BEFOR[illegible] THE OIL CONSERVATION COMM[illegible]SION
[illegible]F THE STATE OF NEW MEXICO

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

CASE NO. 5571
Order No. R-5139

APPLICATION OF ROBERT G. COX FOR
AMENDMENT OF ORDER NO. R-4561, EDDY
COUNTY, NEW MEXICO.

Also see R-5139-A and R-4561

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on October 8, 1975, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 16th day of December, 1975, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Robert G. Cox, is the owner and operator of the Federal "EA" Well No. 1, a crooked hole, the surface location of which is 330 feet from the North line and 330 feet from the West line of Section 12, Township 18 South, Range 27 East, NMPM, Empire-Abo Pool, Eddy County, New Mexico.

(3) That when originally drilled, the subject well deviated 23 feet to the South and 172 feet to the West of the surface location at a measured depth of 6050 feet (true vertical depth 6046 feet) in the Empire-Abo Pool.

(4) That on June 25, 1973, the Commission entered Order No. R-4561 which authorized the applicant to re-enter said well, set a whipstock at approximately 4,200 feet and directionally drill said well to a depth of approximately 6,200 feet, bottoming the well in the Empire-Abo Pool at a point within 100 feet of the surface location.

(5) That Order No. R-4561 also required that the applicant make a continuous multi-shot directional survey of said well from total depth to the whipstock point with shot points not more than 100 feet apart and provide a copy of the survey to the Commission.

(6) That the applicant seeks amendment of said Order No. R-4561 to permit bottoming of the subject well approximately 58 feet from the North line and 8 feet from the West line of said Section 12 and to permit vertification of said downhole location by single-shot directional surveys made concurrently with the drilling of said well.

(7) That the evidence introduced at the hearing clearly established that the applicant made no effort to comply with the provisions of Order No. R-4561 which required the bottoming of said well within 100 feet of the surface location.

(8) That the evidence further established that the well had been intentionally deviated toward the Northwest corner of the spacing unit well beyond the 100 foot target described in Finding No. (4) above.

(9) That the bottom hole location of said Federal "EA" Well No. 1 is approximately 58 feet from the North line and 8 feet from the West line of said Section 12.

(10) That the operators of off-setting acreage appeared at the hearing and objected to the production of said well completed at this bottom hole location.

(11) That a well produced at this bottom hole location would cause drainage across lease lines which would not be equalized by counter-drainage.

(12) That Section 65-3-10 NMSA, 1953 Compilation, places upon the Commission the duty to protect the correlative rights of the owners of mineral interests in oil and gas pools in New Mexico.

(13) That granting this application would impair the correlative rights of the owners of the acreage off-setting the said Federal "EA" Well No. 1.

(14) That to protect correlative rights the application should be denied.

IT IS THEREFORE ORDERED:

(1) That the application of Robert G. Cox for amendment of Order No. R-4561 is hereby denied.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

PHIL R. LUCERO, Chairman

EMERY C. ARNOLD, Member

JOE D. RAMEY, Member & Secretary

S E A L

dr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE NO. 4970
Order No. R-4561

APPLICATION OF ROBERT G. COX
FOR DIRECTIONAL DRILLING,
EDDY COUNTY, NEW MEXICO.

Also see R-5139 and R-5139-A

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on May 23, 1973, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 25th day of June, 1973, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Robert G. Cox, is the owner and operator of the Federal "EA" Well No. 1, a crooked hole, the surface location of which is 330 feet from the North line and 330 feet from the West line of Section 12, Township 18 South, Range 27 East, NMPM, Empire-Abo Pool, Eddy County, New Mexico.

(3) That the subject well has deviated 23 feet to the South and 172 feet to the West of the surface location at a measured depth of 6050 feet (true vertical depth 6046 feet) in the Empire-Abo Pool.

(4) That because of mechanical difficulties applicant has been unable to complete said well to produce from the Empire-Abo Pool at the aforesaid bottom-hole location.

(5) That the applicant proposes to set a whipstock at approximately 4,200 feet and to directionally drill in such a manner as to return the hole to the vertical, and to bottom said well at a depth of 6,200 feet approximately beneath the surface location in the Empire-Abo Pool.

(6) That the applicant should be required to determine the subsurface location of the bottom of the hole by means of a continuous multi-shot directional survey conducted subsequent to said directional drilling, if said well is to be completed as a producing well.

(7) That approval of the subject application will prevent the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Robert G. Cox, is hereby authorized to reenter his Federal "EA" Well No. 1, the surface location of which is 330 feet from the North line and 330 feet from the West line of Section 12, Township 18 South, Range 27 East, NMPM, Empire-Abo Pool, Eddy County, New Mexico, and to set a whipstock at approximately 4,200 feet and to directionally drill said well to a depth of approximately 6,200 feet, bottoming the well in the Empire-Abo Pool at a point within 100 feet of the surface location.

PROVIDED HOWEVER, that subsequent to the above-described directional drilling should said well be a producer, a continuous multi-shot directional survey shall be made of the well bore from total depth to the whipstock point with shot points not more than 100 feet apart; that the operator shall cause the surveying company to forward a copy of the survey report directly to the Santa Fe Office of the Commission, Box 2088, Santa Fe, New Mexico, and that the operator shall notify the Commission's Artesia District Office of the date and time said survey is to be commenced.

(2) That Form C-105 shall be filed in accordance with Commission Rule 1108 and the operator shall indicate thereon true vertical depths in addition to measured depths.

(3) That the NW/4 NW/4 of said Section 12 shall be dedicated to the subject well.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

I. R. TRUJILLO, Chairman

ALEX J. ARMIJO, Member

A. L. PORTER, Jr., Member & Secretary

S E A L

dr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE NO. 5571 DE NOVO
Order No. R-5139-A

APPLICATION OF ROBERT G. COX
FOR AMENDMENT OF ORDER NO.
R-4561, EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 21, 1976, and February 24, 1976, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 10th day of March, 1976, the Commission, a quroum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Robert G. Cox, is the owner and operator of the Federal "EA" Well No. 1, the surface location of which is reported as being 330 feet from the North line and 330 feet from the West line of Section 12, Township 18 South, Range 27 East, NMPM, Empire-Abo Pool, Eddy County, New Mexico.

(3) That when originally drilled, the subject well deviated 23 feet to the South and 172 feet to the West of the surface location at a measured depth of 6050 feet (true vertical depth 6046 feet) in the Empire-Abo Pool.

(4) That on June 25, 1973, the Commission entered Order No. R-4561 which authorized the applicant to re-enter said well, set a whipstock at approximately 4,200 feet and directionally drill said well to a depth of approximately 6,200 feet, bottoming the well in the Empire-Abo Pool at a point within 100 feet of the surface location.

(5) That Order No. R-4561 also required that the applicant make a continuous multi-shot directional survey of said well from total depth to the whipstock point with shot points not more than 100 feet apart and provide a copy of the survey to the Commission.

(6) That in July and August, 1975, the applicant herein, Robert G. Cox, re-entered said well and directionally drilled the same in a northwesterly direction to a depth of approximately 6220 feet at a bottom-hole location approximately 269 feet north and 321 feet west of the surface location.

(7) That said well was completed in August, 1975, capable of production from the Abo formation through perforations from 6212 feet to 6216 feet.

(8) That the applicant seeks amendment of Commission Order No. R-4561 to permit bottoming of the subject well at approximately 58 feet from the North line and approximately 8 feet from the West line of Section 12, Township 18 South, Range 27 East, NMPM, Eddy County, New Mexico, and to eliminate the requirement of a continuous multi-shot survey of the well.

(9) That this matter came on for hearing before Examiner Richard L. Stamets on October 8, 1975, and November 19, 1975, and pursuant to this hearing, Order No. R-5139 was issued in Case No. 5571 on December 16, 1975, which order denied the application of Robert G. Cox for the amendment of Order No. R-4561.

(10) That on January 7, 1976, applicant Robert G. Cox filed application for hearing De Novo of Case No. 5571, and the matter was set for hearing before a quorum of the Commission.

(11) That this matter came on for hearing De Novo on January 21, 1976, and February 24, 1976.

(12) That the evidence adduced at said hearing clearly establishes that the applicant made no effort to comply with the provisions of Order No. R-4561 which required that the well be bottomed within 100 feet of the surface location.

(13) That the evidence further establishes that the applicant intentionally deviated the well toward the northwest corner of said well's spacing and proration unit, being the NW/4 NW/4 of Section 12, Township 18 South, Range 27 East, NMPM, well beyond the 100-foot target area described in Finding No. (4) above, and that he in fact did bottom said well at a point 62 feet from the North line and 9 feet from the West line of said Section 12.

(14) That the owners of interest in acreage offsetting said well appeared at the hearing on January 21, 1976, and February 24, 1976, and objected to the production of the well at the aforesaid bottom-hole location.

(15) That the evidence indicates that the productive interval in the subject well, i.e., the perforated interval from approximately 6212 feet to approximately 6216 feet, is correlative to, and in communication with, the Abo producing interval in wells to the north and west of said well.

(16) That the evidence indicates that there are probably no more than two and one-half acres underlying applicant's lease in the NW/4 NW/4 of Section 12, Township 18 South, Range 27 East, NMPM, which are productive of hydrocarbons from the Abo formation.

(17) That the evidence indicates that the above-described two and one-half acres would have a reservoir hydrocarbon pore volume of approximately 4520 barrels.

(18) That due to the reservoir volume factor, there actually would be produced at the surface somewhat less than 4520 barrels of stock tank oil in voiding the aforesaid 4520 barrels of reservoir hydrocarbon pore space, because of shrinkage of the oil as the dissolved gas is released at the surface.

(19) That subsequent to its August, 1975, completion at the bottom-hole location described in Finding No. (13) above, and through December 31, 1975, the subject well produced 4008 barrels of stock tank oil, representing more than 4008 barrels of reservoir hydrocarbon pore space because of the reservoir volume factor described above.

(20) That at the time of the hearing of Case No. 5571 De Novo, no records were yet available to indicate the volume of stock tank oil produced from the subject well in January, 1976, and February, 1976.

(21) That said well produced an average of approximately 35 barrels of oil per day during November, 1975, and December, 1975, and was assigned an allowable of 35 barrels of oil per day for January, 1976, and February, 1976.

(22) That assuming said well continued to produce 35 barrels of oil per day in January, 1976, and February, 1976, its cumulative production from its August, 1975, completion at the bottom-hole location described in Finding No. (13) above through February, 1976, would be 6108 barrels of stock tank oil.

(23) That even disregarding the reservoir volume factor, the aforesaid 6108 barrels of oil would be in excess of the original oil in place in the Abo formation under the Robert G. Cox Federal "EA" Lease in the NW/4 NW/4 of Section 12, Township 18 South, Range 27 East, NMPM.

(24) That the production of oil in excess of the original oil in place under said lease would of necessity be the production of oil migrating to applicant's lease from offsetting properties.

(25) That the production of oil in excess of the original oil in place under said lease would cause drainage across lease lines which would not be equalized by counter-drainage.

(26) That Section 65-3-11, Subsection 7, NMSA 1953 Comp. authorizes and empowers the Commission "To require wells to be drilled, operated and produced in such manner as to prevent injury to neighboring leases or properties."

(27) That to permit the subject well to produce, after more than the original oil in place has been produced, would result in injury to neighboring leases or properties.

(28) That Section 65-3-10 NMSA 1953 Comp. places upon the Commission the duty to protect the correlative rights of owners of mineral interests in oil and gas pools in New Mexico.

(29) That the granting of the application in this case would impair the correlative rights of the owners of interest in the acreage offsetting the Robert G. Cox Federal "EA" Well No. 1.

(30) That to permit the continued production of the subject well at its present bottom-hole location would impose upon the operators of the acreage offsetting said well the obligation to drill additional wells on their own property at the same approximate distance from the lease line as the subject well, if they would protect their leases from drainage.

(31) That wells drilled under the conditions set out in Finding No. (30) above would not significantly add to the total ultimate production from the Empire-Abo Pool and would not be necessary for the efficient and economic production of the Empire-Abo Pool, and would, therefore, constitute economic waste.

(32) That wells producing under the conditions set out in Finding No. (30) above would not produce the oil and gas from said pool as efficiently as wells more distantly spaced from one another, and could result in underground waste.

(33) That to protect correlative rights, to prevent economic waste, and to prevent underground waste, the application should be denied.

IT IS THEREFORE ORDERED:

(1) That the application of Robert G. Cox for the amendment of Order No. R-4561 is hereby denied.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

PHIL R. LUCERO, Chairman

EMERY C. ARNOLD, Member

JOE D. RAMEY, Member & Secretary

S E A L

dr/

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE NO. 4970
Order No. R-4561

APPLICATION OF ROBERT G. COX
FOR DIRECTIONAL DRILLING,
EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on May 23, 1973, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 25th day of June, 1973, the Commission, a quorum being present, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Robert G. Cox, is the owner and operator of the Federal "EA" Well No. 1, a crooked hole, the surface location of which is 330 feet from the North line and 330 feet from the West line of Section 12, Township 18 South, Range 27 East, NMPM, Empire-Abo Pool, Eddy County, New Mexico.

(3) That the subject well has deviated 23 feet to the South and 172 feet to the West of the surface location at a measured depth of 6050 feet (true vertical depth 6046 feet) in the Empire-Abo Pool.

(4) That because of mechanical difficulties applicant has been unable to complete said well to produce from the Empire-Abo Pool at the aforesaid bottom-hole location.

(5) That the applicant proposes to set a whipstock at approximately 4,200 feet and to directionally drill in such a manner as to return the hole to the vertical, and to bottom said well at a depth of 6,200 feet approximately beneath the surface location in the Empire-Abo Pool.

EXHIBIT II

(6) That the applicant should be required to determine the subsurface location of the bottom of the hole by means of a continuous multi-shot directional survey conducted subsequent to said directional drilling, if said well is to be completed as a producing well.

(7) That approval of the subject application will prevent the drilling of unnecessary wells, avoid the augmentation of risk arising from the drilling of an excessive number of wells, and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That the applicant, Robert G. Cox, is hereby authorized to reenter his Federal "EA" Well No. 1, the surface location of which is 330 feet from the North line and 330 feet from the West line of Section 12, Township 18 South, Range 27 East, NMPM, Empire-Abo Pool, Eddy County, New Mexico, and to set a whipstock at approximately 4,200 feet and to directionally drill said well to a depth of approximately 6,200 feet, bottoming the well in the Empire-Abo Pool at a point within 100 feet of the surface location.

PROVIDED HOWEVER, that subsequent to the above-described directional drilling should said well be a producer, a continuous multi-shot directional survey shall be made of the well bore from total depth to the whipstock point with shot points not more than 100 feet apart; that the operator shall cause the surveying company to forward a copy of the survey report directly to the Santa Fe Office of the Commission, Box 2088, Santa Fe, New Mexico, and that the operator shall notify the Commission's Artesia District Office of the date and time said survey is to be commenced.

(2) That Form C-105 shall be filed in accordance with Commission Rule 1108 and the operator shall indicate thereon true vertical depths in addition to measured depths.

(3) That the NW/4 NW/4 of said Section 12 shall be dedicated to the subject well.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

I. R. TRUJILLO, Chairman

ALEX J. ARMIJO, Member

A. L. PORTER, Jr., Member & Secretary

S E A L

dr/

BEFORE THE OIL CONSERVATION COMMISSION OF NEW MEXICO

IN THE MATTER OF THE
APPLICATION OF ROBERT G. COX
FOR AMENDMENT OF ORDER NO. R-4561,
EDDY COUNTY, NEW MEXICO.

CASE NO. 5571

APPLICATION FOR HEARING DE NOVO

COMES NOW ROBERT G. COX, by and through his attorneys, and applies to the Commission for a de novo hearing for an order amending Order No. R-4561, and in support of the application, states:

1. Applicant is the authorized operator of the Federal EA Well No. 1, located 330 feet from the North line and 330 feet from the West line of Section 12, Township 18 South, Range 27 East, N.M.P.M., in the Empire-Abo Field, in Eddy County, New Mexico.

2. On June 25, 1973, the Commission entered its Order No. R-4561, permitting the applicant to directionally drill its well and as a condition thereof, the well was to be bottomed in the Empire-Abo Pool at a point within 100 feet of the surface location of the well. A further condition of Order No. R-4561 was that a continuous multi-shot directional survey be made of the well from the total depth to the Whipstock Point, with shocks not more than 100 feet apart.

3. During the drilling of the well, repeated single-shot surveys were run which gives a true andaccurate picture of the present bottom hole location of the well. To require a continuous multi-shot directional survey at this time of the well is apt to endanger the producing capabilities of the well, with a resulting loss of hydrocarbons.

4. That the well is presently bottomed within the exterior boundaries of the Northwest Quarter of the Northwest Quarter of

Section 12, Township 18 South, Range 27 East, N.M.P.M., which is the acreage dedicated to this well.

5. On the 16th day of December, 1975, this Commission entered its Order No. R-5139, wherein, after an examiner hearing, the Application to amend Order No. R-4561, was denied. From this Order this Application for Hearing De Novo is made.

WHEREFORE, Applicant asks that this matter be set before the full Commission and that Order No. R-4561 be amended to eliminate the requirement that a continuous multi-shot directional survey be made of the well; and that the Applicant be permitted to produce the well from its present bottom hole location, which is approximately 8 feet from the West line and approximately 58 feet from the North line of Section 12, Township 18 South, Range 27 East, N.M.P.M., Eddy County, New Mexico, or for such other full and fair relief as the Commission may deem appropriate.

FREEDMAN, DAY & IVY
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MONTGOMERY, FEDERICI, ANDREWS, HANNAHS & BUELL

By _____
Attorneys at Law
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(505) 982-3875

Attorneys for Applicant.

BEFORE THE OIL CONSERVATION COMMISSION OF NEW MEXICO

IN THE MATTER OF THE
APPLICATION OF ROBERT G. COX
FOR AMENDMENT OF ORDER NO. R-4561,
EDDY COUNTY, NEW MEXICO. CASE NO. 5571

APPLICATION FOR HEARING DE NOVO

COMES NOW ROBERT G. COX, by and through his attorneys, and applies to the Commission for a de novo hearing for an order amending Order No. R-4561, and in support of the application, states:

1. Applicant is the authorized operator of the Federal EA Well No. 1, located 330 feet from the North line and 330 feet from the West line of Section 12, Township 18 South, Range 27 East, N.M.P.M., in the Empire-Abo Field, in Eddy County, New Mexico.

2. On June 25, 1973, the Commission entered its Order No. R-4561, permitting the applicant to directionally drill its well and as a condition thereof, the well was to be bottomed in the Empire-Abo Pool at a point within 100 feet of the surface location of the well. A further condition of Order No. R-4561 was that a continuous multi-shot directional survey be made of the well from the total depth to the Whipstock Point, with shocks not more than 100 feet apart.

3. During the drilling of the well, repeated single-shot surveys were run which gives a true andaccurate picture of the present bottom hole location of the well. To require a continuous multi-shot directional survey at this time of the well is apt to endanger the producing capabilities of the well, with a resulting loss of hydrocarbons.

4. That the well is presently bottomed within the exterior boundaries of the Northwest Quarter of the Northwest Quarter of

Section 12, Township 18 South, Range 27 East, N.M.P.M., which is the acreage dedicated to this well.

5. On the 16th day of December, 1975, this Commission entered its Order No. R-5139, wherein, after an examiner hearing, the Application to amend Order No. R-4561, was denied. From this Order this Application for Hearing De Novo is made.

WHEREFORE, Applicant asks that this matter be set before the full Commission and that Order No. R-4561 be amended to eliminate the requirement that a continuous multi-shot directional survey be made of the well; and that the Applicant be permitted to produce the well from its present bottom hole location, which is approximately 8 feet from the West line and approximately 58 feet from the North line of Section 12, Township 18 South, Range 27 East, N.M.P.M., Eddy County, New Mexico, or for such other full and fair relief as the Commission may deem appropriate.

FREEDMAN, DAY & IVY
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MONTGOMERY, FEDERICI, ANDREWS, HANNAHS & BUELL

By _____
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Attorneys for Applicant.

BEFORE THE OIL CONSERVATION COMMISSION OF NEW MEXICO

IN THE MATTER OF THE
APPLICATION OF ROBERT G. COX
FOR AMENDMENT OF ORDER NO. R-4561,
EDDY COUNTY, NEW MEXICO.

CASE NO. 5571

APPLICATION FOR HEARING DE NOVO

COMES NOW ROBERT G. COX, by and through his attorneys, and applies to the Commission for a de novo hearing for an order amending Order No. R-4561, and in support of the application, states:

1. Applicant is the authorized operator of the Federal EA Well No. 1, located 330 feet from the North line and 330 feet from the West line of Section 12, Township 18 South, Range 27 East, N.M.P.M., in the Empire-Abo Field, in Eddy County, New Mexico.

2. On June 25, 1973, the Commission entered its Order No. R-4561, permitting the applicant to directionally drill its well and as a condition thereof, the well was to be bottomed in the Empire-Abo Pool at a point within 100 feet of the surface location of the well. A further condition of Order No. R-4561 was that a continuous multi-shot directional survey be made of the well from the total depth to the Whipstock Point, with shocks not more than 100 feet apart.

3. During the drilling of the well, repeated single-shot surveys were run which gives a true andaccurate picture of the present bottom hole location of the well. To require a continuous multi-shot directional survey at this time of the well is apt to endanger the producing capabilities of the well, with a resulting loss of hydrocarbons.

4. That the well is presently bottomed within the exterior boundaries of the Northwest Quarter of the Northwest Quarter of

Section 12, Township 18 South, Range 27 East, N.M.P.M., which is the acreage dedicated to this well.

5. On the 16th day of December, 1975, this Commission entered its Order No. R-5139, wherein, after an examiner hearing, the Application to amend Order No. R-4561, was denied. From this Order this Application for Hearing De Novo is made.

WHEREFORE, Applicant asks that this matter be set before the full Commission and that Order No. R-4561 be amended to eliminate the requirement that a continuous multi-shot directional survey be made of the well; and that the Applicant be permitted to produce the well from its present bottom hole location, which is approximately 8 feet from the West line and approximately 58 feet from the North line of Section 12, Township 18 South, Range 27 East, N.M.P.M., Eddy County, New Mexico, or for such other full and fair relief as the Commission may deem appropriate.

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& BUELL

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Attorneys for Applicant.

IN THE DISTRICT COURT OF EDDY COUNTY

STATE OF NEW MEXICO

ROBERT G. COX, Petitioner vs. NEW MEXICO OIL CONSERVATION COMMISSION, ATLANTIC RICHFIELD COMPANY and AMOCO PRODUCTION COMPANY, Respondents	)	No. 31508

PETITION FOR REVIEW

COMES NOW the Petitioner and states:

1. That Petitioner Robert G. Cox is a resident of Dallas County, Texas. Respondents Atlantic Richfield Company and Amoco Production Company, as adverse parties, are engaged in the transaction of business within the State of New Mexico and, therefore, are subject to service of process within or without the State of New Mexico pursuant to Section 21-3-16, NMSA, 1953 comp. The New Mexico Oil Conservation Commission is an administrative agency of the State Government of New Mexico and is subject to service of process in the manner provided in Section 65-3-22(b), NMSA (1953). The property involved in this matter is located in Eddy County, New Mexico, and said county is the proper county wherein this action must be brought pursuant to Section 65-3-22(b), New Mexico Statutes Annotated (1953).

2. Petitioner is the owner and operator of certain oil and gas leasehold operating rights under an oil and gas lease made by the United States of America as lessor, situated and being within the Empire-Abo Pool, Eddy County, New Mexico. That Petitioner made application to the Respondent Oil Conservation Commission for authorization to directionally drill a well known as the Federal EA Well No. 1, at a surface location of 330' from the North line and 330' from the West line

Pet. for Review

of Section 12, Township 18 South, Range 27 East, which said well is hereinafter referred to as the "subject well".

3. That the Respondent Oil Conservation Commission approved Petitioner's Application on June 25, 1973, by Order R-4561, subject to certain terms and conditions.

4. That the Petitioner thereafter and in September 1975, filed an Application seeking an amendment of Commission Order R-4561 to permit the bottoming of the subject well at a point 58' from the North line and 8' from the West line of Section 12, Township 18 South, Range 27 East, and for the elimination of other conditions imposed by the Commission Order.

5. That Examiner hearings were held by the Respondent Commission on October 8 and November 19, 1975, and Order R-5159 was issued in Case No. 5571 on December 16, 1975, denying Petitioner's Application for Relief.

6. Upon Application timely made, Petitioner requested a De Novo hearing before the Commission. The hearing was held in the offices of the Respondent Oil Conservation Commission on January 21 and February 24, 1976. As a result of said hearing, Respondent Oil Conservation Commission issued its Order R-5139-A (Case No. 5571 De Novo). Order No. R-5139-A is attached as Exhibit "A".

7. Petitioner filed an Application for Rehearing with Respondent Oil Conservation Commission on March 29, 1976, pursuant to Section 65-3-22, NMSA (1953). A copy of said Application is attached as Exhibit "B".

8. Respondent Oil Conservation Commission took no action on said Application within 10 days of filing and, therefore, pursuant to Section 65-3-22(a), Petitioner's Application for Rehearing was deemed to have been denied effective at 5:00 P.M., April 9, 1976.

9. That Respondent Oil Conservation Commission is under a statutory duty by its Orders to afford the owner of each

property in a pool the opportunity to produce his just and equitable share of the oil or gas or both, from the pool, being an amount substantially in the proportion 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. The Order of the Respondent Commission denies Petitioner this statutory opportunity and is, therefore, invalid; as stated in Petitioner's Motion for Rehearing, the Order is invalid and erroneous in the following respects:

(a) The preponderance of evidence adduced at the hearing heretofore held on January 21, 1976, and February 24, 1976, establishes that Petitioner did not intentionally deviate the subject well in violation of the Drilling Permit R-4561 granted Petitioner by the Commission.

(b) The preponderance of evidence adduced at said hearings clearly shows that the subject well is not correlative to and there is no communication with the adjoining well to the West and at best, poor or little correlation to and poor or little communication with the adjoining well to the North.

(c) Any evidence at such hearings indicating probably no more than 2-1/2 acres underlying Petitioner's lease in the NW¼NW¼ of Section 12, T. 18 S., R. 27 E., N.M.P.M., being productive of hydrocarbons from the Abo formation having a reservoir hydrocarbon pool volume of approximately 4520 barrels is not substantive and without corroboration.

(d) There was no substantial evidence introduced at said hearings substantiating the quantity of original oil in place.

(e) That denying the Application in this case deprives Petitioner of his right to enjoy his property in face of the great weight of the law in other jurisdictions allowing production in similar cases.

WHEREFORE, Petitioner prays that the Court determine Commission Order R-5139-A to be invalid and proceed to adjudicate Petitioner's rights to produce the subject well with respect to property interests held by Petitioner, and for all further proper relief herein.

DATED at Roswell, New Mexico, this 23rd day of April, 1976.

HUNKER - FEDRIC, P.A.

By _____
George H. Hunker, Jr.
P.O. Box 1837
Roswell, New Mexico 88201

Attorneys for Robert G. Cox,
Petitioner

I hereby certify that on this 26th day of April, 1976, I mailed true copies of the foregoing document to opposing counsel of record.

_____
George H. Hunker, Jr.

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MEXICO, D. F., MEXICO OFFICE
LIC. MANUEL FUENTES OGARRIO

March 25, 1976

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Oil Conservation Commission
State of New Mexico
P. O. Box 2088
Santa Fe, New Mexico 87501

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE NO. 5571 DE NOVO
Order No. R-5139-A

APPLICATION OF ROBERT G. COX
FOR AMENDMENT OF ORDER NO.
R-4561, EDDY COUNTY, NEW MEXICO

TO THE COMMISSION:

Applicant, Robert G. Cox, et al, requests a rehearing on the above matter.

1. Applicant would show the Commission that:

a) the preponderance of evidence adduced at the hearing heretofore held on January 21, 1976, and February 24, 1976, establishes that Applicant did not intentionally deviate the subject well in violation of the drilling permit R-4561 granted Applicant by the Commission.

b) the preponderance of evidence adduced at said hearings clearly shows that the subject well is not correlative to and there is no communication with the adjoining well to the West and at best poor or little correlation to and poor or little communication with the adjoining well to the North.

c) any evidence at such hearings indicating probably no more than two and one-half acres underlying Applicant's lease in the NW/4 NW/4 of Section 12, T18S, R27E, NMPM, being productive of hydrocarbons from the Abo formation having a reservoir hydrocarbon pool volume of approximately 4520 barrels is not substantive and

Cox Rehearing

Appl. for Rehrg

without corroboration.

d) there was no substantial evidence introduced at said hearings substantiating the quantity of original oil in place.

e) that denying the application in this case deprives Applicant of his right to enjoy his property in face of the great weight of the law in other jurisdictions allowing production in similar cases.

Please advise of your decision for rehearing.

Respectfully submitted,

James E. Day, Jr.
Attorney for Applicant

JEDj/tmc

cc: Mr. George H. Hunker, Jr.
Hunker, Fedric, & Higginbotham, P.A.
Suite 210, Hinkle Building
P. O. Box 1837
Roswell, New Mexico 88201

Mr. Robert G. Cox
Geo-Tech Petroleum Management Corporation
4230 LBJ Freeway, Suite 409
Dallas, Texas 75234

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

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

CASE NO. 5571 DE NOVO
Order No. R-5139-A

APPLICATION OF ROBERT G. COX
FOR AMENDMENT OF ORDER NO.
R-4561, EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 21, 1976, and February 24, 1976, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this 10th day of March, 1976, the Commission, a quroum being present, having considered the testimony presented and the exhibits received at said hearing, and being fully advised in the premises,

FINDS:

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

(2) That the applicant, Robert G. Cox, is the owner and operator of the Federal "EA" Well No. 1, the surface location of which is reported as being 330 feet from the North line and 330 feet from the West line of Section 12, Township 18 South, Range 27 East, NMPM, Empire-Abo Pool, Eddy County, New Mexico.

(3) That when originally drilled, the subject well deviated 23 feet to the South and 172 feet to the West of the surface location at a measured depth of 6050 feet (true vertical depth 6046 feet) in the Empire-Abo Pool.

(4) That on June 25, 1973, the Commission entered Order No. R-4561 which authorized the applicant to re-enter said well, set a whipstock at approximately 4,200 feet and directionally drill said well to a depth of approximately 6,200 feet, bottoming the well in the Empire-Abo Pool at a point within 100 feet of the surface location.

(5) That Order No. R-4561 also required that the applicant make a continuous multi-shot directional survey of said well from total depth to the whipstock point with shot points not more than 100 feet apart and provide a copy of the survey to the Commission.

(6) That in July and August, 1975, the applicant herein, Robert G. Cox, re-entered said well and directionally drilled the same in a northwesterly direction to a depth of approximately 6220 feet at a bottom-hole location approximately 269 feet north and 321 feet west of the surface location.

(7) That said well was completed in August, 1975, capable of production from the Abo formation through perforations from 6212 feet to 6216 feet.

(8) That the applicant seeks amendment of Commission Order No. R-4561 to permit bottoming of the subject well at approximately 58 feet from the North line and approximately 8 feet from the West line of Section 12, Township 18 South, Range 27 East, NMPM, Eddy County, New Mexico, and to eliminate the requirement of a continuous multi-shot survey of the well.

(9) That this matter came on for hearing before Examiner Richard L. Stamets on October 8, 1975, and November 19, 1975, and pursuant to this hearing, Order No. R-5139 was issued in Case No. 5571 on December 16, 1975, which order denied the application of Robert G. Cox for the amendment of Order No. R-4561.

(10) That on January 7, 1976, applicant Robert G. Cox filed application for hearing De Novo of Case No. 5571, and the matter was set for hearing before a quorum of the Commission.

(11) That this matter came on for hearing De Novo on January 21, 1976, and February 24, 1976.

(12) That the evidence adduced at said hearing clearly establishes that the applicant made no effort to comply with the provisions of Order No. R-4561 which required that the well be bottomed within 100 feet of the surface location.

(13) That the evidence further establishes that the applicant intentionally deviated the well toward the northwest corner of said well's spacing and proration unit, being the NW/4 NW/4 of Section 12, Township 18 South, Range 27 East, NMPM, well beyond the 100-foot target area described in Finding No. (4) above, and that he in fact did bottom said well at a point 62 feet from the North line and 9 feet from the West line of said Section 12.

(14) That the owners of interest in acreage offsetting said well appeared at the hearing on January 21, 1976, and February 24, 1976, and objected to the production of the well at the aforesaid bottom-hole location.

(15) That the evidence indicates that the productive interval in the subject well, i.e., the perforated interval from approximately 6212 feet to approximately 6216 feet, is correlative to, and in communication with, the Abo producing interval in wells to the north and west of said well.

(16) That the evidence indicates that there are probably no more than two and one-half acres underlying applicant's lease in the NW/4 NW/4 of Section 12, Township 18 South, Range 27 East, NMPM, which are productive of hydrocarbons from the Abo formation.

(17) That the evidence indicates that the above-described two and one-half acres would have a reservoir hydrocarbon pore volume of approximately 4520 barrels.

(18) That due to the reservoir volume factor, there actually would be produced at the surface somewhat less than 4520 barrels of stock tank oil in voiding the aforesaid 4520 barrels of reservoir hydrocarbon pore space, because of shrinkage of the oil as the dissolved gas is released at the surface.

(19) That subsequent to its August, 1975, completion at the bottom-hole location described in Finding No. (13) above, and through December 31, 1975, the subject well produced 4008 barrels of stock tank oil, representing more than 4008 barrels of reservoir hydrocarbon pore space because of the reservoir volume factor described above.

(20) That at the time of the hearing of Case No. 5571 De Novo, no records were yet available to indicate the volume of stock tank oil produced from the subject well in January, 1976, and February, 1976.

(21) That said well produced an average of approximately 35 barrels of oil per day during November, 1975, and December, 1975, and was assigned an allowable of 35 barrels of oil per day for January, 1976, and February, 1976.

(22) That assuming said well continued to produce 35 barrels of oil per day in January, 1976, and February, 1976, its cumulative production from its August, 1975, completion at the bottom-hole location described in Finding No. (13) above through February, 1976, would be 6108 barrels of stock tank oil.

(23) That even disregarding the reservoir volume factor, the aforesaid 6108 barrels of oil would be in excess of the original oil in place in the Abo formation under the Robert G. Cox Federal "EA" Lease in the NW/4 NW/4 of Section 12, Township 18 South, Range 27 East, NMPM.

(24) That the production of oil in excess of the original oil in place under said lease would of necessity be the production of oil migrating to applicant's lease from offsetting properties.

(25) That the production of oil in excess of the original oil in place under said lease would cause drainage across lease lines which would not be equalized by counter-drainage.

(26) That Section 65-3-11, Subsection 7, NMSA 1953 Comp. authorizes and empowers the Commission "To require wells to be drilled, operated and produced in such manner as to prevent injury to neighboring leases or properties."

(27) That to permit the subject well to produce, after more than the original oil in place has been produced, would result in injury to neighboring leases or properties.

(28) That Section 65-3-10 NMSA 1953 Comp. places upon the Commission the duty to protect the correlative rights of owners of mineral interests in oil and gas pools in New Mexico.

(29) That the granting of the application in this case would impair the correlative rights of the owners of interest in the acreage offsetting the Robert G. Cox Federal "EA" Well No. 1.

(30) That to permit the continued production of the subject well at its present bottom-hole location would impose upon the operators of the acreage offsetting said well the obligation to drill additional wells on their own property at the same approximate distance from the lease line as the subject well, if they would protect their leases from drainage.

(31) That wells drilled under the conditions set out in Finding No. (30) above would not significantly add to the total ultimate production from the Empire-Abo Pool and would not be necessary for the efficient and economic production of the Empire-Abo Pool, and would, therefore, constitute economic waste.

(32) That wells producing under the conditions set out in Finding No. (30) above would not produce the oil and gas from said pool as efficiently as wells more distantly spaced from one another, and could result in underground waste.

(33) That to protect correlative rights, to prevent economic waste, and to prevent underground waste, the application should be denied.

IT IS THEREFORE ORDERED:

(1) That the application of Robert G. Cox for the amendment of Order No. R-4561 is hereby denied.

(2) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

PHIL R. LUCERO, Chairman

EMERY C. ARNOLD, Member

JOE D. RAMEY, Member & Secretary

S E A L

dr/

IN THE DISTRICT COURT OF EDDY COUNTY

STATE OF NEW MEXICO

ROBERT G. COX, Petitioner vs. NEW MEXICO OIL CONSERVATION COMMISSION, ATLANTIC RICHFIELD COMPANY and AMOCO PRODUCTION COMPANY, Respondents	)	No. 31,508

BRIEF IN SUPPORT OF PETITION FOR REVIEW

FACTUAL BACKGROUND:

Petitioner, Robert G. Cox, owns the oil and gas leasehold operating rights under a federal oil and gas lease, situate within the Empire-Abo Pool, Eddy County, New Mexico. Pursuant to an Order issued by the New Mexico Oil Conservation Commission in 1973, the Petitioner in the year 1975 drilled an oil well known as the Federal EA Well #1 upon the leasehold acreage. Subsequently, the Petitioner applied to the Oil Conservation Commission to amend the 1973 Order, so as to allow the well to be bottomed at a location which had not been authorized in the original Order. The Petitioner's Application to Amend was initially denied by a Hearing Examiner, and the Petitioner sought and obtained a de novo hearing before the Commission. The matter was heard by the Oil Conservation Commission as Case 5571 on January 21 and February 24, 1976; however, the relief being sought by the Petitioner was denied under Commission Order R-5139-A. (A copy of said Order is attached to the Petition for Review as Exhibit "A".) The Petition for Review was filed with this Court by Mr. Cox under authority of Section 65-3-22, N.M.S.A.

SCOPE OF REVIEW:

The scope of review by this Court is somewhat restricted, inasmuch as the New Mexico Supreme Court has held that the trial court must limit its review to a review of the evidence before the Commission. The questions to be answered by this Court are questions of law, restricted to whether the Oil Conservation Commission acted fraudulently, arbitrarily or capriciously; or whether the Order was supported by substantial evidence; or generally, whether the action of the administrative head was within the scope of his authority. Continental Oil Company v. Oil Conservation Commission, 70 N.M. 310 (1962).

In the matter before the Court, it is the Petitioner's contention that a material and basic portion of the Commission's Order is not supported by substantial evidence, and thus, the Order, to the extent of the review hereby requested, was capriciously and arbitrarily issued. As succinctly put and pertinent to the Petitioner's position in the present matter, the Supreme Court in Kelley v. Carlsbad Irrigation District, 71 N.M. 464 (1963), stated that "the review is to be restricted to whether based upon the legal evidence produced at the hearing, if the decision...was substantially supported by the evidence".

BASIS OF PETITION:

In the Petition filed before this Court, the Petitioner alleged the Commission's Order R-5139-A was invalid and erroneous in five respects, under Petition subheadings (a) through (e). Petitioner elects to request this Court's review of the following contention only:

> (c) Any evidence at such hearings indicating probably no more than 2½ acres underlying Petitioner's lease in the NW¼NW¼ of Section 12, Township 18 South, Range 27 East, N.M.P.M., being productive of hydrocarbons from the Abo formation having a reservoir hydrocarbon pool volume of approximately 4520 barrels is not substantive and without corroboration.

In the hearing before the Oil Conservation Commission, the Petitioner attempted to establish two basic premises:

(1) That the Petitioner did not intentionally deviate the Petitioner's well in violation of the Commission's original Drilling Permit; and

(2) That the producing formation in which the Petitioner's well was bottomed, was not in communication with offsetting adjoining wells so as to cause drainage.

By requesting this Court to limit its review to contention (c) above, relating to the quantity of productive acres underlying Petitioner's leasehold, Petitioner acknowledges that he violated the Commission's original Drilling Permit Order, and that the well is bottomed in an Empire-Abo Pool formation which communicates with offsetting wells. Petitioner admits that absent restrictions upon his right to produce, the bottom hole location of his well may drain oil from adjoining tracts. However, Petitioner denies that he has in the past or is presently violating correlative rights of adjoining land owners, for the Petitioner submits that he has not yet recovered the total recoverable oil in place under his lease.

Finding No. (16) in the Oil Conservation Commission Order R-5139-A (Exhibit "A" to Petition) reads as follows:

> (16) That the evidence indicates that there are probably no more than 2½ acres underlying applicant's lease in the NW¼NW¼ of Section 12, Township 18 South, Range 27 East, N.M.P.M., which are productive of hydrocarbons from the Abo formation.

Finding No. (17) in the Order related that 2½ productive acres under the Petitioner's lease equaled approximately 4520 barrels of oil, while Finding No. (20) found that the Petitioner had produced 6108 barrels of oil from his lease.

Findings (17) through (33) of said Order essentially state that with only 2½ productive acres under the Cox lease, the Petitioner, Mr. Cox, has already produced more oil than he is entitled to; and that additional production would be drainage oil from adjoining tracts, so as to violate correlative rights; and resulting in the Commission giving the Petitioner no allowable for his well.

Petitioner submits that the Commission's Finding No. (16) of only 2½ productive acres under the Cox lease, is not supported by substantial evidence. Finding (16) is basic to the validity of Findings (17) through (33), and if such findings are unsupported by the evidence, the Commission ruling which denies Mr. Cox the opportunity to further produce his well, is invalid.

ARGUMENT:

The primary object of our oil and gas conservation statutes as set forth in Section 65-3-1, et seq., is to prevent waste of an irreplaceable natural resource. The history of the legislation reflects the primary concern to be the prevention of waste so far as can practicably be done, with a secondary consideration being the protection of the correlative rights of the producers of oil and gas. El Paso Natural Gas Company v. Oil Conservation Commission, 76 N.M. 268 (1966). If, as the Petitioner, Mr. Cox, contends, there is more than 2½ productive acres beneath his lease, the Commission's Order, rather than preventing waste, commits and enhances waste, for the Order will cause the abandonment of substantial quantities of recoverable oil which the Petitioner contends remains under his leasehold.

"Substantial evidence" means such relevant evidence as a reasonable man might accept as adequate to support a conclusion. Rinker v. State Corporation Commission, 84 N.M. 622 (1973). The evidence produced must be more than merely any evidence and more than a scintilla of evidence. Wilson v. Employment Security Commission, 74 N.M. 3 (1964). This Court, on review of the Commission's Order, cannot weigh the evidence, for that is the province of the administrative body, but the Court can review the record to determine if the Commission could reasonably have made its findings.

Since the Petitioner contests the basic and crucial Finding No. (16) of the Commission's Order, we urge the Court's review of the record to determine if adequate evidence reasonably exists

supporting the finding. It is submitted that absent substantial evidence to support the Commission's Finding No. (16), that Findings (17) through (33) which depend upon Finding No. (16) for their basis, will also be invalid.

The only evidence contributing to Finding (16) comes from the testimony of Daniel R. Currens, a Staff Engineer for Amoco Production Company. Mr. Currens' testimony is reflected at pages 181 through 193 of Volume II of the Transcript of the Hearing. (For convenience, the Transcript of the portion of the hearing held January 21, 1976, is referred to as Volume I, and the Transcript from the continued portion of the hearing held February 24, 1976, is referred to as Volume II.)

There are two wells (by surface location) on the Cox lease, an old (prior to Cox) abandoned well referred to frequently in the Transcript as the Aztec well, which had produced approximately 5,000 barrels of oil before being plugged, and the Federal EA #1 well. Mr. Cox re-entered the Aztec well in 1968 in an attempt to recomplete, but was unsuccessful. In 1971, Mr. Cox drilled the Cox #2 Federal EA well to test the Abo formation, but this attempt was dry, and the well was shut-in in late 1972. In 1975, he re-entered the Aztec well, now called the Cox EA #1, and at a point in the well bore he deviated the direction of the well bore under what is called "directional drilling", and bottomed the well at its present productive location. The bottom hole location is located at a point 62 feet from the North line and 9 feet from the West line of the section boundaries which enclose the Cox lease. The Respondents, Atlantic Richfield Company and Amoco Production Company, own a little over 68% of the Empire-Abo Unit (Vol. II, p. 21), a unit operation located within the Empire-Abo Pool, and there are unit wells which offset the Cox lease.

Mr. Currens testified that he had made a study to determine the reservoir limits of the oil reservoir underlying the Cox lease. Mr. Currens noted that the old Aztec well, when deepened to the depth of the productive formation in the EA #1 well, produced only water. (The EA Federal #1 well as to the present productive

formation, is frequently hereafter referred to as the "Cox well".) Mr. Currens also noted that the EA #1 well as originally drilled could not be completed as a producer. In response to questioning by Mr. Guy Buell, Attorney for Amoco, he responded that such information gave him a clue to the possible Southern limits of the Cox zone under the Cox Federal EA lease. (Vol. II, p. 186). Mr. Currens did not explain what clue he was talking about or how he could outline the possible Southern limits of the Cox zone. He did not further explain the study performed by him or set forth normal required engineering parameters in connection with his alleged study. Without further background or basis for the so-called study performed by Mr. Currens, he responded under questioning:

Vol. II, p. 186 --

> Question: All right, sir, based on your study and maybe it will help us get in perspective, in the upper northwest corner of our Exhibit DN-2, what amount of surface acreage are we looking at? I know within the red boundary we were looking at 40 acres, but what are we looking at up there in that northwest corner?
>
> Answer: Well, in the northwest corner, a square to the, with the surface location of the #1 as the corner of it, that 331 feet from the North line and 330 feet from the West line location, this area in the extreme northwest corner, that would be a square of those dimensions would be approximately 2½ acres.
>
> Question: All right, sir, let me ask you this: Based on your study of the completion attempts and the randomly deviated well over the interval that should contain the Cox zone, based on your evaluation of the performance and the production data from the deviated completion and that four feet of porosity, what, in your opinion, could be the maximum extent of the Cox zone under the Cox Federal EA lease?
>
> Answer: I don't believe it could be more than 2½ acres.

Mr. Currens depicts the 2½ acres as a 2½-acre square. He gives no basis for coming up with a square or why he used a square configuration for the reservoir in the first place. In essence, his statement of fact is an unsupported conclusion.

Mr. Currens goes on to mathematically arrive at the number of barrels under 2½ acres and to compare the same with actual production by Mr. Cox, so as to show that Mr. Cox has taken all of the oil from beneath his lease, assuming, of course, that he has

only 2½ productive acres beneath his lease. Mr. Currens states that Mr. Cox has taken all of his oil and is now taking his neighbor's oil.

Under cross-examination of Mr. Currens, the following occurred:

Vol. II, p. 191 --

Question: Mr. Currens, are you saying that under the Cox lease there are only 2½ producing acres?

Answer: I said that I could not see that he could have any more than 2½ acres productive from the completion that he has made in this well.

Question: All right, are there only 2½ producing acres in the Cox lease?

Answer: I doubt that there are any more than that.

Question: You disagree with the unit engineering that Mr. Christianson relies on of 14 producing acres? He relies on the unit study; do you disagree with that?

Answer: We are talking of two different points in time.

Question: I realize that.

Answer: And, yes, I disagree with there being 14 productive acres right now.

Two points in the Currens cross-examination are particularly noteworthy. First, reference is made to a Mr. Christianson and an Engineering Committee study giving 14 productive acres to the Cox lease. Mr. Christianson is Hugh Christianson, a Reservoir Engineer with Atlantic Richfield Company, who testified as a witness opposed to Mr. Cox' position before the Commission.

Mr. Christianson testified (Vol. II, pp. 7-8 and pp. 117-118) that he did his first work in the Empire-Abo Pool in connection with a reservoir study in 1967. From November 1967 through August 1968, he served upon the Engineering Committee for the Empire-Abo Field, which Committee was composed of both geologists and engineers who studied all available information on the pool so as to determine the extent of the Empire-Abo reservoir and to agree upon the acreage which should be included in the unit. Mr. Christianson has been the principal witness in practically all of the hearings before the Oil Conservation Commission involving the Empire-Abo Unit (Vol. II, p. 118). He stated he was presently

supervising an engineering group that had the responsibility for engineering recommendations with reference to the Empire-Abo Pool and Unit (Vol. II, p. 8).

Mr. Christianson testified that the Cox acreage was included by the Engineering Committee as being within the Empire-Abo Pool (Vol. II, pp. 120-121). He testified that the Engineering Committee assigned 14 productive acres to the Cox lease, with barrels of oil in place being estimated at 39,890 barrels (Vol. II, p. 145). Mr. Christianson did state that he felt the original assignment of productive acres to the Cox lease was now too high, and that the original 39,890 barrels of oil in place under the Cox lease should be substantially reduced, although he would not say by how much (Vol. II, pp. 145-146). Later, under cross-examination, Mr. Christianson testified in direct opposition to the testimony of Mr. Currens, who had said all of the oil under the Cox lease had been depleted. Mr. Christianson responded that there is oil presently under the Cox lease (Vol. II, p. 168). Under further cross-examination, Mr. Christianson continued to maintain his position that he was not sure how many productive acres were under the Cox lease, although he did feel that the original Engineering Committee estimate should now be cut. When pinned down and asked how much the Engineering Committee's estimate should be cut, he stated:

> Vol. II, p. 170 --
>
> Answer: I don't know, some percentage of that. It would be say, two-thirds.

Unfortunately, Mr. Christianson's answer is somewhat ambiguous, for there was no further follow-up and it is difficult to determine if he was saying that the original Engineering Committee's estimate of 38,890 barrels of oil should be cut by two-thirds to approximately 13,296 barrels of oil, or if the original estimate was one-third too high so that there would be approximately 26,000 barrels of oil under the Cox lease.

In either event, however, Mr. Christianson, an Engineer with vast experience in the Empire-Abo Pool, and the principal witness in all Empire-Abo administrative hearings, did not limit the productive acres under the Cox lease to only 2½ acres, but on the contrary, found there to still be oil under the Cox lease in substantial quantities. Howsoever his two-thirds answer is interpreted, there remain several thousand barrels of oil under the Cox lease to which Mr. Cox is entitled.

The second noteworthy point in the testimony of the witness Currens, is in his depicted configuration of a square reservoir for the alleged 2½ productive acres underlying the Cox lease. Witness Hugh Christianson testified that fluid withdrawal from the Cox well will be in a radial fashion around the well bore (Vol. II, p. 144). In other words, the oil migrates to the well from all directions, which fact makes the 2½-acre square reservoir proposed by Mr. Currens completely implausible.

Another witness, W. Glenn Noell, Vice President of H.J. Gruy & Associates, in charge of reservoir and evaluation studies, testified that there was not enough information and data to determine the areal extent of the reservoir under the Cox lease (Vol. II, p. 35 and p. 62).

At the Commission hearing, Mr. Cox sought to show that he had not intentionally violated the Commission's original Drilling Order, and that the productive zone under the Cox well was not in communication with the productive zone of his neighbors. Mr. Cox was unsuccessful in both respects, and whether he agrees with such findings or not, the findings are supported by substantial evidence. The thrust of his contentions, however, did not involve the areal extent of the productive reservoir underlying his tract, for his experts felt that his productive zone did not communicate with adjoining wells, under which theory he would not necessarily violate correlative rights, and under which theory the extent of his reservoir would not be of the same significance as if there

were communication between the wells. Therefore, a valid engineering study of the actual areal extent of the Cox reservoir was not presented to the Commission by any of the parties before the Commission, nor did the Commission actually seek such information.

New Mexico Statute 65-3-14(a), 1953 comp., states that the Commission shall:

> ...afford to the owner of each property in a pool the opportunity to produce his just and equitable share of the oil...in the pool, being an amount so far as can be practically determined, and so far as can be practically obtained without waste....

In Grace v. Oil Conservation Commission, 87 N.M. 205 (1975), the Supreme Court noted that this statute was not couched in terms of what is possible, but what is practical. The Court stated that evidence existed that the only reasonable and accurate method of determining recoverable reserves under a tract would be by use of a pressure decline curve, but there had not been a sufficiently long enough productive history in that case to obtain accurate results by such best method. The Graces had contended for other methods of determination, but the Court found the same to be impractical. The Court held that the Commission need not determine the amount of gas underlying each productive tract, and in the pool, when the Commission's findings demonstrated that such determinations are impractical.

By analogy and for the present matter before the Court, if the Commission's findings (where such a determination is crucial to the Commission's Order) do not demonstrate that a determination of the oil underlying the producer's tract would be impractical, then such a determination is a prerequisite to a valid finding by the Commission.

In other words, if the Commission had made a finding, based upon reasonable evidence, that it was impractical to use an accurate method for determining the reserves under the Petitioner's lease, then the Petitioner would not have a basis for complaint. Here, the Commission did not make a valid practical determination

of the quantity of oil underlying the Petitioner's tract, although such a determination could have been made using accepted engineering practices. The Commission instead adopted an unfounded and unsubstantiated opinion that "there are probably no more than 2½ acres" productive under the Petitioner's tract. Even the quoted statement itself indicates the improbability and lack of credibility in the conclusion. Unfortunately, all determinations by the Commission thereafter with reference to quantity of oil underlying the Petitioner's tract of land and a denial of any further allowable to the Petitioner, were based upon the 2½-acre assumption which the Commission accepted and adopted as a finding. The Commission did not seek nor have before it reliable engineering evidence such as a pressure decline curve or bottom hole pressure information in making this crucial determination.

To be substantial, the evidence leading to the Commission's conclusion must be relevant, adequate and reasonable. The only evidence finding 2½ productive acres under the Petitioner's tract was Mr. Currens' testimony, and no other witness would support his assumption. Mr. Currens was asked for his opinion and gave it, but the record is devoid of his relating any calculated or computed basis for the opinion. Absent a valid basis for his opinion, his conclusion is unsupported by substantial evidence.

It is submitted that the Commission in an attitude of disapproval of the Petitioner, Mr. Cox, resulting from his violation of the original Drilling Order issued by the Commission, which violation they found to be willful, determined to accept any and every opinion and conclusion adverse to Mr. Cox as a penalty or punishment to him for his actions. By adopting such a position, the Commission could thus refuse to grant any production allowable to Mr. Cox, rather than simply penalizing his allowable as a penalty for the violation. The Commission has the power to penalize a producer to protect correlative rights and to penalize a producer who may have an undue advantage over others. See: Sec. 65-3-11, N.M.S.A., 1953 comp., and Oil Conservation Commission Rule 104(g).

By adopting such a position, however, the Commission has abdicated their basic duty to regard the prevention of waste as paramount. Under such duty, private rights such as the prevention of drainage and protection of correlative rights are secondary to the prevention of waste. Grace v. Oil Conservation Commission, supra.

The Petitioner does not ask this Court to find that 14 productive acres underlie the Petitioner's tract, as such acres were assigned to the tract by the Unit Engineering Committee, nor does the Petitioner request the Court to fully accept the testimony of the expert witnesses who did not support Mr. Currens; but neither should the unsubstantiated assumption by Mr. Currens of 2½ productive acres be allowed to stand. Petitioner believes that it is clear from the record that a valid determination of the oil underlying the Petitioner's tract simply was not made by the Commission; and that as to the basic Finding No. (16) by the Commission and the subsequent findings in support thereof (Findings (17) through (33)), the Court should set the Commission's Order aside and remand the case to the Commission for the limited purpose of conducting a proper and adequate hearing on the size of the productive reservoir underlying the Petitioner's tract, allowing all parties an opportunity to give tangible and supportable engineering proof in connection therewith.

Certainly, such a request for a more exact determination so as to prevent waste is not unreasonable. If the evaluation of the witness Mr. Christianson, who, it should be remembered, was adverse to the position of the Petitioner, is correct under the most liberal interpretation of his testimony, granting no allowable to the Cox lease would leave in excess of 33,000 barrels of unrecovered oil in the ground.

Mr. Cox seeks only a proper and adequate determination of the extent of the oil reservoirs underlying his tract. If a proper method of determination reflects that there are in fact no more than 2½ productive acres, then he must accept the same. If, on

the other hand, the reserves as reflected by proper engineering data, are substantially more than he has withdrawn from beneath his lease, then he should be entitled to produce his own oil, subject only, however, to such reasonable penalty against his allowable as the Oil Conservation Commission might determine to impose by way of a penalization of his violation of the original Drilling Order.

It is not Mr. Cox' intention or wish to drain oil from his adjoining neighbors or to damage correlative rights, but where the Commission has determined to punish a Commission Order violator by leaving oil reserves in the ground rather than penalizing the producer on his allowable, which they are authorized to do, then the Order of the Commission is arbitrary and capricious, and is permitting waste rather than preventing it.

Respectfully submitted,

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IN THE DISTRICT COURT OF EDDY COUNTY

STATE OF NEW MEXICO

ROBERT G. COX, Petitioner, vs. NEW MEXICO OIL CONSERVATION COMMISSION, ATLANTIC RICHFIELD COMPANY and AMOCO PRODUCTION COMPANY, Respondents.	)	No. 31508

CIVIL APPEAL FROM THE
NEW MEXICO OIL CONSERVATION COMMISSION

RESPONDENT'S ANSWER BRIEF
NEW MEXICO OIL CONSERVATION COMMISSION

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STATEMENT OF THE CASE

This case is a statutory petition brought pursuant to N.M.S.A. Section 65-3-22(b), 1953 Comp., for judicial review of an action of the New Mexico Oil Conservation Commission. The action in question concerns the Commission's denial of Petitioner's application seeking amendment of Order No. R-4561 to permit the bottoming of Petitioner's Federal EA Well No. 1 in Section 12, Township 18 South, Range 27 East, NMPM, Eddy County, New Mexico, at a new location.

By its Order No. R-4561, Respondent Oil Conservation Commission approved Petitioner's application to re-enter a previously drilled crooked hole and to directionally drill so as to return the well bore to approximately vertical. Approval was conditioned on Petitioner's bottoming the well "at a point within 100 feet of the surface location" and verifying that bottom hole location by making a multi-shot directional survey of the well bore. After directionally drilling the well to a bottom hole location 58 feet from the North line and 8 feet from the West line of Section 12, a point approximately 320 feet outside the authorized target area, Petitioner sought an amendment of Order No. R-4561 to permit that bottom hole location and the verification thereof by single-shot directional surveys.

An examiner hearing was held October 8, 1975, and November 19, 1975, and Order No. R-5139 was issued in which the following findings were made:

1. The Petitioner made no effort to comply with the provisions of Order No. R-4561 (Finding 7).

2. The well was intentionally deviated toward the northwest

corner of the spacing unit well beyond the 100 foot target (Finding 8).

3. A well produced at this bottom hole location would cause drainage of hydrocarbons across lease lines which would not be equalized by counter-drainage, and as a result would impair the correlative rights of offsetting operators (Findings 11 and 13). Therefore, Petitioner's application was denied.

Respondent Oil Conservation Commission held a De Novo hearing on January 21, 1976, and February 24, 1976, as a result of which Order No. R-5139-A was issued. The Commission made these additional findings:

1. The productive interval in the subject well is correlative to and in communication with the Abo producing interval in wells to the north and west of said well (Finding 15).

2. There are probably no more than two and one-half acres underlying Petitioner's lease that are productive of hydrocarbons from the Abo formation (Finding 16).

3. This acreage has a reservoir hydrocarbon pore volume of approximately 4520 barrels (Finding 17).

4. The subject well was assigned an allowable of 35 barrels of oil per day (Finding 21).

5. At this rate, production would be in excess of the original oil in place in the Abo formation underlying Petitioner's lease, and would result in the migration of oil from offsetting properties to Petitioner's lease (Findings 23 and 24).

6. Additional wells drilled by offset operators to protect their leases from drainage would not significantly add to the ultimate production from the Empire-Abo Pool, and would therefore constitute economic waste (Finding 31).

7. Such wells would not produce the pool as efficiently as wells more distantly spaced from one another, and could result in underground waste (Finding 32).

Petitioner's application was again denied.

Petitioner then applied for rehearing, which application the Respondent denied by failing to take action, pursuant to N.M.S.A. Section 65-3-22(a), 1953 Comp.

ARGUMENT

I. THE SCOPE OF REVIEW OF RESPONDENT'S ACTION IS LIMITED TO CERTAIN MATTERS.

This case is an appeal from administrative orders issued by the Respondent Oil Conservation Commission. The court is limited in its scope of review to the consideration of three questions. These questions were delineated in Johnson v. Sanchez, 67 N.M. 41, 351 P.2d 449 (1960):

> "It has long been the policy in the state of New Mexico, as shown by the various decisions of this court, that on appeals from administrative bodies the questions to be answered by the court are questions of law and are actually restricted to whether the administrative body acted fraudulently, arbitrarily or capriciously, whether the order was supported by substantial evidence, and, generally, whether the action of the administrative head was within the scope of his authority." 67 N.M. at 48.

See also Otero v. New Mexico State Police Board, 83 N.M. 594, 495 P.2d 374 (1972). This rule has been specifically applied to the Oil Conservation Commission in Continental Oil Co. v. Oil Conservation Commission, 70 N.M. 310, 373 P.2d 809 (1962); Rutter & Wilbanks Corp. v. Oil Conservation Commission, 87 N.M. 286, 532 P.2d 582 (1975); and Fasken v. Oil Conservation Commission, 87 N.M. 292, 532 P.2d 588 (1975). Only two of these

considerations are at issue before this court: whether Respondent's Order was supported by substantial evidence, and whether the Respondent acted fraudulently, arbitrarily or capriciously in denying Petitioner's application. Should Petitioner fail to carry its burden of persuasion on these issues, the court must find for the Respondent.

II. THE RECORD CONTAINS SUBSTANTIAL EVIDENCE SHOWING THAT CORRELATIVE RIGHTS HAVE BEEN VIOLATED.

In seeking review by this court, Petitioner has alleged that the preponderance of evidence adduced at the hearings below establishes that the subject well is not correlative to nor in communication with adjoining wells to the north and west. He alleges that evidence of only two and one-half productive acres and of the quantity of oil underlying his lease is insubstantial.

However, the evidence contained in the record clearly demonstrates that correlative rights have been violated. Generally, the record shows that the subject well is in communication with offsetting wells owned by other operators in the Empire-Abo Pool such as Amoco and Atlantic Richfield Company. Production at its present bottom hole location can therefore cause drainage of hydrocarbons across lease lines which will not be equalized by counter-drainage. This occurrence has, in fact, already begun to take place. Amoco's expert witness, Mr. Currens, estimated that the original oil in place underlying Petitioner's lease amounted to 4520 barrels (bbls.) (TR_2 189). As of March 1, 1976, production had exceeded 6100 bbls. (TR_2 190). Any oil currently being produced is being drained from offsetting acreage and is violating the correlative rights of those operators.

More specifically, the record substantiates the fact of

communication between Petitioner's well and other wells in the Empire-Abo Pool. Mr. Noell, Petitioner's expert witness, testified that there is at least poor communication, and in some places there are good vertical and horizontal communications (TR_2 46). He further admitted that in some places the subject well is in communication with the Empire-Abo Unit reservoir (TR_2 48).

Other expert witnesses were more specific. Mr. Christianson, an expert on the Empire-Abo Pool, offered extensive testimony indicating communication between wells in the reservoir. For example, a comparison of the gas-oil ratio of the subject well with those of other nearby wells in the Empire-Abo Pool as set forth on Atlantic Richfield's Exhibit DN-2 shows excellent correlation between the wells and is supportive of vertical, horizontal and well-to-well communication (TR_2 125, 140, 153). The API gravity of the produced liquid hydrocarbons from these same wells average about 43 degrees (TR_2 128, 153), and well-to-well pressure data show little variation (TR_2 131, 143), providing still further evidence of good reservoir communication between wells. Additional comparisons show similar increases in water production (TR_2 136-138) and similar logs (TR_2 132, 154). Adding strength to Mr. Christianson's testimony is the fact that the engineers and geologists comprising the engineering committee for the Empire-Abo Unit came to the same conclusions (TR_2 130).

Petitioner did not rebut this testimony. At best, his witnesses, Mr. Noell and Mr. Rehkemper, were unable to express opinions as to whether the subject well was in communication with the offset wells or not (TR_2 196, 205). The weight of the uncontroverted evidence clearly shows that communication between the subject well and other wells in the Empire-Abo Pool does exist.

Nor were Mr. Noell and Mr. Rehkemper able to offer opinions on the extent of productive acreage underlying Petitioner's lease. Mr. Noell merely observed that the Unit Committee had assigned fourteen acres (TR_2 35). However, Mr. Christianson felt that the acreage was substantially less than fourteen (TR_2 145), and Mr. Currens calculated only two and one-half acres (TR_2 187). Based on that two and one-half acres, Mr. Currens calculated 4520 bbls. of original oil in place under the lease (TR_2 189). Petitioner introduced no testimony contradicting these figures. Therefore, the record contains substantial and uncontroverted evidence as to productive acreage and quantity of oil underlying Petitioner's lease.

"Correlative rights" are defined as:

> "...the opportunity afforded, so far as it is practicable to do so, to the owner of each property in a pool to produce without waste his just and equitable share of the oil or gas, or both, in the pool, being an amount, so far as can be practicably determined, and so far as can be practicably obtained without waste, substantially in the proportion that the quantity of recoverable oil or gas, or both, under such property bears to the total recoverable oil or gas, or both, in the pool, and for such purpose to use his just and equitable share of the reservoir energy." N.M.S.A. Section 65-3-29(H), 1953 Comp.

By producing more oil than was originally under his lease, Petitioner is recovering more than his just and equitable share of hydrocarbons. As stated above, further production will cause drainage across lease lines which will not be equalized by counter-drainage. In order to compensate for this drainage and to protect correlative rights, as defined, supra, offset operators would have to drill additional wells on their leases (TR_1 138, TR_2 171-172). Drilling these wells would not result in an appreciably greater recovery from the reservoir, and would

constitute economic waste (TR_1 139, TR_2 171-172). Waste of hydrocarbons would also occur, since wells drilled so close to one another could result in reservoir damage and inefficient production (TR_1 139, TR_2 172).

Based on the evidence contained in the record, it is clear that Petitioner's well is in communication with other wells in the Empire-Abo Pool, and that this well has already produced more than Petitioner's share of hydrocarbons from the Empire-Abo Pool. Further production will result in drainage of oil from offsetting leases and will violate correlative rights. Respondent Commission's Order denying Petitioner's application to bottom the subject well only 58 feet from the North line and 8 feet from the West line of his lease was therefore proper, and supported in the record by substantial evidence.

III. THE RECORD CONTAINS SUBSTANTIAL EVIDENCE SHOWING THAT PETITIONER INTENTIONALLY DEVIATED THE SUBJECT WELL.

Petitioner alleges that the preponderance of the evidence adduced at the hearings "establishes that Petitioner did not intentionally deviate the subject well in violation of the Drilling Permit R-4561 granted Petitioner by the Commission." In support thereof, Petitioner testified that a fire had destroyed his records, including the Commission's Order No. R-4561, and as a result he was unaware that he was violating the Order (TR_1 24). He also testified that his intent was to drill to the northeast, away from the lease line (TR_1 36, 78). He emphasized that he himself had not chosen the bottom hole target; the target was chosen instead by representatives from Eastman Whipstock, Inc., probably Mr. Coats (TR_1 69, 91). Apparently when Petitioner learned that the well was drifting towards the lease line, he

chose a new target and sent it to Mr. Ratts, his engineer on location (TR_1 88).

However, in spite of Petitioner's professed good intentions, the testimony clearly demonstrates that he made no effort to comply with Order No. R-4561, and that he intentionally deviated the well outside the 100 foot target prescribed by the Commission in that Order. Although he could easily have obtained a copy of Order No. R-4561 by calling the Commission or by contacting his Santa Fe attorney, Petitioner did not do so, in spite of the fact that he was aware the Order had been issued:

"Q. Mr. Cox, you aren't testifying that you completely forgot that the Commission issued an order after your May 23rd, 1973 case?

A. No, I knew I had permission to deviate and run a survey, I know I didn't have any idea it was a multi-shot.

Q. Your memory just failed as to what was in the order?

A. Yes, sir.

Q. Certainly you realize with a telephone call to the Commission or your attorney here in Santa Fe you could have gotten a complete new copy of the order?

A. I imagine I could have, Mr. Buell, there are a lot of things that I imagine I could do." (TR_1 108).

Whatever may have been Mr. Cox's original intent as to the bottom hole target, he did select a new target location and sent it to Mr. Ratts on July 6, 1975 (TR_1 88). He mailed the new target to Mr. Ratts' home address, even though Mr. Ratts was on the well from July 7 to 31 (TR_1 84). This indicates that Mr. Cox didn't intend the new target to reach Mr. Ratts until the well was already completed. In fact, Mr. Ratts telephoned Mr. Cox during the month of July, and the new target selection was not mentioned (TR_1 98). However, even if Mr. Ratts

had received the new target in time and had altered his drilling program in accordance therewith, the well still would not have complied with the Commission's Order (TR_1 102-103, 127). Nor did it comply as it was finally drilled (TR_1 103):

(Mr. G. Duell continuing.)

> "Q. So, Mr. Cox, regardless of intent, if the deviated and controlled well had followed your instructions to Mr. Ratts, it still wouldn't have conformed to the Commission order?
>
> A. No, sir.
>
> Q. And it did follow the deviation plat shown on the Eastman plats, one of which was furnished you, and it also was outside of the purview and requirements of the Commission order?
>
> A. Yes, sir." (TR_1 103)

Amoco's Exhibit DN-4 is the working plat prepared by Eastman Whipstock for use on location (TR_1 144-145). It shows the target area as being a 100 foot square in the extreme northwest corner of the section. This target was clearly outside the limits set by the Commission's Order, yet Mr. Vickers, Eastman Whipstock's engineer on location, testified that no one connected with Petitioner ever directed him to change it (TR_1 149).

The evidence does not show who actually did select the target. Petitioner points to Mr. Coats, but Mr. Coats denied under oath that he chose that bottom hole location (TR_1 161). The target was apparently chosen at a June, 1975, meeting attended by Mr. Cox, Mr. Ratts and Mr. Coats (TR_1 28). If Mr. Coats did not select the target, either Mr. Cox or his employee, Mr. Ratts, must have. Yet Petitioner denies any knowledge of exactly when or where the target was chosen. The fact remains that the target was deliberately selected at a location that violated the Commission's Order, and the weight of the evidence clearly demonstrates

that Petitioner intentionally deviated the subject well to its present, unauthorized bottom hole location.

IV. THE COMMISSION ORDER AFFORDED PETITIONER AN OPPORTUNITY TO PRODUCE HIS JUST AND EQUITABLE SHARE, AND THEREFORE DID NOT VIOLATE HIS CORRELATIVE RIGHTS.

The State of New Mexico adheres to the non-ownership theory of ownership of oil and gas in place. That is, a lessee has the exclusive right to drill and to retain as absolute owner only the oil and gas that is reduced to possession by production.

> "The lease vests no title to any oil or gas which [the lessee] does not extract and reduce to possession, and hence no title to any corporeal right or interest." Terry v. Humphreys, 27 N.M. 564, 203 P. 539 (1922), at 572.

As an adjunct to this theory, the concept of correlative rights developed. Each operator in a pool may produce the proportion that the quantity of recoverable oil under his property bears to the total recoverable oil in the pool, so far as it is practicable to do so. N.M.S.A. Section 65-3-29(H), 1953 Comp. Petitioner has already produced more than his just and equitable share of the hydrocarbons in the Empire-Abo Pool (p. 7, supra). Therefore, Petitioner has not been denied his correlative rights by the Commission's actions. On the contrary, further production of the subject well will result in the violation of the correlative rights of the offset operators (TR_1 126, 135; TR_2 144). The Commission's statutory mandate directs it to protect these correlative rights. N.M.S.A. Section 65-3-10, 1953 Comp. Its action in denying Petitioner's application properly relied on this mandate, and was therefore not fraudulent, arbitrary nor capricious.

In addition, until it was clear that the subject well had produced in excess of Petitioner's share of hydrocarbons, the Commission authorized an average testing allowable of 35 bbls. per day (TR_1 177). Given this allowable, Petitioner can hardly claim that he was denied the opportunity to produce his fair and equitable share.

Even if the Commission had acted arbitrarily, the issue of whether or not it denied Petitioner's correlative rights is improperly before this court. The issue was not raised by Petitioner's Motion for Rehearing before the Commission. Since a decision on this question was therefore not rendered by the Commission, it has not been preserved for review. Rule 11, Rules of Appellate Procedure for Civil Cases.

Nor has the Commission's action deprived Petitioner of the right to enjoy his property. According to the Terry case, supra, Petitioner has no property rights in the oil in place underlying his lease. He only has rights in the oil which he has reduced to possession. The amount of oil which he may reduce to possession is limited by the theory of correlative rights, a theory which the Commission has properly invoked and enforced in reliance on its statutory mandate. This mandate in turn relies upon the police power of the state.

> "Under the police power of the state, the legislature may regulate and restrict the use and enjoyment of landowners of the natural resources of the state, such as oil and gas, so as to protect them from waste, and prevent the infringement of the rights of others. Such legislation does not infringe the constitutional inhibitions against taking of property without due process of law, denial of the equal protection of the laws, or taking property without just compensation." Russell v. Walker, 160 Okla. 145, 15 P.2d 114 (1932), at 115.

See also Anderson-Prichard Oil Corp. v. Corp. Com'n, 205 Okla. 672, 241 P.2d 363 (1951), app. dism'd 342 U.S. 938 (1952); Barnwell v. Sun Oil Co., Miss., 162 So. 2d 635 (1964); Lombardo v. City of Dallas, Tex., 73 S.W. 2d 475 (1934). Since the record contains substantial evidence of the possibility of waste and the violation of correlative rights, the Commission was acting within the scope of its authority in denying Mr. Cox's application. It did not unlawfully deprive "Petitioner of his right to enjoy his property."

V. THE COURT LACKS JURISDICTION TO GRANT THE RELIEF PRAYED FOR BY PETITIONER.

Petitioner seeks a determination that Commission Order No. R-5139-A is invalid, and an adjudication of Petitioner's rights to produce the subject well with respect to property interests held by Petitioner. It is within the court's power to determine the validity of the Commission's Order. The court must uphold the Order if the following appear:

1. findings of ultimate facts which are material to the issues.

2. sufficient findings to disclose the reasoning of the Commission in reaching its ultimate findings.

3. the findings must have substantial support in the record. Fasken, supra. After a review of Order No. R-5139-A, the record, and this brief, the court must find that the above factors clearly are present. It must, therefore, uphold the Commission's Order.

However, the court lacks jurisdiction to adjudicate Petitioner's property interests. For one thing, the Terry case, supra, makes it evident that Petitioner has no property rights in the hydrocarbons underlying his lease. For another, the court has

power to consider only three issues on appeals from administrative bodies:

1. whether the administrative body acted fraudulently, arbitrarily, or capriciously;

2. whether its order was supported by substantial evidence;

3. whether the action of the administrative head was within the scope of his authority. Johnson, supra. The court does not have the power to adjudicate as to Petitioner's rights to produce the subject well. That part of the Petition must therefore be dismissed.

CONCLUSION

For the foregoing reasons, it is submitted that this Court should affirm the Order of the Oil Conservation Commission and dismiss the Petition for Review.

Respectfully submitted,

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IN THE SUPREME COURT OF THE

STATE OF NEW MEXICO

ROBERT G. COX,

Petitioner-Appellant

vs. No. 11618

NEW MEXICO OIL CONSERVATION COMMISSION, ATLANTIC RICHFIELD COMPANY, and AMOCO PRODUCTION COMPANY,

Respondents-Appellees

COUNTY OF EDDY

D.D. ARCHER, JUDGE

APPELLANT'S BRIEF IN CHIEF

I hereby certify that on this 17th day of February, 1978, true copies of this document were mailed to all opposing counsel of record.

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STATEMENT OF THE CASE

Robert G. Cox (Appellant - Cox) petitioned the New Mexico Oil Conservation Commission (Appellee - NMOCC or Commission) to amend a 1973 NMOCC Order. Atlantic Richfield (Appellee - Arco) and Amoco Production Company (Appellee - Amoco) were necessary parties to the proceedings. An examiner hearing and a subsequent de novo NMOCC hearing denied the relief sought by Cox. A Petition for Rehearing before the NMOCC was denied. Cox petitioned the District Court of Eddy County for review of the NMOCC decision. The District Court of Eddy County affirmed the NMOCC ruling and Cox appeals.

STATEMENT OF PROCEEDINGS

NMOCC entered its Order R-5139-A (Tr. I, p. 5) against Cox in NMOCC Case No. 5571 on March 10, 1976. Cox, on March 25, 1976, sought a rehearing before NMOCC of the Order R-5139-A (Tr. I, p. 10), as required by statute, but the Petition for Rehearing was deemed denied by inaction of NMOCC (Tr. I, p. 2).

On April 27, 1976, Cox filed his Petition for Review with the District Court of Eddy County (Tr. I, p. 1). The Order of the District Court on August 15, 1977, affirming the decision of NMOCC, adopted the findings of NMOCC in its Order R-5139-A (Tr. I, p. 30).

NMOCC Order R-5139-A found there was probably no more than 2½ productive acres underlying the Cox lease (Finding No. 16, Tr. I, p. 7, Challenged - Point I).

NMOCC Order R-5139-A found that as a result of probably no more than 2½ productive acres underlying the Cox lease, that Cox had already produced more oil from his lease than he was entitled to, and thus, the relief sought by him should be denied (Findings 17 through 33, Challenged - Point I).

The Eddy County District Court Judgment was entered August 15, 1977 (Tr. I, p. 30). Cox filed his Notice of Appeal September 9, 1977 (Tr. I, p. 32). By order of the District Court, the time for filing the Transcript on Appeal was extended to January 7, 1978 (Tr. I, p. 34-A). On January 6, 1978, this Court granted an Order extending the time for the filing of Transcript on Appeal to January 27, 1978 (Order not shown in Transcript). On January 23, 1978, the Transcript on Appeal was filed with this Court.

ARGUMENT AND AUTHORITIES

Cox owns the oil and gas leasehold operating rights under a Federal Oil and Gas Lease, situate within the Empire-Abo Pool, Eddy County, New Mexico. There are two wells (by surface location) on the Cox lease, an old (prior to Cox) abandoned well referred to frequently in the Transcript as the Aztec well, which had produced approximately 5,000 barrels of oil before being plugged, and the Federal EA #2 Well. Mr. Cox re-entered the Aztec Well in 1968 in an attempt to recomplete, but was unsuccessful. In 1971, Mr. Cox drilled the Cox #2 Federal EA Well to test the Abo formation, but this attempt was dry, and the well was shut-in in late 1972 (Tr. III, pp. 335-337). In 1975, pursuant to a 1973 NMOCC order, Cox re-entered the old Aztec Well, now called the Cox EA #1, and at a point in the well bore he deviated the direction of the well bore under what is called "directional drilling", and bottomed the well at its present productive location (Tr. I, p. 5). The original order allowed for the well to be deviated by Cox, but not to the actual bottom hole location where the well ended up (Tr. I, pp. 5 & 6). The bottom hole location is located at a point 62 feet from the North line and 9 feet from the West line of the section boundaries which enclose the Cox lease (Tr. I, p. 6). Arco and Amoco own a little over 68% of the Empire-Abo Unit (Tr. II, p. 302), a unit operation located within the Empire-Abo Pool, and there are unit wells which offset the Cox lease.

Cox applied to NMOCC to amend the 1973 Order, so as to allow the well to be bottomed at the location which had not been authorized in the original Order (Tr. I, p. 6). The Application to Amend was initially denied by a Hearing Examiner, and Cox sought and obtained a de novo hearing before NMOCC. The matter was heard by NMOCC as Case 5571 on January 21 and February 24, 1976; however, the relief being sought by Cox was denied under Commission Order R-5139-A (Tr. I, p. 5). A Petition for Rehearing was also denied (Tr. I, p. 10). Cox filed a Petition for Review with the District Court of Eddy County under authority of Section 65-3-22, NMSA.

The scope of review by this Court is restricted, as it was in the trial court, to a review of the evidence before the NMOCC. The questions to be considered are questions of law, restricted to whether the NMOCC acted fraudulently, arbitrarily or capriciously; or whether its Order was supported by substantial evidence; or generally, whether the action of the administrative head was within the scope of his authority. Continental Oil Company v. Oil Conservation Commission, 70 NM 310, 373 P.2d 809 (1962).

In the matter before this Court, it is the contention of Cox that a material and basic portion of the Commission's Order is not supported by substantial evidence, and thus, the Order, to the extent of the review hereby requested, was capriciously and arbitrarily issued. As succinctly put and pertinent to the present matter, the Supreme Court in Kelley v. Carlsbad Irrigation District, 71 NM 464, 379 P.2d

763 (1963), stated that "the review is to be restricted to whether based upon the legal evidence produced at the hearing, if the decision...was substantially supported by the evidence."

POINT ONE:

Findings numbered 16-33 of NMOCC Order R-5139-A are not supported by substantial evidence.

In the Petition filed with the District Court of Eddy County, Cox alleged that NMOCC Order R-5139-A was invalid and erroneous in five respects under Petition for Review subheadings (a) through (e) (Tr. I, p. 3). Cox elected in the District Court to request that Court's review to be limited to NMOCC Order R-5139-A Finding No. 16 and the subsequent Findings 17 through 33 which depended upon Finding 16 for their validity. The subject Finding No. 16 and dependent Findings 17-33 were included in subheading (e) of the Petition for Review (Tr. I, p. 3).

Cox challenges only Findings 16-33 of NMOCC Order R-5139-A. In the hearing before the NMOCC, Cox attempted to establish two basic premises:

(1) That he did not intentionally deviate his well in violation of the Commission's original Drilling Permit; and

(2) That the producing formation in which Cox's well was bottomed, was not in communication with offsetting adjoining wells so as to cause drainage.

By challenging only Findings 16 through 33 of the NMOCC Order, Cox acknowledges that the Commission's original Drilling Permit Order was violated, and that the well is bottomed so as to communicate with offsetting wells.

Cox admits that absent restrictions upon his right to produce, the bottom hole location of his well may drain oil from adjoining tracts. However, he denies that he has in the past or is presently violating correlative rights of adjoining land owners, for he submits that he has not yet recovered the total recoverable oil in place under his lease.

Finding No. 16 in NMOCC Order R-5139-A (Tr. I, p. 7) reads as follows:

> 16. That the evidence indicates that there are probably no more than 2½ acres underlying applicant's lease in the NW¼NW¼ of Section 12, Township 18 South, Range 27 East, N.M.P.M., which are productive of hydrocarbons from the Abo formation.

Finding No. 17 in the Order states that 2½ productive acres under the Cox lease equaled approximately 4520 barrels of oil, while Finding No. 20 found that Cox had produced 6108 barrels of oil from his lease (Tr. I, p. 7).

Findings 17 through 33 (Tr. I, pp. 7-9) of said Order essentially state that with only 2½ productive acres under the Cox lease, Cox has already produced more oil than he is entitled to; and that additional production would be drainage oil from adjoining tracts, so as to violate correlative rights; and resulting in the NMOCC giving Cox no allowable for his well.

The primary object of our oil and gas conservation statutes as set forth in Section 65-3-1, et seq., NMSA, 1953 comp., is to prevent waste of an irreplaceable natural resource. The history of the legislation reflects the primary concern to be the prevention of waste so far as can practicably be done, with a secondary consideration being the protection of

the correlative rights of the producers of oil and gas. El Paso Natural Gas Company v. Oil Conservation Commission, 76 NM 268, 414 P.2d 496 (1966). If, as Mr. Cox contends, there is more than 2½ productive acres beneath his lease, the Commission's Order, rather than preventing waste, commits and enhances waste, for the Order will cause the abandonment of substantial quantities of recoverable oil which Cox contends remains under his leasehold.

"Substantial evidence" means such relevant evidence as a reasonable man might accept as adequate to support a conclusion. Rinker v. State Corporation Commission, 84 NM 626, 506 P.2d 783 (1973). The evidence produced must be more than merely any evidence and more than a scintilla of evidence. Wilson v. Employment Security Commission, 74 NM 3, 389 P.2d 855 (1964). This Court, on review of the Commission's Order, cannot weigh the evidence, for that is the province of the administrative body, but the Court can review the record to determine if the Commission could reasonably have made its findings.

Since Cox contests the basic and crucial Finding No. 16 of the Commission's Order, we urge the Court's review of the record to determine if adequate evidence reasonably exists supporting the finding. It is submitted that absent substantial evidence to support the Commission's Finding No. 16, that Findings 17 through 33 which depend upon Finding 16 for their basis, will also be invalid.

The only evidence contributing to Finding 16 comes from the testimony of Daniel R. Currens, a Staff Engineer for Amoco. Mr. Currens testified that he had made a study to determine the reservoir limits of the oil reservoir

underlying the Cox lease (Tr. III, p. 413). He mentioned that the old Aztec well, when deepened to the depth of the productive formation in the EA #1 Well, produced only water (Tr. III, pp. 466-467). (The EA Federal #1 Well as to the present productive formation, is frequently hereafter referred to as the "Cox Well".) Mr. Currens also noted that the EA #1 Well as originally drilled could not be completed as a producer (Tr. III, p. 467). In response to questioning by Mr. Guy Buell, Attorney for Amoco, he responded that such information gave him a clue to the possible southern limits of the Cox zone under the Cox lease (Tr. III, p. 467). Mr. Currens did not further explain what he meant by a clue or how he could outline the possible southern limits of the Cox zone. He did not further explain the study performed by him or set forth normal required engineering parameters in connection with his alleged study. Without further background or basis for the so-called study performed by Mr. Currens, he responded under questioning:

> Question: All right, sir, based on your study and maybe it will help us get in perspective, in the upper northwest corner of our Exhibit DN-2, what amount of surface acreage are we looking at? I know within the red boundary we were looking at 40 acres, but what are we looking at up there in that northwest corner?
>
> Answer: Well, in the northwest corner, a square to the, with the surface location of the #1 as the corner of it, that 331 feet from the North line and 330 feet from the West line location, this area in the extreme northwest corner, that would be a square of those dimensions would be approximately 2½ acres.
>
> Question: All right, sir, let me ask you this: Based on your study of the completion attempts and the randomly deviated well over the interval that should contain the Cox zone, based on your

> evaluation of the performance and the production data from the deviated completion and that four feet of porosity, what, in your opinion, could be the maximum extent of the Cox zone under the Cox Federal EA lease? (Tr. III, pp. 467-468).
>
> Answer: I don't believe it could be more than 2½ acres.

Mr. Currens depicts the 2½ acres as a 2½-acre square. He gives no basis for coming up with a square or why he used a square configuration for the reservoir in the first place. In essence, his statement of fact is an unsupported conclusion.

Mr. Currens then mathematically arrives at the number of barrels under 2½ acres and compares the same with actual production by Cox, so as to show that Cox has taken all of the oil from beneath his lease, assuming, of course, that he has only 2½ productive acres beneath his lease (Tr. III, p. 470). Mr. Currens states that Cox has taken all of his oil and is now taking his neighbor's oil (Tr. III, p. 471).

Under cross-examination of Mr. Currens, the following occurred:

> Question: Mr. Currens, are you saying that under the Cox lease there are only 2½ producing acres?
>
> Answer: I said that I could not see that he could have any more than 2½ acres productive from the completion that he has made in this well.
>
> Question: All right, are there only 2½ producing acres in the Cox lease?
>
> Answer: I doubt that there are any more than that.
>
> Question: You disagree with the unit engineering that Mr. Christianson relies on of 14 producing acres? He relies on the unit study; do you disagree with that?
>
> Answer: We are talking of two different points in time.
>
> Question: I realize that.

Answer: And yes, I disagree with there being 14 productive acres right now. (Tr. III, pp. 472-473).

Two points in the Currens cross-examination are particularly noteworthy. First, reference is made to a Mr. Christianson and an Engineering Committee study giving 14 productive acres to the Cox lease. Mr. Christianson is Hugh Christianson, a Reservoir Engineer with Atlantic Richfield Company, who testified as a witness opposed to the Cox position before the Commission (Tr. III, p. 397).

Mr. Christianson testified that he did his first work in the Empire-Abo Pool in connection with a reservoir study in 1967 (Tr. III, p. 398). From November 1967 through August 1968, he served upon the Engineering Committee for the Empire-Abo Field, which committee was composed of both geologists and engineers who studied all available information on the pool so as to determine the extent of the Empire-Abo reservoir and to agree upon the acreage which should be included in the unit (Tr. III, pp. 398-399). Mr. Christianson has been the principal witness in practically all of the hearings before the Oil Conservation Commission involving the Empire-Abo Unit (Tr. III, p. 399). He stated he was presently supervising an engineering group that had the responsibility for engineering recommendations with reference to the Empire-Abo Pool and Unit (Tr. II, p. 289).

Mr. Christianson testified that the Cox acreage was included by the Engineering Committee as being within the Empire-Abo Pool (Tr. III, pp. 401-402). He testified that the Engineering Committee assigned 14 productive acres to the Cox lease, with barrels of oil in place being estimated

at 39,890 barrels (Tr. III, p. 426). Mr. Christianson did state that he felt the original assignment of productive acres to the Cox lease was now too high, and that the original 39,890 barrels of oil in place under the Cox lease should be substantially reduced, although he would not say by how much (Tr. III, pp. 426-427). Later, under cross-examination, Mr. Christianson testified in direct opposition to the testimony of Mr. Currens, who had said all of the oil under the Cox lease had been depleted. Mr. Christianson responded that there is oil presently under the Cox lease (Tr. III, p. 449). Under further cross-examination, Mr. Christianson continued to maintain his position that he was not sure how many productive acres were under the Cox lease, although he did feel that the original Engineering Committee estimate should now be cut (Tr. III, pp. 449-450). When pinned down and asked how much the Engineering Committee's estimate should be cut, he stated:

> Answer: I don't know, some percentage of that. It would be say, two-thirds. (Tr. III, p. 451).

Unfortunately, Mr. Christianson's answer is somewhat ambiguous, for there was no further follow-up and it is difficult to determine if he was saying that the original Engineering Committee's estimate of 39,890 barrels of oil should be cut by two-thirds to approximately 13,296 barrels of oil, or if the original estimate was one-third too high so that there would be approximately 26,000 barrels of oil under the Cox lease.

It may be reasonable to assume that Mr. Christianson intended to cut the original unit allocation by two-thirds, but in either event, as an engineer with vast experience in

the Empire-Abo Pool, and the principal witness in all Empire-Abo administrative hearings, he did not limit the productive acres under the Cox lease to only 2½ acres, but on the contrary, found there to still be oil under the Cox lease in substantial quantities. Howsoever his two-thirds answer is interpreted, there remain several thousand barrels of oil under the Cox lease to which Cox is entitled.

The second noteworthy point in the testimony of the witness Currens, is in his depicted configuration of a square reservoir for the alleged 2½ productive acres underlying the Cox lease (Tr. III, pp. 467-468). Witness Hugh Christianson testified that fluid withdrawal from the Cox well will be in a radial fashion around the well bore (Tr. III, p. 425). In other words, the oil migrates to the well from all directions, which fact makes the 2½-acre square reservoir proposed by Mr. Currens completely implausible.

Another witness, W. Glenn Noell, Vice President of H.J. Gruy & Associates, in charge of reservoir and evaluation studies, testified that there was not enough information and data to determine the areal extent of the reservoir under the Cox lease (Tr. III, p. 316, and Tr. III, p. 343).

At the NMOCC hearing, Cox sought to show that he had not intentionally violated the Commission's original Drilling Order, and that the productive zone under the Cox well was not in communication with the productive zone of his neighbors. Cox was unsuccessful in both respects, and the NMOCC findings in such respect are supported by

substantial evidence. The thrust of his contentions, however, did not involve the areal extent of the productive reservoir underlying his tract, for his experts felt that his productive zone did not communicate with adjoining wells, under which theory he would not necessarily violate correlative rights, and under which theory the extent of his reservoir would not be of the same significance as if there were communication between the wells. Therefore, a valid engineering study of the actual areal extent of the Cox reservoir was not presented to the NMOCC by any of the parties before the Commission, nor did the NMOCC actually seek such information.

New Mexico Statute 65-3-14(a), 1953 comp., states that the Commission shall:

> ...afford to the owner of each property in a pool the opportunity to produce his just and equitable share of the oil...in the pool, being an amount so far as can be practically determined, and so far as can be practically obtained without waste....

In Grace v. Oil Conservation Commission, 87 NM 205, 531 P.2d 939 (1975), the Supreme Court noted that Sec. 65-3-14(a) was not couched in terms of what is possible, but what is practical. The Court stated that evidence existed that the only reasonable and accurate method of determining recoverable reserves under a tract would be by use of a pressure decline curve, but there had not been a sufficiently long enough productive history in that case to obtain accurate results by such best method. The Graces had contended for other methods of determination, but the Court found the same to be impractical. The Court held that the Commission need not determine the amount of gas underlying each productive tract, and in the pool, when the Commission's findings demonstrated that such determinations are impractical.

By analogy and for the present matter before the Court, if the NMOCC findings (where such a determination is crucial to the Commission's Order) do not demonstrate that a determination of the oil underlying the producer's tract would be impractical, then such a determination is a prerequisite to a valid finding by the NMOCC.

In other words, if NMOCC had made a finding, based upon reasonable evidence, that it was impractical to use an accurate method for determining the reserves under the Cox lease, then Cox would not have a basis for complaint. Here, the Commission did not make a valid practical determination of the quantity of oil underlying the Cox tract, although such a determination could have been made using accepted engineering practices. The NMOCC instead adopted an unfounded and unsubstantiated opinion that "there are probably no more than 2½ acres" productive under the Cox lease. Even the quoted statement itself indicates the improbability and lack of credibility in the conclusion. Unfortunately, all findings by the NMOCC thereafter with reference to quantity of oil underlying the Cox tract of land and a denial of any further allowable to Cox, were based upon the 2½-acre assumption which the NMOCC accepted and adopted as a finding. The NMOCC did not seek nor have before it reliable engineering evidence such as a pressure decline curve or bottom hole pressure information in making this crucial determination.

To be substantial, the evidence leading to the NMOCC basic Finding No. 16 must be relevant, adequate and reasonable. The only evidence finding 2½ productive acres under the Cox tract was Mr. Currens' testimony, and no

other witness would support his assumption. Mr. Currens was asked for his opinion and gave it, but the record is devoid of his relating any calculated or computed basis for the opinion. Absent a valid basis for his opinion, his conclusion is unsupported by substantial evidence.

It is submitted that the NMOCC in an attitude of disapproval of Mr. Cox, resulting from his violation of the original Drilling Order issued by the Commission, which violation they found to be willful, determined to accept any opinion and conclusion adverse to him as a penalty or punishment to him for his actions. By adopting such a position, the Commission could thus refuse to grant any production allowable to Cox, rather than simply penalizing his allowable as a penalty for the violation. The NMOCC has the power to penalize a producer to protect correlative rights and to penalize a producer who may have an undue advantage over others. Sec. 65-3-11, NMSA, 1953 comp., and Oil Conservation Commission Rule 104(g).

By adopting such a position, however, the Commission has abdicated their basic duty to regard the prevention of waste as paramount. Under such duty, private rights such as the prevention of drainage and protection of correlative rights are secondary to the prevention of waste. Grace v. Oil Conservation Commission, supra.

Cox does not ask this Court to find that 14 productive acres underlie the Cox tract, as such acres were assigned to the tract by the Unit Engineering Committee, nor does he request the Court to fully accept the testimony of the expert witnesses who did not support Mr. Currens; but neither should the unsubstantiated assumption by Mr. Currens

of 2½ productive acres be allowed to stand. Cox believes it is clear from the record that a valid determination of the oil underlying the Cox tract simply was not made by the NMOCC; and that as to the basic Finding No. 16 by the Commission and the subsequent findings in support thereof (Findings 17 through 33), the Court should set the Commission's Order aside and remand the case to the Commission for the limited purpose of conducting a proper and adequate hearing on the size of the productive reservoir underlying the Cox tract, allowing all parties an opportunity to give tangible and supportable engineering proof in connection therewith.

Certainly, such a request for a more exact determination so as to prevent waste is not unreasonable. If the evaluation of the witness Mr. Christianson, who, it should be remembered, was adverse to the position of Cox, is correct, assuming he would cut the original unit allocation to the Cox lease by two-thirds, granting no allowable to Cox, would still leave several thousand barrels of unrecovered oil in the ground.

CONCLUSION:

Cox seeks only a proper and adequate determination of the extent of the oil reservoir underlying his tract. If a proper method of determination reflects that there are in fact no more than 2½ productive acres, then he must accept the same. If, on the other hand, the reserves as reflected by proper engineering data, are substantially more than he has withdrawn from beneath his lease, as the Christianson testimony would tend to indicate, then he should be entitled to produce his own oil, subject only,

however, to such reasonable penalty against his allowable as NMOCC might determine to impose by way of a penalization of his violation of the original Drilling Order.

It is not Mr. Cox' intention or wish to drain oil from his adjoining neighbors or to damage correlative rights, but where the NMOCC has determined to punish a Commission Order violator by leaving oil reserves in the ground rather than penalizing the producer on his allowable, which they are authorized to do, then the Order of the Commission is arbitrary and capricious, and is permitting waste rather than preventing it.

Respectfully submitted,

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IN THE SUPREME COURT OF THE

STATE OF NEW MEXICO

ROBERT G. COX, Petitioner-Appellant, v. NEW MEXICO OIL CONSERVATION COMMISSION, ATLANTIC RICHFIELD COMPANY and AMOCO PRODUCTION COMPANY, Respondents-Appellees.	)	No. 11618

COUNTY OF EDDY

D. D. ARCHER, JUDGE

ANSWER BRIEF OF APPELLEE, NEW MEXICO OIL CONSERVATION COMMISSION

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I hereby certify that on the
15th day of March
19 78, a copy of the fore-
going pleading was mailed to
opposing counsel of record.

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TABLE OF AUTHORITIES

STATEMENT OF THE CASE

Appellee New Mexico Oil Conservation Commission has no objection to Appellant's Statement of the Case.

SUPPLEMENTARY STATEMENT OF PROCEEDINGS

The following is offered as a clarification of the sequence of events described in Appellant's Brief in Chief.

The subject 40-acre tract was originally owned by Aztec Oil & Gas. They drilled the Federal EA Well No. 1 at a surface location 331 feet from the north line and 330 feet from the west line of Section 12 (Tr. I, p. 153; Amoco Ex. DN-2). (Fig. 1, Point A).

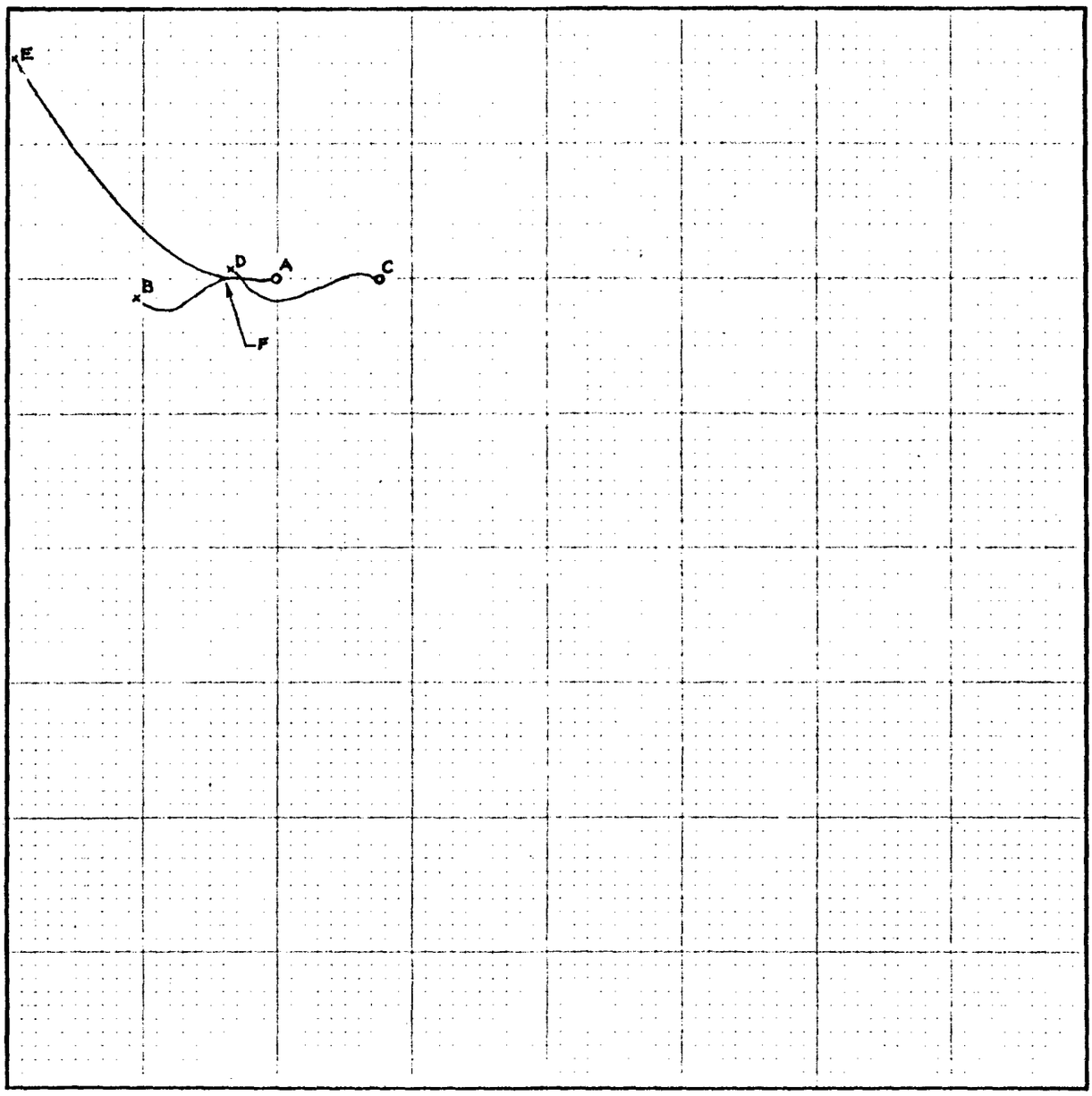
Aztec produced approximately 5,000 barrels of oil from the well (Tr. III, p. 473) and in 1961 attempted to deepen the well, resulting in 100 percent water (Tr. III, p. 466-7). Failing to obtain oil, they plugged and abandoned the well (Tr. III, p. 336).

Cox later acquired the lease and in 1968 re-entered the well but failed to establish production (Tr. I, p. 153-4). He thereupon conducted a survey of the bore hole and established that the well was bottomed approximately 172 feet west and 23 south of the surface location (Tr. I, p. 132 and Amoco Ex. DN-2). (Fig. 1, Point B).

In 1971, Cox drilled his Federal EA Well No. 2, the surface location of which was 125 feet east of the surface location of the No. 1 well, (Tr. I, p. 154). (Fig. 1, Point C). Again he failed to establish production because of water problems (Tr. I, p. 150). This hole bottomed some 177 feet west and 12.5 feet north of its surface location, or 52 feet west and 12.5 feet north of the surface location of Well No. 1 (Amoco Ex. DN-3). (Fig. 1, Point D).

After failing to establish production in either the No. 1

well or the No. 2 well, Cox in 1975 again re-entered the No. 1 and directionally drilled it to its present bottom-hole location, which is 268.56 feet north and 320.59 feet west of its surface location, or about nine feet from the west line and 62 feet from the north line of his lease (Amoco Ex. DN-2). (Tr. I, p. 164; Tr. III, p. 337). (Fig. 1, Point E).



COX LEASE

40 ACRES

NW¼NW¼ SEC. 12, TWP. 18S., RGE 27E.

Point A Surface location, Fed. EA Well No. 1
Point B Original bottom-hole location, Well No. 1
Point C Surface location, Fed. EA Well No. 2
Point D Bottom-hole location, Well No. 2
Point E Present bottom-hole location, Well No. 1
Point F "Kick-off" point in Well No. 1 at which well was deviated to present bottom-hole location.

FIGURE 1.

ARGUMENT AND AUTHORITIES

RESPONSE TO POINT ONE: Findings 16-33 of Commission Order No. R-5139-A are supported by substantial evidence.

The challenge to Commission Order No. R-5139-A before this Court is directed at Findings 16-33 of that Order. Cox argues that if Finding 16 is unsupported by substantial evidence in the record, Findings 17-33 must also fall, in a domino effect. Therefore, Finding 16 must be carefully considered.

Finding 16 states: "That the evidence indicates that there are probably no more than two and one-half acres underlying the applicant's [Cox's] lease in the NW/4 NW/4 of Section 12, Township 18 South, Range 27 East, NMPM, which are productive of hydrocarbons from the Abo formation." (Tr. I, p. 7).

Although the record is replete with testimony relative to the Empire-Abo Pool and the Cox reservoir, only three witnesses presented testimony directly pertaining to this finding. They are Mr. Currens, Mr. Christianson, and Mr. Noell.

Mr. Currens, expert witness for Amoco Production Company, stated that the maximum extent of productive acreage underlying the Cox tract could not be more than two and one-half acres (Tr. III, p. 468). This expert opinion was based on a number of factors, including studies of Cox's completion attempts in the deviated well, as well as his evaluation of the performance and production data from the deviated well, and the four foot porosity zone therein (Tr. III, p. 468).

Mr. Currens determined the southern limits of the areal extent of productive acreage, called the Cox zone, by examining the completion attempts in the Cox well (the EA Federal No. 1)

prior to directional drilling. The well had a bottom hole location some 171.65 feet west and 22.65 feet south of its surface location. It produced 100% water, evidence that it was below the water-oil contact (Tr. III, pp. 466-7). This oil-water contact lies at the bottom of the Abo reef as it dips steeply to the south (Tr. II, p. 300). A secondary gas cap, caused by reinjection of produced gases, lies at the top or north side of the reef, and is pushing oil lower in the pool to the south (Tr. II, p. 301). Since the Cox randomly deviated well produced only water from the Cox zone, it indicates that the bottom hole location must be south of the productive limits of the pool, establishing a southern boundary to the productive acreage under the Cox lease.

The north and west limits of the Cox zone are defined by his lease boundaries. The east limit is found by referring to the evidence Cox gave relative to the EA Federal Well No. 2. This well was drilled by Cox after his initial attempt at recompletion of the No. 1 well failed. The surface location of the No. 2 well was 125 feet east of the No. 1 (Tr. I, p. 150), and the bottom of the hole was west and slightly north of the surface location of the No. 1 (Amoco Exhibit DN-3). Some production was secured in the No. 2 well, but when shut in for completion purposes, it flooded out (Tr. I, p. 150). This demonstrates that the easternmost limit of Cox's productive acreage is somewhat to the north and west of the surface location of the EA Federal Well No. 1. Mr. Currens therefore found that the maximum acreage which could be productive would lie north and west of the surface location of Well No. 1. This forms a two and one-half acre square. Thus Mr. Currens was quite generous. It is just as likely that the water could be encroaching almost completely into

the extreme northwest corner of the Cox lease.

Mr. Currens also stated that there were 4,520 barrels of oil originally in place under the Cox lease (Tr. III, p. 470). This was based on calculations utilizing the four foot pay zone, 6.4% porosity, 9% water saturation, without respect to the reservoir volume factor (Tr. III, p. 469). It was calculated that there were 1,808 barrels per acre under the Cox lease (Tr. III, p. 470), and this multiplied by the two and one-half acres equals 4,520 barrels.

By the end of February, 1976, Mr. Cox had already produced 6,108 barrels (Tr. III, p. 471). This exceeds the amount of oil originally in place under his lease.

The second witness, Mr. Christianson, an expert on the Empire-Abo Pool, represented Atlantic Richfield Company. He stated that the unit engineering committee assigned 14 productive acres and 39,890 barrels of original oil in place to the Cox lease (Tr. III, p. 426). But even based on their data, Mr. Christianson felt there should be a sizeable reduction in that figure (Tr. III, p. 426), perhaps by as much as two-thirds (Tr. III, p. 451). He did not state with certainty that there is still oil under the Cox lease:

> Question: So, you are saying that there is oil below the Cox well, where it is bottomed now?
>
> Answer: No, I'm saying, well, if you go with the original engineering committee estimate, there is a reasonable possibility that there is some oil down there, yes. (Tr. III, p. 451).

However, it was clear from the testimony that more information had become available since the time the engineering committee made their estimate. As summarized at the district court hearing, "an entirely different situation prevailed at the time of the

engineering study and at the time of hearing" (Tr. I, p. 75). It was after the engineering study was completed that Cox deviated his well, providing new reservoir data (Tr. III, pp. 336, 426). Mr. Currens relied on this new data in making the study resulting in the two and one-half productive acres figure. This was his reason for disagreeing with the engineering committee:

> Question: You disagree with the unit engineering that Mr. Christianson relies on of fourteen producing acres? He relies on the unit study, do you disagree with that?
>
> Answer: We are talking of two different points in time (Tr. III, p. 472).

It must be emphasized that the unit engineering committee study was made between November, 1967, and August, 1968 (Tr. III, p. 398). It was this study that resulted in the determination of fourteen productive acres underlying the Cox lease (Tr. III, p. 426). Cox didn't re-enter the EA No. 1 well until October, 1968 (Tr. I, p. 153), and the EA No. 2 wasn't drilled until 1971 (Tr. I, p. 154). A great deal of information was obtained from these later completion attempts. For instance, Cox found only four feet of net pay in his directionally deviated well (Tr. II, p. 315; Tr. III, p. 337), but the study committee had assigned 60 feet of net reef at that spot when they assigned fourteen acres to the tract (Tr. III, p. 426). Had the Committee's calculations been based on four feet of net pay rather than on 60 feet, their estimate of oil originally under the Cox lease would have been greatly reduced.

The third witness was Mr. Noell, expert witness for Cox. He cited the engineering committee's estimate of fourteen acres and agreed, after considering the new data, that the productive

acreage under the Cox lease was of "extremely limited areal extent" (Tr. II, p. 315).

That is a summation of all evidence presented concerning the questioned Finding 16. It can be seen that the most recent study, utilizing the most up-to-date data, was made by Mr. Currens. He determined that there were two and one-half acres of original oil in place underlying the Cox lease. Cox presented no evidence to controvert this.

But for some reason, Cox on appeal contends that a valid engineering study of the actual areal extent of the Cox reservoir was not presented to the Commission, in spite of the fact that two studies, one by Mr. Currens and one by the unit engineering committee, were offered. In fact, the Commission continued its hearing from January 21, 1976, to February 24, 1976, a period of 33 days, at Cox's own request, so that he would have sufficient time to make a valid engineering study (Tr. I, p. 110; Tr. II, p. 244). This study was performed by H. J. Gruy and Associates, a very prestigious firm in the area of reservoir evaluation studies. Mr. Noell was vice president in charge of such studies (Tr. II, p. 303), and Mr. Rehkemper was senior geologist for the company (Tr. III, p. 351). At the second portion of the hearing, Cox's witnesses, Mr. Noell and Mr. Rehkemper, presented the results of that study, but no evidence was offered as to original oil in place underlying the Cox lease. Therefore, Cox cannot substantiate his claim that a valid study was not made. It can be seen that in actuality three studies were presented to the Commission. If Cox's witnesses chose not to present evidence from their own study relative to productive acreage in order to rebut the testimony of Mr. Currens, then they simply failed in

their burden of proof.

In any case, this issue was not raised by Cox in his Petition for Review, and it is therefore improperly before this Court. Section 65-3-22(b), N.M.S.A., 1953 Comp., states: "The questions reviewed on appeal shall be only questions presented to the Commission by the application for rehearing." Since it was not presented in said application, Cox cannot now request that the case be remanded for purposes of conducting a new study.

Even if this issue is proper on appeal, Cox has misconstrued the Grace case if he believes it states that a determination of the oil underlying his tract is a prerequisite to the Commission's Order if the Commission's findings do not demonstrate that it would be impractical. Grace v. Oil Conservation Commission, 87 N. M. 205, 531 P.2d 939 (1975). The Grace case involved the determination of a proration formula for the South Carlsbad-Morrow Gas Pool. The Court in that case held that, as a prerequisite to adopting such a formula, the Commission must determine the amount of gas underlying each tract so far as is practicable. In the case at bar, Cox has not attacked the validity of any proration formula. He has made no claim that the 35 barrel/day allowable granted by the Commission was in any way improper (Tr. II, p. 279). He cannot, then, cite the Grace case, supra, as authority for the proposition that an areal extent study is a prerequisite to a valid finding by the Commission in this case.

Nor can he cite the Grace case as authority that "the only reasonable and accurate method of determining recoverable reserves under a tract would be by use of a pressure decline curve," as he states in his Brief in Chief at page 11. This might be true for determining gas reserves, as were involved in Grace, but a

pressure decline curve cannot be used for determining oil reserves, as in the case at bar. This is especially true in the case of an oil pool with a partial water drive energy mechanism, such as the Empire-Abo Pool (Tr. II, p. 307) and in a pool where gas is being reinjected, such as the Empire-Abo (Tr. II, p. 301). In such a case, there is little or no decline in reservoir pressure, so a pressure decline curve is meaningless. The only accurate method of determining oil reserves is to examine logs and cores from wells in the pool and, based on the depth of pay, porosity, water saturation and other factors, arrive at an average figure of oil present in the target zone. This is exactly the method employed by Mr. Currens in doing his study (Tr. III, p. 469), and any other method would be impractical.

It is admitted that none of the Commission's findings addressed the practicality of further study. However, three studies were already available to the Commission, and a determination had already been made of the original oil underlying the Cox lease, a determination that was uncontroverted by Cox witnesses. Why, then, should the Commission have even considered a finding that an areal extent study was or was not practical? Such a finding is not a prerequisite to a valid order.

From the uncontroverted evidence before it, the Commission could only conclude that "there are probably no more than two and one-half acres... which are productive of hydrocarbons from the Abo formation" (Tr. I, p. 7). And from that finding, others flowed. As stated above, the evidence showed that Cox had produced 6,108 barrels by February, 1976, exceeding his original oil in place by some 1,588 barrels (Tr. III, pp. 470-1). Yet Cox contends that he has not recovered the total recoverable oil in place under his lease. He further contends that the Commission

is not preventing, but is causing, waste if it does not permit him to produce the oil under his lease. The Commission, an expert body in oil and gas regulation, does not believe this to be the case. At the present time, under unitized operation, the north flank of the pool is being depleted and a secondary gas cap is being formed as gas is injected into the uppermost part of the reservoir (Tr. II, p. 301). This will continue until essentially all of the recoverable oil reserves have been produced as the oil migrates down-dip into the wells along the southern flank of the pool. At this stage, the reservoir will be "blown down," that is, the wells along the northern flank will be opened up for production rather than injection, and the gas cap will be produced. As the gas cap is produced and the pressure in the reservoir is drawn down, water will encroach into the reservoir from the lowermost portion, along the southern flank. Any oil which is in place south of, and down-dip from, the unitized wells, will then be driven back up-dip into the unit wells by the natural encroachment of water. Thus we see that even though some of the unit's oil is presently in place under the Cox lease (Tr. III, p. 471), this oil will eventually migrate back onto the unit for production, and would not be wasted. To deny Cox the right to produce the unit oil under his lease will not cause waste, as he contends.

Cox, in his Brief in Chief at page 9, states that Mr. Christianson testified in direct opposition to the testimony of Mr. Currens. Mr. Christianson had said that there is oil under Cox's lease, whereas Mr. Currens testified that all of the oil under Cox's lease had been depleted. Both men are right. What Mr. Currens means is that all of the <u>original</u> oil in place has

been depleted (Tr. III, p. 471). What Mr. Christianson means is that there indeed is oil under the Cox lease, but that it has migrated onto the lease from offsetting leases (Tr. III, pp. 449, 451). This drainage of oil from neighboring properties violates correlative rights, and the Commission is charged by the legislature with the duty of protecting correlative rights.

Cox further charges that Mr. Curren's depiction of the Cox zone as a two and one-half acre square is erroneous in that witness Christianson had testified that drainage into a well-bore is in a radial fashion (Tr. III, p. 425). Mr. Currens did not mean the Cox zone was necessarily in the form of a square. He said that there are two and one-half acres north and west of the surface location of the Federal EA Well No. 1, and that based on his study of the completion attempts and the randomly deviated well over the interval that should contain the Cox zone, and his evaluation of the performance and the production data from the deviated completion, there could be no more than two and one-half productive acres. Further, that due to the 80 percent watercut of the Cox well, he would expect that it is completed close to the current oil-water contact (Tr. III, p. 468). In other words, the Cox zone is contained somewhere within that two and one-half acre square, but due to the oil-water contact, it is most reasonable to assume that it has some shape other than a perfect square and most likely contains less than two and one-half acres. As stated before, Currens was quite generous in assigning the full two and one-half acres to the well.

Cox, in his Brief in Chief at page 10, relying on Christianson's radial drainage testimony, states, "In other words, the oil migrates to the well from all directions." We could not more

heartily agree, and would point out that the deviated well is bottomed in the extreme corner of the lease. If a circle were to be drawn representing radial drainage, with the bottom of the hole as the center of the circle, approximately three-quarters of the circle would be off Cox's lease, and would contain acreage belonging to offset operators. The Commission would also point out that this radial drainage will be affected by gravity drainage of oil from the major portion of the reservoir which lies up-dip and north from the Cox bottom-hole location, thus tending to broaden the circle of radial drainage far to the north (Tr. II, p. 301).

In his Brief in Chief at page 13, Cox states that the Commission has a paramount duty to prevent such waste, and that protection of correlative rights is secondary. However, "the protection of correlative rights is a necessary adjunct to the prevention of waste... Protection of correlative rights is interrelated and inseparable from it." Continental Oil Co. v. Oil Conservation Commission, 70 N.M. 310, 373 P.2d 809 (1962) at p. 324. The Commission, in the case at bar, found that "the production of oil in excess of the original oil in place under said lease would cause drainage across lease lines which would not be equalized by counterdrainage," and that this "would result in injury to neighboring leases or properties" (Tr. I, p. 8). Further, "the granting of the application in this case would impair the correlative rights of the owners of interest in the acreage offsetting" the Cox lease (Tr. I, p. 8). These findings were supported by testimony given at hearing that further production of the Cox well would result in the violation of the correlative rights of the offset operators (Tr. II, pp. 228, 237; Tr. III, p. 425).

The evidence also showed that in order to compensate for this drainage and to protect correlative rights, offset operators would have to drill additional wells on their leases (Tr. II, p. 240; Tr. III, pp. 452-3). Drilling these wells would not result in an appreciably greater recovery from the reservoir and would constitute economic waste (Tr. II, p. 241; Tr. III, pp. 452-3). Waste of hydrocarbons would also occur, since wells drilled so close to one another could result in reservoir damage and inefficient production (Tr. II, p. 241; Tr. III, p. 453).

Thus it is clear that the Commission has both prevented waste and protected correlative rights. Its action in cancelling Cox's allowable was not punitive. The law dictates that the Commission shall prorate in order to prevent waste, upon a reasonable basis and recognizing correlative rights. Section 65-3-13(a), N.M.S.A., 1953 Comp. The Commission has merely followed its statutory mandate in adopting the order appealed from. It has not sought to punish Cox for any of his actions. If it had wished to do so, it could have brought suit against Cox for violation of its order pursuant to Sections 65-3-24 and 65-3-27, N.M.S.A., 1953 Comp. However, it never chose to do so. Any argument that the Commission denied Cox's application in order to punish him is simply without foundation.

Concluding his Brief in Chief, Cox suggests that he should be permitted to produce the oil under his lease (calling it "his own" oil) subject only to such reasonable penalty as the Commission might determine. This would provide an almost perpetual supply of oil for Cox. Gas is being injected into the Empire-Abo Pool along its northern flank, the highest part of the reservoir.

Oil is migrating down-dip from north to south in the reservoir as the result of the expanding gas cap along the northern flank. Located as it is, down-dip on the southern flank of the Empire-Abo Pool, in which gas is being injected all along the northern flank, Cox's well would be among the last wells in the pool to be abandoned (Tr. II, p. 301). If Cox's contention is correct that the oil under his lease is "his" oil, without regard to how much oil was originally present under the lease, then he could continue to produce oil that drains onto his lease by gravity from the main portion of the reservoir until the reservoir is depleted, and it would all be "his" oil.

CONCLUSION

The Oil Conservation Commission is a highly specialized agency with expertise in the field of oil and gas. It has been charged by the Legislature with the regulation of oil and gas production and with the conservation of oil, gas and fresh waters in the State of New Mexico. Sections 65-3-5 and 65-3-11, N.M.S.A., 1953 Comp. In considering the issues here before it, the Court should give "special weight and credence to the experience, technical competence and specialized knowledge of the Commission" (Grace, supra, at p. 208).

The Commission has determined that Cox has produced his share of the oil in the Empire-Abo Pool. Further production will result in waste of hydrocarbons and violation of correlative rights. The evidence in support of these findings is substantial. The Commission's action was not a punitive one and certainly was

not arbitrary and capricious. For the foregoing reasons, it is submitted that this Court should affirm the Order of the Oil Conservation Commission.

Respectfully submitted,

NEW MEXICO OIL CONSERVATION COMMISSION

By _____

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IN THE SUPREME COURT OF THE

STATE OF NEW MEXICO

ROBERT G. COX, Petitioner-Appellant, v. NEW MEXICO OIL CONSERVATION COMMISSION, ATLANTIC RICHFIELD COMPANY and AMOCO PRODUCTION COMPANY, Respondents-Appellees.	)	No. 11618

COUNTY OF EDDY

D. D. ARCHER, JUDGE

ANSWER BRIEF OF APPELLEES, ATLANTIC RICHFIELD COMPANY AND AMOCO PRODUCTION COMPANY

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STATEMENT OF THE CASE

The statement of the case contained in Appellant's Brief appears to be satisfactory.

STATEMENT OF PROCEEDINGS

This proceeding grows out of a hearing held before the New Mexico Oil Conservation Commission (OCC) on May 23, 1973, which involved the application of Appellant (Cox) to re-enter the Cox Federal "EA" No. 1 well (Cox well) located 330 feet from the north and west lines of Section 12, Township 18 South, Range 27 East in the Empire Abo Pool which had failed to encounter oil or gas in paying quantities. In drilling this well it had been deviated 23 feet to the south and 172 feet to the west of the surface location at a measured depth of 6,050 feet. (Tr. Vol. I, page 20).

Order R-4561 was issued by the Commission on June 25, 1973 authorizing Cox to re-enter the Cox well, set a whipstock at approximately 4,200 feet and directionally drill said well to a depth of approximately 6,200 feet so that the well would be bottomed in the Empire Abo Pool at a point within 100 feet of the surface location. (Tr. Vol. I, p. 21).

Acting pursuant to said order, Cox re-entered the Cox well and directionally drilled the same in a northwesterly direction to a depth of 6,220 feet so that the well was bottomed 269 feet north and 321 feet west of the surface location rather than within 100 feet of the surface location as provided by said order. The deviated well was completed in August 1975 and was capable of producing from the Abo formation. (Tr. Vol.I, p. 6).

Cox filed an application with the OCC to amend Order R-4561 to permit the well to be bottomed at the deviated location. (Tr. Vol. I, p. 10).

A de novo hearing was held before the full Commission on January 21, 1976, pursuant to which Order R-5139-A was issued. (Tr. Vol. I, p. 5).

After the de novo hearing, the Commission made specific findings in its Order R-5139-A, which included the following:

(a) That Cox made no effort to comply with OCC Order R-4561 to bottom the Cox well within a radius of 100 feet of the surface location;

(b) That the well was intentionally deviated and was in fact bottomed 62 feet from the north line and 9 feet from the west line of the NW¼NW¼ Section 12, Township 18 South, Range 27 East;

(c) That the 4 foot Abo producing interval in which the Cox well was bottomed is correlative to and in communication with the Abo producing interval in wells to the north and west of the Cox well;

(d) That there are probably no more than 2½ acres underlying the Cox lease which are productive;

(e) That the Cox well has produced more oil than was originally in place under the Cox lease;

(f) That the oil produced from the Cox well in excess of the oil originally in place was oil migrating to the Cox lease from offsetting properties;

(g) That the granting of the application to allow Cox to continue to produce the well would violate correlative rights and would require offset owners to drill unnecessary wells to protect their leasehold interest from drainage. That the drilling of such offset wells would not significantly add to the total ultimate production from the Empire Abo Pool and would constitute economic waste;

(h) That the amendment should be denied to prevent economic and underground waste, as well as to protect correlative rights. (Tr. Vol. I, pp. 6, 7, 8,9).

The District Court approved the decision of the OCC and the findings contained in Order R-5139-A on August 15, 1977. (Tr. Vol. I, p. 30, 31).

Cox gave notice of appeal on September 9, 1977. (Tr. Vol. I, p. 32).

ARGUMENT AND AUTHORITIES

The Empire Abo Unit embraces a large area composed of federal, state and fee leasehold interests in Township 17 and 18 South, Ranges 27, 28 and 29 East, Eddy County, New Mexico. (ARCO Exhibit #1, Tr. Vol. III, p. 400). The Appellant's (Cox) lease embraces the NW¼NW¼ Section 12, Township 18 South, Range 27 East. This lease is on the extreme south boundary of the unit area about 1/3 of the distance of the unit from the west boundary. Although the owner of the lease was afforded the opportunity to commit said leasehold interest to the unit, it was not committed. The Empire Abo Unit is one of the largest oil producing pools in New Mexico and has been very prolific and is still producing large quantities of oil. The Appellee, Atlantic Richfield Company (ARCO) is the unit operator of the Empire Abo Unit and is the owner of 34.14% of the working interests committed to the unit. Appellee, Amoco Production Company (Amoco), is the owner of 34.07% of the oil and gas leasehold interests committed to the unit and some of said leasehold interests offset the leasehold interest owned by Appellant. (Tr. Vol. II, pp. 301, 302).

By this appeal Appellant seeks judicial review of OCC Order R-5139-A. (Tr. Vol. I, p. 5). The review by the District Court and this Court is restricted to the evidence before the OCC. Continental Oil Company v. Oil Conservation Commission, 70 N.M. 310; 373 P.2d 809 (1962).

Only one point is raised or placed in issue by Appellant's Brief and that is that Findings 16 through 33 of OCC Order R-5139-A are not supported by substantial evidence. Appellant recognizes

that the Supreme Court may not weigh the evidence presented to the Commission (Brief p. 5, para. 1) Grace v. Oil Conservation Commission of New Mexico, 87 N.M. 205 (1975). For that reason, much of Appellant's Brief is irrelevant to the main issue on appeal. While all aspects of Appellant's Brief will be considered, the primary emphasis will be on the substantial evidence issue since it is believed that this issue is dispositive of this appeal.

A. OCC ORDER R-5139-A IS SUPPORTED BY SUBSTANTIAL EVIDENCE:

1. In considering whether the record of proceedings before the OCC contains substantial evidence to support this Order, several general principles must be kept in mind. For example, the evidence, together with all reasonable inferences to be drawn therefrom, must be viewed in the light most favorable to the finding complained of. United Veterans Organization v. New Mexico Property Appraisal Department, 84 N.M. 114 (Ct. of App. 1972). Furthermore, only the evidence favorable to the finding, and the inferences to be drawn therefrom, can be considered by the reviewing court. Any evidence unfavorable to the finding may not be considered. Id. These rules apply to the review of decisions from administrative boards and tribunals. Id. These general principles make much of Appellant's Brief irrelevant to the issue before the Court on appeal. Even assuming that the testimony of Mr. Christianson and Mr. Noell was unfavorable to our position (to be discussed below), that testimony cannot be considered by the reviewing court.

Another applicable principle is that a reviewing court may properly give special weight and credence to findings concerning technical or scientific matters by administrative bodies whose members, by education, training or experience, are specially qualified and are functioning within the parameters of their expertise. McDaniel v. New Mexico Board of Medical Examiners, 86 N.M. 447 (1974),

Grace v. Oil Conservation Commission of New Mexico, supra. This principle is especially application to this case since the OCC findings complained of (Findings 16 through 33 of Order R-5139-A) involved primarily technical matters within the special competence of the OCC.

2. Findings 17 through 33 of OCC Order R-5139-A covered by Appellant's Point I are all closely related and pertain to Finding 16, which is as follows:

> (16) That the evidence indicates that there are probably no more than two and half acres underlying applicant's lease in the NW¼NW¼ Section 12, Township 18 South, Range 27 East, N.M.P.M. which are productive of hydrocarbons from the Abo formation.

Appellant asserts that the only evidence in support of Finding 16 is the testimony of Daniel R. Currens, a petroleum engineer employed by Amoco. Mr. Currens testified at the hearing before the Commission on January 21, 1976, which was on the application of Appellant for an amendment of Order R-4561. As to his qualifications as an expert witness, Mr. Currens testified that he was the senior staff engineer for Amoco and had testified at previous hearings before the Commission and his qualifications as a petroleum engineer were a matter of public record in the Commission files. He testified that he graduated from Texas A & M with a B.S. degree in 1954 and was then employed by Stanolind Oil & Gas Company, subsequently Pan American Petroleum Corporation, now Amoco Production Company. During his first employment he was located at Odessa, Texas and subsequently at Hobbs, New Mexico and later, after a tour of duty in the Army, he was located at Roswell where he was engaged primarily in reservoir engineering work from 1957 to 1959. That period encompassed the time of discovery of the Empire Abo Pool and he did reservoir engineering in connection with the Empire Abo Pool at that time. (Tr. Vol. II, pp. 216, 217).

Mr. Currens also testified at the hearing before the Commission on February 24, 1976. He referred to Amoco's Exhibit DN-2 which showed the surface location of the Cox well, the bottom hole of the well as it was originally drilled and the bottom of the hole after it was deviated. In this connection, Mr. Currens said that he had made a study to determine the reservoir limits of the Cox zone. He further testified that in making this study he considered data obtained from the Aztec and Cox wells drilled on the Cox lease, as well as Mr. Cox's activities in directionally drilling the Cox well. He also testified that the Aztec well was completed at a total depth of 6,210 feet in 1959 and subsequently in 1961 the well was deepened to 6,253 feet. The well tested 100% water with a small volume of gas. (Tr. Vol. III, pp. 463, 464).

Mr. Currens said that Mr. Cox was unable to make a completion at any interval in the well after deviation was started until he reached the final deviated depth and this gave him a clue to the possible southern limits of the Cox zone under the Cox lease. (Tr. Vol. iII, p. 467).

Based upon his study, Mr. Currens said that approximately 2½ acres in the northwest corner, which he referred to as a square 331 feet from the north line and 330 feet from the west line, would be the maximum extent of the Cox productive zone under the Cox lease. He also testified that the well at the time of the hearing was producing with a water cut of 80% which indicated that it was fairly close to the oil-water contact. He also indicated that this same zone was not productive at the bottom hole location at the depth to which the original Cox well was drilled. (Tr. Vol. III, p. 468).

He further testified that he had made a study to determine the amount of hydrocarbons originally in place under the 2½ acres from which the Cox well was producing. He also stated that utilizing

the 4 feet of pay, 6.4% porosity, 9% water saturation and without respect to the reservoir volume factor, 1,808 barrels per acre, or 4,520 some odd barrels would be the total oil in place under the Cox lease. Mr. Currens stated that the total production which Cox reported to the Commission to January 1, 1976 showed that his cumulative production was 4,008 barrels. It was brought out that this was only to January 1, 1976 and that there had been production in January and February at the rate of about 35 barrels per day, which would make the cumulative production at the end of February 6,108 barrels, which was far in excess of the original oil in place. (Tr. Vol. III, pp. 469, 470, 471).

Considering the physical facts of the Cox deviated bottom hole location only 9 feet from the west line and 60 feet from the north line of the Cox lease and the fact the well was producing 80% salt water and with the test of the Cox zone slightly over 300 feet from that deviated bottom hole location showing 100% salt water, Mr. Currens was liberal in his conclusion of 2½ productive acres under the Cox lease. Mr. Currens was very careful throughout his direct testimony and cross examination to maintain that there could be no more than 2½ productive acres under the Cox lease. (Tr. Vol. III, pp. 467, 468).

Mr. Currens employed the normal required reservoir parameters in conducting his study. His testimony is conclusive and unrefuted to the effect that Cox has recovered all the oil under his lease and had been producing his neighbor's oil. (Tr. Vol. III, p. 469).

While Appellant's Brief is not entirely clear on this point, Appellant is apparently arguing that Mr. Curren's opinion does not constitute substantial evidence to support the finding because the opinion and its factual basis are not adequately explained in the record. Generally, an expert witness giving an opinion based upon facts of his own knowledge or upon his own observations must first

testify to the facts upon which his opinion is based. 31 Am. Jur. 2d, Expert and Opinion Evidence, Sec. 38 (1967). Mr. Currens did in fact testify as to the matters upon which he based his opinion.

First, it is clear that an expert may give his opinion on matters pertaining to his field which concern questions of fact. Crouch v. Most, 78 N.M. 406 (1967), Beal v. Southern Union Gas Co., 66 N.M. 24 (1960). Furthermore, an expert witness, who gives his opinion based upon personal experience and observation, need not as a prerequisite detail the facts upon which such opinion is based when such facts are voluminous and complicated. Grison Oil Corporation v. Corporation Commission, 99 P.2d 134 (Okla. 1940). The case just cited is particularly relevant, because it involves an oil production proration order handed down by the regulatory agency in the State of Oklahoma. Pertinent portions of the opinion are as follows:

> As appellants point out, the mass of information studied by the experts in arriving at their conclusion was not put in evidence. If the opinion of a qualified expert is, in the absence of detail justifying the opinion, of sufficient probative force to support a decision, the mere omission of supporting details cannot be said to render the evidence insufficient. ... It is apparent that the opinions of the experts who testify before the Commission were based upon the mass of detailed facts which if specifically stated would have been voluminous. Thus, the opinions of the experts as introduced in this case were entitled to such weight as the Commission deemed appropriate and the failure to place in evidence all of the facts upon which such opinions were based did not destroy their probative force. Page 139-140.

It is apparent that the case under consideration is closely analagous to the Grison case, just described. A different question might be presented if Mr. Currens had merely stated his conclusions concerning the area of the reservoir underlying Mr. Cox's lease. However, Mr. Currents testified that his study was based upon factors such as the completion attempts for the Cox and Aztec wells, as

well as his evaluation of the performance and the production data from the deviated completion of the Cox well and his knowledge of the character of the Abo formation in which the Cox well was completed. Mr. Currens clearly designated the general factors upon which he based his conclusion. The Appellant has presented no authority for the proposition that Mr. Currens was required to do anything more. For authority as to the sufficiency of such testimony under the circumstances, see also 31 Am. Jur. 2d supra, N. 3, Malone-McConnell Real Estate Company v. J. B. Simpson Audit Company, 73 So. 369, John V. Shaffer, Jr. & Company v. Ely, 80 A. 775.

An additional factor supporting Appellees' position is the fact that the Appellant had the opportunity to cross-examine Mr. Currens as to the basis of his opinion. The Grison case, supra, emphasized that there was no refusal on the part of the expert witness to reveal the facts which formed the basis of his opinion. The Court stated:

> In other words, since there was a mass of facts considered by the witnesses which were not reflected in detail by their testimony, we cannot say that their opinions were without proper foundation. Since there was no refusal to reveal these facts, appellants cannot complain of the fairness of the hearing. Since the facts that were detailed do not demonstrate the incorrectness of the order or opinion evidence upon which it was based, the probative force of the opinions were not destroyed thereby. Page 140.

Another case involving testimony by oil and gas experts similar to that of Mr. Currens is Anderson-Pritchard Oil Corporation v. Corporation Commission, 241 P.2d 363 (Okla. 1951). In that case the Court stated:

> The opinion of expert witnesses is generally accepted by the court as constituting substantial evidence.

Id. at 371.

Furthermore, an administrative agency may not disregard expert testimony and reach a conclusion contrary thereto where the conclusion of the administrative agency has no support in any other evidence. As stated in 2 Am. Jur. 2d, Administrative Law, Sec. 395:

> Opinion testimony by an expert witness does not establish any material fact as a matter of law, and administrative agencies are not bound to accept such testimony as conclusive. They may reject it in favor of other evidence. Testimony of experts as to conclusions which should be drawn from facts of record is in the nature of argument or opinion, and the weight to be given it depends upon the agency's estimate of the reasonableness of their conclusions and the force of their reasoning. Opinion evidence which, under the peculiar circumstances of the case, is of little value, may be disregarded, but an administrative agency may not disregard expert testimony and reach a conclusion contrary thereto where such conclusion has no support in any other evidence before the officers or in their own knowledge or experience. (Emphasis added).

Also see, Bonwit Teller & Co. v. Commissioner (CA2) 53 F.2d 381, 82 A.L.R. 325, cer den 284 U.S. 69, 76 L.ed 582.

B. TESTIMONY OF NOELL IN RELATION TO THAT OF CURRENS:

Appellant's Brief states that W. Glenn Noell, a petroleum engineer who was a witness on behalf of Cox, testified that there was not enough information or data to determine the areal extent of the reservoir under the Cox lease. (Appellant's Brief, p. 10).

The following exchange occurred on cross-examination of Mr. Noell:

> Q. (G. Buell). Mr. Noell, again we are looking at a well that is sixty feet from the north line, nine feet from the west line, tucked right up there in the northwest corner of the lease, making eighty percent water, I'm going to ask you again, in your opinion, does that not indicate to you, as a reservoir engineer, that this four-foot zone that Mr. Cox has completed in, is of extremely limited area extent under the Cox lease?
>
> A. (Noell), That is correct.
> (Tr. Vol. II, p. 315).

C. TESTIMONY OF CHRISTIANSON IN RELATION TO THAT OF CURRENS:

Appellant confuses the issue by a collateral attack on Currens' testimony by endeavoring to show that there is a conflict between the testimony of Christianson and that of Currens. As described above, if the testimony of Mr. Currens constitutes substantial evidence, the testimony of Mr. Christianson is of no consequence.

Christianson, a petroleum engineer appeared as a witness for ARCO and testified that the Empire Abo Unit became effective October 1, 1973. The unit is, in fact, a pressure maintenance project inasmuch as the gas produced from the wells located on leasehold interests committed to the unit, after extraction of the liquid hydrocarbons, is reinjected into the unitized formation. (Tr. Vol. II, p. 301; Tr. Vol. III, p. 421).

Mr. Christianson also testified that Aztec, or whoever was the owner of the Cox federal lease at the time the unit was formed, was invited to commit the leasehold interest to the unit agreement, but it was never committed.

Mr. Christianson further testified that an engineering committee was created to study the Empire Abo Field preparatory to unitization in 1967, and that a continuous study was made of the Abo reservoir for a period from early November 1967 to the time just before the engineering report was completed in August 1968. This report set up the parameters which were to be used for unitization. (Tr. Vol. III, pp. 398, 399). The Cox lease was included in the proposed unit area which was under study by the engineering committee. (Tr. Vol. III, pp. 401, 402). With respect to the Cox acreage covered by the engineering study, Mr. Christianson testified:

> I haven't really gone into that study, however, I will say that the engineering committee's original study, I believe, assigned 14 acres and 39,890 barrels of original oil in place to the lease and I feel that -- of course, the committee at that time did not have all of the

> information, for instance the present Cox Federal "EA" No. 1 deviated well was not completed at that time and indicating as it does, as little as 4 feet of net pay up in the bottom hole location point, 58 feet from the north line and 8 feet from the west line, the committee as a matter of fact, not having that data, assigned -- when you look at their contour maps you can see they assigned approximately 60 feet of net reef to that spot, 58 feet from the north line and 8 feet from the west line and we are beginning to see evidence develop now that perhaps there is only 4 feet of net reef there. Furthermore, my feeling, although I have not made a detailed study, my feeling would be that the result of one would probably be a reduction in that -- and a sizeable reduction in that original oil in place as calculated by the engineering committee. (Tr. Vol. III, page 426).

From the foregoing it is clear and there can be no question but that the original estimate made by the engineering committee in 1968 was based solely upon information available at that time and did not include the results of the drilling of the two wells on the Cox lease as they had not been drilled. As Mr. Christianson indicated, apparently the engineering committee's structural map which contoured the Abo reef indicated that 60 feet of the reef was on the Cox lease whereas the Cox deviated well demonstrated conclusively that there were only four feet. (Tr. Vol. III, p. 426). When this is taken into consideration in relation to the testimony of Mr. Currens there is absolutely no conflict or relationship between the original estimate of 14 productive acres and the 2½ productive acres, as these were based upon entirely different data. Mr. Christianson was testifying as to factual data which existed in 1968 and Mr. Currens' testimony was based upon data which existed in 1976, nearly eight years later, and at which time there was much more concrete data available. Consequently, Mr. Currens could make a much more accurate estimate of the reserves under the Cox lease. Furthermore, Mr. Christianson stated that he had not made a detailed study. This clearly indicates he had no basis for an opinion as to the reserves under the Cox lease based upon the most recent factual information considered by Mr. Currens.

Mr. Christianson also testified that there could have been a certain radius of error in the bottom hole survey and that the Cox well could possibly be bottomed on lands committed to the unit. (Tr. Vol. III, p. 427).

D. MISCELLANEOUS:

Appellant raises several other points in his brief which we have already indicated are irrelevant to the main issue of whether there is substantial evidence to support the OCC order. These are discussed briefly as follows:

1. Appellant states that he sought to show that he had not intentionally violated the Commission's order for directional drilling and also that the Cox productive zone was not in communication with the productive zone of his neighbors. Appellant admits that he was unsuccessful in both of these contentions and that the OCC order with respect thereto is supported by substantial evidence. (Appellant's Brief pp. 10, 11).

Appellant further states under his theory that there was no communication between the Cox zone and that of his neighbors that he did not, nor did any of the other parties, present to the OCC a valid engineering study of the actual areal extent of the Cox reservoir "nor did the NMOCC seek such information". (Appellant's Brief p. 11). The Appellant did not present one iota of evidence to contradict the testimony of Mr. Currens. Clearly the Appellant's failure in this regard is not grounds for granting a rehearing on this issue due to the fact that Appellee, Amoco, did present expert testimony as to the areal extent of the Cox reservoir which was accepted by the Commission. It is not the fault of Appellees that Appellant was not prepared and certainly the OCC was under no obligation to seek such information. It is not the duty of the OCC to supply evidence or make out a case for any party. Appellant was not

misled and he was not prevented from presenting whatever evidence he believed to be relevant.

2. Appellant states that the "NMOCC did not seek nor have before it reliable engineering evidence such as a pressure decline curve or bottom hole pressure information in making this crucial determination". (Appellant's Brief p. 12). Under the circumstances of this case the OCC considered the testimony of Mr. Currens as to the areal extent of the Cox reservoir to be adequate and to substantially support the Commission's findings. Again, it is not the duty or prerogative of the Commission to seek or arrange for evidence to make out a case for any party. The Appellant had the opportunity to present evidence to contradict the testimony of Mr. Currens but he failed to do so. Furthermore, there is nothing in the record to indicate that Cox made a subsurface pressure test upon completion of his well or that any pressure data was available.

3. Appellant states that because the violation of the original directional drilling order was willful the Commission took the position that Mr. Cox should be punished by the acceptance of "any opinion and conclusion adverse to him as a penalty or punishment for his acts". (Appellant's Brief p. 13). There is no evidence whatsoever to indicate or imply in any way that the Commission acted arbitrarily or capriciously with a view to punishing Mr. Cox for his intentional violation of the Commission order.

4. The Appellant also asserts that the decision of the OCC, if upheld, will cause waste. (Appellant's Brief p. 14). This allegation is based upon Appellant's contention that recoverable reserves remain beneath the Cox lease, which reserves cannot be recovered unless Cox is allowed to produce his well. Even assuming the accuracy of Appellant's assumption as to reserves, there is no evidence in the record that waste will occur if the Appellant is

denied an allowable. It seems just as reasonable that adjoining wells in the unit will be able to recover the undetermined reserves, if any, which may underlie the Cox lease due to the fact that the Cox well is bottomed only 9 feet from the west line of the Cox lease and that there are unit wells offsetting the lease. Furthermore, the Commission has found that Cox has already produced more oil than was in place under his lease.

We respectfully submit that the judgment of the District Court should be affirmed.

HINKLE, COX, EATON, COFFIELD & HENSLEY

By _____
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I hereby certify that copies of this document were mailed to Hunker-Fedric, P.A., P.O. Box 1837, Roswell, New Mexico, opposing counsel, and to Lynn Teschendorf, General Counsel, Oil Conservation Commission, P.O. Box 2088, Santa Fe, New Mexico 87501, attorney for Appellee, Oil Conservation Commission, this 10th day of March, 1978.

_____
Clarence E. Hinkle

IN THE SUPREME COURT OF THE

STATE OF NEW MEXICO

ROBERT G. COX,

Petitioner-Appellant

vs. No. 11618

NEW MEXICO OIL CONSERVATION COMMISSION, ATLANTIC RICHFIELD COMPANY, and AMOCO PRODUCTION COMPANY,

Respondents-Appellees

COUNTY OF EDDY

D.D. ARCHER, JUDGE

APPELLANT'S REPLY BRIEF

I hereby certify that on this 17th day of March, 1978, true copies of this document were mailed to all opposing counsel of record.

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NMOCC Finding No. 16 under NMOCC Order R-5139-A, declaring there to be probably no more than 2½ productive acres underlying the Cox lease, is the critical finding of concern in this appeal. Subsequent NMOCC Findings 17 through 33 evolve from Finding No. 16, and stand or fall upon the validity of such finding. In the Answer Brief of ARCO and AMOCO, they stress the method of viewing the evidence required of this Court. It is submitted even when viewing the critical evidence bearing upon Finding No. 16 in the most favorable light and in support of the finding, together with all reasonable inferences to be drawn therefrom, that the evidence still falls short of the substantial evidence standard.

Evidence favorable to Finding No. 16 was principally offered through the testimony of the expert witness, Dan Currens, but also ARCO and AMOCO attempted to offer supportive favorable evidence through their expert witness, Hugh Christianson. Mr. Christianson's overall testimony was, in fact, favorable to the position taken by ARCO and AMOCO; therefore the same cannot simply be discounted as unfavorable evidence, which could not be considered by the reviewing Court, as ARCO and AMOCO contend.

Mr. Christianson testified favorable to Finding No. 16, in that he believed the original Unit Committee allocation of 39,890 barrels of oil in place under the Cox lease should now be substantially reduced (Tr. III, pp. 426-427), but would not give an acreage limitation figure to the Cox lease; and admitted that oil presently existed under the Cox lease (Tr. III, p. 449), while Mr. Currens stated that Mr. Cox had depleted all of his oil. Mr. Christianson's testimony cannot simply be cut off in midstream so as to isolate and approve of part of his expert testimony while disregarding the remainder. Mr. Christianson's testimony is favorable to a

finding which would reduce the productive acreage attributable to the Cox lease, but the reasonable inference to be drawn from his testimony excludes the finding of only 2½ productive acres under the Cox lease.

Evidence favorable to the finding was principally obtained through the testimony of the witness, Daniel R. Currens, who initiated his opinion conclusions by stating that he had made a study to determine the reservoir limits of the oil reservoir underlying the Cox lease (Tr. III, p. 413). The opinion of any expert, including Mr. Currens, must be based upon facts, proven or assumed, sufficient to form a basis for the opinion. Expert opinion cannot be used to supply the substantive facts necessary to support the expert conclusion. 31 Am.Jur.2d, Expert and Opinion Evidence, Sec. 36 (1967).

In connection with the alleged study done by Mr. Currens, the record reflects the study to have been a study only in part. In speaking of the reservoir limits for the Cox lease, Mr. Currens said: "I've made a study and arrived at a maximum that it could be." (Tr. III, p. 463) He testified that in making the study, he considered data from the original Aztec Well (Tr. III, p. 463), although he did not mention in connection with the "study" that the old Aztec Well had produced approximately 5,000 barrels of oil before being shut-in (Tr. III, p. 473). Mr. Currens noted that an attempt by Aztec to deepen the well and a later attempt by Cox to re-enter and recomplete the well were unsuccessful (Tr. III, pp. 464-465). He did mention that neither the Aztec Well nor the Cox recompletion attempt on the well were logged to the complete total depth drilled (Tr. III, pp. 464-465). One inference from such notation which logically follows, is the lack of information since total depth logs had not been run. Mr. Currens did not mention the factual establishment that the randomly deviated Federal EA #1 Well (the Cox

re-entry well attempt) had deviated 23 feet to the South and 172 feet to the West of the surface location (Tr. I, p. 20). Since such recompletion attempt by Cox in the Federal EA #1 Well was unsuccessful, Mr. Currens testified that such information gave him "a clue" as to the possible southern limits of the Cox zone of the Cox Federal EA lease (Tr. III, p. 467). Thus completed the study by Mr. Currens, and he rendered an opinion that the productive acreage under the Cox lease would be a 2½-acre square tract in the extreme NW¼ of the Cox 40-acre lease (Tr. III, p. 468).

An analysis of the "study" reflects a lack of sufficient facts to support his opinion. Mr. Currens felt he had a clue as to the possible southern boundary limits of the reservoir underlying the Cox lease, but he made no mention whatsoever of a clue, of facts, or of guidelines for the eastern boundary limitation which he established for the reservoir under the Cox lease. For apparent neatness sake, he developed a 2½-acre perfect square with the surface location of the Cox well located at the southeast corner of the square so as to delineate the southern boundary of the Cox reservoir. For the square to be linear perfect, he overlooked the 23-foot south deviation of the EA #1 hole which would have increased the size of the square through shift of the southern boundary, with a resulting increase in the productive acreage attributable to the Cox lease. He limited the eastern boundary of the productive Cox acreage through use of his east line in establishing his 2½-acre square, which automatically eliminated from productive acreage potential the adjoining easterly 2½ acres in the NW¼NW¼NW¼ of the Cox lease and all acreage in the NE¼NW¼NW¼ of the Cox lease.

Mr. Currens gave no basis for his easterly boundary and did not include any facts in his "study" to substantiate his

eastern boundary opinion. An opinion is no stronger than the facts which support it. Parker v. Goldstein, 189 A.2d 441 (NJ super. 1963). The facts referred to by Mr. Currens in his study were totally limited to lack of present productive ability in the old Aztec Well and the Federal EA Well #1, which were facts bearing upon possible southern limits of the productive formation under the Cox lease, but did not bear upon or reveal any factual basis for setting an eastern boundary line for such formation. Nor were such facts sufficient to create an inferred eastern boundary. Mr. Currens simply supplied the boundary to reach his opinion.

A major portion of the testimony before NMOCC by ARCO and AMOCO was directed at establishing the factual existence of communication between the productive zones underlying the Cox lease and the Abo reef underlying the Empire-Abo Unit. Evidence of such communication given by both Mr. Currens and Mr. Christianson was substantial and compelling, with the purpose of such evidence being to show that Cox was producing from the same container of oil as the unit wells. All attempts by Cox to show the existence of a barrier or Abo reef absence under his lease were rebuffed. In fact, ARCO, through its witness, Mr. Christianson, and its Exhibit DN-3, proved that the Abo reef extended to an AMOCO well, the Diamond Federal #1, which was located south of the Cox well in the SW¼ of the same section which contained the Cox lease, and even Mr. Currens admitted that a reef section appeared to be present in that well (Tr. III, p. 473). In establishing an eastern boundary for the productive zone under the Cox lease, it may be reasonably inferred that Mr. Currens had changed his position on communication. By establishing the eastern boundary, Mr. Currens, though giving no factual basis for such a

determination, presumptively is saying there is no communication between the Cox acreage and the Abo reef acreage in the Empire-Abo Unit to the east of the Cox acreage. When Mr. Currens testified to the eastern boundary limits, he knew from personal knowledge and from AMOCO and ARCO exhibits offered at the hearing, that productive unit wells existed to the northeast of the Cox well. In fact, as supportive evidence of productive reef communication between the Cox well and the Unit wells, it had been established that Unit Wells L-17, L-18, L-19, and L-20 are northeast to east offsets to the Cox well (Tr. III, p. 420). Productive Unit Well L-17, north to northeast of the Cox lease, had a bottom hole location of only approximately 1,000 feet from the bottom hole location of the Cox well (Tr. III, pp. 446-447).

Mr. Currens' establishment of a limited 2½-acre productive area for the Cox lease, may be suspect as to the southern boundary limits since his study contained no mention of the southerly deviation in the original Cox re-entry attempt in the EA Well, nor any mention of the Diamond Federal #1 Well to the south of the Cox lease, which well contained a reef section, but considering his evidence in such regard as favorable to the finding, it may be possible to consider that the same was sufficient to assume the establishment of the southern boundary. As to the eastern boundary, however, which closed the door to the productive area for the Cox lease, Mr. Currens offered no evidence whatsoever. Mr. Currens made no mention in his study of a factual basis for drawing the eastern boundary line, and did not touch upon the communicating eastern productive unit wells, the very existence of which refuted his eastern boundary line determination.

CONCLUSION:

New Mexico Statutory Section 65-3-14(a), 1953 comp., requires the NMOCC to afford the owner of each property in a pool his just and equitable share of the oil in the pool. Cox seeks only his share of the oil in the pool, and submits that NMOCC did not have substantial evidence to render its Finding No. 16, which enclosed and limited his opportunity to obtain the share of oil underneath his lease to which he was entitled. Evidence of an eastern boundary line limiting the productive acres underlying the Cox lease was totally absent, rendering the finding unreasonable.

Respectfully submitted,

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