

Case Number

4322

Application
Transcripts.

Small Exhibits

ETC.

dearnley-meier

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

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
March 25, 1970

EXAMINER HEARING

IN THE MATTER OF:

Application of Texaco Inc. for
downhole commingling, Lea County,
New Mexico.

Case No. 4322

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: Case 4322.

MR. HATCH: Case 4322. Application of Texaco Inc. for downhole commingling, Lea County, New Mexico.

MR. KELLY: Let the record show the same appearances as in Case 4319 and that the witness has qualified and is still under oath.

MR. UTZ: The record will so show.

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

C. H. FINKAY

the Witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLY:

Q Now, would you, again referring to what has been marked Exhibit One, the plat, locate the subject well and state what Texaco seeks by the application?

A The well is located in the northwest of the southeast of Unit "H" of Section 25, 17 South, 34 East, Lea County. This well is currently completed in the Abo, the Wolfcamp and the Penn. We are asking that the Wolfcamp and the Penn be commingled downhole.

Q Now, this well is again in the same area as the two wells in the last case: is that correct?

A Yes.

MR. HATCH: Would this be unit "J" rather than "H"?

THE WITNESS: You are right. Pardon me, "J."

Q (By Mr. Kelly) Now, could you, referring to what has been marked as Exhibit Number Two, go through that for the Examiner and give the present status of this well and the various information shown?

A Exhibit Number Two shows the upper pool to be commingled as the Wolfcamp and the lower pool to be commingled as the Penn. At the present time, the Wolfcamp is pumping and the Penn is flowing.

The bottom hole pressure in the Wolfcamp is estimated to be 1850 PSI and in the Upper Penn 1448 PSI by bomb tests 1-8-'70. Both crudes are intermediate sweet. The gravity of the Wolfcamp is 41.6 degrees API and the Upper Penn is 42.1 degrees API.

The GOR limit of the pool was two thousand to one in both cases. The completion interval of the Wolfcamp is 9272 to 9953; in the Upper Penn is 10,032 to 10,070. A test on 1-10-'70 of the Wolfcamp showed this pool to be pumping

twenty-three oil and fourteen water with a GOR of 1030 to 1. The Upper Penn on 1-9-'70 was flowing sixteen oil and seven water with a GOR of 1220 to 1.

The selling price of both crudes is 3.36 per barrel. The daily income from the Wolfcamp is \$77.28 per day and from the Upper Penn is \$52.76 per day. The commingled gravity of this crude should be 41.9 degrees; the selling price is to be 3.36 per barrel and the daily income should be \$193.04.

There will be no increase or decrease in the value of the crude by commingling.

Q And in both zones you are approaching the stripper stage?

A Yes, we are.

Q Now, once again, Texaco has no immediate plans or foreseeable plans for a secondary recovery project; is that correct?

A No, we don't.

Q And you don't feel that if they do, that commingling will have any adverse effect on either reservoir?

A No, we don't.

Q All right. Go on to Exhibits Three and Four, which are your performance curves and economic analysis.

A Exhibit Three is a decline on these different pools from the date they were drilled. The bar graph is the Upper Penn which started out at approximately three thousand barrels per month and is currently making four hundred barrels per month with our last test here.

The dotted line is the Wolfcamp production showing it to be a rather stormy start there but finally got to a high of a thousand barrels a month and is currently making around four hundred barrels a month, the same as the other zone.

We think these will continue to decline in the like manner throughout the remaining life of these pools. We estimate the Wolfcamp has a remaining life of 6.4 years and the Penn of 5.3 years and the commingled zone would be 7.3 years.

You will notice the 9.3 is struck out there. That's a typographical error. It should be 7.3. The remaining reserves for the Wolfcamp is estimated to be 28,798 and for the Penn to be 17,871 and with both zones commingled it would be 47,643.

The economic life of the Wolfcamp is two barrels a day and for the Penn, one; commingled zones would be two barrels a day. Cumulative production to 1-1-'70 from the Wolfcamp is 32,286 and from the Penn 64,897. The ultimate recovery from the Penn is estimated to be 82,768 and from the Wolfcamp is

61,048. The zones commingled should produce 144,826.

We estimate the increase in reserves are 974 barrels of oil by commingling. The current operating costs of the Wolfcamp are 570 per day and for the Penn 230 per day. Commingled zones should be 570 per day.

Q So, your main benefit here is the reduction of your operating costs?

A That's right.

Q I notice that you recently had a work-over on the Wolfcamp and the Penn. Do you think you have gotten your full response from them?

A We think we have. We have the maximum response as shown on the curve, Exhibit Three.

Q Now, going to Exhibit Number Five, your sketch, would you explain the proposed installation?

A Exhibit Number Five shows the triple completion which was originally granted by this Commission and about five months after these wells were completed, we found that the Abo and the Wolfcamp were communicating with each other so when this happened we ran a string of two and a sixteenth-inch tubing in the Wolfcamp with a packer set at 9816 to isolate the North Abo oil from the Wolfcamp oil.

That is the way the wells are currently completed

right now. Now, we propose running a gun in the Upper Pennsylvanian Section and perforating all three strings of casing in the bottom. This will make all zones communicated in the Penn Section. We will then go in to the North Abo string and set a plug at 9700 feet to isolate any possible production from the Abo into the commingled Penn perforations down the hole.

The two and a sixteenth will remain in the Wolf-camp Section with the packer to insure isolation in this zone. We will then pump the Upper-Pennsylvanian string with a rod pump.

Q Now, I don't think I previously asked you. Have you notified in this case all offset operators, sent them copies of this application?

A Yes, we have.

Q In your opinion, would the granting of this application prolong the life of both of these fields and allow you to produce hydrocarbons that would otherwise be left in place?

A Yes, it will.

Q And do you feel it would have any adverse effect on correlative rights in this case?

A No, it wouldn't.

Q Were Exhibits One through Five prepared by you or

under your supervision?

A Yes, they were.

MR. KELLY: I move the introduction of Texaco's Exhibits One through Five.

MR. UTZ: Without objection, Exhibits One through Five will be entered into this record.

MR. KELLY: That concludes my direct examination.

CROSS EXAMINATION

BY MR. UTZ:

Q What type of plug do you intend to put in the North Abo casing?

A This will be cast iron bridge plug, a permanent type bridge plug.

Q What's the purpose of perforating all three or can't you avoid it?

A Well, we were going across strings here and we think it is safest since we have them plugged off by a plug and by a packer in the Wolfcamp to insure perforating, we will just perforate all three of them with a spiral shot.

Q Scatter gun?

A Yes.

Q Is the Abo flowing?

A The Abo is shut in currently as uneconomical;
it's shut in.

Q You are not going to produce it at all?

A No, we aren't.

MR. UTZ: Are there other questions of the witness?

The witness may be excused.

(Witness excused).

MR. UTZ: Statements in this case? The case will
be taken under advisement.

I N D E X

<u>WITNESS</u>	<u>PAGE</u>
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E X H I B I T S

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[illegible]

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

Glenda Burks
Notary Public

My Commission Expires:

March 12, 1973

I do hereby certify that the foregoing is a complete record of all testimony in the Wheeler Case, No. 4322, heard by me on May 25, 1920.

Wm. C. [Signature]
New Mexico Oil Conservation Commission

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE No. 4322
Order No. R-3947

APPLICATION OF TEXACO INC.
FOR DOWNHOLE COMINGLING,
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on March 25, 1970,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 17th day of April, 1970, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

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

(2) That the applicant, Texaco Inc., is the owner and opera-
tor of the Shell State Well No. 1, located in Unit J of Section
25, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico.

(3) That pursuant to authority granted by Administrative
Order MC-1493 said Well No. 1 was completed by the applicant as
a triple completion (tubingless) to produce oil from the North
Vacuum-Abo, Vacuum-Wolfcamp, and Vacuum-Upper Pennsylvanian
Pools

(4) That the Vacuum-Wolfcamp and Vacuum-Upper Pennsylvanian
zones in the subject well are capable of only low marginal produc-
tion.

(5) That the applicant now proposes to complete said Well
No. 1 in such a manner as to produce oil from the North Vacuum-Abo

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CASE No. 4322

Order No. R-3947

Pool through one string of 2 7/8-inch casing and to produce the low marginal production from the Vacuum-Wolfcamp and Vacuum-Upper Pennsylvanian Pools through a single parallel string of 2 7/8-inch casing, commingling in the well-bore the production from the Vacuum-Wolfcamp and Vacuum-Upper Pennsylvanian zones.

(6) That the proposed commingling in the subject well of the Vacuum-Wolfcamp and Vacuum-Upper Pennsylvanian zones may substantially extend the productive lives of said zones in the subject well.

(7) That the reservoir characteristics of the Vacuum-Wolfcamp and Vacuum-Upper Pennsylvanian zones in the subject well are such that underground waste would not be caused by the proposed commingling in the well-bore.

(8) That the proposed commingling may result in the recovery of additional oil from each of the commingled zones in the subject well, thereby preventing waste, and will not violate correlative rights.

(9) That the mechanics of the proposed completion are feasible and in accord with good conservation practices.

(10) That in order to allocate the commingled production to each of the commingled zones in the subject well, approximately 60% of the future allowable and production should be attributed to the Vacuum-Wolfcamp zone, and 40% to the Vacuum-Upper Pennsylvanian zone.

(11) That approval of the subject application will prevent waste and protect correlative rights.

(12) That Administrative Orders MC-1493 and DEC-38 should be superseded.

IT IS THEREFORE ORDERED:

(1) That the applicant, Texaco Inc., is hereby authorized to complete its Shell State Well No. 1, located in Unit J of Section 25, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico, in such a manner as to produce oil from the North Vacuum-Abo Pool through one string of 2 7/8-inch casing and to produce oil from the Vacuum-Wolfcamp and Vacuum-Upper Pennsylvanian Pools through a single parallel string of 2 7/8-inch

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CASE No. 4322

Order No. R-3947

casing, commingling in the well-bore the production from the Vacuum-Wolfcamp and Vacuum Upper Pennsylvanian Pools.

(2) That the applicant shall complete, operate, and produce said well in accordance with the provisions of Rule 112-A of the Commission Rules and Regulations insofar as said rule is not inconsistent with this order.

(3) That approximately 60% of the future allowable and production shall be attributed to the Vacuum-Wolfcamp zone and approximately 40% to the Vacuum-Upper Pennsylvanian zone of the subject well until further order of the Commission.

(4) That the commingling in the well-bore authorized by this order shall continue only so long as the commingled production of the two zones does not exceed 80 barrels of oil per day nor 160 barrels of water per day.

(5) That the maximum amount of gas which may be produced daily from the commingled zones in the subject well shall be determined by multiplying 2,000 by the top unit allowable for the Vacuum-Wolfcamp Pool.

(6) That Administrative Orders MC-1493 and DHC-38 are hereby superseded.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


DAVID F. CARGO, Chairman

ALEX J. ARMISTEAD, Member

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

esr/

Case 4322

Recd 3-25-70

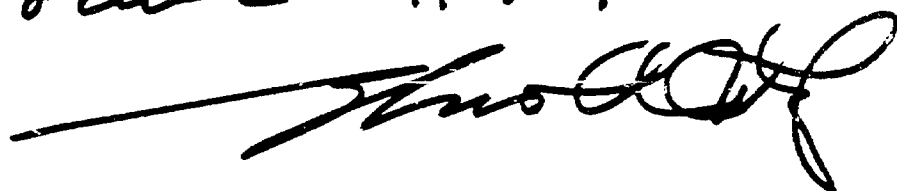
Rec. 3-31-70

Grant Texas permission to
commingle ~~the~~ in the wellbore
the Wacuum-Wolfcamp + Upper
Pennsylvanian in their shell H.
#1 J + 25-175-3FE.

The well is a triple (tubingless)
completion.

The ato casing will be plugged
off above the W.C. zone (middle)
to avoid accidental commingling
when perforating.

Run ~~test~~ prod. tests
before commingling & report
volume for each zone in
accordance with the test.
casing form C-115.



DOCKET: EXAMINER HEARING - WEDNESDAY - MARCH 25, 1970

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

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

- CASE 4321: Application of Sun Oil Company-DX Division for 320-acre spacing, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks 320-acre spacing for the Cass Ranch-Morrow Gas Pool, Eddy County, New Mexico. Said pool was created prior to June 1, 1964, and therefore is not automatically eligible for 320-acre spacing. In the absence of evidence to the contrary, 320-acre spacing will be established for the pool.
- CASE 4324: Application of Pennzoil United, Inc. for an unorthodox oil well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to the special rules and regulations governing the Lea-Bone Springs Pool to permit the completion of a well at an unorthodox location 2310 feet from the South line and 1800 feet from the East line of Section 35, Township 19 South, Range 34 East, Lea County, New Mexico.
- CASE 4325: Application of Mobil Oil Corporation for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle production from the Vacuum-Wolfcamp Pool and the Vacuum-Upper Pennsylvanian Pool in the wellbore of its Bridges State Well No. 119, a triple completion, located in Unit F of Section 24, Township 17 South, Range 34 East, Lea County, New Mexico.
- CASE 4326: Application of Newmont Oil Company for an unorthodox oil well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 104 C 1 to permit the recompletion of a well at an unorthodox oil well location 1325 feet from the South line and 990 feet from the East line of Section 31, Township 17 South, Range 30 East, Loco Hills-Queen Pool, Eddy County, New Mexico.
- CASE 4327: Application of Franklin, Aston & Fair for an exception to Order No. R-3221, as amended, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil on the surface of the ground in Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico. Said exception would be for applicant's leases comprising the NE/4 and N/2 SE/4 of Section 1, Township 18 South, Range 29 East and the E/2, N/2 NW/4, and S/2 SW/4 of Section 6, Township 18 South, Range 30 East, Loco Hills Field, Eddy County, New Mexico. Applicant seeks authority to dispose of salt water produced by wells located or to be located on said leases in unlined surface pits.

Examiner Hearing - March 25, 1970

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- CASE 4328: Application of Pubco Petroleum Corporation for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the undesignated Fictured cliffs gas pool underlying the SE/4 of Section 33, Township 30 North, Range 14 West, San Juan County, New Mexico. Said SE/4 to be dedicated to a well to be drilled in the SW/4 SE/4 of said Section 33. Applicant further seeks an order pooling all mineral interests in said gas pool underlying the NE/4 of Section 4, Township 29 North, Range 14 West, San Juan County, New Mexico. Said NE/4 to be dedicated to a well to be drilled in the NW/4 NE/4 of said Section 4. Also to be considered will be the costs of drilling said wells, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said wells.
- CASE 4329: Application of R. D. Collier for an exception to Order No. R-3221, as amended, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221, as amended, which order prohibits the disposal of water produced in conjunction with the production of oil on the surface of ground in Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico. Said exception would be for applicant's Sinclair Parke Well No. 1 located in Unit F, Section 22, Township 17 South, Range 30 East, Jackson-Abo Field, Eddy County, New Mexico. Applicant seeks authority to dispose of salt water produced by said well in an unlined surface pit in the vicinity of said well.
- CASE 4314: (Continued and readadvertised from February 25, 1970, Examiner Hearing and March 4, 1970 Examiner Hearing)
Application of Coastal States Gas Producing Company for pool redelineation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the redelineation of certain pool boundaries to include the deletion of the W/2 and SE/4 of Section 21, Township 13 South, Range 33 East, Lea County, New Mexico, from the Lazy J-Pennsylvanian Pool and the extension of the North Baum Upper Pennsylvanian Pool to include said deleted acreage.
- CASE 4319: (Continued from the March 4, 1970, Examiner Hearing)
Application of Texaco Inc. for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle production from the North Vacuum-Abo Pool and the Vacuum-Wolfcamp Pool in the wellbores of its New Mexico "Q" State Well No. 4 and its New Mexico "N" State Well No. 6, triple completions located respectively in Unit P of Section 25, Township 17 South, Range 34 East and Unit L

(Case 4319 continued)

of Section 30, Township 17 South, Range 35 East, Lea County, New Mexico.

CASE 4322: Application of Texaco Inc. for downhole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle production from the Vacuum-Wolfcamp and Vacuum-Upper Pennsylvanian Pools in the wellbore of its Shell State Well No. 1, a triple completion, located in Unit J of Section 25, Township 17 South, Range 34 East, Lea County, New Mexico.

CASE 4323: Application of Texaco Inc. for a waterflood project, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Grayburg and San Andres formations through its USA Federal "C" Well No. 1 located in Unit P, Section 15, Township 17 South, Range 32 East, Maljamar (Grayburg-San Andres) Pool, Lea County, New Mexico.

CASE 4330: Application of Tenneco Oil Company for an unorthodox location and dual completion, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks approval of the dual completion of its Hospah Well No. 37X to produce oil from the Hospah-Upper and South Hospah-Lower Sand Oil Pools at an unorthodox location for said pools 1280 feet from the North and West lines of Section 12, Township 17 North, Range 9 West, McKinley County, New Mexico.

CASE 4331: Application of Wynn & Brooks for an unorthodox gas well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Federal "E" Well No. 3, to be located 790 feet from the North and West lines of Section 13, Township 27 North, Range 8 West, Blanco-Mesaverde and Basin-Dakota Pools, San Juan County, New Mexico.

CASE 4264: (Continued from the February 4, 1970 Examiner Hearing)
Application of Wynn & Brooks for an unorthodox gas well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Federal "J" Well No. 1, to be located 2390 feet from the South line and 2410 feet from the East line of Section 11, Township 27 North, Range 8 West, Blanco-Mesaverde and Basin-Dakota Pools, San Juan County, New Mexico.

CASE 4301: (Continued from the February 4, 1970 Examiner Hearing)

In the matter of the hearing called by the Oil Conservation Commission on its own motion to permit Robert T. Smith and all other interested persons to appear and show cause why the following Robert T. Smith wells located in Section 32, Township 20 North, Range 9 West, McKinley County, New Mexico, should not be plugged and abandoned in accordance with a Commission-approved plugging program:

State Well No. 1 located 487 feet from the North line and 990 feet from the East line;

State "A" Well No. 1 located 400 feet from the North line and 990 feet from the East line;

State Well No. 3 located 330 feet from the North line and 330 feet from the West line;

State Well No. 6 located 220 feet from the North line and 1485 feet from the East line;

State Well No. 6-Y located approximately 5 feet West of the above-described Well No. 6;

State Well No. 8 located 1155 feet from the North line and 2475 feet from the East line.

SOCONY MOBIL

25

TEXACO

ATLANTIC

30

BRIDGES
MARATHON OIL

TEXACO MOBIL STATE

TEXACO

MARATHON

McCALLISTER

STATE

STATE

STATE

TIDEWATER OIL
"F"

36

SOCONY MOBIL
"H"SKELLY
"J"

31

TEXACO
"O"

PHILLIPS

MARATHON

SOCONY MOBIL

AMERADA

"I"

"VB"

SANTA FE

WARN
STATE AC 1SHELL
"D"







TEXACO

1

"M"

"L"

LEGEND

- | | |
|---|---|
|  GLORIETA |  WOLFCAMP |
|  BLINEBRY |  UPPER PENNSYLVANIAN |
|  NORTH ABO |  DEVONIAN |

BEFORE EXAMINER UTZ

OIL CONSERVATION COMMISSION

TEXACO EXHIBIT NO. 1

CASE NO. 4322

TEXACO Inc.

Hobbs District

LEASE OWNERSHIP PLAT
PORTION OF
VACUUM (MULTI-PAY) FIELD
LEA COUNTY, NEW MEXICO

Drawn By: De. Date: 5-4-65

DATA SHEET FOR WELLBORE COMMINGLING

Operator: TEXACO Inc.

Address: P.O. Box 728, Hobbs, New Mexico 88240

Lease and Well No: Texaco-Shell State No. 1

Location: Unit J; 1833 Feet from the South Line and
1845 Feet from East Line of Section 25;
Township 17-S, Range 34-E; Lea County.

Multiple Completion Order No. MC-1493

WELL DATA

	<u>Upper Pool</u>	<u>Lower Pool</u>
Name of Pool	<u>Vacuum Wolfcamp</u>	<u>Vacuum Upper Penn.</u>
Producing Method	<u>Pump</u>	<u>Flow</u>
BHP	<u>1850 psi (EST.)</u>	<u>1448 psi (Bomb 1-8-70)</u>
Type Crude	<u>Intermediate Sweet</u>	<u>Intermediate Sweet</u>
Gravity	<u>41.6°</u>	<u>42.1°</u>
GOR Limit	<u>2000:1</u>	<u>2000:1</u>
Completion Interval	<u>9872-9953'</u>	<u>10,032-10,070'</u>
Current Test Date	<u>1-10-70</u>	<u>1-9-70</u>
Oil	<u>23</u> <u>59</u>	<u>16</u> <u>41</u>
Water	<u>14</u>	<u>7</u>
GOR	<u>1030</u>	<u>1220</u>
Selling Price of Crude-\$/BBL.	<u>3.36</u>	<u>3.36</u>
Daily Income - \$/Day	<u>\$77.28</u>	<u>\$53.76</u>

COMMINGLED DATA:

Gravity of Commingled Crude 41.9°
Selling Price of Commingled Crude - \$/BBL. \$3.36
Daily Income - \$/Day \$131.04

Net (Gain) (Loss) From Wellbore Commingling - \$/Day \$0.00
based on current producing rates.

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMIS.
~~TEXAS~~ EXHIBIT NO. 2
CASE NO. 4320

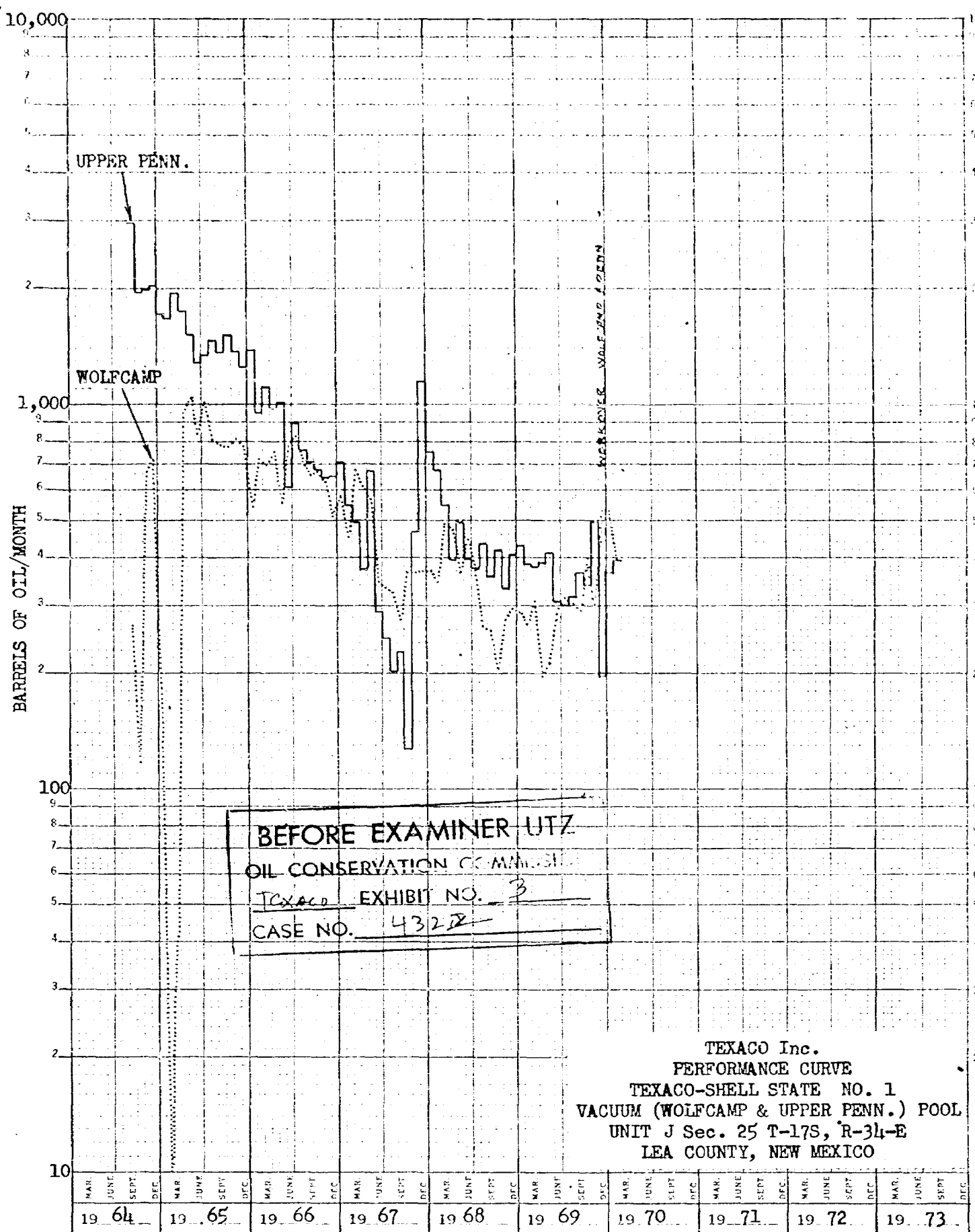


TABLE J
Reserves And Economic Data
TEXACO-Shell State Well No. 1

	<u>Wolfcamp</u>	<u>Penn</u>	<u>Zones Commingled</u>
Remaining Life - Years	6.4	5.3	2.8 7.3
Remaining Reserves (1-1-70)	2,878	17,871	47,613
Economic Limit - BOPD	2	1	2
Cum. Prod. - BO (1-1-70)	32,286	64,297	-
Ultimate Recovery - BO	61,024	82,763	144,826
Incr. Reserves By Commingling	-	-	974
Operating Cost - \$/Day	\$5.70	\$2.30	\$5.70

BEFORE EXAMINER UTZ

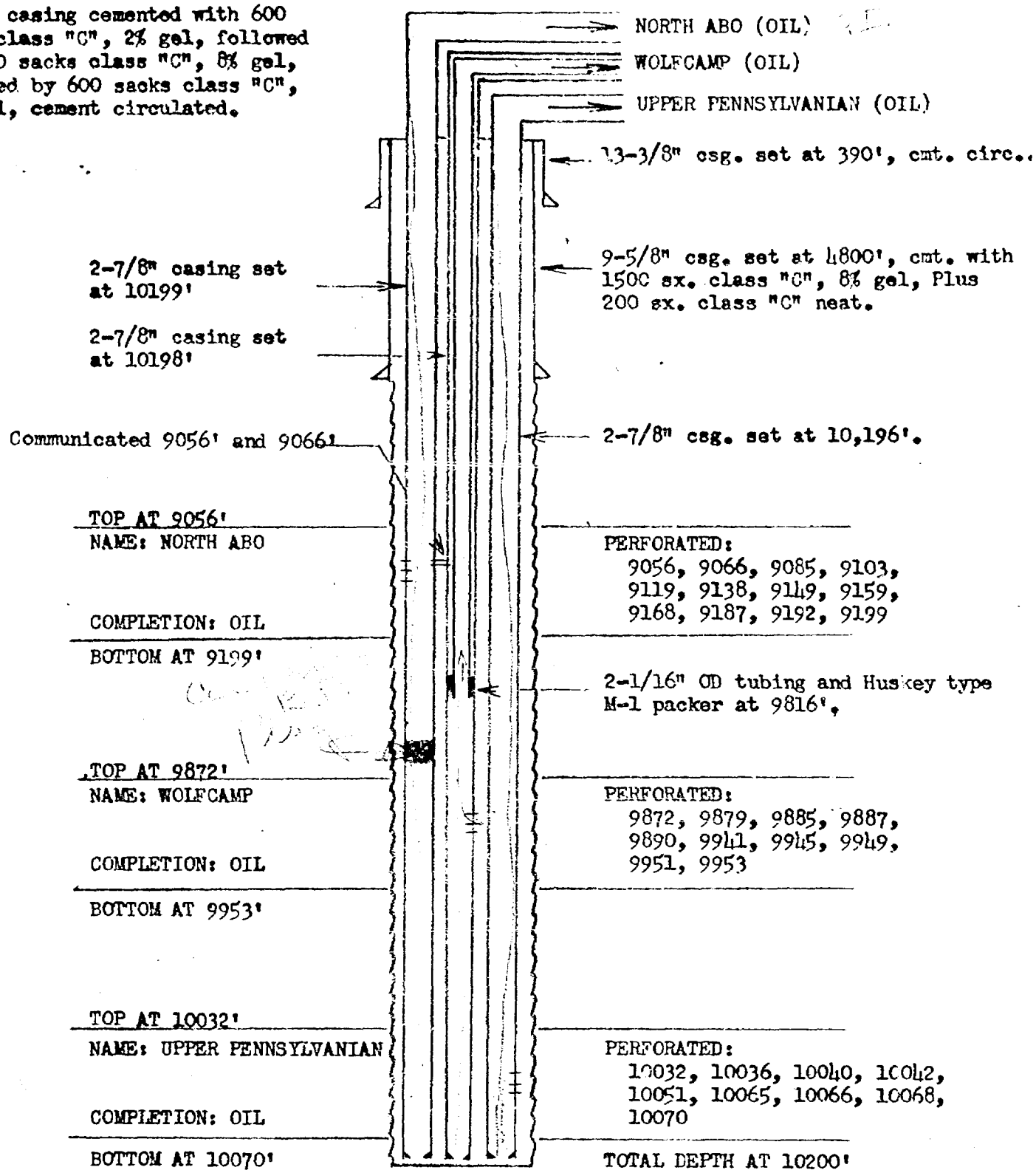
OIL CONSERVATION BOARD

Texaco EXHIBIT NO. 4

CASE NO. 4320

DIAGRAMMATIC SKETCH OF TRIPLE COMPLETION

2-7/8" casing cemented with 600 sacks class "C", 2% gel, followed by 1200 sacks class "C", 8% gel, followed by 600 sacks class "C", 2% gel, cement circulated.



COMPANY: TEXACO INC.
 LEASE: TEXACO-SHELL STATE WELL NO. 1
 FIELD: VACUUM (NORTH ABO, WOLFCAMP & UPPER PENNSYLVANIAN)
 COUNTY: LEA
 STATE: NEW MEXICO
 DATE: MARCH 16, 1970

BEFORE EXAMINER UTZ
 OIL CONSERVATION COMMISSION
 Texaco EXHIBIT NO. 5
 CASE NO. 4322



OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2086 • SANTA FE
87501

GOVERNOR
DAVID F. CARGO
CHAIRMAN

LAND COMMISSIONER
ALEX J. ARMijo
MEMBER

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

February 23, 1970

Texaco Inc.
P.O. Box 728
Hobbs, New Mexico 88240

Case 4322

Attention: Mr. W.E. Morgan

DOCKET MARKED

Date

3-12-70

Administrative Order No. DHC-38

Well Name & No: Shell State No. 1

Location: Unit of Sec. 25, T17S, R34E, NMPM

Pools: Vacuum-Wolfcamp and Vacuum-Upper Pennsylvanian

Gentlemen:

Reference is made to your recent application for an exception to Rule 303-A of the Commission Rules and Regulations for the subject dually completed well to permit the removal of the down-hole separation equipment and to commingle the production from both pools in the well-bore.

It appearing that the subject well qualifies for approval for such exception pursuant to the provisions of Rule 303-C, and that reservoir damage or waste will not result from such down-hole commingling, and correlative rights will not be violated thereby, you are hereby authorized to commingle the production as described above and Commission Order No. _____, which authorized the dual completion and required separation of the zones, is hereby placed in abeyance.

In accordance with the provisions of Rule 303-C, total commingled oil production from the subject well shall not exceed 80 barrels per day, and total water production from the well shall not exceed 160 barrels per day. The maximum amount of gas which may be produced daily from the well shall be determined by multiplying 1,000 by top unit allowable for the Vacuum-Upper Pennsylvanian Pool.

Assignment of allowable to the well and allocation of production from the well shall be on the following basis:

Upper Pool: 40%
Lower Pool: 60%

Pursuant to Rule 303-C 5, the commingling authority granted by this order may be rescinded by the Secretary-Director if, in his opinion, conservation is not being best served by such commingling.

TEXACO
INC.

PETROLEUM PRODUCTS



January 29, 1970

70 FEB 2 AM 8 25

DRAWER 723
HOBBS, NEW MEXICO 88240

WELLBORE COMMINGLING
TEXACO-SHELL STATE NO. 1
Vacuum (Wolfcamp)
and (Upper Penn) Pools

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

Attention: Mr. A. L. Porter, Jr.

Gentlemen:

TEXACO Inc. respectfully requests administrative approval under the provisions of Order No. R-3845 to commingle in the wellbore oil production from the Vacuum (Wolfcamp) and (Upper Penn) Pools which are dually completed in Well No. 1 on the TEXACO-Shell State Lease located in Section 25, Township 17-South, Range 34-East, Lea County, New Mexico.

The subject well for which wellbore commingling approval is requested qualifies under the provisions of Statewide Rule 303C, which provides for administrative application and approval of wellbore commingling. Zones which produce in each wellbore produce oil and gas at rates below the limits specified in the subject order. No water is produced from either of the two zones completed in the well. The Wolfcamp zone is produced by artificial lift while the Upper Penn zone flows. A 26 hour shut-in bottom hole pressure was run on the Wolfcamp zone on January 8, 1970, as required. A copy of the results of the BHP is attached. The fluids from these two reservoirs have been commingled on the surface in common storage for several years and are known to be compatible. There has been no evidence of undesirable scale or precipitates. Ownership of the minerals in both zones is common and the value of the commingled fluids is not less than the total value of the fluids if they were marketed separately. Secondary recovery operations will not be jeopardized by downhole commingling.

DOCKET MAILED

Date 3-12-70

New Mexico Oil Conservation
Commission

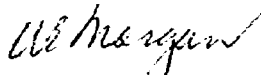
- 2 -

January 29, 1970

In further compliance with the above mentioned order, a data sheet is attached listing all required data for the two reservoirs that are productive in the well. Also attached is a production decline curve for each zone in the well which may be used for allocating production. Well tests are also attached as submitted on Form C-116.

Copies are also being mailed to each of the offset operators shown on the attached list.

Yours very truly,



W. E. Morgan
District Superintendent

KWH-cr

Attachment

DATA SHEET FOR WELLBORE COMMINGLING

MC-1493

Operator: TEXACO Inc.

Address: P. O. Box 728, Hobbs, New Mexico 88240

Lease and Well No: TEXACO-SHELL STATE, WELL NO. 1

Location: Unit J; 1833 Feet from the South Line and
1845 Feet from East Line of Section 25;
Township 17-S, Range 34-E; Lea County.

WELL DATA

	<u>Upper Pool</u>	<u>Lower Pool</u>
Name of Pool	<u>VACUUM WOLFCAMP</u>	<u>VACUUM UPPER PENN.</u>
Producing Method	<u>PUMP</u>	<u>Well has ceased to flow</u> <u>Pumping equipment is needed</u>
BHP	<u>1850 psi (Est)</u>	<u>1448 psi (bomb 1-8-70)</u>
Type Crude	<u>INTERMEDIATE SWEET</u>	<u>INTERMEDIATE SWEET</u>
Gravity	<u>38.2°</u>	<u>41.4°</u>
GOR Limit	<u>2000:1</u>	<u>2000:1</u>
Completion Interval	<u>9872'-9953'</u>	<u>10,032'-10,070'</u>
Current Test Date	<u>11-20-69</u>	<u>11-20-69</u>
Oil	<u>10</u>	<u>14</u>
Water	<u>-</u>	<u>-</u>
GOR	<u>2500</u>	<u>2355</u>
Selling Price of Crude-\$/BBL.	<u>\$3.32</u>	<u>\$3.36</u>
Daily Income - \$/Day	<u>\$33.20</u>	<u>\$47.04</u>

COMMINGLED DATA:

Gravity of Commingled Crude 40.1°
Selling Price of Commingled Crude - \$/BBL. \$3.36
Daily Income - \$/Day \$80.64

Net (Gain) (~~loss~~) From Wellbore Commingling - \$/Day \$0.40
based on current producing rates.

NEW MEXICO OIL CONSERVATION COMMISSION
GAS-OIL RATIO TESTS

Form O-1 (Rev. 1-1-68)

Operator TEXACO Inc.		VACUUM WOLF CAMP & VACUUM PENN.						LEA								
Address P. O. Box 728, Hobbs, New Mexico 88240						TYPE OF TEST - (X) <input checked="" type="checkbox"/> (X)										
LEASE NAME	WELL NO.	LOCATION				DATE OF TEST	STATUS	CHOKES SIZE	TUB. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PROD. DURING TEST				GAS - OIL RATIO CU. FT. / BBL.
		U	S	T	R							WATER BBL.	GRAV. OIL	OIL BBL.	GAS M.C.F.	
TEXACO-SHELL STATE (Vacuum Penn.)	1	J	25	17S	34E	1-9-70	F	26/64	90	16	24	7	42.1	16	76	1220
TEXACO-SHELL STATE (Vacuum Wolfcamp)	1	J	25	17S	34E	1-10-70	P	-	-	23	24	14	41.6	23	45	1030
These tests prior to downhole commingling																

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Commission.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with Rule 301 and appropriate pool rules.

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

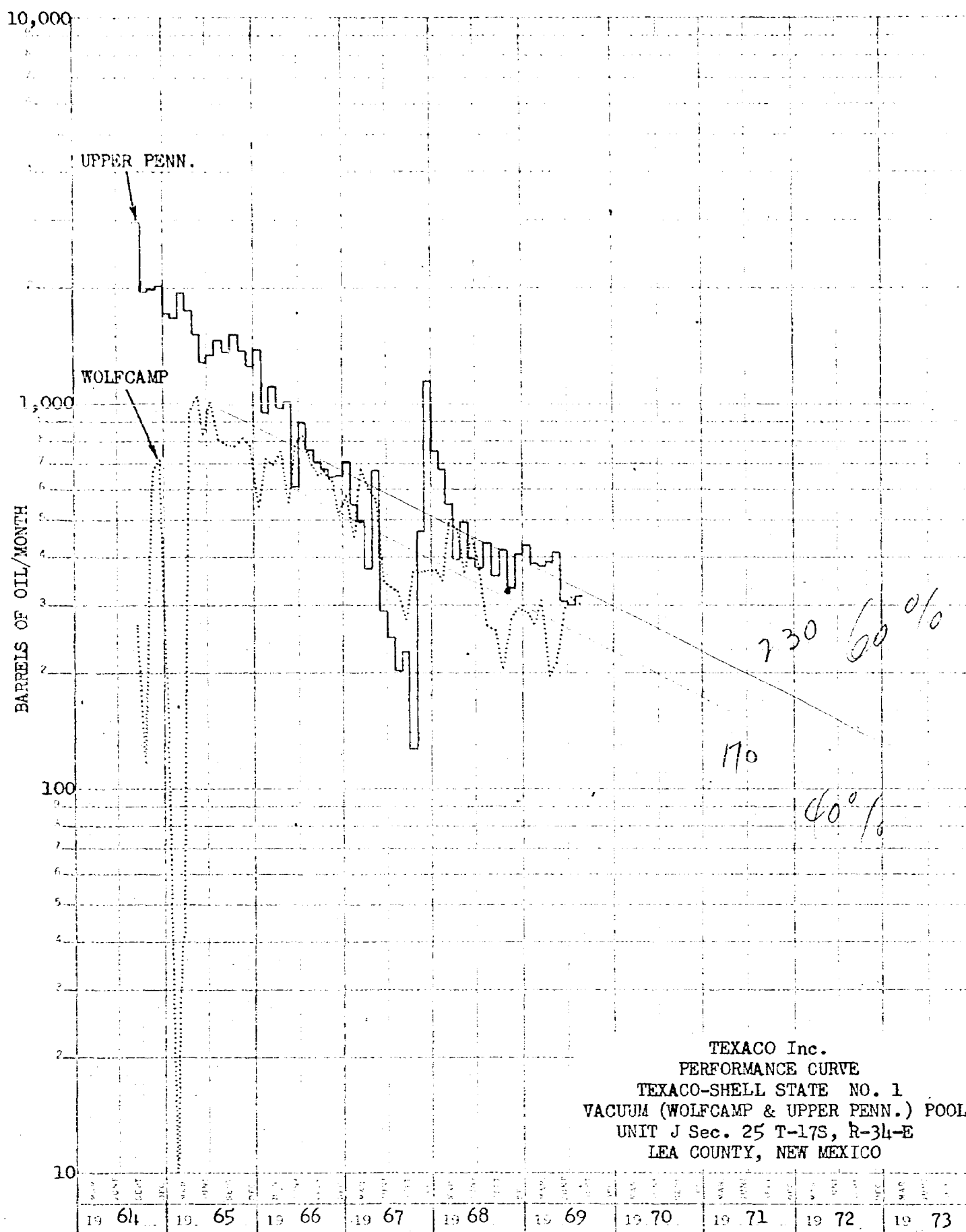
(Signature)

District Superintendent

(Title)

January 28, 1970

(Date)





COLEMAN PETROLEUM ENGINEERING COMPANY

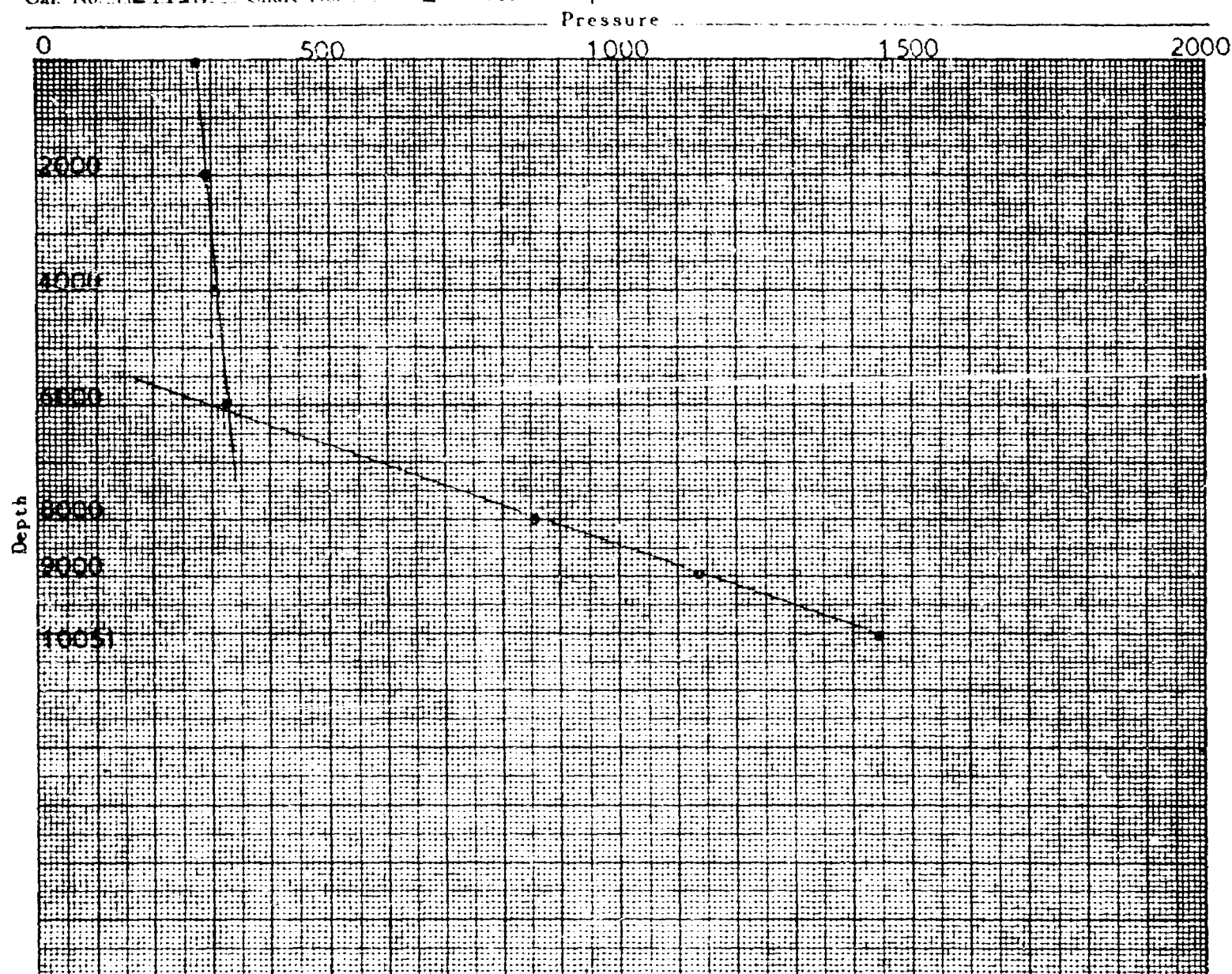
PHONE EXPRESS 3-3813
611 GRIMES
P. O. BOX 1829
HOBBS, NEW MEXICO

BOTTOM HOLE PRESSURE RECORD

OPERATOR TEXACO, INC.
FIELD VACUUM FORMATION PENN
LEASE TEXACO SHELL WELL No. 1
COUNTY LEA STATE NEW MEXICO
DATE 1-8-70 TIME 11:30 AM
Status SHUT IN Test depth 10051'
Time S. 126.0 HRS Last test date INITIAL
Tub Pres. 271 BHP last test -
Cas. Pres. TRIPLE BHP change -
Elev. 3995' GL Fluid top 5113'
Datum (-6056') ** Water top NONE
Temp. @ 149°F Run by WATSON
Cal. No. A2419N Chart No. 2

Depth	Pressure	Gradient
0	271	-
2000	288	.009
4000	308	.010
6000	328	.010
8000	856	.264
9000	1131	.275
10051(-6056)	1448**	.302

** MID POINT OF CASING PERFORATIONS



List Of Offset Operators
TEXACO Inc.
TEXACO-SHELL STATE LEASE

GETTY OIL CO.
P. O. Box 249
Hobbs, New Mexico 88240

MARATHON OIL CO.
P. O. Box 220
Hobbs, New Mexico 88240

MOBIL OIL CO.
P. O. Box 633
Midland, Texas 79701

DRAFT

GMH/esr
April 2, 1970

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE No. 4322

Order No. R-3947

PM
APPLICATION OF TEXACO INC.
FOR DOWNHOLE COMMINGLING,
LEA COUNTY, NEW MEXICO.

*WC 4012
H.P. 4010*

Don

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on March 25, 19670,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this _____ day of April, 19670, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, and being fully advised
in the premises,

FINDS:

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

(2) That the applicant, Texaco Inc., is the owner and opera-
tor of the Shell State Well No. 1, located in Unit J of Section 25,
Township 17 South, Range 34 East, NMPM, Lea County, New Mexico.

(3) That pursuant to authority granted by Administrative
Order MC-1493 said Well No. 1 was completed by the applicant as
a triple completion (tubingless) to produce oil from the North
Vacuum-Abo, Vacuum-Wolfcamp, and Vacuum-Upper Pennsylvanian Pools.

(4) That the Vacuum-Wolfcamp and Vacuum-Upper Pennsylvanian
zones in the subject well are capable of only low marginal produc-
tion.

(5) That the applicant now proposes to complete said Well
No. 1 in such a manner as to produce oil from the North Vacuum-Abo

Pool through one string of 2 7/8-inch casing and to produce the low marginal production from the Vacuum-Wolfcamp and Vacuum-Upper Pennsylvanian Pools through a single parallel string of 2 7/8-inch casing, commingling in the well-bore the production from the Vacuum-Wolfcamp and Vacuum-Upper Pennsylvanian zones.

(6) That the proposed commingling in the subject well of the Vacuum-Wolfcamp and Vacuum-Upper Pennsylvanian zones may substantially extend the productive lives of said zones in the subject well.

(7) That the reservoir characteristics of the Vacuum-Wolfcamp and Vacuum-Upper Pennsylvanian zones in the subject well are such that underground waste would not be caused by the proposed commingling in the well-bore.

(8) That the proposed commingling may result in the recovery of additional oil from each of the commingled zones in the subject well, thereby preventing waste, and will not violate correlative rights.

(9) That the mechanics of the proposed completion are feasible and in accord with good conservation practices.

(10) That in order to ~~assist in a determination of the amount of production to be allocated to each of the commingled zones in the subject well, four weekly production tests of the commingled Vacuum-Wolfcamp and Vacuum-Upper Pennsylvanian zones should be taken by the applicant; that the results of said tests should be submitted to the Santa Fe and Hobbs offices of the Commission.~~
allocate the commingled
from the commingled zones to each of
1 50% of the 1 approximately 60%
of the future allowance and production should be attributed
some, and approximately 40% to the
1
To the

(11) That approval of the subject application will prevent waste and protect correlative rights.

(12) That Administrative Orders MC-1493 ~~and MC-1420~~ should be superseded.

IT IS THEREFORE ORDERED:

(1) That the applicant, Texaco Inc., is hereby authorized to complete its Shell State Well No. 1, located in Unit J of Section 25, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico, in such a manner as to produce oil from the North Vacuum-Abo Pool through one string of 2 7/8-inch casing and to produce oil from the Vacuum-Wolfcamp and Vacuum-Upper Pennsylvanian Pools through a single parallel string of 2 7/8-inch casing, commingling in the well-bore the production from the Vacuum-Wolfcamp and Vacuum-Upper Pennsylvanian Pools.

(2) That the applicant shall complete, operate, and produce said well in accordance with the provisions of Rule 112-A of the Commission Rules and Regulations insofar as said rule is not inconsistent with this order.

~~(3) That the applicant shall take one production test of the commingled Vacuum-Wolfcamp and Vacuum-Upper Pennsylvanian zones, in the subject well, per week for a period of one month and submit results of said tests to the Santa Fe and Hobbs offices of the Commission.~~

(3) That approximately 60% of the future allowable and production shall be attributed to the Vacuum-Wolfcamp zone and from the Vacuum-Upper Pennsylvanian zone in the subject well shall approximately 40% to the Upper Pennsylvanian zone of the subject well.

~~(4) That the production from the Vacuum-Wolfcamp zone and from the Vacuum-Upper Pennsylvanian zone in the subject well shall be established and future production allocated to said zones in the subject well in the proportion that the production from each of said zones in the subject well bears to the combined production from both of said zones until further order of the Commission.~~

(4) ~~(5)~~ That the commingling in the well-bore authorized by this order shall continue only so long as the commingled production of the two zones does not exceed 80 barrels of oil per day nor 160 barrels of water per day.

(5) ~~(6)~~ That the maximum amount of gas which may be produced daily from the commingled zones in the subject well shall be determined by multiplying 2,000 by the top unit allowable for the Vacuum-Wolfcamp Pool.

for the commingled zones

and DHC-38 are
(C) ~~77~~ That Administrative Order MC-1493 ~~is~~ hereby superseded.

(7) ~~77~~ 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.

CASE 4323: Application of TEXACO
FOR A WATERFLOOD PROJECT, LEA
COUNTY, NEW MEXICO.