

† CASE 5246: Application of TENNECO  
FOR PRESSURE MAINTENANCE EXPAN-  
SION & DUAL COMPLETIONS.

CASE No.

5246

Application,  
Transcripts,  
Small Exhibits

ETC.

BEFORE THE  
NEW MEXICO OIL CONSERVATION COMMISSION

Santa Fe, New Mexico  
May 22, 1974

EXAMINER HEARING

IN THE MATTER OF:

Application of Tenneco Oil  
Company for pressure maintenance  
expansion and dual completions,  
McKinley County, New Mexico.

Case No. 5246

BEFORE: Richard L. Stamets, Examiner

For New Mexico Oil  
Conservation Commission:

William Carr, Esq.  
Legal Counsel for the  
Commission  
State Land Office Building  
Santa Fe, New Mexico

For the Applicant:

Ken Bateman, Esq.  
WHITE, KOCH, KELLY AND  
McCARTHY  
220 Otero Street  
Santa Fe, New Mexico

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I N D E X

PAGE

FREDERICK E. KASTNER  
Direct Examination by Mr. Bateman  
Cross Examination by Mr. Kendrick  
Cross Examination by Mr. Stamets

3  
9  
9

E X H I B I T S

Applicant's Exhibits Nos. 1 through 8

9

MR. STAMETS: Case 5246.

MR. CARR: Case 5246. Application of Tenneco Oil Company for pressure maintenance expansion and dual completions, McKinley County, New Mexico.

MR. BATEMAN: Mr. Examiner, I am Ken Bateman of White, Koch, Kelly and McCarthy, appearing for the Applicant, and I have one witness to be sworn.

MR. STAMETS: Are there any other appearances in this case?

The witness will stand and be sworn, please.

FREDERICK E. KASTNER

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

DIRECT EXAMINATION

BY MR. BATEMAN:

Q Would you please state your full name, address and place of employment?

A Frederick E. Kastner, Denver, Colorado. I work for Tenneco Oil Company as Petroleum Reservoir Engineer.

Q Have you previously testified before the Commission?

A No, I have not.

Q Would you briefly state your educational and

KASTNER-DIRECT

Page.....4.....

work experience?

A I graduated from New Mexico School of Mines in 1967 with a B.S. in Math. I worked as a geophysicist for a year and a quarter for Sinclair Oil and Gas before returning to graduate school at the Colorado School of Mines. I got a Master of Science in Petroleum Engineering. I worked for a little over two years for Conoco Oil in Hobbs, New Mexico as Petroleum Production and Reservoir Engineer. I have worked since 9/72 with Tenneco Oil Company as Petroleum Production Analytical Engineer.

Q Are you familiar with the area in question in this Application?

A Yes, I am.

MR. BATEMAN: Are the witness' qualifications acceptable?

MR. STAMETS: They are.

BY MR. BATEMAN:

Q Mr. Kastner, would you refer, then, to Exhibit No. 1 and state what Tenneco seeks by this Application?

A Exhibit No. 1 is a location plat of the South Hospah, Hospah-Lone Pine Dakota Dareas on it. The existing gas-water injection project in the Lower Hospah is being expanded from the pilot stage to a full-scale pressure

KASTNER-DIRECT

Page.....4-A.....

maintenance gas-water injection project. Currently we have three wells located on the map, green dots with green around them, 33, 36 and 84 on the Tesoro Lease that are existing gas-water injection wells, and we have seen response due to injection into these wells in the offset producing wells. We have received permission to drill an additional 6 wells and have drilled 5 of these; 54, 57, 58, 59 and 60, located on the map with red dots.

Tesoro will be drilling a lease line well in Section 6 on the southwest corner. That is also indicated in red.

Instead of drilling the approved Well No. 61, we are proposing to dual complete No. 41 as a lease line well to the north indicated with the orange arrow to the north of Section 12.

We also wish to dual complete Well No. 56 as a dual upper and lower injection well.

Q What is the status of the two wells that are the subject of the Application?

A Well No. 41 and Well No. 56 are currently injection wells into the upper Hospah formation.

Q As I understand, the Application deals only with the lower Hospah, is that correct?

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KASTNER-DIRECT

Page..... 5

A That is correct.

Q Would you continue, then, with Exhibit 2 and 3 and describe how the wells are currently completed?

A Exhibits 2 and 3 indicate the current completion into the upper Hospah. Well No. 41 has a 5½-inch casing set at 1610 feet. The top of the cement is estimated to be at 1177 feet with perforation at 1566, 1597 and plugged back TD at 1607. The diagrammatic wellbore Schematic No. 66 indicates a 7-inch casing set at 1584, plugged back TD 1577, perforations 1542 to 1565, estimated top cement 952 feet. They are both currently completed with packers in the tubing.

Q Please refer to Exhibit No. 4 and describe how you propose to complete Well No. 41 in the lower Hospah.

A Well No. 41. Exhibit No. 4 is a diagrammatic sketch of a proposed dual completion of Well No. 41 and it indicates that we intend to drill out and set a permanent packer and to isolate the upper Hospah from the lower Hospah, and also use a retrievable packer to inject into the upper Hospah. We intend to drill out below the casing shoe and pressure-test communications. If no communication is found, we will continue to drill out through the shale an estimated 8 feet separating the



KASTNER-DIRECT

Page..... 6

upper Hospah from the lower Hospah and drilled 10 feet into the lower Hospah. If there is communication when we pressure-test the packers and tubing below the current formation, we will squeeze and re-squeeze until we establish that there is no communication with the upper Hospah.

Attached to this diagrammatic sketch is a detailed prognosis.

Q Mr. Kastner, I understand that the prognosis is simply an estimate of what will be required?

A That is correct.

Q In your experience, it may be determined that something else will have to be done?

A Right.

Q Would you continue with Exhibit No. 5 and describe how Well No. 56 will be completed?

A Exhibit No. 5 is a diagrammatic sketch of Well No. 56, a proposed dual completion, and it has attached to it a copy of the detailed prognosis. We intend to complete this in a similar manner as No. 41. We intend to drill out below the casing tube, set a packer below the existing perforations, pressure-test for the communication with the upper Hospah. If there is communication, we intend to squeeze before drilling

KASTNER-DIRECT

Page.....7.....

out through the shale and into the lower Hospah. After we have established no communication and have drilled into the lower Hospah, we will set a permanent packer in both wells. The permanent packer will be between the upper Hospah and lower Hospah and we will set a retrievable packer above the upper Hospah. We will inject down through tubing into both intervals.

Q Are you currently injecting fresh water?

A Yes, we are.

Q Do you expect any problems with corrosion?

A No, we don't.

Q Would you continue, then, and discuss Exhibits 6 and 7 together?

A Exhibits 6 and 7 are induction electrical logs of Wells 41 and 56. On the left side you have the SP log. On the right side you have resistivity logs indicating saturation. The top of the upper Hospah is indicated on both these logs and the estimated top of the lower Hospah. Current perforations are also indicated for the logs.

Q Exhibit No. 8, I understand, is a log of a well drilled into the lower Hospah, is that correct?

A Yes. Exhibit No. 8 is a log of a typical well drilled into the lower Hospah. Well No. 8 is the southwest

KASTNER-DIRECT

offset to No. 56. The top of the upper Hospah is estimated at 1544. The top of the lower, at 1611. Exhibit No. 8 is the SP log and the IES log, similar to Exhibits 6 and 7.

Q What volume of water and gas do you expect to inject and at what pressure?

A We expect to inject 1000 barrels of water per day and 100 MCF gas per day at two 250 pounds into each of these lower Hospah completions.

Q If the wells are completed as you propose, do you anticipate any communication between the lower and upper Hospah?

A No, we do not.

Q If the Application is granted, in your opinion, will it protect correlative rights and prevent waste?

A Yes.

Q Were Exhibits 1 through 8 prepared by you or under your direction?

A Yes.

MR. BATEMAN: I offer Exhibits 1 through 8 into evidence.

MR. STAMETS: Without objection, they will be admitted into evidence.

KASTNER-DIRECT

Page.....9

(Whereupon, Applicant's Exhibits Nos. 1 through 8 were marked for identification, offered and admitted into evidence.)

MR. BATEMAN: No further direct.

MR. STAMETS: Are there any further questions of this witness? Mr. Kendrick?

CROSS EXAMINATION

BY MR. KENDRICK:

Q Mr. Kastner, what would be the source of the gas you will inject into these wells?

A Dakota A.

Q Produced from wells on these leases?

A Well No. 10 has gas on this lease.

Q Are there any gas sales lines in this area so that this gas could be sold?

A No, there are not.

Q Will all produced water from the pool be utilized or reinjected into the formations in this manner?

A Yes.

MR. KENDRICK: That's all the questions I have.

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Kastner, you said something about substituting

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KASTNER-CROSS

Well No. 41 for Well No. 61?

A Right.

MR. KENDRICK: Well No. 61 was approved on WFX-56.

MR. BATEMAN: It has not been drilled.

BY MR. STAMETS:

Q And you are not going to utilize No. 61 so that can be dismissed or superseded or whatever, and Well No. 56 is an entirely new injection well for the lower zone?

A Right.

Q You intend to utilize coated tubing in these injection wells?

A No.

Q You don't anticipate any problem?

A No.

Q Do you intend to load and gauge the annulus in the two injection wells or leave the annulus open or in some manner determine whether there is any leakage of the tubing in these injection wells?

A Yes, sir. The annulus will be filled with annular fluid water and monitored.

Q Monitored how?

KASTNER-CROSS

CASE 5246

Page.....11.....

A Pressure gauge.

MR. STAMETS: Are there any other questions of  
this witness?

You may be excused.

(Witness dismissed.)

MR. STAMETS: Is there anything further in  
this case?

We will take the case under advisement.

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STATE OF NEW MEXICO )  
 ) SS.  
 COUNTY OF SANTA FE )

I, RICHARD L. NYE, Court Reporter, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me, and the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

*Richard L. Nye*  
 COURT REPORTER

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 5246, heard by me on 5/23, 19 74.  
*Richard L. Nye*, Examiner  
 New Mexico Oil Conservation Commission

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Dockets Nos. 15-74 and 16-74 are tentatively set for hearing on June 5 and June 19. Application for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - MAY 22, 1974

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 Richard L. Stamets, Alternate Examiner:

CASE 5206: (Continued from the April 25, 1974, Examiner Hearing)

Application of Continental Oil Company for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle West Warren-Blinbry and East Skaggs-Drinkard production in the wellbore of its SEMU Burger Well No. 21 located in Unit O of Section 19, Township 20 South, Range 38 East, Lea County, New Mexico.

CASE 5240: In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Burwinkle and Scanlon and Husky Energy, Inc. and The Employers' Fire Insurance Company and all other interested parties to appear and show cause why the following wells located in Section 28, Township 20 North, Range 9 West, McKinley County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program:

Ohwell Wells Nos. 1, 2, 3, 5, 8, and 39 in Unit C; Ohwell Wells Nos. 9, 10, 11, 12, and 13 in Unit A; and Jaco State Well No. 104 in Unit G.

CASE 5241: Application of Depco, Inc. for an unorthodox gas well location, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks, as an exception to Order No. R-1670-H, approval for the unorthodox location of a well to be drilled 1325 feet from the North and East lines of Section 3, Township 15 South, Range 27 East, Buffalo-Pennsylvanian Gas Pool, Chaves County, New Mexico.

CASE 5242: Application of Penroc Oil Corporation for a dual completion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its Allied-Com Well No. 1 located in Unit B of Section 27, Township 20 South, Range 27 East, Eddy County, New Mexico, in such a manner as to produce undesignated Wolfcamp gas through the tubing and undesignated Morrow gas through the annulus by means of a cross-over assembly.

CASE 5243: Application of Continental Oil Company for special gas-oil ratio, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the establishment of a special gas-oil ratio limitation of 10,000 cubic feet of gas per barrel of oil for the Weir-Drinkard Oil Pool, Lea County, New Mexico.



CASE 5248: Application of Cities Service Oil Company for a dual completion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its Tracy "A" Com Well No. 1 located in Unit C of Section 33, Township 21 South, Range 27 East, in such a manner as to produce undesignated Strawn gas through the tubing and undesignated Morrow gas through the annulus by means of a cross-over assembly.

CASE 5244: Application of El Paso Natural Gas Company for a dual completion, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the tubingless dual completion of its Hubbell Well No. 14 located in Unit G of Section 18, Township 29 North, Range 10 West, San Juan County, New Mexico, in such a manner as to produce Aztec-Fruitland and undesignated Chacra gas through parallel strings of 2 7/8-inch casing cemented in a common wellbore.

CASE 5245: Application of Texaco Inc. for a tubingless quadruple completion and downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the quadruple completion of its C. H. Weir "A" Well No. 8 located in Unit F of Section 12, Township 20 South, Range 37 East, Lea County, New Mexico, in such a manner as to produce Skaggs-Glorieta, East Weir-Blinbry, East Weir-Tubb, and Skaggs-Drinkard production through three parallel strings of 2 7/8-inch casing cemented in a common wellbore with the East Weir-Blinbry and the Skaggs-Drinkard production commingled and produced through a single string of casing.

CASE 5246: Application of Tenneco Oil Company for pressure maintenance expansion and dual completions, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks approval for the expansion of its South Hospah Lower Sand Pressure Maintenance Project, South Hospah Field, McKinley County, New Mexico, by the dual completion of its Hospah Well No. 41 located five feet from the North line and 1650 feet from the East line and its Hospah Well No. 56, located 1100 feet from the North line and 1275 feet from the East line, both in Section 12, Township 17 North, Range 9 West, to permit injection of water into the Lower Sand as well as the Upper Sand as presently authorized.

CASE 5247: Application of Champlin Petroleum Company for a dual completion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its Pecos Federal Well No. 1 located in Unit C of Section 1, Township 22 South, Range 27 East, Eddy County, New Mexico, in such a manner as to produce undesignated Strawn gas through the tubing and undesignated Morrow gas through the annulus by means of a cross-over assembly.



## OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO  
P. O. BOX 2088 - SANTA FE  
87501

I. R. TRUJILLO  
CHAIRMAN

LAND COMMISSIONER  
ALEX J. ARMIJO  
MEMBER

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

June 4, 1974

Mr. Ken Bateman  
White, Koch, Kelly & McCarthy  
Attorneys at Law  
Post Office Box 787  
Santa Fe, New Mexico

Re: CASE NO. 5246

ORDER NO. R-4389-B

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. 5246  
Order No. R-4389-B

APPLICATION OF TENNECO OIL COMPANY  
FOR PRESSURE MAINTENANCE EXPANSION  
AND DUAL COMPLETIONS, MCKINLEY  
COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on May 22, 1974,  
at Santa Fe, New Mexico, before Examiner, Richard L. Stamets.

NOW, on this 4th day of June, 1974, 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 by Order No. R-4389, the applicant, Tenneco Oil  
Company, was authorized to institute its Lower Hospah Pressure  
Maintenance Project in the South Hospah-Lower Sand Pool,  
McKinley County, New Mexico, by the simultaneous injection of  
water and gas into the Lower Hospah Sand formation through two  
wells located in Units B and G, respectively, of Section 12,  
Township 17 North, Range 9 West, NMPM.

(3) That applicant now seeks authority to dually complete  
two of its wells in said Section 12 to permit injection of  
water and gas into the lower Hospah formation as well as the  
injection of water into the Upper Hospah formation as is present-  
ly authorized, those two wells being described as follows:

Hospah Well No. 41, located in Unit B  
Hospah Well No. 56, located in Unit A

(4) That the mechanics of the proposed dual completions  
are feasible and in accord with good conservation practices.

-2-

Case No. 5246  
Order No. R-4389-B

(5) That the dual completion of the subject wells to allow injection of water and gas into the lower Hospah formation as proposed by the applicant is in the interest of conservation and should result in greater ultimate recovery of oil, thereby preventing waste, will not violate correlative rights, and will afford the applicant the opportunity to produce its just and equitable share of the oil in South Hospah-Lower Sand Pool.

IT IS THEREFORE ORDERED:

(1) That the applicant, Tenneco Oil Company, is hereby authorized to dually complete its Hospah Well No. 41, located in Unit B and its Hospah Well No. 56, located in Unit A of Section 12, Township 17 North, Range 9 West, NMPM, McKinley County, New Mexico, to inject water into the Upper Hospah formation and to inject water and gas into the lower Hospah formation through parallel strings of tubing.

(2) That injection in each of the subject dually completed injection wells shall take place through tubing set in packer located as near as practicable to the uppermost perforations in the respective zones to be injected, or, in the case of open-hole completions, to the casing-shoe; the annulus of each well shall be filled with an inert fluid and equipped with an approved leak-detection device.

(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



*I. R. Trujillo*  
I. R. TRUJILLO, Chairman

ALEX J. ARMIJO, Member

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

S E A L

dr/

LEASE: South Hospah Unit  
WELL NO.: 41  
Current Conditions

ZERO ELEV.: 7016' KB (12' AGL)

LOCATION: 5' ENL & 1650' FEL

Sec. 12-T17N-R9W

McKinley County

New Mexico

Completed: 9/10/70 as  
WIW (216 BWPD @ 650 ps)

8 5/8" O.D., 24 LB, H-40 CSG.

Set @ 71' w/ 75' sx. in 12 1/4" hole.

(Top of Cmt. @ Surf. by Circ.)

Est. TOC  
@ 1177'

2 3/8", 4.7#, J-55, EUE, 8R  
" Plastic Cap AB tubing

Baker Lok-Set Packer Top  
@ 1536'

Acidized 1566-1597' w/750 gal.

15% HCL

Sand-water-Fraced 1566-1597'

w/1800 gal. & 5000 lb.

10/20/74 sand  
BEFORE EXAMINER STAMETS

CIVIL CONSERVATION COMMISSION

EXHIBIT NO. 2

CASE NO. 5246

Submitted by Applicant

Hearing Date 5-22-74

Formation Tops:

Lookout Point 314', Mancus

627', Crevasse 852',

Hospah 1564'

1566' (2shots)

-1576'  
-1578'  
-1583'  
-1585'  
-1591'  
-1593'  
-1597'

1 JSPF

1607' PBTD

1611' TD

5 1/2" O.D., 15.5 LB, J-55 CSG

Set @ 1610' w/ 75' sx. in 7 7/8" hole.

(Top of Cmt. @ 1177' by Estimate)

TD @ 1611' PBTD @ 1607'

15 Centralizers & scratchers on bottom 5 jts. (3 each/jt.) & Rough Coated

LEASE: South Hospah Unit  
ELL NO.: 56  
Current Conditions

ZERO ELEV.: 6966' KB (12' AGL)  
LOCATION: 1100' FNL & 1275' FEL  
Sec. 12-T17N-R9W  
McKinley Co.,  
New Mexico  
Completed: 5/19/73 as  
WIW @ 1280  
BWPB

9 5/8" O.D., 36 LB, J-55 CSG.  
Set @ 102' w/ 90 sx. in 12 1/4" hole.  
(Top of Cmt. @ Surf. by Circ.)

Est. TOC.  
@ 952'

2 3/8" Fiberglass  
tubing

Baker "AD" Packer Top  
@ 1534'

1542'  
(2 JSPF)  
1565

1577' PBTD

1584' TD

7" O.D., 20 LB, J-55 CSG  
Set @ 1584' w/ 95 sx. in 8 3/4" hole.  
(Top of Cmt. @ 952' by Vol. Est.)  
TD @ 1584' PBTD @ 1577'  
10 Centralizers

Acidized w/500 gal. 15% HCL

on 10/12/73

Completed 5/19/73 as WIW  
w/Inj. Rate of 800 BW/15 hr.

BEFORE EXAMINER STAMETS  
OIL CONSERVATION COMMISSION

EXHIBIT NO. 3

CASE NO. 5246

Submitted by Applicant

Hearing Date 5-22-74

LEASE: South Hospah Unit

WELL NO.: 41  
Proposed Dual Completion

ZERO ELEV.: 7016' KB (12' AGL)

LOCATION: 5' FNL & 1650' FEL  
Sec. 12-T17N-R9W  
MCKINLEY CO., New Mexico

8 5/8" O.D., 24 LB. H-40 CSG.  
Set @ 71' w/ 75 sx. in 12 1/4" hole  
(Top of Cmt. @ Surf. by Circ.)

1 1/2" Integral Joint Tubing

Baker Model "B" @ 1500' + w/  
Baker J-Lock Seal Assembly

-1566'

-1576'

-1578'

-1583'

-1585'

-1591'

-1593'

-1597'

Existing Perforations  
in Upper Hospah

2 3/8" Integral  
Joint Tubing

1610'

Baker Model "F" @ 1600' ± by wireline

5 1/2" O.D. 15.5 LB. J-55 CSG.  
Set @ 1610' w/ 75 sx. in 7 7/8" hole.  
(Top of Cmt. @ 1177 by Vol. Est.)

1619' Estimated top of shale

1627' Est. Top of Lower Hospah

BEFORE EXAMINER STAMETS  
OIL CONSERVATION COMMISSION

EXPL. NO. 4

CASE NO. 5246

Submitter Applicant

Hearing Date 5-22-74

1637' T.D. (PBD       )  
Size hole: 4 3/4"

(Estimated bottom of Lower Hospah Sand  
@ 1735').



PROGNOSIS  
DUAL HOSPAH NO. 41

1. MI and RU WOR
2. POH with tubing and "Lok-Set" packer.
3. GIH with bit and drill collars. Drill from PBD of 1607 to 1615 5' below casing shoe.
4. GIH with retrievable packer and set at 1605. Inject down annulus into perms 1566 thru 1597 and monitor tubing for communication.
5. If communication is present, reset packer  $\pm$  1200 feet and squeeze perms and casing shoe with 75 sacks of cement. POH. If no communication, proceed to step 8 and skip step No. 9.
6. GIH with bit and drill collars. Drill out cement to 1615 feet. Test squeeze to 1000 psi.
7. If squeeze not okay, POH and resqueeze.
8. If squeeze okay, drill out and penetrate Lower Hospah sand 10 feet. Est. top of Lower Hospah 1627 feet and est. TD 1637'. POH.
9. Rig up Wireline Company. GIH and reperforate Upper Hospah 1574 - 1598 feet.
10. GIH and set Baker Model "F" packer at 1605 feet.
11. GIH with long string (2 3/8" integral joint) with Baker Model "B" snap set dual tension packer, and Baker seal assembly for Model "F" packer.
12. Sting into Model "F" and land long string. GIH with short string (1 1/2" integral joint) with Model "C" J-lock seal nipple. Sting into the Model "B" packer with J-lock nipple and take an upstrain to set Model "B" in tension.
13. Connect injection lines and begin injection. Connect dual pin recorder and monitor pressures to show separation between Upper and Lower zones. Acidize if necessary to obtain injection.

574 W. T. Jones  
April 17, 1974



LEASE: South Hospah Unit

WELL NO.: 56

Proposed Dual Completion

ZERO ELEV.: 6966' KB (12' AGL)

LOCATION: 1100' FNL & 1275' FEL  
SEC. 12-T17N-R9W  
McKinley Co., New Mexico

9 5/8" O.D. 36 LB. J-55 CSG.  
Set @ 102' w/ 90 sx. in 12 1/4" hole  
(Top of Cmt. @ Surf. by Circ.)

2 7/8", 6.5#, Integral  
Joint Tubing

2 3/8", 4.7#, Integral Joint Tubing

Baker Model "B" @ 1537' + w/Baker J-Lock  
Seal Assembly

1 jt. of tubing  
(31' +)

1542'

(2 JSPF) Existing Perforations  
in Upper Hospah

Baker Seal Assembly

1565'

Baker Model "D" @ 1568' by wireline (Proposed)

7" O.D. 20 LB. J-55 CSG.  
Set @ 1584' w/ 95 sx. in 8 3/4" hole.  
(Top of Cmt. @ 952 by Est.)

1592' Estimated Top of Lower Hospah

BEFORE EXAMINER STAMETS  
OIL CONSERVATION COMMISSION

EXHIBIT NO. 5

CASE NO. A246

Submitted Applicant

Hearing Date 5-22-74

1602 T.D. (PBD 6 1/8")  
Size hole: 6 1/8"

(Estimated bottom of Lower Hospah Sand  
@ 1694')

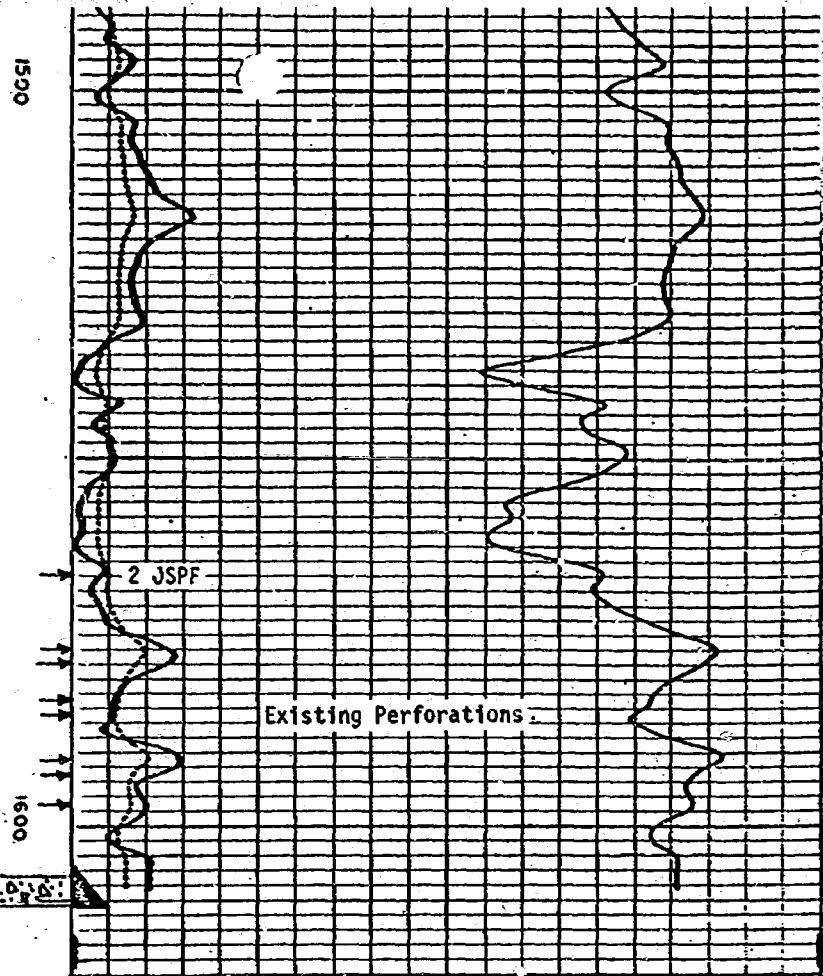
PROGNOSIS  
DUAL HOSPAP NO. 56

1. MI and RU WOR.
2. POH with fiberglass tubing and Model "A" packer. Lay down fiberglass tubing.
3. GIH with bit and drill collars. Drill from PBTD of 1577 to 1586 2' below casing shoe. POH.
4. GIH with retrievable packer and set at 1570 feet. Inject down annulus into perfs 1542 - 65 and monitor tubing for communication.
5. If communication is present, reset packer at  $\pm$  1200 feet and squeeze perfs and casing shoe with 75 sacks of cement. POH. If no communication, proceed to step 8 and skip step No. 9.
6. GIH with bit and drill collars. Drill out cement to 1586. Test squeeze to 1000 psi.
7. If squeeze not okay, POH and resqueeze.
8. If squeeze okay, drill out and penetrate Lower Hospah Sand 10 feet. Est. top of Lower Hospah 1592, est. TD 1602 feet. POH.
9. GIH and perforate Upper Hospah 1542 - 65.
10. GIH with Wireline and set Baker Model "D" packer at 1575  $\pm$ .
11. GIH with long string (2 7/8" integral joint tubing) with Baker Model "B" snap set dual tension packer and Baker seal assembly for Model "D" packer.
12. Sting into Model "D" with seal assembly and land long string. GIH with short string (2 3/8" integral joint tubing) with Model "C" J-lock seal nipple. Sting into the Model "B" packer with J-lock nipple and take an upstrain to set Model "B" in tension.
13. Connect injection lines and begin injection. Connect dual pin recorder and monitor pressures to show separation between Upper and Lower zones. Acidize if necessary to obtain injection.

*W.T.J.* W. T. Jones  
April 17, 1974



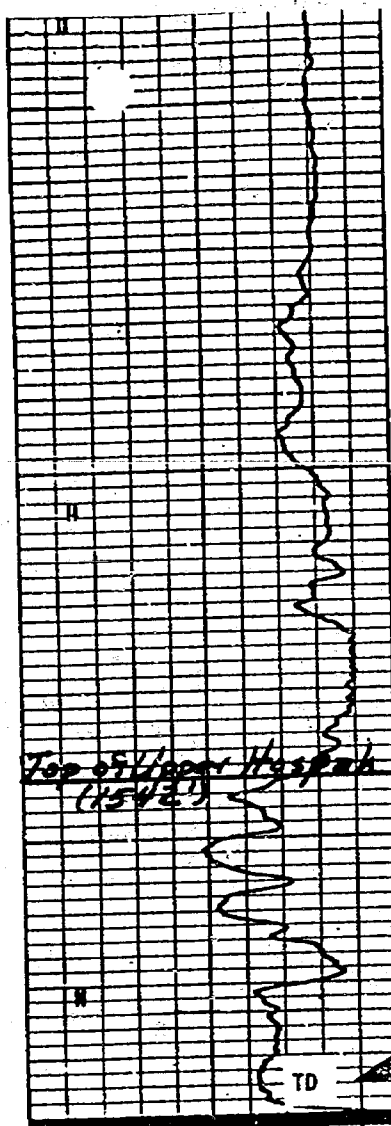
Est. Top of Lower Hesperia (1614)



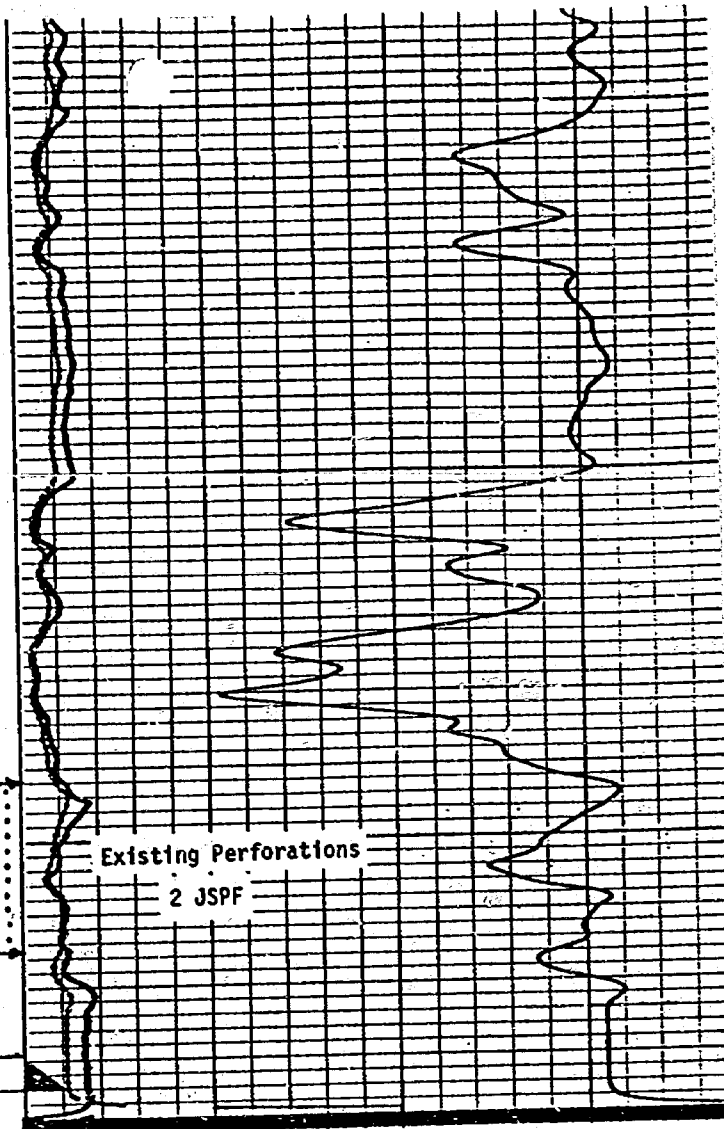
BEFORE EXAMINER STAMETS  
OIL CONSERVATION COMMISSION  
EX. 1 IT NO. 6  
CASE NO. 5246  
Submitter: Applicant  
Hearing Date 5-22-74

0	1000
0	100
INDUCTION RESISTIVITY 40" SPACING	
0	1000
0	100
16" NORMAL	
RESISTIVITY Ohms m <sup>2</sup> /m	
800	400
400	0
INDUCTION CONDUCTIVITY 40" SPACING	

SPONTANEOUS POTENTIAL Millivolts	DEPTH	CONDUCTIVITY Millimhos/m
Company	TENNECO OIL COMPANY	Drillers T.D. 1605
Well	HOSPAH #41	Log F.R. 1604
Field	HOSPAH	Log T.D. 1610
County	MCKINLEY SEC. 12-17N-9W	Elevations:
State	NEW MEXICO	K.B. 7016 D.F. G.L. 7004



1500



BEFORE EXAMINER STAMETS  
OIL CONSERVATION COMMISSION  
CASE NO. 7  
CASE N. 5246  
Submit App LICANT  
Hearing Date 5-22-74

- | +  
10

0	1000
0	100
INDUCTION RESISTIVITY 40" SPACING	
0	1000
0	100
16" NORMAL	
RESISTIVITY Ohms m <sup>2</sup> /m	
800	40
400	
INDUCTION CONDUCTIVITY 40" SPACING	
CONDUCTIVITY Millimhos/m	

SPONTANEOUS POTENTIAL  
Millivolts

DEPTH

Company TENNECO OIL COMPANY  
Well HOSPAH #56  
Field HOSPAH  
County MC KINLEY SEC. 12-27N-9W  
State NEW MEXICO

Drillers T.D. 1580  
Log F.R. 1574  
Log T.D. 1579  
Elevations:  
K.B. 6966 D.F. 6965 G.L. 6954

COMPANY <u>TENNECO OIL COMPANY</u>		COUNTY <u>MC KINLEY, N.H.</u>	
WELL <u>HOSPAL #8</u>		FIELD or LOCATION <u>HOSPAL</u>	
COUNTY <u>MC KINLEY</u>		STATE <u>NEW MEXICO</u>	
LOCATION <u>1650' FNL 2051' FEL</u>		Other Services:	
Sec. <u>12</u> Twp. <u>17N</u> Rge. <u>9W</u>		FDC/GR	
Permanent Datum: <u>GL</u> Elev. <u>6979</u>		Elev. <u>6990</u>	
Log Measured from <u>KB</u> <u>11</u> ft. Above Perm. Datum		D.F. <u>69891</u>	
Drilling Measured from <u>KB</u>		G.L. <u>6979</u>	

Date	<u>3/20/57</u>
Run No.	<u>ONE</u>
Depth—Driller	<u>1710</u>
Depth—Logger	<u>1713</u>
Strm. Log Interval	<u>1712</u>
Top Log Interval	<u>55</u>
Casing—Driller	<u>10 3/4" 55</u>
Casing—Logger	<u>55</u>
Bit Size	<u>8 3/8</u>
Type Fluid in Hole	<u>FRESH GEL</u>

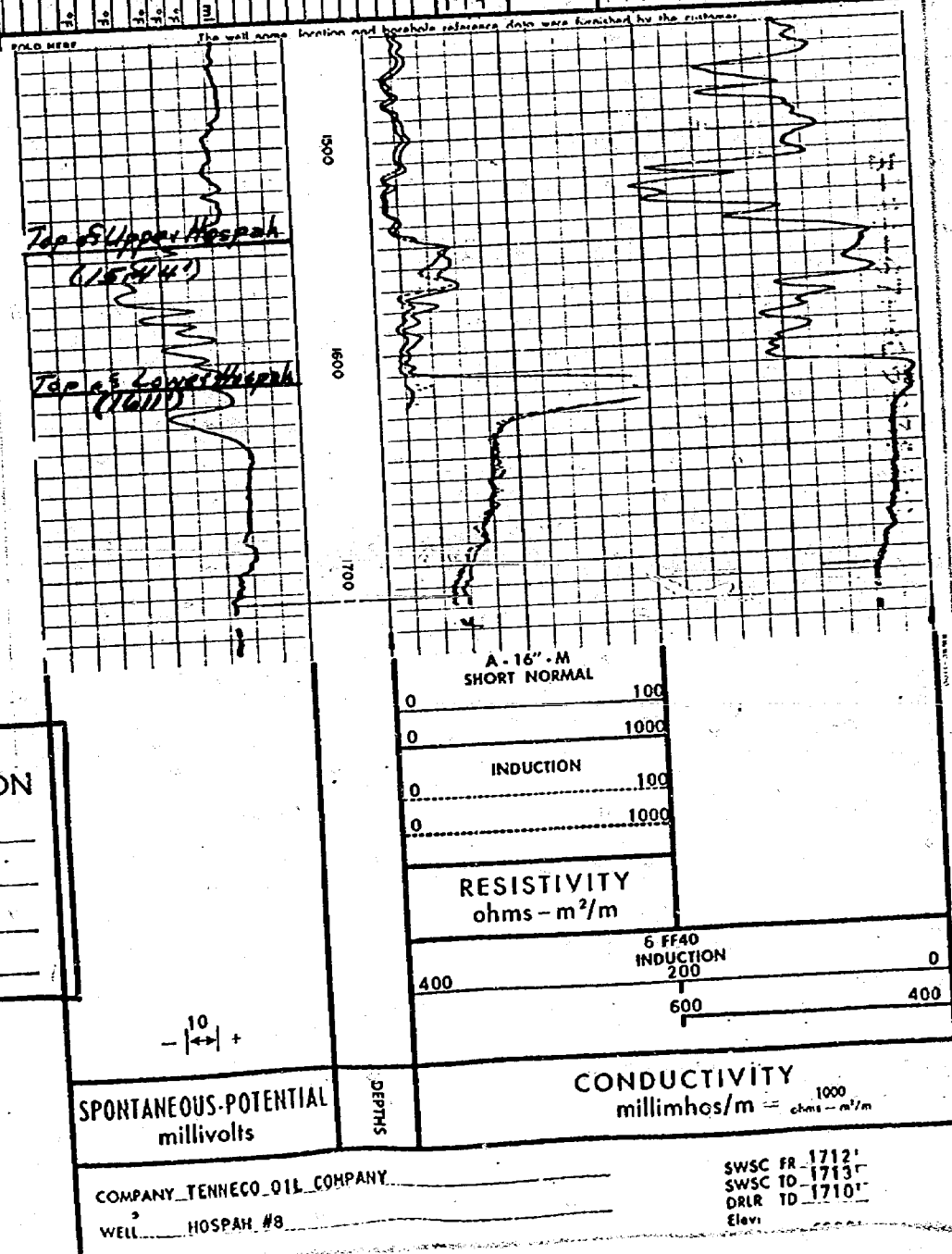
  

Dens. Visc.	<u>8.7</u>	<u>62</u>							
PH (Fluid Loss)	<u>9.0</u>	<u>4.5 ml</u>							
Source of Sample	<u>FLOW LINE</u>								
Bar. @ Meas. Temp.	<u>1.46 @ 54 °F</u>								
Bar. @ Meas. Temp.	<u>1.44 @ 54 °F</u>								
Surface Bar. Pres.	<u>H</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>
Bar. @ BHT	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>
Time Since Circ.	<u>1 HR.</u>								
Max. Rec. Temp.	<u>118 °F</u>								
Equip. Location	<u>4542 FARM</u>								
Recorded by	<u>BRONKS</u>								
Witnessed by	<u>MR. RAFAELE</u>								

HOLES

This and borehole reference data were furnished by the customer.



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

Form C-107  
5-1-61

Case 5246

Operator <b>Tenneco Oil Company</b>		County <b>McKinley</b>	Date <b>4/10/74</b>
Address <b>1200 Lincoln Towers Denver, Colo. 80203</b>		Lease <b>Hospah</b>	Well No. <b>41</b>
Location of Well <b>A</b>	Unit <b>12</b>	Township <b>17 North</b>	Range <b>9 West</b>

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 ☐ As a producer
2. If answer is yes, identify one such instance: Order No. **R-3943**; Operator Lease, and Well No.: **Tenneco, Hospah #37X**

3. The following facts are submitted:	Upper Zone	Intermediate Zone	Lower Zone
a. Name of Pool and Formation	<b>Upper Hospah</b>	<b>DECEASED</b>	<b>Lower Hospah (Gallup)</b>
b. Top and Bottom of Pay Section (Perforations)	<b>1574' (Top) 1595' (Bottom) (Perfs 1566-1597')</b>	<b>MAY - 1 1974</b>	<b>1627' (Est. Top) 1735' (Est. Bottom) Opn. Hole: top 10' of fmn.</b>
c. Type of production (Oil or Gas)	<b>Water Injection</b>	<b>OIL</b>	<b>Gas &amp; Water Injection</b>
d. Method of Production (Flowing or Artificial Life)	<b>N/A</b>	<b>CONSERVATION COMM. Santa Fe</b>	<b>N/A</b>

4. The following are attached. (Please check YES or 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 type="checkbox"/>            | <input checked="" 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 Corp., 8520 Crownhill, San Antonio, Texas**

**Gil Oil & Gas Co., 152 Petroleum Center Bldg., Farmington, New Mexico**

**John Beard, 1230 United Founders Life Tower, 5900 Mosteller Drive, Oklahoma City, OK**

**Beard Oil Co., 2000 Classen Bldg., Oklahoma City, Oklahoma**

6. Were all operators listed in Item 5 above notified and furnished a copy of this application? YES ☒ NO ☐. If answer is yes, give date of such notification \_\_\_\_\_.

CERTIFICATE: I, the undersigned, state that I am the **Petroleum Engineer** 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.

*Frederick E. Kastner*  
Frederick E. Kastner 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.

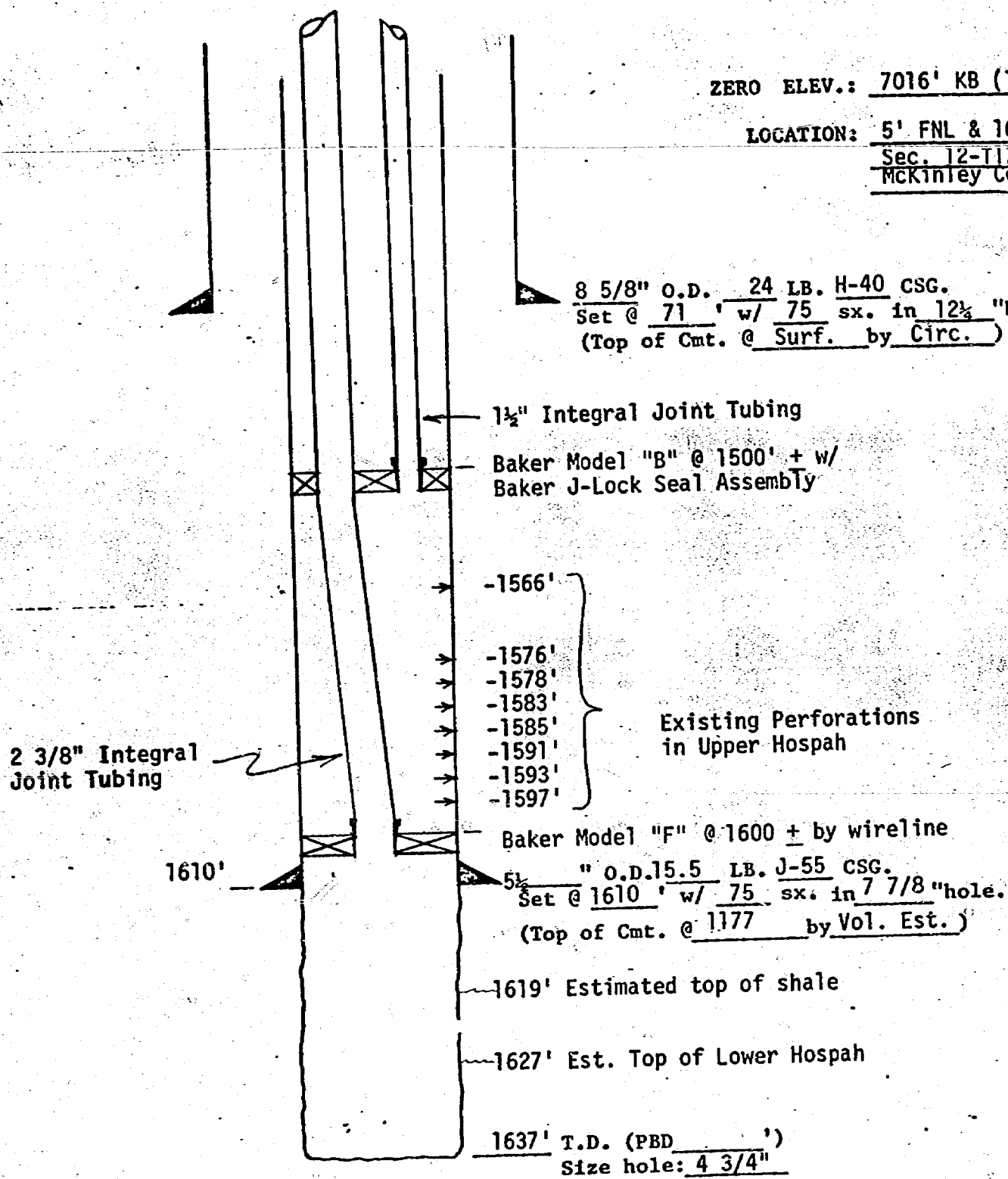
LEASE: South Hospah Unit

WELL NO.: 11  
Proposed Dual Completion

ZERO ELEV.: 7016' KB (12' AGL)

LOCATION: 5' FNL & 1650' FEL  
Sec. 12-T17N-R9W  
MCKINLEY CO., New Mexico

8 5/8" O.D. 24 LB. H-40 CSG.  
Set @ 71' w/ 75 sx. in 12 1/2" hole  
(Top of Cmt. @ Surf. by Circ.)



(Estimated bottom of Lower Hospah Sand @ 1735').

Case 5246



LEASE: South Hospah Unit

WELL NO.: 56

Proposed Dual Completion

ZERO ELEV.: 6966' KB (12' AGL)

LOCATION: 1100' FNL & 1275' FEL  
Sec. 12-T17N-R9W  
McKinley Co., New Mexico

9 5/8" O.D. 36 LB. J-55 CSG.  
Set @ 102' w/ 90 sx. in 12 1/4" hole  
(Top of Cmt. @ Surf. by Circ.)

2 7/8", 6.5#, Integral  
Joint Tubing

2 3/8", 4.7#, Integral Joint Tubing

Baker Model "B" @ 1537' + w/Baker J-Lock  
Seal Assembly

1 jt. of tubing  
(31' +)

1542'

(2 JSPF) Existing Perforations  
in Upper Hospah

Baker Seal Assembly

1565'

Baker Model "D" @ 1568' by wireline (Proposed)

7" O.D. 20 LB. J-55 CSG.  
Set @ 1584' w/ 95 sx. in 8 3/4" hole.  
(Top of Cmt. @ 952 by Est.)

1592' Estimated Top of Lower Hospah

1602 T.D. (PBD 6 1/8")  
Size hole: 6 1/8"

(Estimated bottom of Lower Hospah Sand  
@ 1694')

Case 5246

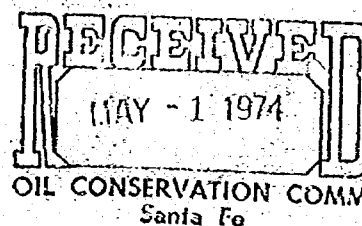


**Tenneco Oil**  
A Tenneco Company

Suite 1200  
Lincoln Tower Building  
Denver, Colorado 80203  
(303) 292-9920



April 18, 1974



Mr. W. Booker Kelly  
White, Kock, Kelly & McCarthy  
220 Otero Street  
P. O. Box 787  
Santa Fe, New Mexico 87501

RE: Hearing to Dually Complete  
the Hospah Nos. 41 and 56  
as Injectors in the Upper  
and Lower Hospah

Gentlemen:

Tenneco Oil Company would appreciate your representing us and making application for hearing to the NMQCC in order to obtain approval to dually complete the Hospah Nos. 41 and 56 as injectors into the Upper and Lower Hospah formations. Well No. 41 may also need an exception to special rules regarding spacing.

Hospah Nos. 41 and 56 are currently injection wells in the Upper Sand and are located as follows:

Hospah No. 41  
5' FNL & 1650' FEL  
Section 12, T17N, R9W  
McKinley County, New Mexico

Hospah No. 56  
1100' FNL & 1275' FEL  
Section 12, T17N, R9W  
McKinley County, New Mexico

For your use in making this application, we are attaching the following:

- 1) three (3) completed copies of Commission Form C-107 for each of the two wells,
- 2) a plat of the area showing the locations of Hospah Nos. 41 and 56,
- 3) a wellbore schematic of each of the proposed dual completions (2),
- 4) a wellbore schematic of the current conditions in each well (2),

*Case 5246*

## TENNECO OIL COMPANY

April 18, 1974  
Page 2

- 5) a detailed prognosis of the dualling operation for each well (2), with the procedure to be followed in running packer leakage tests, and
- 6) an electrical log and porosity log (Bulk Density) from both wells showing the tops and bottoms of producing zones and intervals of perforation.

We would like to set up the apparatus whereby future dual injection wells may be approved administratively, without notice and hearing.

Tenneco plans to send Mr. F. E. Kastner to provide testimony. If you have any questions regarding this application, please contact Mr. Kastner.

Yours very truly,

TENNECO OIL COMPANY

  
D. D. Myers

Asst. Division Production Mgr.

FEK/lj  
attachments

cc: Tesoro Petroleum-San Antonio, Texas  
Gil Oil & Gas Co.-Farmington, N.M.  
John Beard-Oklahoma City, OK  
Beard Oil Co.-Oklahoma City, OK

One 5246

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

Form C-107  
5-1-61

Operator <b>Tenneco Oil Company</b>		County <b>McKinley</b>	Date <b>4/10/74</b>
Address <b>1200 Lincoln Twr., Denver, Colo. 80203</b>		Lease <b>Hospah</b>	Well No. <b>56</b>
Location of Well <b>A</b>	Unit <b>12</b>	Township <b>17 North</b>	Range <b>9 West</b>

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 ☐ As a producer **Tenneco**
2. If answer is yes, identify one such instance: Order No. **R-3943**; Operator Lease, and Well No.: **Hospah #37X**

3. The following facts are submitted:	Upper Zone	Intermediate Zone	Lower Zone
a. Name of Pool and Formation	<b>Upper Hospah</b>		<b>Lower Hospah</b>
b. Top and Bottom of Pay Section (Perforations)	<b>1542' (Top) 1574' (Bottom) (Perfs 1542'-74')</b>		<b>1592' (est. top) 1694' (est. bottom) (opn. hole: top 10' of)</b>
c. Type of production (Oil or Gas)	<b>Water Injection</b>		<b>Gas &amp; Water Injection</b>
d. Method of Production (Flowing or Artificial Lift)	<b>N/A</b>		<b>N/A</b>

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 type="checkbox"/>	<input checked="" 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 Corp., 8520 Crownhill, San Antonio, Texas**

**Gil Oil & Gas Co., 152 Petroleum Center Bldg., Farmington, New Mexico**

**John Beard, 1230 United Founders Life Tower, 5900 Mosteller Drive, Oklahoma City, OK**

**Beard Oil Co., 2000 Classen Bldg., Oklahoma City, Oklahoma**

6. Were all operators listed in Item 5 above notified and furnished a copy of this application? YES ☒ NO ☐. If answer is yes, give date of such notification \_\_\_\_\_.

CERTIFICATE: I, the undersigned, state that I am the **Petroleum Engineer** 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.

*Case 5246*  
**Frederick E. Kastner**  
Frederick E. Kastner 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.

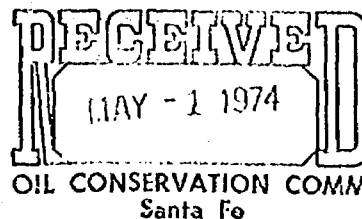
NOTE: If the proposed multiple completion will result in an unorthodox well location and/or a non-standard perforation unit in one or more of the producing zones, then separate application for approval of the same should be filed simultaneously with this application.

WHITE,  
KOCH, KELLY  
&  
McCARTHY

Case 5-246

April 30, 1974

Oil Conservation Commission  
State Land Office Building  
Santa Fe, New Mexico 87501



Attention: Mr. Pete Porter  
Secretary-Director

Re: Application of Tenneco Oil Company to dually complete its  
Hospah Wells Nos. 41 and 56 as injection wells in both the  
Upper and Lower Hospah

Dear Mr. Porter:

By this application, Tenneco Oil Company seeks hearing and approval  
to dually complete as injection wells the two following described  
wells:

Hospah No. 41  
5' FNL & 1650' FEL  
Section 12, T17N, R9W  
McKinley County, New Mexico

Hospah No. 56  
1100' FNL & 1275' FEL  
Section 12, T17N, R9W  
McKinley County, New Mexico

Both of these wells are presently injection wells, injecting into  
the upper sand of the Hospah and it is Tenneco's plan to inject into  
both the upper and lower Hospah formations.

Enclosed with this application are:

1. Copies of Commission Form C-107 for each of the two wells.
2. A plat of the area showing the location of the two wells.
3. A wellbore schematic of each of the proposed dual completions.

Offset operators have been notified and it is my understanding that  
the case will be heard on May 22, 1974.

Sincerely,

*W. B. Kelly*  
W. B. Kelly

WBK:rf  
Enclosures

DOCKET MAILED

Date 5-9-74

L.C. White  
Sumner S. Koch  
William Booker Kelly  
John F. McCarthy, Jr.  
Kenneth Bateman  
Benjamin Phillips  
Ronald M. Friedman

Attorneys and Counselors at Law

220 Otero St., P.O. Box 787, (505)982-4374, Santa Fe, N.M. 87501 — P.O. Drawer E, (505)758-4338, Taos, N.M. 87571

DRAFT

jr/

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. 5246

Order No. R- 4389-B

APPLICATION OF TENNECO OIL COMPANY  
FOR PRESSURE MAINTENANCE EXPANSION  
AND DUAL COMPLETIONS, MCKINLEY COUNTY,  
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on May 22, 1974,  
at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this        day of June, 1974, 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 by Order No. R-4389, the applicant, Tenneco Oil  
Company, was authorized to institute its Lower Hospah Pressure  
Maintenance Project in the South Hospah-Lower Sand Pool, McKinley  
County, New Mexico, by the simultaneous injection of water and gas  
into the Lower Hospah Sand formation through two wells located in  
Units B and G, respectively, of Section 12, Township 17 North,  
Range 9 West, NMPM.

-2-  
CASE NO. 5246  
Order No. R-4389-B

(3) That Rule 1 of the Special Rules and Regulations for the Tenneco Lower Hospah Pressure Maintenance Project promulgated by said order established the project area as the NW/4 and the W/2 NE/4 of said Section 12.

(3) That applicant now seeks authority ~~to expand the project area of said project to include the NE/4 of the NE/4 and~~ to dually complete two of its wells in said Section 12 to permit injection of water and gas into the lower Hospah formation as well as the injection of water into the Upper Hospah formation as is presently authorized, those two wells being described as follows:

Hospah Well No. 41, located in Unit B

Hospah Well No. 56, located in Unit A

(4) That the mechanics of the proposed dual completions are feasible and in accord with good conservation practices.

(5) That ~~the expansion of the project area and~~ the dual completion of the subject well to allow injection of water and gas into the lower Hospah formation as proposed by the applicant is in the interest of conservation and should result in greater ultimate recovery of oil, thereby preventing waste, ~~and~~ will not violate correlative rights, and will afford the applicant the opportunity to produce its just and equitable share of the oil in South Hospah Lower Sand Pool.

IT IS THEREFORE ORDERED:

(1) That the project area of the Tenneco Lower Hospah Pressure Maintenance Project, South Hospah Lower Sand Pool, McKinley County, New Mexico, is hereby expanded to include the area described as follows:

TOWNSHIP 17 NORTH, RANGE 9 WEST  
Section 12: NE/4 NE/4

-3-

CASE NO. 5246

Order No. R-4389-B

*IT IS therefore Ordered:*

(1) That the applicant, Tenneco Oil Company, is hereby authorized to dually complete its Hospah Well No. 41, located in Unit B and its Hospah Well No. 56, located in Unit A of Section 12, Township 17 North, Range 9 West, NMPM, McKinley County, New Mexico, to inject water into the Upper Hospah formation and to inject water and gas into the lower Hospah formation through parallel strings of tubing.

(2) That injection in each of the subject dually completed injection wells shall take place through tubing set in packers located as near as practicable to the uppermost perforations in the respective zones to be injected, or, in the case of open-hole completions, to the casing-shoe; the annulus of each well shall be filled with an inert fluid and equipped with an approved leak-detection device.

(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.