:			2,573		14,025		
Cum. Total to 11-1-65:			141,462				

PRODUCTION HISTORY

OPERATOR: Carter Foundation Production
Company

FIELD: Langlie-Mattix

LEASE: Elma May Hunt

COUNTY: Lea

	<u>No.</u> <u>Wells</u>	<u>Oil</u> <u>Allow.</u> <u>Bbls.</u>	<u>Oil</u> <u>Prod.</u> <u>Bbls.</u>	<u>Per</u> <u>Well</u> <u>Prod.</u>	<u>Gas</u> <u>Prod.</u> <u>MCF</u>	<u>Per</u> <u>Well</u> <u>Prod.</u>	<u>Gas-Oil</u> <u>Ratio</u>
Year: <u>1964</u>							
Jan.	1	124	94	94	431	431	4585
Feb.	1	116	83	83	334	334	4024
Mar.	1	124	87	87	317	317	3644
April	1	120	-	-	380	380	-
May	1	93	-	-	425	425	-
June	1	90	-	-	-	-	-
July	1	93	66	66	-	-	-
Aug.	1	-	69	69	143	143	2072
Sept.	1	81	71	71	204	204	2873
Oct.	1	93	87	87	177	177	2034
Nov.	1	90	68	68	169	169	2485
Dec.	1	93	82	82	177	177	2213

Year Total:

707

2,757

Cum. Total:

31,238

Year: 1965

Jan.	1	80	63	63	177	177	2810
Feb.	1	84	66	66	155	155	2348
Mar.	1	93	57	57	165	165	2895
April	1	90	74	74	105	105	1419
May	1	93	64	64	27	27	422
June	1	90	58	58	93	93	1603
July	1	93	59	59	20	20	339
Aug.	1	93	88	88	125	125	1420
Sept.	1	90	58	58	149	149	2569
Oct.	1	93	80	80	117	117	1463
Nov.							
Dec.							

Year Total to 11-1-65:

667

1,133

Cum. Total to 11-1-65:

31,905

PRODUCTION HISTORY

OPERATOR: Carter Foundation Production
Company
LEASE: Mattix Federal

FIELD: Langlie-Mattix

COUNTY: Lea

	No. Wells	Oil Allow. Bbls.	Oil Prod. Bbls.	Per Well Prod.	Gas Prod. MCF	Per Well Prod.	Gas-Oil Ratio
Year: <u>1964</u>							
Jan.	6	1178	798	133	4198	700	5261
Feb.	6	1102	766	128	3901	650	5093
Mar.	6	1178	840	140	4747	791	5651
April	6	1140	864	144	5632	939	6519
May	6	992	820	137	4728	788	5766
June	6	960	807	135	5196	866	6439
July	6	992	764	127	5025	838	6577
Aug.	6	992	768	128	5261	877	6850
Sept.	6	960	767	128	4708	785	6138
Oct.	6	992	843	141	6829	1138	8101
Nov.	6	960	556	93	5324	887	9576
Dec.	6	992	748	125	5044	841	6743
Year Total:			9,341		60,593		
Cum. Total:			236,255				

Year: <u>1965</u>							
Jan.	6	992	859	143	6132	1022	7139
Feb.	6	896	673	112	3706	618	5507
Mar.	6	992	637	106	4073	679	6394
April	6	960	667	111	3988	665	5979
May	6	930	499	83	3850	642	7715
June	6	900	599	99	3115	519	5200
July	6	930	643	107	2866	478	4457
Aug.	6	930	609	102	3328	555	5465
Sept.	6	900	580	97	3232	539	5572
Oct.	6	930	632	105	3864	644	6114
Nov.							
Dec.							
Year Total to 11-1-65:			6,398		38,154		
Cum. Total to 11-1-65:			242,653				