

CASE 2316: Application of PAN AMER.
for permission to dispose of salt
water into Wolfcamp formation.

Case No.

2316

Application, Transcript,
and Exhibits, Etc.

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 871
SANTA FE

July 13, 1961

Mr. Guy Buell
Pan American Petroleum Corporation
Box 1410
Fort Worth, Texas

Re: CASE NO. 2316 & 2317
ORDER NO. R-2019 and R-2026
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. Kirk Newman

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. 2316
Order No. R-2019

APPLICATION OF PAN AMERICAN PETROLEUM
CORPORATION FOR PERMISSION TO DISPOSE
OF SALT WATER INTO THE WOLFCAMP FORMA-
TION, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on June 28, 1961, at Santa Fe, New Mexico, before Elvis A. Uts, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 13th day of July, 1961, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Elvis A. Uts, and being fully advised in the premises,

FINES:

- (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 Lois Wingerd Well No. 8, located 660 feet from the South line and 600 feet from the East line of Section 24, Township 12 South, Range 37 East, NMPM, Lea County, New Mexico.
- (3) That the applicant proposes to dispose of produced salt water from the Gladiola Field into the Wolfcamp horizon, utilizing the above-described Lois Wingerd Well No. 8 as an injection well with an injection interval of 2610 feet to 2636 feet.
- (4) That the injection should be accomplished through internally plastic-coated tubing and that the annulus should be filled with inhibited fresh water.
- (5) That the water being disposed of is not suitable for either domestic or agricultural usage, and that the disposal will not impair production of oil, gas or fresh water, nor will it impair correlative rights.

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CASE No. 2316
Order No. R-2019

(6) That the injection of salt water into the Wolfcamp horizon will not cause damage to the reservoir and the injection may, in fact, aid in achieving maximum recovery.

IT IS THEREFORE ORDERED:

(1) That the applicant, Pan American Petroleum Corporation, is hereby authorized to dispose of produced salt water into the Wolfcamp formation through its Lois Wingerd Well No. 8, located 660 feet from the South line and 660 feet from the East line of Section 24, Township 12 South, Range 37 East, NMPN, Lea County, New Mexico, with the injection interval from 9610 to 9636 feet.

PROVIDED HOWEVER, That internally plastic-coated tubing shall be installed within the casing and the annulus filled with inhibited fresh water.

(2) That the applicant shall submit monthly reports of its disposal operations in accordance with Rules 704 and 1119 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

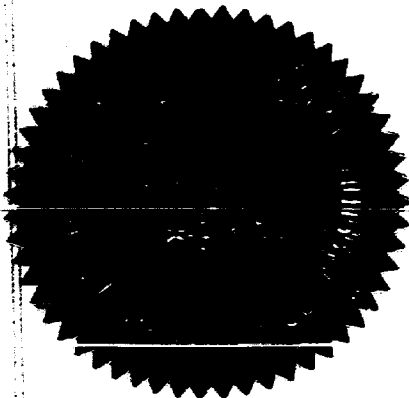


EDWIN L. MECHEM, Chairman


E. S. WALKER, Member



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



esx/

Case 2316

Heard. 6-25-61

Rec. 7-3-61

1. Grant Pan Am's request for an SWD well for their Lois Wingard #8-660/5+E line Sec. 24-12S-37E in the Gladwin - W.C.
2. Disposal interval shall be in the Wolfcamp. from. 9610 to 9636.
3. The well shall be completed by using tubing to inject salt brine with the annulus filled with inhibited fresh brine. A packer shall be set at approx. 9575 ft.
4. The injection salt brine in this formation will not cause damage to the reservoir and in fact may act to some extent as a secondary recovery.
5. Allowing this request will provide the operators of this pool a means of complying with the commission's request of disposing of the salt brine in this pool.

Ernest A. King

File 5316

PAN AMERICAN PETROLEUM CORPORATION

P. O. Box 268
Lubbock, Texas
May 22, 1961

File: CDF-5472-986.510

Subject: Application for Permission
To Dispose of Salt Water In
A Subsurface Formation
Gladiola Field, Lea County,
New Mexico

Mr. A. L. Porter, Jr.
Secretary-Director
New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Dear Sir:

Pan American Petroleum Corporation respectfully requests that a hearing be set at the earliest date possible to consider its application for permission to dispose of salt water into the Wolfcamp formation in the Gladiola-Wolfcamp Field, Lea County, New Mexico, this formation being productive of oil in this field.

Pan American proposes to dispose of salt water produced from the Wolfcamp and Devonian horizons of the Gladiola Field into its Lois Wingerd Well No. 8 located 660 feet from south and east lines of Section 24, T-12-S, R-37-E, Lea County, New Mexico. This well was originally completed on September 20, 1953, in the Wolfcamp formation for an initial potential of 543 BOPD. Cumulative production to March 1, 1961, was 103,087 barrels of oil. The well is presently shut in due to uneconomical producing rates. Proposed injection interval is into the Wolfcamp through perforations at a depth of from 9610 feet to 9636 feet.

In compliance with Statewide Rule 701, the following attachments are presented in support of our request for hearing.

Attachment No. 1 - Attachment No. 1 is a plat showing the proposed disposal well together with all wells within a two mile radius. All wells completed in the Gladiola-Wolfcamp reservoir are indicated in red on this plat. The remainder of the producing wells within the two mile radius are completed in the Gladiola-Devonian reservoir. Current Wolfcamp completions which have previously been completed in other horizons are also noted on this plat. All lease lines within the two mile radius are indicated.

*Noted
dated
6-15-61
R*

Mr. A. L. Porter, Jr.

- 2 -

File: CDF-5472-986.510

Attachment No. 2 - Attachment No. 2 is a log of the Lois Wingerd No. 8, the proposed disposal well, showing the top of the Wolfcamp formation and also showing the proposed disposal interval.

Attachment No. 3 - Attachment No. 3 is a diagrammatic sketch of the casing program for the Lois Wingerd No. 8 showing the manner in which this well will be completed for disposal purposes.

Attachment No. 4 - Attachment No. 4 is a list of wells which will be connected to the salt water disposal system served by the Lois Wingerd No. 8 showing the barrels of water produced daily from each of these wells. The approximate salinity of the Wolfcamp water in this area is 28,000 ppm chlorides and the approximate salinity of the Devonian water is 31,000 ppm chlorides. Waters from both of these horizons are mineralized to such a degree to be unfit for domestic, stock, irrigation, and other general use.

Your favorable consideration of this request will be appreciated.

Yours very truly,

A. J. Inderrieden
A. J. Inderrieden

WJS:js
Attachment

DOCKET: EXAMINER HEARING - WEDNESDAY, JUNE 28, 1961

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, as alternate Examiner:

CONTINUED CASE

CASE 2298: Application of Chambers & Kennedy for a gas-oil dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its Monument State Well No. 1, located in Unit J, Section 34, Township 19 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of gas from the Eumont Gas Pool and the production of oil from the Eunice-Monument Pool through the 5½-inch by 2½-inch casing-tubing annulus and through 2½-inch tubing respectively.

NEW CASES

CASE 2309: Application of Texaco Inc. for an oil-oil-oil triple completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks permission to complete its C. P. Falby (a) Well No. 4, located in Unit E, Section 8, Township 22 South, Range 37 East, Lea County, New Mexico, as a triple completion (conventional) in the Eumont Gas Pool, the Penrose-Skelly Pool, and the Drinkard Pool, the production of oil from each pool to be through parallel strings of 2 3/8-inch tubing.

CASE 2310: Application of Standard Oil Company of Texas for permission to transfer allowables, Lea County, New Mexico. Applicant, in the above-styled cause, during vertical communication tests, seeks permission to transfer allowables in the Vacuum Abo Pool for a 120-day period from its Vac-Edge Unit Well No. 4, located in the NW/4 NE/4 of Section 4, Township 18 South, Range 35 East, Lea County, New Mexico, to its Vac-Edge Unit Wells Nos. 3 and 6, located in the NE/4 NW/4 of said Section 4 and in the NE/4 NE/4 of said Section 4, respectively.

CASE 2311: Application of Continental Oil Company for an oil-oil dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks permission to complete its Britt B-15 Well No. 10, located in Unit F, Section 15, Township 20 South, Range 37 East, Lea County, New Mexico, as a dual completion (conventional) in an undesignated Blinebry Pool and in the Monument-Tubb Pool, the production of oil from each pool to be through parallel strings of 2-inch tubing.

CASE 2312:

Application of Continental Oil Company for an exception to Rule 309 (a), Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 309 (a) to permit the commingling, after separate measurement, of the Maljamar-Paddock Pool production from the William Mitchell "A" lease, consisting of the N/2 of Sections 19 and 20, and from the William Mitchell "B" lease, consisting of the W/2 and the W/2 E/2 of Section 17, the E/2 and the E/2 W/2 of Section 18, and the S/2 of Sections 19 and 20, all in Township 17 South, Range 32 East, Lea County, New Mexico.

CASE 2313:

Application of W. W. Holmes for an order fixing the spacing of wells, Sandoval County, New Mexico. Applicant, in the above-styled cause, seeks an order fixing the spacing of wells producing from the Mesaverde formation in the N/2 of Section 11, Township 18 North, Range 3 West, Sandoval County, New Mexico. Applicant recommends the establishment of two and one-half acre well spacing with no increase in the allowable to be assigned a basic 40-acre oil proration unit.

CASE 2314:

Application of Shell Oil Company for an exception to the gas-oil ratio provisions of Rule 26 (A), Order No. R-1670, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to the gas-oil ratio provisions of Rule 26 (A), Order No. R-1670, to permit its Shell State Well No. 1-A, located 380 feet from the North line and 380 feet from the West line of Section 36, Township 24 South, Range 36 East, Lea County, New Mexico, to remain classified as a gas well in the Jalmat Gas Pool, with a gas-oil ratio below 100,000: 1.

CASE 2315:

Application of Pan American Petroleum Corporation for a non-standard oil proration unit and for an unorthodox oil well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks the establishment of an 86.62-acre non-standard oil proration unit in the Totah-Gallup Oil Pool consisting of Lots 2, 3 and 4 of Section 12, Township 28 North, Range 13 West, San Juan County, New Mexico, to be dedicated to the Gallegos Canyon Unit Well No. 100 at an unorthodox location 476 feet from the North line and 1980 feet from the West line of said Section 12.

CASE 2316:

Application of Pan American Petroleum Corporation for permission to dispose of salt water into the Wolfcamp formation, Lea County, New Mexico. Applicant, in the above-styled

CASE 2316:
(Cont.)

cause, seeks permission to dispose of produced salt water into the Wolfcamp formation through its Lois Wingerd Well No. 8 located 660 feet from the South and East lines of Section 24, Township 12 South, Range 37 East, Gladiola-Wolfcamp Pool, Lea County, New Mexico.

CASE 2317:

Application of Pan American Petroleum Corporation for a pressure maintenance project in the Horseshoe-Gallup Oil Pool, San Juan County, New Mexico, and for special rules governing said project. Applicant, in the above-styled cause, seeks permission to institute a pressure maintenance project in the Horseshoe-Gallup Oil Pool by the injection of water into certain Northeast Hogback Unit wells in Sections 10, 11, 13, 14, 15 and 24, all in Township 30 North, Range 16 West, San Juan County, New Mexico. Applicant further seeks special rules governing the operation of said project.

CASE 2318:

Application of El Paso Natural Gas Products Company for an order force-pooling a non-standard oil proration unit in the Cha Cha-Gallup Oil Pool, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order force-pooling all mineral interests in the Cha Cha-Gallup Oil Pool lying North of the mid-channel of the San Juan River in the SE/4 of Section 17, Township 29 North, Range 14 West, San Juan County, New Mexico. Interested parties include Humble Oil & Refining Company, Pan American Petroleum Corporation, and A. L. Duff.

CASE 2319:

Application of Tenneco Oil Company for a non-standard oil proration unit and for permission to commingle the production from separate leases, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks the establishment of a 90.5-acre non-standard oil proration unit in the Cha Cha-Gallup Oil Pool consisting of lots 3 and 4 and the E/2 SW/4 of Section 31, Township 29 North, Range 13 West, San Juan County, New Mexico. Applicant further seeks permission to commingle the Gallup oil production from the subject unit with other Gallup oil production from the E/2 W/2 and from the E/2 of said Section 31 after separately metering the production from each area.

CASE 2320:

Application of R. C. Banks for approval of the High Point Unit Agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the High Point Unit

CASE 2320:
(Cont.)

Agreement, which unit embraces 1920 acres of State land in Township 11 South, Ranges 34 and 35 East, Lea County, New Mexico.

The following cases will not be heard before 1:30 P.M.

CASE 2321:

Application of Benson-Montin-Greer Drilling Corporation for an unorthodox oil well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox oil well location in the Cha Cha-Gallup Oil Pool for its Jones Well No. 7, located 1200 feet from the North line and 900 feet from the West line of Section 15, Township 28 North, Range 13 West, San Juan County, New Mexico.

CASE 2322:

Application of Southwest Production Company for an unorthodox oil well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox oil well location in the Cha Cha-Gallup Oil Pool for a well to be drilled 2260 feet from the North line and 330 feet from the West line of Section 16, Township 29 North, Range 14 West, San Juan County, New Mexico.

CASE 2323:

Application of Southwest Production Company for two non-standard oil proration units and for an unorthodox oil well location in the Cha Cha-Gallup Oil Pool, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks the establishment of two non-standard oil proration units in the Cha Cha-Gallup Oil Pool, San Juan County, New Mexico, one unit consisting of the West 56.625 acres and one unit consisting of the East 56.625 acres of that portion of the SE/4 of Section 16, Township 29 North, Range 14 West, lying North of the mid-channel of the San Juan River; the West proration unit is to be dedicated to a well to be drilled at an unorthodox location 1912 feet from the South line and 2310 feet from the East line of said Section 16.

CASE 2324:

Application of Aztec Oil & Gas Company for an order force-pooling a standard 320-acre gas proration unit, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order force-pooling all mineral interests in a standard 320-acre gas proration unit in the Basin-Dakota Gas Pool, consisting of the N/2 of Section 2, Township 29 North, Range 12 West, San Juan County, New Mexico.

CASE 2325:

Application of Aztec Oil & Gas Company for a non-standard oil proration unit in the Totah-Gallup Oil Pool, San Juan County, New Mexico. Applicant, in the above-styled cause,

CASE 2325:
(Cont.)

seeks the establishment of an 86.13-acre non-standard oil proration unit in the Totah-Gallup Oil Pool, consisting of Lot 1, the NE/4 NW/4 and the NW/4 NE/4 of Section 30, Township 29 North, Range 13 West, San Juan County, New Mexico, to be dedicated to the Hagood Well No. 28-G located 765 feet from the North line and 3175 feet from the East line of said Section 30.

CASE 2326:

Application of David Fasken for permission to drill directionally, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks permission to sidetrack and recomplete the David Fasken-King-Davis Well No. 2, located 1980 feet from the North line and 1980 feet from the West line of Section 27, Township 8 South, Range 37 East, Roosevelt County, New Mexico, in such a manner as to locate the bottom of the hole in the Bough "C" formation of the Bluit-Pennsylvanian Pool 300 feet West of said surface location.

CASE 2327:

Application of the Oil Conservation Commission on its own motion to consider the establishment of non-standard gas proration units for the Basin-Dakota Pool in Townships 29, 30, 31 and 32 North, Ranges 4, 5, 6, 7, 8, 9, 11, 12, 13 West, San Juan and Rio Arriba Counties, New Mexico. Said non-standard units are necessitated by irregular sections resulting from survey corrections in the United States Public Lands Survey.

ATWOOD & MALONE
LAWYERS

JEFF D. ATWOOD (1883-1960)
ROSS L. MALONE
CHARLES F. MALONE
E. KIRK NEWMAN
RUSSELL D. HANN
PAUL A. COOTER
BOB F. TURNER

TELEPHONE MAIN 2-022
ROSWELL PETROLEUM BUILDING
ROSWELL, NEW MEXICO

June 26, 1961

Oil Conservation Commission
Post Office Box 871
Santa Fe, New Mexico

Re: Case No. 2316, Application of Pan American
Petroleum Corporation to dispose of salt water
in the Wolfcamp formation, Gladiola-Wolfcamp
Pool, Lea County, N. M.

Gentlemen:

We are local counsel for Pan American Petroleum Corporation and as such wish to enter our appearance in the captioned case. Pan American will also be represented by Guy Buell, a member of the Texas Bar, and a company employee. The actual presentation for Pan American will be made by Mr. Buell.

Very truly yours,

ATWOOD & MALONE

By: *E. Kirk Newman*

EKN:ps

cc/ J. K. Smith
Guy Buell

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
JUNE 28, 1961

EXAMINER HEARING

IN THE MATTER OF:

CASE 2316

Application of Pan American Petroleum
Corporation for permission to dispose
of salt water into the Wolfcamp forma-
tion, Lea County, New Mexico.

TRANSCRIPT OF HEARING

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
JUNE 28, 1961

EXAMINER HEARING

DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CH 3-6691

ALBUQUERQUE, NEW MEXICO

IN THE MATTER OF

CASE 2316: Application of Pan American Petroleum Cor- :
poration for permission to dispose of salt :
water into the Wolfcamp formation, Lea :
County, New Mexico. Applicant, in the :
above-styled cause, seeks permission to dis- :
pose of produced salt water into the Wolf- :
camp formation through its Lois Wingerd Well :
No. 8 located 660 feet from the South and :
East lines of Section 24, Township 12 South, :
Range 37 East, Gladiola-Wolfcamp Pool, Lea :
County, New Mexico. :

BEFORE:

Mr. Elvis A. Utz, Examiner.

T R A N S C R I P T O F P R O C E E D I N G S

MR. UTZ: Case 2316.

MR. MORRIS: Application of Pan American Petroleum Cor-
poration for permission to dispose of salt water into the Wolfcamp
formation, Lea County, New Mexico.

MR. BUELL: For Pan American Petroleum Corporation, Guy
Buell.

(Witness sworn)

MR. UTZ: Are there other appearances in this case?



Proceed.

W. J. SANDIDGE, JR.,

called as a witness, having been first duly sworn on oath, testified as follows:

DIRECT EXAMINATION

BY MR. BUELL:

Q Mr. Sandidge, would you state your full name, by whom you are employed, and in what capacity, and at what location, please?

A I'm William James Sandidge, Jr. I'm employed by Pan American Petroleum Corporation as a petroleum engineer, senior grade, in their Lubbock District office.

Q You have testified at prior Commission hearings, have you not?

A I have.

Q Your qualifications as a petroleum engineer are a matter of public record?

A They are.

MR. BUELL: Any questions, Mr. Examiner?

MR. UTZ: No, sir.

(Whereupon, Pan American's Exhibits 1 through 4 were marked for identification).

Q (By Mr. Buell) Would you look, now, at what has been marked as Exhibit 1, and state, for the record, what that Exhibit reflects?

DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CM 3-6691

ALBUQUERQUE, NEW MEXICO



A This is a plat showing the Gladiola-Wolfcamp Pool, and a portion of the Gladiola-Devonian Field. Shown thereon is a circle two miles in radius. We marked in red all the Wolfcamp completions within two miles of the well, which Pan American proposes to utilize for the disposal purposes. The well marked in green in Unit P of Section 24, Township 12 South, Range 37 East, is the Pan American's Lois Wingerd No. 8, a shut-in Gladiola-Wolfcamp Well, which we propose to utilize for disposal purposes.

Q What is the significance, Mr. Sandidge, of the area within the red outline?

A The red outline embraces those leases which will be served by Pan American's proposed disposal system.

Q I notice when you mentioned the Wolfcamp wells, the ones colored in red, you said "Completions." Were you distinguishing that from producing Wolfcamp wells?

A I was, Mr. Buell. As indicated on the map, the majority of the wells in the major portion of the field are either shut-in, carried as temporarily abandoned, or dead. In the area in which we propose to dispose of water, there are presently only four Wolfcamp wells which are producing at marginal rate, varying from one barrel of oil per day to twelve barrels of oil per day.

Q Since there are only four, let's take time to name the wells, locate them, for the record, and state the current production of those wells, according to your information.

A The first well is the Sinclair Green No. 1, located in

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PHONE CH 3-6691

ALBUQUERQUE, NEW MEXICO



Unit M of Section 13, Township 12 South, Range 37 East. That well produced in April three barrels of oil per day, plus ten barrels of water per day. And

Another well is the Pan American's Houston "A" No. 2, and that well is located in Unit L of Section 19, Township 12 South, Range 38 East.

Q Is that all of them?

A No. I was waiting on one of the examiners. That well produced six barrels of oil per day, and two barrels of water in April. The next well is Sinclair Field No. 1. It's located immediately south of the proposed disposal well in Unit A of Section 25. Our records show that it produced at the rate of one barrel of oil per day, and six barrels of water per day in April. The fourth well in that vicinity is the Ohio State No. 1. It's located immediately adjacent to the previous well, to the east, in Unit D of Section 30, and in April it produced twelve barrels of oil per day, and two barrels of water.

Q Mr. Sandidge, looking over at the western portion of your Exhibit, I notice some wells colored in red there that while they're certainly not world beaters, they are producing more than those in the area of the Wingerd No. 8. Are those wells classified as being in the Gladiola-Wolfcamp Pool?

A They are classified as Gladiola-Wolfcamp wells. We have some evidence there is separation between that portion of the reservoir and the portion where we propose to inject water.

DEARNLEY-MEIER REPORTING SERVICE, Inc.

PHONE CN 3-6691

ALBUQUERQUE, NEW MEXICO



Q What evidence do you have?

A There's structural evidence, and also there's two dry holes separating the two portions of the Field. The wells I refer to are the Pan American Wingerd No. 1. At that time it was drilled as a Stanolind Wingerd No. 1.

Q Let me interrupt. You have the official Exhibit copy there. Would you circle in brown these two dry holes?

A All right. I just happen to have a brown pencil.

Q Let me ask you this, Mr. Sandidge. I realize you are going to discuss this further in connection with another Exhibit, but at the outset, let's just get your thought in the record. Do you feel that if there is any effect on this Wolfcamp reservoir from disposing of salt water in our Wingerd No. 8 Well, if there is any effect, do you feel it will be beneficial to the reservoir or detrimental?

A I feel it will not be detrimental, and perhaps it will be beneficial.

Q So, regardless of whether or not the wells to the west are separate or not, or connected or not, if our disposing of salt water affects them in any way, it will be beneficial?

A In my opinion, it will be.

Q Do you have any other comments on this Exhibit?

A I think we have covered it, Mr. Buell.

Q Look, now, at what has been marked as our Exhibit No. 2. Then state, for the record, what is reflected by that Exhibit,

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PHONE CH 3-6691

ALBUQUERQUE, NEW MEXICO



please.

A Exhibit No. 2 is a cross-section which runs in a north-south direction from the Sinclair Schultz No.3, which is located a mile and a quarter due north of the Pan American Wingerd No. 8. The cross-section, as I previously stated, proceeds southerly from the Schultz No. 3 through the other Wingerd completions, to the south through the other Wolfcamp completions -- I am sorry -- to the south, and then switches east, and passes through the Ohio State No. 1.

Q Do you have a surface trace of this cross-section on your Exhibit No. 1, Mr. Sandidge?

A This Exhibit 2 is shown as trace AA Prime on Exhibit 1.

Q How have you distinguished on this Exhibit the completion interval with regard to the Wolfcamp formation in these wells?

A The Wolfcamp completion interval is marked in red on each one of the logs. The Wolfcamp interval in which we propose to inject water is marked in green on the log of Wingerd No. 8.

Q Mr. Sandidge, from the standpoint of the subject matter of this hearing, our request to use Wingerd No. 8 for salt water disposal, what, to you, is the most significant thing on Exhibit 2?

A The most significant thing that this Exhibit shows is the structural relationship and the completion intervals of the Sinclair Field No. 1 and the Ohio State No.1. With regard to our

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ALBUQUERQUE, NEW MEXICO

PHONE CH 3-6691



Wingerd No. 8, both of these wells, as shown by the cross-section, are structurally low to the Wingerd No. 8 on the top of the Wolfcamp. They are both completed higher in the Wolfcamp Section than the Wingerd No. 8 perforations, where we propose to dispose of water.

Q Now, these two wells you are speaking of, the Sinclair Well and the Ohio Well, are the nearest wells to our Wingerd No. 8 that are producing any hydrocarbons from the Wolfcamp?

A That is correct. They are the two producers to the south and the southeast of Wingerd No. 8.

Q Could you make this general observation, Mr. Sandidge, looking at this Exhibit, it would appear to me that most of the Wolfcamp completion intervals in the other wells on this Section are above our proposed disposal interval; is that correct?

A Generally, that is true.

Q Getting back to the Sinclair Well and the Ohio Well again for a moment, do you know whether or not any tests were performed by either of those operators in the interval we are proposing for disposal?

A Yes. The Sinclair Fields No. 1 was drill stem tested while it was being drilled over the interval 9619 to 9654. This interval is below the depth shown on the log. It is approximately equivalent to that one in which we proposed to dispose of water. On a three-hour drill stem test of that interval, the Sinclair Fields No. 1 recovered 180 feet of heavy oil and gas cut mud, 3000 feet of oil, cut sulphur, 1,000 feet of sulphur water.

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The operator did not elect to attempt completion in that interval.

Q When you analyze the result of the test, do you feel that the operator made a wise decision in going up the hole to complete?

A I do.

Q In addition to the log that is shown on Exhibit No. 2, you have also examined logs on other Wolfcamp penetrations in this area, have you not?

A I have.

Q Have you also examined and studied all core data which is available?

A Yes.

Q Based upon your study and evaluation of these studies, that leads you to the opinion that if there is any effect on the Wolfcamp reservoir from disposing of salt water, it will be a beneficial effect?

A I feel that any effect will be beneficial.

Q Will you look at what has been marked as Pan American's Exhibit No. 3? State, for the record, what is reflected by that Exhibit, please.

A Exhibit No. 3 is a schematic drawing showing the manner in which we propose to complete Wingerd No. 8 for disposal purposes, if this application is granted. As shown on the Exhibit, this Well has 7-inch casing set at 9,818 feet with an estimated top of the cement at 7,650 feet. The existing perforations where

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we propose to dispose of salt water are from 9610 to 9636. We plan to set a packer at approximately 9575, run 2 7/8-inch internally coated tubing, which will be bottomed through the packer at approximately 9580. The annulus between the 7-inch casing and the 2 7/8-inch tubing will be loaded with inhibited fresh water to minimize corrosion effects.

Q Mr. Sandidge, do you feel confident that the casing and completion program outlined on Exhibit 3 will adequately assure us that this salt water is going into the interval that we want it to go in?

A I do. That's a generally accepted completion practice for disposal.

Q Look, now, at what has been marked as our Exhibit No. 4, and state, for the record, what is reflected by that Exhibit.

A This is a tabulation showing the names of the seventeen wells which will be served by this disposal system. It shows the latest available production figures for both oil and water. Apparently, the water volume to be disposed of will be approximately 1288 barrels.

Q Would you anticipate that such volume will increase from time to time, Mr. Sandidge?

A I do.

Q In your opinion, will the interval proposed for disposal in our well take the volumes of water which you anticipate will be available?

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A An injectivity test has been run on this well. On this test the well took over twice the present disposal volume on a vacuum. It will take -- according to the test, it will take somewhat over five times the present disposal volume at 50 pounds of pressure.

Q That's certainly not very much pressure when you're looking at disposing of salt water, is it, Mr. Sandidge?

A No, sir, that's very small.

Q So, then, you feel that this interval will take all anticipated available volumes?

A Based on what we know now, this interval will take the volume.

Q We've already discussed one feature of preventing waste, Mr. Sandidge, that is, that if there is any reservoir effect, it's going to be beneficial. Does your proposal serve conservation in any other manner, other than that?

A It will comply with the Commission's Order to dispose of water in this field by subsurface means, and will protect fresh water supplies.

Q In other words, by disposing of this water in the Wolfcamp formation, we're going to eliminate the opportunity for surface and subsurface contamination to occur?

A That is correct.

Q Do you feel that the correlative rights of all owners of interest in this area will be protected under your proposal?

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A I do.

Q Do you have anything else you would like to add?

A I have nothing.

MR. BUELL: That concludes our direct examination, Mr. Examiner. We have a log -- a sample copy of a log of our disposal well. I didn't know whether you wanted it or not, since it is on the section. If you would like it, it is available.

MR. UTZ: No, we won't need it.

MR. BUELL: May I formally offer Pan American's Exhibits 1 through 4 inclusive?

MR. BUELL: Exhibits 1 through 4 will be entered into the record, without objection.

(Whereupon, Pan American's Exhibits 1 through 4 were received in evidence).

CROSS-EXAMINATION

BY MR. UTZ:

Q How much water did you say would be available for disposal?

A 1288 barrels of water per day based on latest tests.

Q Were these tests to determine water that the zone will take run through the 2 7/8-inch tubing?

A It is my impression at the time of the test, it had 2-inch tubing; it was certainly no larger than 2 7/8.

MR. UTZ: Any other questions? The witness may be excused.

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(Witness excused)

MR. UTZ: Any other statements in this case? If not,
the case will be taken under advisement.

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STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) ss

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

WITNESS my Hand and Seal this, the 3rd day of July, 1961, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Ada Dearnley
NOTARY PUBLIC

My Commission expires:
June 19, 1963

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2316, heard by me on June 28, 1961.
[Signature] Examiner
New Mexico Oil Conservation Commission

