

CASE 4346: Application of YATES
DRLG. FOR A PRESSURE MAINTENANCE
EXPANSION & PROMULGATION OF RULES.

Case Number

2346

Application
Transcripts.

Small Exhibits

ETC.

dearnley-meier

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS
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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
April 29, 1970

EXAMINER HEARING

IN THE MATTER OF:

Application of Yates Drilling Company)
for a pressure maintenance expansion) Case No. 4346
and promulgation of rules therefor,)
Eddy County, New Mexico.)

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: Case 4346.

MR. HATCH: Case 4346. Application of Yates Drilling Company for a pressure maintenance expansion and promulgation of rules therefor, Lddy County, New Mexico.

MR. LOSER: Mr. Examiner, would the reporter show on the record the same appearance and the same witness who has previously been sworn?

MR. UTZ: Let the record show.

(Whereupon, Applicant's Exhibits 1 through 5 were marked for identification.)

EDDIE MAHFOOD

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

DIRECT EXAMINATION

BY MR. LOSER:

Q Mr. Mahfood, will you explain this application in Case 4346, please, sir?

A Applicant wishes to extend this pressure maintenance project area for the purpose of developing the entire Second Queen sand area which is considered productive commercially on the back pressure maintenance.

Q You wish to also provide for subsequent administrative approval for additional injection wells?

A Yes, sir.

Q You wish to provide that the project area which is composed of separate leases be governed by the allowable provisions of 701, Rule 701?

A Yes, sir, that should be satisfactory.

Q You also wish administrative approval for additional secondary recovery methods?

A Yes, sir.

Q Now, the Oil Commission on October the 14th of 1969 entered its Order R-3852 which authorized the institution of this project.

Would you explain briefly what that Order authorized Yates Drilling Company to do?

A That Order authorized the injection of one well, the Anderson No. 2.

Q And provided that the allowable would be governed by Rule 701?

A I believe that is correct, sir. I don't have the Rule before me.

Q Please refer to what has been marked as Exhibit 1, being the plat of this proposed project, and explain what is shown on this map.

A The proposed project area is designated with this

red line. It will encompass the southeast quarter of Section 11 and most of Section 12.

Q The present project area is only the southeast quarter of Section 11?

A The southeast quarter of Section 11 is presently the only authorized project area, yes.

Q And the well already authorized for injection is the Anderson No. 2?

A Correct.

Q And the application seeks authority to inject into Wells 3 and 4 in that same --

A That is correct.

Q Now, does this map show all of the wells within the project area?

A This map shows all the wells within the project area. We would like to make one correction. This "N" 1 is now known as Anderson No. 6.

Q So, that the wells in the southeast quarter of Section 11 are known as the 1, 2, 3, 4 and 6?

A Correct. The No. 5 is a proposed location we will probably be drilling in the coming month. It's in Section 12.

Q Now, what horizons within this project area produce

oil or gas?

A In this project area, the Second Queen is productive of oil. The Seven Rivers on the Galvin lease, of course, is productive of oil, also. The upper Queen was not commercially capable of giving up oil, but we might be exploring it some additionally.

Q Now, your Well No. 5 you show over in Section 12 in the southeast quarter of the northwest quarter, that's a proposed location?

A That is correct.

Q Now, I also note over under Pecos River Deep in the southeast quarter of the northeast quarter of Section 12 a well known as -- shows to be No. 2. Is that a producer?

A No, sir. That was a deep test, but it had shows in this Second Queen and we propose to go back in there and make a producer out of it.

Q How deep was it drilled?

A A total depth of 1947 feet.

Q How deep?

A 1947.

Q How deep was the well drilled?

A That's the well.

Q Just to 1900 feet?

A Yes.

Q Okay.

A It's deep. It's a misnomer really.

Q Now, I notice different colors on my map. Would you explain what these colors denote, crosshatch?

A Yes, sir. These crosshatch denotes different ownership.

Q Different leases?

A Well, yes, they are different leases with different ownership and since we are proposing to drill ten-acre spacing, we feel it is not necessary to unitize this area, that there will be sufficient offsetting injection wells and producing wells to protect correlative rights.

Q Now, do you propose to ask for any authority to transfer your allowables between --

A Between leases, no, sir. but within the lease, yes.

Q You feel like that will take care of all the production problems that you have?

A Yes, sir. This sand is awfully tight and we will never make the total allowable that could be obtained.

Q Under Rule 701?

A Under Rule 701.

Q Please refer to what has been marked as Exhibit 2,

being the isopach on the Second Queen together with two attached, supporting logs, and explain first what is shown on this isopach.

A This isopach shows the trend and thickness of the Second Queen and it's supported by these two logs of the Pecos River Deep No. 2 and the Riggs No. 3.

Q And, also, I suppose it's prepared based upon the control that you have in the southeast quarter of Section 11?

A That is correct.

Q Have you picked out the Queen on these two supporting logs, the Riggs No. 3 and the Pecos River Deep Unit No. 2?

A Yes, sir, I have marked these as second sand. The interval on the Riggs No. 3 would be 587 to 627. The pay would be 598 to 610.

Q Now, that was the Riggs No. 3?

A Correct. And the Pecos River Deep No. 2, the Second Queen would be 648 to approximately 676 and the pay interval would be 605 to 614.

Q Do you feel like that the Second Queen is reasonably likely to be present throughout this project area?

A Yes, I think it will be present throughout this project area, as outlined in Exhibit 2A.

Q This isopach?

A The isopach.

Q Please refer to what has been marked Exhibit 3, being the diagrammatic sketches of the Anderson 3 and 4 Wells, and explain what you consider important with respect to each sketch.

A We have a conductive pipe cemented to the surface.

Q Now, you are referring to the Anderson 3?

A Anderson 3. This conductive pipe is set at 20 feet. The hole was drilled with a ten a three-quarter inch bit to 220 feet; 8 and 5/8 inch casing run and the hole deepened with an eight inch bit to approximately 528 feet; five and a half inch casing was set at 514 feet with 100 sacks of cement, which brought the top of the cement to approximately 87 feet from the surface.

We went back in there and fill it to the surface with ready-mix cement. The hole was deepened to total depth of 536 feet and the pay section, Second Queen sand, is at 519 to 547; the pay is at 531 to 539 and 544 to 554.

Q When was this well drilled, Mr. Mahfood; approximately?

A This well was drilled in October of '69.

Q Has it been utilized as a producer?

A No, sir. It was tested at Midland Oil and Water, but it has never been produced officially.

Q Please refer to the sketch on the Anderson No. 4 and point out what you consider pertinent on that sketch.

A Again, we have 20 feet of conductive pipe cemented to the surface. Again, we drilled the ten inch hole to 218 feet, ran 8 and 5/8 inch casing which was pulled later and we drilled an eight inch hole to total depth of 571, ran five and a half inch casing to 567, cemented with 100 sacks of cement which brought the top of the cement to about 100 feet from the surface.

We went back in there and fill it to the surface with ready-mix cement.

Q You perforated the Second Queen?

A The Second Queen was perforated with twenty jets and tested. It gave up oil.

Q Has this been utilized as a producer?

A No, sir, not officially. It was tested; that's all, just tested.

Q When was it drilled?

A This well was drilled in March of '70. I'm sorry, it was drilled earlier, but completed in March of '70.

Q Now, you propose to inject your water down tubing?

A We propose to inject it down tubing with packers set at 480 feet in the No. 3 Well and approximately 480 feet

in the No. 4 Well.

Q What kind of tubing?

A This will be two inch tubing with cement lining.

Q Your Exhibit shows 2 and 3/8.

A 2 and 3/8 is usually called 2 inch.

Q All right. Please refer to what has been marked as Exhibit 4, being your strip logs of these two wells, and point out the injection zones.

A In Exhibit 4A, which is the strip log of Anderson No. 3, we will be injecting to open hole section, 516 to TD of 560. The pay section there would be 532 to 553.

Exhibit 4B is a strip log of the Anderson No. 4. We show perforations at 527 to 537 which is the main pay.

Q Mr. Mahfood, are there any oil zones up the hole in this area?

A The First Queen sand is oil saturated but it is not capable of giving up free oil.

Q Do you feel like this proposed completion for purposes of pressure maintenance will protect any oil or water sands that are in the area from the injected water, produced water?

A Yes, sir. Everything above the Second Queen is cemented, of course, and we are holding our pressure down

to 360 pounds which is considered well below fract pressure.

Q Now, what is the source of the water that you propose to inject in these wells?

A The source of this water will be water from the Galvin lease, from the Seven Rivers formation in the Galvin No. 7 Well.

Q On which you submitted an analysis in the prior case --

A This is correct.

Q -- showing that it had approximately 2500 parts per million of solids --

A That's correct.

Q -- and very little chlorides?

A That is correct.

Q Is this water going to be injected under pressure?

A Yes. This water will be injected under pressure on the McMillan pressure maintenance at 360 pounds pressure.

Q At what rate?

A It is estimated these wells will take twenty barrels per day.

MR. UTZ: Each?

THE WITNESS: Each.

Q (By Mr. Losee) Please refer to what has been

marked as Exhibit 5 entitled, "Production by Months, West McMillan Pool."

A This Exhibit shows the Londo No. 1 which was completed in September of '61. This Londo No. 1 is now known as Anderson No. 6.

That well gave up a total of 733 barrels of oil before it was abandoned because of being not commercial. This is characteristic of this Second Queen sand and for this reason we came to the hearing last year, last October, for pressure maintenance project.

Q Do you intend that this project, these additional injection wells, will put this well back on production?

A Yes, sir. Anderson No. 1 will verify this.

Q All right. Point out on the Anderson No. 1 the cumulative production and what portion of these production history figures show some kind of response to pressure maintenance?

A That's a toughie. You will observe that this production from Anderson 1 has been falling off. In September we were down to 28 barrels; in October, 60 barrels.

We commenced injection in November and we increased production to 80 barrels. There was a definite increase, although the figures on this report do not show it very

well. We increased our production from 2 and a half barrels a day up to 4 barrels a day for a very short period of time and we have been shut down for several reasons; the big freeze we had in December, for one thing, did a lot of damage to our facilities.

Q Do you feel, then, that there has been a response from the injection into your Anderson No. 2 Well back when injection was first commenced last fall?

A I am positive there is a response.

Q Do you feel like that the expansion of this pressure maintenance project will permit you to recover oil that would not otherwise be recovered?

A Yes, sir, I'm very positive of this. You will note the Anderson No. 1 had an cumulative in January of 1188. Well, we are well over 1200 barrels to date, which is much more than the Anderson No. 6 gave up before it was abandoned.

Q And you feel like the injection has permitted this well to increase its production?

A Yes, sir, I'm positive of this. Also, Anderson No. 6 was put in production about the middle of March and it is capable of making oil, two barrels a day.

Q Now, you are asking the Commission for authority to include in this pressure maintenance project all of the lands

shown on your Exhibit 1 outlined in red?

A Repeat that, please?

Q Are you asking the Commission for authority to include in the Anderson pressure maintenance project all of the area outlined in red?

A Yes, sir.

Q With authority to drill additional producing and injection wells in the project area?

A Yes, sir.

Q Upon administrative approval?

A Yes, sir.

Q And for allowable under the authority of 701?

A Correct.

Q Without the transfer of any allowable between leases?

A That is correct.

Q Now, Mr. Mahfood, you also in your letter to the Commission talked about the administrative approval for additional methods of secondary recovery.

Would you explain what additional methods you have in mind at this time?

A We have made no concrete plans yet of any additional methods, but it is conceivable that a steam flood would work

fairly well here. For instance, by elevating the temperature of the formation to approximately 200 degrees, we can reduce the viscosity of this oil from 7 centipoise to about 1.3 centipoise. This should improve the recovery considerably.

Q Do you have any other possibilities, other than a steam flood?

A Yes, sir, there are other possibilities. There's a possibility of using amissible slug here. We have not investigated the economics of either the steam flood or the amissible flood, but if we find it necessary, we would like to get administrative approval at some later date to conduct these floods.

At that time, we will be pleased to furnish supporting evidence that such a project would be feasible.

Q Were Exhibits 1 through 5 prepared by you or under your direction?

A Yes, sir.

MR. LOSER: We move the introduction of Exhibits 1 through 5.

MR. UTZ: Without objection, Exhibits 1 through 5 will be entered into the record of this case.

(Whereupon, Applicant's Exhibits 1 through 5 were offered and admitted in evidence.)

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Mahfood, you show some different types of leases here and some different type of coloring that you don't have lease numbers on.

Now, are those different leases?

A There should be lease numbers on them.

Q Well, for instance, the north half of the northeast quarter of 12 and the southwest of the northeast quarter of 12 is colored with a diagonal.

A In orange, yes, sir. That lease number is NMO 4219.

MR. LOSEE: Didn't you describe the north half northeast and southwest?

Q (By Mr. Utz) Yes, the red diagonal.

A I beg your pardon. We didn't have that lease number in the office.

MR. LOSEE: I think it's a federal lease.

THE WITNESS: It is a federal lease.

Q (By Mr. Utz) Well, it is a different lease, then, wherever you have changed directionally your crosshatching

or color, well, it's a different lease?

A Yes, sir. I'm sorry.

Q And is this Exhibit marked so that each lease can be identified by name? I don't think we are particularly desirous of a number, but we would want it identified by name.

A That red diagonal lease is called the Bowers Lease and I have it in parenthesis.

MR. LOSEE: Now, your orange?

THE WITNESS: The orange lease is the Anderson Lease. The green lease is the Galvin Lease and the blue lease is the Riggs Lease.

MR. HATCH: That little arrow connecting that blue and the green there at the bottom, then, what is that?

THE WITNESS: It refers to ownership, SPH. I believe he has re-assigned this to his drilling company which is Yates Drilling Company.

Q (By Mr. Utz) Now, let's see. The orange cross-hatch is the Anderson Lease?

A That is correct.

Q In both cases?

A Yes, sir, it's the same lease.

Q Now, the southeast quarter of Section 11 is now called a pressure maintenance project under R-3852?

A Yes, sir, that is correct.

(Whereupon, a discussion off the record was held.)

THE WITNESS: I would like to make a correction.

I said that the Hondo 1 or Anderson No. 6 was put in production in March; I believe it was April 15 rather than March 15.

Q (By Mr. Utz) You said that the tubing was going to be cement lined on your No. 4. How about the No. 3?

A Yes, sir, it will be on the No. 3, also.

Q How about the annulus; did you cover that?

A There will be inhibited fresh water in the annulus in both wells.

Q Gauge at the surface?

A Yes, sir.

MR. UTZ: Are there other questions?

MR. HATCH: I am confused on the number of leases again. I am beating this to death, I know. There is an Anderson lease --

MR. LOSEL: Which is the orange crosshatch, yes.

MR. HATCH: You have the Riggs lease --

MR. LOSEE: Which is the --

MR. HATCH: Two 80's, isn't it?

MR. LOSEE: Riggs? Yes, that's the blue.

THE WITNESS: Two 80's; also a 40 in the northeast section of 12.

MR. HATCH: That Pecos River Deep --

MR. LOSEL: Is the Riggs, also.

THE WITNESS: Is the Riggs.

MR. HATCH: All right. Fine.

MR. UTZ: Other questions? The case will be taken under advisement.

I N D E X

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STATE OF NEW MEXICO)
) ss
 COUNTY OF BERNALILLO)

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

Glenda Burks
 NOTARY PUBLIC

My Commission Expires:

March 12, 1973

I do hereby certify that the foregoing is
 a correct record of the proceedings of
 the New Mexico Oil Conservation Commission
 heard by me on April 29, 1970 at 4346
El Paso
 New Mexico Oil Conservation Commission



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

P. O. BOX 2088 - SANTA FE

07NO1

**GOVERNOR
DAVID F. CARGO
CHAIRMAN**

**LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER**

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

May 20, 1970

Mr. A. J. Losee
Attorney at Law
P. O. Drawer 239
Artesia, New Mexico 88210

Re: Case No. 4346
Order No. R-3968
Applicant:
YATES DRILLING COMPANY

Dear Sir:

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

Very truly yours,

G. L. Porter, Jr.

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC x

Artesia OCC x

Aztec OCC

Other State Engineer Office

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. 4346
Order No. R-3968

APPLICATION OF YATES DRILLING COMPANY
FOR A PRESSURE MAINTENANCE EXPANSION
AND PROMULGATION OF RULES THEREFOR,
EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 29, 1970,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 20th day of May, 1970, 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 Order No. R-3852, dated October 14, 1969, authorized
S. P. Yates to institute a pressure maintenance project in the West
McMillan Seven Rivers-Queen Pool by the injection of water into
the Queen formation through his Anderson Well No. 2, located 2310
feet from the South line and 990 feet from the East line of Sec-
tion 11, Township 20 South, Range 26 East, NMPM, Eddy County, New
Mexico; that said project was designated the S. P. Yates West
McMillan Anderson Pressure Maintenance Project.

(3) That the applicant, Yates Drilling Company, now seeks
to expand said project by the conversion to water injection of
two additional wells located in Units O and P of said Section 11,
designation of the project area comprising the SE/4 of said

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CASE No. 4346
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Section 11 and the S/2 NW/4, SW/4, N/2 SE/4, and NE/4 of Section 12, same Township and Range, and the promulgation of special rules and Regulations governing said project.

(4) That as numerous leases are involved, five separate pressure maintenance projects should be established.

(5) That the pressure maintenance projects are in the interest of conservation and should result in greater ultimate recovery of oil, thereby preventing waste.

(6) That the applicant should be authorized to establish five pressure maintenance projects in the above-described area and the projects should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations insofar as said Rules and Regulations are not inconsistent with this order.

(7) That Order No. R-3852 should be superseded.

IT IS THEREFORE ORDERED:

(1) That the applicant, Yates Drilling Company, is hereby authorized to establish the five following pressure maintenance projects in the West McMillan Seven Rivers-Queen Pool, Township 20 South, Range 26 East, NMPM, Eddy County, New Mexico, by the injection of water into the Queen formation:

Yates Drilling Company West McMillan Anderson Pressure Maintenance Project

Project Area:

Section 11: SE/4
Section 12: S/2 NW/4

Injection Wells:

Anderson Well No. 2 - Unit I - Section 11
Anderson Well No. 3 - Unit O - Section 11
Anderson Well No. 4 - Unit P - Section 11

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CASE No. 4346
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Yates Drilling Company West McMillan Galvin Pressure
Maintenance Project

Project Area:

Section 12: S/2 SW/4 and N/2 SE/4

Yates Drilling Company West McMillan Riggs Pressure
Maintenance Project

Project Area:

Section 12: N/2 SW/4

Yates Drilling Company West McMillan Bowers Pressure
Maintenance Project

Project Area:

Section 12: SW/4 NE/4 and N/2 NE/4

Yates Drilling Company West McMillan Pecos River Deep Pressure
Maintenance Project

Project Area:

Section 12: SE/4 NE/4

(2) That each of the above-described pressure maintenance projects shall be assigned an allowable in accordance with Rule 701 E, Sections 1 through 4, of the Commission Rules and Regulations.

(3) That the above-described pressure maintenance projects shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations insofar as said Rules and Regulations are not inconsistent with this order.

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

(5) That the Secretary-Director of the Commission may approve such producing wells and injection wells at orthodox

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CASE No. 4346

Order No. R-3968

and unorthodox locations within each of the above-described project areas as may be necessary to effect an efficient production and injection pattern; provided said wells are drilled no closer than 330 feet to the outer boundary of a lease nor closer than 10 feet to any quarter-quarter section or subdivision inner boundary, and provided that the application therefor has been filed in accordance with Rule 701 B of the Commission Rules and Regulations. The showing of well response as required by Rule 701 E-5 shall not be necessary before obtaining administrative approval for the conversion of additional wells to water injection.

(6) That as to the West McMillan Anderson Pressure Maintenance Project this order shall become effective immediately.

(7) That as to each of the West McMillan Galvin, Riggs, Bowers, and Pecos River Deep Pressure Maintenance Projects this order shall become effective on the date the Secretary-Director approves an injection well for the project pursuant to the provisions of Order (5) above.

(8) That Order No. R-3852 is hereby superseded.

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

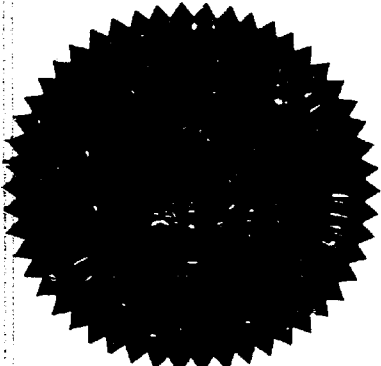
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


DAVID F. CARGO, Chairman


ALEX J. ARMILLO, Member


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



esr/

DOCKET: EXAMINER HEARING - WEDNESDAY - APRIL 29, 1970

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

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

CASE 4340: Application of Tesoro Petroleum Corporation for three waterflood projects and unorthodox injection well locations, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute three waterflood projects in the South Hospah Upper Sand Oil Pool by the injection of water through nine injection wells to be drilled at unorthodox locations in Section 1, Township 17 North, Range 9 West, and in Sections 6 and 7, Township 17 North, Range 8 West, McKinley County, New Mexico. Applicant further seeks a procedure whereby additional injection wells and producing wells at unorthodox locations within the project areas may be approved administratively.

CASE 4341: Application of Pan American Petroleum Corporation for two non-standard gas proration units, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of two non-standard gas proration units for its State "C" Tract 13 Well No. 5, a dual completion, located 1980 feet from the North line and 660 feet from the West line of Section 36, Township 21 South, Range 37 East, Lea County, New Mexico, said units to be comprised as follows:

Blinebry Gas Pool - 240 acres -- NW/4 and W/2
NE/4

Tubb Gas Pool - 200 acres - W/2 NW/4, NE/4
NW/4 and W/2 NE/4

CASE 4342: Application of Dearing, Wright, Gibbins, and Church, doing business as New Mexico Petroleum Company, for authority to operate an oil treating plant, Lea County, New Mexico. Applicants, in the above-styled cause, seek authority to install and operate a chemical and heating process oil treating plant in the vicinity of Tatum, New Mexico, for the reclamation of sediment oil to be obtained from tank bottoms, waste pits, and drip tanks.

- CASE 4343: Application of Texaco Inc. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Devonian formation in the perforated and open-hole interval from 11,194 feet to 11,278 feet in its New Mexico "BB" State (NCT-1) Well No. 2 located in Unit N of Section 11, Township 12 South, Range 32 East, East Caprock-Devonian Pool, Lea County, New Mexico.
- CASE 4344: Application of Texaco Inc. for salt water disposal, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Devonian formation in the open-hole interval from 11,230 feet to 11,503 feet in its B. E. Spencer "B" Federal Well No. 1 located in Unit D of Section 28, Township 15 South, Range 30 East, Little Lucky Lake-Devonian Pool, Chaves County, New Mexico.
- CASE 4345: Application of Yates Drilling Company for salt water disposal, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Seven Rivers and possibly other formations in the open-hole interval from 68 feet to 100 feet in its Galvin Well No. 8 and from 68 feet to 90 feet in its Galvin Well No. 14, both located in Unit N of Section 12, Township 20 South, Range 26 East, West McMillan-Seven Rivers Pool, Eddy County, New Mexico.
- CASE 4346: Application of Yates Drilling Company for a pressure maintenance expansion and promulgation of rules therefor, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand the S. P. Yates West McMillan Anderson Pressure Maintenance Project in the West McMillan Seven Rivers-Queen Pool, Eddy County, New Mexico, authorized by Order No. R-3852, by the conversion to water injection of two additional wells located in Units O and P, Section 11, Township 20 South, Range 26 East. Applicant further seeks the designation of a project area, promulgation of rules governing said project, and a procedure whereby other methods of flooding in the subject project may be authorized administratively.
- CASE 4347: Application of Yates Drilling Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Yates North Vacuum (San Andres) Unit Area comprising 800 acres, more or less, of State lands in Sections 1, 2, 11, and 12, Township 17 South, Range 34 East, Vacuum Grayburg-San Andres Pool, Lea County, New Mexico.

CASE 4348: Application of Yates Drilling Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its North Vacuum (San Andres) Unit Area by the injection of water into the San Andres formation through 9 wells located in Sections 1, 2, 11, and 12, Township 17 South, Range 34 East, Vacuum Grayburg-San Andres Pool, Lea County, New Mexico. Applicant further seeks a procedure whereby said project may be expanded administratively without a showing of well response.

CASE 4349: Application of Tenneco Oil Company for a waterflood expansion and unorthodox injection well locations, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks to expand the waterflood project in its South Hospah Unit Area by the injection of water into the South Hospah Upper Sand Oil Pool, McKinley County, New Mexico, through two additional injection wells at unorthodox locations in Section 12, Township 17 North, Range 9 West, as follows:

Unit Well No. 41 - 5 feet from the North line and 1650 feet from the East line;

Unit Well No. 42 - 3000 from the North line and 5 feet from the East line.

CASE 4350: Application of Cities Service Oil Company for an exception to Order No. R-3221, as amended, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil on the surface of the ground in Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico. Said exception would be for applicant's Snyder Federal Lease comprising the S/2 NE/4 and N/2 SE/4 of Section 26, Township 15 South, Range 29 East, Sulimar-Queen Pool, Chaves County, New Mexico. Applicant seeks authority to dispose of salt water produced by wells on said lease in an unlined surface pit located in Unit H of said Section 26.

CASE 4351: Application of Humble Oil & Refining Company for well reclassification and simultaneous dedication of acreage, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the reclassification of its New Mexico "G" State Well No. 5 from an oil well in the Eument Pool to a gas well in said pool. Applicant further seeks the dedication of a standard 640-acre gas proration unit comprising all of Section 23, Township 21 South, Range 36 East, Lea County, New Mexico, to said Well No. 5 and to applicant's New Mexico "G" State Well No. 9,

located, respectively in units E and G of said Section 23, and authority to produce the allowable assigned to said unit from either of said wells in any proportion.

CASE 4352: Application of Jack L. McClellan for the creation of a new gas pool or, in the alternative, the establishment of pool rules for two existing pools, Chaves and Lea Counties, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new Queen gas pool comprising the following-described acreage:

CHAVES COUNTY, NEW MEXICO

Township 15 South, Range 29 East

Section 11: SE/4

Section 12: SW/4

Section 13: NW/4

Section 14: E/2

Section 23: NE/4 and SW/4

In the alternative applicant seeks the promulgation of special rules for the Sulimar-Queen Pool, Chaves County, and Double L-Queen Pool, Chaves and Lea Counties, New Mexico, as separate or as consolidated pools, including provisions for the classification of oil and gas wells, spacing and well location requirements for oil and gas wells, and an allocation formula for withdrawals by oil wells and gas wells.

CASE 4353: Application of Lone Star Producing Company for special pool rules, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the Tres Papalotes-Pennsylvanian Pool, Lea County, New Mexico, including a provision for 160-acre spacing and proration units.

R-26-E

R-27-E

LAKE McMILLAN RESERVOIR

Crile

"Beaty"

10

Pecos River

S.P. Yates

S.P. Yates

"Anderson"
U.S.

"Galvis"

Riggs

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 2
CASE NO. 4345

S. P. YATES
McMillan West Pool
Eddy County, New Mexico
ISOPACH - 2nd QUEEN

Scale: 1 inch = 2000 feet
Contour Interval = 5 feet

Eddie Mahfood

2-25-70

#2

WELL LOG

COMPANY **YATES DRILLING CO.**

WELL **PECOS RIVER DEEP UNIT #2**

FIELD **WILCOAT**

COUNTY **EDDY** STATE **NEW MEXICO**

Location: **1650' Fr. HIL**

Other Services:

Sec. **12** Twp. **10S** Rge. **26E**

Measured From **Ground Level**; Elev. **3332**
 Datum **D.F. 1 Ft. Above Perrin**

Elev. **K.S. 3333**
 D.F. **3333**
 C.L. **3332**

7-23-63
CRP

1947
1948
1949

WATER

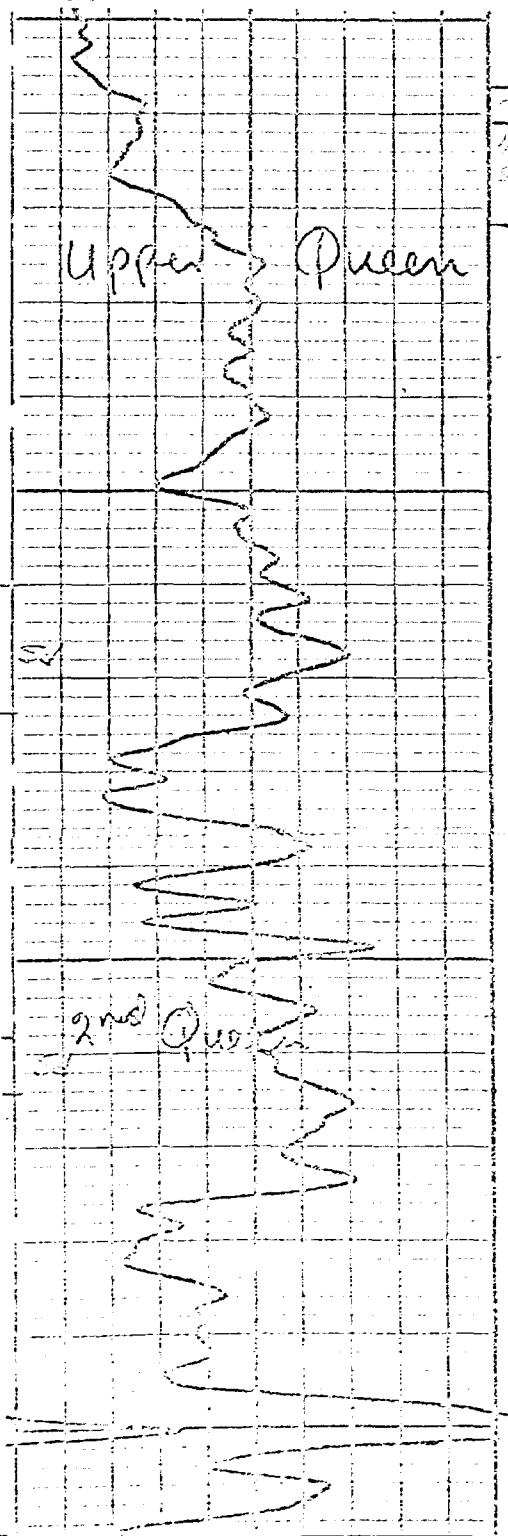
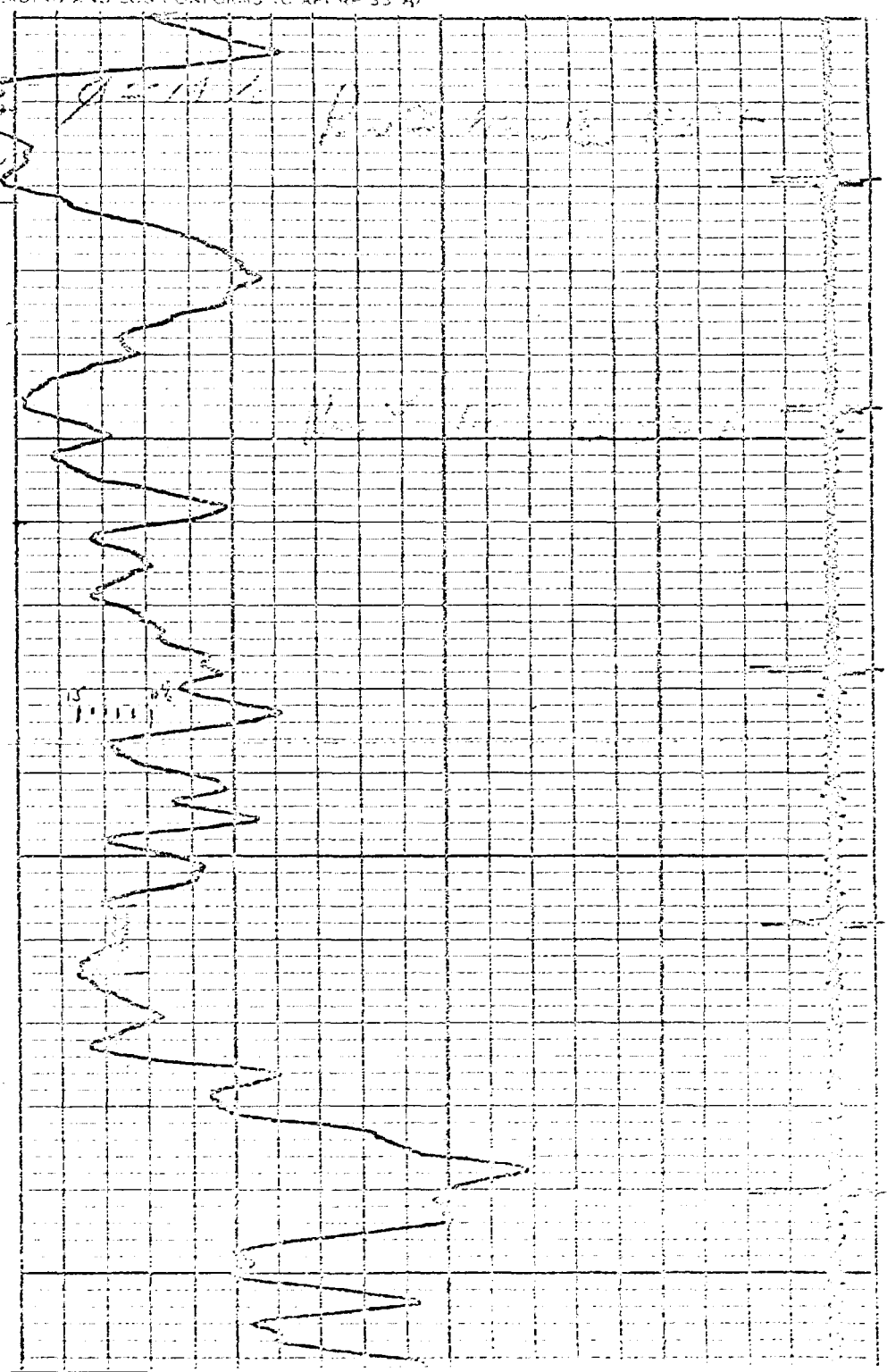
WORK LOG

LOG NO. **118**

CASINO RECORD

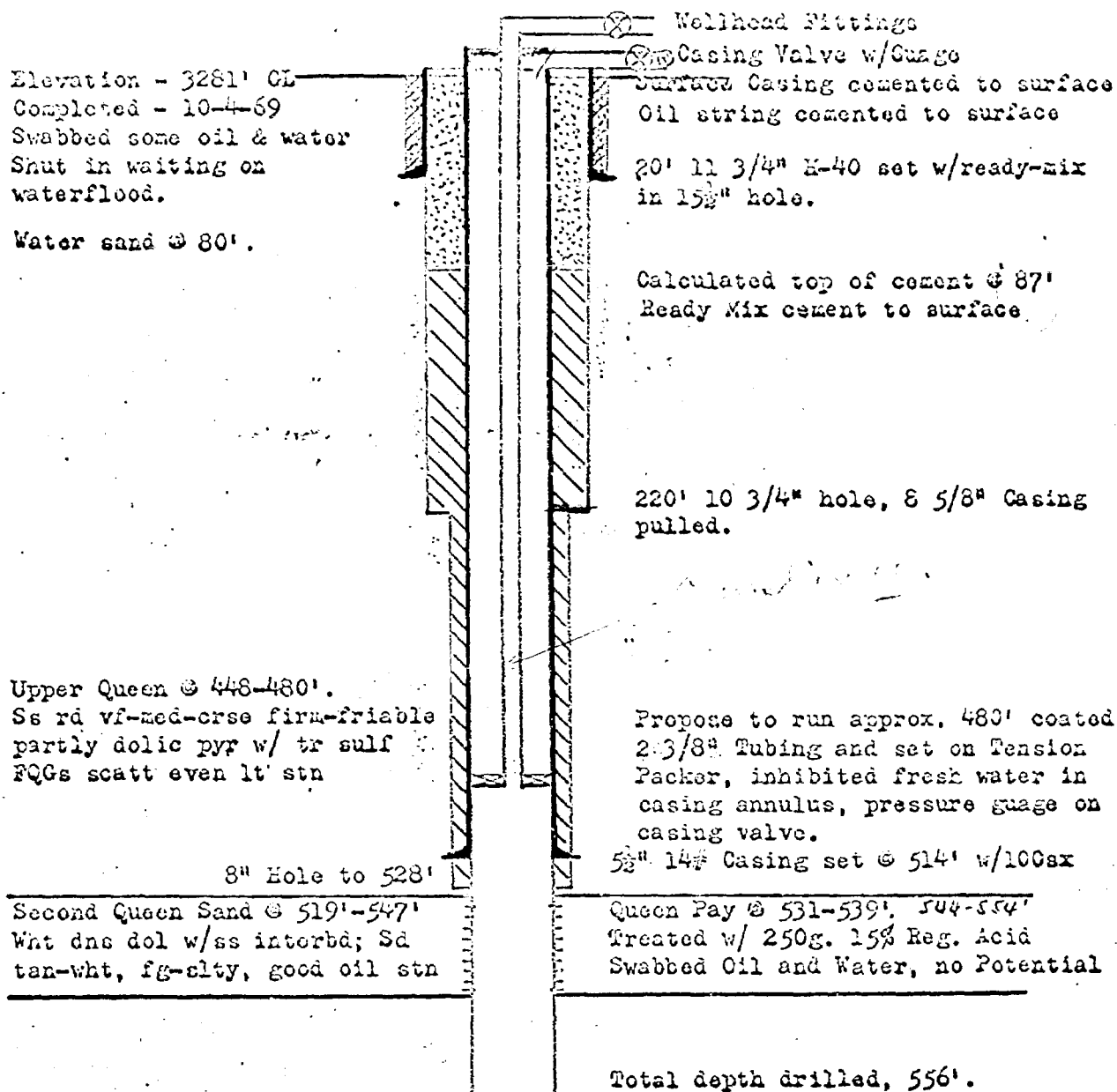
From	To	Size	Wgt.	From	To
1605	210	10"	348	1605	1600
1605	210	10"	348	1605	1600
1605	210	10"	348	1605	1600
1605	210	10"	348	1605	1600

THIS HEADING AND LOG CONFORM TO API RP 55



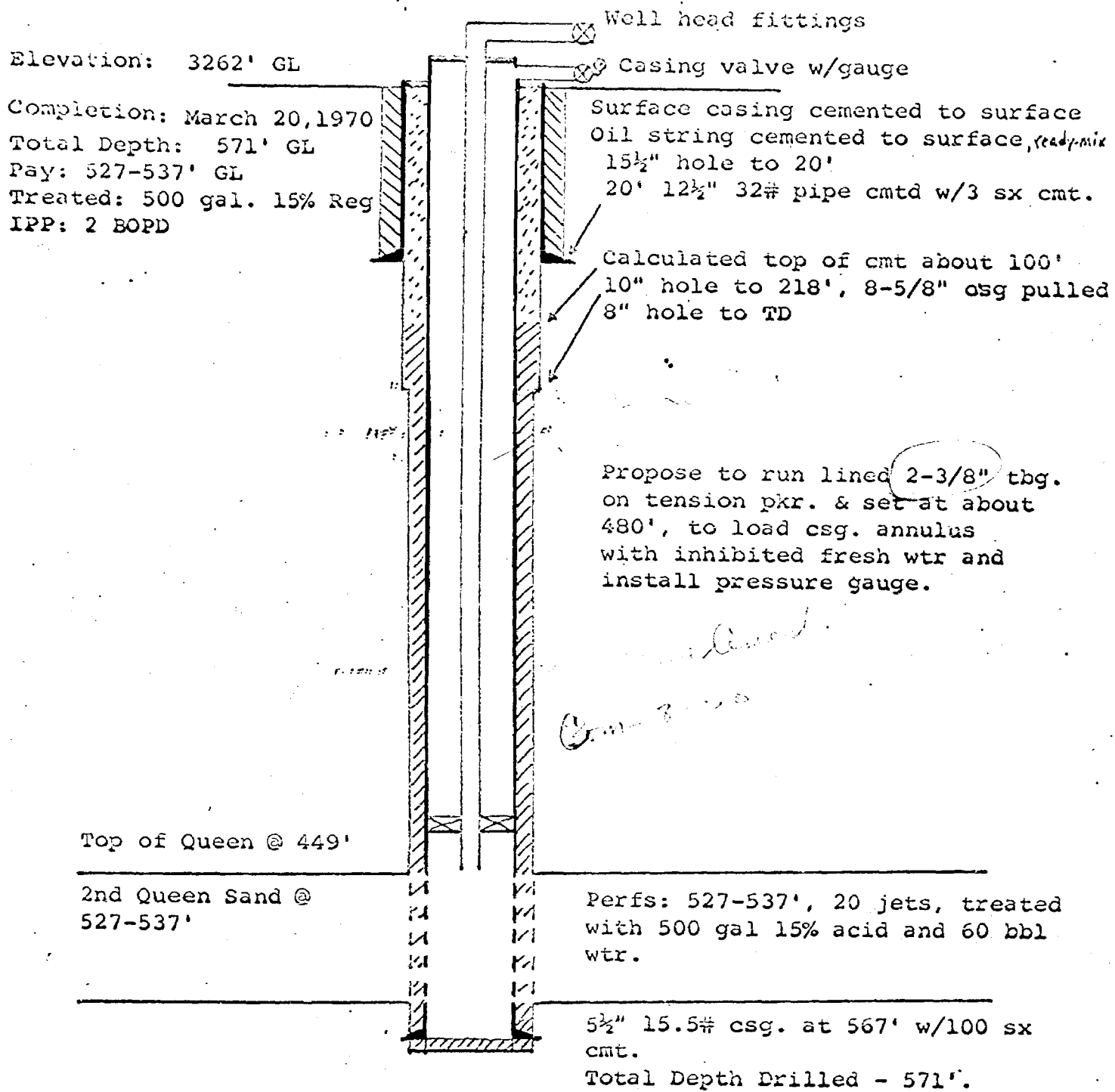
DIAGRAMMING SUMMARY OF INFORMATION WELL

S. P. Yates - Anderson No. 3
2310/2 990/S Unit 0-11-20-86
McMillan West, S.R.-On Pool
Eddy County, New Mexico



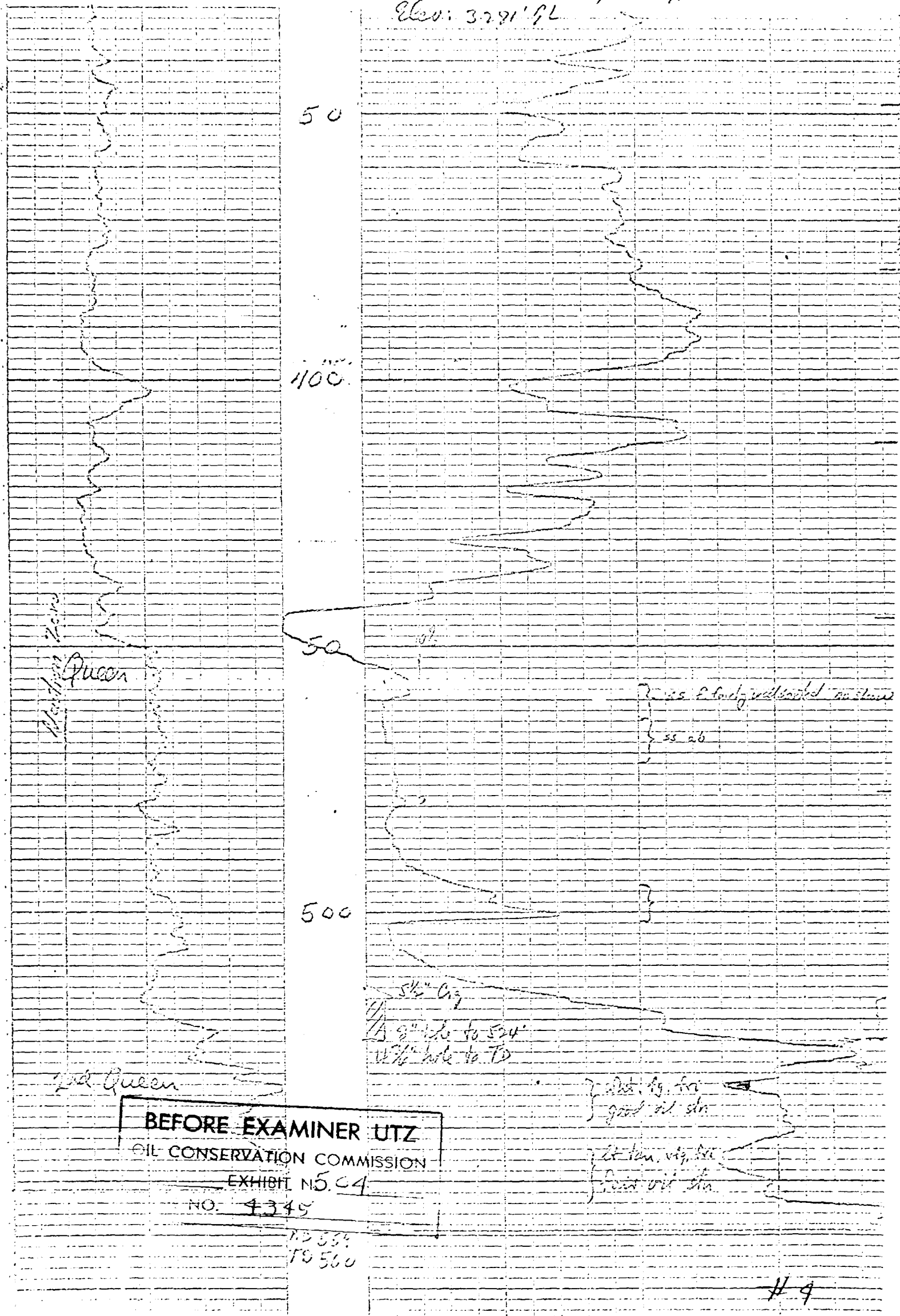
BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 3
NO. 4345

DIAGRAMMATIC SKETCH OF INJECTION WELL
 Yates Drilling Company - Anderson # 4
 990/E 990/S Unit P Sec. 11-20-26
 McMillan West (SR, Qn) Pool
 Eddy County, New Mexico



El Toro Strip Log

Yates Drilling - Anderson No. 3
 2310/E 990/S Unit 0 Sec 11-20-26
 W. McMillan, Eddy County, N. Mex
 Elev: 3281' PL



lane Wells Strip Hwy

Wells Drilling Co. Anderson No. 4
990/S 990/E Unit P Sec 11-20-26
W. McMillan, Eddy County, N. Mex
Elev: 3262' 46

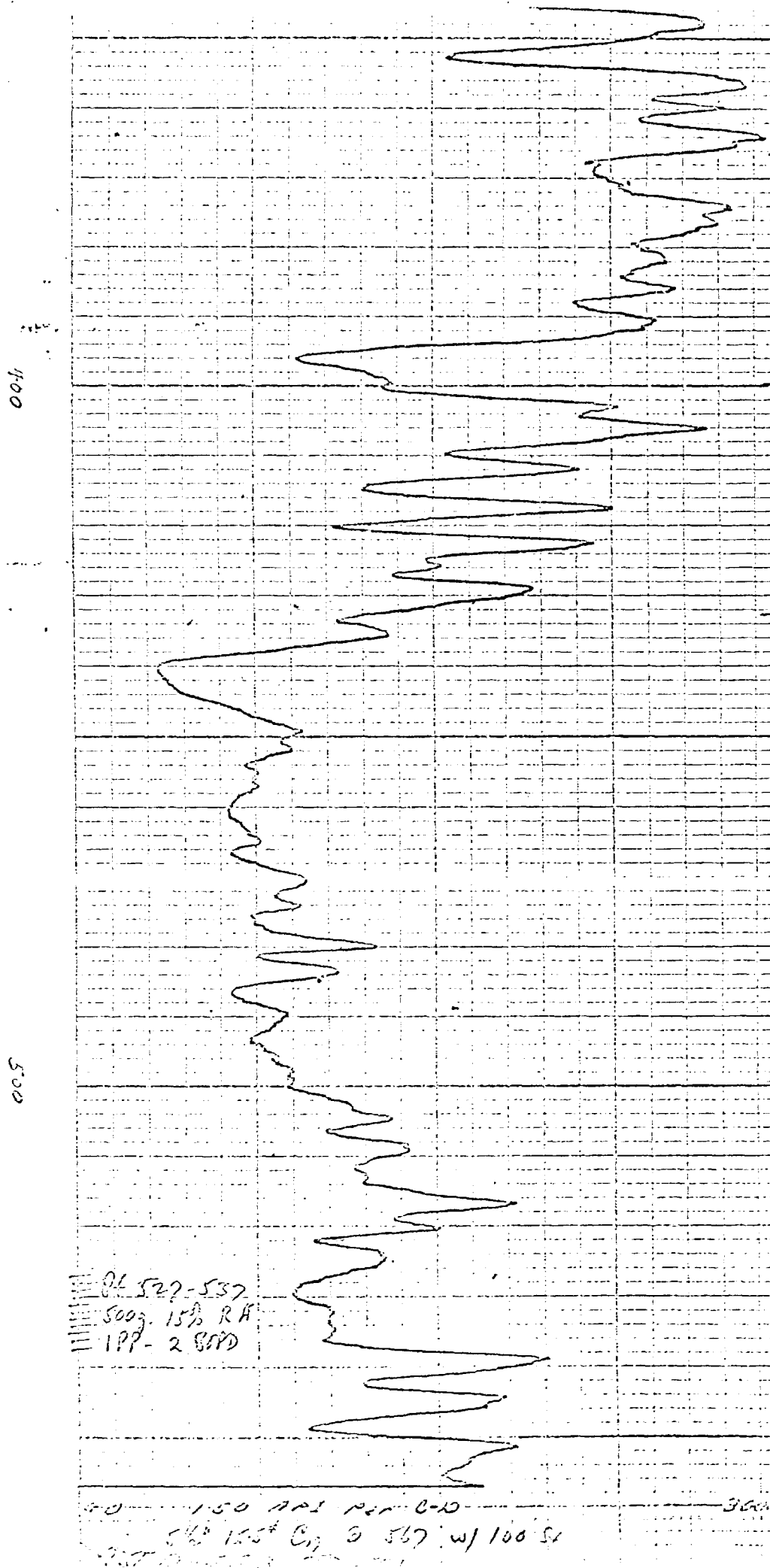
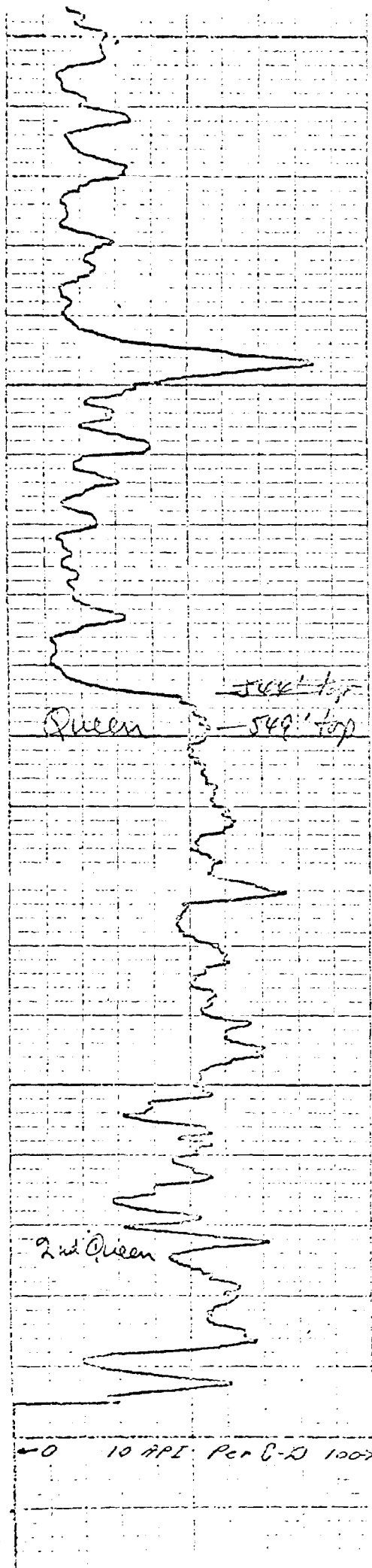
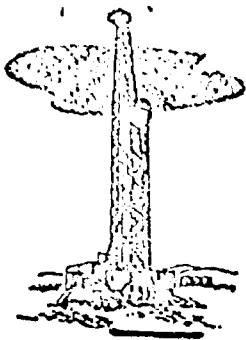


Exhibit 5

Produced by Melba W. Williams, Inc.

Horse Trail (Continued)		Horse Trail	
9-61	150	10-61	15
10-61	265	11-61	20
11-61	30	12-61	80
12-61	<u>122</u>	1961	<u>115</u>
1961	567		
		1-62	73
1-62	70	2-62	119
2-62	97	3-62	12
3-62	<u>19</u>	4-62	73
1962	186	5-62	181
Sum	753	6-62	111
		7-62	67
		8-62	112
		9-62	24
		10-62	60
		11-62	80
		12-62	<u>47</u>
		1962	<u>904</u>
		1-70	<u>52</u>
		1970	221
		Sum	1178



YATES DRILLING COMPANY
YATES BUILDING - 207 SOUTH 4TH ST. - DIAL 746-3558

S. P. YATES,
PRESIDENT

HUGH W. PARRY,
SEC. TREAS.

ARTESIA, NEW MEXICO - 88210

March 20, 1970

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

Case 4346

ATTN: Mr. A. L. Porter, Secretary-Director

RE: APPLICATION FOR EXPANSION OF A PRESSURE MAINTENANCE
PROJECT, WEST MCMILLAN (S.R., Qn) POOL, EDDY COUNTY,
NEW MEXICO WITH SPECIAL RULES AND REGULATIONS

Dear Mr. Porter:

Oil Conservation Commission Order No. R-3852, Case 4225, October 14, 1969, authorized a project designated as the S.P. Yates West McMillan Anderson Pressure Maintenance Project with one injector, the Anderson No. 2 well, and the project to be governed by Rules 701, 702, 703, 704 and 1120. By letter dated December 15, 1969, applicant sought administrative approval for expansion of this project, but was advised that an Examiner's Hearing would be necessary. Case No. 4296 was scheduled for January 21, continued for February 25, but later withdrawn. On February 6 applicant requested change of ownership to Yates Drilling Company.

Applicant now seeks authority for expansion of project area and special rules and regulations therefor:

1. Project area to comprise as follows:
Township 20 South, Range 26 East, New Mexico
Section 11: SE $\frac{1}{4}$
Section 12: S $\frac{1}{2}$ NW $\frac{1}{4}$, N $\frac{1}{2}$ SW $\frac{1}{4}$, S $\frac{1}{2}$ SW $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$, NE $\frac{1}{4}$
2. Provision whereby additional drilling and conversion of wells in orthodox and unorthodox locations in the project area may be approved by administrative procedure rather than by an Examiner's Hearing.
3. The allowable for any lease in the Project shall be the sum of the allowables of the several wells on that lease, including those wells which may be used for injection or shut in for the following reasons: pressure regulation, control of pattern or sweep efficiencies, or to observe changes in pressures or changes in characteristics of reservoir liquids, or progress of sweep.

DOCKET MAILED

Date 4-17-70

4. Provision whereby Operator may, by administrative procedure, incorporate miscible flooding or other new production techniques deemed beneficial and in the interests of conservation and the prevention of waste.

Applicant seeks authority for the conversion of two new wells for the injection of water into the 2nd Queen Formation:

Anderson No. 3 2310/E 990/S Unit O Sec.11-20-26 (OH) 531-539

Anderson No. 4 990/E 990/S Unit P Sec.11-20-26 Pf 527-537

Yours truly,

Yates Drilling Company

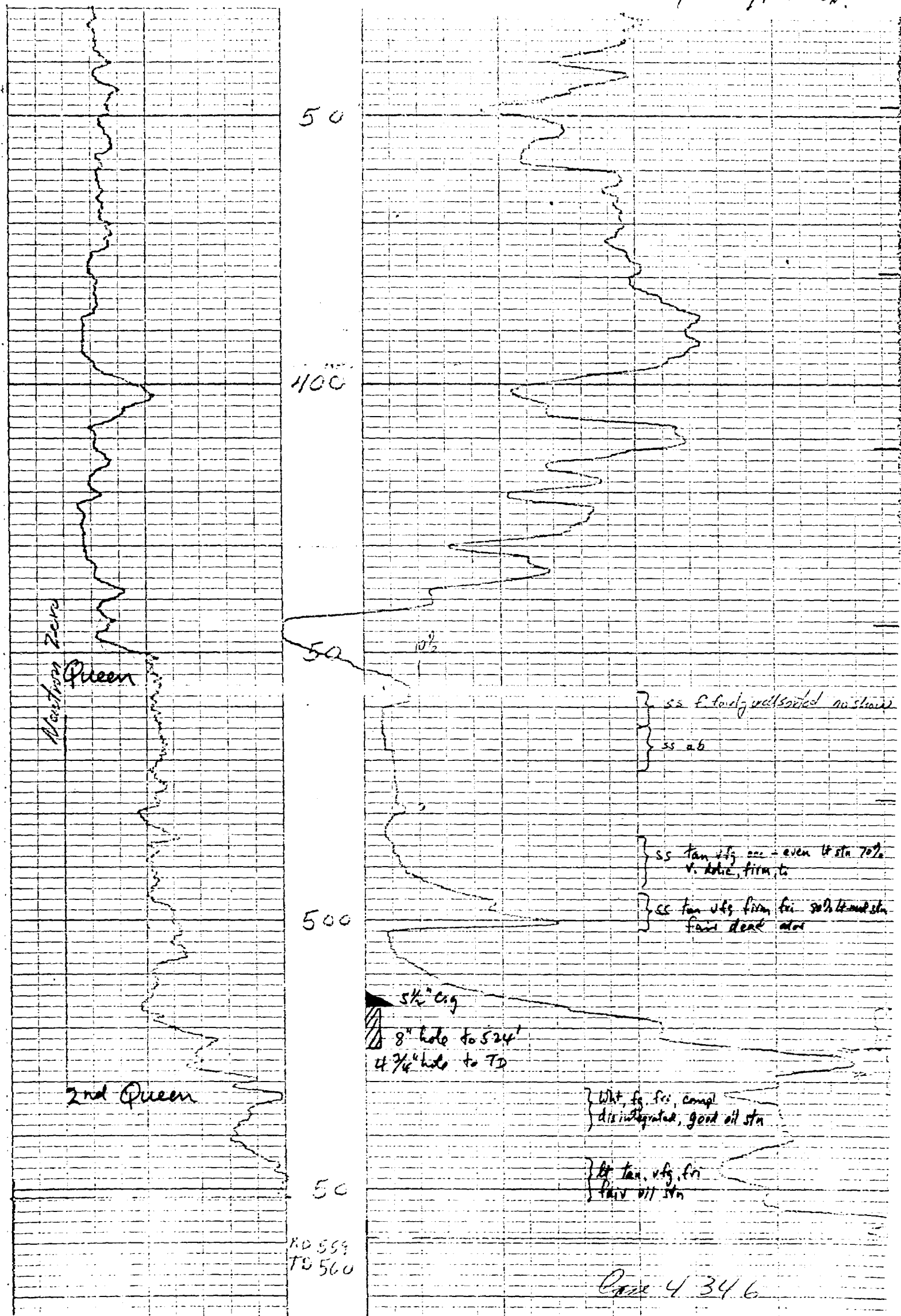
Eddie M. Mahfood

Eddie M. Mahfood,
Petroleum Engineer

EMM/bcm

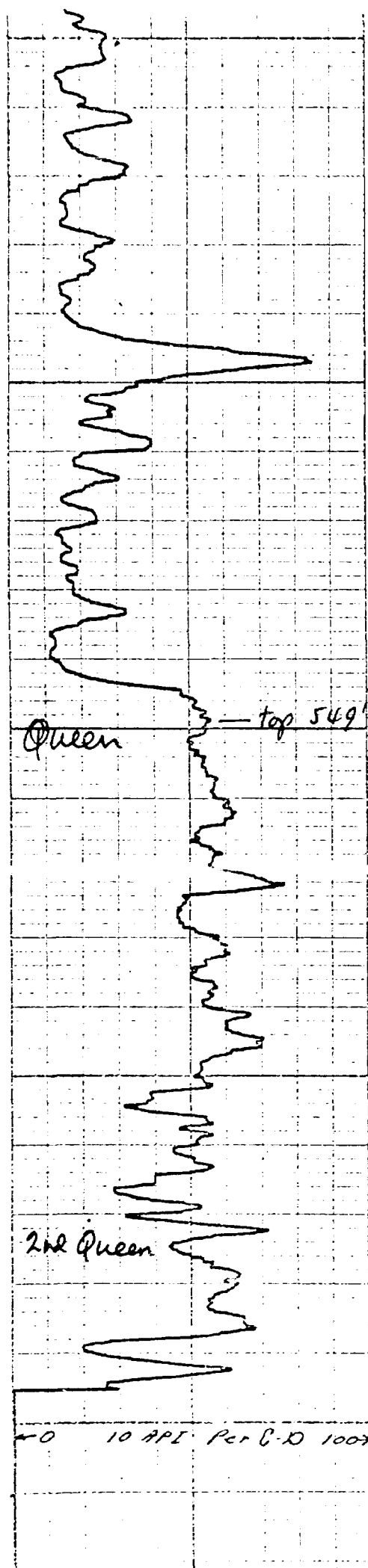
El Toro Strip Log

Yates Drilling Co - Anderson No. 3
2310/E 990/S Unit 0, Section 11-20S-26E
West McMillan (SR. Qn), Eddy County, N. Mex.



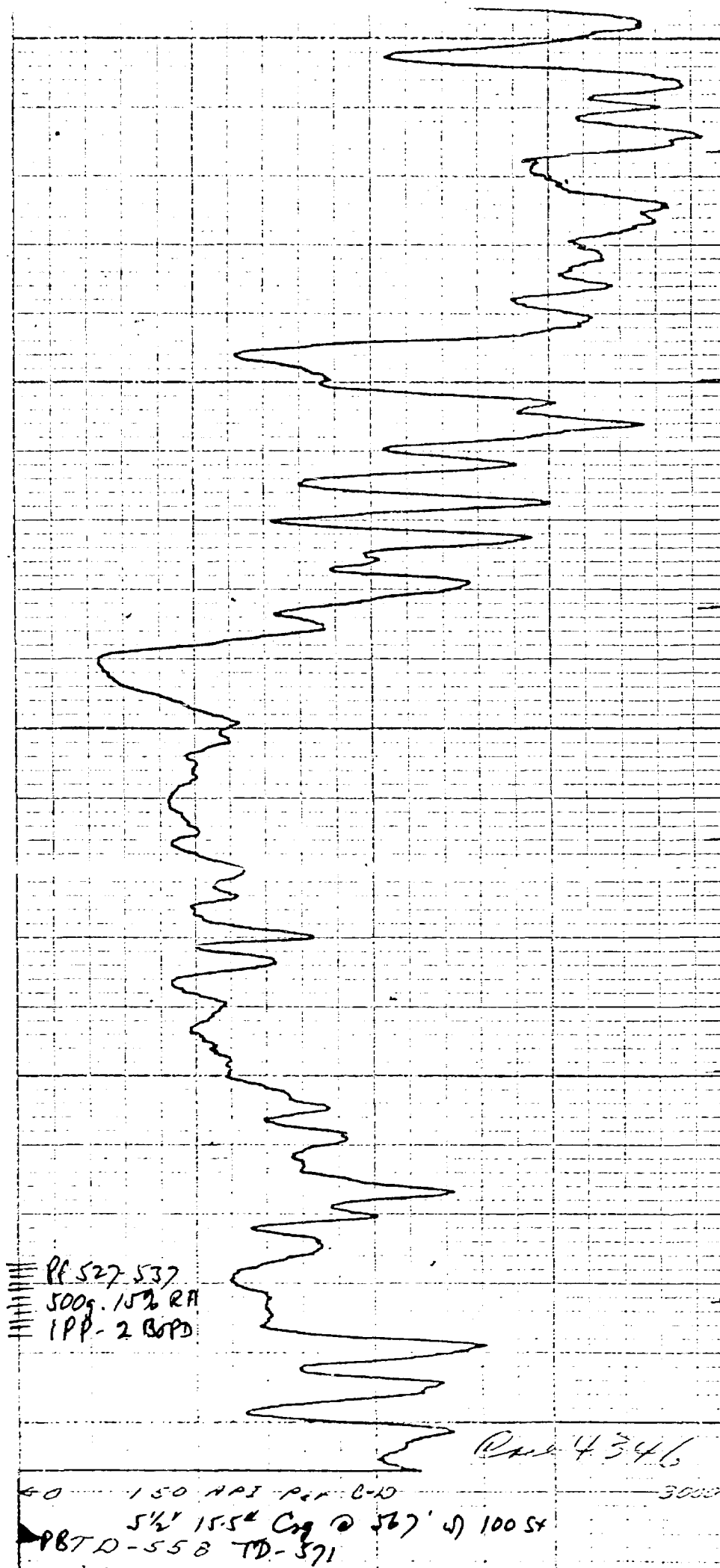
Lane Wells Strip Log

Yates Drilling Co. - Anderson No. 4
 990/S 990/E Unit P Section 11-20-26
 W. McMillan, Eddy County, N. Mex
 Elev: 3262' SL



400

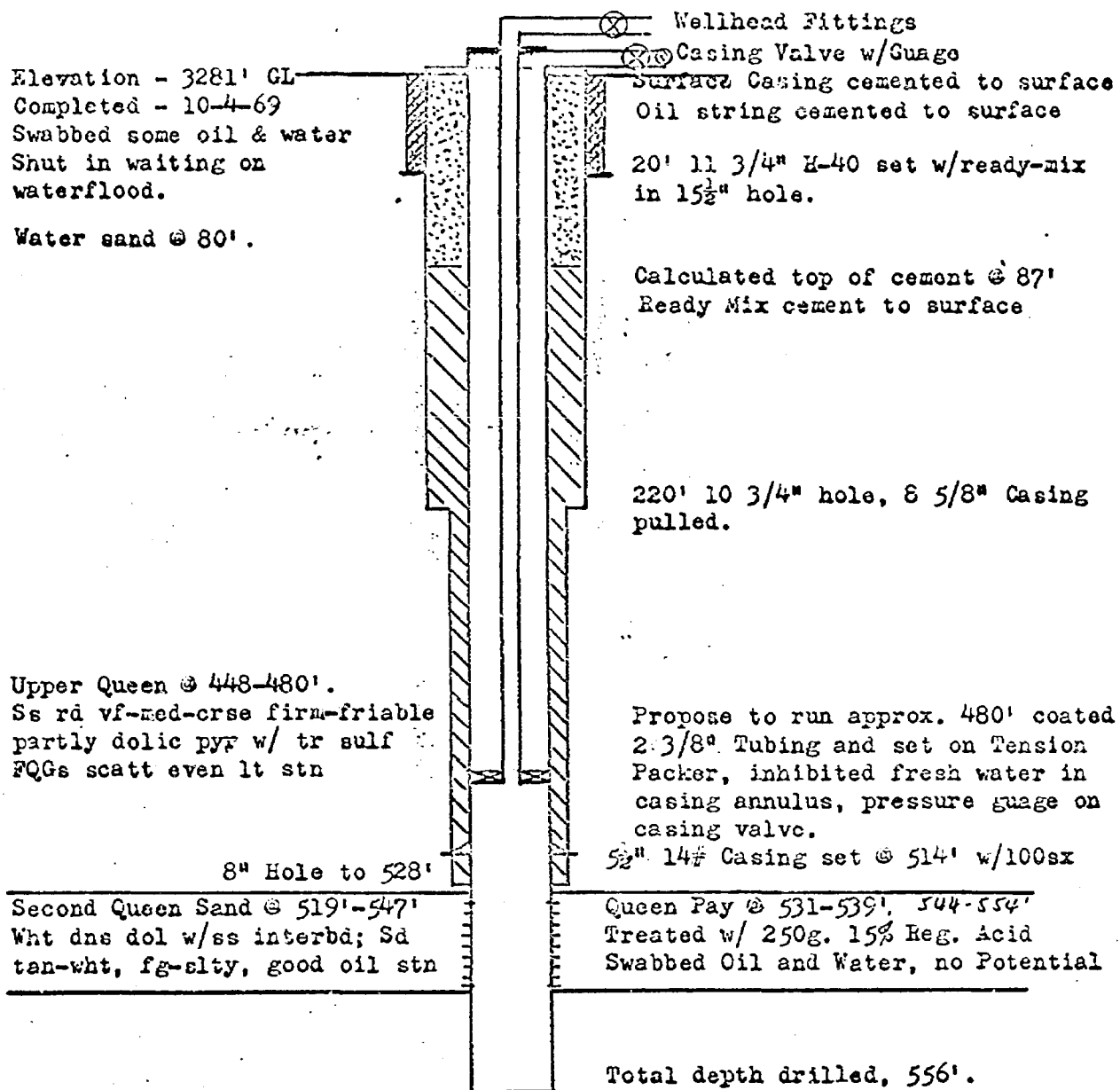
500



5 1/2" 15.5" Csg @ 527' w 100 SF
 PBT D-558 TD-571

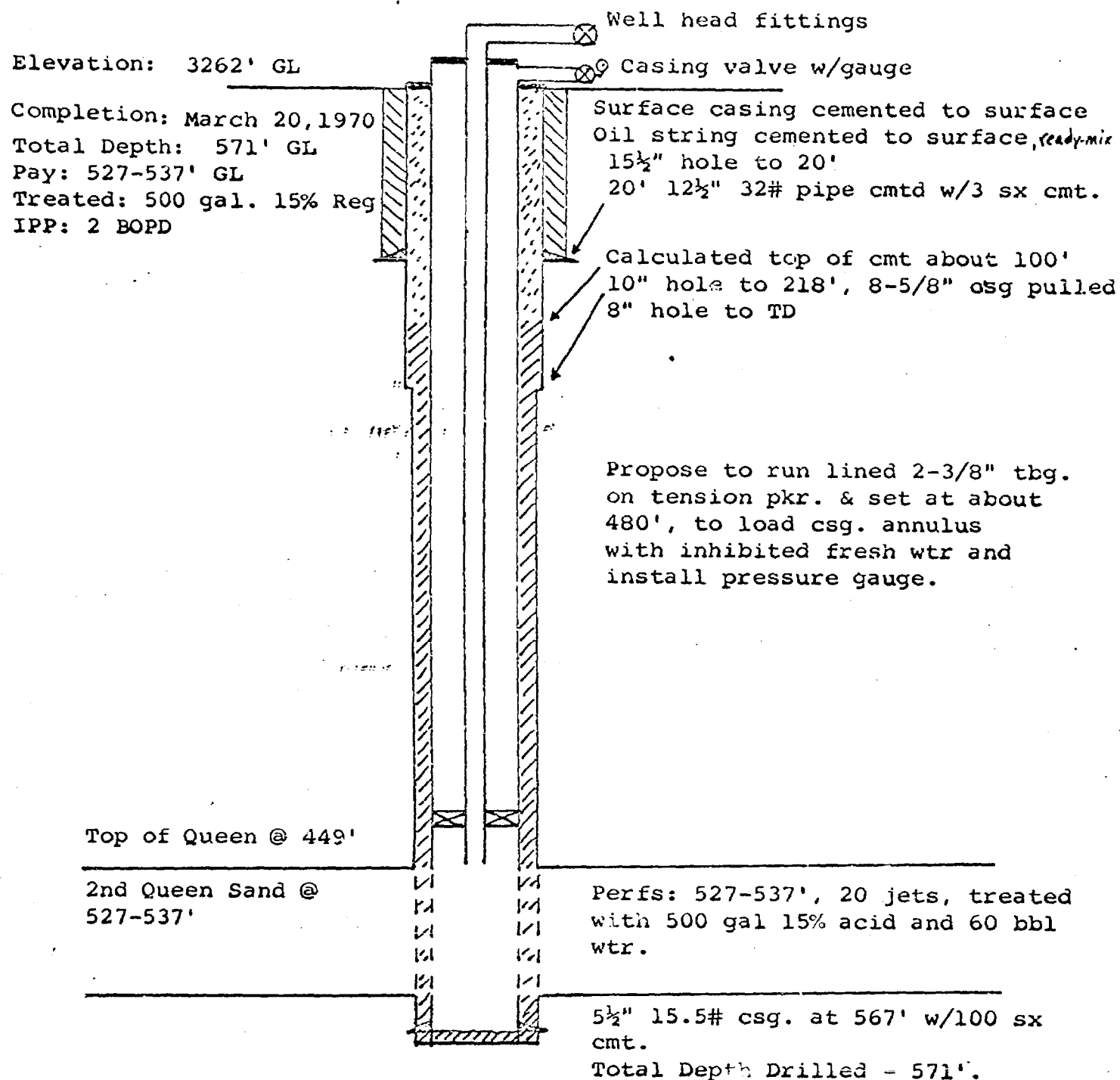
DIAGRAMMATIC SKETCH OF INJECTION WELL

S. P. Yates - Anderson No. 3
 2310/E 990/S Unit 0-11-20-26
 McMillan West, S.R.-Qn Pool
 Eddy County, New Mexico



One 7246

DIAGRAMMATIC SKETCH OF INJECTION WELL
 Yates Drilling Company - Anderson # 4
 990/E 990/S Unit P Sec. 11-20-26
 McMillan West (SR, Qn) Pool
 Eddy County, New Mexico



Case 4346

DRAFT

GMH/esr
May 18, 1970

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. 4346

Order No. R-R 3968

APPLICATION OF YATES DRILLING COMPANY
FOR A PRESSURE MAINTENANCE EXPANSION
AND PROMULGATION OF RULES THEREFOR,
EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on April 29, 19670,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this _____ day of May, 19670, 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 Order No. R-3852, dated October 14, 1969, authorized
S. P. Yates to institute a pressure maintenance project in the West
McMillan Seven Rivers-Queen Pool by the injection of water into
the Queen formation through his Anderson Well No. 2, located
2310 feet from the South line and 990 feet from the East line of
Section 11, Township 20 South, Range 26 East, NMPM, Eddy County, New
Mexico; that said project was designated the S. P. Yates West
McMillan Anderson Pressure Maintenance Project.

(3) That the applicant, Yates Drilling Company, now seeks
to expand said project by the conversion to water injection of
two additional wells located in Units O and P of said Section 11,

designation of the project area comprising the SE/4 of said Section 11 and the S/2 NW/4, SW/4, N/2 SE/4, and NE/4 of Section 12, same Township and Range, and the promulgation of special rules and regulations governing said project.

(4) That as numerous leases are involved, five separate pressure maintenance projects should be established.

(5) That the pressure maintenance projects are in the interest of conservation and should result in greater ultimate recovery of oil, thereby preventing waste.

(6) That the applicant should be authorized to establish five pressure maintenance projects in the above-described area and the projects should be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations insofar as said Rules ^{and Regulations} are not inconsistent with this order.

~~cess of top unit allowable for the West McMillan Seven Rivers-Queen Pool until such time as the well has experienced a substantial response to water injection. When such a response has occurred, the well should be permitted to produce up to two times top unit allowable for the West McMillan Seven Rivers-Queen Pool. Production of such well at a higher rate should be authorized only after notice and hearing.~~

(7) That Order No. R-3852 should be superseded.

IT IS THEREFORE ORDERED:

(1) That the applicant, Yates Drilling Company, is hereby authorized to establish the five following pressure maintenance projects in the West McMillan Seven Rivers-Queen Pool, Township 20 South, Range 26 East, NMPM, Eddy County, New Mexico, by the injection of water into the Queen formation:

Yates Drilling Company West McMillan Anderson Pressure
Maintenance Project

Project Area:

Section 11: SE/4
Section 12: S/2 NW/4

Injection Wells:

Anderson Well No. 2 - Unit I - Section 11
Anderson Well No. 3 - Unit O - Section 11
Anderson Well No. 4 - Unit P - Section 11

Yates Drilling Company West McMillan Galvin Pressure
Maintenance Project

Project Area:

Section 12: S/2 SW/4 and N/2 SE/4

Yates Drilling Company West McMillan Riggs Pressure
Maintenance Project

Project Area:

Section 12: N/2 SW/4

Yates Drilling Company West McMillan ^{Bowers}
~~Bower~~ Pressure
Maintenance Project

Project area:

Section 12: SW/4 NE/4 and N/2 NE/4

Yates Drilling Company West McMillan Pecos River Deep Pressure
Maintenance Project

Project Area:

Section 12: SE/4 NE/4

(2) That each of the above-described pressure maintenance projects shall be assigned an allowance in accordance with Rule 701 E, ~~the~~ Sections 1. Through 4., of the Commission Rules and Regulations.

(3) That the above-described pressure maintenance projects shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations insofar as said Rules and Regulations are not inconsistent with this order.

(4) That monthly progress reports of the projects herein authorized shall be submitted to the Commission in accordance with Rule 704 and 1120 of the Commission Rules and Regulations.

which directly or diagonally offsets a well on another lease producing from the same common source of supply shall produce in excess of two times top unit allowable for the pool.

(5) ~~(3)~~ ~~That~~. That the Secretary-Director of the Commission may approve such producing wells and injection wells at orthodox and unorthodox locations within each of the above-described project areas as may be necessary to effect an efficient production and injection pattern; provided said wells are drilled no closer than 330 feet to the outer boundary of a lease nor closer than 10 feet to any quarter-quarter section or subdivision inner boundary, and provided that the application therefor has been filed in accordance with Rule 701 B of the Commission Rules and Regulations. The showing of well response as required by Rule 701 E-5 shall not be necessary before obtaining administrative approval for the conversion of additional wells to water injection.

(6) ~~(5)~~ That as to the West McMillan Anderson Pressure Maintenance Project this order shall become effective immediately.

(7) ~~(5)~~ That as to each of the West McMillan Galvin, Riggs, Bowers, and Pecos River Deep Pressure Maintenance Projects this order shall become effective on the date the Secretary-Director approves an injection well for the project pursuant to the provisions of ~~Rule 10~~ ^{order (5)}, above.

(8) ~~(5)~~ That Order No. R-3852 is hereby superseded.

(9) ~~(5)~~ (7) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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