

UNIT AGREEMENT

FOR THE DEVELOPMENT AND OPERATION OF THE HOPE UNIT AREA  
EDDY COUNTY STATE OF NEW MEXICO

I-Sec. No. 556

62-35140  
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DEC 10 1947

THIS AGREEMENT, entered into as of the 28th day of November, 1947,  
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, authorizes  
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 in-  
terest; 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 Hope 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 dev-  
elopment 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, to the extent herein specified, their respective interests in the unit area and agree severally among themselves as follows:

#### DEFINITIONS

When used in this agreement, unless it clearly appears from the context that some other or additional meaning is intended:

the term "Secretary" means the Secretary of the Interior of the United States, or any person duly authorized to exercise the powers vested in that officer;

the term "Director" means the Director of the United States Geological Survey;

the term "Supervisor" means the Oil and Gas Supervisor of the United States Geological Survey for the region in which the unit area is situated;

the term "Commissioner" means the Commissioner of Public Lands of the State of New Mexico (including any duly qualified successor authority which may hereafter be vested with similar jurisdiction) or any person duly authorized to exercise the powers vested in that officer;

the term "Commission" means the Oil Conservation Commission of the State of New Mexico (including any duly qualified successor authority which may hereafter be vested with similar jurisdiction) or any person(s) duly authorized to exercise the powers vested in that body;

the term "Unit Operator" shall mean the Unit Operator designated herein or its successor Unit Operator from time to time duly selected, approved and acting hereunder;

the term "working interest" means an interest by virtue of a lease, working or operating agreement, fee mineral title or otherwise, under which the owner of such interest is vested with the right (whether exclusive or held in common with one or more others) to explore for, develop and produce from land oil, gas, natural gasoline and associated fluid hydrocarbons (except that the right vested in the Unit Operator as such by this agreement is not a working interest), and the term "Working Interest Owner" means the owner of such an interest;

the term "royalty interest" means an interest entitling the owner thereof to receive free of development and operating costs a portion of the production from land of oil, gas, natural gasoline and associated fluid hydrocarbons, or the value or proceeds from sale of such portion, and the term shall include such an interest which is limited to a specified dollar or volumetric amount of such production;

the term "landowner's royalty" means a royalty interest created in favor of an original lessor, by an oil and gas lease or a like instrument which vests a working interest in others;

the term "unitized interest" means any interest in oil, gas, natural gasoline and associated fluid hydrocarbons which is committed to this agreement in one of the manners herein provided.

Certain other terms are defined in various sections of this agreement to which definitions reference is made for all purposes hereof.

ENABLING ACT            1. The act of February 25, 1920, as amended, and to the  
AND  
REGULATIONS            extent not inconsistent with this agreement 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, including the Acts of the New Mexico Legislature referred to in the preambles hereof, and to the extent not inconsistent with this agreement all valid pertinent regulations heretofore issued thereunder or valid pertinent and reasonable regulations hereafter issued thereunder also are accepted and made a 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, NEW MEXICO, (Eddy County)

<u>T. 18 S., R. 23 E.</u> Sections 13, 14, 15, 22, 23, 24, 25, 26, 27, 34, 35 and 36:	All
<u>T. 18 S., R. 24 E.</u> Sections 17, 18, 19, 20, 29, 30, 31 and 32: Section 33:	All S $\frac{1}{2}$ and NW $\frac{1}{2}$
<u>T. 19 S., R. 23 E.</u> Sections 1, 2 and 3:	All

Total unit area 17,120 acres, more or less.

Exhibit A attached hereto is a map showing the unit area and the known ownership of all land and oil and gas 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 to which this agreement will become applicable by signature hereto, or to a counterpart or ratification hereof, by the owner(s) of such interests, respectively. Exhibits A and B shall be revised by the Unit Operator at reasonable intervals to reflect changes in the unit area or other changes rendering such revision necessary, and not less than six copies of the revised exhibits (or, when appropriate, the information necessary to correct them) shall be filed with the Supervisor and the Commissioner. While the information shown on Exhibits A and B is understood and believed to be accurate no representation of accuracy is made by the parties hereto except that each represents that he is at the time of his execution hereof the owner and holder of those interests attributed to him by the Exhibit B attached, and Unit Operator makes no representation concerning any revised exhibit or supplemental information filed hereunder except that it is accurate according to Unit Operator's information and belief insofar as it relates to the interests of other parties and that it is correct as to Unit Operator's own interests.

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 or the 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) A copy of said notice shall be delivered to the Supervisor, the Commissioner and the Commission, and a copy thereof shall be mailed to the last known address of each Working Interest Owner and owner of landowner's royalty whose interests are affected, advising that thirty (30) days will be allowed for submission to the Unit Operator of any objections.

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

Commissioner evidence of mailing of the notice of expansion or contraction and shall file with each the Supervisor, the Commissioner and the Commission 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, the Commissioner and the Commission, become effective as of the date prescribed in the notice thereof.

The unit area may be so redefined to include additional contiguous land believed to be potentially productive of oil, gas, natural gasoline or associated fluid hydrocarbons, or to exclude land (if not in a participating area) because it is believed to be barren of such substances.

All land committed to this agreement from time to time shall constitute land referred to herein as "unitized land" or "land subject to this agreement." Land within the unit area shall be deemed committed to this agreement by the execution of this agreement (or a counterpart or a written ratification or adoption hereof) by the persons owning the working interests and the landowner's royalty interests (including the lessees of record if not the Working Interest Owners) in such land, as described opposite the name of such persons in Exhibit B. (Reference is made to Section 25 for provisions covering the withdrawal from unitization of unitized interests in certain cases.) When both the working interest and the landowner's royalty in land are so committed the pertinent lease shall be regarded as committed hereto insofar as it embraces such committed land.

UNITIZED                    3. All oil, gas, natural gasoline, and associated fluid  
SUBSTANCES                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                        4. Southern Union Production Company, a corporation with  
OPERATOR                    offices in Dallas, Texas, is hereby designated as Unit  
Operator and by signature hereto commits to this agreement all land (including  
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 here-  
in 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, and whenever reference is made to an owner of unitized substances or interests such reference shall be understood to include any interests in unitized substances owned by the Unit Operator.

The Unit Operator may resign as Unit Operator whenever not in default under this agreement, but no Unit Operator shall be so relieved from the duties and obligations of Unit Operator for a period of six (6) months after it has served notice of intention to resign on all owners of working interests in land subject to this agreement and on the Director, the Commissioner and the Commission, 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 forthwith by majority vote of the Working Interest Owners 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 any Unit Operator, the duly qualified successor Unit Operator shall have an option to purchase on reasonable terms (to be fixed by the unit accounting agreement) all or any part of the equipment, material, and appurtenances in or upon the land subject to this agreement, owned and used by the retiring Unit Operator 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, all subject to applicable provisions of the unit accounting agreement. At any time within the next ensuing three (3) months any such property not purchased and not necessary for the preservation of wells may be removed by the retiring Unit Operator, but if not removed within such 3-month period shall become the joint property of the owners of unitized working interests in the participating area where such property is installed, 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 rights, titles, or interests of such Unit Operator in any property whatever owned 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. The affirmative vote of Working Interest Owners then parties hereto holding the working interest in more than fifty percent (50%) in area of the land in the participating area (or of the land subject to this agreement, as the case may be) shall be required to select a new Unit Operator; provided, that, if a majority but less than seventy-five percent (75%) 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. The voting may be conducted by written ballot submitted by mail, by viva voce in person or by proxy or in any other democratic manner calculated to obtain the requisite expression, or by a combination of such methods, all upon reasonable notice. 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 the Commissioner. If no successor Unit Operator is selected and qualified as herein provided, the Director and the Commissioner concurring may, at their election, declare this 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, one such copy shall be filed with the Commissioner and one with the Commission.

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, storing, and disposing of the unitized substances are hereby vested in and shall be exercised by the Unit Operator as herein provided (subject, however, to any independent contractual right otherwise valid and effective of any of the parties hereto to purchase for their own account or to dispose of any of the unitized substances). 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.

Except as otherwise expressly provided in Section 12 hereof, 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 revenues and benefits derived from its 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 its 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 all in conformity with the unit accounting agreement, operating agreements, leases, or other independent contracts between the Unit Operator and the parties hereto either collectively or individually.

The development and operation by the Unit Operator of any land subject to this agreement under the terms hereof shall be deemed full performance of

all obligations for such development and operation, express or implied, 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, express or implied, in any lease, operating agreement or other contract by and between the parties hereto or any of them.

DRILLING TO                    8. Within six (6) months after the effective date hereof,  
DISCOVERY                    the Unit Operator shall begin to drill an adequate test well at a location to be approved by the Supervisor (and also by the Commission if upon state land or land in which the oil and gas rights have been patented), and shall thereafter continue such drilling diligently until such well has been drilled to a depth of seven thousand (7000) feet unless at a lesser depth one or more of the unitized substances shall be discovered which can be produced in paying quantities or there is encountered igneous or metamorphic rock or some cavernous or other underground condition which in the opinion of the Supervisor would render further drilling impractical or inadvisable. If the first or any subsequent test well fails to result in the discovery of a deposit of one or more of the 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 six (6) months between the completion of one well and the beginning of the next well, until a well capable of producing one or more of the unitized substances in paying quantities is completed to the satisfaction of said Supervisor and the Commissioner, 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, and be thereby relieved from all obligations as Unit Operator subsequently accruing, 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 concurring may modify the drilling requirement 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 the Commissioner concurring may, after reasonable notice to the Unit Opera-

tor, and each Working Interest Owner, lessee, and lessor at their last known addresses, declare this unit agreement terminated unless within the period provided in such notice the Unit Operator shall take all actions necessary to remedy such default to the satisfaction of the Director and the Commissioner.

The drilling of an initial test well to the depth and in the manner hereinabove specified by Southern Union Production Company shall satisfy the requirement expressed above for the drilling of such well if commenced after the preliminary consideration and approval as to form of this agreement by federal representatives notwithstanding that such well may be commenced or completed prior to the effective date of this agreement.

PLAN OF FURTHER  
DEVELOPMENT AND  
OPERATION

9. Within six (6) months after completion of a well capable of producing one or more of the 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 so approved, 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 like approval 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 land 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 land 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, the Commissioner and the Commission. Said plan or plans shall, subject to like approval, be modified or supplemented in whole or in part from time to time as and when necessary to meet changed conditions or to protect the interests of all parties to this agreement, and future obligations of the Unit

Operator shall be conformed to the plan or plans from time to time in effect. Reasonable diligence shall be exercised in complying with the obligations of the approved plan of development, as from time to time amended and effective. The Supervisor and the Commissioner concurring are authorized to grant a reasonable extension of the six-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 on land not subject to this agreement, shall be drilled unless in accordance with an approved plan of development; provided, during any period when it shall appear that an acceptable plan of development cannot be adopted because of the inability of the Supervisor, the Commissioner and the Commission to agree upon terms thereof, the Unit Operator may, in accordance with the applicable regulations referred to in Section 1 hereof, proceed with reasonable diligence to drill other wells to determine the limits of production and to develop the productive portion of the unit area, and shall operate all productive wells in conformity with good operating practices, and the conservation principles of this agreement.

PARTICIPATION  
AFTER  
DISCOVERY

10. Upon completion of a well capable of producing one or more of the 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 subdivisions of the public land survey, of all unitized land then regarded as reasonably proved to be productive of unitized substances in paying quantities; all lands in said schedule, when so approved, to constitute a participating area, effective as of the date of first production. There may be included any legal subdivision containing 40 acres, more or less, based on the public land survey, one-half or more of the area of which legal subdivision is then regarded as reasonably proved to be productive of unitized substances in paying quantities. Said schedule also shall set forth the percentage of unitized substances to be allocated as herein provided to each tract of unitized land 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 estab-

lished in like manner and with like approval 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 to delete lands in which title has failed or, as a result of further drilling operations or otherwise, to include additional land then regarded as reasonably proved to be productive of unitized substances in paying quantities, and the percentage of allocation shall also be revised accordingly. The effective date of any revision shall be the first day 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 as approved, and any production from land added by the proposed revision prior to the effective date thereof shall be allocated to the particular lease embracing such land. No land once included in a participating area shall be eliminated therefrom on account of depletion of the unitized substances or for any other cause save loss of title as provided in Section 25.

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 or other benefits accrued or delivered on account of 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 and deposited in First National Bank in Dallas, Dallas, Texas, or some other bank or banks approved in writing by Working Interest Owners holding the working interest in more than fifty percent (50%) in area of the land subject to this agreement, except royalties due the United States or the State of New Mexico. Royalties due the United States shall be determined by the Supervisor and the amount thereof deposited with the district land office of the Bureau of Land Management to be held as unearned money until a participating area is finally approved and then applied as earned or returned in accordance

with a determination of the sum due as federal royalty on the basis of such approved participating area. Royalties due the State of New Mexico shall be determined tentatively by the Commissioner and the amount thereof deposited with the Commissioner to be held in a suspense fund or account pending a determination of the sum due as state royalty on the basis of such approved participating area and then applied as earned or refunded, accordingly.

Whenever it is determined, subject to the approval of the Supervisor, the Commissioner and the Commission 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. Unit Operator shall not be required to produce any such well beyond a reasonable test period.

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 as a result of operations by Unit Operator under this agreement, each such tract shall have allocated to it such percentage of such production as its area bears to the unitized land of 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 well is drilled on any particular part or tract of said participating area. Unitized substances produced from any participating area and injected or used in conformity with good operating practice under a plan of operation approved by the Supervisor, the Commissioner and the Commission for repressuring, stimulation of production, increasing ultimate recovery or cycling in such participating area shall be free from any royalty charge unless and until recovered. If the Unit Operator injects into any participating area gas produced outside such participating area for use in repressuring, stimulation of production, increasing ultimate recovery or cycling in conformity with a plan so approved an equal

volume of gas, with due allowance (if and to the extent provided in such plan) for loss or shrinkage from any cause, may be drawn from the formation into which the gas was introduced, royalty free as to dry gas but not as to the products extracted therefrom, provided that such withdrawal shall be at such time(s) as may be provided in the plan of operation or as may otherwise be consented to by the Supervisor, the Commissioner, and the Commission as conforming to good petroleum engineering practice, and provided further that such right of withdrawal shall terminate with any termination of this agreement.

DEVELOPMENT OR OPERATION ON 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 (including a proposed participating area or a proposed extension of 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 ninety (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 the well, and the well shall be operated as though it had been drilled by the Unit Operator hereunder.

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, signified by written notice to Unit Operator within thirty (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, subject to royalty interests. 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 a Working Interest Owner other than the Unit Operator shall be operated pursuant to the terms and provisions of this agreement, and upon termination of operations shall be plugged, by said Working Interest Owner. Royalties in amount or value of production from any such well shall be paid by said Working Interest Owner as specified in the lease affected.

ROYALTIES  
AND  
RENTALS

13. The Unit Operator, on behalf of the parties hereto, respectively, shall pay in value or deliver in kind, according to the rights of the parties hereto established by underlying leases or agreements, all landowner's royalty due upon production allocated to unitized land in a participating area, and shall pay all rentals or minimum royalties due to the United States or the State of New Mexico on unitized land, and shall pay royalty due any other unitized interest on account of production allocated to unitized land in a participating area. On request of any Working Interest Owner the Unit Operator may but shall not be required to pay, for the account of such Working Interest Owner, sums due on account of any royalty interest which is not a unitized interest or any delay rental payable under fee leases, all according to a schedule furnished Unit Operator by such Working Interest Owner. 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 parties hereto from their several obligations under the terms of their respective leases and other applicable agreements, if any, to pay rentals and royalties. Unit Operator shall not be liable to any Working Interest Owner for failure properly to make any such payment when due if the failure is a result of an honest mistake or omission not occasioned by failure to use that degree of care used in the conduct of Unit Operator's own private business.

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 such 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 regulations; 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.

Any Working Interest Owner may suffer to terminate, or surrender to his or its lessor(s), any lease or part thereof, or interest therein, on unitized land, if permitted by the provisions of such lease or of any applicable laws, rules and regulations; provided, however, if any part of such lease is productive the Working Interest Owner thereof shall not surrender or voluntarily suffer to terminate any part of such lease in any participating area or areas without the prior written consent of the lessor of such land and the Working Interest Owners holding the working interests in more than fifty percent (50%) of the participating area or areas. As to nonparticipating land so relinquished an application for contraction of the unit area shall be filed by Unit Operator pursuant to Section 2 of this agreement.

No royalty shall be due on any unitized substances used for production or development purposes hereunder or unavoidably lost.

The right is hereby secured to the United States and the State of New Mexico, respectively, to elect to take their respective royalty shares in kind or value, if and to the extent provided by applicable leases or by any valid pertinent laws, rules or regulations. The right of any other royalty owner to elect to receive his royalty shares in kind shall be determined by provisions of the applicable lease or other pertinent instruments.

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.

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 interests and as approved by the Commissioner as to state interest; moreover, with the affirmative approval of more than fifty percent (50%) in interest of Working Interest Owners affected Unit Operator may pay a fair and reasonable compensatory royalty to other holders of royalty interests, as determined by agreement between the Unit Operator and such other royalty owners but at no greater rate than the compensatory royalty rate determined as fair and reasonable by the Supervisor and the Commission concurring under the circumstances prevailing.

LEASES AND CON-  
TRACTS 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 severally consent that the Secretary and the Commissioner, respectively, may, and each the Secretary and the Commissioner, by his approval of this agreement, does, 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.

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 effectiveness 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.

The Secretary, the Commissioner and (except as provided in the immediately preceding paragraph) all other parties hereto further determine, consent and agree 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 on, under and for the benefit of all unitized land and the respective leases embracing such land; and that no such lease shall be deemed to expire by reason or failure to produce wells situated on land therein embraced. Any federal lease for a term of twenty (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. Each other federal 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 one or more unitized substances is discovered on any unitized land prior to the expiration date of the primary term of such lease. Each state lease committed hereto shall continue in force as to the committed land so long as one or more unitized substances are produced in paying quantities from any unitized land, provided a valuable deposit of one or more unitized substances is discovered on any unitized land prior to the expiration or termination of such lease. Prior to such discovery of unitized substances anywhere on unitized land the expiration date of each lease committed hereto in whole or in part shall be the date specified therein or in the applicable rules and regulations, without prejudice to any right which the then lessee(s) may have to renew or extend such lease, in whole or in part, or to surrender same in exchange for any other lease as may be provided by applicable law, rule or regulation, the renewed, extended or substitute lease and the interests therein and thereunder of all parties hereto to be, without further action, subject to this agreement to the same extent as the predecessor lease.

Suspension of all operations and production on the unitized land pursuant to the direction or consent of the Secretary and the Commissioner shall be deemed to constitute such suspension duly authorized by all parties hereto as to all unitized lands, and no lease shall expire with respect to land subject to this agreement on account of such suspension.

The parties hereto holding interests in land within the unit area other than federal land consent and agree, to the extent of their respective inter-

ests, that all leases and other contracts affecting such land shall be modified, effective with the effectiveness of this agreement, to conform to the provisions of this agreement during the life of this agreement and as so amended shall continue in force and effect.

COVENANTS  
RUN WITH  
LAND

17. The covenants herein shall be construed to be covenants running with the land with respect to the unitized interests of the parties hereto and their successors in interest until this agreement terminates, and any grant, transfer, or conveyance of any such land or interest subject hereto, whether voluntary or not, 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 lands shall be subject to approval of the Commissioner. Each of the parties hereto agrees to file with the Unit Operator an executed, a photostatic or a certified, recorded copy of each instrument making transfer of any unitized interest, in whole or in part, or affecting the allocation of unitized substances, promptly following effectiveness of such instrument, and Unit Operator shall not be required to take notice of or give effect to any such transfer until the first day of the calendar month next following such filing but may do so in proper cases when the parties to such transfer so intend.

Unit Operator shall not be required to take notice of any separation or attempted separation of ownership of oil rights from gas rights or of the production of one or more horizons from others, but shall be entitled to treat the person(s) purporting to make any such transfer as continuing to own the interests purportedly transferred, for all purposes of this agreement, leaving to the parties to any such transaction the adjustment of rights and equities between themselves.

EFFECTIVE  
DATE  
AND TERM

18. This agreement shall become effective upon approval by the Commissioner and the Secretary; provided, however, nothing herein shall be construed to waive or limit the right of the Commission to approve this agreement pursuant to applicable state law. This agreement shall terminate on December 31, 1949, unless (a) such date of expiration is extended by the Director and the Commissioner concurring; 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 fixed term or any extension thereof, in which case the agreement shall remain in effect so long as any of the unitized substances can be produced from any of the unitized land in paying quantities; or (d) it is terminated as provided in section 7 or section 8 hereof. This agreement may be terminated at any time by agreement of Working Interest Owners holding the working interest in at least seventy-five percent (75%) in area of the unitized lands 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, that no such alteration or modification shall be effective as to the rate of prospecting and development of any lands of the State of New Mexico in the absence of the specific written approval thereof by the Commissioner or as to the quantity and rate of production from any land of the State of New Mexico or privately owned land subject to this agreement in the absence of specific written approval thereof by the Commission.

UNAVOIDABLE

DELAY

20. 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 land subject to 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 labor disturbances,

fire, explosion, acts of God, federal, state, or municipal laws or regulations or authorities, accidents, uncontrollable delays in transportation, inability to obtain necessary materials in open market, or other matters beyond the ability of Unit Operator reasonably to anticipate or control, whether similar to matters herein enumerated or not.

CONFLICT OF  
SUPERVISION

21. Neither the Unit Operator nor the Working Interest Owners nor any of them shall be subject to any forfeiture, termination or expiration of any right hereunder or under any unitized interest, lease or contract 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 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 any determination, decision, consent or approval concerning which it is required herein that such concurrence be obtained. The parties hereto and 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, 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.

JOINDER, NONJOIN-  
DER AND SUBSEQUENT  
JOINDER

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 subject to the provisions of Section 2 be effective on the first day of the month next following the filing thereof with the Supervisor, unless objection thereto is made by the Director and notice of such objection is served upon the appropriate parties within sixty (60) days after such filing; provided, that any Working Interest Owners shall have subscribed and complied with the unit accounting agreement as then in effect. A copy of each such

separate counterpart, consent or ratification shall also be filed with each the Commissioner and the Commission.

No person other than one of the parties hereto shall be entitled to any benefit under this agreement. Each of the parties hereto intends to join herein for all purposes to the extent of the oil and gas interests attributed to him by Exhibit B, including the relinquishment or commitment of any rights and possibilities of dower, homestead and curtesy in the property interest of another to the extent that such property interest becomes subject hereto.

If any of the parties hereto shall after his execution or ratification of this agreement acquire an interest in oil, gas, natural gasoline, or associated fluid hydrocarbons in any land within the unit area, which interest had not been previously subjected to this agreement, such person(s) may, subject to all provisions hereof, commit such interest to this agreement by appropriate instrument in writing duly acknowledged and delivered to the Unit Operator (or in the case of Unit Operator, by appropriately revising or correcting Exhibit B then on file with the Supervisor and the Commissioner). Each of the parties hereto agrees that his unitized interests shall, except to the extent otherwise specially provided in Section 2 and 25, be and remain subject to this agreement regardless of the fact that an oil and gas interest of one or more others qualified to subscribe this agreement does not become or remain subject hereto.

The undertakings of the parties hereto are several, not joint or collective.

NOTICES

23. Any notice to one of the parties hereto required or contemplated by this agreement shall be deemed delivered for all purposes of this agreement when deposited in the United States mail in a sealed envelope, postage prepaid, or when filed prepaid for telegraphic transmission with any agent of Western Union, or its successor telegraph company, addressed to such party according to his name and address set forth under his signature hereto or such other address as the party or his successors or assigns shall designate from time to time hereafter in a notice to Unit Operator; provided, that no such notice or other document hereunder shall be deemed delivered to any representative or agency of the United States or of the State of New Mexico or to Unit Operator unless and until actually received by the person or agency addressed.

FAIR                    24. The Unit Operator shall not discriminate against any  
EMPLOYMENT            employee or applicant for employment because of race,  
creed, color, or national origin, and an identical provision shall be incorpor-  
ated in all subcontracts.

TITLE                    25. In the event title to any unitized interest shall fail  
DEFECTS                    and the true owner thereof fails or refuses to commit such  
interest to this agreement it shall cease to be a unitized interest.

If said interest is landowner's royalty the holder(s) of the corresponding working interest may, with the consent of Unit Operator and approval of the Supervisor and the Commissioner concurring, by giving appropriate written notice to Unit Operator within thirty (30) days after the royalty title failure, withdraw such working interest from commitment hereunder effective on the first day of the calendar month following expiration of the 30-day period or the granting of such consent or approval, whichever is latest; if said interest is working interest all corresponding royalty interest shall forthwith cease to be a unitized interest and be withdrawn. Upon any such title failure or effective withdrawal, there shall be made such amendment(s) to the appropriate schedule(s) of participation, if any, as may be necessary on account thereof.

Unit Operator shall be under no obligation to defend title to any unitized interests except its own, but may do so at its election.

In the event that the title to any unitized interest claimed by any one of the other parties hereto shall be called in question at any time by pending litigation or by notice from one or more adverse claimants to Unit Operator, the latter may withhold payment or delivery on account of such interest without liability or interest until the question(s) shall be finally adjudicated or compromised or until the person(s) against whom the adverse claim is asserted shall furnish to Unit Operator, for the benefit of all interested parties hereto, a corporate surety bond in form and amount satisfactory to Unit Operator indemnifying against all loss or expense which may be suffered or incurred by reason of the controversy; 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 or the Commissioner, as the case may be, 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.

Each of the parties hereto other than the United States and the State of New Mexico agrees to indemnify and hold harmless each other, including the Unit Operator in that capacity, from and against any and all expense, liability and loss (except loss of expected future profits) resulting directly or indirectly from defect in the title to or from invalidity of any interest represented, pursuant to Section 2 hereof, to be owned by any such party, and no examination of or reliance upon abstracts of title shall impair such covenant.

COMMITMENT OF            26. This agreement provides for approval hereof by the  
STATE LANDS            Commissioner and the Commission, and in addition contains provisions authorizing the Commissioner and the Commission to exercise certain functions. It is hereby understood and agreed that, in view of the small percentage of State lands in the unit area which may be committed hereto, the Commissioner and Commission will exercise none of the functions prescribed in this agreement, except as to operations on State lands, until such time as said State lands, or a portion thereof, are included in an approved participating area.

In the event the Commissioner or Commission should not approve this agreement, it shall nevertheless be effective if and when approved by the Secretary of the Interior and thereupon all of the provisions of this agreement pertaining to the functions of the Commissioner or Commission shall be of no effect.

IN WITNESS WHEREOF, each of the parties hereto has caused this agreement to be executed so as to be binding upon himself, and his heirs, personal representatives, successors and assigns (all of whom are included within the term "parties hereto"), and has set opposite his name the date of such execution.

SOUTHERN UNION PRODUCTION COMPANY

ATTEST:

J. M. [Signature]  
Secretary

Date: Nov. 28, 1947

By J. C. [Signature] M  
Vice President

1104 Eurt Building  
Dallas 1, Texas

UNIT OPERATOR  
and  
WORKING INTEREST OWNER

L. E. Elliott  
L. E. Elliott

Edna M. Elliott  
Edna M. Elliott, his wife

Address: P. O. Box 147  
Roswell, New Mexico

Date: Aug 18<sup>th</sup>, 1947

Mary E. Orton  
Mary E. Orton

Charles M. Orton  
Charles M. Orton, her husband

Address: 411 So. Mesa Street  
Carlsbad, New Mexico

Date: Aug 21, 1947

Gertrude L. Parcell  
Gertrude L. Parcell

Charlie W. Parcell  
Charlie W. Parcell, her husband

Address: P. O. Box 1416  
Santa Fe, New Mexico

Date: Sept. 7, 1947

Ora R. Hall, Jr.  
Ora R. Hall, Jr.

Edna Ione Hall  
Edna Ione Hall, his wife

Date: August 23, 1947

Address: c/o Exchange Bank  
Perry, Oklahoma

Frank O. Elliott

Elliott, his wife

Date: \_\_\_\_\_, 1947

Address: P. O. Box 147  
Roswell, New Mexico

STATE OF Texas )  
COUNTY OF Dallas ) SS

On this 28th day of November 1947, before me personally appeared B. E. Reid, to me personally known who being by me duly sworn, did say that he is the Vice President of Southern Union Production Co 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 B. E. Reid 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.

My Commission Expires:  
ARLENE RAWLS WATT  
Notary Public, Dallas County, Texas  
My Commission Expires June 1, 1949

Arlene Rawls Watt  
Notary Public

STATE OF New Mexico )  
COUNTY OF Chaves )

On this 18 day of August, 1947, before me personally appeared L. E. Elliott and Edna M. Elliott, his wife, to me known to be the persons 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.

My Commission Expires:  
5-21-49

Edna Mae Bear  
Notary Public

STATE OF New Mexico )  
COUNTY OF Eddy )

On this 21st day of Aug, 1947, before me personally appeared Mary E. Orton and Charles M. Orton, her husband, to me known to be the persons 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.

My Commission Expires:  
April 12, 1951

William J. Hunter  
Notary Public

STATE OF New Mexico )  
COUNTY OF Santa Fe )

On this 2nd day of Sept, 1947, before me personally appeared Gertrude L. Parcell and Charlie W. Parcell, her husband, to me known to be the persons 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.

My Commission Expires:

Mar 3-1951

Hazel Robinson  
Notary Public

STATE OF Oklahoma )  
COUNTY OF Noble )

On this 23rd day of August, 1947, before me personally appeared Ora R. Hall, Jr. and Edna Iona Hall, his wife, to me known to be the persons 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.

My Commission Expires:

Jan. 28, 1951

Geraldine M. Bell  
Notary Public

STATE OF \_\_\_\_\_ )  
COUNTY OF \_\_\_\_\_ )

On this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, 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

#108  
Sheet 1

Report of a Gravity Meter Survey  
of the Southwest Artesia Prospect,  
Eddy County, New Mexico

By: Garrett Exploration Company

Dallas, Texas  
July 27, 1945.

Report of a Gravity Meter Survey  
of the Southwest Artesia Prospect,  
Eddy County, New Mexico

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INTRODUCTION

This report covers a gravity meter survey of Townships 17 South, Range 24 East, Township 18 South, Ranges 23 and 24 East and the north edge of Township 19 South, Range 24 East, all in Eddy County, New Mexico. The area is eight miles southwest of Artesia. Production in the Artesia Field is fifteen miles east of the area.

OPERATIONS

The field equipment consisted of a Frost gravity meter, Wye levels, transits, and necessary trucks. The personnel included the party chief, computer, observer, observer's helper, two surveyors, and two rodmen.

## GEOLOGY

The attached map (Figure 10) shows the regional structural features. The area under consideration is situated on the Artesia-Vacuum trend. The regional geology and local stratigraphy is described in Bulletin No. 18 - The Oil and Gas Resources of New Mexico.

Productive horizons in this area would be similar to those in the Artesia-Vacuum trend with depths approximately comparable to those in that area. These include the horizons productive in the Permian in the Artesia-Vacuum trend. Of these the Grayburg and San Andres are the most important with shallower possibilities in the Queen, Seven Rivers, and Yates above the Grayburg. Deeper possibilities include the lowest part of the Permian and if present, the Devonian, Silurian and Ordovician. It is believed that the greater part of this section is present.

Although a number of very shallow tests have been drilled in the area, no attempt has been made to depict local structural conditions other than through gravity observations.

The Penasco River runs through the area resulting in a fairly rugged terrain. Elevations vary from 3600 to 3900 feet above sea level. All elevations are tied to U.S.G.S. Bench Marks.

Observations over the greater part of the area are made at half mile intervals. Control is ample for the desired accuracy.

The work was conducted during June and July 1945.

Attached to this report are maps showing the observed gravity and the relation of the area to the regional features.

### INTERPRETATION

The observed gravity shows a single major anomaly, with a relatively steep gradient on the west side. The area covered would include all of Sections 31, 30, 19, 20, 29 and 32, and the SW $\frac{1}{4}$  Section 33, South  $\frac{1}{2}$  Sections 17 and 18, all in Township 18 South, Range 24 East; the North  $\frac{1}{2}$  Sections 5 and 6 and the NW $\frac{1}{4}$  Section 4, all in Township 19 South, Range 24 East; the North  $\frac{1}{2}$  of Sections 1 and 2, and the NE $\frac{1}{4}$  of Section 3, Township 19 South, Range 23 East; all of Sections 35, 36, 25, 26, 23, 24 and the South  $\frac{1}{2}$  of Sections 14 and 3, the SE $\frac{1}{4}$  of Section 15, the East  $\frac{1}{2}$  of Sections 22, 27 and 34, all in Township 18 South, Range 23 East.

Over the remainder of the area there is no anomaly that is sufficiently pronounced to be of any significance.

The gravity disturbance appears to arise from an approximate depth of 5,000 feet which would be in the heavy dense limestones of the Lower Permian and Pennsylvanian.

As the anomaly is obvious on the observed gravity map, a residual gravity map is not essential.

GARRETT EXPLORATION COMPANY,

By *Melvin M. Garrett*

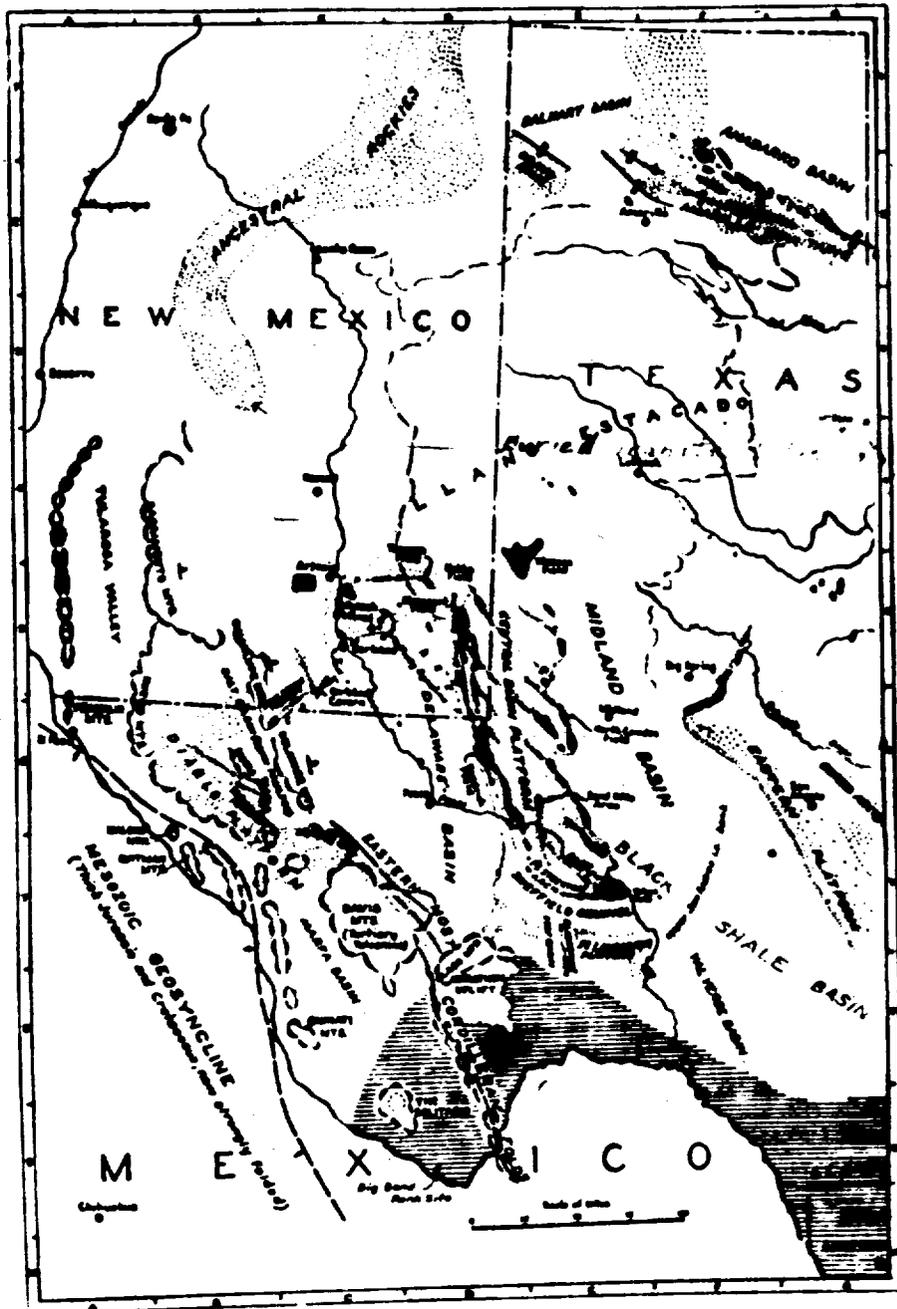


FIGURE 10.—Map showing regional structure of West Texas and eastern New Mexico. (From Lewis, F. E., Position of San Andres group, West Texas and New Mexico. Bull. Amer. Assoc. Petrol. Geol., Vol. 25, No. 1, p. 76, 1941.)