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November 22, 1989

Mr. William J. LeMay
Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87504

HAND DELIVERED

Mr. William R. Humphries
State Land Commissioner
Land Office Building
Santa Fe, New Mexico 87504

HAND DELIVERED

Mr. William Weiss
New Mexico Petroleum Research Center
New Mexico Tech Campus
Socorro, New Mexico 87801

FEDERAL EXPRESS

Re: Exxon Corporation Application for
Rehearing of Case 9716 and Case 9670
Commission Order R-9035

Gentlemen:

On behalf of Exxon Corporation, please find enclosed our Application of Rehearing of the referenced case. This case was heard by the Commission on October 19, 1989, and decided by Order R-9035 entered November 2, 1989.

Very truly yours,


W. Thomas Kellahin

WTK/tic
Enclosure

xc: Robert Stovall, Esq.
William F. Carr, Esq.
Ernest L. Padilla, Esq.
William T. Duncan (Exxon-Midland)

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SANTA FE

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION

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

DE NOVO

APPLICATION OF CURRY AND THORNTON
FOR AN UNORTHODOX OIL WELL LOCATION
AND A NON-STANDARD PRORATION UNIT,
CHAVES COUNTY, NEW MEXICO.

CASE NO 9716

APPLICATION OF STEVENS OPERATING
CORPORATION TO AMEND DIVISION ORDER
NO. R-8917. DIRECTIONAL DRILLING AND
AN UNORTHODOX OIL WELL LOCATION,
CHAVES COUNTY, NEW MEXICO.

CASE NO. 9670
ORDER NO. R-9035

APPLICATION OF EXXON CORPORATION,
FOR REHEARING

COMES NOW EXXON CORPORATION, pursuant to the provisions of
Section 70-2-25 NMSA (1978) and applies to the New Mexico Oil
Conservation Commission ("Commission") for a Rehearing of the
above-captioned case and order and in support thereof states:

PARTIES:

1. Petitioner ("Exxon") is a 50% working interest owner in
the E/2 of Section 9, T14S, R29E, NMPM, Chaves County, New
Mexico, and in the Santa Fe Exploration Company operated No. 1
Holmstrom well located in the SE/4 of said Section 9, and is a

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party of record in all of the proceedings before the Commission and Division in this matter and is adversely affected by the Commission Order R-9035.

2. Santa Fe Exploration Company ("Santa Fe") is a working interest owner in the E/2 of Section 9 and is the operator of the No 1. Holmstrom well ("Holmstrom") in the SE/4 of Section 9 and is a party of record and is adversely affected by the Commission Order R-9035.

3. The applicants, Curry and Thornton and Stevens Operating Corporation, hereafter collectively "Stevens" are the operators of the Deemar Federal Well No. 1, "Deemar well", was drilled at an unorthodox bottom hole location in the SW/4 of Section 9 some 78 feet west of the common spacing unit line between the Holmstrom well and the Deemar well.

4. The Oil Conservation Commission of the State of New Mexico, ("Commission") is a statutory body created and existing under the provisions of the New Mexico Oil & Gas Act, Sections 70-2-1 through 70-2-36 NMSA (1978), laws of the State of New Mexico.

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STATEMENT OF FACTS:

1. Santa Fe-Exxon drilled the Holmstrom well at a standard well location in the SE/4 of Section 9 and found a new Devonian oil reservoir which was later declared by the Division as the North King Camp Devonian Oil Pool and spaced on 160 acre spacing units consisting of either the SE/4, the NW/4, the SW/4 or the NE/4 of a section with wells to be located not closer than 660 feet to the outer boundary of a spacing unit.

2. Thereafter, Curry & Thornton filed an application before the Division in Case 9617 seeking an unorthodox well location 1980 feet from the South line and 165 feet from the East line of a non-standard spacing unit to consist of the E/2W/2 of Section 9.

3. The Division entered Order R-8917 on April 19, 1989, which approved the application, BUT adopted a penalty formula for production from the well which provided:

- (a) a penalty of 75% for crowding the east line of the unit, and
- (b) a further penalty of 35.5% for crowding the Holmstrom well.

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4. The Division further found in Order R-8917 (see Enclosure 1) that only 60 acres out of 320 acres in the W/2 of Section 9 were east of the fault and therefore potentially productive from the proposed Curry & Thornton well.

5. The Division rejected a proposal for a penalty which would include the ratio of potentially productive acres between the E/2 and W/2 of Section 9.

6. Thereafter, Stevens replaced Curry & Thornton as operator of the W/2 and filed a new application with the Division (OCD Case 9670) which sought to amend Order R-8917 and in lieu of a new well sought to re-enter a plugged and abandoned well and then to directionally drill to within 500 feet of a bottom hole target of 1980 feet from the South line and 2475 feet from the West line. Approval of this application would have authorized the Stevens well to be as close as 1 foot to the western boundary of the spacing unit for the Holmstrom well.

7. On May 18, 1989, The Division entered Order R-8917-A (see Enclosure 2) which approved the application. BUT adopted a similar penalty formula (the differences are not essential for

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this summary) and further DENIED the applicant's request for a bottomhole target with a 500 feet radius by restricting the applicant from being any closer than 165 feet to the east boundary of the common spacing unit line between the Stevens' well and the Holmstrom well.

8. Thereafter Stevens re-entered the plugged well in the W/2 of Section 9 and drilled the subject well directionally and ended up west of the fault out of the productive limits of the pool.

9. Having failed to obtain production and without first seeking to amend either Order R-8917 or Order R-8919-A. Stevens now sidetracked the well and drilled what is now called the "Deemar well" to an unorthodox bottom hole location 78 feet from the East line and 1948 feet from the South line of its non-standard proration unit.

10. Stevens then sought a determination from the Division of the allowable which would be assigned to the well and on August 28, 1989, the Division issued its letter (see Enclosure 3) which assigned a producing rate of 34 barrels of oil a day to the Stevens' Deemar well.

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11. On October 19, 1989, the Commission held a De Novo Hearing in both case 9617 and case 9670.

12. Mr. Jack Ahlen, a petroleum geologist, testified for Stevens, and contended that the size, location, thickness and shape of the Devonian reservoir was as he had interpreted it on Ahlen Exhibit 4 (see Enclosure 4).

13. Mr. Scott Hickman, a petroleum engineering consultant, testified for Stevens, and contended that based upon Mr. Ahlen's geologic mapping of the reservoir he calculated about 28.48 percent of the gross reservoir volume was in the W/2 and 71.51 percent of the gross reservoir volume was in the E/2 of the Section. (see Hickman Exhibit 8).

14. Mr. Hickman then calculated that the W/2 of Section 9 had an estimated 674,000 barrels of recoverable oil (29.7%) underlying it and that the SE/4 had an estimated 732,000 barrels of recoverable oil (32.3%) underlying it and the NE/4 had an estimated 863,000 barrels of recoverable oil (38.0%) underlying it which results in the W/2 of Section 9 having 29.7% and the E/2 of Section 9 having 70.3% of the reserves.

15. Mr. Charles Holmstrom, a petroleum geologist, testified for Santa Fe-Exxon that based upon his geologic interpretation, the Devonian reservoir which he discovered has a size, shape, thickness and location as set forth in Santa Fe Exploration Exhibits 1 and 2 (see Enclosures 5 and 6).

16. Mr. L. D. Sipes, Jr., a petroleum engineering consultant, testified for Santa Fe-Exxon that based upon Mr. Holmstrom's mapping of the reservoir only 10 percent of recoverable oil underlay the W/2 while 90 percent of recoverable oil underlay the E/2 of Section 9. (See Transcript p 217).

17. Assuming Mr. Hickman's estimate of total recoverable reserves of the pool of 2,269,000 barrels of oil, Mr. Hickman would allocated 674,000 barrels of oil to the Deemar well while Mr. Sipes would allocate only 226,900 barrels of oil to the Deemar well; a difference of 447,100 barrels of oil.

18. The difference of 447,100 barrels of recoverable oil estimated for the Deemar well is directly attributed to the difference in geologic interpretations between Mr. Holmstrom and Mr. Ahlen in locating the orientation of the fault and the contouring of the reservoir's shape and thickness.

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19. On November 2, 1989, the Commission adopted Order R-9035 (see enclosure 7) which:

- (1) found that there was substantial agreement as to amount of productive acreage and recoverable reserves in Section 9,
- (2) found that there is 10,714 acre-feet of Devonian oil pay in the pool, with 21% in the W/2, 53% in the SE/4 and 26% in the NE/4 of Section 9,
- (3) found that a well in the NE/4 of Section 9 would not be necessary, and
- (4) Therefore ordered that Stevens could produce its Deemar well at the rate of 49 barrels of oil a day and Santa Fe-Exxon could produce its Holmstrom well at the rate of 125 barrels of oil day and allowed 61 barrels of oil a day to be produced from a well located in the NE/4 if that unnecessary well was ever drilled.

18. Within twenty days of the date of Order R-9035, Exxon has filed this Application for Rehearing.

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GROUND S FOR REHEARING

POINT I: COMMISSION ORDER R-9035 IS ARBITRARY AND CAPRICIOUS BECAUSE IT FINDS THAT A WELL IN THE NE/4 OF SECTION 9 IS UNNECESSARY AND AT THE SAME TIME FAILS TO CREDIT THE HOLMSTROM WELL WITH THE 61 BARRELS OF OIL PER DAY OF OF ADDITIONAL ALLOWABLE NECESSARY IN ORDER TO PRODUCE THOSE RESERVES THEREBY VIOLATING THE CORRELATIVE RIGHTS OF SANTA FE-EXXON.

The granting of a Rehearing is necessary in order to correct an unresolved inherent inconsistency in Order R-9035. Both Stevens and Santa Fe-Exxon testified that a well in the NE/4 of Section 9 was unnecessary because the oil reserves in all of Section 9 would or could be produced by the two existing wells. The Commission reached that same conclusion in Finding (21) of Order R-9035. The Commission further concluded that the oil reserves in the NE/4 should be 26% of the reservoir and would be available to that unnecessary well, if drilled, at a rate of 61 barrels a day.

The inconsistency within the order can be cured and should have been resolved by the Commission by simply applying the additional 61 barrels a day production to the Holmstrom well. The record before the Commission is that the ownership in the E/2 of the Section is the same as the ownership in the SE/4.

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If the Commission is concerned that it did not have before it an application for the dedication of a 320 acre proration and spacing unit to the Holmstrom well then that technical problem could have been addressed in the Order. To leave this inconsistency unresolved is a violation of the statutory obligations of the Commission to prevent waste and protect correlative rights.

POINT II: COMMISSION ORDER R-9035 IS NOT SUPPORTED BY SUBSTANTIAL EVIDENCE BECAUSE CONTRARY TO THE FINDINGS OF THE COMMISSION, THERE IS SUBSTANTIAL DISAGREEMENT BETWEEN STEVENS AND SANTA FE-EXXON CONCERNING THE RELATIVE PERCENTAGES OF THE OIL RESERVOIR UNDERLYING EACH PORTION OF SECTION 9

The Commission has made a basic mistake in its analysis of the competing geologic interpretations by Stevens and by Santa Fe-Exxon. The Commission has incorrectly concluded that they are in substantial agreement when in fact they are not. Stevens' petroleum engineer testified that he calculated approximately 29% of the reservoir volume underlying the Stevens non-standard proration unit. The Santa Fe-Exxon petroleum engineer testified that the Stevens unit had only 10% of the reservoir volume. The difference between the two geologic in

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terpretations and corresponding engineering calculations amounts to a total volume of 447,100 recoverable barrels of oil for the Deemar well. To ignore such a substantial volume of oil and conclude that there is substantial agreement between the parties is to ignore the substantial evidence in this case. Such an erroneous conclusion must be corrected when it forms the basic foundation upon which the Commission has calculated the penalty.

The Commission then compounded its error by ignoring both Santa Fe-Exxon and Stevens' respective petroleum engineering testimony and independently calculated relative percentages of recoverable oil per tract which are not supported by substantial evidence and contrary to the record before it.

Upon a Rehearing, Santa Fe-Exxon would present evidence which would show what the correct volume of reservoir for the Deemar well and for the Holmstrom well and what the resulting producing allowables should be.

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POINT III: COMMISSION ORDER R-9035 IS ARBITRARY AND CAPRICIOUS AND IS CONTRARY TO LAW BECAUSE IT FAILED TO INCLUDE IN THE PENALTY FORMULA FOR THE DEEMARS WELL A FACTOR BASED UPON THE UNORTHODOX LOCATION OF THE DEEMARS WELL

The Commission has not fulfilled its statutory obligations by simply constructing a penalty based upon its conclusions about the relative reservoir volume underlying each respective spacing unit. It must also factor in a penalty to balance the advantage the Deemars well gains over the Holmstrom well because the Deemar well is only 78 feet from the common spacing unit boundary.

Division Order R-8917 and Order R-8917-A both recognized and used a penalty based upon the unorthodox location of the Stevens' well. Neither order adopted an additional factor based upon relative net productive acreage or reservoir volume because the Division found there was inadequate data available from which to make a reliable estimate of reserves. (See Finding 10, Order R-8917). Now, the Commission, based upon essentially the same geologic presentation as made before the Division, has decided that it could adopt a penalty based upon relative reservoir volume among tracts.

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But the Commission is wrong when it assumes that a penalty based upon estimates of reservoir volume can be substituted for a penalty based upon locations. Both are mutually inclusive and should be used together rather than in the alternative.

The Commission Order R-9035 fails to account for the respective well locations and therefore is fatally flawed. The granting of this Application for Rehearing is required in order to correct this flaw.

POINT VI: THE COMMISSION ACTED IMPROPERLY AND EXCEEDED ITS AUTHORITY WHEN IT SET A PRODUCTION PENALTY OF THE HOLMSTROM WELL WHICH IS AT A STANDARD WELL LOCATION AND WITHIN A STANDARD SIZE AND SHAPED SPACING AND PRORATION UNIT WITHOUT NOTICE TO SANTA FE-EXXON IN VIOLATION OF DUE PROCESS

It is totally unprecedented for the Commission and certainly in excess of its statutory authority and the scope and call of the subject cases to establish a production limitation of the Holmstrom well. No party proposed such a penalty. The Commission cannot simply reduce the daily volume of oil being

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lawfully produced by the Holmstrom well without notice and hearing. To do so is to violate constitutionally protected rights to due process.

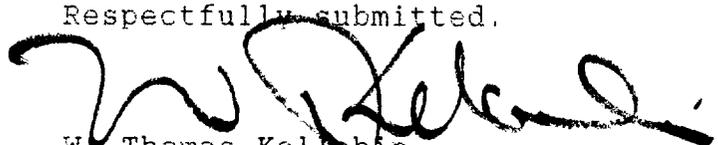
The purpose of due process is to ensure that the owners of constitutionally protected property rights do not have those rights impaired by state action without having notice and opportunity to be heard and participate in the proceedings which result in the state action. See *Jones v. Nuclear Pharmacy, Inc.*, 714 F.2d 322 (Cir. 1984).

What the Commission did is enter an order in a case that was not before it to decide. The Commission did not have before it a case to establish special production limitations for this pool. The Commission did not have before it a case to restrict the production of the Holmstrom well. As the Commission knows, the Holmstrom is lawfully entitled to produce on a daily basis up to 515 barrels of oil a day. To decide to reduce the production rate of the Holmstrom well within the context of the subject cases was done without notice to the interest owners in the Holmstrom well and in violation of their rights to due process.

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WHEREFORE, EXXON CORPORATION requests that the Commission grant this Application for Rehearing.

Respectfully submitted,



W. Thomas Kellahan
P. O. Box 2265
Santa Fe, New Mexico 87504
(505) 982-4285
Attorneys for Exxon Corporation

CERTIFICATE OF SERVICE

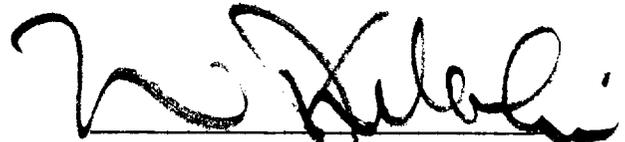
I hereby certify that the foregoing Application for Rehearing was served by regular first class mail, postage prepaid as follows:

William F. Carr, Esq.
P. O. Box 2208
Santa Fe New Mexico 87504

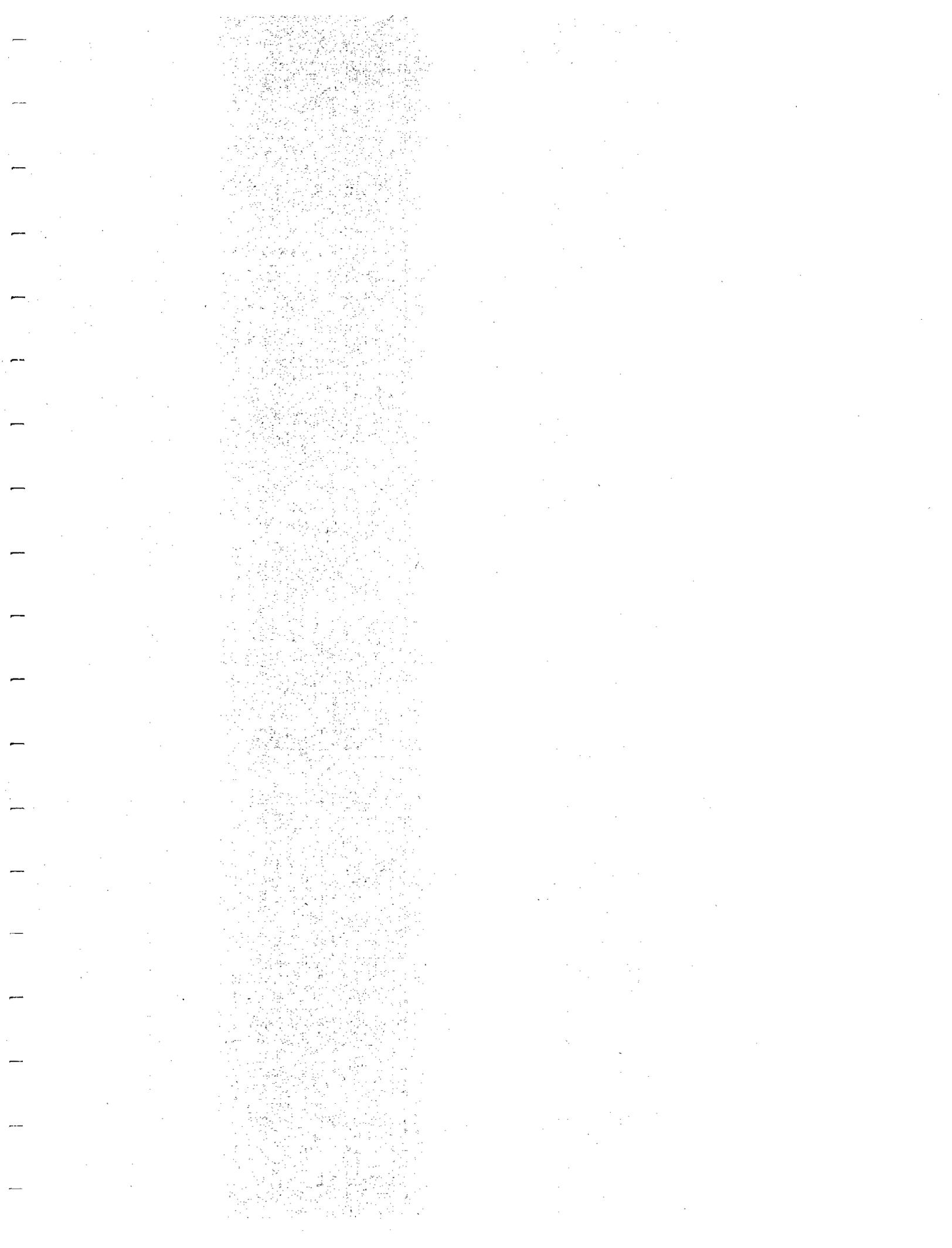
Ernest L. Padilla, Esq
P. O. Box 2523
Santa Fe, New Mexico 87504

Robert G. Stovall, Esq.
P.O. Box 2088
Santa Fe, New Mexico 87504

as of November 22, 1989.



W. Thomas Kellahan



(5) Special pool rules for said pool were promulgated by Order No. R-8806 after the hearing held in November, 1988 in Case No. 9529, and provided for 160-acre spacing and proration units consisting of a governmental quarter section with the well to be located not less than 660 feet from the unit boundary, nor less than 330 feet from an inner quarter-quarter section line, nor less than 1320 feet from the nearest well completed in said pool.

(6) Evidence was introduced in Case No. 9529 that there is a fault, down-thrown to the west, which traverses the W/2 of said Section 9 in generally a north-south direction continuing southward across Section 16. Additional evidence was introduced in this case which substantiates the existence of the fault.

(7) Santa Fe Exploration drilled a well east of the fault described above which was dry at a standard location 660 feet from the North line and 1980 feet from the East line of Section 16, one-half mile south of the discovery well. The revised geologic interpretation shows a second fault separating the second well from the first.

(8) Evidence indicates that approximately 60 acres east of the fault in the E/2 W/2 of Section 9 is potentially productive, and the applicant is entitled to drill a well to recover the reserves.

(9) A non-standard proration unit consisting of the E/2 W/2 would permit applicant to drill a single well to recover the oil under his lease, whereas two wells drilled for the NW/4 and SW/4 would be uneconomic, unnecessary and would cause waste from drilling an unnecessary well.

(10) There is inadequate data available to make an estimate of reserves with sufficient precision upon which a penalty could be assessed.

(11) Applicant requests an exception to two of the spacing requirements - the minimum distance from the outer boundary of the proration unit and the minimum distance between wells.

(12) Evidence at the hearing indicated that it is necessary to crowd the east line of the proration unit in order to avoid the fault but that a well could be drilled at the minimum distance from the nearest well.

(13) A penalty (P_1) should be assessed for crowding the east line of the unit in proportion to the distance moved from a standard location toward that line or $495/660 = 0.75$.

(14) A further penalty (P_2) should be assessed for crowding the nearest well in proportion to the distance the well is moved toward the nearest well from the minimum distance permitted, or $495/1320 = 0.375$.

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Order No. R-8917
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(15) The combined penalties should be cumulative so that the proportion of the top allowable assigned at the proposed location would be $(1-P_1) \times (1-P_2)$, or $.25 \times .625 = .15625$.

(16) The distance moved toward the offsetting lease together with the depth of the well indicates a strong possibility the well may encroach even closer to the Santa Fe Exploration lease or even trespass on that lease, and therefore a continuous directional survey should be run on the well and a copy thereof filed with the Division so that the true location of the well at the productive interval can be determined.

(17) The penalty should be based upon the bottomhole location of the well using the procedure described in Finding Paragraphs (13) through (15), above.

(18) The drilling of the well with appropriate penalty as described above will afford the applicant the opportunity to produce its just and equitable share of the oil in the affected pool, will prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells and will otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED THAT:

(1) The application of Curry and Thornton for an unorthodox oil well location for the North King Camp-Devonian Pool is hereby approved for a well to be located at a point 1980 feet from the South line and 2475 feet from the West line of Section 9, Township 14 South, Range 29 East, NMPM, Chaves County, New Mexico.

(2) The E/2 W/2 of said Section 9 shall be dedicated to the above-described well forming a 160-acre non-standard oil spacing and proration unit for said pool.

(3) A continuous directional survey shall be run on the well and filed with the Division so that the bottomhole location at the producing interval may be determined.

(4) The depth bracket allowable for the well shall be penalized by using the following formula, based on the bottomhole location of the well:

- a. a penalty (P_1) based on the proportion of distance the actual location is moved toward the boundary from the standard location;

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Order No. R-8917
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- b. a penalty (P_1) based on the proportion of distance the actual location is moved toward the nearest well from the minimum distance under the pool rules; and
- c. the product of $(1-P_1) \times (1-P_2)$.

(5) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

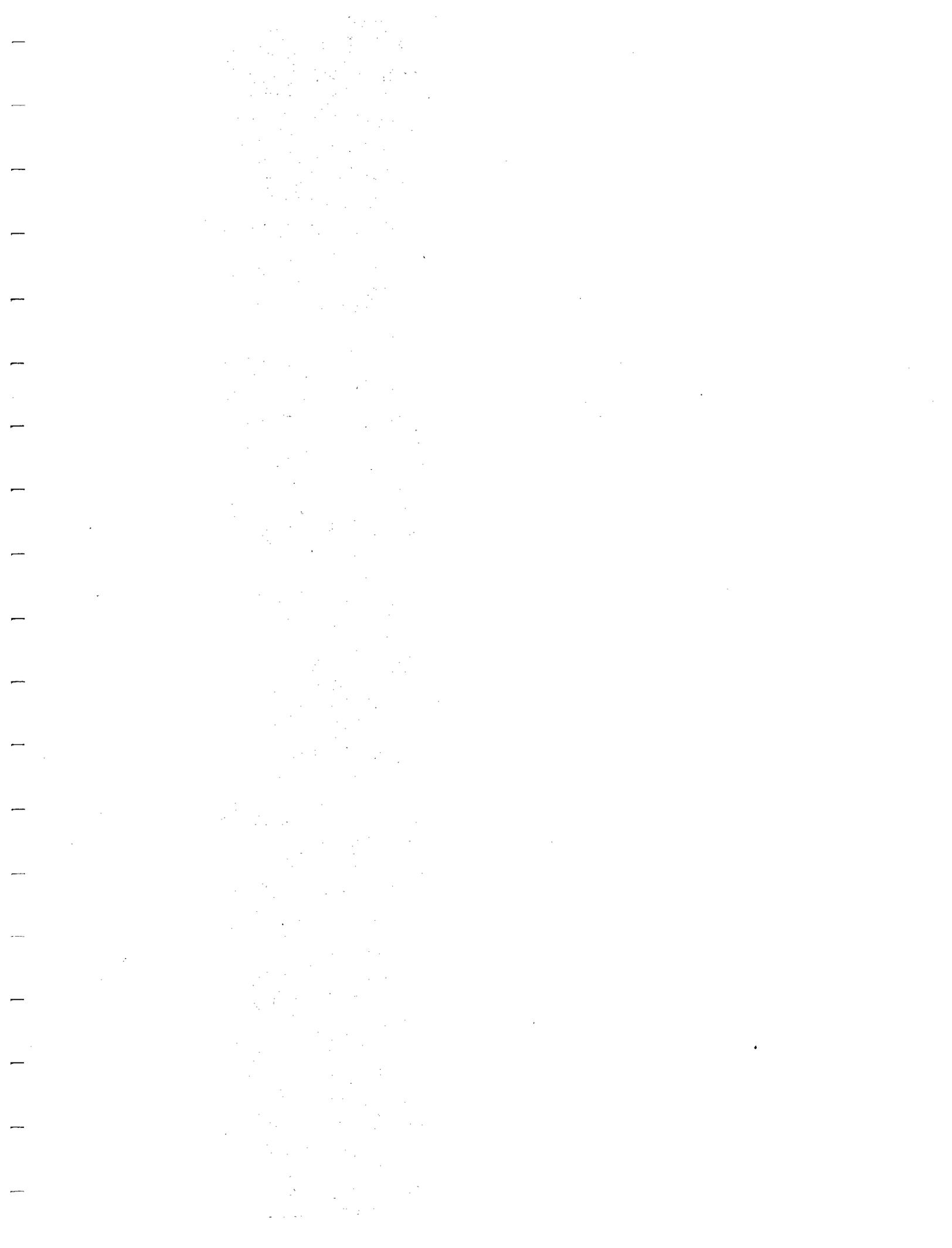
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY
Director

S E A L



RECEIVED MAY 22 1989

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 9670
ORDER NO. R-8917-A

APPLICATION OF STEVENS OPERATING CORPORATION
TO AMEND DIVISION ORDER NO. R-8917,
DIRECTIONAL DRILLING, AND AN UNORTHODOX
OIL WELL LOCATION, CHAVES COUNTY, NEW MEXICO

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on May 10, 1989, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 18th day of May, 1989, the Division Director, having considered the testimony, the record and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) By Division Order No. R-8917, dated April 19, 1989, the applicant in Case No. 9617, Curry and Thornton, was authorized to drill a well to test the North King Camp-Devonian Pool at an unorthodox oil well location 1980 feet from the South line and 2475 feet from the West line (Unit K) of Section 9, Township 14 South, Range 29 East, NMPM, Chaves County, New Mexico. Said Order also approved a 160-acre non-standard oil proration unit comprising the E/2 W/2 of Section 9 to be dedicated to the above-described well.

(3) Said Order No. R-8917 also set forth a penalty to be assessed against the top unit allowable assigned to the well by utilizing the following formula, based on the actual bottomhole location of the wellbore to be determined by a directional survey of the completed well:

- a. a penalty (P_1) based on the proportion of distance the actual location is moved toward the boundary from the standard location;

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- b. a penalty (P_1) based on the proportion of distance the actual location is moved toward the nearest well from the minimum distance under the pool rules; and
- c. the product of $(1-P_1) \times (1-P_2)$.

(4) The applicant in the immediate case, Stevens Operating Corporation, which has replaced Curry and Thornton as operator of the E/2 W/2 of said Section 9, now seeks to amend said Division Order No. R-8917, and in lieu of drilling a new well at the previously authorized unorthodox oil well location, be permitted to re-enter the plugged and abandoned Philtex Oil Company Honolulu Federal Well No. 1 located 1980 feet from the South and West lines (Unit K) of said Section 9, wherein the applicant proposes to deviate said well so as to penetrate the North King-Camp Devonian Pool at an unorthodox bottomhole oil well location within 500 feet west of a point 1980 feet from the South line and 2475 feet from the West line of said Section 9.

(5) The subject well in this matter was spudded on November 3, 1961 and was drilled to a total depth of 9894 feet where it tested dry in the Devonian formation and was subsequently plugged and abandoned.

(6) The applicant proposes to re-enter said well and drill out the existing cement plugs to a depth of approximately 7474 feet, kick-off at this point due east, build angle to 15 degrees and hold to a measured depth of approximately 8913 feet, at which point the angle will be allowed to drop and return to vertical to a measured depth of approximately 9450 feet, whereby the hole will be allowed to build angle back and drift to the west bottoming at a true vertical depth of approximately 9710 feet in the Devonian formation approximately 330 feet west of the well's surface location.

(7) Should said well be a producer, it is the intent of this application that all survey and penalty provisions in the original Order No. R-8917 be fully applicable with respect to this well.

(8) Santa Fe Exploration Company, the offset operator to the east of the non-standard unit, appeared at the hearing and objected to the existing method of assessing a penalty on production from this well and proposed that the top unit allowable for this well, regardless of its location within the proposed target area, be set at a flat rate of 80 barrels of oil per day.

(9) the existence of a fault, downthrown to the west, which traverses the W/2 of said Section 9 in a north-south direction, resulting in only a small portion of the extreme east side of the E/2 W/2 of said Section 9 being potentially productive, as described in Case No. 9617 and further in this matter, makes it necessary for the applicant to crowd the east line of the unit to adequately drain those reserves underlying the unit. By utilizing an existing wellbore to directionally drill into the subject reservoir, the cost of developing this acreage

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should be reduced; therefore approval of the subject application utilizing the penalty formula as outlined in said Order No. R-8917 and Finding Paragraph (3) above, will afford the applicant the opportunity to produce its just and equitable share of the oil in the affected pool, will prevent the economic loss caused by the drilling of unnecessary wells, avoid the augmentation of risk from drilling an excessive number of wells and will otherwise prevent waste and will serve to protect correlative rights in this situation.

(10) The applicant should be required to determine the subsurface location of the kick-off point in the wellbore prior to directional drilling and should subsequently be required to conduct a multi-shot directional survey during or upon completion of drilling operations from the kick-off point to total depth.

(11) The applicant should be required to notify the supervisor of the Artesia district office of the Division of the date and time said directional surveys are to be conducted so that they may be witnessed. The applicant should further be required to provide a copy of said directional surveys to the Santa Fe and Artesia offices of the Division upon completion.

(12) The penalty should however be based on that portion of the total completion interval closest to the eastern boundary of the unit rather than the bottomhole location as provided for in Order No. R-8917 and in Finding Paragraph No. (3), above.

(13) Upon the successful directional drilling and completion of the subject well, said Division Order No. R-8917 should be placed in abeyance.

(14) However, if in the event re-entry into the Honolulu Federal Well No. 1 is unsuccessful, said Division Order No. R-8917 should remain in full force and effect and any other order resulting in the immediate case should become void and of no further effect.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Stevens Operating Corporation, is hereby authorized to re-enter the plugged and abandoned Philtex Oil Company Honolulu Federal Well No. 1 located 1980 feet from the South and West lines (Unit K) of Section 9, Township 14 South, Range 29 East, NMPM, Chaves County, New Mexico, and directionally drill, in the manner described in Finding Paragraph No. (6) of this order, so as to penetrate the North King Camp-Devonian Pool within 500 feet west of an unorthodox oil well location 1980 feet from the South line and 2475 feet from the West line of said Section 9.

PROVIDED HOWEVER THAT, prior to commencing directional drilling operations into said wellbore, the applicant shall establish the location of the kick-off point by means of a directional survey acceptable to the Division.

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PROVIDED FURTHER THAT, during or upon completion of directional drilling operations, the applicant shall conduct a multi-shot directional survey from the kick-off point to total depth in order that the subsurface bottomhole location may be determined.

(2) The applicant shall notify the supervisor of the Artesia district office of the Division of the date and time said directional surveys are to be conducted so that they may be witnessed. The applicant shall further provide a copy of said directional surveys to the Santa Fe and Artesia offices of the Division upon completion.

(3) the E/2 W/2 of Section 9 shall be dedicated to the above-described well forming a previously authorized (R-8917) 160-acre non-standard oil spacing and proration unit for said pool.

(4) Form C-105 shall be filed in accordance with Division Rule 1105 and the operator shall indicate thereon true vertical depth in addition to measured depths.

(5) The depth bracket allowable for the well shall be penalized by using the following formula, based on that portion of the total completion interval which is closest to the eastern boundary of the unit.

- a. a penalty (P_1) based on the proportion of distance the actual location is moved toward the boundary from the standard location;
- b. a penalty (P_2) based on the proportion of distance the actual location is moved toward the nearest well from the minimum distance under the pool rules; and
- c. the product of $(1-P_1) \times (1-P_2)$.

(6) Upon the successful directional drilling and completion of the subject well, Division Order No. R-8917, issued in Case No. 9617 and dated April 19, 1989, shall be placed in abeyance until further notice.

IT IS FURTHER ORDERED, HOWEVER, THAT:

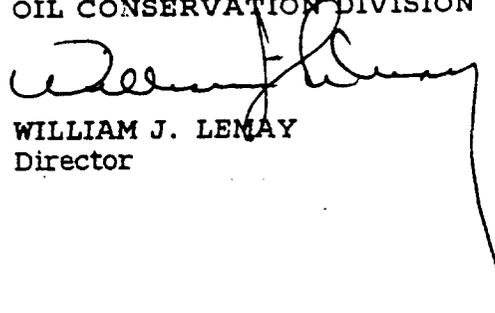
(7) If in the event re-entry into the Honolulu Federal Well No. 1 is unsuccessful, said Division Order No. R-8917 shall remain in full force and effect and, at that time, the order in the immediate case (R-8917-A) shall become void and of no further effect.

(8) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

Case No. 9670
Order No. R-8917-A
Page No. 5

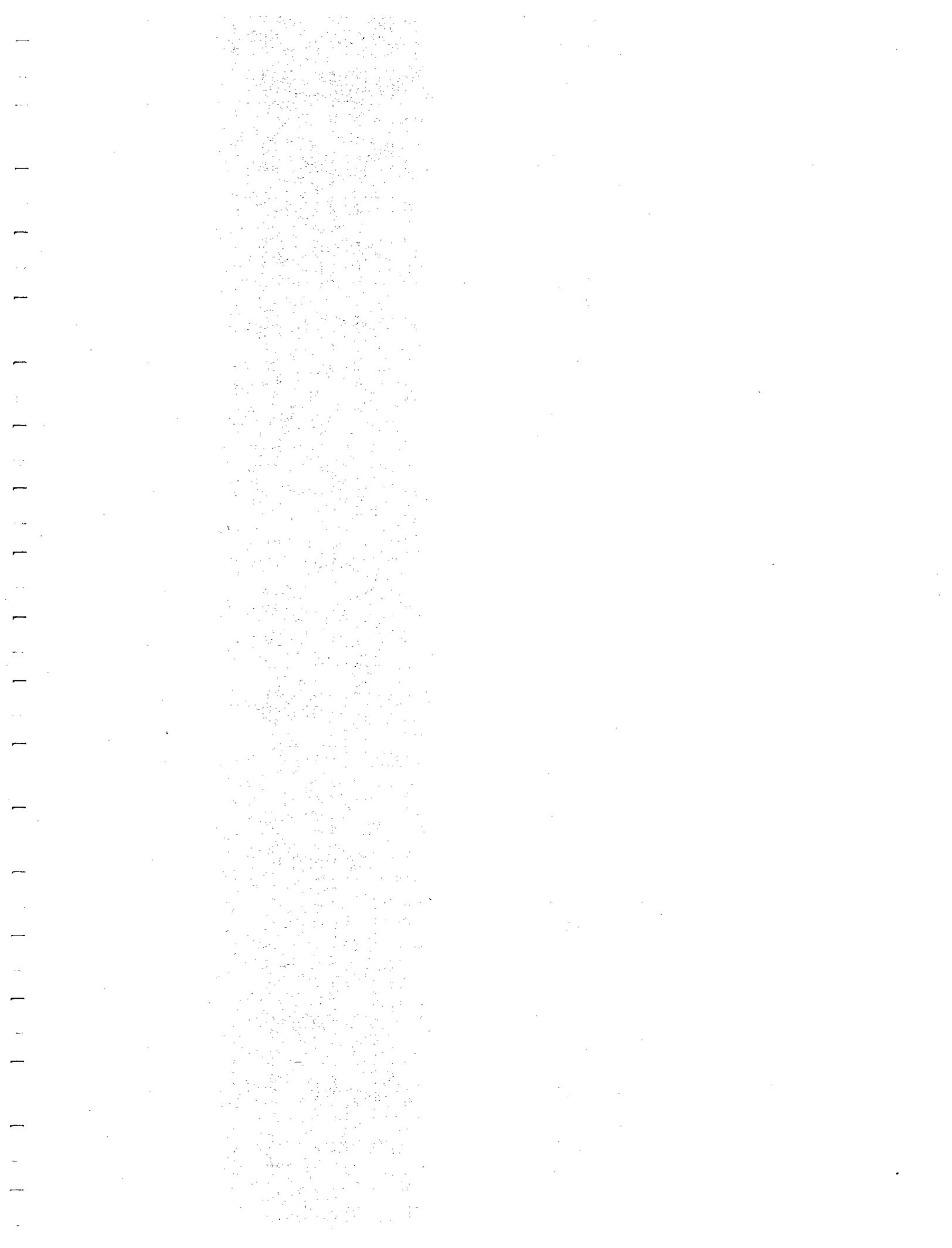
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY
Director

S E A L



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION



GARREY CARRUTHERS
GOVERNOR

August 28, 1989

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

Campbell & Black, P.A.
P.O. Box 2208
Santa Fe, New Mexico 87504-2208

Attention: William F. Carr

RE: Division Case No. 9670, Order
No. R-8917-A, Application of
Stevens Operating Corporation
to amend Division Order No. R-
8917, Directional Drilling and an
Unorthodox Oil Well Location,
Chaves County, New Mexico.

Dear Mr. Carr:

Upon reviewing the Eastman Christensen "Report of Sub-Surface Directional Survey" for the Stevens Operating Corporation Deemar Federal Well No. 1 located at a surface location 1974 feet from the South line and 1988 feet from the West line (Unit K) of Section 9, Township 14 South, Range 29 East, NMPM, North King Camp Devonian Pool, Chaves County, New Mexico, the following penalty shall be assessed against the top unit allowable for this well, as promulgated by Decretory Paragraph No. 5 of said Order No. R-8917-A.

At the bottom-most perforated interval of 9642 feet (TVD) the location of the wellbore was found to be 1948 feet from the South line and 2562 feet from the West line (Unit K) of said Section 9 or 78 feet from the East line of the proration unit. Therefore, P_1 equals 660 feet minus 78 feet divided by 660, or:

$$P_1 = 582/660 = 0.882.$$

The closest well to the subject wellbore is the discovery well (referred to in Finding Paragraph No. 4 of R-8917) which is located 1980 feet from the South and East lines (Unit J) of said Section 9 is 739 feet apart. Therefore, P_2 equals 1320 feet minus 739 feet divided by 1320 or:

$$P_2 = 581/1320 = 0.440.$$

ENCLOSURE 3

Campbell and Black, P.A.
August 28, 1989
Page 2

The top depth bracket allowable for a well in this pool is 515 barrels of oil per day (General Rule 505 (a)). Utilizing the penalty formula as described in said Order No. R-8917-A for this well:

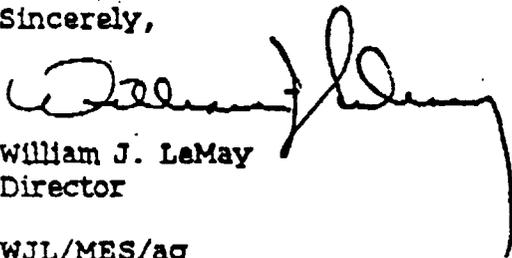
$$(1-P_1) \times (1-P_2) = (1-0.882) \times (1-0.440) = 0.0661 \text{ or } 6.61\%$$

This well shall be assigned a daily oil allowable as follows:

$$(0.0661)(515) = 34.04 \text{ barrels/day.}$$

The effective date for said penalty of this well's production shall be the date of first production.

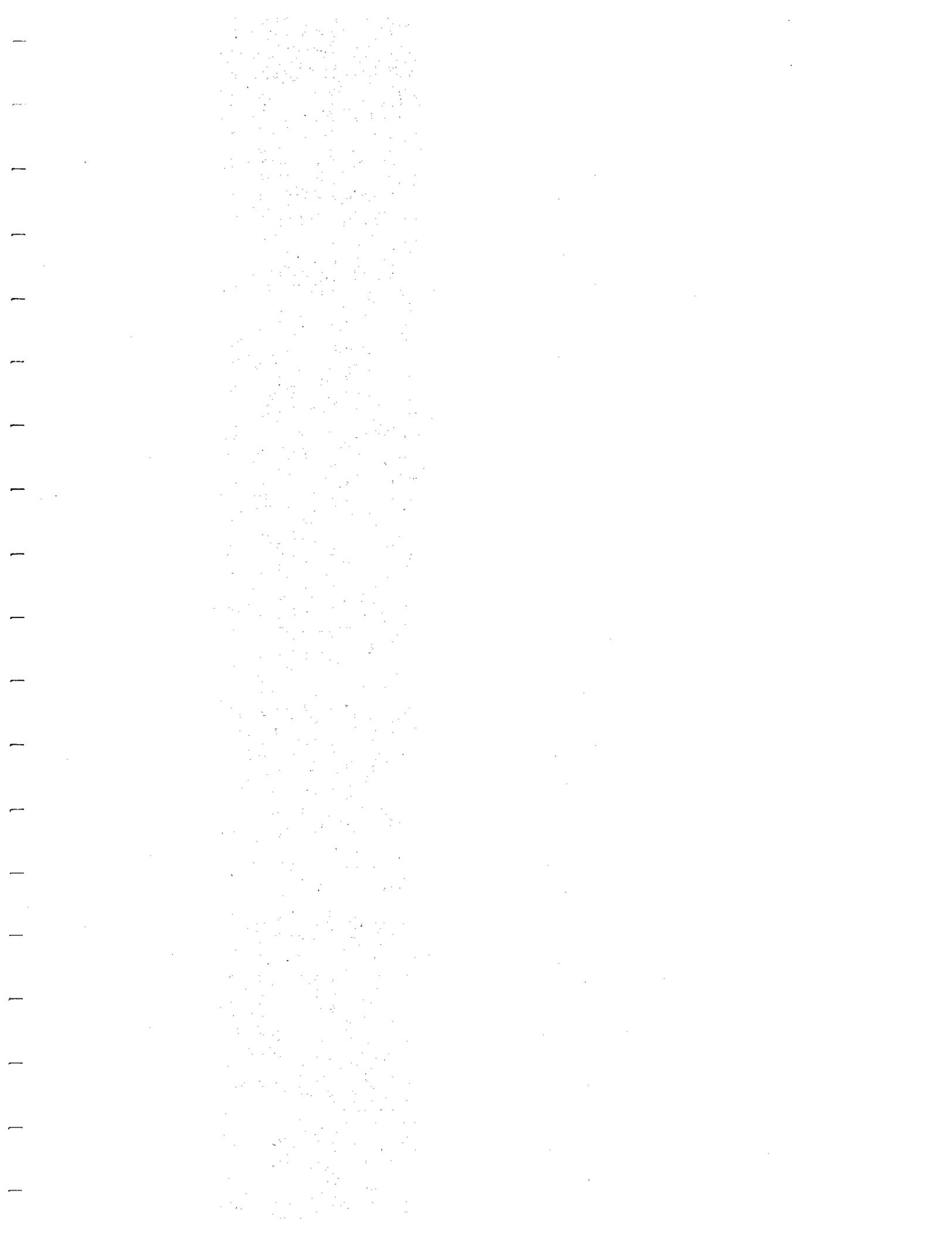
Sincerely,

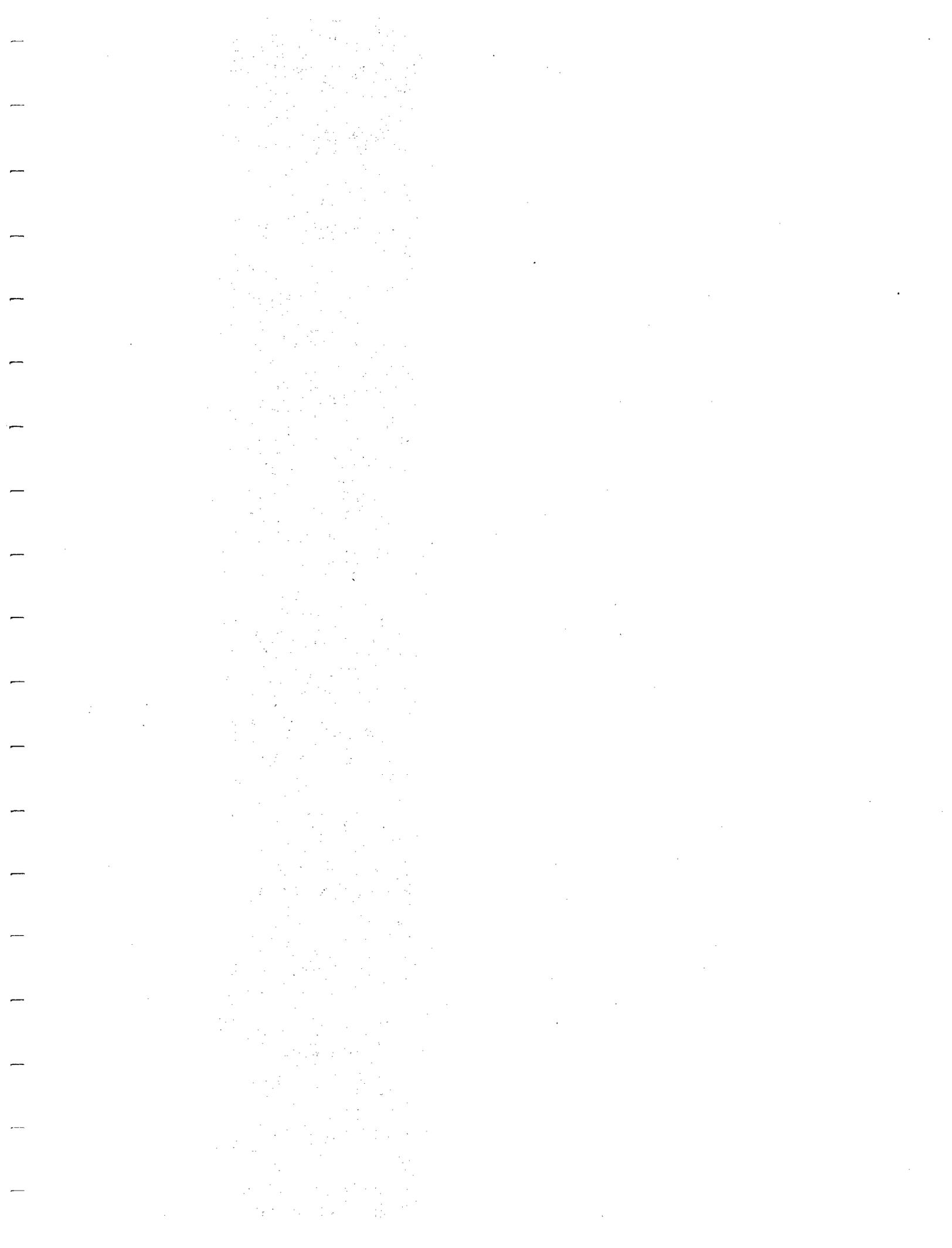


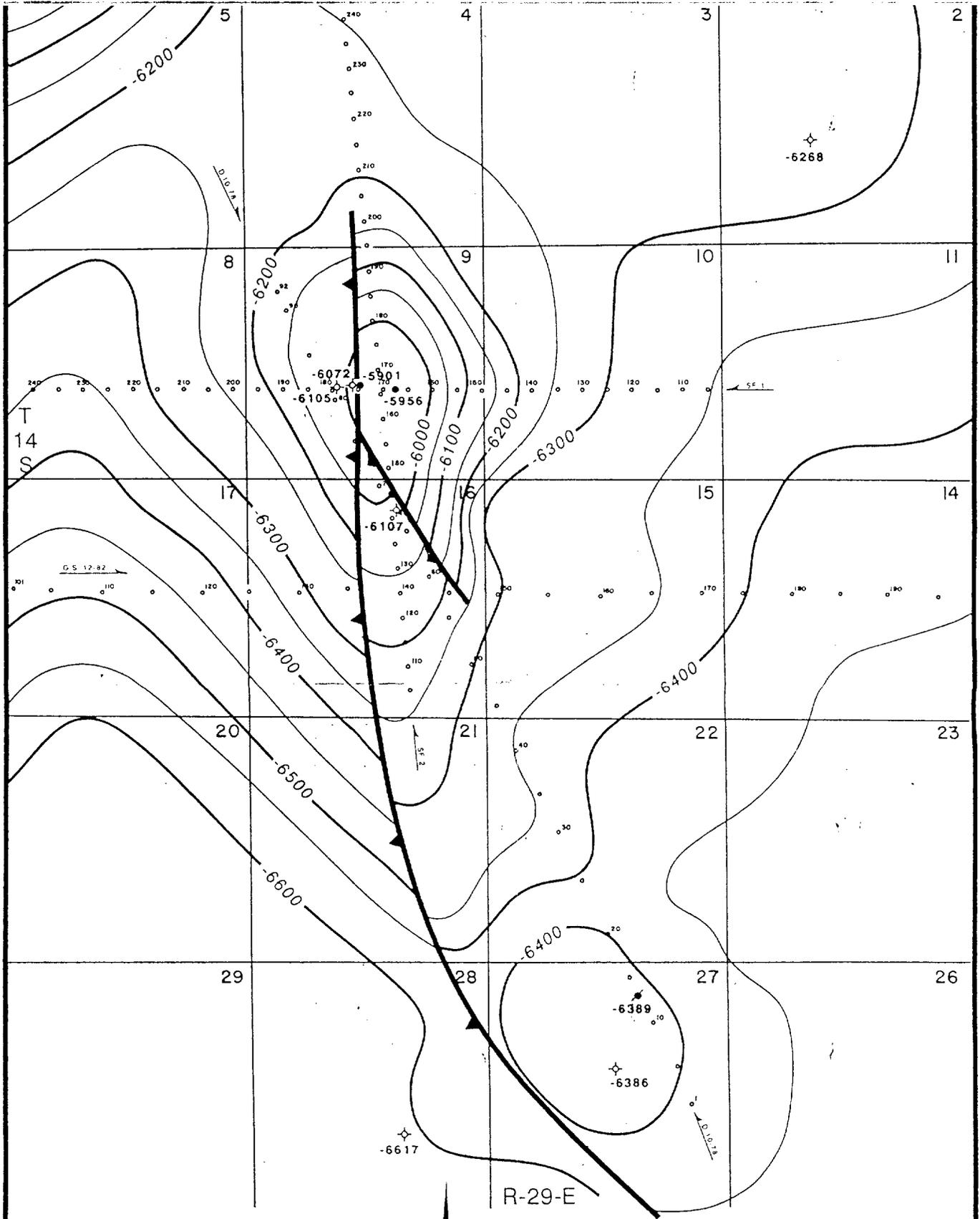
William J. LeMay
Director

WJL/MES/ag

cc: Oil Conservation Division - Artesia
Bob Stovall - Santa Fe
W. Thomas Kellahin - Santa Fe
~~Ernest J. Padilla - Santa Fe~~
Stevens Operating Corp. - Roswell



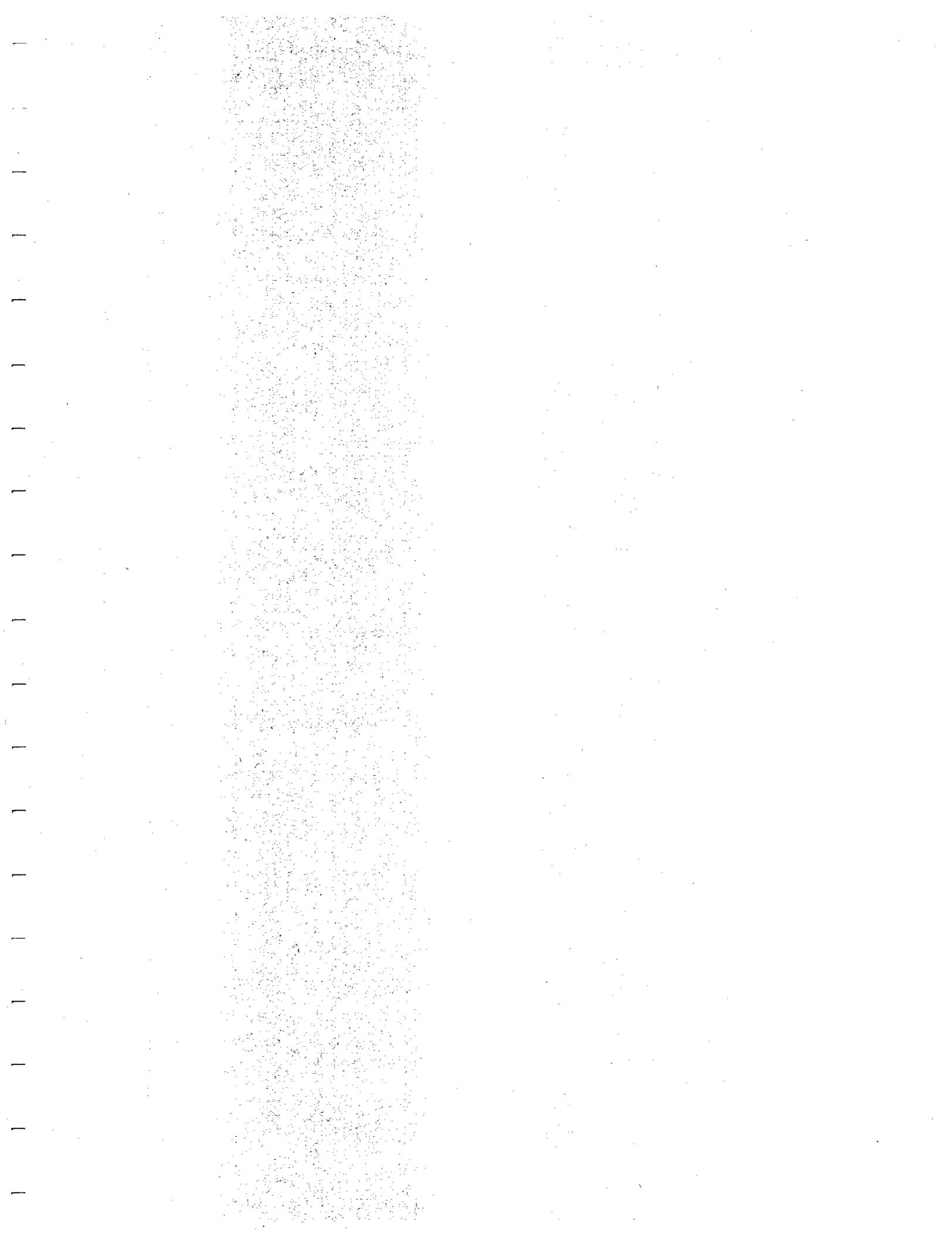




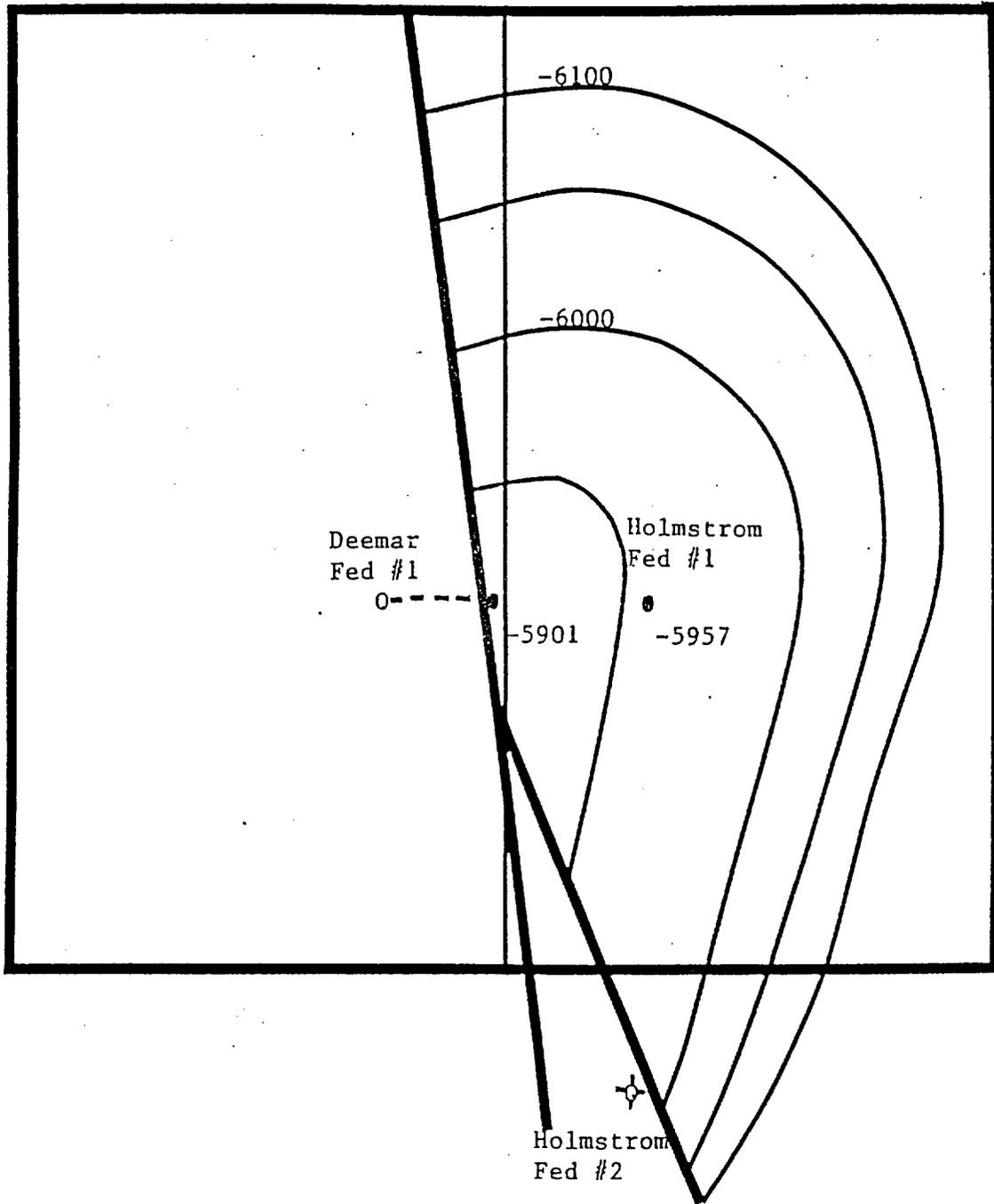
ENCLOSURE 5

BEFORE THE
 OIL CONSERVATION COMMISSION
 Santa Fe, New Mexico
 Case No. 9617 Exhibit No. 1
 Submitted by SF EXPLORATION
 Hearing Date 10/19/89

SANTA FE EXPLORATION COMPANY
NORTH LUCKY PROSPECT Chaves County, New Mexico
DEVONIAN
CONTOUR INTERVAL: 50'
SCALE IN FEET 2000 1000 0 2000 4000



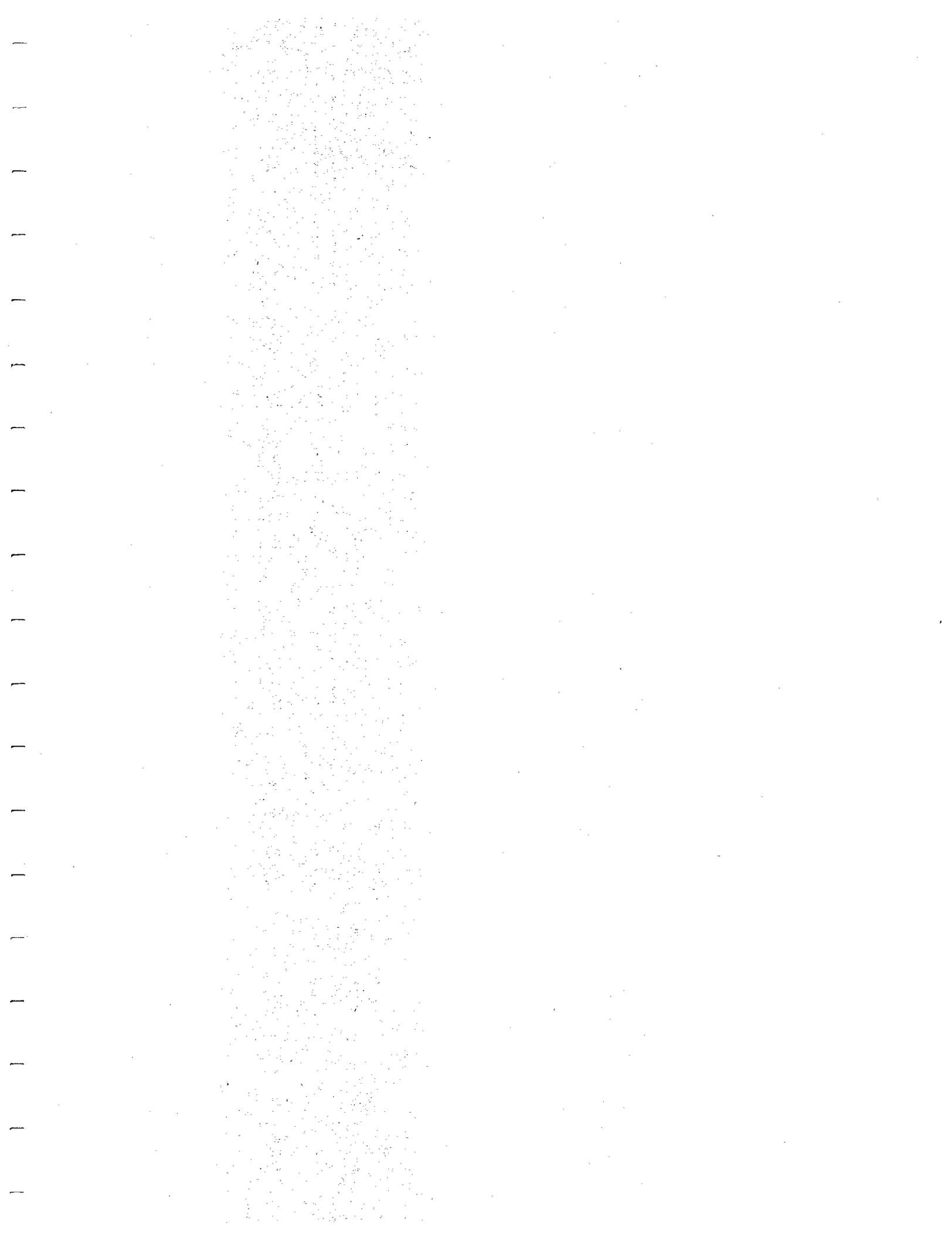
Sec. 9 TWP14S RNG29E



Structure Map
Top of Devonian
North King Camp Field

BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
9617
Case No. 9670 Exhibit No. 2
Submitted by SF Exploration
Hearing Date 10/19/81

Santa Fe Exploration
Exhibit _____
Docket No. _____



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION COMMISSION

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

DE NOVO

APPLICATION OF CURRY AND THORNTON
FOR AN UNORTHODOX OIL WELL LOCATION
AND A NON-STANDARD PRORATION UNIT,
CHAVES COUNTY, NEW MEXICO.

CASE NO. 9617

APPLICATION OF STEVENS OPERATING
CORPORATION TO AMEND DIVISION ORDER
NO. R-8917, DIRECTIONAL DRILLING AND
AN UNORTHODOX OIL WELL LOCATION,
CHAVES COUNTY, NEW MEXICO.

CASE NO. 9670

Order No. R-9035

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9:00 a.m. on October 19, 1989, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 2nd day of November, 1989, the Commission, a quorum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.

(2) The applicant, Curry and Thornton and Stevens Operating Corporation, own the leasehold on the W/2 of Section 9, Township 14 South, Range 29 East, NMPM, Chaves County, New Mexico and desire to dedicate their directionally-drilled Deemar Federal Well No. 1 to a non-standard unit consisting of

the E/2 W/2 of said Section 9 at an unorthodox bottomhole location 1948 feet from the South line and 2562 feet from the West line (Unit K) of said Section 9 in the North King Camp-Devonian Pool.

(3) Santa Fe Exploration and Exxon USA appeared at the hearing and opposed the subject application on the basis that the unorthodox location would impair correlative rights; and, if granted, a penalty should be assessed based upon an estimate of recoverable pool reserves under each tract or the ratio penalty formula set forth in Division Order No. R-8917 and R-8917-A.

(4) The discovery well, the No. 1 Holmstrom, was drilled by Santa Fe Exploration at a standard location 1980 feet from the South and East lines of said Section 9.

(5) Special pool rules for said pool were promulgated by Order No. R-8806 after the hearing held November 22, 1988 in Case No. 9529, which provided for 160-acre spacing and proration units consisting of a governmental quarter section with the well to be located not less than 660 feet from the unit boundary, nor less than 330 feet from an inner quarter-quarter section line, nor less than 1320 feet from the nearest well completed in said pool.

(6) Pursuant to Order R-8917-A, Stevens Operating Corporation ("Stevens") re-entered the Philtex Oil Company Honolulu Federal Well No. 1 in Unit K of said Section 9 and directionally drilled the Deemar Federal Well No. 1 to the approved bottomhole location and encountered only water. After notifying the Division, Stevens plugged back said well bore and deviated a second hole at a higher angle to the east, which they completed as a producer.

(7) Timely applications for hearing de novo before the Commission were filed by both Stevens Operating Corporation and Santa Fe Exploration and the hearing date was extended to October 19, 1989 with the concurrence of all parties.

(8) After reviewing the Eastman Christensen "Report of Subsurface Directional Survey" for the Stevens Operating Corporation Deemar Federal Well No. 1, which showed the bottom-most perforated interval of the wellbore to be at 1948 feet from the South line and 2562 feet from the West line of Section 9, or 78 feet from the East line of the proration unit, the Director assigned a daily oil allowable of 35 barrels per day in accordance with Decretory Paragraph (5) of Order No. R-8917-A.

(9) Both sides presented testimony that was in substantial agreement as to the geometry, the geology field and the producing reservoir characteristics, of the reservoir differing in their interpretations of the rate of north dip and to a minor degree, the trace of the major trapping fault at the west boundary.

(10) In unorthodox location cases, the Commission has generally endorsed a penalty formula using ratios based upon the proportional distance a well crowds the proration unit boundary and nearest producing well as in Division Order R-8917-A, but in cases where there is substantial evidence and agreement as to productive acreage and recoverable reserves, the Commission is obligated under the Oil and Gas Act to set allowables which allow operators to recover the oil and gas underlying their respective tracts while preventing waste.

(11) The geological witness for Stevens presented testimony that the pool oil-water contact was estimated at subsea elevation of -6055 feet which was not refuted by subsequent witnesses.

(12) The same witness established the major fault trace based upon a Formation Micro Scanner survey run in the Deemar Federal No. 1.

(13) Santa Fe Exploration's geophysicist presented a seismic interpretation showing a rate of north dip steeper than that presented by the Stevens' witness who relied upon a geological interpretation of the Micro Scanner survey. That survey only shows the rate of dip within the No. 1 Deemar wellbore.

(14) Based upon the oil-water contact and the major fault trace established by Stevens' geologist, the rate of north dip established by the Santa Fe geophysicist, and other geologic and engineering criteria which was in substantial agreement, the relative percentages of oil productive rock volume calculated under each tract are as follows:

- (a) Within the total field there is approximately 10,714 acre-feet of Devonian oil pay or oil saturated rock volume.
- (b) Underlying the E/2 W/2 of Section 9, there is approximately 2,246 acre-feet of Devonian oil pay or 21% of the pool total.

- (c) Underlying the SE/4 of Section 9 there is approximately 5,688 acre-feet of Devonian oil pay or 53% of the pool total.
- (d) Underlying the NE/4 of Section 9 there is approximately 2,780 acre-feet of Devonian oil pay or 26% of the pool total.

(15) The North King Camp-Devonian Pool has an active water drive and the relative percentages of oil pay or oil-saturated rock volume under each tract are the same approximate percentages as the recoverable oil reserves under each tract, provided wells are positioned to permit the recovery.

(16) Productive surface area is calculated to be approximately 177 acres and expert engineering testimony has established that one well located at the highest part of the North King Camp structure could effectively and efficiently drain all of the recoverable oil reserves under this 177 acre pool.

(17) The Stevens' Deemar Federal No. 1 well occupies the highest portion of the structure and could effectively drain the entire pool. Only well locations that are unorthodox, such as the Stevens' well, could drain the upper portion (attic) of this oil reservoir and prevent the waste of unrecoverable oil reserves.

(18) Producing the Stevens' well at top allowable rates would eliminate waste but would violate the correlative rights of interest owners in the SE/4 of Section 9 unless all interest owners in Section 9 agreed to operate the pool and share oil and gas production and costs in some equitable fashion.

(19) The Santa Fe Exploration No. 1 Holmstrom Federal, the only other producing well in the pool, is located 55 feet lower structurally than the No. 1 Deemar.

(20) Testimony did establish that Santa Fe Exploration is producing their No. 1 Holmstrom well at a rate of 200 barrels of oil per day plus 10 barrels of water so as to minimize the effects of coning water.

(21) In the absence of unitized operations, in order to prevent waste and protect the correlative rights of all interest owners in a pool, allowables must be established which reflect the relative percentages established in Finding (14), encourage voluntary unitization and discourage the

drilling of additional wells which are not needed and would constitute waste.

(22) Penalized allowables for the Stevens well that are tied to the producing rates of the No. 1 Holmstrom would be indefinite and violate Stevens' correlative rights. Allowables which would encourage drilling additional wells would cause waste.

(23) In order to protect correlative rights, total pool allowable should be the current pool production rate which includes the penalized rate of 35 barrels of oil per day for the Stevens' well, and the producing rate of 200 barrels of oil per day from the Santa Fe well. Said pool allowable of 235 barrels of oil per day should be allocated according to the percentages established in Finding (14) which are:

- (a) The E/2 W/2 of Section 9 should have an allowable of 49 ($.21 \times 235$) barrels of oil per day.
- (b) The SE/4 of Section 9 should have an allowable of 125 ($.53 \times 235$) barrels of oil per day.
- (c) the NE/4 of Section 9 should have an allowable of 61 ($.26 \times 235$) barrels of oil per day if it is drilled.

(24) The allowables established in Finding (23) should become effective December 1, 1989 and should remain in effect unless voluntary agreement is reached by all interest parties in the field at which time the pool allowable should be increased to 1,030 barrels of oil per day which is the top allowable rate for the two producing wells currently in the pool and which new pool allowable could be produced in any proportion between the two existing wells.

(25) The tract allowables established in Finding (23) should protect correlative rights by honoring the percentages established in Finding (14) and prevent waste by discouraging the drilling of additional wells which are not necessary to effectively and efficiently drain the subject pool.

(26) Should all interest owners in this pool reach voluntary agreement subsequent to the entry of this order, operators of the pool wells should file with the Director of the Division application for approval of the unit agreement and, upon approval, this order should thereafter be of no further effect and the new pool allowable should take effect on the first day of the month following approval of said unit agreement by the Director.

IT IS THEREFORE ORDERED THAT:

(1) Effective December 1, 1989, the pool allowable for the North King Camp-Devonian field shall be 235 barrels of oil per day which shall be shared by the below listed proration units in the amounts shown:

(a) The E/2 W/2 of Section 9, Township 14 South, Range 29 East, shall have a top allowable of 49 barrels of oil per day.

(b) The SE/4 of Section 9, Township 14 South, Range 29 East, shall have a top allowable of 125 barrels of oil per day.

(c) The NE/4 of Section 9, Township 14 South, Range 29 East, shall have a top allowable of 61 barrels of oil per day if a well is drilled and completed in the Devonian.

(2) Said allowable shall remain in effect unless all interest owners in the pool reach voluntary agreement to provide for unitized operation of its pool.

(3) Should all interest owners reach voluntary agreement subsequent to entry of this order, this order shall thereafter be of no further effect.

(4) The operators of the pool wells shall file with the Director of the Division an application for approval of the unit agreement and this order shall then terminate on the first day of the month following approval of said unit. A new pool allowable of 1,030 barrels of oil per day shall then take effect; said new pool allowable can be produced in any proportion between existing pool wells.

(5) Jurisdiction of this case is retained for the entry of such further orders as the Commission may deem necessary.

Page -7-
Cases Nos. 9617 and 9670 (De Novo)
Order No. R-9035

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

WILLIAM R. HUMPHRIES, Member

William W. Weiss

WILLIAM W. WEISS, Member

William J. Lemay

WILLIAM J. LEMAY, Chairman
and Secretary

S E A L

dr/