

CASE 3885: Appli. of SINCLAIR OIL
& GAS COMPANY FOR A WATERFLOOD
EXPANSION, EDDY COUNTY, N. MEX.

Case Number

3885

Application

Transcripts.

Small Exhibits

ETC.

GOVERNOR
DAVID F. CARGO
CHAIRMAN

State of New Mexico
Oil Conservation Commission



P. O. BOX 2088
SANTA FE

LAND COMMISSIONER
GUYTON B. HAYS
MEMBER

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

November 4, 1968

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-3528, recently entered in Case No. 3885, approving the expansion of the Sinclair Turner "B" Grayburg-Jackson Waterflood Project.

Additional injection is to be through the 12 newly authorized water injection wells, each of which shall be equipped with plastic-coated tubing set in a packer located no higher than 100 feet above the uppermost perforation. The casing-tubing annulus in each well is to be loaded 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 1610 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

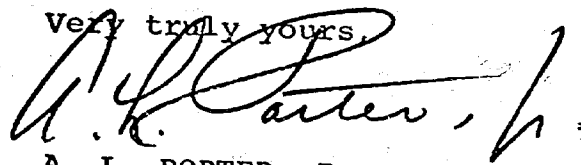
-2-

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

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

cc: Oil Conservation Commission offices in Hobbs and Artesia, N.M.

U. S. Geological Survey - Artesia, New Mexico

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

dearnley-meier reporting service, inc.

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

1120 SIMMS BLDG. • P. O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO



BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
October 9, 1968

EXAMINER HEARING

IN THE MATTER OF:

Application of Sinclair
Oil & Gas Company for a
waterflood expansion,
Eddy County, New Mexico.

Case No. 3885

BEFORE: Elvis A. Utz; Examiner.

TRANSCRIPT OF HEARING

(Whereupon, Applicant's Exhibits One through Seven, inclusive, were marked for identification.)

MR. UTZ: Case 3885.

MR. HATCH: Case 3885, application of Sinclair Oil & Gas Company for a waterflood expansion, Eddy County, New Mexico.

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

(Witness sworn.)

MR. KELLY: Mr. Examiner, when the application was filed, it was before the name change which was effective on October 1st. We would ask that the order to be issued on this case be in the name of Sinclair Oil Corporation and, also, the exhibits are marked under the old name and I ask that the record show that they are exhibits on behalf of Sinclair Oil Corporation.

R. M. ANDERSON

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

DIRECT EXAMINATION

BY MR. KELLY:

Q Would you state your name, position and employer, please?

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

Q And you have previously qualified as an expert
Petroleum Engineer before this Commission?

A Yes, sir.

Q Would you briefly state, referring to Exhibit
One, what Sinclair seeks by this application?

A Exhibit One is an area map of a portion of the
Grayburg-Jackson Pool.

The acreage colored light blue is acreage owned by
Sinclair. The wells with the little arrows on them are current
water injection wells and several of Sinclair's waterflood
projects are shown on this area map.

The particular lease which is the subject of our
application today to expand an existing waterflood project:
subject lease, our Turner "B", as in "Boy", lease occupies the
southern 160 acres in Section 17, Township 17 South, Range 31
East, the southern 160 acres and the northwest quarter of the
southwest quarter of the section, a total of 200 acres in Sec-
tion 17. The lease occupies all of Section 20 immediately
south of 20, and the south half of Section 30 immediately
west of Section 29.

Previously, the Commission approved a waterflood

project for the northern portion of the lease. Today, we're asking that we be permitted to expand this project by converting twelve additional water injection wells. Those twelve wells were listed in our application and were included in the exhibits sent to the Commission of which I have duplicates here today.

Q Well, will the expanded waterflood project cover the balance of the Turner "B" lease?

A Yes. The requested expansion is to extend the project throughout the entire remaining portion of the Turner "B" lease.

Q Now, referring to what has been marked as Exhibit Number Two, will you explain its significance to the Examiner?

A Exhibit Two shows the formation that each well in the expansion portion of the Turner "B" lease is producing from. The wells that are colored red are Grayburg-Jackson Pool wells which is the formation being flooded. The wells colored green are Fren Pool wells. The yellow colored is Cedar Lake-Abo wells and the blue colors are Pennsylvanian gas wells that are in this immediate area of this expansion.

Q Now, do you have an exhibit which shows the actual pattern and the actual injection wells?

A Yes.

Q Proposed injection wells?

A Yes, sir. Exhibit Three reflects the proposed

waterflood pattern. It's an eighty acre five-spot, and the twelve additional injection wells that we've recommended today are a continuation of that same eighty acre five-spot pattern. They include the southernmost two injection wells in Section 20 which is Well 44 and Well 46. That is the two northernmost wells of our expansion project. And in going south from Wells 44 and 46, we'll say Well 47, Well 50, 54, 55, 61, 64, 66, a dry hole, Well Number 68, and proceeding over to the west, Section 30, we see another dry hole, Well 76 and Well 56. Those are to be the twelve additional injectors.

Q Now, will this new injection pattern actually be injecting water into same zone as the original waterflood in the upper part of Turner "B"?

A Well, it will be injecting it into the same common source of supply which is the Grayburg-San Andres reservoirs of the Grayburg-Jackson field. However, as you go south and as my Exhibit Five, my structure map will show, why, we are on a dipping portion of the anticline, the southern portion of the anticline, and different sands are developing as we go south from what it developed in the north.

Now, the northern portion of the lease, the Turner "AB" lease and the Turner "B" lease which is shown on Exhibit Three has Premier sand and Jackson sands, Mattix sands and

various sands comingled in the well bores. However, the principal sand, the main sand that we're going to flood on this expansion is the Premier sand. We have singled it out even though it's open in the wells to the north that are under flood now.

We feel it's not too well developed from a permeability and porosity standpoint and was not too effective in contributing to the production of the lease. So what we're going to do and as we'll see on the next exhibit, the schematic diagrams, we're going to isolate in the injection wells, the Premier sands when we expand down into this area.

Q Now, what is the present status of the proposed injection wells? You have mentioned two of them are dry holes. Are the rest of them presently in production?

A Yes, sir. The rest of them are presently producers.

Q And what is the average of their daily rate of production?

A Well, the average daily production of all the wells in the expansion area, including the producing wells, is somewhat less than ten barrels per day per well.

Q As far as your estimates of primary production, what is the cumulative production from these wells at this

time?

A Cumulative production. Now, this is in the expansion area which is from that line of wells which has -- there are two northernmost wells that we're asking, Wells 44 and 46. Forty-three, 44, 45, 46 from that line of wells, which is the bottom line of wells in Section 12, and down into Section 29 and in the southern half of Section 30, which I will define at this time as the expansion area. The cumulative production from those wells is about a million and a half barrels of oil from all of the wells.

Q Would you say that the primary production is pretty well depleted now, pretty well along the way towards depletion?

A Yes. We estimate that there's approximately 237,000 barrels of remaining primary which will make an ultimate primary of some one million, six hundred and fifty thousand barrels. So with that small amount of remaining primary, relative amount, we feel that we are in the late stages of primary depletion in this expansion area.

Q Then the proposed injection wells would be reaching the advanced stage of depletion and reaching the classification of stripper wells in the near future?

A I haven't made any calculations with regard to

the twelve injections wells, but I have with regard to all wells, and all wells are nearing the state, the economic limit. The decline is rather flat, so it will be a considerable amount of time before we get to the economic limit, but the wells are poor producers at this time.

Q You have an estimate as to the total production that you would expect on secondary recovery?

A Yes. We anticipate that we will increase the ultimate recovery from the expansion area by approximately one and a half million barrels of oil.

Q Just about what your production is now as primary?

A Yes, just about what the present cumulative production is. We should get the remaining primary, plus another million and a half barrels, which would contribute to the secondary recovery of waterflood operations.

Q Now, turning to your next exhibit which is a diagrammatic sketch of the twelve injection wells, would you explain the proposed installations?

A Yes. I have shown on the diagrammatic sketch the lease and well number and the exact footage location of each of the proposed injection wells as shown on the top, above each well, and I have shown the casing, the cement,

the size casing, size tubing, and I have shown, with dashed lines, the approximate location of the packers, tubing packers that will be run in each well and, in some cases, I have shown approximate location of a bridge plug which will be used in the initial stages of the flood to plug off and block off, temporarily, other productive zones that are open in the well bore at this time.

Q The tubing that you have shown there, will that be plastic coated?

A It will be plastic lined tubing and the annulus, tubing casing annulus will be filled with corrosion inhibited fluid and there will be provisions at the surface for installing a pressure gauge.

Q Now, is there any fresh water in the area?

A Fresh water in this area is very spotty. Several operators in the past have attempted waterflood projects using locally found water, but they have been very unsuccessful and their water has been very limited in quantity and in amounts, so the fresh water is not plentiful. There are small amounts, erratically found, that are good, primarily, for water for stock or something like this.

Q Do you feel that the installations you have shown on Exhibit Number Four will protect any fresh water in

this area and also protect migration of fluids to other zones?

A Yes, sir. Using tubing packers and having the annulus filled with corrosion inhibited fluid and pressure gauges on the surface, I believe any leaks on the tubing will be readily detected and can be immediately repaired before migration of water whether it occurs around that area or not.

Q Now, what is the source of the water that you will be injecting?

A The principal source will be fresh water from the Ogallala Formation. Sinclair, several years ago, obtained water rights on the Caprock for flooding this particular acreage and in other acreage that we're flooding with this water. So the principal water, at least, initially, will be fresh water.

However, we are using all the produced salt water from the floods to the north of us and we'll undoubtedly continue to use the produced salt water which isn't really too salty. It's not bad water at all, so we'd use every bit of it for reinjection and we'll continue to do that on this project, too, use a minimum amount of fresh water.

Q Now, what do you expect your volumes of injection to the wells will be?

A We anticipate we will inject about 300 barrels of water per well per day. This is a little bit less than what we have used up in some of the flooding operations to the north, but here, we're going to isolate, for the first time, one zone and concentrate on just putting water into it, and it should take less water per well in order to flood the one zone.

Q Do you have an estimate of your expected pressures?

A Well, I would say that they would be comparable to pressures that we have experienced on the other floods, somewhere around 500 pounds.

Q All right. Is there anything else you want to mention on Exhibit Number Four?

A No, sir.

Q Now, turning to your structure map, Exhibit Number Five, explain that to the Examiner.

A Structure map is drawn on top of the Grayburg. The contour intervals are fifty foot intervals. We are going down structure as go south, so we have about 250 foot of dip per mile in a southerly direction across the expansion area. The premier sands that we're going to flood is the lowest productive sand that has been found in the Grayburg

that is close to the top of the San Andres Formation, but I believe that this structure map reflects the dip that flooded the Premier sand, also.

Q What is the drive mechanism in this reservoir?

A It is a solution gas drive reservoir.

Q What is the present GOR ratio in your experience in these wells?

A The present GOR, expansion area, is about 500 to one.

Q And how about your water production?

A Water production is about twenty-five per cent of the total flood production.

Q So on a ten barrel per day average, you have about two and a half barrels of water per day?

A Yes, that's right.

Q Now, I believe you furnished logs on all but two wells when you submitted your application, is that correct?

A Yes, sir. The Commission files should have logs on ten of the twelve wells.

Q And Exhibits Numbers Six and Seven are the logs of the other two wells, is that correct?

A That is correct.

Q In your opinion, will the granting of this

application promote the effective and efficient production of hydrocarbons that would otherwise be left in place?

A Yes, sir. In my opinion, the granting of this application will be the only way that this additional recovery can be realized from this property, the million and a half present.

Q In your opinion, will the granting of this application have any adverse affect on the correlative rights of any operators in the area?

A No, sir, it will not.

Q Were Exhibits One through Seven prepared by you or under your supervision?

A Yes, sir.

MR. KELLY: We move the introduction of Sinclair's Exhibits One through Seven.

MR. UTZ: One through Six, wasn't it?

MR. KELLY: Six and Seven are the logs of the two wells that were not furnished with the application.

MR. UTZ: Without objection, Exhibits One through Seven will be entered into the record of this case.

(Whereupon, Applicant's Exhibits Numbers One through Seven, inclusive, were admitted in evidence.)

MR. KELLY: Mr. Examiner, I would also like to enter as Exhibits in this case, the ten logs that were submitted with the application so that the record would be clearer on it.

MR. UTZ: Ten of them? The Exhibit Seven has ten parts?

MR. KELLY: Of Exhibit Eight, ten parts. Exhibit Six and Seven are the individual logs.

MR. UTZ: Oh, all right. Let's see. Where are those logs? After ten or twelve cases, you get to where you have a lot of paper.

Now, there are ten logs, and you want those marked Exhibit Seven?

MR. KELLY: Exhibit Eight.

MR. UTZ: I'll get it, yet.

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

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

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Anderson, the locations shown on Exhibit Four, to the best of your knowledge, are correct, the foot locations?

A Yes, sir.

Q Did you give some kind of an average well producing capacity on these extension wells?

A Yes. The extension area, at the present time, is averaging less than ten barrels per well per day.

Q All your injection will be on the packer through a plastic coated tubing?

A Yes, sir.

Q And reinject your produced water?

A And reinject produced water both from this expansion area and from the rest of the lease to the north.

MR. UTZ: Are there other questions? He may be excused. Any statements in this case? The case will be taken under advisement.

I N D E XWITNESS

R. M. ANDERSON

Direct Examination by Mr. Kelly

Cross Examination by Mr. Utz

PAGE

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EXHIBITApplicant's 1
through 7

Applicant's 8

MARKED

2

14

OFFERED AND
ADMITTED

13

14

STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) ss

I, Charlotte J. Macias, Court Reporter 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.

Charlotte Macias
Court Reporter

I do hereby certify that the foregoing is
a complete record of the proceedings in
the Examiner hearing of Case No. 3885.
heard by me on Oct. 9, 1968.
[Signature] Examiner
New Mexico Oil Conservation Commission



ATLANTIC RICHFIELD COMPANY
North American Producing Division
SINCLAIR OIL CORPORATION
P. O. Box 1920,
Hobbs, New Mexico

MAILED
69 APR 1 AM 8 32

March 31, 1969

DOMESTIC OIL & GAS DIVISION

NEW MEXICO OIL CONSERVATION COMMISSION
P. O. Box 2088,
Santa Fe, New Mexico 87501

Gentlemen:

In compliance with Oil Conservation Commission's Rules 701, 702 and 703, injection operations were commenced on the Atlantic Richfield Company's (Formerly Sinclair) Turner "B" SP Well No's. 44, 46, 47, 50, 55, 56, 54, 61, 64, 66, 68 and 76 in the Grayburg Jackson Russell-Turner Waterflood Area effective March 25, 1969.

This Waterflood expansion is authorized by the New Mexico Oil Conservation's Case No. 3885, Order No. R-3528.

Yours very truly,

ATLANTIC RICHFIELD COMPANY

W. F. Burns
W. F. Burns
Superintendent

WFB:ds

cc: W/Orig.
cc: NMOCC, Drawer DD, Artesia, New Mex.
cc: USGS, Box 1857, Roswell, New Mexico
cc: Mr. Frank Irby, State Engineer Office, Santa Fe, New Mex.
cc: Regional Office
cc: file

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

November 4, 1968

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-3528, recently entered in Case No. 3885, approving the expansion of the Sinclair Turner "B" Grayburg-Jackson Waterflood Project.

Additional injection is to be through the 12 newly authorized water injection wells, each of which shall be equipped with plastic-coated tubing set in a packer located no higher than 100 feet above the uppermost perforation. The casing-tubing annulus in each well is to be loaded 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 1610 barrels per day when the South-east 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

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

-2-

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

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

cc: Oil Conservation Commission offices in Hobbs and Artesia, N.M.

U. S. Geological Survey - Artesia, New Mexico

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

ROUGH DRAFT FOR WATERFLOOD LI

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-3528, ^{recently} entered in Case No. 3885, approving the expansion of the Sinclair Turner "B" Grant Waterflood Project.

Additional injection is to be through the 12 newly authorized water injection wells, each of which shall be equipped with ^{plastic-coated} tubing set in a packer located no higher than 100 feet above the uppermost perforation. The casing-tubing annulus in each well is to be loaded with an inhibited fluid and equipped with a pressure gauge to facilitate detection of leakage in the casing, tubing, or ~~and~~ 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 1610 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 x
Aztec

USGS Artesia

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

Gradyburg-Jackson

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. 3885
Order No. R-3528

APPLICATION OF SINCLAIR OIL & GAS
COMPANY FOR A WATERFLOOD EXPANSION,
EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on October 9, 1968,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 22nd day of October, 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, formerly
Sinclair Oil & Gas Company, seeks permission to expand its Turner
"B" Grayburg-Jackson Waterflood Project in the Grayburg-Jackson
Pool by the injection of water into the Premier Sand of the
Grayburg formation through 12 additional injection wells in Sec-
tions 20, 29, and 30, Township 17 South, Range 31 East, NMPM,
Eddy County, New Mexico.

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

(4) That the proposed expansion of the Turner "B" Grayburg-
Jackson Waterflood Project should result in the recovery of
otherwise unrecoverable oil, thereby preventing waste.

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CASE No. 3885
Order No. R-3528

(5) That the subject application should be approved and the expanded 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, formerly Sinclair Oil & Gas Company, is hereby authorized to expand its Turner "B" Grayburg-Jackson Waterflood Project in the Grayburg-Jackson Pool by the injection of water into the Premier Sand of the Grayburg formation through the following-described wells in Township 17 South, Range 31 East, NMPM, Eddy County, New Mexico:

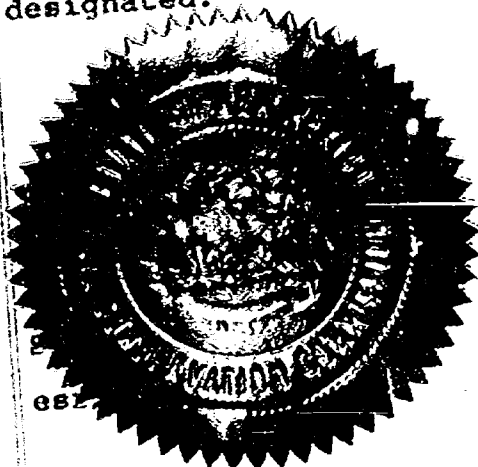
LEASE	WELL NO.	UNIT	SECTION
Turner "B" SP	44	N	20
Turner "B" SP	46	P	20
Turner "B" SP	47	B	29
Turner "B" SP	50	D	29
Turner "B" SP	54	F	29
Turner "B" SP	55	H	29
Turner "B" SP	61	J	29
Turner "B" SP	64	L	29
Turner "B" SP	66	N	29
Turner "B" SP	68	P	29
Turner "B" SP	56	J	30
Turner "B" SP	76	P	30

(2) That the expanded waterflood project 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 expanded 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, Chairman

GUYTON B. HAYS, Member

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

Case 3886

Heard 10-9-68

Rec. 10-15-68.

Grant Sindain an extension
of their Turner 'B' waterflood
project - Grayburg Jackson-
oil pool.

Injection shall be thru tubing -
under a packer - into the Permian
sand of the Grayburg fm.

The 12 injection wells are
~~listed~~ correctly on Ex. # 4.

Thos. H. H.



SINCLAIR OIL CORPORATION

P. O. Box 1470
MIDLAND, TEXAS 79701

November 15, 1968

RECEIVED
NOV 15 1968
PH 1 02

SOUTHERN REGION (WEST TEXAS)
DOMESTIC OIL & GAS DIVISION

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

Attention Mr. A. L. Porter, Jr.

Gentlemen:

Please refer to your letter of November 4, 1968, wherein you advise the calculated maximum allowable for Sinclair's Turner "B" Grayburg-Jackson Waterflood project, under the provisions of Rule 701-E-3, as being 1,610 barrels per day when the Southeastern New Mexico's normal unit allowable is 42 barrels per day or less. You request that we immediately advise both your office and the appropriate district proration office of any error in this calculated maximum allowable. Accordingly, this is to advise that I calculate that the maximum allowable should be 1,694 barrels per day in that we have, or will have after the authorized expansion is complete, 40 developed proration units plus one additional well located in Unit P of Section 17 as shown on the attached map. All 41 wells are currently listed on the November Oil Proration Schedule except Well No. 76 in Unit P of Section 30 and Well No. 68 in Unit P of Section 29. These two wells are scheduled to be injection wells and have been approved by the Commission. Therefore, upon their conversion, I believe they should be counted.

The fore mentioned attached map reflects the Grayburg-Jackson development on subject lease. Please advise if you require additional information concerning this matter.

Very truly yours,

R. M. Anderson
Region Regulatory Engineer

RMA/nr

Docket No. 29-68

DOCKET: EXAMINER HEARING - WEDNESDAY - OCTOBER 9, 1968

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

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

- CASE 3872: Application of Union Oil Company of California for a dual completion and salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to fully complete its Federal "A" Well No. 1 located in Unit P of Section 12, Township 15 South, Range 34 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Morton-Wolfcamp Pool and the disposal of produced salt water through the intermediate casing-production casing annulus into the San Andres and such other formations as may occur in the open-hole interval from approximately 4620 to 7350 feet.
- CASE 3873: Application of R. G. McPherson for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres formation in the open-hole interval from approximately 5250 feet to 5854 feet in his S. P. Johnson Well No. 1 located 990 feet from the West line and 1650 feet from the South line of Section 5, Township 18 South, Range 39 East, South Carter-San Andres Pool, Lea County, New Mexico.
- CASE 3874: Application of Gulf Oil Company - U. S. for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle production from the Paddock and Blinbry Oil Pools in the well-bore of its C. L. Hardy Well No. 2 located in Unit N of Section 20, Township 21 South, Range 37 East, Lea County, New Mexico, with the provision that no more than one single allowable will be produced from said well.
- CASE 3875: Application of Pan American Petroleum Corporation for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a well in exception to the Fowler-Ellenburger Rules at an unorthodox location 910 feet from the North line and 1980 feet from the West line of Section 15, Township 24 South, Range 37 East, Lea County, New Mexico.

- CASE 3876: Application of Newmont Oil Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Young (Queen) Unit Area comprising 1320 acres, more or less, of federal and state lands in Township 18 South, Range 32 East, Young (Queen) Pool, Lea County, New Mexico.
- CASE 3877: Application of Newmont Oil Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its Young (Queen) Unit Area by the injection of water into the Queen formation through 17 wells located in Sections 9, 16, 17, 19, 20, 21, and 29, Township 18 South, Range 32 East, Young (Queen) Pool, Lea County, New Mexico.
- CASE 3878: Application of General American Oil Company of Texas for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Premier sand through two injection wells located in Unit M of Section 8, and Unit G of Section 17, Township 16 South, Range 30 East, West Henshaw-Grayburg Pool, Eddy County, New Mexico.
- CASE 3879: Application of Walter Duncan Oil Properties for an unorthodox oil well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a well at an unorthodox oil well location 1000 feet from the North line and 1242 feet from the East line of Section 36, Township 32 North, Range 18 West, San Juan County, New Mexico. Said well would be projected to the Dakota formation.
- CASE 3880: Application of Anne Burnett Windfohr, dba Windfohr Oil Company, for salt water disposal, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Abo formation in the perforated interval from approximately 6970 feet to 7028 feet in the Windfohr Oil Company Jackson "B" Well No. 23 located in Unit J of Section 24, Township 17 South, Range 30 East, Jackson-Abo Pool, Eddy County, New Mexico.
- CASE 3881: Application of J. M. Huber Corporation for the creation of a new oil pool and for special pool rules, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Devonian oil pool for its Lone Star Federal Well No. 1 located in the NE/4 NE/4 of Section 20, Township 8 South, Range 36 East, Roosevelt County, New Mexico, and for the promulgation of special rules therefor including a provision for 80-acre proration units.

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- CASE 3882: Application of Solar Oil Company for a special gas-oil ratio limitation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 506 of the Commission Rules and Regulations to provide for a limiting gas-oil ratio of 6,000 cubic feet of gas per barrel of oil in the Teague Blinebry Pool, Lea County, New Mexico.
- CASE 3883: Application of Solar Oil Company for a special gas-oil ratio limitation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 506 of the Commission Rules and Regulations to provide for a limiting gas-oil ratio of 6,000 cubic feet of gas per barrel of oil in the Imperial Tubb-Drinkard Pool, Lea County, New Mexico.
- CASE 3884: Application of Marathon Oil Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Miller Ranch Unit Area comprising 5,276 acres, more or less, of State, Federal and Fee lands in Townships 21 and 22 South, Range 25 East, Eddy County, New Mexico.
- CASE 3885: Application of Sinclair Oil & Gas Company for a waterflood expansion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand its Turner "B" Grayburg-Jackson Waterflood Project, Grayburg-Jackson Pool, by the conversion to water injection of 12 additional injection wells located in Sections 20, 29, and 30, Township 17 South, Range 31 East, Eddy County, New Mexico.
- CASE 3886: Application of Sinclair Oil & Gas Company for the amendment of a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks amendment of its Guadalupe Ridge Unit Agreement, unitizing certain lands in Eddy County, New Mexico, and approved by Order No. R-3471, to conform to certain requirements of the Director of the United States Geological Survey. In the absence of objection, the case will be submitted and an order issued upon the basis of the application and exhibits attached thereto.
- CASE 3887: Application of Kersey & Company for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Premier sand of the Grayburg formation through two wells to be located in Units E and K of Section 12, Township 18 South, Range 28 East, Artesia Pool, Eddy County, New Mexico. Applicant further proposes to produce oil from the Upper Grayburg through parallel strings of tubing, if said zones are productive in the subject wells.

- CASE 3888: Application of Amerada Petroleum Corporation for a dual completion, salt water disposal and tubing exception, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its State E "B" Well No. 1 located in Unit E of Section 27, Township 10 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the North Echols-Devonian Pool and the disposal of produced salt water through the tubing-casing annulus into the San Andres formation through perforations in said casing from approximately 5220 feet to 5250 feet. Applicant also seeks an exception to the tubing requirements of Commission Rule 107 in that said tubing would be set more than 250 feet above the upper most Devonian perforation.
- CASE 3889: Application of BTA Oil Producers for the creation of a new pool and special pool rules, Lea and Roosevelt Counties, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new pool for the production of oil from the Bough C zone of the Pennsylvanian formation for its well located in Section 5, Township 9 South, Range 36 East, Lea County, New Mexico, and for the promulgation of special rules therefor including a provision for 160-acre proration units and for the assignment of an 80-acre allowable factor of 4.77.
- CASE 3890: Application of Pan American Petroleum Corporation for special pool rules and a non-standard gas proration unit, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the Empire-Pennsylvanian Gas Pool, Eddy County, New Mexico, including a provision for 320-acre spacing units with wells to be located in either the northwest quarter or the southeast quarter of the section. Applicant further seeks approval of a 280-acre non-standard gas proration unit comprising the SE/4, S/2 SW/4, and the NW/4 SW/4 of Section 30, Township 17 South, Range 28 East, Empire-Pennsylvanian Gas Pool, to be dedicated to its State V Com Well No. 1 located 990 feet from the South and East lines of said Section 30.



SINCLAIR OIL & GAS COMPANY

P. O. Box 1470
Midland, Texas 79701
September 16, 1968

SOUTHERN REGION (West Texas)

Ch 3885

New Mexico Oil Conservation Commission
P. O. Box 2088
Santa Fe, New Mexico 87501

Attention: Mr. A. L. Porter, Jr.
Secretary and Director

Gentlemen:

Sinclair Oil & Gas Company hereby makes application under the provisions of Statewide Rule 701 for a hearing to expand its waterflooding operations currently being conducted on its Turner "B" SP Lease, Grayburg-Jackson Pool, Eddy County, New Mexico. This lease occupies 200 acres in the S/2 of Section 17, all of Section 20 and 29 and the south half of Section 30, T-17-S, R-31-E. It is proposed to expand the waterflood project now in progress in Section 20 to Sections 29 and 30. This lease as well as all other leases within 2 miles are shown on the attached area map. Also enclosed please find:

1. Electric log on Well Nos. 47, 50, 54, 55, 56, 61, 64, 66, 68 and 76 which are the proposed additional injection wells. Logs on Well Nos. 44 and 46 are not available now, but will be presented at the hearing.
2. A diagramatic sketch of the proposed injection wells 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.
4. A plat of the area showing the proposed 80 acre 5-spot injection pattern.

As reflected by the diagramatic sketch injection will be confined to the Premier Sand section of the Grayburg-Jackson common source of supply. Sinclair proposes to inject fresh water from its existing Ogalla^W water rights and produced

60 SEP 17 1968

DOCKET MAILED

Date 9-26-68

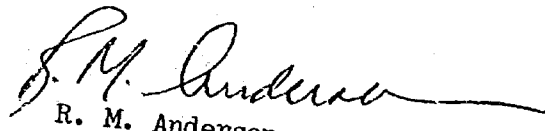
New Mexico Oil Conservation Commission
Attention: Mr. A. L. Porter, Jr.

September 16, 1968
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water from its nearby existing waterflood projects. We propose to inject about 300 barrels of water per day into each well at a surface pressure of up to 1800 lbs.

It is respectfully requested that this matter be set for an Examiner Hearing at an early date.

Very truly yours,


R. M. Anderson
Region Regulatory
Engineer

RMA/ar
enclosures

cc: U.S.G.S.
Depart. of the Interior
P. O. Drawer "J"
Artesia, New Mexico 88210
Attn: Mr. James A. Knauf

R. E. Powers
File

<p>1 Newmont Sander Bros. E12 058173</p>	<p>2 Sander Bros. E12 058173</p>	<p>3 Sander Bros. E12 058173</p>	<p>4 Sander Bros. E12 058173</p>	<p>5 Sander Bros. E12 058173</p>	<p>6 Sander Bros. E12 058173</p>	<p>7 Sander Bros. E12 058173</p>	<p>8 Sander Bros. E12 058173</p>	<p>9 Sander Bros. E12 058173</p>	<p>10 Sander Bros. E12 058173</p>
<p>11 Sander Bros. E12 058173</p>	<p>12 Sander Bros. E12 058173</p>	<p>13 Sander Bros. E12 058173</p>	<p>14 Sander Bros. E12 058173</p>	<p>15 Sander Bros. E12 058173</p>	<p>16 Sander Bros. E12 058173</p>	<p>17 Sander Bros. E12 058173</p>	<p>18 Sander Bros. E12 058173</p>	<p>19 Sander Bros. E12 058173</p>	<p>20 Sander Bros. E12 058173</p>
<p>21 Sander Bros. E12 058173</p>	<p>22 Sander Bros. E12 058173</p>	<p>23 Sander Bros. E12 058173</p>	<p>24 Sander Bros. E12 058173</p>	<p>25 Sander Bros. E12 058173</p>	<p>26 Sander Bros. E12 058173</p>	<p>27 Sander Bros. E12 058173</p>	<p>28 Sander Bros. E12 058173</p>	<p>29 Sander Bros. E12 058173</p>	<p>30 Sander Bros. E12 058173</p>
<p>31 Sander Bros. E12 058173</p>	<p>32 Sander Bros. E12 058173</p>	<p>33 Sander Bros. E12 058173</p>	<p>34 Sander Bros. E12 058173</p>	<p>35 Sander Bros. E12 058173</p>	<p>36 Sander Bros. E12 058173</p>	<p>37 Sander Bros. E12 058173</p>	<p>38 Sander Bros. E12 058173</p>	<p>39 Sander Bros. E12 058173</p>	<p>40 Sander Bros. E12 058173</p>
<p>41 Sander Bros. E12 058173</p>	<p>42 Sander Bros. E12 058173</p>	<p>43 Sander Bros. E12 058173</p>	<p>44 Sander Bros. E12 058173</p>	<p>45 Sander Bros. E12 058173</p>	<p>46 Sander Bros. E12 058173</p>	<p>47 Sander Bros. E12 058173</p>	<p>48 Sander Bros. E12 058173</p>	<p>49 Sander Bros. E12 058173</p>	<p>50 Sander Bros. E12 058173</p>

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:

CASE No. 3885

Order No. R- 3528

APPLICATION OF SINCLAIR OIL & GAS COMPANY
FOR A WATERFLOOD EXPANSION, EDDY COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on October 9, 1968,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this day of October, 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 & Gas Company
Corporation, formerly Sinclair
seeks permission to ~~expand its~~ expand its Turner "B" Grayburg-Jackson
Waterflood Project in the
Unit Area, Grayburg-Jackson Pool by
the injection of water into the Premier sand of the Grayburg
Grayburg-San Andres formations
additional
through 12 / injection wells in Sections 20, 29, and 30,
Township 17 ~~NORTH~~ South, Range 31 ~~WEST~~ East, NMPM,
Eddy County, New Mexico.

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

expansion of the Turner "B" Grayburg-Jackson
(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 expanded 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 & Gas Company, *oil Corporation, formerly the Sinclair oil & Gas Company*, expand its Turner "B" Grayburg-Jackson is hereby authorized to ~~XXXXXX~~ Waterflood Project in the ~~Unit Area~~ Grayburg-Jackson Pool by the injection of water into the Premier Sand of the Grayburg ~~Grayburg-San Andres~~ formations through the following-described wells in Township 17 ~~XXXXX~~ South, Range 31 ~~XXXXX~~ East, NMPM, Eddy

County, New Mexico:

<i>well no.</i>	<i>Unit</i>	<i>Section</i>
Turner "B" SP 44	N	20
Turner "B" SP 46	P	20
Turner "B" SP 47	B	29
Turner "B" SP 50	D	29
Turner "B" SP 54	F	29
Turner "B" SP 55	H	29
Turner "B" SP 56	J	30
Turner "B" SP 61	J	29
Turner "B" SP 64	L	29
Turner "B" SP 66	N	29
Turner "B" SP 68	P	29
Turner "B" SP 76	P	30

(2) ~~That the subject waterflood project is hereby designated~~ That the expanded waterflood project 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 expanded 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.