CASE 1917: Application of AMERADA for persistants from all wells on Amerada State 8-866. League.

1917

Application, Transcript,
Small Exhibits, Etc.

## BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

CASE No. 1917 Order No. R-1656-A

IN THE MATTER OF THE APPLICATION OF AMERADA PETROLEUM CORPORATION FOR PERMISSION TO COMMINGLE THE PRODUCTION FROM TWO SEPARATE POOLS IN LEA COUNTY, NEW MEXICO, SEPARATELY METERING THE PRODUCTION FROM ONLY ONE POOL PRIOR TO COMMINGLING.

### ORDER OF THE COMMISSION

#### BY THE COMMISSION:

This cause came on for reconsideration upon the petition of Amerada Petroleum Corporation for a rehearing in Case No. 1917, Order No. R-1656, heratofore entered by the Oil Conservation Commission of New Mexico on April 25, 1960.

NOW, on this 20th day of May, 1960, the Oil Conservation Commission, a quarum being present, having considered the petition for rehearing.

### FIEDS:

- (1) That the applicant's request in Case No. 1917 was twofold: (1) for narmission to commingle the production from two
  separate pools in exception to Rule 303(a) of the Commission
  Pules and Regulations and (2) for permission to determine the
  production from one pool by the use of a meter, subtracting this
  volume from the total commingled production as measured in tanks
  on the lease in order to determine the production from the other
  pool.
- (2) That the applicant was granted the requested commingling authorization, but was required to mater the production from each pool prior to commingling since the meter tests taken by the applicant to support its application for a one-meter installation were of too short a duration to have any significant probative value, particularly in view of the fact that a meter failure openred during these tests.
- (3) This vithout knowledge of the proper weathering or shrinkage factors to apply to the measured volume of oil, the production attributable to each root cannot be assurately determined. This right very well result in the production of oil in excess of the allowables for the wells in one of the two pools being summingled with a conscusional impairment of courseletive mights.

-2-CASE No. 1917 Order No. R-1656-A

- (4) That the Commission recognizes that carefully controlled tests conducted over at least a one year's period of time might establish that an accurate month-to-month shrinkage factor can be determined.
- (5) That accordingly, it granted the applicant the option of initiating certain tests which would be very useful in proving the accuracy or inaccuracy of a one-meter installation in a system where the production from two or more pools is being commingled.
- (6) That the applicant, in its petition for rehearing, does not state that it has any new or additional evidence to present to the Commission.
- (7) That the Commission has fully considered all testimony and exhibits received in Case No. 1917 and a mere repetition of such testimony would serve no useful purpose.
- (8) That in view of the findings set forth above, the petition for rehearing should be demied.

### IT IS THEREFORE ORDERED:

That the applicant's petition for rehearing in Case No. 1917 be and the same is hereby <u>denied</u>.

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

> STATE OF NEW MEXICO OIL COMMENVATION COMMISSION

JOHN SURBOUGHS, Chairman

NURRAY E. MORGAE, Member

M. J. PORTER, ST., Number & Secretar

R36E Shell Amerada Sun Gulf 8. 6. 2. 6. 1. Weir 5. 40 50 3 • T 19 S **3** • ири 3 • 2• uku 3. 2. 1 • Sincle: Shell 50 1. 1• 1° May Amerada Weir State Amerada Superior 2• 2• 1. 50.9 6\* Weir And-Pri Amp god 6. 3• 3 th 8 1. Gulf BH Skelly Amerada 1• 1.

| OR CONS | BEFORE THE   | L No TEXIOO |
|---------|--|-------------|
| amera.  | EXHIBITATION OF THE PROPERTY O | •           |
| CASE    | 194  | 799         |

PORTION OF MONUMENT POOL LEA COUNTY, NEW MEXICO SCALE: 1" = 20001 • McKee Wells

Case No. \_\_\_ Exhibit No. \_\_\_

# ROSSONIC COMPARISON REFERENCE SEPARATE & CONSTRUCTION

|                                     |  | foothly<br>Trod. | Gravity         | Price<br>Per Bal. | Monthly<br>Income 7/8 | Het<br>Saving |
|-------------------------------------|--|------------------|-----------------|-------------------|-----------------------|---------------|
| 1.                                  | Paye Separated<br>Measuret - Cal.<br>3 No. Average | 3499             | <b>§1</b> • √   |                   | 8,20).16              |               |
| ing<br>Maga<br>Maga<br>Maga<br>Maga | Melfee - Onl.<br>12 Me. Average                    | 66A<br>4183      | er <sup>o</sup> | 2.73              | 1,633.99<br>9,839.¢5  |               |
| 2.                                  | Pay Country of                                     | <u>kalla</u>     | 35. <b>6</b> 0  |                   | 10,603.35             | 14.99         |

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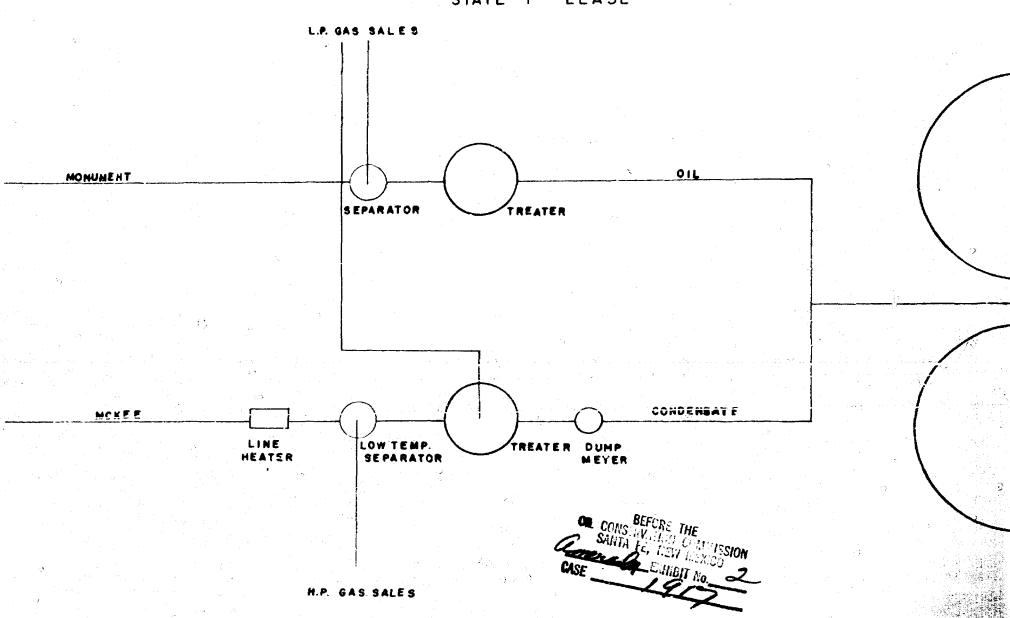
### ANKRADA PETROLEUM CONTORATION

### State "Q" Lease Comparison of Mütüred and Stock Tank Production

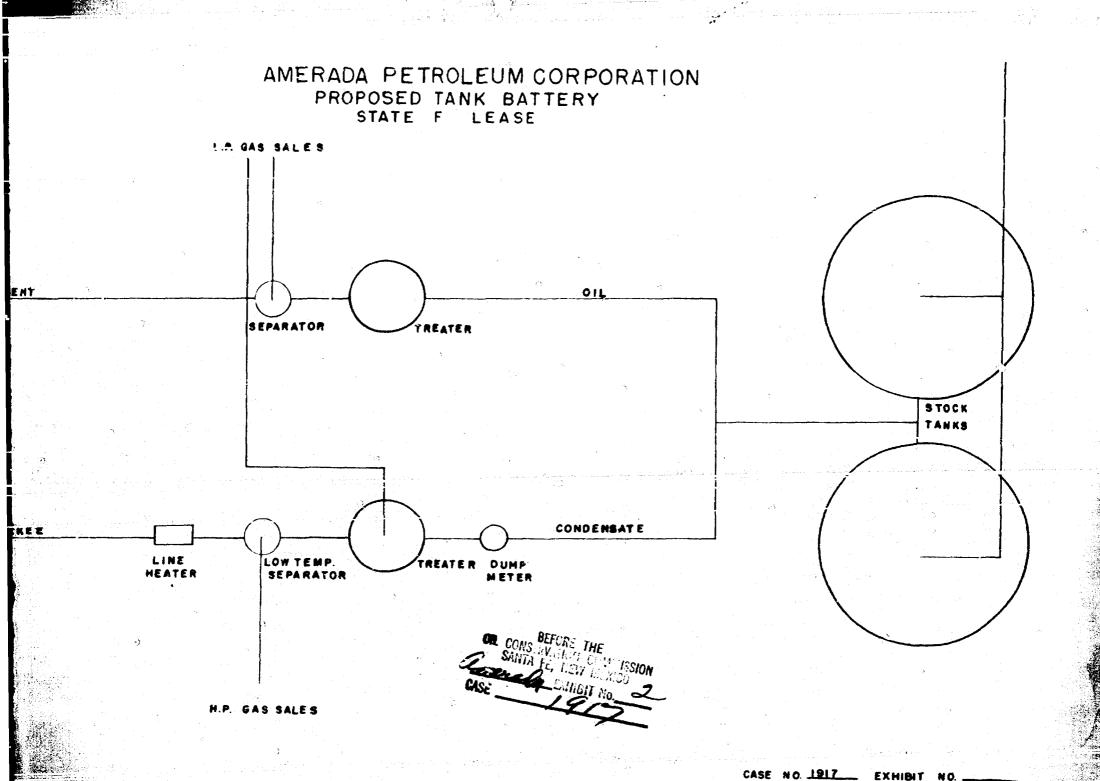
| Year     | More b        | Motors .  | rd. Produc<br>Jilka | Min.   | Stock Tank<br>Production | Difference<br>(Netered-Measured)               | Par Cont |
|----------|---------------|-----------|---------------------|--------|--------------------------|--|----------|
| 1959     | October       | . ea.     | 1039                | 1063   | 1.051                    | 12   | 0,65     |
|          | Kerrenber     | 751       | 906                 | 1.657  | 1737                     | -80  | 4.61     |
|          | December      | 690       | %5                  | · 1643 | 1645                     | <b>- 2</b>                                     | 0,12     |
| 1960     |               |           |                     |        |                          |  |          |
|          | James 17      | 668       | 913                 | 1501   | 1589                     | <b>-8</b>                                      | 0.50     |
|          | Polymary      | 595       | 634                 | 1429   | 1423                     | <b>6</b> 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 0.42     |
| Complete | itro to 3-1-1 | <b>lo</b> |                     | #1.73  | 824.5                    | <b>72</b>                                      | 0.87     |

Case No. 197 Embilds 3

### AMERADA PETROLEUM CORPORATION PROPOSED TANK BATTERY STATE F LEASE



CASE NO 1917



AMERADA PETROLEUM CORPORATION
P. O. BOX 2040

Tulsa 2, Oula.

LEGAL DEPARTMENT

February 2, 1960

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

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

Re: Application of Amerada for Exception to Rule 303 to Permit Commingling of Monument-McKee Condensate with Comment Oil Production on the Amerada State B-869 Lease in Section 30-195-305, Lea County, New Mexico

### Gentlemen:

Enclosed is Amerada's Application pertaining to captioned matter for setting on the docket. In that connection, it would be more convenient to us if this could be set for the state-wide hearing in March, provided that it will not unduly burden the docket for that date.

Very truly yours

H. D. BUSHMELL USLINELY

HDB:MT Encl.

co: Mr. Jason W. Kellahin

KELLAHIN AND FOX ATTORNEYS AT LAW SAN LAST SAN FRANCISCO STREET POST OFFICE BOX (713 SANTA FE, NEW MEXICO Feb. 5, 1960

> Mr. A. L. Porter, Director New Mexico Oil Conservation Commission P. O. Box 871 Santa Fe, New Mexico

Dear Mr. Porter:

Enclosed is the application of Amerada Petroleum Corporation for an order to permit commingling of Monument-McKee condensate with Monument Oil on the Amerada State B-569 lease.

YUCCA 2-2266

You will note from Mr. Bushnell's letter that hearing before the Commission at the regular state-wide hearing in March is requested if the docket is not unduly burdened on that date. This, I understand, is for the convenience of personnel involved, and a setting on that date would be appreciated. If this is not feasible, would you please let me know prior to making any other setting?

Yours very truly,

son W. Kellahin Jason W. Kellahin

JWK:ss Encl.

KELLAHIN AND FOX

JASON W. KELLAHIN ROBERT E. FOX ATTORNEYS AT LAW
54W EAST SAN FRANCISCO STREET
POST OFFICE BOX 1713
SANTA PR. NEW MEMICO

YUCCA 3-9396 YUCCA 2-2991

February 15, 1960

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

ATTENTION: Mr. A. L. Porter

Gentlemen:

This is to request that the application for commingling of production for led on behalf of Amerada Petroleum Corporation covering their State B-869 lease, SW/4, Section 36, 198, 36E, seeking approval for the commingling for the production from the Monument oil pool and the Monument McKee zone be set for hearing at the regular March hearing.

If a later hearing before the Commission is necessary, I would appreciate it if you would advise me before making such a setting.

Very truly yours,

Jason W. Kellahi Jason W. KELLAHIN

JWK:mas

### BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF AMERADA PETROLEUM CORPORATION FOR AN EXCEPTION TO RULE 303 TO PERMIT COM-MINGLING OF MONUMENT-MCKEE CONDENSATE AND CONTENTATE WITH MONUMENT OIL PRODUCTION ON THE AMERADA STATE B-869 LEASE IN SECTION 36-198-36E, LEA COUNTY, NEW MEXICO

CASE NO. /9//

APPLICATION

NOW COMES Amerada Petroleum Corporation and states the following: 1. Applicant is owner of State B-869 Lease, covering the SWF of Section 36-198-36E, Lea County, New Mexico, and is operator of five wells

2. Wells Nos. 1 through 4, completed in the Monument zone, produce oil run into common tankage and measured by gauging; Well No. 5, a single completion well, completed in the Monument-McKee zone, produces condensate which is also measured by gauging;

- 3. Applicant proposes to separately meter the condensate produced from Well No. 5, located in the SE of SW of Section 36, to commingle it with the Monument oil, and to gauge the commingled product in common tankage.
- 4. Applicant is prepared to show that the granting of this Application will permit the operator to produce hydrocarbons from each of the two zones here identified without waste, and further, that the granting of this application will prevent waste.

WHENEFORE, Applicant requests this matter be set for hearing, that notice thereof be given as required by law and that upon due hearing order be entered granting the applicant the authority to commingle the hydrocarbons produced from the lesse described and in the manner herein provided with such other rules as the Commission deems necessary.

KELLAHIN AND FOX

AMERADA PETROLEUM

Attorneys for Applicant

### DOCKET: REGULAR HEARING MARCH 16, 1960

### Oil Conservation Commission 9 a.m., Mabry Hall, State Capitol, Santa Fe, N.M.

Allowable:

- (1) Consideration of the oil allowable for April, 1960.
- (2) Consideration of the allowable production of gas for April 1960 from six prorated pools in Lea County, New Mexico; also consideration of the allowable production of gas from seven prorated pools in San Juan, Rio Arriba and Sandoval Counties, New Mexico.

### CASE 1917:

Application of Amerada Petroleum Corporation for permission to commingle the production from two separate pools. Applicant, in the above-styled cause, seeks permission to commingle the Monument-McKee Gas Pool condensate and Monument Pool oil production from all wells located on the Amerada State B-869 lease consisting of the SW/4 of Section 36, Town-ship 19 South, Range 36 East, Lea County, New Mexico. Applicant proposes to separately meter only the Monument-McKee Gas Pool condensate, and to gauge the commingled production in common tankage

### CASE 1918:

In the matter of the hearing called by the Oil Conservation Commission on its own motion to require Cactus Fetroleum, Incorporated, and McWood Corporation to appear and show cuase why they should not be required to purchase the Culwin Pool production from the following-described wells in Eddy County, New Mexico:

Hale and Hale Federal Well No. 1, Unit G, Section 1, Township 19 South, Range 30 East.

Hale and Hale Federal Well No. 2, Unit B, Section 1, Township 19 South, Range 30 East.

### CASE 1919:

Application of Rice Engineering & Operating, Inc., for adoption of a Form 120-A to be used in reporting salt water disposal operations. Applicant, in the above-styled cause, seeks an amendment of Rules 1119, 704, and 1103 to adopt a Form 120-A to be used by operators of salt water disposal wells in reporting salt water disposal operations.

-2-Docket No. 8-60

CASE 1920:

Southeastern New Mexico nomenclature case calling for an order for the creation of a new pool and the extension of existing pools in Chaves, Eddy, Lea, and Roosevelt Counties, New Mexico.

(a) Create a new pool designated as the Buttom Mesa-San Andres Pool, and described as:

TOWNSHIP 7 SOUTH, RANGE 32 EAST, NMPM Section 20: NE/4

(b) Extend the Allison-Pennsylvanian Pool to include:

TOWNSHIP 8 SOUTH, RANGE 36 EAST, NMPM Section 35: SW/4 Section 36: E/2 SW/4

TOWNSHIP 9 SOUTH, RANGE 36 EAST, NMPM Section 14: SW/4

(c) Extend the Arrowhead Pool to include:

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM Section 17: NW/4 NW/4

(d) Extend the Atoka-Pennsylvanian Gas Pool to include:

TOWNSHIP 18 SOUTH, RANGE 26 EAST, NMPM Section 27: N/2

(e) Extend the Bagley-Pennsylvanian Pool to include:

OWNSHIP 11 SOUTH, RANGE 33 EAST, NMPM Section 33: NE/4
Section 34: NW/4

(f) Extend the Blinebry Oil Pool to include:

TOWNSHIP 21 SOUTH, RANGE 37 EAST, NMPM Section 29: N/2 Section 30: NE/4

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM Section 26: NE/4 SE/4

Docket No. 8-60

(g) Extend the Bronco-Mississipian Pool to include:

TOWNSHIP 18 SOUTH, RANGE 38 EAST, NMPM Section 11: Lots 1 & 2 and W/2 NE/4

(h) Extend the Brown Pool to include:

TOWNSHIP 10 SOUTH, RANGE 26 EAST, NMPM Section 22: SW/4 SE/4

(i) Extend the Culwin-Queen Pool to include:

TOWNSHIP 19 SOUTH, RANGE 31 EAST, NMPM Section 6: SW/4

(j) Extend the Dollarhide-Queen Pool to include:

TOWNSHIP 24 SOUTH, RANGE 38 EAST, NMPM NW/4 Section 19:

(k) Extend the Drinkard Pool to include:

TOWNSHIP 22 SOUTH, RANGE 38 EAST, NMPM Section 28; im/2 8W/A

Extend the Empire-Abo Pool in Eddy County, to include: (1)

TOWNSHIP 17 SOUTH, RANGE 27 EAST, NMPM Section 36: SW/4

TOWNSHIP 17 SOUTH, RANGE 28 EAST, NMPM

Section 31:

TOWNSHIP 18 SOUTH, RANGE 28 EAST, NMPM

Section 4: NW/4

Section 5:

NE/4 and SW/4 Section 6:

Extend the Eumont Gas Pool to include: (m)

TOWNSHIP 21 SOUTH, RANGE 37 EAST, NMPM Section 8: E/2 SW/4 and SE/4

Docket No. 8-60

(n) Extend the Justis-McKee Pool to include:

TOWNSHIP 25 SOUTH, RANGE 38 EAST, NMPM Section 19: NW/4

(o) Extend the East Millman-Queen-Grayburg Pool to include:

TOWNSHIP 19 SOUTH, RANGE 28 EAST, NMPM Section 15: NE/4

(p) Extend the East Millman-Seven Rivers Pool to include:

TOWNSHIP 19 SOUTH, RANGE 28 EAST, NMPM Section 21: NE/4
Section 22: NW/4

(q) Extend the South Paddock Pool to include:

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TOWNSHIP 22 SOUTH, RANGE 38 EAST, NMPM Section 31: SE/4

(r) Extend the South Vacuum-Devonian Pool to include:

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM Section 22: SE/4

CASE 1921:

Sobnibni &

Northwestern New Mexico nomenclature case calling for an order for the extension of existing pools in San Juan, and Rio Arriba Counties, New Mexico.

(a) Extend the Aztec-Pictured Cliffs Pool to include:

TOWNSHIP 29 NORTH, RANGE 10 WEST, NMPM Section 33: SW/4

(b) Extend the Pine Lake-Pictured Cliffs Pool to include:

TOWNSHIP 26 NORTH, RANGE 2 WEST, NMPM Section 29: W/2 & SE/4 Section 32: E/2 & NW/4

(c) Extend the South Blanco-Pictured Cliffs Pool to include:

TOWNSHIP 24 NORTH, RANGE 3 WEST, NMPM Section 18: S/2 (partial)

-5-Docket No. 8-60

(d) Extend the Blanco-Mesaverde Pool to include:

TOWNSHIP 26 NORTH, RANGE 6 WEST, NMPM Section 3: E/2

(e) Extend the Horseshoe Gallup Oil Pool to include:

TOWNSHIP 31 NORTH, RANGE 16 WEST, NMPM Section 27: SW/4 NW/4 Section 34: NE/4 NW/4, N/2 NE/4 & SE/4 NE/4

(f) Extend the Verde-Gallup Oil Pool to include:

TOWNSHIP 31 NORTH, RANGE 14 WEST, NMPM Section 28: NW/4 & NW/4 NE/4 Section 30: NE/4 SW/4

The following case will be heard at 9 a. m. March 17, 1960

CASE: 1922:

In the matter concerning purchaser prorationing by Indiana Oil Purchasing Company in all cit pools from which it purchases in Lea, Chaves and Eddy Counties, New Mexico.





### SKELLY OIL COMPANY

PRODUCTION DEPARTMENT
C L. BLACKSHER, VICE PRESIDENT
W. P. WHITMORE, GENERAL MANAGER

TULSA 2.OKLAHOMA

March 10, 1960

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

> Re: Case 1917 Hearing March 16

Gentlemen:

Skelly Oil Company urges favorable consideration to application of Amerada Petroleum Corporation for comminging of Monument makes and Monument Pool production by separately metering one pool's production in common tankage.

The accurate metering of one pool and the gauging of the commingled production in the common tankage gives sufficient information and data for proper administration. No rights are violated, particularly where it is the same lease and same interests.

The economical advantages are very apparent and justify the Commission's favorable action. This would reduce unnecessary capital investments and operating costs and greatly benefit domestic operations so sorely needed at this time.

Hery truly yours,

Selinger

GWS/reh

cc: Mr. Dunlavey

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

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

#### Cantlemen:

We are advised that Amerada Petroleum Corporation has filed an application for an exception to Rule 303 to permit commingling of Monument-McKee condensate with Monument oil production on the Amerada State "F" lease in Section 36-198-36E, Lea County, New Mexico.

That applicant proposes to separately meter the condensate produced from Well No. 5 located in the SE/4 SW/4 of Section 36, to commingle it with the Monument oil, and gauge the commingled product in common tankage.

As an offset operator we have no objection to this application.

Yours very truly,

GULF OIL CORPORATION

By Mathellshear Date March 10,1960

Cost file

New Mexico Oil Conservation Commission P. O. Box 871 Santa Pe, New Mexico

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

### Gentlemen:

We are edviced that Amereda Petroleum Corporation has filed an application for an exception to Rule 303 to permit commingling of Momment-Helice condensate with Momment ell production on the Amereda State "F" lease in Section 36-196-368, Lea County, New Maxion.

That applicant proposes to separately noter the condensate produced from Well No. 5 located in the SR/4 SV/4 of Section 36, to commission in with time Moments oil, and gauge the commission product in common tenkess.

As an effect operator we have no objective to this application.

Yours very truly,

SHELL OIL COMPANY

1. L. 747.

Acting Division Production Nanagor Date Narch 5/1960

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

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

Gentlemen:

We are advised that Amerada Petroleum Corporation has filed an application for an exception to Rule 303 to permit commingling of Monument-McKee condensate with Monument oil production on the Amerada State "F" lease in Section 36-198-36F, Lea County, New Mexico.

That applicant proposes to separately meter the condensate produced from Well No. 5 located in the SE/4 SW/h of Section 36, to commingle it with the monument oil, and gauge the commingled product in common tankage.

As an offset operator we have no objection to this application.

Yours very truly,

SUPEPIOR OIL COMPANY

# SUN OIL COMPANY

SUN OII

COPY

march 14, 1960

Mr. R. S. Christie Amerada Petroleum Corporation P. O. Box 2040 Tules 2, Oklahoma

Door Sir:

We have your letter of March 2 concerning your proposal to meter the condensate produced from well #5 in the Monument-McKer some and to commingle this with oil produced from wells #1 through #4 on your State of New Mexico B-669 Lease covering the SM/4 of Section 36-198-36E, Lea County, New Mexico.

Sun Oil Company has no objection to your receiving an exception to Rule 303 to permit commingling of Monument-Monore production with Monument oil production on this lease but Sun Oil Company presers that the provided liquid be measured by mater rather than the condensate produced from your well #5.

Yours very truly,

SUN GIL COMPANY

a & Sallan

ABB. ....

Sente Re. Herr Maria

### AMERADA DESTROT PIM COR DECAST CA

# State "Q" Lease Comparison of Metered and Stock Tank Production

| _                   |                          | Matas            | S                |       |                          |                                  |          |
|---------------------|--------------------------|------------------|------------------|-------|--------------------------|----------------------------------|----------|
| <u>Year</u><br>1959 | Mont h                   | Grayburg         | ed Produ<br>Tubb | Total | Stock Tank<br>Froduction | Difference<br>(Metered-Measured) | Per Cent |
|                     | October                  | 824              | 1039             | 1863  | 1851                     | 334.60)                          | Diff.    |
| **                  | November                 | 751              | 906              | 1657  | 1737                     | 12                               | 0.65     |
|                     | Becembor                 | 698              | 945              | 1643  | 1645                     | ~80                              | 4.61     |
| 1960                |                          |                  |                  | *     | 3                        | <b>≈ 2</b>                       | 0.12     |
|                     | Jamary                   | 668              | 913              | 1581  | 1589                     | •                                |          |
|                     | February                 | 5 <del>9</del> 5 | 834              | 1429  | 1423                     | <b>~ 8</b>                       | 0.50     |
| Cumula:             | ive to 3-1-60            |                  |                  |       |                          | 6                                | 0.42     |
|                     | 00 2-1-00                |                  |                  | 8173  | 8245                     | 72                               | 0.87     |
|                     | A Commence of the second |                  |                  |       |                          | enger                            |          |

Case No. 1917 Exhibit

GIL US 115 LAVE TO COMMITSSION
SAUTA FE, NEW MEXICO
EXHIBIT NO. 3
CASE / 9/17

# ECONOMIC COMPARISON BETWEEN SEPARATE & COMMINGLED PRODUCTION

|    |  |         | Price<br>Per Bbl. | Monthly<br>Income 7/8 | Not<br>Saving |
|----|--|---------|-------------------|-----------------------|---------------|
|    | Monthly Prod.  | Gravity | 2.68              | 8,205.16              |               |
| 1. | Pays Separated  Monument - Cal.  3499  3 Mo. Average | 31°     | 2.73              | 1,633.90<br>9,839.06  |               |
|    | McKee - Cal. 684<br>12 Mo. Average 4183              |         | 2,80              | 10,003.35             | 164.29        |
|    | 2. Pay Commingled 4183                               | 35.8°   |                   |                       |               |

ORL CONS. NV...LURI GEMENISSION
BANTA FE, NEW MEXICO
CASE
191

### DEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

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

> CASE NO. 1917 Order No. R-1656

APPLICATION OF AMERADA PETROLEUM CORPORATION FOR PERMISSION TO CONTINUE THE PRODUCTION FROM TWO SEPARATE POOLS IN LEA COUPTY, NEW MEXICO, SEPARATELY METERING THE PRODUCTION FROM ONLY ONE POOL PRIOR TO COMMINGLING.

### ORDER OF THE COMMISSION

### BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on March 16, 1960, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

### FINDS:

- (1) That due public notice having been given as required by less, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Amerada Petroleum Comparation, proposes to commingle the Monument Pool production from all wells located on its State B-869 lease, comprising the SN/4 of Section 36, Township 19 South, Range 36 East, MipM, Lea County, New Memice, with the liquid hydrocarbon production from the Monument-NuRse Cas Pool unlarlying said State B-869 lease, and to determine the production from each of said pools by metering the production from one pool and subtracting said metered production from the total commingled production as measured in tanks on the lease.
- (3) That due to weathering of the commingled production in storage tanks on the lease, there will be some percentage of shrinkage of the total volume of liquid hydrocarbans held in such tankage, and that said shrinkage will vary considerably adorpting to season, and that without knowledge of the proper weathering or "shrinkage" factors to apply to the massured volume of ed! it will be impossible to atourately determine

-2-CASE No. 1917 Order No. R-1656

the amount of production from each pool.

- (4) That the applicant proposes, upon approval of the requested commingling authorization and the installation of such single meter, to initiate a series of tests to determine the shrinkage factor to be incorporated into the single meter each month; but the evidence adduced at this hearing, in view of the relatively short duration of the comparative tests introduced in evidence at the hearing as well as the meter failure which occurred during said tests, does not, in the opinion of the Commission, indicate that such factors have been nor can be accurately determined at this time.
- (5) That the request of the applicant, Amerada Petroleum Corporation, for authority to commingle the Monument Pool oil production with the Monument-McKee Gas Pool liquid production from all wells on its said State B-869 lease should be approved, but that the determination of the liquid hydrocarbon production from each of said pools should be made by means of two separate meters, one for each pool.
- (6) That the applicant should be permitted, on its option, to initiate a series of carefully controlled tests, which tests should be of at least one year's duration, in order to secure a complete variation of seasonal temperature changes, as well as to obtain a complete performance history of the maters involved, to compare the efficiency of its proposed one-mater installation with the horeinafter authorized two-mater installation. Said tests should consist of simultaneously companing the production from one pool, as measured by a single independent third mater and as adjusted by a shrinkage factor as proposed by the applicant, with the production as determined and adjusted by means of the standard two-meter installation hereinafter authorized and commonly in use in New Mexico.
- (7) That if the applicant chooses to emercise the abovementioned option and conduct the aforesaid tests, it should consult with the Secretary-Director of the Commission prior to installation of the necessary equipment and commencement of the tests.

### IT IS THEREFORE ORDERED:

- (1) That the applicant be and the same is hereby authoriced to comingle the cil production from the Monument Pool and the liquid hydrocarbon production from the Monument-NeRee Gas Pool from all wells on its State B-869 lease, comprising the SN/4 of Section 36, Township 19 South, Range 36 East, MCM, Lea County, New Mexico.
  - (2) That the applicant's request that the production from

-3-CASE No. 1917 Order No. R-1656

only one pool be metered and that this metered production be subtracted from the total commingled production in determining the production from the pool which is not metered be and the same is hereby denied.

- (3) That the production from each of said pools shall be separately metered prior to commingling.
- (4) That the applicant may, at its option, run a series of tests over a one-year period to determine whether shrinkage factors can be accurately determined in a one-meter installation. If the applicant chooses to exercise such option, it shall notify the Secretary-Director prior to installation of the necessary equipment and commencement of the tests.
- (5) That the applicant shall install adequate facilities to pagmit the testing of all wells on the said State B-869 Lease at least once each month to determine the individual production from each well.
- (6) That all meters shall be operated and maintained in such a manner as to ensure an accurate measurement of the liquid hydrogarbon production at all times.

That all meters shall be checked for accuracy at least once each month until further direction by the Secretary-Director. Heters shall be calibrated against a master moter or against a test tank of measured volume and the results of such calibration filed with the Commission on the Commission soom entitled "Neter Test Report."

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

> STATE OF MEN MEXICO OIL COMBERVATION COMMISSION

JOSE SETERATION Chairman

MURRAY H. MORGAE, Munices

A. L. PONTER, Jr., Monibor & Socretar

**-/** 

# BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE APPLICATION OF AMERADA PETROLEUM CORPORATION FOR PERMISSION TO COMMINGLE THE PRODUCTION FROM TWO SEPARATE POOLS IN LEA COUNTY, NEW MEXICO, SEPARATELY METERING THE PRODUCTION FROM ONLY ONE POOL PRIOR TO COMMINGLING.

### APPLICATION FOR REHEARING

Comes now Amerada Petroleum Corporation and applies to the Oil Conservation Commission of New Mexico for a rehearing in Case No. 1917, Order No. R-1656, as provided by law, insofar and only insofar as said Order No. R-1656 denies the applicant's request that the production from only one pool be metered and that this metered production be subtracted from the total commingled production in determining the production from the pool that is not metered, and in support thereof would show the commission:

- 1. That the above captioned case was heard by the Oil Conservation Commission on March 16, 1960, and that under date of April 25, 1960, the Commission entered its Order No. R-1656 denying the relief sought by applicant in Case No. 1917.
  - 2. That said Order is unlawful in that
  - (a) There is no evidence in the record to support the findings upon which said Order is based;
  - (b) There is no finding that waste or correlative rights will be affected by the operations proposed by applicant.
  - (c) The effect of said Order is to cause the expenditure of money by the applicant without just cause thereby

depriving applicant of its property without due process of law.

- (d) Said Order is based upon opinion which is without support in the evidence before the Commission.
- 3. Said Order is further unlawful and invalid for the reason that the Commission was without lawful authority to deny said application on the basis of the record before the Commission.

WHEREFORE, applicant prays that this matter be set for rehearing before the Commission and that after notice and rehearing, as provided by law, the Commission enter its order approving the application herein as prayed for.

Respectfully submic

BY KILLAHIN & FOX

P. O. Box 1713

Santa Fe, New Mexico

ATTORNEYS FOR APPLICANT

# P. O. BOX 871 SANTA FE, NEW MEXICO

May 23, 1960

Mr. Jason Kellahin Kellahin & Fox P. O. Box 1713 Santa Pe, New Mexico

Door Mr. Eollahin:

On behalf of your client, Amerada Petroleum Corporat' 11. we enclose two copies of Order R-1656-A in Case 1917 issued by the Oil Conservation Commission on May 20. 1960.

Yery truly yours,

A. L. PORTER, &r. Secretary-Director

12/

Carbon copy of order sent to:

Gil Compervation Commission Nobbs, Now Musico

Finalize from the applications of amerada tetroloum Case No. Corporation for permission to com-1917 minge the production from two Older No. R-56 separate pools in Lea County, new Inifice, rejourately motering the strong one pool prior to AM commingling Heard by the Communican on March 16 FINDS : (1) Usual (2) That the applicant, amerada Vetroleum Corporation, proposes to comming to the movement Pool production from all wells located on its State B-869 Lease, comprising the suft of Section 36, Laurship 19 South, Frange 36 East, umpm, Lea County, new mexico, with the liquid hydrocarbon production from Thonument - ME Kee Gas Fool linderly said State B-869 lease, and to determine productions from each of said pools & metering the production from one and subtracting said metered stoo from the total commingled product as (3) That due to weathering of the minded production in storage to the lease, there will be some perce apprintage of the total value of advantant hell in such traits The property of the second 

oil, it will be impossible to accurately detsemines the amount of probection from each (4) That the applicant proposed, upon approval of the requested commingling authorizations and The installation of such single meter, to initiate a series of tests to determine the shrinkage factor to be incorporated into the adduced at this hearing, in view of the relatively short duration of the comparative tests introduced in evidence at the hearing as well as the meter failure which occurred during said tests, Goes not, in the openion of the Commission, indicate that such factors have been nor can be accurately determined at this time. (5) That the request of the applicant, amerala Etroleum Corporation, for outhority to commingle the monument Pool oil production with the monument - me Kee Gas Pool liquid production from all wells on its said State B-869 for should be approved, but that the determination I the liquid hydrocarbon production from each of said pook should be made meant of two separate meters, one for each pobl. (6) That the applicant should be permitted at its option, to initiate a series bearing waterled tests, which tests executed be bush me year's duration, in or air a couple or it is a green to with the seal as will as a seal 

proposed one - motor installation with the hereinafter authorized two-meter installation. Daid that should consist of simultaneously comparing the production from one pool, as measured by a single independent third meter and as adjusted by a shrinkase factor as proposed by the applicant, with the production as determined and adjusted by mens of the standard two-meter installation hereinefter authorized and commonly in use in new mexico.

(7) That if the applicant chooses to exercise the above-mentioned option and conduct the Ascretary-Director of the Commission prior to installation of the necessary equipment and commission of the recessary equipment and commission of the lists.

At do Therefore Ordered:

hereby authorized to comming the same is hereby authorized to comming to the production from the Monument Pool and the Liquid hydrocarbon production from the Monument.

Me Kee Gas Pool from all wells on its tate B-869 lease, comprising the says of lection 36, Savinship is South, Range 36 East, Mason, Lea County, Ten Mexico.

12) Hat the applicant assured the Mason with the applicant assured that the says and the same that the same and the same and

(3) That the production from each of soil pools shall be separately melere D'prior to commingling (4) That the applicant may, at its option, run a series of lests over a one-year period to determine whether shrinkage factors can be accurately determined in a one-meter installation. If the applicant chooses to exercise Director prior to installations of the necessary equipment and commencement of the tests. (5) That the applicant shall motallades nate facilities to permit the testing of all Wills on the said State B-869 Lease at least once each month to determine the individual production from each well. and maintained in such a manner as to exerce an accurate measurement of the isued hydrocarbon production at all times. That all meters shall be checked for accuracy at least once each month until further direction by the Secretary-Director meters shall be calibrated against a master meter or acainst a test tank of measure volume and the results of such calibration 1. 1. O with the Commission of the Commission ben entitled "Meter Jest Report

# 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. 1917 Order No. R-1656-A

APPLICATION OF AMERADA PETROLEUM CORPORATION FOR PERMISSION TO COMMINCLE THE PRODUCTION FROM TWO SEPARATE POOLS IN LEA COUNTY, NEW MEXICO, SEPARATELY METERING THE PRODUCTION FROM ONLY ONE POOL PRIOR TO COMMINGLING.

### ORDER OF THE COMMISSION

### BY THE COMMISSION:

This cause came on for reconsideration upon the petition of Amerada Petroleum Corporation for a rehearing in Case No. 1917, Order No. R-1656, heretofore entered by the Oil Conservation Commission of New Mexico on April 25, 1960.

NOW, on this \_\_\_\_\_day of May, 1960, the Oil Conservation Commission, a quorum being present, having considered the petition for rehearing,

### FINDS:

- (1) That the applicant's request in Case No. 1917 was twofold; (1) for permission to commingle the production from two separate pools in exception to Rule 303(a) of the Commission Rules
  and Regulations and (2) for permission to determine the production
  from one pool by the use of a meter, subtracting this volume from
  the total commingled production as measured in tanks on the lease
  in order to determine the production from the other pool.
- authorization, but was required to meter the production from each the meter pool separately prior to commingling since/tests taken by the applicant to determine shrinkage were of too short a duration to have any significant probative value, and validity particularly were of the final factories and the first probative value and validity particularly were of the first factories a letter failure occurred during these tests.
- (3) That without knowledge of the proper weathering or shrinkage factors to apply to the measured volume of oil, the production attributable to each pool cannot be accurately determined. This might very well result in the production of oil in excess of the allowables for the wells in one pools have communicated with a concomitant impairment? Correlative rights.

¿ Su

-2-CASE No. 1917 Order No. R-1656-A

- (4) That the Commission recognizes that carefully controlled tests conducted over at least a one year's paried of time might establish that an accurate month-to-month shrinkage factor can be determined.
- (5) That accordingly, it granted the applicant the option of initiating certain tests which would be very useful in proving the accuracy or inaccuracy of a one-meter installation in a system where commingling situation. He production from two or more pools is being commingled.
- (6) That the applicant, in its petition for rehearing, does not state that it has any new or additional evidence to present to the Commission.
- (7) That the Commission has fully considered all testimony and exhibits received in Case No. 1917 and a mere repetition of such testimony would serve no useful purpose.
- (8) That in view of the findings set forth above, the petition for rehearing should be denied.

### IT IS THEREFORE ORDERED:

That the applicant's petition for rehearing in Case No. 1917 be and the same is hereby denied.

DONE at Santa Fe, New Mexico,

The state of the s

BEFORE THE OIL CONSERVATION COMMISSION Santa Fe, New Mexico March 16, 1960

IN THE MATTER OF:

Application of Amerada Petroleum Corporation for permission to commingle the production from two separate pools. Applicant, in the above-styled cause, seeks permission to commingle the Monument-McKee Gas Pool condensate and Monument Pool oil production from all wells located on the Amerada State B-869 lease consisting of the SW/4 of Section 36, Township 19 South, Range 36 East, Lea County, New Mexico. Applicant proposes to separately meter only the Monument-McKee Gas Pool condensate, and to gauge the commingled production in common tankage.

Case 1917

BEFORE:

Honorable John Burroughs Mr. A. L. Porter Mr. Murray Morgan

# TRANSCRIPT OF HEARING

MR. PAYNE: "Case 1917. Application of Amerada Petroleum Corporation for permission to commingle the production from two separate pools."

MR. KELLAHIN: If the Commission please, Jason Kellahin, Kellahin and Fox, Santa Fe, representing Amerada. I have associated with me Mr. H. D. Bushnell, a member of the Okhahoma bar.

MR. PORTER: Mr. Bushnell.

MR. BUSHNELL: We have two witnesses to be sworn in.

MR. PORTER: Would you have them stand, please?

(Witnesses sworn.)

MR. BUSHNELL: If the Commission please, Amerada, the applicant, requested that this matter be heard before the Commission instead of at an Examiner's Hearing, and I would like to explain here the reason for that request. Rule 303 as recently amended is in two parts. Rule 203-A, the first part in effect prohibits commingling before marketing, and to that extent is substantially the same as the old Rule 303. The second part, Rule 303-B, the new amended portion authorizes exceptions upon administrative approval. Implicit in Rule 303-A, of course, is the Commission's power to grant exception after notice and hearing. One of the requirements to obtain administrative approval under sub paragraph 3, and this is only one of several, is a showing that the commingled product can be separately measured accurately.

Implicit in that finding, of course, would be a similar finding to be made by the Commission after notice and hearing to grant an exception under Rule A. In the mid portion of 1959

Amerada filed an application in this same field for authority to commingle the Grayburg and Tubb zones from a single State lease.

Although we did obtain an order authorizing that commingling, contrary to our position and as a part of that order was the rule that we be required to seprately meter either zone. We are of the opinion that that is an indication of perhaps a policy of the



Commission that separate metering of either zone makes for greater accuracy, of the total production plus the shrinkage to be allocated to either zone.

Amerada takes the position that that does not establish additional accuracy, that the metering of one zone is adequate, and is as accurate as the metering of the two is, and the purpose of this hearing today is to present that testimony to the Commission. With those opening comments, I will proceed with the examination of the witness.

MR. PORTER: In other words, you are going to try to convince the Commission that you were right in the first place?

MR. BUSHNELL: Yes, sir, I guess that's the effect.

## RICHARD E. BROSCHAT

called as a witness, having been previously duly sworn, testified as follows:

# DIRECT EXAMINATION

### BY MR. BUSHNELL:

- Would you state your name and company employment, please Q
- My name is Richard E. Broschat. I'm employed by Amerada Petroleum Corporation.
  - In what capacity?
  - As District Petroleum Engineer, Monument, New Mexico.
  - Have you testified before this Commission in a similar

capacity at prior hearings?



CH 3-5691

A Yes, I have.

Q In the course of your duties with Amerada, does the areas covered by this application come within your jurisdiction and field of study?

A Yes, it does.

Q Have you made a study of the matters pertaining to this application, that is the lease known as the State \*F\* Lease and Amerada operates the lease?

A Yes, I have.

(Marked Amerada's Exhibit No. 1, for identification.)

Q I hand you what is marked as Amerada's Exhibit No. 1, which is a plat of lease ownership showing thereon, outlined in red, the area covered by the Amerada owned State \*F\*\* Lease, located in the Southwest Quarter of Section 36. This plat also shows the names of lessees of offset operators. Now, what zones are you producing from, currently producing from on that lease?

A On our State "F" Lease, Wells No. 1, 2, 3 and 4 are completed in the Grayburg-San Andres formation in the Monument Pool.

Q Those are designated by the dark blue?

A Dark blue circles. Well No. 1 is also dualed in the Eumont Gas Pool.

Now, the Eumont Gas Pool is a dry gas and doesn't pertain to this particular application, is that right?



No, sir, it produces dry gas only. Well No. 5 is completed in the Monument-McKee Gas Fool and produces gas and liquid hydrocarbons.

How are you now measuring the gas condensate from the McKee and the Monument oil?

At the present time we're producing the production from the four Monument wells into separate tanks and the condensate from the McKee is produced into separate tanks.

- And they re currently being separately measured?
- Yes, sir.
- Now the Monument production is allocated production, is that correct?
  - Yes. sir.
  - The McKee is not?
- No, sir. Production from the McKee gas well is dependent upon gas requirements.
  - Just based on the amount of takes the purchaser makes?
  - Yes, sir.
  - Are you meeting the allowable of the Monument wells?
- Wells Numbers 2, 3 and 4 are top allowable wells at the present time. Well No. 1 is a marginal well and has an allowable of 20 barrels per day at the present time.
- Now, have you made a schematic drawing of the proposed method of comminging?



A Yes, sir, I have.

(Marked Amerada's Exhibit No. 2, for identification.)

Q I hand you what is marked as Amerada's Exhibit No. 2, which is a schematic drawing. Would you explain what that purports to show?

A Exhibit No. 2 is a schematic diagram of our proposed tank battery on the State "F" Lease. Beginning at the left we can follow the route of the Monument oil from the four Monument wells. It will go through a low-pressure separator from which gas will be taken to low-pressure gas sales and then through a heater treater and then the oil will go into the stock tanks. Fluid from the McKee gas well will first pass through a line heater and then through a low temperature separator from which high pressure gas will be taken to sales and then through a treater and then through a meter where the condensate from the McKee zone will be metered.

- Q What type of meter are you using?
- A We plan to use a dump type meter.
- Q Is that the more accurate method of metering?
- A In this case we feel it will be.
- Q Is this method, the dump type meter, one that's commonly used within the industry?
  - A Yes, it is.



from the McKee. considering the shrinkage?

A Well, take periodic tests at least once a month in which the condensate from the McKee will be routed into a separate tank and the production in the tank will be measured and the meter will be adjusted to compensate for any shrinkage that takes place between the dump meter and the actual production in the stock tanks.

Q Then how will you compute the amount of production from the Monument zone?

A Total production from the two zones will be measured in the stock tanks and we will know the McKee production from our meter and the difference between the two will then be the production from the Monument zone.

in your coinion is that a method as accurate as it would be if you were using a meter on either zone?

A Yes, it is.

Q Now, referring to the hearing that was commented on in the opening remarks in the early part or mid portion of 1959 on the State "Q" Lease, which is a state lease owned and operated by Amerada in this same field. You have produced commingled production from that lease, the Grayburg and Tubbs since October, 1959. Have you made a study of the comparison or the tolerance by comparing the metered production with the stock tank production?

Yes, I have.



- What conclusion did you reach from that study?
- We concluded that the difference between the metered production and stock tank production was extremely small, in this case less than one percent.
- Is that a tolerance within the one percent that would be expected on this type of meter?
  - Yes, that is within the limits of accuracy of the meter. (Marked Amerada's Exhibit No. 3 for identification.)
- I hand you what has been marked as Amerada's Exhibit 3, which is a tabulation. Is this the tabulation from which you have just testified your conclusion?
  - Yes, it is.
  - Would you explain it, please?
- In this tabulation we have separate meters on the Grayburg and Tubb zones on our State "Q" Lease. The columns at the left show the monthly production as shown by our meters from the two zones and then the total metered production. The stock tank production is what was actually measured in our stock tanks. Then the difference between the two has been tabulated and percent difference has been tabulated.
- Now, the period covered by this report represents the total period of commingled production from this "F" Lease, is that correct?



From the "Q" Lease.

- The "Q" Lease? Q
- Yes, sir. A
- And the metered figures for each of the two zones for the five months shown represents the corrected figure after you have deducted shrinkage?
  - Yes, sir. The meters have been calibrated for shrinkage
- I note for the month of November you show your largest Q figure in terms of percentage, 4.61 variation. Do you have any explanation to make in reference to that?
- During the month of November we experienced mechanical difficulties with one of our meters that was corrected in the next month and we were able to check out very closely again.
- The remaining figures for the period remaining, however, reflect figures where in your opinion there was no mechanical difficulty, is that right?
- No, I think that is just the normal tolerance in metering of this type.
- Now, Mr. Broschat, can you draw any conclusion from this study where you have been using a meter on either side to determine the cause or source of tolerance?
- Well, I think one reason for variation would be temperature.
- Does the existence of two meters, one on either side, you any answer as to the source of that tolerance from



# DEARNLEY-MEIER REPORTING SERVICE,

either zone?

- No, I don't believe it does. A
- Would you have the same amount of tolerance if you had Q had meter on one zone?
  - Yes. I believe you would. A
- What's the purpose of Amerada's application for commingling in this instance?
- On our State "F" Lease by commingling we propose to increase the value of the liquids sold on this lease.
- And to increase the net return to Amerada, is that Q correct?
  - Yes, Sir.
- And, based on the experienced production of 1959, have you made some calculations of what you estimate will be the net increase to Amerada on a monthly basis?
- Yes. As a result of commingling on this lease we hope to increase our net income by approximately \$164.00 per month.

(Marked Amerada's Exhibit No. 4, for identification.)

- Now, you have made a tabulation of these figures, is that correct?
  - Yes, sir.
- I hand you what is marked as Exhibit No. 4 which is that tabulation prepared by you or by someone under your supervision.



Prepared under my supervision.

Q Would you state what that shows?

This shows an economic comparison between separate production and commingled production. Our average monthly production from the Monument pay, calculated three-month average, is 3439 barrels per month. Gravity of this oil is 31° and the present price is \$2.68 per barrel. Average condensate production from the McKee gas well during 1959, twelve-month average was 684 barrels per month. The gravity of the condensate is 67°, and the present price per barrel is \$2.73.

If the two pays are commingled the gravity of the commingled production will be 35.80, price per barrel for this gravity crude would be \$2.60, and the net increase 7-8 would be \$164.29 per month.

Have you made a calculation of the net interest as to the royalty interest to the State of New Mexico?

That would be approximately \$23.00 a month, or \$275.00 per year.

Is it my understanding, Mr. Broschat, then, that in conclusion, based on the testimony here stated it is your opinion that no greater accuracy, either as to the total production from either some or as to the amount of shrinkage traceable to either some, will be obtained by using a meter on either some compared to using a meter on one zone and computing the production of the other some



in the manner here proposed by you?

No, sir, I don't believe any greater accuracy would be obtained by using the two meters.

Mr. Broschat, do you have any knowledge whatsoever that the use of one meter on one zone would cause any waste?

No, sir.

If a meter on one zone will cause no waste, then the use of two meters, one on either zone, would not prevent any waste then I assume, is that correct?

That's correct.

Do you have any knowledge that the use of one meter on one lone would be detrimental to the offset operators who owned wells completed in the allocated zone?

No, sir.

As a matter of fact, I would like the record to show that offset operators, which include Shell Oil Company, Gulf, Superior Oil Company, have without qualification given consent to. I'm not sure whether the Commission has copies of these letters, and I'll be glad to offer mine into the record, also that Sun Oil Company has given a qualified conser to the extent Sun Oil Company prefers that the proratable liquid be measured by meter rather than the condensate.

In that connection, Mr. Broschat, in your opinion does it make any difference which side is metered?



- No, sir, I don't believe it would make any difference.
- So far as the accuracy is concerned? Q
- So far as the accuracy is concerned. A
- But if there is any administrative reason for the Com-Q mission wanting you to meter the allocated side, you would be glad to do so, is that correct?
  - Yes, sir.
- Are all of these exhibits, except for the waivers here mentioned, prepared by you or one under your supervision?
  - Yes, sir, they were.
- MR. BUSHNELL: I would like to offer those into the record, please.
- MR. PORTER: Without objection, the exhibits will be admitted.
  - MR. BUSHNELL: Would you like copies of those letters?
  - MR. PORTER: Mr. Payne, do we have copies of those letters?
  - MR. PAYNE: We haven't received any that I'm aware of.
- MR. PORTER: I think there are some in the case file,
- Mr. Payne. I think we can check that for you in just a moment, Mr. Bushnell.

For the record, the Commission has a letter from Smelly Oil Company concurring in the application, and Gulf, they offer no objection, Superior offers no objection, and Shell.

MR. BUSHNELL: Well, to complete your record I will offer



here Sun's letter prepared by A. R. Ballou and Superior Oil Company is not an offset operator, but the other operators are as shown by Exhibit 1. That's all the questions I have of this witness at this time.

# CROSS EXAMINATION

# BY MR. PORTER:

Mr. Broschat, I believe that you testified that there are three top allowable wells in the Monument Pool producing from the Monument Pool?

- A Yes.
- And one marginal well?
- And one marginal.
- On the State "F" Lease? Yes, sir.
- And they propose to produce into common tankage with a McKce gas well which is producing some liquids?
  - Yes, sir.
- Could you tell us about how much liquids the McKee formation is producing? Of course, I realize it depends on the gas takes.
- Mr. Porter, on the last exhibit we showed 684 barrels per month and that was an average over a twelve-month period.
  - About 22 barrels a day?
  - Yes, sir, it fluctuates from month to month.
  - Then your Merument production would be slightly in excess



PHONE CH

of 100 barrels a day?

- A Yes, sir.
- Q And in your proposal you are proposing to meter the unprorated McKee liquids?
  - A Yes, sir.
- Q And not to meter the prorated oil liquids from the Monument pay?
  - A As we stated, it doesn't make any difference to us.
  - Q You would do it either way?
  - A We would do it either way.

MR. PORTER: Mr. Payne, do you have a question?

MR. PAYNE: Yes, sir.

### BY MR. PAYNE:

- Q I believe you testified, Mr. Broschat, that you would have an additional revenue of \$164.00 a month if you are allowed to commingle these two zones, is that right?
  - A Yes, sir.
- Q You'll have that increased revenue whether you have to separately meter each zone or not, wouldn't you? You'll still be commingling?
  - A Yes, sir.
  - Q How much does a meter cost, Mr. Broschat?
  - A Oh, a meter of the type we're thinking of would probably

No evanue 2600-00



So that it would only take you some four months to pay out the cost of the additional meter if you are allowed to commingle and the order requires separate metering, is that right?

Yes, sir.

Mr. Broschat, apparently you have some manner of calculating the shrinkage factor, is that right?

We can compensate our meters for shrinkage by checking the meter reading against a tank gauge.

- How often do you check this?
- Once a month.
- Once a month?

Yes, sir. A

If you do meter one zone and use the subtraction method to determine the production from the Monument Pool, it is true, is it not, that all the shrinkage in the absence of the shrinkage factor would be charged against the Monument zone?

If the meter was not adjusted that would be the case. However, it will be adjusted for that.

Now, Mr. Broschat, aren't there a number of factors that influence shrinkage which change from time to time?

Oh, factors such as temperature will influence the amount of shrinkage.

Does a rise or lowering of barometric pressure also influence the amount of shrinkage?

I don't think it would be significant.



- It does affect it, doesn't it?
- I don't know.
- If you open a theif hatch would that affect the amount of shrinkage?
  - If it was left open for a great length of time it would.
- A change in the gravity of the oil produced from either or both zones would also affect shrinkage, would it not?
  - To a certain degree.

MR. PAYNE: That's all. Thank you.

# BY MR. PORTER:

Mr. Broschat, do you think the use of two meters here would offer any safeguards, as far as the Commission is concerned, that the use of one meter would not?

It might serve as an additional check just as two meters in series on one side would serve as check, one against the other. However, we don't feel, that it is justified.

- You think your company would not object to the principle of the Commission allowing commingling of prorated and nonprorated liquids with only one of the liquids being metered?
  - I don't know if I follow your question there.
  - Well, it's apparent that you wouldn't, since your application is asking for that.

MR. BUSHNELL: That's right

MR. PORTEK: Any further questions?

MR. PAYNE: Yes.



DEARNLEY-MEIER

### BY MR. PAYNE:

- Q I believe you testified that you had some difficulty here during the month of November with one meter being off for some reason?
  - A Yes, sir.
- Q Now, if you were metering both zones, it would come to your attention more rapidly, would it not, that one meter was not functioning correctly?
- A I don't think it would. The production from our Monument wells is settled, we know what those wells will make every day, any discrepancy we would know it if we only had one meter.
- Q Well now, in view of the fact one well was marginal, how do you know how much it's going to make every day? Apparently it is declining, is it not?
- A It has an allowable of 20 barrels per day and that is what the well is capable of making. We run periodic tests on all our wells.
  - Q That's a relatively constant figure?
  - A Yes, sir.

MR. PAYNE: Thank you.

MR. PORTER: Mr. Nutter.

### BY MR. NUTTER:

Mr. Broschat, you stated that you would make your meter correct?



- We would run a check once a month, yes, sir.
- Now, any factor that you would derive from the once a month test would be applicable for the following month, is that correct?
  - Yes, sir.
- And that factor would depend upon the conditions the day that you ran your calibration?
  - Yes, sir.
- And if conditions changed during the month, then the factor would be in error?
- There would be certain random errors, which is inherent in any metering.
- Now, your Exhibit No. 3 shows the small percentage of error that you encountered on the State "Q" Lease. This test was run over a five-month period, I believe October through February?
  - Yes, sir.
- This is in the coldest part of the year down in Lea County, is it not?
  - Well, as I recall, October was quite warm.
- October through February wouldn't be as warm as May through September, however, would it?
  - I believe this test is valid for the entire year.
- And shrinkage is a factor of temperature as well as

A Yes, sir.

Q So the conditions here were ideal as far as temperature was concerned to get a good comparison?

A I wouldn't say they were ideal. We had considerable temperature fluctuation during the entire five-month period.

Q The point I'm trying to make, Mr. Broschat, is the fact that you stand a chance to get a better comparison by taking a winter test than by taking a summer test, wouldn't you?

- A I don't know if you would or not.
- Q You don't feel that temperature is a factor in shrinkage?
- A Temperature is a factor in shrinkage, however, I believe it is a factor that can be compensated for.
- April, assuming that three of the wells are top allowable wells and one of them is capable of making 20 barrels a day, would have a total allowable of some 3750 barrels for the month. Could you give me any idea as to what storage facilities you would have on this tank battery which you propose?
  - A The one we propose?
  - Q Yes.
  - A Or the one we have now?
  - Q The one you propose.
- A We aren't entirely sure. I think we probably will have three tanks.



£

What size?

Three 500 barrel tankel

- Your allowable per day would be some 125 barrels, is that correct?
  - Yes, sir,
- So it would take at least three or four or five days to fill up a tank in order to be able to run it?
  - Yes, sir.
- There would be some weathering shrinkage of the oil during the time it's sitting in those tanks for three or four or five days, right?
  - Yes. sir.
- When you make your calibration to determine the accuracy of the meter, do you place that distillate in the tank and allow it to weather for three, four or five days before you make your correction?
- We haven't been. However, I think by far the greater part of the weathering will occur during twenty-four hours.
- And you allow it to stand in the tank for twenty-four hours before you measure it then?
  - Yes, sir.
- Just how do you arrive at the shrinkage factor, Mr. Broschat?
- Well, as we stated, the production into the tank is by standard measurement tank gauge and if our



reading either long or short, we have adjustments on the meter which will bring it in line with what is actually measured in the tank. It's a matter of compensation to get our meter to read what is in the tank.

- Mr. Broschat, how do you determine how much of this difference is meter error and how much of it is shrinkage?
  - By meter error, what do you refer to?
- Well, I'm sure that all meters have a certain amount of error that may be slippage of fluid past the veins of the meter or a number of other things. How do you determine how much of this is some of the other things and how much is actually shrinkage of the fluid after it is in the tank?
- In the dump type meter that we propose using we will measure a positive volume of fluid in a vessel, and I don't see where any other meter error would necessarily be a great factor. That's all I have.
- Q Do you think that on a dump type meter the only error that you would ever encounter then would be the factor of shrinkage?
- I think that would be by far the greatest. I think the others would be random errors inherent in the meter.
  - MR. MUTTER: I think that's all.
  - MR. PORTER: Anyone else have a question of the witness?

### BY MR. PAYNE:

Assuming you had five percent shrinkage of the Monument



zone, would this allow you to produce five percent in excess of your allowable?

We propose to measure the Monument production, the Monument production will be weathered in tanks when we measure it, since we will be subtracting the McKee production from the total.

So that if your shrinkage factor is correct, you will be producing exactly your allowable?

Yes, sir.

That's all, thank you. MR. PAYNE:

MR. PORTER: Any further questions? Mr. Bushnell.

### RE-DIRECT EXAMINATION

### BY MR. BUSHNELL:

Mr. Broschat, we can clear up a couple of points here that have been inquired about. Let me ask you, are you in this hearing taking any issue as to the validity of the principle of using meters as an accurate method of computing quanitites?

- No, sir.
- In your opinion, is your company taking such a position?
- No, sir.
- Is there any rule in the orders of this Commission covering your "Q" Lease which requires you periodically to check the accuracy of your meters?
  - Yes, sir, I believe.



of the amount of shrinkage?

I believe the rule states that the meters shall be checked for accuracy once a month.

- And you would check those once a month for the purpose of computing the amount of shrinkage, is that correct?
  - Yes, sir, that is correct.
- As a matter of fact, your Exhibit No. 4 shows the comparison of the meter production with the stock tank production on both sides, as metered on both sides, is that correct?
  - Yes, sir.
- So that any variation in the month of November which you were asked about is reflected where they're metered on both sides, is that correct?
  - Yes, sir.
- Does the change of gravity affect the accuracy of metering in this type of meter in your opinion?
  - In my opinion, no.
- Do you recognize, or is it your opinion that changes of weather is a factor for determining the amount of shrinkage?
- Changes in temperature will influence shrinkage to a small degree.
- And if the change of weather changes the temperature of your oil, it will make a change in the amount of shrinkage, is that correct?



- Yes, sir.
- Q That's one of the factors? Yes, sir.
- Those factors or differences of factors exist in whether Q you are using one meter or two meters, is that correct?
  - That's correct.
- And if the factors are known, is it your opinion that that would affect the determination of the accuracy of the amount of production?
  - No. I don't think it would.
- What is the allowable based on is it based on the amount metered or the amount run from the tank?
  - It's based on the amount run from the tanks.
  - Is that after weathering or before weathering?
  - It's after weathering.

MR. PORTER: That's all the questions?

### RE-CROSS EXAMINATION

### BY MR. PAYNE:

- How does your Exhibit No. 4 indicate in any way that Q you can accurately compute shrinkage?
  - I don't believe I said it did.
  - Then what is the purpose of Exhibit 4?
- The purpose of Exhibit 4 was to show the saving or the increase in value of the crude by commingling.
  - maybe I have the wrong number.



MR. BUSHNELL: I think you are referring to the Exhibit

It's the one that has at the top "State "Q" Lease". 3.

MR. PORTER: Exhibit 3.

- Does Exhibit 3 in any way indicate that you can accurate ly determine the shrinkage?
  - Yes, I believe it does.
- Now, it is based, is it not, on two zones which are each separately metered?

Q

- But you propose to separately meter only one zone?
- Yes.

MR. PAYNE: That's all. Thank you.

MR. PORTER: Any further questions? The witness may be

excused.

(Witness excused.)

# R. S. CHRISTIE

called as a witness, having been previously duly sworn, testified as follows:

# DIRECT EXAMINATION

# BY MR. BUSHNELL:

Would you state your name and company for which you are Q employed?



| The Control of the Co |         |           |   |           |           |
|--|---------|-----------|---|-----------|-----------|
| Q  | In what | capacity? | A | Proration | engineer. |

- Q Have you ever testiffed before this Commission in that capacity in prior hearings?
  - A Yes, sir.
- Q Mr. Christie, based on your experience in the oil industry, do you have any opinions to express concerning the accuracy either as to the total production or as to the amount of shrinkage to be attributable to zones where you are metering only the one and computing the quantity of the other zone by the method testified to by the prior witness?
- A I think the volumes you obtain, one by meter and the other by difference in the tanks, is a reasonable, accurate method.
- Q That is both as to the quantity of the oil and considering the factor of shrinkage, is that correct?
  - A Yes, sir.
- Q That is true also regardless of the variation of the factors of shrinkage?
  - A Yes, it is true.
- Q It is your opinion that you obtain no more accuracy by the use of a meter on either zone?
  - A No more accuracy, no, sir.
- Q Now, do you have any comment that you would like to make concerning the requirement in an order authorizing commingling which requires an operator to put meters on either of the two somes?



A I believe that where you can obtain a reasonable, accurate measurement with the one meter, I don't think the Commission should require an operator to install the two meters. Counsel for the Commission raised the question of the cost of the meter. I think he was given a figure of approximately \$600.00. That in itself in a single instance probably wouldn't be worth complaining about if that was all we were arguing about was \$600.00, but this has occurred, this would be the second time that we have filed an application for this type of production, gauging and metering production. I'm sure that we'll have others in the future, and not only that, all the other companies that are operating in this area or in New Mexico will probably have similar applications.

Taking the sum total of all the applications that might come in for something like this, if the Commission would grant it, could amount to a substantial figure.

Now, I'm not crusading for the other companies here by any means, but I think that all the companies, and the Commission is well aware of this, are trying every way they can to reduce expenses, and this is just one way to do it. I think where the accuracy of the production which is either measured or metered is satisfactory, I see no reason why the industry should be burdened with that additional cost even though it is minor insofar as one application is concerned.

I understand that there have been several annlications granted



in the past for using one meter, but those I understand are, also have been on marginal wells. I'm not so sure that the Commission should make a distinction between a marginal well and a non-marginal well as long as you are talking about metering production. Talk about the shrinkage for a minute, I'm not quite clear whether the Commission is interested in the actual shrinkage of the oil. If they are, there's a lot better or more accurate way of their determining shrinkage by calibrating a meter against measured volume. Your engineering staff knows that very well. I think the only thing that you should be interested in is what you gauge and sell and whether you measure it by two meters or one meter and take the difference by tanks, I can't see where it makes any difference.

That is particularly true on a lease where your two zones are on the same lease. Now, if you were commingling production from two different leases with different royalty owners and different operators or something like that, that's a different problem, but where you have a single lease with the interest the same, I don't see that it makes any difference whether your meter calibrates within one percent or two percent or whether you have one meter or two as long as you do not produce over and above your allowable assigned to your allocated wells.

I might, it seems to me that the fact that we have received waivers from offset operators would indicate that the issue of



correlative rights is certainly not involved here. Otherwise,
we wouldn't have got these waivers signed by these offset companies.

I think that the Commission should grant this application. I
think it's a reasonable thing to ask for. I think it's something
that the other companies are interested in, and if they feel that
they can save money, we are trying to save here, they will probably
file similar applications.

Q You think the matter here requested is a matter of good conservation practices then, I take it?

A Well, actually, as I define conservation, I don't think it really has anything to do with conservation.

Q You are not asking for anything?

A We are not creating any waste. We are not disturbing any correlative rights to any extent. We aren't, if we were producing both of these zones into separate tankage we have a certain amount of loss due to evaporation and so forth, we will have probably even less if we commingle them, because the condensate will be more or less stabilized in the crude, and I think if there is any conservation at all I think it would be to the interest of conservation.

- Q It is not detrimental to conservation?
- A It certainly is not in my opinion.

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

CROSS EXAMINATION



### BY MR. PORTER:

Q Do you think the fact that one of the zones is unprorated should have any bearing on the Commission's decision?

A No, I really don't. It seems to me as though it's rather a simple matter that if you gauge or meter one zone and take the other by difference, it doesn't make too much difference which one you do it with. I'll admit that from the Commission's standpoint it would probably be better to meter the allocated production and get the other by difference. Since there is a variation in the amount of condensate that's produced from month to month, whereas your production will be fairly constant from your oil wells.

- Q There's no ceiling on the condensate production?
- A That's right.

### BY MR. PAYNE:

- Q Mr. Christie, the ownership is common at all depths on this lease, isn't it?
  - A Yes.
- I would like to ask you a question just for a matter of information since we have you on the stand and available. Is there any correlation between the amount of money that you might save in New Mexico because you receive an order allowing you to do something which a general rule prohibits? Is there any correlation between that saving and the amount of money budgeted in New Mexico?

  I doubt very much if the company would consider \$600.00



in their budget one way or the other. That would be, more or less come under your nominal operation expenses. I don't think it would even show up in the budget. Of course, we're also saving, if this is granted we are also saving in the salvage of tank that we can use other places, and it amounts to considerably more than just one meter. I don't think the Commission should, just because we can pay this thing out, should make us do it.

- I agree with you there.
- The same thing is true about drilling wells. cause you can pay them out by drilling more, there is no reason that you should drill more wells. There's always a question of drainage.
- What I was actually interested in though was if you have aclieved a certain amount of savings in New Mexico because you are getting exception to a particular rule, is it actually reflected for that state in your budget or do they look at their management as a whole?
  - I would say they look at them as a whole. MR. PORTER: The witness may be excused.

(Witness excused.)

MR. BUSHNELL: If there is any implication that we are back saying that the Commission was wrong, I can't deny that, but I hope that you won't attribute any ill will to us.

MR. PORTER: We will distribute ill will equitably



among overybody.

MR. BUSHNELL: That's all I have.

MR. BRATTON: Mr. Bratton, Humble Oil and Refining Company. Humble Oil and Refining supports Amerada Petroleum Corporation in their application in Case 1917, as a matter of principle. Humble feels that the simplest and most economical means of accurately determining the separate production from separate fields or leases should be approved. Humble feels as a matter of principle that Mr. Christie, as so ably stated here, that certainly these are unsettled times in the oil industry, and I believe in answer to Mr. Payne's question that certainly the cost of doing business in New Mexico is an item that is considered not necessarily by one company, but certainly by the oil industry generally, the cost of production.

I don't mean to suggest that what's good for General Bull Moose is necessarily good for the country, but I certainly do feel that in conformity with the Commission's duty to protect correlative rights and prevent waste that an important function they can render to this state is to reduce reasonably the cost of doing business.

Now, I feel that the Commission has become increasingly aware of this and the industry is appreciative of the Commission's concern in this regard and we sincerely request that you continue your careful attention to this matter.

MR. PORTER: Mr. Kelly.



MR. KELLY: John Kelly, Independent, Roswell. I would like to emphasize to the Commission the plight of all producers and especially the independent producers that we are caught in a tight situation or Stight economic vise, declining profits due in part, of course, to the declining allowable and in part to the increased cose of labor and material. I, as an individual, support the Amerada application and feel the Commission should aid any operators to reduce their operating cost by allowing a type of situation as Mr. Christie has requested and other situations that might come up in the future. To answer Mr. Payne directly, I operate only in New Mexico. If I cou d save \$600.00 on one well I would be spending it on other wells in New Mexico.

MR. PORTER: Anyone else have anything further to offer? We'll take the case under advisement and recess until one-thirty, at which time we will take up Case 1919.

STATE OF NEW MEXICO ) COUNTY OF BERNALILLO;

I, ADA DEARNLEY, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF I have affixed my hand and notarial seal day of March, 1960.

My commission expires:

June 19, 1963.