

Case Number
4221

Application

Transcripts

Small Exhibits

ETC.

dearnley-meier

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS
1120 SIMMS BLDG. • P. O. BOX 1092 • PHONE 243-6691 • ALBUQUERQUE, NEW MEXICO



BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
October 8, 1969
EXAMINER HEARING

IN THE MATTER OF:

Application of Tenneco Oil Company
for a dual completion and water
injection, McKinley County, New
Mexico.

Case No.
4221

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: Case 4221.

MR. HATCH: Case 4221.

Application of Tenneco Oil Company for a dual completion and water injection, McKinley County, New Mexico.

MR. KELLEY: Booker Kelley of White, Gilbert, and Kelley, Santa Fe, and on behalf of the applicant I have one witness and ask that he be sworn.

(Witness sworn.)

MIKE LACEY

the witness, called by Mr. Kelley, having first been duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLEY:

Q Will you state your name and position and employer, please?

A Mike Lacey, petroleum engineer with Tenneco Oil Company, Denver, Colorado.

Q Have you previously qualified as an expert petroleum engineer before this Commission?

A No, sir, I haven't.

Q Will you give the Examiner a resume of your

education and your professional background?

A. I received a petroleum engineer degree from the Colorado School of Mines in 1967, Master of Science degree in petroleum engineering from the Colorado School of Mines in 1969. I worked for Tenneco Oil Company as a petroleum engineer since January of 1969.

Prior to that, I worked for Continental Oil Company as a special instructor in petroleum engineering for the Colorado School of Mines.

Q. Have you had actual on-the-job experience in the Hospah Field in northwest New Mexico?

A. Yes, sir, I have -- since January.

Q. Are you familiar with the subject application in this case?

A. Yes, I am.

MR. KELLEY: Are the witness's qualifications acceptable?

MR. UTZ: Yes, they are.

Let me, at this time, ask for other appearances?

All right, you may proceed.

Q. (By Mr. Kelley) Referring to what has been marked as Exhibit One which is a plat of the area, would you briefly explain what Tenneco seeks by this application?

A. Yes. Hospah Number Twenty-three, which is located in the southwest quarter of the northeast quarter of the southwest quarter, Section 12, Township 17 North, Range 9 West, McKinley County, New Mexico was drilled June 27, 1967. The objective at that time was to find the Dakota oil range.

Previously, we had drilled our Number Ten, located in the southeast quarter of the northeast quarter of the northwest quarter, and discovered gas in the Dakota with that well.

The well was drilled to a total depth of twenty-nine forty-nine, and was fractured previously in the Dakota, and we recovered gas from that test.

The well potential, three thousand eighty-one m.c.f. of gas per day at that time.

In December of 1968, an expandable packer was placed at twenty-four ninety, which plugged off the current formation in the Hospah formation.

The well came in for eight barrels of oil per day and thirty-six barrels of water per day at that time, and the Dakota was shut in.

The well declined to a rate of one barrel of oil per day and thirty-two barrels of water per day, and at

the time it was decided that the well would be an ideal injection well, and we would complete a pattern at the south end of the field and would flood volumes of oil that would be unrecoverable by the waterflood in its present state at that time.

We therefore converted the well to a water injection well in June of 1969 and we drilled out the expendable packer and replaced the packer with a p.s.i. sleeve, which left the Dakota shut off at that time.

We went in in September and removed the p.s.i. packer sleeve, and placed the present assembly, which I will discuss when we enter our Exhibit Number Two, which is a diagrammatic sketch of the well bore.

Our intent with this well is to have an injection well into the upper Hospah, which will allow us the waterflood oil, which would be unrecoverable by the previous waterflood pattern.

And also to give us a standby gas supply well to operate our field on. And we take packer leakage tests on Number Ten, in case of an emergency -- just stand by the gas supply well would be opened up, and would supply lease gas for fuel purposes.

Q I believe you said upper Hospah; this is the

lower Hospah; isn't it?

A. No, sir -- this -- the injection is into the upper Hospah.

Q. All right. Now referring the plat itself, you show all offset operators within a two-mile radius; is that correct?

A. Yes, sir.

Q. And the only offset operator is the Tesoro Petroleum Corporation; is that correct?

A. Yes, sir, it is. We have received waivers of objection to our application and the waiver objection was also sent to the Commission.

Q. Now also, the Commission has previously granted authority for a waterflood to encompass the subject well and it grants authority for it to be an injection well; does it not?

A. Yes -- the approval for the twenty-three degree injection well was granted by the Administrative Order in June --

MR. HATCH: Excuse me -- what was that Order number?

THE WITNESS: I do not know.

MR. KELLEY: The original order setting up

this flood, I think, was -- I think the case number was 3660 -- but that well was not listed at the time of the original order, but came in on 701 --

MR. HATCH: In June?

THE WITNESS: Yes.

MR. KELLEY: So, the only thing involved now is to get authority for the dual completions?

A. That's true, yes, sir.

Q. (By Mr. Kelley) Referring to what has been marked Exhibit Two, your sketch, will you explain the installation that has been provided?

A. Yes, sir.

This sketch shows that the gas can be produced through the annulus and injection can take place down the tubing, without the possibility of contamination or interference with any fluids.

We have set a Baker model "D" packer, at twenty-four ninety, above the Dakota sands for perforations.

We have set a lockset packer, with a crossover assembly, at sixteen forty-two.

You can see, by looking at the sketch, that injection of the water down the tubing will crossover into the annulus space at the upper Hospah perforations.

And it's protected from the Dakota with a Baker model "D" packer of twenty-four ninety.

Gas production from the Dakota will come up the stringer, below the lockset packer, crossover to the annulus above the Hospah perforations, and be produced by the annulus.

This well was cemented with returns on both the surface pipe and long string.

We feel, therefore, that all fresh water zones and any other zones will protect it by the casing.

Q. Is this internally plastic coated tubing?

A. Yes, sir.

Q. Will you have any way of checking the annulus to see if you have leakage?

A. Yes, sir. A package leakage test was run on this well after injection was commenced, and the results of that packer leakage test was sent to the Commission at that time, and they did show that no communication existed.

Q. Where does the source of water you are injecting come from?

A. The water is from the lower Hospah or the Dakota -- excuse me -- the lower Hospah or the Gallup, as we prefer to call it.

This water is being supplied currently from our Number Seven, located on Exhibit One.

Q. Is this particular corrosive water?

A. No, sir. It isn't -- it's relatively fresh.

Q. What injection rates do you contemplate here?

A. We will attempt to inject at no more than two hundred barrels a day.

Q. And that will be fairly constant?

A. Yes, it will.

Q. How about the pressure?

A. The pressure will be limited to seven hundred pounds. Currently, the injection pressure is about six hundred pounds.

Q. Now, are you aware of any fresh water in this area in the surface?

A. The point lookout, which occurs at about four hundred and sixty to six hundred and sixty feet is thought to be fresh water sand.

Q. But your submitting program covers this area?

A. Yes, sir.

Q. In your opinion, will the insulation you have shown on Exhibit Number Two sufficiently prevent migration fluids to any other zones?

A. Yes, sir, it will.

Q. Is there any reason why you feel that the upper Hospah will not take the volume of water you anticipate?

A. No, I believe the upper Hospah will take the volumes that we have set up for this well -- our injection wells Number Thirteen and Seventeen have taken greater volumes.

Q. Now, Exhibit Number Three is a log of the injection wells; is that correct?

A. Yes, sir, it is.

Q. And you've shown the applicable perforations, tops and bottoms?

A. Yes, sir, I have.

Q. In your opinion, will the granting of this application prevent waste and protect the correlative rights of all operators?

A. Yes, sir, it will.

Q. Were Exhibits One, Two and Three prepared by you or under your supervision?

A. Yes, sir.

MR. KELLEY: I move the introduction of Tenneco Exhibits One through Three at this time.

MR. UTZ: Without objection, Exhibits One through Three will be entered in the record in this case.

(THEREUPON, Applicant's Exhibits One through Three, inclusive, were duly admitted.)

MR. KELLEY: I have no further questions on direct, Mr. Examiner.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Lacey, how about the fluids on the Dakota? Are they pretty wet?

A The Dakota has a considerable amount of water in some of our wells -- we've had no problem in the Hospah Field with producing the Dakota through the annulus.

Q I see your crossover is at sixteen forty-two; is that correct?

A Yes, sir.

Q And the crossover is in what size casing; four and a half?

A Yes, sir.

Q And it's two-inch tubing?

A Yes, sir -- two and three-eighths --

Q How was the cross sectional area of the two

and three-eighths, did you say?

A. Yes, sir.

Q. How does the two and three-eighths by four and a half casing compare with the two and three-eighths tubing? Is it substantially larger?

A. Well, I couldn't answer that.

Q. I would surmise that it is -- but you still testify to the fact that the annulus would be small enough to lift through the --

A. Yes, sir -- we've had no problem in the test that we ran on this well.

Q. Now, you are here requesting to inject in the upper Hospah; is that correct?

A. Yes, sir.

Q. To refresh my memory a little bit -- don't we have a waterflood in the lower Hospah?

A. No, we do not -- the upper Hospah --

Q. Everything is in the upper Hospah? All the flooding is in the upper Hospah?

A. Yes, all the flooding is taking place in the upper Hospah.

Q. We had something to do with the lower Hospah in this pool not too long ago and I can't remember what it

was.

Now, all the flooding is then contained in these two falls shown on your Exhibit Number One?

A. Yes, sir.

Q. You are getting substantial response --

A. Yes, we have had substantial response.

Q. And this is in expansion of your actual flood area?

A. Yes, sir, it is. The volume of oil to the south of the line of wells of twenty-two, twenty-one and nineteen, we feel would be unrecoverable by injection into thirteen and seventeen alone. And because Number Twenty-three had declined to a producer of one barrel of oil per day and thirty-two barrels of water per day, at the time we converted it to an injection well -- we felt that this would make an ideal injection well.

We have since had response in Number Nineteen, Twenty-one and Twenty-two from injection into Twenty-three.

The total increase would be about ninety barrels of oil per day.

Q. And you have determined that there is no oil production to the southwest of this well?

A. The Hospah is wet onto the southwest. We mapped

the oil-water contact just to the southwest of twenty-three.

Most of our upper Hospah completions came in essentially water free, and this well came in for eight barrels of oil and thirty-one barrels of water.

MR. UTZ: Any other questions of the witness?
You may be excused.

Are there any statements in this case? The case will be taken under advisement.

I N D E XPage

The Witness - MIKE LACEY

Direct Examination by Mr. Kelley 2

Cross Examination by Mr. Utz 11

E X H I B I T SAdmitted

Applicant's Exhibits One through Three 11

dearnley-meier reporting services, inc.

SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

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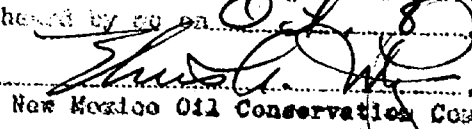
PAGE 16

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, CA FENLEY, 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.

Witness my Hand this 20th day of November, 1969.


CA FENLEY - COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the hearing before the Commission on Case No. 4226 heard by me on Oct. 8, 1969.

New Mexico Oil Conservation Commission



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

P. O. BOX 2088 - SANTA FE

87801

GOVERNOR
DAVID F. CARGO
CHAIRMAN

LAND COMMISSIONER
ALEX J. ARMISTEAD
MEMBER

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

October 15, 1969

Mr. Booker Kelly
White, Gilbert, Koch & Kelly
Attorneys at Law
Post Office Box 787
Santa Fe, New Mexico

Re: Case No. 4221
Order No. R-3848
Applicant:
Tenneco Oil Company

Dear Sir:

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

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC X

Artesia OCC

Aztec OCC X

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. 4221
Order No. R-3848

APPLICATION OF TENNECO OIL COMPANY
FOR A DUAL COMPLETION AND WATER
INJECTION, MCKINLEY COUNTY, NEW
MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on October 8, 1969, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 14th day of October, 1969, 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, Tenneco Oil Company, seeks approval of the dual completion of its South Hospah Unit Well No. 23, located 1650 feet from the South line and 1800 feet from the West line of Section 12, Township 17 North, Range 9 West, NMPM, McKinley County, New Mexico, to produce gas through the casing-tubing annulus by means of a crossover assembly from an undesignated Dakota gas pool in the perforated interval from approximately 2590 feet to 2865 feet, and to inject water for secondary recovery purposes into the Upper Sand, South Hospah-Upper Sand Oil Pool, in the perforated interval from approximately 1685 feet to 1714 feet, with separation of the zones by a packer set at approximately 2490 feet.

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CASE No. 4221
Order No. R-3848

(3) That the mechanics of the subject dual completion are feasible and in accord with good conservation practices.

(4) That approval of the subject dual completion will prevent the drilling of unnecessary wells, and will otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the dual completion of the Tenneco Oil Company South Hospah Unit Well No. 23, located 1650 feet from the South line and 1800 feet from the West line of Section 12, Township 17 North, Range 9 West, NMPM, McKinley County, New Mexico, to produce gas through the casing-tubing annulus by means of a crossover assembly from an undesignated Dakota gas pool in the perforated interval from approximately 2500 feet to 2865 feet, and to inject water for secondary recovery purposes into the Upper Sand, South Hospah-Upper Sand Oil Pool, in the perforated interval from approximately 1685 feet to 1714 feet, with separation of the zones by a packer set at approximately 2490 feet, is hereby approved.

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

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

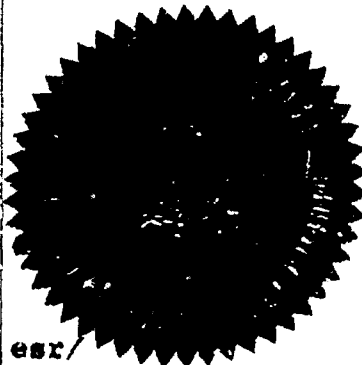
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


DAVID F. CARGO, Chairman


ALEX J. ARNEZ, Member


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



esr/

Case 4221

Heard 10-8-69

Rec. 10-8-69

Grant Janness permission
to finally complete their
So. Hoopah well #23 as a
Under Dakota Gas produces and
an upper Hoopah Sand water
injection well.

1. Dakota to be produced under
a packer ^{set at 2450} then 2 3/8 tubing to
a crossover set at 1642, hence
to surface then 2 3/8 x 4 1/2 an-
nulus.

2. Water to be injected then
2 3/8 tubing to X-over @ 1642,
then annulus to Upper Hoopah
Sand perf @ 1685-1714.

Dakota Gas to be used as
standby gas supply for
pool operations.

— E. H. H. —

August 25, 1969

MAIN OFFICE
'69 SEP 2 AM 8 10

Case
4221
JH

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

Gentlemen:

Tesoro Petroleum Corporation as an offset operator waives objection to Tenneco Oil Company's request to recomplete Hospah #23 (Unit K, Section 12, T12N, R9W, McKinley County, New Mexico) as a dual Upper Hospah Sand injection well-Dakota gas supply well.

We have recieved a copy of the above mentioned application.

Yours very truly,

TESORO PETROLEUM CORPORATION

Harold Vaythorg Jr.

/mae

OIL CONSERVATION COMMISSION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

September 5, 1969

Case 4221

Tenneco Oil Company
Suite 1200, Lincoln Tower Building
Denver, Colorado 80203

DOCKET MAILED

Date

9-26-69

Attention: Mr. C. W. Nance

Gentlemen:

Reference is made to your application for authority to dually complete your South Hospah Unit Well No. 23, located in Unit K of Section 12, Township 17 North, Range 9 West, McKinley County, New Mexico, to permit the production of gas from an undesignated Dakota gas pool and the injection of water for secondary purposes into the upper sand, South Hospah Upper Sand Oil Pool. This application is not eligible for administrative approval and will have to be set for public hearing.

Unless we hear from you to the contrary, your application will be docketed for the Examiner Hearing to be held on October 8, 1969.

Very truly yours,

GEORGE M. HATCH
Attorney

GMH/esr

C
O
P
Y

Docket No. 27-69

DOCKET: EXAMINER HEARING - WEDNESDAY - OCTOBER 8, 1969

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 4220: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit E. P. Campbell, and all other interested parties to appear and show cause why the E. P. Campbell Christmas Well No. 1 located in Unit C of Section 6, Township 23 South, Range 36 East, Jalmat Pool, Lea County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program.

CASE 4221: Application of Tenneco Oil Company for a dual completion and water injection, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its South Hospah Unit Well No. 23 located in Unit K of Section 12, Township 17 North, Range 9 West, McKinley County, New Mexico, in such a manner as to permit the production of gas from the perforated interval 2590 feet to 2865 feet, undesignated Dakota gas pool, and the injection of water for secondary recovery purposes into the upper sand, South Hospah-Upper Sand Oil Pool, in the perforated interval from 1685 feet to 1714 feet.

CASE 4222: Application of Coastal States Gas 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 West Sawyer-San Andres Pool, Lea County, New Mexico, including a provision for 80-acre spacing and proration units.

CASE 3881: (Reopened)

In the matter of Case No. 3881 being reopened pursuant to the provisions of Order No. R-3533, which order established 80-acre spacing units for the South Prairie-Devonian Pool, Roosevelt County, New Mexico, for a period of one year. All interested parties may appear and show cause why said pool should not be developed on 40-acre spacing units.

CASE 4181: (Continued from the September 10, 1969 Examiner Hearing)

Application of J. M. Huber Corporation for a dual completion and salt water disposal, Lea County, New Mexico. Applicant,

(Case 4181 continued)

in the above-styled cause, seeks authority to dually complete its Stoltz Federal Well No. 1 located in Unit J of Section 12, Township 15 South, Range 34 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Morton-Wolfcamp Pool and the disposal of produced salt water through the 8 5/8 X 4 1/2-inch casing-casing annulus into the San Andres, Tubb, Abo, and possibly other formations in the open-hole interval from approximately 4330 feet to 9750 feet.

CASE 4223: Application of Resler and Sheldon for two waterflood projects, Lea County, New Mexico. Applicants, in the above-styled cause, seek authority to institute two waterflood projects by the injection of water into the Grayburg, and possibly other formations in the perforated interval from approximately 3555 feet to 3617 feet in their Kelly Well No. 3 and into the Queen, and possibly other formations in the perforated interval from approximately 3439 feet to 3689 feet in their Steeler Well No. 1, said wells being located, respectively, in Unit M of Section 16, and Unit I of Section 20, Township 23 South, Range 37 East, Langlie-Mattix Pool, Lea County, New Mexico. In the alternative, applicants seek authority to dispose of produced salt water in said wells in the intervals as described above.

CASE 4224: Application of Big "6" Drilling Company for a dual completion and salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dually complete its Ora Jackson "A" Well No. 1 located 660 feet from the South and West lines of Section 5, Township 19 South, Range 35 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Scharb-Bone Springs Pool and the disposal of produced salt water through the intermediate casing-production casing annulus into the Seven Rivers, Queen, San Andres, Upper Bone Springs, and possibly other formations in the interval from approximately 3989 feet to 9500 feet.

CASE 4225: Application of S. P. Yates for a pressure maintenance project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project 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, West McMillan Pool, Eddy County, New Mexico.

Examiner Hearing - October 8, 1969

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Docket No. 27-69

CASE 4226: Application of John A. Yates for a waterflood project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Grayburg formation through his John A. Yates-State A Wells Nos. 2 and 6 located in Units J and P, respectively, of Section 5, Township 19 South, Range 28 East, Artesia Pool, Eddy County, New Mexico.

CASE 4227: Application of Penrock Oil Corporation for an unorthodox gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 104 C 11 to permit the re-entry of a well at an unorthodox gas well location 660 feet from the South and East lines of Section 33, Township 12 South, Range 34 East, West Ranger Lake-Devonian Gas Pool, Lea County, New Mexico. The E/2 of said Section 33 to be dedicated to the well.

TENNECO OIL COMPANY
DENVER DISTRICT
PROPOSED MULTIPLE COMPLETION
UPPER HOSPAH SAND
SOUTH HOSPAH FIELD
Section 12 - T 17 N - R 9 W
Mc Kinley County, New Mexico

Dakota gas
Produced via annulus

Water injection down tubing
to Upper Hospah.

8 5/8" Surface pipe set at 91'
cemented to surface with 70 sx
class 'C' cement with 2% CaCl₂.

Lok-Set packer w/cross over
assembly at 1642'

2 3/8" Tubing.

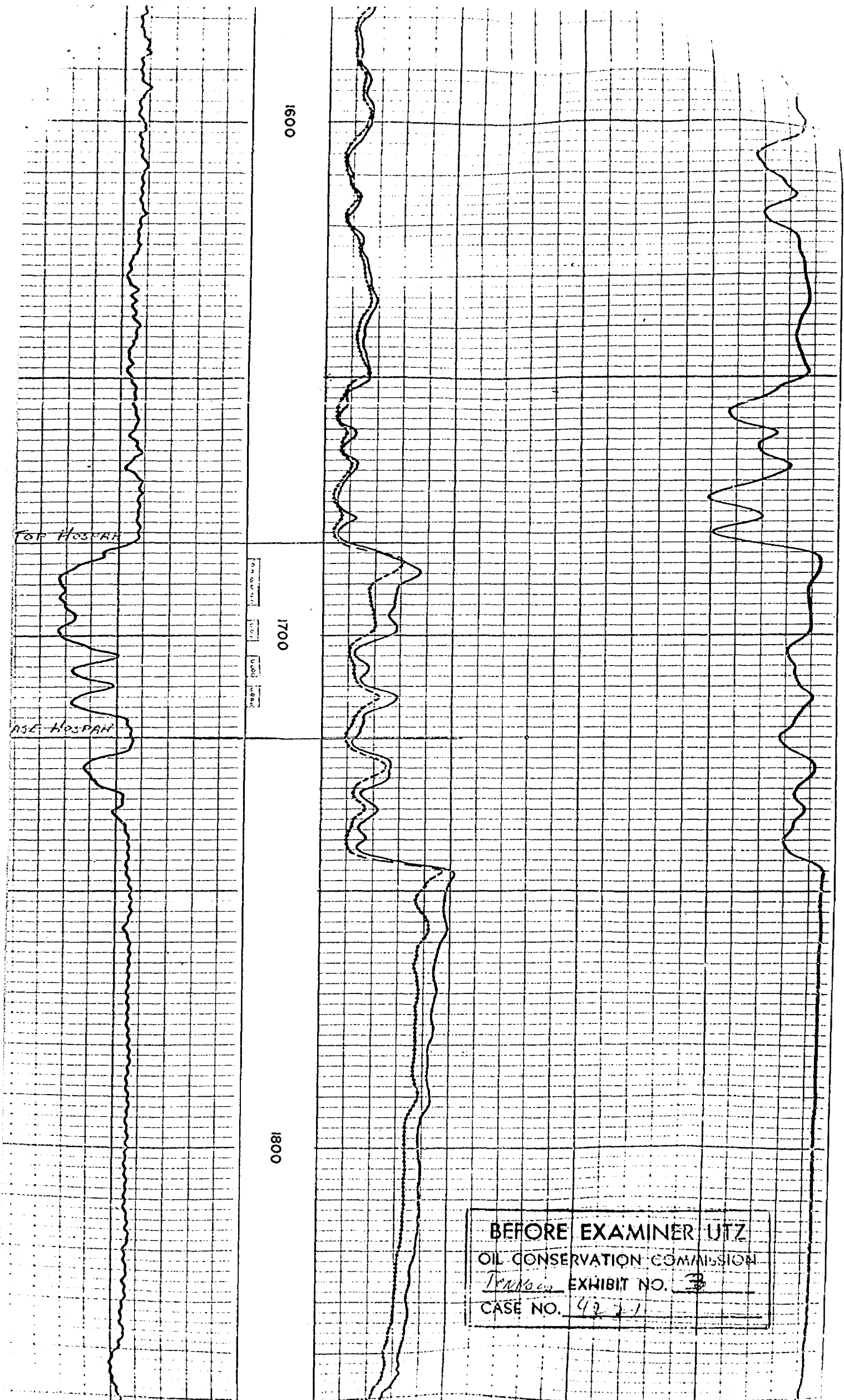
Upper Hospah sand perforations,
1685' to 1714'

Baker model "D" packer
set at 2490'

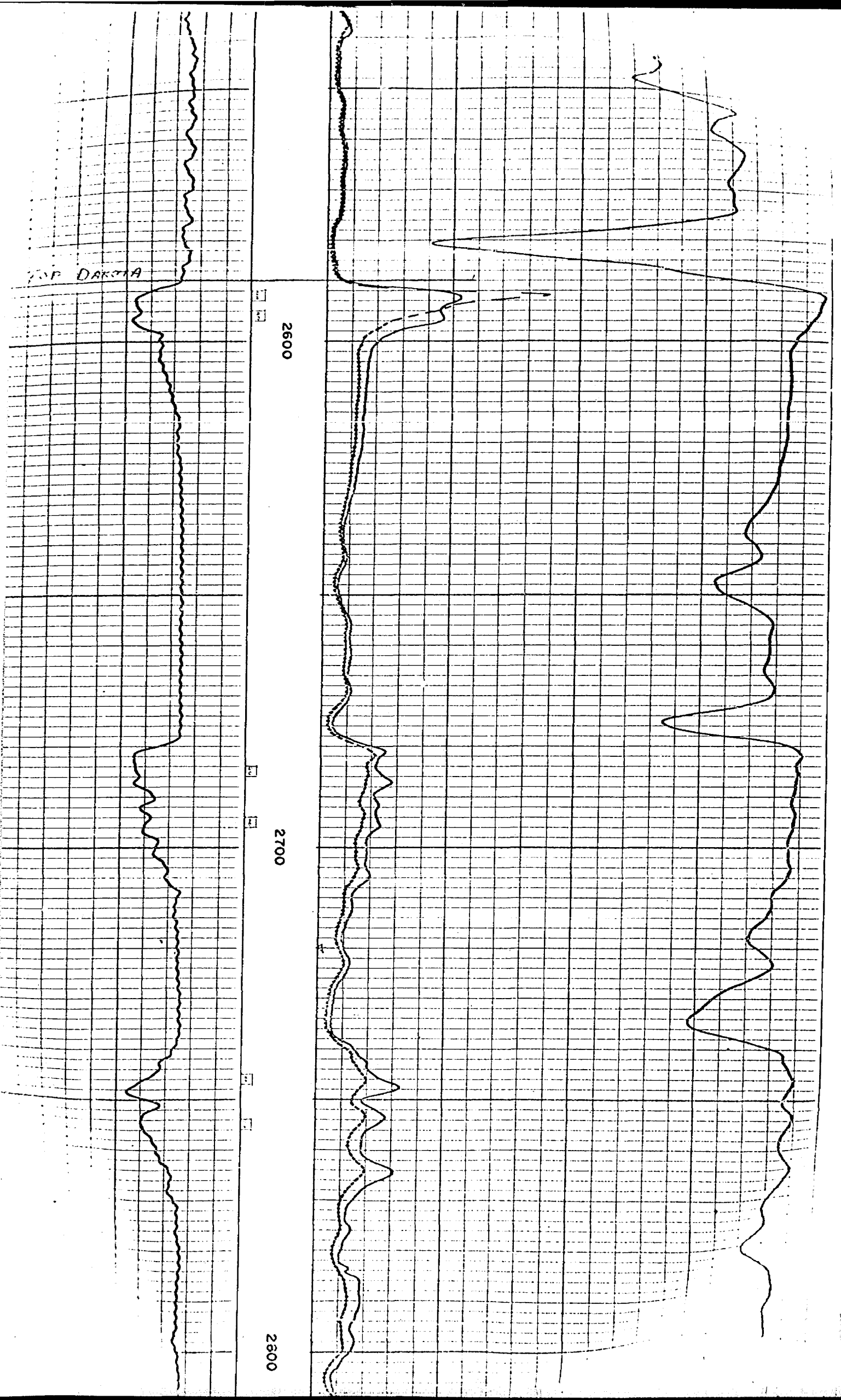
Dakota sand perforations,
2590' to 2865'

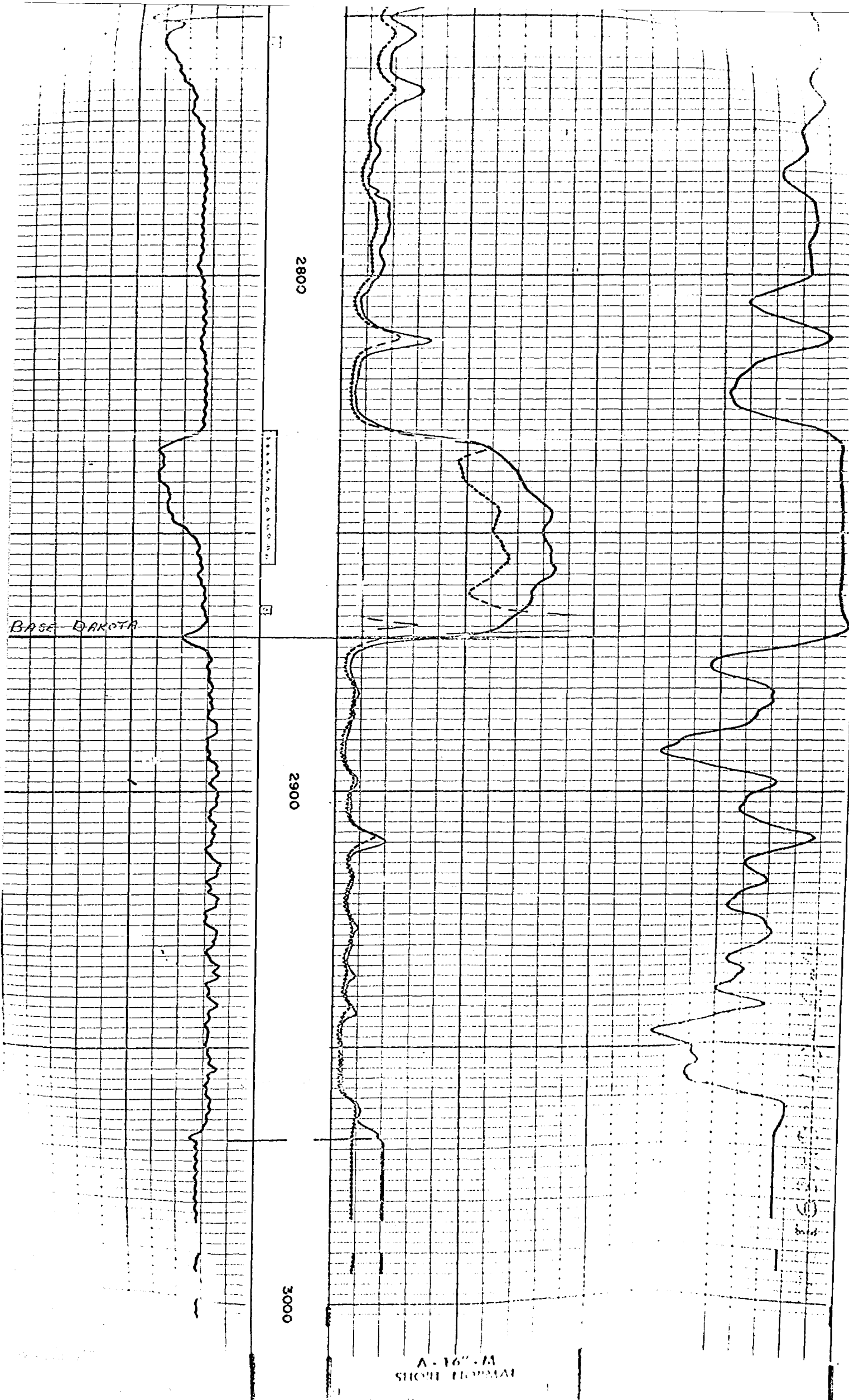
4 1/2" casing set at 2942'
and cemented to surface.
with 245 sx class 'C' cement
with 2% CaCl₂ and .5% TIC.

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Tenneco EXHIBIT NO. 2
CASE NO. 4221



BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 3
CASE NO. 4221





2800

2900

3000

BASE DAKOTA

SOUND LOG

A-160-11
SHEATH LOG

TENNECO OIL COMPANY

A Major Component of Tenneco Inc.

SUITE 1200 • LINCOLN TOWER BUILDING • DENVER, COLORADO 80203



August 26, 1969

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

Case 4221

Gentlemen:

Tenneco Oil Company hereby submits an application for a dual completion in the South Hospah Field. We desire authorization to operate Hospah No. 23 as a dual Upper Hospah Sand injection well - Dakota stand-by gas supply well.

Injection into South Hospah Unit No. 23 will sweep additional secondary reserves to wells Nos. 22, 21, and 19. The dual completion in the Dakota zone will provide a stand-by fuel gas supply for the most economical and uninterrupted operation of the field. Hospah No. 10 presently serves as the fuel gas supply well and is a dual Lower Hospah producer. During the annual packer-leakage test and any work-overs it is necessary to shut-in this gas supply. Hospah No. 23 would be shut-in in the Dakota zone except when its stand-by gas supply was required due to necessary shut-in of Hospah No. 10. The multiple completion of No. 23 will, therefore, permit recovery of additional reserves and efficient operation of the field.

In accordance with Rule 112-A we have enclosed Commission Form C-107, a diagrammatic sketch of the completion, a well log showing perforations, and a plat of the Hospah Field. A copy of this application has been sent to Tesoro Petroleum Corporation, the offset operator.

As shown by the attached sketch, injection down the tubing and gas production through the annulus can be safely and efficiently accomplished at the same time by the use of a Baker Lockset Packer with a crossover assembly. The use of two packers prevents communication between the two zones.

DOCKET MAILED

Date _____

TENNECO OIL COMPANY

New Mexico Oil Conservation Commission
August 26, 1969
Page Two

Due to our oversight, this well has already been recompleted in the above described manner. We are therefore, enclosing a packer-leakage test for this well. As a result of this test it is concluded that no casing leaks exist and that we can operate this well without comingling fluids.

We regret that this well was recompleted prior to Commission approval. Steps have been taken to prevent another occurrence of this type.

Yours very truly,

TENNECO OIL COMPANY

C.W. Nance

C. W. Nance
District Production Superintendent

JML/mae

Attachments

NEW MEXICO OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
APPLICATION FOR MULTIPLE COMPLETION

Form O-107
5-1-61

Case 4221

Operator Tenneco Oil Company		County McKinley	Date August 25, 1969
Address Suite 1200 Lincoln Tower Building		Lease South Hospah Unit	Well No. 23
Location of Well K	Unit K	Section 12	Township 17 12N
		Range 9W	

1. Has the New Mexico Oil Conservation Commission heretofore authorized the multiple completion of a well in these same pools or in the same zones within one mile of the subject well? YES _____ NO X
2. If answer is yes, identify one such instance: Order No. _____ ; Operator Lease, and Well No.: _____

3. The following facts are submitted:	Upper Zone	Intermediate Zone	Lower Zone
a. Name of Pool and Formation	Upper Hospah		Undesignated Dakota
b. Top and Bottom of Pay Section (Perforations)	1685-1714		2590-2865
c. Type of production (Oil or Gas)	Water Injection		Gas
d. Method of Production (Flowing or Artificial Lift)	Injection		Flowing

4. The following are attached. (Please check YES or NO)

- | Yes | No | |
|-------------------------------------|--------------------------|---|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | a. Diagrammatic Sketch of the Multiple Completion, showing all casing strings, including diameters and setting depths, centralizers and/or turbolizers and location thereof, quantities used and top of cement, perforated intervals, tubing strings, including diameters and setting depth, location and type of packers and side door chokes, and such other information as may be pertinent. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | b. Plat showing the location of all wells on applicant's lease, all offset wells on offset leases, and the names and addresses of operators of all leases offsetting applicant's lease. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | c. Waivers consenting to such multiple completion from each offset operator, or in lieu thereof, evidence that said offset operators have been furnished copies of the application.* |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | d. Electrical log of the well or other acceptable log with tops and bottoms of producing zones and intervals of perforation indicated thereon. (If such log is not available at the time application is filed it shall be submitted as provided by Rule 112-A.) |

5. List all offset operators to the lease on which this well is located together with their correct mailing address.

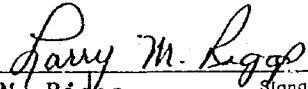
Tesoro Petroleum Corporation

533 Busby Drive

San Antonio, Texas 78209

6. Were all operators listed in Item 5 above notified and furnished a copy of this application? YES X NO _____. If answer is yes, give date of such notification **August 25, 1969**.

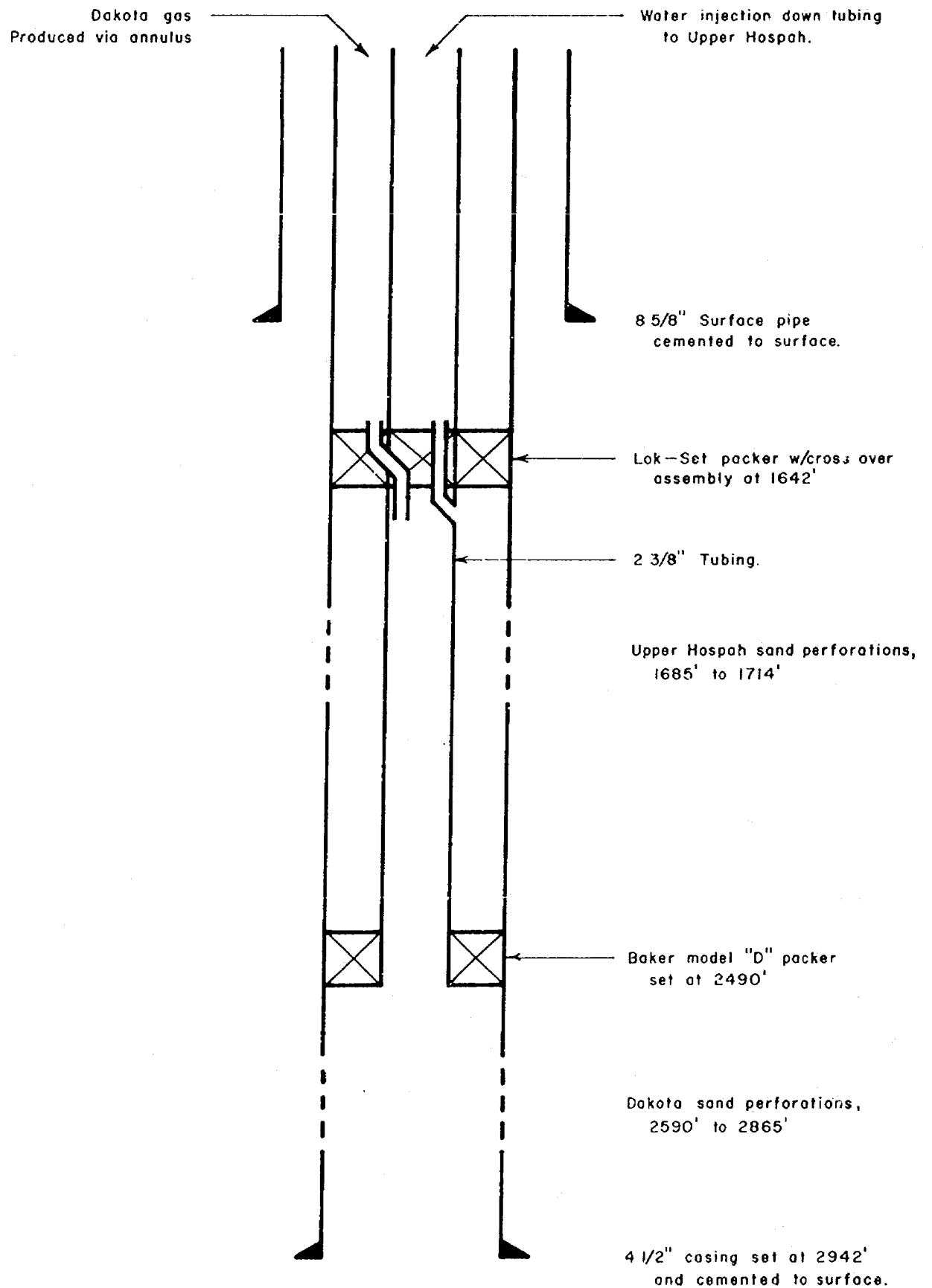
CERTIFICATE: I, the undersigned, state that I am the **District Office Supervisor** of the **Tenneco Oil Company** (company), and that I am authorized by said company to make this report; and that this report was prepared under my supervision and direction and that the facts stated therein are true, correct and complete to the best of my knowledge.


L. M. Riggs Signature

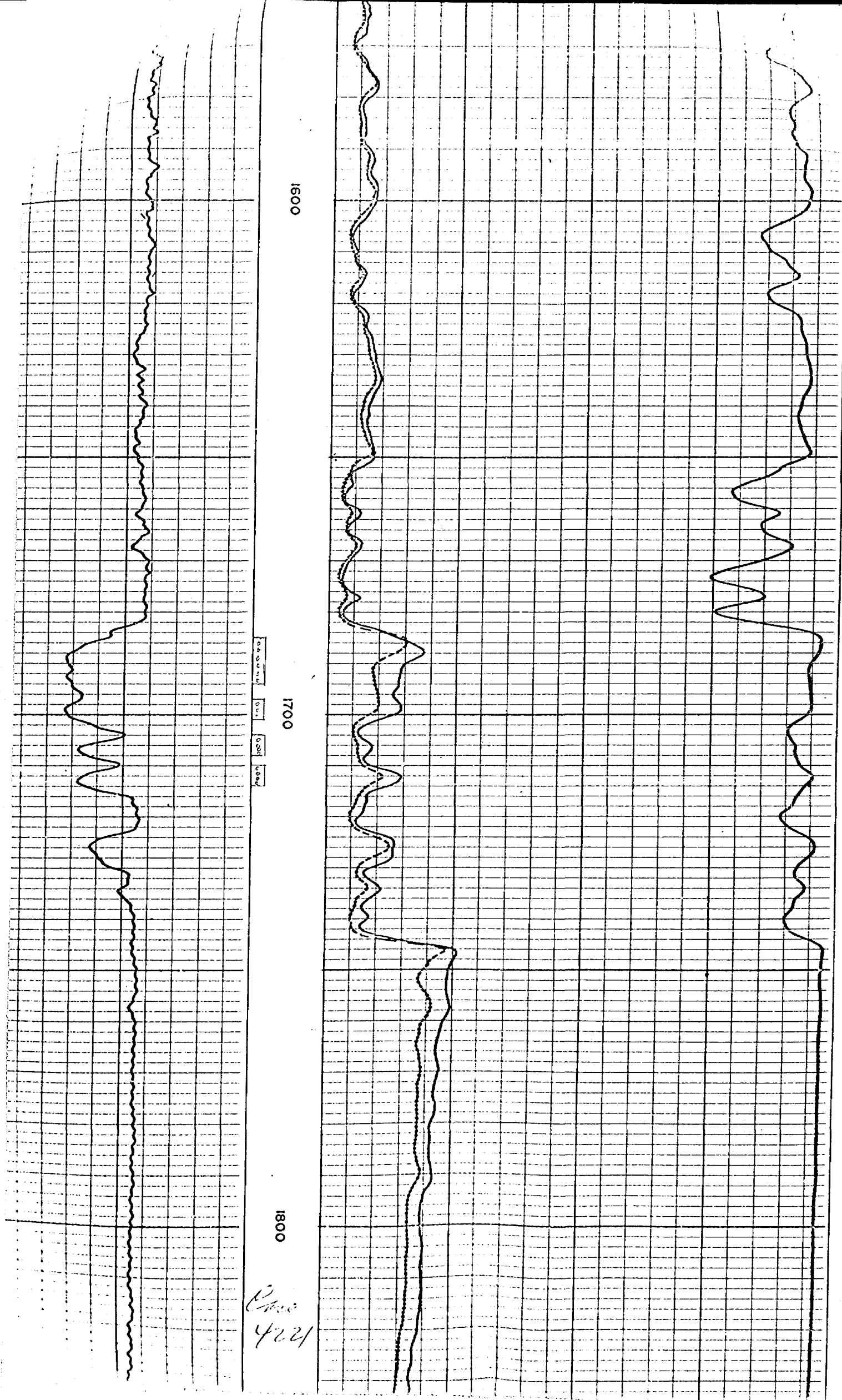
*Should waivers from all offset operators not accompany an application for administrative approval, the New Mexico Oil Conservation Commission will hold the application for a period of twenty (20) days from date of receipt by the Commission's Santa Fe office. If, after said twenty-day period, no protest nor request for hearing is received by the Santa Fe office, the application will then be processed.

NOTE: If the proposed multiple completion will result in an unorthodox well location and/or a non-standard perforation unit in one or more of the producing zones, then separate application for approval of the same should be filed simultaneously with this application.

TENNECO OIL COMPANY
 DENVER DISTRICT
 PROPOSED MULTIPLE COMPLETION
 UPPER HOSPAH SAND
 SOUTH HOSPAH FIELD
 Section 12 - T 17 N - R 9 W
 Mc Kinley County, New Mexico



Case 4221



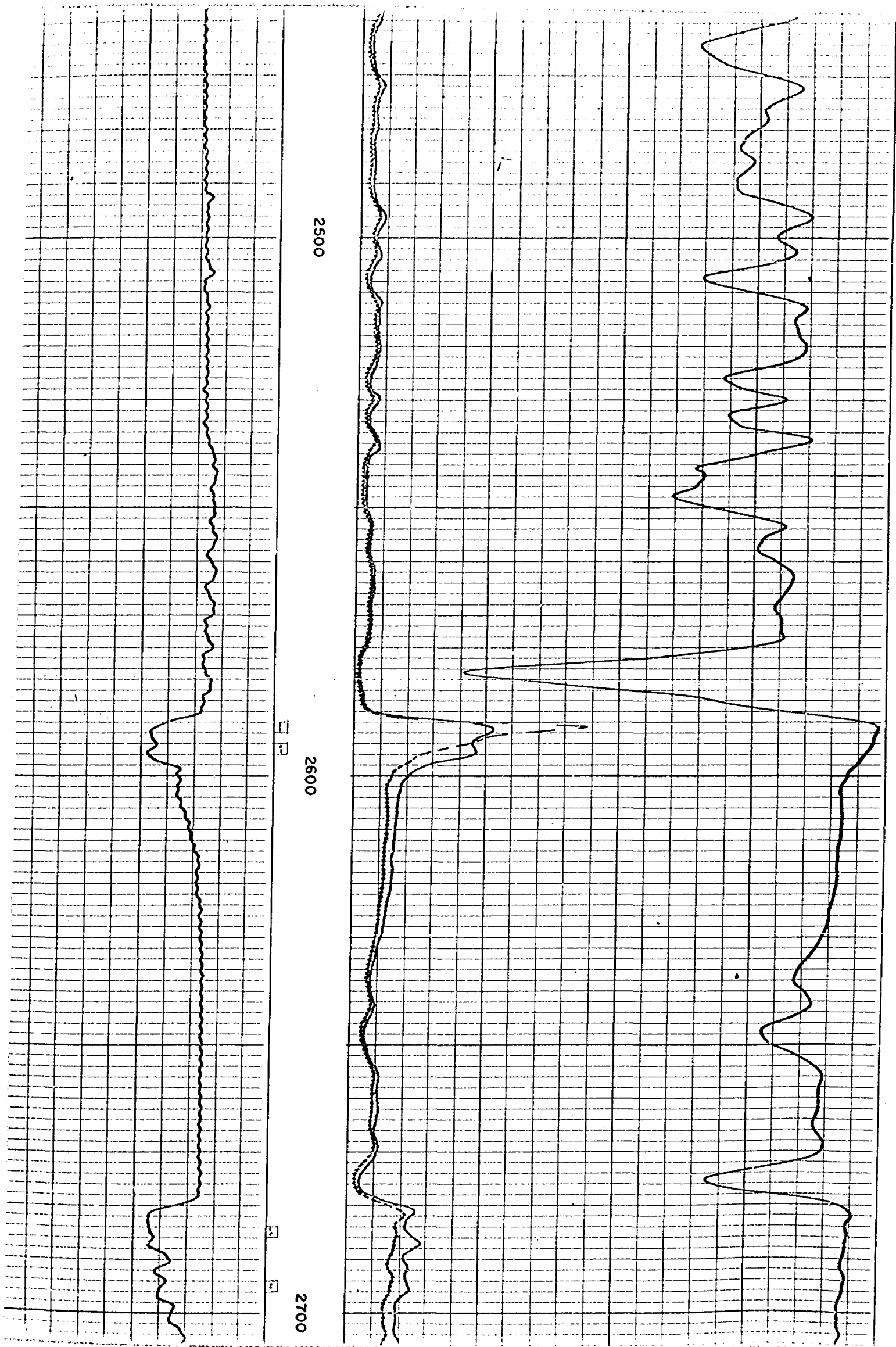
1600

1700

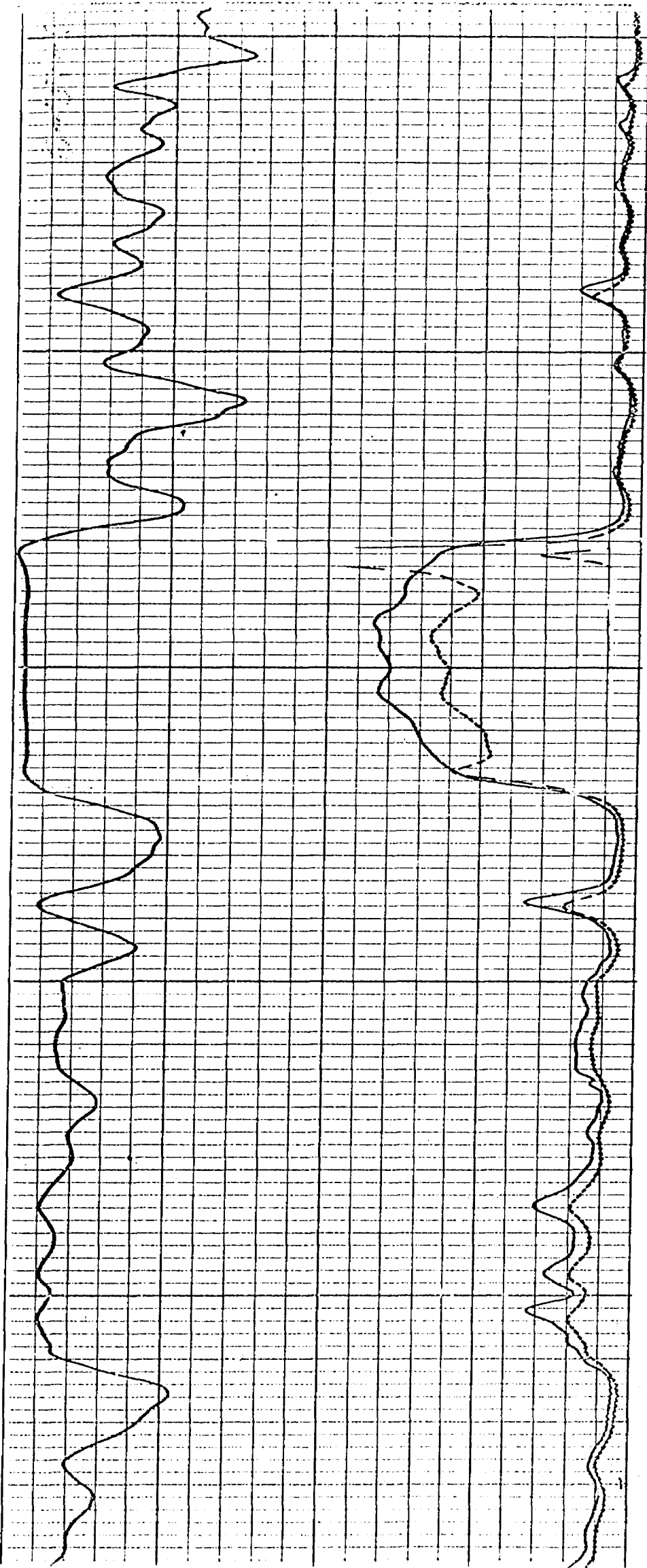
1800

0.5 sec 1000 1000 1000

4221



Plot 4/23/

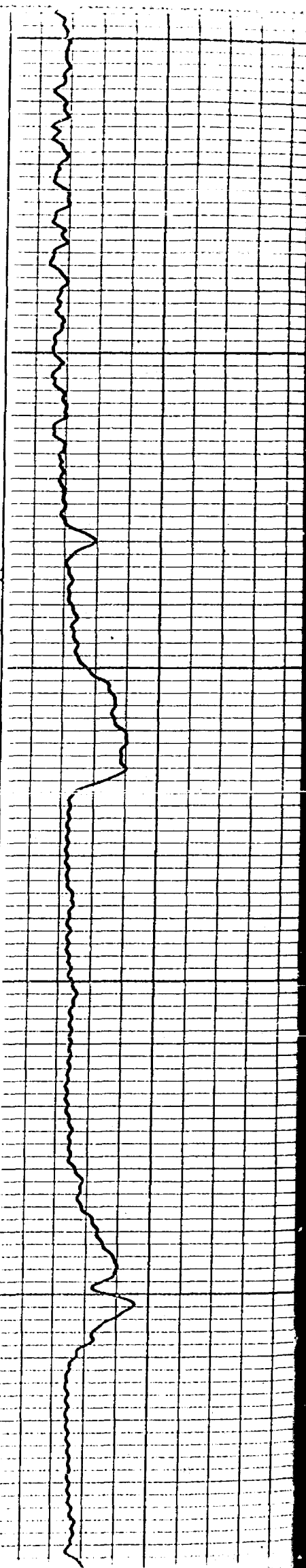


2900

2800

2800

2800



Case 4221

NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST

Operator Tenneco Oil Company Lease Hospah Well No. # 23
 Location of Well: Unit K Sec. 12 Twp. 17 Rge. 9 County McKinley

Name of Reservoir or Pool	Type of Prod. (Oil or Gas)	Method of Prod. (Flow or Art. Lift)	Prod. Medium (Tbg. or Csg.)
Upper Completion <u>South Hospah Unit</u>	<u>water injection</u>		<u>Tubing</u>
Lower Completion <u>Dakota</u>	<u>Gas</u>	<u>Flow</u>	<u>Casing</u>

PRE-FLOW SHUT-IN PRESSURE DATA

Upper Compl	Hour, date <u>8:00 A.M.</u> Shut-in <u>7-29-69</u>	Length of time shut-in <u>3 days</u>	SI press. <u>0</u> psig	Stabilized? (Yes xxxxxx) <u>Yes</u>
Lower Compl	Hour, date <u>8:00 A.M.</u> Shut-in <u>7-29-69</u>	Length of time shut-in <u>3 days</u>	SI press. <u>945</u> psig	Stabilized? (Yes xxxxxx) <u>No</u>

FLOW TEST NO. 1

Commenced at (hour, date)* 12:00 P.M. 8-1-69 Zone producing (Upper ~~xxxxxx~~ or Lower): Lower

Time (hour, date)	Lapsed time since*	Pressure Upper Compl.	Pressure Lower Compl.	Prod. Zone Temp.	Remarks
<u>1:00 P.M.</u> <u>8-1-69</u>	<u>1 hour</u>	<u>0</u>	<u>63</u>		<u>Flared</u>
<u>2:00 P.M.</u> <u>8-1-69</u>	<u>2 hours</u>	<u>0</u>	<u>57</u>		<u>Flared</u>
<u>3:00 P.M.</u> <u>8-1-69</u>	<u>3 hours</u>	<u>0</u>	<u>53</u>		<u>Flared</u>

Production rate during test

Oil: BOPD based on Bbls. in Hrs. Grav. GOR
 Gas: MCFPD; Tested thru (Orifice or Meter):

MID-TEST SHUT-IN PRESSURE DATA

Upper Compl	Hour, date <u>8:00 A.M.</u> Shut-in <u>7-29-69</u>	Length of time shut-in <u>6 days</u>	SI press. <u>0</u> psig	Stabilized? (Yes xxxxxx) <u>Yes</u>
Lower Compl	Hour, date <u>3:00 P.M.</u> Shut-in <u>8-1-69</u>	Length of time shut-in <u>3 days</u>	SI press. <u>890</u> psig	Stabilized? (Yes xxxxxx) <u>No</u>

FLOW TEST NO. 2

Commenced at (hour, date)** 8:00 A.M. 8-4-69 Zone producing (Upper ~~xxxxxx~~ or Lower): Upper

Time (hour, date)	Lapsed time since **	Pressure Upper Compl.	Pressure Lower Compl.	Prod. Zone Temp.	Remarks
<u>9:00 A.M.</u> <u>8-4-69</u>	<u>1 hour</u>	<u>0</u>	<u>890</u>		<u>No flow South</u>
<u>10:00 A.M.</u> <u>8-4-69</u>	<u>2 hours</u>	<u>0</u>	<u>892</u>		<u>Hospah dead</u>
<u>11:00 A.M.</u> <u>8-4-69</u>	<u>3 hours</u>	<u>0</u>	<u>892</u>		

Production rate during test

Oil: BOPD based on Bbls. in Hrs. Grav. GOR
 Gas: MCFPD; Tested thru (Orifice or Meter):

REMARKS:

I hereby certify that the information herein contained is true and complete to the best of my knowledge.

Approved: 19
 New Mexico Oil Conservation Commission

By

Title

Operator Tenneco Oil Company

By J. E. Massey

Title District Production Engineer

Date

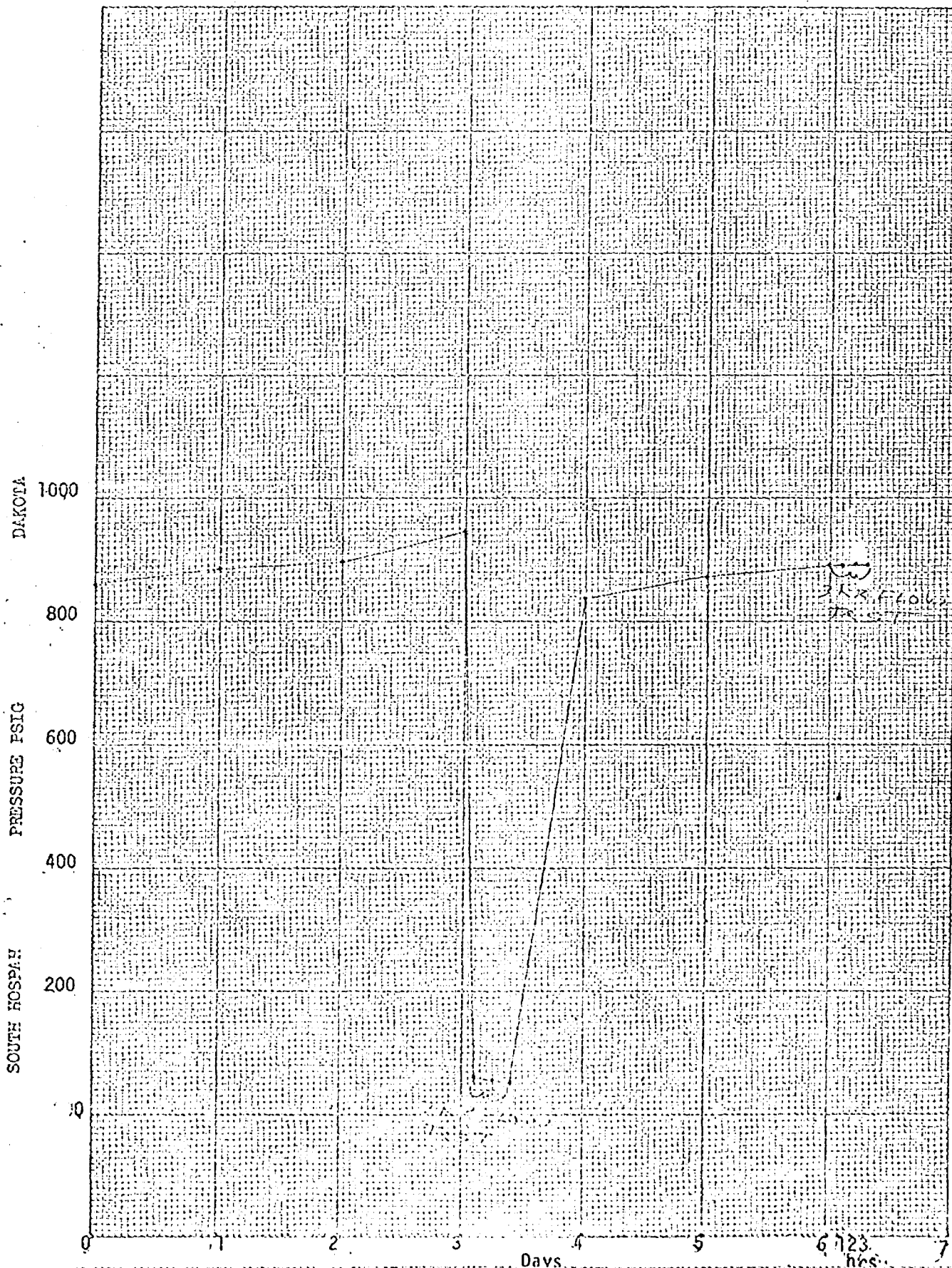
Enc. 4721

1. A pressure leakage test shall be conducted on each newly completed well within seven days after actual completion of the well, and annually thereafter as prescribed by the order authorizing the multiple completion. Such tests shall also be conducted on all multiple completions within seven days following completion and the cessation of production therefrom, and whenever a well is shut-in for a well during which the number or the tubing have been disturbed. Tests shall also be taken at any time that discontinuity in production or flow is requested by the production.
2. At least 72 hours prior to the commencement of any pressure leakage test, the operator shall notify the Commission in writing of the exact time the test is to be conducted. Offset operators shall also be so notified.
3. The operator to whom test shall commence shall both zones of the dual completion are shut-in for pressure stabilization. Both zones shall remain shut-in until the wellhead pressure in each has stabilized, provided however, that they need not remain shut-in more than seven days.
4. For Flow Test No. 1, one zone of the dual completion shall be produced at the normal rate of production while the other zone remains shut-in. Each test shall be conducted for seven days in the case of a gas well and for 24 hours in the case of an oil well. After 16, on an initial pressure leakage test, a gas well in being flowed to the atmosphere due to the lack of a pipeline connection the flow period shall be three hours.
5. Following completion of Flow Test No. 1, the well shall again be shut-in, in accordance with Paragraph 3 above.
6. Flow Test No. 2 shall be conducted over though no leak was indicated during Flow Test No. 1. Procedure for Flow Test No. 2 is to be the same as for Flow Test No. 1 except that the previously produced zone shall remain shut-in while the zone which was previously shut-in is produced.

7. Procedures for gas zone tests shall be as follows: Each zone with a dual completion shall be tested at intervals of 24 hours. A 24-hour test shall be conducted prior to the beginning of each flow period, at fifteen-minute intervals during the first hour thereof, and at hourly intervals thereafter, including one pressure measurement immediately prior to the conclusion of each flow period. Tests shall be conducted immediately prior to the beginning of each flow period, at least once during each flow period (at approximately the midway point) and immediately prior to the conclusion of each flow period. Other pressure readings may be taken as desired, or may be repeated on wells which have previously shown questionable test data.

24-hour oil zone tests: All pressures, throughout the entire test, shall be continuously measured and recorded with recording pressure gauges, the accuracy of which must be checked at least twice, once at the beginning and once at the end of each test, with a deadweight pressure gauge. If a well is a gas-oil or an oil-gas dual completion, the recording gauge shall be required on the oil zone only, with deadweight pressure as required above being taken on the gas zone.

8. The results of the above-described tests shall be filed in triplicate within 15 days after completion of the test. Tests shall be filed with the Area District Office of the New Mexico Oil Conservation Commission on Northwest New Mexico Packer Leakage Test Form Revised 11-1-54, with all deadweight pressures indicated thereon as well as the flowing temperature (and zone only) and gravity and GOR (oil zones only). A pressure versus time curve for each zone of each test shall be constructed on the reverse side of the Packer Leakage Test Form with all deadweight pressure points taken indicated thereon. For oil zones, the pressure curve should also indicate all key pressure changes which may be reflected by the recording gauge chart. These key pressure changes should also be tabulated on the front of the Packer Leakage Test Form.



Case 4221

PACKER LEAKAGE DATA SHEET

WELL:

WELL: Hospah #22

[illegible]

Check 4221

DRAFT

GMH/esr

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. 4221

Order No. R- 3848

APPLICATION OF TENNECO OIL COMPANY
FOR A DUAL COMPLETION AND WATER
INJECTION, MCKINLEY COUNTY, NEW
MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on October 8, 1969,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this day of October, 1969, 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, Tenneco Oil Company, seeks approval
of the dual completion of its South Hospah Unit Well No. 23,
1650 feet from the south line and 1800 feet from the west line of
located ~~in Unit K of~~ Section 12, Township 17 North, Range 9 West,
through the casing-tubing annulus by means of a cement assembly
NMPM, McKinley County, New Mexico, to produce gas from an un-
designated Dakota gas pool in the perforated interval from
approximately 2590 feet to 2865 feet ~~through the casing-tubing~~
down the casing-tubing annulus by means of a cement assembly
annulus, and to inject water for secondary recovery purposes into
the Upper Sand, South Hospah-Upper Sand Oil Pool, in the perforated
interval from approximately 1685 feet to 1714 feet, with separa-
tion of the zones by a packer set at approximately 2490 feet.

(3) That the mechanics of the subject dual completion are feasible and in accord with good conservation practices.

(4) That approval of the subject dual completion will prevent the drilling of unnecessary wells, and will otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the dual completion of the Tenneco Oil Company, *1650 feet from the twist line and 1800 feet from the* South Hospah Unit Well No. 23, located ~~in Unit K~~ of Section 12, Township 17 North, Range 9 West, NMPM, McKinley County, New Mexico, to produce gas *through the casing-tubing annulus by means of a crown assembly* from an undesignated Dakota gas pool in the perforated interval from approximately 2590 feet to 2865 feet, ~~through the casing-tubing annulus, and to inject water for secondary recovery purposes into the Upper Sand, South Hospah-Upper Sand Oil Pool, in the perforated interval from approximately 1685 feet to 1714 feet, with separation of the zones by a packer set at approximately~~ *through the casing-tubing annulus by means of a crown assembly* 2490 feet, is hereby approved.

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

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

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