Case 161

Cass Ranch

Unit

CASE 161 CASS RANCH UNIT

Malco Refineries, Inc.

P. O. BOX 660
ROSWELL, NEW MEXICO

February 9, 1954

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

Gentlemen:

We are enclosing for your records a photostatic copy of our application for termination of the Cass Ranch Unit Agreement, approved by the U.S.G.S. as of February 1, 1954. A copy of this approved application has also been sent to the Commissioner of Public Lands.

Very truly yours,

MALCO REFINERIES, INC.

Alys M. Norton

Alys M. Norton (Mrs.)

enc.

IN THE MATTER OF THE UNIT AGREEMENT FOR THE DEVELOPMENT AND OPERATION OF THE CASS RANCH UNIT AREA, COUNTY OF EDDY, STATE OF NEW MEXICO

APPLICATION FOR APPROVAL OF TERMINATION OF THE CASS RANCH UNIT AGREEMENT PURSUANT TO SECTION 18 THEREOF

RECEIVED
DEC 24 1953
U. S. GEOLOGICAL SURVEY
ROSWELL, NEW MEXICO

TO: THE HONORABLE DIRECTOR OF THE GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR, WASHINGTON, D.C.:

Malco Refineries, Inc., as Unit Operator and as owner of one hundred per centum (100%) of the working interest signatory to the Cass Ranch Unit Agreement, I Sec. No. 680, hereby agrees to the termination of the said Cass Ranch Unit Agreement, pursuant the provisions of Section 18 thereof, and respectfully requests approval of the Director of the United States Geological Survey to said termination.

In support of this Application for Termination, the following is respectfully submitted:

(1) Pursuant to Section 8 of said Unit Agreement, the Cass Ranch Unit Well No. 1, located in SE/4 NW/4 of Section 3, Township 20 South, Range 24 East, Eddy County, New Mexico was drilled to a total depth of 9950'.

(2) The following formation tops were recorded:

San Andres	+3114	Canyon	-3706
Glorietta	+1994	Atoka	-4946
Fullerton	+ 314	Mississippian	-5651
Abo	- 276	Woodford	-6111
Wolfcamp	-1506	Devonian	-6130

(3) No commercial oil or gas showings were encountered in any of the zones penetrated.

(4) The well was plugged and abandoned October 28, 1953.

The undersigned working interest owner believes it is reasonably determined that the unitized land is incapable of production of unitized substances in paying quantities in the formations tested and therefore is not willing to insur the expense and risk of drilling any additional test wells.

Dated this 14th day of December 1953.

ATTEST:

MALCO REFINERIES, INC.

Asst Secretary

By Vice President

STATE OF NEW MEXICO)
COUNTY OF CHAVES)

On this 14th day of Dec, 1953, before me appeared

[redacted]

[redacted] 14th day of Dec.,
1953.

My commission expires:

6-30-56

H. E. Hamilton

Date approved [redacted] 1954

Termination of the Cass Ranch unit agreement Eddy County, New Mexico, I-Sec. No. 680, effective as of February 1, 1954, is hereby approved pursuant to the last senterce of section 17 thereof.

Thomas B. Nolan

Acting Director, Geological Survey

January 20, 1954

Malco Refineries, Inc.
P. O. Box 660
Roswell, New Mexico

Re: Application for approval of Termination of the Cass Ranch Unit Area, Eddy County, New Mexico

COPY

Gentlemen:

We have your letter dated January 7, 1954 together with a photostatic copy of the application filed with the United States Geological Survey for approval of termination of the Cass Ranch Unit Agreement in Eddy County, New Mexico.

Please be advised that we approve your application to terminate this particular unit agreement provided, however, like consent is obtained from the United States Geological Survey and Oil Conservation Commission.

Very truly yours,

E. S. WALKER
Commissioner of Public Lands

cc: United States Geological Survey
Roswell, New Mexico (3)
Oil Conservation Commission
Santa Fe, New Mexico (1)

STANDARD OIL COMPANY OF TEXAS

P. O. Box 1249
HOUSTON 1, TEXAS

June 18, 1953

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
RECEIVED
JUN 22 1953

Case 161

CASS RANCH UNIT
Eddy County, New Mexico

Conservation Commission
State of New Mexico
Santa Fe, New Mexico

Gentlemen:

We enclose for your file a copy of the Unit Accounting Agreement for the Cass Ranch Unit dated May 1, 1953.

Yours very truly,

H H Kuester

H. H. Kuester, Manager
Land and Lease Division

RMT:ms

Enclosure

cc: The Commissioner of Public Lands
State of New Mexico
Santa Fe, New Mexico

November 20, 1952

Malco Refineries, Inc.
P.O. Box 660
Roswell, New Mexico

Re: Case Ranch Unit Area Case 161

Attention: H. E. Harrington

Dear Sir:

We have your letter dated November 18, 1952 together with a copy of your application submitted to the United States Geological Survey requesting that the term of the Cass Ranch Unit Agreement be extended until December 31, 1953.

The undersigned hereby consents to the extension of time of twelve months from and after December 31, 1952, within which to comply with further drilling requirements for the Cass Unit Agreement; provided, however, similar authorization for extension is granted by the Director of the United States Geological Survey.

Very truly yours,

GUY SHEPARD,
Commissioner of Public Lands

cc: U. S. Geological Survey (3)
Oil Conservation Commission (1)

ek

ILLEGIBLE

December 27, 1951

Malco Refineries, Inc.
P. O. Box 660
Roswell, New Mexico

Re: CASS RANCH UNIT AREA

161

Attention: H. E. Harrington

Dear Sir:

We have your letter dated December 17, 1951 together with a copy of your application submitted to the United States Geological Survey requesting that the term of the Cass Unit Agreement be extended to December 31, 1952.

The undersigned hereby consents to the extension of time of twelve months from and after December 31, 1951 within which to comply with further drilling requirements for the Cass Unit Agreement; provided, however, similar authorization for extension is granted by the Director of the United States Geological Survey.

Very truly yours,

Guy Shepard,
Commissioner of Public Lands.

cc: Oil Conservation Commission
Santa Fe, New Mexico
U. S. Geological Survey
Roswell, New Mexico

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
DEC 28 1951
RECEIVED

ILLEGIBLE

October 1, 1951

161

Malco Refineries, Inc.
Box 660
Roswell, New Mexico

Attention: Mr H. E. Harrington

Re: Cass Ranch Unit Area

Gentlemen:

In accordance with your request of August 24th I am pleased to inform you that I approve the extension of the above captioned Unit Agreement for a period of nine (9) months from June 24, 1951.

I also approve the resignation of Magnolia Petroleum Company as Unit Operator and the proposal of Malco Refineries, Inc., to be Successor Unit Operator of the Cass Ranch Unit Area; provided, however, like approval is had and obtained by the Malco Refineries, Inc., from the proper officials of the Department of Interior and this office provided with a duly executed and federally approved copy of the Designation for our files.

Very truly yours,

GUY SHEPARD
Commissioner of Public Lands

cc: U. S. Geological Survey
Roswell, New Mexico

Oil Conservation Commission
Santa Fe, N. M.

January 8, 1951

Magnolia Petroleum Company
Roswell, New Mexico

Attention: Mr. S. P. Hamilfin

Dear Mr. Hamilfin:

I have carefully examined your application for an extension of time within which to comply with the further drilling requirements for the development and operation of the Cass Ranch Unit Area, Eddy County, New Mexico.

I have concluded that the best interests of the State of New Mexico would be served by such requested extensions under the appropriate provision of the original agreement. Therefore, I approve your application for extension of time until June 24, 1951.

This approval is entirely conditioned upon approval of this application for extension being had from the proper officials of the Department of the Interior.

Very truly yours,

Guy Shepard

GUY SHEPARD
Commissioner

cpm

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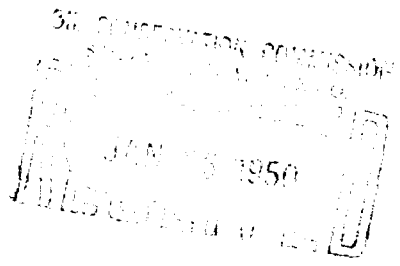
MAGNOLIA PETROLEUM COMPANY

A SOCONY-VACUUM COMPANY

Roswell, New Mexico

January 23 1950

case 161



Mr. R. R. Spurrier
New Mexico Oil Conservation Commission
Santa Fe, New Mexico

Dear Dick:

I am enclosing two copies of the approval of the extension of time in which to start a well on our Cass Ranch Unit in Townships 19 and 20 South, Range 24 East, Eddy County, New Mexico.

This is the unit agreement which I discussed with Guy Shepherd on the telephone while you and he were in Washington and you and Guy wired Buck Morrell approving the extension for the Commission.

Thanks a lot to you and Guy for your friendly cooperation in getting this extension of time.

Yours very truly,

S. P. Hannifin

SPH:ms
Encls.

Form X-85--4-49

COPY

UNITED STATES

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

Washington 25, D. C.

January 20, 1950

Magnolia Petroleum Company

Roswell, New Mexico

Gentlemen:

On January 13, 1950, Acting Director of the United States Geological Survey, Thomas B. Nolan, approved the application dated January 3, 1950, filed by your company as unit operator, requesting an extension of time until February 7, 1950, within which to commence the drilling of the initial test well in the Cass Ranch unit area, Eddy County, New Mexico, I-Sec. No. 680 approved July 8, 1949.

One approved copy of the application is enclosed for your record. It is assumed that you will furnish the State of New Mexico with whatever evidence of this approval it requires.

Very truly yours,

/s/ H. J. Duncan
For the Director

Enclosure

X-case

MAGNOLIA PETROLEUM COMPANY

C
O
P
Y

Roswell, New Mexico

January 3, 1950

Director, U. S. Geological Survey
Washington, D. C.
Thru Mr. Foster Morrell, Supervisor
Roswell, New Mexico

Re: Cass Ranch Unit Agreement
T. 19 and 20 S., R. 24 E.,
Eddy County, New Mexico.

Dear Sir:

The Director of the United States Geological Survey approved our Cass Ranch Unit Agreement on July 8, 1949, and under the provisions of this Unit Agreement, we agreed to start a well to be drilled to a total depth of 3900 feet, or oil or gas in paying quantities at a lesser depth, within six months from that date.

This six months time will be up on January 8, 1950. We are at the present time engaged in doing additional geological and geophysical work in an effort to determine the best location for the test well on this Unit and we respectfully request an additional thirty days time to complete this work in order that we may pick what we think is the best location with a possible better chance of securing production.

We kindly ask that you give this favorable consideration.

Yours very truly,

MAGNOLIA PETROLEUM COMPANY

By /s/ S. P. Hamilton

SPH:mm

Approved January 13 1950

/s/ Thomas B. Nolan
Acting Director,
U. S. Geological Survey

Form X-81-4-49

COPY

UNITED STATES

DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

Washington 25, D. C.

January 20, 1950

Magnolia Petroleum Company

Roswell, New Mexico

Gentlemen:

On January 13, 1950, Acting Director of the United States Geological Survey, Thomas B. Nolan, approved the application dated January 3, 1950, filed by your company as unit operator, requesting an extension of time until February 7, 1950, within which to commence the drilling of the initial test well in the Cass Ranch unit area, Eddy County, New Mexico, I-Sec. No. 680 approved July 8, 1949.

One approved copy of the application is enclosed for your record. It is assumed that you will furnish the State of New Mexico with whatever evidence of this approval it requires.

Very truly yours,

/s/ H. J. Duncan
For the Director

Enclosure

X-4220

MAGNOLIA PETROLEUM COMPANY

COPY

Roswell, New Mexico

January 3, 1950

Director, U. S. Geological Survey
Washington, D. C.
Thru Mr. Foster Morrell, Supervisor
Roswell, New Mexico

Re: Cass Ranch Unit Agreement
T. 19 and 20 S., R. 24 E.,
Eddy County, New Mexico.

Dear Sir:

The Director of the United States Geological Survey approved our Cass Ranch Unit Agreement on July 8, 1949, and under the provisions of this Unit Agreement, we agreed to start a well to be drilled to a total depth of 3900 feet, or oil or gas in paying quantities at a lesser depth, within six months from that date.

This six months time will be up on January 8, 1950. We are at the present time engaged in doing additional geological and geophysical work in an effort to determine the best location for the test well on this Unit and we respectfully request an additional thirty days time to complete this work in order that we may pick what we think is the best location with a possible better chance of securing production.

We kindly ask that you give this favorable consideration.

Yours very truly,

MAGNOLIA PETROLEUM COMPANY

By /s/ S. P. Hamilfin

SPH:ms

Approved January 13 1950

/s/ Thomas B. Nolan
Acting Director,
U. S. Geological Survey

July 25, 1949

Mr. Clarence Hinkle
Harvey, Dow and Hinkle
Roswell, New Mexico

Dear Mr. Hinkle:

This will acknowledge receipt of your letter of July 22nd, and an approved copy of the Unit Agreement for the operation and development of the Cass Ranch Unit Area, Eddy County, New Mexico.

Very truly yours,

R. R. Spurrier
SECRETARY-DIRECTOR

RRS:bw

J. M. HERVEY
HIRAM M. DOW
CLARENCE E. HINKLE
W. E. BONDURANT, JR.

GEORGE H. HUNKER, JR

LAW OFFICES
HERVEY, DOW & HINKLE
ROSWELL, NEW MEXICO

July 22, 1949

Mr. R. R. Spurrier
Secretary, New Mexico Oil & Gas Ass'n
Santa Fe, New Mexico

Dear Mr. Spurrier:

We hand you herewith an approved copy of the Unit Agreement for the operation and development of the Cass Ranch Unit Area, Eddy County, New Mexico, which was approved by the Director of the United States Geological Survey as of July 8th.

Yours very truly,

HERVEY, DOW & HINKLE

By

CEH:rh
Enc.

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. 161

ORDER NO. 796

THE APPLICATION OF MAGNOLIA PETROLEUM
COMPANY FOR AN ORDER APPROVING A PROPOSED
UNIT AGREEMENT FOR THE DEVELOPMENT AND
OPERATION OF THE CASS RANCH UNIT AREA
CONSISTING OF 10,230.27 ACRES SITUATED
IN TOWNSHIPS 19 AND 20 SOUTH, RANGES 23
AND 24 EAST, N.M.P.M. EDDY COUNTY,
NEW MEXICO

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 10:00 o'clock a.m. October 28, 1948, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 19th day of November, 1948, the Commission having before it for consideration the testimony adduced at the hearing of said case and being fully advised in the premises:

FINDS that the proposed unit plan will in principle tend to promote the conservation of oil and gas and the prevention of waste;

IT IS THEREFORE ORDERED:

That the order herein shall be known as the:

"CASS RANCH UNIT AGREEMENT ORDER"

SECTION 1. (a) That the project herein shall be known as the Cass Ranch Unit Agreement and shall hereafter be referred to as the Project.

(b) That the plan by which the Project shall be operated shall be embraced in the form of unit agreement for the development and operation of the Cass Ranch Unit Area referred to in the Petitioner's petition and filed with said petition and such plan shall be known as the Cass Ranch Unit Agreement Plan.

SECTION 2. That the Cass Ranch Unit Agreement Plan shall be and is hereby approved in principle as a proper conservation measure; provided, however, that notwithstanding any of the provisions contained in said unit agreement, this approval of said agreement shall not be considered as waiving or relinquishing in any manner any rights, duties, or obligations which are now or may hereafter be vested in the New Mexico Oil Conservation Commission by law relative to the supervision and control of operations for exploration and development of any lands committed to said Cass Ranch Unit Agreement or relative to the production of oil or gas therefrom.

SECTION 3. (a) That the Unit Area shall be:

NEW MEXICO PRINCIPAL MERIDIAN

T.20 S, R.23 E - Section 13 - NE¼

T.19 S, R.24 E - Section 26 - S½
Sections 27 and 28 - All
Sections 31 to 34, incl. - All
Section 35 - N½, SW¼

T.20 S, R.24 E - Sections 3 to 9, incl. - All
Section 10 - W½
Section 17 - N½
Section 18 - Lots 1 and 2, NE¼, E½NW¼

Eddy County, New Mexico, containing 10,230.27 acres, more or less.

(b) The Unit Area may be enlarged or diminished as provided in said Plan.

SECTION 4. That the unit operator shall file with the Commission an executed original or executed counterpart thereof of the Cass Ranch Unit Agreement not later than 30 days after the effective date hereof.

SECTION 5. That any party owning rights in the unitized substances who does not commit such rights to said Unit Agreement before the effective date thereof may thereafter become a party thereto by subscribing to such agreement or a counterpart thereof. The Unit Operator shall file with the Commission within 30 days an original or any such counterpart.

SECTION 6. That this order shall become effective on the first day of the calendar month next following the approval of the Commissioner of Public Lands and the Secretary of the Interior and shall terminate ipso facto on the termination of said Unit Agreement. The last Unit Operator shall immediately notify the Commission in writing of such termination.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

Thomas J. Mabry, Chairman

John E. Miles, Member

R. R. Spurrier, Secretary

Santa Fe Copy

BEFORE THE
OIL CONSERVATION COMMISSION
STATE OF NEW MEXICO

The following proceedings before the Oil Conservation Commission, State of New Mexico, came on for hearing pursuant to legal notice of publication, and at the time and place as set out below.

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

The State of New Mexico by its Oil Conservation Commission hereby gives notice, pursuant to law, of the following public hearing to be held October 28, 1948, beginning at 10:00 o'clock A. M. on that day in the City of Santa Fe, New Mexico, in the House of Representatives.

CASE 159

In the matter of the application of Magnolia Petroleum Company, a corporation for approval of a proposed unit agreement for the development and operation of the Lindrith Unit Area described as follows: Covering 28,459.39 acres situated in townships 24 and 25 North, Ranges 2 and 3 West, N.M.P.M., Rio Arriba County, New Mexico.

CASE 160

In the matter of application of Phillips Petroleum Company, Bartlesville, Oklahoma for exception to Order No. 72, effective August 1, 1937, amending Order No. 52 and for an order authorizing a central tank battery for certain leases in Section 32, Township 12 South, Range 32 East, Lea County, New Mexico.

CASE 161

In the matter of application of Magnolia Petroleum Company for an order approving a proposed unit agreement for the development and operation of the Cass Ranch Unit Area consisting of 10,230.27 acres situated in Townships 19 and 20 South, Ranges 23 and 24 East, N.M.P.M., in Eddy County, New Mexico.

CASE 162

In the matter of the application of the New Mexico Oil Conservation Commission upon its motion at the suggestion of the Lea County Operators Committee that Paragraph "G" of Section 2 of Commission Order 637 known as State Wide Proration Order be amended so as to read as follows:

(g) At the beginning of each calendar month, the distribution or proration to the respective units in each pool shall be changed in order to take into account all new wells which have been completed and were not in the proration schedule during the previous calendar month. Where any well is completed between the first and last day of the calendar month, its unit shall be assigned an allowable in accordance with whether such unit is marginal or non-marginal, beginning at 7 A. M. on the date of completion and for the remainder of that calendar month.

CASE 163

In the matter of the petition of Stanolind Oil and Gas Company for the adoption of regulations establishing the 640 acre spacing in the Blanco Field in San Juan County, New Mexico; establishing the location of the initial well on each 640; fixing regulations as to the setting of pipe; and for back pressure tests of the various stratas.

CASE 164

In the matter of the application of Grayburg Oil Company of New Mexico, and Western Production Company, Inc. for an order granting permission to unitize certain tracts within the boundaries of the Grayburg Cooperative and Unit Area, in Township 17 South, Ranges 29 and 30 East, N.M.P.M., in the Grayburg-Jackson Pool of Eddy County, New Mexico for proration and allowable purposes.

CASE 165

In the matter of application of Jenkins and McQueen for order granting permission to drill unorthodox location designated as Well No. 1 on their Cassidy lease, described as NW¼NE¼SE¼ (2970 feet south of the north line and 990 feet west of the east line) Section 19, Township 29 North, Range 11 West, N.M.P.M., in the Kutz Canyon-Fulcher Basin Field of San Juan County, New Mexico.

Given under the seal of the Oil Conservation Commission of New Mexico at Santa Fe, New Mexico on October 13, 1948.

(Seal)

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

BY /s/ R. R. Spurrier
R. R. SPURRIER, Secretary

BEFORE: Hon. R. R. Spurrier, Secretary and Member

REGISTER:

Don McCormick, Carlsbad, N. M., George Graham, Santa Fe, N. M., Frank C. Barnes, Santa Fe, N. M., Roy C. Yarbrough, Hobbs, N. M., Al Greer, Aztec, N. M., for the Oil Conservation Commission.

Hervey, Dow & Hinkle (By Mr. Clarence E. Hinkle), Roswell, N. M., S. P. Hannifin, Roswell, N. M., R. R. McCormick, Midland, Texas, for Magnolia Petroleum Company.

B. N. Riddle, Albuquerque, N. M.

H. A. Kiker, Santa Fe, N. M., C. L. Jenkins, Blackwell, Oklahoma, Sherman A. Wengard, Albuquerque, N. M., for Jenkins & McQueen and Jenkins Supply.

Frank A. Schultz, Dallas, Texas, Alfred E. McLane, Dallas, Texas, for the Delhi Oil Corporation.

L. C. Morgan, Wichita, Kansas, for the Wood River Oil & Refining Co.

J. R. Modrall, Albuquerque, N. M., Thomas B. Scott, Jr., Albuquerque, N. M., for Brookhaven Oil Co.

Frank J. Gardner, Midland, Texas, Cecil A. Darnall, Albuquerque, N. M., for Sinclair Prairie Oil Co.

Jack G. Coates, Midland, Texas, for Cities Service Oil.

O. H. Beshell, Midland, Texas, for Magnolia Pipe Line Co.

Sid W. Binian, Midland, Texas, for Atlantic Pipe Line Co.

J. D. Boatman, Jr., Dallas, Texas, S. J. Henry, Jr., Dallas, Texas, for the Atlantic Refining Co.

S. B. Christy, Jr., Roswell, N. M., for Sun Oil Co.

Cliff C. Mowry, Farmington, N. M., for Standard Oil Company of Texas.

George E. Kendrick, Jal, N. M., for El Paso Natural Gas Company.

Scott R. Brown, Midland, Texas, Roy C. Jeter, Durango, Colorado, for Western Natural Gas Co.

Fred Feasel, Fostoria 4, Ohio.

Glenn Staley, Hobbs, N. M., for Lea County Operators Committee.

Frank R. Lovering, Hobbs, N. M., L. B. Berry, Midland, Texas, M. T. Smith, Midland, Texas, for Shell Oil Company.

William E. Bates, Midland, Texas, for The Texas Co.

Seth & Montgomery (By. Mr. J. O. Seth and Mr. Oliver Seth), Santa Fe, N. M., for Stanolind Oil and Gas Company.

Caswell Silver, Aztec, N. M., for M. J. Florance Drilling Company.

J. N. Dunleavy, Hobbs, N. M., For Skelly Oil Company.

Paul C. Evans, Hobbs, N. M., for Gulf Oil Company.

Carl Jones, Midland, Texas, Russell Hayes, Midland, Texas, for Phillips Petroleum Company.

John E. Cochran, Jr., Artesia, N. M., for Grayburg Oil Company.

COMMISSIONER SPURRIER: Gentlemen, the Commission is in session. First, we will let the record show that the minutes of the meeting of the Commission will show that I was authorized to sit for the purpose of taking the record only. There will be no decisions made, no opinions given, and all cases will be taken under advisement. Mr. Graham, will read the first case, please?

(Reads the notice of publication in Case No. 159.)

MR. HINKLE: May it please the Commission, I represent Hervey, Dow & Hinkle. We are attorneys for the Magnolia Petroleum Company. This is the application of the Magnolia Petroleum Company for the approval of the Lindrith Unit Area in Rio Arriba County, New Mexico. The agreement covers--the proposed agreement covers a total of 28459.39 acres situated in Townships 24 and 25 North, Ranges 2 and 3 West, Rio Arriba County. 22,379.49 acres of the lands involved are lands of the United States. 6,039.90 are fee or privately owned lands, and only forty acres belong to the State of New Mexico. We have filed with the application the proposed form of unit agreement, which is in substantially the same form as unit agreements heretofore approved by the Commission. Under the terms of the proposed unit agreement, the Magnolia Petroleum Company would be the unit operator. Magnolia, in this case, holds substantially all the acreage involved. This particular area has heretofore been designated by the Director of the United States Geological Survey as one suitable and proper for unitization.

We have filed with the petition a geological map and report, which are the same as filed with the United States Geological Survey and used as the basis for the designation of the area. It is proposed under the agreement to drill a test well to the depth of approximately 6,500 feet to test the area for the oil and gas possibilities. I have here Mr. S. P. Hannifin of the Magnolia Petroleum Company whom I would like to have sworn, and I will ask him a few questions.

S. P. HANNIFIN, having been first duly sworn, testified as follows:

DIRECT EXAMINATION BY MR. HINKLE:

Q. Your name is S. P. Hannifin?

A. Yes, sir.

Q. Are you employed by Magnolia Petroleum Company?

A. Yes, sir.

Q. In What capacity?

A. District land man.

Q. Are you familiar with the proposed agreement for unitization of the Lindrith Unit Area?

A. Yes, sir.

Q. Tell the Commission whether or not, in your opinion, the agreement would be in the interests of the conservation of oil and gas and the prevention of waste?

A. I do.

MR. HINKLE: That is all, unless you would have some questions.

COMMISSIONER SPURRIER: Does anyone care to cross-examine the witness? If not, the witness is excused.

(Witness dismissed)

COMMISSIONER SPURRIER: Call the next case, Mr. Graham, please.

(Reads the notice of publication in Case 161.)

MR. HINKLE: If it please the Commission. Let the record show that Clarence E. Hinkle is appearing on behalf of the Magnolia Petroleum Company. This is the matter of the application of the Magnolia Petroleum Company for the approval of the unit agreement for the Cass Ranch Unit Area, Eddy County, New Mexico. This proposed agreement would cover 10,230.27 acres in Townships 19 and 20 South, Ranges 23 and 24 East, Eddy County, New Mexico. The total acreage involved is 9,270.27 in lands of the United States, 640 acres belonging to the State of New Mexico, and 320 privately owned or fee lands. The unit agreement which has been filed with the application is in substantially the same form as unit agreements heretofore approved by the Commission. Under the terms of the agreement, the Magnolia Petroleum Company would be designated as the unit operator. The proposed unit area has heretofore been approved by the United States Geological Survey as one suitable and proper for unitization. We have filed with the application the geological map and report which were the basis for the designation of the area. It is proposed under the terms of the unit agreement to commence a test well for oil and gas within six months of the date of the approval of the agreement, and to drill it to a depth of approximately 3,900 feet.

S. P. HANNIFIN, having previously been sworn, testified as follows:

DIRECT EXAMINATION BY MR. HINKLE:

Q. Your name is S. P. Hannifin?

A. Yes, sir.

Q. You are employed by Magnolia Petroleum Company?

A. Yes, sir.

Q. In what capacity?

A. District land man.

Q. Are you familiar with the application of the Magnolia Petroleum Company for designation of the Cass Ranch Unit Area?

A. I am.

Q. You are also familiar with the proposed unit agreement?

A. I am.

Q. State whether or not, in your opinion, the agreement would be in the interests of the conservation of oil and gas and the prevention of waste?

A. I believe it would.

MR. HINKLE: That is all.

MR. McCORMICK: I have no questions.

COMMISSIONER SHURRIER: Does anyone care to examine the witness? If not, the witness is excused. Mr. Graham, will you call the next case?

(Reads the notice of publication in Case 160.)

MR. JONES: Let the record show that the applicant is represented by Carl W. Jones, attorney for Phillips Petroleum Company at Midland, Texas. Case No. 160 is the application of Phillips Petroleum Company for exception to Order No. 72, effective August 1, 1937, amending Order No. 52, and for an order authorizing Phillips Petroleum Company to set a central tank battery for certain of its leases in Section 32, Township 12 South, Range 32 East, Lea County, New Mexico. The particular units within Section 32 will be brought out later by testimony and by exhibit. I will ask that Mr.Russell Hayes be called and sworn to testify.

(The witness is sworn)

MR. JONES: Prior to the testimony of Mr. Hayes, I would like to read Order No. 72, to which the applicant requests an

exception. (Reads the order) Now, the order states that exceptions may be made at the discretion of the Commission. The exception that the applicant asks is that their four basic leases--they are state leases, the ownership of the royalties being all in the common school fund. The fact is that the applicant asks that the central tank battery be authorized for nine units instead of the five described in the order.

RUSSELL HAYES, having been first duly sworn, testified as follows:

DIRECT EXAMINATION BY MR. JONES:

Q. Your name is Russell Hayes?

A. Yes, sir.

Q. Where do you reside?

A. Midland, Texas.

Q. Are you employed by Phillips Petroleum Company?

A. Yes.

Q. In what capacity?

A. Assistant division superintendent.

Q. Have you ever previously qualified as a witness before this Commission?

A. No.

Q. Will you state your profession, please?

A. Petroleum engineer.

Q. And you have a degree in petroleum engineering?

A. Yes.

Q. Where and when did you receive that degree?

A. A. and M. College of Texas in 1932.

Q. Will you state your experience in the field of petroleum engineering since receiving your degree?

A. Four years employed by Shell in the refinery department in

Houston; for approximately five years by the Gulf Oil Corporation in west Texas. The last six and a half years by Phillips in west Texas and New Mexico.

Q. In your position with the Phillips Petroleum Company, are you familiar with the operations of Phillips in Lea and Chaves County, and in particular in the Caprock Pool in Lea and Chaves County, New Mexico?

A. Yes.

MR. JONES: Is the Commission satisfied as to the qualifications of the witness?

COMMISSIONER SPURRIER: Yes.

Q. Mr. Hayes, I will ask you to take this map and glance at it and state whether or not it accurately represents the leasehold ownership and the operations of the Phillips Petroleum Company in Section 32, Township 12 South, Range 32 East?

A. Yes.

Q. Was that map prepared under your supervision with reference to the ownership and operations of the Phillips Petroleum Company in Section 32?

A. Yes.

Q. I will ask the reporter to mark this Applicant's Exhibit A, please. Mr. Hayes, will you take that map which has been marked Applicant's Exhibit A and indicate to the Commission the leases owned by the Phillips Oil Company in Section 32?

A. There are four basic leases, B-10,213, comprised of two 40-acre units in the SW¼NW¼ of Section 32, in the SE¼NW¼ of Section 32, and also in the same basic lease, B-10,213, the NE¼NE¼ of Section 32, the SE¼NE¼ of Section 32, and the NE¼ SE¼ of Section 32. The second basic lease is B-10,283, the NE¼NW¼, a 40-acre tract (Reporter's note: This probably is

by the witness. This tract bears the number B-10,839 on the exhibit.) B-11,330, the $NW\frac{1}{4}NE\frac{1}{4}$, and the $SE\frac{1}{4}NE\frac{1}{4}$ of Section 32. And the fourth basic lease, B-10,357, the $SE\frac{1}{4}SE\frac{1}{4}$ of Section 32.

Q. Those are the four basic leases. Now, is it a fact that those leases that you enumerate are outlined in this exhibit A in red?

A. That's right.

Q. I notice that this (indicating on map) 40-acre unit is outlined in yellow. Will you explain that?

A. It is outlined in yellow because this 40-acre tract is not a part of this application for consolidation. It is not continguous to the other leases at all.

Q. Going back to your testimony a moment ago, this lease B-10,213 is divided into two units which are not continguous with each other, is that correct?

A. That is correct.

Q. The reason that no consolidation of tank batteries for this 40-acre unit outlined in yellow is requested is for the reason that it is not contiguous to the other units?

A. That's right.

Q. The nine units which are the subject of this application for which a consolidated tank battery is requested are those nine 40-acre units continguous.

A. They are contiguous to each other.

Q. Now, in your experience with these leases do you know the royalty owners of the four basic leases which you have outlined?

A. Yes.

Q. What is that royalty ownership?

A. The common school fund of the State of New Mexico.

Q. And the common school fund owns the royalty under all four basic leases?

A. That is correct.

Q. Is it a fact that these four basic leases in so far as they cover land in Section 32 also cover units which are not in Section 32?

A. That's right.

Q. But no consolidation is requested for those particular units?

A. That's right.

Q. It is only the units in Section 32 for which consolidation is sought?

A. That is correct.

Q. Now, will you explain of the nine units which you have described and for which this application is made, what wells have been completed and what wells are now being drilled by Phillips Petroleum on the nine-forty-acre units?

A. In the S½NW¼, comprising two 40-acre tracts, which is commonly referred to as the Rock lease. Rock No. 1 and No. 2 have been completed. And in the NE¼NW¼, the 40-acre tract known as the Ostia, this well has been completed. And in the SW¼NE¼ well Alden No. 1 is in the process of being completed.

Q. But not yet completed?

A. That's right. And in the quarter section tract outlined in yellow ....

Q. .... let's don't get the record involved with that because it is not the subject of this application. Now, Mr. Hayes, in the event there were no consolidated tank battery on these nine units and under the four leases which you have described,

how many tank batteries would it be necessary to set, assuming that production is obtained in the future from all units?

A. Necessary to set five of these tank batteries.

Q. Explain why.

A. It will be necessary to set a tank battery on each basic lease, excepting the basic lease known as B-10,213. It contains two tracts in the same section which are not contiguous to each other. Therefore, it would require two tank batteries for that basic lease. A total of five.

Q. In other words, according to Exhibit A, the two portions for the B-10,213 are separated by what is known as the Alden lease?

A. That's right.

Q. And it will be necessary to set ....

COMMISSIONER SPURRIER: .... excuse me, Mr. Jones. Gentlemen, I think you should direct your attention to the witness. If you care to have a conference, I suggest that you go outside. Hearing is bad enough at best. Those who care to hear what the witness has to say will appreciate your being as quiet as possible.

Q. You stated that there would be required five separate tank batteries. How many different tanks would there have to be set in these five separate tank batteries in the event there were no consolidated tank battery, and assuming all units drilled and found to be productive? How many individual tanks in the five batteries would be required?

A. It would require thirteen tanks.

Q. Thirteen tanks. And what size?

A. 210-barrel tanks.

Q. Can you give a close estimate of what the cost would be?

A. Approximately $13,000.00.

Q. In the event the Commission sees fit to grant this application, then how many individual tanks would be required to care for production, again assuming that the units are all drilled and found to be productive?

A. Eight tanks.

Q. Can you give the Commission an estimate of the cost of those eight tanks?

A. Approximately $8,000.00.

Q. They also would be 210-barrel tanks?

A. Yes.

Q. In other words, the difference in the initial cost of the tanks would be $5,000.00?

A. That is correct.

Q. Now, in the event the consolidated tank battery were allowed by this Commission, would there also be a saving in the pipe required to bring the production to the battery?

A. Yes, there would be a substantial one.

Q. As between the five separate tank batteries and one single consolidated battery?

A. There would be a substantial saving in the pipe.

Q. Would there be any other saving in the initial cost of a consolidated battery over the five separate tank batteries?

A. I didn't get the question.

Q. Would there be any other saving in the initial cost of a consolidated battery over the five separate tank batteries? Instead of five separate tank batteries as would otherwise be required, according to your testimony?

A. In addition to the saving of the pipe, of course, the required amount of separation equipment would be reduced in

in the consolidated tank battery over five. The estimated cost as already given includes the tank battery.

Q. Over a period of years, is it your opinion, in the event a consolidated tank battery is allowed, that there would be a saving in the operation of these leases?

A. Yes.

Q. Is it your opinion that the operation would be more efficiently performed by the use of the consolidated tank battery?

A. That's right.

Q. Assuming that is true, that there there would be a saving over the years in the operation of the leases, is it your opinion that the economic life of these wells would be prolonged by the use of a consolidated tank battery?

A. Yes.

Q. Explain how their life would be prolonged?

A. By a saving in the initial cost of equipment and more efficient utilization of field personnel to operate the consolidated tank battery over the five tank batteries required unless consolidation is allowed. It would extend the economic life of the properties, thereby allowing a greater recovery and extending the producing period of the life of the properties.

Q. In other words, with dedreased cost of operation, it is your opinion that the wells could be produced longer, and be commercial wells longer, than if you had five separate tank batteries?

A. They could be operated at a profit longer.

Q. Getting back to the initial installation, can you give an estimate of the amount of steel which would be required to construct the thirteen separate 210-barrel tanks, which you

testified would be necessary in the event you were not permitted to set a consolidated tank battery?

A. The average weight of a 210-barrel tank is three tons. If consolidated were allowed, there would be an approximate saving of fifteen tons of steel in the installation of tanks alone.

Q. Five tons of steel.

A. Fifteen tons.

Q. That doesn't include the saving in steel in the connecting system and the pipe that would be necessary otherwise?

A. No.

Q. Then to briefly summarize your testimony, is it your opinion that in the event this application is granted and a consolidated tank battery authorized, that there would be a savings in initial cost, conservation of steel, more efficient operation, and as a result a longer economical life per well?

A. That's right.

MR. JONES: That is all I have.

MR. McCORMICK: How about overiding royalties? Is there any out on these leases?

MR. JONES: No, sir. Mr. Hayes, you understand, I believe, that even though this application be granted by the Oil Conservation Commission, these being state leases, this matter of the tank batteries is also subject to approval by the Commissioner of Public Lands?

A. That's right.

Q. In the event this application is granted and the Commissioner of Public Lands approves the use of a consolidated tank battery, where, with reference to Exhibit A, would the consolidated tank battery be located?

A. As near as practical in the SW¼of the NE¼, as near to the center of the lease as possible, on what is presently known as the Alden lease.

Q. Is that as near the center of the 40-acre tract as possible?

A. Yes.

MR. McCORMICK: How will you gauge each well to see how much each well will produce?

A. Facilities will be provided to take individual well tests at any time.

MR. McCORMICK: Do you plan to keep an accurate record of what each well will produce as distinguished from the nine wells?

A. They will be produced into a consolidated tank battery, but periodic tests of the ability of each well would be determined.

MR. McCORMICK: Will you be able to determine just exactly how much each well is producing for purposes of unit proration?

A. We will be able to file the forms presently filed on the consolidated tank battery showing each well.

MR. McCORMICK: And it will be accurate as to the production for each well?

A. As accurate as possible.

MR. McCORMICK: How accurate do you mean?

A. As determined by individual well tests.

MR. McCORMICK: How often will the individual well tests be taken?

A. I don't know that I can state a period of time. We will be able to take the tests upon request, and at periodic

intervals for our own information.

MR. McCORMICK: If each well were allowed to produce forty barrels a day, say, you had nine wells, that would be 360 barrels a day, if they all made their maximum. You would be able to determine and report exactly what each well produced each month?

A. Every attempt--I say every attempt--the wells will be produced in such a manner as to take the daily allowable from each well.

MR. McCORMICK: That will be accurate?

A. As accurate as they can get.

MR. McCORMICK: I have no more questions.

Q. In other words, in the event--in the absence of this exception, you have the same situation on this lease on the NE¼NE¼, the SE¼NE¼, and NE¼SE¼. You would determine then, in the event that the application is granted, from the nine wells as accurately as you could determine the production from the three wells without the exception and without the consolidated tank battery. Is that the case?

A. That's right.

Q. In the event this application is granted, is it contemplated that these four basic leases, insofar as they cover these units in Section 32, will be really carried as a section lease?

A. Yes.

Q. Do you have a suggested name for that lease?

A. We suggest the name Caprock.

Q. That would cover the nine units and not cover any other unit under these basic leases which are not in Section 32?

A. That is correct.

Q. In the event that lease B is redesignated as the Caprock lease, would you then rename the wells which have been completed and are now drilling?

A. Yes.

Q. How would they be renamed?

A. All necessary correcting forms would be filed to identify them as being in the consolidated Caprock lease. What is presently known as our Rock No. 1 in the SW¼NW¼ would be known as Caprock No. 1. What is presently known as Rock No. 2 in the SE¼NW¼ would be Caprock No. 2. And what is presently known as Ostia No. 1 in the NE¼NW¼ would be Caprock No. 3. And the present Alden No. 1 in the SW¼NE¼ will be known as Caprock No. 4. Subsequent drilling would follow along that line.

Q. Up to Caprock No. 9 if all were drilled?

A. That's right.

Q. You understand, Mr. Hayes, that these leases are not unitized and insofar as drilling operations and perpetuating the life in particular of drilling they will still be drilled as four separate leases?

A. Yes.

Q. Mr. Hayes, do you have any other information that you think should be brought to the attention of the Commission with respect to this application?

A. No.

MR. JONES: Does the Commission have any questions to address to the witness?

COMMISSIONER SPURRIER: The Commission has none. Does anyone care to cross-examine the witness? In connection with Case No. 164, which is a Grayburg application for something not

the same and involving different basic leases, I wonder if anyone has any comment to make on the similarity of these two cases? Mr. Morrell, do you have any comment?

MR. MORRELL: The only comment I could offer is that the applications speak for themselves to indicate a direct similarity.

COMMISSIONER SPURRIER: Mr. Staley, do you have any comment?

MR. STALEY: No, I do not.

COMMISSIONER SPURRIER: If no one else has anything, the witness is excused, and Mr. Graham will call the next case.

(Reads the notice of publication in Case 162.)

COMMISSIONER SPURRIER: Now this case, gentlemen, if someone cares to appear, that is all right, but I thought I would explain ~~explain~~ to everyone present that the intention of this is to put a well on proration schedule the day it is completed, and thereby gain that much production,rather than waiting until the first of the month or 16th of the same month, whichever the case may be. In our allowable system the fact that we have completed wells off the proration schedule until the 16th or first of the month has been responsible for certain losses of production which we need very badly these days. Mr. Staley, if you have anything to add, we will be glad to hear it.

MR. STALEY: The only thing that I have to add is that the fact is there just doesn't seem to be any justification for a well completed on the first or second of the month having to wait until the 16th to get an allowable. Due to the system used in allocating and running oil, if we have one well that is down during the month, the state is short that amount of oil. And by giving an allowable to all newly completed wells, it gives us an opportunity to make up the amount of shortage

that is now occurring each month in the State of New Mexico, which amounts on an average to about seven per cent.

COMMISSIONER SPURRIER: Thank you.

MR. MCCORMICK: How did the old system happen to get started? To be worked out that way?

MR. STALEY: At the time the system was inaugurated we really had pipe line proration. The pipe lines could only take a certain amount of oil during the month. Therefore, there was no--what you would call slack of such allowable. And all of the oil allocated to the State of New Mexico was allocated on the first and fifteenth of each month and each pipe line took that portion they could handle. That condition doesn't exist at this time, and we have plenty of pipe line room and plenty of market, and the nation needs the oil.

MR. MORRELL: Mr. Spurrier, I was wondering if Mr. Staley might not add to his remarks that granting of this additional oil immediately upon completion of the well would not be charged against the state allowable by reason of the fact that you have a shortage, and that, therefore, it could not be charged. By that I mean it wouldn't reduce the daily allowable to all presently producing oil wells.

MR. STALEY: At the present time, the system of allocating, the oil wells capable of producing it are given a top allowable; and so-called marginal wells, the wells incapable of producing top allowable, they have been added to the total of the top allowable wells, and that is the outlet for the State of New Mexico. This allocation to the newly completed wells on the day that they come in will be in addition to that allowable, so that the amount run short by overestimating of the operators of their marginal wells, and allocating top

allowable to wells capable of purducing it, will allow the state to cut down materially that seven per cent of shortage we have each month. Does that cover it?

MR. MORRELL: I think so.

MR. GRAHAM: Is that an actual or statistical shortage?

MR. STALEY: Actual.

MR. LOVERING: Mr. Lovering, representing Shell Oil Company. It seems in this case the order as written requires a definition. I think in the minds of many of us the question arises when is a well completed? In our old Case 146 we had that definition which stated that for the purpose of this order the well shall be considered completed on the day that the first oil is run into the lease and/or tanks. I think this should be included for clarity.

COMMISSIONER SPURRIER: Mr. Staley, would you care to add anything to that?

MR. STALEY: That, it seems to me, is an administrative order on the part of the Commission, and the Commission can determine what, in their opinion, constitutes a completed well. And the original definition given by the Commission of a well was completed when tubed--total depth reached--and tubed and the oil turned into the tank ....

MR. LOVERING: Where is that definition?

MR. STALEY: I couldn't tell you. That was the definition that was originally set out by the Commission in 1935.

MR. McCORMICK: What happens to oil that is recovered on a drill stem test so far as proration is concerned?

MR. STALEY: If the oil is saved that is produced on a drill stem test, the oil is charged against the allowable of the well when it goes on production--proration--schedule.

MR. McCORMICK: That is not really a very big factor, is it?

MR. STALEY: No.

COMMISSIONER SPURRIER: Does anyone have anything further?

MR. MORRELL: Mr. Spurrier, I would merely like to add that whatever the final order the Commission might issue, I do second the thought by Mr. Lovering that some definition of the word "completion" should be incorporated. We have found that for years to be a source of argument as to when a well is completed. As long as it is very specifically written in the order, everyone can proceed accordingly.

COMMISSIONER SPURRIER: If no one has anything further, Mr. Graham will call the next case.

(Reads the notice of publication in Case 164.)

MR. COCHRAN: If the Commission please, some three and a half months ago during the early part of July Grayburg Oil Company of New Mexico and Western Production Company filed with the Commission an application to drill 28 unorthodox 5-spot locations on leases owned by these two companies within the boundaries of the Grayburg Cooperative and Unit Area. This application was assigned case number 152, and a hearing was had on that application before the Commission on the 29th of July, 1948. At that time the Commission granted permits for the drilling of the 28 unorthodox locations, but no action was taken on the request that basic leases be unitized for proration and allowable purposes. And at the request of the Lea County Operators Committee action was withheld on that pending receipt by Lea County Operators Committee of the transcript of testimony at that hearing. A few weeks following the hearing, after the transcript was received by Lea County Operators Committee, representatives of Grayburg Oil Company

and Western Production Company had a meeting with representatives of Lea County Operators Committee in order to try to work out a proration arrangement that would not be adverse to any oil interests in the state and something that would be practical for Grayburg and Western Production to operate under. As a result of that meeting the application in the present case was filed. And in that application certain areas were marked off, which are shown on the maps which have been before you, as units for proration and allowable purposes. Now, the units are designated as C-1, C-2, W-1, W-5, and so on, designating the ownership of the particular unit. Now, the units vary in size, but in each instance, the areas included in any specific unit contain one or more of the proposed 5-spot locations. Now, at the hearing on July 29 rather extensive testimony was offered, and unless it is the Commission's desire or someone present that additional testimony be given, the unitization of the described tracts as set up in the application and shown on the map will be based solely on the application. The way these units will be produced is not new in that the Commission has on many occasions granted the 5-spot locations and permitted proration units around that to be unitized. In the case of 160 acres, the allowable for the four 40-acre units would be produced from five wells. In this case that is what Grayburg and Western ask; that from each unitized area they be permitted to produce the allowable as assigned by the Commission for the total number of developed 40-acre units in the proration unit from all of the wells located on that unit. It is not our intention to produce any well in excess of top allowable as set by the Oil Conservation Commission. But they will simply take the total

allowable for the number of 40-acre units in that given unit, and that will be produced from the total number of wells on the unit. And in no event would any well exceed top allowable. Now, I have a letter which I would like to introduce in evidence, which is addressed to me from Mr. Foster Morrell, supervisor of the United States Geological Survey, and in which it is stated that his office has no objection to this proposal. I also have a copy of a letter dated October 23, 1948, addressed to Mr. Spurrier of the Commission from Mr. G. H. Card, Chairman of Lea County--the Executive Committee of the Lea County Operators Committee--in which it is stated that the Executive Committee, after reviewing this application and the proposed order that was submitted on behalf of Grayburg and Western, voted six to one that they had no objection. Now, I believe the one who did not vote favorably was Shell Oil Company. And if Shell would like to ask some questions or have some additional testimony on the matter, I would be happy to have Mr. Krauskop testify.

MR. LOVERING: If the Commission please, the Shell company in no way questions the intent or purpose of this application. We do wish to point out that that there are what we consider a few objectionable features of the application and order as written as setting a precedent if applied in like manner to other fields in the state where we have communication between the wells and between the leases and as a matter of fact throughout a pool. The first request is the authorizing of what was comparable lease allowsable, which we consider undesirable, especially in highly competitive fields, more competitive than these. And the feature which permits the shift of allowables from one section of a large tract to another;

which also in highly competitive fields is undesirable. There is nothing in this order that confines the production under that 5-spot well to be allocated to the adjacent wells in that area. You can conceive of a special case where you might have four top allowables--not in this particular tract, perhaps--and you want to put a 5-spot on. They could then produce 200 barrels of allowable instead of 160. This is not analogous to the 160-acre tracts on which we already have 5-spots because in those cases the production is, has to be, allocated to the adjacent wells, which we understand was the original intent of the Grayburg Oil Company and Western Production Company in asking for their 5-spot locations. Again I want to reiterate we do not wish to question this particular case but are wondering about the complications that would be set up in analogous cases in more productive fields where we do have intercommunication and more competitive smaller leases and the malpractices that generally go with this sort of thing. I know in talking with any number of men who come here who were under the impression that these 5-spot locations--the production therefrom--would be allocated only to those adjacent wells in the 160-acre parcel, but there is nothing in the order to so state. As a matter of fact, in this particular case, or any similar case, allowable could be made up for wells that were incapable of making their production as far as a mile or a mile and a half away. In highly competitive fields where we have intercommunication that could happen for wells that weren't even on the structure. So, what we a re wondering about is the precedent that would be set if the order is written as submitted.

MR. McCORMICK: Mr. Lovering, have you read the next to last

paragraph of the proposed order?

MR. LOVERING: I have.

MR. McCORMICK: Well, don't you interpret that to mean that the allowable is limited to the monthly allowable, or daily allowable multiplied by the number of 40-acre subdivisions?

MR. LOVERING: No. If the applied factor whereby the top allowable per well would be reduced in relation to the increased number of wells, that would lessen the objections that we have to that sort of thing.

COMMISSIONER SPURRIER: Mr. Cochran, would you care to state what the intent of your order as it is written shows?

MR. COCHRAN: Yes, sir.

COMMISSIONER SPURRIER: With particular reference to this paragraph Mr. McCormick just mentioned.

MR.COCHRAN: May I read this please? It is further ordered, and the applicants are hereby authorized, to produce from each unitized tract herein above described the total allowable production, as fixed by the Commission for the total number of developed 40-acre proration units comprising such unitized tract, and that the applicants are hereby authorized to produce the total allowable so fixed by the Commission for each unitized tract from all of the wells located upon, or that hereafter may be drilled upon, such unitized tract producing from the Grayburg-Jackson pay. Now, the intent is exactly what that says. For instance, the west half of 26, which is a 320-acre unit, and which at the present time has eight producing wells and three porposed 5-spot wells; and I believe all of those wells are top allowable wells; and when those three porposed wells are drilled, then we would simply produce the allowable set for the number of 40-acre units in

the 320 acres or eight units. He would produce the allowable for eight units from eleven wells, all being top allowable wells, which means that each well will produce at a rate less than top allowable. There are two units that are 160 acres. There are some that are 320. Then in Section 19, and in the S½S½ of Section 18, there is a 640-acre unit. The wells on that tract, I believe, are all marginal wells. The wells that they propose to drill, the 5-spots on that tract, will not be allowable wells. And in most instances in that 640-acre tract the two wells--the well now on the 40 and the proposed 5-spot, which would constitute the second well--the two wells together would not make top allowable. And speaking about putting the allowable on a lease basis, what Grayburg Oil Company and Western Production Company, as the Commission knows, asked for at their first hearing, that was the purpose of the meeting with the Lea County Operators, and that was what we tirelessly worked for. In other words, to set it up in such a way that it would be on a basis that the Commission had granted before and the word or term "lease allowable" would not exist at all. And the units are outlined in such a way that there will be no transfer of any allowable from a top allowable well to a marginal allowable well. In other words, these lines were drawn as to area. This part of the acreage in the S½S½ of Section 18 (referring to map); Section 19. That is the whole area which was drilled a number of years ago, and all of those wells are marginal wells. And that is the way the units are outlined and the wells defined. No allowable can be transferred from a low pressure area to a high pressure area, or vice versa. It simply means that the allowable for the eight wells of a 320-acre unit which are all

top allowable wells will be taken out of eleven wells, and each well will produce at a rate less than the top allowable. Grayburg thinks that by doing that the wells will produce at a more efficient rate of recovery of the oil than otherwise. It is not their idea to have more allowable than at the present time without drilling the wells. But they would like to recover some oil that isn't recoverable without 5-spots. And incidentally, since the last hearing for the permits to drill the wells, one well has been completed, one is in the process of completion, and another well is drilling. One completed well is shut in at the present time waiting for some sort of allowable. The well that has been completed is on a unit on which all the wells are top allowable wells, and this well appears to be capable of producing 250 barrels a day. And the fact of the matter is that when they start to produce that well they won't produce top allowable. It will be cut back. They will take the total allowable.

MR. McCORMICK: Mr. Cochran, do you intend to make this map a part of the order so as to definitely fix the location of the 5-spot wells?

MR. COCHRAN: The proposed order that I have for Mr. Graham describes the 5-spot locations, shows the distances from the lines, and the numbers of the leases on which the well is located. And the proposed order that we have offered describes the acreage in each unitized tract. There will be nine units. It identifies the tracts. So, you have the well information as to location and description of these units, which conforms to what is shown on the map.

MR. McCORMICK: I would like to ask Mr. Lovering if he believes that there will be any danger of drainage from adjacent leases

as long as the 5-spot locations are interior locations.

MR. LOVERING: I don't believe so. We don't believe there is much communication in this case. As pointed out in the past testimony, we have never questioned the intention of the operations. It is in the interests of conservation. The only thing we question is the lease allowable in the present setup. Wehther you call it that or not. It is still that, in effect. And another feature I pointed out is setting up a precedent. That is all we would like to have considered. We don't question the unitization in this particular tract.

MR. McCORMICK: If this same system were inaugurated or someone proposed a system like this in Momument, would there be a much different situation?

MR. LOVERING: Yes, I would say there would.

MR. McCORMICK: If the 5-spots were all interior locations, do you think that would be objectionable in Momument?

MR. LOVERING: It could be. For instance, if I have a 160-acre block and you permit me to drill a 5-spot, I am getting the advantage in drainage over a man who has an adjacent 80 who can't have a 5-spot without setting up some sort of offset obligation.

MR. COCHRAN: Is that because of the communication between wells in the particular area?

MR. LOVERING: That's right.

MR. COCHRAN: Does Shell have a lease or leases that have been farmed out within in such an area ?

MR. LOVERING: We have one in Maljamar that is not the center of a 160-acre tract. And as long as the production is allocated to the adjoining wells, we have no objection. We have no objection here or anywhere else, I don't believe.

MR. COCHRAN: You understand, Mr. Lovering, that is exactly what we tried to do in our meeting with the Lea County Operators. Tried to define--

MR. LOVERING: .... we don't question you here at all.

MR. McCORMICK: On this 320-acre unit there is a third 5-spot. And if the 320 acres were considered as two separate 160-acre tracts, the 5-spot on each end would be all right as there is no 160 acres in the middle separate and apart from these two.

MR. LOVERING: That puts it on a 320 acre basis, that's right. So, on that 320 acres it simply would be producing in this manner. The allowable for eight 40-acre units would be taken from eleven wells. Just like you are talking about a state lease in Maljamar to take the allowable from four units from five wells.

MR. GRAHAM: There is no other case exactly like this? In other words, is that an experiment, this deal?

MR. COCHRAN: No, sir, it is not an experiment. Talking about the way this case differs from the usual practice of the Commission is that heretofore unitization has been for some reason unknown to me on perhaps only 160 acres in the tract.

MR. GRAHAM: Smaller tracts?

MR. COCHRAN: That's right. In this proposal, there are some tracts larger than 160 acres. But the principle is identically the same as on the lease that Shell farmed out to Barney Cochran, and last July he drilled a 5-spot unorthodox location in the center of 160 acres and unitized the 40 in the center of the 160. In some of these units there is more than 160 acres.

MR. McCORMICK: How about this 13-D in Section 26, which appears to be a 5-spot? When was that drilled?

MR. COCHRAN: As I recall, it was a deep test and was drilled by Grayburg Oil Company. How deep did that well go, Mr. Heard?

MR. HEARD: 5,170, and it was dry at that depth and plugged back, and they were permitted to produce that well as a part of the allowable for the four wells around it.

MR. GRAHAM: Mr. Lovering's objection possibly will be met if no precedent is set by this proposal.

MR. COCHRAN: That's right.

MR. LOVERING: If the Commission please, I merely want to leave that thought with the Commission and with the operators. I am sure that in future cases regarding unorthodox location or distribution of allowable they will be heard on the merits, and that we don't anticipate upsetting the apple cart here. I just wanted to bring those thoughts to your attention.

COMMISSIONER SPURRIER: Mr. Lovering is exactly right in the statement that the cases are decided upon their merits. Precedent is one thing and merit is another. I wonder if there is anyone ..... I am a little bit confused at this point .... would care to comment on the practice of the transfer of allowable from one well to another on the same basic lease? In a case where one well has a high gas-oil ratio, is there any similarity between these two cases, or am I as confused as I said I was?

MR. LOVERING: The only similarity is that both are in the interests of economy and conservation. You are conserving energy which ultimately is oil. Here they don't have any energy. There is a drainage problem. By so doing, they are getting more oil in the interests of conservation. That is about the similarity of that.

COMMISSIONER SPURRIER: Thank you. In the interests of information for the Commission, and I don't care whether the witness is sworn or not, I would like to have one of Grayburg's men give us a few facts about this well that they have recently completed. Mr. Krauskop, I presume you would like to answer the questions. What was the initial pressure, rock pressure?

MR. KRAUSKOP: The well is shut in right nowfor a bottom hole pressure buildup, and at the end of seventy-two hours pressure plus 800 datum was 783 pounds.

COMMISSIONER SPURRIER: These four surrounding wells, what are the approximate bottom hole pressures?

MR. KRAUSKOP: The average would be less than 700 pounds. We figured the initial static pressure was in the neighborhood of 1,050 to 1,100 pounds. In the last twenty-four hours of this buildup we have had quite a rapid buildup.

COMMISSIONER SPURRIER: Still building up?

MR. KRAUSKOP: That's right, and our experience in this area is that it will take two or three weeks to reach static. So, it will be another week or two before we have the final buildup pressure. So far as gas-oil ratio is concerned, we found that the original pressure has been in the neighborhood of 500 feet of gas per barrel produced. The ratio on this well in the two different tests has averaged right at 600 feet of gas per barrell, which would indicate we haven't reached the--at least the bubble point hasn't been reached in this well. The area hasn't been subjected to sufficient drainage to reach the bubble point.

MR. MORRELL: What is the name and number of the well?

MR. KRAUSKOP: Keeley No. 16-B, located 1,295 feet from the south line and 1,295 feet from the east line of Section 26,

Township 17 South, Range 29 East.

COMMISSIONER SPURRIER: What was the estimated initial production for twenty-four hours?

MR. KRAUSKOP: Based on tube tests, about 250 barrels per day.

COMMISSIONER SPURRIER: Do you have any record of what these four surrounding wells will actually make per day? Top production?

MR. KRAUSKOP: Three of them--one well, Keeley 9-B, is an input well; and the two offsets are top allowable. Keeley 10-B and 12-B, we have had no potential on those since they were completed. Keeley 11-B is a marginal well. It is about a 25-barrel well.

COMMISSIONER SPURRIER: Any questions?

MR. McCORMICK: I have none.

COMMISSIONER SPURRIER: Mr. Cochran, do you have any further statement?

MR. COCHRAN: I have nothing further.

MR. McCORMICK: Do you have a copy of your proposed order?

MR. COCHRAN: Yes, sir.

MR. McCORMICK: Could I have it, please?

MR. COCHRAN: Yes, sir.

COMMISSIONER SPURRIER: Does anyone have anything further in this case? Gentlemen, the case will be taken under advisement along with the others. Mr. Graham, call the next case.

(Reads the notice of publication in Case 165.)

S. A. WENGARD, having been first duly sworn, testified as follows:

DIRECT EXAMINATION BY MR. KIKER:

MR. KIKER: This application is controlled by the term order No. 748 made in Case No. 126 on June 22, 1948. Permission is

sought to drill on 160 acres in the Pictured Cliffs pool in the Kutz Canyon-Fulcher Basin area, San Juan County. The application conforms in every respect to the order mentioned, except that the 160 acres is not in the form or shape of a square. Dr. Wengard is called to substantiate the assigned reasons why permission is sought. Permission is sought under the powers reserved to the Commission in Section 2 of the order, which reserve powers are based upon the finding lettered "H" in the findings of fact contained in that order No. 748.

Q. Dr. Wengard, you gave the reporter your initials?

A. Yes, sir.

Q. What is your profession?

A. I am a petroleum geologist.

Q. And you live where?

A. In Albuquerque.

Q. Will you please tell the Commission about your qualifications as a pteroluem geologist?

A. I have worked for ten years with the Shell Oil Company as petroleum geologist, and I am now a consultant as well as professor at the University of New Mexico.

Q. Will you tell the Commission about the location of the proposed well, and the territory where it is to be and the adjoining territory without detailed questioning?

A. The block is an irregular, L-shaped block in accordance with Exhibit A, and has three--has wells on the northwest and west sides owned by Southern Union. This proposed block being irregular fulfills several of the requirements for drilling, but it is impossible to drill in the middle of the block because it is L-shaped. It is proposed that, first, the well offsets no other well directly, and is 990 feet from every unit line excepting the west, that Jenkins-McQueen be given per-

mission to drill the location on the basis of their desire to produce a block of acreage whose initial shape was controlled by irregular acreage purchase in the region. And as such, the gas would be lost in part to the operator and the block could not be drilled unless the application is O. K. 'd. The other wells were drilled on an old order, and we believe that Mr. Jenkins should be permitted to develop the acreage which he owns.

Q. Those other wells were completed prior to June 22, 1948?

A. Yes, sir.

Q. The effective date of the order under exceptions to which we ask permission?

A. Yes, sir.

Q. Is there any likelihood of waste on account of this drilling operation, or injury to others?

A. On the contrary, the waste is highest to the operator now owning the land. It is now being withdrawn from at least the west side, if not the northwest side, of the block. It is imperative that he drill for that reason, Southern Union owning all the surrounding acreage.

Q. Do you have any communication from Southern Union with respect to this matter?

A. Yes, sir. In a wire received yesterday was the following: "New Mexico Oil Conservation Commission. In regard to Case number 165 we recommend that the unorthodox drilling unit be approved. Southern Union Gas Co. Van Thompson."

Q. May I have that, please, sir? This actually belongs to the Commission.

MR. McCORMICK: Let the record show that it is marked as an exhibit.

MR. KIKER: Yes.

MR. McCORMICK: Call it Exhibit B.

A. Yes, sir.

Q. Do you know, Mr. Wengard, whether Jenkins-McQueen are ready to begin immediately to operate if permission is granted?

A. Yes, I understand that they are.

Q. Do you have anything further that you want to add as to why this permission should be granted?

A. Only this. I believe it would work a hardship on a not too irregular block if the operator were not allowed to produce the gas underlying the block from the Pictured Cliffs.

MR. KIKER: That is all.

MR. McCORMICK: Is this Federal land?

A. This is fee land.

Q. It is on the Cassidy lease.

MR. McCORMICK: How is the royalty owned?

A. That I do not know.

Q. May I call Mr. Jenkins?

COMMISSIONER SPURRIER: Does anyone have any further questions of this witness?

MR. MORRELL: I have of Mr. Jenkins.

MR. KIKER: Mr. Jenkins, please stand, please. You haven't been sworn.

C. L. JENKINS, having been first duly sworn, testified as follows:

DIRECT EXAMINATION BY MR. KIKER:

Q. Your name is C. L. Jenkins?

A. Yes, sir.

Q. You are a member of the partnership of Jenkins-McQueen?

A. That's right.

Q. Your headquarters are in Blackwell, Oklahoma?

A. Yes, sir.

Q. And you are doing business in the State of New Mexico?

A. Yes, sir.

Q. You have drilled several wells in the State of New Mexico?

A. Yes, sir.

Q. This Cassidy lease. The partnership holds that lease?

A. Yes, sir.

Q. What about the royalty?

A. All owned by Mr. Cassidy.

Q. He is the owner of the fee?

A. No, he is not the owner of the surface. He is the owner of all the royalty.

Q. And all the minerals?

A. Yes, sir.

Q. Are you ready to begin drilling operations on this tract immediately, Mr. Jenkins? If granted permission to do so?

A. Yes, sir.

MR. McCORMICK: How large is the basic lease? Does it cover anything other than 160?

A. No, sir, just the 160.

Q. Have you been able to secure any adjoining land, Mr. Jenkins, so as to make a square?

A. No, sir.

MR. KIKER: I think that is all.

MR. MORRELL: I would like to ask Mr. Jenkins a question. As a representative of the Geological Survey we are directly interested in this location, inasmuch as the lands to the east and west are public lands of the United States on which we have productive gas wells. To the west we have a well com-

pleted by the Southern Union Production Company. Cousins Well No. 4 located 990 feet from the lease boundary line adjoining Mr. Jenkin's lease. To the east the Southern Union Production Company has the Cousins Well No. 5, also located 990 feet from the outer lease boundary adjoining Mr. Jenkin's lease. Those two wells are located in acceptable square--acceptable rectangular 160-acre drilling units. They follow the outstanding order of the Commission for well spacing in the Fulcher Basin field. The location of Mr. Jenkin's 160-acre L-shaped tract, as already testified to before the Commission, is of such shape and location that the Survey would have no objection whatsoever to a well drilled on that 160-acre unit. I think they are entitled to it. The only point I wish to make is that the location, as included in the application, is stated to be 990 feet from the east line of the section, which puts the location 330 feet from the adjoining Federal acreage. Whereas our offset wells are 990 feet. The equitable thing in that case would be to allow Jenkins-McQueen to make their location anywhere they desire in a north-south line, but the location should be 660 feet from their east-west lease boundary line. In other words, in the center of their tier of 40-acre tracts. With that slight amendment, we have no objection to the location at all.

MR. McCORMICK: Mr. Morrell, the place where it is located would be substantially in the center of the four 40's, would it not?

MR. MORRELL: If the Commission please, I will spot for you where the location of the Southern Union well is for this 160; which is the northwest corner of the SE¼ of that sec-

tion. Then there is another 990 feet location to the east. In otherwords, the Federal wells are equidistant from the Jenkin-McQueen lease, and we were merely asking that the Jenkin-McQueen well be equidistant within its own proper line.

MR. WENGARD: If that location is made in the middle instead of where it now is, and the blocks will be developed in the future on a more densely spaced pattern, that well of Jenkins-McQueen, as suggested by the Geological Survey, would be totally out of spacing, and give us some difficulty and require petitions for each well drilled in the entire block.

MR. MORRELL: I question the merits of that statement as to what might be drilled on a proper spacing basis. We have a state order for 160 acre wells at the present time. That order was prepared on tests submitted and the tests proved that wells could not be drilled economically on a lesser spacing. I say any further spacing would be a mathematical ....

MR. KIKER: .... would you please consider what would be a central location?

MR. MORRELL: Merely moving it back 330 feet so that it would be 660 feet from each side of the lease, rather than 990 feet from one side and 330 feet from the other.

MR. JENKINS: This would throw you right in this creek here. To move it where he say move it, it would be impossible to drill it there. We could move it about 130 feet and still be all right.

COMMISSIONER SPURRIER: 130 feet?

A. To the east and keep it out of the creek bed.

MR. MORRELL: My point was any place on the north-south line.

A. That's right.

MR. MORRELL: It could be made any place on the north-south

line.

MR. KIKER: Just look at this please, Mr. Jenkins.

A. Yes, sir.

Q. How far does that creek bed extend?

A. Through those three 40's, clear through them. Runs clear up--this creek comes right down to here (indicating on Exhibit A), like this.

Q. In a practically north-south direction?

A. That's right. Isn't that right, Mr. Morrell?

MR. MORRELL: I don't recall.

Q. If you move the well as far as is suggested it would throw you in the creek bed?

A. I could move it 100 odd feet farther and be all right. To center it--I don't think you would have any objection if I just moved out of that creek bed.

MR. MORRELL: That reason would be on account of the local topography and there would be no objection. The thing is moving 330 feet from one line where the offset operator already has a well.

Q. Then, you concede, Mr. Morrell, that if he moved 330 feet he would be in a improper location?

MR. MORRELL: The state as well as the Survey always allows a tolerance on a location for physical reasons.

MR. KIKER: If he moved it eastward as far as 130 feet, would that be satisfactory to you?

MR. MORRELL: I think the exact location on that should be checked in the field. I can't say as to what it could be.

MR. KIKER: Would that be satisfactory, Mr. Jenkins?

A. Yes, sir.

MR. KIKER: I believe that is all.

COMMISSIONER SPURRIER: I have a question. Mr. Morrell, are all these Southern Union wells on Federal acreage about 330 out of the center.

MR. MORRELL: 330 out of the center of the 160. The Cassidy lease makes the remainder of that particular section. And we have worked out in the past with Southern Union to locate their wells in described 160-acre units. It so happens that the Cassidy lease doesn't fit. However, they are entitled to a well and we have no objection. It is just to stay as nearly as possible within the center.

COMMISSIONER SPURRIER: Come up a moment, please. How far--according to the map the location is here (indicating).

MR. MORRELL: The location to the west is 2,310 feet from the south and east lines of Section 19.

COMMISSIONER SPURRIER: All right. How far is this west offset of Southern Union's from Jenkin-McQueen's proposed location?

MR. MORRELL: 1,320 feet.

COMMISSIONER SPURRIER: Then how far would it be from the proposed location of Jenkins-McQueen to the east offset?

MR. MORRELL: 1,980 feet.

COMMISSIONER SPURRIER: And if this well, barring topographical difficulties, were moved easterly 330 feet east of the proposed location, then it would be half way between these east and west offsets?

MR. MORRELL: That is exactly right. It would be equidistant between existing wells 660 feet apart.

COMMISSIONER SPURRIER: All right. I think you have in the record, Mr. Morrell, that anywhere up and down these 40's would be satisfactory. Are you or Mr. Jenkins familiar with where a south offset might come?

MR. MORRELL: There is no south offset to that at the present time. This being somewhat roughly the west edge of porosity.

MR. JENKINS: That's right.

MR. MORRELL: We have a well on a 160-acre block in the NW¼ of Section 20. We have a well ....

COMMISSIONER SPURRIER: .... which is how far from this east offset?

MR. MORRELL: The east offset is located 2,310 feet from the north and 990 feet from the west of Section 20. There is an additional well in the SW¼ of Section 20, which is a communitized block taking eight acres of the S½ of SW of section 20 and the N½ of NW of Section 29. All wells to the south and to the north are drilled on 160-acre spacing with the well essentially 330 out of the center of the 160.

COMMISSIONER SPURRIER: Well, Mr. Morrell, let me ask this question. When the Commission--if and when--writes an order approving this proposed location--or one close to it--if they take into consideration the topographical situation and the distance to the offset wells and get this well within 100 feet of the center, for example, say 150 feet of the center, would that be satisfactory?

MR. MORRELL: There would be essentially no objection. Inasmuch as the application is for an unorthodox location, and this is a single basic lease, I would see no objection if drilled closer than 330 to a 40-acre line. So that gives you considerable leeway. So there would be no question so long as you keep in SENE and NESE of Section 19. There would be no serious question as to its probable production inasmuch as it is between two existing gas wells.

MR. WENGARD: May I ask a question, Mr. Morrell? This well

is equidistant from this one over here. That is, it is as far from here to here at the present time?

MR. MORRELL: I can't speak at to that offhand.

MR. MENGARD: My reference preceded an important one, and that is the matter of equipment. I do not know the status of Mr. Jenkins' drilling or the location of his equipment. But if he should have it on his location already, and it is a matter of 150 feet off, is that a consideration for the operator? I do not know, as I say, what Mr. Jenkins' situation is there.

MR. MORRELL: I won't speak for the Commission, but so far as the Geological Survey is concerned, we have had them plug wells 2,000 feet deep because they were off location.

MR. KIKER: Would 150 feet throw you in that creek bed, Mr. Jenkins?

A. This location could be moved 150 feet, which would be all right.

MR. KIKER: That is all.

COMMISSIONER SPURRIER: As Mr. Morrell stated, both the U. S. Geological Survey and the Commission allow a tolerance of 150 feet in any direction for wells which are, that is an oil field, in oil pools, which are supposed to be located in the center of the 40-acre tract. That is why I posed the question to Mr. Morrell. If you have a tolerance of 150 feet there, possibly you can avoid the topographical trouble, and, at the same time, very nearly fulfillMr. Morrell's request.

MR. JENKINS: Yes, sir.

COMMISSIONER SPURRIER: Does anyone have anything further in this case? If not, gentlemen, we will recess for lunch. We will return for the remainder of the hearing at two o'clock.

(Noon hour recess)

OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

13 October 1948

Carlsbad Daily Current Argus
Carlsbad, New Mexico

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RE: Cases 161,162, & 164 -
Notice of Publication

Gentlemen:

Please publish the enclosed notice once, immediately. Please proof-read the notice carefully and send a copy of the paper carrying such notice.

UPON COMPLETION OF THE PUBLICATION, PLEASE SEND PUBLISHER'S AFFIDAVIT IN DUPLICATE.

For payment please submit statement in duplicate, accompanied by voucher executed in duplicate. The necessary blanks are enclosed.

Very truly yours,

RRS:bsp

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

The State of New Mexico by its Oil Conservation Commission hereby gives notice, pursuant to law, of the following public hearing to be held October 28, 1948, beginning at 10:00 o'clock A.M. on that day in the City of Santa Fe, New Mexico.

STATE OF NEW MEXICO TO:

All named parties in the following cases, and notice to the public:

CASE 161

In the matter of application of Magnolia Petroleum Company for an order approving a proposed unit agreement for the development and operation of the Cass Ranch Unit Area consisting of 10,230.27 acres situated in Townships 19 and 20 South, Ranges 23 and 24 East, N.M.P.M. in Eddy County, New Mexico.

CASE 162

In the matter of the application of the New Mexico Oil Conservation Commission upon its motion at the suggestion of the Lea County Operators Committee that Paragraph "G" of Section 2 of Commission Order 637 known as the State Wide Proration Order be amended so as to read as follows:

(g) At the beginning of each calendar month, the distribution or proration to the respective units in each pool shall be changed in order to take into account all new wells which have been completed and were not in the proration schedule during the previous calendar month. Where any well is completed between the first and last day of the calendar month, its unit shall be assigned an allowable in accordance with whether such unit is marginal or non-marginal, beginning at 7 A.M., on the date of completion and for the remainder of that calendar month.

CASE 164

In the matter of the application of Grayburg Oil Company of New Mexico, and Western Production Company, Inc. for an order granting permission to unitize certain tracts within the boundaries of the Grayburg Cooperative and Unit Area, in Township 17 South, Ranges 29 and 30 East, N.M.P.M., in the Grayburg-Jackson Pool of Eddy County, New Mexico for proration and allowable purposes.

Given under the seal of the Oil Conservation Commission of New Mexico at Santa Fe, New Mexico, on October 13, 1948.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

By R. R. Spurrier
R. R. SPURRIER, Secretary

LAW OFFICES
HERVEY, DOW & HINKLE
ROSWELL, NEW MEXICO

J. M. HERVEY
HIRAM M. DOW
CLARENCE E. HINKLE
W. E. BONDURANT, JR.

GEORGE H. HUNKER, JR.

September 22, 1948

OIL CONSERVATION COMMISSION
SEP 27 1948
RECEIVED

161

Graham

Mr. R. R. Spurrier, Secretary
New Mexico Oil Conservation Commission
State Capitol
Santa Fe, New Mexico

Dear Dick:

We hand you herewith, in triplicate, application of the Magnolia Petroleum Company for approval of the Cass Ranch Unit Area, Eddy County, New Mexico, together with three copies of the proposed unit agreement.

We would appreciate your setting this matter down for hearing at your earliest convenience and would suggest that the hearing be held, if possible, some time during the weeks of the 11th or 18th of October.

We are also filing similar application of the Magnolia Petroleum Company for a hearing on the Lindrith Unit Area, which can be heard at the same time.

It would be appreciated if you would let me know as soon as possible the date of the hearing so that I may make my plans accordingly.

Yours sincerely

HERVEY, DOW & HINKLE

BY

ceh:s
encls.

UNIT AGREEMENT

FOR THE DEVELOPMENT AND OPERATION OF THE CASS RANCH UNIT AREA

EDDY COUNTY STATE OF NEW MEXICO

I. SEC. NO. 680

This agreement, entered into as of the 14th day of September, 1948, by and between the parties subscribing, ratifying, or consenting hereto, and herein referred to as the "parties hereto",

W-I-T-N-E-S-S-E-T-H:

WHEREAS, the parties hereto are the owners of working, royalty, or other oil or gas interests in the unit area subject to this agreement; and

WHEREAS, the Act of February 25, 1920, 41 Stat. 437, 30 U.S.C. secs. 181, et. seq., as amended by the Act of August 8, 1946, 60 Stat. 950, authorized Federal lessees and their representatives to unite with each other, or jointly or separately with others, in collectively adopting and operating under a cooperative or unit plan of development or operation of any oil or gas pool, field, or like area, or any part thereof, for the purpose of more properly conserving the natural resources thereof whenever determined and certified by the Secretary of the Interior to be necessary or advisable in the public interest; and

WHEREAS, the Commissioner of Public Lands of the State of New Mexico is authorized by an Act of the Legislature (Chap. 88, Laws 1943) to consent to or approve this agreement on behalf of the State of New Mexico, insofar as it covers and includes lands and mineral interests of the State of New Mexico; and

WHEREAS, the Oil Conservation Commission of the State of New Mexico is authorized by an Act of the Legislature (Chap. 72, Laws 1935) to approve this agreement and the conservation provisions hereof; and

WHEREAS, the parties hereto hold sufficient interests in the Cass Ranch Unit Area to give reasonably effective control of operations therein; and

WHEREAS, it is the purpose of the parties hereto to conserve natural resources, prevent waste, and secure other benefits obtainable through development and operation of the area subject to this agreement under the terms, conditions, and limitations herein set forth;

NOW, THEREFORE, in consideration of the premises and the promises herein contained, the parties hereto commit to this agreement their respective interests in the unit area and agree severally among themselves as follows:

ENABLING ACT AND REGULATIONS

1. The Act of February 25, 1920, as amended, supra, and all valid pertinent regulations, including operating and unit plan regulations, heretofore issued thereunder or valid pertinent and reasonable regulations hereafter issued thereunder are accepted and made a part of this agreement, and as to non-Federal land applicable State laws are accepted and made part of this agreement.

UNIT AREA

2. The following described land is hereby designated and recognized as constituting the unit area:

NEW MEXICO PRINCIPAL MERIDIAN

T. 20 S., R. 23 E. - Section 13 - $NE\frac{1}{4}$

T. 19 S., R. 24 E. - Section 26 - $S\frac{1}{2}$
Sections 27 and 28 - All
Sections 31 to 34, incl. - All
Section 35 - $N\frac{1}{2}$, $SW\frac{1}{4}$

T. 20 S., R. 24 E. - Sections 3 to 9, incl. - All
Section 10 - $W\frac{1}{2}$
Section 17 - $N\frac{1}{2}$
Section 18 - Lots 1 and 2, $NE\frac{1}{4}$, $E\frac{1}{2}NW\frac{1}{4}$

Eddy County, New Mexico, containing 10,230.27 acres, more or less

Exhibit A attached hereto is a map showing the unit area and the known ownership of all land and leases in said area. Exhibit B attached hereto is a schedule showing the percentage and kind of ownership of oil and gas interests in all land in the unit area. Exhibits A and B shall be revised by the Unit Operator whenever changes in the unit area or other changes render such revision necessary, and not less than six copies of the revised exhibits shall be filed with the Oil and Gas Supervisor.

The above-described unit area shall be expanded or contracted, whenever such action is necessary or desirable to conform with the purposes of this agreement, in the following manner:

(a) Unit Operator, on its own motion or on demand of the Director of the U. S. Geological Survey, hereinafter referred to as Director, or on demand of the Commissioner of Public Lands of the State of New Mexico, hereinafter referred to as Commissioner, shall prepare a notice of proposed expansion or contraction describing the contemplated changes in the boundaries of the unit area, the reasons therefor, and the proposed effective date thereof.

(b) Said notice shall be delivered to the Oil and Gas Supervisor, hereinafter referred to as Supervisor, and Commissioner, and copies thereof mailed to the last known address of each working interest owner, lessee, and lessor whose interests are affected, advising that 30 days will be allowed for submission to the Unit Operator of any objections.

(c) Upon expiration of the 30-day period provided in the preceding item (b) hereof, Unit Operator shall file with the Supervisor and Commissioner evidence of mailing of the notice of

expansion or contraction and a copy of any objections thereto which have been filed with the Unit Operator.

(d) After due consideration of all pertinent information, the expansion or contraction shall, upon approval by the Director and Commissioner, become effective as of the date prescribed in the notice thereof.

All land committed to this agreement shall constitute land referred to herein as "unitized land" or "land subject to this agreement".

UNITIZED SUBSTANCES

3. All oil, gas, natural gasoline, and associated fluid hydrocarbons in any and all formations of the unitized land are unitized under the terms of this agreement and herein are called "unitized substances".

UNIT OPERATOR

4. The Magnolia Petroleum Company, a corporation, with offices at Dallas, Texas, is hereby designated as Unit Operator and by signature hereto commits to this agreement all interests in unitized substances vested in it as set forth in Exhibit B, and agrees and consents to accept the duties and obligations of Unit Operator for the discovery, development, and production of unitized substances as herein provided. Whenever reference is made herein to the Unit Operator, such reference means the Unit Operator acting in that capacity and not as an owner of interests in unitized substances.

The Unit Operator may resign as Unit Operator whenever not in default under this agreement, but no Unit Operator shall be relieved from the duties and obligations of Unit Operator for

a period of 6 months after it has served notice of intention to resign on all owners of working interests subject hereto and the Director and Commissioner, unless a new Unit Operator shall have been selected and approved and shall have assumed the duties and obligations of Unit Operator prior to the expiration of said 6-month period. Upon default or failure in the performance of its duties or obligations under this agreement the Unit Operator may be removed by a majority vote of owners of working interests determined in like manner as herein provided for the selection of a successor Unit Operator. Prior to the effective date of relinquishment by or within 6 months after removal of Unit Operator, the duly qualified successor Unit Operator shall have an option to purchase on reasonable terms all or any part of the equipment, material, and appurtenances in or upon the land subject to this agreement, owned by the retiring Unit Operator and used in its capacity as such operator, or if no qualified successor operator has been designated, the working interest owners may purchase such equipment, material, and appurtenances. At any time within the next ensuing 3 months any equipment, material, and appurtenances not purchased and not necessary for the preservation of wells may be removed by the retiring Unit Operator, but if not removed shall become the joint property of the owners of unitized working interests in the participating area or, if no participating area has been established, in the entire unit area. The termination of the rights as Unit Operator under this agreement shall not terminate the right, title, or interest of such Unit Operator in its separate capacity as owner of interests in unitized substances.

SUCCESSOR UNIT OPERATOR

5. Whenever the Unit Operator shall relinquish the right as Unit Operator or shall be removed, the owners of the unitized working interests in the participating area on an acreage basis, or in the unit area on an acreage basis until a participating area shall have been established, shall select a new Unit Operator. A majority vote of the working interests qualified to vote shall be required to select a new Unit Operator; PROVIDED, That, if a majority but less than 75 percent of the working interests qualified to vote are owned by one party to this agreement, a concurring vote of at least one additional working interest owner shall be required to select a new operator. Such selection shall not become effective until (a) a Unit Operator so selected shall accept in writing the duties and responsibilities of Unit Operator, and (b) the selection shall have been approved by the Director and Commissioner. If no successor Unit Operator is selected and qualified as herein provided, the Director and Commissioner at their election may declare this unit agreement terminated.

UNIT ACCOUNTING AGREEMENT

6. If the Unit Operator is not the sole owner of working interests, all costs and expenses incurred in conducting unit operations hereunder and the working interest benefits accruing hereunder shall be apportioned among the owners of unitized working interests in accordance with a unit accounting agreement by and between the Unit Operator and the other owners of such interests, whether one or more, separately or collectively. Any agreement or agreements entered into between the working interest owners and the Unit Operator as provided in this section, whether

one or more, are herein referred to as the "unit accounting agreement". No such agreement shall be deemed either to modify any of the terms and conditions of this unit agreement or to relieve the Unit Operator of any right or obligation established under this unit agreement, and in case of any inconsistency or conflict between this unit agreement and the unit accounting agreement this unit agreement shall prevail. Three true copies of any unit accounting agreement executed pursuant to this section shall be filed with the Supervisor.

RIGHTS AND OBLIGATIONS OF UNIT OPERATOR

7. Except as otherwise specifically provided herein, the exclusive right, privilege, and duty of exercising any and all rights of the parties hereto which are necessary or convenient for prospecting for, producing and storing the unitized substances are hereby vested in and shall be exercised by the Unit Operator as herein provided; but notwithstanding anything contained in this Agreement to the contrary, all working interest owners of unitized lands hereby reserve the right to take their proportionate shares of the unitized substances in kind or to provide for the sale of their respective interests therein for their individual accounts, as such unitized substances are allocated to the respective working interest owners in accordance with the provisions of this Agreement. Acceptable evidence of title to said rights shall be deposited with said Unit Operator and, together with this agreement, shall constitute and define the rights, privileges, and obligations of Unit Operator. Nothing herein, however, shall be construed to transfer title to any land or to any lease or operating agreement, it being understood that under this agreement the Unit Operator, in its capacity as Unit Operator, shall exercise the rights of possession and use vested in the parties hereto only for the purposes herein specified.

The Unit Operator shall pay all costs and expenses of operation with respect to the unitized land. If and when the Unit Operator is not the sole owner of all working interests,

such costs shall be charged to the account of the owner or owners of working interests, and the Unit Operator shall be reimbursed therefor by such owners and shall account to the working interest owners for their respective shares of the revenue and benefits derived from operations hereunder, all in the manner and to the extent provided in the unit accounting agreement. The Unit Operator shall render each month to the owners of unitized interests entitled thereto an accounting of the operations on unitized land during the previous calendar month, and shall pay in value or deliver in kind to each party entitled thereto a proportionate and allocated share of the benefits accruing hereunder in conformity with operating agreements, leases, or other independent contracts between the Unit Operator and the parties hereto either collectively or individually.

The development and operation of land subject to this agreement under the terms hereof shall be deemed full performance by the Unit Operator of all obligations for such development and operation with respect to each and every part or separately owned tract of land subject to this agreement, regardless of whether there is any development of any particular part or tract of the unit area, notwithstanding anything to the contrary in any lease, operating agreement, or other contract by and between the parties hereto or any of them.

DRILLING TO DISCOVERY

8. Within 6 months after the effective date hereof, the Unit Operator shall begin to drill an adequate test well at a location to be approved by the Supervisor, if such location is upon lands of the United States, and if upon State lands or

patented lands, such location shall be approved by the Oil Conservation Commission of the State of New Mexico, hereinafter referred to as the Commission, and thereafter continue such drilling diligently until a well not less than 3900 feet in depth has been drilled, unless at a lesser depth unitized substances shall be discovered which can be produced in paying quantities or the Unit Operator shall at any time establish to the satisfaction of the Supervisor as to wells on Federal land, or the Commission as to wells on State land or patented land, that further drilling of said well would not be warranted. If the first or any subsequent test well fails to result in the discovery of a deposit of unitized substances capable of being produced in paying quantities, the Unit Operator shall continue drilling diligently one well at a time, allowing not more than 6 months between the completion of one well and the beginning of the next well, until a well capable of producing unitized substances in paying quantities is completed to the satisfaction of said Supervisor if on Federal land or the Commissioner if on State land or patented land, or until it is reasonably proved that the unitized land is incapable of producing unitized substances in paying quantities. Nothing in this section shall be deemed to limit the right of the Unit Operator to resign, as provided in Section 4 hereof, after any well drilled under this section is placed in a satisfactory condition for suspension or is plugged and abandoned pursuant to applicable regulations. The Director, and the Commissioner may modify the drilling requirements of this section by granting reasonable extensions of time when in their opinion, such action is warranted. Upon failure to comply with the drilling provisions of this section, the Director and Commissioner may, after reasonable notice to the Unit Operator and each working interest owner, lessee, and lessor at their last known addresses, declare this unit agreement terminated.

The drilling of an initial test well to the depth and in the manner hereinabove specified by the Magnolia Petroleum Company shall satisfy the requirement set forth hereinabove for the drilling of such well, notwithstanding that such well may have been commenced or completed prior to the effective date of this agreement.

PLAN OF FURTHER DEVELOPMENT AND OPERATION

9. Within 6 months after completion of a well capable of producing unitized substances in paying quantities, the Unit Operator shall submit for the approval of the Supervisor, the Commissioner, and the Commission, an acceptable plan of development and operation for the unitized land which, when approved by the Supervisor, the Commissioner, and Commission, shall constitute the further drilling and operating obligations of the Unit Operator under this agreement for the period specified therein. Thereafter, from time to time before the expiration of any existing plan, the Unit Operator shall submit for the approval of the Supervisor, the Commissioner, and the Commission, a plan for an additional specified period for the development and operation of the unitized land. Any plan submitted pursuant to this section shall provide for exploration of the unitized area and for the determination of the commercially productive area thereof in each and every productive formation and shall be as complete and adequate as the Supervisor, the Commissioner, and the Commission may determine to be necessary for timely development and proper conservation of the oil and gas resources of the unitized area and shall (a) specify the number and locations of any wells to be drilled and the proposed order and time for such drilling; and (b) to the extent practicable specify the operating practices regarded as necessary and advisable for proper conservation of natural resources. Separate plans may be submitted for separate productive zones, subject

to the approval of the Supervisor, Commissioner, and the Commission. Said plan or plans shall be modified or supplemented when necessary to meet changed conditions or to protect the interests of all parties to this agreement. Reasonable diligence shall be exercised in complying with the obligations of the approved plan of development. The Supervisor and Commissioner are authorized to grant a reasonable extension of the 6-month period herein prescribed for submission of an initial plan of development where such action is justified because of unusual conditions or circumstances. All parties hereto agree that after completion of one commercially productive well no further wells, except such as may be necessary to afford protection against operations not under this agreement, shall be drilled except in accordance with a plan of development approved as herein provided.

PARTICIPATION AFTER DISCOVERY

10. Upon completion of a well capable of producing unitized substances in paying quantities or as soon thereafter as required by the Supervisor or the Commissioner, the Unit Operator shall submit for approval by the Director, the Commissioner, and the Commission a schedule, based on subdivision of the public land survey or aliquot parts thereof, of all unitized land then regarded as reasonably proved to be productive of unitized substances in paying quantities; all land in said schedule on approval of the Director, the Commissioner and the Commission to constitute a participating area, effective as of the date of first production. Said schedule shall also set forth the percentage of unitized substances to be allocated as herein provided to each unitized tract in the participating area so established, and shall govern the allocation of production from

and after the date the participating area becomes effective. A separate participating area shall be established in like manner for each separate pool or deposit of unitized substances or for any group thereof produced as a single pool or zone. The participating area or areas so established shall be revised from time to time, subject to like approval, whenever such action appears proper as a result of further drilling operations or otherwise, to include additional land then regarded as reasonably proved to be productive in paying quantities, and the percentage of allocation shall also be revised accordingly. The effective date of any revision shall be the first of the month following the date of first authentic knowledge or information on which such revision is predicated, unless a more appropriate effective date is specified in the schedule. No land shall be excluded from a participating area on account of depletion of the unitized substances.

It is the intent of this section that a participating area shall represent the area known or reasonably estimated to be productive in paying quantities; but, regardless of any revision of the participating area, nothing herein contained shall be construed as requiring any retroactive apportionment of any sums accrued or paid for production obtained prior to the effective date of revision of the participating area.

In the absence of agreement at any time between the Unit Operator, the Director, the Commissioner, and the Commission as to the proper definition or redefinition of a participating area, or until a participating area has, or areas have, been established as provided herein, the portion of all payments affected thereby may be impounded in a manner mutually acceptable

to the owners of working interests, except royalties due the United States and the State of New Mexico, which shall be determined by the Supervisor and the Commissioner and the amount thereof deposited with the District Land Office of the Bureau of Land Management and the Commissioner of Public Lands, respectively, to be held as unearned money until the participating area is finally approved and then applied as earned or returned in accordance with a determination of the sum due as Federal and State royalty on the basis of such approved participating area.

Whenever it is determined, subject to the approval of the Supervisor as to wells on Federal land and the Commissioner as to wells on State land, and the Commission as to patented land, that a well drilled under this agreement is not capable of production in paying quantities and inclusion of the land on which it is situated in a participating area is unwarranted, production from such well shall be allocated to the land on which the well is located so long as that well is not within a participating area established for the pool or deposit from which such production is obtained.

ALLOCATION OF PRODUCTION

11. All unitized substances produced from each participating area established under this agreement, except any part thereof used for production or development purposes hereunder, or unavoidably lost, shall be deemed to be produced equally on an acreage basis from the several tracts of unitized land of the participating area established for such production and, for the purpose of determining any benefits that accrue on an acreage basis, each such tract shall have allocated to it such percentage of said production as its area bears to the said participating area. It is hereby agreed that production of unitized

substances from a participating area shall be allocated as provided herein regardless of whether any wells are drilled on any particular part or tract of said participating area.

DEVELOPMENT OR OPERATION OF NON-PARTICIPATING LAND

12. Any party hereto, other than the Unit Operator, owning or controlling a majority of the working interests in any unitized land not included in a participating area and having thereon a regular well location in accordance with a well-spacing pattern established under an approved plan of development and operation may drill a well at such location at his own expense, unless within 90 days of receipt of notice from said party of his intention to drill the well the Unit Operator elects and commences to drill such well in like manner as other wells are drilled by the Unit Operator under this agreement.

If such well is not drilled by the Unit Operator and results in production such that the land upon which it is situated may properly be included in a participating area, the party paying the cost of drilling such well shall be reimbursed as provided in the unit accounting agreement for the cost of drilling similar wells in the unit area, and the well shall be operated pursuant to the terms of this agreement as though the well had been drilled by the Unit Operator.

If any well drilled by the Unit Operator or by an owner of working interests, as provided in this section, obtains production insufficient to justify inclusion of the land on which said well is situated in a participating area, said owner of working interests at his election, within 30 days after determination of such insufficiency, shall be wholly responsible for and

may operate and produce the well at his sole expense and for his sole benefit. If such well was drilled by the Unit Operator and said owner of working interests elects to operate said well, he shall pay the Unit Operator a fair salvage value for the casing and other necessary equipment left in the well.

Wells drilled or produced at the sole expense and for the sole benefit of an owner of working interest other than the Unit Operator shall be operated pursuant to the terms and provisions of this agreement. Royalties in amount or value of production from any such well shall be paid as specified in the lease affected.

ROYALTIES AND RENTALS

13. The Unit Operator, on behalf of the parties hereto, shall pay in value or deliver in kind, according to the rights of the parties established by underlying leases or agreements, all royalties due upon production allocated to unitized land and shall pay all rentals or minimum royalties due on unitized land. All such payments or deliveries in kind shall be charged by the Unit Operator to the appropriate working interest owners as provided in the unit accounting agreement. Nothing herein contained shall operate to relieve the lessees of Federal or State land from their obligations under the terms of their respective leases to pay rentals and royalties.

Royalty due the United States shall be computed as provided in the operating regulations and paid in value or delivered in kind as to all unitized substances on the basis of the amounts thereof allocated to unitized Federal land as provided herein at the rates specified in the respective Federal leases, or at such lower rate or rates as may be authorized by

law or regulation: PROVIDED, That for leases on which the royalty rate depends on the daily average production per well, said average production shall be determined in accordance with the operating regulations as though each participating area were a single consolidated lease.

Rental or minimum royalty for land of the United States subject to this agreement shall be paid at the rates specified in the respective Federal leases, or such rental or minimum royalty may be waived, suspended, or reduced to the extent authorized by law and applicable regulations.

CONSERVATION

14. Operations hereunder and production of unitized substances shall be conducted to provide for the most economical and efficient recovery of said substances, to the end that the maximum efficient yield may be obtained without waste, as defined by or pursuant to State or Federal law or regulation; and production of unitized substances shall be limited to such production as can be put to beneficial use with adequate realization of fuel and other values.

DRAINAGE

15. The Unit Operator shall take appropriate and adequate measures to prevent drainage of unitized substances from unitized land by wells on land not subject to this agreement, or pursuant to applicable regulations pay a fair and reasonable compensatory royalty as determined by the Supervisor for Federal land or as approved by the Commissioner as to State land.

LEASES AND CONTRACTS CONFORMED TO AGREEMENT

16. The parties hereto holding interests in leases embracing unitized land of the United States or of the State of New Mexico consent that the Secretary and Commissioner, respectively, may, and said Secretary and Commissioner, by their approval of this agreement do hereby establish, alter, change or revoke the

drilling, producing, rental, minimum royalty, and royalty requirements of such leases and the regulations in respect thereto, to conform said requirements to the provisions of this agreement, but otherwise the terms and conditions of said leases shall remain in full force and effect.

Said parties further consent and agree, and the Secretary and Commissioner by their approval hereof determine, that during the effective life of this agreement, drilling and producing operations performed by the Unit Operator upon any unitized land will be accepted and deemed to be operations under and for the benefit of all unitized leases embracing land of the United States and the State of New Mexico; and that no such lease shall be deemed to expire by reason of failure to produce wells situated on land therein embraced. Any Federal lease for a term of 20 years or any renewal thereof or any part of such lease which is made subject to this agreement shall continue in force until the termination hereof. Any other Federal lease or state lease committed hereto shall continue in force as to the committed land so long as the lease remains committed hereto, provided a valuable deposit of unitized substances is discovered prior to the expiration date of the primary term of such lease. Authorized suspension of all operations and production on the unitized land shall be deemed to constitute authorized suspension with respect to each unitized lease.

Each of the parties hereto holding any unitized interest, including royalty and working interest, in, to and under an oil and gas lease of privately owned land subject to this agreement hereby agrees that such lease is hereby modified, as between such of the parties hereto as are interested therein, effective as of the effective date of this agreement, to the extent necessary that (1) such lease shall remain in full force and effect for the primary term therein stated, subject only to the payment of any and all delay

rentals and the compliance with any other requirements therein provided, and for so long thereafter as one or more of the substances so leased is producible from lands embraced by such lease in quantities sufficient to justify the cost of production, and (2) in the event any of the land embraced by such lease is before expiration or termination thereof included within a participating area, or extension thereof, effective pursuant to this agreement, so that the holders of such interests become entitled to share in the production, or proceeds from sale thereof, from such participating area, payable at the rate or rates provided in such lease on the production allocated hereunder to the land so included, then the term of such lease is extended (free of subsequently accruing delay rentals, if any) as to all the land embraced by it, for and during the entire term of this agreement.

COVENANTS RUN WITH LAND

17. The covenants herein shall be construed to be covenants running with the land with respect to the interests of the parties hereto and their successors in interest until this agreement terminates, and any grant, transfer, or conveyance of interest in land or leases subject hereto shall be and hereby is conditioned upon the assumption of all privileges and obligations hereunder by the grantee, transferee, or other successor in interest, and as to Federal land shall be subject to approval by the Secretary and as to State land shall be subject to approval by the Commissioner.

EFFECTIVE DATE AND TERM

18. This agreement shall become effective upon approval by the Commissioner and Secretary and shall terminate on December 31, 1951, unless (a) such date of expiration is extended by the Director and Commissioner, or (b) it is reasonably determined prior to the expiration of the fixed term or any extension thereof that the unitized land is incapable of production of unitized substances in paying quantities and after notice of

intention to terminate the agreement on such ground is given by the Unit Operator to all parties in interest at their last known addresses, the agreement is terminated with the approval of the Director and the Commissioner, or (c) a valuable discovery of unitized substances has been made on unitized land during said initial term or any extension thereof, in which case the agreement shall remain in effect so long as unitized substances can be produced from the unitized land in paying quantities; or (d) it is terminated as provided in section 5 or section 8 hereof. This agreement may be terminated at any time by not less than 75 percentum, on an acreage basis, of the owners of working interests signatory hereto with the approval of the Director and the Commissioner.

RATE OF PROSPECTING, DEVELOPMENT, AND PRODUCTION

19. All production and the disposal thereof shall be in conformity with allocations, allotments, and quotas made or fixed by any duly authorized person or regulatory body under any Federal or State statute. The Director is hereby vested with authority to alter or modify from time to time, in his discretion, the rate of prospecting and development and within the limits made or fixed by the Commission to alter or modify the quantity and rate of production under this agreement, such authority being hereby limited to alteration or modification in the public interest, the purpose thereof and the public interest to be served thereby to be stated in the order of alteration or modification; provided further that no such alteration or modification shall be effective as to any land of the State of New Mexico as to the rate of prospecting and development in the absence of the specific written approval thereof by the Commissioner and as to any lands of the State of New Mexico or privately-owned lands subject to

this agreement as to the quantity and rate of production in the absence of specific written approval thereof by the Commission.

CONFLICT OF SUPERVISION

20. Neither the Unit Operator nor the working interest owners nor any of them shall be subject to any forfeiture, termination, or expiration of any rights hereunder or under any leases or contracts subject hereto, or to any penalty or liability on account of delay or failure in whole or in part to comply with any applicable provision thereof to the extent that the said Unit Operator, working interest owners or any of them are hindered, delayed, or prevented from complying therewith by reason of failure of the Unit Operator to obtain, in the exercise of due diligence, the concurrence of proper representatives of the United States and proper representatives of the State of New Mexico in and about any matters or thing concerning which it is required herein that such concurrence be obtained. The parties hereto, including the Commission, agree that all powers and authority vested in the Commission in and by any provisions of this contract are vested in the Commission and shall be exercised by it pursuant to the provisions of the laws of the State of New Mexico and subject in any case to appeal or judicial review as may now or hereafter be provided by the laws of the State of New Mexico.

UNAVOIDABLE DELAY

21. All obligations under this agreement requiring the Unit Operator to commence or continue drilling or to operate on or produce unitized substances from any of the lands covered by this agreement shall be suspended while, but only so long as, the Unit Operator despite the exercise of due care and diligence, is prevented from complying with such obligations, in whole or in part, by strikes, lockouts, acts of God, Federal, State, or municipal laws or agencies, unavoidable accidents, uncontrollable delays in transportation, inability to obtain necessary materials

in open market, or other matters beyond the reasonable control of the Unit Operator whether similar to matters herein enumerated or not.

COUNTERPARTS

22. This agreement may be executed in any number of counterparts with the same force and effect as if all parties had signed the same document, or this agreement may be ratified with like force and effect by a separate instrument in writing specifically referring hereto. Any separate counterpart, consent, or ratification duly executed after approval hereof by the Secretary and the Commissioner shall be effective on the first day of the month next following the filing thereof with the Supervisor and the Commissioner, unless objection thereto is made by the Director or Commissioner and notice of such objection is served upon the appropriate parties within 60 days after such filing.

FAIR EMPLOYMENT

23. The Unit Operator shall not discriminate against any employee or applicant for employment because of race, creed, color, or national origin, and an identical provision shall be incorporated in all subcontracts.

LOSS OF TITLE

24. In the event title to any tract of unitized land or substantial interest therein shall fail and the true owner cannot be induced to join this unit agreement, so that such tract is not committed to this unit agreement, there shall be such readjustment of participation as may be required on account of such failure of title. In the event of a dispute as to title or as to any interest in unitized land, the Unit Operator may withhold payment or delivery on account thereof without liability for

interest until the dispute is finally settled; PROVIDED: That as to Federal and State land or leases, no payments of funds due the United States or the State of New Mexico shall be withheld but such funds shall be deposited with the District Land Office of the Bureau of Land Management and Commissioner of Public Lands of the State of New Mexico, respectively, to be held as unearned money pending final settlement of the title dispute and then applied as earned or returned in accordance with such final settlement.

IN WITNESS WHEREOF, the parties hereto have caused this agreement to be executed and have set opposite their respective names the date of execution.

APPROVED
Legal
Title
Gas
Land

ATTEST:

M. W. Patterson

Sept. 28, 1948
Date

MAGNOLIA PETROLEUM COMPANY

By S. A. Thompson
S. A. Thompson
Vice-President

Working interest owner Tracts 1 to 10 inclusive, lessee Tracts 12, 13 and 14.

ATTEST:

_____

_____
Date

CONTINENTAL OIL COMPANY

By _____

ATTEST:

_____

_____
Date

GULF OIL CORPORATION

By _____

ATTEST:

_____

_____
Date

BUFFALO OIL COMPANY

By _____

Record owner Tract No. 7.
Sept. 1, 48
Date
Ella V. Tapp
J. E. Tapp

Record owner Tract No. 6.
Sept 20, 1948
Date
Frances Finch
Ralph Finch

Record owner Tract No. 3.
Sept 20, 1948
Date
Josephine Locke

Record owner Tract No. 2.
Sept. 20, 1948
Date
Ralph Brown
Dorothy L. Brown

Record owner Tract No. 4.
Sept 20, 1948
Date
Louis F. Hamilton
Alice M. Hamilton

Record owner Tract No. 1.
Sept. 20, 1948
Date
Louise D. Yates

Record owner Tract No. 5.
Sept. 30, 1948
Date
Mrs L. Farrar
J. Burt Farrar

Husband of record owner Tract No. 1.
Sept. 9, 1948
Date
Harvey E Yates

Record owner Tract No. 8.
Oct. 11, 1948
Date
J. A. Powell
Cleta Lee Powell

Record owner Tract No. 9.
Oct. 16, 1948
Date
Eugene Bates (Mrs Eugenia Bates)
Claude Bates (Claude Bates)

Date

Date

STATE OF Texas }
COUNTY OF Dallas } SS

On this 28th day of September, 1948, before me personally appeared S. A. Thompson, to me personally known who being by me duly sworn, did say that he is the Vice- President of MAGNOLIA PETROLEUM COMPANY and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and said S. A. Thompeon acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal on this, the day and year last above written.

Joan Stephens
Notary Public

JOAN STEPHENS, Notary Public
in and for Dallas County, Texas

My Commission Expires
June 1, 1949

STATE OF _____ }
COUNTY OF _____ } SS

On this _____ day of _____ 19___, before me personally appeared _____, to me personally known who being by me duly sworn, did say that he is the _____ President of _____ and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and said _____ acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal on this, the day and year last above written.

_____
Notary Public

My Commission Expires

_____

STATE OF New Mexico)
: ss
COUNTY OF Chaves)

On this 18th day of September, 1948, before me personally appeared Ollie V. Tapp and husband L. E. Tapp, to me known to be the person s described in and who executed the foregoing instrument, and acknowledged that the y executed the same as their free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate above written.

Notary Public

My commission expires
MY COMMISSION EXPIRES MAY 14th, 1950

STATE OF New Mexico)
: ss
COUNTY OF Eddy)

On this 20th day of September, 1948, before me personally appeared Frances Nix and husband Ralph Nix, to me known to be the person s described in and who executed the foregoing instrument, and acknowledged that the y executed the same as their free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate above written.

Notary Public

My commission expires:
10-22-50

STATE OF New Mexico)
: ss
COUNTY OF Eddy)

On this 20th day of September, 1948, before me personally appeared R. B. Rodke and wife, Josephine Rodke, to me known to be the person s described in and who executed the foregoing instrument, and acknowledged that they executed the same as their free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate above written.

Notary Public

My commission expires:
10-22-50

STATE OF New Mexico)
:
COUNTY OF Eddy)

On this 20th day of September, 1948, before me personally appeared Ralph Brown and wife Madelyn S. Brown, to me known to be the person s described in and who executed the foregoing instrument, and acknowledged that they executed the same as their free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate above written.

Flora Coggin
Notary Public

My commission expires
10-29-50

STATE OF New Mexico)
:
COUNTY OF Eddy)

On this 20th day of September, 1948, before me personally appeared Louis J. Hamilton and wife Alice M. Hamilton, to me known to be the person s described in and who executed the foregoing instrument, and acknowledged that they executed the same as their free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate above written.

Flora Coggin
Notary Public

My commission expires:
10-29-50

STATE OF New Mexico)
:
COUNTY OF Eddy)

On this 21st day of September, 1948, before me personally appeared Louise B. Yates, wife of Harvey E. Yates, to me known to be the person described in and who executed the foregoing instrument, and acknowledged that she executed the same as her free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate above written.

Flora Coggin
Notary Public

My commission expires:
10-29-50

STATE OF Arkansas)
:
COUNTY OF Craighead)

On this 30th day of September, 1948, before me personally appeared Merle L. Farrar and husband J. Bud Farrar, to me known to be the person s described in and who executed the foregoing instrument, and acknowledged that they executed the same as their free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate above written.

Mary Louise Grier
Notary Puolic

My commission expires
5-4-50

STATE OF New Mexico)
:
COUNTY OF Eddy)

On this 4th day of October, 1948, before me personally appeared Harvey E. Yates, husband of Louise D. Yates, to me known to be the person described in and who executed the foregoing instrument, and acknowledged that he executed the same as his free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate above written.

Glenna Coggin
Notary Public

My commission expires:
10-29-50

STATE OF Texas)
:
COUNTY OF Travis)

On this 11th day of October, 1948, before me personally appeared T. O. Powell and wife Lota Lee Powell, to me known to be the person s described in and who executed the foregoing instrument, and acknowledged that they executed the same as their free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate above written.

Janice Williams
Notary Public

My commission expires:
July 31, 1950

STATE OF Arizona)
:
COUNTY OF Maricopa)

On this 16th day of October, 1948, before me personally appeared Eugene Bates (Mae Eugenia Bates) and husband, Claude Bates (Claude Bates), to me known to be the person s described in and who executed the foregoing instrument, and acknowledged that they executed the same as their free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate above written.

Notary Public

My commission expires
June 2, 1952

STATE OF _____)
:
COUNTY OF _____)

On this ____day of _____, 194__, before me personally appeared _____, to me known to be the person___ described in and who executed the foregoing instrument, and acknowledged that __he__ executed the same as _____ free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate above written.

My commission expires;

_____
Notary Public

STATE OF _____)
:
COUNTY OF _____)

On this ____day of _____, 194__, before me personally appeared _____, to me known to be the person__ described in and who executed the foregoing instrument, and acknowledged that __he__ executed the same as _____ free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate above written.

My commission expires:

_____
Notary Public

R 23 E

R 24 E

T 19 S

T 20 S

RICHFIELD

CONTINENTAL
160 a.

MAGNOLIA
W.I. only
160 a.

Fee

Fee

1040 a
T. O. Powell
L.C. 062256

RICHFIELD

RICH.

T.O. Powell
L.C. 062256

BUFFALO
E-1771

MAG.
4-12-49
B-8112

BUFFALO
E-1771

GULF
E-1191

MAG.
3-4-51
B-11106

O. BEHRENS
B-9797

O.E. JONES
B-8962

BUFFALO
E-1771

GULF
E-1160

MAG.
2-6-51
B-8976

MAG.
4-12-49
B-8112

BUFFALO
E-1771

M.G. SMITH
B-11115

637.60 a.
Louise D. Yates
L.C. 068600

RICHFIELD

2000 a.
Mrs. Eugenia Bates
L.C. 062259

39.70
39.50
39.30
39.10

39.03 40.12 40.20 40.28 40.28 40.20 40.12 40.04

39.08
39.13
39.18

39.38 39.43 39.48 39.53

39.81 39.83 39.86 39.87

639.62 a.
R. B. Radkie
L.C. 065701

639.36 a.
Ralph Brown
L.C. 064470

480 a.
Frances Nix
L.C. 066024

1914.36 a.
Louis F. Hamilton
L.C. 064469

Frances Nix
L.C. 066024

480 a.
Allie V. Tapp
L.C. 064439

39.23
39.28
39.33
39.38

39.40
39.41

1438.81 a.
Merle L. Ferrar
L.C. 064468

Frances Nix
L.C. 066024

Lands Committed to Unit Agreement

State 640.00 a.

Federal 9270.27 a.

Fee 320.00 a.

Total 10,230.25 a.

UNIT MAP
CASS RANCH AREA

EDDY COUNTY, NEW MEXICO

SCALE: 2 IN. = 1 MILE

Boundary of Unit Area

EXHIBIT "B"

SCHEDULE SHOWING THE PERCENTAGE AND KIND OF OWNERSHIP OF OIL AND GAS INTERESTS IN ALL LANDS IN THE CASS RANCH UNIT AGREEMENT

FEDERAL LANDS

Tract No.	Description	No. of Acres	Las Cruces Serial No.	% Royalty Payable to United States	Record Owner of Lease or Application	% of Overriding Royalty Under Option Agreement, Operating Agreement or Assignment and Owner	Working Interest Owner and % of Interest
1	All Sec. 31, T. 19 S., R. 24 E.	637.60	068660	12½%	Louise D. Yates	Louise D. Yates, 3% under Option Agreement	Magnolia Petroleum Co. 84½%
2	All Sec. 3, T. 20 S. R. 24 E.	639.36	064470	12½%	Ralph Brown	Ralph Brown, 3% under Option Agreement	Magnolia Petroleum Co. 84½%
3	All Sec. 4, T. 20 S. R. 24 E.	639.62	065701	12½%	R.B.Rodke	R. B. Rodke, 3% under Option Agreement	Magnolia Petroleum Co. 84½%
4.	All Secs. 5,6,7, T. 20 S., R. 24 E.	1,914.88	064469	12½%	Louis F. Hamilton	Louis F. Hamilton, 3% under Option Agreement	Magnolia Petroleum Co. 84½%
5	All Sec. 8; NW¼ Sec. 9; NW¼ Sec. 17; N½ Sec. 18, T. 20 S., R. 24 E.; NE¼ Sec. 13, T. 20 S. R. 23 E.	1,438.81	064468	12½%	Merle L. Farrar	Merle L.Farrar, 3% under Option Agreement	Magnolia Petroleum Co. 84½%
6	NE¼, SW¼ Sec. 9; NE¼ Sec. 17, T. 20 S., R. 24 E.	480	066024	12½%	Frances Nix	Frances Nix, 3% under Option Agreement	Magnolia Petroleum Co. 84½%
7	SE¼ Sec. 9; W½ Sec. 10, T. 20 S., R. 24 E.	480	064499	12½%	Allie V.Tapp	Allie V. Tapp, 3% under Option Agreement	Magnolia Petroleum Co. 84½%

Tract No.	Description	No. of Acres	Las Cruces Serial No.	% Royalty Payable to United States	Record Owner of Lease or Application	% of Overriding Royalty Under Option Agreement, Operating Agreement or Assignment and Owner	Working Interest Owner and % of Interest.
8	E½SE¼ Sec. 26; E½, E½NW¼, SW¼ Sec. 27; E½SE¼, SW¼SE¼, S½SW¼, NW¼SW¼, NW¼ Sec. 28, T. 19 S. R. 24 E.	1,040.00	062298	12½%	T.O.Powell	T.O.Powell 2% Richfield Oil Corporation 2% under Option Agreement	Magnolia Petroleum Co. 83½%
9	W½SE¼, SW¼ Sec. 26; all Secs. 33 and 34; N½, SW¼ Sec. 35, T. 19 S. R. 24 E.	2,000	062299	12½%	Eugene Bates	Eugene Bates 2% Richfield Oil Corporation 2% under Option Agreement	Magnolia Petroleum Co. 83½%
	Total Federal Lands	9,270.27					

FEE LANDS

Tract No.	Description	No. of Acres	% Royalty Payable to Lessor and Owner	Working Interest Owner & % of Interest
10	S½NE¼, NW¼SE¼, NE¼SW¼ Sec. 28-19S-24E.	160	12½% John R. Joyce, Jr.	Magnolia Petroleum Co. 87½%
11	W½NW¼ Sec. 27; N½NE¼ Sec. 28-19S-24E	160	12½% Mollie Millman	Continental Oil Co. 87½%
	Total Fee Lands	320 acres		

STATE LANDS

Tract No.	Description	No. of Acres	Serial No. & Expiration date.	% of Royalty Payable to State of New Mexico	Lease Record Owner & % of Working Int.	% of Overriding Royalty and Owner
12	NE¼NW¼, SE¼SW¼ Sec. 32, T. 19 S., R. 24 E	80	B-8112 4/12/49	12½%	Magnolia Petroleum Co. 87½%	None

Tract No.	Description	No. of Acres	Serial No. & expiration date	% of Royalty Payable to State of New Mexico	Lease Record Owner & % of Working Int.	% of Overriding Royalty & Owner
13	SE¼NW¼ Sec. 32, T. 19 S. R. 24 E.	40	B-11106 3/4/54	12½%	Magnolia Petroleum Co. 87½%	None
14	SW¼SW¼ Sec. 32, T. 19 S. R. 24 E.	40	B-8976 2/6/51	12½%	Magnolia Petroleum Co. 84½%	3% to E.F.Luke
15	E½NW¼ Sec. 32, T. 19 S. R. 24 E.	80	E-1191 2/10/57	12½%	Gulf Oil Company Co. 87½%	None
16	N½SE¼ Sec. 32, T. 19 S. R. 24 E.	80	E-1160 1/10/57	12½%	Gulf Oil Company Co. 87½%	None
17	W½NW¼, NE¼SW¼, SW¼SE¼ NW¼NE¼ Sec. 32, T. 19 S., R. 24 E.	200	E-1771 3/10/58	12½%	Buffalo Oil Company 87½%	None
18	SW¼NE¼ Sec. 32, T. 19 S. R. 24 E.	40	B-9797 9/3/52	12½%	O. Behrens 87½%	None
19	SE¼SE¼ Sec. 32, T. 19 S. R. 24 E.	40	B-11115 3/3/54	12½%	M. G. Smith 87½%	None
20	NW¼SW¼ Sec. 32, T. 19 S. R. 24 E.	40	B-8962 1/22/51	12½%	O. E. Jones 87½%	None
	Total State Lands	640.00				

R E C A P I T U L A T I O N

Federal Lands	9,270.27	acres
Fee Lands	320	acres
State Lands	640	acres
Total number of acres in Cass Ranch Unit Area	10,230.27	acres

UNIT ACCOUNTING AGREEMENT UNDER
UNIT AGREEMENT FOR THE DEVELOPMENT AND OPERATION
OF THE CASS RANCH UNIT AREA, COUNTY OF EDDY,
STATE OF NEW MEXICO

THIS AGREEMENT, made and entered into, as of the 1st day of May, 1953, by and between STANDARD OIL COMPANY OF TEXAS, a Delaware corporation, hereinafter designated as "Unit Operator", and the undersigned as owners of working interests in the unitized substances within the Unit Area subject to the Unit Agreement herein below described, as may subscribe this agreement and become parties hereto, which owners are hereinafter sometimes referred to individually as "Working Interest Owner" and collectively as "Working Interest Owners";

WITNESSETH: THAT,

WHEREAS, the parties hereto have heretofore executed a certain Unit Agreement for the Development and Operation of the Cass Ranch Unit Area, County of Eddy, State of New Mexico, dated September 18, 1948, hereinafter sometimes referred to as "Unit Agreement"; and

WHEREAS, Section 6 of the Unit Agreement provides for a separate Unit Accounting Agreement to be executed by the parties hereto, wherein and whereby such parties shall agree among themselves with respect to certain matters and things relating to the development and operation of the said area.

NOW, THEREFORE, in consideration of the premises and the covenants and agreements herein contained, it is mutually agreed by and between the parties as follows:

1. UNIT PLAN CONFIRMED: The Unit Agreement for the Development and Operation of the Cass Ranch Unit Area and all exhibits attached thereto are hereby confirmed and made a part of this agreement and, in the event of any conflict between the provisions of the Unit Agreement and the provisions of this agreement, the provisions of the Unit Agreement shall prevail.

2. UNIT OPERATOR: STANDARD OIL COMPANY OF TEXAS, the party hereto named as successor Unit Operator of the Unit Area under the provisions of the Unit Agreement, or its duly appointed successor Unit Operator, shall have the exclusive right to develop and operate the Unit Area subject to the provisions

of this agreement and of the Unit Agreement. The Unit Operator shall not sustain any liability to the Working Interest Owners for any acts done or omitted, in good faith performance of any of the provisions of this agreement, and in the exercise of its judgment and discretion.

The number of employees used by Unit Operator in conducting unit operations, the selection of such employees, the hours of labor and the compensation for services to be paid any and all such employees shall be determined by Unit Operator. Such employees shall be the employees of Unit Operator.

3. TITLES: Each Working Interest Owner hereto represents that it is now the owner of an interest in one or more of the tracts of land in the Unit Area. Within ten (10) days after the effective date of this agreement, each Working Interest Owner shall furnish the Unit Operator with up-to-date abstracts of title covering and affecting its interest together with such original and supplemental title opinions as may be available, and in addition for lands of the United States, acceptable up-to-date reports as to the status of the lands as appears from the records of the Bureau of Land Management of the Department of Interior. The Unit Operator shall thereupon examine all title opinions, abstracts and status reports. All expenses incurred in connection with such examination of titles shall be borne by each Working Interest Owner as to his own lease or leases. Each Working Interest Owner shall severally pay the cost of curative work on its own titles. The Unit Operator shall pass upon all titles and shall approve or reject, in whole or in part, such titles. All tracts of land or parts thereof as to which title is disapproved by the Unit Operator, and also by a controlling vote of the Working Interest Owners as provided in Section 5 hereof, shall be eliminated from the Unit Agreement and from this agreement.

Notwithstanding approval and acceptance of titles as provided above, each party hereto shall sustain the entire loss occasioned by any defect in or failure of its titles and Unit Operator is hereby relieved from any and all liability in connection therewith; and upon any loss of title to any land or interest committed to this agreement and the Unit Agreement there shall be an appropriate adjustment of the percentages of participation of the parties hereto, and if the interest is substantial and the true owner of such title fails or refuses to commit its interest to the said agreements, the acreage so affected shall be eliminated from this agreement and the Unit Agreement.

The Unit Operator in its capacity as Unit Operator shall sustain no liability to any party hereto for and on account of loss occasioned by reason of any erroneous payment caused by defect of title, but such loss shall be the loss of all the parties hereto owning working interests, excluding the owner whose title failed, in the affected participating area proportionate to their respective interests without prejudice to pursue any rights in law or in equity against the defaulting party for recovery of such loss. Any future recovery of any sums so erroneously paid shall be paid or credited to said parties in like proportion.

4. DUTIES OF UNIT OPERATOR: Unit Operator shall in the conduct of operations hereunder:

(a) conduct the same in a good and workmanlike manner, and have the right and duty to conduct such operations in accordance with its best judgment of what a prudent Operator would do under the same or similar circumstances;

(b) consult freely with Working Interest Owners concerning unit operations, and keep Working Interest Owners advised of all matters arising during the operation of the Unit Area which Unit Operator, in the exercise of its best judgment, considers important;

(c) keep true and correct books, accounts and records of its operations hereunder, and permit at all reasonable times the inspection, examination and auditing of same by any party hereto;

(d) permit any party hereto to have access to the lands and premises hereunder for inspection at all reasonable times;

(e) upon written request, furnish each affected Working Interest Owner with copies of all run tickets, and likewise upon request furnish each such party hereto, on or before the 20th day of each calendar month, with a statement of the production, and the kinds thereof taken from the premises during the preceding calendar month; provided, that settlement for gas sold will be made by the 25th day of the second month following the month in which sales were made;

(f) on request furnish any Working Interest Owner a copy of the log of any well and other engineering data pertaining to unit operations and samples from the cores and cuttings encountered in drilling wells, provided that such Working Interest Owner gives Unit Operator written notice of its desire to have such samples prior to the commencement of the well;

(g) comply with all valid applicable Federal and State laws and regulations; and

(h) keep the land in the unit area free from liens and encumbrances occasioned by its operations, save only the lien granted the Unit Operator under this agreement.

5. ADVISORY COMMITTEE CREATED: An "Advisory Committee" is hereby created consisting of one representative of each Working Interest Owner signatory hereto, and its assigns, to be designated in writing by each party. The representative of the Unit Operator shall be chairman of the Committee. Each member shall have a vote equal to the proportionate or fractional acreage interest owned by his principal in the participating area involved in any determination to be made by the Committee, or in the Unit Area where the determination concerns any matter affecting the Unit Area as a whole. Except as otherwise specified herein or in the Unit Agreement, an affirmative vote of 65% of the voting power of the Committee, taken in the manner to be determined by the Committee, referred to hereinafter, upon any matters upon which such Committee is authorized to act shall constitute the decision of the Committee and be binding on the Committee and upon each of the parties hereto; provided, however, that should any party own as much as 65%, but less than 100%, voting interest in the Unit Area or in a participating area, as the case may be, its vote must be supported by the affirmative vote of at least one additional party to bind all the parties hereto and provided further that if one party owns 30% or more voting interest, but less than 100%, the vote of such party shall not serve to defeat or disapprove any matter approved by the majority (over 50%) unless supported by at least one additional voting interest but in case of conflict the last proviso shall yield to the preceding proviso. The Committee is authorized to adopt a rule providing that where any action is agreed to in writing by all members of the Committee, it shall be part of the Committee's records and shall have the same force and effect as if adopted at a regular meeting at which a quorum was present.

It is agreed by the parties hereto that the place of meeting of the Advisory Committee shall not be over seventy-five (75) miles distant from the properties herein covered unless agreed upon by the Advisory Committee.

6. POWERS AND DUTIES OF ADVISORY COMMITTEE: The Advisory Committee shall be charged, subject to the provisions of this agreement, with compliance

with the terms and conditions of the Unit Agreement and the leases and necessary contracts affecting the development and operation of the lands covered hereby as long as the same shall be owned and held by the parties hereto, and shall have, among other powers, the power and authority:

(a) to exercise the powers of the Working Interest Owners set forth in the Unit Agreement and this agreement;

(b) to adopt such rules and regulations as it may deem advisable for its proper functioning including the selection of the time and place for holding regular meetings, calling of special meetings, and the manner of taking votes on any question;

(c) to approve or disapprove the location, drilling, and letting of contracts for drilling or recompletion of any and all wells. The approval of the drilling or recompletion of any well shall be construed to mean and include the approval of any necessary expenditures for the drilling, completing and equipping of such well, including the necessary lines, separators, and necessary tankage if a producer, and if a dry hole the plugging and abandonment thereof, except as otherwise provided in Sections 9 and 17 hereof;

(d) to approve or disapprove any expenditure in excess of $5,000.00 other than normal operating expenses;

(e) to approve or disapprove the use of facilities owned by one participating area for purposes of operation and development outside of said area, and to determine the amount of any charges therefor, unless otherwise provided for in this agreement or in the Unit Agreement;

(f) to approve or disapprove any expenditure for expert technical advice including any extra services rendered by Unit Operator's technical staff not contemplated by the provisions of the Accounting Procedure, hereto attached, marked Exhibit "1", and not covered by the overhead and camp expenses therein authorized, which overhead in said Accounting Procedure is intended to only cover normal development and operations;

(g) to approve or disapprove any partial relinquishment of the rights of the Unit Operator;

(h) to approve or disapprove the abandonment of any well or wells or the disposal of any major items of surplus material or equipment other than junk, having an original cost of $1,000.00 or more (any such item or items of less cost may be disposed of without such approval), except as otherwise provided in Section 17 hereof;

(i) to approve or disapprove any proposed plan for development of the Unit Area or any participating area or amendment thereof, or any proposed expansion or contraction of the Unit Area or any designation or enlargement of a participating area unless otherwise required by Public Authority;

(j) to determine the basis of investment adjustment and the adjusted basis of prorated future development and operating costs and to readjust percentages of participation upon enlargement or reduction of the Unit Area or enlargement of any participating area or upon elimination of acreage for failure of title;

(k) to approve or disapprove any arrangements for repressuring or cycling and to approve or disapprove any change in the existing method of operation.

In case of blow-out, explosion, fire, flood, or other sudden emergency, Unit Operator may take such steps, and incur such expense, as in its opinion are required to deal with the emergency and to safeguard life and property; provided that Unit Operator shall, as promptly as possible, report the emergency to the other parties and shall endeavor to secure any sanction which might otherwise have been required.

Subject to the provisions hereof, Unit Operator shall have full control of the premises subjected hereto and shall conduct and manage the development and operation of unitized lands for the production of unitized substances therefrom for the account of the parties hereto.

It is specifically understood, that if the Working Interest in the initial participating area or any subsequent participating area or areas, or of any separate lease situated outside any participating area, is owned by one party, such party shall alone control the action of the Unit Operator in all matters referred to in subsections (a), (c), (d), (e), (f), (h), (j), and (k) above in respect thereto until such area or areas may be enlarged to include an additional Working Interest Owner or Owners therein.

7. INSURANCE: Unit Operator agrees that Contractors or Subcontractors will carry insurance as follows, to cover drilling and development operations on all lands subject to this agreement:

(a) Workmen's Compensation Insurance as required by the laws of the State of New Mexico.

(b) Contractor's Public Liability Insurance in amounts of $100,000.00 for injuries for one person and $300,000.00 for injuries in one accident.

(c) Automobile Public Liability and Property Damage Insurance in

amounts of $100,000.00 for injuries to one person, $300,000.00 for injuries in one accident and $10,000.00 for property damage.

With respect to production operations on all lands subject to this agreement, Unit Operator shall carry with a reputable insurance carrier, Workmen's Compensation Insurance, Contractor's Public Liability Insurance with limits of $100,000.00 for one person and $300,000.00 for one accident, and Automobile Public Liability Insurance with limits of $100,000.00 for one person, $300,000.00 for one accident and $10,000.00 for property damage.

Unit Operator shall carry insurance required under this agreement at the expense of the parties hereto and for the benefit of Working Interest Owners hereunder; however, premiums for Automobile Public Liability and Property Damage Insurance on Unit Operator's fully-owned equipment shall not be charged directly to the joint account, but will be covered by the flat rate charges assessed for use of such equipment. Unit Operator will not carry fire, windstorm and explosion insurance covering operations hereunder.

8. COST OF OPERATIONS: The actual cost to the Unit Operator of performing its obligations as Unit Operator hereunder shall be kept separately for each participating area, and in each area such cost shall be apportioned to each tract in the same ratio as that defined in the Unit Agreement for the allocation of production in that area, and among the Working Interest Owners in each tract in proportion to their comparative interest therein, and as so allocated shall be paid as hereinafter provided by the several Working Interest Owners, and as nearly as may be done all costs shall be charged directly to each participating area and the operations served. All such costs, expenses, credits, and related matters and the method of handling the accounting with respect thereto shall be in accordance with the provisions of the Accounting Procedure attached hereto, made a part hereof, and marked for identification as Exhibit "1", except that:

(a) Anything contained in the Accounting Procedure attached hereto to the contrary notwithstanding, if Operator is unable to obtain pipe or other materials in the open market and/or through regular channels, or if Operator wishes to move pipe or materials to the joint property from its warehouse in the district or from other properties of Operator, the transportation charges for which would be in excess of that which would be incurred if moved from the nearest reliable supply store or railway receiving point, then Operator may

give each Working Interest Owner written notice or by telegraph setting out the estimated prices to be paid or the transportation charges it proposes to incur and each Working Interest Owner shall, in a similar manner, advise Operator within five (5) days after the date of such notice that it either agrees to pay its proportionate part of such costs or excess transportation charges, or elects to furnish its proportionate share of such pipe or other materials in kind at the location where they are to be used and by the time they are required to be on location and Operator shall be governed by and charges shall be made or not made to the joint account accordingly. If Non-Operator fails or refuses to so notify Operator within the period as aforesaid, or fails to furnish the pipe or other materials at the location within the time required, then Operator may proceed with the purchase and/or transportation of such pipe and materials as set out in its notice to each Working Interest Owner and the costs thereof shall be charged to the Joint Account and each Working Interest Owner shall pay its proportionate share of such charges.

(b) In the event of any conflict between the provisions contained in the body of this instrument or in the Unit Agreement and those contained in said Accounting Procedure, the provisions of the former shall govern to the extent of such conflict. The term "Operator" as used in Exhibit "1" shall be deemed to refer to the Unit Operator, and the term "Non-Operators" as used in Exhibit "1" shall be deemed to refer to the Working Interest Owners herein.

Unit Operator is hereby granted a prior lien upon the rights and interest of each Working Interest Owner in the Unit Area and the unitized substances allocated to each such Working Interest Owner, and the material and equipment thereon, to secure the payment of its proportionate part of the said costs and expenses. Should any Working Interest Owner fail to pay its proportionate part of said costs and expenses within thirty (30) days after being billed therefor as provided for in the referred-to Accounting Procedure, Exhibit "1", Unit Operator shall have the right at its option at any time thereafter, such default continuing, to foreclose said lien upon the respective interest of such Working Interest Owner.

Unit Operator, at its election, may request each Working Interest Owner hereto to advance its respective proportion of the development and operating costs hereunder in accordance with an estimate by Unit Operator to be made not less than ten (10) days in advance of the month in which the costs and expenses are to be incurred. Adjustment between estimates and actual costs

shall be made by the Unit Operator at the close of each calendar month and the accounts of the Working Interest Owners adjusted accordingly.

9. TEST WELLS: In the event any test wells are drilled on the Unit Area by Operator prior to establishing a participating area, or prior to establishment of an additional participating area, or any additional test wells to test heretofore untested formations, the Working Interest Owners subscribing hereto shall only be responsible for such portion of the cost thereof as they may have expressly agreed to in writing.

10. ESTABLISHMENT OF NEW PARTICIPATING AREAS OR ENLARGEMENT OF EXISTING PARTICIPATING AREAS: In the event any test well drilled shall encounter the unitized substances in quantity sufficient to justify the establishment of a new and separate participating area or the enlargement of an existing participating area for the formation encountered, such participating area or enlargement shall be formed as provided in Section 10 of the said Unit Agreement. Upon the establishment of any participating area, there shall be a retroactive adjustment of the cost of drilling, completing, equipping for production and operating the said test well from the commencement of operations on said well until the effective date of the establishment to the end that the owners of working interests in the participating area newly established shall reimburse without interest the party or parties who paid for the cost and expense of drilling, completing, equipping for production, and operating the well, less any income derived by the last named party or parties up to the date of settlement, and thereafter the costs incurred and benefits derived from the operation of the well shall be borne by and inure to the benefit of the Working Interest Owners in the participating area or areas, and the working interests attributable to the nonparticipating portion of the Unit Area shall thereafter be liable for no part of the costs and entitled to no part of the benefits derived therefrom.

11. FUTURE WELLS DRILLED BY UNIT OPERATOR: All wells drilled in the Unit Area by Unit Operator after the effective date of this agreement shall be drilled on a competitive contract basis at the usual rates prevailing in the region of the Unit Area. Unit Operator, if it so desires, may employ its own tools and equipment in the drilling of such wells, but in such event the charge therefor shall not exceed the competitive prevailing rate charged by independent contractors doing work of a similar nature. Before the commencement of the drilling of any well by the Unit Operator, the Unit Operator and the other affected Working Interest Owners shall agree upon the then competitive prevail-

ing rate and upon the contract under which Unit Operator will drill such well.

12. WELLS DRILLED OUTSIDE PARTICIPATING AREA: The Unit Operator, upon obtaining the approval, where necessary, of Federal or State authority, may drill any test well within the Unit Area but outside the boundaries of any established participating area, for the account, and at the sole cost, risk and expense of the Working Interest Owners within the participating area, only after obtaining the consent of the parties as provided in Sections 5 and 6 hereof. In the alternative such wells may be drilled as provided in Section 12 of the Unit Agreement.

13. CHANGE OF PARTICIPATING AREA - INVESTMENT ADJUSTMENT: Separate participating areas for different formations may be established and any participating area may be diminished on account of failure of title or may be enlarged, all as provided by the said Unit Agreement and this agreement. On the enlargement of any participating area there shall be an investment adjustment between the owners of working interest in the enlarged participating area who are parties hereto and the Working Interest Owners in the former participating area who are parties hereto, to the end that the investment in wells, well equipment, facilities, and all other property within the enlarged participating area shall be paid for by the affected Working Interest Owners in the enlarged participating area proportionate to the interest of each in the cost of operation and revenue derived from the enlarged participating area, and also to the end that the parties who have previously paid said costs shall be reimbursed on the basis hereinafter set forth. The affected Working Interest Owners in the participating area before its enlargement shall receive credit for the intangible cost of drilling, completing, and equipping for production all wells capable of producing unitized substances situated within said participating area. The costs to be so credited shall be measured by the average cost of drilling, completing and equipping for production wells of like character and depth in that region in a good and workmanlike manner at the time when said wells were drilled. Credit shall also be given for the casing and other tangible property and facilities installed in the wells and for any structures, facilities or other property at a percentage of original cost, such percentage to be separately agreed upon by the Working Interest Owners in the enlarged participating area. The affected Working Interest Owners on any tract outside of the participating area that is to be admitted to the enlarged participating

area shall likewise receive credit for the intangible cost of drilling, completing, and equipping any wells on their respective leases, together with the value of the tangible equipment, facilities, and structures located thereon and used in connection therewith on the basis as last hereinabove set out. The sum total of all credit shall be the investment cost apportionable to the enlarged participating area. The investment adjustment shall be made by cash settlement among the Working Interest Owners through the Unit Operator. No credit shall be given for the previous cost of operating any wells or repairing or maintaining other property, nor shall there be any debit for and on account of production taken from wells prior to the effective date of the enlargement of the participating area.

14. MARGINAL WELL - SEPARATE OPERATION: In the event that any well drilled under the provisions of Section 16 hereof or under Section 12 of the Unit Agreement shall encounter the unitized substances in producible but not in paying quantities, so that the well is not admitted to any participating area, it may be separately operated by the parties who financed the drilling thereof for their own account as provided by Section 12 of the Unit Agreement. If the drilling of the well was financed by parties other than the Working Interest Owners on the well tract, such Working Interest Owners may at any time take over the well by reimbursing the parties financing the same for the unrecovered portion of the drilling and operating costs thereof; but if the parties who financed any such well desire to abandon the same, the Working Interest Owners on the well tract may then take over and operate the well by payment of the fair salvage value of the casing and other necessary equipment left in the well, provided also that if the Working Interest Owners on the well tract do not elect to take over and operate such well, the same shall be plugged and abandoned at the cost of the parties who financed such well.

15. TAXES: All ad valorem taxes assessed on privately owned land within the Unit Area shall be paid by the owner of the land unless otherwise provided in any contract or agreement between such owner and a Working Interest Owner hereunder. Each Working Interest Owner, however, shall ascertain that the land contributed by it to the Unit Area shall not be sold for nonpayment of any ad valorem taxes constituting a lien thereon and in the event of such sale, such Working Interest Owner shall, at its expense, effect the redemption of such land or take any other measures permitted by law or the terms of its lease

to prevent the loss of the land as a result of the tax sale.

Unit Operator, subject to the provisions of the Unit Agreement, shall render and pay all taxes on tangible personal property owned by the Working Interest Owners in all participating areas and all other taxes of any nature or kind whatever (except the Federal and State income taxes in any state, licenses, franchises, or other similar tax necessary to be paid by the parties hereto to maintain their corporate existence) and shall charge to and collect such taxes from the respective Working Interest Owners in the same proportion as other costs are distributed and collected.

In the event any taxable valuation is assessed on or against said property or any portion thereof, which the Unit Operator deems to be unreasonable, it shall be the duty of Unit Operator to protest said taxable valuation within the time and manner as prescribed by law, and prosecute such protest to final determination. When any such protested valuation of such property shall have been determined, Unit Operator shall pay, for the joint account, the taxes thereon, together with any interest or penalty accrued by reason of such protest, and bill each party for its proportionate share of such payments in accordance with the Accounting Procedure, Exhibit "1", hereto attached.

16. DRILLING OF ADDITIONAL WELLS: Any Working Interest Owner who desires to be relieved of the obligation to contribute to the cost and the obligation to share in the risk of drilling any well at a location outside the boundaries of an existing participating area, or to test any untested formation, may be so relieved by notifying the Unit Operator in writing prior to the commencement of operations for said well.

Certain further provisions are made in Section 12 of the Unit Agreement as to the drilling of such outside well by the party or parties owning or controlling a majority of the working interests under such well location. The basis of contribution to the cost of such well and the final adjustment or disposition of such costs shall be made the subject of a special agreement between the parties financing said well. Said cost in either event shall include, if a producer, the cost of completing and equipping the well for production, and if a nonproducer, the cost of plugging and abandoning the well.

In either case, if the well produces unitized substances in producible but not in paying quantities, the said well shall be handled as provided in the third paragraph in Section 12 of the Unit Agreement and, if operated by the

Unit Operator, shall be operated for the account of the Working Interest Owners who participated in the cost and risk of drilling the well.

Likewise in either case, if said well is completed as a producer of unitized substances in paying quantities, the well shall be operated by the Unit Operator in the appropriate participating area as enlarged or to be established as a result of the drilling of this well as the case may be, and there shall be an investment adjustment among the Working Interest Owners as provided in Section 10 or Section 13 hereof as the case may be. Separate accounts shall be maintained as to costs and production of said well and the entire Working Interest portion of the production from the well after deducting 100% of the operating costs attributable to the well to the date of reimbursement hereinafter provided for, shall be first allocated to the Working Interest Owners who participated in the cost and expense of drilling said well in proportion to their contribution to the cost of such well, until said Working Interest Owners have received from the proceeds thereof, in addition to the 100% credit for the cost of the well allowed above in the investment adjustment, an additional 50% of the cost of drilling, testing, completing and equipping such well. After the parties who participated in the cost of drilling said well have been fully reimbursed to the extent above described, then and thereafter said well shall be operated by the Unit Operator for the joint account of all Working Interest Owners herein, and the subsequent costs and expenses of operation and the production derived therefrom shall be apportioned in the same manner and in the same proportion as if all Working Interest Owners hereto had originally participated in the drilling of said well.

If any well be drilled hereunder to test any formation other than the formation then producing in any participating area and said well is not completed as a paying producer from the objective formation but the well can be plugged back or deepened, as the case may be, and made into a paying producer in a formation for which a participating area has been established, the Working Interest Owners in the affected participating area shall have the right to take over said well and cause the Unit Operator to plug back or deepen as the case may be and to complete and operate it all for the account of such participating area upon effecting an investment adjustment for the cost of said well from the surface to such producing formation on the same basis provided in Section 13 hereof.

Notwithstanding the foregoing, in the event Unit Operator is required to drill an extension well outside the boundaries of any participating area or any development well within a participating area by governmental order, or demand, whether such order or demand is initiated by the government independent of its consideration of any plan of development, or is issued as a required alteration of a plan of development, the cost of drilling and completing said well if a producer, and of plugging and abandoning the well if a dry hole, shall be borne by all of the Working Interest Owners in said participating area in proportion to their interest therein. The consent of a Working Interest Owner to a plan of development calling for the drilling of a well or wells shall be deemed consent to participate in the cost of drilling such a well or wells. Should Unit Operator be required by governmental order to drill a well to test any previously untested formation in the Unit Area, the cost of drilling and equipping such well if a producer, and plugging and abandoning the well if a dry hole, shall be, anything contained in Sec. 9 hereof notwithstanding, initially borne by all of the parties hereto in proportion to their interests in the entire Unit Area; provided, however, further, that in the event such well is completed as a paying producer resulting in the establishment of a participating area, the parties advancing said costs shall be reimbursed for all the costs of drilling, equipping and operating the well by cash adjustment by the Working Interest Owners in the participating area, after which, the well shall be owned by and operated for the account of the Working Interest Owners of the participating area so established.

In the event any well is multiply completed as a paying producer in more than one formation, the Working Interest Owners of the respective participating areas established for such formations shall arrange for an appropriate allocation of investment and operating costs of such well by separate agreement.

17. OPTION AS TO ABANDONMENT OF WELLS: If the affected Working Interest Owners hereto are unable to agree as to the proposed abandonment of any well or wells, then such party or parties not desiring to abandon the same shall tender to the other affected Working Interest Owner or Owners a sum equal to the last named parties' proportionate share in the salvage of the material and equipment in said well or wells determined in accordance with the Account-

ing Procedure Exhibit "1" hereto attached and upon receipt of said sum, the said parties wishing to abandon said well shall assign to the other Working Interest Owners their rights in the well and well property down to and including the producing formation in the land on which said well is situated, said well may thereafter be operated by the Unit Operator for the separate account of the remaining Working Interest Owners. Proper bills of sale and division orders shall be executed by the assigning parties to accomplish the purposes hereof, and no further wells shall be drilled to the producing formation within the drainage area of said well as established by the well spacing system then in use in said field, but there shall be no conveyance of any rights in and to any land or leasehold rights in the acreage surrounding said well, and the percentage of participation of the parties under the Unit Agreement and this Agreement as to all other wells then or thereafter drilled and as to the land and leasehold rights under this Agreement and the Unit Agreement shall be unaffected by this transfer.

18. ASSIGNMENTS: Any Working Interest Owner may, at any time, transfer or assign all of his working interest to any other Working Interest Owner who is then a party to the Unit Agreement and to this agreement, or to any other person, association, or corporation, when such assignment is made expressly subject to the terms of the Unit Agreement and the terms of this agreement, and wherein the assignee shall accept and agree to perform all duties, obligations, and liabilities thereof. In such assignment, it shall be competent for the assignor to reserve a royalty interest. Upon the making of such assignment, irrespective of whether a royalty interest is reserved, the assignor shall thereupon be relieved of all future duties, obligations, and liabilities of a Working Interest Owner under this agreement and under the Unit Agreement. A partial assignment of working interest shall be effective as above described to the extent of the interest so assigned. No assignment made under the provisions of this Section shall be binding upon the Unit Operator until a certified copy of said assignment has been delivered to Unit Operator.

19. WITHDRAWAL OF PARTY: If any party hereto so desires, it may withdraw from this agreement by conveying, assigning, and transferring, without warranty, either express or implied to the other parties hereto who do not desire to withdraw, all of its right, title and interest in and under the leases included in the Unit Area, together with the withdrawing party's interest in all wells, casing, material, equipment, fixtures, and other personal

property belonging to the joint account, but such conveyance or assignment shall not relieve said party from any obligation or liability accruing or incurred prior to the date thereof. The interest so conveyed and assigned shall be held and owned by the assignees in the proportion set out in applicable percentage participation schedules and; thereupon the withdrawing party shall be relieved from all obligations and liabilities thereafter to accrue under this contract, and the right of such party to any benefits subsequently accruing hereunder shall cease; but assignees shall pay assignor for its interest in all casings, material, equipment, fixtures, and other personal property owned by the joint account at the salvage value thereof, computed in accordance with the Accounting Procedure, Exhibit "1", hereto attached.

20. LIABILITY: The liability of the parties hereunder shall be several and not joint or collective. Each party shall be individually responsible for its own obligations as set out in this agreement and shall be liable only for its proportionate share of the costs and expenses as provided by this contract, and nothing herein contained or implied shall be deemed to create a partnership between or among the parties hereto. Whenever in this agreement reference is made to operations for the account of any of the parties hereto or the charges or credit to the account of the parties hereto, or whenever similar language is used, the parties use such language merely as a convenient method of referring to the accounting necessary between them, and it is agreed that no such phraseology shall ever be construed as creating any joint liability upon the part of the parties hereto for any obligation incurred under this agreement, or as setting apart or creating any fund or jointly owned property for the satisfaction of any such obligation; or as creating a common fund for any other purpose. No funds received by Unit Operator under this agreement, whether received as proceeds from the sale of unitized substances, or as advances or as payments on account of costs or expenses, or otherwise, need be segregated by Unit Operator or maintained by it as a joint fund, but may be commingled with its own fund and distributed by Unit Operator as provided for in this agreement.

Unit Operator shall not be liable or responsible for any damage to the Unit Area or the property, equipment or facilities used in the development and operation thereof, or for the loss of any production arising out of its operation of the Unit Area, except only for bad faith or gross negligence in

connection therewith.

If, and in the event, notwithstanding the foregoing provisions of this section, the Unit, the Unit Operator or any member of the Unit is held liable by a court of competent jurisdiction for any matter or thing for which it is herein provided the Unit or person so named shall not be liable, the amount of such liability as finally determined shall thereupon be treated, regarded and paid as an item of unit expense.

21. NOTICES: All notices required or permitted to be given hereunder shall be in writing and shall be deemed to have been properly served and addressed when sent by mail or telegram to the parties executing this agreement at the addresses set opposite their respective names.

22. SUBSEQUENT JOINDER: Any Working Interest Owner having interests in the Unit Area who for any reason does not subscribe to this agreement at the time of its inception may subsequently become a party thereto by signing instruments with the Unit Operator expressly ratifying this agreement and the Unit Agreement; however, the Unit Operator may in its discretion refuse to admit a Working Interest Owner to participation in this agreement unless all the Working Interest Owners having interests in the tract or tracts of land in which the applicant Working Interest Owner has an interest likewise elect to join, and further subject to the condition that if the Working Interest Owners are unable to secure the commitment to the Unit Agreement of all of the royalty interests in the tract to be committed, they shall undertake to pay and satisfy the royalty interests on said tract and save the Unit Operator and the other Working Interest Owners on other tracts harmless from any claim or demand of said royalty owners. The Unit Operator shall promptly furnish to the remaining Working Interest Owners who are then parties hereto, copies of all such instruments.

23. DISPOSAL OF PRODUCTION: Each of the parties hereto shall own and, at its own expense, shall take in kind and separately dispose of its proportionate part of all the oil, gas, casinghead gas and other hydrocarbon substances produced and saved from the lease acreage covered hereby, exclusive of the production which the Unit Operator may use in developing and producing operations and in preparing and treating oil for market purposes and of production unavoidably lost; provided that each of the parties shall pay, or secure the payment of the royalty interest in its proportionate part of the

production.

24. UNAVOIDABLE DELAY: All obligations under this agreement requiring the Unit Operator to commence or continue drilling or to operate on or produce unitized substances from any of the lands covered by this agreement shall be suspended while, but only so long as, the Unit Operator despite the exercise of due care and diligence is prevented from complying with such obligations, in whole or in part, by strikes, lockouts, acts of God, Federal, State, or municipal laws or agencies, unavoidable accidents, uncontrollable delays in transportation, inability to obtain necessary materials in open market, or other matters beyond the reasonable control of the Unit Operator whether similar to matters herein enumerated or not.

25. EFFECTIVE DATE AND TERM: This agreement shall become effective as to all parties executing the same upon the date set out above, and the term hereof shall be the same as that of the Unit Agreement. This agreement may be terminated in any manner by which the said Unit Agreement may be terminated.

This agreement may be executed in any number of counterparts with the same force and effect as if all the parties had signed the same document.

IN WITNESS WHEREOF, the parties have executed this contract the day and year first above written.

ATTEST:

_____
Secretary

Date _____

ATTEST:

_____
Assistant Secretary

Date _____

Date _____

Date _____

Date _____

Date _____

MALCO REFINERIES, INC.

By _____

STANDARD OIL COMPANY OF TEXAS

By _____

_____

_____

_____

_____

_____

_____

_____

601 ROSS MARTIN CO. TULSA 1, OKLAHOMA

EXHIBIT "1"

Model Form-PASO-1949-1

Attached to and made a part of Unit Accounting Agreement under Unit Agreement for the Development and Operation of the Cass Ranch Unit Area, County of Eddy, State of New Mexico

ACCOUNTING PROCEDURE

(UNIT AND JOINT LEASE OPERATIONS)

I. GENERAL PROVISIONS

1. **Definitions**
The term "joint property" as herein used shall be construed to mean the subject area covered by the agreement to which this "Accounting Procedure" is attached.
The term "Operator" as herein used shall be construed to mean the party designated to conduct the development and operation of the leased premises for the joint account.
The term "Non-Operator" as herein used shall be construed to mean any one or more of the non-operating parties.

2. **Statements and Billings**
Operator shall bill Non-Operator on or before the last day of each month for its proportionate share of costs and expenditures during the preceding month. Such bills will be accompanied by statements, reflecting the total costs and charges as set forth under Sub-Paragraph B below:
A. Statement in detail of all charges and credits to the joint account.
B. Statement of all charges and credits to the joint account, summarized by appropriate classifications indicative of the nature thereof.
C. Statements, as follows:
(1) Detailed statement of material ordinarily considered controllable by Operators of oil and gas properties;
(2) Statement of all other charges and credits to the joint account summarized by appropriate classifications indicative of the nature thereof; and
(3) Statement of any other receipts and credits.

3. **Payments by Non-Operator**
Each party shall pay its proportion of all such bills within fifteen (15) days after receipt thereof. If payment is not made within such time, the unpaid balance shall bear interest at the rate of six per cent (6%) per annum until paid.

4. **Audits**
Payment of any such bills shall not prejudice the right of Non-Operator to protest or question the correctness thereof. All statements rendered to Non-Operator by Operator during any calendar year shall be conclusively presumed to be true and correct after eighteen months following the close of any such calendar year, unless within said eighteen months period Non-Operator takes written exception thereto and makes claim on Operator for adjustment. Failure on the part of Non-Operator to make claim on Operator for adjustment within such period shall establish the correctness thereof and preclude the filing of exceptions thereto or the making of claims for adjustment thereon. A Non-Operator, upon notice in writing to Operator and all other Non-Operators, shall have the right to audit Operator's accounts and records relating to the accounting hereunder, within eighteen months next following the close of any calendar year. Non-Operator shall have six months next following the examination of the Operator's records within which to take written exception to and make any and all claims on Operator. The provisions of this paragraph shall not prevent adjustments resulting from the physical inventory of property as provided for in Section VI, Inventories, hereof.

II. DEVELOPMENT AND OPERATING CHARGES

Subject to limitations hereinafter prescribed, Operator shall charge the joint account with the following items:

1. **Rentals and Royalties**
Delay or other rentals, when such rentals are paid by Operator for the joint account; royalties, when not paid direct to royalty owners by the purchaser of the oil, gas, casinghead gas, or other products.

2. **Labor, Transportation, and Services**
Labor, transportation, and other services necessary for the development, maintenance, and operation of the joint property. Labor shall include (A) Operator's cost of vacation, sickness and disability benefits of employees, and expenditures or contributions imposed or assessed by governmental authority applicable to such labor, and (B) Operator's current cost of established plans for employees' group life insurance, hospitalization, pension, retirement, stock purchase, thrift, bonus, and other benefit plans of like nature, applicable to Operator's field payroll; provided that the charges under Part (B) of this paragraph shall not exceed five per cent (5%) of the total of such labor charged to the joint account.

3. **Material**
Material, equipment, and supplies purchased or furnished by Operator, for use of the joint property. So far as it is reasonably practical and consistent with efficient and economical operation, only such material shall be purchased for or transferred to the joint property as required for immediate use, and the accumulation of surplus stocks shall be avoided.

4. **Moving Material to Joint Property**
Moving material to the joint property from Vendor's or from Operator's warehouse in the district or from the other properties of Operator, but in either of the last two events no charge shall be made to the joint account for a distance greater than the distance from the nearest reliable supply store or railway receiving point where such material is available, except by special agreement with Non-Operator.

5. **Moving Surplus Material from Joint Property**
Moving surplus material from the joint property to outside vendees, if sold f.o.b. destination, or minor returns to Operator's warehouse or other storage point. No charge shall be made to the joint account for moving major surplus material to Operator's warehouse or other storage point for a distance greater than the distance to the nearest reliable supply store or railway receiving point, except by special agreement with Non-Operator; and no charge shall be made to the joint account for moving material to other properties belonging to Operator, except by special agreement with Non-Operator.

6. **Use of Operator's Equipment and Facilities**
Use of and service by Operator's exclusively owned equipment and facilities as provided in Paragraph 4, of Section III, "Basis of Charges to Joint Account."

7. **Damages and Losses**
Damages or losses incurred by fire, flood, storm, or any other cause not controllable by Operator through the exercise of reasonable diligence. Operator shall furnish Non-Operator written notice of damage or losses incurred by fire, storm, flood, or other natural or accidental causes as soon as practicable after report of the same has been received by Operator.

8. **Litigation, Judgments, and Claims**
All costs and expenses of litigation, or legal services otherwise necessary or expedient for the protection of the joint interests, including attorney's fees and expenses as hereinafter provided, together with all judgments obtained against the joint account or the subject matter of this agreement; actual expenses incurred by any party or parties hereto in securing evidence for the purpose of defending against any action or claim prosecuted or urged against the joint account or the subject matter of this agreement.
   A. If a majority of the interests hereunder shall so agree, actions or claims affecting the joint interests hereunder may be handled by the legal staff of one or more of the parties hereto, and a charge commensurate with the services rendered may be made against the joint account, but no such charge shall be made until approved by the legal department of or attorneys for the respective parties hereto.
   B. Fees and expenses of outside attorneys shall not be charged to the joint account unless authorized by the majority of the interests hereunder.

9. **Taxes**
All taxes of every kind and nature assessed upon or in connection with the properties which are the subject of this agreement, the production therefrom or the operation thereof, and which taxes have been paid by the Operator for the benefit of the parties hereto.

10. **Insurance**
   A. Premiums paid for insurance carried for the benefit of the joint account, together with all expenditures incurred and paid in settlement of any and all losses, claims, damages, judgments, and other expenses, including legal services, not recovered from insurance carrier.
   B. If no insurance is required to be carried, all actual expenditures incurred and paid by Operator in settlement of any and all losses, claims, damages, judgments, and any other expenses, including legal services, shall be charged to the joint account.

11. **District and Camp Expense**
A proportionate share of the salaries and expenses of Operator's District Superintendent and other general district or field employees serving the joint property, whose time is not allocated direct to the joint property, and a proportionate share of maintaining and operating a district office and all necessary camps, including housing facilities for employees if necessary, in conducting the operations on the joint property and other leases owned and operated by Operator in the same locality. The expense of, less any revenue from, these facilities shall include depreciation or a fair monthly rental in lieu of depreciation on the investment. Such charges shall be apportioned to all leases served on some equitable basis consistent with Operator's accounting practice.

12. **Overhead**
Overhead charges, which shall be in lieu of any charges for any part of the compensation or salaries paid to managing officers and employees of Operator, including the division superintendent, the entire staff and expenses of the division office located at _____, and any portion of the office expense of the principal business office located at _____, but which are not in lieu of district or field office expenses incurred in operating any such properties, or any other expenses of Operator incurred in the development and operation of said properties; and Operator shall have the right to assess against the joint property covered hereby the following overhead charges:
   A. $ 100.00 per month for each drilling well, beginning on the date the well is spudded and terminating when it is on production or is plugged, as the case may be, except that no charge shall be made during the suspension of drilling operations for fifteen (15) or more consecutive days.
   B. $ 35.00 per well per month for the first five (5) producing wells.
   C. $ 25.00 per well per month for the second five (5) producing wells.
   D. $ 15.00 per well per month for all producing wells over ten (10).
   E. In connection with overhead charges, the status of wells shall be as follows:
      (1) In-put or key wells shall be included in overhead schedule the same as producing oil wells.
      (2) Producing gas wells shall be included in overhead schedule the same as producing oil wells.
      (3) Wells permanently shut down but on which plugging operations are deferred, shall be dropped from overhead schedule at the time the shutdown is effected. When such wells are plugged, overhead shall be charged at the producing well rate during the time required for the plugging operation.
      (4) Wells being plugged back or drilled deeper shall be included in overhead schedule the same as drilling wells.
      (5) Various wells may be shut down temporarily and later replaced on production. If and when a well is shut down (other than for proration) and not produced or worked upon for a period of a full calendar month, it shall not be included in the overhead schedule for such month.
      (6) Salt water disposal wells shall not be included in overhead schedule.

F. The above overhead schedule on producing wells shall be applied to individual leases; provided that, whenever leases covered by this agreement are operated as a unitized project in the interest of economic development, the schedule shall be applied to the total number of wells, irrespective of individual leases.

G. The above specific overhead rates may be amended from time to time by agreement between Operator and Non-Operator if, in practice, they are found to be insufficient or excessive.

13. Warehouse Handling Charges None

14. Other Expenditures

Any other expenditure incurred by Operator for the necessary and proper development, maintenance, and operation of the joint property.

III. BASIS OF CHARGES TO JOINT ACCOUNT

1. Purchases

Material and equipment purchased and service procured shall be charged at price paid by Operator, after deduction of all discounts actually received.

2. Material Furnished by Operator

Material required for operations shall be purchased for direct charge to joint account whenever practicable, except that Operator may furnish such material from Operator's stocks under the following conditions:

A. New Material (Condition "A")

(1) New material transferred from Operator's warehouse or other properties shall be priced f. o. b. the nearest reputable supply store or railway receiving point, where such material is available, at current replacement cost of the same kind of material. This will include material such as tanks, rigs, pumps, sucker rods, boilers, and engines. Tubular goods (2" and over), shall be priced on carload basis effective at date of transfer and f. o. b. railway receiving point nearest the joint account operation, regardless of quantity transferred.

(2) Other material shall be priced on basis of a reputable supply company's Preferential Price List effective at date of transfer and f. o. b. the store or railway receiving point nearest the joint account operation where such material is available.

(3) Cash discount shall not be allowed.

B. Used Material (Condition "B" and "C")

(1) Material which is in sound and serviceable condition and is suitable for reuse without reconditioning shall be classed as Condition "B" and priced at 75% of new price.

(2) Material which cannot be classified as Condition "B" but which,

(a) After reconditioning will be further serviceable for original function as good second hand material (Condition "B"), or

(b) Is serviceable for original function but substantially not suitable for reconditioning,

shall be classed as Condition "C" and priced at 50% of new price.

(3) Material which cannot be classified as Condition "B" or Condition "C" shall be priced at a value commensurate with its use.

(4) Tanks, derricks, buildings, and other equipment involving erection costs shall be charged at applicable percentage of knocked-down new price.

3. Warranty of Material Furnished by Operator

Operator does not warrant the material furnished beyond or back of the dealer's or manufacturer's guaranty; and, in case of defective material, credit shall not be passed until adjustment has been received by Operator from the manufacturers or their agents.

4. Operator's Exclusively Owned Facilities

The following rates shall apply to service rendered to the joint account by facilities owned exclusively by Operator:

A. Water service, fuel gas, power, and compressor service: At rates commensurate with cost of providing and furnishing such service to the joint account but not exceeding rates currently prevailing in the field where the joint property is located.

B. Automotive Equipment: Rates commensurate with cost of ownership and operation. Such rates should generally be in line with schedule of rates adopted by the Petroleum Motor Transport Association, or some other recognized organization, as recommended uniform charges against joint account operations and revised from time to time. Automotive rates shall include cost of oil, gas, repairs, insurance, and other operating expense and depreciation; and charges shall be based on use in actual service on, or in connection with, the joint account operations. Truck, tractor, and pulling unit rates shall include wages and expenses of driver.

C. A fair rate shall be charged for the use of drilling and cleaning-out tools and any other items of Operator's fully owned machinery or equipment which shall be ample to cover maintenance, repairs, depreciation, and the service furnished the joint property; provided that such charges shall not exceed those currently prevailing in the field where the joint property is located.

D. Whenever requested, Operator shall inform Non-Operator in advance of the rates it proposes to charge.

E. Rates shall be revised and adjusted from time to time when found to be either excessive or insufficient.

IV. DISPOSAL OF LEASE EQUIPMENT AND MATERIAL

The Operator shall be under no obligation to purchase interest of Non-Operator in surplus new or secondhand material. Derricks, tanks, buildings, and other major items shall not be removed by Operator from the joint property without the approval of Non-Operator. Operator shall not sell major items of material to an outside party without giving Non-Operator an opportunity either to purchase same at the price offered or to take Non-Operator's share in kind.

1. **Material Purchased by Operator**
Material purchased by Operator shall be credited to the joint account and included in the monthly statement of operations for the month in which the material is removed from the joint property.

2. **Material Purchased by Non-Operator**
Material purchased by Non-Operator shall be invoiced by Operator and paid for by Non-Operator to Operator immediately following receipt of invoice. The Operator shall pass credit to the joint account and include the same in the monthly statement of operations.

3. **Division in Kind**
Division of material in kind, if made between Operator and Non-Operator, shall be in proportion to their respective interests in such material. Each party will thereupon be charged individually with the value of the material received or receivable by each party and corresponding credits will be made by the Operator to the joint account, and such credits shall appear in the monthly statement of operations.

4. **Sales to Outsiders**
Sales to outsiders of material from the joint property shall be credited by Operator to the joint account at the net amount collected by Operator from Vendee. Any claims by Vendee for defective material or otherwise shall be charged back to the joint account, if and when paid by Operator.

V. BASIS OF PRICING MATERIAL TRANSFERRED FROM JOINT ACCOUNT

Material purchased by either Operator or Non-Operator or divided in kind, unless otherwise agreed, shall be valued on the following basis:

1. **New Price Defined**
New price as used in the following paragraphs shall have the same meaning and application as that used above in Section III, "Basis of Charges to Joint Account."

2. **New Material**
New material (Condition "A"), being new material procured for the joint account but never used thereon, at 100% of current new price.

3. **Good Used Material**
Good used material (Condition "B"), being used material in sound and serviceable condition, suitable for reuse without reconditioning,
   A. At 75% of current new price if material was charged to joint account as new, or
   B. At 75% of current new price less depreciation consistent with their usage on and service to the joint property, if material was originally charged to the joint property as secondhand at 75% of new price.

4. **Other Used Material**
Used Material (Condition "C"), being used material which
   A. After reconditioning will be further serviceable for original function as good secondhand material (Condition "B"), or
   B. Is serviceable for original function but substantially not suitable for reconditioning,

   at 50% of current new price.

5. **Bad-Order Material**
Used material (Condition "D"), being material which cannot be classified as Condition "B" or Condition "C", shall be priced at a value commensurate with its use.

6. **Junk**
Junk (Condition "E"), being obsolete and scrap material, at prevailing prices.

7. **Temporarily Used Material**
When the use of material is of a temporary nature and its service to the joint account does not justify the reduction in price as provided in Paragraph 3B, above, such material shall be priced on a basis that will leave a net charge to the joint account consistent with the value of the service rendered.

VI. INVENTORIES

1. **Periodic Inventories**
Periodic inventories shall be taken by Operator of the joint account material, which shall include all such material as is ordinarily considered controllable by operators of oil and gas properties.

2. **Notice**
Notice of intention to take inventory shall be given by Operator at least ten days before any inventory is to begin, so that Non-Operator may be represented when any inventory is taken.

3. **Failure to be Represented**
Failure of Non-Operator to be represented at the physical inventory shall bind Non-Operator to accept the inventory taken by Operator, who shall in that event furnish Non-Operator with a copy thereof.

4. **Reconciliation of Inventory**
Reconciliation of inventory with charges to the joint account shall be made by each party at interest, and a list of overages and shortages shall be jointly determined by Operator and Non-Operator.

5. **Adjustment of Inventory**
Inventory adjustments shall be made by Operator with the joint account for overages and shortages, but Operator shall only be held accountable to Non-Operator for shortages due to lack of reasonable diligence.

6. **Special Inventories**
Special inventories may be taken, at the expense of the purchaser, whenever there is any sale or change of interest in the joint property, and it shall be the duty of the party selling to notify all other parties hereto as quickly as possible after the transfer of interest takes place. In such cases both the seller and the purchaser shall be represented and shall be governed by the inventory so taken.

CERTIFICATION-DETERMINATION

Pursuant to the authority vested in the Secretary of the Interior, under the act approved February 25, 1920, 41 Stat. 436, 30 U.S.C. secs. 181, et seq., as amended by the act of August 8, 1946, 60 Stat. 950, and delegated to the Director of the Geological Survey pursuant to Departmental Order No. 2365 of October 8, 1947, 43 C.F.R. sec. 4.611, 12 F.R. 6784, I do hereby:

A. Approve the attached agreement for the development and operation of the Cass Ranch Unit Area, State of New Mexico.

B. Certify and determine that the unit plan of development and operation contemplated in the attached agreement is necessary and advisable in the public interest for the purpose of more properly conserving the natural resources.

C. Certify and determine that the drilling, producing, rental, minimum royalty, and royalty requirements of all Federal leases committed to said agreement are hereby established, altered, changed, or revoked to conform with the terms and conditions of this agreement.

Dated JUL 8 1949

Acting Director
United States Geological Survey

CERTIFICATE OF APPROVAL BY COMMISSIONER OF PUBLIC LANDS, STATE OF NEW MEXICO, OF UNIT AGREEMENT FOR THE DEVELOPMENT AND OPERATION OF THE CASS RANCH UNIT AREA, EDDY COUNTY, STATE OF NEW MEXICO.

There having been presented to the undersigned, Commissioner of Public Lands of the State of New Mexico, for examination and agreement for the development and operation of the Cass Ranch Unit Area, Eddy County, New Mexico, bearing date of September 18, 1948, in which the Magnolia Petroleum Company, a corporation is designated as Operator, and which has been executed by various parties owning and holding oil and gas leases embracing lands within the unit area, and upon examination of said agreement, the Commissioner finds:

(a) That such agreement will tend to promote the conservation of oil and gas and the better utilization of reservoir energy in said field;

(b) That under the operations proposed, the State will receive its fair share of the recoverable oil or gas in place under its lands in the area affected;

(c) That the agreement is in other respects for the best interests of the State;

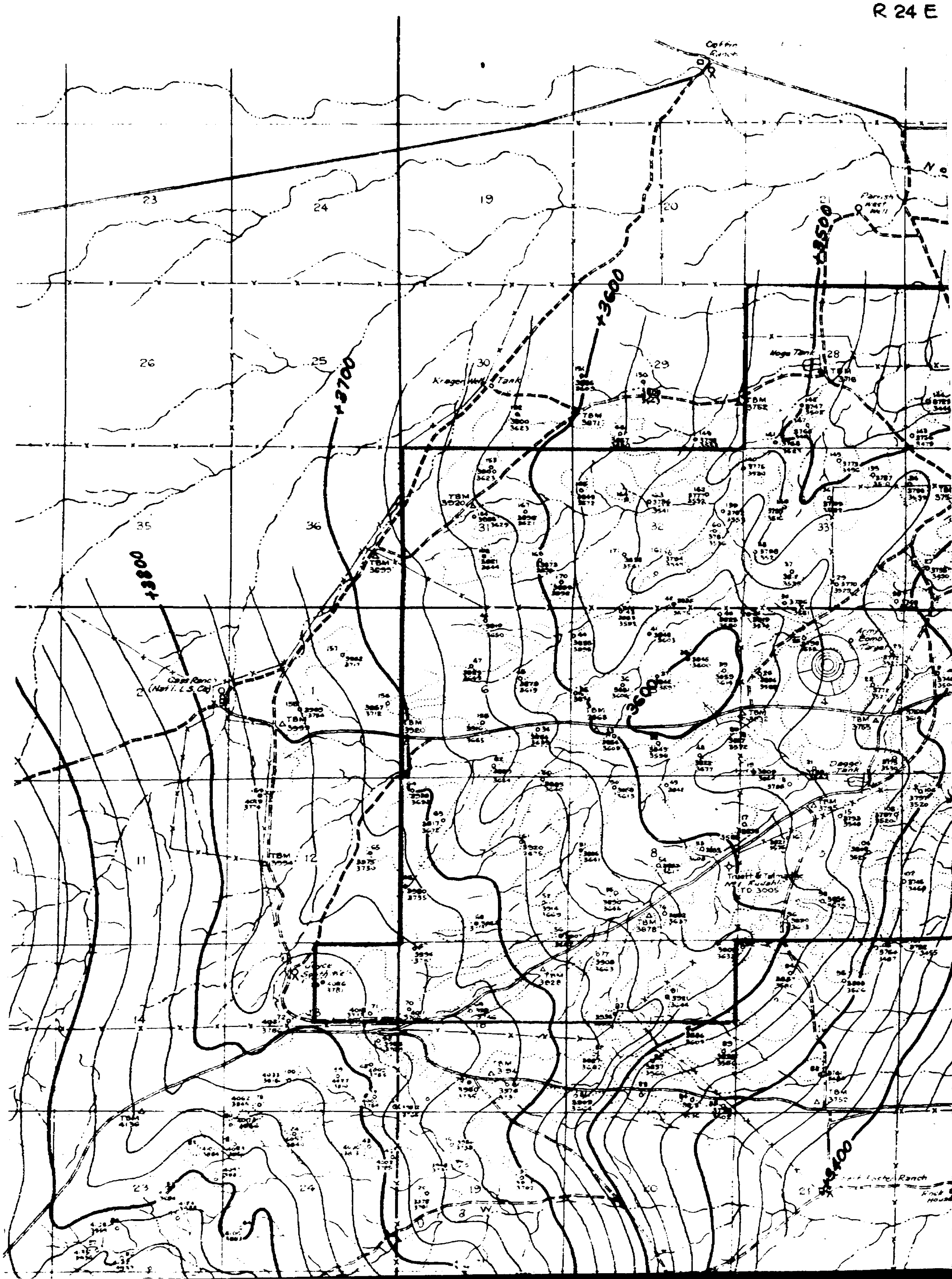
(d) That the agreement provides for the unit operation of the field, for the allocation of production, and the sharing of proceeds from a part of the area covered by the agreement on an acreage basis as specified in the agreement.

NOW, THEREFORE, by virtue of the authority conferred upon me by Chapter 88 of the New Mexico Session Laws of 1943, approved April 14, 1943, I, the undersigned, Commissioner of Public Lands of the State of New Mexico, for the purpose of more properly conserving the oil and gas resources of the State, do hereby consent to and approve the unit agreement above referred to for the development and operation of the Cass Ranch Unit Area, Eddy County, New Mexico, subject to all of the provisions of the aforesaid act.

Executed this the 18th day of Oct., 1948.

John E. Miles

Commissioner of Public Lands of the State of New Mexico


R 24 E
Coffin Ranch
Parrish Reef Well
+3500
+3600
+3700
+3800
3600
3400
Kragen Well Tank
Case Ranch (Nat'l L. S. Co.)
Army Bomb Target
Dagger Tank
Trott & Talmadge Nat'l Fulkerson TD 3005
Foster Ranch
23
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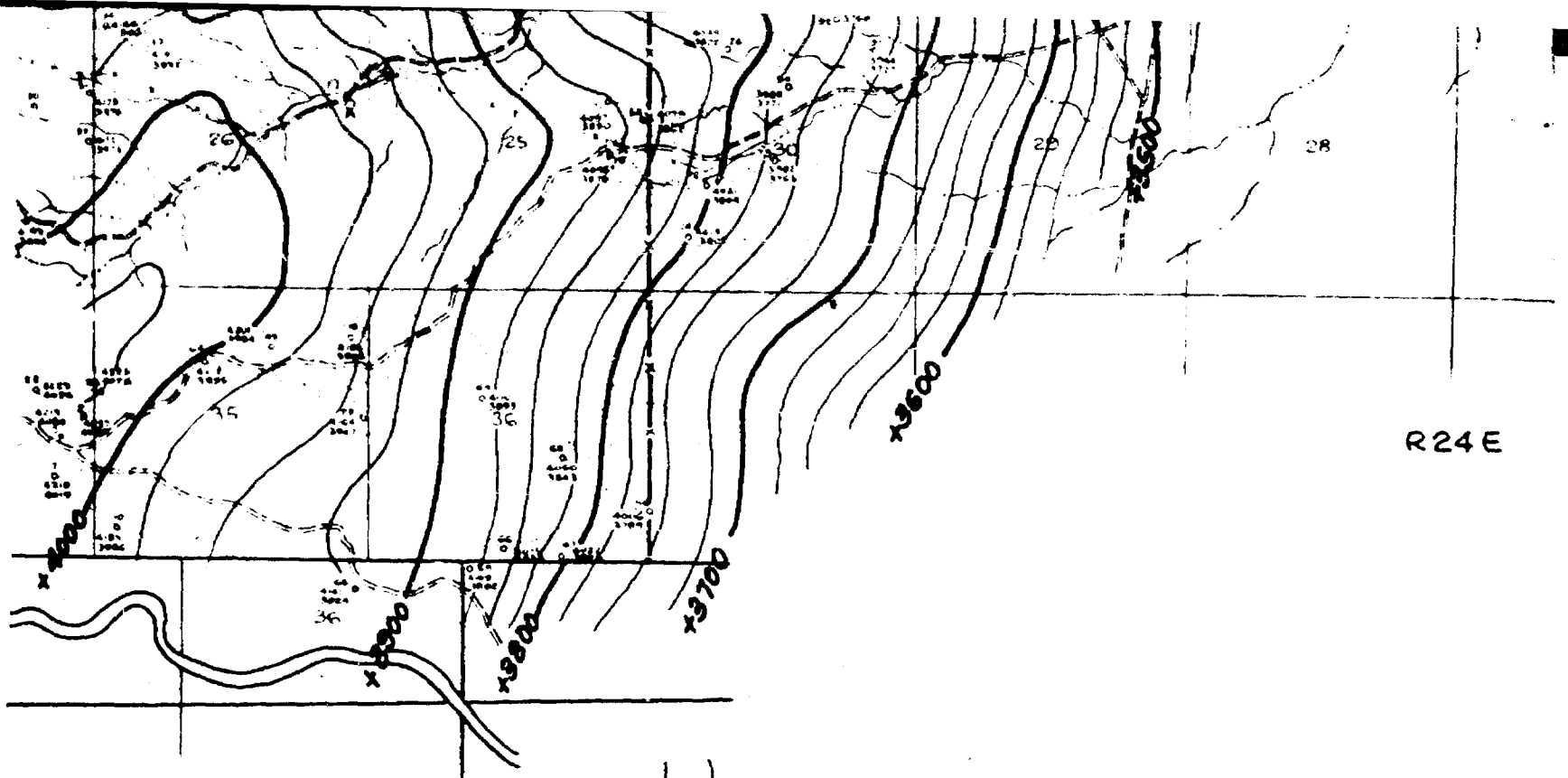

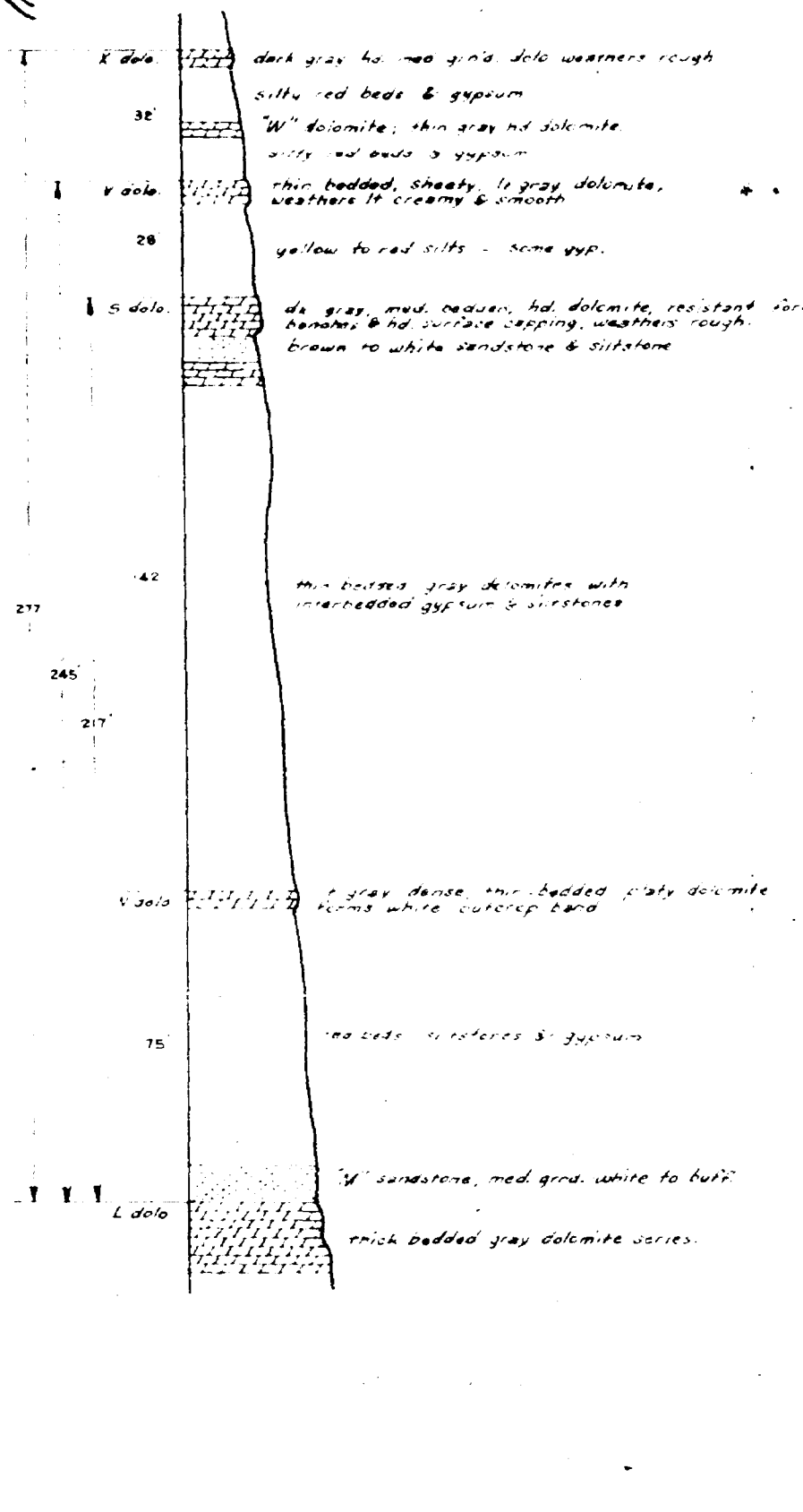

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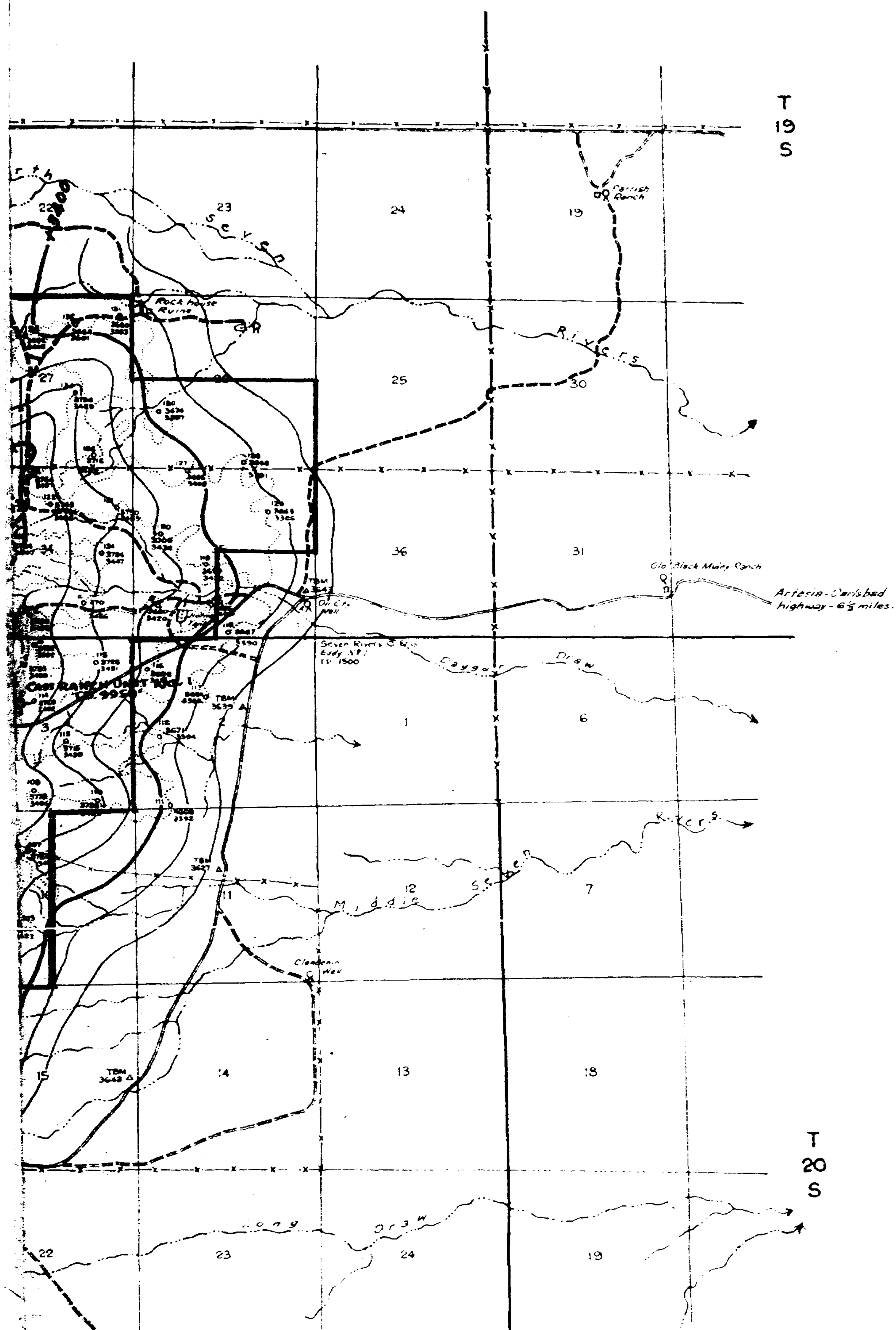
Geology


T 19 S
T 20 S
Parrish Ranch
Rock House Ruins
Old Black Mule Ranch
Artesia-Carlsbad highway - 6½ miles.
Seven Rivers
Middle Seven Rivers
Long Draw
Clendenin Well
TBM 3639
TBM 3627
TBM 3643
22
23
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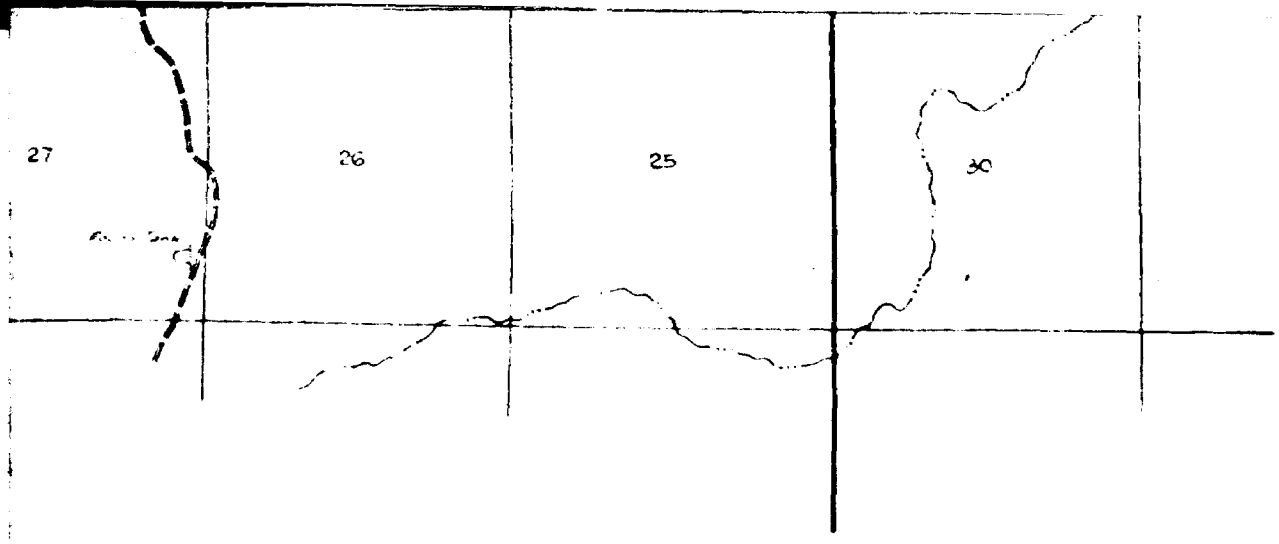


—— Boundaries of Proposed Unit Area

CE GEOLOGICAL STRUCTURE MAP

RANCH AREA, EDDY COUNTY NEW MEXICO

H ADDITIONS SHOWING REGIONAL RELATIONS TO THE BURRO
-, FOSTER ANTICLINES & SURFACE-GRAVITY ANOMALY Nº 144.)

SCALE IN MILES

0 ½ 1

trol adapted from aerial photographs; land corners tied in on ground.
Vertical control by Paulin Altimeter
Elevations on sea level datum

X dolomite
K dolomite
L dolomite
S dolomite
R dolomite
N dolomite
M sand
L dolomite

} Queen formation (Permian)

CONTOURS ON TOP OF "L" DOLOMITE

Upper figure under station is elevation of outcrop
Lower figure under station is elevation projected to 'L' bed

Main Ranch roads
Secondary ranch roads & trails
Fences
Windmills
Earthen water tanks
TBM - Temporary benchmarks established by plane table.

y horizontal control by Milton Hruby - Nov. - Dec., 1947

Pan American Pet. Co
Geological Dept.
Roswell, N Mex.

EXHIBIT "C"

NEW MEXICO OIL CONSERVATION COMMISSION

SANTA FE, NEW MEXICO

APPLICATION FOR APPROVAL OF CASS RANCH UNIT AREA

EDDY COUNTY, NEW MEXICO

New Mexico Oil Conservation Commission
Santa Fe, New Mexico

COMES the undersigned, the MAGNOLIA PETROLEUM COMPANY, a corporation of Dallas, Texas, and files herewith three copies of a proposed Unit Agreement for the Development and Operation of the Cass Ranch Unit Area, Eddy County, New Mexico, and hereby makes application for the approval of said Unit Agreement by the New Mexico Oil Conservation Commission, as provided by law, and in support thereof shows:

1. That the unit area designated in said unit agreement covers a total of 10,230.27 acres, situated in Townships 19 and 20 South, Ranges 23 and 24 East, N.M.P.M., Eddy County, New Mexico. That 9,270.27 acres of the lands in the said proposed unit area are lands of the United States, 640 acres are lands of the State of New Mexico, and 320 acres are fee or privately-owned lands. That said unit area is more particularly described by the plat attached to said unit agreement, made a part hereof, and for purposes of identification marked Exhibit "A".

2. That the owners of substantially all of the oil and gas leases, or pending applications therefor, embracing lands of the United States, have agreed to commit said oil and gas leases to said Unit Agreement and the Magnolia Petroleum Company owns or holds oil and gas leases covering a substantial

portion of the privately-owned or fee lands and is willing to commit said leases to said unit agreement, as well as its lease covering the lands of the State of New Mexico embraced in said proposed unit area.

3. That the unit area described in the proposed unit agreement has heretofore been designated by the Director of the United States Geological Survey as one suitable and proper for unitization, and that all lands embraced therein are believed to be situated upon the same geological structure, and that there is attached hereto, made a part hereof, and for purposes of identification marked Exhibit "A", a plane table map showing the geological structures covered by said proposed unit area and the relationship between the geological structure and the proposed unit area and that said map is the one submitted to the U. S. Geological Survey and upon which the designation by the Director was based and is to be treated as confidential.

4. That the undersigned, Magnolia Petroleum Company, is designated as the Unit Operator in said agreement and the Unit Operator is given authority under the terms thereof to carry on all operations which are necessary for the development and operation of the unit area for oil and gas, subject to all applicable laws and regulations. The Magnolia Petroleum Company is preparing to commence operations upon a test well for oil and gas to be located upon some part of the lands embraced in the proposed unit area, and it is anticipated that the same will be drilled in the approximate center of said unit area, and that said well will be drilled with due diligence to a depth of approximately 3900 feet, unless oil or gas in

commercial quantities should be encountered at a lesser depth.

5. That said unit agreement is in substantially the same form as unit agreements heretofore approved by the Commissioner of Public Lands of the State of New Mexico, the Secretary of the Interior, and the New Mexico Oil Conservation Commission, and it is believed that operations to be carried on under the terms thereof will promote the economical and efficient recovery of oil and gas to the end that the maximum yield may be obtained from the field or area, if oil or gas should be discovered in paying quantities, and the production is to be limited to such production as may be put to beneficial use with adequate realization of fuel and other values, and it is further believed that such agreement will be in the interest of conservation of oil and gas and the prevention of waste as contemplated by the Oil Conservation Statutes of the State of New Mexico.

6. That upon an order being entered by the New Mexico Oil Conservation Commission approving said Unit Agreement, and after approval thereof by the Commissioner of Public Lands of the State of New Mexico and the Secretary of the Interior of the United States, an approved copy of said agreement will be filed with the New Mexico Oil Conservation Commission.

WHEREFORE, the undersigned applicant respectfully requests that a public hearing be held on the matter of the approval of said unit agreement as provided by the Statutes of the State of New Mexico and the regulations of the New Mexico Oil Conservation Commission, and, upon said hearing, said unit agreement be approved by the New Mexico Oil Conservation Commission.

Respectfully submitted

MAGNOLIA PETROLEUM COMPANY

BY A. P. Hannifin

Rotary Engineering Co.

701 S. PECOS – MIDLAND, TEXAS – PHONE 4-6631

Company STANDARD OF TEXAS

Well FED. CASS RANCH UNIT NO. 1

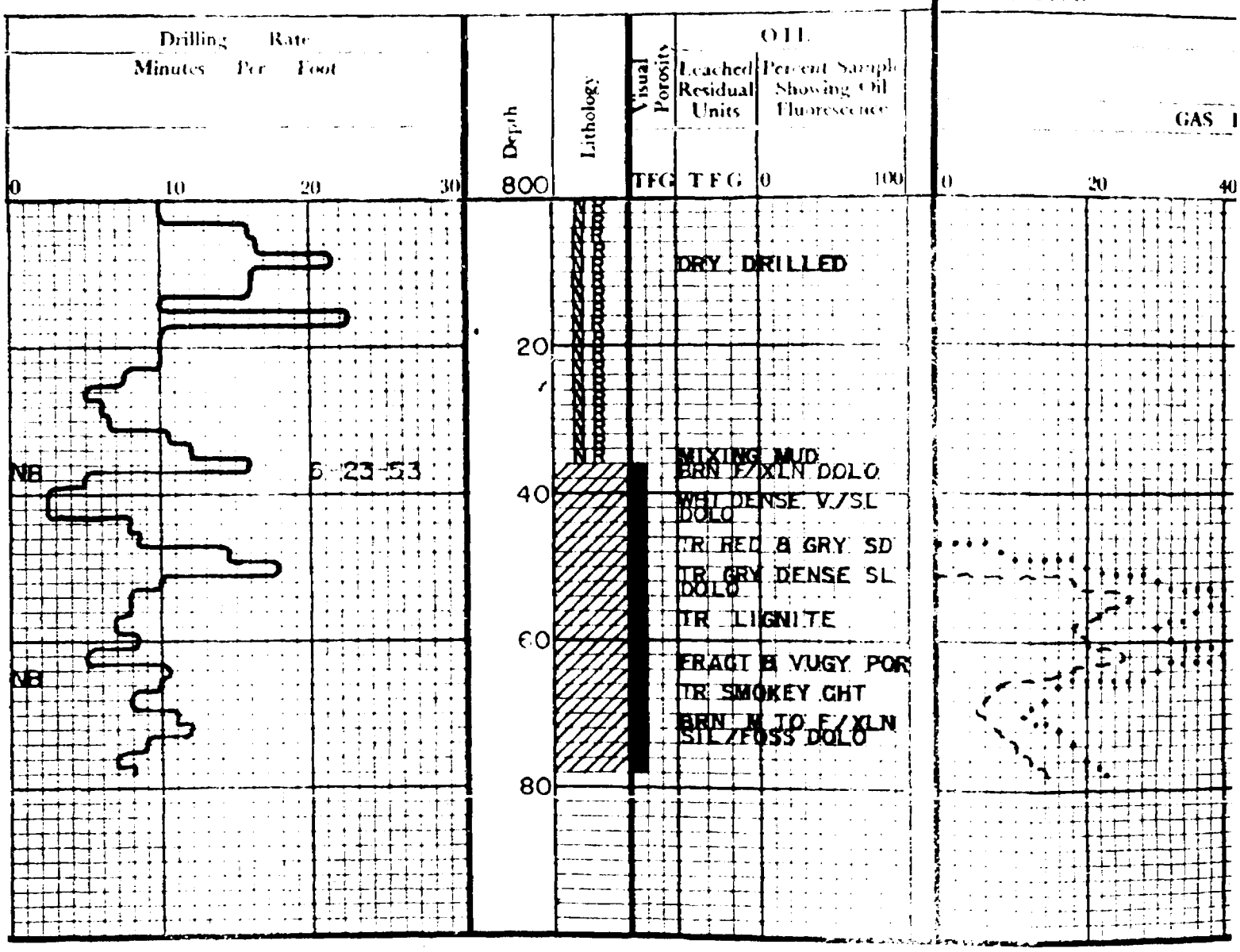
Location EDDY CO., N. MEXICO

Date 6-20-53 Unit No. 51

ELEVATION

N. B.
N. C. B.
W. L. D. B.
W. L. C. B.
C. O.
N. R.
D. S. T.
Salt in PPM.

New Bit
New Cor
Wire Lin
Wire Lin
Circulate
No Retur
Drill Ste



Well Logging Service

: Bit
: Drilling Bit
· Core Bit
l Out
ns
n Test

LEGEND

VISUAL POROSITY
TRACE ☐
FAIR ☐ ☐
GOOD ☐ ☐ ☐

R/10 - - Gas Sensitivity
Cut To 1/10 Normal

SAND
LIMESTONE
DOLOMITE
SHALE
CHERT
ANHYDRITE
COAL
CONGLOMERATE
SANDY SHALE
GRANITE
GRANITE WASH

GAS UNITS

2.2 Volts Reading - All Combustible Gas . . . . .
1.4 Volts Reading - Gas Other Than Methane - - - -

GAS FROM CUTTINGS

60 80 100

GAS FROM MUD

0 20 40 60 80 100

GAS PROBABLY FROM LIGNITE