CASE 3423: Application of PAN AM. for salt water disposal, Lea County, New Mexico

Case Number

3423

Application

Transcripts.

Small Exhibits

ETC.

F . 2-57

PAN AMERICAN PETROLEUM CORPORATION

Post Office Box 68
Hobbs, New Mexico

July 8, 1966

66 JUL 11 AM 7 22

File: VES-218-501.61

Subject: Water Analyses
Scarborough Pool
NMOCC Case No. 3423

Mr. Frank E. Irby
Chief, Water Rights Division
State Engineer's Office
State Capitol Building
Santa Fe, New Mexico

Dear Sir:

Attached are the water analyses you requested in conjunction with NMOCC Case No. 3423.

The analysis in the first column is of the water in the proposed zone of injection, obtained recently from the C. M. Farnsworth "B" Well No. 5. The second column is an analysis of the produced water from the C. M. Farnsworth "A" and "B" Leases, which will be injected for sub-surface disposal.

We trust the above analyses furnish the information you desired and comply with your request.

Yours very truly,

Original Signed by
V. E. STALEY

V. E. Staley
Area Superintendent

JWM:la

Attachment

cc: Mr. D. S. Nutter - New Mexico Oil Conservation Commission
Santa Fe, New Mexico

ATTACHMENT I
SCARBOROUGH POOL WATER ANALYSES

	C. M. Farnsworth "B" Well No. 5	Produced Water C. M. Farnsworth "A" & "B" Leases
	PPM	PPM
Ca	480	490
Mg	260	250
Cl	4800	3250
SO_4	250	265
HCO_3	1260	1280
Na	2670	1685
H_2S	50-60	50-60
Sg	1.004	1.004

GOVERNOR
JACK M. CAMPBELL
CHAIRMAN

State of New Mexico
Oil Conservation Commission

LAND COMMISSIONER
GUYTON B. HAYS
MEMBER

P. O. BOX 2088
SANTA FE

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

July 11, 1966

Mr. Russell D. Mann
Atwood & Malone
Attorneys at Law
Post Office Box 700
Roswell, New Mexico

Re: Case No. 3423
Order No. R-3089
Applicant:

PAN AMERICAN PETROLEUM CORP.

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

A. L. Porter, Jr.
A. L. PORTER, Jr.
Secretary-Director

ir/

Carbon copy of order also sent to:

Hobbs OCC X
Artesia OCC
Aztec OCC
OTHER Mr. Guy Buell - Mr. Frank Irby

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. 3423
Order No. R-3039

APPLICATION OF PAN AMERICAN PETROLEUM
CORPORATION FOR SALT WATER DISPOSAL,
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on June 29, 1966, at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 11th day of July, 1966, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Pan American Petroleum Corporation, is the owner and operator of the C. M. Farnsworth "B" Well No. 9, located 660 feet from the South line and 1660 feet from the West line of Section 7, Township 26 South, Range 37 East, NMPM, Scarborough Yates-Seven Rivers Pool, Lea County, New Mexico.

(3) That the applicant proposes to utilize said well to dispose of produced salt water into the Seven Rivers Reef formation through the open hole interval from 3029 feet to approximately 3080 feet.

(4) That the proposed disposal zone is below the water-oil contact and is non-productive at this location and at other structurally lower locations, thereby averting waste.

(5) That the injection should be accomplished through 3 1/2-inch internally plastic-coated tubing installed in a packer set at

approximately 3027 feet; that the casing-tubing annulus should be filled with corrosion inhibited water; and that a pressure gauge should be attached to the annulus or the annulus left open at the surface in order to determine leakage in the tubing or packer.

(6) That approval of the subject application will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Pan American Petroleum Corporation, is hereby authorized to utilize its C. M. Farnsworth "B" Well No. 9, located 660 feet from the South line and 1660 feet from the West line of Section 7, Township 26 South, Range 37 East, NMPM, Scarborough Yates-Seven Rivers Pool, Lea County, New Mexico, to dispose of produced salt water into the Seven Rivers Reef formation, injection to be accomplished through 3 1/2-inch tubing installed in a packer set at approximately 3027 feet, with injection into the open hole interval from 3029 feet to approximately 3080 feet;

PROVIDED HOWEVER, that the tubing shall be internally plastic-coated; that the casing-tubing annulus shall be filled with corrosion inhibited water; and that a pressure gauge shall be attached to the annulus or the annulus left open at the surface in order to determine leakage in the tubing or packer.

(2) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

(3) 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, Chairman

GUYTON B. HAYS, Member

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

esr/

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 7/6/64

CASE 3423 Hearing Date 9AM 6/29
DSW @ SF

My recommendations for an order in the above numbered cases are as follows:

Enter an order authorizing Pan American to dispose of produced saltwater into the Seven Rivers Def formation through openhole interval from 3029' to approx 3080' in its C.M. ~~Farnsworth~~ Farnsworth "B" Well No 9 loc 660' FSL & 1660' FWL of Sec 7 Twp 26 S Rge 37 E, Scarborough Unit - Seven Rivers Pool, Lea Co., N.M. The proposed disposal zone is below the salt water oil contact and is non-prod at this location and at other structurally lower locations, thereby averting waste. Disposal will not affect correlative rights.

Ben Stone

CASE 3422 Continued:

Range 12 West, San Juan County, New Mexico, and for the promulgation of special pool rules therefor, including a provision for 160-acre proration units and specified well locations. Applicant further seeks the approval of four non-standard proration units as follows in Township 28 North, Range 12 West:

A 164.44-acre unit comprising lots 2, 3, and 4 and the S/2 SW/4 of Section 9;

A 176.14-acre unit comprising lot 1 and the S/2 SE/4 of Section 9 and lot 4 and the SW/4 SW/4 of Section 10;

A 163.29-acre unit comprising lots 1, 2, and 3 and the SW/4 SE/4 and SE/4 SW/4 of Section 10;

A 175.14-acre unit comprising the SE/4 SE/4 of Section 10 and the S/2 SW/4 and lots 3 and 4 of Section 11.

CASE 3423: Application of Pan American Petroleum Corporation for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water in the Seven Rivers Reef formation, Scarborough Yates-Seven Rivers Pool through the open hole interval from 3029 to 3080 feet in its C. M. Farnsworth "B" Well No. 9, located in Unit N of Section 7, Township 26 South, Range 37 East, Lea County, New Mexico.

Docket No. 16-66

DOCKET: EXAMINER HEARING - WEDNESDAY - JUNE 29, 1966

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

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

CASE 3418: Application of Ashmun & Hilliard for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the approval of the dual completion (conventional) of its J. E. Stokes Well No. 1, located in Unit G of Section 26, Township 16 South, Range 35 East, Lea County, New Mexico, to produce oil from the Wolfcamp and Pennsylvanian formations, Shoe Bar Field, through parallel strings of tubing.

CASE 3419: Application of B. M. Jackson for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Queen formation through one well located in Unit H of Section 4, Township 18 South, Range 32 East, Pearsall Queen Pool, Lea County, New Mexico.

CASE 3420: Application of Standard Oil Company of Texas for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a well at an unorthodox location 1650 feet from the North line and 990 feet from the East line of Section 15, Township 18 South, Range 26 East, Atoka-Pennsylvanian Gas Pool, Eddy County, New Mexico.

CASE 3421: Application of Hanson Oil Company for an exception to Commission Order No. R-111-A, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to the potash-oil area casing and cementing rules as set forth in Commission Order No. R-111-A. Applicant proposes to drill and complete a well in Unit G of Section 21, Township 20 South, Range 34 East, Saddle Lynch Yates Pool, Lea County, New Mexico, and to drill, case, and cement said well as follows:

Drill to 65 feet and circulate cement on 13 3/8-inch casing; deepen to 800 feet and mud-in 10 3/4-inch casing; deepen to 1600 feet and mud-in 8 5/8-inch casing; drill into the Seven Rivers formation and back 5 1/2-inch casing with at least 25 sacks of cement; drill into and test the Seven Rivers pay. If production is obtained, pull the 10 3/4-inch and 8 5/8-inch casing and cement 5 1/2-inch casing to surface. (Note: All depths are approximate.) The well would be plugged and abandoned in accordance with Commission Order No. R-111-A.

CASE 3422: Application of Pan American Petroleum Corporation for creation of a new pool, special pool rules and four non-standard proration units, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new oil pool for Gallup production discovered by its Gallegos Canyon Unit Well No. 250 located in Unit K of Section 14, Township 28 North,

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
June 29, 1966

EXAMINER HEARING

IN THE MATTER OF: Application of Pan American Petroleum Corporation for salt water disposal, Lea County, New Mexico

Case No. 3423

BEFORE: DANIEL S. NUTTER, Examiner

TRANSCRIPT OF HEARING

MR. NUTTER: The Hearing will come to order, please. The next case will be Case 3423.

MR. HATCH: Application of Pan American Petroleum Corporation for salt water disposal, Lea County, New Mexico.

MR. MANN: Russell Mann with the law firm of Atwood and Malone in Roswell, representing Pan American, the Applicant in this case, and we have one witness we want to put on.

(Witness sworn)

J I M W I L L I A M M E E K, called as a witness herein, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. MANN:

Q Will you state your name, please?

A My name is Jim William Meek.

Q Where do you live?

A Hobbs, New Mexico.

Q What is your occupation?

A Petroleum engineer.

Q By whom are you employed?

A I am employed by Pan American Petroleum Corporation as an area engineer in the Hobbs office.

Q About how long have you been so employed?

A Well, in that capacity, approximately nine years.

Q How long have you been with Pan American as a petroleum engineer?

A Since graduation from college, about 15 years.

Q Does your Hobbs area office cover the pool described in Pan American's application for salt water disposal?

A Yes, it does.

Q Are you personally familiar with Pan American's application for salt water disposal that is the subject of this particular Hearing?

A Yes.

Q Have you previously testified before this Commission?

A Yes, I have.

Q When did you last testify?

A I believe it was August of 1965.

MR. MANN: Are the witness' qualifications satisfactory?

MR. NUTTER: Yes, they are.

Q (By Mr. Mann) Mr. Meek, would you please describe briefly Pan American's application that's the subject of this Hearing?

A Pan American Petroleum is requesting in this case that permission be granted to dispose of produced salt water from the Yates and Seven Rivers formations in the Scarbrough Pool in the C. M. Farnsworth B Well Number 9, located 660 feet from the south line, 1660 feet from the west line, Section

7, Township 26 South, Range 37 East, Lea County, New Mexico.

Q Into what formation will this water be disposed?

A The water will be disposed of into the Seven Rivers Reef Formation.

Q Is the proposed disposal well producing any oil or gas?

A No, the well is not producing.

Q Is it presently at the desired injection depth?

A No, it is not. It is proposed to deepen the well in order to obtain an open hole disposal interval.

Q Approximately how much deeper do you propose to go?

A We anticipate developing a satisfactory disposal zone by deepening approximately 50 feet.

Q Have you had prepared under your supervision certain exhibits?

A Yes, I have.

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

Q (By Mr. Mann) Would you take the first Exhibit that you have in there, would you take that and explain it, please?

A The first Exhibit is a structure map of the area involved with both the delineation of the Scarbrough Pool and adjacent parts of the Jalmat Pool indicated. A circle is shown within a two mile radius of the proposed disposal well

which is indicated by the red arrow on Pan American C. M. Farnsworth B, and A leases, both Federal leases are shown as the northernmost two stippled areas on the map.

The trace of a section to be mentioned in a later Exhibit is also shown. The structure is contoured on the top of the Yates Formation, contour points are so shown, contour interval of 20 feet.

Q Do you have the disposal well indicated on your drawing?

A Yes, the disposal well is indicated by the red arrow.

Q Now, would you take your second map there, or drawing, in Exhibit 1 and explain that, please?

A Exhibit 2 is an acoustic gamma ray or gamma ray sonic log of the proposed disposal well down to the depth to which it is currently drilled. On the five inch or detailed section, the two intervals in which completion was attempted are shown. The lower interval having been squeezed and the upper interval still open; however, prior to deepening, we plan on squeezing it. Those are shown in red pencil as is the top of the Yates Formation.

Q Now, this particular log that you are speaking of, is that a direct south offset to the disposal well?

A No. The log I am speaking of is the proposed

disposal well.

Q All right. Would you take your next Exhibit and describe that to the Examiner, please?

A Exhibit Number 3 is a diagramatic sketch of the proposed injection hookup for the Farnsworth B Well Number 9. As shown, eight and five/eighths inches, 24 pound J 55 surface casing was set at 357 feet, cemented with 200 sacks cement circulated, the casing was tested prior to drilling out the thousand pounds 30 minutes satisfactorily. The hole was then drilled to 3,029 feet, five and a half 14 pound H 40 casing was set at that depth with 150 sacks cement, top of the cement was 2620 feet and that casing was tested prior to perforating 1200 pounds 30 minutes satisfactorily.

We have also shown diagramatically the two intervals from which it was attempted to obtain production as mentioned earlier in another Exhibit, one of these intervals has been squeezed. We propose to squeeze the other prior to deepening. Once a satisfactory disposal zone is obtained, a permanent type packer will be set between the shoe in these lower perforations.

Nominal three and a half inch EUE plastic coated tubing will be tied into that packer and the annulus between the injection tubing and the casing loaded with inhibited fluid.

Q Would you then take your next diagram or part of that Exhibit and explain it, please?

A Exhibit Number 4 is a tabulation of water production from the Farnsworth A and B Wells which would be injected into the proposed disposal well. This individually lists the wells by number and their latest water production in barrels per day.

Q Then, would you now explain the last diagram you have there?

A Exhibit Number 5 is a cross-section, the trace of which was shown earlier on Exhibit Number 1. Now, the proposed injection well, Farnsworth B Number 9 shown here, I believe it's one, two, the third well from the left shown also on this section, relocated top of the Yates, the subsea datum of plus 100 and the top of the Seven Rivers Reef. Shown on the various logs involved are other current producing intervals like this Farnsworth A Number 10, in the extreme southern end of the A lease produces from a lower, what we term a lower reef section around 3200 feet. The immediate south offset to the proposed disposal well was taken to approximately that same depth and we were unsuccessful in establishing production in either this lower reef or intermediate zones above that and production was finally established in what we term the Basil-Yates Sands immediately overlying the reef.

The Farnsworth B Number 9 in conjunction with the program we had followed on some recent development in the area was deliberately stopped prior to penetrating the reef to open merely these lower Yates stringers. However, we were unsuccessful in obtaining production from that well. The Farnsworth A Number 3, which is currently plugged and abandoned has literally tested the zones we consider productive in the area, both in the lower reef unsuccessfully, the upper reef, which is up structure to the zone, we propose to dispose of in the B 9, produced for a relatively short period of time from 1949 to 1950, I believe it's shown in the detail here, watered out and then production was subsequently obtained in the middle Yates sections until the well finally watered out and currently it is plugged and abandoned with the casing pulled. Then similar detail is furnished on other wells on this cross-section.

Q Now, Mr. Meek, in the front of what has been identified as Exhibit 1, there is a discussion sheet; do you have any corrections that you need to make on the one that was sent to the State Engineer's Office or Commission earlier?

A The brochures furnished with our application are in error on the last two lines, where it's referring to the upper reef interval 2980 to 2986, that should be 2996, and the date should be 1949 to 1950. The Exhibits furnished properly

showed these facts. However, the ones that were furnished at the time the application was mailed do not have them. The Exhibits you were furnished today do have the corrections on them.

MR. NUTTER: The brochure is identical in all other respects?

A Yes.

Q (By Mr. Mann) Do you think of anything you wish to add or explain to these Exhibits, is there anything else you want to add?

A No, I don't believe so.

Q In your opinion, Mr. Meek, will the approval of this application for salt water disposal prevent waste and also protect correlative rights?

A Yes.

MR. MANN: We offer now Exhibit 1 into evidence which also includes what has been numbered Sub-exhibits 1 through 5.

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

MR. NUTTER: Exhibit Number 1, including Sub-exhibits 1 through 5 will be admitted in evidence.

(Whereupon, Applicant's Exhibit Number 1 received in evidence.)

MR. MANN: That's all the direct examination I have.

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

MR. IRBY: Yes.

MR. NUTTER: Mr. Irby.

CROSS EXAMINATION

BY MR. IRBY:

Q Your brochure says in the last sentence of the first paragraph, "Produced water will be disposed into the Seven Rivers Reef Formation", and the preceding sentence says, "Water from the Yates and Seven Rivers Formation". Are the Yates and Seven Rivers also reefs? I believe you said the Yates was a sand.

A Would you repeat your question?

Q Well, I'm trying to determine from your terminology whether you are taking from and disposing into the same formation, if both of them are reef formations?

A Well, Mr.Irby, maybe I can best answer that to me they are zones within a commonly defined pool. The Scarbrough Pool, which I believe at one time was part of the Jalmat, which was defined as Yates and Seven Rivers.

MR. NUTTER: Tansil, Yates and Seven Rivers.

A Okay. When I refer here, taking Exhibit Number 5, these perforations here I would call Basil-Yates with this being the top of the Seven Rivers Reef from there on down. In other words, we have production from this zone, we have production from this zone in higher wells. We have production from this

stringer here within the -- what I would term the reef. In other words, both the Yates and Seven Rivers are productive in this pool.

Q (By Mr. Irby) Well, now, are the characteristics of the Yates and Seven Rivers similar to those of the Seven Rivers Reef Formation?

A In what respect, sir?

Q Porosity, permeability, and age, et cetera. Maybe if I tell you my principal worry, without going through all these questions, it will be helpful. I want to know the difference in the chemical quality of the water in the producing zone and in the disposal zone. This is what I'm getting at.

A Well, I don't know that we have any analyses, as such, of the proposed disposal zone. Now, we have analyses of the waters that we are producing down there that are in the range, oh, of 2500 to 3,000 parts per million chloride.

Q Approximately total dissolved solids?

A Approximately 10,000, Mr. Irby. Now, it could vary somewhat.

Q I take it then, you don't have any nearby wells that may have penetrated the proposed disposal zone?

A No. I don't have a water analysis to show a comparable quality. I am of the opinion that there's not much

difference but I don't have the chemical analysis.

Q That would be my guess, but I need to be sure. Now, you haven't drilled out fr[illegible] to 3080?

A No, sir.

Q In this hole. Would you be able to grab a sample of that water in there if it has water in it, when you drill this out?

A If we possibly could, I am just trying to think of anything that might occur in case we did not because we would have a fluid filled hole at the time it would be drilled out. We could attempt to obtain a sample at such time.

Q I would like to have a sample. I don't know just how to tie you down, but I want a sample of the water in the disposal zone, that is, an analysis of a sample, and the water to be disposed of.

MR. NUTTER: Bill, do you have a well that's producing from the Seven Rivers?

A Yes.

MR. NUTTER: You've got some wells that are producing from this same zone at a different place on the structure?

A This B 5, I can get a water analysis there. Let me see, I don't believe I have any.

MR. NUTTER: Some of the produced water from a well producing in the same interval? It is going to be hard to get a sample of the water when they're drilling it out unles-

they take a drill stem test. It might not even flow.

A Would that be satisfactory for your purposes?

Q (By Mr. Irby) Yes. An analysis of a sample from the producing zone and from some other well not too far away in the disposal zone.

A Now, may I just clarify this for my own purpose?

Q Yes. And it will be a producing well.

A Say we propose to dispose into -- like this, this B Number 5, how about a composite sample of the water we propose to dispose, is that adequate?

Q Yes.

A We can get that.

Q Would you tell me how far this B 5 is from the disposal well?

A Would you refer to Exhibit 1?

Q I'll look at yours.

A I thought you had one there. Here we are, the diagonal northwest offset.

Q Roughly a quarter of a mile.

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

MR. NUTTER: Any further questions of Mr. Meek?

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Meek, do you feel that disposal is being proposed

low enough on the structure here that there will be -- I shouldn't ask it that way. Do you feel that there's a possibility that disposal here would be too high to cause any damage to these producing wells in the disposal interval?

A Your question, would disposal be too high?

Q Too high on the structure. In other words, is there any danger of watering out or flooding or drowning any of the producing wells that are producing from the zone in which you propose to dispose of water?

A No, sir. I don't believe there would be, Mr. Nutter. I'm trying to review available records. I couldn't determine that any wells in this immediate vicinity down structure of the proposed disposal well were producing from the reef.

Q None down structure from it?

A That's right.

Q Now, this well that is directly south of your disposal well is lower structurally, as far as the top of the Yates is concerned. What is the perforated interval on it? I guess it's on your cross-section there. That would be your Number 11 Well. What zone is it completed it?

A It's in what, to use the terminology I have been using today, it's in the lower Yates.

Q It's in the Yates rather than the Seven Rivers?

A Yes, in other words, it's the Basil-Yates or

immediately above the reef. The producing perforations are shown here.

Q You'll be disposing below that pay?

A Below that pay, zonewise.

Q And the west offset is considerably higher than the disposal well?

A Yes.

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

(Witness excused.)

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

MR.MANN: We have nothing further, your Honor.

MR. NUTTER: Does anyone have anything further they wish to offer in Case 3423? We will take the case under advisement and call case 3422.

I N D E X

WITNESS	PAGE
JIM WILLIAM MEEK	
Direct Examination by Mr. Mann	2
Cross Examination by Mr. Irby	10
Cross Examination by Mr. Nutter	13

E X H I B I T S

EXHIBIT	MARKED FOR IDENTIFICATION	OFFERED & ADMITTED	
App. 1	4	9	9

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

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

Witness my Hand and Seal this 6th day of July, 1966.

Ada Dearnley
NOTARY PUBLIC

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. 3423, heard by me on 6/29, 1966.

, Examiner
New Mexico Oil Conservation Commission

DISCUSSION

Pan American Petroleum Corporation respectfully requests that the New Mexico Oil Conservation Commission grant permission to dispose of produced salt water from the Yates and Seven Rivers formations into the C. M. Farnsworth "B" Well No. 9, located 660' FSL x 1,660' FWL, Section 7, T-26-S, R-37-E, Lea County, New Mexico. Produced water will be disposed of into the Seven Rivers Reef formation open hole interval 3029 to approximately 3080.

The C. M. Farnsworth "B" Well No. 9 was originally completed on November 22, 1965, as a temporarily abandoned well in the Jalmat Pool. The well was temporarily abandoned after unsuccessful attempts were made to obtain commercial oil production from the perforated intervals 3020-26 and 3006-11. These intervals failed to produce commercial quantities of oil.

Exhibit No. 1 of this application is a plat showing all wells within a two-mile radius of the proposed disposal well, along with the formation from which these have produced or are producing and the names of the leases.

Exhibit No. 2 is a log of the proposed disposal well. Since it is proposed to deepen this well, the disposal interval is not shown. However, Exhibit No. 5, cross section, shows the anticipated interval on the Farnsworth "A" Well No. 11 from approximately 3050-3100. This well is a direct south offset to the proposed disposal well.

Exhibit No. 3 is a diagrammatic sketch showing the manner in which Pan American Petroleum Corporation plans to utilize the C. M. Farnsworth "B" Well No. 9 as a disposal well. The 5½" casing is suitably cemented to prevent communication with other formations, and the use of a packer, internally coated tubing, and inhibited fluid in the annulus will protect the casing from corrosion.

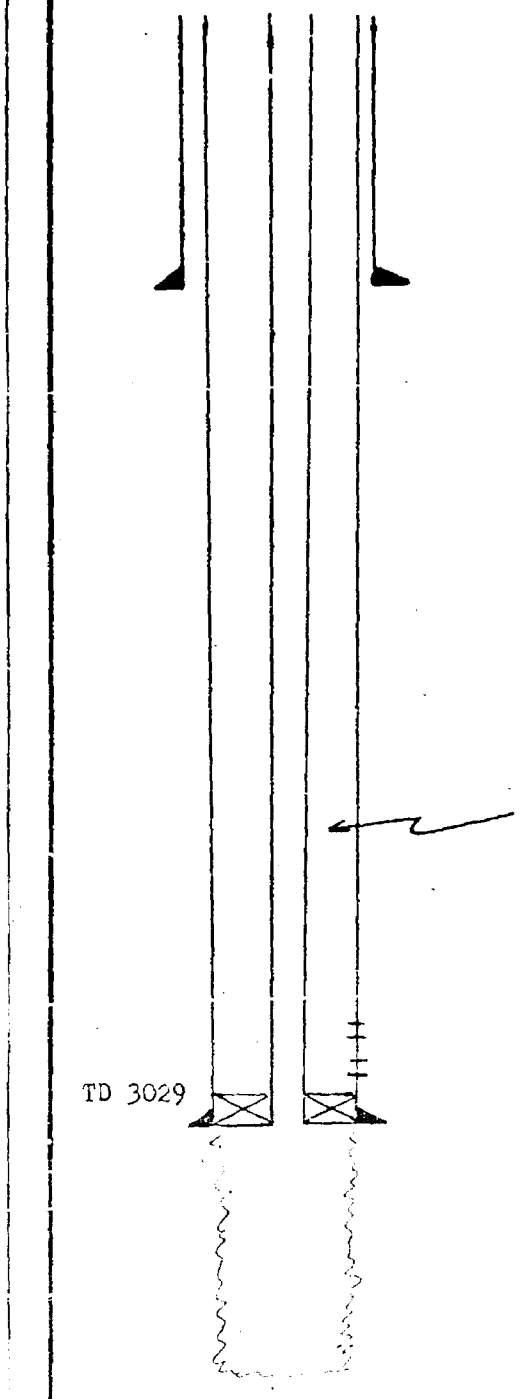
Exhibit No. 4 is a tabulation of the fifteen wells on the C. M. Farnsworth "A" and "B" Leases showing current daily water production.

Exhibit No. 5 is a log cross section through the proposed disposal well. A trace of this cross section is shown on Exhibit No. 1. Pertinent data for the proposed disposal well and nearby completion is also shown.

Approximately 4,900 barrels of produced water will be injected daily into the proposed Seven Rivers interval from 3029 to 3080. This interval is considered non-productive at this and lower structural locations, as indicated on the cross section log of the C. M. Farnsworth "A" Well No. 3, which produced from the Upper Reef interval 2980-2986 from ~~1950~~ 1949 to ~~1956~~ 1956 and then was abandoned due to uneconomic production.

EXHIBIT NO. 3

Elevation: 2968.5 RDB



8-5/8" 24# J-55 CSA 357 - cemented with 200 sx cmt. circulated. Tested csg. 1,000 psi - 30 min. - O.K.

Annulus between tubing and casing to be loaded with inhibited wator

Perfs 3020-26 - squeezed - 3006-11 to be squeezed prior to deepening

3-1/2" EUE tubing landed in Model "D" packer at 3027 (tubing to be plastic coated)

5-1/2" 14# H-40 csg. set at 3029 with 150 sx. Top cement 2620. Tested casing - 1200 psi - 30 min. - O.K.

Proposed open hole total depth approximately 3080

PAN AMERICAN PET [illegible]

[illegible], Lea County, New Mexico, [illegible] of proposed completion

SCALE:

DRG. NO.

[illegible] completed well, Seroboron [illegible]

EXHIBIT NO. 4

WATER PRODUCTION FROM WELLS TO BE CONNECTED TO
C. M. FARNSWORTH "B" NO. 9 DISPOSAL WELL
SCARBOROUGH YATES SEVEN RIVERS POOL, LEA COUNTY, NEW MEXICO

C. M. Farnsworth Well No.		Barrels Water Per Day
"A"	1	582
	2	572
	4	272
	5	94
	6	552
	7	94
	9	82
	10	78
	11	5
"B"	1	572
	2	520
	3	342
	5	478
	6	664
	7	10
		4,913