Case Number

4312

Application

Transcripts.

Small Exhibits

ETC.

BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
February 25, 1970

EXAMINER HEARING

IN THE MATTER OF:

Application of U. S. Potash & Chemical Company, Eddy County, New Mexico.) Case No. 4312

BEFORE: Elvis A. Utz, Examiner.

TRANSCRIPT OF HEARING

MR. UTZ: The hearing will come to order, please. Case 4312.

MR. HATCH: Case 4312. Application of U. S. Potash & Chemical Company, Eddy County, New Mexico.

MR. OLMSTED: May the record show that Charles D. Olmsted, an attorney with Stephenson, Campbell and Olmsted, is appearing on behalf of the Applicant, U. S. Potash & Chemical Company.

My principal witness and the only one I intend to call is Mr. Charles W. Hicks, although we have two others available if the Examiner wants to question any further on certain matters that Mr. Hicks might not be able to testify, namely Mr. Mike Rosenburg, an attorney from Carlsbad and Mr. Don Libby, geologist with U. S. Potash & Chemical Company.

(Witness sworn).

(Whereupon, Applicant's Exhibits 1 through 7 were marked for identification).

MR. UTZ: Are there other appearances in this case? You may proceed.

CHARLES W. HICKS

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

DIRECT EXAMINATION

BY MR. OLMSTED:

Q You are Mr. Charles W. Hicks?

A Yes, sir.

Q Where do you reside, Mr. Hicks?

A Roswell, New Mexico.

Q By whom are you employed at this time?

A Olan F. Featherstone.

Q You are not employed by U. S. Potash & Chemical Company?

A No, sir.

Q Have you ever been?

A No, sir.

Q Mr. Hicks, have you testified before this Commission before?

A Yes, sir.

Q How long ago was it?

A Must have been about twelve years ago.

Q Mr. Hicks, what is your educational background?

A I received a B. S. Degree in geology in 1940 from Texas Technological College in Lubbock, Texas.

Q Have you professionally been engaged as a

geologist since that time?

A Yes, sir.

Q In what year?

A In the Potash Basin, mostly associated with Potash.

Q By whom have you been employed in the Potash Basin?

A I worked for International Minerals and Chemical Company from 1940 to 1952.

Q In what capacity?

A Initially, I went into the refinery and after a few months there I transferred to the engineering department and in 1953 I became geologist and subsequently the chief geologist.

Q And with whom were you connected after that?

A I went to work for Olan Featherstone in December of '52 and worked for him and again on the Potash Project until 1955, I believe.

Q In what capacity were you employed by Featherstone?

A Geologist in the development of Potash property.

Q After '55?

A I stayed with the same Potash property and worked for Kerr-McGee about a year and a half and then following

that, I stayed on for -- until 1960 working as a geologist for Farm Chemical Resources Development Corporation which further developed the same property.

This is the property, incidentally, that Kerr-McGee is mining now in Lea and Eddy County, New Mexico.

Q Then, after Kerr-McGee?

A Well, after Kerr-McGee and Farm Chemical, then I went to work for Mr. Featherstone again in 1960. I have been working for him since then in the capacity of general manager, mostly, now, with oil and gas.

MR. OLMSTED: Does the Examiner want any further questions with regard to his qualifications?

MR. UTZ: No. Mr. Hicks is fully qualified. I would inquire, you are here representing U. S. Potash on a consulting basis --

THE WITNESS: Yes, sir.

MR. UTZ: -- or Featherstone?

THE WITNESS: U. S. Potash. Mr. Featherstone is not connected with this.

MR. UTZ: I see. You may proceed.

Q (By Mr. Olmsted) Now, Mr. Hicks, referring you to Exhibit Three behind you, are you generally familiar with these leases and the properties they cover?

A Yes, sir.

Q Does Exhibit Three accurately reflect the information shown thereon as to these federal leases?

A Yes, sir. I have examined them and they do cover the acreage contained in the leases as shown.

Q You, yourself, in fact were the original permittee for the lands covered by those leases and ultimately the original leasee; is that correct?

A That is right.

Q Subsequently, they were signed or transferred to U. S. Borax and Chemical Company --

A Actually, U. S. Potash and Chemical Company --

Q -- or U. S. Potash & Chemical Company?

A Yes, sir.

Q Would you generally explain and describe the principal potash and minerals in this Carlsbad Basin?

A The principal mineral being mined is sylvite. The other mineral being mined is langbeinite.

Q With regard to langbeinite, how is it used or its product?

A Mainly as a fertilizer and especially used in citrus and would be considered especially valuable to supply potash, magnesium and sulfate in the more alkaline

soils because you are not adding chloride like you would be if you used sylvite, which is KCL.

Q Referring you to Exhibit Five up there on the wall, does that indicate the principal differences insofar as chemical content between the minerals langbeinite and sylvite?

A Yes, sir. Chemical composition of langbeinite as shown there is K_2SO_4, $2MgSO_4$.

Q Principally a magnesium and sulfate --

A Potassium-magnesium sulfate.

Q -- as distinguished from a chloride in the sylvite?

A The sylvite shown here is actually KCL. KCL plus NaCL is a mechanical mixture that is sylvanite, but this is a minor point.

Q Actually, that exhibit is somewhat in error. KCL, NaCL is really sylvanite --

A Right.

Q -- and the KCL by itself is sylvite?

A Yes, sir.

Q Now, with reference to both these minerals in the industry, their values, I take it, are expressed in a percentage of potassium oxide or K_2O; is that correct?

A Yes, sir.

Q This Exhibit Five shows the conversion factors for langbeinite, K_2O and for sylvite, K_2O?

A Yes, sir.

MR. OLMSTED: Does the Examiner have any questions on this? I realize the Examiner went into it rather thoroughly last July in connection with IMC's similiar application.

MR. UTZ: Yes, sir, I have been exposed to it off and on for some years, not too often.

MR. OLMSTED: Probably more often than I.

Q (By Mr. Olmsted) With regard to the mineral langbeinite, in what areas of the United States or the parts of the world is it found?

A This is the only known commercial deposits right here in New Mexico and there's only about three down there that I know of or three companies that have known commercial deposits.

Q What companies that do have known commercial deposits?

A International Minerals and Chemical have two zones; Duvall has one and we have this one. When I say "we" I mean U. S. Potash & Chemical.

Q The one with respect to which application is

being made here is the one you are referring to, U. S. Potash?

A Yes, sir.

Q How large an area in terms of square miles or sections is this langbeinite deposit?

A Probably, if you put it all together you wouldn't cover over a township at the most, probably near thirty sections.

Q Insofar as you know, this is the only such langbeinite deposit in the world?

A Yes, sir.

Q Going back to the difference between langbeinite and sylvite, as far as use is concerned, are there specific agricultural uses where langbeinite is of a little preferrable to sylvite and other potash fertilizers.

A Yes, sir. It's especially beneficial to soils that already have sufficient or an excess of chloride; then, you can use potassium sulfate and you are not increasing your chlorides.

Q Now, referring you to Exhibit One, down there in the corner, Mr. Hicks, and with specific reference to that, prefatory to your pointing anything out, are you familiar with the Secretary of Interior's Order F. R. Document

65-5149 dated May 11, 1965?

A Yes, sir.

Q Am I correct in assuming that is a federal order which is quite similar in purpose, in design to Oil Conservation Commission Order No. R-111-A?

A That is my understanding.

Q I wonder if you would point out to the Examiner, on Exhibit One, the area covered by the federal order I referred to a moment ago.

A This is the heavy-dashed outlined area that has superceded the original outlined area, which is the heavy solid line. This was in '51 and this was the '65.

Q So, everything within that heavy-deashed line is covered by this federal Conservation Order relating to the potash industry and potash lands?

A Yes, sir.

MR. UTZ: Is that order number on that exhibit?

MR. OLMSTED: It's down in the lower left hand corner, Mr. Examiner.

MR. UTZ: I just wanted a record of the number.

MR. OLMSTED: Do you have a copy of the federal order? I have one here if you would --

MR. UTZ: I don't know whether we do or not.

MR. HATCH: I don't have one. I would like to have a copy.

MR. UTZ: We can make a copy of it later.

THE WITNESS: The number isn't --

Q (By Mr. Olmsted) Similarly, Mr. Hicks, would you point out on Exhibit One the area included within OCC Order No. R-111-A as amended to date?

A This is the light-dashed line. The Commission naturally is familiar with these outlined areas.

Q And finally with respect to Exhibit One, would you point out the area with respect to which U. S. Potash is making this application?

A This is the area shaded solid green and here is the boundary of the OCC R-111-A, which naturally this lies right up against it and I believe this is where International recently received approval of an extension on it.

Q Right. Referring you to that case 4175, which was, I believe, IMC's application last July, order entered last August, can you generally show us the location of the IMC lands that were included by the Commission by the amendment to OCC Order No. R-111-A?

A That covered all or parts of about 13 sections

and it would cover this area in general right in here and this joins Duvall's property that they are mining langbeinite at the present time.

Q Indicating, then, that IMC's properties lay generally to the west and to the north and immediately adjacent to these properties with which U. S. Potash is concerned?

A That is correct.

Q Now, Mr. Hicks, did you, in February of 1963, have occasion to conduct a drilling program in and about the material property in which we are concerned today?

A Yes, sir.

Q Referring you to Exhibit Two, is this another map of the specific area covered by the leases shown on Exhibit Three and with respect to which application is here made?

A Yes, sir, it is.

Q Am I correct in assuming that this drilling program commenced in February of '63; is that right?

A That is right.

Q For whom was the drilling program conducted at that time?

A Joint venture named Permian Potash.

Q Of which you were a member?

A Yes, sir.

Q Who conducted the drilling program?

A I was in charge of the drilling operation. The drilling was actually done by Pennsylvania Drilling Company.

Q This was a core drilling program?

A Yes, sir.

Q Who did the chemical analysis on that program?

A Tom Futch.

Q Where is he from?

A He is from Carlsbad. He had previously worked at Potash Company of America and had a very good background for chemical analysis and associated work in the potash industry.

Q Who made the calculations and estimates based upon these core drills and these cores and Mr. Futch's analyses?

A I did the estimation calculations as far as the reserves are concerned.

Q Explain briefly, if you would, to the Examiner how that program was conducted and pointing out the progression of the holes and --

A We started drilling this Permian Potash Number One located in the center of Section 22. We didn't find commercial potash in that well, although it was very near commercial in the second ore zone consisting of both langbeinite and sylvite.

We then moved down to Number Two and drilled this well.

Q Indicating PP2A?

A Yes, sir.

MR. UTZ: That's in the center of Section 28?

THE WITNESS: Yes, sir. Both of these wells were drilled looking for the first ore zone, which is sylvite and the main ore zone in the basis. Unfortunately, we didn't develop a sylvite ore body, but we did discover langbeinite in this well in such amounts to prompt us to continue our drilling operations to the west; so, after drilling PP2A in the center of 28, we moved over in the center of 29 and drilled PP3A and subsequently PP4A and PP5A.

These three wells all proved commercial ore in the fourth ore zone. We then calculated the ore reserves. I did for these two zones. We call this one block one, this block two, because this was the best grade of ore and

the highest bites or thickest ore. Then, International drilled these two wells -- or later they did.

Q (By Mr. Olmsted) Indicating IMC 371 and IMC 372?

A Yes, sir. The 371 is located near the northwest corner of Section 19 in Township 23 South, Range 31 East. IMC Number 372 is located near the southwest corner of Section 19, Township 23 South, Range 31 East.

However, both of them were across the township line on property held by International Minerals and Chemical.

Q Were you able to use available data from any other holes in the general area in conducting your test?

A We used the results of the analysis on this 3F, which was considered commercial langbeinite in the fourth ore zone.

Q That's the one in Section 29?

A Yes, sir. That's in the northwest quarter of Section 29.

Q Any other holes?

A These were the -- all the potash tests that we used. We did use -- if you want to go into this, we did use the oil wells drilled in the vicinity that showed

appreciable amounts or commercial amounts of potash.

We only used them for extending the ore body. We didn't use them in the actual calculation of the heighth or grade of ore. I felt confident that these oil wells that gamma ray neutron or acoustic logs on them showed commercial or near commercial; so, I extended the ore body in that direction by an imaginary 1500 foot diameter circle or radius circle around each of the wells.

Q Referring you to Exhibit Six, on the other side of the room, do the three pages of this exhibit reflect the results of your program back there in 1963, your drilling program?

A Yes, sir. Would you like for me to read this conclusion?

Q Yes.

A Potash core tests drilled to date in Township 23 South, Range 31 East, indicate a langbeinite ore body in the U. S. G. S. designated fourth ore zone containing an estimated fifty-two and a quarter tons of ore in place.

This ore contains 31.32 percent langbeinite, which has equivalent value of 7.12 percent K_2O and averages six foot ten inches in heighth. It is located in Section 19, 20, 27, 28, 29 and 30.

Then we have the individual results of the core tests Permian Potash 2A, 3A, 4, 5, F3, IMC 371 and IMC 372 and then on Exhibit Six, page three, I have shown what I have estimated to be the potash content of the fourth ore zone in the Wright Federal Number One located in Section 27 of Township 23 South, Range 31 East; Wright Federal Number Three located in Section 33, Township 23 South, Range 31 East and Continental's State Number One in Section 32 of Township 23 South, Range 31 East.

Q Those are the three oil wells that you were referring to and pointed out on Exhibit Two?

A Yes, sir.

Q And the result of your calculations is that in these three blocks shown on Exhibit Two, you calculate there is an ore body of 52 and a quarter million tons of 7.12 K_2O percent langbeinite, averaging six foot ten in depth in the fourth ore zone; is that correct?

A That is right.

Q Could you give us some idea of the value of that amount of langbeinite on today's market?

A At the present price of about eighteen dollars per ton in considering the concentration ratio and recovery factor, we are probably talking about two hundred million

dollars gross value of the reserves.

Q In terms of jobs for miners and the period of time to mine out this ore body, what are we thinking of, what are we talking about?

A That probably would require a minimum of fifty employees and would require at least twenty years and it could extend beyond that depending on how fast, naturally, the ore is mined and is quite often happens when you get into these ore bodies you find more ore than you originally start with.

Q Am I correct in assuming that in order to effectively mine this area and achieve the desired percentage of recovery, which I think is what, ninety percent in this ore body?

A I think it's quite possible to get ninety percent. That's right up at the top, but they should be able to do it. That would include secondary recovery.

Q That it would be necessary, in order to achieve such a program, to protect this area from uncontrolled oil and gas operations?

A It sure would. Yes, sir.

MR. OLMSTED: That's all I have. Just a moment. One further question or several further questions, Mr.

Hicks.

Q (By Mr. Olmsted) U. S. Potash & Chemical Company is not presently operating in the vicinity of this ore body shown on Exhibit Two, is it?

A No, sir.

Q Actually, right now they are not even mining langbeinite?

A No, sir.

Q They are mining sylvite entirely?

A That's right.

Q And I take it that the recovery of this ore body would require a brand new mine, a new mill, new refinery?

A Yes, sir, and that would be two shaft operations, which is required by the state and I would imagine it would cost in excess of seven or eight million dollars. I mean this would be just a very minimum estimate of the cost to put in an operation here.

MR. OLMSTED: Mr. Examiner, I believe the Commission has received the proposed mining program of U. S. Potash for the next five years.

I think it was sent out under letter dated January 22, 1970, indicating that this particular area

shown on Exhibit Two is within the five year program of U. S. Potash. I can't ask this witness any questions about that since he was not connected with the company.

MR. UTZ: It's your statement that we have received this and that this area is within the five year plan?

MR. OLMSTED: Yes, sir. I believe when I was over here a month or so ago, less than a month ago, Mr. Porter indicated that this submission had been received.

MR. UTZ: I don't know. I haven't seen the file.

MR. OLMSTED: I have nothing further.

MR. UTZ: Does that conclude your direct?

MR. OLMSTED: Yes, sir.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Hicks, then this block one, two and three that you show on your Exhibit Number Two is what you contend to be the proven ore bodies in these sections you are requesting?

A Yes, sir.

Q That is based on the core holes and the oil wells shown on Exhibit Six?

A Yes, sir.

Q The sections that you are requesting in the three leases shown on Exhibit Three, then, is somewhat more acreage than you show as proven reserves at this time?

A I believe it goes to the east boundary of Section 27 in squaring the sections off, which would be right here (indicating).

Q Yes. That's correct. I was thinking Section 26 was in your proposal but it is not?

A No, sir. Some of the things we evaded was just how much to cover and I would like to say that we did have commercial ore in this Permian Potash Number Six located in the center of Section 14, but not having more than one well there we didn't hardly think that we should try to include it, although this Well Permian Potash Number One located here in Section 22, as I explained at the beginning of my testimony, showed commercial ore -- not commercial, but near commercial ore in the second ore zone.

In other words, both of these were second ore zone mineralizations or commercial ore. This being near commercial and this being commercial and could very easily have requested that.

I don't know how the Commission would have felt

about it, but it looked like it should have been protected is what I really have in mind here.

Q Yes. But, that's not a part of your application at this time.

A No, sir. That may come later.

Q Now, the description shown on Exhibit Number Three properly describes the green area shown on your Exhibit Number One or the extension; is that correct?

A Yes, sir, except for that Section 26. This shows the complete lease and we are not asking for 26, as we have just discussed.

Q I see. All right. Now, Mr. Hicks, I guess I am asking a point of information here. In hearings past, we had set I believe and I believe it was common knowledge, a guide line as to depth and percentage of K_2O. Do you recall what that was, four feet of some percent of K_2O, I think?

A On sylvite, four feet of fourteen and langbeinite, four feet of eight percent.

Q Four feet of eight percent of langbeinite --

A When that was set up by the U. S. G. S, I was working at International and we were horsing a lot of six percent K_2O and running it through the mill and we were

making money on it at that time and I sure believe it would make money today.

Q Now, does your analysis here meet these guide lines? You have 7.12 percent K_2O or 6 -- almost seven feet of 7.12 K_2O; is that correct?

A Yes, sir. It would sure --

Q You have roughly 35 percent more thickness, but not quite the fourteen percent; is that correct?

A That is correct. But, if you use a footage grade factor, four times eight, which is thirty-two, which everybody uses, this would exceed the thirty-two that we are talking about.

Q I see.

A I would say this, it would be rather difficult to sink a shaft and try to mine on just block two because of its low height and low grade and the tonnage there, but since you have all your recovery of investment long before you get to block two, it will be a real economical mining operation when you get there.

Q It will be your recommendation, then, to U. S. Potash that they sink their shafts on block one or three?

A Yes, sir. This is pretty standard in not only mining, but a lot of other places where you get into the

most economical part of the recovery investment, then you can go after the lower grades and I feel confident by then that they will have advanced their mining operations up towards Permian Potash Number One and even up to six.

At that time they will be going in those directions. That would require more core tests, but there will be considerably more before this venture is mined out.

Q Now, are the oil wells shown just south of the area in question here in Sections 32, 33 and where was the other one?

MR. OLMSTED: Twenty-seven.

THE WITNESS: Twenty-seven.

Q (By Mr. Utz) Are they producing at this time?

A No, sir. They are plugged and abandoned.

Q They are? Now, you have an analysis here of number of feet and percentage of K_2O in those oil wells. How did you arrive at that?

A Those are estimates. I can describe to you how they were arrived at. In our Permian Potash Number One, we ran a gamma ray neutron log. That was used as the basis.

Now, the U. S. G. S. 123 bed is a polyhalite bed which, in a given area and over a fairly wide range,

the K_2O content remains fairly consistent, so what we did and I have done this in the past, I compared the results, the known results of our analysis of the fourth ore zone to the 123 bed and found that it would run about eight percent K_2O.

I used eight percent K_2O as my standard for the polyhalite bed in these three wells and then from that I calculated, or estimated would be a better word, the K_2O content of the fourth ore zone in these three wells.

It's rather simple and not real technical, but as far as I am concerned it is the best way to arrive at an estimate of potash in an oil well because if you try to do it by reading radiation you get into so much problem of what does your fluid contain in the way of chlorides or potash in any form, because it's the K40 isotope that is radioactive and how much have you had washed out in your beds, so if you have something though as a standard in these wells and since polyhalite is not soluable or very slightly soluable it makes a real good standard to arrive at these estimates and these are strictly estimates.

However, this showed a real good analysis or estimate analysis for the fourth ore zone and I know that International has a test right in here, and years ago we

traded out the information.

I don't have the results of the tests right now, but this was the high grade langbeinite test right here in the fourth ore zone and that is in the southeast quarter section of Section 32; so, I am confident that these wells show just about the amount of potash and the thickness that is indicated on the chart, but I wouldn't use them in the calculations themselves.

I just used them to designate the area that's enclosed.

Q In other words, you didn't use your percentage of thickness in those wells to arrive at this 6.10?

A No, sir. They were all developed from known results of these core tests.

Q I see. But, you did compare logs on the oil wells, the sample log on your PP1?

A Yes, sir, and I have some copies here, if you would like to look at them.

Q Oh, I doubt that would be necessary unless you want to enter them into the record.

A What do you think, Dave?

MR. OLMSTED: I don't think it's necessary.

Mr. Utz, I did neglect one thing with this

witness.

Mr. Hicks, I show you document marked Exhibit Seven and ask you if this is a copy of the report dated November, 1966, that you prepared as to the results and calculations as to this ore body shown on Exhibit Two?

THE WITNESS: Yes, sir, it is.

MR. OLMSTED: I would ask the Commission to --

MR. UTZ: You want to introduce your exhibits at this time --

MR. OLMSTED: Yes. I would ask the Commission to --

MR. UTZ: -- all seven?

MR. OLMSTED: -- to accept all of these exhibits, one, two, three, five and six and seven and if the Commission desires, I'll furnish it with a copy of the federal order earlier referred to, which, unfortunately, I left in my office.

MR. UTZ: We would like to have a copy of it. Apparently we don't have. If we do, neither one of us know where it is.

MR. OLMSTED: Could it be marked as Exhibit Eight when received, if you want it that way? Doesn't make any difference.

MR. UTZ: Just send it in. Without objection, Exhibits One through Seven will be entered into the record of this case.

MR. HATCH: There was no Exhibit Four.

MR. OLMSTED: We didn't introduce Exhibit Four.

MR. UTZ: With the exception of Exhibit Four. In other words, to finish up our conversation regarding those oil wells, you made a comparison between the logs on the oil wells and the log on your PP1 and by your analysis of that log and using the PP1 as a guide, you could determine not only the thickness, but the percentage.

Now, the percentage would be arrived at by a right or left deviation on the log?

THE WITNESS: Yes, sir.

MR. UTZ: Are there other questions of the witness?

CROSS EXAMINATION

BY MR. HATCH:

Q Mr. Hicks, are you familiar with the gas well that has been completed in Section 26?

A Yes, sir.

Q I think you might point out to the Examiner the location of that gas well.

A It's located in the northeast quarter of Section 26; just exactly where, I am not sure, but I think it's -- maybe you have that location.

Q I think it's probably 1980 from the north and east lines of Section 26.

A Let's see. That would be about right, I guess.

CROSS EXAMINATION (Cont'd.)

BY MR. UTZ:

Q A little bit to the northeast there, I think.

A To the northeast?

Q Yes. That's pretty close.

A All right.

Q Who owns that well?

A Texas American, I believe.

MR. HATCH: Texas American Oil Corporation and I would like to point out Order No. R-3917 created a new gas pool there and I believe that it created 640-acre spacing for that pool.

THE WITNESS: Six-forty.

MR. HATCH: I believe it created 640 acre on a temporary basis but, I would have to review that order.

Q (By Mr. Utz) What zone is this well producing from?

A I believe that's Atoka, isn't it?

MR. HATCH: I believe so.

THE WITNESS: Probably their structure lies east or some other direction.

MR. HATCH: They have lots of acreage they could earn with their other wells.

THE WITNESS: I understand they recently completed a Delaware offsetting that.

MR. HATCH: I think they are.

Q (By Mr. Utz) Now, the depth of this ore body is what?

A I think it's roughly 1600 feet. It probably varies on this side, on the west side. It's going to be somewhat shallow and might grade clear over to 1800 on the east side.

I would have to look at those. It looks like about 1550 to 1700.

Q That's close enough.

A I think 2A shows 1665, but I believe by the time we got other here we would probably be 1700; I mean over into the area of this Wright Federal, which we could check; but, I believe that's about 1700 over there.

MR. UTZ: Are there other questions of the

witness?

MR. HATCH: I believe a representative from the land office has a few questions.

MR. MARCUM: Gordon Marcum, special assistant on oil and gas development with the state land office, Mr. Armijo.

CROSS EXAMINATION

BY MR. MARCUM:

Q Do you know how soon U. S. Potash intends to develop this area?

A I believe they said while ago it was in their next five year mining plan.

Q Do you have any estimate of the demand for this particular product at this time?

A We all are pretty aware of the fact that sylvite has had a terrible time because of our over supply and the price has dropped from around twenty dollars a ton to as low as ten or eleven; during this same period of time the price of langbeinite has gradually increased; say, in the past ten years, it's probably increased from sixteen and a half, maybe, to as much as eighteen dollars now.

Q From our analysis and looking at different ore companies, it appears the area has possibilities of

producing hydrocarbons and would there be any objection from U. S. Potash if directional drilling was used in this area to develop?

A I think, so long as the reserves are protected, it would probably be agreeable but I couldn't answer that really.

Q I would like to point out to the Examiner that the wells that are shown on the exhibit are very shallow wells. They are in the area of four thousand to five thousand feet and --

MR. UTZ: You are speaking of the plugged and abandoned wells?

MR. MARCUM: Yes, sir.

MR. UTZ: Does that conclude your questions?

MR. MARCUM: Yes, sir.

MR. OLMSTED: In this connection, Mr. Examiner, relative to the demand for the langbeinite product, I have a letter which is with my copy of the federal order, addressed, I believe, to Mr. Porter from Mr. Hensley, who runs the marketing program of U. S. Potash on this langbeinite product and this letter, which I will bring over to you at the same time I bring the order, indicates that the demand for langbeinite is not only quite constant, it is flowing.

In other words, the farmers and agricultural people are getting educated to langbeinite. There are certain uses for which it is most beneficial and far better than the muriates or the chloride product of potash and it seems to be getting more and more popular throughout the United States and as the evidence indicates here, this is the only known source of langbeinite in the world in this township size area of land.

MR. UTZ: Is there any langbeinite being mined at the present time down there?

THE WITNESS: In Carlsbad?

MR. UTZ: In this area?

THE WITNESS: Duvall has the nearest operation.

MR. OLMSTED: In this connection, isn't it a fact that IMC is almost totally dependant upon langbeinite production at this time, isn't it?

THE WITNESS: I think for their Carlsbad operation this is their main source of revenue is their langbeinite and that is true also of Duvall.

MR. OLMSTED: To date, they are the only two producers of langbeinite in the world, aren't they?

THE WITNESS: Yes, sir.

MR. UTZ: U. S. Potash has no plans to immediately

start operations here? Anyone can answer it. The gentleman there can answer the question.

MR. LIBBY: Donald L. Libby; yes, sir, U. S. Potash -- our plans are to implement this project just as soon as possible. I also respectfully indicate that even the Federal Government has a little trouble with money once in a while, but our intentions are completely sincere to do everything possible to implement this project as soon as possible.

MR. UTZ: Together, if you can properly finance it?

MR. LIBBY: This is a factor, yes, sir.

MR. UTZ: I would agree with you, the Federal Government has a lot of trouble with money, judging from my taxes.

Are there other questions of this witness? The witness may be excused.

(Witness excused).

MR. UTZ: Statements in the case?

MR. OLMSTED: I don't think any are necessary, sir.

MR. UTZ: The case will be taken under advisement.

I N D E X

E X H I B I T S

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, GLENDA BURKS, Court Reporter in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings to the best of my knowledge, skill and ability.

Glenda Burks
Notary Public

My Commission Expires:

March 12, 1973

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 4312, heard by me on Dec. 25, 1970.

..... Examiner
New Mexico Oil Conservation Commission

OIL CONSERVATION COMMISSION

STATE OF NEW MEXICO
P. O. BOX 2088 - SANTA FE
87501

GOVERNOR
DAVID F. CARGO
CHAIRMAN

LAND COMMISSIONER
ALEX J. ARMIJO
MEMBER

STATE GEOLOGIST
A. L. PORTER, JR.
SECRETARY - DIRECTOR

March 2, 1970

Mr. Dave Olmsted
Stephenson, Campbell & Olmsted
Attorneys at Law
Post Office Box 877
Santa Fe, New Mexico

Re: Case No. 4312
Order No. R-111-H
Applicant:
U. S. Potash & Chemical Co.

Dear Sir:

Enclosed herewith are two copies of the above-referenced Commission order recently entered in the subject case.

Very truly yours,

A. L. PORTER, Jr.
Secretary-Director

ALP/ir

Copy of order also sent to:

Hobbs OCC X
Artesia OCC X
Aztec OCC

Other

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. 4312
Order No. R-111-H

APPLICATION OF U. S. POTASH & CHEMICAL
COMPANY, EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on February 25, 1970, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 2nd day of March, 1970, 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, U. S. Potash & Chemical Company, is the owner of certain Federal potash leases in Township 23 South, Range 31 East, NMPM, Eddy County, New Mexico.

(3) That the applicant seeks an amendment of Order No. R-111-A, as amended, to extend the Potash-Oil Area as set forth in said order to include the following-described acreage in Eddy County, New Mexico:

TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM
Sections 19, 20, 27, 28, 29, and 30: All

(4) That the evidence presented indicates that the entire area described above contains potash deposits in commercial quantities.

(5) That to promote the orderly development of natural resources in the Potash-Oil Area, Order No. R-111-A, as amended, should be amended to include the above-described acreage in the Potash-Oil Area.

IT IS THEREFORE ORDERED:

(1) That Order No. R-111-A, as amended, is hereby further amended to include the following-described acreage within the Potash-Oil Area in Lea and Eddy Counties, New Mexico:

EDDY COUNTY, NEW MEXICO
TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM
Sections 19, 20, 27, 28, 29, and 30: All

(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

DAVID F. CARGO, Chairman

ALEX J. ARMIJO, Member

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

esr/

Case 4312
Heard 2-25-70
Rec. 2-26-70

Grant an addition to the Potash Area Order R-111-A to add the following area ~~for the~~ request of ~~Duval~~ Potash + Chem. Co.,

T 23 S, R 31 E.

Sec. 19, 20, 27, 28, 29, 30,

Applicant ~~also~~ cored + proven 4 tracts of land which they intend to develope as soon as it can be financed - probably 1 year + certainly within 5 yrs.

Docket No. 6-70

DOCKET: EXAMINER HEARING - WEDNESDAY - FEBRUARY 25, 1970

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Elvis A. Utz, Examiner, or Daniel S. Nutter, Alternate Examiner:

CASE 4296: (Continued from the January 21, 1970 Examiner Hearing) Application of S. P. Yates for a pressure maintenance project expansion, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to expand the S. P. Yates West McMillan Anderson Pressure Maintenance Project, authorized by Order No. R-3852, by the injection of water into the Queen formation through one additional well, the Anderson Well No. 3 located 2310 feet from the East line and 990 feet from the South line of Section 11, Township 20 South, Range 26 East, West McMillan-Seven Rivers-Queen Pool, Eddy County, New Mexico.

CASE 4308: Application of Bill J. Graham for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Delaware formation in the perforated interval from 4913 feet to 4961 feet in his U. S. Smelting Federal Well No. 5 located in Unit P of Section 22, Township 24 South, Range 32 East, Double X-Delaware Pool, Lea County, New Mexico.

CASE 4309: Application of Mobil Oil Corporation for an amendment of Order No. R-3824, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-3824 to permit the drilling of its Humphrey Queen Unit Well No. 13, a water injection well in its Langlie Mattix Humphrey Waterflood Project, at a non-standard location 1500 feet from the South line and 1220 feet from the East line of Section 4, Township 25 South, Range 37 East, Lea County, New Mexico, in lieu of the location authorized in said Order No. R-3824.

CASE 4310: Application of Klabzuba, Munson and Seaman for an unorthodox oil well location, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a wildcat oil well to the Devonian formation at an unorthodox location 700 feet from the East line and 2500 feet from the South line of Section 13, Township 10 South, Range 27 East, Chaves County, New Mexico.

CASE 4311: Application of C. E. Long for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order force-pooling all mineral interests from the surfaces down to the base of the Seven Rivers formation underlying the S/2 of the NE/4 of Section 31, Township 21 South, Range 36 East, Lea County, New Mexico, to form two 40-acre proration units for Jalmat, Eumont, or South Eunice Oil production to be dedicated to a well to be re-entered in Unit H and a well to be re-entered or to be drilled at a standard location in Unit G of said Section 31 and/or to form an 80-acre non-standard gas proration unit in the event gas production is encountered in the Jalmat or Eumont Gas Pools. Also to be considered will be the costs of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

CASE 4312: Application of U. S. Potash & Chemical Company, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-111-A to include the following-described lands in the Potash-Oil Area defined by said order:

EDDY COUNTY, NEW MEXICO

Township 23 South, Range 31 East,
Sections 19, 20, 27, 28, 29 and 30: All

CASE 4313: Application of Atlantic Richfield Company for a non-standard gas proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the establishment of 160-acre non-standard gas proration unit comprising the N/2 S/2 of Section 36, Township 21 South, Range 37 East, Blinebry Gas Pool, Lea County, New Mexico, to be dedicated to its State 367 Wells Nos. 2 and 3 located, respectively, in Units L and K of said Section 36. Applicant further seeks authority to produce the allowable assigned to said unit from either of the aforesaid wells in any proportion.

CASE 4314: Application of Coastal States Gas Producing Company for pool redelineation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the redelineation of certain pool boundaries to include the deletion of the W/2 and SE/4 of Section 21, Township 13 South, Range 33 East, Lea County, New Mexico, from the Lazy J-Pennsylvanian Pool and the extension of the North Baum Upper Pennsylvanian Pool to include said deleted acreage.

CASE 4315: Application of Pan American Petroleum Corporation for pool consolidation, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the consolidation of the Fowler-Lower Paddock and Fowler-Blinebry Pools, Lea County, New Mexico, into one pool. Applicant further requests that the consolidated pool be governed by rules presently applicable to the Fowler-Blinebry Pool.

CASE 4316: Application of Pan American Petroleum Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Rule 104 C 11 to permit the drilling of a well at an unorthodox gas well location 330 feet from the North and East lines of Section 11, Township 23 South, Range 26 East, South Carlsbad-Strawn, Atoka, and-Morrow Gas Pools, Eddy County, New Mexico. The N/2 of said Section 11 to be dedicated to the well.

CASE 4317: Application of Union Oil Company of California for the creation of a new gas pool and special pool rules, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks the creation of a new San Andres gas pool for its Federal "18" Well No. 2 located 660 feet from the South and East lines of Section 18, Township 8 South, Range 38 East, Roosevelt County, New Mexico, and for the promulgation of special rules therefor, including provisions for 160-acre spacing units and a casing program.

GEOLOGICAL EVALUATION OF POTASH DEPOSITS IN T23S, R31E, NMPM

November, 1966
Charles W. Hicks

I. PURPOSE:

To evaluate the results of core drilling for potassium salts in Township 23 South, Range 31 East, NMPM, Eddy County, New Mexico, on six (6) potassium prospecting permits issued effective January 1, 1963, to Charles W. Hicks.

II. CONCLUSION:

Potash core tests drilled to date in Township 23 South, Range 31 East, indicate a langbeinite ore body in the USGS designated 4th Ore Zone containing an estimated 52.25 million tons of ore in place. This ore contains 31.32% langbeinite (7.12% K_2O) and averages 6'10" in height. It is located in Sections 19, 20, 27, 28, 29, and 30, extending westward into the adjoining township and apparently spreads to the adjacent section on the south.

In addition, there are potential commercial ore deposits in the 2nd, 4th, and 10th USGS designated Ore Zones as indicated by potash core tests in the area other than those used in demonstrating the above described ore body.

III. DISCUSSION:

The six (6) potassium prospecting permits NM 0329205, NM 0329206, NM 0329207, NM 0329208, NM 0329209, and NM 0329210 issued to Charles W. Hicks, effective January 1, 1963. All are located in T-23 South, R-31 East, NMPM, Eddy County, New Mexico. The Permits are outlined

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 7
CASE NO. 4312

on the attached plat marked Exhibit "A". The primary term of each was two (2) years, and each was extended an additional two (2) years by the completion thereon of a potash core test within the primary term.

NM 0329207

CORE TEST PP-1

In February of 1963, the first potash core test, designated PP-1 and located in the center of Section 22, T-23 South, R-31 East, was commenced on acreage held under potassium prospecting permit NM 0329207. The results of this test indicated marginal ore in the 2nd Ore Zone.

The 2nd Ore Zone was mineralized from 1809'9" to 1820'1", and the interval from 1810'4" to 1817'0" measuring 80" contains 15.8% langbeinite (3.6% K_2O), 13.3% sylvite (8.41% K_2O). Other Ore zones in this test had little or no mineralization. The results of the analysis of the 2nd Ore Zone indicates that ore may exist in this area of sufficient tonnage, height, and grade to be of commercial value.

NM 0329206

CORE TEST PP-2A

The second potash core test was located near the center of Section 28, T-23 South, R-31 East, and was drilled on acreage held under potassium prospecting permit NM 0329206.

The 1st Ore Zone in this test was mineralized from a depth of 1736'11" to 1746'10", but only 13" from 1743'7" to 1744'8" contained enough sylvite to be of interest.

The 2nd Ore Zone was mineralized from a depth of 1706'4" to 1710'10". The interval from 1706'8" to 1709'7" consisting of 35" contains 35.9% langbeinite (8.1% K_2O) and 5% sylvite (3.2% K_2O). This would be considered marginal langbeinite ore, and it indicates the possibility that commercial ore may exist in the immediate area.

The 4th Ore Zone was mineralized from a depth of 1659'0' to 1665'10", and 49" from 1661'1" to 1665'2" contains 27% langbeinite (6.1% K_2O). This test represents the low grade low height eastern extent of the langbeinite ore reserve more fully described in part IV of this report.

CORE TEST PP-3A NM 0329208

The third core test was located near the center of Section 29, T-23 South, R-31 East, and was drilled on acreage held under potassium prospecting permit NM 0329208.

The 4th Ore Zone was 5'5" thick from a depth of 1569'5" to 1574'10", and contained 36.8% langbeinite (8.35% K_2O). This was the only ore zone of interest in this test, and the results of this test were used in calculating the 4th Ore Zone langbeinite reserves in part IV of this report.

CORE TEST PP-4 NM 0329208

The fourth core test was located near the center of Section 30, T-23 South, R-31 East, and, like PP-3, was drilled on acreage held under potassium prospecting permit NM 0329208.

The 1st Ore Zone covering 44" from a depth of 1583'1" to 1586'10" contains 11.3% sylvite (7.1% K_2O). This could not be considered of commercial interest at the present time.

The 2nd Ore Zone contains both sylvite and langbeinite. The top 16" from a depth of 1547'2" to 1548'7" contains 63.1% langbeinite (14.3% K_2O), and underlying this interval from 1548'7" to 1551'8" are 37" containing 10.8% sylvite (6.8% K_2O). This is not of commercial interest at the present time, but it does indicate the possibility of commercial mixed ore in this area.

The 4th Ore Zone, 7'6" thick from a depth of 1501'10" to 1509'5" contains 31.1% langbeinite (7.1% K_2O) and 1.8% sylvite (1.2% K_2O). This zone is of commercial thickness and grade and was used in estimating the 4th Ore Zone reserves in part IV of this report.

CORE TEST PP-5 NM 0329205

The fifth core test was located near the east quarter corner of Section 19, T-23 South, R-31 East, and

was drilled on acreage held under potassium prospecting permit NM 0329205.

The 2nd Ore Zone covering 40" from a depth of 1577'11" to 1581'3" contains 29.5% langbeinite (6.7% K_2O). This would be considered commercial grade with sufficient thickness, which may develop in the immediate area.

The 4th Ore Zone, 9'3" thick from a depth of 1535'0" to 1544'3" contains 27.7% langbeinite (6.3% K_2O). This is considered commercial and is used in estimating the reserves in part IV of this report.

CORE TEST PP-6 NM0329209

The sixth core test was located near the center of Section 14, T-23 South, R-31 East, and was drilled on acreage held under NM 0329209.

The 2nd Ore Zone, 50" from 1969'0" to 1973'2" contains 36.4% langbeinite (8.3% K_2O). This is of sufficient thickness and grade to be considered commercial. However, additional drilling is necessary to determine whether or not sufficient ore exists in the area for a commercial mining project. Potash core test PP-7, located in the SE/4 of Section 11 to the north is only slightly mineralized in the 2nd Ore Zone, which may indicate the northern limit of the ore body. However, potash test PP-1 located in the center of Section 22, approximately 1-1/2 miles southwest is 6'8" thick and contains both sylvite and langbeinite of near commercial content.

CORE TEST PP-7 NM 0329210

The seventh core test was drilled in the SE/4 of Section 11, T-23 South, R-31 East, and was drilled on acreage held under permit NM 0329210.

The 2nd Ore Zone, 1'10" from 1965'8" to 1967'6" contains slight langbeinite mineralization.

The 4th Ore Zone, 5'9" from 1920'10" to 1926'7" contains 17.8% langbeinite (4.04% K_2O) which is considered of marginal value at the present time. However, there is sufficient bed thickness and it indicates the potential of langbeinite development sufficient to be of

commercial value in this area.

IV. 4th ORE ZONE ORE RESERVES.

The ore reserve discovered as of this date in this area is outlined on the attached Exhibit "A". This ore body is in the USGS designated 4th Ore Zone, and the results of the following core tests were used in calculation and estimation of these reserves: PP-2A, PP-3A, PP-4, PP-5, 3-F, IMC 371 and IMC 372. The outline of the ore body was influenced in some areas by the results of gamma-ray logs of oil wells in the immediate vicinity. These wells are indicated on the attached Exhibit. The ore body is located in Sections 19, 20, 27, 28, 29, and 30, and additional core tests will be required to fully delineate and evaluate these reserves.

METHOD OF CALCULATION:

A circle with a radius of 1500' was drawn around each of the test wells in this area containing langbeinite ore in the 4th Ore Zone, and also around the three plugged and abandoned oil wells that indicate langbeinite ore in the 4th Ore Zone. Tangent lines were then drawn connecting the circles and the area was measured with a compensating polar planimeter.

The area was divided in three (3) blocks. Block I includes parts of Sections 19, 20, 29, and 30. It averages 7'4" in thickness, 7.43% K_2O as langbeinite and contains an estimated 28.7 million tons of ore in place. This block is the results of potash tests PP-3A, PP-4, PP-5 and 3-F.

Block II includes parts of Sections 27 and 28. It averages 4'1" in thickness, 6.1% K_2O as langbeinite and contains an estimated 10.8 million tons of ore. This height and grade was taken from the results of PP-2A and the ore outline was influenced by the gamma-ray logs indicating 4th Ore Zone langbeinite in the oil wells located in Section 27 and 33.

Block III covers parts of Sections 19 and 30, and

was included as a result of the langbeinite found in IMC potassium core tests which were drilled subsequent to the development drilling for the previous two blocks. Block III averages 8'1" in thickness, 7.17% K_2O as langbeinite, and contains an estimated 12.75 million tons of ore. This Block was calculated from the results of potassium core tests PP-4, PP-5, IMC 371 and IMC 372.

The height and grade averages and total tonnage for the above three (3) blocks are as follows:

Average Height	6'10" (Thickness)
Average Grade	7.12% K_2O as langbeinite
Total Tonnage	52.25 Million

V.

The core testing on the six (6) permits to be evaluated was done by Pennsylvania Drilling Company.

The chemical analyses and calculations of the langbeinite content of core tests were done by Mr. Tom J. Futch. A resume of Mr. Futch's background experience is set forth in a letter dated February 10, 1963. A copy of this letter is attached.

The ore reserve estimates and calculations were done by Mr. Charles W. Hicks, and a resume of his geological experience is attached.

Respectfully,

Charles W. Hicks

Original

RESUME OF GEOLOGICAL EXPERIENCE

Charles W. Hicks

The writer received his B.S. degree in Geology from Texas Technological College in June, 1940. In the same year he went to work for International Minerals & Chemical Corporation then Union Potash Company in Carlsbad, New Mexico, working in the refinery then the Mine Engineering department. In 1943 he became geologist and subsequently chief geologist, a position he held until resigning in December of 1952. While at International he was in charge of geology, exploration, and mine ore control. Over 100 potash core tests were drilled under his supervision. The logging and calculations of the results were either done by him or under his supervision. New ore reserves and expansions of existing reserves both of langbeinite and sylvite were accomplished under his direction.

In December of 1952 the writer went to work for Olen F. Featherstone, an independent oil operator interested in potash development for a client. Approximately fifty (50) potash core tests were drilled which were logged and evaluated developing a large sylvite reserve which is now being developed by Kerr-McGee in association with National Farmers Union. Kerr-McGee first became interested in this potash project in 1954 and acquired an interest in about 1955. The writer followed the project going to work for Kerr-McGee in 1955 and continued the drilling and development of this potash project. Kerr-McCee, National Farmers Union and Phillips Petroleum Company formed a corporation to develop the project which was called Farm Chemical Resources Development Corporation. The writer went with this Corporation in the capacity as geologist and continued the development of the project. In 1960 the writer resigned to accept a position with Olen F. Featherstone, an independent Oil producer, and is now General Manager of the Featherstone properties.

Charles W. Hicks

February 10. 1963

Permian Potash

Carlsbad, N.M.

Gentlemen :

In order to support my claim to competence regarding work in connection with evaluation of potash core wall tests I would like to give you a brief historical outline of past experience.

I was employed by Potash Company of America October 15, 1935 in the classification of assistant chemist. I held the title of chemist from October 1, 1936 to January 1, 1938, assistant research engineer from January 1, 1938 to May 1, 1938, analytical chemist from May1, 1938 to April 1, 1947 and assistant chief chemist April 1, 1947 to February 10, 1959.

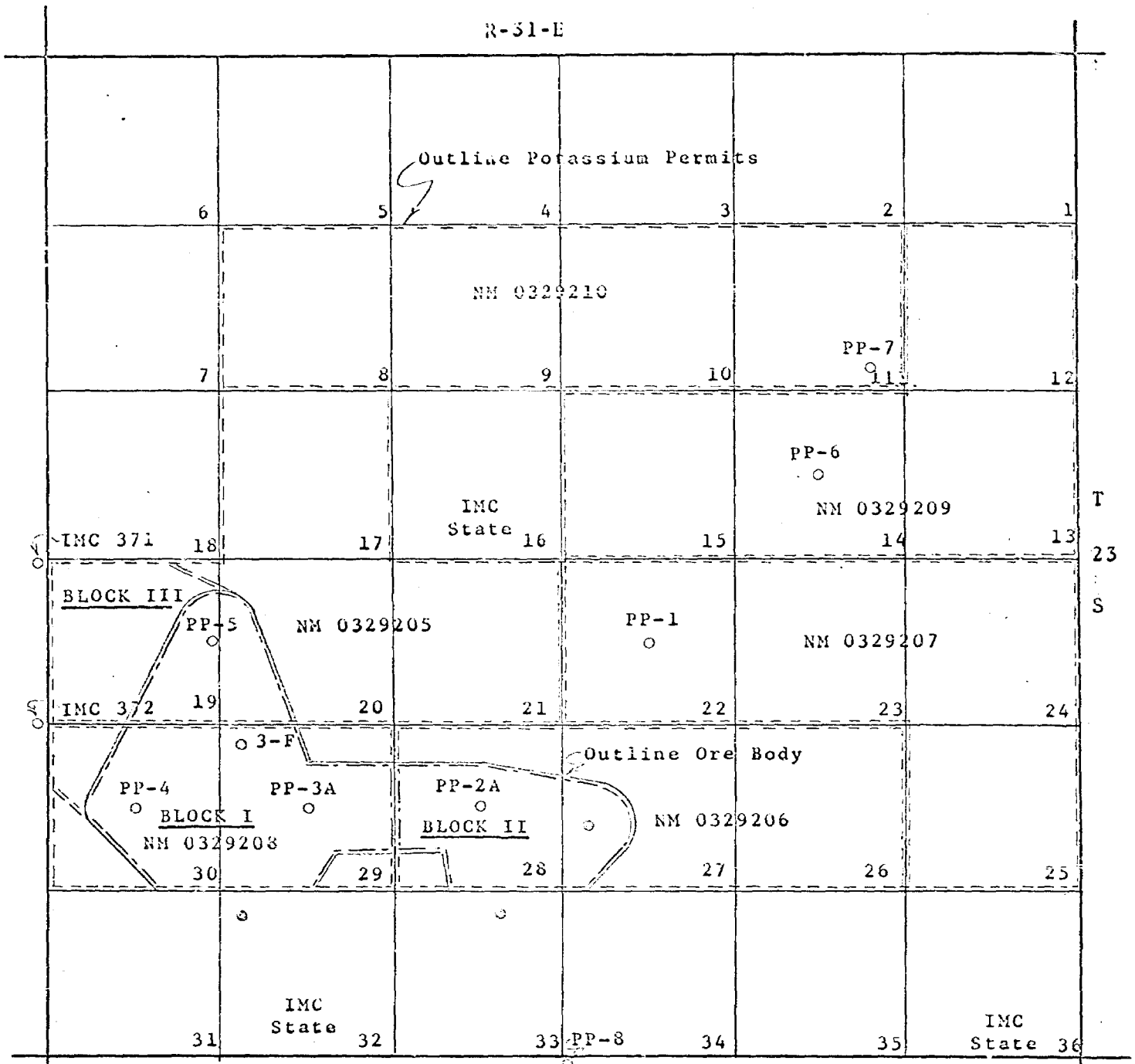
During the entire period covered by the above I was directly connected with analytical procedures involved in determining the various potassium bearing minerals of the Carlsbad area. The work also included the close examination of cores and ground pulps, through mineralized zones, by optical means, by heavy liquid separation and by other physical tests in order to determine the mineral composition.

In view of this contact I feel that I am sufficiently familiar with all the necessary requirements to complete the work in a satisfactory manner.

Very truly yours,

T.J. Putch

EXHIBIT "A"



	Langbeinite Height	K_2O	Tonnage (Million)
BLOCK I	7'4"	7.43%	28.7
BLOCK II	4'1"	6.10%	10.8
BLOCK III	8'1"	7.17%	12.75
Total & Avgs.	6'10"	7.12%	52.25

⊙ Oil Well Tests - P&A
○ Potash Core Tests

Nov. 1966

U. S. POTASH & CHEMICAL CO.
SUBSIDIARY OF CONTINENTAL AMERICAN ROYALTY COMPANY
P. O. BOX 101
CARLSBAD, NEW MEXICO 88220

CHICAGO
CARLSBAD
DALLAS

REFINERY PHONE
505-745-3541
MINE PHONE
505-887-5591

January 23, 1970

Oil Conservation Commission
State of New Mexico
Santa Fe, New Mexico

Gentlemen:

In support of our request to include additional areas in the O.C.C. designated potash area, the following marketing data is presented. As the Commission knows, potassium values of Langbeinite are as sulfates (K_2SO_4). Sulfate products marketed are as Langbeinite and Potassium sulfate, the later being a refined product principally produced using Langbeinite as a raw material.

1. Total sulfate products shipped from Carlsbad are as follows for the period indicated:

1966	484,679 tons
1967	474,836 tons
1968	652,752 tons
1969	586,000 tons

2. There are currently two producers of these products in the Carlsbad area. Both have in the past year completed major expansion programs.

3. Market prices for the sulfate products have been steady or increased in the past several years. By comparison Potassium Chloride (Muriate of Potash) declined in 1969 to the $11.00 to $12.00 per ton range, f.o.b. Carlsbad, while Langbeinite remained constant at $17.00 to $18.00 per ton and sulfates increased to above $40.00 per ton.

4. There are no other known deposits of the mineral Langbeinite except in the Carlsbad potash basin.

With the demand expected to continue increasing and at a stable market price, it can be expected that production of Langbeinite in this area will continue to increase for years to come.

Very truly yours,

Warren G. Hensley,
Vice-President, Marketing

WGH:ctr

U. S. POTASH & CHEMICAL CO.
SUBSIDIARY OF CONTINENTAL AMERICAN ROYALTY COMPANY
P. O. BOX 101
CARLSBAD, NEW MEXICO 88220

CHICAGO
CARLSBAD
DALLAS

REFINERY PHONE
505-745-3541
MINE PHONE
505-887-5591

'70 FEB 3 AM 8 14

Case 4312

January 28, 1970

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

DOCKET MAILED
Date 2-13-70

Re: Commission Order No. R-111-A
Sections 19, 20, 27, 28, 29 and 30, T 23 S, R 31 E, NMPM, New Mexico

Dear Mr. Porter:

Application is hereby made for amendment of Commission Order No. R-111-A so as to include the following described lands covered by Federal Potash Leases NM-0329205, NM-0329206 and NM-0329208, which are held by U. S. Potash & Chemical Co.:

All of Sections 19, 20, 27, 28, 29 and 30 in T 23 S, R 31 E, NMPM, New Mexico.

These lands are known to contain substantial Langbeinite ($2MgSO_4 \cdot K_2SO_4$) ore reserves, the utilization and conservation of which require protection from oil and gas drilling activities. In this connection, the major portion of these lands has been included under the Secretary of Interior's Order F.R. Doc. 65-5149, dated May 14, 1965, designating conservation in the potash area; further, they form a substantial part of the only known Langbeinite reserves in North America.

The foregoing area, for which conservation and protection coverage under Commission Order No. R-111-A is requested, is of minimum size to cover known existing Langbeinite ore reserves and does not include other potential Langbeinite reserves in lands held by U. S. Potash & Chemical Co. under Federal Potash Leases in the same vicinity.

We also request that this matter be placed upon the commission's case docket for February 25, 1970 and that representatives of U. S. Potash & Chemical Co. be permitted to there appear in support of this petition. In this connection, we will anticipate receipt of a copy of the Commission's Docket for the aforementioned hearing confirming that our petition will be given consideration at that time. Please address all communications and other notices concerning this matter to the above address, marked to my attention, and, if possible, send copies to the following:

DOCKET MAILED
Date 2-13-70

Rosenberg & Blenden
Attention: M. Rosenberg
P. O. Box 1597
Carlsbad, New Mexico 88220

Stephenson, Campbell & Olmsted
Attention: Charles D. Olmsted
P. O. Box 877
Santa Fe, New Mexico 87501

DOCKET MAILED
Date 2-13-70

With appreciation for the opportunity of presenting this case to the Commission, I am,

Very truly yours,

Earl H. Miller
Executive Vice President

EHM:ctr

DRAFT

GMH/esr

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:

RECORDS CENTER

CASE No. 4312

Order No. R-111-H

APPLICATION OF U. S. POTASH & CHEMICAL
COMPANY, EDDY COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on February 25, 1970, at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this _____ day of March, 1970, 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, U. S. Potash & Chemical Company, is the owner of certain Federal potash leases in Township 23 South, Range 31 East, NMPM, Eddy County, New Mexico.

(3) That the applicant seeks an amendment of Order No. R-111-A, as amended, to extend the Potash-Oil Area as set forth in said order to include the following-described acreage in Eddy County, New Mexico:

TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM
Sections 19, 20, 27 28, 29, and 30: All

(4) That the evidence presented indicates that the entire area described above contains potash deposits in commercial quantities.

(5) That to promote the orderly development of natural resources in the Potash-Oil Area, Order No. R-111-A, as amended, should be amended to include the above-described acreage in the Potash-Oil Area.

IT IS THEREFORE ORDERED:

(1) That Order No. R-111-A, as amended, is hereby further amended to include the following-described acreage within the Potash-Oil Area in Lea and Eddy Counties, New Mexico:

EDDY COUNTY, NEW MEXICO
TOWNSHIP 23 SOUTH, RANGE 31 EAST, NMPM
Sections 19, 20, 27, 28, 29, and 30: All

(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.