

CASE 3616: Application of HUMBLE
OIL & RFG. CO. for a waterflood
project, Lea County, New Mexico.

Case Number

3416

Application
Transcripts.

Small Exhibits

ETC.

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO

July 24, 1967

Mr. Clarence Hinkle
Hinkle, Bondurant & Christy
Attorneys at Law
Post Office Box 10
Roswell, New Mexico 88201

Dear Sir:

Reference is made to Commission Order No. R-3273, recently entered in Case No. 3516, approving the Humble Paddock San Angelo Water-flood Project.

Injection is to be through the six authorized water injection wells, each of which is to be completed with a string of plastic-coated tubing set in a packer. Packers shall be set as near to the top of the perforated interval as is practicable. The casing-tubing annulus shall be loaded with an inert fluid and a pressure gauge installed or the annulus left open at the surface to permit detection of leaks in the tubing or the packer.

As to allowable, our calculations indicate that when all of the authorized injection wells have been placed on active injection, the maximum allowable which this project will be eligible to receive under the provisions of Rule 701-E-3 is 1050 barrels per day when the Southeast New Mexico normal unit allowable is 42 barrels per day or less.

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

In order that the allowable assigned to the project may be kept current, and in order that the operator may fully benefit from the allowable provisions of Rule 701, it behooves him to promptly notify both of the

OIL CONSERVATION COMMISSION

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Mr. Clarence Hinkle
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Roswell, New Mexico 88201

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aforementioned Commission offices by letter of any change in the status of wells in the project area, i.e., when active injection commences, when additional injection or producing wells are drilled, when additional wells are acquired through purchase or unitization, when wells have received a response to water injection, etc.

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

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

cc: Oil Conservation Commission
Hobbs, New Mexico

Mr. Frank Irby, State Engineer Office,
Santa Fe, New Mexico

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. 3616
Order No. R-3273

APPLICATION OF HUMBLE OIL & REFINING
COMPANY FOR A WATERFLOOD PROJECT, LEA
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on July 12, 1967,
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 17th day of July, 1967, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

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

(2) That the applicant, Humble Oil & Refining Company seeks
permission to institute a waterflood project in its Paddock (San
Angelo) Unit Area, Paddock Pool, by the injection of water into
the Paddock formation through six injection wells in Section 35,
Township 21 South, Range 37 East, and Section 2, Township 22 South,
Range 37 East, NMPM, Lea County, New Mexico.

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

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

(5) That the subject application should be approved and
the project should be governed by the provisions of Rules 701,
702, and 703 of the Commission Rules and Regulations.

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Case No. 3616

Order No. R-3273

IT IS THEREFORE ORDERED:

(1) That the applicant, Humble Oil & Refining Company, is hereby authorized to institute a waterflood project in its Paddock (San Angelo) Unit Area, Paddock Pool, by the injection of water into the Paddock formation through the following-described wells in Lea County, New Mexico:

TOWNSHIP 21 SOUTH, RANGE 37 EAST, NMPM

<u>OPERATOR</u>	<u>LEASE</u>	<u>WELL NO.</u>	<u>UNIT</u>	<u>SECTION</u>
Cities Service	Owen	4	O	35

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM

<u>OPERATOR</u>	<u>LEASE</u>	<u>WELL NO.</u>	<u>UNIT</u>	<u>SECTION</u>
Humble	New Mexico State "S"	5	A	2
Humble	New Mexico State "S"	8	G	2
Humble	New Mexico State "S"	9	K	2
Humble	New Mexico State "S"	15	C	2
Humble	New Mexico State "S"	19	E	2

(2) That the subject waterflood project is hereby designated the Paddock San Angelo Waterflood Project and shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations.

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

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

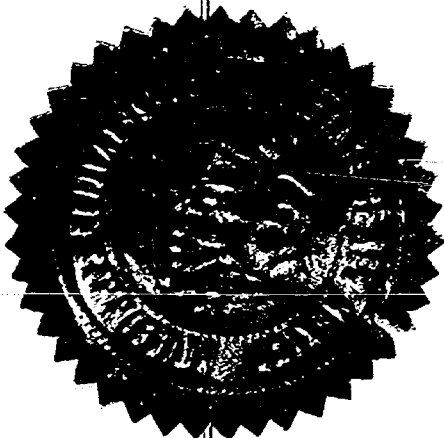
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

David F. Fargo
DAVID F. FARGO, Chairman

Guyton B. Hays
GUYTON B. HAYS, Member

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



State of New Mexico
Oil Conservation Commission



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Other _____

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
July 12, 1967

IN THE MATTER OF:)

Application of Humble Oil)
and Refining Company for a)
unit agreement, Lea County,)
New Mexico.)
Application of Humble Oil)
and Refining Company for a)
waterflood project, Lea)
County, New Mexico.)

Cons. Case No. 3615 3616

BEFORE: Daniel S. Nutter, Examiner

TRANSCRIPT OF HEARING

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MR. NUTTER: The hearing will come to order, please.
The next case this afternoon will be Case 3615.

MR. HATCH: Case 3615, Application of Humble Oil and Refining Company for a unit agreement, Lea County, New Mexico.

MR. NUTTER: Do you think we could put this altogether?

MR. HINKLE: Yes.

MR. NUTTER: Call also please, Case 3616.

MR. HATCH: Case 3616, Application of Humble Oil and Refining Company for a waterflood project, Lea County, New Mexico.

MR. HINKLE: Clarence Hinkle, Hinkle, Bondurant and Christy, Roswell, representing Humble Oil and Refining Company. I would like to move that these two cases, 3615 and 3616 be consolidated.

MR. NUTTER: Cases 3615 and 3616 will be consolidated for the testimony.

(Whereupon, Applicant's Exhibits 1 through 10 were marked for identification.)

MR. HINKLE: We have three witnesses, Monty Gist, Art Kelley and Marvin Wigley and I would like to have them sworn.

(Witnesses sworn.)

MR. HINKLE: Incidentally, Mr. Examiner, we agreed to pay for the advertising of these two cases so as to get

them on the docket and I just have the proof of publication there, if you want them.

MR. NUTTER: I notice that we got a proof of publication from one of the papers and I presume that we did from the other.

MR. HINKLE: I turned those in so that you will have them complete.

MR. NUTTER: Let me go check on this right quick to see if we got the proof of publication.

MR. HINKLE: You can just keep them if you want to.

MR. NUTTER: Okay. Fine. And did you get your invoices from both the newspapers, also?

MR. HINKLE: Yes, they're all paid.

MR. NUTTER: Okay.

MONTY J. GIST

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

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name?

A Monty Gist.

Q And by whom are you employed?

A Humble Oil and Refining Company.

Q Are you a graduate geologist?

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A Yes, sir, I am.

Q State briefly your educational background and your experience as a geologist?

A I graduated from Oklahoma State University in 1956, was immediately employed with Humble Oil and Refining Company and have been working in the Permian Basin complex of West Texas and New Mexico, since that time. Currently I'm a geologist in a joint interest group in the Midland division.

Q Have you made a study of the Paddock (San Angelo) area?

A Yes, sir.

Q Pool?

A Yes, sir.

Q What does that study consist of?

A That study consists of a review of the geologic nature of the Paddock and surrounding area.

Q You have not previously testified before the New Mexico Oil Conservation Commission?

A No, sir.

Q MR. HINKLE: Are the witness' qualification satisfactory?

MR. NUTTER: Yes, they are.

Q (By Mr. Hinkle) Are you familiar with the applications of Humble Oil in these two cases, number 3615 and 3616?

A Yes, sir.

Q Have you prepared any exhibits to be introduced in this case or have they been prepared under your direction?

A Yes, sir.

Q Will you refer to Exhibit Number 1, and explain to the Commission what it is and what it shows? We have already distributed the exhibits to the Commission.

A Exhibit Number 1 is a base map of the Paddock field. The dashed, heavy dashed line within this area is the proposed boundary of the Paddock unit. The stapled, long stapled pattern indicates the State lease. The small dotted pattern indicates the Federal leases. The map shows on it all of the wells within the Paddock area and as the symbols indicate, this is a field with multiple completions, some 14 or so zones are productive in the area.

Q Are all of the wells up to the northeast producing from the Paddock, too?

A No, sir.

Q The northwest?

A The northwest, no, sir, they are not. There are several wells up there. However, they do not appear to be contiguous as far as productive communication is concerned between the proposed unit area and the area to the northwest.

Q Now, refer to Exhibit number 2 and explain what it shows?

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A Exhibit Number 2 is a similar map showing the unit boundary but it also has the surrounding lease ownership within a two mile radius of the proposed unit pilot injection area which would be proposed to be located in Section 35, T. 21, 37 East and in Section 2 T. 22 South, Range 37 East. Also on this base are the proposed future injection wells as indicated by the small triangles within the unit boundary.

Q By future, you mean that in the event the pilot area is expanded, that these are the likely wells to use in expansion?

A That's correct.

Q Anything further with respect to Exhibit Number 2?

A No, sir.

Q Now, refer to Exhibit Number 3 and explain what that shows?

A Exhibit Number 3 is a structure map, contoured on top of the Paddock A zone. If you will look at Exhibit 3-A, we have a typical log showing the Paddock member of the San Angelo formation. This map is contoured on top of the A. zone as you can see, here. It falls about fifty feet on top of the upper A. zone. The structure map has approximately forty to fifty feet of relief on the west side and approximately a 180 feet of relief or enclosure on the east side. As you can see, the overall configuration of the Paddock field is an elongate structural feature. I might point out here that the Paddock

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production is not related to structure, at least the primary is related in part to structure but primarily the controlling factor, controlling trapping mechanism here is stratigraphic along the length of the field back along the flanks of the proposed unit area. The porosity and permeability are controlling factors along with high water cuts. There is not a consistent water level in the field. It is erratic.

MR. NUTTER: That's along this east length over here, that you're talking about? Or would that also include the west side?

A That also included the west side. And there is porosity and permeability from this main study area within the proposed unit area and the area of the Paddock was to the northwest. They appear to be noncontiguous, as far as effective communication is concerned there is one well linkage there, a narrow band linkage there and as far as the reservoir is concerned, the northwest portion is noncontiguous because later development to the north, later drilling and recompletion work of the northwest portion, indicated that the well is to be, to have eight or nine hundred pound pressure compress, higher pressure than the main Paddock area.

Q (By Mr. Hinkle) That's upon the completion of the well?

A That's upon the completion of the well, yes, sir.

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Q Now, is that the reason why the proposed unit area has been outlined as it is and so as to exclude the area which you refer to in the northwest and west?

A Yes, sir. It is, we feel it is not an effective communication, the well would not be effective to the northwest.

Q Well, in your opinion, does the proposed unit area cover all, substantially all of the producing area, that is the same reservoir from which the Paddock wells are producing?

A Yes, sir. Well, with the exception of one or two wells that are not in the unit at the discretion of the operator.

Q Is it your opinion that the injection of water in the proposed unit area would not affect the wells which are in the area shown on the structural map toward the northwest and west?

A Yes, sir.

Q So, that's the reason they have been excluded from the proposed unit area?

A That is correct.

Q Have the wells producing in the proposed unit area reached an advanced stage of production?

A Yes, sir, they have. The 86 producing wells in the field -- 86 wells, 70 producing, the average production is a little over six barrels per day. That is the average production.

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in the San Angelo.

Q In your opinion, would these wells be regarded under the term of stripper wells?

A Yes, sir.

Q Do you have anything else with respect to 3 and 3-A?

A No, sir.

Q Now, turn to Exhibit Number 4 and explain what it shows?

A Exhibit Number 4 is the diagrammatic cross section through the north portion of the proposed unit area as can be seen on the cover, extending across the top row of wells in Section 2, 22 South, 37 East. This cross section was prepared to show the general structural relief across this general portion of the field and to indicate, give an indication of how the Paddock member of the San Angelo formation has been broken down into zones by the technical study group. It also aides in the location of perforated intervals in the Paddock wells, themselves and in the 29 wells, where they exist.

Q Would you say that the Paddock formation correlates real good in all the wells that are shown on this cross section?

A The three zones as has been defined here as A, B, and C, correlate good on the S.P. curve, they are correlated primarily by interval on the gamma ray neutron log but overall and throughout the field the three zones can be carried --

Q There is a good continuity throughout the whole unit area as far as these three zones are concerned?

A As far as the three zones we have defined are concerned, the porosity and permeability varies within each zone.

Q Is it the intention of Humble to inject water into all three of these zones?

A Yes, it is far productive.

Q And you propose that all of the injection wells in the initial pilot and later extended, would be open to these three zones so water could be injected?

A Yes, sir, where they are deemed productive.

Q Now, referring to Exhibit Number 5, is that what you have?

A No, sir.

Q Okay. Is there anything else that you want to bring out from a geologic standpoint?

A If you have no other questions, no, sir.

Q Okay. next, wait a minute.

MR. HINKLE: Do you have any questions?

CROSS EXAMINATION

BY MR. NUTTER:

Q I would like to know how universal are all three zones in the wells, in the unitized area?

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A They are carried uniformly throughout the unitized area. However, the productivity varies in accordance with the porosity and permeability.

Q I noticed some of your wells here in the cross section, I think I noticed one that wasn't even drilled through zone C, apparently. That would be this Marathon-Lynch Number 3 third from the right. Now, it doesn't have zone C in it, at all, apparently. I wonder if it's the intention of Humble in setting these wells up for flooding if they open perforations in wells that don't have all three zones perforated?

A Yes, sir. They will. Depending on the well tests and the performance of the zones in the surrounding area.

Q If a neighboring well has it and this well is perforated in --

A To presume the continuity.

Q In other words, it's going to be an attempt to flood all three zones wherever it is indicated that it is positively productive?

A Yes.

Q Now, you also mentioned that you had a few wells on the west that were producing from this same reservoir but weren't in the unit, at the operators option. Would I be correct to assume that those Paddock wells belonging to Socony Mobil in Section 9, just west of the unit there would be that

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type of well, it appears that it's in the same pool? I was referring to your structure map, Exhibit 3. See that up there, number 7 there in Section 9 which is a Paddock well and number 2 up north of that is a Paddock well, evidently. Oh, I beg your pardon, that is General Skelly.

A That's a General Skelly.

Q All right, that's correct. Those are General Skelly wells. Number 11 in the northeast of 9 is a Paddock but it's labeled temporarily abandoned on your Exhibit Number 1.

A Yes.

Q The porosity --

MR. HINKLE: Was that acreage considered when you first tried to delineate the outlines of the unit area?

A Yes, it was. If you will refer to Exhibit Number 4, the heavy dark line that is the cross section, the heavy dark line around the Paddock field consists of, I think, 139 wells which was included in the initial study.

Q (By Mr. Nutter) And it was finally eliminated to the dotted line?

A Yes, sir.

Q Shown there on that exhibit?

A Yes, sir.

Q Now, in your direct testimony, you mentioned that there were 86 wells in the field, you meant in the unit, I

presume?

A Well, yes, sir.

Q In the unitized area?

A Yes.

MR. NUTTER: I believe that's all. Are there any further questions of the witness? He maybe excused.

* * * * *

A. L. KELLEY

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

DIRECT EXAMINATION

BY MR. HINKLE:

Q Your name is Art Kelley?

A Yes, sir.

Q You're employed by the Humble Oil and Refining Company?

A Yes, sir.

Q What capacity are you?

A I'm reservoir engineer in the division office in Midland, a joint interest group.

Q Are you a graduate in petroleum engineering?

A Yes, I am. I graduated from Tulsa University in 1953 and have been employed by Humble since then, primarily as reservoir engineer.

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Q Have your studies as a reservoir engineer, included areas in New Mexico?

A Yes. Since coming into the division office in September of last year, I have been handling engineering involving some of our New Mexico interests.

Q Have you made a study of the Paddock (San Angelo) area?

A Yes, I have.

Q What does that study consist of?

A When I came in in September of last year, I reviewed the engineering committee report and all of the correspondence in connection with this unitization effort beginning with the first operators meeting in April of '61. Since then, I have been assigned to this project and have participated in revising the agreements and other unitization work that has been done during that period.

Q Are you familiar with the applications of Humble in connection with cases 3615 and 3616?

A Yes, I am.

Q Are you familiar with the contemplated plan of development or secondary recovery operation of Humble?

A Yes, I am.

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

A No, I have not.

MR. HINKLE: Are the qualifications of the witness acceptable?

MR. NUTTER: Yes, they are.

Q (By Mr. Hinkle) Have you prepared certain exhibits for use in connection with this case or have they been prepared under your direction?

A Yes, I have.

Q Refer to Exhibit Number 5 and explain what it shows?

A This Exhibit Number 5 is a base map of the general area similar to Exhibit Number 1, the primary difference being that it shows only the six planned pilot injection wells, one being in Section 5, Township 21 South, Range 33 East, the other five being in Section 2, Township 22 South, Range 33 East. Also this map shows the pilot project area which is circled by a dashed line there that encloses the injection well plus the diagonal and direct offsets to the pilot injection wells.

Q What sort of a pattern would be formed by the first six injection wells?

A Our planned pilot will be two 60 acre five spots. These wells are now Paddock completion.

Q How much water do you contemplate would be injected into these six wells, initially?

A About a thousand barrels a day per well or six thousand

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barrels per day total.

Q What are Humble's plans in the event you do obtain a favorable response within a reasonable time of the injection of water into the pilot area?

A As soon as the pilot evaluation indicates a favorable flood or successful flood, our plans are to expand following the five spot pattern as shown on Exhibit 2 that has already be discussed, it shows our expanded, our tentative expanded pattern.

Q Have you prepared, or was there prepared under your direction, a diagrammatic sketch of each of the proposed additional injection wells?

A Yes, it was.

Q Refer to Exhibit A and explain what that is?

A This is Exhibit 6. We have a schematic diagram of each pilot injection well and those are lettered 6-A through F. These sketches show all of the casing, the cement volume and cement tops and the descriptions of each tubing stream and packer and our planned injection interval which takes in the entire unitized formation.

Q Are all of these sketches of each of the six wells substantially the same?

A Yes, they are.

Q The only difference is in the depth of the casing and

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the depth of the tubing, I guess, isn't it?

A That's correct. They all will have tubing and packers.

Q Do you know whether or not a copy of the application for waterflood project was furnished to the State Engineer?

A Yes, it was.

Q Do you know whether or not the State Engineer has voiced any objection to the proposed plan?

A There has been no objection.

Q Where does Humble propose to get water, the water supply for carrying on this project?

A We have received permits to drill six-five thousand foot injection wells in Section 2 which shows the Humble State S. Lease on the previous maps. These would be San Andres wells, would be a non potable water.

Q Now, in the original application, when it was filed, it was indicated that Humble had made application to the State Engineer to appropriate 1950 acres of water for this purpose but that the application had not yet been acted upon. Since the filing of this application has that, has it been approved by the State Engineer?

A Yes, it has been approved for 1950 acre feet.

Q Is it stated that the water produced for these water wells would be fresh water or brackish water or what?

A It will be non potable water. We haven't actually

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drilled in the wells but from the other wells in the area, we know it will be.

Q You propose to drill one well initially to start the project area?

A That's correct.

Q And then drill additional wells as needed?

A That's correct.

Q Have you compiled any information with respect to the production history to the Paddock (San Angelo) Pool?

A Yes, sir, I have.

Q Refer to Exhibit Number 7 and explain what that shows?

A Exhibit 7 is the production decline curve for the proposed unit area. We have plotted the annual production and each year's annual average production is plotted on the line, the vertical line for that particular year. This covers the period from the beginning of development in 1945 through the year 1966. We had a peak rate in 1948 of about a million and a half barrels per year and the average in 1966 was a hundred and seventy-one thousand barrels per year or about 11 percent of the peak rate. The accumulative production as of April 1st of '67 is about twelve and a quarter million barrels and as you can see, we are, we have been in a decline several years and we consider this a stripper stage in production.

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Q Have you made any calculation as to what you might reasonably expect to recover by this secondary recovery operation?

A Yes, we estimate the secondary recovery to be about 9,300,000 barrels. This is roughly 75 percent of the primary. The value of this oil will be about \$23,300,000.00.

Q The proposed unit agreement, copies of which have been filed with the application, changing the formula for the distribution or allocation of production, did you have anything to do with that formula?

A I am familiar with it. This formula was negotiated before I had any connection with the unit but I can review what it's based on.

Q That was negotiated among all of the operators in the proposed unit area?

A That's correct. The primary phase is to extend until a total of 768,239 barrels of oil have been produced after January 1st, 1964. This phase is based fifty percent on 1964 adjusted revenue and fifty percent on the estimated January 1st, '64 remaining primary. The secondary will last from the end of the primary phase to the end of the project and it's based 100 percent on the estimated ultimate recovery, ultimate primary, including the psuedo-ultimate primary assigned to certain undeveloped tracts.

Q Did Humble and all of the other operators who have

joined in this unit agreement reached a conclusion that this was a fair and equitable formula?

A They did reach a substantial agreement. I think it was generally agreed that it was impractical to map net pay accurately enough for the use of this as the perimeter so this was the reason for using the estimated ultimate primary based on the declined curves as an indication of the net pay under each tract.

Q Is it your opinion that this formula will protect the correlative rights of all the parties?

A Yes, It will.

Q Both the working interests and the royalty owners?

A That's correct.

Q Due to the fact that you propose to start a pilot project area and to expand it, in your opinion, would it facilitate the plan and the carrying out of this operation for the Oil Conservation Commission to provide an administrative procedure for the expansion of the project pilot area and also to approve additional injection wells?

A Yes, it would. The sole purpose of the pilot, of course, is to determine whether we can go on to the full scale expanded flood. We already have made plans for this expansion in the event the pilot is successful. We have prorated an adequate water supply and are certain it would be to some

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advantage to be able to proceed with this expansion without any further hearings? Is Humble seeking the establishment of a project allowable as provided by Rule 701 of the Commission?

A Yes, it is.

Q Do you have anything further with respect to the Engineering standpoint that you would like to say to the Commission?

A I believe not.

MR. HINKLE: That's all of this witness.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Kelley, your production decline curve here, indicates that during 1966 the unit area produced approximately 170,000 barrels of oil or some such figure?

A Yes.

Q How many wells was that coming from and how does that work out to be an average daily per well production figure?

A At that particular time during March, there were 70 wells actually producing and 16 wells shut in in the unit area.

Q How about during '66?

A I don't know if there has been any drastic changes. That would be within one or two wells of that same number for the year. It has been fairly substantial. I am again, looking

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at March. I have a summary hear, I think. At any rate, this is approximately seven barrels per day per producing well for March of '67, which is slightly lower than the average for '66.

Q Let's see, the average depth here is a little more than five thousand feet, sin't it?

A Yes.

Q So, you figure seven barrels per day at a depth in this neighborhood, is a stripper stage?

A Yes, actually the engineering committee arrived at a figure of three barrels a day as an economic limit so, we are slightly over twice the economic limit on the average.

Q Now, on this tract participation formula, how many operators in the unit have agreed to this formula, did you have 100 percent commitment for a working interest in that?

A No, we have a man prepared to testify as to the sign up status here.

MR. HINKLE: The next witness, Mr. Wigley, will testify with respect to the interests that have been committed.

Q (By Mr. Nutter) I see. Mr. Kelley, will this tubing be treated in some manner to prevent corrosion?

A These plans are to plastic coat the tubing.

Q How about the annulus between the tubing and the casing?

A We normally put corrosive inhibited fluid in there,

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use a water inhibitor.

Q And there will be a packer in each case?

A Yes, sir.

Q Now, I count up about 25-40 acre tracts in the initial project area, is that about what you had counted?

A I hadn't --

Q With the determination of the allowables -- Anyway, it's the area within this little dotted line?

A Yes.

Q And is there a Paddock well in each one of those forty acre tracts?

A Yes, there is.

Q Okay.

A In some cases they are shut in but they are completed.

Q You hope that they will be activated?

A Yes, sir. We hope they will produce.

MR. NUTTER: I believe that's all. If there are no further questions, the witness may be excused.

* * * * *

MR. HINKLE: All right, the next witness, Mr. Marvin Wigley.

MARVIN L. WIGLEY

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

DIRECT EXAMINATION

BY MR. HINKLE:

Q State your name, whom you're employed by and where do you live?

A Marvin L. Wigley, I'm employed by the Humble Oil and Refining Company as a unitization landman at the division office in Midland.

Q What is your position with Humble?

A I'm a unitization landman.

Q Are you familiar with the applications of Humble in Cases 3615 and 3616?

A I am.

Q Have you been in charge of, you might say, of putting together this unit agreement, unit operating agreement and getting it executed by all of the interested parties?

A Yes, sir, I have.

Q Do you know whether or not the proposed unit area has been approved by the Director of the United States Geological Survey?

A Yes, on May 25, 1966, Humble made applications for the designation of this area and this area was designated by the U.S.G.S. by their letter of July 27th, 1966.

Q Is that Exhibit Number 8?

A Yes, this is the Exhibit Number 8.

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Q Was there an amendment to this designation as shown by the letter of July 27th?

A Yes, Gulf Oil Corporation requested that the southwest quarter of the northeast quarter of Section 3, Township 22 West, Range 37 East, be omitted from the unit area for the reason that this well, this acreage was not producible from the unitized formation and that the well is not necessary for unitization secondary recovery operations. This amendment was approved by the U.S.G.S. by letter dated May 3rd, 1967.

Q Let's see, that's Exhibit Number 9?

A This is Exhibit Number 9.

Q Has the area also been approved, that is the outlines of the area in the form of a unit agreement been approved by the Commissioner of Public Lands?

A Yes, they have.

Q And has the form of unit agreement been also approved by the Director of the U.S.G.S.?

A Yes.

Q Now, that approval is in connection with the original letter designating the unit area?

A This is true, this is true.

Q Is the formal unit agreement which is being proposed in this case, substantially the same as that which has heretofore been approved by the Commissioner of Public Lands, the Oil

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Conservation Commission and the U.S.G.S. where Federal, State and fee lands are involved?

A Yes, it is. Of course, the participation formula in these agreements, vary according to what is negotiated among the operators but the form is substantially the same as that generally used.

Q Is Humble designated as the unit operator in the unit agreement?

A Yes, we are.

Q I believe that you testified that you have been in charge of getting the unit agreement signed up. Can you give, tell the Commission what's the present status of the execution of the unit agreement?

A Yes. There are 31 tracts shown within the outline of the unit, your plat, Exhibit A, attached to the unit agreement. Of these, 24 tracts comprising 82.97 percent are qualified for inclusion in the unit in accordance with the terms of the unit agreement. Now, in these 24 tracts, they are signed 100 percent as to working interest and 85 percent or more as to royalty interest. Just as a matter of general information, we have royalty owners comprising 95.86 percent of the entire royalty under the unit now committed. This, we, of course, will continue our efforts with regard to present unsigned interests.

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Q I believe the Examiner asked another witness there, what tracts had been omitted. Do you have a plat which would show that?

A Yes, I have this and I will show the Examiner this well --

Q Refer to Exhibit Number 10 and explain the tracts which have not been committed to the unit agreement in accordance with the provisions of the unit agreement, that is the qualifications and why they have not been committed?

A Mobil Oil Corporation is the operator in tracts 13 and 22. There, Mobil had a disagreement with the participation formula as to those tracts. Now, they have thus far and we assume that they will not ratify this particular unit. Sunray in tracts 28 and 29 were not satisfied with the formula and did not join for the same reason. T. P., Texas and Pacific in tracts 2, 3 and 18 have the same position. Now, in a number of these tracts, there are several of them, are qualified from a royalty standpoint but the operator has thus far not seen fit to join. In some instances, I won't go into detail but in some instances, one operator's tracts would fit as far as the formula was concerned but it didn't fit as far as the other tract was concerned and therefore, they didn't sign.

Q Do you anticipate that on farther down the road some place that these tracts might possibly be committed, particularly

in the event that the pile up proves to be satisfactory and you go ahead and expand the unit?

A These parties have not indicated anything in this regard as of the present time. It seems reasonable that this might happen.

Q This shows all that in yellow has been committed in acreage?

A This is the portion of the unit that will become effective as it stands right now. Now, of course, in this sign up, I have assumed the State and Federal government, of course, will issue their usual approval on it since they have seen the forms. I have counted this as signed, for our figures.

Q Now, how long, how much time has been consumed in putting this unit together, as far as meetings of the operators are concerned and trying to reach an agreement on an equitable formula?

A I believe this started back about 1960 or '61. Pardon me. I have it here somewhere. The first operators meeting was held in April, 1961. The first technical committee meeting was held in May of '61 and there have been numerous meetings since that time. A great deal of work has gone into this and we feel that if the unit is not put together--We know there are some unsigned tracts--but we feel that if it's

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not put together at this time, that if we have to start over, it may never get put together. This is something we couldn't answer.

MR. HINKLE: Did you have any questions?

MR. NUTTER: No further questions.

Q (By Mr. Hinkle) In the event the unit agreement is approved, do you feel that the unit agreement will be in the interest of conservation and the prevention of waste?

A Yes, I do.

Q Is it your opinion that it will promote the greatest ultimate recovery of unitized substances?

A Yes.

Q State whether or not in your opinion the unit agreement will also be in the interest of protection of correlative rights?

A I believe it will.

Q Is there anything else that you would like to bring out to the Commission?

A No.

MR. HINKLE: That's all of the testimony.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Wigley, with regard to these tracts that aren't being committed, how much total acreage comprise those seven tracts?

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A If you will give me just a moment, sir, I'll tell you that. The 24 tracts, there is a total of 3758.3 acres in the unit. These 24 tracts comprise 3118.3 acres so, subtracting that is, 640 acres, according to a quick calculation there.

Q Now, in the event that the flood, the pilot flood is successful and that you go on to expand the flood and these tracts are still not committed to the unit, will Humble attempt to work line agreements with the operators of these tracts so the flooding could go up to their leases and possibly they could operate their own floods then?

A Yes, we do have plans for that, do we not?

MR. KELLEY: I think those would be our only two alternatives.

A Yes, for the reason that it's our only alternative there.

Q (By Mr. Nutter) So, that it's not necessarily fatal to the operation if these tracts aren't committed?

A No, it is not.

Q And of the 24 tracts which qualified, you do have 100 percent commitment working interest?

A And within limits as required by the agreement for royalty.

MR. HINKLE: And they anticipate, do you not, that you will continue your efforts?

A Oh, yes, we definitely plan to continue our efforts.

MR. HINKLE: But, you will not withhold the filing of the unit agreement for approval?

A No.

MR. HINKLE: Until you get every royalty owner in it?

A No, we are requesting approval, at this time.

Q (By Mr. Nutter) Although this letter of July 27th, 1966 as amended by the letter of May the 3rd, 1967 from the United States Geological Survey, doesn't in itself, approve the unit agreement, it does say that the unit area is an acceptable area and that the form of the unit is an acceptable form?

A Yes.

Q And they have stated what your participation formula is?

A Yes.

Q So, presumably, they have given tentative approval to your participation?

A Yes, I have counted this in the sign up here in order to qualify the specific number of, amount of the unit area that we have to qualify.

Q And how do you stand with the Commissioner of Public Lands?

A He has tentatively approved the form. This was cleared

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with him sometime back. I can't give you an exact date but they have, there is a letter in our files from your firm, I believe, advising that they have been advised by the Commissioner that this is a satisfactory form.

Q Including the participation formula?

A Yes, this is true.

MR. NUTTER: Are there any further questions of Mr. Wigley?

MR. HINKLE: For your own information, the Commissioner of Public Lands approved it right after the U.S.G.S. did, after we got approval from the U.S.G.S and at our conferences with the U.S.G.S., this letter was intended as an approval of the formula as well as the formal unit agreement designation of the area. There is no question about that.

MR. NUTTER: Very good.

MR. HINKLE: Because the approval was withheld for a time until Humble furnished additional information as to how the formula was based on before they would approve it.

MR. NUTTER: If there are no further questions of the witness, he may be excused. Let's see, do you have the exhibits?

MR. HINKLE: I would like to offer into evidence, Exhibits 1 through 10, inclusive.

MR. NUTTER: Humble's Exhibits 1 through 10 will be

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admitted into evidence. Do you have anything further, Mr. Hinkle?

MR. HINKLE: No, I would like to say this, that in view of the present status of the signing of the unit agreement, it is the plan of Humble to present this to the Commission of Public Lands for their approval, next Tuesday and if the Commission could get the order ready, assuming they will approve the unit agreement, just the ones on Case 3615, so we will have it ready for the Commissioner by Tuesday, we would certainly appreciate it. Now, the other, you can take your time on.

MR. NUTTER: We will try to get this one for you. If there is nothing further in these cases, we will take the cases under advisement. The hearing is adjourned.

(Whereupon, Applicant's Exhibits 1 through 10 were offered and admitted into evidence.)

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STATE OF NEW MEXICO)
) SS.
COUNTY OF BERNALILLO)

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

Witness my Hand and Seal this 19th day of July, 1967.

Joe B. Jameson
Notary Public

My Commission Expires:

June 25, 1971.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. **3615-3616** heard by me on **7/12**, 19**67**.
[Signature]
Examiner
New Mexico Oil Conservation Commission

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ATTN. MR. CLARENCE HINKLE

JUN 28 1967

DATE	INCHES	TOTAL INCHES	DESCRIPTION	CHARGES	TAX	CREDITS	BALANCE
JUN 28 67			NOTICE OF PUBLICATION CASES 3615 AND 3616 NEW MEXICO OIL CONSERVATION COMMISSION 2 AFFIDAVITS MAILED TO NMOCC	10.95	.44		11.39*
<p><i>Applications Late -</i> <i>Special</i> <i>Advertisement of</i> <i>Cases 3615 & 3616</i> <i>@ applicants</i> <i>et/consent</i> <i>ck# 7314</i></p> <p>I hereby certify that the above charge is just and correct and payment therefor has not been received</p> <p>Sun Publishing Corp. Hobbs Daily News-Sun <i>Pauline Jentress</i></p> <p>Subscribed and sworn to this 28 day of June, 1967 <i>[Signature]</i> Notary Public</p>							

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AMOUNT

AFFIDAVIT OF PUBLICATION

State of New Mexico,
County of Lea.

1. **Robert L. Summers**

of the Hobbs Daily News-Sun, a daily newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping attached hereto was published once a week in the regular and entire issue of said paper, and not in a supplement thereof for a period

of _____

ONE _____ weeks.

Beginning with the issue dated

June 28 _____, 19 **67**

and ending with the issue dated

June 28 _____, 19 **67**

Robert L. Summers
Publisher.

Sworn and subscribed to before

me this **28th** day of

June _____, 19 **67**

Notary Public.

My Commission expires _____

3-17, 19 **69**

(Seal)

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.

LEGAL NOTICE

June 28, 1967

**NOTICE OF PUBLICATION
STATE OF NEW MEXICO
OIL CONSERVATION
COMMISSION**

SANTA FE, NEW MEXICO

The State of New Mexico by its Oil Conservation Commission hereby gives notice pursuant to law and the Rules and Regulations of said Commission promulgated thereunder of the following public hearing to be held at 9 o'clock a.m. on JULY 12, 1967, at the Oil Conservation Commission Conference Room, State Land Office Building, Santa Fe, New Mexico, before Daniel S. Nutter, Examiner, or Elvis A. Utz, Alternate Examiner, both duly appointed for said hearing as provided by law.

STATE OF NEW MEXICO TO:

All named parties and persons having any right, title, interest or claim in the following cases; and notice to the public.

(NOTE: All land descriptions herein refer to the New Mexico Principal Meridian, whether or not so stated.)

CASE 3615:

Application of Humble Oil & Refining Company for a salt agreement, Lea County, New Mexico.

Applicant, in the above-styled cause, seeks approval of its Paddock (San Angelo) Unit Area comprising 3758 acres, more or less, of Federal, State and Fee Lands in Townships 21 and 22 South, Range 37 East, Lea County, New Mexico.

CASE 3616:

Application of Humble Oil & Refining Company for a waterflood project, Lea County, New Mexico.

Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its Paddock (San Angelo) Unit Area by the injection of water into the Paddock formation through six wells located in Section 25, Township 21 South, Range 37 East, and Section 2, Township 22 South, Range 37 East, Paddock Pool, Lea County, New Mexico.

GIVEN under the seal of the New Mexico Oil Conservation Commission on this 23rd day of June, 1967.

**STATE OF NEW MEXICO
OIL CONSERVATION
COMMISSION**

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

(SEAL)

Affidavit of Publication

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County of Santa Fe }

I, Geraldine L. Trujillo, being first
duly sworn, declare and say that I am the (LEGAL Manager) (~~Editor~~) of
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Laws of 1937; that the publication, a copy of which is hereto attached, was
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cutively, the first publication on the 30 day of June, 1967;
and the last publication on 30 day of June, 1967; that pay-
ment for said advertisement has been (duly made), or (assessed as court
costs); that the undersigned has personal knowledge of the matters and
things set forth in this affidavit.

Geraldine L. Trujillo
LEGAL ~~Editor~~ Manager

Subscribed and sworn to before me this 30
day of June, A.D., 1967

Ronald E. Quintana
Notary Public

My commission expires
January 16, 1969

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
OIL CONSERVATION
COMMISSION
SANTA FE, NEW MEXICO
The State of New Mexico by its
Oil Conservation Commission
hereby gives notice pursuant
to law and the Rules and Regu-
lations of said Commission promul-
gated thereunder of the following
public hearing to be held at 9
o'clock a.m. on JULY 12, 1967, at
the Oil Conservation Commission
Conference Room, State Land Of-
fice Building, Santa Fe, New Mex-
ico, before Daniel S. Nutter,
Examiner, or Elvis A. Utz, Alter-
nate Examiner, both duly appoint-
ed for said hearing as provided
by law.
STATE OF NEW MEXICO TO:
All named parties and persons
having any right, title, interest
or claim in the following cases,
and notice to the public.
(NOTE: All land descriptions
herein refer to the New Mexico
Principal Meridian, whether or
not so stated.)
CASE 3615:
Application of Humble Oil & Re-
fining Company for a unit agree-
ment, Lea County, New Mexico.
Application, in the above-styled
cause, seeks approval of its Pad-
dock (San Angelo) Unit Area
comprising 3758 acres, more or
less, of Federal, State and Fee
Lands in Townships 21 and 22
South, Range 37 East, Lea Coun-
ty, New Mexico.
CASE 3616:
Application of Humble Oil & Re-
fining Company for a waterflood
project, Lea County, New Mex-
ico.
Applicant, in the above-styled
cause, seeks authority to institute
a waterflood project in its Pad-
dock (San Angelo) Unit Area by
the injection of water into the
Paddock formation through six
wells located in Section 35, Town-
ship 21 South, Range 37 East,
and Section 2, Township 22 South,
Range 37 East, Paddock Pool,
Lea County, New Mexico.
GIVEN under the seal of the
New Mexico Oil Conservation
Commission on this 23rd day of
June, 1967.
(SEAL)
STATE OF NEW MEXICO
OIL CONSERVATION
COMMISSION
A. L. PORTER, Jr.,
Secretary-Director
(Legal No. 4119, Pub. June 30,
1967)
BY _____

ILL
e at \$ 10.50
aff. .50
mes \$ _____
ax \$.44
total \$ 11.44

July 6, 1967

Mr. Clarence E. Hinkle
Attorney at Law
Hinkle, Bondurant & Christy
Roswell, New Mexico

Dear Mr. Hinkle:

Your letter of June 27, 1967 and the enclosed application and exhibits pertaining to Humble Oil & Refining Company's application for a waterflood project in connection with the proposed Paddock (San Angelo) Unit Agreement is gratefully acknowledged.

It is noted in item 7 of the application that Humble has made application to the State Engineer to appropriate 1950 acre feet of water per annum from the San Andres formation in Sec. 2, T. 22 S., R. 37 E. Humble's application CP-316 filed in February of 1966 was protested. No hearing on the matter has been requested and therefore it is retained in a pending status.

On March 10, 1967 Humble filed applications CP-427 thru CP-427-X-5 seeking to appropriate 1950 acre feet on the six wells to produce from the San Andres in Sec. 2, T. 22 S., R. 37 E. These applications were approved on June 8, 1967.

In view of the above facts, it is suggested that Humble's application CP-316 be disposed of either by hearing, by withdrawal or some other means, since it appears that the approved application provided the water requested by Humble in the protested application.

FEI/ma
cc-Oil Conservation Comm.

Yours truly,

S. E. Reynolds
State Engineer

By:
Frank E. Irby
Chief
Water Rights Div.

- CASE 3613: Application of Sunray DX Oil Company for an amendment to Order No. R-1636-A, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks the amendment to Order No. R-1636-A, which order established special rules governing the operation of the Sunray Mid-Continent Central Bisti LPG-Gas-Water Injection Project, Bisti-Lower Gallup Oil Pool, San Juan County, New Mexico. Applicant seeks the reclassification of said pressure maintenance project, for the purpose of filing reports, as a waterflood project.
- CASE 3614: Application of Shiprock Corporation for an amendment to Order No. R-1438, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-1438, which order established special rules for the Shiprock-Gallup Oil Pool. Applicant seeks the deletion of that provision of said rules which provides that wells shall not be located closer than 300 feet to the nearest well producing from the same pool. Applicant would further amend said rules to permit the drilling of wells closer than 165 feet to the outer boundary of the quarter-quarter section, but in no event closer than 165 feet to the boundary of acreage owned by an offset operator.
- CASE 3615: Application of Humble Oil & Refining Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of its Paddock (San Angelo) Unit Area comprising 3758 acres, more or less, of Federal, State and Fee lands in Townships 21 and 22 South, Range 37 East, Lea County, New Mexico.
- CASE 3616: Application of Humble Oil & Refining Company for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its Paddock (San Angelo) Unit Area by the injection of water into the Paddock formation through six wells located in Section 35, Township 21 South, Range 37 East, and Section 2, Township 22 South, Range 37 East, Paddock Pool, Lea County, New Mexico.

DOCKET: EXAMINER HEARING - WEDNESDAY - JULY 12, 1967

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

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

- CASE 3608: Application of Union Oil Company of California for the creation of a new gas pool and special pool rules, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new pool for Permo-Pennsylvanian gas production from its Forni Well No. 1 located in Unit I of Section 15, Township 22 South, Range 27 East, Eddy County, New Mexico, and for the promulgation of special pool rules therefor, including a provision for 640-acre spacing.
- CASE 3609: Application of Texas Pacific Oil Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its J.P. Collier Well No. 4Y located in Unit G of Section 10, Township 11 South, Range 33 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Northeast Bagley-Wolfcamp and the North Bagley-Upper Pennsylvanian Pools through parallel strings of tubing.
- CASE 3610: Application of Texas Pacific Oil Company for a dual completion, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its Bluitt State Com. Well No. 1 located in Unit I of Section 32, Township 7 South, Range 37 East, Roosevelt County, New Mexico, in such a manner as to permit the production of gas from the Bluitt Wolfcamp and Bluitt San Andres Gas Pools through 2-inch tubing and the casing-tubing annulus, respectively.
- CASE 3611: Application of Texas Pacific Oil Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its Ella Drinkard Well No. 2 located in Unit E of Section 25, Township 22 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of oil from undesignated McKee and Ellenburger pools through parallel strings of tubing.
- CASE 3612: Application of Roger C. Hanks for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a well in exception to the South Flying "M" Pennsylvanian Rules at an unorthodox location 660 feet from the South line and 660 feet from the East line of Section 24, Township 9 South, Range 32 East, Lea County, New Mexico.

CLARENCE E. HINKLE
W. E. BONDURANT, JR.
S. B. CHRISTY IV
LEWIS C. COX, JR.
PAUL W. EATON, JR.
CONRAD E. COFFIELD
HAROLD L. HENSLEY, JR.
MICHAEL R. WALLER
STUART D. SHANOR

LAW OFFICES
HINKLE, BONDURANT & CHRISTY
600 HINKLE BUILDING
ROSWELL, NEW MEXICO 88201

MIDLAND, TEXAS OFFICE
521 MIDLAND TOWER
(915) MU 3-4891
OF COUNSEL: HIRAM M. DOW

June 27, 1967

TELEPHONE (505) 622-6510
POST OFFICE BOX 10

3616
MAIN OFFICE

Mr. A. L. Porter, Jr.
Secretary-Director
Oil Conservation Commission
Box 2088
Santa Fe, New Mexico

'67 JUN 28 AM 8 11

Re: Paddock (San Angelo) Unit

Attention: Mr. Dan Nutter

Gentlemen:

We enclose herewith in triplicate application of Humble Oil & Refining Company for approval of the Paddock (San Angelo) Unit Agreement embracing 3,758.30 acres in the Paddock pool situated in Lea County, New Mexico.

We also enclose herewith in triplicate application of Humble for approval of a waterflood project in connection with the proposed Paddock (San Angelo) Unit Agreement.

The writer talked with Mr. Dan Nutter in regard to these 2 cases with a view to having them placed on the first examiner's docket in July.

There is also enclosed 3 copies of the proposed form of unit agreement for the Paddock (San Angelo) Unit Agreement.

Yours very truly,

HINKLE, BONDURANT & CHRISTY

By Clarence E. Hinkle

CEH:cs

Enc.

cc: J. M. Shepherd
cc: Leon McMillan
cc: Marvin Wigley

DOCKET MAILED

Date 6-29-67
A

Case 3516

BEFORE THE NEW MEXICO OIL CONSERVATION COMMISSION

SANTA FE, NEW MEXICO

Case 3516

Application of Humble Oil & Refining Company for approval of a waterflood project in connection with the proposed Paddock (San Angelo) Unit Agreement embracing 3,758.30 acres in Townships 21 and 22 South, Range 37 East, N.M.P.M. Lea County, New Mexico within the Paddock Pool. Applicant also seeks establishment of administrative procedure whereby pilot project area may be expanded and for approval of additional injection wells.

MAIN OFFICE 000

'57 JUN 28 AM 8 11

Oil Conservation Commission
Box 2088
Santa Fe, New Mexico

Comes Humble Oil & Refining Company and hereby makes application for approval of a waterflood project in connection with the proposed Paddock (San Angelo) Unit Agreement embracing 3,758.30 acres in Townships 21 and 22 South, Range 37 East, N.M.P.M. Lea County, New Mexico within the Paddock Pool. Applicant also seeks establishment of administrative procedure whereby pilot project area may be expanded and for approval of additional injection wells, all in accordance with the provisions of Rule 701 of the rules and regulations of the Oil Conservation Commission, and in support thereof respectfully shows:

1. That applicant is in the process of forming a unit agreement to be known as the Paddock (San Angelo) Unit embracing the following described lands within the Paddock Pool situated in Lea County, New Mexico, to-wit:

Township 21 South, Range 37 East

Section 34 - SE $\frac{1}{4}$ SE $\frac{1}{4}$

Section 35 - S $\frac{1}{2}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$, E $\frac{1}{2}$ SE $\frac{1}{4}$

Township 22 South, Range 37 East

Section 1 - $W\frac{1}{2}$, $SW\frac{1}{4}NE\frac{1}{4}$, $W\frac{1}{2}SE\frac{1}{4}$, $SE\frac{1}{4}SE\frac{1}{4}$
Section 2 - All
Section 3 - $NW\frac{1}{4}NE\frac{1}{4}$, $E\frac{1}{2}NE\frac{1}{4}$, $S\frac{1}{2}$
Section 4 - $SE\frac{1}{4}SE\frac{1}{4}$
Section 10 - All
Section 11 - All
Section 12 - $NW\frac{1}{4}$, $N\frac{1}{2}NE\frac{1}{4}$, $SW\frac{1}{4}NE\frac{1}{4}$, $N\frac{1}{2}SW\frac{1}{4}$, $NW\frac{1}{4}SE\frac{1}{4}$
Section 14 - $N\frac{1}{2}NW\frac{1}{4}$
Section 15 - $N\frac{1}{2}NE\frac{1}{4}$, $SE\frac{1}{4}NE\frac{1}{4}$, $NE\frac{1}{4}NW\frac{1}{4}$
containing 3,758.30 acres, more or less

It is contemplated that applicant will be the unit operator under the terms of said unit agreement, the primary objective of which is to formulate and put into effect a secondary recovery project in order to effect additional recovery of unitized substances, prevent waste and conserve natural resources consistent with good engineering practices.

2. That there is attached hereto as Exhibit "A" a plat of the location of the proposed injection wells and the location of all other wells within a radius of 2 miles from said proposed injection wells which are producing from the Paddock pool or zone, which said plat also indicates the lease ownership within the proposed unit area and within a 2 mile radius.

There is also attached hereto as Exhibit "B" a plat showing the ownership of the proposed unit area, together with all wells producing not only from the Paddock pool but from other zones or pools within a radius of 2 miles of the proposed initial injection wells.

3. That applicant proposes to inaugurate a pilot project consisting of two 80 acre 5 spots with injection into 6 wells, which are more particularly shown on Exhibit "A" attached hereto. That there is filed herewith electrical logs of each of the 6 initial injection wells.

4. That there is also filed herewith diagrammatic sketches of each of the proposed 6 initial injection wells above referred to showing all casing strings, including diameters and setting depths, quantities used and tops of cement, and the planned injection interval in connection with each well. Each sketch also shows the tubing strings, including diameters and setting depths, and type and location of packers in connection with each well.

5. That the wells producing from the Paddock zone have reached an advanced stage of depletion and are regarded as what is commonly known as stripper wells.

6. The pilot project will be inaugurated by the injection of approximately 1,000 barrels of water per day into each of the 6 injection wells and if it appears after a reasonable time that the pilot project is responding favorably so that it would be economical to do so, the pilot project will be expanded by adding additional injection wells from time to time to form the pattern indicated on Exhibit "A" and to the end that the entire unit area will constitute the project area.

7. Humble has heretofore made application to the State Engineer for appropriation of 1950 acre feet of water per annum from the San Andres formation of the Capitan Underground Water Basin by the drilling of 6 wells to a depth of approximately 5,000 feet to be located in Section 2, Township 22 South, Range 37 East. These wells will be drilled as needed in connection with the expansion of the water flood project and it is anticipated that the water produced from these wells and used for injection purposes will be brackish water or water which is not potable and cannot be used for other purposes.

8. Applicant seeks the establishment of the project area and a project allowable in accordance with the provisions of Rule 701 of the Oil Conservation Commission and also the establishment of an administrative procedure for expansion of the pilot area and approval of additional injection wells.

9. A copy of this application with all exhibits has been mailed to the State Engineer of the State of New Mexico, Capitol Building, Santa Fe, New Mexico simultaneously with the mailing of this application to the Commission.

10. Applicant respectfully requests that this matter be set down for hearing before an examiner at the earliest possible date.

Respectfully submitted,

HUMBLE OIL & REFINING COMPANY

By 

HINKLE, BONDURANT & CHRISTY

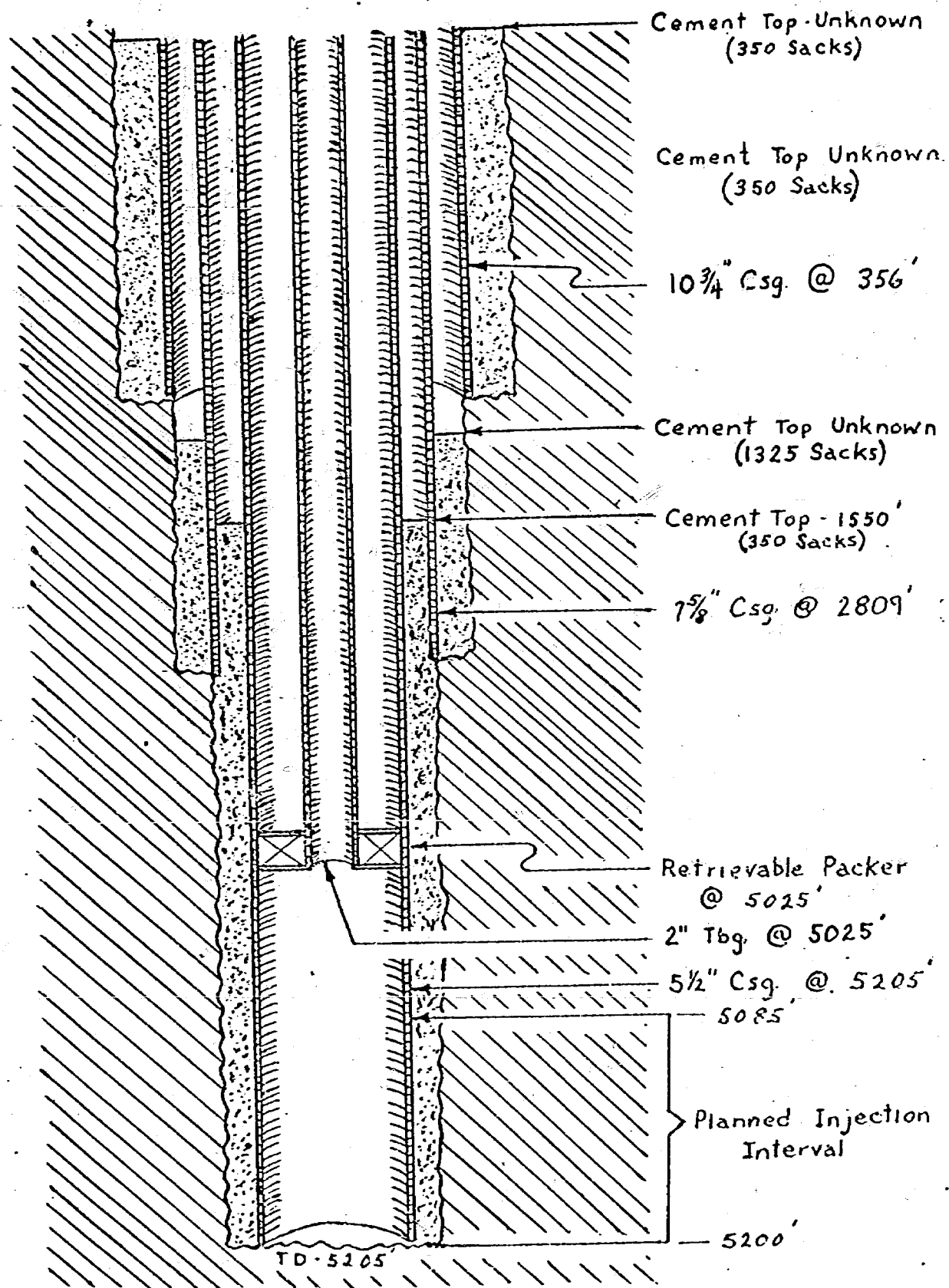
By 

Attorneys for Applicant

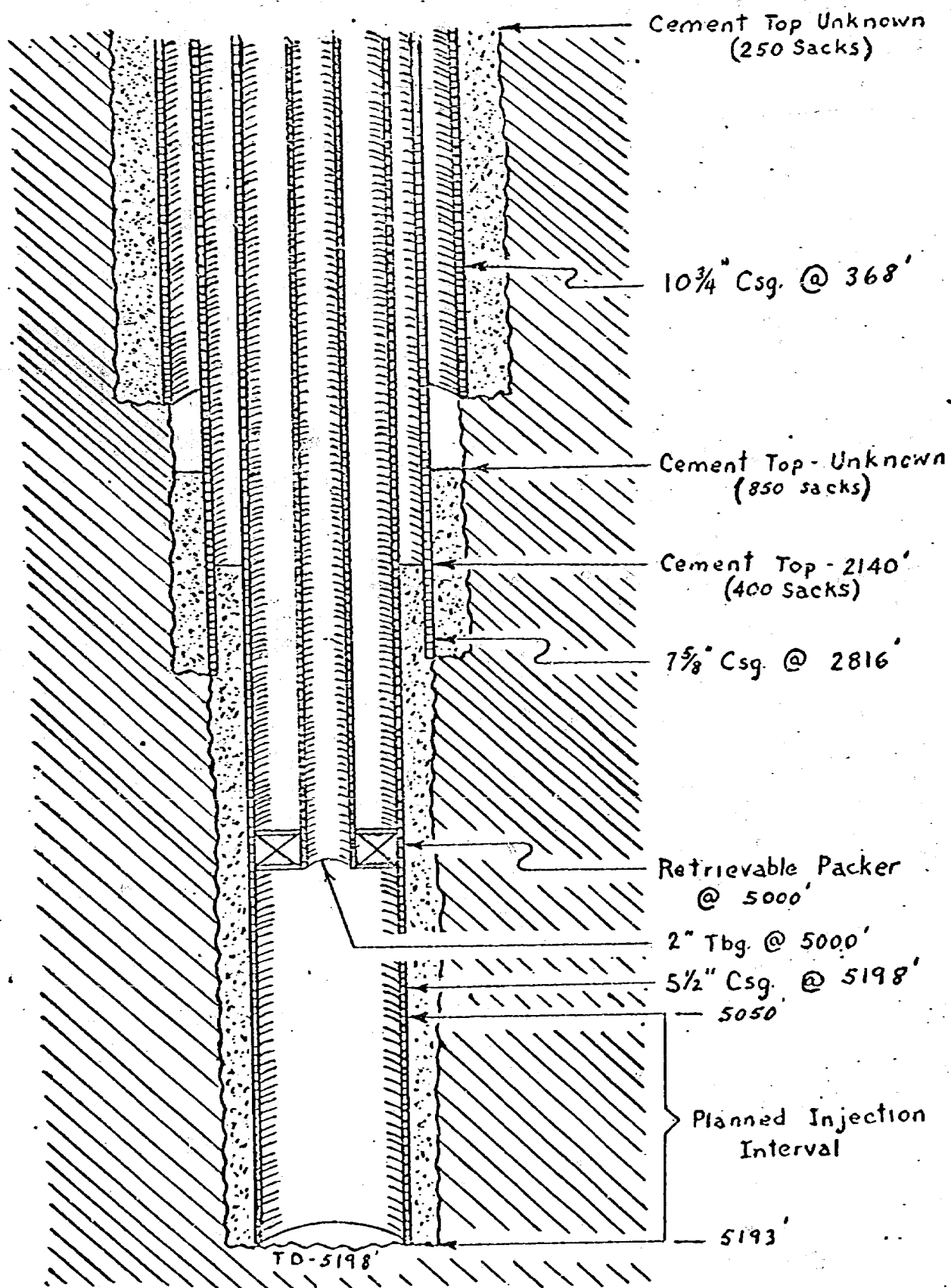
Box 10

Roswell, New Mexico

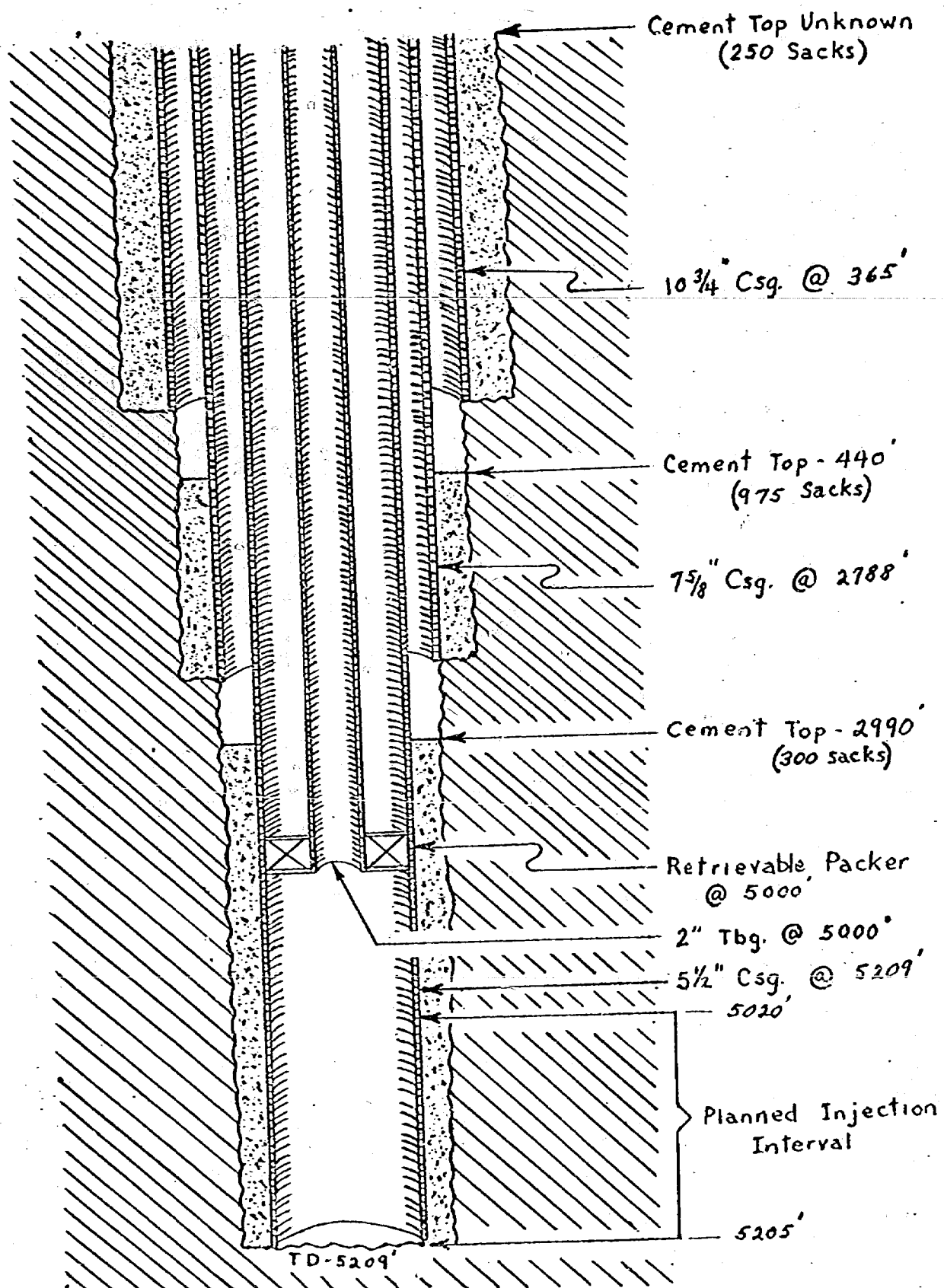
Humble New Mexico State "S" No. 5
Pilot Injection Well
Paddock (San Angelo) Unit



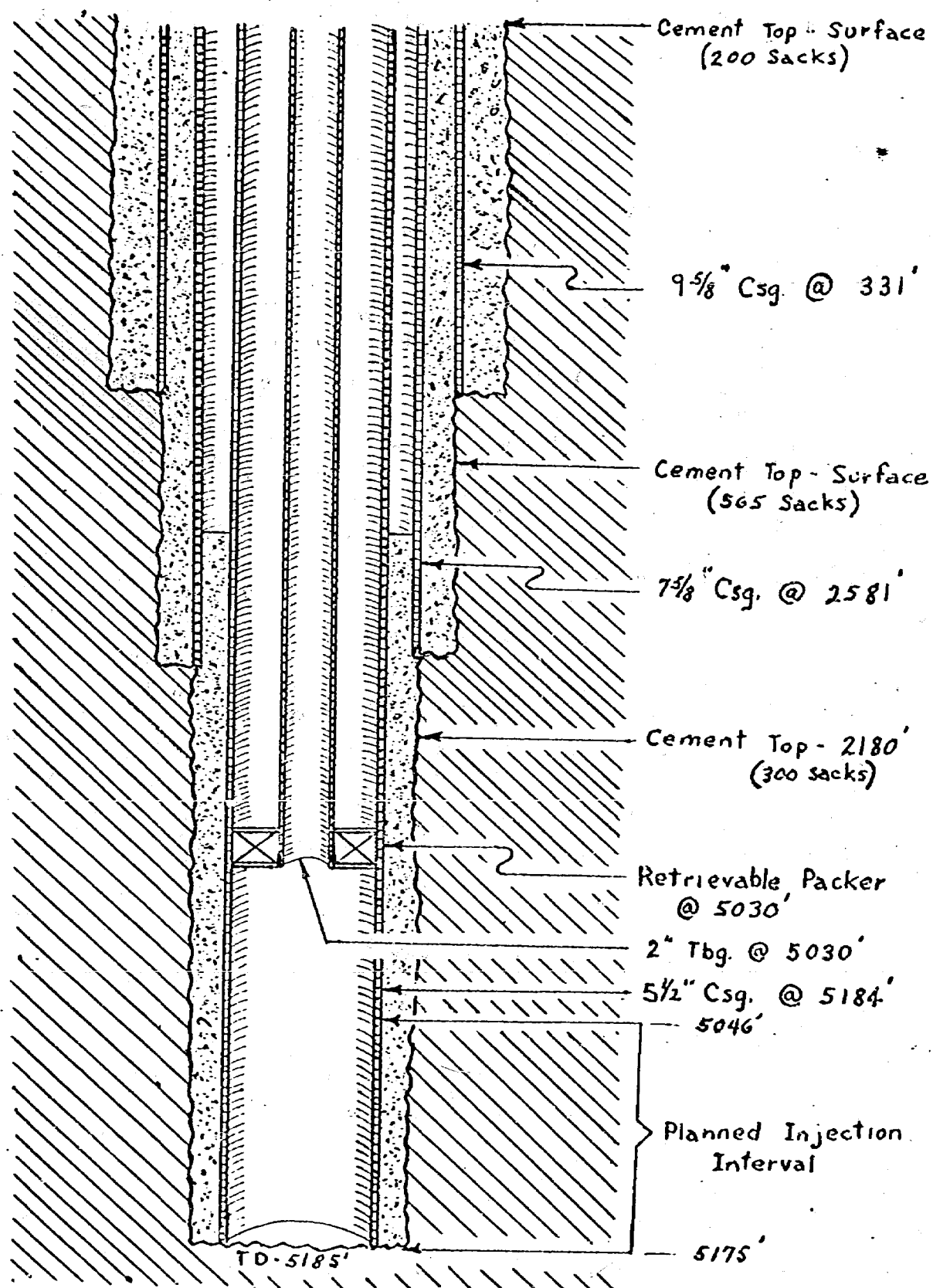
Humble New Mexico State "S" No. 8
Pilot Injection Well
Paddock (San Angelo) Unit



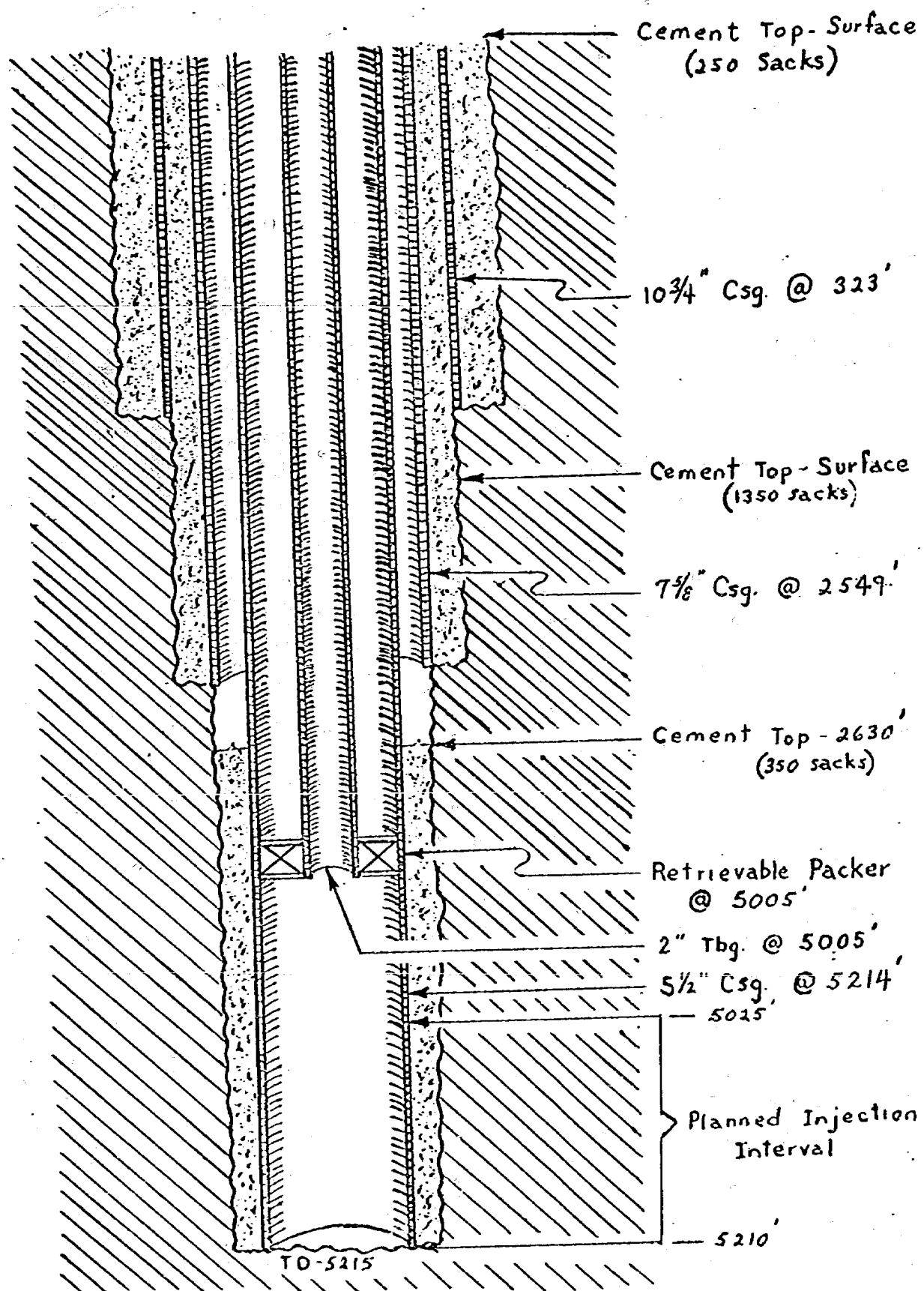
Humble New Mexico State "S" No. 9
Pilot Injection Well
Paddock (San Angelo) Unit



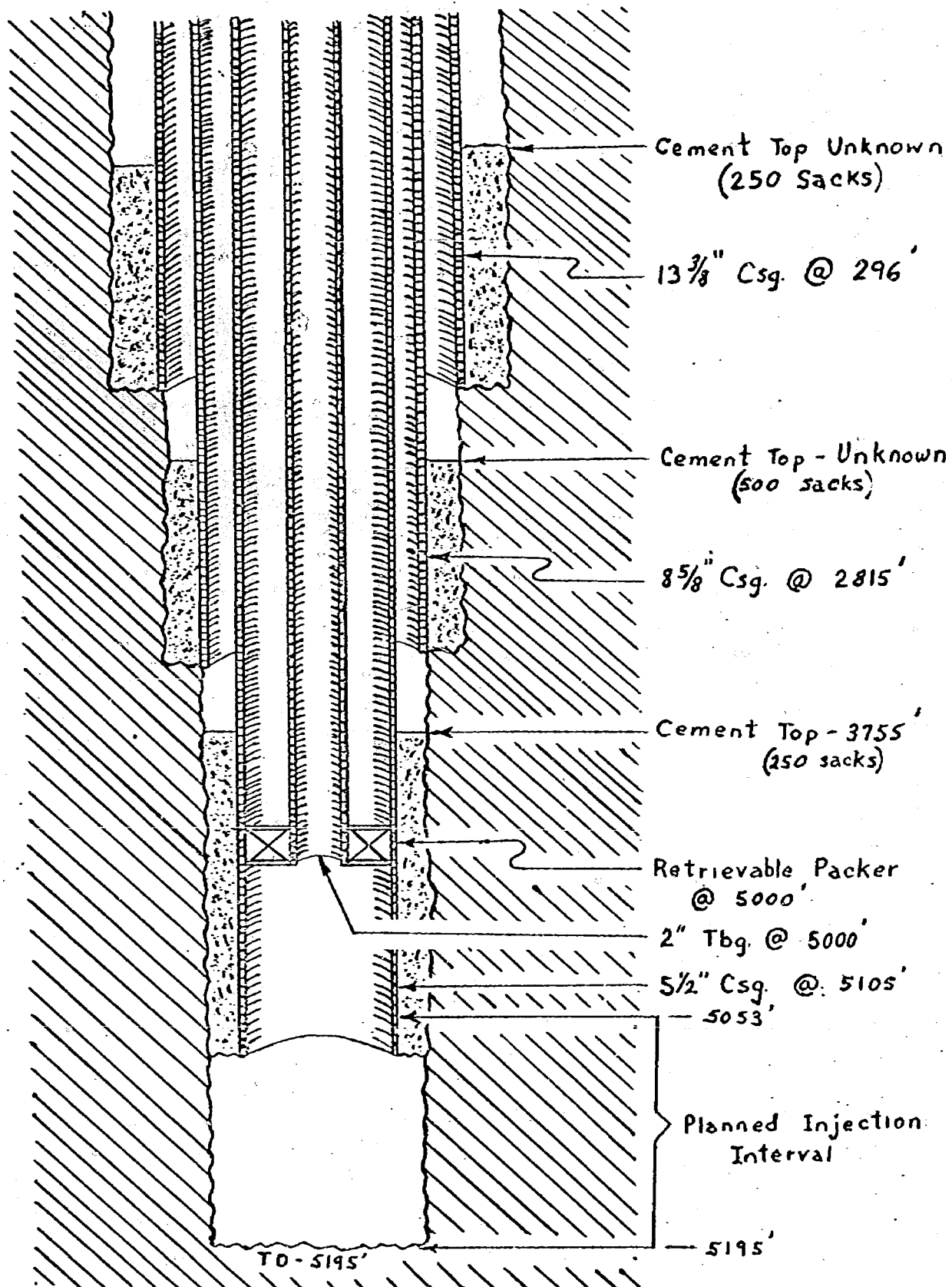
Humble New Mexico State "S" No. 15
Pilot Injection Well
Paddock (San Angelo) Unit

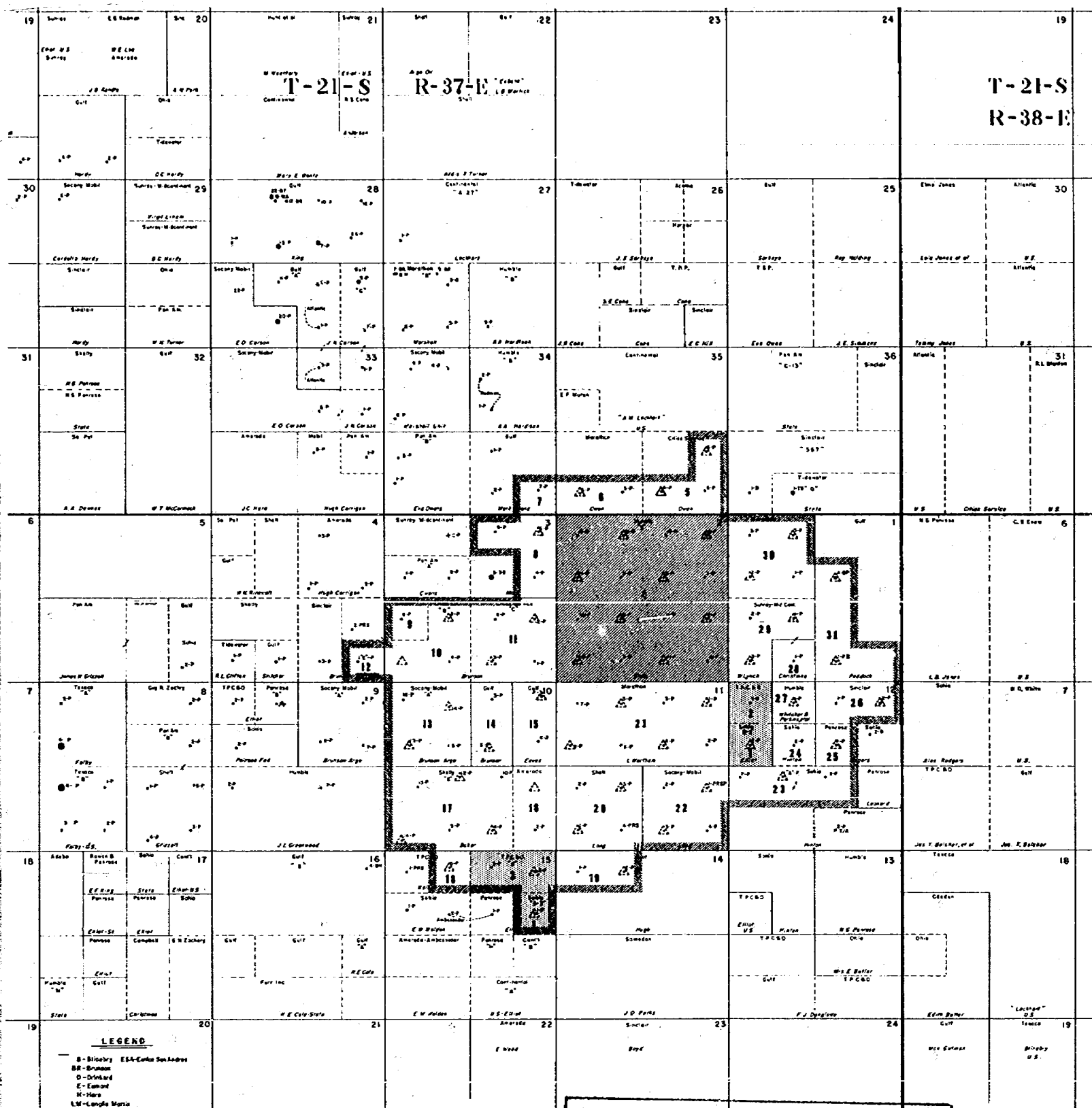


Humble New Mexico State "S" No. 19
Pilot Injection Well
Paddock (San Angelo) Unit



Cities Service Owen No. 4
Pilot Injection Well
Paddock (San Angelo) Unit





LEGEND

— B-Bleedby
 BR-Brumson
 D-Driskill
 E-Emery
 H-Hart
 LM-Langley Martin
 Mc-McCormick
 M-McKee
 MO-McMann
 P-Paddock
 PS-Pearce Shufly
 SH-South Hare
 T-Tubb
 WA-Watts Abe

• Oil
 • Oil-Dual
 • Gas
 • Gas-Dual
 • Gas-Oil Dual
 • Oil-Triples
 • Gas-Gas-Oil Triples

ISO SHUT-IN
 BWD-SALT WATER DISPOSAL
 ▲ Pilot Injection Well
 ▲ Testative Future Injection Well
 ■ State Lease
 ■ Federal Lease
 ■ Unit Boundary

STATE AND FEDERAL
 LEASE DESIGNATION

TRACT NUMBER
 1 LC064427
 2 NM032362
 3 NM0557257
 4 B 934

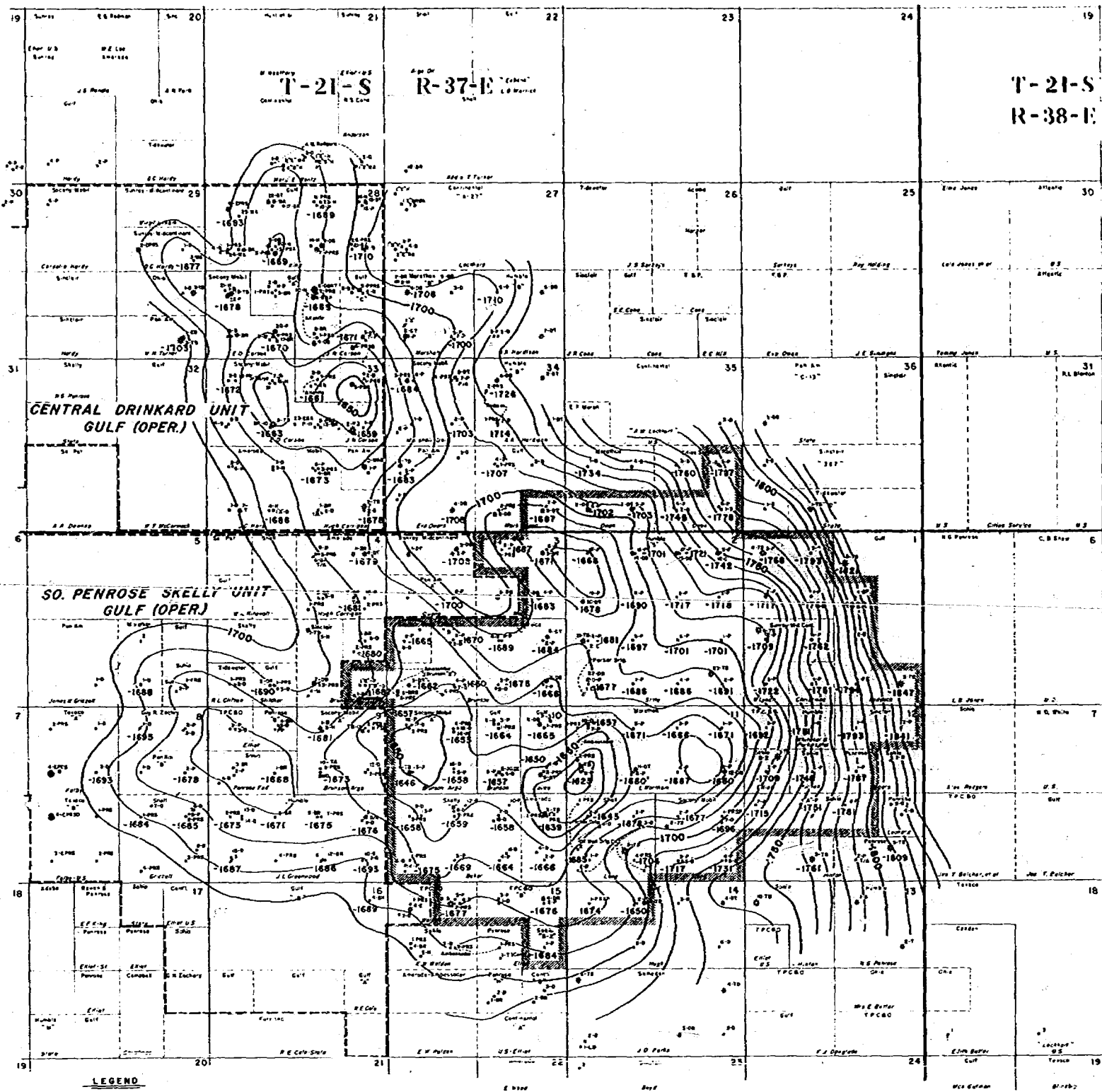
BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
 EXHIBIT NO. 2
 CASE NO. 3615-3616

PADDOCK (SAN ANGELO) UNIT
 LEA COUNTY, NEW MEXICO

SCALE
 0 1000 2000 3000 4000 5000
 Revised June 5, 1967

T-22-S R-37-E

T-22-S
 R-38-E



LEGEND

B - Bunker
 BR - Bunker
 D - Drinkard
 E - Evans
 H - Hays
 LM - Longfellow
 MC - McCracken
 M - McFar
 MO - Monument
 P - Paddock
 PRS - Penrose Skelly
 S - South
 T - Tank
 WA - Warty Abo

• Oil
 • Oil-Dust
 • Gas
 • Gas-Dust
 • Gas-Dust
 • Gas-Dust
 • Gas-Dust
 • Gas-Dust

(SO SHUT-IN
 SWD - SALT WATER DISPOSAL

Unit Boundary

T-22-S R-37-E

BEFORE EXAMINER NUTTER
 CIL CONSERVATION COMMISSION
 EXHIBIT NO. 3
 CASE NO. 3615-3616

STRUCTURE MAP

Contoured on top of Paddock "A" Zone

PADDOCK (SAN ANGELO) UNIT
 LEA COUNTY, NEW MEXICO

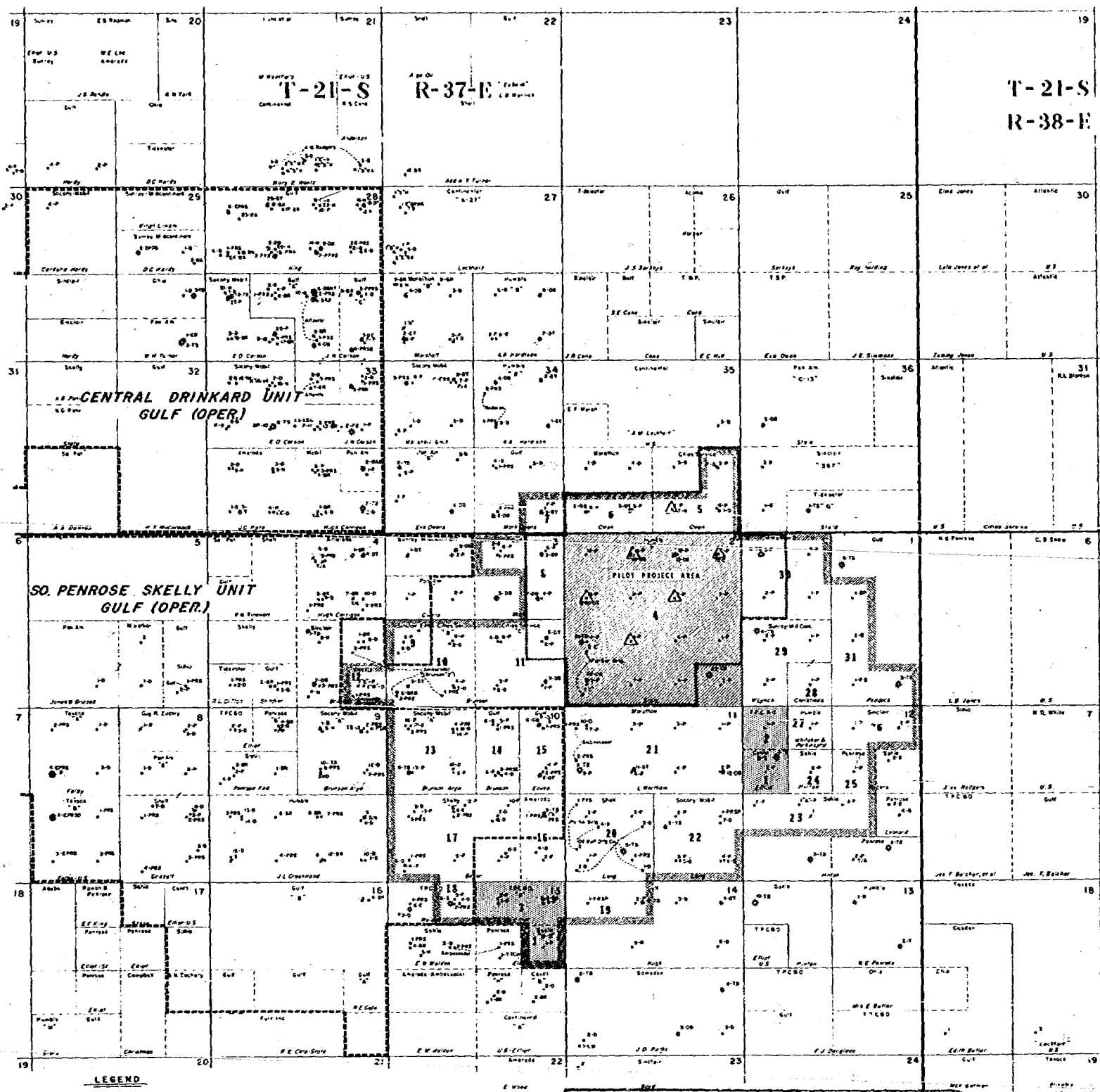
SCALE

Revised June 5, 1967

T-21-S
 R-38-E

T-22-S
 R-38-E

3



LEGEND
 O - Bittery
 BR - Brinson
 O - Driskell
 E - Eumet
 N - Nore
 LM - Longley Marice
 MC - McCracken
 M - McKee
 MO - Monahan
 P - Paddock
 PS - Paddock Shelly
 SH - South Hore
 T - Tubb
 WA - Wanta Abo

• Oil
 • Oil-Dust
 • Gas
 • Gas-Dust
 • Gas-Oil-Dust
 • Gas-Trip
 • Gas-Gas-Oil Trip
 (SQ) SHUT-IN
 SWD-SALT WATER DISPOSAL
 ▲ Water Injection Well

State Lease
 Federal Lease
 Unit Boundary

STATE AND FEDERAL
 LEASE DESIGNATION
 TRACT NUMBER
 1 LC064427
 2 NW032369
 3 NW055257
 4 8934

T-22-S R-37-E

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
 EXHIBIT NO. 5
 CASE NO. 3615-3616-3617
 IDENTIFIED IN ALL WELLS

PADDOCK (SAN ANGELO) UNIT
 LEA COUNTY, NEW MEXICO

SCALE
 Revised June 5, 1987

T-22-S
 R-38-E

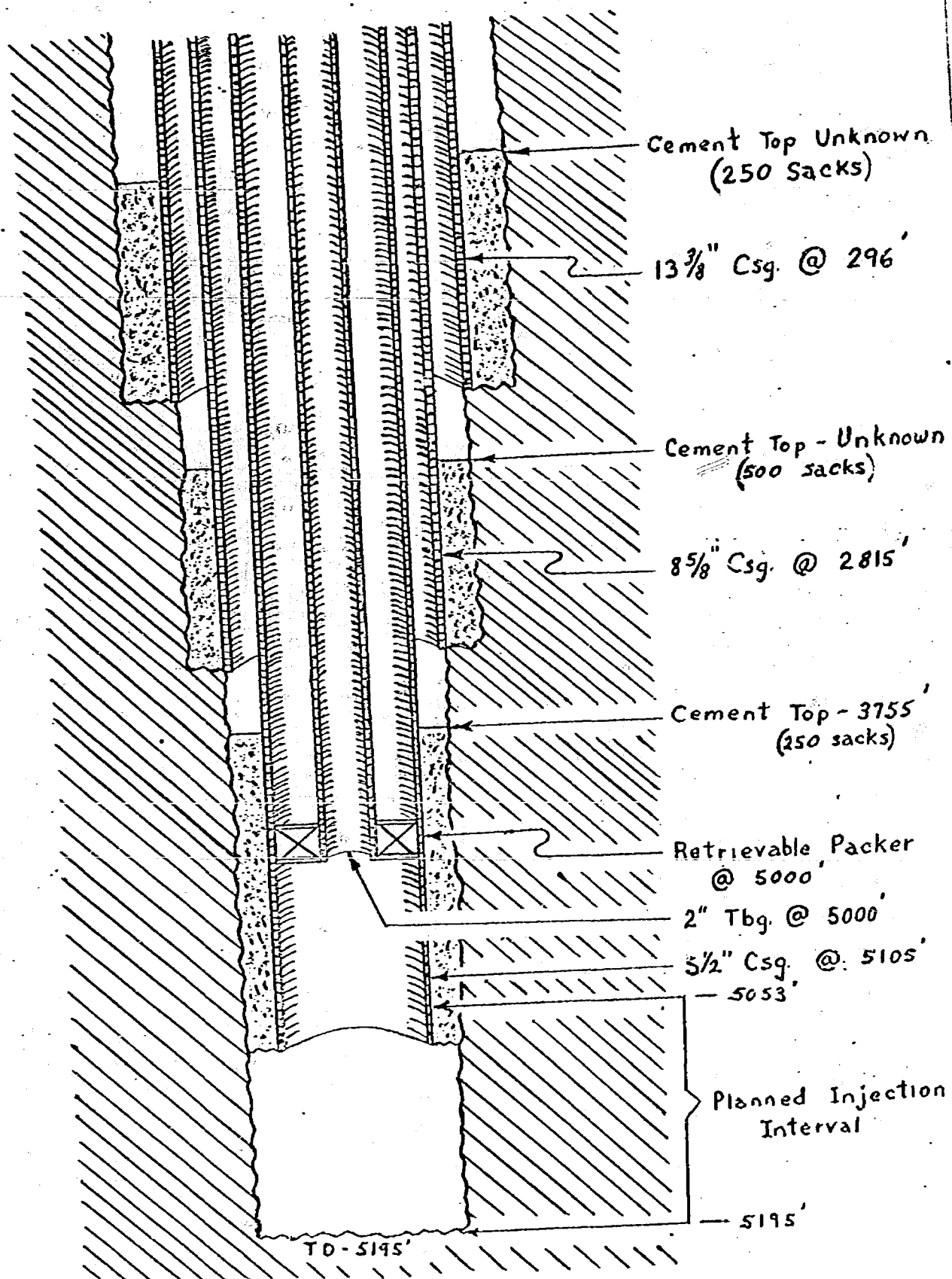
Cities Service Owen No. 4
Pilot Injection Well
Paddock (San Angelo) Unit

BEFORE EXAMINER NUTTER

OIL CONSERVATION COMMISSION

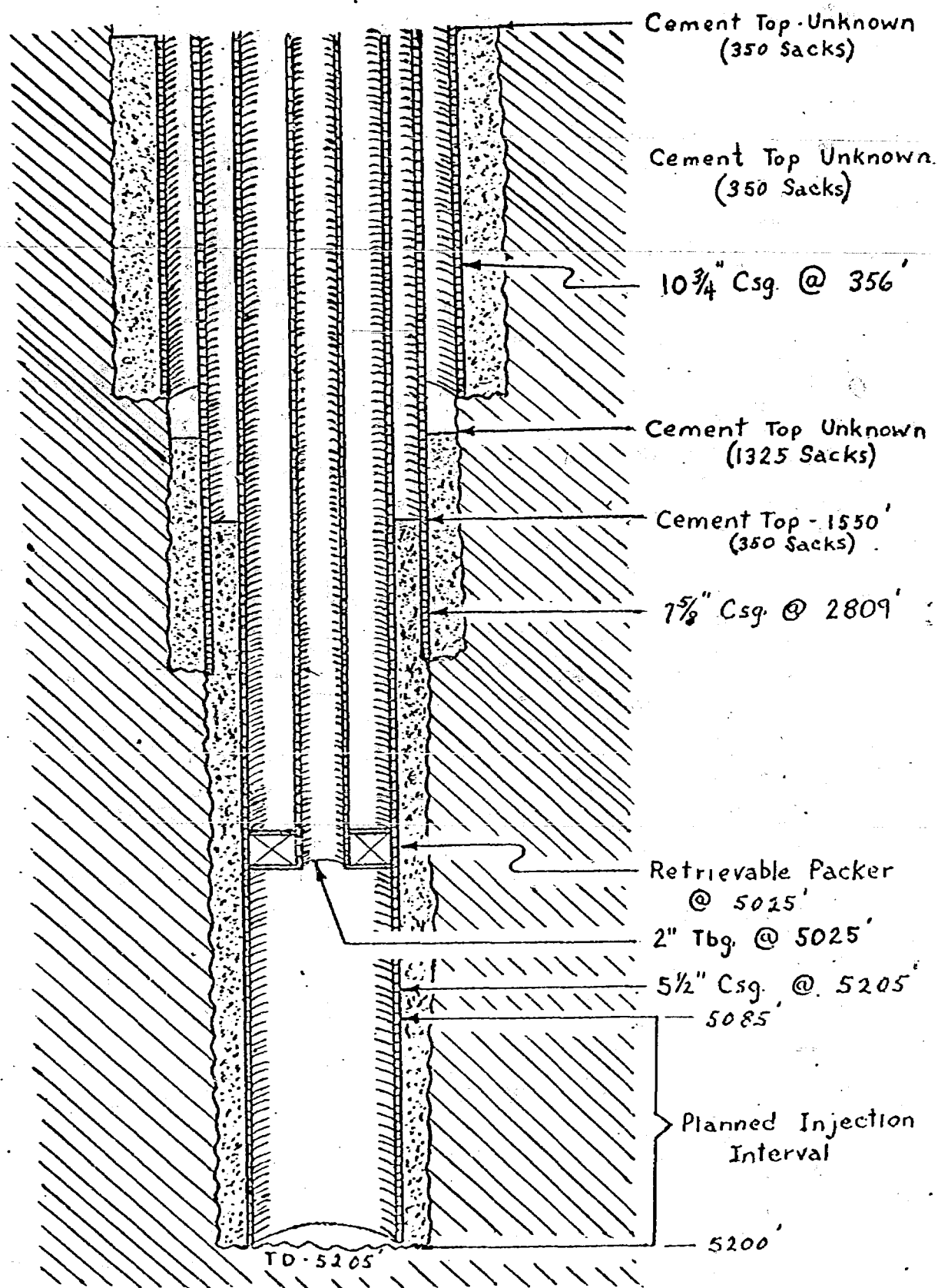
EXHIBIT NO. 6-A

CASE NO. 3615-3616



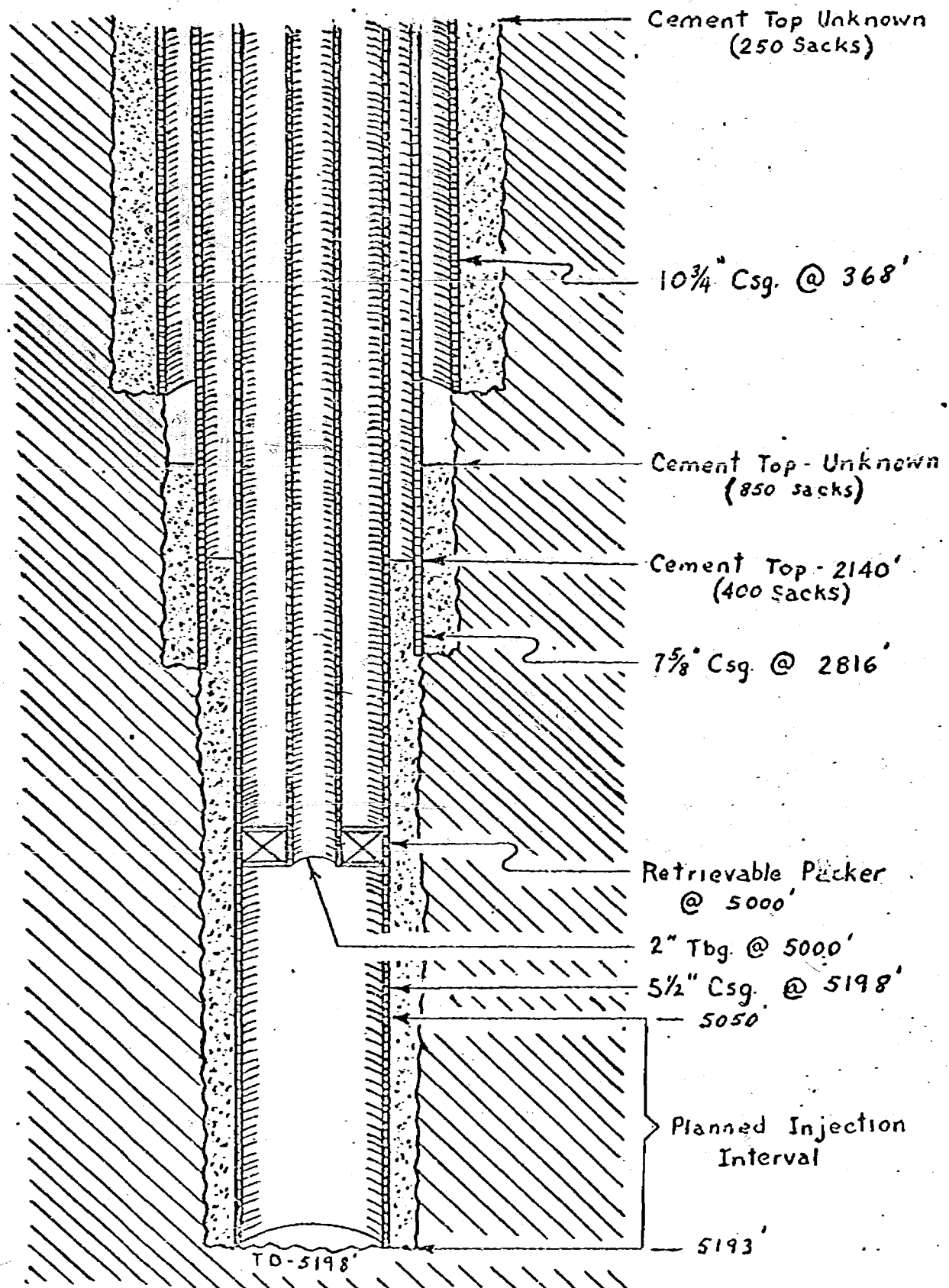
Humble New Mexico State "S" No. 5
Pilot Injection Well
Paddock (San Angelo) Unit

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 6-B
CASE NO. 3615-3616



Humble New Mexico State "S" No. 8
Pilot Injection Well
Paddock (San Angelo) Unit

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 6-C
CASE NO. 3615-3616



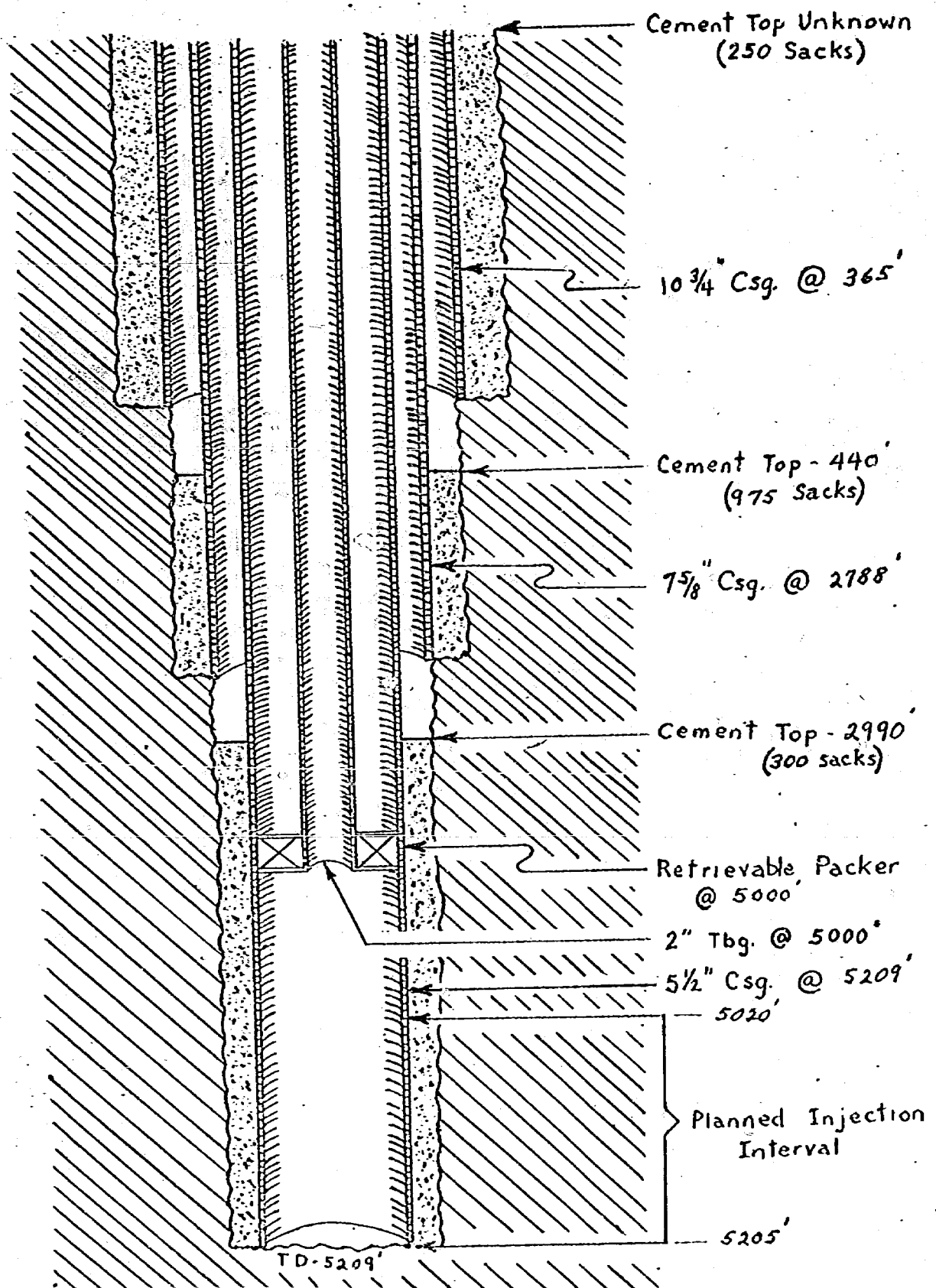
Humble New Mexico State "S" No. 9
Pilot Injection Well
Paddock (San Angelo) Unit

BEFORE EXAMINER NUTTER

OIL CONSERVATION COMMISSION

EXHIBIT NO. 6-D

CASE NO. 3615-3616



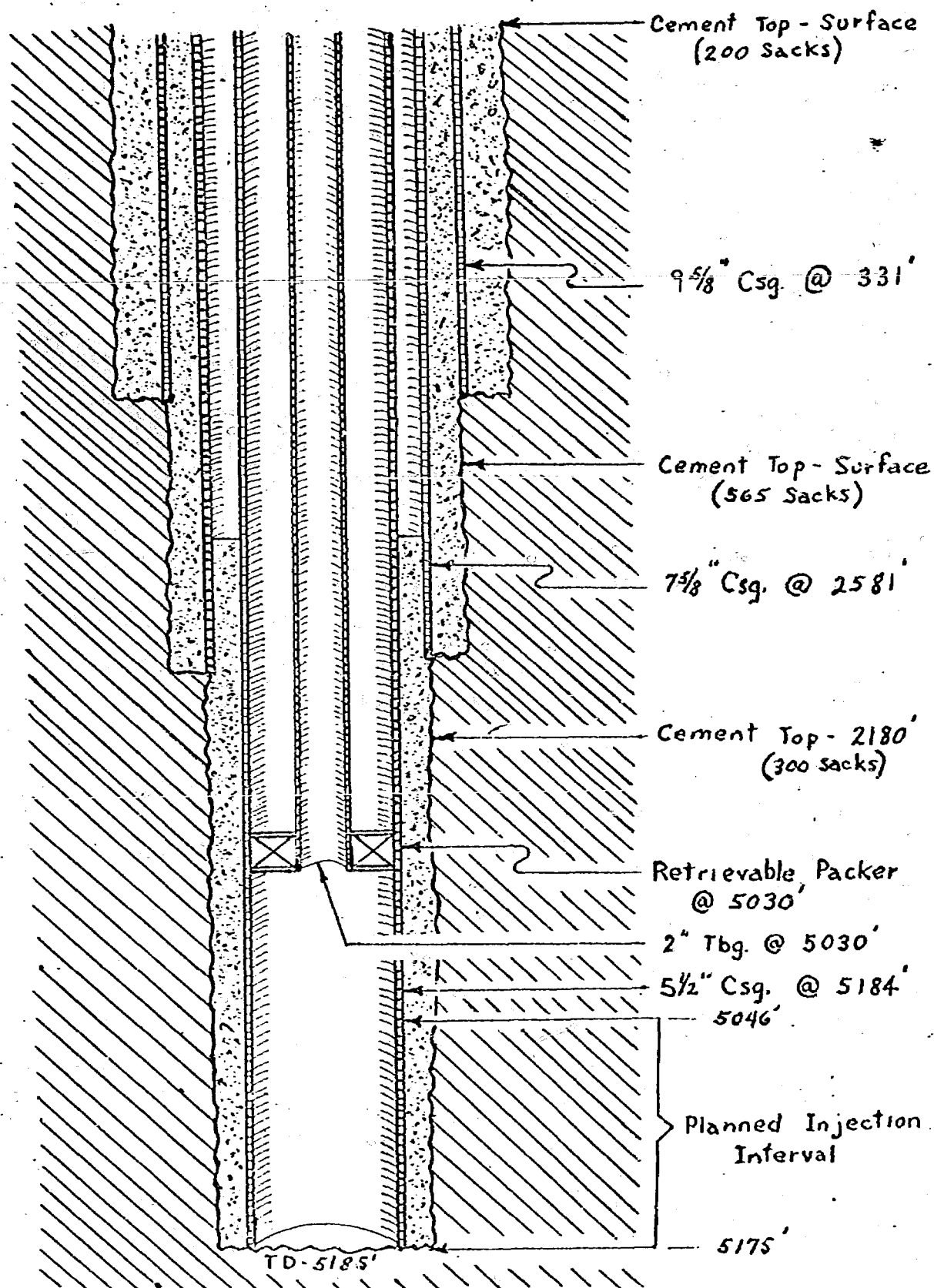
Humble New Mexico State "S" No. 15
Pilot Injection Well
Paddock (San Angelo) Unit

BEFORE EXAMINER NUTTER

OIL CONSERVATION COMMISSION

EXHIBIT NO. 6-E

CASE NO. 3615-3616



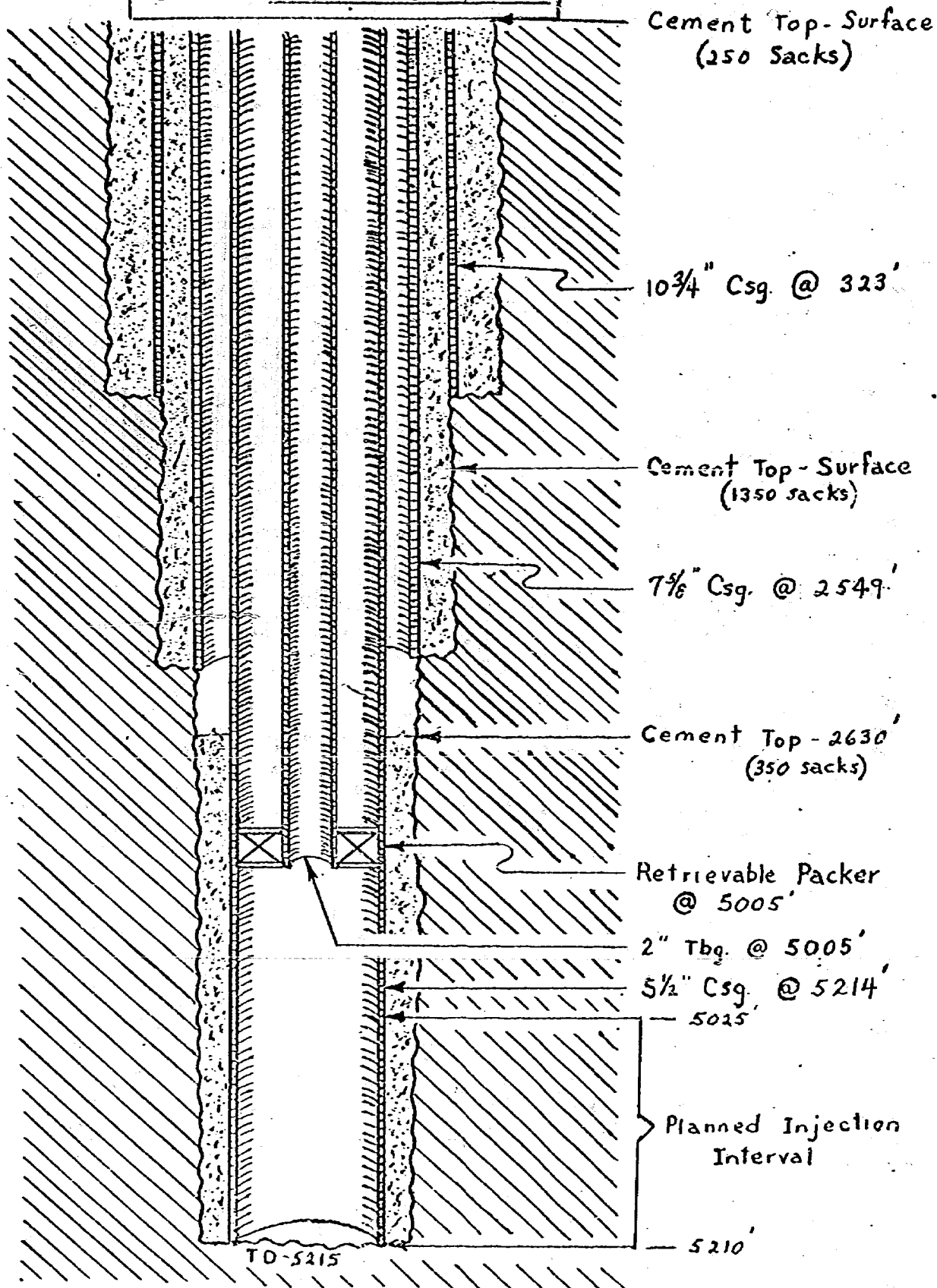
Humble New Mexico State "S" No. 19
Pilot Injection Well
Paddock (San Angelo) Unit

BEFORE EXAMINER NUTTER

OIL CONSERVATION COMMISSION

EXHIBIT NO. 6-F

CASE NO. 3615-3616



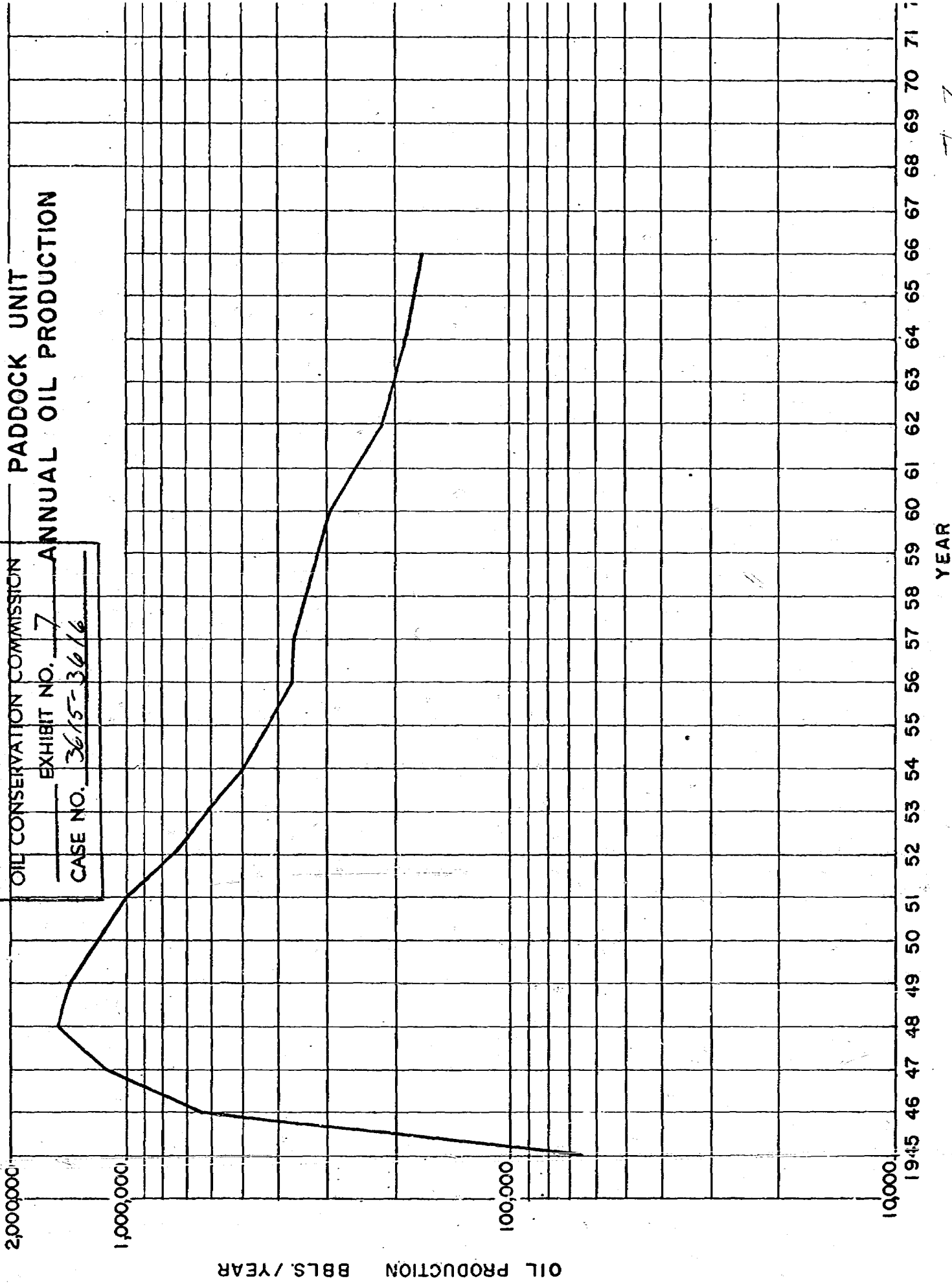
BEFORE EXAMINER NUTTER

OIL CONSERVATION COMMISSION

EXHIBIT NO. 7

CASE NO. 3615-3616

PADDOCK UNIT
ANNUAL OIL PRODUCTION





UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON 25, D. C.

IN REPLY REFER TO:

JUL 27 1966

Humble Oil and Refining Company
c/o Hinkle, Bondurant & Christy
P. O. Box 10
Roswell, New Mexico 88201

RECEIVED
AUG 4 1966

Attention: Mr. Clarence E. Hinkle

HINKLE, BONDURANT & CHRISTY
ROSWELL, NEW MEXICO

Gentlemen:

Your application of May 25 filed with the Regional Oil and Gas Supervisor, Roswell, New Mexico, requests the designation of the Paddock (San Angelo) unit area embracing 3,800 acres, more or less, Lea County, New Mexico, as logically subject to operation under the unitization provisions of the Mineral Leasing Act, as amended, and acceptance of the proposed form of unit agreement. Our records indicate the proposed unit area embraces 3,798.18 acres. Please recheck and correct your acreage figures if appropriate. Based on such acreage figure, the unit area is composed of 200.00 acres (5.27 percent) of Federal land, 639.04 acres (16.82 percent) of State of New Mexico land, and 2,959.14 acres (77.91 percent) of fee land.

Unitization, for the purpose of conducting secondary recovery operations by waterflooding will be limited to the Paddock zone as identified in Section 2(g) of the unit agreement form. The unit area has been developed by 93 wells completed in the interval to be unitized, of which 72 wells are currently producing. Primary phase participation in unitized substances is based 50 percent on 1964 adjusted revenue and 50 percent on remaining primary reserves as of January 1, 1964. Secondary phase participation is based entirely on ultimate primary recovery and will commence after 768,239 barrels of oil have been produced after January 1, 1964. You estimate the proposed waterflood project will result in the recovery of approximately 9,000,000 barrels of oil over and above that recoverable by primary methods.

The land outlined on your plat marked "Exhibit A, Paddock (San Angelo) Unit, Lea County, New Mexico," is acceptable as a logical unit area for secondary recovery operations. Your proposed form of unit agreement which modifies the standard Federal form (1961 reprint) to the extent necessary to cover conditions incidental to recovery operation of a producing unit will be acceptable if further modified as marked in colored pencil and/or by attached riders. One copy of the marked form is returned herewith and the remaining copies are retained for distribution to the appropriate offices of the Geological Survey.

EXHIBIT 8

BEFORE EXAMINER NUTTER
OIL CONSERVATION COMMISSION
EXHIBIT NO. 8
CASE NO. 3615-3616

In the absence of any other type of land requiring special provisions or any other objections not now apparent, a duly executed agreement conformed to the marked copy, approved by the appropriate officials of the State of New Mexico, will be approved, if submitted in approvable status within a reasonable period of time. However, the right is reserved to deny approval of any executed agreement which, in our opinion, does not have full commitment of sufficient lands to afford effective control of secondary recovery operations.

Please include the latest status of all acreage when the executed agreement is submitted for final approval. Inasmuch as this unit area contains State of New Mexico lands, we are sending a copy of this letter to the Commissioner of Public Lands at Santa Fe. Please contact the State of New Mexico before soliciting joinders regardless of prior contacts with or clearances from the State.

Sincerely yours,



Acting Director

Enclosure



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON, D.C. 20242

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MAY 8 1967

HINKLE, BONDURANT & CHRISTY
ROSWELL, NEW MEXICO

MAY 3 - 1967

Humble Oil and Refining Company
c/o Hinkle, Bondurant & Christy
P. O. Box 10
Roswell, New Mexico 88201

Attention: Mr. Clarence E. Hinkle

Gentlemen:

Your application of April 4 filed with the Regional Oil and Gas Supervisor, Roswell, New Mexico, amends your application of May 25, 1966, for the designation of the Paddock (San Angelo) unit area, Lea County, New Mexico, to the extent necessary to eliminate the SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 3, T. 22 S., R. 37 E., N.M.P.M., from the unit area. The requested amendment will decrease the proposed unit area from 3,798.18 to 3,758.18 acres. The unit area amendment is requested inasmuch as the well located in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 3 is not producible from the unitized formation and is not necessary for unitized secondary recovery operations.

Our letter of July 27, 1966, designating the Paddock (San Angelo) unit area as acceptable as a logical unit area for secondary recovery operations is hereby amended to delete the SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 3, T. 22 S., R. 37 E., N.M.P.M., from the unit area designated by such letter.

Sincerely yours,

Acting Director

EXHIBIT # 9

BEFORE EXAMINER NUTTER	
OIL CONSERVATION COMMISSION	
EXHIBIT NO.	9
CASE NO.	3615-3616