Case No.

1337

Application, Transcript,
Small Exhibits. Etc.

Appli[redacted] of [redacted] to amend Order
R-1093-A to permit the commingling of
Paddock prod. Justis Field - Lea Co.

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE NO. 1337

TRANSCRIPT OF HEARING

June 24, 1959

DEARNLEY - MEIER & ASSOCIATES
INCORPORATED
GENERAL LAW REPORTERS
ALBUQUERQUE, NEW MEXICO
3-6691 5-9546

# I N D E X

| WITNESS | DIRECT | CROSS | REDIRECT |
|---|---|---|---|
| JOHN H. HOOVER | 4 | 8 | |

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

Application of Gulf Oil Corporation for an order amending Order No. R-1093-A. Applicant, in the above-styled cause, seeks an order amending Order No. R-1093-A to permit the commingling of Paddock production with the commingled Blinebry, Drinkard, and Langlie-Mattix production from its Learcy McBuffington lease consisting of the S/2 of Section 13, Township 25 South, Range 37 East, Justis Field, Lea County, New Mexico.

CASE NO. 1337

BEFORE:

ELVIS A. UTZ, Examiner.

TRANSCRIPT OF PROCEEDINGS

MR. UTZ: Case 1337.

MR. KASTLER: My name is Bill Kastler. I'm appearing on behalf of Gulf Oil Corporation and our witness in this case is Mr. John H. Hoover, Production Engineer from Roswell.

MR. PAYNE: Case 1337. Application of Gulf Oil Corporation for an order amending Order No. R-1093-A. Let the record show this is the same witness who has testified in the previous case and who was sworn at that time.

JOHN H. HOOVER

called as a witness, having been previously sworn on oath,

testified as follows:

DIRECT EXAMINATION

BY MR. KASTLER:

Q Mr. Hoover, would you please explain what Gulf is seeking in its application in this case No. 1337?

A We are seeking for the permission to commingle another formation into an existing L.A.C.T. battery.

Q Do you have a lease plat which will show Gulf's lease involved and the well involved, and will you then explain the pay zones of the oil that is involved?

A This lease plat is labeled Exhibit No. 1. It shows the Learcy McBuffington lease outlined in dash lines, and is described as the south half of Section 13, Township 25 South, Range 37 East, Lea County, New Mexico.

Q Is Well No. 5 involved in this application?

A Yes, it is.

Q In what zone or zones is well No. 5 completed or proposed to be completed?

A It is in the Paddock and Ellenburger. The Ellenburger is now going into the L.A.C.T. battery, but we want permission to produce the Paddock into our sour L.A.C.T. battery.

Q Can you explain anything further as to the background of this application?

A On June the 18th, 1959, the New Mexico Oil

Conservation Commission issued Order No. A-1093-A in Case No. 1337, approving an additional lease automatic custody transfer system for the Drinkard, Blinebry, and Langlie-Mattix production on our Learcy McBuffington lease. We are now asking that this order be amended to also include the Paddock production.

Q Are all of these crudes known as sour crudes?

A Yes, they are.

Q Do you have schematic flow diagram which will illustrate the proposed installation?

A Yes, sir.

Q Is this what you have caused to be labeled Exhibit No. 2?

A Yes, it is.

Q Referring to Exhibit No. 2, would you now explain how the proposed commingling could occur?

A This test flow diagram I might say is identical to the diagram that was submitted in the Case 1337 when we had got approval for Blinebry, Drinkard and Langlie-Mattix production, so we have added the Paddock production. A duplicate would be at the top of the flow diagram. We have shown in various color schemes raw crude being pink, demersable crude being green, the water being blue, gas yellow and the non-measurable crude in brown. We propose to use the same equipment on our Paddock part of the battery as we are now using on the Blinebry and Drinkard, which

have been approved. We have a separator, a heater treater, a monitoring system with the crude going into the thousand barrel tank for delivery to the pipe line through the ACT equipment now in use. This system also ties into our central test facilities so that we are able to make adequate well tests at any time.

Q Mr. Hoover, is there a difference in the type of meter you are proposing to use in this installation?

A Yes. It might be noted that on our Blinebry and Drinkard where we have labeled 12-A and 12-B that we show a dump type meter, whereas on our Paddock labeled 12-C we have shown to be a DT meter. We are asking if this is approved that we be given authority to either use a positive displacement meter or a dump type meter.

Q In other words, Gulf requests that the order be so drawn that it may install either a PD meter on a dump type meter?

A Yes, sir.

Q Is there anything further you would like to explain in connection with Exhibit No. 2?

A No, sir, unless they would like me to trace the flow right through.

Q Have other operators in this section or offsetting this lease been notified of this application?

A Yes, sir.

Q If allowed would the commingling of Paddock oil with

the other sour crudes produced on this lease cause any waste?

A No, it would not.

Q Would correlative rights in any way be impaired?

A No, sir.

Q Are the royalty interests on this lease in common or among a common ownership?

A Yes, sir.

Q Would the granting of this application result in a substantial saving to the operator and to the pipe line?

A Yes, sir, it would. Of course, the pipe line is already connected to the battery. They would have no additional connection expenses.

Q Whereas if the commingling application were not granted there would be an additional connection expense?

A And by utilizing our existing battery we can install our Paddock equipment for approximately $8,000, whereas if we set a conventional type battery for just the Paddock production we would then estimate the cost to be about $12,000, or we can realize approximately $4,000 saving through this method of commingling.

Q Mr. Hoover, were Exhibits No. 1 and 2 prepared by you or at your direction and under your supervision?

A Yes, sir.

MR. KASTLER: Mr. Utz, I request that Exhibits No. 1 and 2 be admitted into evidence in this case.

MR. UTZ: Without objection they will be admitted.

MR. KASTLER: These are the only questions I have of Mr. Hoover.

BY MR. UTZ:

Q Mr. Hoover, all four of these zones are sour, are they not?

A Yes, sir, they are.

Q Have you ever experienced any difficulty with positive displacement meters in sour crude?

A No, sir, we have not.

Q You have used quite a few of them, have you?

A No, sir. We have not used the PD meter on our present equipment, being our dump type meters. We have had no corrosion troubles, and with our other equipment we have not experienced any corrosion. However, we have not used a PD meter.

Q What type of meters do you propose to use, corrosion resistant meters?

A Yes, sir.

CROSS EXAMINATION

BY MR. PAYNE:

Q Tentatively you propose to use dump type meters in this installation even though you want the order in the alternative?

A No, sir. We plan to try a PD meter. There is quite

a saving in cost.

Q Now, do they make these meters corrosion resistant?

A It is my understanding that they do.

MR. UTZ: Has your company at any point used PD meters in sour crude in like installations?

A Yes, sir, I'm sure they have. In fact, we use a PD meter on this installation on the pipe line equipment. It's a PD meter, it's a A.O. Smith, and there has been no corrosion trouble on that. Now, we have --

MR. UTZ: Is it a corrosion resistant meter?

A Yes, sir. We would probably not use that same type of meter. We would use a smaller meter on this installation here, but it would be a corrosion resistant.

MR. UTZ: Apparently you have satisfied yourself that corrosion resistant PD meters would be satisfactory?

A It has been on our ACT equipment.

MR. UTZ: Any other questions of the witness? If not, the witness may be excused.

(Witness excused.)

MR. UTZ: Are there any other statements to be made in this case? If not the case will be taken under advisement.

STATE OF NEW MEXICO )
: ss
COUNTY OF BERNALILLO )

I, Ned A. Greenig, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached transcript of proceedings before the Oil Conservation Commission was reported by me in stenotype and reduced to typewritten transcript by me and/or under my personal supervision and that the same is a true and correct record to the best of my knowledge, skill and ability.

Witness my hand and seal this the 8th day of July, 1959, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Ned A. Greenig
Notary Public

My Commission Expires:
May 5, 1963

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 1337, heard by me on June 24, 1959.

Examiner
New Mexico Oil Conservation Commission

DEARNLEY - MEIER & ASSOCIATES
GENERAL LAW REPORTERS
ALBUQUERQUE, NEW MEXICO
Phone CHapel 3-6691

OIL CONSERVATION COMMISSION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

June 25, 1971

Gulf Oil Company - U.S.
P. O. Box 670
Hobbs, New Mexico 88240

Attention: Mr. C. D. Borland

Administrative Order PC-416

Gentlemen:

Reference is made to your application for the amendment of Commission Orders R-1093, R-1093-A, R-1093-B and R-1093-C which authorized certain commingling on your Learcy McBuffington Lease in Section 13, Township 25 South, Range 37 East, Justis Field, Lea County, New Mexico, after separately metering the production from each pool. It is our understanding that all of the affected production is now of marginal nature and that you propose to delete the metering requirements from the subject orders.

Inasmuch as these orders were entered after notice and hearing, it is not possible to amend them except after notice and hearing. However, the proposed commingling with allocation on the basis of periodic well tests is, under the circumstances, eligible for administrative approval.

Pursuant to the authority granted me by Rule 303-B of the Commission Rules and Regulations, Gulf Oil Company, is hereby authorized to commingle Justis McKee, Ellenburger, Fusselman, and Montoya production in one battery and Justis Tubb-Drinkard and Blinebry and Langlie-Mattix production in another battery on its Learcy McBuffington Lease as described above, allocating the production to each well and to each pool on the basis of periodic well tests, provided however,

OIL CONSERVATION COMMISSION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501


P. O. Box 670
Hobbs, New Mexico 88240

that Gulf shall notify the Commission in the event that any well producing into either battery becomes capable of top allowable production.

Commission Orders R-1093, R-1093-A, R-1093-B, and R-1093-C, which are in conflict with this order, are hereby put in abeyance.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/DSN/dr
cc: Oil Conservation Commission - Hobbs
Oil & Gas Engineering - Hobbs

OIL CONSERVATION COMMISSION
P. O. BOX 2088
SANTA FE, NEW MEXICO

December 3, 1965

Gulf Oil Corporation
P. O. Box 900
Kermit, Texas 79745

Attention: Mr. H. F. Swannack

Administrative Order PC-283

Gentlemen:

Reference is made to your application dated August 16, 1965, for administrative approval of an exception to Rule 303 (a) of the Commission Rules and Regulations to permit the commingling of Montoya, Ellenburger, McKee, Fusselman, Blinebry, and Tubb-Drinkard production on your Learcy McDuffington Lease, which comprises the S/2 of Section 13, Township 25 South, Range 37 East, Lea County, New Mexico, after separately metering the production from each pool. It is our understanding that Commission Order No. R-1803-C dated July 7, 1959, permitted the commingling of intermediate grade production from the Ellenburger, McKee, Fusselman, and Montoya zones and also the commingling of sour crude from the Drinkard, Blinebry, and Paddock zones, after separately metering the production from each pool. We further understand that you now plan to run the Blinebry and Tubb-Drinkard production in with the intermediate production, with the resulting commingled production classified as an intermediate grade crude. The Paddock will be handled separately and sold as sour crude.

By the authority vested in me under the provisions of Rule 303 (b) of the Commission Rules and Regulations, you are hereby authorized to commingle the production from the aforesaid pools on said lease in the above-described manner. Provided,however, that the installation shall be operated in accordance with the provisions of the Commission Manual for the Installation and Operation of Commingling Facilities, including the provision for non-reset counters on the meters. Please notify the Hobbs District Office of the Commission at such time as this installation is complete in order that an inspection may be made of the installation prior to putting it in operation.

OIL CONSERVATION COMMISSION
P. O. BOX 2088
SANTA FE, NEW MEXICO

That portion of Order No. R-1093-C which authorized the two separate commingling installations is hereby put in abeyance.

Very truly yours,

A. L. PORTER, JR.
Secretary-Director

ALP:DSN:sg

cc: Oil Conservation Commission (with enclosure) - Hobbs
Oil & Gas Engineering Committee - Hobbs
Case File 1337

OIL CONSERVATION COMMISSION
P. O. BOX 2088
SANTA FE, NEW MEXICO

December 3, 1965



Seth, Montgomery, Federici & Andrews
Attorneys at Law
P. O. Box 2307
Santa Fe, New Mexico

Attention: Mr. Richard S. Morris

Gentlemen:

Reference is made to your letter of November 30, 1965, regarding the waterflood project authorized for Kewanee Oil Company by Order No. R-2954 in Case No. 3290.

It is our understanding that it is Kewanee's intention to inject water into the authorized wells through internally coated 2 3/8 inch steel tubing rather than the 2 inch extra heavy fiberglas tubing discussed at the hearing and authorized by our letter of September 8, 1965.

The Commission has no objection to the use of internally coated steel tubing in the injection wells of this project and our letter of September 8 is hereby amended to permit its use.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP:DSN:sg

cc: Oil Conservation Commission - Artesia
Mr. Frank Irby - State Engineer Office - Santa Fe

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. 1337
Order No. R-1093-C

APPLICATION OF GULF OIL
CORPORATION FOR TWO AUTOMATIC
CUSTODY TRANSFER SYSTEMS AND
FOR PERMISSION TO COMMINGLE
THE PRODUCTION FROM SEVERAL
SEPARATE POOLS IN LEA COUNTY,
NEW MEXICO

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 8:00 o'clock a.m. on June 24, 1959, at Santa Fe, New Mexico, before Elvis A. Utz, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 7th day of July, 1959, the Commission, a quorum being present, having considered the application, the evidence adduced, and the recommendations of the Examiner, Elvis A. Utz, 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 Learey McBuffington Lease consisting of the S/2 of Section 13, Township 25 South, Range 37 East, NMPM, Lea County, New Mexico.

(3) That the applicant proposes to commingle the intermediate grade crude production from the Justis-Ellenburger, Justis-McKee, Justis-Fusselman, and Justis-Montoya Pools from all wells presently completed or hereafter drilled on the said Learey McBuffington Lease after separately metering the production from each pool, and to pass this commingled production through an automatic custody transfer system.

(4) That the applicant further proposes to commingle the sour crude production from the Justis-Drinkard, Justis-Blinebry, Langlie-Mattix, and undesignated Paddock Pools from all wells presently completed or hereafter

drilled on the said Learcy McBuffington Lease after separately metering the production from each pool, and to pass this commingled production through another automatic custody transfer system.

(5) That approval of the subject application will neither cause waste nor impair correlative rights provided the production from each pool is separately metered prior to commingling.

IT IS THEREFORE ORDERED:

(1) That the applicant, Gulf Oil Corporation, be and the same is hereby authorized to commingle the intermediate grade crude production from the Justis-Ellenburger, Justis-McKee, Justis-Fusselman, and Justis-Montoya Pools from all wells presently completed or hereafter drilled on its Learcy McBuffington Lease consisting of the S/2 of Section 13, Township 25 South, Range 37 East, Justis Field, Lea County, New Mexico.

PROVIDED HOWEVER, That the production from each pool shall be separately metered prior to commingling.

(2) That after separately metering the production from each of the above-mentioned pools, the applicant be and the same is hereby authorized to pass this commingled production through an automatic custody transfer system.

(3) That the applicant be and the same is hereby authorized to commingle the sour crude production from the Justis-Drinkard, Justis-Blinebry, Langlie-Mattix, and undesignated Paddock Pools from all wells presently completed or hereafter drilled on its said Learcy McBuffington Lease.

PROVIDED HOWEVER, That the production from each pool shall be separately metered prior to commingling.

(4) That after separately metering the production from each of the above-mentioned pools, the applicant be and the same is hereby authorized to pass this commingled production through another automatic custody transfer system.

(5) That all meters shall be operated and maintained in such a manner as to ensure an accurate measurement of production at all times.

That all meters shall be checked for accuracy at intervals not to exceed one month until further direction by the Secretary-Director. Meters shall be calibrated against a master meter or against a test tank of measured volume and the results of such calibration filed with the Commission on the Commission form entitled "Meter Test Report."

(6) That the applicant shall install adequate testing facilities to permit the testing of all wells located on the said Learcy McBuffington Lease at least once each month to determine the individual production from each zone of each well.

(7) That Order Nos. R-1093, R-1093-A, and R-1093-B be and the same are hereby superseded.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JOHN BURROUGHS, Chairman

MURRAY E. MORGAN, Member

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

vem/

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

COPY

July 7, 1959

Mr. Bill Kastler
Gulf Oil Corporation
P. O. Box 669
Roswell, New Mexico

Dear Mr. Kastler:

On behalf of your client, Gulf Oil Corporation, we enclose two copies of Order No. R-1093-C issued July 7, 1959, by the Oil Conservation Commission in Case No. 1337.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Enclosures

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 6-26-59

CASE NO. 1337 HEARING DATE 6-24-59

**My recommendations for an order in the above numbered case(s) are as follows:**

Supercede orders. R-1093, ~~A, B~~ R-1093-A - R-1093-B.

1. Grant Gulf permission to commingle the Paddock with the ~~Blin~~ Justis - Blinebry, Langlie Mattix + Justis - Drinkard pools.
2. The results of superceding the orders should result in ~~the~~ R-1093-C permitting the following:
   a. Commingling intermediate grade crudes consisting of Justis - Fusselman, Justis - Montoya, Justis McKee and Justis - Ellenburger. approving LACT system for these pools.
   b. commingling sour crudes consisting of Justis - Blinebry, Langlie Mattix, Justis - Drinkard and ~~Paddock~~ Justis - Paddock pools. approving LACT system for these Pools.
3. Order heading should note 1093 - 1093-A & 1093-B. as being superceded.

Staff Member

R-37-E

R-38-E

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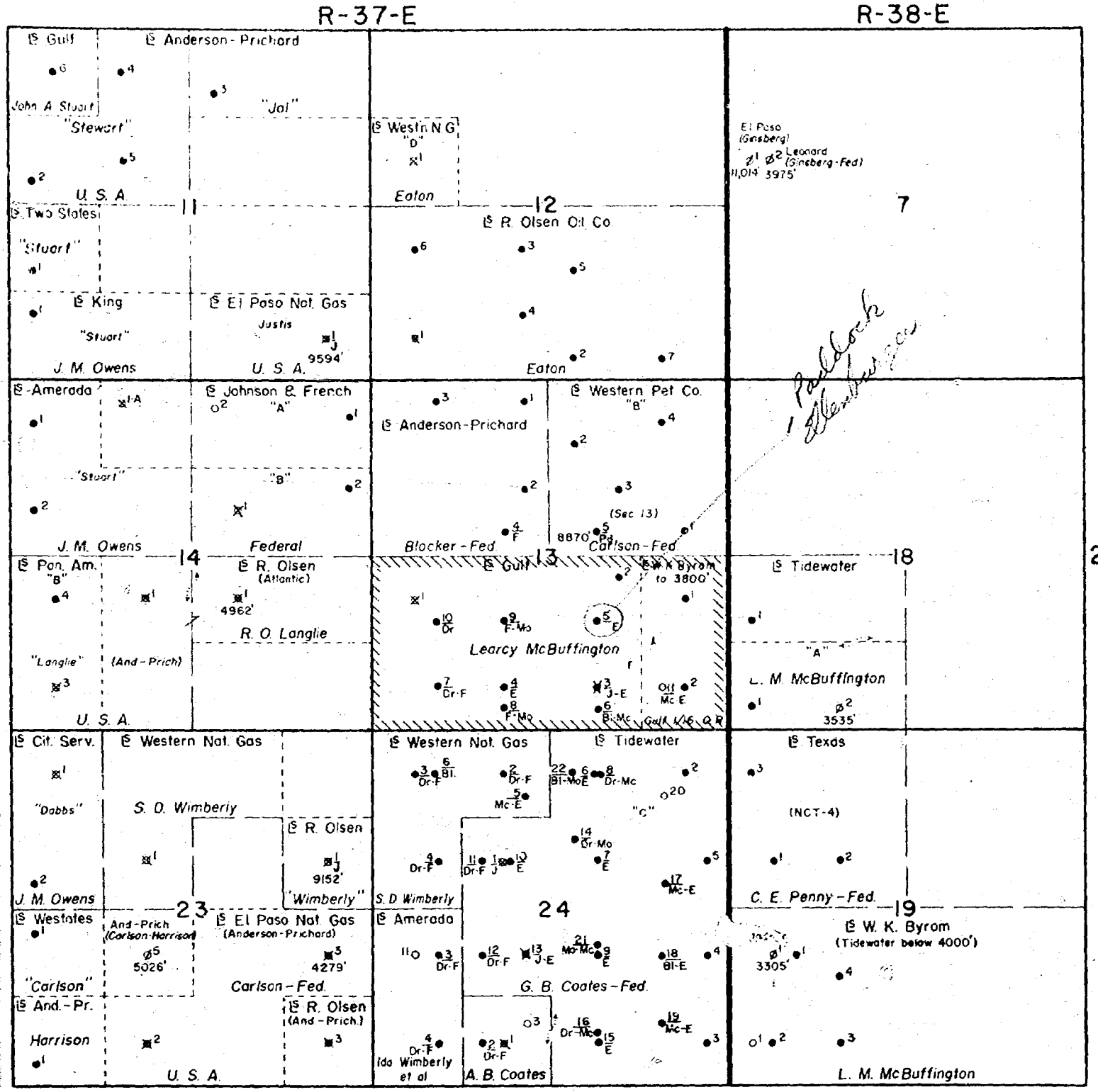



# LEASE PLAT

## LEARCY McBUFFINGTON

LEA COUNTY, NEW MEXICO

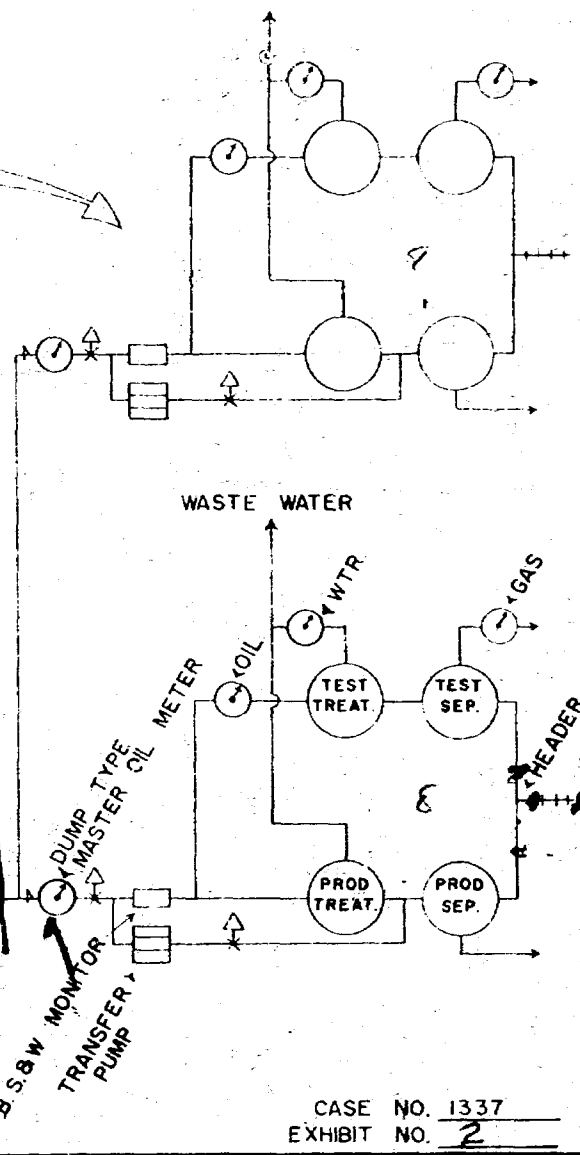
— LEGEND —

Pertinent Gulf Lease

Gulf Oil Corporation — Ft. Worth Prod. Div.
Petroleum Engineering — June 24, 1959

Case No. 1337
Exhibit No. 1

EACH PAY WILL HAVE
SAME EQUIPMENT




Filed case
1337
Nov 57

CASE NO. 1337
EXHIBIT NO. 2

# LEASE AUTOMATIC CUSTODY TRANSFER SYSTEM

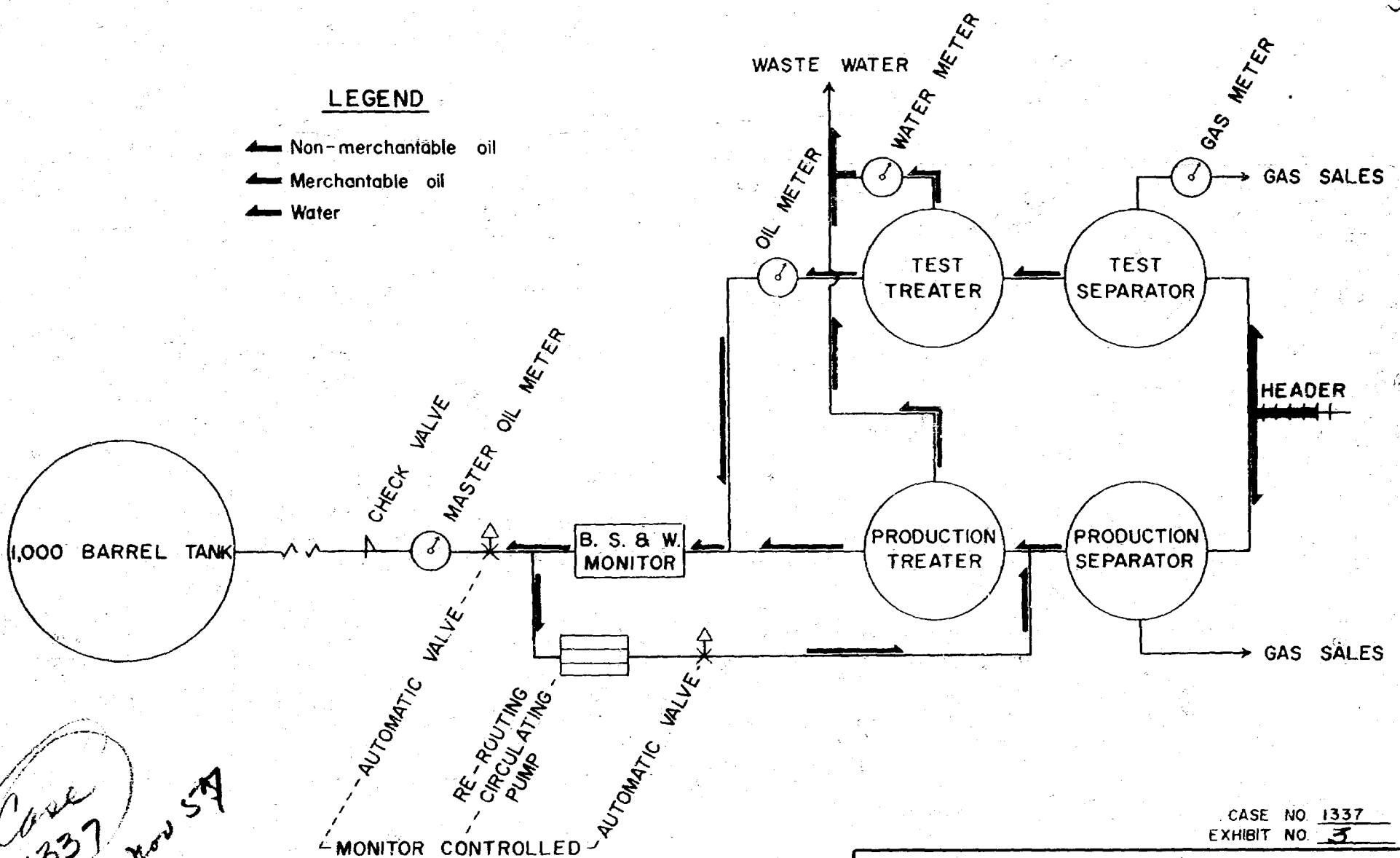
McBUFFINGTON LEASE, JUSTIS AREA
LEA COUNTY, NEW MEXICO

GULF OIL CORPORATION NOVEMBER 14, 1957

3

LEGEND

- Non-merchantable oil
- Merchantable oil
- Water




Case 1337 now 57

CASE NO. 1337
EXHIBIT NO. 3

# PRODUCTION AND TEST FLOW DIAGRAM FOR ONE PAY ZONE

McBUFFINGTON LEASE, JUSTIS AREA
LEA COUNTY, NEW MEXICO

GULF OIL CORPORATION NOVEMBER 14, 1957

No. 23-59

DOCKET: EXAMINER HEARING JUNE 24, 1959

OIL CONSERVATION COMMISSION - 1120 CERRILLOS ROAD, HIGHWAY DEPARTMENT AUDITORIUM, 8 a.m., SANTA FE, NEW MEXICO

The following cases will be heard before Elvis A. Utz, Examiner, or A. L. Porter, Jr., Secretary-Director.

CONTINUED CASE

CASE 1666: Application of Sunray Mid-Continent Oil Company for approval of a unit agreement. Applicant, in the above-styled cause, seeks an order approving its Central Bisti-Lower Gallup Sand Unit embracing approximately 7389 acres of federal, state, and allotted Indian lands in the Bisti-Lower Gallup Oil Pool, San Juan County, New Mexico.

NEW CASES

CASE 1692: Application of Continental Oil Company for the establishment of a non-standard gas proration unit in the Tubb Gas Pool. Applicant, in the above-styled cause, seeks the establishment of a 160-acre non-standard gas proration unit in the Tubb Gas Pool consisting of lot 15, the N/2 SE/4 and the SE/4 SE/4 of Section 3, Township 21 South, Range 37 East, Lea County, New Mexico, said unit to be dedicated to applicant's Hawk B-3 Well No. 2-T, located 1650 feet from the South and East lines of said Section 3.

CASE 1693: Application of Amerada Petroleum Corporation for three non-standard oil proration units. Applicant, in the above-styled cause, seeks an order establishing three 43.7 acre non-standard oil proration units for Mississippian production in the SE/4 of Section 11, Township 13 South, Range 38 East, Lea County, New Mexico. Applicant further seeks approval of one unorthodox oil well location.

CASE 1694: Application of Texas Crude Oil Company for an oil-oil dual completion. Applicant, in the above-styled cause, seeks an order authorizing it to dually complete its Big Eddy Unit 1-30 Well, located in the SE/4 SE/4 of Section 30, Township 20 South, Range 31 East, Eddy County, New Mexico, in such a manner as to produce oil from an undesignated Tansil pool and to produce oil from an undesignated Delaware pool through parallel strings of tubing.

CASE 1695: Application of Texaco, Inc. for a triple completion, for permission to commingle the production from three separate pools, and for the establishment of two non-standard gas proration units, Applicant, in the above-styled cause, seeks an order authorizing it to triple complete its A. H. Blinebry NCT-4 Well No. 1, located in the SE/4 SE/4 of Section 31, Township 22 South, Range 38 East, Lea County, New Mexico, in such a manner as to permit production from the Blinebry formation, production of gas from the Tubb Gas Pool, and production of oil from the Drinkard Pool through tubing, the annulus via cross-over, and tubing respectively. Applicant further seeks the establishment of a 160-acre non-standard gas proration unit in both the Tubb Gas Pool and Blinebry Gas Pool each consisting of the S/2 S/2 of said Section 31. Applicant further seeks permission to commingle the liquid production from the Blinebry, Tubb, and Drinkard formations underlying said acreage.

CASE 1696: Application of Caulkins Oil Company for a triple completion. Applicant, in the above-styled cause, seeks an order authorizing it to triple complete its Breech "F" Well No. PMD-8, located in the NE/4 NE/4 of Section 34, Township 27 North, Range 5 West, Rio Arriba County, New Mexico, in such a manner as to produce gas form the South Blanco-Pictured Cliffs Pool, gas from the Mesaverde formation, and gas from the Dakota formation through parallel strings of tubing.

CASE 1697: Application of Universal Oil Corporation for the creation of a new oil pool for Gallup production, and for an exception to Rules 104 and 107 for wells in said pool. Applicant, in the above-styled cause, seeks an order creating a new pool for Gallup production to be designated the Shiprock-Gallup Oil Pool and located in Sections 16 and 17, Township 29 North, Range 18 West, San Juan County, New Mexico. Applicant further seeks the promulgation of pool rules to permit wells in said pool to be located closer than 660 feet to the nearest producing well in exception to Rule 104, and to permit certain exceptions to the casing requirements of Rule 107 of the Commission Rules and Regulations.

CASE 1698: Application of Shell Oil Company for an exception to Rule 502 I (a). Applicant, in the above-styled cause, seeks an order which would exempt all wells in the Carson Unit Area and all other Shell wells in Township 25 North, Ranges 11 and 12 West, Bisti-lower Gallup Oil Pool, San Juan County, New Mexico, from the daily tolerance provisions of Rule 502 I (a) of the Commission Rules and Regulations.

CASE 1195: Application of Graridge Corporation for capacity allowables for certain wells in a water flood project. Applicant, in the above-styled cause, seeks an order authorizing capacity allowables for three wells in the project area of its water flood in the Caprock-Queen Pool in Lea and Chaves Counties, New Mexico.

CASE 1196: Application of Graridge Corporation for an order amending Order No. R-966. Applicant, in the above-styled cause, seeks an order amending Order No. R-966 to establish administrative procedures for development of its Artesia Water Flood Projects No. 2 and 3, Artesia Pool, Eddy County, New Mexico, and for approval of unorthodox locations for 27 wells in said projects, for authority to convert six wells in said projects to water injection, and for capacity allowables for five wells in said projects.

CASE 1185: Application of Graridge Corporation for an order amending Order No. R-952. Applicant, in the above-styled cause, seeks an order amending Order No. R-952 to establish administrative procedures for development of its Artesia Water Flood Project No. 1, Artesia Pool, Eddy County, New Mexico, and for approval of unorthodox locations for fifteen wells in said project, and for capacity allowables for five wells in said project.

CASE 1699: Application of J. W. Brown for an order authorizing a pilot water flood project. Applicant, in the above-styled cause seeks an order authorizing it to institute a pilot water flood project in the Brown Pool, Chaves County, New Mexico, by the injection of water into the Queen formation through four wells located in the SE/4 NW/4 of Section 26, Township 10 South, Range 26 East, Chaves County, New Mexico.

CASE 1337: Application of Gulf Oil Corporation for an order amending Order No. R-1093-A. Applicant, in the above-styled cause, seeks an order amending Order No. R-1093-A to permit the commingling of Paddock production with the commingled Blinebry, Drinkard, and Langlie-Mattix production from its Learcy McBuffington lease consisting of the S/2 of Section 13, Township 25 South, Range 37 East, Justis Field, Lea County, New Mexico.

CASE 1700: Application of Gulf Oil Corporation for permission to commingle the production from two separate leases: Applicant, in the above-styled cause, seeks an order authorizing it to commingle the production from the East Millman Queen-Grayburg Pool from two separate non-contiguous leases in Township 19 South, Range 28 East, Eddy County, New Mexico.

CASE 1703: Application of Tidewater Oil Company to commingle the production from several separate oil pools from two separate leases. Applicant, in the above-styled cause, seeks an order authorizing it to commingle the intermediate grade crudes produced from its Coates "D" Lease comprising the SE/4 SW/4 of Section 24, Township 25 South, Range 37 East, Justis Field, Lea County, New Mexico, with the commingled production of all intermediate grade crudes produced from its Coates "C" Lease comprising the E/2, SE/4 NW/4, and the NE/4 SW/4 of said Section 24 and to pass such commingled production through its automatic custody transfer system.

CASE 1704: Application of Cities Service Oil Company for capacity allowables for nine wells in a water flood project and for establishment of administrative procedure for expansion of said project. Applicant, in the above-styled cause, seeks an order authorizing capacity allowable for nine wells in the project area of its water flood project in the Caprock-Queen Pool, Chaves County, New Mexico. Said capacity allowables would be in exception to Order R-1128-A. Applicant further seeks establishment of an administrative procedure to expand said water flood project.

CASE 1705: Application of Neville G. Penrose, Inc., for a capacity allowable for one well. Applicant, in the above-styled cause, seeks an order authorizing a capacity allowable for its Alston Well No. 2, located in the NW/4 NW/4 of Section 11, Township 14 South, Range 31 East, Caprock Queen Pool, Chaves County, New Mexico, due to a response from the adjoining Cities Service Oil Company water flood project. Said capacity allowable would be in exception to Order R-1128-A.

pj

NEW MEXICO OIL CONSERVATION COMMISSION

Docket No. 23-59-a

In addition to the cases listed on Docket No. 23-59, the following cases will also be heard June 24, 1959, before Elvis A. Utz, Examiner, or A. L. Porter, Jr., Secretary-Director:

CASE 1701: Application of Gulf Oil Corporation for an oil-oil dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its Learcy McBuffington Well No. 5, located in the NW/4 SE/4, Section 13, Township 25 South, Range 37 East, Lea County, New Mexico, in such a manner as to produce oil from an undesignated Paddock Pool and oil from the Justis-Ellenburger Pool through parallel strings of tubing.

CASE 1702: Application of Humble Oil & Refining Company for an oil-gas dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its South Four Lakes Unit Well No. 6, located in the SW/4 SE/4, Section 2, Township 12 South, Range 34 East, Lea County, New Mexico, in such a manner as to produce oil from a Four Lakes-Pennsylvanian Pool extension and gas from a Four Lakes-Devonian Gas Pool extension through parallel strings of tubing.

CASE 1706: Application of Sunray Mid-Continent Oil Company for an order amending Order No. R-1414. Applicant, in the above-styled cause, seeks an order amending Order No. R-1414 to include the following additional acreage: NW/4 NW/4 of Section 6, Township 25 North, Range 12 West, and the SW/4 SW/4 of Section 31, Township 26 North, Range 12 West, San Juan County, New Mexico.

Place of hearing will be Highway Department Auditorium, 1120 Cerrillos Road, Santa Fe, New Mexico.

Time of hearing will be 8:00 o'clock a.m.

ig/

PETROLEUM AND ITS PRODUCTS

# GULF OIL CORPORATION

P. O. DRAWER 1290 · FORT WORTH 1, TEXAS

June 24

E. HOSFORD
DIVISION PRODUCTION COORDINATOR

May 20, 1959

FORT WORTH
PRODUCTION DIVISION

Order Will be 1093-B

Oil Conservation Commission
State of New Mexico
P. O. Box 871
Santa Fe, New Mexico

Re: Application for an Order Amending Order R-1093 and R-1093-A in Case 1337 for the Learcy McBuffington Lease Comprising the S/2 of Section 13, T-25-S, R-37-E, Lea County, New Mexico

Gentlemen:

Gulf Oil Corporation herewith makes application for an order amending NMOCC Orders R-1093 and R-1093-A in Case 1337, to permit the addition of the Paddock zone to the commingling approval previously granted for the Justis-Blinebry, Drinkard and Langlie-Mattix reservoirs underlying the subject lease.

In support of this application, Gulf states the following:

(a) Gulf Oil Corporation is the owner and operator of all producing rights below 3800 feet on the Learcy McBuffington Lease which consists of the S/2 of Section 13, T-25-S, R-37-E, Lea County, New Mexico.

(b) There is no diversity of royalty ownership underlying the above described lease.

(c) By Order R-1093 dated November 27, 1957, applicant was authorized to install central production and test facilities and automatic transfer equipment to receive and measure the sweet McKee and Ellenburger production from subject lease. This order further authorized the commingling of McKee and Ellenburger crudes after separate measurement.

(d) By Order R-1093-A dated June 18, 1958, applicant was authorized to install separate central production and test facilities and automatic transfer equipment to receive and measure the sour Blinebry, Drinkard and Langlie-Mattix production from subject lease. R-1093-A further authorized the commingling of these three sour crudes.

Gulf Keeler
Lucked Mailed
6-12-59

(e) In this case applicant will request permission to add the Paddock zone to the commingling approval previously granted for the Blinebry, Drinkard and Langlie-Mattix reservoirs.

(f) The granting of applicant's request in this case is in the interest of conservation, and will protect correlative rights.

(g) By copy of this letter all operators owning interests in the section involved and all offset operators, as well as the pipe line company concerned, are notified of Gulf's application.

Gulf Oil Corporation respectfully requests that this matter be set for hearing at an early date.

Respectfully submitted,

GULF OIL CORPORATION

By E. Hosford
Division Production Coordinator

cc: Oil Conservation Commission
P. O. Box 2045
Hobbs, New Mexico

Anderson-Prichard Oil Corporation
P. O. Box 196
Midland, Texas

W. K. Byrom
1000 Dal Paso
Hobbs, New Mexico

R. Olsen Oil Company
Drawer Z
Jal, New Mexico

Texaco, Inc.
P. O. Box 1270
Midland, Texas

Tidewater Oil Company
Att'n: J. B. Holloway
P. O. Box 1404
Houston, Texas

Western Natural Gas Company
Midland Tower Building
Midland, Texas

Western Petroleum Company
291 Sutter Street
San Francisco, California

Texas-New Mexico Pipe Line Company
P. O. Box 1510
Midland, Texas

Case No.

1337

Application, Transcript,
Small Exhibits, Etc.

CASE 1337: Hearing 11/19/58

BEFORE THE

OIL CONSERVATION COMMISSION

NOVEMBER 19, 1958

IN THE MATTER OF:

APPEICATION OF GULF OIL CORPORATION, CASE 1337.

TRANSCRIPT OF HEARING

DEARNLEY - MEIER & ASSOCIATES
GENERAL LAW REPORTERS
ALBUQUERQUE NEW MEXICO
Phone CHapel 3-6691

BEFORE THE
OIL CONSERVATION COMMISSION
NOVEMBER 19, 1958

IN THE MATTER OF:
Application of Gulf Oil Corporation for permission to commingle the production from two separate oil pools. Applicant, in the above-styled cause, seeks an order amending Order R-1093 and Order R-1093-A to authorize it to commingle the production from the Montoya formation with the production from the Ellenburger, Fusselman, and McKee Formations on its Learcy McBuffington Lease consisting of the S/2 of Section 13, Township 25 South, Range 37 East, Lea County, New Mexico. Case 1337

BEFORE:
Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: The next case will be case 1337.

MR. PAYNE: Case 1337, application of Gulf Oil Corporation for permission to commingle the production from two separate oil pools.

MR. KASTLER: My name is Bill Kastler. I am an attorney in Roswell, New Mexico, appearing for Gulf Oil Corporation.

This is the third hearing of this case to come before the Commission. The first hearing was held on November 14, 1957, with Mr. C. M. Bumpass, Gulf's Area Petroleum Engineer, as the chief witness. At that time we introduced Exhibits One, Two and Three, and the outcome of the case was the Commission's Order Number 1093.

The case came on for a second hearing on June 11, 1958. At that time Gulf proposed to add another pay into each of the separate tank batteries. The application was heard. We presented again exhibits and inadvertantly numbered them One, Two and Three.

The outcome of that case was approval as reflected in Commission Order 1093-A.

In introducing our exhibits today, if it is all right, with the Examiner, I would like to designate them as Number 7, 8, 9 and so forth, in order that there won't be quite so much confusion.

MR. UTZ: We would prefer to have it One-C, Two-C and so forth.

MR. KASTLER: Very well. My witness again is Mr. Bumpass, who has previously qualified as an expert witness, and I would like him sworn, please.

(Witness sworn.)

MR. KASTLER: Are Mr. Bumpass' qualifications acceptable?

MR. UTZ: Yes.

C. M. BUMPASS

the witness, having first been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. KASTLER:

Q Mr. Bumpass, what amendment of Orders Number 1093 and 1093-A is being sought here today by Gulf Oil Company?

A For the commingling of the Montoya with the Ellenburger, Fusselman and McKee Crude.

Q Are these sweet or sour crudes?

A Sweet crudes.

Q Have you prepared a lease plat for introduction into evidence here as Exhibit Number 1-C?

A Yes, sir.

Q Would you please mark that plat 1-C and distribute it to the Hearing Officer.

(Marked Gulf Exhibit 1-C for identification.)

Q (By Mr. Kastler) Mr. Bumpass, what have you caused to be shown on Exhibit Number 1-C in Case 1337?

A Exhibit 1-C shows the outline of the Learcy McBuffington Lease with the battery location indicated in the red square.

Q Is this a 320 acre lease in a compact unit designated as the south half of Section 13, Township 25 South, Range 37 East?

A Yes, sir.

Q Does the hatched line on Exhibit 1-C designate this lease?

A That's correct.

Q Will you state what if anything is shown on this plat?

A Well, of course, the well locations and the designated pay are indicated here on our property and the offset operators and their particular wells.

Q Which wells are completed in the Montoya zone or formation?

A In the Montoya, we have Well Number 8 and Well Number 9.

Q And those appear on the plat, is that correct?

A That's correct.

Q Now, have you prepared a schematic diagram which shows the present installation and the preposed installation if this order should be granted?

A Yes, sir, I have.

Q Would you please label that Exhibit Number 2-C and distribute copies of it to the Examiner?

(Marked Gulf's Exhibit 2-C for Identification.)

Q (By Mr. Kastler) Referring now to Exhibit 2-C, Mr. Bumpass, would you outline the direction of flow of the Montoya oil into the surge tank?

A The Montoya oil coming from the individual wells enters header here at Item 1 on this diagram as being the well head. The well that is on production will flow through this indicated red part here into Item Number 2 of the drawing, which is the production separator for the Montoya. The oil then will pass from the separator through, again the red line, into the production treater for the Montoya pay, where, on receiving the necessary treatment, the merchantable crude will be routed through this green line through the check valve, Item 18, and thence into the B. S. & W. Monitor, Item 10.

On leaving the B.S.&W. Monitor, the crude passes into the re-routing valve, which is normally open, into the master dump meter for this particular pay, that being Item 12-D. Here the oil

is measured in one barrel dump instruments and it is discharged into the common surge tanks of the area, this green line.

Q In the event this B. S. & W. Monitor finds the oil unsuitable, what then happens?

A When the B. S. & W. Monitor detects that the B. S. & W. contents is in excess of the pre-set in the monitor, the monitor will send a signal simultaneously to the re-routing valve, Item 9, and to Item 11, which is the electric powered circulating pump. The signal received by Item 9, the re-routing valve,, will terminate flow from that valve into the dump type meter, Item 12-D, and open the flow through this brown line returning the oil for further treatment, in the production treater, Item 8.

Q When the circulating valve or pump is in operation, what prevents that oil from backing up or cycling right in that square you have drawn around that pump?

A The check valve, Item 18, prevents the oil from leaving the discharge side of the pump and reversing the flow into the heater treater.

Q Does the unsuitable oil re-entering the heater treater for the second time have a higher pressure by route of the pump than the oil ordinarily flowing from the wells?

A Yes, it will have in order to enter the stream of flow into the separator.

Q If the unsuitability of the oil should arise by virtue of of the heater treater becoming inoperative or the fire going out,

other actions would occur towards shutting the wells down?

A Well, if the fire goes out, then, of course, we have terminated our treatment here of the crude; and as long as the B. S. & W. Monitor monitors excessive B. S. & W., this valve continues to be closed and you have the condition where you have a continual filling but no discharge from that valve, so to speak. That will cause the fluid level to rise in this production treater, Item 8, and when the fluid rises sufficiently to activate the high level float switch, Item 19, in the production treater, that will cause the signal to be sent to the individual header valves causing them to be closed. As they are closed, the wells are continuing to feed into the flow lines, and with a small pressure build up on the flow lines, the shut in valves in the head, at the well head will be closed.

Q What arrangements are there for testing the oil from the Montoya wells?

A For the testing of the Montoya wells, the flow is from the production through the test leg of the header over to the test separator, which is Item 3 in this drawing. Here the gas is removed from the oil and is metered through an integrating type meter at Item 21. The oil on leaving the separator passes into the test production treater where it receives the treatment to remove B. S. & W. The water is discharged on a water leg through a dump type water meter. The oil is discharged through the oil leg through a dump type oil meter. The oil meter in this

case being Item 5, and the water meter being Item 6.

Q Mr. Bumpass, during that operation's testing, would you explain the activity of the valves which are designed as Item 7?

A Yes. This cluster of valves here, Item 7, are automatic valves, and they are normally in a closed position. It will be noted from close examination of this drawing that there is one such valve on a line returning to each respective pay. When the well is placed on test automatically and routed through the test facilities, the same signal that places that well through the test leg of the header sends a signal and operates this valve here which allows it to open. Thereby we have a complete open circuit of the test leg through the dump test meter, oil meter, Item 5, and then back to Item 7, which will allow the oil to return to the line of flow of a normal Montoya production where it will re-enter it and be commingled with the regular production from the Montoya.

Q You have one test facility for all three pays?

A That is correct. The same sequence of operations would happen on these others as we have previously tested.

Q Is all of the flow from the Montoya pay zone supposed to pass through the dump meter for that zone?

A All of the Montoya, yes, after separation treatment and monitoring will pass through the dump meter, Item 12-D, for the Montoya pay prior to its entering into the common surge tank.

Q What experience has Gulf had to gauge the accuracy of its

dump type oil meters used on this lease --

MR. KASTLER: We have three exhibits here which will be proposed as Exhibits 3, 4, and 5-C respectively. Our final exhibit will be Exhibit 6-C.

(Marked Gulf's Exhibits 3-C, 4-C, 5-C and 6-C for identification.)

Q (By Mr. Kastler) Mr. Bumpass, would you refer to Exhibit 2-C if necessary to indicate the nature of tests that were made of the McKee pay zone.

A Well, the test of the McKee pay zone was essentially this. We set a test tank out here, "strap" test tank, and jumped across here, bypassed this line in order that we might test or determine the agreement between the dump meter of the McKee, which is Item 12-B in this drawing, we manually gauged in, I, believe, the low 500 barrel tank; and I might here --

Q -- Describe the tank.

A -- say that the Ellenburger was tested by comparing the volume meter with this dump meter, 12-A, into the 1,000 barrel surge tank, and for the Fusselman, we employed a test tank to check the volume of the meter, 12-C; and Exhibit 3-C here is a tabulation of the results of 15 tests taken on the McKee pay.

In this case, the test tank was a low 500 barrel tank. The test period was through from July '58 through October 12th; and in brief these tests show here that of a total test volume gauged manually 4,018.13 barrels, the metered volume through the

dump meter was 4,026.72 barrels, or a difference of 8.519 barrels more through the dump meter than was gauged manually.

Q What percentage of error does this give?

A Weighted average percent difference of plus 21 hundredths of one percent.

Q What were the readings of the test in the Ellenburger pay zone as are reflected in Exhibit 4-C?

A The test period here was approximately the same. We did have one additional test. The total gauge volume was 5,041.28 barrels against 5,061.71 barrels metered through the dump meter which gave a weighted average percent difference of plus 41 hundredths percent.

Q Would you now refer to Exhibit Number 5-C and describe your tests that were conducted in that Fusselman?

A Again the test period was approximately the same. The number of tests were approximately the same. The volume gauged manually was 4547.29 barrels. The volume metered through the dum meter was 4556.19 barrels, a difference of plus 8.90 barrels more metered than gauged, to give a weighted average percentage difference of plus two tenths of one percent.

Q Mr. Bumpass, by whom were these tests conducted?

A By our pumper. These tests here are, the temperature corrections were made on the manual gauging valves; and, of course, the dump meter, as in the previous test, is equipped with temperature and flash compensating valves.

Q Have any comparative tests been made between the dump meters on the other side, on the pipe line side of this?

A Yes. I would like to refer once again to Exhibit 2-C for a little statement regarding this test procedure. With these other test tanks up here, which have been necessary for that, necessary to operate using these test tanks, because we were to prove these meters before we could commingle; but in the case of the Ellenburger, it's connected into this tank here and actually serves as a test tank, but it is our permanent surge tank, and it is that tank that the pipe line is connected with the P.D. Meter here. Now, by taking, starting reading on this P.D. Meter and starting gauging on this tank and a starting meter reading on the dump meter and then by taking a final meter reading here, a final gauge volume and a final meter reading on the dump type meter, we have conducted two such tests whereby a good comparison is made between the agreement of the dump type meter with that of the P.D. Meter.

Q Are the results of those tests shown on Exhibit 6-C?

A Yes, they are.

Q Refer to 6-C and explain it.

A Essentially what this exhibit 6-C shows on the first test conducted under the method just described, the test of 9/29/58, there was 601.87 barrels metered by the P.D. Meter, and the difference in volume in the 1,000 barrel surge tank, the volume metered through the dump meter 601.20 barrels for a difference of

minus 67 hundredths of one barrel. This gives a dump meter percent error or a dump meter percent difference of 11 hundredths of one percent value.

Q In all of these tests that were conducted, with the exception of those where the P.D. Meter was compared, the comparison was made by the dump meter against manual gauging on the tanks?

A Yes, sir. We were assuming as a proof volume the hand gauging of the tank.

Q You are assuming the hand gauging of the tank is 100 percent accurate for the purpose of this test?

A Yes.

Q In your opinion, have the results as shown by these various tests proven that the dump meters are satisfactory to accurately dump the amount of oil produced from each pay zone?

A In my opinion, based on these tests, they are.

Q In there anything incompatible about the oil to be commingled?

A No, they are all classified as sweet crude.

Q Have all offset operators been given notice of Gulf's operation?

A Yes.

Q Has the pipe line purchaser been consulted about this proposal?

A Yes.

Q Are there any diversified interest owners involved in this

application to commingle?

A No.

Q If granted, will this protect correlative rights?

A Yes.

Q Will it be consistent with the State's policy of conservation of oil and the prevention of waste?

A Yes.

MR. KASTLER: That's all the questions I have of the witness on direct testimony. I would like to offer at this time Exhibits 1-C through 6-C inclusive into evidence.

MR. UTZ: Without objection, they will be received in evidence. Any questions of the witness?

EXAMINATION BY MR. PAYNE:

Q Mr. Bumpass, would you expect any order issued in this case to contain the same orders and restrictions as 1093 and 1093-A?

A Yes, sir. I presume you are referring to the monthly calibration, the monthly checking of these dump type meters.

Q Yes.

A Yes, we propose to do that.

EXAMINATION BY MR. FISCHER:

Q Mr. Bumpass, are these items on this hookup, are they gas or electrically operated?

A They are pneumatically controlled. I think I said pneumatic. They are electrically controlled and pneumatically operated.

EXAMINATION BY MR. UTZ:

Q Mr. Bumpass, you used the, I'll call it the index or manual gauging of the stock tanks as the criterion for gauging your meters. Did you do that because you felt that that was the ultimate in measuring, or could there have been error in the measuring of the stock tanks?

A Well, I think for anyone to say there can't be an error in manual gauging, why, that would be incorrect. We had a letter directing us to check this against the tanks, and this test we are submitting now is to comply with that proviso that you made. That was one additional reason, Mr. Utz, why we went through these two tests in the exhibits, feeling that there possibly is some, well, you get to the point of questioning which one is the accurate one. We are assuming that the hand gauging is. Looking at the results of these checked against the P.D. Meter, why, it would lead one to think that the dump meter is more accurate than hand gauging. It certainly is as accurate.

Q Do you think there will be any more pay zones in that lease?

A Well, I don't know. We contemplate another one or two.

MR. UTZ: Any other questions of the witness? If not, the witness will be excused.

(Witness excused.)

MR. UTZ: Is there any other statement to be made in this case? If not, the case will be taken under advisement.

STATE OF NEW MEXICO )
) ss
COUNTY OF BERNALILLO)

I, JOHN CALVIN BEVELL, 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 in Stenotype and reduced to typewritten transcript by me; that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this 26th day of November, 1958, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

John Calvin Bevell
NOTARY PUBLIC

My Commission Expires:
January 24, 1962

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 1337, heard by me on Nov. 19, 1958.

..... Examiner
New Mexico Oil Conservation Commission

DEARNLEY - MEIER & ASSOCIATES
GENERAL LAW REPORTERS
ALBUQUERQUE, NEW MEXICO
Phone CHapel 3-6691

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. 1337
Order No. R-1093-B

APPLICATION OF GULF OIL CORPORATION
FOR PERMISSION TO COMMINGLE THE
PRODUCTION FROM SEPARATE POOLS IN
LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on November 19, 1958, at Santa Fe, New Mexico, before Elvis A. Utz, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 26th day of November, 1958, the Commission, a quorum being present, having considered the application, the evidence adduced and the recommendations of the Examiner, Elvis A. Utz, 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 was authorized by Order Nos. R-1093 and R-1093-A to commingle the production from the McKee, Ellenburger, and Fusselman formations underlying its Learcy McBuffington lease consisting of the S/2 of Section 13, Township 25 South, Range 37 East, NMPM, Lea County, New Mexico, after the production from each zone has been separately metered.

(3) That the applicant now requests that Order Nos. R-1093 and R-1093-A be amended to permit the inclusion of the Montoya formation under the provisions of said orders.

(4) That approval of the application, subject to the limitations and requirements set forth in Order Nos. R-1093 and R-1093-A, will not cause waste nor impair correlative rights.

IT IS THEREFORE ORDERED:

That the application of Gulf Oil Corporation to amend Order Nos. R-1093 and R-1093-A to include the Montoya formation with the McKee, Ellenburger, and Fusselman formations under the provisions of said orders be and the same is hereby approved.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

EDWIN L. MECHEM, Chairman

MURRAY E. MORGAN, Member

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

ir/

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

November 20, 1958

COPY

Gulf Oil Corporation
P.O. Box 2167
Hobbs, New Mexico

ATTENTION: C. F. Taylor

Gentlemen:

We are in receipt of your letter of November 17, 1958, with which you enclosed the tabulations of the tests which you have recently conducted to determine the accuracy of the dump type meters which Gulf Oil Corporation is utilizing in its automatic battery in the Justis area of Lea County.

We concur with your determination that the accuracy of these dump meters is such as to warrant their use in this type of a system, subject to periodic tests to assure continued accuracy.

Gulf Oil Corporation is therefore hereby authorized to commence commingling the Ellenburger, McKee and Fusselman crudes as soon as desired. Furthermore, it would appear that the fifteen-test test series presently being conducted on the Montoya, Drinkard and Blinebry meters may be more than adequate. You are hereby authorized to discontinue this fifteen test series if desired, provided that the meters have indicated to date that they will perform satisfactorily.

Yours very truly,

A. L. Porter, Jr.
Secretary - Director

ALP/DSN:bp

CC-Oil Conservation Commission
Hobbs, New Mexico

PETROLEUM AND ITS PRODUCTS

# GULF OIL CORPORATION

November 17, 1958

FORT WORTH
PRODUCTION DIVISION

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

Dear Mr. Porter:

This letter transmits the results of the dump type meter test series as directed in your letter of March 3, 1958, regarding our McBuffington Automatic Battery in the multi-pay Justis Pool, Lea County, New Mexico. The order number in this matter is R-1093. As you will recall, the tests previously submitted in my letter of June 4, 1958, were not corrected for the effect of temperature nor were the dump meters equipped with compensators for temperature and flash factor. These factors have been incorporated in this series of tests.

Your letter provided for a minimum of fifteen tests of the meter on each pay prior to the commingling of any oil from the separate pools. The attached tabulations present the test data and show the meter accuracy as compared to the gauged volumes in a 1000 barrel storage tank, the prover vessel in the tests for the Ellenburger, and in the low-500 barrel storage tanks, the prover vessels in the tests for the McKee and Fusselman.

As shown on the attached tabulations, the weighted average of the percentages of error for the Ellenburger, McKee and Fusselman Pools are ∕ 0.41, ∕ 0.21 and ∕ 0.20, respectively. The accuracy of manual gauging is limited to the nearest one-quarter of an inch. This volume in the test tank, either a 1000-barrel or a low-500 barrel tank, is 1.35 barrels and represents 0.46% of a 295-barrel volume, which was the average test volume used in these 46 tests.

We conclude that the accuracy of our dump meters as reflected by the attached test data are certainly within tolerable limits for the accounting of the sweet crudes from the Ellenburger, McKee and Fusselman zones before commingling in common storage. Similar tests are being conducted on the dump meters of the Montoya, Drinkard and Blinebry crudes and they too will be submitted at the end of 15 tests. Provided you concur with the above conclusion, please advise so that commingling of the Ellenburger, McKee and Fusselman crudes can commence. We are at present bearing additional expense for rental tanks in order to adequately test the accuracy of the dump meter.

As directed in your letter, periodic tests of at least one per month will be conducted on each dump type meter and the results thereof will be submitted.

C. F. TAYLOR
AREA PRODUCTION SUPERINTENDENT

Attachment

cc: New Mexico Oil Conservation Commission
Hobbs, New Mexico

## PROOF OF DUMP METER ON LEARCY McBUFFINGTON LEASE - ELLENBURGER PAY
## TEST TANK - 1,000 BBLS.

| | | MANUAL GAUGING | | | | | | | | DUMP METER | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | | (3) | (4) | (5) | | | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | |
| Test No. | Date Starting 1953 | Starting Gauge Ft. | In. | Temp. | Corr. Vol. | Closing Gauge Ft. | In. | Temp | Corr. Vol. | Diff. in Volumes (7 - 4) | | Start | Final | Metered Vols. (10 - 9) | Vol. Diff. in Bbls. Meter vs Manual (11 - 8) | Per Cent Difference | Remarks |
| 1 | 9-24 | 9 | 7-1/2 | 82° | 639.27 | 13 | 0 | 81° | 856.59 | 217.32 | | 772.59 | 996.79 | 224.20 | + 6.88 | + 3.17 | |
| 2 | 9-28 | 7 | 5-3/4 | 92 | 498.83 | 11 | 5-3/4 | 81 | 758.71 | 259.88 | | 73.56 | 334.28 | 260.72 | + 0.84 | + 0.32 | |
| 3 | 9-30 | 7 | 3-3/4 | 85 | 489.92 | 13 | 5-1/2 | 88 | 882.92 | 393.01 | | 368.35 | 763.69 | 395.34 | + 2.33 | + 0.59 | Compensator had run out of Fluid. |
| 4 | 9-1 | 8 | 1 | 90 | 538.00 | 11 | 11-3/4 | 90 | 787.36 | 249.36 | | 285.00 | 536.00 | 251.00 | + 1.64 | + 0.66 | |
| 5 | 9-3 | 8 | 7 | 90 | 570.01 | 10 | 11-1/2 | 90 | 722.02 | 152.01 | | 888.00 | 1041.00 | 153.00 | + 0.99 | + 0.65 | |
| 6 | 9-6 | 8 | 4 | 86 | 555.14 | 12 | 1-1/2 | 90 | 796.69 | 241.55 | | 804.70 | 1049.50 | 244.80 | + 3.25 | + 1.35 | |
| 7 | 9-8 | 7 | 3-1/2 | 82 | 489.32 | 10 | 9-1/2 | 90 | 711.35 | 222.03 | | 479.00 | 702.00 | 223.00 | + 0.97 | + 0.44 | |
| 8 | 9-11 | 8 | 5 | 90 | 559.34 | 11 | 3 | 90 | 740.69 | 181.35 | | 115.44 | 297.46 | 182.02 | + 0.67 | + 0.37 | |
| 9 | 9-17 | 7 | 8-1/2 | 90 | 514.01 | 12 | 2-1/2 | 90 | 802.02 | 288.01 | | 7762.00 | 8053.00 | 291.00 | + 2.99 | + 1.04 | |
| 10 | 9-19 | 8 | 0-1/2 | 90 | 535.33 | 11 | 8-1/4 | 90 | 768.68 | 233.35 | | 8180.00 | 8416.00 | 236.00 | + 2.65 | + 1.14 | |
| 11 | 9-24 | 5 | 10-1/2 | 98 | 395.09 | 10 | 2 | 98 | 668.69 | 273.60 | | 252.42 | 525.92 | 273.50 | - 0.10 | - 0.04 | Flash factor adjustment changed. |
| 12 | 9-29 | 8 | 11-1/2 | 82 | 536.42 | 11 | 11 | 80 | 787.33 | 190.91<br>410.96<br>501.87 | | 2440.65 | 3041.85 | 601.20 | - 0.67 | - 0.11 | |
| | Metered thru P.D.Meter, 412.2 X 0.99698 | | | | | | | | | | | | | | | | |
| 13 | 10-1 | 7 | 5 | 74 | 499.31 | 10 | 10-1/4 | 76 | 720.36 | 221.05 | | 751.00 | 972.00 | 221.00 | - 0.05 | - 0.02 | |
| 14 | 10-6 | 7 | 2-1/2 | 70 | 486.69 | 10 | 9-1/2 | 70 | 718.57 | 231.68 | | 735.65 | 965.15 | 229.50 | - 2.18 | - 0.94 | Fluid low in compensator. |

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 4-C
CASE NO. 1332

## PROOF OF DUMP METER ON LEARCY McBRIDE-HUNTINGTON LEASE - SCHLUMBERGER PAY
## TEST TANK - 1,000 BBLS.

| | MANUAL GAUGING | | | | | | | | DUMP METER | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | | (3) | (4) | (5) | | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | |
| TEST NO. | DATE STARTED 1952 | STARTING GAUGE FT. | IN. | TEMP. | CORR. VOL. | CLOSING GAUGE FT. | IN. | TEMP | CORR. VOL. | DIFF.IN VOLUMES (7 - 4) | START | FINAL | METERED VOLS. (10 - 9) | VOL.DIFF. IN BBLS. METER VS MANUAL (11 - 8) | PER CENT DIFFERENCE | REMARKS |
| 25 | 10-14 | 7 | 11 | 90 | 527.33 | 13 | 11 | 82 | 915.07 | 387.74 | 7857.85 | 8245.45 | 387.60 | - 0.14 | - 0.04 | |
| 26 | 11-11 | 8 | 6-3/8 | 80 | 569.56 | 8 | 11-3/4 | 80 | 598.36 | 28.80 | 7174.10 | | | | | |
| | Metered thru P.D.Meter | | | | 862.9 X 0.99510 | | | | | 858.67 | | 8061.93 | | | | |
| | | | | | | | | | | 887.47 | | | 887.83 | ± 0.36 | ± 0.04 | |
| | | | | | TOTAL VOLUME GAUGED: | | | | | 5,041.28 | TOTAL TEST VOLUME METERED: | | 5,061.71 | ±20.43 | | |

WEIGHTED AVERAGE PER CENT DIFFERENCE: $\frac{\pm 20.43}{5,041.28} \times 100 = \pm 0.41\%$

## PROOF OF DUMP METER ON LEARCY McBUFFINGTON LEASE - FUSSELMAN PAY
## TEST TANK - LOW 500 BBL.

| | MANUAL GAUGING | | | | | | | | | DUMP METER | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | | (3) | (4) | (5) | | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | |
| TEST No. | DATE STARTED 1958 | STARTING GAUGE FT. | IN. | TEMP. | CORR. VOL. | CLOSING GAUGE FT. | IN. | TEMP | CORR. VOL. | DIFF. IN VOLUMES (7 - 4) | START | FINAL | METERED VOLS. (10 - 9) | VOL. DIFF. IN BBLS. METER VS MANUAL (11 - 8) | PER CENT DIFFERENCE | REMARKS |
| 1 | 7-28 | 2 | 9-1/2 | 88° | 179.00 | 6 | 9-1/2 | 90° | 434.78 | 255.78 | 66.00 | 322.80 | 256.80 | ∮ 1.02 | ∮ 0.40 | |
| 2 | 8- 7 | 3 | 1-1/4 | 88 | 199.04 | 7 | 3 | 88 | 464.57 | 265.53 | 87.00 | 352.33 | 265.33 | - 0.20 | - 0.08 | |
| 3 | 8-12 | 0 | 11-1/2 | 86 | 61.51 | 4 | 7-3/4 | 86 | 298.13 | 236.62 | 54.30 | 291.34 | 237.04 | ∮ 0.42 | ∮ 0.18 | |
| 4 | 8-16 | 3 | 7-1/2 | 90 | 232.20 | 5 | 11-3/4 | 90 | 382.81 | 150.61 | 13.00 | 164.00 | 151.00 | ∮ 0.39 | ∮ 0.26 | |
| 5 | 8-29 | 0 | 11 | 80 | 59.01 | 5 | 10 | 80 | 375.39 | 316.38 | 25.10 | 343.60 | 318.50 | ∮ 2.12 | ∮ 0.67 | |
| 6 | 9- 4 | 0 | 11 | 80 | 59.01 | 5 | 7-3/4 | 80 | 363.33 | 304.32 | 22.00 | 329.70 | 307.70 | ∮ 3.38 | ∮ 1.11 | |
| 7 | 9- 8 | 1 | 1-1/2 | 78 | 72.50 | 7 | 1-1/2 | 80 | 458.42 | 385.92 | 71.70 | 459.45 | 387.75 | ∮ 1.83 | ∮ 0.47 | |
| 8 | 9-15 | 3 | 6 | 82 | 225.10 | 7 | 4 | 82 | 471.34 | 246.24 | 99.10 | 343.30 | 244.20 | - 2.04 | - 0.83 | |
| 9 | 9-16 | 1 | 4 | 80 | 85.84 | 4 | 10 | 78 | 311.41 | 225.57 | 543.00 | 768.00 | 225.00 | - 0.57 | - 0.25 | |
| 10 | 9-22 | 1 | 3 | 84 | 80.31 | 7 | 2 | 86 | 459.70 | 379.39 | 23.30 | 402.90 | 379.60 | ∮ 0.21 | ∮ 0.06 | |
| 11 | 10- 5 | 0 | 11 | 70 | 59.31 | 6 | 7-1/2 | 76 | 427.10 | 367.79 | 6744.10 | 7114.70 | 370.60 | ∮ 2.81 | ∮ 0.76 | |
| 12 | 10- 6 | 0 | 11 | 70 | 59.31 | 7 | 2 | 88 | 459.24 | 399.93 | 114.70 | 515.12 | 400.42 | ∮ 0.49 | ∮ 0.12 | |
| 13 | 10-11 | 3 | 1-3/4 | 74 | 203.12 | 7 | 4 | 70 | 474.20 | 271.08 | 663.33 | 931.20 | 267.87 | - 3.21 | - 1.18 | |
| 14 | 10-14 | 0 | 11 | 60 | 59.60 | 5 | 9-3/4 | 80 | 374.04 | 314.44 | 7931.20 | 8245.70 | 314.50 | ∮ 0.06 | ∮ 0.02 | |
| 15 | 10-19 | 0 | 11 | 62 | 59.54 | 7 | 6-3/4 | 77 | 487.23 | 427.69 | 364.75 | 794.63 | 429.88 | ∮ 2.19 | ∮ 0.51 | |
| | | | | | | | | TOTAL TEST VOLUME GAUGED | | 4547.29 | | | TOTAL TEST VOLUME METERED | 4556.19 | ∮ 8.90 | |

WEIGHTED AVERAGE PERCENT DIFFERENCE: $\frac{\not 8.90}{4,547.29} \times 100 = \not 0.20\%$

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. S-5
CASE NO. 1337

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

November 28, 1958

COPY

Mr. Bill Kastler
Gulf Oil Corporation
P.O. Box 669
Roswell, New Mexico

Dear Mr. Kastler:

We enclose two copies of Order R-1093-B issued November 26, 1958, by the Oil Conservation Commission in Case 1337, which was last heard on November 19th at Santa Fe before an examiner.

Very truly yours,

A. L. Porter, Jr.
Secretary - Director

bp
Encls.

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date 11-19-58

CASE NO. 1337 HEARING DATE 11-20-58

My recommendations for an order in the above numbered case(s) are as follows:

1. Grant the ~~request~~ requested addition to R-1093-A ~~as~~
2. This will add the Justis Montoya zone to the McKee, Ellenburger, Devonian Zones for this lease. ( Leary McBuffington
3. Use usual style order.

Staff Member

No. 32-58

DOCKET: EXAMINER HEARING NOVEMBER 19, 1958

Oil Conservation Commission 9 a.m., Mabry Hall, State Capitol, Santa Fe, New Mexico

The following cases will be heard before Elvis A. Utz, Examiner:

CASE 1337: Application of Gulf Oil Corporation for permission to commingle the production from two separate oil pools. Applicant, in the above-styled cause, seeks an order amending Order R-1093 and Order R-1093-A to authorize it to commingle the production from the Montoya formation with the production from the Ellenburger, Fusselman, and McKee formations on its Learcy McBuffington Lease consisting of the S/2 of Section 13, Township 25 South, Range 37 East, Lea County, New Mexico.

CASE 1548: Application of Shell Oil Company for an automatic custody transfer system and for permission to commingle the production from four separate leases. Applicant, in the above-styled cause, seeks an order authorizing it to install an automatic custody transfer system and to commingle the production from the Vacuum Pool on four State Leases located in Sections 29, 30, and 31, Township 17 South, Range 35 East, Lea County, New Mexico.

CASE 1549: Application of Tidewater Oil Company for two non-standard gas proration units. Applicant, in the above-styled cause, seeks an order establishing a 120-acre non-standard gas proration unit, in both the Tubb Gas Pool and the Blinebry Gas Pool, each to comprise the S/2 SE/4 and SE/4 SW/4 of Section 36, Township 21 South, Range 37 East, Lea County, New Mexico, and to be dedicated to applicant's State "Q" Well No. 1, located in the SE/4 SW/4 of said Section 36, which well is dually completed in the aforesaid pools.

CASE 1550: Application of Tidewater Oil Company to commingle the production from several separate oil pools. Applicant, in the above-styled cause, seeks an order authorizing it to commingle the production from the Ellenburger, McKee, Fusselman, Montoya and any other pool or pools encountered which produces oil of similar qualities on its Coates "C" Lease comprising the E/2 and SE/4 NW/4 and NE/4 SW/4 of Section 24, Township 25 South, Range 37 East, Lea County, New Mexico. Applicant further requests permission to commingle production from the Drinkard formation on said lease with any other pool or pools encountered which produce sour crudes. Applicant proposes to separately meter production from each pool prior to being commingled. Applicant further seeks permission to produce more than sixteen wells into said common facilities.

CASE 1551: Application of Pan American Petroleum Corporation for permission to commingle the production from three separate leases and for permission to produce more than sixteen wells into a common tank battery. Applicant, in the above-styled cause, seeks an order authorizing it to commingle the production from the Empire-Abo Pool from the three separate Federal leases hereinafter described:

LC-065478-B N/2 NW/4, NE/4, N/2 SE/4, and E/2 SW/4 Section 3; E/2 Section 10

NM-025604 S/2 SE/4 Section 3; W/2 Section 10

LC-067858 N/2 and SW/4 Section 11

all in Township 18 South, Range 27 East, Eddy County, New Mexico. Applicant further requests authority to produce more than sixteen wells into the common tank battery for said leases. Applicant proposes to separately meter production from each of the above-discribed leases prior to being commingled.

CASE 1552: Application of Pan American Petroleum Corporation for permission to commingle the production from four separate leases. Applicant, in the above-styled cause, seeks an order authorizing it to commingle the production from the Abo formation adjacent to the Empire-Abo Pool from the four separate State leases hereinafter discribed:

E-5461 NW/4 NW/4 Section 2

B-7244-30 S/2 NW/4, NW/4 SW/4, and SE/4 SW/4 Section 2

B-8814-12 NE/4 SW/4 Section 2

E-7833 SW/4 SE/4 Section 2

all in Township 18 South, Range 27 East, Eddy County, New Mexico. Applicant proposes to separately meter the production from each of said leases prior to being commingled.

CASE 1553: Application of The Texas Company for a dual completion and for permission to commingle the liquids produced from two separate pools. Applicant, in the above-styled cause, seeks an order authorizing it to dually complete its Peery-Federal (NCT-1) Well No. 1 located 1980 feet from the North and East lines of Section 29, Township 15 South, Range 30 East, Chaves County, New Mexico, in such a manner as to permit the production of oil from an undesignated Devonian oil pool and gas from an undesignated Ellenburger Gas Pool through parallel strings of tubing. Applicant further requests permission to commingle the liquids and low pressure gas produced from the Devonian and Ellenburger formations from all existing and future wells on its Peery-Federal Lease which comprises all of said Section 29.

CASE 1554: Application of The Texas Company for an automatic custody transfer system and for permission to commingle the production from five separate leases. Applicant, in the above-styled cause, seeks an order authorizing it to install an automatic custody transfer system and to commingle the production from the Bisti-Lower Gallup Oil Pool on five Navajo Allottee Leases located in Sections 14, 15, and 23, Township 25 North, Range 11 West, San Juan County, New Mexico. Applicant proposes to separately meter the production from each lease prior to being commingled.

CASE 1555: Application of H. K. Riddle for two non-standard oil proration units and two unorthodox oil well locations. Applicant, in the above-styled cause, seeks an order establishing a 61-acre non-standard oil proration unit consisting of Lots 1, 2, 3, and 4 of Section 18, said unit to be dedicated to a well to be drilled on an unorthodox location 1980 feet from the South line and 252 feet from the West line of said Section 18; applicant further seeks

the establishment of a 63-acre non-standard oil proration unit consisting of Lots 1, 2, 3, and 4 of Section 19, said unit to be dedicated to a well to be drilled on an unorthodox location 660 feet from the North line and 256 feet from the West line of said Section 19, all in the Bisti-Lower Gallup Oil Pool, Township 26 North, Range 13 West, San Juan County, New Mexico.

CASE 1556: Application of Chaco Oil Company for an exception to Rule 104 of the Commission Rules and Regulations. Applicant, in the above-styled cause, seeks an order authorizing it to drill four additional oil wells in the Red Mountain-Mesaverde Oil Pool in the SW/4 SE/4 of Section 20 and the NW/4 NE/4 of Section 29, Township 20 North, Range 9 West, McKinley County, New Mexico.

CASE 1557: Application of Cities Service Oil Company for a dual completion. Applicant, in the above-styled cause, seeks an order authorizing it to dually complete its State "P" No. 3 Well located 990 feet from the South and West lines of Section 32, Township 22 South, Range 38 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Blinebry Oil Pool and from an undesignated Glorieta oil pool through parallel strings of tubing.

ig/

Case 1337

Exam Hearing

PETROLEUM AND ITS PRODUCTS

MAIN OFFICE OCC

# GULF OIL CORPORATION

P. O. DRAWER 1290 · FORT WORTH 1, TEXAS

E. HOSFORD
DIVISION PRODUCTION COORDINATOR

FORT WORTH
PRODUCTION DIVISION

October 22, 1958

Oil Conservation Commission
State of New Mexico
P. O. Box 871
Santa Fe, New Mexico

Re: Application for an Order Amending Order R-1093 and R-1093-A in Case 1337 for the Learcy McBuffington Lease Comprising the S/2 of Section 13, T-25-S, R-37-E, Lea County, New Mexico

Gentlemen:

Gulf Oil Corporation herewith makes application for an order amending NMOCC Order R-1093 and R-1093-A in Case 1337, to permit the addition of the Montoya zone to the commingling approval previously granted for the Justis-Ellenburger, Fusselman and McKee reservoirs underlying the subject lease.

In support of this application, Gulf states the following:

(a) Gulf Oil Corporation is the owner and operator of all producing rights below 3800 feet on the Learcy McBuffington Lease which consists of the S/2 of Section 13, T-25-S, R-37-E, Lea County, New Mexico.

(b) There is no diversity of royalty ownership underlying the above described lease.

(c) By Order R-1093 dated November 27, 1957, applicant was authorized to install central production and test facilities and automatic transfer equipment to receive and measure the McKee and Ellenburger production from subject lease. Applicant was further authorized by said order to commingle the McKee and Ellenburger formations after separate measurement.

Docket Mailed 11-5-58 BP

(d) By Order R-1093-A dated June 18, 1958, the Commission approved Gulf's request to include the Fusselman formation under the provisions of R-1093, thereby authorizing the commingling of Fusselman crude with the Justis Ellenburger and McKee production.

(e) In this case applicant will request permission to add the Montoya zone to the commingling approval previously granted for the Ellenburger, Fusselman and McKee reservoirs.

(f) The granting of applicant's request in this case is in the interest of conservation, and will protect correlative rights.

(g) By copy of this letter all operators owning interests in the section involved and all offset operators, as well as the pipe line company concerned, are notified of Gulf's application.

Gulf Oil Corporation respectfully requests that this matter be set for hearing at an early date.

Respectfully submitted,

GULF OIL CORPORATION

By E. Hazlard r
Division Production Coordinator

cc: Oil Conservation Commission
P. O. Box 2045
Hobbs, New Mexico

Anderson-Prichard Oil Corporation
P. O. Box 196
Midland, Texas

W. K. Byrom
1000 Dal Paso
Hobbs, New Mexico

R. Olsen Oil Company
Drawer Z
Jal, New Mexico

The Texas Company
P. O. Box 1270
Midland, Texas

Tidewater Oil Company
Att'n: J. B. Holloway
P. O. Box 1404
Houston, Texas

Western Natural Gas Company
Midland Tower Building
Midland, Texas

Western Petroleum Company
291 Sutter Street
San Francisco, California

Texas-New Mexico Pipe Line Company
P. O. Box 1510
Midland, Texas

R-37-E

R-38-E

T 25 S

Gulf
Anderson-Prichard
"Jal"
John A. Stuart
"Stewart"
Western N.G.
"D"
El Paso (Ginsberg)
Ø1 Ø2 Leonard (Ginsberg-Fed)
11,014' 3975'
7
Eaton
12
R. Olsen Oil Co.
U. S. A.
Two States
"Stuart"
King
"Stuart"
El Paso Nat. Gas
Justis
9594'
J. M. Owens
U. S. A.
Eaton
Amerada
"Stuart"
Johnson & French
"A"
"B"
Anderson-Prichard
Western Pet Co.
"B"
(Sec. 13)
8870'
Carlson-Fed.
Blocker-Fed
13
18
Tidewater
J. M. Owens
14
Federal
R. Olsen (Atlantic)
4962'
Pan Am.
"B"
R. O. Langlie
"Langlie"
(And-Prich)
U. S. A.
Gulf
Learcy McBuffington
Battery location
L. M. McBuffington
Ø2 3535'
Cit. Serv.
"Dobbs"
Western Nat. Gas
S. D. Wimberly
R. Olsen
9152'
"Wimberly"
Western Nat. Gas
Tidewater
Texas
(NCT-4)
C. E. Penny-Fed.
19
W. K. Byrom (Tidewater)
And-Pr.
3305'
J. M. Owens
Westates
23
El Paso Nat. Gas (Anderson-Prichard)
4279'
And-Prich. (Carlson-Harrison)
Ø5 5026'
Carlson-Fed.
"Carlson"
And.-Pr.
R. Olsen (And.-Prich.)
Harrison
U. S. A.
S. D. Wimberly
Amerada
24
G. B. Coates-Fed.
Ida Wimberly et al
A. B. Coates
L. M. McBuffington

# LEASE PLAT
## LEARCY McBUFFINGTON
LEA COUNTY, NEW MEXICO

Gulf Oil Corporation
Fort Worth Prod. Div.

Nov. 19, 1958

LACT. Facilities

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
Gulf EXHIBIT NO. 1-C
CASE NO. 1337

Case No. 1337
Exhibit No. 1-C

Hearing

## PROOF OF DUMP METER ON LEARCY McDUFFINGTON LEASE - McKEE PAY
## TEST TANK - LOW 500 BBLS.

| | MANUAL GAUGING | | | | | | | | DUMP METER | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | | (3) | (4) | (5) | | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | |
| TEST NO. | DATE STARTED 1958 | STARTING GAUGE FT. | IN. | TEMP. | CORR. VOL. | CLOSING GAUGE FT. | IN. | TEMP | CORR. VOL. | DIFF.IN VOLUMES (7 - 4) | START | FINAL | METERED VOLS. (10 - 9) | VOL.DIFF. IN BBLS. METER VS MANUAL (11 - 8) | PER CENT DIFFERENCE | REMARKS |
| 1 | 7-23 | 2 | 1-3/8 | 92° | 135.31 | 6 | 4 | 90° | 405.47 | 270.16 | 266.80 | 538.85 | 272.05 | ∮ 1.89 | ∮ 0.70 | |
| 2 | 8-18 | 1 | 2 | 90 | 74.73 | 4 | 8-3/4 | 90 | 302.86 | 228.13 | 826.15 | 1056.25 | 230.10 | ∮ 1.97 | ∮ 0.86 | |
| 3 | 8-27 | 1 | 2 | 80 | 75.11 | 5 | 0 | 80 | 321.81 | 246.70 | 44.0 | 290.00 | 246.00 | - 0.70 | - 0.28 | |
| 4 | 9-4 | 1 | 4 | 80 | 85.84 | 6 | 6-3/4 | 80 | 422.26 | 336.42 | 50.00 | 387.00 | 337.00 | ∮ 0.58 | ∮ 0.17 | |
| 5 | 9-5 | 1 | 9-1/2 | 80 | 115.35 | 6 | 9-1/2 | 78 | 437.43 | 322.08 | 43.10 | 368.50 | 325.40 | ∮ 3.32 | ∮ 1.03 | |
| 6 | 9-9 | 3 | - | 78 | 193.33 | 5 | 5-1/2 | 80 | 351.28 | 157.95 | 84.50 | 244.10 | 159.60 | ∮ 1.65 | ∮ 1.04 | |
| 7 | 9-12 | 2 | 7 | 80 | 166.32 | 7 | 1-1/2 | 80 | 458.42 | 292.10 | 44.10 | 338.20 | 294.10 | ∮ 2.00 | ∮ 0.68 | |
| 8 | 9-15 | 1 | 6-1/2 | 82 | 99.15 | 5 | 10 | 78 | 375.77 | 276.62 | 6150.20 | 6426.00 | 275.80 | - 0.82 | - 0.30 | |
| 9 | 9-18 | 0 | 10 | 80 | 53.64 | 7 | 8 | 78 | 493.74 | 440.10 | 6435.00 | 6875.00 | 440.00 | - 0.10 | - 0.02 | |
| 10 | 9-23 | 1 | 2-1/2 | 82 | 77.71 | 5 | 1-1/2 | 76 | 330.47 | 252.76 | 6884.00 | 7135.00 | 251.00 | - 1.76 | - 0.70 | |
| 11 | 9-26 | 1 | 6-1/4 | 74 | 98.20 | 3 | 10-1/4 | 66 | 249.86 | 151.66 | 157.58 | 309.24 | 151.66 | 0.00 | 0.00 | |
| 12 | 10-1 | 3 | 10-1/4 | 60 | 250.61 | 6 | 2-1/4 | 58 | 402.53 | 151.92 | 309.24 | 461.70 | 152.46 | ∮ 0.54 | ∮ 0.36 | |
| 13 | 10-6 | 1 | 5-1/2 | 76 | 94.06 | 4 | 6 | 78 | 289.96 | 195.90 | 7814.50 | 8010.40 | 195.90 | 0.00 | 0.00 | |
| 14 | 10-8 | 0 | 10 | 84 | 53.54 | 6 | 11 | 70 | 447.28 | 393.74 | 33.67 | 427.52 | 393.85 | ∮ 0.11 | ∮ 0.03 | |
| 15 | 10-12 | 2 | 0 | 60 | 130.05 | 6 | 8 | 66 | 431.94 | 301.89 | 8540.80 | 8842.60 | 301.8 | - 0.09 | - 0.03 | |
| | | | | | | | | TOTAL TEST VOLUME GAUGED | | 4018.13 | | TOTAL TEST VOLUME METERED | | 4026.72 | ∮ 8.59 | |

WEIGHTED AVERAGE PERCENT DIFFERENCE: $\frac{\text{∮ } 8.59}{4,018.13} \times 100 = \text{∮ } 0.21\%$

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 3-C
CASE NO. 1332

PROOF OF ELLENBURGER DUMP METER ON LEASE OF HUNTINGTON TEXAS AGAINST ACT METER AND 1000-BARREL TANK

REMARKS: In the following two tests the accuracy of the Ellenburger Dump Meter is checked against the volume ran through the ACT P. D. Meter and the differential volume, from start to end of test, determined by manual gauging in the 1000-barrel surge tank. The volumes reported herein are corrected for temperature and flash.

PURPOSE OF TEST: To determine the accuracy of the Dump type Meter as compared with the ACT P. D. Meter, the prover meter.

TEST NO. 1 STARTED ON 9-29-58:

| | | |
|---|---|---|
| 1. | Corrected volume metered through ACT P. D. Meter, Bbls. | 410.96 |
| 2. | Corrected volume increase in 1000-Bbl surge tank | 190.91 |
| 3. | Total corrected volume through prover | 601.87 |
| 4. | Ending Dump Meter reading | 3041.85 |
| 5. | Starting Dump Meter reading | 2440.65 |
| 6. | Volume metered during test | 601.20 |
| 7. | Dump Meter Error, 601.20 - 601.87 | - 0.67 Bbls. |
| 8. | Dump Meter Percent Error | - 0.11 % |

TEST NO. 2 STARTED ON 11-11-58:

| | | |
|---|---|---|
| 1. | Corrected volume metered through ACT P.D. Meter, Bbls. | 858.67 |
| 2. | Corrected volume increase in 1000-Bbl surge tank | 28.80 |
| 3. | Total corrected volume through prover | 887.47 |
| 4. | Ending Dump Meter reading | 38061.93 |
| 5. | Starting Dump Meter Reading | 37174.10 |
| 6. | Volume metered during test | 887.83 |
| 7. | Dump Meter Error, 887.83 - 887.47 | + 0.36 |
| 8. | Dump Meter Percent Error | + 0.04 |

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 6-C
CASE NO. 1337

# Case No.

1337

# Large Exhibit

CASE 1337: Gulf Oil Corp. application for [redacted] approval of a lease automatic custody transfer system, commingling of oil & produce wells in excess of monthly allowable tolerance.

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
November 14, 1957

TRANSCRIPT OF HEARING
CASE NO. 1337

DEARNLEY - MEIER & ASSOCIATES
INCORPORATED
GENERAL LAW REPORTERS
ALBUQUERQUE, NEW MEXICO
3-6691 5-9546

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
November 14, 1957

IN THE MATTER OF:

Application of Gulf Oil Corporation for approval of a lease automatic custody transfer system to receive and measure the production from more than eight wells and for permission to commingle the oil produced from the McKee and Ellenburger Pools underlying said lease in Lea County, New Mexico, and for permission to produce the wells on said lease in excess of the monthly allowable tolerance for a limited period of time.

CASE NO. 1337

BEFORE:

Honorable Edwin L. Mechem
Mr. Murray Morgan
Mr. A. L. Porter

TRANSCRIPT OF HEARING

MR. PORTER: The meeting will come to order, please. We will take up next Case 1337.

MR. COOLEY: Case No. 1337. Application of Gulf Oil Corporation for approval of a lease automatic custody transfer system to receive and measure the production from more than eight

wells and for permission to commingle the oil produced from the McKee and Ellenburger Pools underlying said lease in Lea County, New Mexico, and for permission to produce the wells on said lease in excess of the monthly allowable tolerance for a limited period of time.

MR. KASTLER: If the Commission please, my name is Bill Kastler, I am employed by Gulf Oil Corporation, law department in Roswell, New Mexico; and I am appearing for Gulf in this case. Gulf Oil Corporation is seeking an order approving a lease automatic custody transfer system for its Learcy McBuffington Lease in Section 13, Township 25 South, Range 37 East, Lea County, New Mexico, to receive and measure the production from more than eight wells, and further authorizing the commingling of the oil produced from the McKee and Ellenburger Pools underlying the leases.

In part our application which was filed and dated October 11, 1957, stated an exception to Rule 502 II may be required pending completion of sufficient wells to have enough allowable capacity to fill the one thousand surge tank. On the completion of the second Ellenburger well this exception will no longer be required. I'm able to state to the Commission that our second Ellenburger well has been completed at this time and therefore I ask that this portion of the application be stricken. That was item Number Four where Gulf requested exception to Rule 502, which prohibits production in excess of the assigned monthly allowable

plus a tolerance of five days allowable production. We have as our next witness Mr. C. Bumpass from Hobbs, New Mexico. Mr. Bumpass, will you be sworn?

(Witness sworn.)

C. M. BUMPASS

having been first duly sworn, testifies as follows:

DIRECT EXAMINATION

BY MR. KASTLER:

Q Would you please state your name and the position, your employer, where you live?

A The name is C. M. Bumpass, I'm employed by Gulf Oil Corporation at the Hobbs office and I'm a petroleum engineer living in Hobbs.

Q Have you previously appeared before the New Mexico State Conservation Commission and qualified and testified as an expert witness?

A I have.

Q Are you familiar with Gulf's application for lease automatic custody transfer system and a commingling application?

A I am.

MR. KASTLER: If the Commission please, I move that Mr. Bumpass' qualifications as an expert be accepted.

MR. PORTER: They are accepted.

Q What is the purpose, Mr. Bumpass, of Gulf's application

for the lease automatic custody transfer system and for commingling the oil in this case?

A Well, the primary purpose is to effect economy and effect improved operations of this lease.

Q In what ways will economy be affected?

A Through the conservation of crude saving on manpower through the operation of this automatic equipment and savings in the investment in the equipment.

Q Have you prepared, or at your direction had prepared, a plat showing the location of the lease?

A Yes, I have.

Q This Learcy McBuffington Lease in this area, Lea County, New Mexico, is offered as Exhibit No. 1, Mr. Bumpass, please state what is shown on Exhibit No. 1?

A Well, shown on Exhibit No. 1 is Gulf's Learcy McBuffington Lease, being the south half of Section 13, Township 25 South, Range 37 East. There are several wells on this lease, those of particular interest in this case are the wells No. 3 and No. 4 and are Ellenburger producers.

Q Those are the two wells concerned in this application?

A That is correct.

Q Does Gulf plan any further producing wells in this lease?

A Yes, they very definitely do.

Q Does Gulf own all the working interest in this lease?

A That is correct.

Q I notice there is a farm out to W. C. Birum to 3,500 feet.

A Well, that's below that depth, we own all of it which is the matter of this case here.

Q These two wells are concerned solely with production from below 3,800 feet?

A That is correct.

Q And from an area in which Gulf owns the entire working interest?

A That is correct.

Q Is there a diversity of ownership in the lease or is it all the same?

A It is all the same.

Q Have the neighboring operators been notified of your application in this matter?

A Yes, they have.

Q And has the pipe line been notified of your operation in this matter?

A Yes, sir.

Q Have you prepared for Exhibit No. 2 a schematic diagram which shows the lease automatic custody transfer system proposed?

A Yes, I have.

MR. KASTLER: If the Commission please, we intend to offer this later as Exhibit No. 2.

Q Mr. Bumpass, will you state what is shown on this diagram, Exhibit No. 2?

A Well, the diagram is shown here is entitled lease automatic custody transfer system. However, it was felt pertinent to show in addition to the euqipment the allied equipment that would be installed up stream of the automatic custody transfer equipment and that would be that equipment to the right of the 1,000 barrel surge tank.

Q For the present will you now confine your explanation to the 1,000 barrel tank and what is beyond that towared the pipe line?

A Yes, sir. That equipment constitutes the lease automatic custody transfer euqipment and consists of various items of equipment that have been proven and accepted by industry for automatic custody transfer of crude.

Q Are the installations that are described here from the 1,000 barrel tank forward, you might say toward the pipe line, substantially the same as those concerned in Shell Oil Corporation's Case No. 1275, lease automatic custody transfer system, which was approved by the New Mexico Oil Conservation Commission?

A Yes, essentially the equipment is the same.

Q In connection with the 1,000 barrel tank, Mr. Bumpass,

will all of the production from these two pays on this lease be commingled at that point or in that tank?

A They will be commingled in the tank. The commingling will actually occur just prior to entering the tank.

Q But they will all be held at that tank?

A That is correct.

Q What will actuate the operation of that tank?

A Well, the tank, in there automatic equipment of this type is equipped with switches set at various levels in the tank; primarily in this tank we have a low level shutoff switch and an intermediate level switch which actuate the operation of the lease automatic custody transfer equipment. When the oil is produced into the tank and as the fluid rises it will rise to this intermediate level switch, approximately thirteen or fourteen feet from the bottom of the tank and on so doing will actuate relays which will open the necessary valves and start operation of the pipe line pump which will in effect transfer the fluid in the tank to the pipe line.

Q Then it is possible and it is proposed that the 1,000 barrel tank will automatically transfer the custody of the oil from that tank into the pipe line?

A Well --

Q And meter it at the same time?

A Essentially the pump will transfer it from the tank

into the pipe line automatically. I did leave out that then the pipe line pump consequently has to have a rate in excess of the incoming fluid so it will void the tank or to the low level shut-off switch at which time the operation of the automatic equipment will be terminated.

Q The automatic equipment is powered primarily by electricity, is it not?

A Yes, sir.

Q If there should be a failure of the electrical, and electrical failure would the apparatus remain open and continue to deliver unmetered oil?

A No, it is designed so that the power failure would permit the equipment to close safe, that is the valve, and terminate the transfer of crude.

Q As an incidence of your application, if this proposal were granted, would it be necessary to have an exception to Rule 303 which prohibits the commingling of oil between pools?

A Yes, it would.

Q Would it be necessary to have an exception to Rule 309 which limits production from only eight units of the same by a six lease into common tankage?

A That is correct. We anticipate sufficient number of wells to exceed that.

Q Would it be further necessary to have an exception to the

Rule 309A, which requires measurement of oil in tanks before such oil is transported from the lease?

A That is correct.

Q Mr. Bumpass, would you outline what is shown to the right of the tank, namely the equipment for each separate pay?

A Well, just to the right of the tank we have such equipment. Starting from the right hand of the Exhibit is the well header, and then we have production and test separator equipment; production and test treating equipment, and then we have metering equipment to facilitate all tests and make records of the oil handled from each pay. I can show that better by the next exhibit and would like to add here that each one of these will be indenticals.

Q Yes. Although they are identical there are two systems here, one for each pay. Would you please state whether or not those two systems work independently of each other?

A I don't know if I understand. You mean equipment for each pay?

Q There is equipment for each pay?

A Operating independently of each other, yes.

Q The equipment for the McKee pay?

A Yes.

Q If the allowable should be produced from the McKee pay first would that separate unit then automatically shut down?

A It would shut down when the necessary equipment that was designed in there signalled the automatic controls to shut in the wells.

Q What precaution has been taken to prevent a back flow in the commingled oil back into one or the other systems?

A Well, just the normal installation equipment such as a check valve.

Q A check valve would guarantee insurance against the McKee pay under any circumstances backing into the Ellenburger pay system, is that correct?

A Yes, sir.

Q Have you prepared or had prepared under your supervision a production and test flow diagram for one pay zone?

A I have.

Q This is more detailed, I take it, than the two pay zones shown in Exhibit No. 2?

A It is.

Q If the Commission please, we propose to offer this production and test flow diagram as Exhibit No. 3 and it should be understood that this is one separate unit for the pay zone, and since there are two pay zones to be commingled in this case this will be duplicated in the actual operation. Mr. Bumpass, will you please explain what is shown on Exhibit No. 3?

A Well, this is just an enlarged flow diagram of one of the

two previously shown. It is the production and test flow diagram for one pay. The well header on the extreme right would be first equipment through which the well string from each individual well would pass prior to entering the equipment illustrated here. For wells that are on production the flow stream would pass into the production separator thence into the production treater for treating of the oil; the fluid on leaving the production treater would pass through a B. S. & W. Monitor.

Q That stand for basic sediment and water monitor?

A That is true. And if the oil is measurable, as shown in the purple areas the fluid would be able to pass on through the master oil meter and into the tank.

If the B. S. & W. cut is above the preset value on the monitor then the monitor would automatically open the valve to the right of the recirculating pump and close the valve just in front of the master oil meter and would reroute the oil back through the production treater until the B. S. & W. content was reduced to within the limits allowed; at which time the valves would open and close in the proper manner and continue to transfer oil.

Q Mr. Bumpass, would the B. S. & W. Monitor reject, for example, oil that had too high a water content?

A Yes, sir.

Q In that event it would go back through the production treater, is this correct, and --

A That is correct.

Q -- and the oil and water would be retreated and more water removed?

A That is true.

Q Then it would again pass down stream through the B. S. & W. Monitor and if accepted as merchantable oil would automatically pass through this valve into the master oil meter, is that correct?

A That is true.

Q Can your headers be switched automatically in such a way as to test the production from each well on the lease?

A Yes, we will have with this equipment here also fully automatic well programming and testing equipment and by setting into this well programer wells will be tested in sequence and for the length of time that is desired.

Q Now, how does that differ from the ordinary test that's made usually with gauger or pumper at work making tests?

A Well, the test is accomplished automatically with this system with the oil and water and gas volumes for that well test being recorded, whereas in the present manner why it is manually in tank gauges.

Q How are the results of tests recorded?

A Beg your pardon?

Q How are the results of tests recorded?

A The results of the tests are recorded automatically on the strip chart in the control.

Q There are printings made from the gas meter, water meter and oil meter involved in the tests?

A That is true.

Q Those are then printed on a sheet and preserved, is that correct?

A Yes, they will be available for making of records.

Q After any particular well has been flowing through the test treater and test separator and the record has been made of the test that has been performed on that automatically, what then takes place to change the well that flows in for the next test?

A Well, that is handled by the well programmer in which that if you want well number one to be on test first, number two second, third, fourth and fifth well like that you set your well programmer such that that will be accomplished and it will be done automatically as soon as the test is completed on well number one that well will be routed from the test phase of the equipment over to the production phase and then the next well up for test will be switched automatically into the test phase of the equipment and that will repeat until all wells are tested and it will start over on the initial well.

Q Will the separate tests that are made be helpful in regulating production more accurately to the allowable?

A Yes, that is true.

Q Will the test also show the need at any particular time

for work overs or anything of that sort?

A Well, yes, they will; that fact will be expedited in that more frequent well tests we feel as accurate or more accurate well tests will result from this type of equipment and we feel that it will, yes.

Q Now, after the testing the oil is again commingled with the other production from that same pay --

A That is true.

Q -- before it gets to the B. S. & W. Monitor?

A That is true.

Q After it passes through the monitor successfully it then goes to the master oil meter, is that correct?

A That is true.

Q What type meter is the master oil meter?

A It is a dump type oil meter.

Q What accessories are on it for compensating different factors that might be found?

A Well, it compensates for the temperature of the flowing string through it. It has the facilities of compensating for shrinkage factor and it also has a set stop counter which is a device whereby the allowable at the beginning of a proration period is set into the meter and as each barrel of production passes through the meter that meter reading is decreased by a like amount, this operation continuing until the last barrel has been metered

through the equipment and then the set stop counter will terminate the operations on this lease.

Q Then, I understand if you have two wells producing from the Ellenburger pay both wells come in here and they are alternatively tested but after the testing their production is then passed forward into the 1,000 barrel surge tank after being accurately measured, is that correct?

A Yes, sir.

Q And when the allowable for those two pays has been reached is there an automatic shut down --

A Two pays.

Q -- from both pays?

A That is true.

Q Both pays have produced their allowable, is that equipment shut off?

A Yes, that is true. Each pay will have identical equipment on it.

Q Will it be set up on a monthly allowance or daily allowance, will this master oil meter be set daily or monthly?

A Monthly allowable.

Q Will it be read daily?

A It will be recorded daily which will allow us to read it daily to keep close check on the operation of the performance of the wells for daily production checks.

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Q Will you state what you know of the accuracy of the dump master oil meter?

A Well, we do not have any of these type meters in operation, therefore we do not know the accuracy first hand.

Q Have you made investigations to find out what accuracy has been reported for this type meter?

A Yes, I have. There was a consulting firm of Purnell and White that conducted extensive tests on the accuracy of the dump type meter and the accuracy reported by them was that the average accuracy was never less than 99.8% and in, I believe it was five or seven of the tests it was not, well, just let me read it here: "The average accuracy of the meters tested never fell below 99.8% for any set of tests run and fell below 99.9% for only seven of the twenty-eight groups of tests performed."

Q In other words, in all but seven cases this type master oil meter was accurate to 99.9%?

A That is true.

Q And in the seven cases it was accurate to 99.2%, is that correct?

A 99.8%.

Q Was that experiment a laboratory or field experiment?

A No, it was very definitely a test conducted in the laboratory under ideal control conditions.

Q To the best of your knowledge has the field experience

with this type of meter been satisfactory?

A As I said before we have not performed any but I do think that meters of this type in operation in the field will give a good or better accuracy than manual gauging of tanks.

Q After the master oil meter has been passed the oil then passes through a check valve again and before it reaches the 1,000 barrel tank it is commingled with oil from the other pays, is that correct?

A That is true.

Q Is there any reason that you know of why oil from the McKee pay and oil from the Ellenburger pay can not successfully be commingled?

A No, I do not.

Q In your opinion would the granting of the applicant's, request in this case, be in the interest of conservation and would it protect correlative rights?

A Yes, I feel it would.

Q Would it protect the correlative rights of the royalty owners as well as the operator?

A Yes, sir.

MR. KASTLER: If the Commission please, I would like to move at this time for the admission into evidence of Exhibits 1, 2 and 3 heretofore referred to, and that is all of the questions I have at this time.

MR. PORTER: Without objection Exhibits 1, 2 and 3 will be admitted. Anyone have a question of Mr. Bumpass? Mr. Cooley?

BY MR. COOLEY:

Q Mr. Bumpass, how many Ellenburger completions did you say you had on the Learcy McBuffington Lease at the present time?

A We now have two.

Q How many McKee completions?

A We have none at this time.

Q How many proposed completions in each of these pools will you have when the lease is completely drilled up, do you have any idea?

A Well, that is a purely, a function of development and structure. We think it could conceivably be in excess of eight units.

Q Eight completions in each pool?

A No, I wouldn't know that, Mr. Cooley, because I don't know how many wells that we could have in each pay.

Q Now, this automatic custody transfer equipment will be installed only on the Learcy McBuffington Lease?

A That is true.

Q To receive production from that lease alone?

A That is true.

Q Consequently the oil that would be measured on the lease would not be measured in tanks as required in 309 but it will

be measured on the lease?

A I probably overlooked a point. This shows that the battery location would be to the west of No. 4 or that would place that battery location in the southeast quarter of the southwest quarter of Section 13.

Q It would be measured on the lease?

A It would, yes.

Q How often if this lease is drilled to the maximum density, how many wells would there be on there?

A Well, there would be eight for the Ellenburger and eight for the McKee.

Q And, as I understand it, you would have separate testing equipment for each pool?

A Each pay, each pool, yes, sir.

Q Then there would be eight wells being tested by one set of equipment?

A That is true.

Q How often then would it be possible to test each well continuously?

A Well, if we test them a full twenty-four hour period we would be able to get through , well, if we had thirty-two days in a month we could get four per month.

Q It is your opinion that the positive displacement meters, these are positive displacement meters?

A These are what are called dump type meters.

Q Will you explain that and compare them to the positive displacement meter?

A I could stand to be corrected on this, but I understand that is a meter with veins that are moved as oil pass through them, pass through the meter. I don't think you would call it a rotating disc but it is a vein type meter, when oil moves into the meter by the veins moving in and out from the center of the meter they trap a unit volume and it is by that design of the meter that I understand the P. D. Meter gets it's name of a positive displacement meter. These meters here are a vessel of which the fluid is entered, it's entrance and it's leaving of the meter is controlled by valves and actuated by either floats or arrangements of floats and valves where you trap a specified volume in the meter and that cycle is complete in that when the valve is actuated, say the opening valve is opened, the fluid moves into the meter and while this is being accomplished the valve that will allow the fluid to leave the meter is closed when the vessel fills to the upper level a float will be actuated to close the inlet valve and it will be discharged then through the outlet valve. There is no interference there between the inlet and the outlet of the fluid. That is in my opinion the main difference in the types of meters. This is a dump type meter.

Q I believe you stated a few moments ago that the accuracy

of this dump type meter is at least as good as a manual type measurement?

A That is true, based on this information and what we have been able to gather.

Q The amount of oil for which you will be paid by the pipe line will not be measured by the dump type master meters. Will there not be another meter between the 1,000 surge tank and the pipe line?

A That will be the P. D. Meter.

Q The equipment shown on Exhibit Two?

A Yes, sir. In the P. D. Meter Unit that meter there it's illustrated by that circle between the Dearerator and Prover Meter Connection.

Q Do you feel that there would be any appreciable discrepancy in the volume of fluid passing through the P. D. Meter into the pipe line and the combined totals of the fluid passing through the dump type meters on the automatic custody equipment?

A I don't believe there will be an appreciable error, yet I think we can not expect them to flow within 100%. I just formed that opinion based on what is accurate when we talk about the meter accuracy versus tank gauge accuracy.

Q Aren't there going to some elements beside accuracy, some settling and evaporation? Is there any way you can lose volume of fluid between the dump type master meter and your

automatic custody equipment and the point where the oil is metered into the pipe line?

A All right. To answer your question we are trying to equip this such that that difference will be a very minute amount. I would like to restate that the dump type meter will be temperature compensating as is the P. D. Meter so that will place our barrels at the correct temperature for reading which they should flow. The P. D. Meter will have worked into the metering part of the meter, that is in the counterpart a shrinkage factor which will take care of the decreased volume in the dump type meter because of the gas in solution. Say it is at fifty pounds we have a certain amount of gas in solution, at fifty pounds that meter will be set after the shrinkage factor is determined to allow us to have as near a barrel or if that is a barrel dump which this proposed to be one barrel dump as near as one barrel dump as we can effect.

Now, we have our temperature compensation and we have our shrinkage factor and the P. D. Meter has its temperature correction and the fluid going through it should have the same amount of gas in it since we have taken into consideration the shrinkage factor in the oil in the dump type meter so that the accuracy should be very close.

I mean the agreement of the meter from one with the other should be very close. I don't think we'll be able to get 100%.

Q My point in this line of questioning I feel it would

certainly be necessary that your allowable production would be determined by the measurements on your dump type meter regardless of what your sales were?

A Your allowable would be what?

Q When you have produced your allowable as reflected by your dump type master meter in the automatic custody system then that pool would have to be shut in?

A That is true. That will be affected by the Set stop.

Q The allowable control will be affected at the dump type meter and will not be a combined allowable at the positive displacement meter?

A That is true. We have a set stop counter on that other meter too, it's just a further prevention.

Q You said the automatic equipment could keep the wells within their monthly allowable tolerance. Will it be possible to keep them within the daily allowable tolerance provided by Rule 302, Roman numeral one?

A We will endeavor to do so, not to produce over 25% of the daily allowable.

Q And the equipment is so designed --

A That is true. If we take a test and it is exceeding that rate --

Q -- it can be adjusted?

A Adjusted, yes.

MR. PORTER: Mr. Nutter.

BY MR. NUTTER:

Q Mr. Bumpass, who is the purchaser of the oil from your McBuffington lease?

A Tidewater.

Q Have you discussed this installation with Tidewater?

A Yes, sir.

Q Are they agreeable to the use of an automatic custody transfer system?

A I understand that they are, sir.

Q I think you stated that for the time being at least the only formation that would be producing into this system would be the Ellenburger unit. You have no McKee wells completed?

A That is correct.

Q Is this 1,000 barrel tank to be installed, has that tank been strapped or would it be strapped?

A Yes, sir.

Q In other words, you know the volume of it and you would only be producing one formation into it you could probably run a series of tests to determine the accuracy of your dump type master oil meters?

A Yes, sir.

Q By crude of that tank, could you not?

A Yes, sir, we could.

Q You have never proved them in the field?

A That is true.

Q This would give you an opportunity to do so?

A Yes.

Q Would Gulf be willing?

A We certainly would. We would do that in any event because we are interested in obtaining this information ourself.

Q Mr. Bumpass, your application includes the question to authorize the production of the wells on the lease in excess of the monthly allowable tolerance?

MR. PORTER: That portion of the application was withdrawn.

MR. KASTLER: Withdrawn.

A Yes, sir.

Q Mr. Bumpass, will this automatic custody transfer system require as much attention as a normal tank battery installation would?

A Well, I think --

Q Personal attention on the part of the pumper or switcher?

A Well, I think it will require less after he becomes familiar with it and we become familiar with it.

Q In other words, wouldn't be any attendant on the lease --

A No, sir.

Q -- as frequently?

A That is true. That is one way we can save man hours by spreading him over other areas to handle other properties.

Q Do you think that with all the electric gadgets and automatic shut-in devices that you have made adequate protection to avoid the waste of oil if you have a line break since you wouldn't have an attendant on the lease as frequently?

A Well, there can always be continual improvement on something. If the need so arises we will, we have it designed for fail safe conditions, but if a flow line was to rupture it would be no more difficult than our present operations, we would find that when the pumper made his next round.

Q But the pumper wouldn't make the rounds as frequently on this installation?

A No, sir.

Q Now, when you are running oil out of the 1,000 barrel tank what happens to the production from the wells?

A It will continue to enter the 1,000 barrel tank.

Q In other words, this is not a measuring device in any way, it is just a storage tank?

A Just a surge tank, I think it is referred to.

Q In the event that the B. S. & W. Monitor reroutes the oil to the treater --

A Yes, sir.

Q -- what happens to the wells?

A When the fluid level builds up in the heater treater due to the termination of the passage of the fluid through it then the high level switch in the treater will shut in the wells as the header.

Q They are shut in at the header and not the well head?

A There is a valve shut in at the header and then there is a pressure sensitive valve that is shut in at the well.

Q Have you made provision in your installation here to calibrate the positive displacement meter?

A Well, we have here a proved meter connection but for sometime until we have enough P. D. Meters to wear and perhaps a prover tank or a prover meter why we will use the services of a firm in Midland, who is a representative of the particular type of meter that we continue to calibrate our meter.

Q It will be possible to calibrate the P. D. Meter at regular intervals?

A Yes, sir.

Q In response to Mr. Cooley's question you said that the allowable production could be set on the dump type meter, would it be the allowable production for the month?

A That is true.

Q The wells would not have to exceed the monthly allowable production?

A No, we don't intend for them to exceed the monthly.

Q But there would be no control over producing within the 125% daily tolerance?

A Yes, sir, we would have our wells flowing on choke and these chokes sizes would be determined after the automatic well test had been performed and after the wells had been set on their allowable or within 125% of the allowable, then they would be producing, we could assume they would be producing at that same rate during normal production operations.

Q An effort would be made by sizing the chokes to produce the daily allowable or within 125% of it?

A Oh, yes, sir.

MR. PORTER: Does anyone else have a question of Mr. Bumpass? Mr. Cooley.

MR. COOLEY: I have one more question.

BY MR. COOLEY:

Q How, in this equipment, do you determine your lease storage at the end of the month?

A You can't do it by pays, Mr. Cooley. In other words, to say that some barrel in this tank is McKee. That is why we felt the necessity, that is why we have to have a meter here, the master meter from each pay before it goes into that tank.

Q You don't even have a method of determining how much total barrels of oil you have on hand at any given period do you, you have no provision for testing the amount of oil or measuring

the amount of oil you have in storage at any given time, do you?

A No, just gauging it I guess, that's the only way I would know how to do it.

Q It would have to be mainly gauged at the end of each month?

A Yes, sir. That's the only way I can see right at this time to do it.

Q Would you need another automatic gadget?

A Well --

Q Gulf would be willing to determine the amount of oil they did have on hand as required by C115?

A Yes, sir.

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

MR. PORTER: Anyone else have a question of Mr. Bumpass? The witness may be excused. Anyone have anything further to say in this case? We'll take the case under advisement.

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 in Stenotype and reduced to typewritten transcript by me and/or under my personal supervision; that same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal, this, the 27th day of November, 1957, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Ada Dearnley
NOTARY PUBLIC

My Commission Expires:

June 19, 1959.

DEARNLEY - MEIER & ASSOCIATES
INCORPORATED
GENERAL LAW REPORTERS
ALBUQUERQUE, NEW MEXICO
3-6691 5-9546

# Memo

From Dan

To Bobbye

make provision
in letter of transmittal
for monthly calibration
of PD meter and
continuous ~~continuous~~ test
on dump type meters
up to the time wells
in both formations
are completed.

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

November 29, 1957

COPY

Mr. William Kastler
Gulf Oil Corporation
P.O. Box 669
Roswell, New Mexico

Dear Sir:

We enclose two copies of Order R-1093 issued November 27, 1957, by the Oil Conservation Commission in Case 1337, which was heard on November 14th.

Very truly yours,

A. L. Porter, Jr.
Secretary - Director

bp
Encls.

Case 1337

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

March 3, 1958



Mr. W. A. Shellshear
Gulf Oil Corporation
P.O. Drawer 669
Roswell, New Mexico

Dear Mr. Shellshear:

Reference is made to your letter of February 24, 1958, wherein you note that the "continuous series of tests" required by our letter of December 6, 1957, on the dump type meter utilized in the automatic custody transfer system authorized for installation on Gulf's Learcy McBuffington Lease in the Justis Pool, Lea County, New Mexico, by Order No. R-1093 would not be feasible in that the production from the lease is not closed in while oil is run from the 1,000 barrel surge tank through the positive displacement meter into the pipeline.

We feel, inasmuch as the use of dump type meters is relatively new, particularly to measure oil that will be commingled from two separate pools, that an adequate series of tests should be run in order to determine the accuracy of said meters. Gulf Oil Corporation is, therefore, directed to so schedule a series of tests on these meters to provide that a minimum of fifteen tests will be conducted prior to the commingling of any oil from the two separate pools. This series of tests should provide the necessary information as to the accuracy of the meters. Upon completion of this series of tests, check tests shall be run at intervals not to exceed one month to determine that the accuracy is being maintained.

Yours very truly,

A. L. Porter, Jr.
Secretary - Director

ALP/DSN:bp

PETROLEUM AND ITS PRODUCTS

# GULF OIL CORPORATION

P. O. DRAWER 669 • ROSWELL, NEW MEXICO

W. A. SHELLSHEAR
DISTRICT MANAGER

FORT WORTH
PRODUCTION DIVISION

February 24, 1958

Oil Conservation Commission
State of New Mexico
Post Office Box 871
Santa Fe, New Mexico

Gentlemen:

In Case No. 1337 the New Mexico Oil Conservation Commission approved the installation of a lease automatic custody transfer system for operation of Gulf's Learcy McBuffington Lease in the Justis Pool, Lea County, New Mexico. This lease is located in the S/2 of Section 13, T-25S, R-37E. It will be recalled that during the hearing on this application questions were asked regarding the feasibility of comparing oil volumes measured by the dump type meters and hand gauging. Subsequent to issuance of Order No. R-1093 in this case, we received your letter dated December 6, 1957, requesting that a continuous series of tests be made comparing metered volume through the dump type meter and those in the 1,000 barrel tank. We wish to call your attention to the fact that as this system operates on an automatic custody transfer basis, it is not possible to accurately hand gauge the volume of oil entering the 1,000 barrel surge tank. You will recall that operation of this system is such that as the tank fills to a predetermined level, it automatically turns on the pipeline pump. When a predetermined lower level is reached, the pump automatically shuts off. However, during this period of time production from the lease is not closed in, but continues to produce into the 1,000 barrel tank. It is, therefore, not feasible to obtain a "continuous" comparison of these readings as long as the system operates on an automatic basis.

You might be interested in knowing that the automatic custody phase of this installation has been operating since late December, 1957, however, since only one pay has been produced into the battery the commingling feature of the system has not been placed into operation. Equipment has been ordered and delivery has been promised by late March, 1958. Of course permanent installation and initial testing will be made at a later date.

We are probably more interested than the Commission in determining that accurate meter measurements are made from the dump type meters. It is our plan to make two or three tests per month to determine the accuracy of the dump type meter. During this time we plan to turn off the pipeline pump entirely, taking a gauge of the amount of oil in the tank, then a certain amount of production will be passed through the dump type meters into the 1,000 barrel surge tank and

a subsequent gauge made. By comparing the difference in the beginning and ending gauge we can determine the amount of production which has been made in the surge tank during the test period. A comparison of this volume with the dump type meter volume will give us an analysis on the difference between the metered volume and hand gauged volume. Although we have not set up a test schedule, we anticipate testing in this manner two or three times per month, or as often as necessary until we are assured the meter is working satisfactorily and then possibly reducing the test time to one day each month for the remaining period of installation. We would like to request that the Commission consider the feasibility of testing in this manner and accept the data which we would obtain from these tests in lieu of that required by your letter of December 6, 1957.

Yours very truly,

W. A. SHELLSHEAR

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

December 6, 1957

COPY

Mr. William Kastler
Gulf Oil Corporation
P.O. Box 669
Roswell, New Mexico

Dear Sir:

Reference is made to the order in Case 1337 which was mailed with our letter of November 29th.

You will note that in the "It Is Therefore Ordered" portion of Order R-1093 that the first paragraph entitled "Provided Further," requires "That each dump-type meter and positive displacement meter in the above-described system shall be checked for accuracy at intervals and in a manner satisfactory to the Commission."

Gulf Oil Corporation is hereby directed to so calibrate each positive displacement meter at intervals not to exceed one month by means of a master calibrated meter or a meter test tank. Gulf is also requested to run a continuous series of tests on the dump-type meter utilized, calibrating said meters against the one thousand barrel surge tank in the transfer system until such time as production from both the Ellenburger and McKee formations is commingled in the system. All of the above-described tests shall be conducted until further notice from the Commission.

Very truly yours,

A. L. Porter, Jr.
Secretary - Director

ALP/DSN:bp

OIL CONSERVATION COMMISSION
P. O. BOX 871
SANTA FE, NEW MEXICO

June 23, 1958

COPY

Mr. William Kastler
Gulf Oil Corporation
P.O. Box 669
Roswell, New Mexico

Dear Mr. Kastler:

We enclose two copies of Order R-1093-A issued June 18, 1958, by the Oil Conservation Commission in Case 1337, which was heard on June 11th at Santa Fe before an examiner.

Please note that this order requires that each meter installed in the subject system shall be tested for accuracy at intervals and in a manner satisfactory to the Commission. It will be necessary for you to run a series of tests of sufficient duration to determine that the meters are functioning properly immediately following installation. Thereafter tests should be made at intervals not to exceed one month and a report of said calibration filed with the Commission. The meters shall be calibrated against a master meter or against a test tank of measured volume.

Very truly yours,

A. L. Porter, Jr.
Secretary - Director

ALP/DSN:bp
Encls.

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

Date June 12, 1958

CASE NO. 1337 HEARING DATE 9:AM 6/11/58 DSN SF

My recommendations for an order in the above numbered case(s) are as follows:

Enter an order approving amendment of Order No. R-1093, permitting the addition of the Fusselman zone to the previously granted authority for the Ellenburger and McKee and approving separate LACT battery for the Drinkard, Blinebry and Langlie Mattix production. Also grant the exception to that portion of Rule 309 which limits production from only 16 units into common facilities, provided that meters shall be tested at intervals prescribed by the Commission.

Staff Member
Examiner

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE NO. 1337
Order No. R-1093-A

APPLICATION OF GULF OIL CORPORATION
FOR AN ORDER AMENDING ORDER NO. R-1093
TO INCLUDE THE FUSSELMAN FORMATION IN
THE LEASE AUTOMATIC CUSTODY TRANSFER
SYSTEM AUTHORIZED THEREBY, AND TO PROVIDE
FOR AN ADDITIONAL LEASE AUTOMATIC CUSTODY
TRANSFER SYSTEM FOR THE DRINKARD, BLINEBRY,
AND LANGLIE-MATTIX PRODUCTION FROM THE
SUBJECT LEASE.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on June 11, 1958, at Santa Fe, New Mexico, before Daniel S. Nutter, Examiner duly appointed by the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission," in accordance with Rule 1214 of the Commission Rules and Regulations.

NOW, on this 18th day of June, 1958, the Commission, a quorum being present, having considered the application, the evidence adduced and the recommendations of the Examiner, Daniel S. Nutter, 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, was authorized by Order R-1093 to install central production and test facilities and automatic custody transfer equipment to receive and measure the McKee and Ellenburger production from its Learcy McBuffington Lease comprising the S/2 of Section 13, Township 25 South, Range 37 East, NMPM, Lea County, New Mexico.

(3) That the applicant was further authorized by said order to commingle the production from the McKee and Ellenburger formations after the same has been separately measured.

(4) That the applicant now requests that Order No. R-1093 be amended to permit the inclusion of the Fusselman formation under the provisions of said order, and further that it be authorized to install separate central production and test facilities and automatic custody transfer equipment for the Drinkard, Blinebry, and Langlie-Mattix production from the said Learcy McBuffington Lease and to authorize the commingling of said production after the same has been separately measured.

(5) That approval of the application, subject to the limitations and requirements set forth in Order No. R-1093, will not cause waste nor impair correlative rights.

IT IS THEREFORE ORDERED:

1. That the application of Gulf Oil Corporation, to include the Fusselman formation under the provisions of Order No. R-1093 be and the same is hereby approved.

2. That the applicant, Gulf Oil Corporation, be and the same is hereby authorized to install central production and test facilities utilizing dump-type oil meters, and automatic custody transfer equipment, utilizing a positive displacement meter, to receive the production from all wells completed in the Drinkard, Blinebry, and Langlie-Mattix formations on the following-described lease:

LEARCY McBUFFINGTON LEASE

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM
Section 13: S/2

all in Lea County, New Mexico.

FURTHER, That the applicant be and the same is hereby authorized to commingle the production from the Drinkard, Blinebry, and Langlie-Mattix formations underlying the above-described lease after such production has been separately metered through the central production and test facilities.

PROVIDED HOWEVER, That each well connected to the above-described system shall be individually tested at least once a month.

PROVIDED FURTHER, That each dump-type meter and positive displacement meter in the above-described system shall be checked for accuracy at intervals and in a manner satisfactory to the Commission.

PROVIDED FURTHER, That the above-described system shall be so equipped as to prevent the undue waste of oil or gas in the event of malfunction or line break.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

EDWIN L. MECHEM, Chairman

MURRAY E. MORGAN, Member

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

ir/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE NO. 1337
Order No. R-1093

APPLICATION OF GULF OIL CORPORATION
FOR APPROVAL OF A LEASE AUTOMATIC
CUSTODY TRANSFER SYSTEM TO RECEIVE
AND MEASURE THE PRODUCTION FROM MORE
THAN EIGHT WELLS AND FOR PERMISSION
TO COMMINGLE THE OIL PRODUCED FROM
THE McKEE AND ELLENBURGER POOLS
UNDERLYING SAID LEASE IN LEA COUNTY,
NEW MEXICO, AND FOR PERMISSION TO
PRODUCE THE WELLS ON SAID LEASE IN
EXCESS OF THE MONTHLY ALLOWABLE
TOLERANCE FOR A LIMITED PERIOD OF TIME.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on November 14, 1957, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 27th day of November, 1957, the Commission, a quorum being present, having considered the application and the evidence adduced, 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 Gulf Oil Corporation is the owner and operator of all producing rights below 3,800 feet on the Learcy McBuffington Lease which consists of the S/2 of Section 13, Township 25 South, Range 37 East, NMPM, Lea County, New Mexico.

(3) That the McKee and the Ellenburger formations underlying the aforementioned Learcy McBuffington Lease are productive of oil, and that the applicant expects to fully develop said lease in both of said formations.

(4) That the applicant proposes to install automatic production and testing facilities on said Lease for each of the aforementioned formations, and further, to commingle the production

from said formations after it has been metered by means of dump-type oil meters, and to transfer the custody of all such oil to the purchaser by means of a positive displacement meter.

(5) That the applicant amended its application at the hearing to delete that portion wherein permission was requested to produce the wells on the above-described lease in excess of the monthly allowable tolerance.

(6) That if the said Learcy McBuffington Lease is fully developed there will be more than eight wells producing into the system.

(7) That the metering system proposed by the applicant will provide an accurate and reliable means for measuring the amount of oil produced from each formation, provided the meters are periodically checked for accuracy.

(8) That the previous use of automatic equipment, similar to that proposed by the applicant has shown that such equipment is a reliable and economic means of measuring and transferring the custody of oil and that the use of such equipment should be permitted.

(9) That the applicant should be permitted to install and operate the automatic equipment in the manner proposed and to commingle the production from the McKee formation and the Ellenburger formation after said production has been measured, provided that each of the meters in the system is periodically checked for accuracy.

(10) That the system should be so equipped as to prevent the undue waste of oil or gas in the event of malfunction or line break.

(11) That the system should be so equipped as to permit the testing of each well in the system at least once a month.

IT IS THEREFORE ORDERED:

(1) That the applicant, Gulf Oil Corporation, be and the same is hereby authorized to install central production and test facilities utilizing dump-type oil meters, and automatic custody transfer equipment utilizing a positive displacement meter, to receive the production from all wells completed in the McKee formation and the Ellenburger formation on the following described lease:

LEARCY McBUFFINGTON LEASE

TOWNSHIP 25 SOUTH, RANGE 37 EAST, NMPM
Section 13: S/2

all in Lea County, New Mexico.

FURTHER, That the applicant be and the same is hereby authorized to commingle the production from the McKee formation and the Ellenburger formation underlying the above-described lease after such production has been separately metered through the central production and test facilities.

PROVIDED HOWEVER, That each well connected to the above-described system shall be individually tested at least once a month.

PROVIDED FURTHER, That each dump-type meter and positive displacement meter in the above-described system shall be checked for accuracy at intervals and in a manner satisfactory to the Commission.

PROVIDED FURTHER, That the above-described system shall be so equipped as to prevent the undue waste of oil or gas in the event of malfunction or line break.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

EDWIN L. MECHEM, Chairman

MURRAY E. MORGAN, Member

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

ir/

No. 17-58

DOCKET: EXAMINER HEARING JUNE 11, 1958

Oil Conservation Commission 9 a.m., Mabry Hall, State Capitol, Santa Fe, NM

The following cases will be heard before Daniel S. Nutter, Examiner:

CASE 1337: Application of Gulf Oil Corporation for an order amending Order R-1093. Applicant, in the above-styled cause, seeks an order amending Order R-1093 to provide for the commingling, in exception to Rule 303, but only after separate measurement, of oil produced from the Fusselman, Ellenburger, and McKee formations underlying its Learcy McBuffington Lease, comprising the S/2 of Section 13, Township 25 South, Range 37 East, Lea County, New Mexico, and the transfer of said production by means of automatic custody transfer equipment, in exception to Rule 309 (a); applicant also seeks authority to commingle the production, after separate measurement, from the Blinebry and Drinkard formations and the Langlie-Mattix Pool underlying the above-described McBuffington Lease, and to transfer said production by means of automatic custody transfer equipment. Applicant further seeks authority to produce more than 16 wells into each of the common transfer facilities described above, in exception to Rule 309 (a).

CASE 1341: Application of Jal Oil Company, Inc. for an oil-oil dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its Sarkeys Well No. 2, located 660 feet from the North and West lines of Section 25, Township 21 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Blinebry Oil Pool and oil from the Tubb Gas Pool through parallel strings of tubing.

CASE 1464: Application of Amerada Petroleum Corporation for an oil-oil dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its Ida Wimberley Well No. 3, located 1980 feet from the South line and 990 feet from the West line of Section 24, Township 25 South, Range 37 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Fusselman adjacent to the Justis-Fusselman Pool, and oil from the Drinkard formation adjacent to the Justis-Drinkard Pool through parallel strings of tubing.

CASE 1465: Application of Magnolia Petroleum Company for an oil-oil dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its New Mexico "S" No. 1 Well, located 990 feet from the North line and 1650 feet from the East line of Section 2, Township 16 South, Range 32 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Wolfcamp formation adjacent to the Anderson Ranch-Wolfcamp Pool and oil from the Anderson Ranch-Devonian Pool through parallel strings of tubing.

CASE 1466: Application of Tidewater Oil Company for an exception to Rule 309 of the Commission Rules and Regulations. Applicant, in the above-styled cause, seeks an order authorizing the installation of automatic custody transfer equipment with positive displacement meters and automatic sampling equipment and other related facilities to receive, measure, and transfer custody of oil from the Justis-Ellenburger Pool produced from the wells located on its Coates "C" Lease, which comprises the E/2, SE/4 NW/4, and NE/4 SW/4 of Section 24, Township 25 South, Range 37 East, Lea County, New Mexico.

CASE 1467: Application of Continental Oil Company for the establishment of a new Tubb gas pool and for the promulgation of special rules and regulations. Applicant, in the above-styled cause, seeks an order establishing a new pool for Tubb gas production to be designated as the Warren-Tubb Gas Pool with horizontal limits consisting of the E/2 of Section 28, Township 20 South, Range 38 East, Lea County, New Mexico. The applicant further seeks the promulgation of special pool rules similar to those adopted for the Tubb Gas Pool, as set forth in Order R-586, subject to modification of certain of said rules.

CASE 1468: Application of Continental Oil Company for the establishment of a new Blinebry gas pool and for the promulgation of special rules and regulations. Applicant, in the above-styled cause, seeks an order establishing a new pool for Blinebry gas production to be designated as the Warren-Blinebry Gas Pool with horizontal limits consisting of the E/2 of Section 28, Township 20 South, Range 38 East, Lea County, New Mexico. The applicant further seeks the promulgation of special pool rules similar to those adopted for the Blinebry Gas Pool, as set forth in Order R-610, subject to modification of certain of said rules.

CASE 1469: Application of Phillips Petroleum Company for a non-standard gas proration unit. Applicant, in the above-styled cause, seeks an order establishing a 320-acre non-standard gas proration unit in the Eumont Gas Pool consisting of the S/2 of Section 14, Township 19 South, Range 36 East, Lea County, New Mexico, said unit to be dedicated to the applicant's Bern "A" Well No. 1, located 660 feet from the South and East lines of said Section 14.

CASE 1470: Application of Phillips Petroleum Company for a non-standard gas proration unit. Applicant, in the above-styled cause, seeks an order establishing a 320-acre non-standard gas proration unit in the Eumont Gas Pool consisting of the N/2 of Section 12, Township 19 South, Range 36 East, Lea County, New Mexico, said unit to be dedicated to the applicant's Monument Well No. 1, located 1977 feet from the North line and 660 feet from the East line of said Section 12.

CASE 1471: Application of Phillips Petroleum Company for a non-standard gas proration unit. Applicant, in the above-styled cause, seeks an order establishing a 240-acre non-standard gas proration unit in the Tubb Gas Pool consisting of the NW/4 and the W/2 SW/4 of Section 24, Township 22 South, Range 37 East, Lea County, New Mexico, said unit to be dedicated to the applicant's Sims Well No. 3, located 1980 feet from the North and West lines of said Section 24.

CASE 1472: Application of Sunray Mid-Continent Oil Company for an oil-oil dual completion. Applicant, in the above-styled cause, seeks an order authorizing the dual completion of its State Land 15 Well No. 3, located 660 feet from the South line and 1980 feet from the East line of Section 16, Township 21 South, Range 37 East, Lea County, New Mexico, to permit the production of oil from the Drinkard Pool and oil from the Blinebry Oil Pool through parallel strings of tubing.

Case 1337

PETROLEUM AND ITS PRODUCTS

# GULF OIL CORPORATION

P. O. DRAWER 1290 · FORT WORTH 1, TEXAS

E. HOSFORD
DIVISION PRODUCTION COORDINATOR

FORT WORTH
PRODUCTION DIVISION

May 27, 1958

Oil Conservation Commission
State of New Mexico
P. O. Box 871
Santa Fe, New Mexico

Re: Application of Gulf Oil Corporation for an Order Amending R-1093 in Case 1337. Applicant will also ask Exception to Rule 309 to Permit Lease Automatic Custody Batteries to Receive Production from More than Sixteen Wells.

Gentlemen:

Gulf Oil Corporation herewith makes application for an order amending R-1093 in Case 1337 to permit the addition of the Fusselman zone to the commingling approval previously granted for the Ellenburger and McKee reservoirs. Applicant will also ask authority to commingle the Drinkard, Blinebry and Langlie Mattix production in a separate LACT battery to be constructed in the near future for the purpose of handling sour crudes. In addition, Gulf will request an exception to that portion of Rule 309 which limits production from only sixteen units of the same basic lease into common tankage.

In support of this application, Gulf states the following:

(a) Gulf Oil Corporation is the owner and operator of all producing rights below 3800 feet on the Learcy McBuffington Lease which consists of the S/2 of Section 13, T-25-S, R-37-E, Lea County, New Mexico.

(b) There is no diversity of royalty ownership underlying the above described lease.

(c) By Order R-1093 dated November 27, 1957, a lease automatic custody transfer system and commingling privileges were approved by the Commission so far as applied to the McKee and Ellenburger oil underlying subject lease.

(d) Applicant will request permission to add the Fusselman zone to the commingling approval previously granted for the Ellenburger and McKee reservoirs.

(e) Applicant proposes to install an additional LACT battery to handle sour crudes produced from this property, and permission will be requested which would allow the Drinkard, Blinebry and Langlie Mattix oils to be commingled in this one additional automatic custody battery.

(f) Applicant proposes to modify the initially approved LACT system for McKee and Ellenburger production in order to provide for only one complete test facility for each battery.

(g) The proposed installations will be adequate to accurately measure oil produced from each pool and result in efficient accounting of crude oil transferred to the pipe line gathering system.

(h) The granting of applicant's request in this case is in the interest of conservation, and will protect correlative rights.

(i) By copy of this letter all operators owning interests in the section involved and all offset operators, as well as the pipe line company concerned, are notified of Gulf's application.

Gulf Oil Corporation respectfully requests that this matter be set for hearing at an early date.

Respectfully submitted,

GULF OIL CORPORATION

By E. Hayford
Division Production Coordinator

cc: Oil Conservation Commission
P. O. Box 2045
Hobbs, New Mexico

Anderson-Prichard Oil Corporation
P. O. Box 196
Midland, Texas

W. K. Byrom
1000 Dal Paso
Hobbs, New Mexico

R. Olsen Oil Company
Drawer Z
Jal, New Mexico

The Texas Company
P. O. Box 1270
Midland, Texas

Tidewater Oil Company
Att'n: J. B. Holloway
P. O. Box 1404
Houston, Texas

Western Natural Gas Company
Midland Tower Building
Midland, Texas

Western Petroleum Company
291 Sutter Street
San Francisco, California

Texas-New Mexico Pipe Line Company
P. O. Box 1510
Midland, Texas

CLASS OF SERVICE
This is a fast message unless its deferred character is indicated by the proper symbol.

# WESTERN UNION
## TELEGRAM

W. P. MARSHALL, PRESIDENT

1220 (R 11-54)

SYMBOLS
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NL=Night Letter
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OIL CONSERVATION COMM=
STATE OF NEW MEXICO SANTA FE NMEX=

Case 1337

ATTENTION: MR DAN NUTTER

SUPPLEMENTING APPLICANT'S LETTER DATED MAY 9, 1958, PLEASE SET EXAMINER HEARING TO CONSIDER GULF'S REQUEST FOR AN ORDER AMENDING R-1093 IN CASE 1337. GULF WILL ASK AUTHORITY TO ADD THE FUSSELMAN ZONE TO T E COMMINGLING APPROVAL PREVIOUSLY GRANTED FOR THE ELLENBURGER AND MCKEE RESERVOIRS. APPLICANT WILL ALSO ASK AUTHORITY TO COMMINGLE THE SOUR DRINKARD, BLINEBRY AND LANGLIE MATTIX CRUDES IN A SEPARATE LACT BATTERY TO BE CONSTRUCTED IN THE NEAR FUTURE. GULF WILL FURTHER REQUEST AN EXCEITION TO THAT PORTION OF RULE 309 WHICH LIMITS PRODUCTION FROM ONLY SIXTEEN UNITS OF THE SAME BASIC LEASE INTO COMMON TANKAGE=
E HOSFORD GULF OIL CORP==

-9 1958 R-1093 1337 LACT=

This application was amended by one dated May 27th

PETROLEUM AND ITS PRODUCTS

# GULF OIL CORPORATION

P. O. DRAWER 1290 · FORT WORTH 1, TEXAS

E. HOSFORD
DIVISION PRODUCTION COORDINATOR

FORT WORTH
PRODUCTION DIVISION

May 9, 1958

Oil Conservation Commission
State of New Mexico
P. O. Box 871
Santa Fe, New Mexico

Re: Application for Approval of LACT System and Request for Permission to Commingle Oil Produced from the Reservoirs Underlying Gulf's Learcy McBuffington Lease, Section 13, T-25-S, R-37-E, Lea County, New Mexico

Gentlemen:

Gulf Oil Corporation herewith makes application for exception to Rule 303 of the New Mexico Oil Conservation Commission Rules and Regulations to obtain approval to commingle all sweet crudes into one battery on subject lease and commingle all sour crudes into an additional automatic custody transfer battery, which, if approved, will be constructed in the near future. At this hearing, Gulf will also ask permission to modify their LACT system for Ellenburger and McKee production as approved by Order R-1093 in Case No. 1337.

In order to fully utilize the proposed LACT system, Gulf will request exceptions to:

(1) NMOCC's Rule 309(a) which requires measurement of oil in tanks before such oil is transported from the lease.

(2) That portion of Rule 309 which limits production from only eight units of the same basic lease into common tankage.

(3) Rule 303 which prohibits the commingling of oil between pools.

Docket Mailed 5-27-58 JP

In support of this application, Gulf states the following:

(a) Gulf Oil Corporation is the owner and operator of all producing rights below 3800 feet on the Learcy McBuffington Lease which consists of the S/2 of Section 13, T-25-S, R-37-E, Lea County, New Mexico.

(b) There is no diversity of royalty ownership underlying the above described lease.

(c) By Order R-1093 dated November 27, 1957, a lease automatic custody transfer system and commingling privileges were approved by the Commission so far as applied to the McKee and Ellenburger oils underlying subject lease.

(d) The applicant will request permission to commingle all sweet crude produced from this lease into the LACT battery which is now being used for McKee and Ellenburger oil.

(e) Applicant proposes to install an additional LACT battery to handle sour crudes produced from this property, and permission will be requested which would allow all sour crudes to be commingled in this one additional automatic custody battery.

(f) Applicant proposes to modify the initially approved LACT system for McKee and Ellenburger production in order to provide for one complete test facility.

(g) The proposed installation will be adequate to accurately measure oil produced from each pool and result in efficient accounting of crude oil transferred to the pipe line gathering system.

(h) The granting of applicant's request in this case is in the interest of conservation, and will protect correlative rights.

(i) By copy of this letter all operators owning interests in the section involved and all offset operators, as well as the pipe line company concerned, are notified of Gulf's application.

Gulf Oil Corporation respectfully requests that this matter be set for hearing at an early date.

Respectfully submitted,

GULF OIL CORPORATION

By E. Harland
Division Production Coordinator

cc: Oil Conservation Commission
P. O. Box 2045
Hobbs, New Mexico

cc: Anderson-Prichard Oil Corporation
P. O. Box 196
Midland, Texas

W. K. Byrom
1000 Dal Paso
Hobbs, New Mexico

R. Olsen Oil Company
Drawer Z
Jal, New Mexico

The Texas Company
P. O. Box 1270
Midland, Texas

Tidewater Oil Company
Att'n: J. B. Holloway
P. O. Box 1404
Houston, Texas

Western Natural Gas Company
Midland Tower Building
Midland, Texas

Western Petroleum Company
291 Sutter Street
San Francisco, California

Texas-New Mexico Pipe Line Company
P. O. Box 1510
Midland, Texas

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

IN THE MATTER OF:

CASE NO. 1337

TRANSCRIPT OF PROCEEDINGS

June 11, 1958

DEARNLEY - MEIER & ASSOCIATES
GENERAL LAW REPORTERS
ALBUQUERQUE NEW MEXICO
Phone CHapel 3-6691

NEW MEXICO OIL CONSERVATION COMMISSION

Mabry Hall

Santa Fe, NEW MEXICO

REGISTER

HEARING DATE Examiner June 11, 1958 TIME: 9:00 a.m.

| NAME: | REPRESENTING: | LOCATION: |
|---|---|---|
| W. H. Leach / Of Counsel | Magnolia Petroleum / O.B.P.I. Co. | Tatum New Mex. / Midland Texas |
| J. E. Sperling | Magnolia Pet. Co. | Albuquerque |
| William R. Loar | Sunray Mid-Continent | Tulsa, Okla. |
| D. E. Hall | " | Midland, Texas |
| O. C. McBryde. J. | Amerada Petr. Corp | Midland, Texas |
| C. M. Burpass | Gulf Oil Corp | Hobbs |
| W. M. Kastler | " " " | Roswell |
| Don Walker | " " " | Ft. Worth, Tex |
| Jason Kellahin | Kellahin & Fox | Santa Fe. |
| Dewey Watson | Val Oil Co. Inc | Jal NM |
| W. G. Grand | Atty for Oil Co. | Hobbs N. Mex. |
| P. N. Miller | Tidewater Oil Co. | Hobbs, N. Mex. |
| A. Orth | Seth & Monk | Artesia |
| A. Duvall | Shell Oil Co. | Roswell, N. Mex. |
| F. Norman Woodruff | El Paso Natural Gas Co | El Paso |
| Nancy Kayser | Oil Conservation Reporter | Santa Fe |

NEW MEXICO OIL CONSERVATION COMMISSION

Mabry Hall

Santa Fe, NEW MEXICO

REGISTER

HEARING DATE Examiner June 11, 1958 TIME: 9:00 a.m.

| NAME: | REPRESENTING: | LOCATION: |
|---|---|---|
| E.V. Boynton | Continental Oil Co | Hobbs |
| J. Nelson Edge | Continental Oil Co. | Roswell, New Mexico |
| J. Mulvey | Phillips Pet Co | Midland, Texas |
| Carl E. Lawrence | Phillips Pet. Co | " " |
| N. Tinsley | ✓ | Bartlesville Okla |

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
JUNE 11, 1956

IN THE MATTER OF:

CASE 1337 Application of Gulf Oil Corporation for an order amending Order R-1093. Applicant, in the above-styled cause, seeks an order amending Order R-1093 to provide for the commingling, in exception to Rule 303, but only after separate measurement, of oil produced from the Fusselman, Ellenburger, and McKee formations underlying its Learcy McBuffington Lease, comprising the S/2 of Section 13, Township 25 South, Range 37 East, Lea County, New Mexico, and the transfer of said production by means of automatic custody transfer equipment, in exception to Rule 309 (a); applicant also seeks authority to commingle the production, after separate measurement, from the Blinebry and Drinkard formations and the Langlie-Mattix Pool underlying the above-described McBuffington Lease, and to transfer said production by means of automatic custody transfer equipment. Applicant further seeks authority to produce more than 16 wells into each of the common transfer facilities described above, in exception to Rule 309 (a).

BEFORE:

Daniel S. Nutter, Examiner.

T R A N S C R I P T  O F  P R O C E E D I N G S

MR. NUTTER: The hearing will come to order, please. First case on the docket this morning will be Case 1337.

MR. PAYNE: Application of Gulf Oil Corporation for an order

amending Order R-1093.

MR. KASTLER: If the Examiner please, my name is Bill Kastler. I am counsel for Gulf Oil Corporation. I live at Roswell, New Mexico. In today's extension of Case No. 1337, Gulf has made application to amend the Commission's Order No. R-1093. to permit the addition of the Fusselman zone to the commingling approval previously granted for the Ellenburger and McKee reservoir. In addition, Gulf desires authority to commingle the Drinkard, Blinebry and Langlie-Mattix production encountered on wells in this same lease into a separate surge tank for automatic custody transfer of sour crudes. Finally, the applicant seeks an exception to that portion of Rule 309 which provides, as now amended, that no more than 16 wells shall be produced into a single tank battery. Mr. C. M. Bumpass, area petroleum engineer, who testified in this case at the previous hearing held on November 14, 1957, will be Gulf's only witness today.

(Witness sworn)

C. M. BUMPASS,

called as a witness, having been first duly sworn on oath, testified as follows:

DIRECT EXAMINATION

BY MR. KASTLER:

Q Will you state your name, by whom are you employed and what is your position?

A My name is C. M. Bumpass. I am employed by Gulf Oil Corpora-

tion, area petroleum engineer, Hobbs, New Mexico.

Q You are the area petroleum engineer for the Hobbs area, which encompasses southeastern New Mexico?

A Yes, sir.

Q Have you previously appeared before the New Mexico Oil Conservation Commission and qualified as an expert and testified?

A Yes, sir.

Q Are you familiar with Gulf's application -- amended application in Case No. 1337?

A Yes, sir.

MR. KASTLER: If the Examiner please, I would like to have Mr. Bumpass' qualifications accepted.

MR. NUTTER: Mr. Bumpass is qualified. Please proceed.

Q Mr. Bumpass, will you please outline or state the location of Gulf's Learcy McBuffington lease?

A Yes, sir. Our Learcy McBuffington lease consists of the S/2 of Section 13, Township 25 South, Range 37 East, Lea County, New Mexico.

Q Does Gulf own all the operating rights on this 320-acre lease?

A With the exception of the 80 acres, the east 80 acres which is farmed out, I believe, to Byrum.

Q W. K. Byrum? A Yes, sir.

Q To what depth is his farm-out made, do you know?

A 3600 feet.

Q Is there any diversity of royalty ownership in the 320-acre lease? A No, sir.

Q Has the Commission previously approved automatic custody transfer of commingled oil produced on this lease?

A Yes, sir, they have.

Q Did Order No. R-1093 authorize the commingling of crude oil produced on this lease from the McKee and Ellenburger pay zones?

A Yes, sir, it did.

Q Since Order R-1093 has been entered into, have additional producible pay zones been encountered on this lease?

A Yes, sir, there have been other pay zones encountered.

Q What are those zones?

A Well, we have the Fusselman, the Drinkard, and the Blinebry, and of course, the old pay, there is the Langlie-Mattix pay.

Q Is the oil from the Fusselman compatible with the Ellenburger and McKee crude oil so as to permit commingling as a practical matter?

A Yes, it is.

Q How would commingling of these crudes, that is, Fusselman with Ellenburger and McKee benefit the operator?

A Well, mainly prevent additional installation of equipment.

Q What pay zones capable of producing sour crudes have been encountered on this lease?

A The Blinebry, the Drinkard, and of course, the old pay, the Langlie-Mattix.

Q If authority were granted by the Commission, could the sour crude be commingled in a common surge tank for automatic custody transfer to pipelines in a method identical to sweet crudes?

A Yes, sir, it would.

Q Would it, or might it necessitate an exception to Rule 309 as recently amended to produce all the crude oil in the manner proposed?

A Yes, it would because of the multiple pays and the possible completion of more wells, such that the total of all the wells from the multiple pay, both sweet and sour, would exceed 16.

Q Have you prepared exhibits which show the flow diagrams for the sweet and sour crude oil batteries from the wells to the pipeline?

A Yes, sir.

Q On these Exhibits, may they be numbered Exhibit No. 4 and Exhibit No. 5 to supplement the previous three exhibits already entered in this case?

Mr. Bumpass, will you refer to the Exhibit marked Exhibit No. 4, and will you outline or trace the flow of crude oils as indicated there, and explain the facilities which are proposed to be located for handling the sweet crudes produced on this lease?

A Well, the flow diagrams for the sweet crudes is Exhibit No. 4. And we have here, just generally speaking, at this time we have indicated here the Ellenburger, the McKee and the Fusselman. Now, if you will just look at those for a moment, you will see that

all of those are identical, that we have somewhat of a five spot here, a central test facility. I would like first to explain the flow of production test and normal production through say, let's take the Fusselman and then the flow of the production in the McKee and Ellenburger would be identical, so to save time, I think we will just take the flow of the production, both production and test through the Fusselman, it will simplify the matter. We have here indicated No. 1 in the legend the well header. The well header is a simulation of automatic valves pneumatically controlled; electrically operated. The flow of oil coming in from the well enters the production side of the header and passes into the separator here in the line marked in red. It then passes on into the emulsion treator and on leaving the emulsion treater, the oil is shown in green to this point here, where the oil is pulled into the monitor system by a pump electrically powered that runs continuously.

Q Mr. Bumpass, are you indicating a point between the header treater and the dump valve which is indicated on your Exhibit as No. 7?

A That's an automatic valve.

Q Yes. Is that -- A That's true.

Q This point here was the one marked No. 7?

A That's right.

Q Now, the purpose of this equipment shown here, Items 9, 10, 11 and 7 is to insure that when the oil passes the point 7 it is merchantable oil and that is accomplished through the operation of

this pump, the BS and W monitors, and then controls it to accomplish either rerouting the oil for further treatment or returning it to allow it to be metered by this matter dump type meter, Item 12 C. Now, while we are at this point, it might be well to go ahead and go through an explanation of what would happen if the BW and W content of this crude was such that the oil was non-merchantable. For example, let's just say that the BS and W content that we would allow to be passed through a meter was two-tenths of one percent. We would set this monitor two-tenths of one percent, and as long as the crude flowing from the treater through this monitor did not exceed two-tenths of one percent, this valve No. 9 would be closed to this position here, but would be opened in this direction, such that your flow would be from this point through the monitor back to this point. And, in that case, with this valve closed, this valve No. 7 remains opened which allows this vessel here to open and receive oil, measure it, close, and transfer the oil through this line here to the one thousand barrel surge tank.

Q Mr. Bumpass, if I understand you right, then, what you just said is that if the BS and W content is not over two-tenths of one percent, assuming that was the critical point, then, your pipeline transfer or your valves, the passage would be open from the heater treater to the surge tank through the dump valve, is that correct?

A That is correct.

Q Thank you.

A Now, in the event that the BS and W content is exceeded, the

monitor immediately sends a signal which closes valve No. 7, which prevents any further oil from passing that point. It opens valve No. 9 in this position and closes the flow in this direction, that allows the oil to be recirculated back for further treatment. Now, --

Q It also interrupts the continued flow of crude oil from the wells to the surge tank?

A Yes. If the BS and W problem is not solved in sufficient length of time, then the fact that you have the flow leaving the treater shut off, and you still have flow coming into the treater the working fluid level in this treater will build up sufficiently to accentuate this float control switch marked Item 19 in this drawing.. And you'll notice that that 19 is common in each one of the treaters and the separators. With this signal received at the control house, a signal is sent to the automatic valves at the header which closes those valves, and you have flow line pressure building up in the flow line which accentuates a pressure sensitive valve at the well, thus closing in the wells for the length it takes for the system to reduce the BS and W content of the crude to the point that it will be acceptable.

Q Realizing that you've already testified as to the dump type valve and its operation in the earlier hearing in this case, would you now outline the proposal that would be made if you were to test one particular well producing from the Fusselman?

A Yes. As I said before, this header is composed of a series of valves; there is a valve for each well. It is placed just at

about the end of the flow line, and that's a three-way valve. That means in one position it will be closed to production while it will be open to the test; in another position it will be closed to test while open to production. Let's just say that we had in this particular header four wells and by our test programmer, we wanted No. 1, No. 2, No. 3 and No. 4 to be tested in that sequence. And we can specify the length of time that these wells are to be on test from one hour to twenty-four hours, so having gone through the flow diagram of the normal production, we will now take the flow diagram for test production.

Q No. 1 is to be tested now?

A No. 1 is to be tested. So, let's say the well comes on test at eight o'clock up until eight o'clock. All wells are going through production here. The well test programmer, when eight o'clock comes to be, will automatically send the signal which will switch the No. 1 header valve from production to test. That closes off its normal flow through the production site and reroutes it through the test site which the production will travel down this line indicated in red, coming to this test separator.

Q What is the number of the test separator on the exhibit?

A Item No. 3.

Q Thank you.

A The production on leaving the separator enters the central test emulsion treater and, as in the other case of the production treaters, the oil will follow the path indicated in green here, and

this Item No. 5 is a dump type test oil meter, with Item No. 6 being the dump test water meter.

Q As I understand it, your central test facilities consist of Item 3, a test separator, Item 4, a test header treater, Items 5 and 6, which are respectively an oil and water dump meter?

A That's true, and then also to measure the gas, we have Item No. 21 which is located just on the vent line from the separator, Item 3.

Q That's an orifice flange flow meter?

A Yes, sir. Now, oil leaving the treater will enter the dump type oil meter and, likewise, the water from the fluid on this test will enter the water meter and be measured and then discharged into the waste water line. Now, coming back to the oil line at the same time the signal is sent to place this Well No. 1 on test, this automatic valve No. 7 is opened, it receives the same signal and it is opened to allow the oil after having been metered by the test dump meter to be returned back to the respective pay. In this discussion here we are using the Fusselman, return back to the Fusselman line just up stream of the Fusselman heater treater. Now, you will also note that in this diagram at this point here we have three such valves.

Q What are you indicating now?

A Item No. 7, these three here. Of course, this one here, as you can see, is for the Fusselman, and this valve No. 7 is for the McKee, and this valve is for the Ellenburger. Now, these

valves, this is somewhat the heart of this testing feature, to allow us to have a central test facility. This valve can only be opened when it receives the signal.

Q You are speaking of valve No. 7 which now leads to the Fusselman production treater, is that right?

A That's true. The same applies for any zone that you have on test, but I just wanted to emphasize that when the signal is transmitted by the well test programmer to place No. 1 on test, that same signal is transmitted to this, in this example. Valve No. 7 for the Fusselman, that opened that valve, these other two remain closed. That allows this oil to be returned here and then, of course, it is intermixed with the oil of the other wells in that pay, and then it is monitored and comes on in through the master type dump meter and is measured with the other oil.

Q Mr. Bumpass, do your central test facilities proposed in this exhibit differ in any respect from the test facilities proposed at the earlier hearing?

A Yes. Actually, in the initial hearing it was our proposal to have test facilities for each individual pay, and this proposal is to have a central test facility common to all pays in the sweet and in the sour battery.

Q One common to the sweet and another one common to the sour?

A That is correct.

Q Now, if installed, will these proposals result in adequate test facilities to permit the testing of each well, at least one

each month?

A Yes. It will certainly do that, and of course, we have the latitude of testing them more frequent than that, depending on the length of test that we wish to perform.

Q Is the salt water discharge measured in any other place than at the central test facility?

A No, it is not.

Q That is the only place where the salt water content in the oil is measured?

A That's true. That's just for the purpose of well testing.

Q And likewise the orifice meter is only located on the test facility, and that's the only place it is necessary to be, is that correct?

A Yes, for test purposes, that's true.

Q Now, your Items 12-A, 12-B and 12-C, which are your dump meters for each respective pay, do those measure the aggregate allowable or production from each separate pay?

A They measure the production from each pay, the total production.

Q In other words, the well from each -- the production from each well is not here measured, but the production from each pay zone is measured, and that, of course, is divisible by the number of wells to see how much each well has produced?

A Yes. Of course, we have our well test that we can keep right on top of what each well is doing, and the main purpose of --

this meter here is the mastive dump meter. As the name implies, it measures all the oil before it enters the common surge tank.

Q Do I understand that the valve No. 7, which is the outlet from the test facilities back into the production treater, and the header valve for the well that's on test, operate simultaneously?

A Yes, sir.

Q So that from the moment the test begins until the test is completed, the oil going through the test facilities is all attributed to this particular well tested?

A That's true.

Q Unless you have something to add now, on Exhibit No. 4, will you go and explain Exhibit No. 5?

A Well, I don't have anything to add specifically to Exhibit No. 4. For the sake of saving time, I would like to say that Exhibit No. 5 is identical materially to Exhibit No. 4. We are accomplishing the same goal in Exhibit 5 that we are doing in 4. There is a slight difference in the equipment, such as this tank. Well, I believe the only difference in equipment is that this is a five hundred barrel tank whereas in Exhibit No. 4 for the sweet crude is a thousand barrels. That's just because of the difference in allowables.

Q Other than that, is the battery setup you propose for handling the sour crudes the same as the one proposed for handling the sweet crudes on this particular lease? Will it, in all respects, be identical?

A Yes, sir.

Q And the flow diagram disclosed shows that they are identical, does it not? A Yes.

Q Will these proposals result in efficient accounting of crude oil transferred to the pipeline, if approved?

A Yes, sir, they will.

Q Mr. Bumpass, the transfer from the surge tank to the pipeline has been previously outlined, has it not, in principal?

A Yes, it has, in previous cases.

Q Exhibit No. 1 in 1337?

A 1337 and approved by the Commission's Order 1093. I believe that's the correct number.

Q Is there no differentiation from that proposal and that explanation that you made at that time in this setup?

A No. It is all the same.

Q Is this application in the prevention of waste and the interest of prevention of correlative and protect correlative rights?

A Yes.

Q Have other operators in this lease been notified of this application? A Yes, sir.

Q Have any objections been received? A No, sir.

Q Were these Exhibits prepared by you or under your supervision and direction? A Yes, sir.

MR. KASTLER: Mr. Examiner, those are the only questions I have at this time, and I would like to move for the admission of Exhibits No. 4 and 5.

MR. NUTTER: Is there objection to the introduction of Gulf's Exhibits no. 4 and 5? If not, they will be received in evidence. Does anyone have any questions of Mr. Bumpass?

CROSS EXAMINATION

BY MR. PAYNE:

Q Mr. Bumpass, is there an employee on duty at the control house at all times?

A No, there isn't. It is just -- at the present time he is spending more time there than he would for a normal battery. But in time, as we get more familiar with the equipment, we feel his time will be less than a normal battery.

MR. NUTTER: Any further questions?

NANCY ROYAL: What are the sour crude zones to be commingled?

A Langlie-Mattix, the Drinkard, and the Blinebry.

CROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Bumpass, in following the flow of this oil, as the raw crude leaves the production treater, what is to prevent it from going directly into valve No. 7 and on into the flow meter without being monitored?

A Well, we have a circulating pump that is pulling the oil constantly out of this line through the monitor and recharging it back into this point here. There is actually a check valve at this point here.

Q Where is this now?

A In between here. This is not exactly grammatically correct. We have the flow coming from the treater through the monitor and then back into this line before it goes on to this point here.

Q You mean there is a -- is the flow in the monitoring loop from right to left, as depicted on your exhibit?

A Actually, this should be shown over here because the flow comes from this point and through the monitor and then back into this line here.

Q So the flow is from right to left?

A Yes.

Q And you have in No. 11 a circulating pump which has constant suction on the flow line from the production treater --

A Yes, sir.

Q -- drawing oil into the monitoring loop?

A Yes, sir. In fact, it has a capacity greater than what our normal rate through this line would be, so actually, it is circulating all of the oil that would normally be going through that line plus some more oil, if you see what I mean there? It has a greater capacity; I think it is around, I don't remember offhand what the rate through there is, but actually, if you start out there with one barrel, maybe the first circulation you would circulate that barrel plus other part of another barrel, which would be circulating more than what you started circulating before.

Q Mr. Bumpass, what is the need for the line that runs parallel to the monitoring loop, being the direct flow line? What is the

need for this line?

A Actually, I don't know.

Q It appears to me there is a likelihood that some of the oil may be transferred directly to the transfer meter and not be monitored or circulated by the additional parallel line.

A Well, if our pump failed, it is possible that it could, with the pump having a greater capacity than the volume through-put of that, the normal production rate, that's the only way I could see that it could, would be the fact that the pump were to fail.

MR. KASTLER: May I direct examine on this point?

MR. NUTTER: Yes, sir, please do.

REDIRECT EXAMINATION

BY MR. KASTLER:

Q Mr. Bumpass, isn't it true that the green line, which shows over this pump and flowing to the dump meter from the production heater treater, isn't this for the use as a return line of any crude oil that is not --

A Well, we have to, that's right.

Q -- merchantably?

A This oil, as it comes through the monitor, has to be returned to this line. Of course, we could go -- if we put this on this line, then come to that valve here, we would have to fix it up so that this would be over there on the "T" along this line, and if the oil became bad it would be rerouted back through here.

Q Well, the oil that is returned for additional treatment

passes through valve No. 9 in the brown line, doesn't it?

A That's right. I think, Mr. Nutter, there is no use denying it, we were just a little bit lost, when you asked that question. We run through things; we work them out; we plan them, and then we run against things we have to change. I am not sure that this is graphically correct. It may be, but I can assure you this, that we have a pump here that has to have fluid passing through here, and we have to have a return coming through here, and if we just had a monitor in there and had a pump that ran a certain rate without having a line that you could loop back into that, we would be continually having to change the size of the pump so that we wouldn't pump the pump dry. See what I mean there? In other words, let's just assume that the rate through here was ten barrels an hour and we put a pump that was twenty barrels an hour, we would have a tendency to pump a vacuum through this thing and we would be running the pump dry, so we have to have a return loop into this thing. Now, I do believe that monitor will work. It certainly wouldn't be desirable just to stick the monitor in there. The literature tells us that we want to have a constant rate through there because if you don't have, you'll have somewhat of a settling out, you won't get an acceptable sample.

Q At any rate, Mr. Bumpass, this installation will be made in such a manner that unnecessarily large volumes of BS and W will not be passed into the through-barrel surge tank?

A That's right, we have to have it that way, yes, sir.

RECROSS EXAMINATION

BY MR. NUTTER:

Q Mr. Bumpass, what is the disposition of the tank bottoms from the through barrel tank?

A That is shown in this, shall we call it a brown flow string, and since we cannot very well take this oil and put it back through a normal system because it would allow it to return back to the dump type meters, which would again indicate production when that had already been produced, we hsve chosen to bring that through a circulating pump, Item No. 17, back to our test treater where the oil will be treated, and then you will note that there are two valves just below the Item No. --

Q Are those the valves indicated by crosses on the little circle?

A That's true. Those are manually operated valves and this will be a manually operated operation. We will go in there and close the valves underneath the treater and open the valves just below that valve and then start our circulating pump, which will pull off the bottoms whenever it is required and treat it, and allow the oil to be returned back. This will be done, of course, when there is no testing of the well.

Q This is just the period when no well is on test?

A That is true.

Q Would you tell me what type of meters Items 12-A, 12-B and 12-C are?

A Those are dump type meters.

Q What is the capacity of these?

A I believe those are 750 barrels a day.

Q Mr. Bumpass, has Gulf Oil Corporation taken any test of these dump type meters in an installation similar to the proposed installation here?

A Yes, we have. We -- in letter of, I think it was January the 4th, we sent in results of those tests. I don't know if you received them at that time, but we have taken tests on our McKee and our Ellenburger. Of course, that's all we have at this time, and the tests are continuing to be conducted. One reason is that we do not have our temperature compensating and our pressure compensating elements on these mastive type dump meters. The results that we have obtained are very good, in our opinion, and we feel that even better accuracy can be obtained, particularly the pressure compensating elements, when they are installed. We just haven't received those yet. We expect to in the very near future, and we hope to have them in operation by the end of -- oh, sometime around the 15th of July.

Q How many tests have been conducted to date, Mr. Bumpass?

A Let's see. I have through 5/23/58 13 tests on the Ellenburger and 19 tests for the McKee through 5/26/58.

Q Now, were these tests made against a strapped tank?

A Yes. In each case -- in the case of the Ellenburger we would use manual gauging in this one thousand barrels tank, checking

it against the volume measured by this dump type meter. In the instance of the McKee, we had a thousand barrel, which is a low five hundred, actually, and set here a test tank, moved in there, and by manual gauging checked that with this meter.

Q What was the average differentiation of the meter readings as compared with the volumes of oil measured in the tanks?

A I don't have the average. I can give you the range.

Q Would you give me the range, please?

A All right. In the Ellenburger, the range was from a plus 1.69 percent to a minimum of plus .23 hundredths of one percent.

Q And this is in the range of what volume of oil?

A Well, in a thousand barrel tank. Of course, we tried to gauge it to a quarter of an inch, and a quarter of an inch in a thousand barrels is one and 35 hundredths barrels. Now, since more of our tests were in the neighborhood of a 300 barrel volume, a quarter of an inch represents 45 hundredths of one percent. So you can see there we get to the point, are we using an accurate basis for checking our meter; maybe the manual gauging is not quite as accurate as the meter, that question arises.

Q Each of these tests that were taken were in the range of 300 barrels total volume measured through the meters?

A Yes, sir. Some of them were over 300 and there were one or two under that.

Q Were all of the tests that were taken within the same range of differentiation, more or less?

A Yes, sir, they were. In the case of the McKee, when we first put that on, let's see, we had some very erratic variations, and we had to change the counter, and after we changed counter, the percent ranged from a maximum of plus 1.19 percent to minus 87 hundredths of one percent.

Q Previous to changing the counter, did you have variations in excess of these 1.19?

A Yes, we did. We had as high as 35.6 percent. That's minus. Of course, we only metered 56 barrels. Now, the first few tests that we have here run from a minimum of 56 barrels up to 398, and that was because we were just anxious to get started, as soon as we put them in. The allowable on the Drinkard was somewhere around 400 barrels, something like that, and it took a long time to accumulate the volume, around 300 barrels, but we noticed that the counter was very erratic, and after we changed the counter, the percent of error dropped to what I related there. I believe that was a maximum of plus 1.19 percent to minus 87 hundredths of one percent.

Q Is it your opinion that the variation in the range that you had when the counter wasn't operating correctly could occur after installation had been made and the counter was operating correctly, or was this a faulty counter when it was installed?

A Apparently it was a faulty counter because when it was installed, I don't know if it was damaged in transit or had some slight imperfection in the assembly or fabrication, or what it was, but when you get, oh, maybe 15 to 20 barrels difference in maybe

70 to 80 measured, there is something wrong. We knew something was wrong right off because it wasn't working right, and after it was changed, we would get somewhere between one to two barrels difference in 3 to 400 barrels measured, which is very accurate, I would say.

Q And you don't believe, then, that this would occur spontaneously after a meter had been installed and was operating correctly?

A Well, I think any equipment is subject to failure. We haven't had any to know in what length of time we could expect failures. I don't know if there is any set pattern on it, but the -- to just say that the equipment would never fail, I would think would be an erroneous statement.

Q You will take tests of this equipment at rather frequent intervals until it has been determined that it is reliable?

A That's true, just like in our installation here on the PD meter, we have found out from the operation of the PD meters that after you have calibration for several months and get kind of a trend, that it is not necessary to calibrate then too frequently. You can more or less tell by the volume of oil that is going through them as to how often you should calibrate them. We are very interested in this. We have to assure ourselves that everything is operating right here, so we will still continue to take these tests and we will do so in the future and, of course, that's about all we can say at this time until we have had some experience with it.

Q Mr. Bumpass, do you anticipate that the use of sour oil in the one system as depicted on Exhibit 5 will cause any difficulties, which might not be expected in the sweet system on Exhibit No. 4?

A You mean from corrosion or such as that?

Q Yes, sir, being sour crude?

A Well, I don't know. I'm sure there is automatic equipment operating in sour crude strings. Also, we have taken into consideration, for any build-ups in our metering equipment, to plastic coat that, which should eliminate the encrustration of any build-ups in our treating equipment -- I mean in our measuring equipment. We are plastic coating our treaters, and our pilot valves are non-bleeding valves, they are just instantaneous bled, and we are even contemplating an auxiliary supply to operate our valves. As you know, those constant bleed valves use a lot of gas, but these intermediate valves use very little gas, and with the sweet gas, that should eliminate any trouble you have from the controls. I am just talking here in general, we don't anticipate any trouble or the malfunctioning of this equipment.

Q Mr. Bumpass, I know you stated that if you had a build-up of fluid in the production treater or the production separator, that the high level float valves would activate the valves at the header and cause a build-up of line pressure at the flow line and shut off the flow at the well head, is that correct?

A You possibly left out one step. When the fluid level rises through the high level shut off, that makes a contact, which sends

the signal to the control house which then sends the signal to the header valves. I think, as I understood you, Mr. Nutter, you said, when this high level occurred, a signal was sent to the header valve. Well, it is, but it goes through the control house.

Q And the build-up of pressure in the flow line shuts in the valve on the well head?

A That is correct.

Q Is there any installation there, or is this a two-way deal on the well head, that a drop in pressure on that flow line will shut it off?

A No, sir. It is just pressure increase, to close it in.

Q Is the one positive displacement meter, which is on the outlet of the surge tank, the only PD meter in the entire installation?

A When you say "entire," do you mean the sweet and sour?

Q Either one of the two installations, is there just one PD meter in each system?

A There is one for the sweet and one for the sour, yes.

MR. NUTTER: Does anyone else have any questions of Mr. Bumpass?

MR. PAYNE: One question.

MR. NUTTER: Mr. Payne.

QUESTIONS BY MR. PAYNE:

Q How does this equipment prevent undue waste in the case of a line break?

A Well, sir, if we have a line break within this system here -- Well, I think I will be all inclusive and say that if we have a line break from the well to this point here, it would be no more different than a normal battery operation, where you have conventional batteries.

MR. NUTTER: Except that you expect the lease attendant to be on the lease less frequently with this system?

A I would like to say here that it is not anything new, it has been done by operators a long time. We do have all of these lines above ground, which should eliminate or reduce any corrosion that you normally have around the battery where you have your lines buried, and even a little seep, with the lines above ground, it would be very apparent to somebody walking on that property.

MR. PAYNE: That is all.

MR. NUTTER: Any further questions? If not, Mr. Bumpass may be excused.

(Witness excused)

MR. NUTTER: Do you have anything further, Mr. Kastler?

MR. KASTLER: No, sir, I don't.

MR. NUTTER: Does anyone have anything they wish to offer in Case 1337?

MR. SETH: Tidewater would like to concur in the application of Gulf and urge it receive favorable consideration.

MR. NUTTER: Thank you. Are there any further statements? If not, we will take Case 1337 under advisement and take next Case

1341.

C E R T I F I C A T E

STATE OF NEW MEXICO )
: ss
COUNTY OF BERNALILLO )

I, J. A. TRUJILLO, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in stenotype and reduced to typewritten transcript by me and/or under my personal supervision, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal, this, the 10th day of July, 1958, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Joseph A. Trujillo
Notary Public

My Commission Expires:

October 5, 1960.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 1337, heard by me on 6-11, 1958.

..... Examiner
New Mexico Oil Conservation Commission

No. 33-57

DOCKET: REGULAR HEARING NOVEMBER 14, 1957

Oil Conservation Commission 9 a.m., Mabry Hall, State Capitol, Santa Fe, NM

ALLOWABLE: (1) Consideration of the oil allowable for December, 1957.

(2) Consideration of purchasers' nominations for the six-month period beginning January 1, 1958, for six prorated pools in Lea County, New Mexico; also consideration of the allowable production of gas for December, 1957, for six prorated pools in Lea County, New Mexico, and consideration of the allowable production of gas from six prorated pools in San Juan and Rio Arriba Counties, New Mexico for December, 1957.

NEW CASES

CASE 1337: Application of Gulf Oil Corporation for approval of a lease automatic custody transfer system to receive and measure the production from more than eight wells and for permission to commingle the oil produced from the McKee and Ellenburger Pools underlying said lease in Lea County, New Mexico, and for permission to produce the wells on said lease in excess of the monthly allowable tolerance for a limited period of time. Applicant, in the above-styled cause, seeks an order approving a lease automatic custody transfer system for its Learcy McBuffington Lease in Section 13, Township 25 South, Range 37 East, Lea County, New Mexico, to receive and measure the production from more than eight wells, and further authorizing the commingling of the oil produced from the McKee and Ellenburger Pools underlying said lease, and further authorizing the production of the wells on said lease in excess of the monthly allowable tolerance until such time as the lease allowable is sufficient to fill and storage volume of the surge tank.

CASE 1338: Southeastern New Mexico nomenclature case calling for an order for the creation of new pools and the extension of existing pools in Lea and Eddy Counties, New Mexico.

(a) Create a new oil pool for Yates production, designated as the South Lusk Pool and described as:

Township 19 South, Range 32 East
SW/4 of Section 29

(b) Create a new oil pool for Siluro-Devonian production, designated as the Shugart Siluro-Devonian Pool and described as:

Township 18 South, Range 31 East
SE/4 of Section 27

(c) Extend the Crossroads Slaughter Pool to include:

Township 9 South, Range 36 East
W/2 W/2 of Section 29

(d) Extend the Drinkard Pool to include:

Township 22 South, Range 37 East
W/2 NE/4 of Section 27

(e) Extend the Eumont Gas Pool to include:

Township 20 South, Range 37 East
S/2 NE/4 of Section 12
SW/4 of Section 24

(f) Extend the North Gladiola-Devonian Pool to include:

Township 12 South, Range 38 East
NE/4 & N/2 SW/4 of Section 8

(g) Extend the West Henshaw-Grayburg Pool to include:

Township 16 South, Range 30 East
E/2 of Section 18
N/2 NE/4 of Section 19

(h) Extend the Justis Ellenburger Pool to include:

Township 25 South, Range 37 East
SE/4 of Section 13
NW/4 of Section 24

(i) Extend the Maljamar Pool to include:

Township 17 South, Range 33 East
N/2 of Section 17
S/2 SW/4 of Section 34

(j) Extend the Pearl Queen Pool to include:

Township 19 South, Range 35 East
W/2 & S/2 SE/4 of Section 27

(k) Extend the San Simon Pool to include:

Township 21 South, Range 35 East
S/2 SE/4 of Section 29
NE/4 of Section 32

(l) Extend the Shugart Pool to include:

Township 18 South, Range 31 East
N/2 SW/4 of Section 26

(m) Extend the Square Lake Pool to include:

Township 16 South, Range 29 East
N/2 S/2 of Section 36

(n) Extend the Townsend Wolfcamp Pool to include:

Township 16 South, Range 36 East
Lots 12 & 13 of Section 6

CASE 1339: (a) Extend the Blanco Mesaverde Pool to include:

Township 31 North, Range 12 West
All of Section 19

Township 31 North, Range 13 West
All of Section 24
N/2 of Section 25

(b) Extend the Aztec-Pictured Cliffs Pool to include:

Township 29 North, Range 8 West
W/2 of Section 30
W/2 of Section 31

Township 29 North, Range 9 West
All of Section 25
All of Section 36

(c) Extend the Canyon Largo-Pictured Cliffs Pool to include:

Township 25 North, Range 6 West
S/2 and NW/4 of Section 16
All of Section 17
E/2 of Section 18

(d) Extend the South Blanco-Pictured Cliffs Pool to include:

Township 24 North, Range 4 West
N/2 of Section 8
N/2 of Section 9

Township 25 North, Range 3 West
S/2 of Section 19

Township 25 North, Range 4 West
S/2 Section 24

Township 27 North, Range 6 West
All of Section 21
S/2 of Section 22
S/2 of Section 23
SW/4 of Section 24
W/2 of Section 25
All of Sections 26 and 27
N/2 of Section 28
N/2 of Section 34

Township 27 North, Range 7 West
NW/4 Section 14
N/2 Section 15
N/2 Section 16

Township 28 North, Range 8 West
E/2 of Section 34

(e) Extend the Tapacito-Pictured Cliffs Pool to include:

Township 25 North, Range 3 West
S/2 of Section 10
E/2 of Section 11

Township 26 North, Range 3 West
W/2 of Section 20

(f) Extend the Bisti-Lower Gallup Oil Pool to include:

Township 25 North, Range 12 West
SW/4 Section 3

(g) Extend the Verde-Gallup Oil Pool to include:

Township 30 North, Range 15 West
NE/4 Section 6

Township 31 North, Range 14 West
SE/4 of Section 7

Township 31 North, Range 15 West
SW/4 of Section 23
NW/4 of Section 24
NW/4 of Section 33

CONTINUED CASES

CASE 1325: Application of Amerada Petroleum Corporation for an order amending Order R-991 insofar as said order pertains to the Bagley-Upper Pennsylvanian Gas Pool in Lea County, New Mexico, to extend the horizontal limits of said pool, and to provide for standard drilling units of 320 acres. Applicant, in the above-styled cause, seeks an order extending the Bagley-Upper Pennsylvanian Gas Pool to include the W/2 SW/4 of Section 2; N/2, SE/4 and N/2 SW/4 of Section 3; N/2 and N/2 SE/4 of Section 4, all in Township 12 South, Range 33 East; the S/2 and S/2 N/2 of Section 33; S/2 and S/2 N/2 of Section 34, all in Township 11 South, Range 33 East, Lea County, New Mexico. Applicant further requests the establishment of 320-acre spacing and drilling units in the Bagley-Upper Pennsylvanian Gas Pool and such other rules and regulations as the Commission may deem necessary for the purposes herein stated.

CASE 1327: Application of Texas Pacific Coal and Oil Company for an order immediately terminating gas prorationing in the Jalmat Gas Pool; or in the alternative, revising the Special Pool Rules for the Jalmat Gas Pool in Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order immediately terminating gas prorationing in the Jalmat Gas Pool, or in the alternative, an order immediately cancelling all accumulated underproduction and redistributing such underproduction to overproduced wells in the Jalmat Gas Pool, and requiring gas purchasers to nominate a sufficient amount of gas from the pool to permit wells from which purchasers are able to take gas to have an allowable equal to their actual production, and upon this basis to thereafter balance the pool production at the end of each proration period, and establishing deliverability of gas wells as a factor in the proration formula for the pool, and establishing a maximum amount of gas which may be taken from any well in the pool during a specified period of time. Applicant further requests the Commission to issue such further order or orders as will bring the pool immediately into balance and maintain such balance without waste and without abuse of applicant's or others' correlative rights.

ir/

Ca. 1537

PETROLEUM AND ITS PRODUCTS



# GULF OIL CORPORATION

P. O. DRAWER 1290 · FORT WORTH 1, TEXAS

B. E. THOMPSON
DIVISION PRODUCTION COORDINATOR

October 11, 1957

FORT WORTH
PRODUCTION DIVISION

Oil Conservation Commission
State of New Mexico
P. O. Box 871
Santa Fe, New Mexico

Re: Application for Approval of LACT System and Request for Permission to Commingle Oil Produced from the McKee and Ellenburger Reservoirs Underlying Gulf Oil Corporation's Learcy McBuffington Lease in Section 13, T-25-S, R-37-E, Lea County, New Mexico

Gentlemen:

Gulf Oil Corporation herewith makes application for exception to the New Mexico Oil Conservation Commission's applicable rules and regulations to obtain permission to operate Lease Automatic Custody Transfer Equipment on subject lease.

In order to fully utilize the LACT system, Gulf will request exceptions to:

(1) NMOCC's Rule 309(a) which requires measurement of oil in tanks before such oil is transported from the lease.

(2) That portion of Rule 309 which limits production from only eight units of the same basic lease into common tankage.

(3) Rule 303 which prohibits the commingling of oil between pools.

(4) Rule 502-II which prohibits production during any one proration period in excess of the assigned monthly allowable plus a tolerance of five days allowable production.

In support of this application, Gulf Oil Corporation states the following:

(a) Gulf Oil Corporation is the owner and operator of all producing rights below 3800 feet on the Learcy McBuffington Lease which consists of the S/2 of Section 13, T-25-S, R-37-E, Lea County, New Mexico.

(b) There is no diversity of royalty ownership underlying the above described lease.

(c) The proposed installation will be adequate to accurately measure oil produced from each pool and result in efficient accounting of crude oil transferred to the pipe line gathering system.

(d) Applicant will request permission to commingle the oil produced from the Ellenburger and McKee Formations underlying its Learcy McBuffington Lease.

(e) An exception to Rule 502-II may be required pending completion of sufficient wells to have enough allowable capacity to fill the storage volume of the 1000-barrel surge tank. On completion of the second Ellenburger well, this exception would no longer be required.

(f) The pipe line company which purchases the crude oil from subject lease has indicated its approval of the design and equipment for the proposed LACT system.

(g) The granting of applicant's request in this case is in the interest of conservation, and will protect correlative rights.

(h) By copy of this letter all operators owning interests in the section involved and all offset operators, as well as the pipe line company concerned, are notified of Gulf's application.

Gulf Oil Corporation respectfully requests that this matter be set for hearing at an early date.

Respectfully submitted,

GULF OIL CORPORATION

By B. E. Thompson jr.
Division Production Coordinator

cc: Oil Conservation Commission
P. O. Box 2045
Hobbs, New Mexico

Anderson-Prichard Oil Corporation
P. O. Box 2197
Hobbs, New Mexico

cc: W. K. Byrom
1000 Dal Paso
Hobbs, New Mexico

R. Olsen Oil Company
Drawer Z
Jal, New Mexico

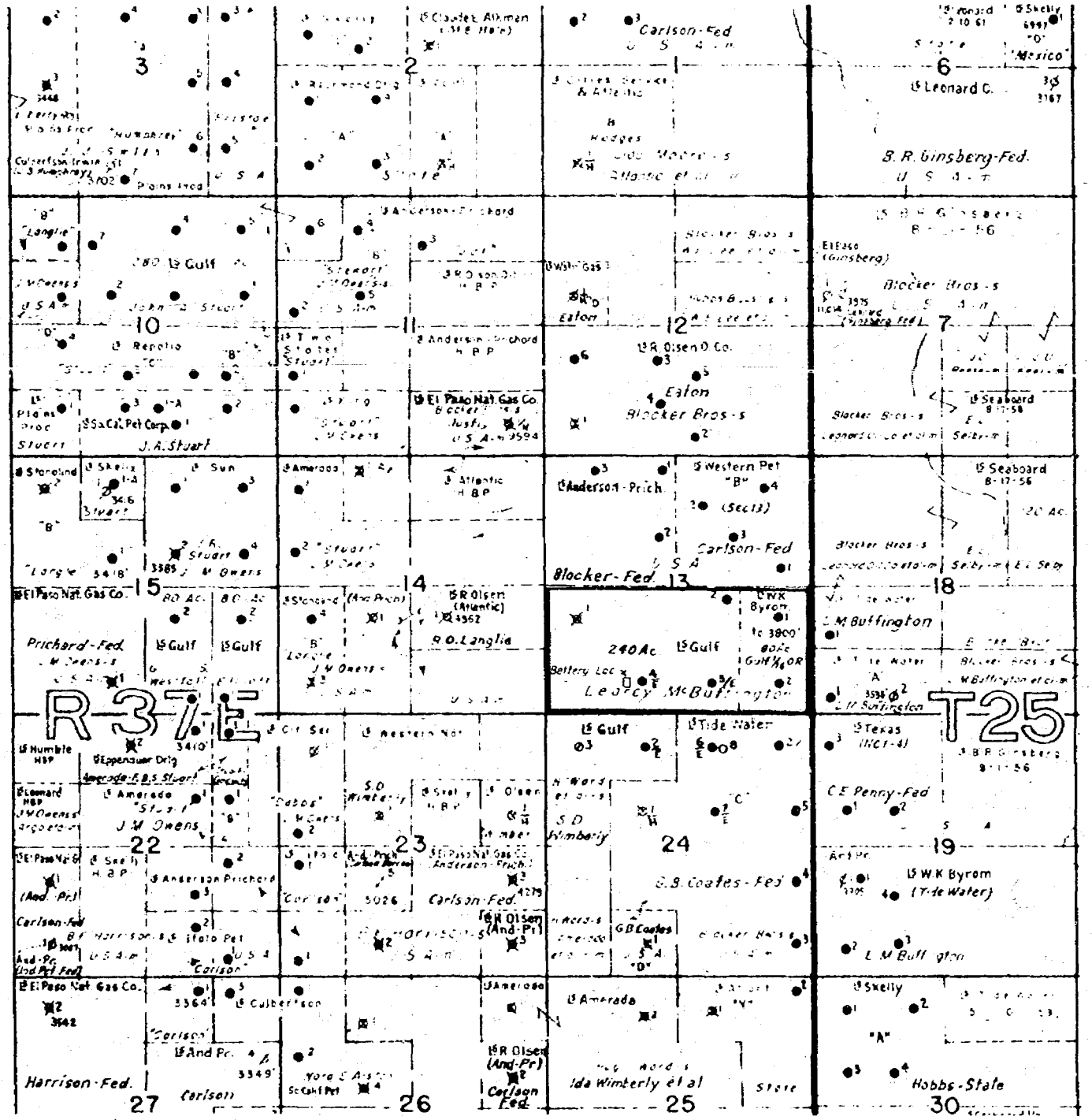
The Texas Company
P. O. Box 1270
Midland, Texas

Tidewater Oil Company
Att'n: J. B. Holloway
P. O. Box 1404
Houston, Texas

Western Natural Gas Company
Midland Tower Building
Midland, Texas

Western Petroleum Company
291 Sutter Street
San Francisco, California

Texas-New Mexico Pipe Line Company
P. O. Box 1510
Midland, Texas



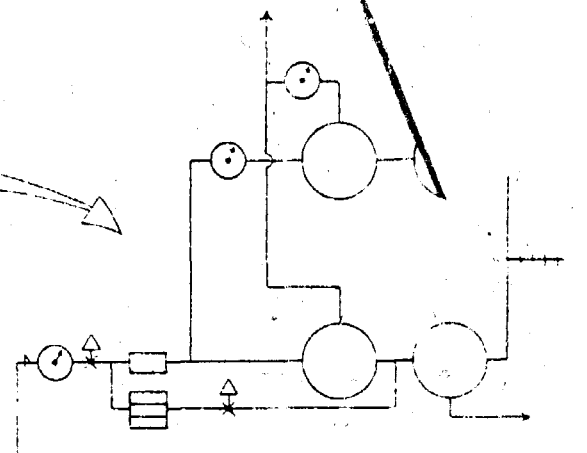

# LEARCY McBUFFINGTON LEASE

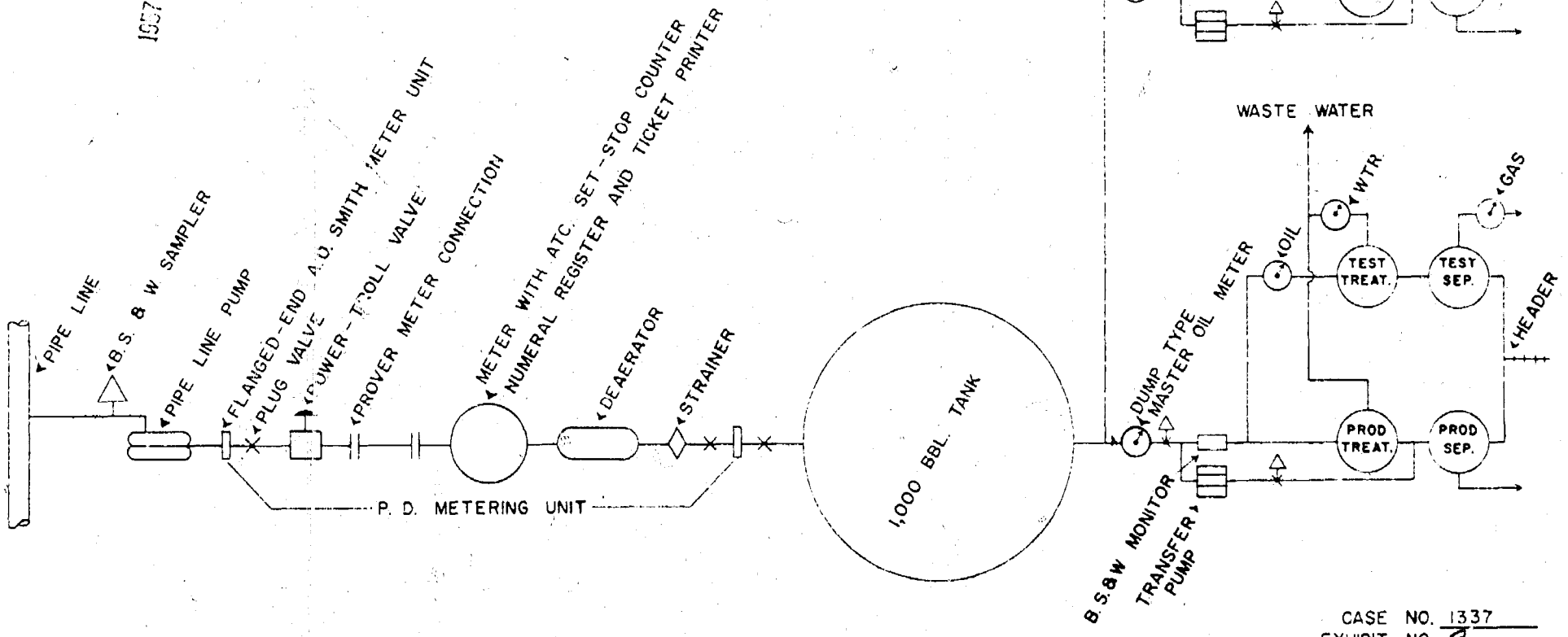
## JUSTIS AREA, LEA COUNTY, NEW MEXICO

GULF OIL CORPORATION NOVEMBER 14, 1957

CASE NO. 1337
EXHIBIT NO. 1

EACH PAY WILL HAVE SAME EQUIPMENT



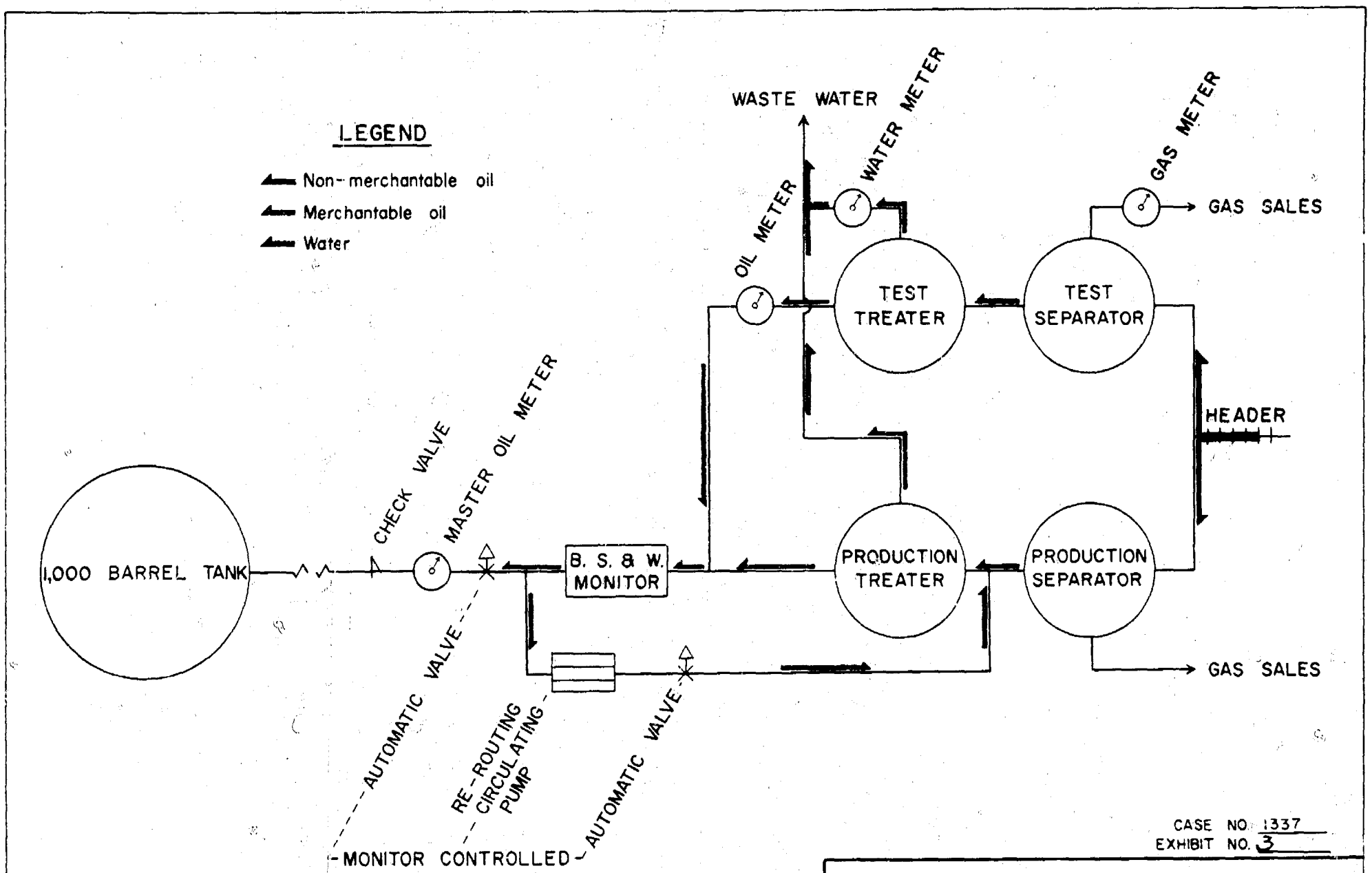



CASE NO. 1337
EXHIBIT NO. 2

# LEASE AUTOMATIC CUSTODY TRANSFER SYSTEM

McBUFFINGTON LEASE, JUSTIS AREA
LEA COUNTY, NEW MEXICO

GULF OIL CORPORATION — NOVEMBER 14, 1957




CASE NO. 1337
EXHIBIT NO. 3

# PRODUCTION AND TEST FLOW DIAGRAM FOR ONE PAY ZONE

McBUFFINGTON LEASE, JUSTIS AREA
LEA COUNTY, NEW MEXICO

GULF OIL CORPORATION NOVEMBER 14, 1957

1337

## PROOF OF DUMP METER ON LEARCY McBUFFINGTON LEASE - FUSSELMAN PAY
## TEST TANK - LOW 500 BBL.

| | | MANUAL GAUGING | | | | | | | | DUMP METER | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | |
| TEST No. | DATE STARTED 1958 | STARTING GAUGE FT. | IN. | TEMP. | CORR. VOL. | CLOSING GAUGE FT. | IN. | TEMP | CORR. VOL. | DIFF. IN VOLUMES (7 - 4) | START | FINAL | METERED VOLS. (10 - 9) | VOL. DIFF. IN BBLS. METER VS MANUAL (11 - 8) | PER CENT DIFFERENCE | REMARKS |
| 1 | 7-28 | 2 | 9-1/2 | 88° | 179.00 | 6 | 9-1/2 | 90° | 434.78 | 255.78 | 66.00 | 322.80 | 256.80 | ∮ 1.02 | ∮ 0.40 | |
| 2 | 8- 7 | 3 | 1-1/4 | 88 | 199.04 | 7 | 3 | 88 | 464.57 | 265.53 | 87.00 | 352.33 | 265.33 | - 0.20 | - 0.08 | |
| 3 | 8-12 | 0 | 11-1/2 | 86 | 61.51 | 4 | 7-3/4 | 86 | 298.13 | 236.62 | 54.30 | 291.34 | 237.04 | ∮ 0.42 | ∮ 0.18 | |
| 4 | 8-16 | 3 | 7-1/2 | 90 | 232.20 | 5 | 11-3/4 | 90 | 382.81 | 150.61 | 13.00 | 164.00 | 151.00 | ∮ 0.39 | ∮ 0.26 | |
| 5 | 8-29 | 0 | 11 | 80 | 59.01 | 5 | 10 | 80 | 375.39 | 316.38 | 25.10 | 343.60 | 318.50 | ∮ 2.12 | ∮ 0.67 | |
| 6 | 9- 4 | 0 | 11 | 80 | 59.01 | 5 | 7-3/4 | 80 | 363.33 | 304.32 | 22.00 | 329.70 | 307.70 | ∮ 3.38 | ∮ 1.11 | |
| 7 | 9- 8 | 1 | 1-1/2 | 78 | 72.50 | 7 | 1-1/2 | 80 | 458.42 | 385.92 | 71.70 | 459.45 | 387.75 | ∮ 1.83 | ∮ 0.47 | |
| 8 | 9-15 | 3 | 6 | 82 | 225.10 | 7 | 4 | 82 | 471.34 | 246.24 | 99.10 | 343.30 | 244.20 | - 2.04 | - 0.83 | |
| 9 | 9-16 | 1 | 4 | 80 | 85.84 | 4 | 10 | 78 | 311.41 | 225.57 | 543.00 | 768.00 | 225.00 | - 0.57 | - 0.25 | |
| 10 | 9-22 | 1 | 3 | 84 | 80.31 | 7 | 2 | 86 | 459.70 | 379.39 | 23.30 | 402.90 | 379.60 | ∮ 0.21 | ∮ 0.06 | |
| 11 | 10- 5 | 0 | 11 | 70 | 59.31 | 6 | 7-1/2 | 76 | 427.10 | 367.79 | 6744.10 | 7114.70 | 370.60 | ∮ 2.81 | ∮ 0.76 | |
| 12 | 10- 6 | 0 | 11 | 70 | 59.31 | 7 | 2 | 88 | 459.24 | 399.93 | 114.70 | 515.12 | 400.42 | ∮ 0.49 | ∮ 0.12 | |
| 13 | 10-11 | 3 | 1-3/4 | 74 | 203.12 | 7 | 4 | 70 | 474.20 | 271.08 | 663.33 | 931.20 | 267.87 | - 3.21 | - 1.18 | |
| 14 | 10-14 | 0 | 11 | 60 | 59.60 | 5 | 9-3/4 | 80 | 374.04 | 314.44 | 7931.20 | 8245.70 | 314.50 | ∮ 0.06 | ∮ 0.02 | |
| 15 | 10-19 | 0 | 11 | 62 | 59.54 | 7 | 6-3/4 | 77 | 487.23 | 427.69 | 364.75 | 794.63 | 429.88 | ∮ 2.19 | ∮ 0.51 | |
| | | | | | | | | TOTAL TEST VOLUME GAUGED | | 4547.29 | | | TOTAL TEST VOLUME METERED | 4556.19 | ∮ 8.90 | |

4 018.13

WEIGHTED AVERAGE PERCENT DIFFERENCE: $\frac{\text{∮ } 8.90}{4,547.29} \times 100 = \text{∮ } 0.20\%$

## PROOF OF DUMP METER ON LEARCY McBUFFINGTON LEASE - FUSSELMAN PAY
## TEST TANK - LOW 500 BBL.

| | MANUAL GAUGING | | | | | | | | DUMP METER | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | | (3) | (4) | (5) | | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | |
| TEST No. | DATE STARTED 1958 | STARTING GAUGE FT. | IN. | TEMP. | CORR. VOL. | CLOSING GAUGE FT. | IN. | TEMP | CORR. VOL. | DIFF. IN VOLUMES (7 - 4) | START | FINAL | METERED VOLS. (10 - 9) | VOL. DIFF. IN BBLS. METER VS MANUAL (11 - 8) | PER CENT DIFFERENCE | REMARKS |
| 1 | 7-28 | 2 | 9-1/2 | 88° | 179.00 | 6 | 9-1/2 | 90° | 434.78 | 255.78 | 66.00 | 322.80 | 256.80 | ∮ 1.02 | ∮ 0.40 | |
| 2 | 8- 7 | 3 | 1-1/4 | 88 | 199.04 | 7 | 3 | 88 | 464.57 | 265.53 | 87.00 | 352.33 | 265.33 | - 0.20 | - 0.08 | |
| 3 | 8-12 | 0 | 11-1/2 | 86 | 61.51 | 4 | 7-3/4 | 86 | 298.13 | 236.62 | 54.30 | 291.34 | 237.04 | ∮ 0.42 | ∮ 0.18 | |
| 4 | 8-15 | 3 | 7-1/2 | 90 | 232.20 | 5 | 11-3/4 | 90 | 382.81 | 150.61 | 13.00 | 164.00 | 151.00 | ∮ 0.39 | ∮ 0.26 | |
| 5 | 8-29 | 0 | 11 | 80 | 59.01 | 5 | 10 | 80 | 375.39 | 316.38 | 25.10 | 343.60 | 318.50 | ∮ 2.12 | ∮ 0.67 | |
| 6 | 9- 4 | 0 | 11 | 80 | 59.01 | 5 | 7-3/4 | 80 | 363.33 | 304.32 | 22.00 | 329.70 | 307.70 | ∮ 3.38 | ∮ 1.11 | |
| 7 | 9- 8 | 1 | 1-1/2 | 78 | 72.50 | 7 | 1-1/2 | 80 | 458.42 | 385.92 | 71.70 | 459.45 | 387.75 | ∮ 1.83 | ∮ 0.47 | |
| 8 | 9-15 | 3 | 6 | 82 | 225.10 | 7 | 4 | 82 | 471.34 | 246.24 | 99.10 | 343.30 | 244.20 | - 2.04 | - 0.83 | |
| 9 | 9-16 | 1 | 4 | 80 | 85.84 | 4 | 10 | 78 | 311.41 | 225.57 | 543.00 | 768.00 | 225.00 | - 0.57 | - 0.25 | |
| 10 | 9-22 | 1 | 3 | 84 | 80.31 | 7 | 2 | 86 | 459.70 | 379.39 | 23.30 | 402.90 | 379.60 | ∮ 0.21 | ∮ 0.06 | |
| 11 | 10- 5 | 0 | 11 | 70 | 59.31 | 6 | 7-1/2 | 76 | 427.10 | 367.79 | 6744.10 | 7114.70 | 370.60 | ∮ 2.81 | ∮ 0.76 | |
| 12 | 10- 6 | 0 | 11 | 70 | 59.31 | 7 | 2 | 88 | 459.24 | 399.93 | 114.70 | 515.12 | 400.42 | ∮ 0.49 | ∮ 0.12 | |
| 13 | 10-11 | 3 | 1-3/4 | 74 | 203.12 | 7 | 4 | 70 | 474.20 | 271.08 | 663.33 | 931.20 | 267.87 | - 3.21 | - 1.18 | |
| 14 | 10-14 | 0 | 11 | 60 | 59.60 | 5 | 9-3/4 | 80 | 374.04 | 314.44 | 7931.20 | 8245.70 | 314.50 | ∮ 0.06 | ∮ 0.02 | |
| 15 | 10-19 | 0 | 11 | 62 | 59.54 | 7 | 6-3/4 | 77 | 487.23 | 427.69 | 364.75 | 794.63 | 429.88 | ∮ 2.19 | ∮ 0.51 | |
| | | | | | | | | TOTAL TEST VOLUME GAUGED | | 4547.29 | | | TOTAL TEST VOLUME METERED | 4556.19 | ∮ 8.90 | |

WEIGHTED AVERAGE PERCENT DIFFERENCE: $\frac{\text{∮ } 8.90}{4,547.29} \times 100 = \text{∮ } 0.20\%$

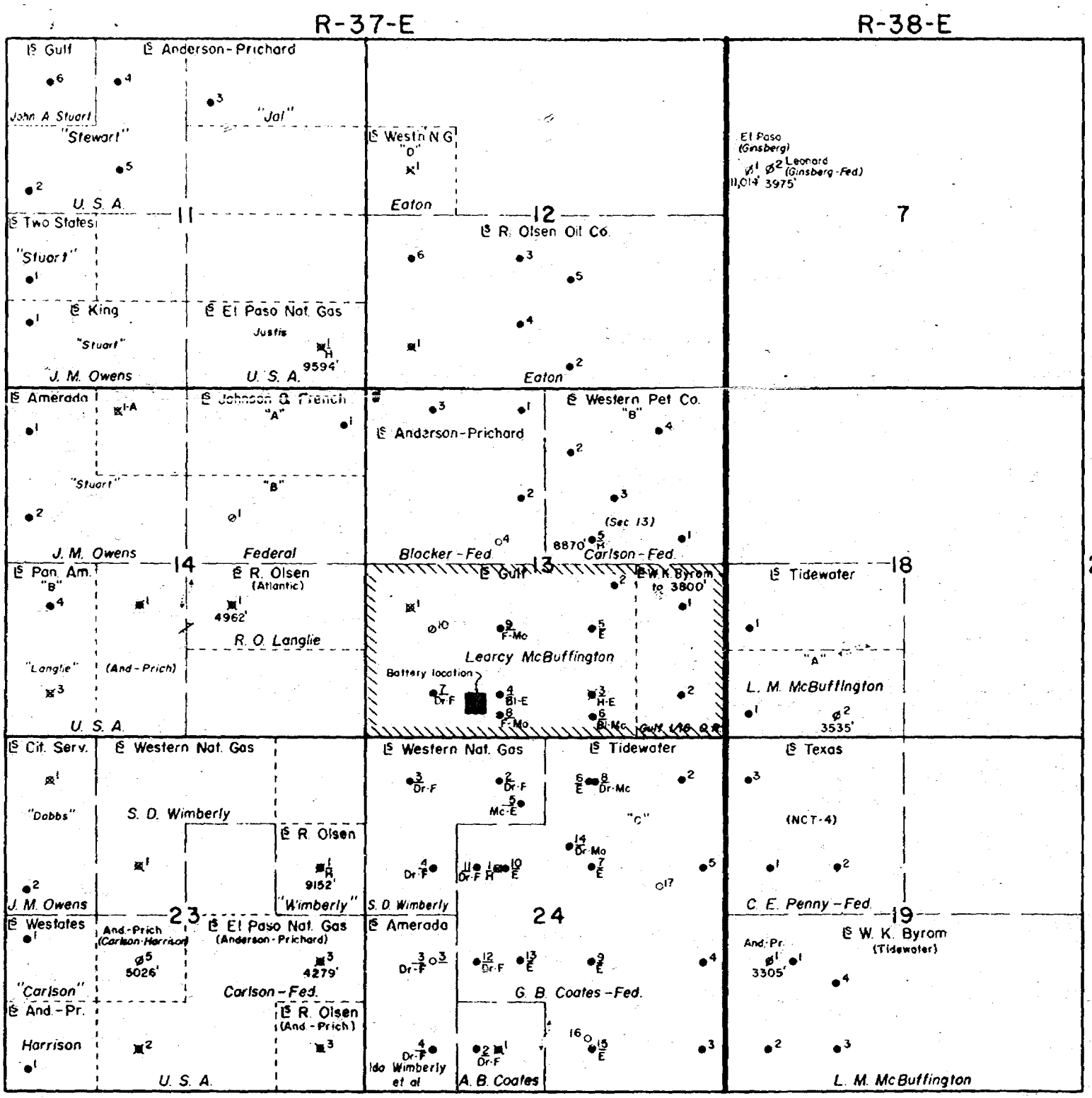
## PROOF OF DUMP METER ON LEARCY McBUFFINGTON LEASE - ELLENBURGER PAY
### WEST TANK - 1,000 BBLS.

| | | MANUAL GAUGING | | | | | | | | DUMP METER | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | | (3) | (4) | (5) | | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | |
| RUN NO. | TIME CHANGE 1952 | STARTING GAUGE FT. | IN. | TEMP. | CORR. VOL. | CLOSING GAUGE FT. | IN. | TEMP | CORR. VOL. | DIFF.IN VOLUMES (7 - 4) | START | FINAL | METERED VOLS. (10 - 9) | VOL.DIFF. IN BBLS. METER VS MANUAL (11 - 8) | PER CENT DIFFERENCE | REMARKS |
| 1 | 8-24 | 9 | 7-1/2 | 82° | 639.27 | 13 | 0 | 81° | 856.59 | 217.32 | 772.59 | 996.79 | 224.20 | + 6.88 | + 3.17 | |
| 2 | 8-28 | 7 | 5-3/4 | 92 | 498.03 | 11 | 3-3/4 | 91 | 758.71 | 259.88 | 73.56 | 334.28 | 260.72 | + 0.84 | + 0.32 | |
| 3 | 8-30 | 7 | 3-3/4 | 85 | 489.91 | 13 | 5-1/2 | 88 | 882.92 | 393.01 | 368.35 | 763.69 | 395.34 | + 2.33 | + 0.59 | Compensator had run out of fluid. |
| 4 | 9-1 | 8 | 1 | 90 | 530.00 | 11 | 11-3/4 | 90 | 787.36 | 249.36 | 285.00 | 536.00 | 251.00 | + 1.64 | + 0.66 | |
| 5 | 9-3 | 8 | 7 | 90 | 570.02 | 10 | 11-1/2 | 90 | 722.02 | 152.01 | 888.00 | 1041.00 | 153.00 | + 0.99 | + 0.65 | |
| 6 | 9-6 | 8 | 4 | 86 | 555.14 | 12 | 1-1/2 | 90 | 796.69 | 241.55 | 804.70 | 1049.50 | 244.80 | + 3.25 | + 1.35 | |
| 7 | 9-8 | 7 | 3-1/2 | 82 | 489.32 | 10 | 9-1/2 | 90 | 711.35 | 222.03 | 479.00 | 702.00 | 223.00 | + 0.97 | + 0.44 | |
| 8 | 9-11 | 8 | 5 | 90 | 559.34 | 11 | 3 | 90 | 740.69 | 181.35 | 115.44 | 297.46 | 182.02 | + 0.67 | + 0.37 | |
| 9 | 9-27 | 7 | 8-1/2 | 90 | 514.01 | 12 | 2-1/2 | 90 | 802.02 | 288.01 | 7762.00 | 8053.00 | 291.00 | + 2.99 | + 1.04 | |
| 10 | 9-19 | 8 | 0-1/2 | 90 | 535.33 | 11 | 8-1/4 | 90 | 768.68 | 233.35 | 8180.00 | 8416.00 | 236.00 | + 2.65 | + 1.14 | |
| 11 | 9-24 | 5 | 10-1/2 | 98 | 395.09 | 10 | 2 | 98 | 668.69 | 273.60 | 252.42 | 525.92 | 273.50 | - 0.10 | - 0.04 | Flash factor adjustment changed. |
| 12 | 9-29 | 8 | 11-1/2 | 82 | 596.42 | 11 | 11 | 80 | 787.33 | 190.91 | 2440.65 | | | | | |
| | Extend thru P.D.Meter, | | | | 412.2 X 0.99698 | | | | | 410.96 | | 3041.85 | | | | |
| | | | | | | | | | | 601.87 | | | 601.20 | - 0.67 | - 0.11 | |
| 13 | 10-1 | 7 | 5 | 74 | 499.31 | 10 | 10-1/4 | 76 | 720.36 | 221.05 | 751.00 | 972.00 | 221.00 | - 0.05 | - 0.02 | |
| 14 | 10-6 | 7 | 2-1/2 | 70 | 486.89 | 10 | 9-1/2 | 70 | 718.57 | 231.68 | 735.65 | 965.15 | 229.50 | - 2.18 | - 0.94 | Fluid low in compensator. |

## PROOF OF DUMP METER ON LEARCY McBUTTINGTON LEASE - ELLENBURGER PAY
## TEST TANK - 1,000 BBLS.

| | MANUAL GAUGING | | | | | | | | DUMP METER | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | | (3) | (4) | (5) | | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | |
| TEST NO. | DATE STARTED 1958 | STARTING GAUGE FT. | IN. | TEMP. | CORR. VOL. | CLOSING GAUGE FT. | IN. | TEMP | CORR. VOL. | DIFF.IN VOLUMES (7 - 4) | START | FINAL | METERED VOLS. (10 - 9) | VOL.DIFF. IN BBLS. METER VS MANUAL (11 - 8) | PER CENT DIFFERENCE | REMARKS |
| 15 | 10-14 | 7 | 11 | 90 | 527.33 | 13 | 11 | 82 | 915.07 | 387.74 | 7857.85 | 8245.45 | 387.60 | - 0.14 | - 0.04 | |
| 16 | 11-11 | 8 | 6-3/8 | 80 | 569.56 | 8 | 11-3/4 | 80 | 598.36 | 28.80 | 7174.10 | | | | | |
| | Metered thru P.D.Meter | | | | 862.9 X 0.99510 | | | | | 858.67 | | 8061.93 | | | | |
| | | | | | | | | | | 887.47 | | | 887.83 | ∤ 0.36 | ∤ 0.04 | |
| | | | | | | TOTAL VOLUME GAUGED: | | | | 5,041.28 | TOTAL TEST VOLUME METERED: | | 5,061.71 | ∤20.43 | | |

WEIGHTED AVERAGE PER CENT DIFFERENCE: $\frac{\nmid 20.43}{5,041.28} \times 100 = \nmid 0.41\%$




# LEASE PLAT
## LEARCY McBUFFINGTON

LEA COUNTY, NEW MEXICO

Gulf Oil Corporation — Nov. 19, 1958
Fort Worth Prod. Div.

■ LACT. Facilities

Case No. 1337
Exhibit No. 1-C