

CASE 3432: Application of GULF for
down-hole commingling, Lea County,
New Mexico.

Case Number

3432

Application
Transcripts.

Small Exhibits

ETC.

State of New Mexico
Oil Conservation Commission



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

August 5, 1966

Re: Case No. 3432
Order No. R-3099
Applicant:

Dear Sir:

Very truly yours,

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

ir/

Carbon copy of order also sent to:

Hobbs OCC x

Artesia OCC_____

Aztec OCC _____

OTHER _____

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. 3432
Order No. R-3099

APPLICATION OF GULF OIL CORPORATION
FOR DOWN-HOLE COMMINGLING, LEA COUNTY,
NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on July 19, 1966,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 5th day of August, 1966, 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, Gulf Oil Corporation, is the owner
and operator of the Barry Leonard (NCT-C) Well No. 11, located
in Unit K of Section 36, Township 21 South, Range 36 East, NMPM,
Lea County, New Mexico.

(3) That said well is now completed as a low marginal
pumping well in an undesignated Blinberry pool with perforations
from 5783 feet to 5890 feet.

(4) That prior to completion in the undesignated Blinberry
pool there was low marginal production from the Leonard Leonard
Pool through perforations from 5514 feet to 5590 feet.

(5) That the applicant proposes to produce and commingle in
the well both the Leonard Leonard production from the Leonard Leonard

(6) That the production from neither of said zones, in itself,
is sufficient to cover the operating costs of production, and as
a single correlation. Further, that the production from each zone,

CASE No. 3432
Order No. R-3099

combined, is insufficient to cover the cost of installing conventional dual completion equipment and the operating cost of the well.

(7) That the reservoir characteristics of each of the two zones are such that underground waste would not be caused by the proposed commingling in the well-bore.

(8) That approval of the proposal will prevent waste in permitting the production of otherwise unrecoverable oil and will not violate correlative rights.

(9) That production tests should be conducted, prior to commingling, to determine the production from each zone.

IT IS THEREFORE ORDERED:

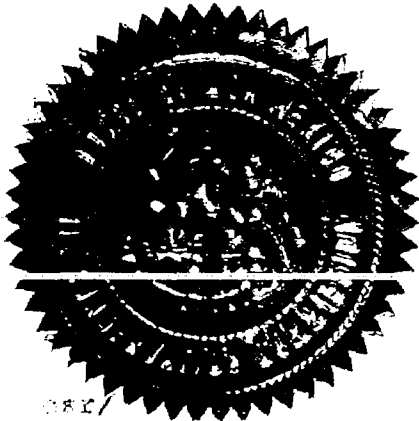
(1) That the applicant, Gulf Oil Corporation, is hereby authorized to complete its Harry Leonard (NCT-C) Well No. 11, located in Unit K of Section 36, Township 21 South, Range 36 East, NMPM, Lea County, New Mexico, in such a manner as to produce oil from an undesignated Blinebry pool through perforations from 5783 feet to 5890 feet and from the Arrowhead-Drinkard Pool through perforations from 6514 feet to 6590 feet, commingling the production from each of said zones in the well-bore;

PROVIDED HOWEVER, that the production of each zone shall be established and future production allocated to the Blinebry and Arrowhead-Drinkard zones of the subject well in the proportion that the production from each zone bears to the combined production from both zones until further order of the Commission;

PROVIDED FURTHER, that commingling in the well-bore shall continue only so long as the commingled production does not exceed the top unit allowable for either of the zones in the subject well.

(2) 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 date hereinafter designated.



DEPARTMENT OF LAND AND NATURAL RESOURCES
NEW MEXICO OIL AND GAS CONSERVATION COMMISSION

Jack M. Campbell
Chairman

Ray B. Hay
Secretary

A. L. Porter, Jr.
Assistant Secretary

Case 3432

Heard 7-19-66

Rec. 7-26-66

1. Grant Gulf. permission to downhole
commingle the Indesignated Blinby
pool & the Arrowhead Drinkard pool in
the Ham Leonard (NCT-C) #11 NE SW-36-215-
36 E.

2. Both zones are ^{very} marginal. Because
~~if~~ of this oil will be recovered which
otherwise would be lost.

3. Production shall be reported to the
commission on the basis of ^{pool} ~~as~~ test
to be taken before commingling
is commenced.

4. If at any time the commingled
stream ~~for~~ is greater than either
pool's normal unit allowable the zones
shall be separated.

Shut. V. F.

Docket No. 18-66

DOCKET: EXAMINER HEARING - TUESDAY - JULY 19, 1966

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 3428: Application of Continental Oil Company for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of its Eumont-Hardy Unit Area comprising 1,930 acres, more or less, of State, Federal and Fee lands in Township 20 South, Ranges 37 and 38 East, and Township 21 South, Ranges 36 and 37 East, Lea County, New Mexico.

CASE 3429: Application of Continental Oil Company for two waterflood projects, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project by the injection of water into the Yates, Seven Rivers, and Queen formations, Eumont Pool, through 28 wells in its Eumont Hardy Unit. Applicant further seeks the approval of an offsetting cooperative waterflood project to be conducted on its SEMU Eumont lease by the injection of water into two wells in Section 25, Township 20 South, Range 37 East, all in Lea County, New Mexico.

CASE 3430: Application of Tenneco Oil Company for a unit agreement, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of its Hess Hills Unit Area comprising 16,801 acres, more or less, of State, Federal and Fee lands in Townships 23 and 24 South, Ranges 23 and 24 East, Eddy County, New Mexico.

CASE 3431: Application of Sinclair Oil & Gas Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the approval of the dual completion of its W. H. Turner Well No. 1 located in Unit L of Section 29, Township 21 South, Range 37 East, Lea County, New Mexico, to produce oil from the Drinkard Oil Pool through 2-inch tubing and to produce oil from the Blinebry Oil Pool through the casing-tubing annulus.

CASE 3432: Application of Gulf Oil Corporation for down-hole commingling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to commingle in the well-bore marginal oil production from the Arrowhead Drinkard Pool and an undesignated Blinebry Pool in its Harry Leonard (NCT-C) Well No. 11 located in Unit K of Section 36, Township 21 South, Range 36 East, Lea County, New Mexico.

CASE 3252 (Reopened):

In the matter of Case No. 3252 being reopened pursuant to the provisions of Order No. R-2917, which order established 640-acre spacing units for the McMillan-Morrow Gas Pool, Eddy County, New Mexico, for a period of one year after first pipeline connection in the pool. All interested parties may appear and show cause why said pool should not be developed on 320-acre spacing units.

JULY 19, 1966 EXAMINER HEARING

CASE 3433: Application of Skelly Oil Company for an exception to Rule 104, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 104 C I of the Commission Rules and Regulations to permit the production of oil from two wells located less than 660 feet apart in the West Dollarhide-Drinkard Pool, Lea County, New Mexico. Applicant's Mexico "L" Well No. 18 located 1656 feet from the North line and 990 feet from the East line of Section 5, Township 25 South, Range 38 East, is presently completed in said pool, and applicant proposes to recomplete its Well No. 2, located 1980 feet from the North line and 660 feet from the East line of said Section 5 in said pool, with the assignment of a single 40-acre allowable to both wells.

CASE 3259 (Reopened):

In the matter of Case No. 3259 being reopened pursuant to the provisions of Order No. R-2929, which order established 160-acre spacing units for the Nonombre-Upper Pennsylvanian and Nonombre-Lower Pennsylvanian Pools, Lea County, New Mexico, for a period of one year. All interested parties may appear and show cause why said pools should not be developed on 40-acre or 80-acre spacing units.

CASE 3434: Application of Shell Oil Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the approval of the dual completion (conventional) of its South Wilson Deep Unit Well No. 2 located in Unit J of Section 33, Township 21 South, Range 34 East, Lea County, New Mexico, to produce oil from an undesignated Bone Springs Oil Pool and to produce gas from the Grama Ridge-Morrow Gas Pool through parallel strings of tubing.

CASE 3435: Application of Tidewater Oil Company for a capacity allowable, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the assignment of a capacity allowable to its GO State "J" Well No. 1 located in Unit II of Section 7, Township 17 South, Range 33 East, Maljamar Pool, Lea County, New Mexico. Said well offsets the waterflood project operated by Great Western Drilling Company on its Malmar Unit in said Section 7.

CASE 3436: Application of Leonard Latch for a gas injection project, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a gas injection project in the Empire Yates-Seven Rivers Pool, Eddy County, New Mexico, by the injection of gas into the Yates formation through his Berry "A" Wells Nos. 11 and 26, located in Units K and O, respectively, of Section 24, Township 17 South, Range 27 East.

Gulf Oil Corporation

ROSWELL PRODUCTION DISTRICT

W. B. Hopkins
DISTRICT MANAGER
M. L. Taylor
DISTRICT PRODUCTION
MANAGER
F. O. Mortlock
DISTRICT EXPLORATION
MANAGER
H. A. Rankin
DISTRICT SERVICES MANAGER

June 10, 1966

P. O. Drawer 1938
Roswell, New Mexico 88201

66 JUN 13 AM 7 13

Oil Conservation Commission
State of New Mexico
Post Office Box 2088
Santa Fe, New Mexico 87501

Re: Application of Gulf Oil Corporation
for Approval of Down Hole Commingling
of Production in the Harry Leonard
(NCF-C) Well No. 11, Undesignated
Blinebry and Arrowhead Drinkard Oil
Pools, Lea County, New Mexico

Gentlemen:

Gulf Oil Corporation respectfully requests that an examiner hearing be set to consider its application for approval of down hole commingling of undesignated Blinebry and Arrowhead Drinkard oil production in the Harry Leonard (NCF-C) Well No. 11, located in the NE/4 SW/4 of Section 36, T-21-S, R-36-E, Lea County, New Mexico.

In support of this application, the following facts are submitted:

- (1) Applicant's subject well was drilled and completed in an undesignated Blinebry Pool on June 17, 1965. Initial production was 29 BO and 5 BW pumping. On Company test May 31, 1966 the well pumped 11 BO and a trace of water.
- (2) Applicant, prior to completion in the undesignated Blinebry Pool, attempted an Arrowhead Drinkard Pool completion. This zone pumped 28 BO and an estimated 7 BWPD.
- (3) The dual completion of the well and pumping the Drinkard zone from below a packer was not considered satisfactory from an operational standpoint. The additional expense of an extra pumping unit, rods and tubing for the marginal Drinkard well was not considered to be economical.
- (4) Applicant originally proposed to deplete the undesignated Blinebry oil after which the Arrowhead Drinkard would be produced.
- (5) Applicant believes it is in the interest of conservation and economics to commingle the production down hole and pump both zones with the existing pumping equipment.



DOCKET MAILED

Date 7-8-66

Oil Conservation Commission

-2-

June 10, 1966

- (6) The anticipated production by this proposal will be 35 to 40 barrels per day, which is well below the top allowable for the shallowest zone.
- (7) Offset operators have been furnished a copy of this application.

Respectfully submitted,

GULF OIL CORPORATION

M. I. Taylor

M. I. Taylor

JHH:sz

cc: New Mexico Oil Conservation Commission
Post Office Box 1980
Hobbs, New Mexico 88240

Cities Service Oil Company
Post Office Box 69
Hobbs, New Mexico 88240

Marathon Oil Company
Post Office Box 2107
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Sinclair Oil & Gas Company
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PAGE 1

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
July 19, 1966

EXAMINER HEARING

IN THE MATTER OF: Application of Gulf Oil
Corporation for down-hole commingling, Lea
County, New Mexico.

Case No. 3432

BEFORE: ELVIS A. UTZ, Examiner

TRANSCRIPT OF HEARING



MR. UTZ: Case 3432.

MR. HATCH: Application of Gulf Oil Corporation for down-hole commingling, Lea County, New Mexico.

MR. KASTLER: If the Examiner please, I am Bill Kastler from Roswell, employed by and representing Gulf and our witness is John H. Hoover.

(Witness sworn.)

MR. UTZ: Are there other appearances? You may proceed.

(Whereupon, Exhibits 1 through 4 marked for identification.)

* * *

J O H N H. H O O V E R, called as a witness herein, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KASTLER:

Q Please state your name, by whom you are employed, and where and in what position.

A John Hoover, employed by Gulf Oil Corporation, Roswell, New Mexico as District Production Engineer.

Q Have you previously appeared before the Oil Conservation Commission many times and been qualified as a production engineer?

A Yes, sir.

Q Are you familiar with Gulf's Application in Case 3432?



A Yes, sir.

Q What is Gulf seeking in this Application?

A We are asking for authority to commingle in the wellbore marginal production from the Arrowhead Drinkard Oil Pool and an undesignated Blinebry Oil Pool in our Harry Leonard NCT-C Well Number 11, which is located in Unit K of Section 36, Township 21 South, Range 36 East, Lea County, New Mexico.

MR. KASTLER: I should have asked this before the last question. Mr. Examiner, are you satisfied with Mr. Hoover's qualifications?

MR. UTZ: Yes, sir, I think we will accept them.

Q (By Mr. Kastler) Do you have a plat showing the Harry Leonard NCT-C lease and Well Number 11, the subject well?

A Yes, sir, it's marked Exhibit Number 1 and on this Exhibit, we show the Harry Leonard NCT-C lease outlined in orange and it's described as the north half and the east half, southwest quarter of Section 36, Township 21 South, Range 36 East. Well Number 11 is circled and colored in orange and it is located 2200 feet from the south line and 2200 feet from the west line of this Section 36.

Q When was Well Number 11 completed and what zone is it now producing from?

A It was completed May 23, 1965 in an undesignated



Blinebry Oil Pool.

Q That's at the time it was drilled?

A Yes. On test October 19th, 1965 the well produced 20 barrels of oil per day and two barrels of water per day. A test on May 31 of 1966 revealed that the well would produce 11 barrels of oil per day with a trace of water, and then a test taken on July 9, 1966, the well pumped nine barrels of oil per day and one barrel of water per day. The well was completed as a pumping well.

Q Is this well also completed in the Arrowhead Drinkard Pool?

A Yes, it is. Prior to completing in the Blinebry, the well was perforated and tested in the Arrowhead Drinkard zone. The well produced on May the 4th, 1965 from this Drinkard zone 28 barrels of oil per day with seven barrels of water. This zone was temporarily abandoned with the plan being to deplete the Blinebry and then produce the Arrowhead Drinkard. The Arrowhead Drinkard zone was also completed pumping, and this pumping from below a packer presents some operational problems which dictated the initial completion in the Blinebry.

Q As a single completion?

A As a single completion.

Q Do you have a schematic sketch of this well showing



how it is completed at the present time?

A Yes. It is marked Exhibit Number 2 and we have nine and five-eighths inch casing set at 1158 feet. It was cemented with 585 sacks of cement and the cement was circulated. We have seven inch casing set at 6,698 feet and it was cemented with 830 sacks with the top of the cement at 2455 feet.

The undesignated Blinebry is perforated 5783 feet to 5890 feet and the Arrowhead Drinkard is perforated 6514 feet to 6590 feet. We have a Baker seven inch retrievable bridge plug set at 5940 feet with two sacks of sand on top. We have two and three-eighths inch tubing set at 5751 feet.

Q You say two and three-eighths inch tubing?

A Yes, set at 5751 feet.

Q How does Gulf propose to complete this well if the application is approved?

A We propose to remove the Baker seven-inch retrievable bridge plug and lower the tubing and the pump. The tubing would be set at approximately the top of the Arrowhead Drinkard zone, being at 6514 feet. We propose to keep both the Blinebry zone and the Arrowhead Drinkard zone pumped down.

Q What production do you anticipate by this method?

A Well, based on the July 9, 1966 test for the Blinebry of nine barrels of oil per day and the initial test on the Arrowhead Drinkard of 28 barrels of oil per day, we could



expect 37 barrels maximum. It will probably, and we feel that it is probably certain that we will get less than 28 barrels in the Drinkard because our Harry Leonard NCT-C Well Number 10, which is also an Arrowhead Drinkard Well, currently produces only 18 barrels of oil per day.

Q How far is it removed from this; refer to Exhibit 1, if you will.

A Well, Number 10 is located in the southeast quarter, southwest quarter of Section 36, it's the south offset to Number 11.

MR. UTZ: What did it produce?

A It currently produces 18 barrels of oil per day.

Q (By Mr. Kastler) What is the top allowable for each of these zones, Blinebry and Drinkard?

A Based on the July, '66 allowables, the undesignated Blinebry is 60 barrels of oil per day, and the Arrowhead Drinkard is 80 barrels of oil per day.

Q Then the production you expect is well below the top allowable for the shallowest zone?

A Yes.

Q It's also below the top allowable for the lower zone, isn't it?

A Yes, it is.

Q You state that Gulf has another Arrowhead Drinkard



well, that's Number 10. How many such wells are there in this pool zone?

A Gulf has the only two wells in this pool, or will have when Number 11 is placed back on production, and Well Number 10 is the other one, and we have previously described the location of that well.

Q When was it completed in the Arrowhead Drinkard Pool, the Well Number 10?

A Well Number 10 was completed on June 19, 1957.

Q How many undesignated Blinebry wells are there in this area?

A There's only one, being the Harry Leonard NCT-C Well Number 11.

Q Then Gulf has the only well with production involved in this application, is that correct?

A Yes, that's correct.

Q Going back to the production you expect to produce, is the nine barrels of Blinebry Oil approaching its economic limit to pump?

A Yes, it is. We believe that it's not economical to pump it below five barrels per day and from the test of May of 11 barrels per day --

Q May 31?

A May 31. -- and the test in July of nine barrels,



it appears that the Blinebry production is rapidly approaching this limit. We are ready to start producing the Drinkard now to increase the production from the lease. We don't believe that it is satisfactory, from an operational standpoint, to pump the Drinkard below the packer. The pumping efficiency would be very poor, due to gas locking the pump. If we can not produce the wells as proposed by commingling, we will probably squeeze the Blinebry and produce the Drinkard.

Once the Blinebry is squeezed, I doubt if it is ever opened up again.

Q You mean the remaining oil in the Blinebry then, if it were squeezed off to allow you to produce the Drinkard, it would be lost and you wouldn't have any economic justification to re-enter that zone?

A No, not at this point with the production down as low as it is.

Q So, in other words, you are just about at the point without the granting of the application to abandon the Blinebry?

A Yes, that's right.

Q Assume it would be feasible to produce this well as a conventional dual, what would be the cost to install the additional pumping equipment?

A The cost of another pumping unit, tubing, rods, pump



packer, we estimate the cost to be \$22,000.00 and we do not believe that this expenditure is justified to recover this declining Blinebry oil.

Q What bottom hole pressure information do you have?

A We have Exhibits 3 and 4, they are sonic fluid level tests in the Well Number 11 for the undesignated Blinebry, and the Well Number 10 for the Arrowhead Drinkard. Since these, both these wells are pumping, it was impractical to take a bottom hole pressure so the fluid level test was sounded and the bottom hole pressure was calculated, using the pressure gradient for the gravity of the fluid.

The Blinebry pressure on Exhibit Number 3, the calculated bottom hole pressure at 5837 feet was 399 pounds, and the calculated bottom hole pressure for the Arrowhead Drinkard at 6575 feet was 776 pounds. Correcting the pressure of 776 pounds to the datum of the Blinebry at 5837 feet, corrects the pressure to 500 pounds as compared to 399 pounds in the Blinebry, or that would be a pressure difference of 101 pounds.

We do not believe that this differential is significant since we plan to keep both zones pumped down and no migration of oil would occur.

Q Referring to Exhibit Number 1 again, where is the nearest existing Drinkard and Blinebry oil production in



relation to Harry Leonard NCT-C Well Number 11, excluding Gulf's Well Number 10?

A The nearest wells are a mile and a half east and northeast and they are in the Drinkard Oil Pool. Going east from Well Number 11 to Section 31, and in the east half of the east half there are three Central Drinkard Unit Wells, being Number 135, 136 and 151.

In Section 30, in the northwest quarter, southeast quarter, McDonald Oil Company has a Drinkard Well and still in Section 30 Texaco has three wells on the V. M. Henderson, they're 7, 8 and 9. These are the nearest wells in the Drinkard, the Drinkard Wells being all east and northeast from that point.

Q Where are the nearest Blinebry wells?

A The nearest Blinebry wells are in the Blinebry Oil Pool, which is approximately two miles northeast of this well. These are Sinclair Turner Well Number 4 in Section 29 of 21, 37 in the southwest quarter, southwest quarter; and Gulf's Mattern B Well Number 8, which is in Section 30, being in the northeast quarter, southeast quarter.

There are other Blinebry wells on to the east and to the north, but those are the nearest wells to our Well Number 11.

Q Mr. Hoover, would the commingling of this production



result in any loss of revenue by lowering the specific gravity?

A The difference would be practically nil. Assuming that we had got the nine barrels of Blinebry oil and 28 barrels of Drinkard oil, the difference in revenue would only be 27¢ per day less. This would be what we think would be the maximum difference because we feel that the Drinkard will be less than 28 barrels, and the 27¢ would actually be reduced due to the less Drinkard oil.

We have authority at this time to commingle the undesignated Blinebry in the Arrowhead Drinkard and by adding the Arrowhead Drinkard from Well Number 11 in this same commingling, this is above ground commingling, actually the difference is only 7¢ per day less so the difference in revenue is insignificant.

Actually, we will increase the revenue from the lease by this commingling if we can do it this way because we will actually increase the production, and if we could go ahead and recover the Blinebry, the lease will further benefit by not losing the remaining Blinebry oil.

Q Who is the royalty owner in the Harry Leonard State Lease?

A The State.

Q Is this application in the interest of economics and prevention of waste?



A Yes, it is. We do not believe it is economically justified to spend \$22,000.00 to make a conventional dual completion to recover the Blinebry oil, and we believe it will prevent waste by allowing us to recover the Blinebry oil, which otherwise would not be recovered.

Q You are not going to produce through the casing and annulus, but through the two and three-eighths inch tubing pumping?

A Yes. It will be through tubing.

Q Have the offset operators been notified of this application and have any objections been made?

A Yes. They were furnished a copy of our application and we have not heard of any objections.

Q Will anyone else's correlative rights be impaired, in your opinion?

A No, they will not. Gulf has the only wells in production in the Arrowhead Drinkard and in this undesignated Blinebry Pool.

Q Do you have anything further to add in this case?

A No, I don't.

Q Were Exhibits 1, 2, 3 and 4 prepared by you or at your direction and under your supervision?

A Yes, they were.

MR. KASTLER: I would like to move at this time, to

enter into evidence Exhibits 1, 2, 3, and 4 and I rest.

MR. UTZ: Exhibits 1 through 4 will be entered into the record of this case.

(Whereupon, Exhibits 1 through 4 were offered and admitted into evidence.)

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Hoover, what is the gravity of each zone?

A On the Exhibit Number 3, which was the test taken on July 9, 1966 on the Blinebry the gravity is 38.5. Now, the test that we took on the Drinkard at the time we recom-
pleted in the Blinebry showed the gravity of that oil to be 37.5. Now, the Drinkard oil from Well Number 10, on the test that was made here on this Exhibit 4, the gravity was 36.1. So, we could be speaking of a gravity in the range of between 36.1 and 37.5.

Q How about your gas oil ratio for each zone?

A On the test of the Harry Leonard NCT-C Number 10, the well produced 18 barrels of oil, two barrels of water, 51 mcf of gas for a gas oil ratio of 2835. On the undesig-
nated Blinebry, Harry Leonard NCT-C Number 11 on test, on the April production it produced 385 barrels of oil for the month and 582 mcf so that would put it in the gas oil ratio range



of less than 2,000. We think that ratio would be less than 2,000.

Q In your opinion, will there be as much oil recovery from each of these zones by commingling in this manner as there would if you completed them separately?

A Yes, sir, I believe there will be no difference because we propose to keep both zones pumped down and anything that would come into the well bore commingled would also come into the well bore if they were produced singly. We would keep both zones pumped down if they were dually completed conventionally or commingled, and I don't think there would be any difference in the oil recovery. The pump that we have on there is big enough to more than keep anything pumped down where we're looking at here.

I might point out, also, Mr. Examiner, that on that Blinebry oil it was reported that we thought we were getting more oil than what we actually were, so they ran a new pump in it and that nine barrel test is with a new pump, and we feel like that is a good test and that the production was declining and it wasn't necessarily a production problem.

Q How do you propose to report these volumes?

A What we propose to do is, of course, we have to allocate it on the basis of percentage, and when we complete-- For example, let's say we get nine barrels of Blinebry oil



and 18 barrels of Drinkard oil, that would give us a total of 27 barrels. Nine barrels would be a third of the 27 and the Drinkard would be two-thirds and we propose to allocate on that percentage whatever the initial test would show.

We have considered other things here, running one string of tubing with a packer and two sleeves, and open both sleeves up and pump it, but there again you are speaking of -- well, if you have to run a test, say, just once a year, you are speaking about \$1,000.00 of unit time to pull your pump, close one of your sleeves, run your pump back in and test, pull your pump out, it actually would be more than \$1,000.00 on that particular installation.

We also considered running one string of tubing with a packer that when you set it down you close the upper port and then again, you'd have rig time to come out and lift it, open the port and then close it again, and that would be about \$1,000.00 in rig time and personnel time, and we don't feel like we can justify that expense each year if we had to run a test once a year, and not twice a year for that nine barrels.

Q In the event that your production should increase to more than the 60 barrel allowable for the Blinebry zone, what would be your reaction?

A Well, we don't propose to produce it any more than the allowable for the shallowest zone. We hope that could



happen but it won't at this stage.

Q If you are going to keep it pumped down, then you would have to pump capacity, right?

A That's right. We're keeping the Blinebry pumped down now in that Well Number 11 and we are keeping the Arrowhead Drinkard pumped down in that Well Number 10. We would not expect to get more than the shallow zone allowable. We would not go over that.

MR. PORTER: You would settle for that, wouldn't you?

A We sure would.

MR. UTZ: Are there other questions of the witness?
He may be excused.

(Witness excused.)

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



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I N D E X

WITNESS	PAGE
JOHN HOOVER	
Direct Examination by Mr. Kastler	2
Cross Examination by Mr. Utz	13

E X H I B I T S

EXHIBIT	MARKED FOR IDENTIFICATION	OFFERED	ADMITTED
App's. 1 - 4	2	13	13

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STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

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

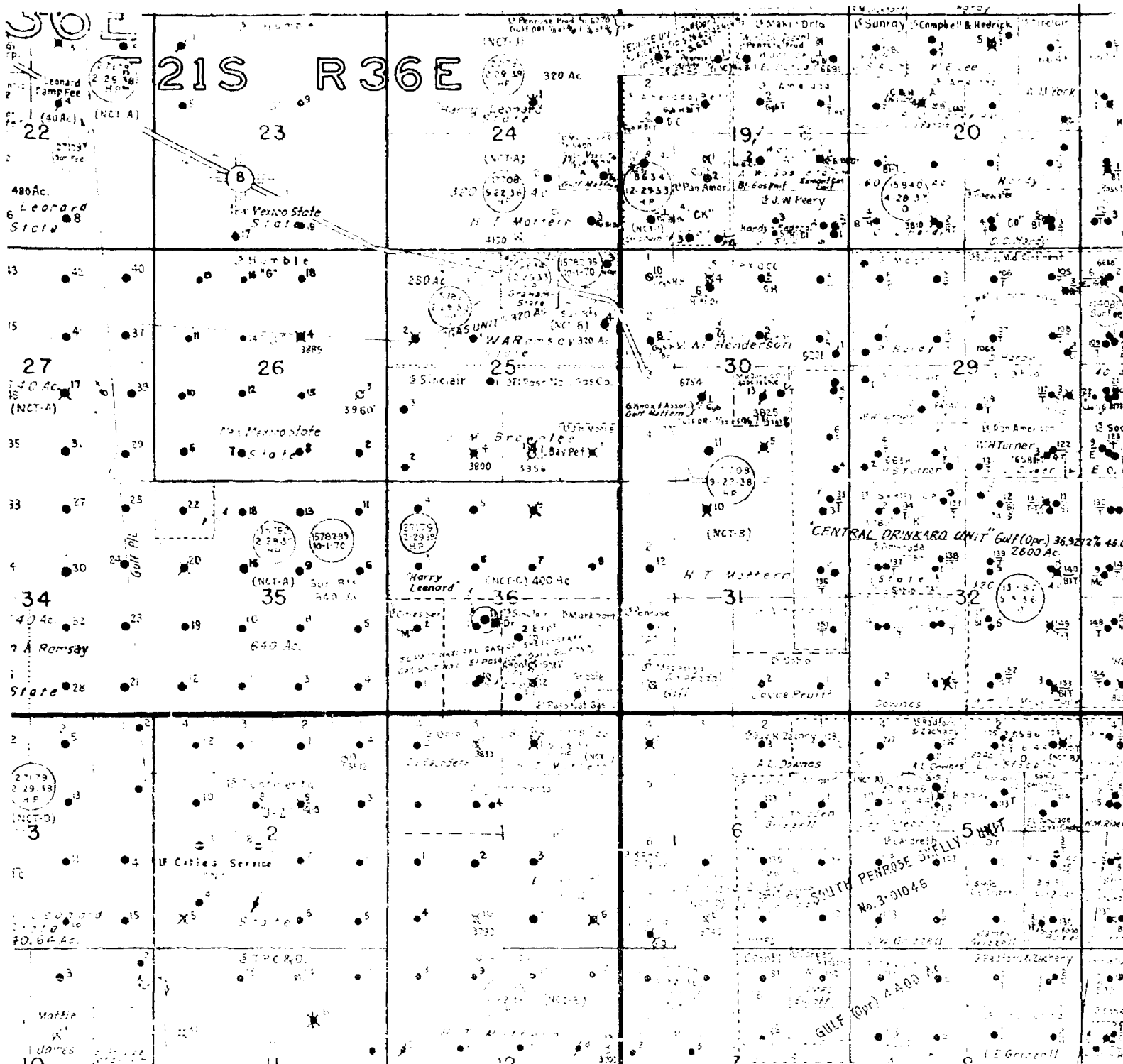
Witness my Hand and Seal this 24th day of July, 1966.

Ada Dearnley
NOTARY PUBLIC

My Commission Expires:

June 19, 1967.

I do hereby certify that the foregoing is a complete record of the proceedings in the Executive Hearing of Case No. 3432, heard by me on *July 19, 1966*.
Thos. H. [Signature] Examiner
New Mexico Oil Conservation Commission



LEASE PLAT

HARRY LEONARD (NCT-C)
LEA COUNTY, NEW MEXICO

- LEGEND -

Pertinent Lease

Pertinent Well

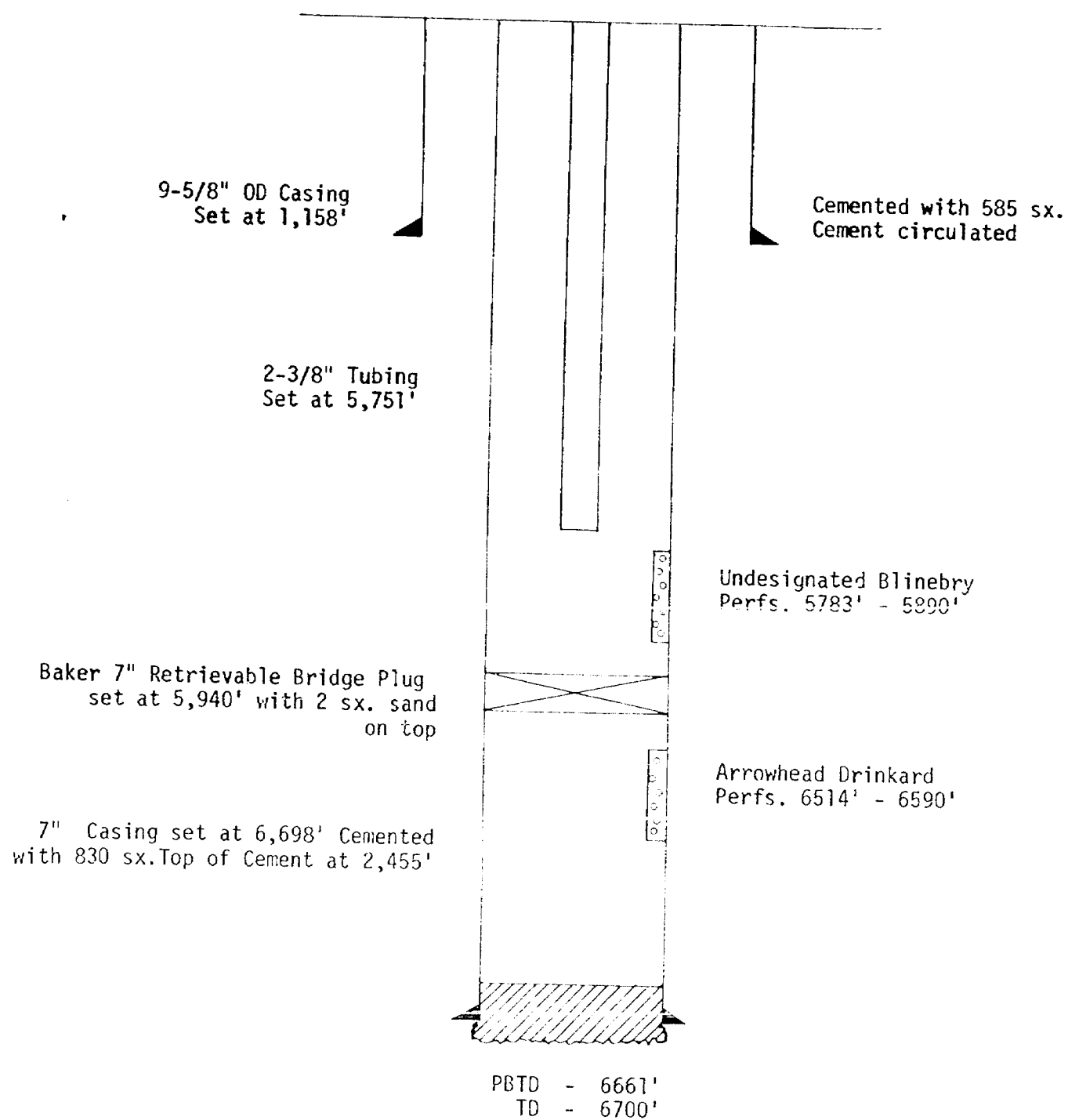
GULF OIL CORPORATION

CASE NO. 3432

EXHIBIT NO. 1

DATE 7-19-66

GULF OIL CORPORATION
HARRY LEONARD (NCT-C) NO. 11
2200' FSL and 2200' FWL Section 36-21S-36E, Lea County, New Mexico
Undesignated Blinebry - Arrowhead Drinkard Oil Pools



CASE NO. 3432
EXHIBIT NO. 2
DATE 7/19/66



COLEMAN PETROLEUM ENGINEERING COMPANY

PHONE EXPRESS 3-3813

611 GRIMES

P. O. BOX 1829

HOBBS, NEW MEXICO

ACOUSTICAL WELL SOUNDING RECORD

FIELD	UNDESIGNATED BLINEBRY	DATE	7-9-65
OPERATOR	GULF OIL CORPORATION		
LEASE	LEONARD "C"	WELL	No. 11
TYPE OF TEST	BOTTOM HOLE PRESSURE		
TIME RUN	8:30 AM	SIZE OF TBG	2"
STATUS OF WELL	SHUT IN	AVG. LENGTH TBG, JTS	31.99
SHUT IN TIME	48.0 HOURS	BOTTOM OF TBG	5726' (179 Jts)
TUBING PRESSURE	PUMP	SIZE OF CASING	7"
CASING PRESSURE	245# DWT	TOTAL DEPTH OF WELL	5837' MP*
ELEVATION	3520' GL	LAST TEST DATE	-
DATUM	(-2317') 5837'*	BHP LAST TEST	- BY -
WATER PERCENT	10.0	BHP CHANGE	-
DEPTH TO FLUID	5582'	DIFF. TOP FLUID TO DATUM	255'
FLUID GRADIENT	.360 OIL .433 WATER PSI/FT	JOINTS TO FLUID	174.5
PRESSURE OF FLUID COLUMN	94		PSIG.
PRESSURE OF GAS COLUMN	60		PSIG.
CASING PRESSURE	245		PSIG.
CALCULATED BHP AT DATUM*	399		PSIG.
TEST RUN BY	ALLMAN	CALCULATED BY	COLEMAN
		CHART NO.	1
REMARKS:	* MID POINT OF CASING PERFS.		
	SP. G. OIL-.8323, 38.5° API @ 60°F		
	SP. G. GAS-.9240		
	PRODUCTION: 9.0 BO/D, 1.0 BW/D		

CASE NO. 3432

EXHIBIT NO. 3

DATE 7/19/66



COLEMAN PETROLEUM ENGINEERING COMPANY

PHONE: LA 8-5 13812

611 GRIMES

P. O. BOX 1829

HOODS, NEW MEXICO

ACOUSTICAL WELL SOUNDING RECORD

FIELD ARROW DRINKARD DATE 7-9-66

OPERATOR GULF OIL CORPORATION

LEASE HARRY LEONARD "C" WELL No. 10

TYPE OF TEST BOTTOM HOLE PRESSURE

TIME RUN 8:45 AM SIZE OF TBG 2"

STATUS OF WELL SHUT IN AVG. LENGTH TBG, JTS. 31.26

SHUT IN TIME 48.0 HOURS BOTTOM OF TBG 6565' (210 JTS)

TUBING PRESSURE PUMP SIZE OF CASING 5 1/2"

CASING PRESSURE 128# DWT TOTAL DEPTH OF WELL ~~6575'~~ 6679' MP*

ELEVATION 3514' GL LAST TEST DATE -

DATUM ~~-3061'~~ ~~(-3165')~~ 6575' BHP LAST TEST - BY -

WATER PERCENT 10.0 BHP CHANGE -

DEPTH TO FLUID 4908' DIFF. TOP FLUID TO DATUM ~~1774'~~ 1667'

FLUID GRADIENT .366 OIL JOINTS TO FLUID 157.0

.433 WATER PSI/FT. 620

PRESSURE OF FLUID COLUMN 660 PSIG.

PRESSURE OF GAS COLUMN 28 PSIG.

CASING PRESSURE 128 PSIG.

CALCULATED BHP. AT DATUM ~~816~~ 776 PSIG.

TEST RUN BY ALLMAN CALCULATED BY COLEMAN CHART NO. 2

REMARKS: * MID POINT OF CASING PERFS.

SP. G. OIL-.8443, 36.1° API @ 60°F

SP. G. GAS-.8880

PRODUCTION: 18.0 BO/D, 2.0 B#/D

CASE NO. 3432EXHIBIT NO. 7DATE 7/19/66