BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
June 7, 1962

EXAMINER HEARING

IN THE MATTER OF:

Application of Randall F. Montgomery for an exception to Order R-111-A, or in the alternative for three unorthodox oil well locations, Lea County, New Mexico. Applicant, in the above-styled cause, seeks exception to the provisions of Order R-111-A, insofar as it pertains to the re-entry and casing program on five plugged and abandoned wells in the Salt Lake Pool, four of which are located in Section 7, and one of which is located in Section 18, all in Township 20 South, Range 33 East, Lea County, New Mexico. Applicant further seeks permission, as an alternative request, to drill three new wells at unorthodox locations in the Salt Lake Pool as follows:

(1) Brooks - 7 Well No. 6, to be located 10 feet from the South line and 2310 feet from the East line;

(2) Brooks - 7 Well No. 7, to be located 330 feet from the South line and 1320 feet from the West Line;

(3) Brooks - 7 Well No. 8, to be located 1320 feet from the South line and 1980 feet from the West line;

all in Section 7, Township 20 South, Range 33 East, Lea County, New Mexico.

Case 2571

NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING - DANIEL S. NUTTER

SANTA FE, NEW MEXICO

REGISTER

HEARING DATE JUNE 7, 1962 **TIME:** 9 A.M.

NAME:	REPRESENTING:	LOCATION:
John Tracey	Tenneco Oil Co	Durango, Colo
H P Beyster	Humble Oil	Midland, Tex
D H Rainey	El Paso Natural	El Paso
[illegible]	[illegible] Corp	[illegible] N.M.
R F Montgomery	Self	Hobbs
[illegible]	Tenneco Oil Co.	Roswell
A R Ryan	U S G S	Artesia
V. T. Lyon	Continental Oil Co	Roswell, N. M.
Jason Kellahin	Kellahin & Fox	Santa Fe
Lewis Johnson	Val R. Reese & Assoc.	Albuquerque
Mathias A. Zamora	BCO Inc	Santa Fe
Ruth Ross		Santa Fe
R M Anderson	Sinclair	Midland
H L Atwill	Great Plains Land Co.	Midland
R. R. Oaton	Franklin, Aston & Fair	Roswell
Douglas W. Cunningham	Sinclair Oil & Gas Co.	Midland, Texas
Booker Kelly	Gilbert, White & Gilbert	S. F.

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REGISTER

HEARING DATE JUNE 7, 1962 **TIME:** 9 A.M.

NAME:	REPRESENTING:	LOCATION:
Frank Darden	Newmont Oil Co.	Ft. Worth
Jack M Campbell	Campbell & Russell	Roswell
[illegible]	Losee & Stewart	Artesia
J Gregory Merrion	J Gregory Merrion & Assoc.	Farmington, N M
Archie M. Stark	Neil E. Salsich	Artesia, N.M.
Hal Foster	[illegible]	
Wm J. Cooley	J Gregory Merrion	Farmington, N.M.
Frank E. Irby	State Engineer	Santa Fe

BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

MR. NUTTER: The hearing will come to order, please. The first case this morning will be Case 2571.

MR. MORRIS: Application of Randall F. Montgomery for an exception to Order R-111-A, or in the alternative for three unorthodox oil well locations, Lea County, New Mexico.

(Witness sworn.)

RANDALL F. MONTGOMERY

called as a witness, having been first duly sworn, testified as follows:

DIRECT EXAMINATION

MR. MONTGOMERY: I have filed an application for exception to R-111-A for the purpose of re-entering abandoned wells in the old Salt Lake Pool. These wells were originally drilled, generally in 1942, and plugged and abandoned in 1948. At that time R-111-A was not in effect and the wells were not plugged in accordance with the rule, nor was the casing program in accordance with R-111-A. I have three exhibits I would like to present.

MR. NUTTER: Were all of these wells drilled in '42?

MR. MONTGOMERY: I'll give you the exact dates on each one of them.

(Whereupon, Applicant's Exhibits 1, 2 and 3 were marked for identification.)

MR. MONTGOMERY: The well designated Brooks A-7 No. 1 was drilled by Continental Oil Company, completed on 10-31-1941; the Brooks-7 No. 2 well was completed on 1-9-1942; and Brooks-7 No. 3 was completed on 10-14-42; Brooks-7 No. 4 was completed on 1-11-1945. The Smith-18 No. 1 was completed on 3-11-1942, and the Brooks-7 No. 5 was completed on 5-30-1945.

All of the wells were plugged and abandoned in 1948, all wells in the entire pool, and based on the decline curve, which is Exhibit No. 2, it's our interpretation that there was oil left in the ground and it would be our opinion that natural resources can be recovered if we're permitted to re-enter these wells, assuming they are successful re-entries.

You'll notice the Halfway Pool has a decline curve of about 15%, whereas the Salt Lake Pool has a decline curve of 40%. The Halfway Pool and the Salt Lake Pool are adjacent pools in Lea and Eddy Counties and produce from the same formation.

There's another pool one and one-half miles to the east, the West Teas Pool, which seems to be an oil reservoir with fairly large reserves for some of the wells. The wells are completed in the Yates and Capitan reef formations and typically have rather large reserves for the area. The purpose for this hearing is on Exhibit No. 1, due to the mechanical completion of the wells after they were plugged and abandoned it's not possible

to comply to the exact casing requirements of R-111-A due to the manner in which the casing was shut off in the various wells.

Commencing with the Smith No. 1 well located in Section 18, a string of pipe was set at 10-3/4 at 815 feet, and then another string of 8-5/8 set at 1115 and cemented with 50 sacks. The well was drilled to total depth. 5-½" was set at 2908 after drilling to a total depth of 3034. After plugging and abandoning the well, the 5-½ casing was shot off at approximately 600 feet, and the 10-3/4, which was just set originally, was pulled upon completion of the well initially.

R-111-A requires that a string of casing be set to the top of the anhydrite cement circulated and then a string set up on top of the pay with the cement circulated. This is typical of each one of the wells in the area with the exception of Brooks No. 4, which has a string of 5-½ to the surface. However, all other strings were pulled.

The red marks indicated on Exhibit 1 indicate where the casing was shot and pulled, or pulled after just being set, cable tool operation. What we would like to do would be to re-enter these wells, if possible. Of course, there are mechanical hazards involved of actually re-entering the wells, run 4-½" casing inside the existing string and circulate cement. In our opinion this will more adequately protect the potash than what the

present wells are probably doing now, since they were not plugged and abandoned in accordance with R-111-A.

I have notified all interested parties known to me, and by registered mail, return receipt requested, and I have received no objection from any of the potash lessees in the area.

At this time I would like to withdraw my request for the drilling of new wells in the event the Commission does not see fit to approve this exception to R-111-A. Exhibit No. 3 is a small plat showing the potash leases in the area, the green representing the International Minerals potash leases, the other the United States Borax & Chemical Corporation leases, and the yellow is unleased portion for potash. The cross hatched area is the lease in question.

I have received permission from Perry R. Bass, the operator of the Little Eddy Unit. I've also received verbal permission from the Potash Company, and with the Commission's permission, where I might continue to go back to the United States Geological Survey, we would like to re-enter these wells. We think we can recover more oil.

MR. MORRIS: Mr. Montgomery, would you identify the exhibits again for the record? There seems to be some confusion.

MR. MONTGOMERY: Exhibit No. 1 is a diagrammatic sketch indicating the mechanical condition of the various wells in

question, the red color indicating the casing that has been removed from the well, the blue marks indicating the casing still in the well.

Exhibit 3 is a plat depicting the potash leases in the area and the oil lease in question. Exhibit No. 2 is a decline curve on the Halfway Pool and the Salt Lake Pool.

MR. MORRIS: Thank you. Does that complete your presentation?

MR. MONTGOMERY: Yes, sir.

MR. NUTTER: Are there any questions of Mr. Montgomery?

MR. MORRIS: Yes, sir, I have a couple.

CROSS EXAMINATION

BY MR. MORRIS:

Q Mr. Montgomery, have you actually negotiated with the potash companies in the areas with respect to each of these wells and casing programs that you intend to follow, and have you explained to them how your procedure in your opinion will more adequately protect the potash?

A Yes, sir, I have. As I understand it, they are very much in favor of re-entering these wells because of the fact they will have to re-enter themselves in the event they start mining in the area.

Q You anticipate my next question. Is there active mining

in this area at the present time?

A No, sir, there is not.

Q How far away is the nearest active potash mine?

A Approximately six miles to the west.

Q Do you know whether the various potash companies involved plan to mine in this area within the, say the next five years?

A They have not indicated it in their five-year plan.

Q It is not indicated on their five-year plan?

A No, sir.

Q But is all of the area in question included within the potash oil area as defined by R-111-A?

A Yes, it is.

Q Even the North Half of the Northeast Quarter of Section 18 shown on your plat?

A Yes, it is.

Q Even though it's unleased for potash it is included within the potash oil?

A Yes, sir.

MR. MORRIS: I believe that's all I have.

MR. NUTTER: Any further questions?

BY MR. PORTER:

Q Mr. Montgomery, do you have anything in mind as to

how much additional oil you might recover here?

A Well, my opinion, the pool was probably depleted about 50% under primary methods and another 50% involved. It produced about 720 barrels per acre. I think I can recover in the range of 1500 to 2000 barrels per acre. The wells range from 2000 barrels a well to about 45,000 barrels of oil per well. I believe that I can recover that much more oil from each well.

Q Do you intend to frack these wells?

A Yes, sir.

Q Do you think that's the reason why, one of the contributing reasons why no more oil was recovered in the first place?

A I think that's part of it. The wells were drilled during the war, and due to what I think was probably inadequate supervision at that time due to the times, the lease was not properly produced. It's my understanding that the gentleman that pumped the lease was a water well contractor; during the war, to help in the war situation, his wife actually pumped the wells, and when the big pumping units went down she couldn't start them up again. It is my understanding that one of the wells was making actually 20 barrels a day. There are other factors involved, oil was selling for $1.40 a barrel at that time, and we did not have the pumping equipment or the completion techniques that we have today.

MR. PORTER: Thank you. That's all I have.

BY MR. NUTTER:

Q On your Exhibit No. 2 there are several curves shown here, and I'm having difficulty telling exactly which one represents what.

A Well, the upper curve is the decline curve on the Halfway Pool.

Q That's the long curve that runs clear across?

A Yes, sir.

Q It's got a 15% decline? A Yes.

Q Okay.

A Then the dotted line that's just below the Halfway Pool to the left is the decline curve on the Salt Lake Pool. And you'll notice that it zeros out in September of 1948. That has a decline curve of 38%.

Q Okay.

A Then the shaded curve, you will note, starts in 1942. This was a Smith No. 1 well, it was a one-well lease, and all the oil went into the one battery.

Q Is that one of the wells that you are talking about here today?

A Yes, sir. I've indicated about 10½% decline curve. Of course, you can estimate it at about 50% decline curve. Then

the solid line just beneath the Salt Lake decline curve is the second lease, the Brooks lease, depicting five wells. I think this curve tends to indicate that the wells had an abnormal decline curve and does indicate that the wells were not produced in a steady manner.

Q Now, the Halfway curve and the Conoco-Smith curve and the Salt Lake curve are based on little flat lines across for each month, the jagged lines that comes to points for each month is the Conoco Brooks lease?

A Yes.

Q Then where is the Leonard Well J State lease curve?

A Well, this curve was on the graph, but it confused it even more and it wasn't pertinent to the case.

Q It's not on?

A No, I attempted to erase it and I wasn't successful.

Q This Brooks lease is one of the, are those some of the wells that are being considered here?

A Yes, the Brooks lease, at the time it was drilled, was known as all of Section 7. The Smith lease was known as the Northeast Quarter of Section 18. When I bought the lease from the Federal Government at a competitive sale, well, what was put up for sale was all but the North Half of the North Half of 7 and the North Half of the Northeast Quarter of 18, and I wanted

to keep from confusing the records, to save confusion I elected to use the same designations.

Q If we take the Smith lease, the Conoco No. 1, how much oil did it produce?

A 41,000 barrels of oil.

Q Each of these wells, with the exception of one, has had the 10-3/4" pipe pulled, is that correct?

A All of them have had the 10-3/4 pulled, or rather the surface actually, No. 5 had 13", that was the technique at the time was to, with the cable tool drillers, the cable tool operation, it's a small water horizon around four to five hundred feet.

Q I see Brooks No. 4 has only a small amount of 10-3/4 left, so for all practical purposes you might say the surface pipe has been pulled in all the wells?

A Yes.

Q The 5½ has been shot off and pulled in each one except the Brooks No. 4?

A That's correct.

Q And it's still in there, is it?

A Yes, sir.

Q And the 8-5/8 has been cut and pulled in most of the wells, hasn't it, or is that all of them?

A It has been cut and pulled in all the wells with the

exception of Smith No. 1.

Q So all of the 8-5/8" pipe is still in the Smith No. 1?

A Yes, sir.

Q It's your proposal to run 4½" pipe in each of these wells and cement to the surface?

A Yes, sir. I believe this will be more actually, as far as protection of the potash is concerned, than R-111-A would provide for.

Q In plugging the well?

A During the producing period, then when we plug it, it will be two strings of pipe to go through instead of just one under R-111-A when it is plugged.

Q Have your plans gone far enough that you'd know how you would produce the well in the event this application was approved you'd pump them through tubing?

A Yes, through tubing.

Q Would you have packers?

A No, there's little or no gas in the area. We drilled a well about a mile and a half to the east two years ago and there's insufficient gas to run a pump if they had to be pumped by electricity.

MR. NUTTER: Any further questions of Mr. Montgomery?

MR. HEATON: George Heaton of the United States Borax

& Chemical Corporation.

BY MR. HEATON:

Q Does he propose to use the salt base mud in drilling these out?

A We certainly would be happy to where the salt section is composed, there are only three wells where the salt section is composed, and we would like the liberty of using the best mechanical means available at that time for that particular situation, which very well could be salt base mud. The pipe, in all instances, is covering the potash interval. The Brooks No. 1, the 5½, is shot off at 1700, which is just a hundred feet or so below the top 400 feet below the top of the salt. The Brooks No. 2, the 5½ is shot off at 1520, which is approximately 200 feet below the top of the salt. The Brooks No. 5, the 5½ is shot off at 1437, approximately 200 feet below the top of the salt. So actually there would be very little salt section open.

Q They are all except your wells that are exposed?

A Are not exposed.

Q Not exposed.

BY MR. NUTTER:

Q On Exhibit No. 1 I see the top of the salt is identified in some of the wells and not in others. Would you give us the top of the salt in each of the wells?

A The logs were inadequate to tell. There was only a mechanical log run on one or two wells and they were only run through the pay section and all the rest of the tops were just driller's logs.

Q As far as you know, is the salt a rather uniform depth in the area?

A For all practical purposes.

Q So you do have it identified at 1250 and 1276 in two wells? Would it be approximately 1250 to 1276 in the others in your opinion?

A Yes, sir, it would be plus or minus 50 feet from 1250.

Q And the base of the salt is approximately 2600 feet, is that correct?

A Yes, sir.

Q Now, when you'd run your $4\frac{1}{2}$" pipe, would you go down into the pay with that and cement it or would you complete open hole?

A Well, again, I would like to have the permission to do whatever the situation at the time calls for. Some of the wells are in the Capitan reef and, as you know, the water level in this area in Capitan reef stands about 1200 feet from the surface. In the event it's a large cavern, for example, the well we drilled a mile and a half to the east, we had a large cavern,

the drill bit fell right through. I think it would be risky to attempt to set through in an instance of that kind.

Q There isn't a great deal of distance, only 300 feet from the base of the salt to the top of the pay apparently?

A Yes.

Q How far below the base of the salt did you say you had set your 4½" pipe?

A Oh, I would set it at least as deep as they were in the original wells and probably a little deeper in order to get a cement bond. Probably 50 feet. I would like to have the prerogative to complete either open hole or to set through and perforate due to this cavernous situation we could run into.

Q You would set your pipe into at least the top of the pay?

A Yes, sir.

MR. NUTTER: Any further questions?

BY MR. HEATON:

Q Would it be possible to perforate the old 5½" casing and possibly squeeze and drill cement behind it, especially near the top of the salt?

A It would be possible, yes, sir.

Q Say for 300 feet down in the salt, maybe a hundred feet above the salt?

A Yes.

Q Is that possible? I don't know.

A Well, it's probably possible. However, they reported that the cement circulated originally on that particular well they used a thousand sacks of cement and reported it did circulate.

Q It did circulate? A Yes, sir.

Q Oh, I didn't know that. In all the wells, it recirculated in all the wells?

A No, just the one well.

Q Just one? A Yes.

Q I'm just thinking about giving the salt section a little protection from the possible surface waters behind the $5\frac{1}{2}$ casing.

A We'd be happy to comply with any requirements that the Commission felt necessary to protect the potash.

MR. PORTER: I have a question.

MR. NUTTER: Mr. Porter.

BY MR. PORTER:

Q Mr. Montgomery, how far is this area from the well that you will remember that we had all the difficulty down ~~with in~~ where we had plugging?

A It's approximately eight miles to the west.

Q You might encounter the same conditions, you think?

A Yes.

Q Possibility? A Yes.

MR. NUTTER: And you have withdrawn your entire alternative request?

A Yes.

MR. NUTTER: Any further questions of Mr. Montgomery? He may be excused.

(Witness excused.)

MR. NUTTER: Did you have anything further you wish to offer in the case, Mr. Montgomery?

MR. MONTGOMERY: No.

MR. NUTTER: Does anyone have anything further they wish to offer in Case 2571? We will take the case under advisement and call Case 2572.

STATE OF NEW MEXICO)
: ss
COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Court Reporter, do hereby certify that the foregoing and attached transcript of proceedings before the New Mexico Oil Conservation Commission at Santa Fe, New Mexico, is a true and correct record to the best of my knowledge, skill and ability.

IN WITNESS WHEREOF I have affixed my hand and notarial seal this 19th day of June, 1962.

Ada Dearnley
Notary Public-Court Reporter

My commission expires:

June 19, 1963.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2571, heard by me on June 7, 1962.

....., Examiner
New Mexico Oil Conservation Commission