

CASE 3307: Application of ARWOOD
STOWE & COMPANY for creation of
new pool, pool rules & waterflood.

CASE No.

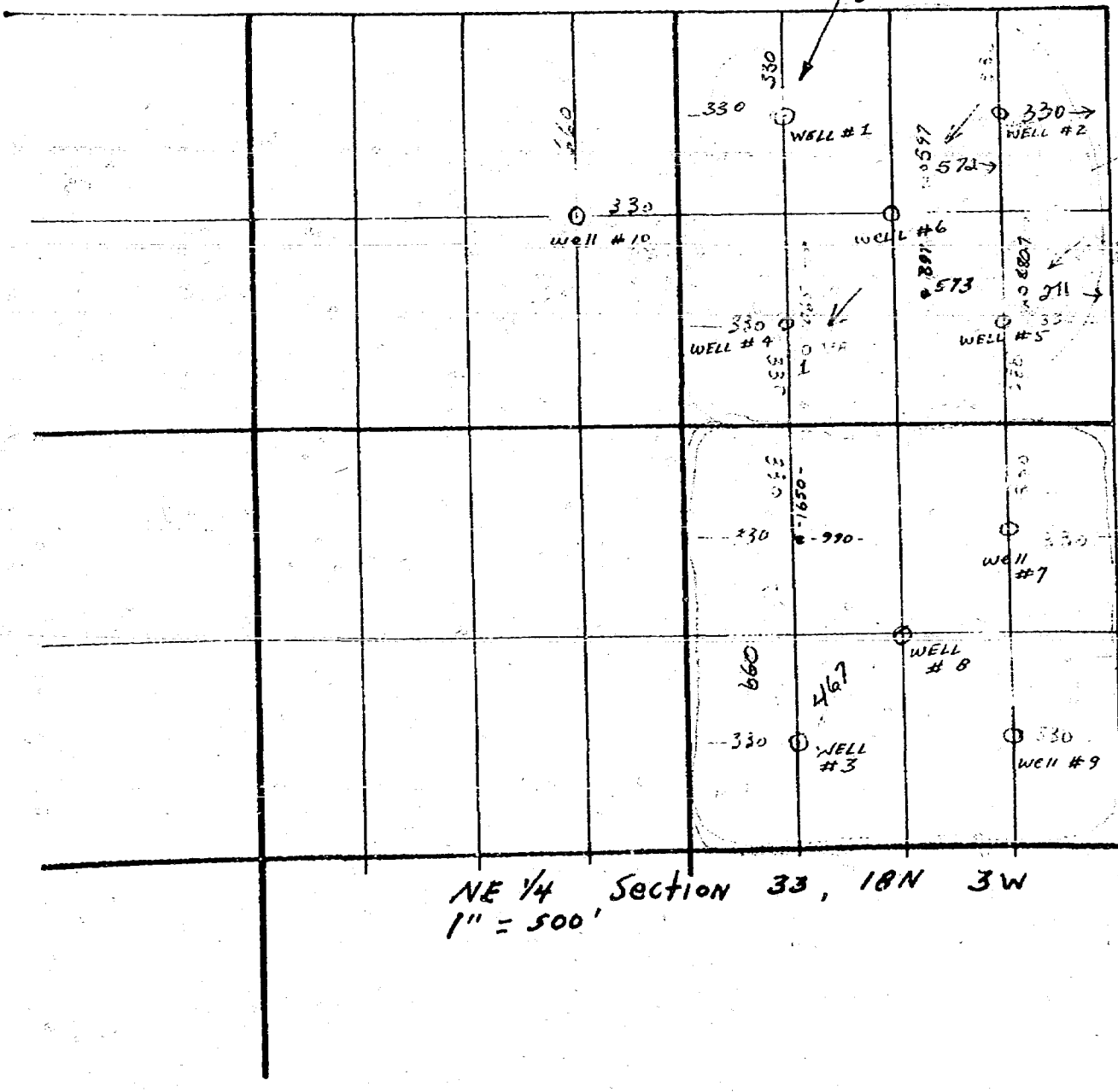
3307

Application,
TRANSCRIPTS,
SMALL Exhibits
ETC.

$$\begin{array}{r} 70 \\ 2 \\ \hline 140 \\ 2 \\ \hline 280 \end{array}$$

$$\begin{array}{r} 1 \\ 2 \\ \hline 3 \\ 70 \end{array}$$

BEFORE EXAMINER NUTTER
 OIL CONSERVATION COMMISSION
 EXHIBIT NO. **3307**
 CASE NO. **2**



found well at 660

1/2 ac

40 acres

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PAGE 1

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
October 6, 1965

EXAMINER HEARING

IN THE MATTER OF: (Continued from September 22,
1965 Examiner Hearing)
Application of Arwood Stowe & Company
for the creation of a pool, special
pool rules, and a waterflood project,
Sandoval County, New Mexico.

Case No. 3307

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MAIN OFFICE

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PAGE 2

MR. UTZ: The hearing will come to order, please.
The first case on the docket will be Case 3307.

MR. DURRETT: Application of Arwood Stowe & Company
for the creation of a pool, special pool rules, and a water-
flood project, Sandoval County, New Mexico.

If the Examiner please, I would like to state for
the record that this case was heard on September 22, 1965,
and appears on this docket only because there was an error in
advertising the case. One of the papers made an error, so
we readvertised the case and carried it on this docket. I
would at this time move the Examiner to incorporate the record
of the prior hearing into the record here today, and take the
case under advisement, if there is no objection.

MR. UTZ: We'll incorporate the hearing of September
22nd in the record today. Are there any other appearances or
any comments regarding this case? If there are none, it will
be taken under advisement.

* * * *

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PAGE 3

STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) ss

I, ADA DEARNLEY, Court Reporter-Notary Public, 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 belief.

WITNESS my Hand and Seal this 9th day of October, 1965.

Ada Dearnley
NOTARY PUBLIC - COURT REPORTER

My Commission Expires:

June 19, 1967.

I do hereby certify that the foregoing is a complete record of the proceedings in the hearing of Case No. 3307 heard by me on 10-14-1965.

Thos. A. Mc...
New Mexico Oil Conservation Commission

NEW MEXICO OIL CONSERVATION COMMISSION

Examiner HearingSanta Fe, NEW MEXICOREGISTERHEARING DATE October 6, 1965 TIME: 9 A.M.

NAME:	REPRESENTING:	LOCATION:
Granville Dutton	Sun Oil	Dallas
Frank Schatz	Sun Oil	Roswell
C. E. Rogers	Sun Oil	Midland
A. C. Hewitt	J. R. L. Hannon	"
W. L. LeFlore	Jake L. Hannon	Las Cruces
L. D. Vendig	Russell McGuire	Dallas
John D. Russell	Texas Pacific Oil Co	Roswell
Hollis W. Deats	Texas Pacific Oil Co	Hobbs
Robert Lowers	Sun Oil Co	Dallas
Ed Burr &	"	"
Frank E. Dwy	State Engr. Office	Santa Fe
John P. Carnes	Sun Oil Co.	Roswell, N.M.
L. E. Little	Tenneco Oil Co	Durango, Colo.
James E. Hume	Jake L. Hannon	Roswell
R. T. WRIGHT	EL PASO NATURAL GAS	SAL, N.M.
Dennis Miller	Pan Am Petr. Corp	Denver
Louis C. Ross	Pan American Petr Corp	Denver

NEW MEXICO OIL CONSERVATION COMMISSION

Examiner Hearing

Santa Fe, NEW MEXICO

REGISTER

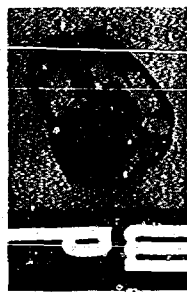
HEARING DATE October 6, 1965 TIME: 9 A.M.

NAME:	REPRESENTING:	LOCATION:
Jason Kellahin	Kellahin & Fox	Santa Fe
Nina Dammé	RW Bryan & Co.	
Joe O'Raney	NMOC	Hobbs
Bonnie Kelly	reuben brett kelly	SF
Forrest S. Smith	Kellahin & Fox	SF
A. L. Patton	OCC	S.F.
V. T. Lyon	Continental Oil Co	Hobbs

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PAGE 1

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
September 22, 1965

EXAMINER HEARING

IN THE MATTER OF:

Application of Arwood Stowe & Company
for the creation of a pool, special
pool rules, and a waterflood project,
Sandoval County, New Mexico.

Case No. 3307

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

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PAGE 2

MR. NUTTER: The hearing will come to order, please.
The next case will be 3307.

MR. DURRETT: Application of Arwood Stowe and Company for the creation of a pool, special pool rules, and a waterflood project, Sandoval County, New Mexico.

MR. KELLAHIN: If the Examiner please, Jason Kellahin, Kellahin and Fox, Santa Fe, representing the Applicant. I have one witness I would like to have sworn, please.

MR. NUTTER: I would like to state that there was an error in the advertising in Case 3307 in the Santa Fe New Mexican. We will go ahead and hear this case at this time. The case has been readvertised and will be reopened for any appearances on October 6th of 1965. We'll hear your case at this time.

MR. KELLAHIN: If the Examiner please, in that connection it's my understanding that Newmont Oil Company has withdrawn from participation in this particular case. They are, however, in support of the application and I have a letter from them to that effect.

MR. NUTTER: That's Case 3310.

MR. KELLAHIN: Yes, I am sorry, right; wrong story, wrong case.

(Witness sworn.)

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PAGE 3

M. D. MILLER

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you state your name, please?

A Malcolm D. Miller.

Q Mr. Miller, what business are you engaged in?

A I'm a consulting geological engineer.

Q Have you ever testified before the Oil Conservation Commission of New Mexico?

A No, I haven't.

Q For the benefit of the Examiner, would you state your education and your experience as an engineer?

A I have a Geological Engineering Degree from Oklahoma State University, and I have been a consultant through various states of Wyoming, Colorado, Texas, Oklahoma.

Q Do you have any connection with Arwood Stowe and Company?

A Yes, I am a consultant employed by them.

Q In that connection, did you have anything to do with the proposed creation of a new pool, special pool rules and waterflood project in Sandoval County?

A Yes, engineered it.

Q Did you make a study of the area involved in this application?

A Yes.

MR. KELLAHIN: Are the witness' qualifications acceptable?

MR. NUTTER: Yes, they are.

(Whereupon, Applicant's Exhibits Nos. 1 through 4 marked for identification.)

Q (By Mr. Kellahin) Referring to what has been marked as Exhibit No. 1, would you identify that exhibit, please?

A Exhibit No. 1 is denoting the two areas of production in the township; one, the San Luis Field, which was drilled some years ago, and the Stowe acreage which hasn't been designated as a field but which is in Section 33; the other being in Section 21.

Q Now is the Stowe Field as designated on the plat the area that is under consideration before the Commission at this time?

A That's correct.

Q Is there any production in this area at the present time?

A Yes. There is production in two wells that were drilled there some years ago, about five years ago, in the nature of about five or six barrels a day. We haven't had

adequate time to really test these wells to know how much they will make.

Q What does Arwood Stowe and Company propose to do with this area?

A Primarily we intend to drill the wells as outlined on Exhibit 3, which there are -- these wells will all be productive in the primary stages or they will be under primary production through probably a short period of time due to the low reservoir pressure; and after further testing of these wells and through production history, well, these wells will be flooded on a five-spot pattern of where the triangles will be the injection wells and the little black circles will be the production wells.

Q Referring to what has been marked as Exhibit No. 2, would you identify that exhibit?

A Number 2 is primarily the same outline of the wells drilled just with a little more clarification of what they are numbered and their location from the lines.

Q Does that give the location of the wells that you propose to drill for water injection and for production?

A That is correct.

Q At this time are you asking for approval of those well locations?

A Yes, we are.

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PAGE 6

Q Now referring to Exhibit No. 3, I believe you stated that showed the injection wells and the producing wells. Are the injection wells shown by the triangles?

A They are.

Q In connection with the application, I believe you are asking for two and a half acre spacing. This exhibit does not reflect two and a half acre spacing, does it?

A That is correct. We haven't completed -- if I may explain why?

Q Yes, please do.

A We haven't completed these wells, but what we have, the work we have done in the sand is of a lenticular nature and we feel like there is a possibility that we might want to flood on something less than the 40-acre pattern.

Q Do you have any information on the porosity and permeability of the formation?

A Nothing only correlative, and more or less as an educated guess, looking at the sandstone samples, it is very poor.

Q In your opinion is it acceptable as a flood?

A I would say it is.

Q Referring to what has been marked as Exhibit No. 4, will you identify that exhibit?

A Number 4 is our schematic diagram of a typical well,

showing how we will circulate cement from top to bottom and inject water through tubing with a packer set above the injected formation.

Q Will this be a plastic coated tubing?

A At this point I couldn't say. We don't know how corrosive the water will be that would be injected, but if it does prove to be corrosive, we will plastic coat the tubing.

Q What is the depth of the formation you are planning to flood?

A Approximately 400 feet.

Q What is it designated as?

A It's actually the Mesa Verde or the Menefee.

Q It is a part of the Mesa Verde formation, is that correct?

A That is correct.

Q What is your source of water going to be?

A It's difficult for us to say right now because we haven't drilled enough test wells to know. We did encounter one sand at 650 foot in the No. 1 Well.

Q Where is it located?

A It's located in the northwest, it's the farthest north and west well on Exhibit 2. It's designated Well No. 1.

Q At what depth did you find water there?

A 650 feet.



Q You say the producing formation that you are going to flood is approximately 400 feet?

A That is correct.

Q Is there any separation between these formations?

A Yes, there's an impervious shale section between these two formations.

Q Is this fresh water or salt or --

A We do not have a water analysis, but we will furnish one upon the testing.

Q Would you furnish the Commission and the State Engineer's Office with a copy of the analysis when it is available?

A Yes, we will.

Q Is there a possibility that you would go to some other formation for your source of water?

A There's a possibility, just from some scant study of the general area there appears to be a productive area of Artesian water around 1500 feet in the area.

Q Do you know if that is a fresh water or salt?

A No, I don't.

Q What volume of water will you inject in this project?

A At this point we feel like something in the neighborhood of probably around fifty to seventy-five barrels

a day.

Q Per well?

A Per well.

Q And will you have all the injection wells on injection initially when you start the project?

A Yes. This will be our pilot flood, actually.

Q It will be a simultaneous flood of the area?

A Yes.

Q Will this come under the provisions of Rule 701 of the Commission?

A Yes, it will.

Q Now I believe you testified there were two wells producing in the area at the present time. Will those wells be utilized in connection with this flood?

A Well, there were two wells on the acreage when we purchased it, and we have made some scant tests of these wells and -- which I said made five or six barrels a day. One well possibly will be utilized. We have very little information to how it was completed and it may have inadequate cement behind the pipe to withstand pressure of injection, so we may have to redrill the well.

Q Will you determine the condition of the well before you utilize it for injection purposes?

A Yes, we will.

Q What pressure will the injection water be under?

A That's rather difficult to say. I would say some place in the neighborhood of around 300 pounds.

Q Do you think it might take it on vacuum?

A I think initially it will.

Q What estimated life do you think this project will have; have you made any determination of that?

A Something in the neighborhood of five years.

Q Will it, in your opinion, result in the production of oil that would not otherwise be produced?

A Yes, sir.

Q What is the nature of this oil? Is it a sweet crude, sour crude?

A Yes, it is a sweet crude, paraffin-base.

Q Does it have any gas content?

A It's really nil; it's very little.

Q Were Exhibits 1 through 4 prepared by you?

A Yes, sir, they were.

MR. KELLAHIN: At this time I would like to offer in evidence Exhibits 1 through 4.

MR. NUTTER: Applicant's Exhibits 1 through 4 will be admitted in evidence.

(Whereupon, Applicant's Exhibits Nos. 1 through 4 offered and admitted in evidence.)

MR. KELLAHIN: That's all the questions I have on direct examination.

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

MR. IRBY: I don't have any questions. He's agreed to give me an analysis of the water and I'm satisfied with his well construction. I beg your pardon, I do have one question.

CROSS EXAMINATION

BY MR. IRBY:

Q You brought out that in this water well you found water at approximately 650?

A Right.

Q And your production is approximately 400. Stratigraphically, what is between the oil production and the water production?

A That impervious shale there.

MR. IRBY: That's all.

BY MR. NUTTER:

Q Mr. Miller, now this application is for the creation of a pool or, in the alternative, for the extension of the San Luis-Mesa Verde Pool. Now you mentioned that there were a couple of wells out there that were producing. Is that in the San Luis Field as shown on Exhibit 1?

A They are in Section 33 in the Stowe Field.

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Q There are producing wells in Section 33?

A Right. They have been producing; actually, we are in the process of reworking them.

Q Has the Commission ever created any pool down there in Section 33?

A As far as I know, it hasn't.

Q In the San Luis, there is an order pending for creation of a field less than 40 acres, is that correct?

A That is correct.

Q But there's no intervening production as between these two pools?

A No.

Q So if we were to extend the pool, it would be an extension of over a mile to combine them into a single pool, and the intervening mile hasn't been proved productive?

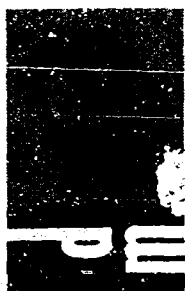
A I might state that if it would help the Commission, there have been some wells drilled between the two pools that does indicate that there might be some tie-in between the two.

Q But they are not producing wells?

A No.

Q How about up in San Luis, anything going on up in there right now?

A As far as I know, there has been one well drilled in the last year's time, and it was dry.



Q Are any wells producing currently?

A Yes, there are some wells producing there now, I believe four wells.

Q If the Commission should see fit to create a new pool rather than extend the San Luis Pool, did your company have any proposed name for the pool?

A No, sir.

Q South San Luis sounds feasible?

A Fine.

Q Now on your Exhibits 2 and 3, as I understand it, well, referring say to Exhibit 3, the entire plat would be 160 acres, would it not?

A That is correct.

Q And so each of these quadrants here that have four triangles and one completed circle would be a 40-acre tract?

A That is correct.

Q And you would have five wells in the 40?

A That is correct.

Q In your application, are you specifically asking for the approval of water injection; and if so, into how many of the wells, the eight wells or just four in the north 40?

A Into the eight wells.

Q The eight wells would be your initial pilot?

A Yes, sir.

Q And all wells would be completed with two and seven-eighths inch casing set through the pay with cement circulated to the surface?

A That's correct.

Q And an inner string of tubing run with a packer?

A That's right.

Q And as far as the pool rules are concerned, you are simply asking for spacing of something less than 40 acres, so there wouldn't be any restriction as to how close the wells would be drilled?

A That is correct, because of the lenticular nature of the sand.

MR. NUTTER: Are there any further questions of Mr. Miller? He may be excused.

(Witness excused.)

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

MR. KELLAHIN: That's all I have, Mr. Nutter.

MR. NUTTER: Does anyone have anything they wish to offer in Case 3307?

MR. IRBY: I would like to ask if I may have a copy of the exhibits. I think the one I have here is one of the three that goes to the Commission.

MR. MILLER: I will furnish you a copy.

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MR. NUTTER: If there's nothing further in Case 3307, we'll take that case under advisement.

* * * *

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Court Reporter - Notary Public, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me, and that the same is a true and correct record of the said proceedings to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this 19th day of October, 1965.

Ada Dearnley
NOTARY PUBLIC - COURT REPORTER

My Commission Expires:
June 19, 1967.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3307, heard by me on 9/22, 1965.

[Signature] Examiner
New Mexico Oil Conservation Commission

to show
auth of
adhd in wells
in New

GOVERNOR
EDWIN L. MECHEM
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
E. S. JOHNNY WALKER
MEMBER



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

P. O. BOX 2088
SANTA FE
87501

Water is to be injected through the four
authorized injection wells located in located
in the SE/4 NE/4 of Section 33, Twp 18 N, Rge 3W Sandoval
County New Mexico. In addition, pursuant to the
provisions of Order No R 2975, you are
also authorized to inject water into the
following wells in Section 33:
Well No. 3, located 2310 feet from the North line
and 990 feet from the East line.
Well No. 7, located 1650' FNL & 330' FEL
Well No. 9, 2310' FNL and 330' FEL
and a well 1650' FNL and 990' FEL.

Gentlemen:

Reference is made to and a well 1650' FNL and 990' FEL.
Enclosed herewith is Commission Order No. R-2975, entered in Case
No. 3307, approving the Arwood Stowe & Company South San Luis
Water Flood Project.

as to allowable, indicate that
According to our calculations, when all of the authorized injection
wells have been placed on active injection, the maximum allowable which this
project will be eligible to receive under the provisions of Rule 701-E-3
is 280 barrels per day.

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

In order that the allowable assigned to the project may be kept current,
and in order that the operator may fully benefit from the allowable provisions
of Rule 701, it behooves him to promptly notify both of the aforementioned
Commission offices by letter of any change in the status of wells in the project
area, i.e., when active injection commences, when additional injection or
producing wells are drilled, when additional wells are acquired through purchase
or unitization, when well have received a response to water injection, etc.

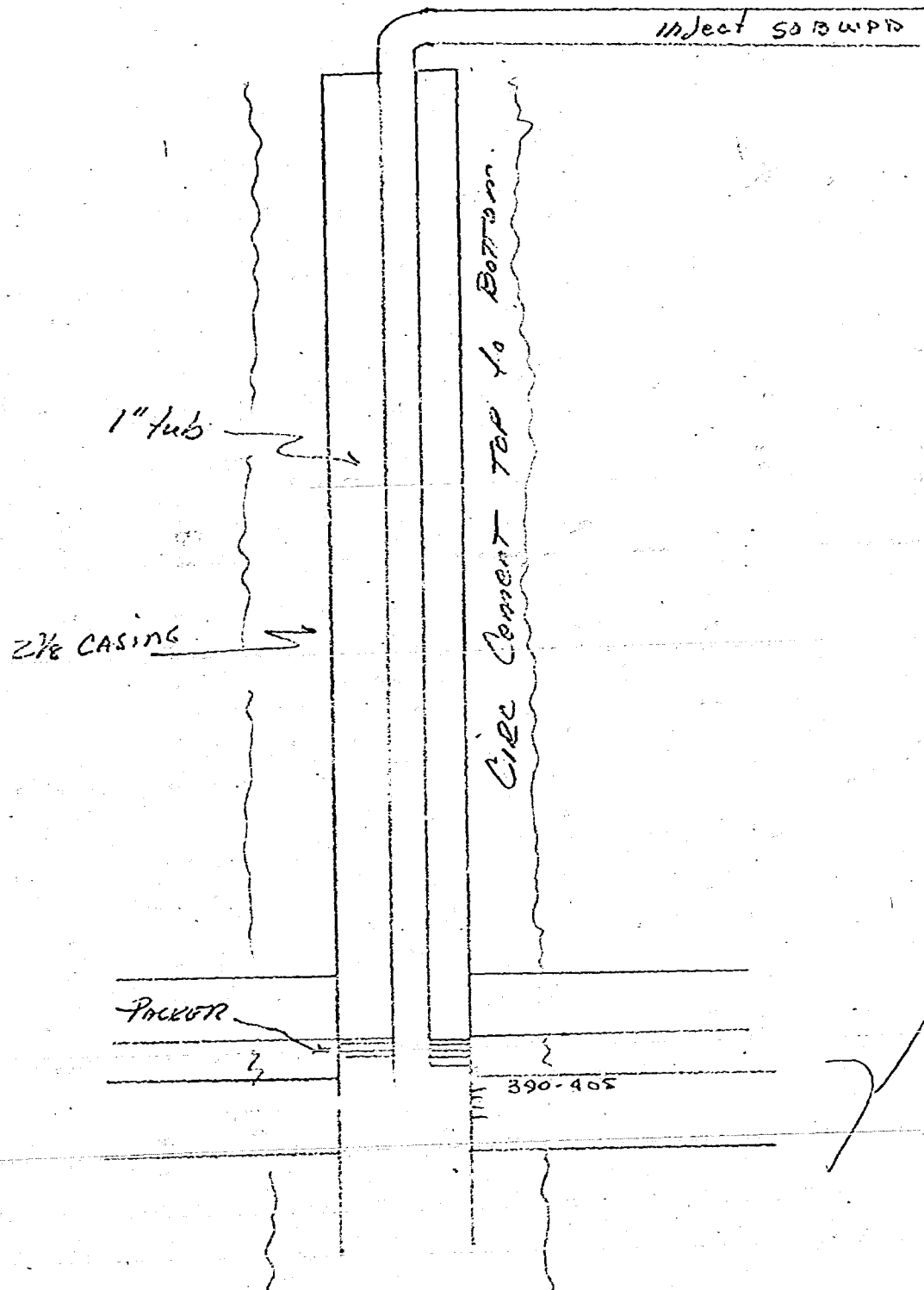
Your cooperation in keeping the Commission so informed as to the status
of the project and the wells therein will be appreciated.

Very truly yours,

cc: Mr. Frank Irby
OCC - Hobbs & Aztec

A. L. PORTER, Jr.
Secretary-Director

Injection into all wells shall be through
2 1/2 inch tubing installed within 2 1/2 inch casing
and cemented to the surface. The pay



Measure for zone of the well

BEFORE EXAMINER NUTTER
 OIL CONSERVATION COMMISSION
Copy EXHIBIT NO. 4
 CASE NO. 3307

Arwood H. Stowe & Co.
 SANDOVAL County N.M.
 TYPICAL WELL.

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 9/23/65

CASE NO. 3307

HEARING DATE 9am 9/22/65
DSN@SF

My recommendations for an order in the above numbered case(s) are as follows:

Enter an order creating the South San Luis - Mesaverde Pool ~~in~~ comprising the NE/4 of Section 33-T 18N - R 3W Sandoval Co, N. Mex. Provide pool rules identical to those for the San Luis Mesaverde Pool in Order No R-1555 Also authorize applicants to institute a water flood project in S San Luis NV Pool by the injection of water into the Menefee zone of the NV formation through 8 wells in Sec 33 T 18 N 3W described as follows.

Well No 1	330' FNL	990' FEL
2	330' FNL	330' FEL
3	2380' FNL	990' FEL
4	990' FNL	990' FEL
5	990' FNL	990' FEL
6		330' FEL
7	1650' FNL	330' FEL
8	2310' FNL	330' FEL
9		990' FEL
10	1650' FNL	990' FEL

Staff Member
3305
Assurance

Provide a paragraph similar to Order (2) in R 2282 for Red Mountain Waterflood Project

DRAFT
JMD/esr

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

CF Subj. _____

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

CASE No. 3307

Order No. R-2975

APPLICATION OF ARWOOD STOWE & COMPANY
FOR THE CREATION OF A POOL, SPECIAL POOL
RULES, AND A WATERFLOOD PROJECT, SANDOVAL
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on
October 6, 1965, at Santa Fe, New Mexico, before Examiner
Elvis A. Utz.

NOW, on this day of October, 1965, 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, Arwood Stowe & Company, seeks the
creation of a new oil pool for Mesaverde production in the NE/4
of Section 33, Township 18 North, Range 3 West, NMPM, Sandoval
County, New Mexico.

(3) That the Mesaverde formation underlying the NE/4 of Sec-
tion 33, Township 18 North, Range 3 West, NMPM, Sandoval County,
New Mexico, constitutes a separate common source of supply which
should be designated the South San Luis-Mesaverde ^{Oil} Pool.

(4) That the applicant also seeks the promulgation of
special rules governing said pool, including a provision autho-
rizing less than 40-acre spacing and a provision authorizing well

*Spec Rtr repl
JMD*

[Handwritten signatures]

[Handwritten signature]
9-26-65

locations no nearer than 150 feet to a quarter-quarter section line and no nearer than 300 feet to a well producing from the same pool.

(5) That adoption of the proposed special rules and regulations will prevent waste and protect correlative rights provided a 40-acre proration unit does not receive more than a 40-acre top unit allowable for wells in the 0-5000 foot depth range in Northwest New Mexico, regardless of the number of wells on the 40-acre unit.

(6) That the applicant also seeks permission to institute a waterflood project in the South San Luis-Mesaverde Pool by the injection of water into the Mesaverde formation through four wells in Section 33, Township 18 North, Range 3 West, NMPM, Sandoval County, New Mexico.

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

(8) That the proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(9) That the proposed waterflood project should be approved and should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(10) That an administrative procedure should be established whereby the Secretary-Director of the Commission may approve additional injection or producing wells at unorthodox locations if he determines that such approval will increase the efficiency of the waterflood project herein authorized.

IT IS THEREFORE ORDERED:

(1) That a new pool in Sandoval County, New Mexico, classified as an oil pool for Mesaverde production, is hereby created and designated the South San Luis-Mesaverde Pool, with vertical limits

comprising the Mesaverde formation and horizontal limits comprising the NE/4 of Section 33, Township 18 North, Range 3 West, NMPM, Sandoval County, New Mexico.

(2) That Special Rules and Regulations for the South San Luis-Mesaverde Pool are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE ^{oil}
SOUTH SAN LUIS-MESAVERDE POOL
↑

RULE 1. Each well completed or recompleted in the South San Luis-Mesaverde Pool or in the Mesaverde formation within one mile thereof, and not nearer to or within the limits of another designated Mesaverde oil pool, shall be spaced, ^{drilled,} operated, and produced in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. Each well shall be located no nearer than 150 feet to a quarter-quarter section line and no nearer than 300 feet to any other well producing from the pool.

RULE 3. A 40-acre proration unit shall not produce in excess of the 40-acre top unit allowable for wells in the 0-5000 foot depth range in Northwest New Mexico, regardless of the number of wells on the unit.

It is further ordered:

(1) That the applicant, Arwood Stowe & Company, is hereby authorized to institute a waterflood project in the South San Luis-Mesaverde Pool by the injection of water into the Mesaverde formation through the following-described wells in Section 33, Township 18 North, Range 3 West, NMPM, Sandoval County, New Mexico:

Well No. 1, located 330 feet from the North line and 990 feet from the East line;

Well No. 2, located 330 feet from the North line and 330 feet from the East line;

Well No. 4, located 990 feet from the North line and 990 feet from the East line; and

Well No. 5, located 990 feet from the North line and 330 feet from the East line.

²
(4) That the subject waterflood project shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

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

⁴
(6) That the Secretary-Director of the Commission is hereby authorized to approve additional injection or producing wells at unorthodox locations in the subject waterflood project in accordance with the following-described administrative procedure:

1. An application shall be filed in TRIPLICATE and shall be accompanied by a plat showing the location of the proposed well and all other wells in the project area.
2. Any offset operator desiring notice of such applications shall notify the Secretary-Director and the operator of the waterflood project.
3. The applicant shall forward a copy of the application and plat to all offset operators who have requested notice, and the application shall state that such notice has been furnished.
4. The Secretary-Director may approve the application if he determines that approval will increase the efficiency of the waterflood project and no offset operator has requested notice of the application or has not objected within ten days after the Secretary-Director has received the application.

-5-
CASE No. 3307

(7) 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.

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. 3307
Order No. R-2975
NOMENCLATURE

APPLICATION OF ARWOOD STOWE & COMPANY
FOR THE CREATION OF A POOL, SPECIAL POOL
RULES, AND A WATERFLOOD PROJECT, SANDOVAL
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on October 6, 1965, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 7th day of October, 1965, 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, Arwood Stowe & Company, seeks the creation of a new oil pool for Mesaverde production in the NE/4 of Section 33, Township 18 North, Range 3 West, NMPM, Sandoval County, New Mexico.

(3) That the Mesaverde formation underlying the NE/4 of Section 33, Township 18 North, Range 3 West, NMPM, Sandoval County, New Mexico, constitutes a separate common source of supply which should be designated the South San Luis-Mesaverde Oil Pool.

(4) That the applicant also seeks the promulgation of special rules governing said pool, including a provision authorizing less than 40-acre spacing and a provision authorizing well

-2-

CASE No. 3307
Order No. R-2975

locations no nearer than 150 feet to a quarter-quarter section line and no nearer than 300 feet to a well producing from the pool.

(5) That adoption of the proposed special rules and regulations will prevent waste and protect correlative rights, provided a 40-acre proration unit does not receive more than a 40-acre top unit allowable for wells in the 0-5000 foot depth range in Northwest New Mexico, regardless of the number of wells on the 40-acre unit.

(6) That the applicant also seeks permission to institute a waterflood project in the South San Luis-Mesaverde Oil Pool by the injection of water into the Mesaverde formation through four wells in Section 33, Township 18 North, Range 3 West, NMPM, Sandoval County, New Mexico.

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

(8) That the proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(9) That the proposed waterflood project should be approved and should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

(10) That an administrative procedure should be established whereby the Secretary-Director of the Commission may approve additional injection or producing wells at unorthodox locations if he determines that such approval will increase the efficiency of the waterflood project herein authorized.

IT IS THEREFORE ORDERED:

(1) That a new pool in Sandoval County, New Mexico, classified as an oil pool for Mesaverde production, is hereby created and designated the South San Luis-Mesaverde Oil Pool, with vertical limits comprising the Mesaverde formation and horizontal limits comprising the NE/4 of Section 33, Township 18 North, Range 3 West, NMPM, Sandoval County, New Mexico.

(2) That Special Rules and Regulations for the South San Luis-Mesaverde Oil Pool are hereby promulgated as follows:

-3-

CASE No. 3307

Order No. R-2975

SPECIAL RULES AND REGULATIONS
FOR THE
SOUTH SAN LUIS-MESAVERDE OIL POOL

RULE 1. Each well completed or recompleted in the South San Luis-Mesaverde Oil Pool or in the Mesaverde formation within one mile thereof, and not nearer to or within the limits of another designated Mesaverde oil pool, shall be spaced, drilled, operated, and produced in accordance with the Special Rules and Regulations hereinafter set forth.

RULE 2. Each well shall be located no nearer than 150 feet to a quarter-quarter section line and no nearer than 300 feet to any other well producing from the same pool.

RULE 3. A 40-acre proration unit shall not produce in excess of the 40-acre top unit allowable for wells in the 0-5000 foot depth range in Northwest New Mexico, regardless of the number of wells on the unit.

IT IS FURTHER ORDERED:

(1) That the applicant, Arwood Stowe & Company, is hereby authorized to institute a waterflood project in the South San Luis-Mesaverde Oil Pool by the injection of water into the Mesaverde formation through the following-described wells in Section 33, Township 18 North, Range 3 West, NMPM, Sandoval County, New Mexico:

Well No. 1, located 330 feet from the North line
and 990 feet from the East line;

Well No. 2, located 330 feet from the North line
and 330 feet from the East line;

Well No. 4, located 990 feet from the North line
and 990 feet from the East line; and

Well No. 5, located 990 feet from the North line
and 330 feet from the East line.

(2) That the subject 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 waterflood project herein authorized shall be submitted to the Commission in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

-4-

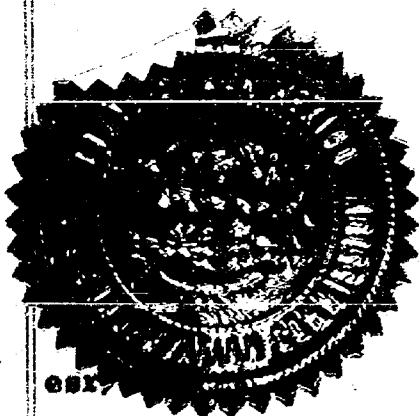
CASE No. 3307
Order No. K-2975

(4) That the Secretary-Director of the Commission is hereby authorized to approve additional injection or producing wells at unorthodox locations in the subject waterflood project in accordance with the following-described administrative procedure:

1. An application shall be filed in TRIPPLICATE and shall be accompanied by a plat showing the location of the proposed well and all other wells in the project area.
2. Any offset operator desiring notice of such applications shall notify the Secretary-Director and the operator of the waterflood project.
3. The applicant shall forward a copy of the application and plat to all offset operators who have requested notice, and the application shall state that such notice has been furnished.
4. The Secretary-Director may approve the application if he determines that approval will increase the efficiency of the waterflood project and no offset operator has requested notice of the application or has not objected within ten days after the Secretary-Director has received the application.

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

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

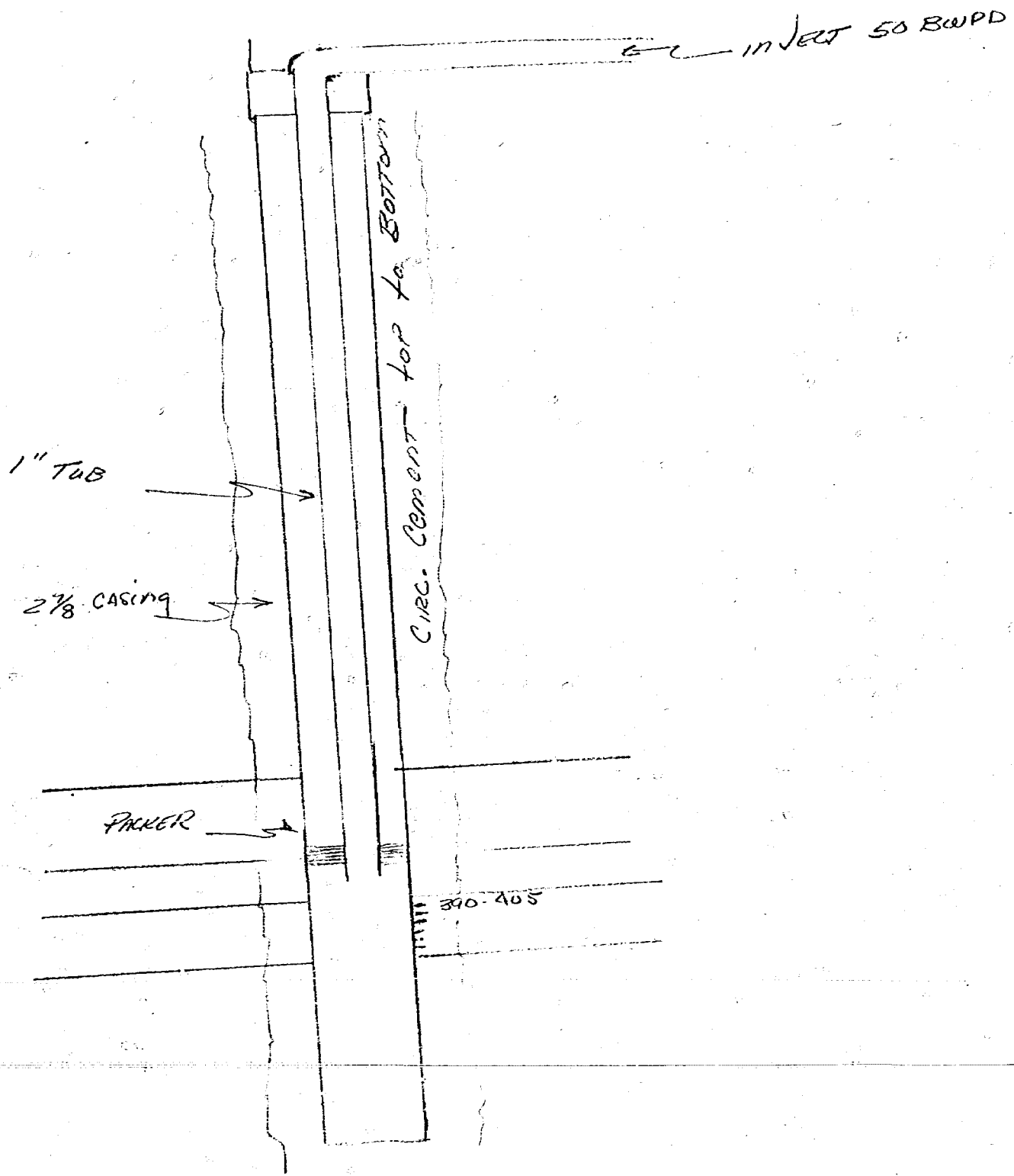


STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Jack M. Campbell
JACK M. CAMPBELL, Chairman

Guyton B. Hays
GUYTON B. HAYS, Member

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



APP EX D
 2-2-77

ARWOOD H. STONE & CO.
 SANDOVAL County N.M.
 Wtr Injection System
 TYPICAL WELL.
 3307

X4

MAIN

'65 SEP 3

BEFORE THE
OIL CONSERVATION COMMISSION OF NEW MEXICO

IN THE MATTER OF THE APPLICATION
OF ARWOOD STOWE & COMPANY FOR
CREATION OF A POOL FOR PRODUCTION
OF OIL FROM THE MESAVERDE FORMA-
TION, SANDOVAL COUNTY, NEW MEXICO,
AND ADOPTION OF POOL RULES OR IN
THE ALTERNATIVE, EXTENSION OF THE
SAN LUIS MESAVERDE OIL POOL; AND
APPROVAL OF A WATER FLOOD PROJECT.

Case 3307

A P P L I C A T I O N

Comes now Arwood Stowe & Company and applies to the Oil Conservation Commission of New Mexico for the creation of a new pool for the production of oil from the Mesaverde Formation, adoption of pool rules including provision for the creation of $2\frac{1}{2}$ acre spacing and proration units, and for approval of a secondary recovery project by injection of water, or in the alternative, extension of the San Luis Mesaverde Oil Pool, and approval of water injection, and in support thereof would show:

1. Applicant is the owner and operator of interests in Section 33, the $S\frac{1}{2}SE\frac{1}{4}$ of Section 28, and the $S\frac{1}{2}NW\frac{1}{4}$, $SE\frac{1}{4}NW\frac{1}{4}$ of Section 21, all in Township 18 North, Range 3 West, Sandoval County, New Mexico.

2. Applicant proposes as an initial phase to drill and develop the $NE\frac{1}{4}$ of Section 33-18-N-3W on a forty-acre five-spot pattern, drilling four wells at locations 330 feet from the corners of the forty-acre tract, and a fifth well to be drilled at or near the center of said forty-acre tract. Applicant proposes to eventually convert said four wells to water injection, producing from the center well.

DOCKET MAILED

DOCKET MAILED

Date

7-24-65 9-10-65

3. Source of water to be used will be the Menefee formation situated at a depth of approximately 200 to 300 feet, with an initial water well to be located 330 feet from the North Line and 660 feet from the East Line of Section 33-18N-3W.

4. It is anticipated that applicant will inject approximately fifty barrels per day in each of the injection wells.

4. While the initial injection wells will be located at a point 330 feet out of the corner of each forty, applicant prays the adoption of $2\frac{1}{2}$ acre spacing, with authority to drill at locations within 150 feet of the corner of each quarter-quarter section and within 330 feet of the nearest well producing from the same common source of supply.

5. The approval of this application will result in the recovery of oil that would not otherwise be recovered, and is in the interests of conservation and the prevention of waste.

Attached hereto is a plat showing initial phase of the water flood project. Diagrammatic sketches of the proposed injection well, and typical producing well will be furnished prior to the hearing. Logs will be furnished at the time the wells are drilled.

By copy of this application, the office of the State Engineer has been notified of this application.

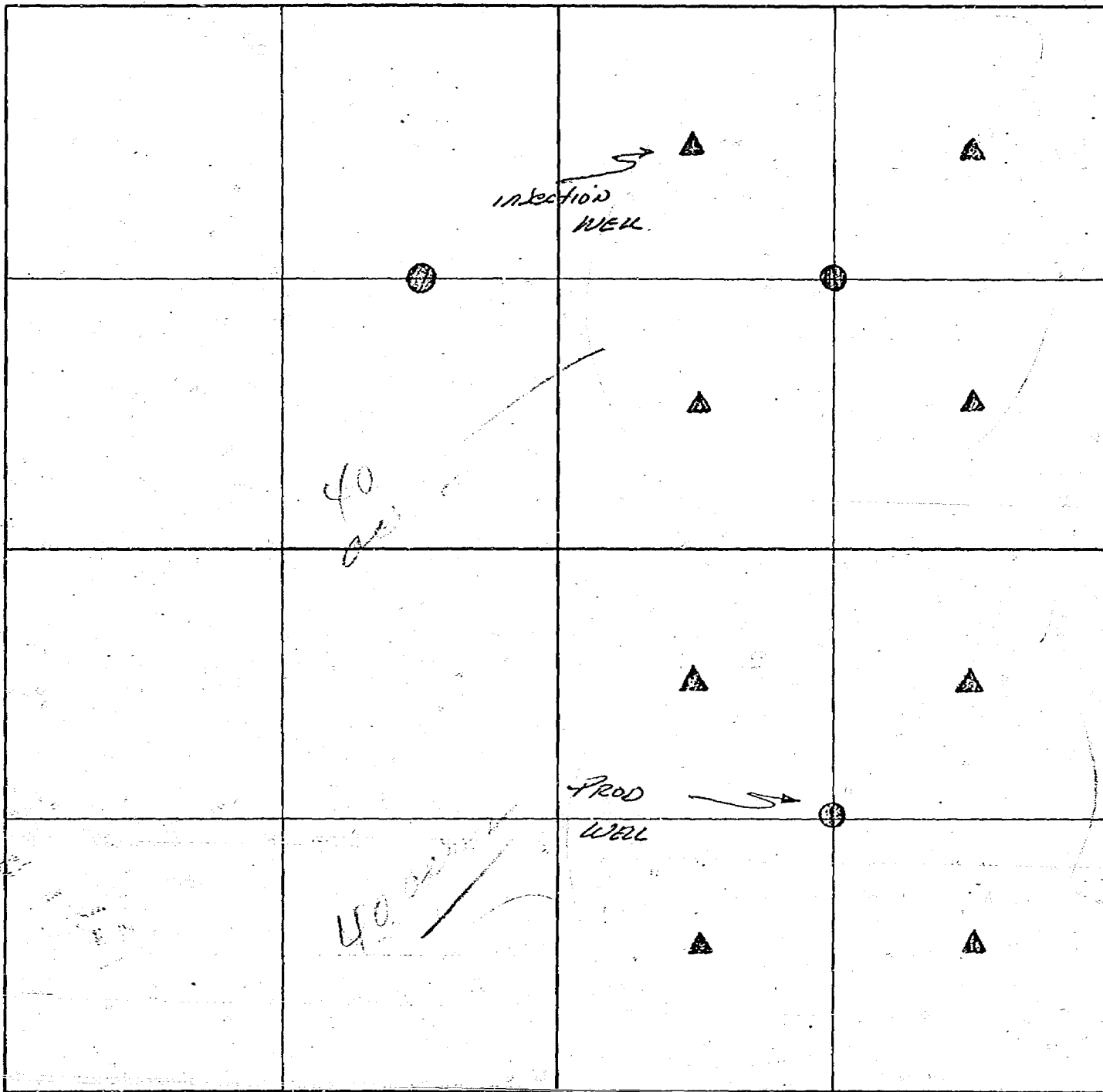
Respectfully submitted,

ARWOOD STOWE & COMPANY

By Jason W. Kellahin
KELLAHIN & FOX
P. O. Box 1769
Santa Fe, New Mexico

ATTORNEYS FOR APPLICANT

Section E/2, NE/4 33 Township 18N Range 3W County SANDOVAL State N.M.



BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
Appl EXHIBIT NO. 3
CASE NO. 3307

State of New Mexico
Oil Conservation Commission



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

October 7, 1965

Re: Case No. 3307
Order No. K-2975
Applicant:

Dear Sir:

Very truly yours,

ir/

Carbon copy of order also sent to:

Hobbs OCC X

Artesia OCC

Aztec OCC

OTHER

Docket No. 28-65

DOCKET: EXAMINER HEARING - WEDNESDAY - OCTOBER 6, 1965

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 3307: (Continued from September 22, 1965 Examiner Hearing)
Application of Arwood Stowe & Company for the creation of a pool, special pool rules, and a waterflood project, Sandoval County, New Mexico. Applicant, in the above-styled cause, seeks the creation of an oil pool for Mesaverde production in Section 33, Township 18 North, Range 3 West, Sandoval County, New Mexico, and the establishment of special pool rules governing well spacing of less than 40 acres and special well locations; or in the alternative, for the extension of the San Luis-Mesaverde Pool to include portions of said Section 33. Applicant further seeks authority to institute a waterflood project in said Section 33 by the injection of water into the Mesaverde formation through four wells.
- CASE 3310: (Continued from September 22, 1965 Examiner Hearing)
Application of Cima Capitan, Inc., Ryder-Scott Management Company, and Stallworth Oil and Gas Company for a waterflood project, Eddy County, New Mexico. Applicants, in the above-styled cause, seek authority to conduct a cooperative waterflood project by the injection of water into the Grayburg-San Andres formations through 16 injection wells to be drilled at unorthodox locations in Sections 25 and 36, Township 16 South, Range 30 East, and Sections 30, 31 and 32, Township 16 South, Range 31 East, Square Lake Pool, Eddy County, New Mexico.
- CASE 3313: Application of Tenneco Oil Company for a non-standard location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to produce its Omler "A" Well No. 2 at a non-standard undesignated Gallup oil well location 1525 feet from the North line and 1650 feet from the East line of Section 35, Township 28 North, Range 10 West, San Juan County, New Mexico.
- CASE 3314: Application of Sinclair Oil & Gas Company for a non-standard gas proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an amendment to Order No. R-2040, which created a non-standard gas proration unit comprising the SW/4 of Section 14 and the SE/4 of Section 15, Township 23 South, Range 36 East, Jalmat Gas Pool, Lea County, New Mexico, said unit to be dedicated to its Matkins Well No. 1 located in Unit P of said Section 15. Applicant proposes to dedicate said unit to its Matkins Well No. 4 located in Unit K of Section 14 in addition to said Well No. 1.
- CASE 3315: Application of Sun Oil Company for a unit agreement, Catron and Socorro Counties, New Mexico. Applicant, in the above-styled cause, seeks approval of the San Augustin Plains Unit Area comprising 404,293 acres, more or less, of Federal, State and Fee lands in Townships 1, 2, 3, 4, and 5 South, Ranges 7, 8, 9, 10, 11, and 12 West, Socorro and Catron Counties, New Mexico.

OCTOBER 6, 1965 EXAMINER HEARING

CASE 3316: In the matter of the hearing called by the Oil Conservation Commission on its own motion for the creation of a new oil pool for Yates and Seven Rivers production in Sections 12, 13, and 24, Township 26 South, Range 36 East, and Sections 7, 18, 19, 30, 31, 32, and 33, Township 26 South, Range 37 East, Lea County, New Mexico, said pool to be designated the Scarborough Yates-Seven Rivers Pool. Further, to consider the establishment of a procedure whereby a special allowable would be assigned to said pool which would permit equalized per-acre withdrawal rates from wells on 40-acre spacing in New Mexico to the per-acre withdrawal rates from 20-acre wells located immediately south in the Scarborough Pool, Winkler County, Texas.

CASE 3317: Application of Jake L. Hamon for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Owl Draw Unit Area comprising 8,916 acres, more or less, of Federal, State and Fee lands in Township 25 South, Range 27 East, Township 26 South, Range 26 East, Township 26 South, Range 27 East, Eddy County, New Mexico.

CASE 3318: Application of Pan American Petroleum Corporation for salt water disposal, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Pennsylvanian formation in its Navajo Tribal "U" Well No. 6 located in Unit O of Section 22, Township 26 North, Range 18 West, San Juan County, New Mexico.

CASE 3107 (Reopened):

In the matter of Case No. 3107 being reopened pursuant to the provisions of Order No. R-2779, which order established 80-acre spacing units for the North Bagley-Middle Pennsylvanian Pool, Lea County, New Mexico, for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units.

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

October 21, 1965

C
O
P
Y

Mr. Jason Kellahin
Kellahin & Fox
Attorneys at Law
Post Office Box 1769
Santa Fe, New Mexico

Dear Sir:

Reference is made to Commission Order No. R-2975, entered in Case No. 3307, approving the Arwood Stowe & Company South San Luis Waterflood Project.

Water is to be injected through the four authorized injection wells located in the NE/4 NE/4 of Section 33, Township 18 North, Range 3 West, Sandoval County, New Mexico. In addition, pursuant to the provisions of Order No. R-2975, you are also authorized to inject water into the following wells in said Section 33:

Well No. 3, located 2310 feet from the North line and 990 feet from the East line;

Well No. 7, located 1650 feet from the North line and 330 feet from the East line;

Well No. 9, 2310 feet from the North line and 330 feet from the East line and a well 1650 feet from the North line and 990 feet from the East line.

Injection into all wells shall be through 1-inch tubing installed within 2 7/8 inch casing which shall be set through the pay and cemented to the surface.

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

-2-

Mr. Jason Kellahin

October 21, 1965

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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 280 barrels per day.

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

In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 701, it behooves him to promptly notify both of the aforementioned commission offices by letter of any change in the status of wells in the project area, i.e., when active injection commences, when additional injection or producing wells are drilled, when additional wells are acquired through purchase or unitization, when wells have received a response to water injection, etc.

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

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/DSN/ir

cc: Mr. Frank Irby

Oil Conservation Commission - Hobbs and Aztec