

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO

April 16, 1953

CASE 529: In the matter of the application of the Oil Conservation Commission upon its own motion for an order revising Rule 401, Rule 402 and Rule 1121 of the Commission's Rules and Regulations to provide for gas well testing procedure applicable to gas wells completed in San Juan, Rio Arriba and McKinley Counties, New Mexico; and providing for a Form C-122-A to be used in reporting the results of such tests.

ELVIS A. UTZ.

having first been duly sworn, testified as follows:

DIRECT EXAMINATION

By: MR. GRAHAM

Q. Will you state your name and discuss the matter?

A. My name is Elvia A. Utz, Engineer with the Oil Conservation Commission. It might be well to make a brief statement as to why the Commission has to change Rules 401 and 402 and 1121. These rules state that we shall have a 4 point back pressure test which is not possible in the San Juan Basin, due to peculiar reservoir conditions in that area, - the regular 4 point test is not practical.

Therefore, a committee was appointed to study the situation and this report of exhibit is the result of that study which has been carried on over the past several months.

The report that was mailed out by the committee on March 19, 1953 was received by the Oil Commission, I presume, as a recommendation from the Committee - - there has been some changes made since that report has come to the Commission office. I am wondering if the Commission would like for me to point out these changes or not.

MR. SPURRIER: Yes.

A. It might be less confusing for some people. Under A, I assume everyone has a copy, - - under Section A, types of test required by New Mexico Oil Conservation Commission, the entire first paragraph has been added.

Under Section B, Part I, Paragraph 1, subparagraph (b). I have added

"and tubing pressure" or "and tubing" rather.

Under subparagraph 3 of Section B, we have added "existing pipe line pressures permitting". Incidentally, before we go further, I'd like to call your attention to the fact that pages 4 and 5 are misnumbered. Four should be 5 and 5 should be 4.

On the top of page 3, the formula as set out, typographical error -- that formula should be set out in brackets with the Nth power, -- -- designated. I have added -- we have added under the formula the definition of "C". The coefficient is determined from ^{*}CNG Committee report No. 2.

Under Part 4, we have added an exception for the Barker dome Dakota storage area which sets out the test for that area.

Under -- well, all of Part A and B under Section 4 is an addition.

Under Section 5, the Pennsylvania formation, the entire Section 5 has been changed and added to.

VOICE: Not paragraph 1.

A. That's right. With the exception of paragraph 1, initial potential test.

Under the general instructions for taking deliverability tests of gas wells in San Juan Basin, Part 1, Conditioning Period, line 4 after pressure, we have not added here but I will read in "existing pipe line pressures permitting".

VOICE: What page was that -- I mean, what words?

A. After the words "seven-day shut-in pressure".

VOICE: Where is that?

A. It's on page five -- what is numbered page 4 on your sheet under Conditioning Period, paragraph 1, line 4, after "seven-day shut-in pressure".

Under paragraph 4 on that same page, we have added an explanation of the general flow formula.

On the recommended form, last page, C-122-A, we propose to call it that -- down 1, 2, 3, -- -- the 8th line, I have added a place for meter runs size, orifice size, type of chart and type of taps. It wasn't on the original and further down in the observed data, I have omitted meter run

~~* This should probably be~~
~~EMC Committee Report No. 2~~
~~(gas deliverability Committee Report No. 2)~~
~~from the book~~

line diameter and orifice diameter - it's a duplication. I have also added a line for flowing temperature - meter run temperature.

That is all the additions in addition to the original report. I might add in -- as a recommendation the Commission could consider that in the first paragraph of A, page 1, instead of using "theoretical" we might use "calculated" deliverability.

I believe that's all that I have.

MR. GRAHAM: Do you recommend the adoption of these rules of the Commission for that area?

A. Yes, I do. A lot of time has been spent on this and I believe it is the best possible test that can be formulated at this time. Later on, we might find something better.

MR. MENCHER: Hamilton Mencher representing Kingsley-Lecke Oil Company. I would like to be on record for the company and the company's geologist and superintendent, Mr. Frank C. Barnes, to the effect that he has watched very closely the committee and the recommendations and is in sympathy with them, and recommends that they be adopted.

MR. SPURRIER: Anyone else?

MR. UTZ: I would like - - -

MR. SPURRIER: Excuse me.

MR. UTZ: I would like to present a copy of this into the case.

MR. SPURRIER: Without objection, it will be received.

MR. HODLIS: W. T. Hollis, El Paso Natural. El Paso is in agreement with this exhibit and it's the best procedure as we see it now.

MR. SPURRIER: Anyone else?

JUDGE FOSTER: We'd like to offer something in this case.

MR. SPURRIER: All right.

CHARLES W. BINKLEY

having first been duly sworn, testified as follows:

DIRECT EXAMINATION

By JUDGE FOSTER:

Q. State your name, please?

A. Charles W. Binkley.

Q. Do you reside in Bartlesville, Oklahoma?

A. Yes, sir.

Q. Are you employed by Phillips Petroleum Company?

A. Yes, sir.

Q. In what capacity?

A. I am the chief production engineer of the natural gas department.

Q. You have testified before before the Commission, have you not?

A. Yes, sir.

Q. And you have found to be qualified?

A. My qualifications passed the last time.

Q. Mr. Binkley, directing your attention here to the proposed rule which has been suggested, and -- do you have a copy of it there?

A. No, sir. I didn't get a copy.

Q. On page 1 there, under A, do you find anything there that would be objectionable?

A. There are several A's on that page, are you referring to the small a under Part 3?

Q. I'm referring to capital A on page 1 here that says Type of Test Required by the New Mexico Oil Conservation Commission. Are you looking at the same thing?

A. Yes. I see it now. The word "theoretical" deliverability is not understood. I am opposed to the use of the word theoretical. Mr. Utz suggested that the word be changed to "calculated". I think that is a much better word.

Q. Now directing your attention to subdivision 3 under B, testing procedure, do you find anything objectionable in that paragraph?

A. Yes, sir. I do.

Q. Will you state what it is?

A. In the third sentence of subdivision little a, the addition of the words "existing pipe line pressures permitting" invalidates the entire sentence.

I worked all last year and up until the present time with this testing committee and the purpose of that sentence as it was originally written and I would like to read the way it was originally written -- "All production during the twenty-seven days must be at a working well head pressures not in excess of seventy-five percent of the previous seven days shut in pressure of the well". That is the way it was left by the testing committee.

The purpose of that is to minimize error in the deliverability test results. The figure of seventy-five percent was agreed upon after considerable discussion and I think it's a very fair figure. If no percentage in excess of seventy-five percent is used, the error in the deliverability test results as outlined here will be on the order of minus -- plus or minus ten percent, which is a reasonable error. If existing pipe line pressures permitting is added to that sentence, it can well be possible that we would test at as much as ninety percent in such situation where the pressure would be ninety percent of the previous seven day shut in pressure. In such case, the error can be as high as plus or minus thirty percent. The committee deemed that too high an error so I am suggesting that the words "existing pipe line pressure permitting" be stricken and the original wording of the committee used.

Q. In the proposed rule?

A. Yes, sir.

Q. Now, let me ask you, are there any other objections that you see.

Take the initial potential test.

A. Well, I have never had a clear understanding of the purpose of the initial potential test. I am very hopeful that by the end of this year Phillips Petroleum Company will have sufficient information to convince the Commission and the operators that a back-pressure test can be applied to wells in the San Juan Basin. This three-hour test -- open flow test -- has been applied to a few of our Mesaverde wells which we have completed. We have approximately four wells completed and in at least two of these wells, we have very definite evidence of the open flow creating a caving condition in one well -- completely

filled the well bore with cavings before we had time to run the tubing.

In other words, without ever having production from the well, we reconditioned it to get the tubing down into the formation.

Q. As a result of the open-flow test?

A. We think so. We think we have very conclusive evidence to that. It isn't a new thing at all. The Bureau of Mines, Monograph 7, which defines the method of taking back-pressure tests was primarily developed to eliminate the caving condition in many wells that resulted from a twenty minute open flow. Well, now, the difference between twenty minutes and three hours is of no consequence, but it's mighty important to me in releasing all the pressure on six or seven hundred feet of open hole that's been shot allowing the pressure back away from the immediate well bore to sluff off shale and rock into the hole. I think that the three hour test is a damaging test and will be expensive to the operators in reconditioning.

Q. In other words, it's wasteful, isn't it?

A. Yes, sir. It's wasteful.

Q. What would you suggest?

A. I have suggested to the committee that a back-pressure test be used to determine the initial potentials.

Q. Do you think a back-pressure test is a feasible method in the San Juan Basin?

A. Not in the form the Bureau of Mines presented in the Monograph 7 several years back, but there is a modification to that method that I am confident is applicable.

Q. What modification of that method do you propose?

A. We call it a constant-time test or a short-period flow test, similar to the flow after flow test that is recommended presently by the New Mexico Commission rules.

Q. Is that a three point test?

A. It may be three or more. Quite often it is advisable to have a four point test.

Q. Is this a wasteful method?

A. It may or may not be. Under some testing conditions, the test can be made into the pipe line. Other times, a small amount of gas must be vented into the air.

Q. What is your recommendation then?

A. If there is a real need for such a test, I have agreed to go along on the thing until such time as our engineers can prove that there is a back-pressure test that is applicable. At that time, I hope to eliminate this 3 hour open test.

Q. Is there a need for this type of test in the field?

A. I do not know. We can operate without one.

Q. You don't know the situation of other operators?

A. No, I don't. I understand some of them use the three-hour open flow test to -- as a guide or an index to the meter settings and gathering systems.

Q. Then you would say that if it's necessary to take the test, you are not objecting to it but you think that they can provide a better test.

A. Yes, sir.

Q. And you're hopeful that you will be able to present a better test method before too long to be used in the field?

A. I'm certainly working on it and I'm hopeful.

Q. And your concern here then is simply not to get this nailed down too tight at this time. Is that your point?

A. Well, I feel that all the rules, including the deliverability test, are of a tentative nature but I am in agreement that it's about the best set of rules we can have at this time.

Q. At the present time? But there are some suggestions that you want to make with respect to the rules in the future. Is that right?

A. I think so.

Q. How do you regard this proposed annual deliverability shut in pressure test?

A. I consider that a reliable test to determine what a well will produce into the pipe line during the last week of the twenty-seven day flow period. I think it's a reasonably stabilized delivery rate and the deliverability test lies -- and the deliverability so determined will be a reasonably stabilized deliverability.

Q. You find any of the proposed rules on annual deliverability and shut in pressure test lacking in definiteness -- being definite enough?

A. Well, ah -- --

Q. A little vague or indefinite?

A. It isn't definite and it really wasn't a function of the committee as I see it to specify how the test would be witnessed and reported. The committee has done it's work, I think. But in addition to that, I think it's highly necessary that the Commission have a representative to witness deliverability tests.

Q. The proposed rule doesn't provide for that?

A. No.

Q. And there is no provision in the rule for a Commission representative to witness these tests?

A. Not that I know of. And certainly not in the exhibit on Case 529.

Q. Do you think it advisable?

A. Yes. We have been through that in other states and it's definitely advisable. That is for the protection, I might add, of both the Commission and the operator. Any complaint, in case the capacity test would be used in any proration allocation, any complaint of an operator could not be defended if the test had not been witnessed by the Commission and we think that's very essential.

Q. Why do you think it's essential?

A. Well, accident -- ah, errors are unconsciously made through untrained personnel -- sometimes they're made on purpose -- a little extra allowable -- three or four million feet on three or four wells a month -- sometimes helps. I think everybody is inherently honest on the thing but it's

-- we've seen it in other states where it has happened and we've had to retake them and just to throw the thing open up there in the mountains, to me just wouldn't be the proper approach. It's really desired to have a test that has some significance.

Q. And one that the Commission could really rely on?

A. Yes, sir.

Q. Do the rules here provide for deliverability for the new rules?

A. Yes, sir.

Q. Do you think that's a sound feature in the rules?

A. Yes, sir.

Q. On calculating deliverabilities?

A. Yes, sir. Only in a rare -- by rare coincidence could you measure the deliverability directly.

Q. Now, in the rules, there are a number of provisions in there to the effect that you notify the Commission in advance as to the time of taking these tests -- the deliverability tests?

A. I haven't been able to find such provisions.

Q. Would you recommend that they provide such provisions?

A. Yes.

Q. And the rule provides that one operator may witness the test of another operator.

A. The rules are silent on that point but I think all operators should have the privilege, at any time that anyone knows that a test is going on and he desires, for some reason or another, to witness the test that he have the privilege to do so.

Q. Do you think it would be desirable to include such a statement in the rules?

A. I could it could eliminate some controversy and would be advisable.

Q. Now, do you find any other objections to the proposed rules that I haven't mentioned.

A. There will be some difficulties come up but I can't object to them at the moment. I think not. That I have no other objections of any consequence.

Q. With respect to these charts in the rules here, is there any provision as to when they're to be sent out?

A. No, sir. The rule says that they will be furnished the Commission upon request.

Q. Well, do you think that the rules ought to be changed so that operators would send them in - - -

A. I don't see how the Commission can check the test and find out that the provisions for testing have been complied with and obtained the necessary data the last week to calculate the test without having four weekly charts, - - furnished them.

Q. Would you suggest that the rules be amended in that respect?

A. Yes, sir.

Q. And what provision do you have in mind which would be sufficient to cover that situation?

A. From the completion of the test by the operator, with the understanding that the Commission witness had been there the last week of the test, the Commission should be notified and furnished the charts with the operators own calculations of the test results.

Q. And the Commission may then determine whether the results of the test - - - -

A. That's right. I think the Commission will want to calculate the test and see that they agree with the results and make it an official record.

Q. You recommend that the rules be amended in that respect?

A. Yes, sir.

JUDGE FOSTER: I believe that's all. Unless there's something I have forgotten.

A. No. I think you remembered one that I had forgotten.

(Laughter)

MR. SPURRIER: Does anyone else have a question of this witness?
Mr. Mason?

MR. MASON: Mr. Binkley, do you think that the need for seeing the test -- an operator might want to see if he could get a little more production. There is no preparation system up there now, I don't see how they could unless the pipe lines are governing their take.

MR. BINKLEY: Well, there's a tendency for an operator to want to have better delivery capacity at the high side if he has any desire at all. He may want to sell his properties. Actually, I'm thinking of the possibility, of course, if the Commission would take this data for a couple of years and then preparation would come in and it might be that deliverability would be a factor in some way or another. At that time, if it were desirable to have deliverability a factor, I think it would be better for everyone concerned to have a decent set of tests than some that had just been haphazardly taken and then thrown back in the files.

MR. SPURRIER: Anyone else? If not, the witness may be excused. Are there any other comments in this case? If not, we will take the case under advisement. We'll go on to Case 530.

STATE OF NEW MEXICO)
COUNTY OF SANTA FE)

I hereby certify that the foregoing and attached transcript of hearing in Case 528 before the Oil Conservation Commission on April 16, 1953, at Santa Fe, is a true record of the same to the best of my knowledge, skill and ability.

DATED at Santa Fe, this 1st day of May, 1953.


Audrey M. Henriksen

My commission expires September 20, 1955.