

CASE NO. 19

BEFORE THE OIL CONSERVATION COMMISSION
FOR THE STATE OF NEW MEXICO

HEARING TO CONSIDER REGULATIONS
COVERING OIL-GAS RATIOS FOR THE
PRODUCING FIELDS IN THE STATE OF
NEW MEXICO

THE CAPITOL, SANTA FE, NEW MEXICO
DECEMBER 9th, 1939

Pursuant to notice, duly given and published, hearing in the above entitled matter was convened in the Hall of the House of Representatives, Capitol Building, Santa Fe, New Mexico, at the hour of ten o'clock, A. M., of December 9th, 1939, the Commission sitting as follows:

Hon. John E. Miles, Governor, Chairman of Commission
Hon. Frank Worden, Commissioner of Public Lands, Secretary

Owing to the fact that hearing in Case No. 14, which was set for December 6th, 1939, was not finished at ten o'clock on December 9th, 1939, and was suspended for the hearing in Case No. 19, appearances of interested parties were not re-taken for this hearing, but the appearances entered in Case No. 14 were entered in this case as follows:

J. O. Seth	Stanolind Oil & Gas Co.	Santa Fe, New Mexico
D. D. Bodie	Cities Service Oil Co.	Hobbs, New Mexico
J. D. Atwood	Cities Service Oil Co.	Roswell, New Mexico
Lloyd L. Gray	Gulf Oil Corporation	Tulsa, Oklahoma
P. H. Bohart	Gulf Oil Corporation	Tulsa, Oklahoma
Russell G. Lowe	Gulf Oil Corporation	Tulsa, Oklahoma
R. S. Knappen	Gulf Oil Corporation	Tulsa, Oklahoma
S. C. Sanderson	Gulf Oil Corporation	Tulsa, Oklahoma
A. D. Curtis	Barnsdall Oil Co.	Tulsa, Oklahoma
J. S. Noland	Barnsdall Oil Co.	Tulsa, Oklahoma
W.M. Fleetwood, Jr.	Barnsdall Oil Co.	Tulsa, Oklahoma
E. P. Keeler	Continental Oil Co.	Hobbs, New Mexico
R. S. Dewey	Humble Oil & Rfg. Co.	Midland, Texas
W. E. Hubbard	Humble Oil & Rfg. Co.	Houston, Texas
R. A. Koenig	Ohio Oil Co.	Hobbs, New Mexico
Glenn Bish	Ohio Oil Co.	Hobbs, New Mexico
H. L. Johnston	Continental Oil Co.	Hobbs, New Mexico
H. B. Hurley	Continental Oil Co.	Fort Worth, Texas
D. R. McKeithan	Phillips Petroleum Co.	Bartlesville, Okla.
A. E. Willig	The Texas Co.	Fort Worth, Texas
Ira Van Tuyl	Gulf Oil Corp.	Hobbs, New Mexico
Ross M. Stuntz, Jr.	Gulf Oil Corp.	Tulsa, Oklahoma
S. P. Hannifin	Magnolia Petroleum Co.	Roswell, New Mexico
Delmer R. Guinn	Cities Service Oil Co.	Hobbs, New Mexico
Allen B. Gibson	Cities Service Oil Co.	Hobbs, New Mexico
D. A. Powell	Drlg. & Exploration Co.	Hobbs, New Mexico
Jack E. Rankin	Repollo Oil Co.	Midland, Texas
N. B. Larsh	Repollo Oil Co.	Midland, Texas
H. J. Summy	Repollo Oil Co.	Midland, Texas
Frank Gray	Anderson-Prichard Oil Corp.	Hobbs, New Mexico
Weston Payne	Anderson-Prichard Oil Corp.	Oklahoma City, Okla.
H. J. Kemler	Shell Oil Co.	Midland, Texas

O. D. Crites	Shell Oil Co.	Houston, Texas
M. T. Smith	Shell Oil Co.	Midland, Texas
F. E. Heath	Sun Oil Co.	Dallas, Texas
Harvey Hardison	Standard Oil Co. of Texas	Houston, Texas
Francis C. Wilson	Wilson Oil Co.	Santa Fe, New Mexico
Weldon Brigance	Rowan Drilling Co.	Fort Worth, Texas
R. S. Christie	Amerada Petroleum Co.	Fort Worth, Texas
C. G. Campbell	Tex.-Pacific Coal & Oil	Midland, Texas
O. F. Hedrick	Tex.-Pacific Coal & Oil	Midland, Texas
G. W. Selinger	Skelly Oil & Getty Oil	Tulsa, Oklahoma
Colin C. Ra e	Skelly Oil Co.	Tulsa, Oklahoma
M. Albertson	Shell Oil Co., Inc.	Houston, Texas
R. G. Schuehle	Shell Oil So.	Midland, Texas
E. W. Childers	Tidewater Assoc. Oil Co.	Midland, Texas
Edgar Kraus	Atlantic Rfg. Co.	Carlsbad, New Mexico
Lig Biddick	Samadan Oil Corp.	Ardmore, Oklahoma
J. P. Cusack	J. P. Cusack, Inc.	Midland, Texas
A. M. McCorkle	Stanolind Oil & Gas Co.	Fort Worth, Texas
G. H. Card	Stanolind Oil & Gas Co.	Fort Worth, Texas
Howard P. Holmes	Two States Oil Co.	Dallas, Texas
Roy Yarborough	Oil Conservation Comm.	Hobbs, New Mexico
Rex E. Rader	Stanolind Oil & Gas Co.	Hobbs, New Mexico
R. W. Tesch	Stanolind Oil & Gas Co.	Fort Worth, Texas
Guy H. Woodward	Stanolind Oil & Gas Co.	Tulsa, Oklahoma
G. S. Bays	Stanolind Oil & Gas Co.	Tulsa, Oklahoma

The hearing was opened by Governor Miles.

Thereupon, at the request of Mr. Worden, the Notice for Publication for the hearing was read as follows:

"NOTICE FOR PUBLICATION

STATE OF NEW MEXICO

OIL CONSERVATION COMMISSION

Pursuant to Chapter 72, Session Laws of 1935, State of New Mexico, by which Act the Oil Conservation Commission of New Mexico was created, investing said Commission with the jurisdiction and authority over all matters relating to the conservation of oil and gas in this State and of the enforcement of all provisions of said Act, notice is hereby given that a public hearing will be held at the Capitol, Santa Fe, New Mexico, on the 9th day of December, 1939, at ten o'clock A. M., for the purpose of considering the following:

Case No. 19.

The adoption of regulations governing oil-gas ratios in the various producing fields in New Mexico.

Any person having any interest in the subject of the said hearing shall be entitled to be heard.

Given under the seal of said Commission at Santa Fe, New Mexico, on November 16, 1939.

OIL CONSERVATION COMMISSION

By (Sgd.) JOHN E. MILES

Governor

By (Sgd.) FRANK WORDEN

Commissioner of Public Lands

(SEAL)

A. M. McCORKLE,

being called as a witness, and being first duly sworn to tell the truth, the whole truth, and nothing but the truth, was examined by Mr. Seth, and testified as follows:

DIRECT EXAMINATION

Q Your name is A. M. McCorkle?

A Yes, sir.

Q You are Chairman of the Lea County Operators?

A I am.

Q You may make any statement you wish, Mr. McCorkle.

A For a great many years the matter of gas-oil ratios, and corrective work to reduce the same, has been given a great deal of serious attention, and a great deal of work has been done to remedy the same in the Lea County, New Mexico fields. Several months ago, prior to the notice of this hearing, at a meeting of the Monument-Hobbs operators, this matter was discussed, and Mr. Staley, the umpire at Hobbs, was instructed to appoint a special engineering committee of five to study the subject and to recommend some method of penalizing the high gas-oil ratio wells in order to further encourage corrective work to eliminate physical waste. This study, at that time, was primarily for the Monument Pool, but was later enlarged to include all Lea County pools, and at a meeting -- a special meeting of the Lea County Operators in this room on December 7, 1939, the operators moved -- that is, a majority of the operators present instructed the Chairman of this Special Engineering Committee, who is Mr. R. S. Christie, to present their recommendations to the Commission at this hearing for taking care of this matter, at least temporarily until a detailed study could be made of all the pools.

I believe that is all.

BY GOVERNOR MILES: Has that study been made?

A Mr. Christie, I believe, will testify as to that.

BY MR. KRAUS: Have there been any other counties working on this

problem? Have there been any remedial programs instituted, even before this?

A I believe I undertook to state in my remarks, this matter has been under consideration, and considerable work toward reducing gas-oil ratios has been done for several years. The Hobbs Engineering Committee meets regularly, and a review of the minutes of their meetings will show that, so far as I can recall, there was never a meeting but what the matter has been brought up, the corrective work that has been done since the last meeting, the results of the same, and discussion of additional corrective work.

WITNESS DISMISSED.

R. S. CHRISTIE,

being called as a witness, and being first duly sworn to tell the truth, the whole truth, and nothing but the truth, was examined by Mr. Seth, and testified as follows:

DIRECT EXAMINATION

Q Your name is R. S. Christie?

A Yes, sir.

Q You are petroleum engineer for the Amerada?

A Yes, sir.

Q You have had many years experience in the Lea County oil fields?

A Yes, sir.

Q You have heard Mr. McCorkle's testimony about the engineering committee that was appointed?

A Yes, sir.

Q Have you the recommendations of that committee?

A I have.

Q Will you please state the names of the members of the committee, and read into the record the recommendations of the committee?

A The members of this committee are Mr. Lloyd Gray, of the Gulf Oil Corporation; Mr. Van A. Mills, of the Continental Oil Company; and R. S. Christie, of the Amerada Petroleum Corporation; Mr. Glenn Staley, Chairman of the Lea County Engineering Committee; Mr. F. E. Heath, of the Sun Oil Company.

Q Will you read the recommendations?

"RECOMMENDATION FOR A GAS DISPLACEMENT FACTOR FOR
WELLS IN LEA COUNTY.

1. Any well producing with a net gas-oil ratio in excess of ten thousand (10,000) cubic feet per barrel of oil produced, shall be allowed to produce daily a total volume of gas equivalent to that quantity obtained by multiplying the average unit allowable for Lea County by 10,000. The displacement volume will vary from time to time as the allowable production for units is changed.

In applying the displacement factor to the unit allowable in a field, the units penalized in daily allowable shall first be set up on the schedule and the remaining oil distributed to the remaining units of the field.

There are some fields with high ratio wells producing large volumes of water which may warrant a temporary exception to this rule.

Net gas is defined as gas coming from the formation with the oil produced from the well and not returned to the reservoir.

2. Within sixty (60) days after the inauguration of this temporary order, a study of all fields shall be made and evidence presented at an open hearing; such evidence to be used as a basis for establishing a proper gas-oil ratio limit for each field, after which an order shall be prepared and made effective immediately.
3. That a committee of field engineers be appointed by Mr. Staley to determine a standard method of taking gas measurements for the calculation of gas-oil ratios.
4. That a quarterly gas-oil ratio survey shall be made and reported on all wells in all fields in Lea County."

Q Mr. Christie, do you recommend to the Commission the adoption of these recommendations of the committee?

A Yes, I do.

Q Do you believe these recommendations would be a start, at least, in the right direction for the conservation of oil and gas?

A I do.

Q The committee contemplates, after setting out conditions, the adjustment of, and lowering of the ratios?

A That is correct. This committee did not feel it had time enough

A Well, there are approximately 127 wells with a ratio above 10,000 cubic feet.

Q This will immediately bring them down to this limit, unless corrective measures are immediately put into effect?

A That is correct. For some reason or other, we have checked 107 of those wells with a ratio above 10,000, and the average ratio of those 107 wells is 25,836 cubic feet.

Q Would the effect of this regulation be to reduce the well with 25,000 cubic feet ratio, cut the allowable down approximately two-fifths, unless corrective work is done?

A Yes. If we assume that the allowable on these 107 wells is 46 barrels, we save a total of 77,000,000 cubic feet by using the displacement factor of 10,000 cubic feet, and we feel that is a pretty good start, if we can correct all of those and, in the meantime, work out details for other fields -- to be a very good conservation measure.

BY MR. COLE (The Texas Company):

Q Mr. Christie, there are a number of wells, essentially gas wells, which nevertheless produce a small quantity of oil, the gas being sold to pipe lines for fuel, domestic and otherwise. Did your committee give consideration to those wells in this recommendation?

A Not specifically. I believe this applies to those set up on the proration schedule. Are those wells set up on the proration schedule? Of course, there would have to be exceptions. You could not cut a gas well down to 10,000 cubic feet.

Q You think those wells which are essentially gas wells should be exempt from the order?

BY MR. SETH: You mean, provide in the order for gas wells?

BY MR. COLE: Provide in the order for gas wells supplying the pipe line market.

A Yes, I certainly do.

BY MR. COLE: I would like particularly to call the Commission's

attention to that condition, and ask their consideration.

BY MR. LIVERMORE (Great Western Producers, Inc.)

Q Was your recommendation that this order go into effect immediately in cutting back all allowables?

A On 10,000, all wells above 10,000 cubic feet.

BY MR. LIVERMORE: I would like to register a protest on that, unless we be given time to present evidence -- I have evidence that it would result in further loss; also we would like to have time to go into it. By increasing the allowables still further, I believe we would reduce the ratios, and by putting that order into effect, it would bring about material loss. I have evidence I can produce, and I feel it would be a hardship to me if that was put in effect.

A Of course, this is a recommendation to the Commission. That would be a problem for them to settle.

BY MR. SETH: Isn't 10,000 felt to be quite liberal?

A Yes, I think it is, I am satisfied that is. It is probably high for a number of fields, and probably too low for one or two fields.

BY MR. McKEITHAN (Phillips Petroleum Co.): I would like to say, in general, we think the recommendations are very constructive. I would like to ask Mr. Christie a few questions.

Q You are familiar with production in the Cooper field?

A Yes, sir.

Q Then you know that large volumes of water are being produced along with the oil in that field?

A That is correct.

Q As a result of these large volumes of water being produced, the gas, in many cases, is apparently very high, the gas-oil ratio.

A I understand the gas-oil ratio is in excess of 12,000 in the Cooper field, so the value of all wells would be penalized. That is our reason for the second to the last paragraph in our first recommendation.

Q If the 10,000 ratio is put into immediate effect that might result in considerable waste in the Cooper pool?

A I believe that is true.

Q Would you recommend in the Cooper Pool, due to these conditions,

that the Commission might not put into effect these proposed rules until a regular hearing has been held for the permanent work?

A I believe that would be reasonable for that pool. I would like to correct that statement -- I doubt very much if it would tend to create physical waste, but it might cause some hardship.

Q Many wells would be shut down?

A Yes, sir.

Q And probably never produce again?

A That is right.

BY MR. RANKIN (Repollo Oil Co.): The Repollo Oil Company is very much in favor of any measure that will reduce the gas-oil ratios and produce conservation. However, we think more equity would result in volumetric withdrawals rather than flat measurements, in the Lea County allowables, in that in a number of pools it is necessary to produce gas in order to flow the wells.

I would like to recommend, or ask, that the Commission consider that the volumetric withdrawal of the gas be based on 10,000 cubic feet -- whatever the Commission desires -- that be multiplied by the highest allowable for any well in the field, and this be the top gas allowable for any well in the field, and upon production of that volume of gas and oil, production up to or below the well's allowable be allowed the well.

BY MR. LIVERMORE: I would like to clear up one statement. I am not objecting to a reasonable conservation of gas. However, there are conditions you sometimes can't regulate without special consideration of the problem. In the problem I have referred to, I have already spent a considerable amount of money trying to correct conditions as they exist, and have gone to considerable expense in remedial work. But this rule, if enforced, would tend to impair the wells down there, and if continued, would result in complete loss. If it is necessary, and you think proper, I can present the evidence here at this time.

BY GOVERNOR MILES: Any further questions? How long would it take you to produce your evidence? Could you submit that in writing to the Commission?

BY MR. LIVERMORE: I will, yes, sir.

BY GOVERNOR MILES: Before proceeding further in this matter, Mr. Kraus,

I have a question I would like to ask you. How many wells are there in Lea County?

BY MR. KRAUS: I am sorry -- I have a schedule covering the period to September 16th -- on the schedule the total is 2318. Since them there must be at least 100 more.

BY GOVERNOR MILES: How many of those wells show over 10,000 cubic feet?

BY MR. KRAUS: Mr. Christie just testified 125, about 5%. I think the number now is slightly less than 5%.

BY MR. DEWEY: I think Mr. Christie failed to point out in his report that it was a majority report, and that there were several operators who did not concur fully. In behalf of the Humble Oil and Refining Company I wish to state it was our opinion that the 10,000 cubic feet per barrel ratio was somewhat high, and it is our hope that when the fields are more adequately studied, this ratio will be very materially reduced in the majority of the fields.

BY MR. RANKIN: I would like to have the record and minutes of all previous hearings be made a part of the record at this hearing.

BY MR. COLE: On behalf of the Texas Company I wish to state we concur in the recommendation, as one of the operators in the county, of 10,000 cubic feet as a temporary measure only, in that we believe it will be found, when individual fields are studied, that a lower ratio will be found desirable. We consider 10,000 too high as a blanket measure for all fields. A much lower ratio should be applied to most fields, and for that reason, we would concur with the understanding that each individual field be given further consideration for ultimate orders.

BY MR. RAE: (To Mr. Christie):

Q Do you know approximately what the approximate gas-oil ratio is in Lea County on wells there?

A This is from memory -- approximately 3300 I believe.

Q In your opinion, would that ratio compare favorably with other operating fields in the United States?

A I believe that is a very reasonable figure.

Q What would be the investment in well costs, in these 127 wells that

have a ratio greater than 10,000 cubic feet, for wells that would be penalized or worked over?

A What would it cost to work them over?

Q I mean, the total cost to each well, the cost of drilling and completing each well?

A I would not attempt to answer that, it would take in the whole of Lea County.

Q What would you assume would be a fair average cost to drill those wells?

A Roughly, \$30,000.00.

Q The wells, the 127 wells, would represent an investment of \$30,000.00 times 127 -- that would be three or four million dollars, approximately?

A That is right.

Q In your opinion, where the ratio in general is low, the fact that the committee recommended this work be done on these wells, they considered that would be a reasonable start toward corrective work?

A Yes, sir.

BY GOVERNOR MILES: If there are no further questions or testimony, the Commission will take this matter under advisement.

C E R T I F I C A T E

I hereby certify that the foregoing and attached nine and a half pages of typewritten matter are a true, correct and complete transcript of the shorthand notes taken by me at the hearing in the above entitled matter on the 9th day of December, 1939, and by me extended into typewriting.

Witness my hand this 10th day of January, 1940.

Esther Barton