

CASE 3935: Appli. of SINCLAIR OIL  
CORPORATION FOR A WATERFLOOD  
PROJECT, LEA COUNTY, NEW MEXICO

Case Number

3935

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  
November 12, 1968

IN THE MATTER OF: )

Application of Sinclair Oil Corporation )  
for a waterflood project, Lea County, )  
New Mexico. )

Case No. 3935

BEFORE: D. S. NUTTER

TRANSCRIPT OF HEARING

MR. NUTTER: Call Case 3935.

MR. HATCH: Application of Sinclair Oil Corporation  
for a waterflood project, Lea County, New Mexico.

MR. KELLY: Booker Kelly, of White, Gilbert,  
Koch and Kelly on behalf of the applicant. I have one  
witness and ask that he be sworn.

(Witness sworn.)

(Applicant's Exhibits 1 through  
6 marked for identification.)

\* \* \* \* \*

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

DIRECT EXAMINATION

BY MR. KELLY:

Q Now, Mr. Anderson, would you state your name,  
position and employer?

A R. M. Anderson, Region Regulatory Engineer, Sinclair  
Oil Corporation, Midland, Texas.

Q And you have previously qualified as an expert  
Petroleum Engineer in front of this Commission?

A Yes, I have.

Q Referring to what has been marked Sinclair's Exhibit  
No. 1, would you state what Sinclair seeks by their application?

A Sinclair's Exhibit No. 1 is an area plat in the

vicinity of Sinclair's B Davis Lease showing the producing status of all wells within a mile radius of the Lease. The wells that are colored solid red are current producers from the Jalmat Oil Pool. Wells that are colored solid yellow are current producers from the Jalmat Gas Pool. Wells that are colored solid blue are current producers from the Langlie-Mattix Oil Pool and wells that are circled in red, yellow or blue that are not filled in, are wells that are either plugged and abandoned or shut in and are not currently producing.

The proposed injection well is identified with an arrow and a yellow lable to that effect, the well is located in Unit M, of Section 34, Township 23 South, Range 36 East.

Q Now, if I understand your testimony, the Jalmat Pool, you have only two wells actually, or three wells that could be called offset of the proposed injection well?

A Yes, the proposed injection well has been depleted since 1962, it has not produced since January of '62. The only other well on our Lease that is completed in the same interval is our Well No. 3 which is colored with a solid red circle. Was that your question?

Q Yes. Well, there are other Jalmat wells that could be called offsets, but we will go into their completion zones later in this testimony. Now, what are the offset operators?

A The offset operator to the south is Argus Oil Company, the offset operator to the southwest is Aries Oil Company, to the west is two depleted Sun-Ray wells, either plugged or depleted, my area map shows them to be plugged and abandoned; to the north, we have an Atlantic well which is off schedule, depleted, in the Jalmat and also Continental with two gas wells in the north half of Section 34, the offset operator to the east is Sinclair's Guthrie Lease.

Q Refer to what has been marked as Exhibit No. 2, the structure map; would you explain its significance to the Examiner?

A This is a structure map on the top of the Yates. It's a regional map, not particularly known for its accuracy in detail, but in general it shows the Yates to be a north-south trending anticline, shows this to be on the west edge of the anticline, and in the neighborhood of increasing dip to the west, in the vicinity of increasing dip to the west.

Q What is the drive mechanism of this reservoir?

A The drive mechanism is solution gas drive in both the Yates and Seven Rivers Zones. However, we are experiencing considerable water production by virtue of being located on that western flank and there is water associated with this

reservoir.

Q Can you give the Examiner a brief summary of the reservoir characteristics?

A Yes. The producing formations that we will be injecting into in the subject well are Yates and Seven Rivers formations. They're mostly sands and limey sands. The reservoir has, Yates and Seven Rivers have a common oil-water contact between minus 300 to minus 380 feet. They have a common gas-oil contact at minus 180 to minus 200 feet, somewhere in there. As I said before, they are both solution gas drive. The Yates has a porosity of 10%, the Seven Rivers has porosity of about 14%. The permeabilities range from 12 millidarcies in the Yates to about 20 millidarcies in the Seven Rivers. These are the reservoir averages, not averages taken from this well. Our connate water content is high, the water saturation is about 44% in the Yates and about 55% in the Seven Rivers, so we have water producing problems. Gravity oil is about 29 degrees.

Q At the present time, there's only one well producing on this Lease from the Jalmat, is that right?

A That is correct.

Q Do you have an exhibit that shows the cumulative oil production for the Lease?

A Yes, I have Exhibit 3, which indirectly shows the cumulative, it shows the production from the lease by years, the monthly average oil production by years through 1959 and then commencing in 1960, I've shown the monthly oil production by months. Now, prior to 1956, all three wells on subject Lease were classified as Cooper Jal wells, Cooper Jal oil wells. Around the end of '55, the first of '56, one of the wells, the well that is colored in blue was reclassified, redesignated in the Langlie-Mattix Pool as a matter of nomenclature and the other two wells, the No. 1 Well, the subject well of this application, and the No. 2 well were put in the Jalmat Oil Pool and my curves reflect the production from that time on, separated by Pools. The cumulative production for the Jalmat, the two Jalmat wells, is the No. 1 Well, 155,190 barrels, that's the proposed injection well, the producing well, No. 2 Well, No. 3 Well, correction, the No. 3 well, the producing well in the Jalmat currently has recovered 183,614 barrels of oil, for a total oil from the Jalmat Oil Pool, and from the Cooper Jal Pool before, being 338,804 barrels. The No. 2 Well, which is a Langlie-Mattix well, has recovered 366,996 barrels of oil.

Q How long has the proposed injection well been shut in?

A Since January, 1962.



Q What is the present daily rate of production in the other Jalmat well?

A On the other Jalmat Well, we are currently producing 18 barrels of oil per day.

Q Do you feel that this well is reaching its advanced state of depletion?

A Yes, I believe that the Lease is in a late primary stage of depletion.

Q Now, Exhibit No. 4 is the tabular production history, is that correct?

A That is correct, that is the tabular data that is plotted on Exhibit No. 3.

Q Is there anything you want to bring to the Examiner's attention on Exhibit No. 4?

A No, sir.

Q Referring to what has been marked as Exhibit No. 5, your sketch of the proposed injection well, would you explain the diagram?

A The Exhibit No. 5 reflects the condition that the well will be in when it is used as an injection well. At the present time, there is a cast iron bridge plug at 3490 which is between the two sets of perforations that are shown on the well. We will drill out that cast iron bridge plug which is

not shown on the sketch, opening both sets of perforations to the well bore as reflected by the sketch.

Q Now, you are going to have plastic-coated tubing?

A Yes. This exhibit shows that we will run plastic-coated tubing set in a packer, the packer to be located some 60 feet above the uppermost perforation and we will fill the annulus with corrosion inhibited fluid and make some provision at the surface for observing pressure.

Q What is the source of the water?

A The source of the water is produced water from the subject lease, the two producing wells on subject lease and Sinclair's Guthrie Lease which offsets the Lease to the east.

Q Do you know the ownership of the two leases involved, are they Federal, State or fee?

A Well, the Davis Lease, the subject lease, is a fee lease. I do not know the status of the Guthrie Lease, it shows to be a fee lease on my Exhibit 1.

Q What will be your initial injection rates?

A We are currently producing 1,000 barrels of water a day on the two leases and that will be our initial injection rate.

MR. NUTTER: A thousand barrels a day?

THE WITNESS: Yes, sir.

Q (By Mr. Kelly) How about the pressure?

A We feel that the well will take this thousand barrels a day by gravity; however, we will be prepared to go up to six or eight hundred pounds of pressure, if necessary.

Q Do you think the injection of that amount of water will have any adverse affect on any adjoining Jalmat Pools of your Lease?

A No, sir, I do not.

Q Referring to what has been marked Exhibit No. 6, your log, could you explain the relative perforated zones between the injection well and wells adjoining this injection well?

A Yes, sir. I have marked Exhibit No. 6 with an orange pencil, the uppermost area of perforations, and that was perforated in 1951. That was acidized twice and tested and gave up no shows of oil or gas. It was tight and non-productive. The present perforations will be found marked in red, from 3468 to 78. Those are the present perforations that are opened in the well bore along with the non-productive orange ones up the hole there, but those were the perforations that were producing from 1951 until 1962, until the well was finally depleted.

MR. NUTTER: What happened to the perforations that are marked in orange, Mr. Anderson, were they squeezed?

THE WITNESS: No, they were left open.

MR. NUTTER: They are tight and they are still open?

THE WITNESS: They're tight and open. We are asking for permission to inject into them although I personally don't think they will take any water.

MR. NUTTER: They will be subject to the injection, though?

THE WITNESS: Yes, I mentioned earlier in talking about the diagrammatic sketch, that there was a cast iron bridge plug at 3490. I don't know whether I have marked that on the Examiner's copy of the log or not. The 3490, the location of the bridge plug presently in the well. Immediately below that bridge plug are perforations 3494 to 3408. These are marked on the Examiner's log. Those perforations, when tested in 1951, swabbed 40 barrels of water an hour with no show of oil or gas. This calculates nine hundred sixty some odd barrels a day and we feel that the majority of our injection will go into those perforations and that's why I feel that the well will take the water with very low surface pressure. Immediately below those perforations, the waterbearing perforations, we have the top of a cement plug at 3515 and everything below that point has been plugged off, both the cast iron bridge plug and cement and hydromite and several workovers

resulting in plugging the bottom of that hole. Now, the offset well to the south which is an Argus well, you asked about the offsetting wells?

Q (By Mr. Kelly) Yes.

A That might be affected. In my opinion, that well will not be affected in any way by this injection. The Argus B Well No. 2 located in Unit D of Section 3 is presently completed from the casing seat at 3592, in open hole to 3638, according to Commission files. The correlative zone in that Argus well, the zone in the Argus Well bore that we are going to be putting this water in, and I'm lumping here, our two red sets of perforations on our Exhibit 6, is found from 3492 to 3532 in the Argus well. So we are some, the bottom of our injection interval, some 60 feet above the top of their producing interval, so I feel that they will not be affected by the injection. On the other hand, Sinclair's B Davis Well No. 3, the other, the Jalmat producer on our Davis Lease, it is perforated from 2900 to 3326 and the comparable zone in it that compares with the red perforations in our No. 1 well is from 3246 to 3286, and our No. 3 Well is therefore open some 40 feet below the lowest perforations in our injection zone, so it is, well, the No. 3 Well is open in this same interval and then some, that we're injecting into, so I feel

there is a very good chance that we will see some effect on that well. That is the only well that I anticipate will be affected unless some additional well work is done in the area.

Q Therefore, in your opinion, there wouldn't be any adverse affect on the correlative rights of any adjoining operators by the granting of this application?

A Well, there will be no effect on them one way or another in my opinion. However, if they were open in our correlative zone, I would expect them to have a beneficial effect.

Q I don't think I asked you, going back to your sketch for a minute, in your opinion, would this proposed installation protect any fresh water that might be in the area or protect any other zones against migration of the injected fluid?

A Yes, it will, the only fresh water in the area is Ogalala and it's found at a depth above 289 feet and we have surface casing set at 289 and cement circulated to the top. For some reason, a 9 and 5/8ths intermediate string was run in this well and cemented with 425 sacks of cement which we estimate would bring the top of the cement up to 62 feet from the surface which would, of course, be over 200 feet up

into the 13-inch surface casing. So we have two strings of pipes cemented in a manner to protect the surface water.

Q In your opinion, would the granting of this application prevent waste by allowing you to recover oil that would otherwise be left in place?

A Yes, in my opinion, we have a very good chance of recovering quite a bit of additional oil. As I stated earlier our cumulative Jalmat oil production has been about 338,000 barrels. We're in a position here to sweep here, maybe about half of our lease and that would be 160,000 barrels. We probably, I would estimate that we might, if we're lucky, get as much as 100,000 barrels of additional oil, secondary oil, as a result of this test.

Q Of course, if this application is granted, it would also serve as a secondary purpose of disposing of salt water under ground?

A Yes, sir.

Q Were Exhibits 1 through 6 prepared by you or under your supervision?

A Yes.

MR. KELLY: I move the introduction of Sinclair's Exhibits 1 through 6.

MR. NUTTER: Sinclair's Exhibits 1 through 6 will be

admitted in evidence.

(Whereupon, Sinclair's Exhibits 1 through 6 offered and admitted in evidence.)

MR. KELLY: That's all we have on direct.

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

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Anderson, I notice from your decline curve that the decline on your Langlie-Mattix has been upward. To what do you attribute this?

A I don't know, unless it's due to the increase in allowables in the State of New Mexico.

Q Is it a top allowable well?

A Yes.

Q It is, and this production curve here for the Jalmat would reflect only one well since 1962, is that correct?

A Yes.

Q It's presently producing 18 barrels a day?

A Yes, sir.

MR. NUTTER: Are there any other questions of Mr. Anderson? He may be excused.

(Witness excused.)



MR. NUTTER: Do you have anything further, Mr. Kelly?

MR. KELLY: No, I don't.

MR. NUTTER: Anyone have anything they wish to offer in Case 3935? We will take the case under advisement and recess the hearing until 1:30.

I N D E X

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STATE OF NEW MEXICO )  
 )  
 COUNTY OF BERNALILLO )

I, ADA DEARNLEY, Court Reporter in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceeding before the New Mexico Oil Conservation Commission was reported by me, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my hand this 26th day of November, 1968.

*Ada Dearnley*  
 Ada Dearnley  
 I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3135 heard by me on 11/12, 1968.  
*[Signature]*  
 Examiner  
 New Mexico Oil Conservation Commission

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

November 19, 1968

C  
Mr. Booker Kelly  
White, Gilbert, Koch & Kelly  
Attorneys at Law  
Post Office Box 787  
Santa Fe, New Mexico

O  
Dear Sir:

Reference is made to Commission Order No. R-3566, entered in Case No. 3935, approving the Sinclair Jalmat Davis Waterflood Project.

P  
Injection is to be through the one authorized water injection well, which shall be equipped with a string of tubing set in a packer at approximately 3050 feet.

The casing-tubing annulus shall be loaded with an inhibited fluid and equipped with a pressure gauge to facilitate detection of leakage in the casing, tubing or packer.

Y  
As to allowable, our calculations indicate that 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 84 barrels per day when the Southeast New Mexico normal unit allowable is 42 barrels per day or less.

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

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

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Mr. Booker Kelly  
White, Gilbert, Koch & Kelly  
Attorneys at Law  
Post Office Box 787  
Santa Fe, New Mexico

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.

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

Enclosure

cc: Oil Conservation Commission  
Hobbs, New Mexico

Mr. D. E. Gray, State Engineer Office  
Santa Fe, New Mexico

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. 3935  
Order No. R-3566

APPLICATION OF SINCLAIR OIL CORPORATION  
FOR A WATERFLOOD PROJECT, LEA COUNTY,  
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on November 12, 1968, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 19th day of November, 1968, 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, Sinclair Oil Corporation, seeks permission to institute a pilot waterflood project in the Jalmat Pool by the injection of water into the Yates and Seven Rivers formations through its B. Davis Well No. 1, located 330 feet from the South line and 330 feet from the West line of Section 34, Township 23 South, Range 36 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 pilot waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

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CASE No. 3935  
Order No. R-3566

(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, Sinclair Oil Corporation, is hereby authorized to institute a pilot waterflood project in the Jalmat Pool by the injection of water into the Yates and Seven Rivers formations through its B. Davis Well No. 1, located 330 feet from the South line and 330 feet from the West line of Section 34, Township 23 South, Range 36 East, NMPM, Lea County, New Mexico.

(2) That the subject pilot waterflood project is hereby designated the Sinclair Jalmat Davis 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 pilot waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION



*David F. Cargo*

DAVID F. CARGO, Chairman

*Guyton B. Hays*

GUYTON B. HAYS, Member

*A. L. Porter, Jr.*

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

esr/

ROUGH DRAFT FOR WATERFLOOD LETTER

Mr. Booker Kelly  
White, Gilbert, Koch & Kelly  
Attorneys at Law  
Post Office Box 787  
Santa Fe, New Mexico

Dear Sir:

Reference is made to Commission Order No. R-3566, entered in Case No. 3935, approving the Sinclair Jalmat Davis Waterflood Project.

*Injection is to be through the one authorized water injection well, which shall be equipped with a string of tubing set in a packer at approximately 3050 feet.*

*The casing-tubing annulus shall be coated with an inhibited fluid and equipped with a pressure gauge to facilitate detection of leakage in the casing, tubing or packer.*

As to allowable, our calculations indicate that 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 84 barrels per day when the Southeast New Mexico normal unit allowable is 42 barrels per day or less.

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.

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

cc: OCC: Hobbs   x    
          Artesia         
          Aztec       

~~USGS~~

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

Mr. D. E. Gray

DOCKET: EXAMINER HEARING - TUESDAY - NOVEMBER 12, 1968

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

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

- CASE 3927: Application of Gulf Oil Corporation for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a producing oil well at an unorthodox location 5 feet from the North line and 1,315 feet from the West line of Section 33, Township 19 South, Range 35 East, as an infill well in the West Pearl Queen Unit Waterflood Project, Pearl-Queen Pool, Lea County, New Mexico.
- CASE 3928: Application of Jake L. Hamon for the creation of a new oil pool and for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Devonian oil pool for its State "K-33" Well No. 1 located 1980 feet from the South and West lines of Section 30, Township 16 South, Range 36 East, Lea County, New Mexico, and for the promulgation of special rules therefor including a provision for 80-acre proration units.
- CASE 3929: Application of Leonard Latch for three waterflood projects, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute three waterflood projects by the injection of water into the Yates formation through five wells on his Saunders A, B, and Travis leases located in Sections 12 and 13 of Township 17 South, Range 27 East, Empire (Yates-Seven Rivers) Pool, Eddy County, New Mexico.
- CASE 3930: Application of Pan American Petroleum Corporation for a dual completion and water injection, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Meyers "B" Federal Well No. 4 located in Unit E of Section 21, Township 24 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of gas from the perforated interval 2950 feet to 3090 feet, Jalmat Gas Pool, and the injection of water for secondary recovery purposes into the Seven Rivers-Queen formations, Langlie-Mattix Pool, in the open-hole interval from 3295 feet to 3650 feet through parallel strings of tubing.
- CASE 3931: Application of Pan American Petroleum Corporation for salt water disposal, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres formation in the interval from 4239 feet to 4389 feet in its Farrell Federal Well No. 10 located in Unit F of Section 28, Township 7 South, Range 33 East, and in



November 12, 1968  
Examiner Hearing  
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Docket No. 33-68

(Case 3931 continued)

the interval from 4402 to 4422 feet in its State "DF" Well No. 1 located in Unit I of Section 25, Township 7 South, Range 33 East, Chaverco-San Andres Pool, Roosevelt County, New Mexico.

CASE 3932: Application of Pan American Petroleum Corporation for down-hole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle production from the Justis-Blinebry and Justis-Fusselman Pools in the wellbore of its State "AJ" Well No. 6 located in Unit M of Section 30, Township 25 South, Range 38 East, Lea County, New Mexico, with the provision that no more than one single allowable will be produced from said well.

CASE 3933: Application of Texaco, Inc., for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pilot waterflood project by the injection of water into the Drinkard formation through its C. H. Lockhart Federal NCT Well No. 8 located in Unit P of Section 18, Township 22 South, Range 38 East, Drinkard Pool, Lea County, New Mexico. Applicant further seeks a procedure whereby said project may be expanded administratively without a showing of a well response.

CASE 3934: Application of Texaco Inc., 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 Drinkard formation through the Drinkard string of its multiple completed (tubingless) V. M. Henderson Well No. 8 located in Unit E of Section 30, Township 21 South, Range 37 East, Drinkard Pool, Lea County, New Mexico.

CASE 3935: Application of Sinclair Oil Corporation for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pilot waterflood project by injection of water into the Yates and Seven Rivers formations through its B Davis Well No. 1 located 330 feet from the South and West lines of Section 34, Township 23 South, Range 36 East, Jalmat Pool, Lea County, New Mexico.

November 12, 1968

Examiner Hearing

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Docket No. 33-68

CASE 3936: Application of Tenneco Oil Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Yates and Seven Rivers formations in the perforated interval from approximately 2920 feet to 3134 feet in its E. J. Wells Well No. 2 located in Unit G of Section 12, Township 25 South, Range 36 East, Jalmat Pool, Lea County, New Mexico.

CASE 3937: Application of Anadarko Production Company for an amendment to Order No. R-2977, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-2977, as corrected by Order No. R-2977-A, which authorized a cooperative waterflood project in the Square Lake Pool, Eddy County, New Mexico, to delete the water injection well previously authorized to be drilled 2630 feet from the South line and 2650 feet from the East line of Section 31, Township 16 South, Range 31 East, and to authorize for water injection its Grier Federal Well No. 6 located 1980 feet from the South and East lines of said Section 31.

CASE 3938: Application of Aztec Oil & Gas Company for compulsory pooling and a non-standard proration unit, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Pictured Cliffs formation underlying Lots 6, 7, NE/4 SW/4, and SE/4 SW/4 of Section 6, Township 29 North, Range 10 West, Aztec-Pictured Cliffs Gas Pool, San Juan County, New Mexico. Said non-standard unit to be dedicated to a well to be drilled 1830 feet from the South line and 1530 feet from the West line of said Section 6. Also to be considered will be the costs of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

CASE 3939: Application of Aztec Oil & Gas Company for four unorthodox gas well locations, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval of unorthodox Blanco-Mesaverde Gas Pool locations for four wells located as follows:

SAN JUAN COUNTY, NEW MEXICO  
Township 30 North, Range 11 West

Hampton Well No. 4 - 1,140 feet from the West line  
and 970 feet from the North line  
of Section 13

November 12, 1968

Examiner Hearing

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Docket No. 33-68

(Case 3939 continued)

Township 31 North, Range 12 West

Richardson Well No. 7 - 1,584 feet from the East line  
and 1,621 feet from the South line  
of Section 15

East Well No. 10 1,770 feet from the North line  
and 790 feet from the West line of  
Section 26

East Well No. 8 790 feet from the South and East  
lines of Section 26.

CASE 3940:

Application of Shell Oil Company for an amendment to Order No. R-2808, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-2808 to permit the dedication of a non-standard proration unit authorized therein to its Livingston Wells Nos. 7 and 2 located in Units V and W, respectively, of Section 3, Township 21 South, Range 37 East, Tubb Gas Pool, Lea County, New Mexico. Applicant further seeks authority to produce the allowable assigned to said unit from either of the aforesaid wells in any proportion.

CASE 3941:

Application of Agua, Inc., for salt water disposal, Eddy County, New Mexico. Applicant, in the above-styled cause, proposes to dispose of produced salt water into the San Andres formation in the open-hole interval between the casing shoe set at 2050 feet and a cement plug at 5400 feet after cleaning out and acidizing the well between 2050 feet and 3600 feet in its Empire-Abo SWD Well No. 01, formerly the Humble Federal Empire-Abo Well No. 3, located in Unit O of Section 1, Township 18 South, Range 27 East, Empire-Abo Field, Eddy County, New Mexico.

CASE 3942:

Application of Cities Service Oil Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Yates and Seven Rivers formations in the perforated interval from approximately 3790 feet to 3834 feet in its Closson "B" Well No. 18 located in Unit M of Section 19, Township 22 South, Range 36 East, Jalmat Pool, Lea County, New Mexico.

November 12, 1968  
Examiner Hearing

Docket No. 33-68

-5-

CASE 3943: Application of Continental Oil Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Lynn A-28 Well No. 5, located in Unit A of Section 28, Township 23 South, Range 36 East, Lea County, New Mexico, in such a manner as to produce gas from the Yates formation of the Jalmat Gas Pool through the casing-tubing annulus and to dispose of produced salt water through tubing into the Seven Rivers formation of said pool in the interval from 3340 to 3374 feet.

CASE 3944: Application of Sun Oil Company for a pressure maintenance project, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project in its James McFarland Lease by the injection of water into the San Andres formation through its James McFarland Well No. 4 located in the NW/4 SW/4 of Section 20, Township 7 South, Range 33 East, Chaveroo-San Andres Pool, Roosevelt County, New Mexico. Applicant further seeks the promulgation of special rules to govern operation of said pressure maintenance project.

CASE 3945: Application of Mobil Oil Corporation for lease commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle Vacuum Grayburg-San Andres production from its State "G" lease comprising the W/2 NE/4 and SE/4 NE/4 of Section 24, Township 17 South, Range 34 East, Lea County, New Mexico, with Vacuum Grayburg-San Andres production from that portion of its Bridges State lease comprising the W/2 of said Section 24, allocating the production to each lease on the basis of monthly well tests.





BEFORE EXAMINER MUTTER  
OIL CONSERVATION COMMISSION  
EXHIBIT NO. 3935  
CASE NO. 3935

PRODUCTION HISTORY  
SINCLAIR OIL CORPORATION  
B. DAVIS LEASE

COOPER-JAL POOL

YEAR	OIL	WATER	GAS	YEAR	OIL	WATER	GAS
1937	3066			1946	16770	428770	
1938	20863			1947	15349	180000	
1939	17229			1948	15155	0	
(Republic Prod.) Operator 1940	15330			1949	18109	0	
1941	29879			1950	19838	0	
1942	24627	7313		1951	20976	0	
1943	37467	14339		1952	27935	0	
(Lynn Pool) 1944	32559	113401		1953	33852	0	
1945	17550	269970		1954	29719	0	
				1955	21108	382296	

EFFECTIVE 10-1-55 & 1-1-56 wells numbers 1 and 3 were transferred to the Jalmat Pool and well number 2 was transferred to the Langlie Mattix Pool.

<u>JALMAT POOL</u>				<u>LANGLIE MATTIX POOL</u>		
YEAR	OIL	WATER	GAS	OIL	WATER	GAS
1956	13031	89976	61408	12557	79082	19441
1957	12373	72006	52150	11890	107811	27234
1958	10287	44271	29012	12557	473718	36443
1959	7981	81833	27219	12987	519600	32040

<u>JALMAT POOL</u>				<u>LANGLIE MATTIX POOL</u>		
YEAR & MONTH	OIL	WATER	GAS	OIL	WATER	GAS
<u>1960</u>						
Jan.	667	6200	2263	1147	46500	2502
Feb.	495	5800	2219	1073	43500	2361
March	646	6200	2427	1116	46500	2622
April	758	6000	2428	1050	45000	2607
May	744	6200	2376	1212	46500	2478
June	960	6600	1895	952	45000	1959
July	843	6820	1927	1023	46500	2510
Aug.	734	6200	2323	1023	46500	2411
Sept.	652	6000	2485	990	45000	2556
Oct.	809	6200	2587	1023	46500	2687
		6030	2238	1020	45000	2515

BEFORE EXAMINER NUMBER

JALMAT POOL

LANGLIE MATTIX POOL

YEAR & MONTH	OIL	WATER	GAS	OIL	WATER	GAS
1961						
Jan.	820	6200	2078	1085	46500	3121
Feb.	603	5600	1972	980	42000	2856
March	1040	6231	2200	1085	46500	3158
April	1120	7500	2284	1050	45000	3761
May	1157	7781	2291	1054	46500	3787
June	1097	7530	2053	1020	45000	3971
July	1105	7781	2030	1054	46500	4043
Aug.	1023	7750	459	1171	46500	1354
Sept.	1093	7530	2556	1020	45000	3492
Oct.	1023	7781	1939	1069	46500	2896
Nov.	1020	7530	1883	1066	45000	2751
Dec.	<u>1023</u>	<u>7781</u>	<u>1903</u>	<u>1024</u>	<u>46500</u>	<u>2788</u>
<u>1962</u>						
Jan.	715	7781	378	1116	46500	4363
Feb.	910	8400	401	938	42000	4586
March	868	9300	528	952	46500	5008
April	937	9000	978	968	45000	5053
May	973	9300	1017	1034	46500	5224
June	990	10500	1032	1189	45000	4867
July	1035	10850	1202	1056	46500	4878
Aug.	973	10850	1132	972	46500	4831
Sept.	990	10500	1020	1061	45000	4680
Oct.	954	10850	1005	987	46500	4470
Nov.	913	10500	946	1024	45000	4615
Dec.	<u>1023</u>	<u>10850</u>	<u>885</u>	<u>1181</u>	<u>46500</u>	<u>4064</u>
<u>1963</u>						
Jan.	993	10850	858	994	46500	3579
Feb.	847	9800	733	923	42000	4048
March	998	10850	908	1089	36500	3968
April	990	9000	1182	1100	45000	4304
May	999	9300	1124	1090	31000	4148
June	990	9000	1172	1167	30000	4267
July	971	9300	1523	1059	31000	3950
Aug.	990	9300	1455	1100	31000	3716
Sept.	1006	9000	1476	1098	30000	3738



JALMAT POOL

LANGLIE MATTIX POOL

YEAR & MONTH	OIL	WATER	GAS	OIL	WATER	GAS
<u>1963 (CONT.)</u>						
Oct.	914	9300	1538	982	31000	3946
Nov.	1000	9000	1507	1091	30000	3905
Dec.	<u>945</u>	<u>2015</u>	<u>1395</u>	<u>1084</u>	<u>29915</u>	<u>3836</u>
<u>1964</u>						
Jan.	870	3100	1159	972	31000	3271
Feb.	937	2900	1206	1075	29000	3354
March	873	3100	1512	1065	31000	4248
April	977	3000	1619	1201	25500	4545
May	1067	<del>9424</del>	3780	1178	30132	2520
June	866	9570	3792	1100	26610	2508
July	774	1699	3389	984	29340	3187
Aug.	655	1900	3280	1147	27813	3102
Sept.	836	2324	4186	1018	26040	1912
Oct.	844	2346	2377	1022	26143	4375
Nov.	832	2313	2270	993	25401	4255
Dec.	<u>883</u>	<u>2455</u>	<u>1830</u>	<u>1054</u>	<u>26961</u>	<u>3556</u>
<u>1965</u>						
Jan.	947	2644	2430	1132	28854	4548
Feb.	831	2310	2165	993	25401	3882
March	801	2224	2270	1209	30926	4101
April	664	1846	2101	1135	21849	4340
May	775	2099	2304	1178	22677	4558
June	797	7980	4308	1110	21368	2857
July	756	7560	4300	1147	22080	2891
Aug.	647	6470	4111	1147	22080	2890
Sept.	900	9000	4229	1126	21676	2778
Oct.	895	8950	4036	1178	22677	2399
Nov.	680	6800	681	1089	20963	4227
Dec.	<u>525</u>	<u>5250</u>	<u>526</u>	<u>1240</u>	<u>23870</u>	<u>5674</u>
<u>1966</u>						
Jan.	662	6620	564	1302	25064	6061
Feb.	662	6620	527	1232	23716	5649
March	382	3820	315	1364	26257	6460
April	563	5630	456	1320	25027	6130

JALMAT POOL

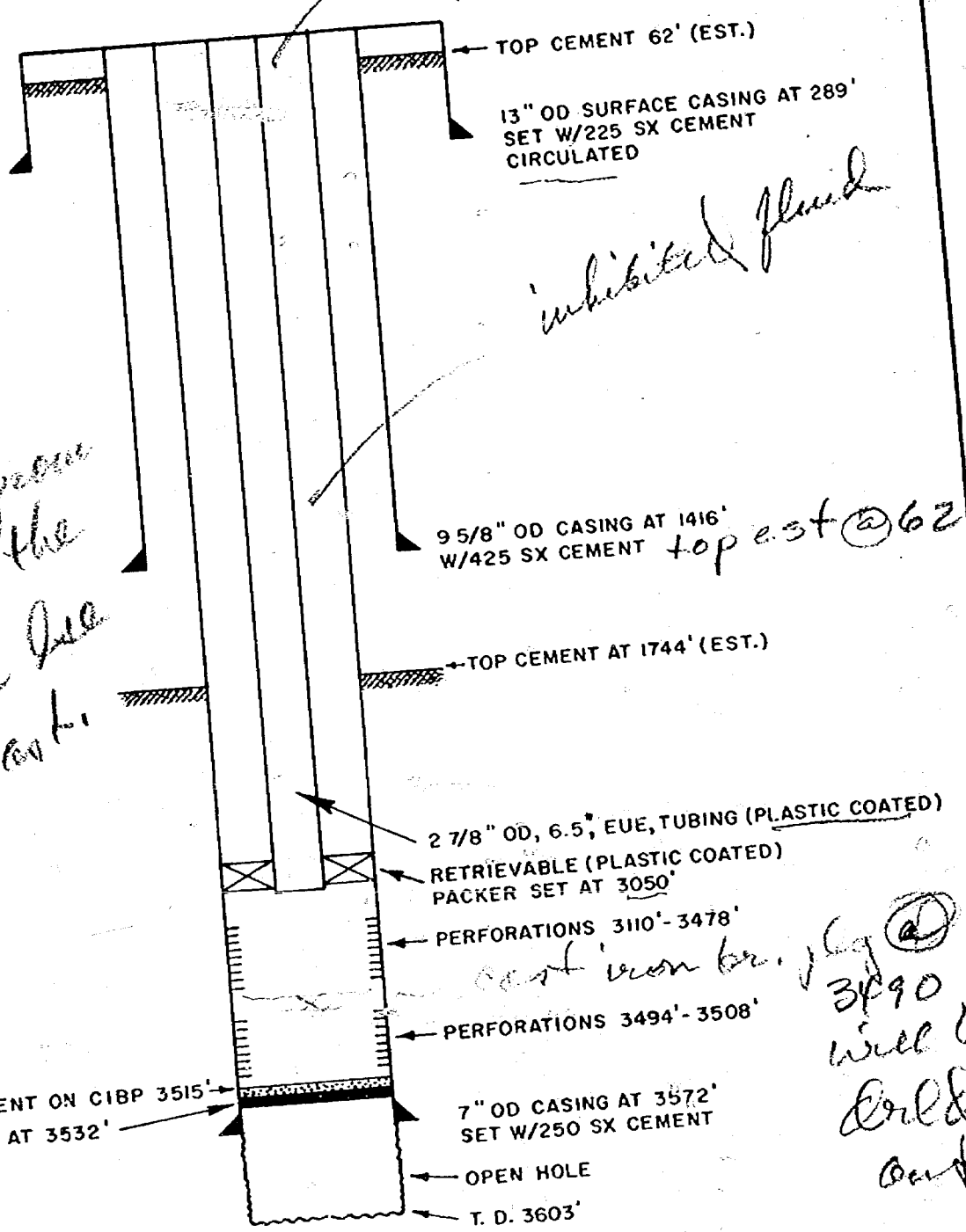
LANGLIE MATTIX POOL

YEAR & MONTH	OIL	WATER+	GAS	OIL	WATER	GAS
<u>1966</u> (CONT.)						
May	203	2030	163	1364	25861	6309
June	336	5127	288	1350	25596	6628
July	534	8149	1180	1348	25558	5980
Aug.	485	7401	1145	1225	23226	6089
Sept.	490	7477	1257	1238	23472	6609
Oct.	583	8897	1126	1457	27625	5995
Nov.	466	7111	1138	1177	22316	5923
Dec.	<u>542</u>	<u>8271</u>	<u>866</u>	<u>1353</u>	<u>25653</u>	<u>5471</u>
<u>1967</u>						
Jan.	528	8057	873	1334	25293	5556
Feb.	523	7981	3642	1320	25027	2768
March	629	9599	3991	1585	30052	3663
April	573	8744	3979	1441	21615	2940
May	554	8454	5622	1391	20865	1188
June	570	8009	5597	1413	21195	1439
July	452	6351	5684	1453	21795	1762
Aug.	506	7109	4864	1327	16588	2020
Sept.	436	6126	4489	1247	15588	2008
Oct.	437	6140	5044	1123	14038	1929
Nov.	460	6463	5207	1180	14750	2026
Dec.	<u>493</u>	<u>6927</u>	<u>4872</u>	<u>1268</u>	<u>15850</u>	<u>1975</u>
<u>1968</u>						
Jan.	427	5999	5105	1221	15263	2999
Feb.	440	6182	5062	1257	15713	2954
March	478	6716	5614	1365	17063	3258
April	448	6294	4885	1279	17791	2879
May	599	8416	6902	1313	18264	2833
June	506	6163	6484	1370	19057	3203
July	529	6443	7240	1431	19905	2536
Aug.	543	6614	7048	1468	20420	2481
Sept.	562	6845	6476	1522	21171	2311

DIAGRAMMETIC SKETCH OF PROPOSED INSTALLATION

*gang*

*Source of  
wlr  
from  
B. Davis & the  
Gardner Inc  
to the east.*



*inhibited fluid*

*est' ion br. 3490 will be cold out*

BEFORE EXAMINER NUTTER  
OIL CONSERVATION COMMISSION  
SINCLAIR EXHIBIT NO. 5  
CASE NO. 3935

SINCLAIR OIL CORPORATION  
B. DAVIS No. 1  
JALMAT POOL  
330' FWL, SECTION 34, T-23-S R-36-E  
LEA COUNTY, NEW MEXICO



*Case 3935*

SINCLAIR OIL CORPORATION  
P. O. BOX 1470  
MIDLAND, TEXAS 79701

SOUTHERN REGION (WEST TEXAS)  
DOMESTIC OIL & GAS DIVISION

October 22, 1968

New Mexico Conservation Commission  
Post Office Box 2088  
Santa Fe, New Mexico 87501

Attention Mr. A. L. Porter, Jr.  
Secretary & Director

Gentlemen:

Sinclair Oil Corporation hereby makes application under the provisions of Statewide Rule 701 for a hearing to approve a Pilot Waterflood project on its B Davis Well no. 1, located in Section 34, T-23S, R-36E, Jalmat Pool, Lea County, New Mexico. This lease as well as all other leases within two miles are shown on the attached area plat. Also enclosed please find:

1. Electric log on B Davis Well No. 1.
2. A diagramatic sketch of the proposed injection well showing all casing strings, diameters, setting depths, cement quantities, tops and producing intervals, tubing size, length, type packer and setting depth.
3. A plat of the area showing the oil and/or gas pool each well in the immediate vicinity is completed in.

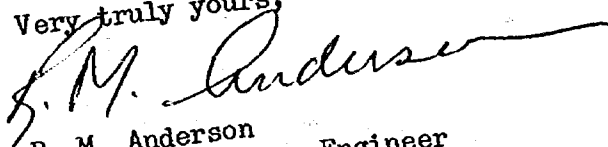
DOCKET MAILED

*11-1-68*

Page 2  
New Mexico Oil Conservation Commission  
October 22, 1968

4. Injection will be into the Yates and Seven Rivers formations in the Jalmat Oil Pool.  
Produced salt water will be injected 1000 barrels per day at 1000 to 1500 PSI pressure.

Very truly yours,

  
R. M. Anderson  
Region Regulatory Engineer

RMA:pj

Enclosures

CC: File (3)

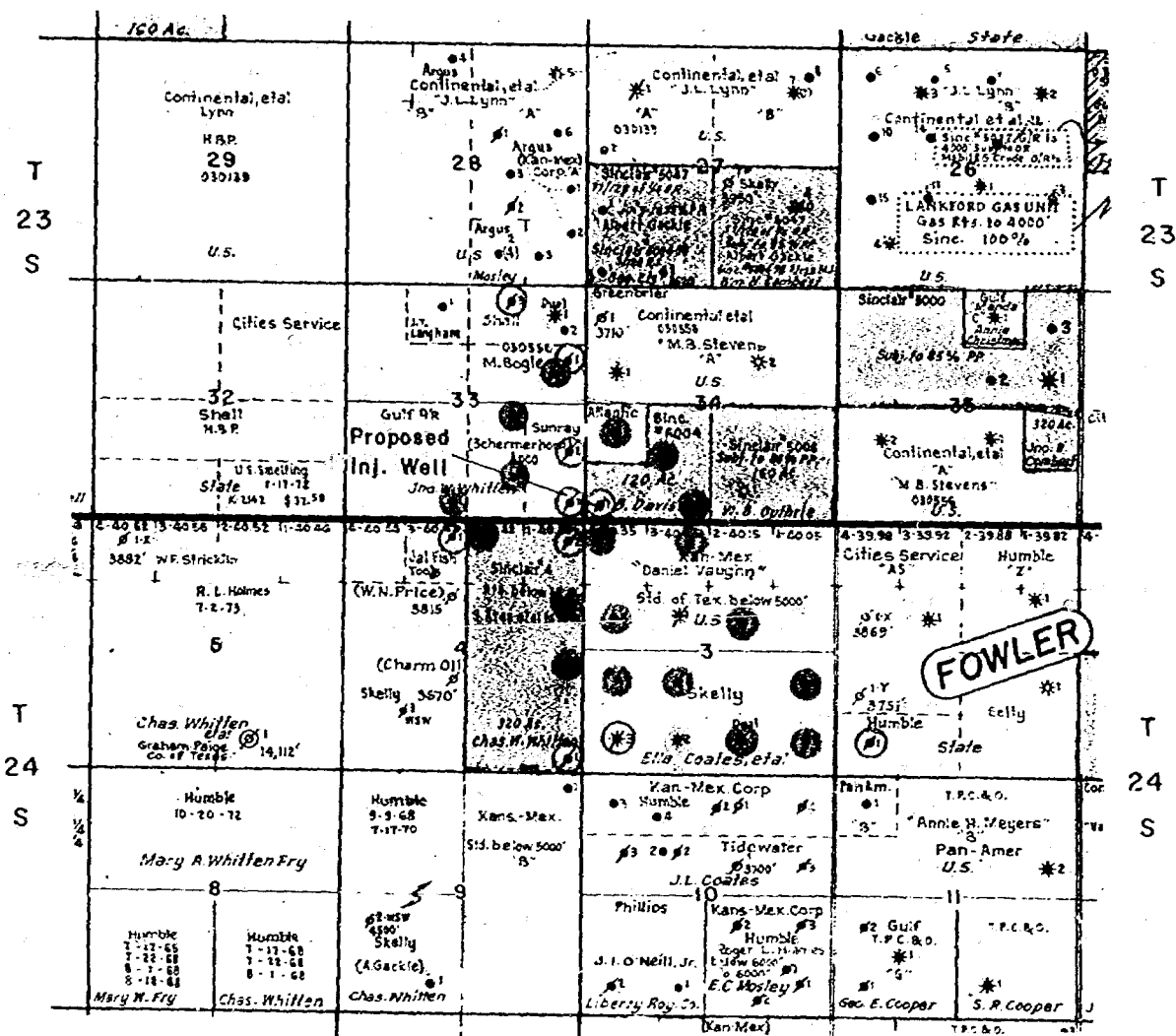
WFB

NFG

HNB

White, Guilbert, Koch & Kelly  
Post Office Box 787  
Santa Fe, New Mexico 87501

R - 36 - E



R - 36 - E

**NOTE:**

All wells completed in Jalmat or Langlie Mattix Pools.

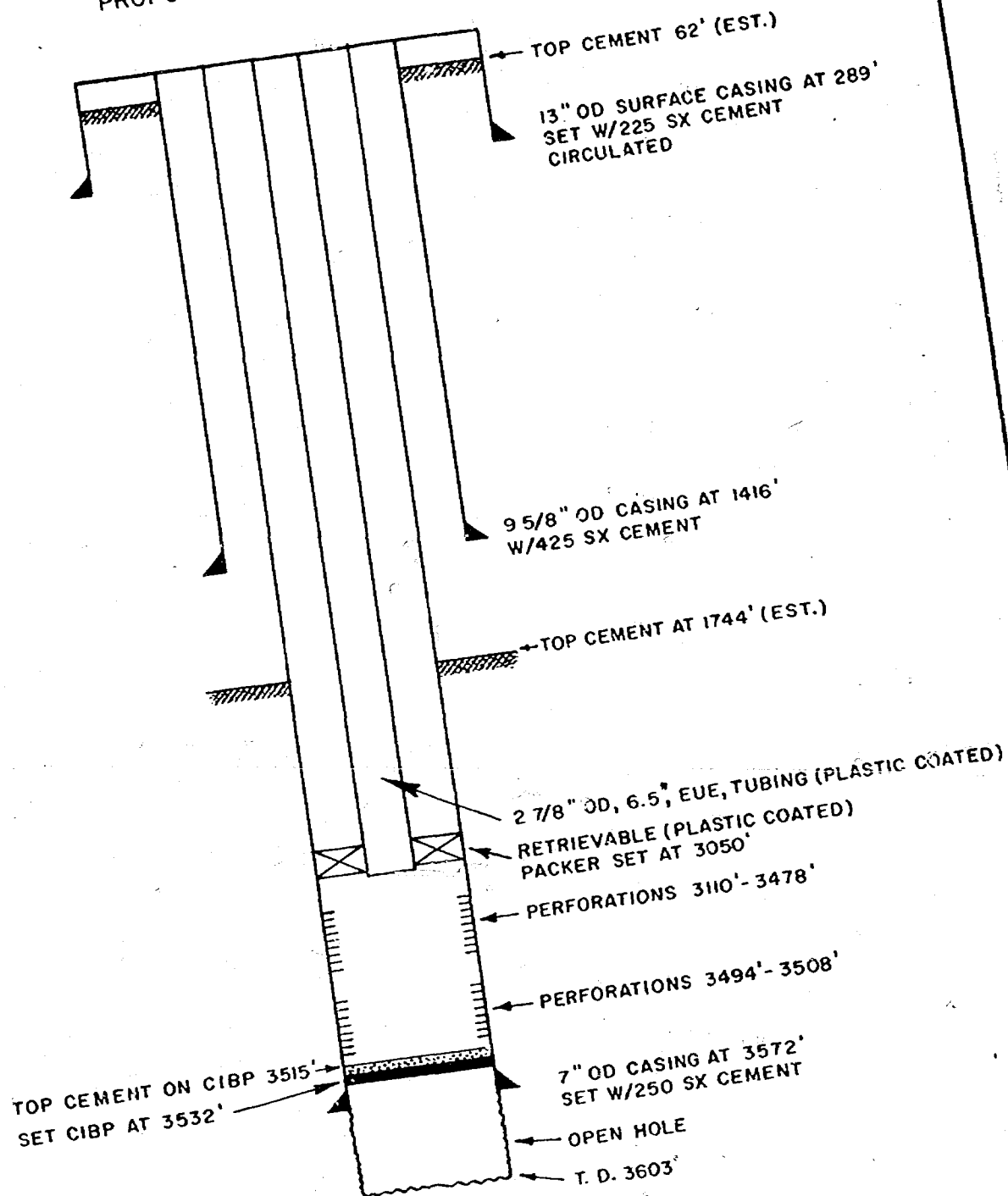
**LEGEND**

- |       |                    |           |
|-------|--------------------|-----------|
| PROD. |                    | P/A or SI |
| ●     | LANGLIE MATTIX OIL | ⊙         |
| ⊙     | JALMAT OIL         | ⊙         |
| *     | JALMAT GAS         | *         |

<b>SINCLAIR OIL CORPORATION</b>	
MIDLAND, TEXAS	
PART OF	
<b>LEA COUNTY, NEW MEXICO</b>	
R.M.A.	10-21-68
DRAWN BY <u>WAH</u> CHECKED BY <u>JWH</u> DATE <u>10-3-68</u>	
SCALE - 1" = 4000' REVISED <u>10/21/68-WTF</u>	

*Case 3935*

DIAGRAMMETIC SKETCH OF  
PROPOSED INSTALLATION



SINCLAIR OIL CORPORATION  
B. DAVIS No. 1  
JALMAT POOL  
330' FSL & 330' FWL, SECTION 34, T-23-S R-36-E  
LEA COUNTY, NEW MEXICO

Case 3935

DRAFT

GMH/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:

*Spec ltr*

*GMH*

*[Signature]*

*[Signature]*

CASE No. 3935

Order No. R- 3566

APPLICATION OF SINCLAIR OIL CORPORATION  
FOR A WATERFLOOD PROJECT, LEA COUNTY,  
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on November 12, 1968,  
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this        day of November, 1968, 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, Sinclair Oil Corporation,  
pilot  
seeks permission to institute a/waterflood project in the         
       Unit Area, Jalmat Pool by  
Rivers  
the injection of water into the Yates and Seven / formations  
its B. Davis Well No. 1, located 330 feet from the South line  
through/ injection wells in Section  
and 330 feet from the West line of Section 34,  
Township 23 ~~North~~ South, Range 36 ~~West~~ 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.

pilot  
(4) That the proposed/waterflood project should result in  
the 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 Rules 701, 702, and 703 of the Commission Rules and Regulations.

IT IS THEREFORE ORDERED:

(1) That the applicant, Sinclair Oil Corporation,  
pilot  
is hereby authorized to institute a/waterflood project in the  
~~=====Unit Area=====~~ Jalmat Pool  
Rivers  
by the injection of water into the Yates and Seven / formations  
~~through the following described wells in Township=====~~  
~~North, South, Range=====West, East, NMPM,=====~~  
~~County, New Mexico~~

through its B. Davis Well No. 1, located 330 feet from the South line and 330 feet from the West line of Section 34, Township 23 South, Range 36 East, NMPM, Lea County, New Mexico.

pilot  
(2) That the subject/waterflood project is hereby designated the Sinclair Jalmat Davis 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 <sup>pilot</sup>waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 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.