Case No.

1452

Application, Transcript,
Small Exhibits, Etc.

1458

[redacted] Amerada Pet. Corp. application for order authorizing dual completion of its H.C. Posey A #4 well Lea County.

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE NO. 1452

TRANSCRIPT OF HEARING

DEARNLEY - MEIER & ASSOCIATES
GENERAL LAW REPORTERS
ALBUQUERQUE, NEW MEXICO
Phone CHapel 3-6691

May 28, 1958

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
May 28, 1958

IN THE MATTER OF:

Application of Amerada Petroleum Corporation for the dual completion of a producing oil well to permit the disposal of salt water therein. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its H. C. Posey "A" No. 4 Well, located in the NW/4 NE/4 of Section 14, Township 12 South, Range 32 East, Lea County, New Mexico, in such a manner as to permit the production of oil through the tubing from the Pennsylvanian formation, adjacent to the East Caprock-Pennsylvanian Pool, and to permit the disposal of salt water through the casing tubing annulus into the Devonian formation between 11,205 feet and 11,370 feet.

CASE NO 1452

BEFORE:

Elvis A. Utz, Examiner.

TRANSCRIPT OF PROCEEDINGS

MR. UTZ: The hearing will come to order, please. The next case on the docket will be Case 1452, and the order in which the cases will be taken will be numerical, unless somebody has some urgent business.

MR. PAYNE: Case 1452. Application of Amerada Petroleum Corporation for the dual completion of a producing oil well to permit the disposal of salt water therein.

MR. KELLAHIN: If the Commission please, Jason Kellahin of Kellahin and Fox, Santa Fe, New Mexico, representing the applicant Amerada Petroleum Corporation. We have one witness, Mr. Harold Kidd. This application in Case 1452 is for permission to dually complete the Amerada H. C. Posey "A" No. 4 Well, which is a depleted oil well, in such a manner as to permit production of oil from the Pennsylvanian formation and disposal of salt water into the Devonian formation.

I would like to call as our first witness Mr. Harold Kidd.

(Witness sworn.)

HAROLD C. KIDD

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

DIRECT EXAMINATION

BY: MR. KELLAHIN:

Q Will you state your name, please?

A Harold C. Kidd.

Q By whom are you employed and in what capacity, Mr. Kidd?

A By Amerada Petroleum Corporation as district engineer at Monument, New Mexico.

Q Are you the same Mr. Kidd who testified in Case 1451 which was heard before this Commission yesterday, and qualified as an expert engineer?

A I am.

MR. KELLAHIN: Are the witness' qualifications acceptable?

MR. UTZ: They are.

Q Mr. Kidd, you are familiar with the application in Case 1452, are you not?

A Yes, sir, I am.

Q Briefly, will you describe what is proposed to be done in connection with that application?

A Yes, sir. We propose to deepen the well one hundred feet into the Devonian; set a Baker Model D packer at approximately 8800 feet, perforate the Pennsylvanian zone through the interval 8570 to 8748, set a Brown DS-3 packer at 8300 feet on 2 3/8 inch tubing, and will have a 2 1/2 inch tubing string connecting the Brown packer and Baker packer, and inject salt water down the casing-tubing annulus to the Brown packer through the 2 1/2 inch tubing to the Baker packer and down the 5 1/2 inch casing to the Devonian formation, and will produce the Pennsylvanian through 2 inch tubing.

Q Now, referring to what has been marked as Exhibit No. 1, will you state what that is?

A Exhibit No. 1 is a plat of the area showing the subject well circled in red, located in the NW/4 of the NE/4 of Section 14, Township 12 South, Range 32 East. It shows lease ownership and well locations offsetting the subject well.

Q Does that plat cover the defined limits of the East Caprock Devonian Pool?

A Yes, it does.

Q Is this plat the same plat that is attached to the application in this case?

A Yes, it is.

Q Now, referring to what has been marked as Exhibit No. 2, will you state what that is?

A Exhibit No. 2 is a structure map contoured on top of the Devonian formation with a contour interval of 100 feet. The original water-oil contact is shown on the map at minus 6910. The subject well is colored red, and there is a red north-south line representing our electric log cross section, which will be submitted as Exhibit 5.

Q Now, with reference to the subject well, what type of location is that with reference to the reservoir, Mr. Kidd?

A The structure map shows Posey "A" No. 4 to have been an edge well at completion, with the top of the Devonian at a minus 6884, while the original oil-water contact was at a minus 6910. The oil-water contact now varies from minus 6805 to minus 6886 subsea, and averages approximately minus 6869 subsea.

Q And how does the depth of the Posey "A" No. 4 compare as to the original water-oil contact?

A At the present time, the total depth of the well is approximately four feet below the original oil-water contact.

Q Now, referring to what has been marked as Exhibit No. 3, will you state what that is?

A Exhibit No. 3 is an isopach map of gross Devonian pay above water at the present time. Shows location of the original oil-water contact at a minus 6910, and the location of present oil-water contact is represented by the zero contour line. Posey "A" No. 4 is shown in red and has zero pay above water.

Q At the present time there isn't any well producing outside of this present water-oil contact, is there?

A No, sir, there isn't.

Q Are the wells inside of the zero line making water?

A Yes, sir, 15 of the 24 are inside of the zero contour line are making water.

Q Is that an active water drive pool?

A Yes, sir, it is. The main Devonian reservoir here is underlain with about six to eight hundred feet water saturated Devonian formation.

Q Now, referring to what has been marked Exhibit No. 4, will you state what that shows?

A Exhibit No. 4 is a structure map contoured on the Pennsylvanian A double marker, a correlation point approximately 35 feet below the top of the Pennsylvanian, and has a contour interval of 25 feet. Posey "A" No. 4 is again shown in red, and the red north-south line represents -- or the lines of cross section in Exhibit 5.

Q Now, in regard to that Exhibit, two wells, I believe, up in the northern portion are colored in brown. What are they?

A The wells colored brown are Wolfcamp producers which are producing from the Wolfcamp formation just above our proposed Pennsylvanian producing interval.

Q How far are they from your proposed injection well?

A Approximately a mile and a half.

Q Now, is there any well in the area producing from the Pennsylvanian zone which you propose to perforate?

A No, sir, there isn't.

Q Now, referring to what has been marked as Exhibit No. 5, would you state what that is?

A Exhibit No. 5 is a north-south electric log cross-section showing the Pennsylvanian A ~~double~~ "W" marker. The proposed producing interval in the Pennsylvanian in the Posey "A" No. 4. The top of the Devonian formation, the present oil-water contact of wells in the line of cross-section. The oil zone has been colored in brown, water zone in blue. The subject well is located at the far left of the exhibit, and shows the relationship to the proposed injection interval to the oil-water contact.

Q And what is that relationship, with reference to the exhibit?

A The proposed injection here shows that it will be right at the oil-water contact, and approximately a hundred and fifty feet below.

Q Well now, in your opinion, where will the major portion of the water be injected in the reservoir if the completion is

made as you are proposing?

A Well, actually, the major portion of the water to be injected will be injected in the lower portion of the proposed disposal interval and will be below the original oil-water contact of the pool. Previous history shows that we will hit zones of high permeability as we drill deeper into the Devonian.

Q Will the injection of water have any material or adverse effect upon the active water drive?

A No, sir, we anticipate no effect at all.

Q Referring to what has been marked Exhibit No. 6, will you state what that shows?

A Exhibit No. 6 is a marked electric log of Posey "A" No. 4 showing the top of the Pennsylvanian to be at 8483, at a minus 4129; shows the Pennsylvanian A ~~double~~ W marker, the proposed Pennsylvanian producing interval from 8570 to 8748, shows the top of the Devonian at 11,238, or minus 6884, and shows 5 1/2 inch casing to be set at 11,205, and present TD of the well, as shown, is 11,270 feet. The oil-water contact in the pool was at minus 6910, and it would be 11,264 on this log.

Q Does that exhibit show where you intent to perforate in the Pennsylvanian formation?

A Yes, sir, it does.

Q Was any test made of the Pennsylvanian when the well was drilled?

A ~~Yes, sir. We drill stem tested two intervals, or took~~

two drill stem tests over the interval we propose to perforate. The first was from 8514 to 8666; gas to surface in eighteen minutes, 15,000 cubic feet per day recovered, 2000 feet of free oil, the final flowing pressure was 860 pounds, the build up pressure was 1440, and then we had a drill stem test from 8666 to 8756, had gas to surface in 3 minutes, oil in 9 minutes, flowed 106 barrels of oil in four hours, the gas volume, 546,000 cubic feet per day, which gave a GOR of 860, final flowing pressure was 1175, and the built up pressure in this test was 1580 pounds.

Q Now, referring to what has been marked as Exhibit No. 7, Mr. Kidd, what does that show?

A Exhibit No. 7 is a tabulation of production data for Posey "A" No. 4 showing monthly oil production and water production since completion.

Q Can you summarize the data for the benefit of the Examiner which appears on that exhibit?

A Yes, sir. Posey "A" No. 4 has produced 231,848 barrels of oil and 526,074 barrels of water since June, 1953. Latest test, production test, of April 14, 1958, showed the well producing 5 barrels of oil and 490 barrels of water per day.

Q Do you consider that an economic well at the present time?

A No, sir, our experience shows that approximately 15 barrels a day is the economic limits of a deep Devonian producer in this field.

Q Has any effort been made to work the well over, or attempt

made to increase the oil production?

A Yes, sir. The well produced from open hole 11,240 to 11,255, which is a minus 6886 to minus 6901, from June, 1953, to March, 1958, when the well was deepened to 11,270 feet. It is now producing from 11,240 feet to 11,270, which is a minus 6886 to a minus 6916. The well was deepened to assure that no oil pay was left below the old TD and the original water-oil contact of the pool.

Q And you found there was no oil--

A No, sir, there was no increase in oil production after deepening.

Q Now, referring to what has been marked Exhibit No. 8, will you state what that shows, Mr. Kidd?

A Exhibit No. 8 is a graph of production data for the East Caprock Devonian Pool. The graph shows monthly oil production in barrels since discovery, monthly water production is represented by the shaded area or shaded curve above the oil production curve; cumulative oil production curve; curve for the number of producing wells in the pool, and a plot of pool bottom hole pressure.

Q Now, have you any general statistics on the entire pool?

A Yes, sir. The East Caprock Devonian Pool has produced 9,415,067 barrels of oil and 8,628,241 barrels of water since discovery in August, 1951. Production currently averages 3869

barrels of oil per day, and 7055 barrels of water per day, giving you an average water cut of 64.4 per cent. The bottom hole pressure in the pool has declined only 132 pounds since discovery from an original pressure of 4419 to 4287.

Q Your information would indicate that large volumes of water are being produced in this pool. What disposition is being made of water at the present time?

A At the present time we have a permit to dispose of water into the Dewey Lake formation, and at the present time are disposing of it at approximately 2,680 barrels of water per day, which represents 38 per cent of the total water produced.

Q Is a new injection well necessary for the disposal of water?

A Yes, sir. We require additional disposal capacity to handle all of the produced water from the pool, and since the Dewey Lake formation has been found to be inadequate, we must dispose of our water into the Devonian formation, which is the only formation in the area capable of handling the necessary volume of produced water.

Q And what is the amount of water which you propose to inject into the well in the event this application is approved?

A Our gathering system and disposal system is designed to dispose of approximately ten thousand barrels of water per day.

Q And that would be the approximate amount of water you

propose to inject?

A Ultimately, yes.

Q Now, referring to what has been marked as Exhibit No. 9, will you describe that exhibit, please.

A Exhibit No. 9 is a schematic diagram showing the present completion of the well along with the proposed dual completion installation. As presently completed, the well has 13 3/8 inch casing at 299 feet; 8 5/8 inch casing at 3615; 5 1/2 inch casing at 11,205, with the top of the cement outside of the oil string at 7667, and was determined by temperature survey, and is approximately 903 feet above the proposed producing perforations in the Pennsylvanian formation. The present TD of the well is 11,270.

Q The surface string is cemented through the fresh water zones?

A Yes, it is.

Q Now, in regard to the proposed dual completion, just with reference to this exhibit, what is proposed to be done, Mr. Kidd?

A We propose to deepen the well from 11,270 to a total depth of 11,370. We will set a Baker model D permanent packer at 8800. We will perforate the Pennsylvanian formation through the interval 8570 to 8748. We will set a Brown DS-3 packer at 8300 feet on 2 3/8 inch tubing, and we will have a 2 1/2 inch tubing string connecting the upper and lower packers to complete separation through the Pennsylvanian zone. Salt water will

injected down the casing-tubing annulus to the Brown packer through 2 1/2 inch tubing to the Baker Model D packer, and below the Baker Model D packer will be injected 5 1/2 inch casing to the proposed disposal interval of 11,205 to 11,370.

Q Now, the application in this case shows that you propose to perforate the Pennsylvanian formation at 8406 to 8748 feet, and your exhibit and testimony show you propose to perforate at 8570 to 8748. Which is correct.

A The correct perforation should be 8570 to 8748.

Q Now, Mr. Kidd, will the type of completion which is proposed here prevent the commingling of fluids in the two zones that will be opened in this well?

A Yes, sir, it will.

Q Would it adequately protect other producing zones, fresh water zones that may be encountered?

A Yes, sir, I believe it will.

Q Will it be possible for you to make any tests that may be necessary or required by the Commission in connection with the operation of this as a disposal well?

A Yes, sir, we will be able to do so.

Q Now, it wouldn't be possible for you to make a normal packer leakage test, would it?

A No, sir, it will not. We propose to run a bottom hole pressure gauge down to the two inch tubing to the Pennsylvanian producing formation, shut in the Pennsylvanian producing formation

and allow the pressure to stabilize with the salt water disposal zone also shut in. After pressure in the Pennsylvanian zone is stabilized, we propose to inject water down the casing-tubing annulus and if there is any communication, why there would be pressure change relected on our bottom hole pressure gauge, and a positive test on this, I believe, would assure that we had separation.

Q Well now, in normal production of the Pennsylvanian zone, would any leakage in that zone be reflected in your production?

A Yes, sir, it would. When we are injecting salt water, we will have approximately 800 pounds greater pressure around the Brown DS-3 Packer than the formation pressure of the Pennsylvanian formation, therefore, any leak would allow the water to communicate with the oil zone, and it would be immediately apparent to us in our production history of the well, or production tests of the well.

Q Now, in operation of this well as a salt water disposal well, would you anticipate any corrosion to occur?

A No, sir, we don't. We have not experienced any, have not suffered any corrosion in the area.

Q Would you take any precautions to assure that no corrosion would occur, or that you would learn of it promptly if it did occur?

A Yes, sir. We anticipate treating the salt water with

a corrosion inhibitor and running coupons to check on any possible corrosion. I should point out too, that all produced water that is disposed here has already been treated at the producing well for corrosion.

Q Now, what are your plans for production of the Pennsylvanian formation if it becomes necessary to put the well on artificial lift?

A Well, we anticipate that the use of Posey "A" No. 4 as a salt water disposal well can be considered temporary. Another Devonian well will be availabe in the East Caprock Pool in approximately three years, and we feel that this well will produce for a three year period.

Q The production from the Pennsylvanian, is that, in your opinion, an economic operation?

A Only as a salvage operation.

Q Is has been your experience that the productive formation is somewhat limited in this area?

A Yes, sir. A check of logs and drill stem tests in the area indicate that the Pennsylvanian formation that we propose to perforate will be productive only in this immediate area.

Q Unless you can make a dual completion of the type proposed, would it be profitable to produce the Pennsylvanian formation?

A No, sir, not to drill for it.

Q Is there any other well available at the present time for your disposal of salt water in this pool?

A No, sir, there isn't.

Q Were the exhibits which have been presented here prepared by you or under your direction and supervision, Mr. Kidd?

A Yes, sir, they were prepared by me.

MR. KELLAHIN: At this time we would like to offer in evidence Exhibits 1 through 9 inclusive.

MR. UTZ: Without objection they will be accepted.

MR. KELLAHIN: That's all the questions we have.

CROSS EXAMINATION

BY: MR. UTZ:

Q Mr. Kidd, why did you propose, or why do you propose to use this type of a dual completion rather than a two string dual?

A We'd have to use two and one-sixteenth inch tubing, and our pressure -- the pressure drop through that, the tubing -- To inject the volume that we propose to inject would be so great that we would exceed the design of any of our present disposal system. You would be getting up to fifteen, sixteen hundred pressure minimum.

Q The Brown DS-3 Packer is a retrievable packer?

A Yes, sir, it is.

Q I believe you stated that you intend to treat the salt water. It is salt water, is it not?

A Yes, sir.

Q With inhibitor to prevent corrosion?

A Yes, sir.

Q Has that been successful?

A Well, I would say it has. We have wells that are producing say two thousand barrels of salt water a day while we are injecting chemicals down the casing, which mix with the water. Actually, this will be a much better operation and we will be able to uniformly mix our chemical with the water on the surface and distribute it equally through it, and I believe it will provide complete protection, if there is any need for protection.

Q Have you used this inhibitor process very long?

A Yes, sir.

Q How many years?

A We have been treating our wells in the East Caprock since completion, or since they were first making water.

Q How many years would that be?

A 1951.

Q And you had no corrosion problem?

A No, sir. This is a close system, I would like to point out, and we found that you have very little corrosion difficulty with the closed system.

Q Would you explain again in little more detail how you intend to check for corrosion periodically?

A Well, we will have, of course, coupons in the line to assure that our corrosion - -

Q Will you explain what coupons are?

A They are just metal samples that we can attach into the disposal line and they periodically check those to see what rate they have corroded, and any severe corrosion would be immediately known and would change our chemical treatment until we could cut down the rate of oorrosion, and any leak anywhere into the Pennsylvaniar will, of course, be apparent in our production test or production of the well.

Q And you think that this formation -- Has this well been completed?

A No, sir.

Q Do you believe that this formation will take ultimately ten thousand barrels a day?

A Yes, sir, we do. We have some PI tests in the field which have an infinite PI.

MR. UTZ: Any other questions of the witness? If there are no other questions, the witness may be excused.

(Witness excused.)

MR. UTZ: Are there any other statements to be made in this case?

MR. KELLAHIN: That completes our presentation, Mr. Utz. In connection with the application, I would like to point out that what is involved here is really in no sense different than other cases which have heretofore been approved by the Commission, except perhaps on the proposition of dual completion in the Pennsylvanian zone. The Commission has on numerous occasions

approved the use of wells for salt water disposal. In some cases it was indicated that tubing could be used for injection of salt water, and apparently salt water is being injected into the casing.

I would like to call the Commission's attention to these cases. I have a long list here, but I will only mention a few. There is Case 764, 1142, 1121, 869, 310, 1109, and 1137. The record in those cases would show that injection is being done directly through the--I wouldn't say in all those cases, but as I recall in most of them, the injection of salt water is directly through the casing. The only other problem involved here is the dual completion of the Pennsylvanian zone, and as shown by Mr. Kidd's testimony, if anything went wrong with the injection program which did result in leakage at that point, it would become immediately apparent, and we would immediately take steps to correct it.

MR. UTZ: Is there anything further in this case? If not, the case will be taken under advisement.

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, J. A. Trujillo, 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 in Stenotype and reduced to typewritten transcript, and that same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal, this, the 9th, day of June, 1958, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Joseph G. Trujillo
NOTARY PUBLIC

My Commission Expires:

October 5, 1960

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 1452, heard by me on May 26, 1958.

Examiner
New Mexico Oil Conservation Commission

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE NO. 1452
Order No. R-1209

APPLICATION OF AMERADA PETROLEUM CORPORATION FOR THE DUAL COMPLETION OF A WELL TO PRODUCE OIL FROM THE PENNSYLVANIAN FORMATION ADJACENT TO THE EAST CAPROCK PENNSYLVANIAN POOL, LEA COUNTY, NEW MEXICO AND TO PERMIT THE INJECTION OF SALT WATER THROUGH THE CASING-TUBING ANNULUS INTO THE DEVONIAN FORMATION.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on May 28, 1958, at Santa Fe, New Mexico, before Elvis A. Utz, 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 20th day of June, 1958, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Elvis A. Utz, 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, Amerada Petroleum Corporation, is the owner and operator of the H. C. Posey "A" No. 4 Well, located in the NW/4 NE/4 of Section 14, Township 12 South, Range 32 East, NMPM, Lea County, New Mexico, and that said well is now depleted in the Devonian formation and that the applicant proposes to re-complete the well in the Pennsylvanian formation adjacent to the East Caprock Pennsylvanian Pool.

(3) That the applicant proposes to dually complete the said H. C. Posey "A" Well No. 4 in such a manner as to permit the disposal of salt water in the Devonian formation below the water-oil contact, with the salt water being injected down the casing-tubing annulus to the upper packer, through 2 1/2-inch tubing between the upper and the lower packer, thence down 5 1/2-inch casing below the lower packer to the disposal interval.

(4) That the applicant failed to prove that by use of the proposed mechanical installation the Pennsylvanian formation can be effectively isolated from the injected salt water.

(5) That the invasion of salt water into the Pennsylvanian formation would cause waste.

(6) That the application for dual completion of the said H. C. Posey "A" No. 4 Well should be denied.

(7) That the disposal of salt water into the Devonian formation below the water-oil contact will not cause waste provided the said H. C. Posey "A" No. 4 Well is not open to the Pennsylvanian formation.

(8) That the applicant should be permitted to utilize the said H. C. Posey "A" No. 4 Well as a salt water disposal well in the Devonian formation below the water-oil contact.

IT IS THEREFORE ORDERED:

1. That the application of Amerada Petroleum Corporation for permission to dually complete its H. C. Posey "A" No. 4 Well, located in the NW/4 NE/4 of Section 14, Township 12 South, Range 32 East, NMPM, Lea County, New Mexico, in such a manner as to permit the production of oil from the Pennsylvanian formation adjacent to the East Caprock-Pennsylvanian Pool through 2-inch tubing and to permit the injection of salt water below the water-oil contact in the Devonian formation through the casing-tubing annulus to the upper packer, through 2 1/2-inch tubing between the upper and the lower packer, thence down 5 1/2-inch casing below the lower packer to the disposal interval, be and the same is hereby denied.

2. That the applicant, Amerada Petroleum Corporation, be and the same is hereby granted permission to utilize the said H. C. Posey "A" Well No. 4 as a salt water disposal well, by injecting the salt water into the Devonian formation below the water-oil contact, provided said well is not open to the Pennsylvanian formation.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

EDWIN L. MECHEM, Chairman

MURRAY E. MORGAN, Member

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

ir/

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

June 24, 1958

COPY

Mr. Jason Kellahin
Kellahin & Fox
P.O. Box 1713
Santa Fe, New Mexico

Dear Mr. Kellahin:

On behalf of your client, Amerada Petroleum Corporation, we enclose two copies of Order R-1209 issued June 20, 1958, by the Oil Conservation Commission in Case 1452, which was heard on May 28th at Santa Fe before an examiner.

Very truly yours,

A. L. Porter, Jr.
Secretary - Director

bp
Encls.

AMERADA PETROLEUM CORPORATION
P. O. BOX 2040
TULSA 2, OKLAHOMA

Drawer D
Monument, New Mexico
April 22, 1958

New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Re: Application to Dually Complete Amerada H.C. Posey "A" #4, East Caprock Devonian Pool, Lea County, New Mexico in such a manner to permit disposal of salt water in the Devonian Formation and oil production from the Pennsylvanian Formation.

Gentlemen:

By this letter of application Amerada Petroleum Corporation wishes to state the following:

A. That the Amerada Petroleum Corporation H.C. Posey "A" #4, located in the NW/4 of the NE/4 of Section 14, Township 12 S, Range 32 E, was completed as an oil well at a total depth of 11,255' in the Devonian Formation on June 19, 1953. The well was deepened an additional 15' to a total depth of 11,270' on March 18, 1958. The attached plat shows the location of this well along with the location of all offset wells.

B. That oil production from the Amerada H.C. Posey "A" #4 has declined such that further operation is considered economically infeasible.

C. That the Pennsylvanian formation in the Amerada H.C. Posey "A" #4 was proven productive by drill stem tests through the interval 8406' to 8748' while drilling.

D. That the Dewey Lake Formation, which is now being used for disposal of the East Caprock-Devonian Pool produced water, has proven inadequate for the disposal of the current volume of produced water.

E. That no other formation above the Devonian is suitable for disposal of salt water.

F. That Amerada Petroleum Corporation wishes to dually complete the H.C. Posey "A" #4, a depleted Devonian oil well, in such a manner to permit production of oil from the Pennsylvanian Formation and the disposal of salt water into the Devonian Formation. The proposed dual completion will be done in the following manner:

1. Deepen well an additional 100 feet from 11,270' to 11,370'.

2. Set Baker Model "D" Production Packer at approximately 8800'.

3. Selectively perforate Pennsylvanian interval 8406' to 8748', acidize, and test.

4. Run a Brown DS-3 packer on 2" tubing with a 2-1/2" connecting string to lower packer and set at approximately 8300'.

5. Salt water will be injected as follows: down casing-tubing annulus to upper packer, through 2-1/2" tubing between upper and lower packer, thence down 5-1/2" casing below lower packer to disposal interval. Oil will be produced through 2" tubing string to surface. Attached schematic diagram shows equipment installation and production disposal methods.

G. That the manner and method of the proposed dual completion is both mechanically feasible and practical.

Therefore, Amerada Petroleum Corporation requests that the oil conservation Commission set a certain day on which this application may be heard and after said hearing grant permission to dually complete the subject well as an oil-salt water disposal well in the manner proposed in this application.

Respectfully submitted,

AMERADA PETROLEUM CORPORATION

D. C. Capps
District Superintendent

DCC/HCK/vh

cc: Shell Oil Company
Box 845, Roswell, New Mexico

Skelly Oil Company
Box 38, Hobbs, New Mexico

Texas Pacific Coal & Oil Co.
Box 1688, Hobbs, New Mexico

The Texas Company
Box 1270, Midland, Texas

Union Oil Company
1801 Gila Drive, Hobbs, N.M.
c/o A.T. Mannon

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 6-6-55

CASE 1452 Hearing Date 5-25-55

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

1. Approve Dual as requested.
2. Upper completion is East Capwock Penn.
   Lower " " " Devonian
   for salt H2O injection from East Capwock Pool.
3. Operator shall make deligent effort to prevent corrosion ~~of the casing and tubing~~ in the wellbore.
4. Finding should state to the effect that ~~the~~ due to the unusual nature of the completion it is approved only because of the marginal nature of Penn. formation in this area ~~so that~~ no precedent will be set by this approval.
5. Water disposal shall be below the H2O-oil contact of the E. Capwock ~~oil~~ - Devonian oil Pool.
6. monthly reports shall be made in accordance Rules 1104 & 1119.
7. Operator shall treat injection fluid so as to prevent wellbore corrosion and shall report the results of such treatment each 3 months ~~so~~ long as the well is dually completed.

Staff Member

Thos A. Dale

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 6-19-58

CASE 1452 Hearing Date 5-28-58

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

Deny Dual Completion and allow the Posey #4 to be used as a SWD well. H_2O to be injected below H_2O-oil contact in the E. Caprock Devonian Pool.

Staff Member

CLASS OF SERVICE
This is a fast message unless its deferred character is indicated by the proper symbol.

WESTERN UNION
TELEGRAM

W. P. MARSHALL, PRESIDENT

1201

SYMBOLS
DL = Day Letter
NL = Night Letter
LT = International Letter Telegram

The filing time shown in the date line on domestic telegrams is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination

MAIN OFFICE OCC

1958 JUN 2 PM 3 05

LA195 DC269

(55)

D MDA188 PD=MIDLAND TEX 2 352PMC=

ELVIS UTZ, NEW MEXICO OIL CONSERVATION COMM=
MABREY BLDG SANTA FE NMEX=

CONFIRMING OUR TELEPHONE CONVERSATION TODAY ON AMERADA=
POSEY A=4, THE ESTIMATED MAXIMUM BHP IN THE PENNSYLVANIAN
OIL ZONE IS 3050 PSI THE ESTIMATED MINIMUM HYDROSTATIC
PRESSURE OPPOSITE OIL PRODUCING ZONE IS 3110 PSI=
AMERADA PETROLEUM CORP BY O C MCBRYDE JR=

=A=4 3050 3110=

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

GOVERNOR
EDWIN L. MECHEM
CHAIRMAN

New Mexico
OIL CONSERVATION COMMISSION

LAND COMMISSIONER, MURRAY E. MORGAN
MEMBER

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

P. O. BOX 2045
HOBBS, NEW MEXICO

May 19, 1958

Dix Case 1452

Mr. Elvis Utz
Oil Conservation Commission
Box 871
Santa Fe, New Mexico

Re: Case #1452, H. C.
Posey "A" #4-A,
NE/4 NE/4, Sec. 14,
T12S, R32E.

Dear Elvis:

Amerada's application for an oil, S.W.D., Dual completion is on the docket for May 28, 1958.

As I am maintaining a file on all oil-oil dual completions, and S.W.D. wells, I would appreciate a set of the exhibits on the above case, for this file. They plan to produce oil from the Pennsylvanian and inject salt water into the Devonian.

I am primarily interested in the downhole mechanics of this installation.

Any help shall be greatly appreciated.

Yours very truly,

OIL CONSERVATION COMMISSION

Eric F. Engbrecht
Oil & Gas Inspector

EFE/eb

TV

GRARIDGE CORPORATION

BOX 752

BRECKENRIDGE, TEXAS

May 8, 1958

Service Pipe Line Company
1628 19th Street
Lubbock, Texas

ATTENTION: Mr. C. E. Wilson

Dear Mr. Wilson:

Attached is schematic proposal for LACT unit for use in the North Caprock Queen Unit of Lea and Chaves County, New Mexico. We believe this installation will conform to the specifications as discussed in your office on April 18. Features that are perhaps not clearly shown on the drawing are as follows:

1. Clean oil from treater will enter 600 barrel cone bottom settling tank through deck connection and enter tank through 4" perforated downcomer to center of cone bottom. Oil in this tank will be monitored continuously by an Instruments Incorporated Model 1728-CIE explosion proof monitor. Intake to monitor is 6' above edge of cone and discharge is 2' above edge of cone. Oil overflow from settling tank to 500 barrel surge tank will be from the 17' level on the settling tank to deck inlet and through 4" perforated downcomer to bottom tank. Installed in this line will be a 4" fail closed diaphragm valve activated by a control circuit in monitor and, or, by a high fluid level control in surge tank. Tied into the same circuit to be activated when monitor gives indication of bad oil existing in settling tank will be a 50 barrel an hour circulating pump drawing suction from center of cone bottom of settling tank. Bottom of settling tank will be pumped off periodically as needed by time clock operation of the 50 barrel an hour pump. Should oil fail to go to pipe line for any reason settling tank will fill to 19' level and bypass to 3 additional 500' barrel oil storage tanks.

Oil will go to your pipe line pump and sampler from regular pipe line connection on 500 barrel surge tank. Oil will then go to meter skid unit. It will go through 3" gas eliminator, 3" strainer, two 2" A.O. Smith Model S-12 meters, temperature compensated with ticket printer, complete with valve arrangement so that either one or both meters can be used or bypassed completely. Oil will then go through your back pressure valve and to the 10 barrel plastic

coated atmospheric meter prover. It is assumed that when the meter prover is used, the oil will gravity on out.

2. The meters will have a maximum capacity of 171 barrels per hour or 4104 barrels per day. We understand that these meters for best results should operate at a constant rate of about 140 to 150 barrels per hour so your pipe line pump will need to be sized accordingly. This should handle our expected maximum capacity of 2500 BPD in about 16 hours. If you foresee necessity for shutting your pump in for long periods each day, we might need to increase meter capacity, pipe line pump capacity, and surge tank capacity.

3. Should meters fail, you will note that system is arranged so that normal pipe line runs from all tanks can be made.

4. On skid mounted unit a 3" nipple 3' long with victaulic couplings will be put in line which can be removed for you to install your back pressure valve, or, if you prefer you can specify the type back pressure valve you want and we will have it installed at factory and billed to you.

5. Attached is quotation from National Tank Company which gives most of specifications.

Should you need additional information about any of the equipment or method of operation, please feel free to call on us or Mr. W. R. Willis with the National Tank Co., Box 1316, Wichita Falls, Texas.

The only articles that might delay installation are the meters which have a six-week delivery. Please advise us as soon as possible if the equipment meets your approval or of any necessary changes so that we may assemble all information for an Oil Conservation Commission hearing the latter part of this month.

Very truly yours,

GRARIDGE CORPORATION

T. A. Ford

T. A. Ford
Manager of Production

TAF:gl
Attach
cc: Service Pipe Line Co.
Box 671
Lovington, New Mexico
Attn: Mr. Dodson

P.S. Hearing is schedule for May 28, 1958

FORM 249 (8-53)

SERVICE PIPE LINE COMPANY

Lovington, New Mexico
May 17, 1958

Graridge Corporation
Box 752
Breckenridge, Texas

Attn: Mr. T. A. Ford

Dear Mr. Ford:

We have received your schematic proposal for the LACT unit to be used on the North Caprock Queen Unit, Lea County, New Mexico. We have given your proposal careful consideration and find that the arrangement of equipment and method of operation is satisfactory to Service Pipe Line Company. It is assumed that a draw-off will be provided on the 500 bbl. surge tank (primary pipe line tank) to allow disposal of any bottom build up that might occur.

We appreciate, and accept your offer to have a back pressure valve factory installed. We want to use a 3" cast steel, 300 lb. WP, Charles Wheatley Stream Flo check valve with external counter balance arm and weights to hold 10 psi back pressure (weights adjustable). The type connection can be either victaulic or ASA 150 RF flanges, which ever is consistent with your fabrication. Billing for this valve should be mailed to Service Pipe Line Company, Box 1088, Lovington, New Mexico.

We intend to install a Roper gear pump that will conform to the recommended meter through-put.

Sincerely yours,

J. C. Dotson
Lovington District Superintendent

cc: C. E. Wilson

ROUTE TO:	DATE CHECKED
CLARK	
REAUGH	X
FORD	
ELLIOTT	
EVANOFF	
VICK	
WALKER	
FERREL	
	X

R 31 E

R 32 E

L E A

C H A V E S

25

30

29

31

32

38

T 12 S

T 13 S

6

5

7

8

Proposed Flow Line and Tank Battery Arrangement

Flow Line

Produced Water

Tank Battery

Free Water Knockout

Water Inject. Plant

Water Inject. Well

NORTH CAPROCK QUEEN UNIT

CHAVES & LEA COUNTIES
NEW MEXICO
Scale 1" = 2,000'

R 31 E

R 32 E

T 12 S

T 13 S

L E A

C H A V E S

25

30

29

31

32

36

6

5

7

8

Not in Unit as of 5/28/56

Ambassador

State V

Not in Unit As of 5/26/58

Texas Company

Flow Line and Tank Battery Arrangement As Of 3/26/58

- Tank batteries
- Water Inject. Plant
- Proposed Water Injection Plant
- Flow Lines

NORTH CAPROCK QUEEN UNIT

CHAVES & LEA COUNTIES NEW MEXICO

Scale 1" = 2,000'

R 32 E

T 12 S

Texas | Mid. Cont. | Texas | T.P.C. & O. | Texas | Texas

Mid. Cont. | Dancinger Texas | Los Nietos | Skelly | State BA

3 | Texas | APC | TP.C. & O. | 2 | State Gross | Mexico T | Shell | JL Hamon

State | State E | EGA

APC | APC | APC | APC

State of NM "BX" NCT-1 | State ECD | State EC'E | State EC'H

Gulf | Texas | Texas | APC | APC | APC | APC

H. Schenck etal | B.L. Evans etal

Livermore

10 | APC | State "BH" | State EC'C | B.L. Evans etal | H. Schenck etal

Los Nietos | Texas | Texas | 12

State EC'G | State EC'F | "BB" | L.C. Cochran

Phillips | Texas | Texas | APC | Texas | APC | Texas

H.C. Posey, etal A

APC

"BA" | State EC'A | U.S.A. | L.C. Cochrain

APC | 15 | Magnolia | Hall & Stewart | 14 | A.A. Kimnitz | 13 | Magnolia

Brown & Wheeler | APC

E.N. Speed | Will G. Speed | E.E. Cheatwood | Caprock

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Amerada EXHIBIT NO. 1
Case 1452

EAST CAPROCK POOL

LEA COUNTY, N. MEX.

SCALE 1 INCH = 2000 FEET
CONTOUR INTERVAL

Exhibit No. 1

Production Data - Posey "A" #4
East Caprock Devonian Pool

1953

MONTH	OIL BBLS	WATER BBLS
June	3,072	
July	7,936	
August	7,936	507
Sept.	7,680	490
Oct.	7,750	861
Nov.	6,810	4,000
Dec.	7,037	4,313
Total	48,221	10,171
Cumulative	48,221	10,171

1954

MONTH	OIL BBLS	WATER BBLS
Jan.	7,037	4,313
Feb.	6,356	1,491
Mar.	6,975	7,866
April	6,810	7,699
May	7,037	7,935
June	6,810	8,323
July	7,037	4,691
August	6,882	4,588
Sept.	6,480	4,320
Oct.	6,882	16,058
Nov.	6,827	15,196
Dec.	7,128	15,866
Total	82,261	98,326
Cumulative	130,482	108,497

1955

MONTH	OIL BBLS	WATER BBLS
Jan.	7,372	17,201
Feb.	6,526	15,227
March	7,449	17,381
April	6,809	13,824
May	6,897	14,003
June	4,210	8,548
July	3,100	6,294
August	1,645	3,049
Sept.	1,588	3,083
Oct.	2,788	5,412
Nov.	2,700	5,241
Dec.	2,782	11,903
Total	53,876	121,166
Cumulative	184,358	229,663

1956

MONTH	OIL BBLS	WATER BBLS
Jan.	2,794	10,511
Feb.	2,608	9,247
March	2,796	9,367
April	2,721	4,837
May	2,747	4,677
June	2,692	8,076
July	2,751	8,253
Aug.	1,855	1,518
Sept.	1,825	1,493
Oct.	1,774	3,296
Nov.	1,830	3,399
Dec.	1,821	11,186
Total	28,218	75,862
Cumulative	212,576	305,525

1957

MONTH	OIL BBLS	WATER BBLS
Jan.	1,903	11,690
Feb.	1,619	9,945
March	1,908	5,718
April	1,802	6,388
May	1,856	6,580
June	1,788	14,467
July	1,831	14,814
August	1,060	3,549
Sept.	979	3,278
Oct.	989	15,494
Nov.	969	15,181
Dec.	1,084	35,049
Total	17,778	142,153
Cumulative	230,354	447,678

1958

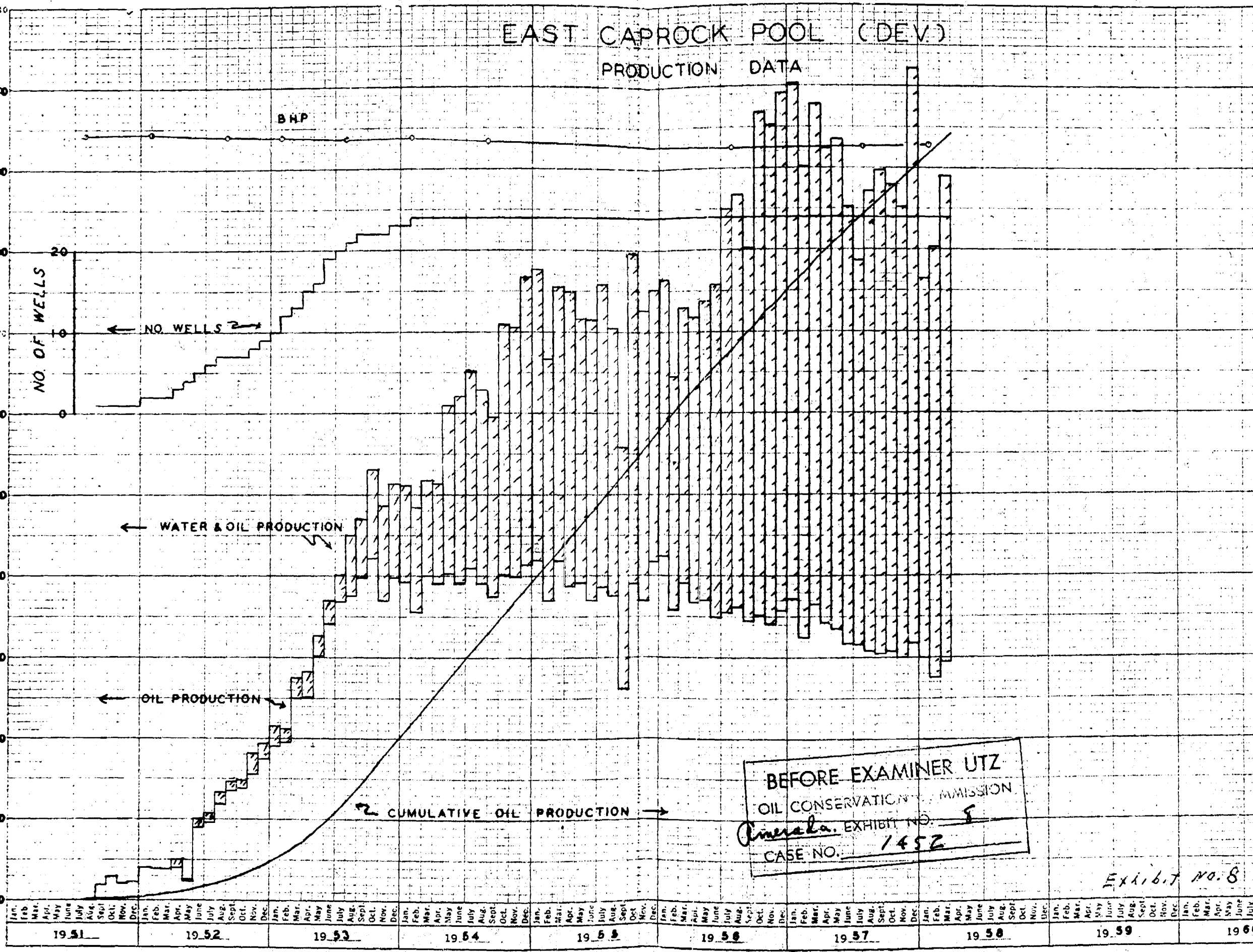
MONTH	OIL BBLS	WATER BBLS
Jan.	990	34,100
Feb.	168	11,032
March	186	18,414
April	150	14,850
Total	1,494	78,396
Cumulative	231,848	526,074

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Amerada EXHIBIT NO. 7
CASE NO. 1952

EXHIBIT NO. 7

EAST CAPROCK POOL (DEV.)

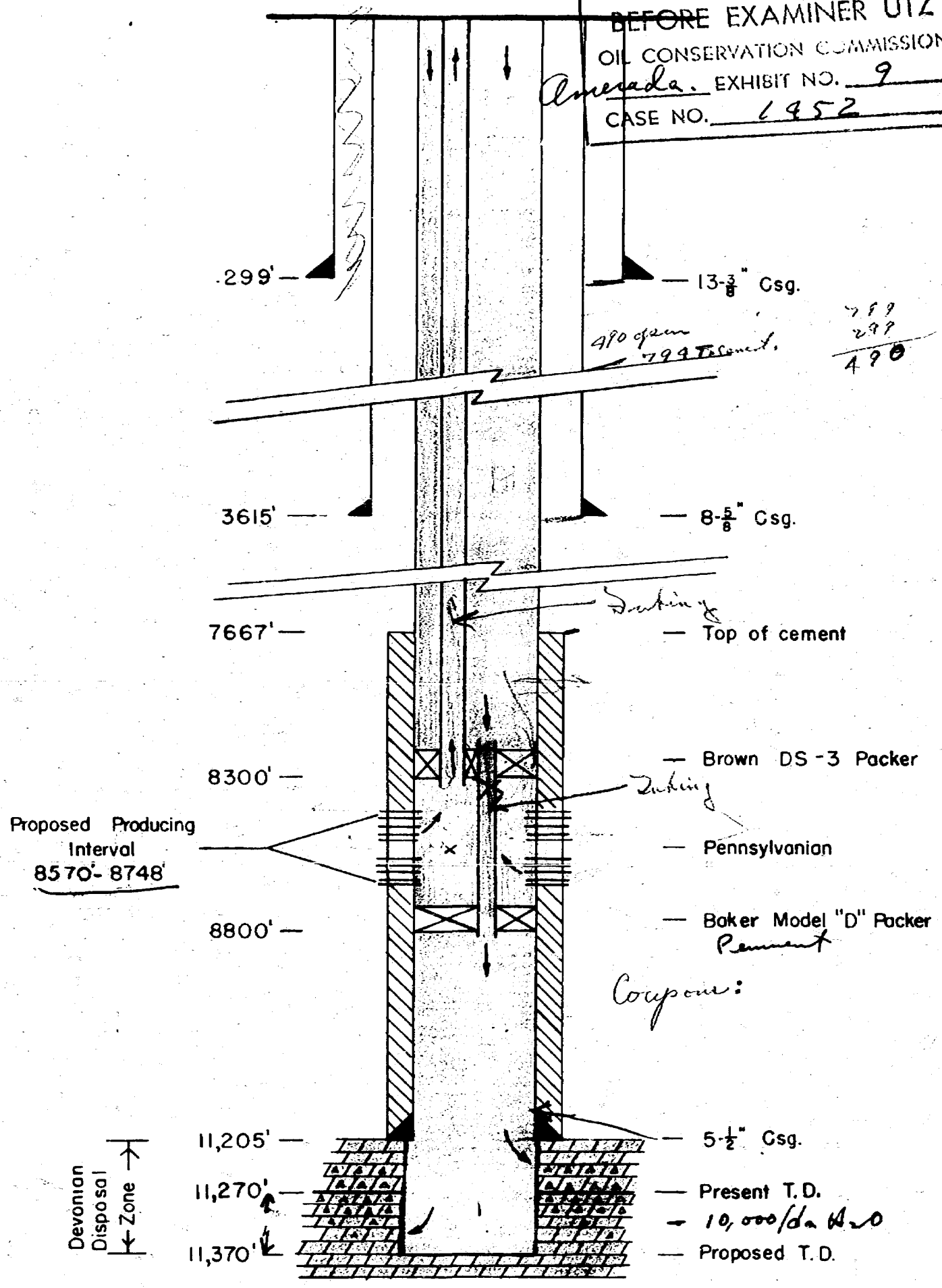
PRODUCTION DATA



BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Amerada EXHIBIT NO. 8
CASE NO. 1452

Exhibit No. 8

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Amerada. EXHIBIT NO. 9
CASE NO. 1952



PROPOSED DUAL COMPLETION
OIL & SALT WATER DISPOSAL

AMERADA PETROLEUM CORPORATION

H. C. Posey "A" No. 4

Exhibit No. 9

STATUS OFFSET WELLS
MARCH 1, 1958

	Feb. Prod.	Oil B/D	GOR	Water B/D
TUBB GAS (OIL)				
Jal Oil Company (Olsen)				
Sarkey No. 1 E 25-21-37	441	16	2525	
No. 2 D 25-21-37	382	14	891	
TERRY BLINEBRY				
Gulf Oil Corperation				
Stephens, N. No. 1 D 24-21-37	811	29	7493	2
No. 2 E 24-21-37	811	29	10412	2
No. 3 C 24-21-37	686	24	1712	3
BLINEBRY				
Jal Oil Company (Olsen)	No report for February, January used.			
Sarkey No. 1 E 25-21-37	446	14	6500	-
WANTZ				
Sinclair Oil & Gas Company				
R. Barton No. 1 G 23-21-37	695	25	3355	2
No. 2 B 23-21-37	669	24	872	2
No. 3 H 23-21-37	1775	63	1592	-
Sarkeys No. 3 I 23-21-37	113	4	6614	3
DRINKARD				
Sinclair Oil & Gas Company				
Sarkeys "A" No. 2 O 23-21-37	144	5	6700	-
Greenbrier Oil				
Sarkeys No. 1 B 26-21-37	177	6	16004	-

JLS:ib
5-21-58