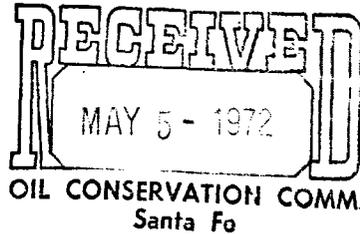


Edward P. Chase
Attorney and Counselor at Law



Bank of New Mexico Building
Albuquerque, New Mexico 87101
Phone 242-8936
May 4, 1972

Mr. A. L. Porter, Jr.
Secretary-Director
New Mexico Oil Conservation Commission
P.O. Box 2088
Santa Fe, New Mexico 87501

Re: Cases No. 4693 and 4694
Consolidated.

Dear Mr. Porter:

Pursuant to the Commission's ruling at the hearing on the above case, I am enclosing the following documents:

1. Motion To Dismiss
2. Motion For Continuance
3. Statement of Position of Michael P. Grace, II, and Corinne Grace
4. Various Exhibits

Copies of the above have been forwarded to all parties entering an appearance in the above case. We request thirty (30) minutes oral arguments to present our position concerning the above pleadings. If the Commission will allow the oral argument, please advise me of the date and time for argument and we will notify the other parties.

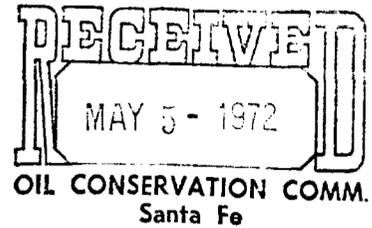
Very truly yours,


Edward P. Chase

EPC/s1
Enclosures

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION ON ITS OWN MOTION TO
CONSIDER INSTITUTING GAS PRORATIONING
IN THE SOUTH CARLSBAD-MORROW AND
SOUTH CARLSBAD-STRAWN GAS POOLS,
EDDY COUNTY, NEW MEXICO



Cases No. 4693 and 4694
Consolidated

MOTION TO DISMISS

Come now Michael P. Grace II and Corinne Grace by and through their attorneys, and move the Commission to dismiss the above case.

In support of this motion the moveant's state:

1. The commission does not have jurisdiction to institute gas prorationing in the South Carlsbad-Morrow and South Carlsbad-Strawn gas Pools as the evidence presented at the hearing clearly establishes that production of gas from the pools does not exceed the reasonable market demand for such gas and that production will not exceed the reasonable market demand for such gas in the foreseeable future.

2. The Commission does not have jurisdiction to institute gas prorationing in the South Carlsbad-Morrow and South Carlsbad-Strawn Gas Pools as the evidence presented at the hearing clearly establishes that production of gas from the pools in not in excess of the capacity of gas transportation facilities for such gas and that production will not exceed the capacity of gas transportation facilities for such gas in the foreseeable future.

3. The Commission's jurisdiction to institute prorationing is very clearly defined in Section 65-3-13 (c), NMSA (1953 Comp.) which provides:

and deprive the moveant's of their property without due process of law. source of supply will violate the moveant's correlative rights, cause waste, including moveant's wells with wells producing from another common South Carlsbad-Strawn Gas Pool and the institution of gas prorationing source of supply as the other wells in the South Carlsbad-Morrow and 4. The moveant's wells are not producing from the same common

Strawn Gas Pools at this time. to institute gas prorationing in South Carlsbad-Morrow and South Carlsbad- future, the moveant's submit that the Commission does not have jurisdiction able to take all gas produced from the Grace wells in the foreseeable produced from the Grace wells and that they will be ready, willing and Transwestern is that they are ready, willing and able to take all gas is the only purchaser from the Grace wells and the testimony from the gas transportation facilities taking gas from the pool. As Transwestern demand from the pool or the production is in excess of the capacity of that production from the specific pool involved exceeds reasonable market jurisdiction to instituting gas prorationing unless the evidence establishes We submit that, by statutory definition, the Commission does not have "The production in this State of natural gas from any gas well or wells, or from any gas pool, in excess of the reasonable market demand from such source for natural gas of the type produced or in excess of the capacity of gas transportation facilities for such type of natural gas. . . ."

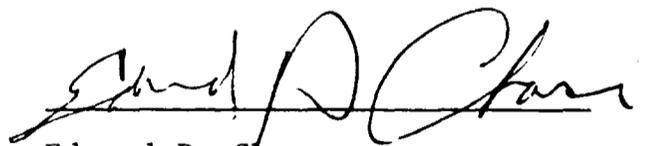
specifically defined under Section 65-3-3 E. NMSA (1953 Comp.) as follows: Waste, insofar as the term is used in connection with prorationing, is

(Emphases added)
upon a reasonable bases and recognizing correlative rights. . . .
production from gas wells producing from any pool in this State is fixed by the Commission in an amount less than that which the pool could produce if no restrictions were imposed the Commission shall allocate the allowable amount the gas wells in the pool delivering to a gas transportation facility

Further, moveant's should be permitted to show by additional newly discovered evidence that irreparable damage will result to moveant's wells if same are prorated or shut down. The essence of said evidence is called to the Commission's attention by Exhibits A and B, attached hereto and made a part hereof.

5. The moveant's wells were included within the horizontal and vertical limits of the South Carlsbad-Morrow and South Carlsbad-Strawn Gas Pools without actual notice to the moveant's and an opportunity to be heard even though the moveant's interest in the subject matter of the hearing extending the limits of the pool was known to the Commission and the other operators in the pool. Constructive notice by publication is insufficient for the reason above stated and for the further reason that the same is ambiguous and does not designate what wells are the subject matter of the hearing or the area covered. (See Publisher's Affidavit attached hereto and made a part hereof). If the Commission proceeds with above case without permitting the moveant's to present evidence that their wells are producing from a separate common source of supply, the moveants will be deprived of their property without due process of law and denied equal protection of the laws.

6. The evidence presented at the hearing concerning the various prorating formulas proposed is so conflicting and incomplete that the Commission can not reasonably make the determinations required by Continental Oil Company vs. Oil Conservation Commission, 70 N.M. 310, and the Commission under the applicable law must dismiss the above case.


Edward P. Chase
1122 Bank of New Mexico Building
Albuquerque, New Mexico 87101

Of Counsel:
Grantham, Spann, Sanchez & Rager
Charles C. Spann
914 Bank of New Mexico Building
Albuquerque, New Mexico 87101

Hunker, Fedric & Higginbotham, P.A.
George H. Hunker, Jr.
P.O. Box 10
Roswell, New Mexico 88201

Attorneys for Michael P. Grace, II,
Corinne Grace and The City of
Carlsbad.

TELEGRAM

215P CDT MAY 5 72 KA 045 NSA 058

NS LFA 004 SJ PDF LAFAYETTE LA 4KC NS LFA 004 SJ NL PDF (DUPE
AND CORRECTED COPY)

LAFAYETTE LA 4

EDWARD T CHASE

1122 BANK OF NEW MEXICO BLDG ALBUQUERQUE NMEX
THE CORINNE GRACE NO . 1 CITY OF CARLSBAD IN THE SOUTH CARLSBAD
FIELD , EDDY COUNTY , NEW MEXICO IS PRODUCING 1,000 BARRELS OF
WATER PER DAY A D 9.5 MMCF OF GAS . WHEN ORIGINALLY COMPLETED
THE WELL MADE MUCH MORE WATER WITH ALMOST NO GAS . AFTER BEING
PLAIED ON THE SALES LINE , THE WELL VERY SLOWLY IMPROVED IN
GAS DELIVERABILITY WITH A MARKED REDUCTION IN WATER PRODUCTION .
ANY ATTEMPTS TO CURTAIL PRODUCTION RATES RESULT IN AN INCREASE
I WATER AND A CORRESPONDING DECREASE IN TUBING FLOWING PRESSURE
AND GAS RATE .

CURTAILMENT OF PRODUCTION TO ANY AMOUMTS LESS THAN THE WELL

8F-1201 (RS-69)

Exhibit "A" Page 1

Telegram

CAN FLOW AGAINST SALES LINE BACK PRESSURE CAUSES INCREASED
WATER PRODUCTION AND DECREASING GAS FLOW RATES AT THESE SAME
LESSE

RATES . ANY CURTAILMENT OF PRODUCTION FOR MORE THAN A FEW HOURS
CAN CAUSE THIS WELL TO CEASE FLOWING WITH POSSIBLE WATERING
OUT AND COMPLETE LOSS OF PRODUCTIVITY

RICHARD STEI HORST JR PETROLEUM ENGINEER .

1 1,000 9.5 .

44-242-393P

8F-1201 (RS-69)

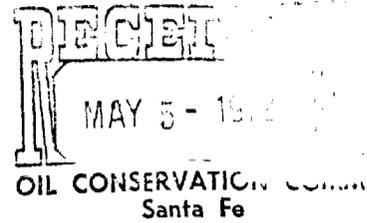
Exhibit "A" Page 2



TETRA TECH, INC.
630 NORTH ROSMEAD BLVD
PASADENA, CALIFORNIA 91107
TELEPHONE (213) 449-6400

May 2, 1972

Michael P. Grace
P.O. Box 1418
Carlsbad, New Mexico



Dear Sir:

At Tetra-Tech our geologists and engineers have reviewed data pertinent to the production of gas in the South Carlsbad area and have read with care the transcript of the hearings before the New Mexico Oil Conservation Commission on April 19-20/72.

We have in our possession maps showing the structural geology of the area on two horizons (Morrow and Strawn) prepared by various operators. We assume these operators to have been represented by competent geologist. In summary four different maps of each horizon are available. The maps differ in some details but all of them indicate a minimum trend (a synclinal swale) separating the greater part of the Grace properties from other producing areas of the field. Two of the available interpretations emphasize the structural separation by indicating a fault within the syncline and trending approximately north-south.

Our Tetra-Tech structural interpretation will not be completed for several days but we presently assume that features identified by so many competent professionals are valid and indicate a separation of the Morrow reservoir into two productive areas. We are presently evaluating the question of whether these two separate areas communicate as a reservoir or not.

In assessing the question of potential communication (horizontally or vertically) within the Morrow formation of the South Carlsbad area we take note of statements by employees of the Commission as related in the transcript to the effect that:

- (1) Unexplained differentials exist between the various wells.
- (2) Unexplained anomalies of potential productivity are recorded.
- (3) Anomalous or unexplained pressure draw-downs are noted.

These observations may indicate lack of communication between the areas of Morrow production.

In reviewing the transcript we are disturbed to find that an attempt has been made to evaluate production from this area without:

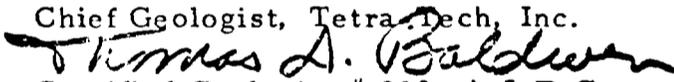
- (1) Waiting for sufficient production history to afford data for evaluation (see testimony).

Exhibit "B" Page 1

- (2) Without preparation of an isobaric map to relate in geologic form the pressure anomalies referred to in the testimony.
- (3) Without preparation of an Iso-productivity (or Iso-deliverability) map to relate in proper form the productive anomalies referred to.
- (4) Without a report of studies (if any have been performed) involving the nature of reservoir fluids in the area, for example:
 - (a) Testimony suggested danger of the loss of potential liquids by "Excess" gas production but no liquids are adduced to be present other than warm salt water.
 - (b) A record of variable water salinity which might reflect non-communication between the two areas by Iso-salinity anomalies has not been prepared.
 - (c) Laboratory analyses of the gases produced as related to the geographic and geologic position of the various wells were not presented.

In the absence of so much data and analysis normal to proper reservoir study we offer the following tentative conclusions:

- (1) It is essential that maps and exhibits of the various types described be prepared before the South Carlsbad producing areas can be equitably pro-rated. Tetra-Tech is presently engaged in this study and will hope to complete the work within two weeks.
- (2) The data as presented appear to indicate that two structurally separated, non-communicating Morrow reservoirs exist in the area.
- (3) No data has been presented to indicate that the areas of Morrow production do communicate (other than the reiterated statement that the Commission has, in the past, considered the Morrow to be one pool.
- (4) Shut-in or considerable proration of production from such wells in the area as are presently making substantial amounts of water. (as well as gas) would inevitably result in a high head of liquid being brought against and above the producing interval. This unfortunate result might cause irreversible damage to the individual well or, potentially, to the reservoir.

Thomas A. Baldwin
Chief Geologist, Tetra-Tech, Inc.

Certified Geologist # 310, A. I. P. G.
Registered Geologist # 175, California
Registered Petroleum Engineer # 789, Ca.
Active Member A. A. P. G.
Active Member S. E. G.
Fellow G. S. A.

State of New Mexico
County of Eddy

AFFIDAVIT

The undersigned being publisher of the Artesia Daily Press
being first duly sworn, deposes and says that the attached
photocopy of publication received from the New Mexico Oil
& Gas Commission was published in the above stated newspaper
on the 1st day of September 1971.

Affiant further saith not.

James K. Green
Publisher

Subscribed and sworn to before me this 5th May, 1972.

Jeanita L. Jones
Notary Public

My commission expires Sept 10, 1975

LEGAL NOTICE

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
OIL CONSERVATION
COMMISSION

SANTA FE - NEW MEXICO

The State of New Mexico by its Oil Conservation Commission hereby gives notice pursuant to law and the Rules and Regulations of said Commission promulgated thereunder of the following public hearing to be held at 9 o'clock a.m. on SEPTEMBER 15, 1971, at the OIL CONSERVATION COMMISSION CONFERENCE ROOM, STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO, before Daniel S. Nutter, Examiner, or A. L. Porter, Jr., Alternate Examiner, both duly appointed for said hearing as provided by law.

STATE OF NEW MEXICO TO:

All named parties and persons having any right, title, interest or claim in the following cases and notice to the public.

(NOTE: All land descriptions herein refer to the New Mexico Principal Meridian, whether or not so stated.)

CASE 4588:

Application of V. H. Westbrook for a pressure maintenance project, Eddy County, New Mexico.

Applicant, in the above-styled cause, seeks authority to institute a pressure maintenance project by the injection of water into the Delaware formation through his Guy A Reed Well No. 2 located in Unit L of Section 24, Township 24 South, Range 28 East, Malaga-Delaware Pool, Eddy County, New Mexico.

CASE 4589:

Application of Anadarko Production Company for a unit agreement, Eddy County, New Mexico.

Applicant, in the above-styled cause, seeks approval of the Burnham Grayburg San Andres Unit Area comprising 480 acres, more or less, of state lands in Section 2, Township 17 South, Range 30 East, Square Lake Field, Eddy County, New Mexico.

CASE 4596:

In the matter of the application of the Oil Conservation Commission of New Mexico upon its own motion for an order for the creation of the following pools:

South Hackberry-Strawn Pool in Township 20 South, Range 31 East, Eddy County;

Maroon Cliffs-Morrow Gas Pool in Township 20 South, Range 31 East, Eddy County;

McDonald-Pennsylvanian Pool in Township 14 South, Range 36 East, Lea County;

and for the abolishment of the Northwest Vacuum-Abo Pool in Lea County and the extension of the North Vacuum-Abo Pool to include the lands contained in said Northwest Vacuum-Abo Pool;

and for the extension of the following pools in Lea County:

Blinebry Oil Pool
Flying "M"-Pennsylvanian Pool

Flying "M"-San Andres Pool

Langlie-Mattix Pool

East Shoobar-Devonian Pool

North Vacuum-Morrow Gas Pool

North Vacuum-Lower Wolfcamp Pool

Northwest Vacuum-Wolfcamp Pool

Vada-Pennsylvanian Pool

and for the extension of the following pools in Eddy County:

South Carlsbad-Morrow Gas Pool

South Carlsbad-Strawn Gas Pool

Eagle Creek-San Andres Pool

Grayburg-Jackson Pool

Power Grayburg-San Andres Pool

and for the extension of the Double L-Queen Associated Pool in Chaves County.

CASE 4597:

Application of Morris R. Antweil for lease commingling and off-lease storage, Eddy County, New Mexico.

Applicant, in the above-styled cause, seeks authority to commingle condensate produced from his Little Jewel Well No. 1 and Allen Well No. 1 located in Units F and J, respectively, of Section 31, Township 22 South, Range 27 East, and from his Joell Well No. 1 located in Unit C of Section 6, Township 23 South, Range 27 East, South Carlsbad-Strawn Gas Pool, Eddy County, New Mexico, after separation and measurement of the liquids from each well.

GIVEN under the seal of the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 27th day of August, 1971.

STATE OF
NEW MEXICO
OIL CONSERVATION
COMMISSION
A. L. PORTER, Jr.,
Secretary-Director

(SEAL)

Published in the Artesia Daily Press, Artesia, N. M., Sept. 1, 1971, Legal No. 4922.

(c) Create a new pool in Lea County, New Mexico, classified as an oil pool for Pennsylvanian production and designated as the McDonald-Pennsylvanian Pool. The discovery well is the J. M. Huber Corporation Griffin No. 1 located in Unit A of Section 4, Township 14 South, Range 36 East, NMPM. Said pool would comprise:

TOWNSHIP 14 SOUTH, RANGE 36 EAST, NMPM
SECTION 4: NE/4

(d) Abolish the Northwest Vacuum-Abo Pool in Lea County, New Mexico, described as:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
SECTION 2: SW/4
SECTION 3: NE/4 SE/4

(e) Extend the North Vacuum-Abo Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
SECTION 2: SW/4
SECTION 3: SE/4

(f) Extend the Blinebry Oil Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 21 SOUTH, RANGE 36 EAST, NMPM
SECTION 36: NE/4

TOWNSHIP 22 SOUTH, RANGE 37 EAST, NMPM
SECTION 8: NW/4

(g) Extend the South Carlsbad-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 22 SOUTH RANGE 26 EAST, NMPM
SECTION 25: S/2

TOWNSHIP 22 SOUTH, RANGE 27 EAST, NMPM
SECTION 30: S/2
SECTION 31: W/2

(h) Extend the South Carlsbad-Strawn Gas Pool in Eddy County, New Mexico, to include therein:

*Sec. 2 added
at the hearing*

Q Are your recommendations prepared in the form of an Exhibit?

A They are prepared in the form of Exhibit 1, Paragraphs "A" through "T".

Q All right. Would you refer to Exhibit 1 and Paragraphs "A" through "T" and point out any differences between it and the docket that has been distributed, any corrections that have been made?

A We have several additions and, as recommended, one Paragraph "H" be dismissed.

Q Let's go through them one at a time.

A All right, sir. The first addition is Paragraph "E" and the addition is the NE/4 of Section 10 in Township 17 South, Range 34 East. That is an extension to the North Vacuum-Abo Pool in Lea County.

In Paragraph "G", South Carlsbad-Morrow Pool, addition in Township 22 South, Range 27 East, N/2 of Section 30 and Township 22 South Range 26 East, S/2 of Section 2.

In Paragraph "H" it is recommended that Paragraph "H" be dismissed pending further study.

Paragraph "I" in addition to the extension shown to the Double L-Queen Associated Pool, in Township 14

From transcript of Sept. 15, 1971

State of New Mexico
County of Eddy

AFFIDAVIT

The undersigned being publisher of the Artesia Daily Press
being first duly sworn, deposes and say that the attached
photocopy of publication received from the New Mexico Oil
& Gas Commission was published in the above stated newspaper
on the 29th day of February 1972.
Affiant further saith not.

James H. Green
Publisher

Subscribed and sworn to before me this 5th May, 1972

Quanita L. Green
Notary Public

My commission expires Sept. 10, 1975

NOTICE OF PUBLICATION
STATE OF NEW MEXICO
OIL CONSERVATION
COMMISSION

SANTA FE - NEW MEXICO

The State of New Mexico by its Oil Conservation Commission hereby gives notice pursuant to law and the Rules and Regulations of said Commission promulgated thereunder of the following public hearing to be held at 9 o'clock a.m. on MARCH 15, 1972, at the OIL CONSERVATION COMMISSION CONFERENCE ROOM, STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO, before Daniel S. Nutter, Examiner, or Elvis A. Utz, Alternate Examiner, both duly appointed for said hearing as provided by law.

STATE OF NEW MEXICO TO:

All named parties and persons having any right, title, interest or claim in the following cases and notice to the public.

(NOTE: All land descriptions herein refer to the New Mexico Principal Meridian, whether or not so stated.)

CASE 4675:

In the matter of the application of the Oil Conservation Commission of New Mexico upon its own motion for the creation of the following pools:

Eagle Creek-Atoka Gas Pool in Township 17 South, Range 25 East, Eddy County;

Golden Lane-Morrow Gas Pool in Township 21 South, Range 29 East, Eddy County;

Hare-Glorieta Pool in Township 21 South, Range 37 East, Lea County;

Osudo-Devonian Gas Pool in Township 20 South, Range 36 East, Lea County;

Washington Ranch-Morrow Gas Pool in Township 25 South, Range 24 East, Eddy County; and for the contraction of the Eumont Gas Pool in Lea County;

and for the contraction and extension of the Langlie-Mattix Pool in Lea County;

and for the extension of the following pools in Lea County:

North Bagley-Pennsylvanian Pool

South Corbin-Morrow Gas Pool

Lea-Bone Springs Pool

North Vacuum-Abo Pool

Vada-Pennsylvania Pool

and for the extension of the following pools in Eddy County:

South Carlshad-Morrow Gas Pool

South Carlshad-Strawn Gas Pool

and for the extension of the South Prairie-San Andres Pool in Roosevelt County.

CASE 4680:

Application of Midwest Oil Corporation for an unorthodox well

Application of Midwest Oil Corporation for an unorthodox well location and amendment of Order No. R-4254, Eddy County, New Mexico.

Applicant, in the above-styled cause, seeks approval of an unorthodox gas well location for a well to be drilled 1980 feet from the South line and 1900 feet from the West line of Section 6, Township 18 South, Range 29 East, undesignated Morrow Gas Pool, Eddy County, New Mexico, with the non-standard 2.9-acre proration unit comprising the S/2 of said Section 6 established by Order No. R-4254 to be dedicated to the well.

GIVEN under the seal of the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, on this 25th day of February, 1972.

(SEAL)

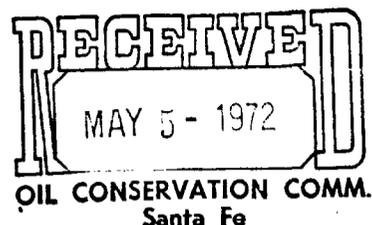
STATE OF NEW MEXICO
OIL CONSERVATION

COMMISSION
A. L. PORTER, Jr.,
Secretary-Director

Published in the Artesia Daily Press, Artesia, N. M., Feb. 29, 1972. Legal No. 5081.

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION ON ITS OWN MOTION TO
CONSIDER INSTITUTING GAS PRORATIONING
IN THE SOUTH CARLSBAD-MORROW AND
SOUTH CARLSBAD-STRAWN GAS POOLS,
EDDY COUNTY, NEW MEXICO.



Cases No. 4693 and 4694

Consolidated

MOTION FOR CONTINUANCE

Come now Michael P. Grace II and Corinne Grace, by and through their attorneys, and move the Commission to continue the above case for a period of ninety (90) days to permit the moveant's sufficient time to present evidence to establish that the moveant's wells are not producing from the same common source of supply as the other wells in the South Carlsbad-Morrow and South Carlsbad-Strawn Gas Pools and to permit the moveant's, the Commission and all other interested parties sufficient time to prepare testimony concerning a proration formula which will most equitably protect correlative rights in the South Carlsbad-Morrow and South Carlsbad-Strawn Gas Pools.

In support of this motion the moveant's state:

1. The moveant's were not permitted an opportunity at the hearing to establish that their wells were producing from a separate common source of supply other than the South Carlsbad-Morrow and South Carlsbad-Strawn Gas Pools. The refusal to hear such testimony was prejudicial error by the Commission and if the moveant's are not permitted an opportunity to present evidence that their wells are producing from a separate common source of supply the moveant's will be deprived of their property without due process of law and denied equal protection of the laws as the moveant's did not have actual knowledge of the hearing held by the Commission which included their

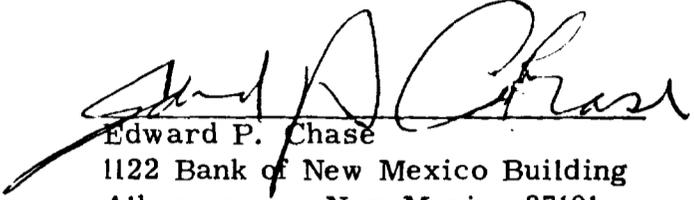
wells within the South Carsbad-Morrow and South Carlsbad-Strawn Gas Pools and did not have an opportunity to be heard concerning the matter. The moveant's submit that the order extending the limits of the South Carlsbad-Morrow and South Carlsbad-Strawn Gas Pool to include the moveant's wells is void as the moveant's did not have actual notice of the hearing and the moveant's interest in the subject matter was known to the Commission and to the other operators in the pool. If the Commission proceeds to institute prorationing in the South Carlsbad-Morrow and South Carlsbad-Strawn Gas Pools without giving the moveant's an opportunity to be heard on the question of whether or not the moveant's wells are producing from the same common source of supply as the other wells within the South Carlsbad-Morrow and South Carlsbad- Strawn Gas Pools the moveant's will be deprived of their property without due process of law and denied equal protection of the laws.

2. The evidence presented at the hearing establishes that there is not sufficient information available at this time to show affirmatively whether or not the moveant's wells are producing from the same common source of supply as the other wells within the South Carlsbad-Morrow and South Carlsbad -Strawn Gas Pools. The hearing should therefore be continued until such time as evidence is available to permit the Commission to make a reasonable determination as to whether or not the moveant's wells should be included in the South Carlsbad-Morrow and South Carlsbad-Strawn Gas Pools. If it can not be affirmatively established that the moveant's wells are producing from the same common source of supply as the other wells within the South Carlsbad-Morrow and South Carlsbad-Strawn Gas Pools the case should be dismissed or continued until such time as such evidence is available in order to protect the moveant's correlative rights, prevent waste and afford the moveant's equal protection of the laws.

3. The evidence presented at the hearing concerning the various proposed proration fomulas is so conflicting that the Commission cannot at this time make a reasonable determination concerning which formula

will most adequately protect correlative rights and present waste. The operators and other interested parties should therefore be given additional time to conduct reservoir studies and make reservoir engineering calculations and determinations and present testimony concerning the same before the Commission can adopt a formula which will allocate the allowable production upon a reasonable bases and recognizing correlative rights:

Of Counsel:
Hunker, Fedric & Higginbotham, P. A.
P. O. Box 10
Roswell, New Mexico 88201



Edward P. Chase
1122 Bank of New Mexico Building
Albuquerque, New Mexico 87101

Grantham, Spann, Sanchez & Rager
914 Bank of New Mexico Building
Albuquerque, New Mexico 87101

Attorneys for Michael P. Grace II,
Corinne Grace and The City of
Carlsbad.

RECEIVED
MAY 5 - 1972
OIL CONSERVATION COMM.
Santa Fe

Telegram

1040A CDT MAY 5 72 KA 045 NSA 058

2425936

NS LFA 004 SJ PDF LAFAYETTE LA 4KC NS LFA 004 SJ NL PDF (DUPE
AND CORRECTED COPY)

LAFAYETTE LA 4

EDWARD T CHASE

with Gold seal

FILE	NO. 212
DATE	MAY 5 1972
BY	<i>[Signature]</i>
REMARKS	<i>per oil reg. unit</i>

1122 BANK OF NEW MEXICO BLDG ALBUQUERQUE NMEX
THE CORINNE GRACE NO . 1 CITY OF CARLSBAD IN THE SOUTH CARLSBAD
FIELD , EDDY COUNTY , NEW MEXICO IS PRODUCING 1,000 BARRELS OF
WATER PER DAY A D 9.5 MMCF OF GAS . WHEN ORIGINALLY COMPLETED
THE WELL MADE MUCH MORE WATER WITH ALMOST NO GAS . AFTER BEING
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GAS DELIVERABILITY WITH A MARKED REDUCTION IN WATER PRODUCTION .
ANY ATTEMPTS TO CURTAIL PRODUCTION RATES RESULT IN AN INCREASE
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AND GAS RATE .

CURTAILMENT OF PRODUCTION TO ANY AMOU TS LESS THAN THE WELL

WESTERN UNION

Telegram

CAN FLOW AGAINST SALES LINE BACK PRESSURE CAUSES INCREASED
WATER PRODUCTION AND DECREASING GAS FLOW RATES AT THESE SAME
LESSE

RATES . ANY CURTAILMENT OF PRODUCTION FOR MORE THAN A FEW HOURS
CAN CAUSE THIS WELL TO CEASE FLOWING WITH POSSIBLE WATERING
OUT AND COMPLETE LOSS OF PRODUCTIVITY

RICHARD STEINHORST JR PETROLEUM ENGINEER .

1 1,000 9.5 .



TETRA TECH, INC.
830 NORTH BRENDA ROAD
PASADENA, CALIFORNIA 91107
TELEPHONE (213) 449-6400

May 2, 1972

Michael P. Grace
P.O. Box 1418
Carlsbad, New Mexico

Dear Sir:

At Tetra-Tech our geologists and engineers have reviewed data pertinent to the production of gas in the South Carlsbad area and have read with care the transcript of the hearings before the New Mexico Oil Conservation Commission on April 19-20/72.

We have in our possession maps showing the structural geology of the area on two horizons (Morrow and Strawn) prepared by various operators. We assume these operators to have been represented by competent geologist. In summary four different maps of each horizon are available. The maps differ in some details but all of them indicate a minimum trend (a synclinal swale) separating the greater part of the Grace properties from other producing areas of the field. Two of the available interpretations emphasize the structural separation by indicating a fault within the syncline and trending approximately north-south.

Our Tetra-Tech structural interpretation will not be completed for several days but we presently assume that features identified by so many competent professionals are valid and indicate a separation of the Morrow reservoir into two productive areas. We are presently evaluating the question of whether these two separate areas communicate as a reservoir or not.

In assessing the question of potential communication (horizontally or vertically) within the Morrow formation of the South Carlsbad area we take note of statements by employees of the Commission as related in the transcript to the effect that:

- (1) Unexplained differentials exist between the various wells.
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- (3) Anomalous or unexplained pressure draw-downs are noted.

These observations may indicate lack of communication between the areas of Morrow production.

In reviewing the transcript we are disturbed to find that an attempt has been made to evaluate production from this area without:

- (1) Waiting for sufficient production history to afford data for evaluation (see testimony).

Exhibit "B" Page 1

- (2) Without preparation of an isobaric map to relate in geologic form the pressure anomalies referred to in the testimony.
- (3) Without preparation of an Iso-productivity (or Iso-deliverability) map to relate in proper form the productive anomalies referred to.
- (4) Without a report of studies (if any have been performed) involving the nature of reservoir fluids in the area, for example:
 - (a) Testimony suggested danger of the loss of potential liquids by "Excess" gas production but no liquids are adduced to be present other than warm salt water.
 - (b) A record of variable water salinity which might reflect non-communication between the two areas by Iso-salinity anomalies has not been prepared.
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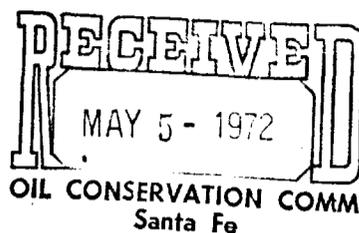
In the absence of so much data and analysis normal to proper reservoir study we offer the following tentative conclusions:

- (1) It is essential that maps and exhibits of the various types described be prepared before the South Carlsbad producing areas can be equitably pro-rated. Tetra-Tech is presently engaged in this study and will hope to complete the work within two weeks.
- (2) The data as presented appear to indicate that two structurally separated, non-communicating Morrow reservoirs exist in the area.
- (3) No data has been presented to indicate that the areas of Morrow production do communicate (other than the reiterated statement that the Commission has, in the past, considered the Morrow to be one pool.
- (4) Shut-in or considerable proration of production from such wells in the area as are presently making substantial amounts of water (as well as gas) would inevitably result in a high head of liquid being brought against and above the producing interval. This unfortunate result might cause irreversible damage to the individual well or, potentially, to the reservoir.

Thomas A. Baldwin
Chief Geologist, Tetra-Tech, Inc.
Thomas A. Baldwin
Certified Geologist # 310, A. I. P. G.
Registered Geologist # 175, California
Registered Petroleum Engineer # 789, Ca.
Active Member A. A. P. G.
Active Member S. E. G.
Fellow G. S. A.

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION ON ITS OWN MOTION TO
CONSIDER INSTITUTING GAS PRORATIONING
IN THE SOUTH CARLSBAD-MORROW AND
SOUTH CARLSBAD-STRAWN GAS POOLS,
EDDY COUNTY. NEW MEXICO.



Cases No. 4693 and 4694
Consolidated

STATEMENT OF POSITION
of
MICHAEL P. GRACE II AND CORINNE GRACE

Michael P. Grace II and Corinne Grace make the following statement
of position to the Commission:

1. In view of the evidence presented at the hearing that the purchasers are ready, willing and able to take all the gas that is being produced from the South Carlsbad-Morrow and South Carlsbad-Strawn Gas Pools and all of the gas that the wells in the pool will be capable to producing in the foreseeable future, it is our position that the Commission does not, at this time, have jurisdiction to institute gas prorationing under the applicable New Mexico statutes.

2. Even if the Commission had jurisdiction to institute gas prorationing in the South Carlsbad-Morrow and South Strawn Gas Pools at this time the Grace wells are producing from a separate common source of supply other than the South Carlsbad-Morrow and South Carlsbad-Strawn Gas Pools and the Commission does not have jurisdiction to institute prorationing in the pool the Grace wells are producing from as the purchasers have testified that they are ready, willing and able to take all of the gas that the Grace wells are capable of producing at this time and all of the gas that they will be capable of producing in the foreseeable future.

3. The order which included the Grace wells within the limits of the South Carlsbad-Morrow and South Carlsbad-Strawn Gas Pools is void as the Grace's interest in the subject matter of the hearing held in that nomenclature case was known to the Commission and the Grace's did not receive actual notice of the hearing. It is our position on this point that the Grace's were denied due process of law and equal protection of the laws when they were not given actual notice of the hearing. We submit that constructive notice probably confers jurisdiction over unknown parties in interest but that constructive notice will not confer jurisdiction over parties which the Commission knows have an interest in the subject matter of the hearing and the whereabouts of the parties is known to the Commission or can be readily ascertained.

4. It was prejudicial error for the Commission to refuse to permit testimony concerning separation of the two pools when the question was raised as to whether or not the Grace's wells were in fact producing from the same common source of supply as the other wells in the South Carlsbad-Morrow and South Carlsbad-Strawn Gas Pools. The effect of this ruling was to deny the Grace's equal protection of the laws and deprive them of their property without due process of law. The case should therefore be dismissed or a new hearing allowed in order to permit the Grace's to present testimony concerning the matter.

5. If the Commission determines that it will not permit additional testimony in this hearing concerning the vertical and horizontal limits of the South Carlsbad-Morrow and South Carlsbad-Strawn Gas Pools it is our position that the hearing should be continued for a reasonable length of time in order to allow all of the operators in the pool sufficient time to conduct studies and make recommendations to the Commission concerning the proration formula which will most adequately protect correlative rights. It is our position that there was not sufficient evidence presented at the hearing to enable the Commission

to make a reasonable determination concerning a proration formula at this time.

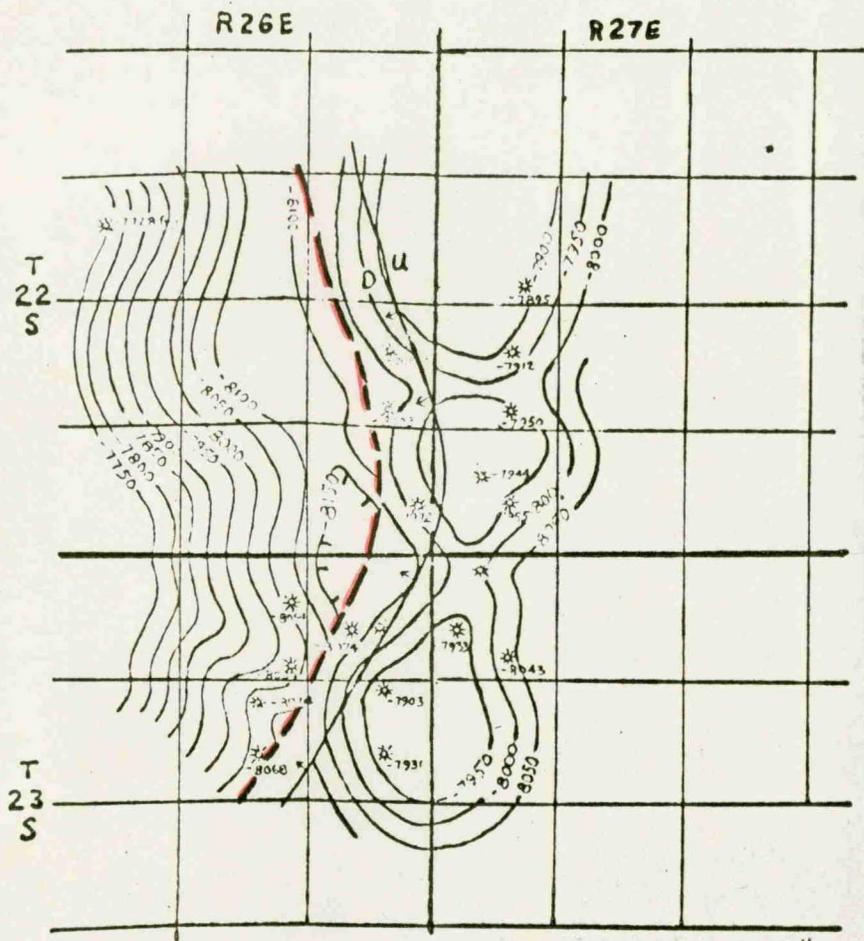
6. The testimony presented at the hearing is not sufficient to permit the Commission to make the findings required by Continental Oil Company vs. Oil Conservation Commission, 70 N.M. 310, and the Commission must therefore dismiss the above case or continue the hearing until the proper evidence has been submitted and the proper finding can be made, a portion of which is attached hereto being the Morrow Structure Map and marked Exhibit "A" and made a part hereof. Also accompanying said map is a large mosaic of aerial photographs taken by Dale Carlson, marked Exhibit "B", and handcarried to the Commission.


Edward P. Chase
1122 Bank of New Mexico Building
Albuquerque, New Mexico 87101

Of Counsel:
Grantham, Spann, Sanchez & Rager
Charles C. Spann
914 Bank of New Mexico Building
Albuquerque, New Mexico 87101

Hunker, Fedric & Higginbotham, P.A.
George H. Hunker, Jr.
P.O. Box 10
Roswell, New Mexico 88201

Attorneys for Michael P. Grace, II,
Corinne Grace and The City of Carlsbad.



— Fault line on surface
 - - - Fault on Morrow Horizon

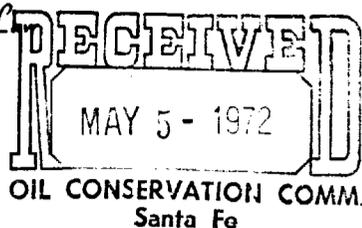
The above Morrow Structure Map marked Exhibit "A" is amended by me, same showing a fault traced from infra-red aerial photographs taken by Dale Carlson, geologist.

The fault plane dips between 70 and 80 degrees to the West. Its intersection with the Strawn Formation would lie approximately 200 to 300 feet West of the Penzoil Gulf #1 Well and its intersection with the Morrow would lie over 1,000 feet West of the Penzoil Gulf Well. Evidence supporting this conclusion may be found in pressure differentials between the Penzoil Gulf Well and the Grace #1 Gradonoco and the Humble-Grace wells, further indicating that the fault tends to form a sealing barrier between wells. This same fault also appears to be approximately indicated as a surface feature in Cities Service Exhibit No. 3.

Robert W. Becker
 Robert W. Becker
 Geologist

Exhibit "A"

Edward P. Chase
Attorney and Counselor at Law



Bank of New Mexico Building
Albuquerque, New Mexico 87101
Phone 242-8936

May 4, 1972

ADDITIONAL MEMORANDUM FOR THE BENEFIT OF THE COMMISSION
IN THE MATTER OF CASES No. 4693 and 4694 Consolidated

Not conceding in any way the jurisdiction, authority or constitutionality of the hearings held on the Morrow-Strawn Pools of the South Carlsbad Area in Hobbs recently, this memorandum of law and fact is placed before the Commission in order to facilitate prospective proper decisions.

While various plans of prorating the two pools were proposed and while the general consensus of expert opinion was that insufficient data had been compiled to arrive at any criteria whatsoever, nevertheless, one radical plan proposed by the Antweil interests subsequently received additional support from Llano Pipe Line, and qualified support from Pennzoil United, at the hearing, on the condition that it be administered by a committee of the operators as to the standards applied. Cities Service pointed out at the hearing that the most offensive factor in this proposal, the use of the size of the perforated interval, was derived from secondary oil field recovery and not application to gas-field practice. No proof was adduced as to the relationship of perforated intervals to reservoir capacity. While, as above, not endorsing the acreage factor used by the Commission after careful study in the past, it must be pointed out here that no departure therefrom can be made as radical and unorthodox as this without equal time and study.*

With a continuance of the hearing and proper study, as indicated above, and to explain and authorize the proper standards for "rateable takes," the Mobil plan, coupled with the Pennzoil proposition of a committee to facilitate the acceptance of practical standards, would probably be under the appropriate future circumstances the most adequate, equitable and acceptable. An oral argument will amplify future endorsement of such a plan when the appropriate time occurs for its usage and we hereby oppose categorically any radical or unorthodox approach to the producing zones in South Carlsbad.

As to the words "appropriate time", let the Commission be reminded that the Carlsbad-Grace is being filed for production as a Strawn well; at least one more well is drilling into the same Strawn zone and three more are being staked, today or tomorrow, making void or voidable most of the Strawn exhibits at the hearing.

Memorandum to the Commission
Page 2
May 4, 1972

*Enclosed Exhibit "A" indicating a plan of research of the various proposals.

A handwritten signature in cursive script, appearing to read "Michael P. Grace II".

Michael P. Grace, II

Michael P. Grace II



TETRA TECH, INC.
630 NORTH BOBWHITE BLVD
PACADENA CALIFORNIA 9107
TELEPHONE (913) 449-8400

May 2, 1972

Michael P. Grace
P.O. Box 1418
Carlsbad, New Mexico

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Fellow G. S. A.

Rec'd 5/5/72



BEFORE THE
OIL CONSERVATION COMMISSION OF NEW MEXICO

IN THE MATTER OF THE HEARINGS
CALLED BY THE OIL CONSERVATION
COMMISSION ON ITS OWN MOTION TO
CONSIDER GAS PRORATIONING IN THE
SOUTH CARLSBAD-MORROW, AND THE
SOUTH CARLSBAD-STRAWN GAS POOLS,
EDDY COUNTY, NEW MEXICO

CASES:
No. 4693
No. 4694 ✓

CLOSING STATEMENT OF
PENNZOIL UNITED, INC.

Comes now Pennzoil United, Inc., one of the participants in the above cases, and submits its closing statement pursuant to order of the Commission in the foregoing cases, heard on a consolidated record at Hobbs, New Mexico, April 19 and 20, 1972.

These cases were called by the Oil Conservation Commission of New Mexico for the purpose of considering the necessity of prorating the gas production from the two pools involved, and to consider the manner in which such prorating of production should be handled, in the event the Commission found it necessary to institute prorating.

Necessity for Prorating:

The Oil Conservation Commission witness, Elvis Utz, stated three reasons he felt it was necessary to prorate production in the two pools involved: 1) There are two pipeline connections in each of the pools involved, making it difficult if not impossible to insure ratable taking of gas from the different wells; 2) Some wells have split connections, that is they are connected to both of the two pipelines, making it impossible for the pipelines to determine how much gas should be taken from the wells; and 3) Several wells have been assigned a

penalty factor by the Oil Conservation Commission because of their unorthodox location, which factor is meaningless in the absence of prorationing.

In addition, Pennzoil's witness, J. C. Raney, testified that unless there is prorationing in the pool to prevent uncontrolled withdrawals, there is a danger that waste will occur.

On the basis of the testimony, bolstered by the testimony of other witnesses to the effect that they felt prorationing essential, the pool should be prorated to protect correlative rights of the operators in the pool, and to prevent waste.

Duties of the Commission:

The duties of the Oil Conservation Commission when it prorates production are set out in Sections 65-3-13, 65-3-14, and 65-3-29, New Mexico Statutes 1953, as amended, with which the Commission is thoroughly familiar. We would, however, like to quote a portion of Section 65-3-14:

(a) The rules, regulations or orders of the Commission shall, so far as it is practicable to do so, afford to the owner of each property in a pool the opportunity to produce his just and equitable share of the oil or gas, or both, in the pool, being an amount, so far as can be practically determined, and so far as can be practically obtained without waste, substantially in the proration that the quantity of the recoverable oil or gas, or both, under such property bears to the total recoverable oil or gas, or both, in the pool, and for this purpose to use his just and equitable share of the reservoir energy.

The foregoing section is substantially the same as the statutory definition of "correlative rights", as set out in Section 65-3-29H. Under the terms of Section 65-3-13, (c), the Commission, in prorating the total allowable of natural gas from a pool, is required to recognize correlative rights.

The New Mexico Supreme Court has had occasion to pass on these provisions of the New Mexico Statutes in two cases:

Continental Oil Company v. Oil Conservation Commission, 70 N.M. 310, 373 P. 2d 809; and El Paso Natural Gas Company v. Oil Conservation Commission, 76 N.M. 268, 414 P. 2d 496.

In these two cases, the first dealing with a gas prorationing order in the Jalmat Gas Pool, Lea County, and the second dealing with a gas prorationing order in the Basin-Dakota Gas Pool, in Northwestern New Mexico, the Supreme Court determined that the Commission, in prorating gas, must determine:

- 1) The amount of recoverable gas under each producers' tract.
- 2) The total amount of recoverable gas in the pool.
- 3) The proportion that 1) bears to 2).
- 4) What proportion of the arrived at proportion can be recovered without waste.

Essentially, what the Court said in these two cases was that a proposed new formula must be shown to have been "based on the amounts of recoverable gas in the pool and under the tracts, insofar as those amounts can be practicably determined and obtained without waste".

In the face of the statutes, and the court decisions, this Commission cannot prorate gas production in the two pools involved on any basis other than one that gives consideration to the reserves in the pool, and under the various tracts.

Evidence to be Considered:

The Commission, during a day and one-half of testimony and numerous exhibits, heard considerable evidence about the two pools involved in these cases. However, the only evidence on the question of gas reserves in the pool and under the tracts of the individual operators was that offered by R. M. Williams for Allen Antweil, and by J. C. Raney for Pennzoil United, Inc.

Briefly, the other evidence offered dealt with the difficulties in arriving at a proration formula. Cities Service Oil Company rejected any other consideration and proposed the pool be prorated on the basis of acreage. This would give all wells in the pool substantially the same allowable, except for the penalized wells, although all witnesses testified that there was considerable difference in the character of the pools across their entire area.

Acreage is only one factor that could be considered by the Commission, if it follows the statutory injunction. It must also give consideration to thickness, porosity, permability, water saturation, and other factors that have a bearing on the computation of the gas reserves underlying the pools and the tracts. The cross section offered by Mr. Williams showed a wide variation in the net pay from one well to another, and his testimony, supported by that of Mr. Raney, clearly showed that if allocation of production from the wells is made on an acreage basis, correlative rights will not be protected.

Both Mr. Williams and Mr. Raney testified that at the present state of knowledge of these pools, and with the scant productive history available, a pore volume calculation is the best method available for determining reserves in the two pools.

Pennzoil proposed that a pore volume calculation be made for each well in the pool. Mr. Raney testified that there is sufficient information presently available to make this calculation, and that from this calculation, a determination of the reserves underlying each well can be made, and the reserves in the reservoir can be determined.

At first glance it may appear that it would be difficult to obtain agreement on the various parameters contained in the Pennzoil formula, but these are matters every operator deals with in evaluating his holdings in any particular reservoir, in determining whether he will drill or not, and in dealing with other operators. As Mr. Raney testified, the basic information is available. As Mr. Stamets testified for the Commission: "If all the operators sat down together they could probably come up with some parameters that would be acceptable . . .", and the Proposal made by Pennzoil will not impose an undue burden on the Commission. Approached in a cooperative spirit, and with a genuine desire for equity and conservation, the proposed formula would provide the framework for prorating the South Carlsbad-Morrow, and South Carlsbad-Strawn Gas Pools. At the same time it would not lock the Commission into a final figure such as that resulting from a present computation of reserves, which could change as additional information is obtained about the two reservoirs, after inequities have resulted.

It was commented by one witness that fifteen pools in Southeastern New Mexico are prorated on the basis of straight acreage, and none on any other basis. That is, in itself, a poor reason for grafting the system on a new pool. It should also be pointed out that only one request for a different system has ever been made in Southeastern New Mexico, in the Jalmat Gas Pool, where the Court found the proposed system did not give consideration to the reserves in the pool and underlying the individual tracts within the pool.

It is urged that the Commission adopt the formula proposed by Pennzoil United, Inc., as an equitable means of

giving full consideration to the reserves in the pool, and reserves underlying each owner's tract, the relationship of one to the other, and the amount of that figure that can be obtained without waste. In other words, the proposed formula gives full consideration to the protection of correlative rights as defined by the statutes, and the New Mexico Supreme Court.

Respectfully submitted,

PENNZOIL UNITED, INC.

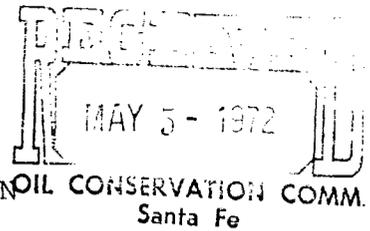
By Jason W. Kellahin
KELLAHIN & FOX
P. O. Box 1769
Santa Fe, New Mexico 87501

ATTORNEYS FOR PENNZOIL UNITED, INC.

CERTIFICATE OF SERVICE

I hereby certify that I served a copy of the foregoing Statement on all counsel of record in the above case by mailing a copy thereof, addressed as shown in the Commission's letter of April 25, 1972, this 5th day of May, 1972.

Jason W. Kellahin
Attorney for Pennzoil United, Inc.



BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING CALLED BY)
 THE OIL CONSERVATION COMMISSION ON ITS)
 OWN MOTION TO CONSIDER INSTITUTING GAS)
 PRORATIONING AND THE ADOPTING OF)
 SPECIAL RULES AND REGULATIONS INCLUDING) No. 4694
 PROVISIONS FOR ALLOCATING THE ALLOWABLE)
 PRODUCTION AMONG THE WELLS IN THE SOUTH)
 CARLSBAD STRAWN GAS POOL, EDDY COUNTY,)
 NEW MEXICO.)

CLOSING STATEMENT OF MORRIS R. ANTWEIL, OPERATOR,
 AND DELTA DRILLING COMPANY AND MABEE PETROLEUM
 COMPANY, NON-OPERATORS

The statutes direct the New Mexico Oil Conservation Commission (the Commission) to allocate allowables on the basis of reserves under each tract in proportion that such reserves bear to the total reserves in the pool. Section 65-3-14(a) N.M.S.A., 1953 substantially directs that the rules, regulations and orders of the Commission provide for allocation of allowables on the basis of reserves. Section 65-3-12(c) further provides for such allocation from gas wells in a pool to be on a reasonable basis and recognizing correlative rights.

DETERMINATION OF RESERVES

Antweil presented testimony on the South Carlsbad Strawn reservoir exhibiting the determination of the reserves under each proration unit, the total reserves in the pool, the relationship that each proration unit's reserves bears to the total pool reserves, and what portion of the determined reserves can be recovered without waste.

The testimony clearly demonstrated that the correlative rights of the working interest and royalty interest owners of the

tracts with better reservoir development would be seriously violated if the South Carlsbad Strawn Pool is not prorated and if the allocation of allowable does not consider the thickness and quality of the pay development. Antweil has recommended that the allowables in the South Carlsbad Strawn Pool be allocated on the basis of the determined reserves.

Allocation of the allowables on the basis of acreage rather than reserves would permit the confiscation of approximately 37% of the Antweil reservoir energy from the initial day of such allocation, representing a potential loss from the 3 Antweil tracts of 18 billion cubic feet of gas having a value of five million dollars.

VALIDITY OF RESERVES DETERMINATION

A question asked during the hearing raised the possibility of an inaccuracy in the absolute value of the reserves determined; however, it was not questioned that the relative value of the reserves determined for the individual proration units would provide an accurate measure of equitable proportion of the total field reserves held by each proration unit.

The determination of reserves inherently is interpretive. Antweil presented his determination of reserves for the benefit of the Commission; but the Commission must make the final interpretation.

Interpretations by the Commission are necessary and usual, the many duties of the Commission requiring such interpretations as a matter of course and on a regular basis. All of the following hearings held by the Commission since its formation required an interpretation by the Commission of geologic

and engineering data similar, to a greater or lesser degree, to that being requested by Antweil in determining reserves herein:

273 cases for non-standard proration units,
370 cases for unorthodox locations,
475 cases for secondary recovery projects,
368 cases for unit agreements, and
23 cases for oil or gas proration.

The fact that the determination of reserves is interpretive was no deterrent in the Basin Dakota Case, Case No. 2504, Order No. R-2259-B, affirmed by the New Mexico Supreme Court in El Paso Natural Gas Company v. Oil Conservation Commission, 76 N.M. 268, 414 P.2d 496 (1966). In that case, the Commission determined 2.255 trillion gas reserves under approximately 700 wells covering approximately 224,000 acres. In the instant case, Antweil is asking the Commission to determine reserves only in 7 completed wells covering some 2,240 acres.

PRACTICALITY OF ALLOCATION ON BASIS OF RESERVES

The only substantive question raised at the hearing on the South Carlsbad Strawn Pool concerned the practicality of allocation of allowables based on reserves. The Commission Staff questioned the practicality, but no other party objected to such an allocation. Antweil submits that such allocation is practical as shown in this hearing as follows:

1. Testimony of operators in the field as to its practicality was substantial. Antweil in fact determined reserves for the field as shown by his Exhibits 1 through 10. Pennzoil United stopped one step short of determining reserves by its recommendation of a hydrocarbon pore volume allocation, did

not question Antweil's determination of reserves, and concurred that determination of reserves is necessary under the statute.

2. Testimony established, including testimony from the Commission's Geologist, that determination of reserves in any field by the method used by Antweil is a usual practice in the industry and is applied to most fields as a matter of course.

3. The Commission Geologist, in his testimony, declared that he would so calculate reserves if directed by the Commission.

SOUTH CARLSBAD STRAWN COMPARED
WITH SOUTH CARLSBAD MORROW POOL

Antweil has taken no position on the allowable allocation of the South Carlsbad Morrow Pool, consolidated for purposes of hearing with the South Carlsbad Strawn Pool. There was considerable testimony presented in the consolidated hearing showing that the Morrow pay is inconsistent, confusing and difficult to determine or evaluate. This testimony must not be applied to the Strawn reservoir. The differences in the reservoirs are these, as brought out by the Commission geologist and other witnesses in their testimony:

1. The Morrow reservoir is undefined, with additional wells being drilled, completed, staked and planned; on the other hand, the Strawn reservoir is completely developed and defined, so far as can be reasonably determined, making a determination of both tract and total reserves in the pool relatively simple.

2. The Morrow sand pay is composed of many separate stringers, many of which have not been tested and are difficult of determination as to whether productive or not. The Strawn formation is homogeneous limestone with all porosity within the section being interconnected. Thus, the determination of porosity and net pay, the principal constituents of reserves determination, is relatively simple.
3. The Morrow formation produces varying amounts of water in different wells, affecting pressures and the determination of whether a sand stringer is productive or not. The Strawn formation produces no appreciable water, effectively ruling out one variable in reserves determination.

Antweil therefore submits that any determination as to the practicality of reserves determination in the Morrow Formation should have no effect on such determination in the Strawn Formation in the South Carlsbad pools. Should the Commission decide that reserves determination and allocation is practical in the South Carlsbad Strawn Pool and impractical in the South Carlsbad Morrow Pool, the industry would be afforded excellent guidelines as to the Commission's viewpoints for future allocations in other fields.

LACK OF OPPOSITION TO ALLOCATION BASED ON RESERVES

In the South Carlsbad Strawn portion of this hearing, Antweil determined reserves and Pennzoil suggested a determination of hydrocarbon pore volume, the principal constituent of

reserves calculation. No operator questioned that the method of reserves determination and allocation was anything but practical and proper. No evidence for any other allocation formula in the South Carlsbad Strawn Pool was submitted by any party. The lack of controversy and substantial concurrence between operators in the pool should be given considerable weight by the Commission.

PRECEDENT SETTING EFFECT OF ALLOCATION
OF ALLOWABLE BASED ON RESERVES

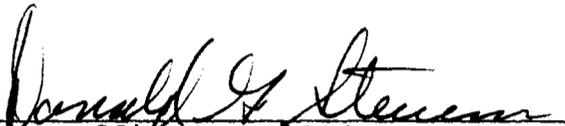
Allocation of the allowable in the South Carlsbad Strawn Pool based on reserves would be a precedent-setting decision. The Commission pointed out that 15 gas fields are currently being prorated in Southeast New Mexico, all on an acreage basis. This should be no factor in the Commission's determination, inasmuch as in all the original hearings prorating these 15 fields, no party requested anything other than acreage proration. In the Basin Dakota case mentioned above, the Commission specifically found in Finding No. 10 of Order No. R-2259-B, that there was no direct correlation between acreage and reserves, and therefore, that acreage should not be used as the sole criterion for allowable allocation. This finding comports with the evidence submitted at this hearing.

The Commission has always been progressive in adopting new methods where the evidence justifies. The statement presented by the Director of the Commission at the morning session of this hearing, to the effect that the Commission will entertain applications for increased allowables when presented with evidence that such an increase would not damage the reservoir,

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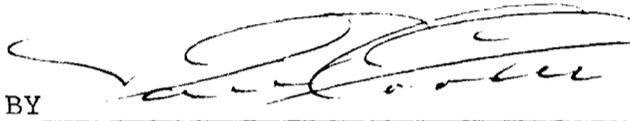
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McDERMOTT, CONNELLY & STEVENS

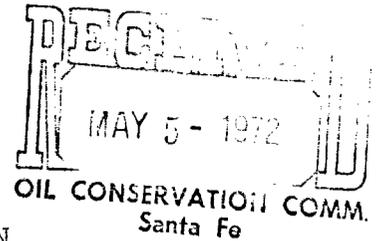
BY


Post Office Box 1904
Santa Fe, New Mexico 87501

ATWOOD, MALONE, MANN & COOTER

BY


Post Office Drawer 700
Roswell, New Mexico 88201



BEFORE THE OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING CALLED BY)
THE OIL CONSERVATION COMMISSION ON ITS)
OWN MOTION TO CONSIDER INSTITUTING GAS)
PRORATIONING AND THE ADOPTING OF)
SPECIAL RULES AND REGULATIONS INCLUDING) No. 4694
PROVISIONS FOR ALLOCATING THE ALLOWABLE)
PRODUCTION AMONG THE WELLS IN THE SOUTH)
CARLSBAD STRAWN GAS POOL, EDDY COUNTY,)
NEW MEXICO.)

CLOSING STATEMENT OF MORRIS R. ANTWEIL, OPERATOR,
AND DELTA DRILLING COMPANY AND MABEE PETROLEUM
COMPANY, NON-OPERATORS

The statutes direct the New Mexico Oil Conservation Commission (the Commission) to allocate allowables on the basis of reserves under each tract in proportion that such reserves bear to the total reserves in the pool. Section 65-3-14(a) N.M.S.A., 1953 substantially directs that the rules, regulations and orders of the Commission provide for allocation of allowables on the basis of reserves. Section 65-3-12(c) further provides for such allocation from gas wells in a pool to be on a reasonable basis and recognizing correlative rights.

DETERMINATION OF RESERVES

Antweil presented testimony on the South Carlsbad Strawn reservoir exhibiting the determination of the reserves under each proration unit, the total reserves in the pool, the relationship that each proration unit's reserves bears to the total pool reserves, and what portion of the determined reserves can be recovered without waste.

The testimony clearly demonstrated that the correlative rights of the working interest and royalty interest owners of the

tracts with better reservoir development would be seriously violated if the South Carlsbad Strawn Pool is not prorated and if the allocation of allowable does not consider the thickness and quality of the pay development. Antweil has recommended that the allowables in the South Carlsbad Strawn Pool be allocated on the basis of the determined reserves.

Allocation of the allowables on the basis of acreage rather than reserves would permit the confiscation of approximately 37% of the Antweil reservoir energy from the initial day of such allocation, representing a potential loss from the 3 Antweil tracts of 18 billion cubic feet of gas having a value of five million dollars.

VALIDITY OF RESERVES DETERMINATION

A question asked during the hearing raised the possibility of an inaccuracy in the absolute value of the reserves determined; however, it was not questioned that the relative value of the reserves determined for the individual proration units would provide an accurate measure of equitable proportion of the total field reserves held by each proration unit.

The determination of reserves inherently is interpretive. Antweil presented his determination of reserves for the benefit of the Commission; but the Commission must make the final interpretation.

Interpretations by the Commission are necessary and usual, the many duties of the Commission requiring such interpretations as a matter of course and on a regular basis. All of the following hearings held by the Commission since its formation required an interpretation by the Commission of geologic

and engineering data similar, to a greater or lesser degree, to that being requested by Antweil in determining reserves herein:

273 cases for non-standard proration units,
370 cases for unorthodox locations,
475 cases for secondary recovery projects,
368 cases for unit agreements, and
23 cases for oil or gas proration.

The fact that the determination of reserves is interpretive was no deterrent in the Basin Dakota Case, Case No. 2504, Order No. R-2259-B, affirmed by the New Mexico Supreme Court in El Paso Natural Gas Company v. Oil Conservation Commission, 76 N.M. 268, 414 P.2d 496 (1966). In that case, the Commission determined 2.255 trillion gas reserves under approximately 700 wells covering approximately 224,000 acres. In the instant case, Antweil is asking the Commission to determine reserves only in 7 completed wells covering some 2,240 acres.

PRACTICALITY OF ALLOCATION ON BASIS OF RESERVES

The only substantive question raised at the hearing on the South Carlsbad Strawn Pool concerned the practicality of allocation of allowables based on reserves. The Commission Staff questioned the practicality, but no other party objected to such an allocation. Antweil submits that such allocation is practical as shown in this hearing as follows:

1. Testimony of operators in the field as to its practicality was substantial. Antweil in fact determined reserves for the field as shown by his Exhibits 1 through 10. Pennzoil United stopped one step short of determining reserves by its recommendation of a hydrocarbon pore volume allocation, did

not question Antweil's determination of reserves, and concurred that determination of reserves is necessary under the statute.

2. Testimony established, including testimony from the Commission's Geologist, that determination of reserves in any field by the method used by Antweil is a usual practice in the industry and is applied to most fields as a matter of course.

3. The Commission Geologist, in his testimony, declared that he would so calculate reserves if directed by the Commission.

SOUTH CARLSBAD STRAWN COMPARED
WITH SOUTH CARLSBAD MORROW POOL

Antweil has taken no position on the allowable allocation of the South Carlsbad Morrow Pool, consolidated for purposes of hearing with the South Carlsbad Strawn Pool. There was considerable testimony presented in the consolidated hearing showing that the Morrow pay is inconsistent, confusing and difficult to determine or evaluate. This testimony must not be applied to the Strawn reservoir. The differences in the reservoirs are these, as brought out by the Commission geologist and other witnesses in their testimony:

1. The Morrow reservoir is undefined, with additional wells being drilled, completed, staked and planned; on the other hand, the Strawn reservoir is completely developed and defined, so far as can be reasonably determined, making a determination of both tract and total reserves in the pool relatively simple.

2. The Morrow sand pay is composed of many separate stringers, many of which have not been tested and are difficult of determination as to whether productive or not. The Strawn formation is homogeneous limestone with all porosity within the section being interconnected. Thus, the determination of porosity and net pay, the principal constituents of reserves determination, is relatively simple.
3. The Morrow formation produces varying amounts of water in different wells, affecting pressures and the determination of whether a sand stringer is productive or not. The Strawn formation produces no appreciable water, effectively ruling out one variable in reserves determination.

Antweil therefore submits that any determination as to the practicality of reserves determination in the Morrow Formation should have no effect on such determination in the Strawn Formation in the South Carlsbad pools. Should the Commission decide that reserves determination and allocation is practical in the South Carlsbad Strawn Pool and impractical in the South Carlsbad Morrow Pool, the industry would be afforded excellent guidelines as to the Commission's viewpoints for future allocations in other fields.

LACK OF OPPOSITION TO ALLOCATION BASED ON RESERVES

In the South Carlsbad Strawn portion of this hearing, Antweil determined reserves and Pennzoil suggested a determination of hydrocarbon pore volume, the principal constituent of

reserves calculation. No operator questioned that the method of reserves determination and allocation was anything but practical and proper. No evidence for any other allocation formula in the South Carlsbad Strawn Pool was submitted by any party. The lack of controversy and substantial concurrence between operators in the pool should be given considerable weight by the Commission.

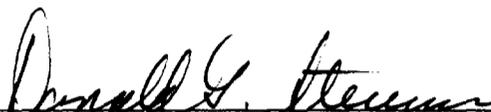
PRECEDENT SETTING EFFECT OF ALLOCATION
OF ALLOWABLE BASED ON RESERVES

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CITIES SERVICE OIL COMPANY

RECEIVED
MAY 5 - 1972
OIL CONSERVATION COMM.
Santa Fe

Box 300
Tulsa, Oklahoma 74102

May 1, 1972

Oil Conservation Commission
State of New Mexico
P. O. Box 2068
Santa Fe, New Mexico 87501

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

Re: South Carlisbad-Morrow and
Strawn Gas Pools, Case No. 4693
and Case No. 4694

Gentlemen:

Attached are two copies of the Closing Statement of Cities Service Oil Company in the subject cases. The Statement is submitted in accordance with the Commission's ruling that such statements would be accepted within 15 days of the date of hearing.

Very truly yours,
ORIGINAL SIGNED BY
ROBERT F. LeBLANC

Robert F. LeBlanc
Senior Attorney

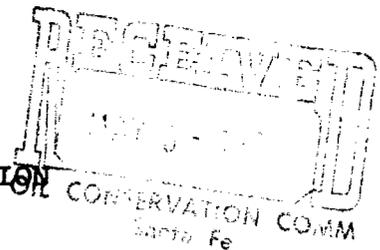
RFL:EB
o
Enclosures

- cc: Mr. George H. Hatch -w/Attach.
- Mr. Charles C. Spann -w/Attach.
- Mr. George H. Hunker, Jr. -w/Attach.
- Mr. Donald S. Stevens -w/Attach.
- Mr. Jason Kellahan -w/Attach.
- Mr. Edward P. Chase -w/Attach.
- Mr. Fischer Neal -w/Attach.

THIS COPY FOR

ILLEGIBLE

BEFORE THE OIL CONSERVATION COMMISSION
STATE OF NEW MEXICO



SOUTH CARLSBAD-MORROW) In the Matter of the Hearing
GAS POOL - CASE NO. 4693) Called by the Oil Conservation
) Commission on its Own Motion to
) Consider Instituting Gas Pro-
SOUTH CARLSBAD-STRAWN GAS) rationing in the South Carlsbad-
POOL - CASE NO. 4694) Morrow Gas Pool and South Carls-
) bad-Strawn Gas Pool, Eddy County,
) New Mexico.

Hearing Held in Hobbs, New Mexico
on April 19 and 20, 1972

STATEMENT OF CITIES SERVICE OIL COMPANY

TO THE HONORABLE NEW MEXICO OIL CONSERVATION COMMISSION:

Cities Service Oil Company ("Cities") is the owner of extensive leasehold interests in the South Carlsbad Fields. It operates four Morrow gas wells, owns a working interest in a fifth Morrow well and operates one Strawn well. Because of its interests and in order to protect the correlative rights of all parties in the field, Cities took an active part in the subject hearings and recommended that the Morrow and Strawn gas pools be prorated by this Commission.

Each of the subject pools should be prorated because (1) there are two pipeline purchasers taking gas from each pool, (2) split takes exist from wells in the pools, and (3) penalty factors have been assigned wells for non-standard locations and such are meaningless without an allocation formula. Each of the items mentioned point toward allocation as necessary to protect the correlative rights of all parties in the fields.

Cities recommends that the Morrow gas pool be prorated on an acreage allocation formula basis as the record

will show that this is the only practical basis on which to allocate this gas pool. With respect to the Strawn gas pool, however, Cities would have no objection to the allocation formulae proposed by the other participants at the hearing, assuming the Commission believes it can effectively administer proration under the formula it adopts.

MORROW GAS POOL

The record will show that the productive limits of the Morrow Pool have not been finally determined. The approximate 600 feet of Morrow formation is not homogeneous and is comprised of numerous stringers. There seems to be no pay zone common to every well in the pool. The Morrow is a very complex reservoir and it is very difficult to determine the exact net feet of pay for each well. The record will show that the only way to know if a particular zone in a well will produce is to perforate and test the zone. Even after a successful test, there is no way of knowing, and it is interpretive, as to whether or not the same thickness of the zone extends throughout the particular 320-acre gas unit. No cores have been taken in the Morrow Formation, and the factors such as net feet of pay, porosity, water saturation and permeability are interpretive and tend to confuse reserve calculations.

The Commission should note that not one isopachous map for the Morrow Formation was submitted at the hearing. Witnesses for a more precise reserve type allocation formula testified that the above factors and the preparation of isopachous maps could be worked out by operators in the field and by the Commission staff. What if these differences cannot be resolved or some operators would not attend the joint work sessions? The burden would then be on the Commission staff to resolve the differences, and Cities submits that due to the geological make-up of the Morrow Formation, any conclusions would be arbitrary.

With respect to the possibility of using deliverability as the allocation formula, the record will clearly show that deliverability is not indicative of recoverable reserves. Open flows of wells vary widely. To illustrate, one particular well had four times greater deliverability than another well located only 1300 feet away, both wells appearing to be producing from the same zone. Additionally, open flows will change under varying conditions according to test procedures and cleanup time.

Finally, Cities submits that the record in this matter strongly supports that the South Carlsbad-Morrow Gas Pool should be prorated on an acreage allocation formula. Ninety-nine and six-tenths percent of the prorated gas or 15 gas pools in southeast New Mexico are prorated on an acreage allocation formula. Cities respectfully requests that the Morrow Gas Pool be prorated on an acreage allocation formula since acreage is one of the best and most accurate factors to be used in determining recoverable reserves. Adoption of an acreage allocation formula will protect the correlative rights of all interest owners and will give each such owner the opportunity to recover his fair share of the reserves.

Respectfully submitted,
CITIES SERVICE OIL COMPANY

By _____
Robert F. LeBlanc
Senior Attorney

May 3, 1972

RFLeB
o

Parties that will receive copy of orders entered in Cases Nos. 4693 and 4694

Orders Mailed - 7/5/72 - JH

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