

CASE NO.

7602

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APPLICATION,  
TRANSCRIPTS,  
SMALL EXHIBITS,  
ETC.

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION  
STATE LAND OFFICE BLDG.  
SANTA FE, NEW MEXICO

97 June 1992

EXAMINER HEARING

IN THE MATTER OF:

Application of Riqueza, Inc., for an oil  
treating plant permit, Eddy County, New  
Mexico.

CASE  
7602

and

and

Application of Riqueza, Inc., for an ex-  
ception to Order No. R-3221, Eddy County,  
New Mexico.

CASE  
7603

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation  
Division:

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1  
2 MR. STAMETS: We'll call next Case 7602.

3 MR. PEARCE: That is the application of  
4 Riqueza, Inc., for an oil treatment plant permit, Eddy County,  
5 New Mexico.

6 MR. PADILLA: Mr. Examiner, Ernest L.  
7 Padilla, on behalf of the applicant in this case. I have two  
8 witnesses who need to be sworn.

9  
10 (Witnesses sworn.)

11  
12 MR. PADILLA: Mr. Examiner, for the purposes  
13 of testimony, I would request that Case 7603 be consolidated  
14 with 7602. I think that would facilitate the matters, since  
15 the cases are related.

16 MR. STAMETS: Let's call Case 7603, and if  
17 I hear no objection, we will consolidate these cases for pur-  
18 poses of testimony.

19 MR. PEARCE: Case 7603 is the application of  
20 Riqueza, Inc., for an exception to Order No. R-3221, Eddy  
21 County, New Mexico.

22 MR. STAMETS: You may proceed, Mr. Padilla.

23 MR. PADILLA: Mr. Examiner, I call Stan  
24 Sygmunt to the stand at this time.  
25

STAN ZYGMUNT

being called as a witness and being duly sworn upon his oath,  
testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. PADILLA:

Q. Mr. Zygmunt, would you please for the record  
state your name and also spell it for the benefit of the re-  
porter?

A. My name is Stan Zygmunt. My last name is  
Z-Y-G-M-U-N-T.

Q. Mr. Zygmunt, where do you reside?

A. 1944 Camino Manzanita, Los Alamos, New Mexico.

Q. And where do you -- what is your connection  
to the applicant in this case?

A. I was hired by the applicant to review his  
design of his facility.

Q. Have you testified previously before the  
Oil Conservation Division?

A. No, sir, I have not.

Q. Would you state your educational background  
and your work experience with oil and gas related activities?

A. Yes. I have a BS degree in chemical engin-

1  
2 eering from the University of New Mexico; graduated in '71.

3 I worked three years for Cities Service Oil  
4 Company, Lake Charles Refinery, doing design and unit opera-  
5 tions, and I worked for Little America Refining Company,  
6 Casper, Wyoming, for six years doing environmental work, pro-  
7 cess design, and unit operation.

8 Q Mr. Zygmunt, are you familiar with the ap-  
9 plication today and more specifically with the design of the  
10 oil treating plant under application for Case 7602?

11 A Yes, I am.

12 MR. PADILLA: Mr. Examiner, are the witness'  
13 qualifications acceptable?

14 MR. STAMETS: Yes.

15 Q Mr. Zygmunt, referring to what has been  
16 marked as Exhibit Number One for this case, would you tell us  
17 what that is and what it contains?

18 A It is a layout drawing of the system pro-  
19 posed to recover waste water and oil. Basically, the facility  
20 consists of a receiving tank battery consisting of four 500  
21 barrel tanks. Truckloads of water and oil are received into  
22 this area; are checked to determine whether or not they con-  
23 tain an oil/water emulsion. If they contain oil/water emul-  
24 sion, they are segregated into two determined tanks; if they con-  
25 tain an Oil/water mixture which is easier -- easily settleable

they are put in another tank.

From the receiving tanks the -- which make the primary oil/water separation, that is, oil particles greater than 40 microns will easily settle out in these tanks, that oil then flows by gravity to the oil receiving tank.

The water which is separated in these tanks then flows by gravity to an oil/water separator. The oil/water separator is a Pinkleton rod separator, which is composed of three modules. The first module is a flocculation module. The second module is air flotation, and the third module is tilted plate separator.

For cases where you have an easily separable oil/water mixture only the tilted plate separator will be employed. This is adequate to give a water which has a concentration of 10 parts per million of oil left in the water.

For cases where you have a stabilized emulsion, whether it be mechanical or chemical, the facility has equipment which will allow the addition of chemical surfactants or polymers which will help break the emulsion and the emulsion is then flocculated in a flocculation module and then by the use of air flotation the separation is enhanced as it proceeds through the tilted plate separator.

In this case the use of all three modules

1  
2 will allow the breaking of the stable emulsion and still give  
3 a water which has a concentration of approximately 10 parts  
4 per million of oil.

5 The oil which is separated from the oil/water  
6 separator goes to a receiving tank. The water separated will  
7 flow to the -- to the salt lake.

8 Q Mr. Zygmunt, would you -- there's a -- to-  
9 wards the bottom of the diagram there's another sketch. What  
10 is that?

11 A This is just an elevation sketch which shows  
12 that the process is gravity operated; that is, that the water  
13 from the tanks flows to the oil/water separator by gravity,  
14 and the oil from the oil/water separator will flow to the  
15 receiving tank also by gravity.

16 The elevation of the Oil/water separator is  
17 such that oil will not overflow the oil/water separator. It  
18 will flow to the tank.

19 Q Mr. Zygmunt, there are some dashed lines  
20 around on the main portion of the diagram. What do those  
21 depict?

22 A Those are berm or fire walls and they are  
23 designed to maintain the contents of the tanks should tank  
24 failures occur. In the case of the receiving tanks, the bat-  
25 tery of four tanks, that is, the volume of the berm wall is



1  
2 sufficient to maintain failure of two tanks simultaneously.  
3 The receiving tank is -- the berm wall around it is adequate  
4 to receive the contents of that tank should it fail.

5 Q Over on the upper lefthand corner of the  
6 diagram, what is that depiction there? Is that the location  
7 of --

8 A Yes, that is the location of the facility.

9 Q In Section 26?

10 A Yes.

11 MR. PADILLA: Mr. Examiner, I have no fur-  
12 ther questions of this witness.

13  
14 CROSS EXAMINATION

15 BY MR. STAMETS:

16 Q Mr. Zygmunt, just trying to get this thing  
17 organized, looking at Exhibit One, I presume the trucks will  
18 enter up there where the arrow says To State Road 31, is that  
19 correct?

20 A That is correct.

21 Q They'll drive in and unload into one or the  
22 other of these four tanks on the location?

23 A That is correct.

24 Q Now, who determines which tank they unload  
25 into?

1  
2 A. There is an operator at the facility so it  
3 is a manned facility and will be -- and will be operated by  
4 personnel.

5 Q. Do you plan --

6 A. He will take a sample of the water and in-  
7 spect it.

8 Q. When each tank comes in?

9 A. Yes.

10 Q. And if it is a heavy emulsion it goes into  
11 one tank.

12 A. That's correct.

13 Q. And if there is free oil in it it goes into  
14 another tank.

15 A. Well, if it's a fairly defineable water/oil  
16 mixture, then it will go into a segregated tank. Those tanks --  
17 that mixture does not need as much settling time as does an  
18 emulsion, so that, you know, operating procedure would allow  
19 you to turn those tanks over at a faster pace than you could  
20 a tank with emulsion.

21 Q. Now it would appear as though the ability  
22 is there to take in the oil which settles out and run that  
23 directly to the oil storage tank?

24 A. Yes, that is correct. Oil that settles out  
25 in the receiving tank goes directly to the -- to the oil

1  
2 storage tank.

3 Q And then any oil, or any liquids which have  
4 to be treated will then go to -- down this 4-inch brine pipe--  
5 line, is that right?

6 A That is correct.

7 Q Through the treating system.

8 A That is correct.

9 Q Any oil recovered there will go to the oil  
10 storage tank.

11 A That is correct.

12 Q All right.

13 And then I believe you indicated that around  
14 the receiving tanks, that berm provides capacity to hold the  
15 volume of two tanks.

16 A Yes.

17 Q All right. The oil tank has a berm around  
18 it sufficient to hold the entire volume.

19 A That is correct.

20 Q And the same thing would be true relative  
21 to the treating system.

22 A That is correct, also. If I may point out  
23 on the drawing, that the berm wall around the oil storage  
24 tank shows a 16-inch minimum height, but that tank is actually  
25 set down subsurface and that 16 inches is in addition to the

1  
2 setdown of the tank. The actual volume of the berm wall is  
3 4-1/2 feet.

4 Q So it's 4-1/2 feet inside.

5 A From the floor to the top of the berm wall.

6 Q And sixteen inches on the outside.

7 A Right.

8 Q Now when you calculated the volume, did you  
9 calculate it on the 4-1/2 foot side or the sixteen inch side?

10 A It would be on the 4-1/2 foot side.

11 Q All right. What size are these tanks? I  
12 see they're sixteen foot diameter.

13 A They're fifteen foot tall. The receiving  
14 tanks are nominally 500 barrel tanks and the oil storage tank  
15 is nominally a 210.

16 MR. PADILLA: Mr. Examiner, I have another  
17 exhibit to introduce through this witness.

18 MR. STAMETS: Okay, fine, go ahead and do  
19 it.

20  
21 REDIRECT EXAMINATION

22 BY MR. PADILLA:

23 Q Mr. Zygmunt, I refer you to what has been  
24 marked as Exhibit Number Two. Would you please identify what  
25 that is and what it contains?

1  
2 A This is a statement of the materials of  
3 construction used in the facility. It states that the re-  
4 ceiving tanks will be constructed of welded steel and they  
5 will be lined with a coal tar epoxy to prevent corrosion.

6 The unloading lines will be fiberglass and  
7 the brine line will be polyethylene; both of these materials  
8 are also corrosion resistant.

9 The fiberglass line is also pressure rated  
10 to cycle to 300 pounds and it has the advantage over other lines  
11 that when over-pressured, which might occur during -- a missed  
12 valve during unloading, it will leak prior to rupturing, so  
13 it presents a bit of a safety -- some safety protection.

14 Q Mr. Zygmunt, do you have anything else to  
15 add to your testimony?

16 A No, sir, I do not.

17  
18 RECROSS EXAMINATION

19 BY MR. STAMETS:

20 Q The only other question I have, most of  
21 these facilities wind up with an irreducible sediment.

22 A Yes.

23 Q What arrangements are being made to dispose  
24 of that?

25 A When tanks are cleaned, the resulting sedi-

ment will be hauled to State-approved disposal site.

MR. STAMETS: Any other questions of this witness? He may be excused.

MR. PADILLA: Call Tim Kelly.

T. E. KELLY

being called as a witness and being duly sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. PADILLA:

Q Mr. Kelly, would you please state your name and where you reside?

A My name is T. E. Kelly. I reside at 148 Whitetail Road, Albuquerque.

Q Mr. Kelly, what's your connection with the applicant in this case?

A I am President of Geohydrology Associates, a consulting, water resources consulting firm in Albuquerque, and our firm is retained by the applicant to make a hydrological investigation in the vicinity of the disposal site.

Q Mr. Kelly, have you ever testified before the Oil Conservation Division?

A No, I haven't.

Q Would you please state your educational background and your work experience and related activities as regards to -- with respect to this application?

A Yes, sir. I have a Master's degree in geology from the University of Kansas, completed in 1962. Following graduation I worked for Standard Oil of California for two years and then was employed by the Water Resources Division of the Geological Survey in the capacity of a hydrologist from 1964 until 1975.

Since 1968 I have been in New Mexico working on hydrologic problems. In 1975 I resigned from the Geological Survey and established the firm of Geohydrology Associates, and since that time we have worked for a variety of clients throughout the country, but in particular in New Mexico.

Of particular concern to this study is a two year study that we conducted in behalf of the Bureau of Land Management on the hydrology of the Nash Draw and Clayton Basin area of Eddy County, with particular emphasis on the effects of potash mining and refining on the hydrologic system.

Q Mr. Kelly, is the area of application within the Nash Draw area of Eddy County?

A Yes, it is.

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Q And you're familiar with the purpose of the hearing today?

A Yes, I am.

MR. PADILLA: Mr. Examiner, are the witness' qualifications acceptable?

MR. STAMETS: They are.

Q Mr. Kelly, would you refer to what has been marked as Exhibit Number Three, and would you identify what that is and what it contains?

A This is a report entitled Hydrologic Assessment, Lindsay Lake Area, Eddy County, New Mexico, which was prepared by our firm in behalf of the applicant, and it contains our evaluation of the geohydrology of the proposed discharge site.

Q Mr. Kelly, did -- would you describe in general the nature of your study?

A Our study involved, first, a literature and file search of available data. We then made an assessment of the work which we did for the Bureau of Land Management with specific emphasis on the Lindsay Lake Area, and then we made a field evaluation of the area, in particular Lindsay Lake and the area within a radius of perhaps a mile, as well as any other adjoining areas which had a bearing on the hydrologic system as we envisioned it, or as we had determined by



1  
2 our earlier studies.

3 We collected samples and also collected in-  
4 formation from the files on water quality data in the area  
5 and put that in the form of a report.

6 Q Mr. Kelly, on page five of the report there  
7 is a map. Would you identify where the Lindsay Lake area  
8 is and its significance to this application?

9 A Yes, sir, Lindsay Lake is located, well,  
10 it's identified as the proposed site, and Lindsay Lake, that  
11 would be in Section 26, the northeast quarter of Section 26,  
12 Township 22 South, Range 29 East.

13 This -- this shows the area within which  
14 we concentrated our study because it's the area most likely  
15 to be impacted by the proposed discharge facility.

16 Q Mr. Kelly, does this -- where is the Nash  
17 Draw in relation to this map?

18 A The Nash Draw is a large topographic area  
19 which covers several hundred square miles, but this shows  
20 essentially the south end of Nash Draw. The salt lake shown  
21 in the lower lefthand corner of this illustration is the low  
22 point within Nash Draw, and Nash Draw is ingeneral towards  
23 the north and east of this illustration.

24 Q Mr. Kelly, would you give us a general  
25 description of the geology underlying the Lindsay Lake area?

1  
2           A.           Yes, sir, the area is underlain by the  
3 Salado salt formation, which is the source of the potash which  
4 is extensively mined in the area. This material is composed  
5 primarily of halite, is soluble, and as a result there has  
6 been solution on top of the Salado which resulted in collapse  
7 of the surface feature and the creation of Nash Draw and  
8 Clayton Basin, so that Nash Draw is in effect a collapsed  
9 structure in which the Rustler formation and the younger  
10 deposits on top of that have dropped down onto the erosional  
11 surface of the Salado. This has created a rubble zone through  
12 which ground water moves freely and since it is, the ground  
13 water is coming from the north, it is picking up the halite  
14 within the Salado formation and consequently, the water moving  
15 through this zone is a saturated brine in excess of 300,000  
16 parts per million dissolved solids.

17           Q           Can you tell us anything about the Rustler  
18 formation in the area?

19           A           Well, the Rustler formation is composed of  
20 five different members that are shown in the table on page  
21 three.

22                       In addition to the five members identified  
23 there, there is also what is called an upper leach zone, but  
24 essentially the Tamarisk member, the Culebre, which is a dolo-  
25 mite, the unnamed member, and the leach zone, these have all

1 collapsed, forming essentially a rubble zone through which the  
2 water moves. The overlying formations also contain highly  
3 mineralized water, which is derived by solution of the gypsum  
4 and the anhydrite within those formations, also.

5  
6 Q What are the topographical settings in the  
7 area? Can you tell us something about that?

8 A Well, since the Nash Draw was created by  
9 collapse, there is a general movement of -- or a topographic  
10 slope from north to south with the lowest point being Salt  
11 Lake, and so any surface water which moves through the area  
12 moves towards the south through whatever channels are avail-  
13 able; however, in general, most of the movement is underground.  
14 Most of the -- most of the ground water movement moves through  
15 this rubble zone beneath Nash Draw.

16 There are isolated closed depressions and  
17 so forth that have been created by differential collapse of  
18 these formations onto the Salado.

19 Q Through what formation is the migration?

20 A It's through the, basically through the  
21 Rustler formation and the lower members of the Rustler forma-  
22 tion.

23 Q Is there any percolation through the Rustler  
24 to other formations below the Rustler?

25 A No, the Rustler is directly on top of the

1  
2 Salado formation and there is no movement of water through  
3 the Salado.

4 Q What can you tell us about the ground water  
5 in the area?

6 A The, although there is some potable water  
7 in the Rustler on the boundaries and outside -- well, right,  
8 on the boundaries and outside of Nash Draw, within Wash Draw  
9 itself there is no potable water. There are a few isolated  
10 stock wells that stock do -- that are used for stock watering;  
11 however, none of this water is considered to be potable. The  
12 few residents which are in this area either haul water for  
13 drinking purposes and also depend on cisterns for -- for their  
14 water supply.

15 Q When you say potable, where do you make  
16 your cutoff as far as potable is concerned?

17 A The general cutoff is 1000 parts per million  
18 dissolved solids, which is the recommended upper limit for  
19 drinking water.

20 Q On page six of your study, I read in there  
21 that the shallow -- in the second paragraph, about the middle  
22 of the second paragraph, it says the shallow ground water is  
23 potable to slightly saline in most areas. What are you talking  
24 about when you say that?

25 A This refers to the wells which tap the

1  
2 Rustler formation outside Nash Draw. The last sentence of  
3 that paragraph states there is no known potable water within  
4 Nash Draw itself.

5 Q What can you tell us about the surface water  
6 conditions of the area?

7 A The water moves generally through the ground  
8 but where it does come to the surface in lakes there is in  
9 many instances greater ground water discharge into the lakes  
10 than can be evaporated from these particular bodies; conse-  
11 quently, there is surface run off which occurs from the lakes  
12 and in particular there's Laguna Uno and a series of lakes  
13 which empty into Salt Lake. This surface flow occurs particu-  
14 larly in the spring and decreases during the summer when  
15 evaporation in the lakes increases.

16 Q You mentioned Laguna Uno. Where is that  
17 located on your map?

18 A That's approximately one mile east of Lind-  
19 say Lake in Section 24 and 25. This is a large closed de-  
20 pression into which IMC discharges its refinery waste.

21 Q Who's IMC?

22 A That's International Minerals and Chemical  
23 Corporation, a potash miner and refiner company. They dis-  
24 charge approximately 5200 acre feet a year into a lake and  
25 there is no outflow from the lake. Consequently, that water

1  
2 either is evaporated or leaves the lake by subsurface under-  
3 flow towards points to the south and ultimately ends up in  
4 Salt Lake.

5 Q Mr. Kelly, what conclusions have you reached  
6 as a result of your study as far as the application is con-  
7 cerned?

8 A Well, the -- I might refer you to Table II  
9 on page nine which lists oil field brines as well as three  
10 samples from Salt Lake, the IMC discharge, and Lindsay Lake,  
11 and there are also some additional analysis on the following  
12 page.

13 The three analyses from Salt Lake, IMC, and  
14 Lindsay Lake all show that the natural water quality in those  
15 lakes is considerably more mineralized than any of the oil  
16 field brines which -- for which analyses are available.

17 On the basis of this and on hydrologic in-  
18 vestigation, we concluded that the proposed discharge facility  
19 would not adversely affect any ground water or surface water  
20 in the area both from a water quality standpoint and from a  
21 overall discharge which is proposed at 88 gallons per minute.  
22 There is sufficient surface area within the lakes to evapor-  
23 ate this quantity of water when considered over the annual  
24 cycle.

25 Q Mr. Kelly, do you have anything else to of-

1  
2 fer as far as testimony is concerned?

3 A. No, I don't.

4 MR. PADILLA: Mr. Examiner, we pass the  
5 witness at this time.  
6

7 CROSS EXAMINATION

8 BY MR. STAMETS:

9 Q Mr. Kelly, you've used the term potable  
10 water and described that pretty well. However, the Oil Con-  
11 servation Division is also supposed to protect any waters  
12 having a total dissolved solids concentration up to 10,000  
13 milligrams per liter.

14 Does the Rustler in this area contain con-  
15 centrations less than 10,000?

16 A It does along the flanks of Nash Draw. I  
17 would refer you to Figure 1, page five. It's not shown on  
18 this map, but near the middle of Section -- Section 34, in  
19 which the highway symbol 31 is located, and in the middle of  
20 that section there is a stock well located which does --

21 Q I believe, excuse me, I believe that's  
22 Section 33, isn't it?

23 A 6, 5, 4, 3, yes, sir.

24 Q Okay.

25 A There is a stock well located in that sec-

tion which has been used for many years and my recollection, the water quality in that well is approximately 3500 to 4000 parts per million dissolved solids; however, highway 31 is constructed along the west boundary of Nash Draw and in our earlier study for the Bureau of Land Management it was our conclusion that the natural ground water flow is from northwest to southeast so that this is water which is being intercepted as it comes into Nash Draw; however, within the vicinity of the Tamarisk Lake, Laguna Tres, Laguna Uno, there are no stock wells which produce water of less than 10,000 parts per million dissolved solids.

Q Let me see if I understand this correctly. What we have is a stock water well there out of the Rustler with good enough water for cows to drink.

A Right.

Q But the water is locally derived --

A Yes, sir.

Q -- from rainfall and is moving from the high ground into the low ground.

A Yes, sir.

Q Okay. Now in -- I obviously have not read all of this, but I've seen another report which was done for a similar application that is pending, and in that report referring to Laguna Uno you indicated that the edges of the



lake were not sealed.

A. That's correct.

Q. And that water can be escaping along the edges of the lake.

A. Yes, sir.

Q. Would the same thing be true of Lindsay Lake?

A. Yes, sir. Lindsay Lake has several springs shown on the illustration at the north end; however, there is a outflow from Lindsay Lake, which we estimate to be approximately 100 gallons a minute, and yet there's no surface inflow other than these springs. Therefor, the ground water, that 100 gallon a minute discharge from Lindsay Lake, is actually ground water discharge into the lake, which is coming from areas to the north and presumably from Laguna Uno, which is approximately 29 feet higher topographically than Lindsay Lake and is a constant source of -- or has a constant source from IMC, so that the water is flowing underground from Laguna Uno into Lindsay Lake and then out of Lindsay Lake, so obviously, Lindsay Lake has to have a leaky bottom in order to obtain that water.

Q. Where does it -- where does it go as it outflows?

A. From Lindsay Lake?

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Q Yes.

A Into the area identified as Lindsay Flats and ultimately into Tamarisk Lake.

Q Well now, does that mean that the additional water that would be put into this lake would just add to the outflow?

A During the summer months the surface area of Lindsay Lake is adequate to evaporate approximately 1000 gallons a minute and the applicant proposes to discharge 88 gallons a minute; consequently, during the warmer periods of the year, in fact throughout most of the year, the evaporation from the surface of the lake would be adequate to eliminate the discharge proposed by the applicant.

During the winter months there could conceivably be outflow which would originally been contributed by the applicant, because the discharge -- the evaporation rate during the winter is approximately 66 gallons a minute.

Q Nevertheless, do you have this outflow year round?

A I can't answer that. There's 100, approximately 100 gallons a minute at the present time. This is the period of the year when the level of the lake should be at its highest because we're going into the summer season.

We haven't studied the discharge from Lind-

1  
2 say Lake over a period of twelve months, which is what it  
3 would require. My assumption would be that the -- there would  
4 be no surface discharge during the bulk of the year, although  
5 at the present time there is.

6 Q Also from reading the report, the other re-  
7 port, I got the impression that this whole area is gradually  
8 filling up with salt water.

9 A That's correct.

10 Q How many years is it going to take before  
11 we have a salt water swamp in this area?

12 A I think we already have one. Our studies  
13 for the BLM identify two wells, one at Laguna Uno and the  
14 other one just to the east of this map, which produced potable  
15 water, or stock water, in the late thirties. The refining  
16 companies became active in the mid-forties, late forties, and  
17 those wells are now totally submerged beneath Laguna Uno and  
18 another lake, Laguna Quatro, it's based on our studies, we  
19 concluded that there is enough evaporation now occurring in  
20 all of these lakes and in the north end of Salt Lake to  
21 totally evaporate any of the discharge, all of the brine, I  
22 should say, which is getting into the area, so that we believe  
23 the area is now in equilibrium with evaporation and what  
24 transpiration occurs.

25 So it probably won't get any worse because

1  
2 water levels have reached a point where evaporation is oc-  
3 ccurring to offset any of the natural -- any of the artificial  
4 discharge by the refining companies.

5 Q Okay, let me see if I understand this cor-  
6 rectly.

7 What we have is a situation where upstream  
8 of Salt Lake more salt water is being added to the system  
9 than can be evaporated locally.

10 A Yes, sir.

11 Q But as it fills up the area available to  
12 it, including Salt Lake, more and more surface area is ex-  
13 posed to the atmosphere, you have greater rates of evapora-  
14 tion and so you do not foresee a situation where Salt Lake  
15 will become a permanent pool.

16 A No, sir. The surface area of the lakes is  
17 adequate to more than evaporate the amount of water that's  
18 being put into the system.

19 Q Now does this inflow of water to the Rustler  
20 in this area, does this have any effect on the discharge of  
21 salt water to the Pecos River?

22 A No, sir. The studies that have been done  
23 by the Geological Survey and our study with BLM, confirm that  
24 the salt water in the Pecos River is probably coming from  
25 upward migration from the Salado or the so-called leach zone

1  
2 in the Salado. The best evidence for this is that between  
3 Salt Lake and the Pecos River the ground water level is higher  
4 than either, which indicates that there is a natural recharge  
5 in this zone, and also studies of the Pecos River show that  
6 the salinity is greatest along the very bottom of the river  
7 and decreases as you go up, indicating the water is coming up  
8 through the bottom of the Pecos, the bed of the Pecos River  
9 itself and not through surface inflow.

10 MR. STAMETS: Any other questions of this  
11 witness? I have a few more questions for Mr. Zygmunt at this  
12 point.

13  
14 STAN ZYGMUNT

15 being recalled and having been previously sworn, testified as  
16 follows, to-wit:

17  
18 RECROSS EXAMINATION

19 BY MR. STAMETS:

20 Q I note that the capacity, or the throughput,  
21 is estimated at a maximum capacity of 3000 barrels a day.  
22 How will that be regulated so that no more than 3000 barrels  
23 a day will go through the system?

24 A If the capacity -- the oil/water separator  
25 will be designed for approximately 100 gallons per minute.

1  
2 This is greater than 3000 barrels a day on a 24-hour day oper-  
3 ating basis, and the flow through the oil/water separator will  
4 be controlled by proper line sizing between receiving tanks  
5 and the oil/water separator. In other words, that line will  
6 be specified to restrict the flow given the head differential  
7 between the tanks, to limit the flow capacity in the line; it  
8 will be such that the system can only handle, you know, what  
9 flows through the line.

10 Now this is done, instead of putting in any  
11 kind of control device, because a control device would set  
12 up tiers in the flow that would re-emulsify any oil/water  
13 that came through the pipeline. So what you do is you put in  
14 a straight shot pipe and you size the pipe, the length of the  
15 pipe, and take into account the head differential and control  
16 your flow by sizing that pipe.

17 Q What's the fifteen cent description of the  
18 process? You know, you have a heat treating process, a chem-  
19 ical treating process --

20 A Okay, basically the -- if you assume you  
21 had a stable emulsion, the first thing you would do is add  
22 a chemical and the chemicals you would add to the system would  
23 be dependent upon what form the emulsion, and this going to  
24 have to be developed after some history of operation.

25 Q I'm just simply trying to come up with a

1  
2 set of terms that look nice in an order.

3 A. Okay.

4 Q. So we've got chemicals partly, right?

5 A. Right.

6 Q. But you also have the corrugated plates.

7 A. Okay, what the process is, it's chemical  
8 addition followed by flocculation. This is a process where  
9 the chemicals are allowed to work if you will, and add, you  
10 know, agglomerate the oil particles together so that they are  
11 more easily separable.

12 From the flocculator the air is added to  
13 the system, small air bubbles. This adds in settling the  
14 oil particles to the surface. From this point the flow is  
15 through tilted plate separators which tend to coalesce the oil  
16 into larger particles which settle to the surface and are re-  
17 moved.

18 Q. So it's basically a chemical/time process.

19 A. Right, that's correct.

20 Q. Now I'm not sure who to address this ques-  
21 tion to. Normally, when the Division has approved this type  
22 of operation we have required a -- that all the fluid initially  
23 go in to some sort of a settling pond before it gets into  
24 the lake bed proper. Is that planned for this installation  
25 or if it is required would that be any kind of a problem?

1  
2 A. No, that would not present a problem. We  
3 would simply put an earthen pond following the -- oil/water  
4 separator and we would put an underflow or overflow device in  
5 so such that only water escapes should there be an inadvertent  
6 accident which put oil in the pond.

7 Q What's an appropriate size for that? One  
8 day's volume?

9 A. One day's volume would be more than adequate.  
10 I would suggest typically a settler of that type would be  
11 designed on the basis of one or two hours, which would be a  
12 very small pond.

13 Q Well, we'll do some calculation and see  
14 what's sensible. If you have any specific recommendations  
15 that you'd like to submit after the hearing, we would give  
16 those consideration.

17 A Yes, sir.

18 MR. STAMETS: Are there any other questions  
19 of either of these witnesses? They may be excused.

20 MR. PADILLA: Mr. Examiner, I offer into  
21 evidence Exhibits One, Two, Three.

22 MR. STAMETS: These exhibits will be ad-  
23 mitted.

24 MR. PADILLA: And I have nothing else.

25 MR. STAMETS: If there is nothing further,

the case will be taken under advisement.



C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that  
the foregoing Transcript of Hearing before the Oil Conserva-  
tion Division was reported by me; that the said transcript  
is a full, true, and correct record of the hearing, prepared  
by me to the best of my ability.

Sally W. Boyd CSR

I do hereby certify that the foregoing is  
a complete record of the proceedings in  
the Examiner hearing of Case No. 7602 2 7603  
heard by me on 6-9 1982

Richard P. Starnes, Examiner  
Oil Conservation Division

SALLY W. BOYD, C.S.R.

Box 199-B  
Santa Fe, New Mexico 87501  
Phone (505) 455-7409



BRUCE KING  
GOVERNOR

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

August 19, 1982

POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-2434

McCormick & Forbes  
Box 1718  
Carlsbad, New Mexico 88220

Attention: Mr. Roger E. Yarbrow

Re: Case No. 7602

Gentlemen:

Your letter and accompanying documents will be made a part of the above referenced case file.

This is sufficient to indicate that B & E, Inc. has assumed all rights granted under Division Order No. R-7026.

Yours very truly,

JOE D. RAMEY  
Director

JDR/fd

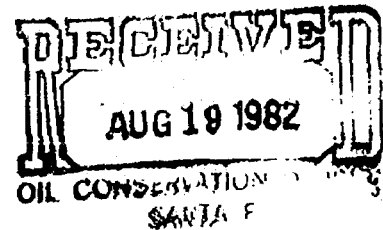
DON G. MCCORMICK  
JAY W. FORBES  
THOMAS L. MAREK  
ROGER E. YARBRO  
JOHN M. CARAWAY  
CAS TABOR

MCCORMICK AND FORBES  
ATTORNEYS AT LAW  
BUJAC BUILDING  
P. O. BOX 1718  
CARLSBAD, NEW MEXICO 88220

TELEPHONE 885-4171  
AREA CODE 505

16 August 1982

State of New Mexico  
Energy and Minerals Department  
Oil Conservation Division  
P. O. Box 2088  
Santa Fe, New Mexico 87501



Attn: Mr. Joe D. Ramey, Director

Re: B & E, Inc., Carlsbad, New Mexico

Dear Mr. Ramey:

Enclosed please find a letter agreement between my client, B & E, Inc., and Michael Grace concerning the proposed transfer of all rights for the operation of a sediment oil treatment plant and an oil reclamation plant, which the New Mexico Oil Conservation Commission has approved on behalf of Michael Grace. As you can see, it is contemplated that B & E, Inc., would have the right to operate under that order. As I believe you know, B & E, Inc., has heretofore been approved for the operation of a similar facility on two alternate sites.

Assuming that the transfer of these rights can be accomplished to my client, the plant which would be used by my clients would be the plant which the Oil Conservation Commission approved on behalf of B & E, Inc., instead of the plant approved by Michael Grace. The reason for the reason for the change is that we believe that our plant is superior to the plant proposed by Mr. Grace.

I realize that I will have to have the approval of the Oil Conservation Commission to make this transfer and I am contacting you to see what steps, in addition to this letter, if any, I must take. Obviously, I would like to avoid a hearing if possible, and it is my belief, based upon the Oil Conservation Commission's approval of our plant, that the transfer can be accomplished without a formal hearing.

I am looking forward to your early response. I appreciate your cooperation and assistance.

Sincerely,

A handwritten signature in cursive script, appearing to read "Roger E. Yarbrow".

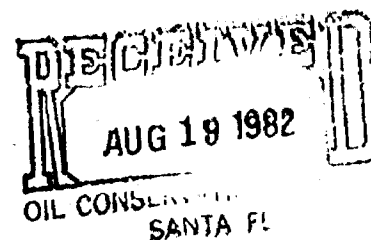
Roger E. Yarbrow

REY:lld

Enclosures

cc: Gene Green  
Phil Withrow  
Burford Norrid

28 July 1982



B & E, Inc.  
P. O. Box 756  
Carlsbad, New Mexico 88220

Attn: Mr. Phil Withrow

Re: Transfer of all Rights for Operation of a Sediment  
Oil Treatment Plant and Oil Reclamation Plant

Gentlemen:

Riqueza, Inc., a New Mexico corporation, has applied to the New Mexico Oil Conservation Commission for authority to operate a sediment oil treatment plant and reclamation plant on Lindsey Lake located in Eddy County, New Mexico. In addition, Michael Grace is the holder of a lease from the State of New Mexico on certain property in Eddy County, New Mexico, which lease provides for the operation of a surface saltwater disposal and oil reclamation plant. Attached hereto and incorporated herein by reference as Exhibits "A" through "C" respectively, are copies of the Oil Conservation Commission Order permitting the operation of a saltwater disposal facility, a copy of the Order authorizing the operation of an oil reclamation plant and a copy of the Lease with the State of New Mexico.

Upon the terms and conditions contained herein, the undersigned agrees to transfer all of its rights arising out of Exhibit "A" through "C". In addition, the undersigned will agree with you not to engage in the operation of a saltwater disposal plant and/or oil reclamation plant in the counties of Eddy, Lea and Chaves, New Mexico, for a period of eight years from the effective date of the transfer of the rights provided for herein. The parties agree that the limitations of Eddy, Lea and Chaves counties are reasonable because of the fact that B & E, Inc.'s trucking permit is for those three counties.

In consideration of the transfer of the rights and the agreement not to compete, you are to pay to me the sum of \$5,000.00 cash, as earnest money and \$10,000.00 upon the closing of the transaction contemplated by this offer, and one and one-half cents per barrel for each barrel of saltwater waste disposed of at your plant in Eddy County, New Mexico. Said one and one-half cent per barrel payments to commence 45 days after the commencement of your operations and to continue monthly thereafter until you have paid to me the sum of \$55,000.00 from

Mr. Phil Withrow  
B & E, Inc.  
28 July 1982  
Page 2

*File*  
said ~~1st~~ payments. The closing of the transaction contemplated by this offer shall occur as soon as possible. The undersigned agrees to assist you and to use his best efforts to have the appropriate State agencies approve the transfer of the rights to be transferred herein.

In the event the rights cannot be transferred to B & E, Inc., then all of the issued and outstanding common stock of Riqueza, Inc., will be conveyed to B & E, Inc. Thus, permitting the operation of the facility by said corporate entity. In any event, the \$5,000.00 earnest money is to be retained by the undersigned.

It is further agreed that in the event B & E, Inc., commences operations of the disposal system on Lindsey Lake as described in Exhibit "A", then in that event, B & E, Inc., agrees to pay Michael P. Grace, Jr., the sum of two cents per barrel for each barrel disposed of at said Lindsey Lake location. Said two cent payment is to be adjusted based upon changes in the "Gross National Product Implicit Price Deflator" as reported quarterly by the Office of Business Economics of the Department of Commerce and can be found in "Economic Indicators" published by the Superintendent of Documents, Government Printing Office, Washington, D.C. 20202.

Michael P. Grace, Jr., shall have the right to enter the subject premises with reasonable notice to B & E, Inc., for the purpose of taking samples for research and development for non-competitive product development.

If this offer is acceptable to you, please indicate your acceptance thereof by your signature on the enclosed copy of this letter and return it to me with the \$5,000.00 earnest money deposit, at which time the parties will be deemed to have a valid contract.

Sincerely,

RIQUEZA, INC.

By *Michael P. Grace*  
Michael P. Grace, President

By *Michael P. Grace Jr.*  
Michael P. Grace, Jr., Individually

ACCEPTED:

B & E, INC.

By *Phil Withrow*  
Phil Withrow, President

NEW MEXICO DEPARTMENT OF LAND AND NATURAL RESOURCES  
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:

RECORDED

JUL 19 1982

O. C. D.  
CASE-NOVCE7602  
Order No. R-7026

APPLICATION OF RIQUEZA, INC.  
FOR AN OIL TREATING PLANT PERMIT,  
EDDY COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

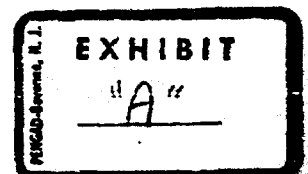
BY THE DIVISION:

This cause came on for hearing at 9 a.m. on June 9, 1982, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 16th day of July, 1982, the Division Director, 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 Division has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Riqueza, Inc., seeks authority to construct and operate a chemical, flocculation, and air flotation type oil treating plant at its salt water disposal site in the NE/4 of Section 26, Township 22 South, Range 29 East, NMPM, Eddy County, New Mexico, for the processing of approximately 3000 barrels per day of raw material from tank bottoms, disposal water, and waste pits.
- (3) That dikes, dams and/or emergency pits should be constructed around the plant capable of holding the entire capacity of all tanks and vessels at the plant location in order that sediment oil, reclaimed oil, or waste oil cannot escape from the immediate vicinity of such plant.
- (4) That the proposed plant and method of processing will efficiently process, treat, and reclaim the aforementioned waste oil, thereby salvaging oil which would otherwise be wasted.



(5) That the Director of the Division should be authorized to administratively grant approval for the expansion or modification of said plant.

(6) That the subject application should be approved as being in the best interests of conservation.

IT IS THEREFORE ORDERED:

(1) That the applicant, Riqueza, Inc., is hereby authorized to install and operate a chemical, flocculation, and air flotation type oil treating plant at its salt water disposal site in the NE/4 of Section 26, Township 22 South, Range 29 East, NMPM, Eddy County, New Mexico, for the purpose of treating and reclaiming sediment oil to be obtained from tank bottoms, waste pits and disposal water.

PROVIDED HOWEVER, that the continuation of the authorization granted by this order shall be conditioned upon compliance with the laws of the State of New Mexico and the rules and regulations of the New Mexico Oil Conservation Division;

PROVIDED FURTHER, that prior to commencing operation of said plant, the applicant shall file with the Division and obtain approval of a performance bond in the amount of \$10,000.00 conditioned upon substantial compliance with applicable statutes of the State of New Mexico and all rules, regulations and orders of the Oil Conservation Division.

(2) That the operator of the above-described oil treating plant shall clear and maintain in a condition clear of all debris and vegetation a fireline at least 15 feet in width and encircling the site upon which the plant is located.

(3) That dikes, dams and/or emergency pits shall be constructed around the plant capable of holding the entire capacity of all tanks and vessels at the plant location and capable of preventing the escape of any sediment oil, reclaimed oil, or waste oil from the immediate vicinity of said plant.

(4) That the disposal of waste water accumulated in conjunction with the operation of the above-described plant on the surface of the ground, or in any pit, pond, lake, depression, draw, streambed, or arroyo, or in any watercourse, or in any other place or in any manner which will constitute a hazard to any fresh water supplies is hereby prohibited.

(5) That the Director of the Division may administratively grant authority for the expansion or modification of said plant

Case No. 7002  
Order No. R-7026

upon request and a demonstration that such expansion or modification is upon contiguous acreage and is otherwise consistent with this order and Division Rules and Regulations.

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

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

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
JOE D. RAMEY,  
Director

S E A L



ENERGY AND MINES DEPARTMENT  
OIL CONSERVATION DIVISION

RECEIVED

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:

JUL 19 1982

O. C. D.  
ARTESIA OFFICE  
CASE NO. 7603  
Order No. R-7027

APPLICATION OF RIQUEZA, INC. FOR AN  
EXCEPTION TO ORDER NO. R-3221,  
AS AMENDED, EDDY COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on June 9, 1982, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 16th day of July, 1982, the Division Director, 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 Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Riqueza, Inc., is the owner and operator of a sediment oil treatment plant, located in the NE/4 of Section 26, Township 22 South, Range 29 East, NMPM, Eddy County, New Mexico.

(3) That Order (3) of Division Order No. R-3221, as amended, prohibits in that area encompassed by Lea, Eddy, Chaves, and Roosevelt Counties, New Mexico, the disposal, subject to minor exceptions, of water produced in conjunction with the production of oil or gas, or both, on the surface of the ground, or in any pit, pond, lake, depression, draw, streambed, or arroyo, or in any watercourse, or in any other place or in any manner which would constitute a hazard to any fresh water supplies and said disposal has not previously been prohibited.

(4) That the aforesaid Order No. R-3221 was issued in order to afford reasonable protection against contamination of fresh water supplies designated by the State Engineer through



disposal of water produced in conjunction with the production of oil or gas, or both, in unlined surface pits.

(5) That the State Engineer has designated, pursuant to Section 65-3-11 (15), N.M.S.A., 1953 Compilation, all underground water in the State of New Mexico containing 10,000 parts per million or less of dissolved solids as fresh water supplies to be afforded reasonable protection against contamination; except that said designation does not include any water for which there is no present or reasonably foreseeable beneficial use that would be impaired by contamination.

(6) That the applicant seeks as an exception to the provisions of the aforesaid Order (3) to permit the disposal of salt water collected at applicant's above-described facility into a salt lake (Lindsey Lake) located in the NE/4 of said Section 26.

(7) That applicant's facility is expected to handle approximately 3000 barrels of water per day.

(8) That there appears to be no shallow fresh water in the vicinity of the subject pit for which a present or reasonably foreseeable beneficial use is or will be made that would be impaired by contamination from the subject pit.

(9) That the area of the salt lake is sufficient to provide for evaporation in excess of the volume of salt water proposed for disposal (up to 3000 barrels of water per day).

(10) That the applicant should construct a header or settling pit upstream from Lindsey Lake to receive the initial discharge of waters from the treatment facility.

(11) That such header or settling pit shall be of sufficient size and design to prevent the movement of oil from the treatment facility to Lindsey Lake.

(12) That if the applicant fails to prevent the movement of such oils to the surface of Lindsey Lake, the Director of the Division should be empowered to administratively suspend or rescind the authority for use of such lake for salt water disposal.

(13) That this application should be approved.

IT IS THEREFORE ORDERED:

(1) That the applicant, Riqueza, Inc., is hereby granted an exception to Order (3) of Division Order No. R-3221, as

amended, to dispose of up to 3000 barrels of salt water per day produced in conjunction with the operation of its sediment oil treatment facility, located in the NE/4 of Section 26, Township 22 South, Range 29 East, NMPM, Eddy County, New Mexico, in a salt lake (Lindsey Lake) also located in the NE/4 of said Section 26.

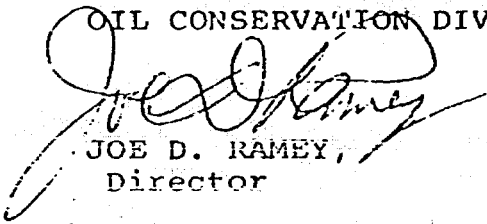
(2) That prior to disposal of any waters into Lindsey Lake, the applicant shall construct a pit upstream from such lake to receive the initial discharge of water from the treatment facility and shall maintain such pit in a manner as to prevent the movement of oil onto the surface of said lake.

(3) That the Director of the Division may by administrative order suspend or rescind such authority whenever it reasonably appears to the Director that such suspension or rescission would serve to protect fresh water supplies from contamination or if the applicant should permit the movement of oil onto the surface of Lindsey Lake.

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

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

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

  
JOE D. RAMEY,  
Director

S E A L



# NEW MEXICO STATE LAND OFFICE

## BUSINESS LEASE

APPLICATION NO. BL-1084

LEASE NO. BL-1084

THIS INDENTURE, made and entered into this 10th day of May, 19 82, by and between the State of New Mexico, acting by and through its Commissioner of Public Lands, hereinafter called the Lessor, and Michael Grace whose post office address is: 7002 Coligny, Houston, Texas 77087, hereinafter called the Lessee(s).

### WITNESSETH:

1. The Lessor, in consideration of the covenants and agreements of the Lessee(s) hereinafter set forth, has this day leased to the Lessee(s) the following described tract of land for the sole and only purpose of using the tract for erecting, maintaining and operation & of a Surface Salt Water Disposal & Oil Reclamation

(Be specific).

2. The tract of land included in this lease is as follows:

### DESCRIPTION

Township 22 South, Range 29 East, Section 26, NE $\frac{1}{4}$ , containing 160.00 acres more or less.

\* First two years; \$320.00 per year; Third year negotiable but not less than \$320.00 nor more than \$960.00; Fourth year negotiable, but not less than \$320.00 nor more than \$1280.00; Fifth year negotiable, but not less than \$320.00 nor more than \$1600.00.

3. TO HAVE AND TO HOLD the same for the term of five (5) years, beginning at the date of this lease and ending May 10, 1987, for which Lessee(s) agree(s) to pay: \$320.00, annually, in advance \* (SEE ABOVE)

4. The Lessee(s) expressly grant(s) to the Lessor a first and prior lien upon any and all improvements and equipment which have been or shall have been placed upon the above described premises during the term of this lease as security for the payment of any due and unpaid rentals provided for in this lease.

5. That the Lessee(s) shall be permitted to remove any or all improvements placed upon the tract embraced in this lease on or before the expiration of this lease, provided that all rentals have been fully paid. In the event of sale of the land, all authorized improvements not so removed shall be appraised by the Commissioner and disposed of in the same manner as provided by law in the case of improvements upon grazing leases. Any improvements placed upon the land without the prior written approval of the Lessor shall be deemed unauthorized and become the property of the Lessor.

6. This lease shall terminate upon default of any payments due, upon thirty (30) days' notice by registered mail to the Lessee(s), evidenced by return receipt, unless such default be cured within such thirty (30) day period.

7. This lease includes the right of Lessee(s) of ingress and egress to and from said premises and any part thereof.

8. This lease is made for the sole use and benefit of Lessee(s), for the express purposes here intended; that except for the purposes of this lease, no sub-lease or under-lease (either written or verbal) shall be made by the Lessee(s) without the written consent of the Commissioner of Public Lands and any violation of this agreement and understanding will subject the lease to cancellation. This lease is not assignable except upon written approval by the Commissioner of Public Lands.

9. The Lessee(s) may at any time surrender and be relieved of any obligations under this lease by the payment of Ten (\$10.00) Dollars to the Lessor, provided; however, that all rentals then due have been fully paid and the terms of this lease have been complied with. However, upon such surrender, no part of any rentals already paid by the Lessee(s) shall be refunded.

(over)

EXHIBIT

10. This lease is issued subject to all valid existing rights upon the tract included herein.

11. Applications for a new lease should be submitted to the lessor for consideration at least thirty (30) days prior to the expiration of the term herein.

12. Lessee(s) is(are) authorized to place the following described improvements upon the land, the total valuation of which shall in no event exceed \$-----0----- without the prior written approval of the Lessor.

13. Lessor reserves the right to execute leases on the above land for mining purposes or for the extraction of petroleum, oil, gas, salt, geothermal resources, and other mineral deposits therefrom and the right to go upon, explore for, mine, remove and sell same. Lessor further reserves the right to grant rights-of-way and easements over, upon, or across the said land for public highways, railroads, tramways, telephone, telegraph and power lines, irrigation works, sewer lines, drainage ditches, mining, logging, and for other purposes.

14. Lessees, including their heirs, assigns, agents, and contractors shall at their own expense fully comply with all laws, regulations, rules, ordinances, and requirements of the city, county, state, federal authorities and agencies, in all matters and things affecting the premises and operations thereon which may be enacted or promulgated under the governmental police powers pertaining to public health and welfare, including but not limited to conservation, sanitation, aesthetics, pollution, cultural properties, fire, and ecology. Such agencies are not to be deemed third party beneficiaries hereunder; however, this clause is enforceable by the Grantor as herein provided or as otherwise permitted by law.

15. Lessee(s) shall save and hold harmless, indemnify and defend the State of New Mexico, The Commissioner of Public Lands, and his agent or agents, in their official and individual capacities, of and from any and all liability claims, losses, or damages arising out of or alleged to arise out of or indirectly connected with the operations of Lessee(s) hereunder, off or on the hereinabove described lands, or the presence on said lands of any agent, contractor or subcontractor of Lessee(s).

All the terms of this agreement shall extend to and bind the successors and assigns of the parties hereto.

Executed in duplicate.

Witness the hands and seals of the parties aforesaid the day and year first above written.

Noble S. Sore  
LESSEE

\_\_\_\_\_  
LESSEE

SUBSCRIBED AND SWORN TO BEFORE ME THIS 10th DAY OF May, 1982.

(SEAL)

My Commission Expires: 9/27/84

Clifford S. Sore  
NOTARY PUBLIC

Alfred A. Ramirez  
COMMISSIONER OF PUBLIC LANDS



POST OFFICE BOX 2088  
STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO 87501  
(505) 827-2434

July 16, 1982

Mr. Ernest L. Padilla  
Attorney at Law  
P. O. Box 2523  
Santa Fe, New Mexico 87502

Re: CASE NO. 7602  
ORDER NO. R-7026

Applicant:

Riqueza, Inc.

Dear Sir:

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

Yours very truly,

JOE D. RAMEY  
Director

JDR/ed

Copy of order also sent to:

Hobbs OCD	x
Artesia OCD	x
Aztec OCD	

Other

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:

CASE NO. 7602  
Order No. R-7026

APPLICATION OF RIQUEZA, INC.  
FOR AN OIL TREATING PLANT PERMIT,  
EDDY COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on June 9, 1982, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 16th day of July, 1982, the Division Director, 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 Division has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Riqueza, Inc., seeks authority to construct and operate a chemical, flocculation, and air flotation type oil treating plant at its salt water disposal site in the NE/4 of Section 26, Township 22 South, Range 29 East, NMPM, Eddy County, New Mexico, for the processing of approximately 3000 barrels per day of raw material from tank bottoms, disposal water, and waste pits.
- (3) That dikes, dams and/or emergency pits should be constructed around the plant capable of holding the entire capacity of all tanks and vessels at the plant location in order that sediment oil, reclaimed oil, or waste oil cannot escape from the immediate vicinity of such plant.
- (4) That the proposed plant and method of processing will efficiently process, treat, and reclaim the aforementioned waste oil, thereby salvaging oil which would otherwise be wasted.

-2-

Case No. 7602  
Order No. R-7026

(5) That the Director of the Division should be authorized to administratively grant approval for the expansion or modification of said plant.

(6) That the subject application should be approved as being in the best interests of conservation.

IT IS THEREFORE ORDERED:

(1) That the applicant, Riqueza, Inc., is hereby authorized to install and operate a chemical, flocculation, and air flotation type oil treating plant at its salt water disposal site in the NE/4 of Section 26, Township 22 South, Range 29 East, NMPM, Eddy County, New Mexico, for the purpose of treating and reclaiming sediment oil to be obtained from tank bottoms, waste pits and disposal water.

PROVIDED HOWEVER, that the continuation of the authorization granted by this order shall be conditioned upon compliance with the laws of the State of New Mexico and the rules and regulations of the New Mexico Oil Conservation Division;

PROVIDED FURTHER, that prior to commencing operation of said plant, the applicant shall file with the Division and obtain approval of a performance bond in the amount of \$10,000.00 conditioned upon substantial compliance with applicable statutes of the State of New Mexico and all rules, regulations and orders of the Oil Conservation Division.

(2) That the operator of the above-described oil treating plant shall clear and maintain in a condition clear of all debris and vegetation a fireline at least 15 feet in width and encircling the site upon which the plant is located.

(3) That dikes, dams and/or emergency pits shall be constructed around the plant capable of holding the entire capacity of all tanks and vessels at the plant location and capable of preventing the escape of any sediment oil, reclaimed oil, or waste oil from the immediate vicinity of said plant.

(4) That the disposal of waste water accumulated in conjunction with the operation of the above-described plant on the surface of the ground, or in any pit, pond, lake, depression, draw, streambed, or arroyo, or in any watercourse, or in any other place or in any manner which will constitute a hazard to any fresh water supplies is hereby prohibited.

(5) That the Director of the Division may administratively grant authority for the expansion or modification of said plant



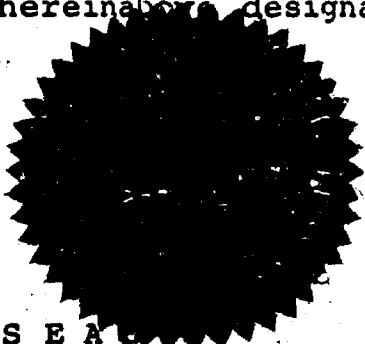
-3-

Case No. 7602  
Order No. R-7026

upon request and a demonstration that such expansion or modification is upon contiguous acreage and is otherwise consistent with this order and Division Rules and Regulations.

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

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



STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

*Joe D. Ramey*  
JOE D. RAMEY,  
Director

S E A L

STATEMENT AS TO EQUIPMENT

All water storage tanks will be constructed of welded steel and completely coated with coal tar epoxy. The oil storage tank will also be constructed of welded steel.

Every tank shall be equipped with vapor-proof positive seal thief hatches, corrosion resistant manual valves, and bronze check valves on the fiberglass (rated at 300 psi cyclic working pressure) inlet lines. Polyethylene SDR 17 pipe will be utilized for the remaining brine handling lines.

NARRATIVE DESCRIPTION OF TREATING PROCESS

Produced brine will be brought to the site by truck. In order to avoid commingling waters of different quality, the incoming water will be inspected by the site attendant, who will then direct the truck driver to discharge into the appropriate storage tank. Most of the free oil present (if any) will separate inside the water storage tanks. Any recovered by the gravity separator oil in water emulsions received will be processed separately. Demulsifiers and flotation reagents will be added as necessary to this stream. Complete removal of emulsified oil shall be achieved by means of dissolved air flotation inside the gravity separator.

BEFORE EXAMINER STAMETS  
OIL CONSERVATION DIVISION

EXHIBIT NO. 2

CASE NO. 7602

Submitted by \_\_\_\_\_

Hearing Date 6/9/82

HYDROLOGIC ASSESSMENT, LINDSEY LAKE AREA

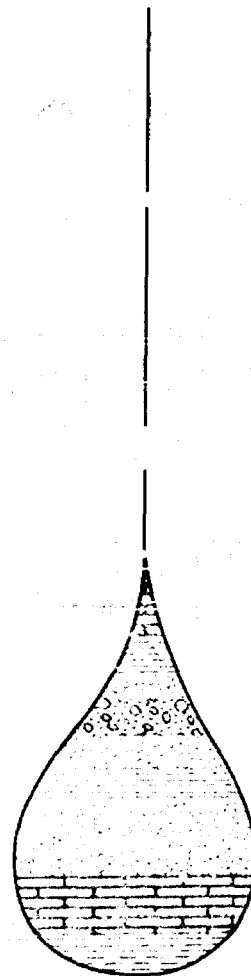
EDDY COUNTY, NEW MEXICO

by

**Geohydrology  
Associates, Inc.**

4015 Carlisle, N.E. • Suite A • (505) 884-0580  
Albuquerque, New Mexico 87107

May 1982



BEFORE EXAMINER STAMETS  
OIL CONSERVATION DIVISION

EXHIBIT NO. 3

CASE NO. 7603

Submitted by

Hearing Date

6/9/82

HYDROLOGIC ASSESSMENT, LINDSEY LAKE AREA  
EDDY COUNTY, NEW MEXICO

by

Geohydrology Associates, Inc.  
Albuquerque, New Mexico

May 1982

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## HYDROLOGIC ASSESSMENT, LINDSEY LAKE AREA

EDDY COUNTY, NEW MEXICO

by

Geohydrology Associates, Inc.

In May 1982, Mr. Michael Grace of Houston, Texas, authorized a study of the hydrologic conditions in the vicinity of Lindsey Lake, Eddy County, New Mexico. The area is located about 20 miles east of Carlsbad in Townships 22 and 23, South, Range 29 and 30 East. The study was made by Geohydrology Associates, Inc., of Albuquerque.

The purpose of the study was to determine the effects that might result for discharge of oil-field brine into Lindsey Lake.

Earlier studies in the region established that the regional ground-water flow was from northeast to southwest. However the regional flow pattern has been changed locally by various factors, including the potash refineries, and various natural and man-made factors.

Many of the earlier studies were devoted to the regional aspects of the ground-water system. Robinson and Lang (1938) showed that most of the lower Nash Draw drained into the large, natural Salt Lake, and concluded that brine from the lake is not discharging into the Pecos River. Other studies were made by Thomas (1963) and Mower and others (1964); however their work was completed before the major impacts of the potash refineries were exerted on the area.

Gilkey and Stotemyer (1965) made one of the earliest detailed studies of the Nash Draw area. They concluded that brine-disposal ponds at the potash refineries contribute to the hydrologic system by leakage. A detailed study by Geohydrology Associates, Inc. (1978) identified significant quantities of brine entering the ground-water system, although much of this is confined to the Clayton Basin area north of the project area. All of these factors have a bearing on the suitability of Lindsey Lake as a brine-discharge site.

The study authorized by Michael Grace was based on a thorough literature and file search of existing data; it also drew heavily from the earlier reports by Geohydrology Associates, Inc., which was submitted to the Bureau of Land Management. A field reconnaissance was made which included a visual inspection of Lindsey Lake, Tamarisk Flat and Lake, and Laguna Seis. A water sample was collected from Lindsey Lake. An analysis of the data and the resultant conclusions are presented herein.

## DESCRIPTION OF THE AREA

### Geology

A number of studies of the geology and ground-water resources of the area have been made. These include King (1942), Hendrickson and Jones (1952), and Vine (1963), Brokaw and others (1972) and Geohydrology Assoc., Inc. (1978, 1978a, 1979). The reader is referred to these studies for more detailed information than is warranted in this report.

There are only two formations in the Lindsey Lake area that are directly concerned by this study (table 1). These are the Salado Formation below and the overlying Rustler Formation. The Rustler generally is subdivided into a Lower Member, the Culebra Dolomite, the Tamarisk Member, the Magenta Member, and the uppermost Forty-nine Member.

#### Salado Formation

The Salado Formation is an areally extensive unit which underlies much of Eddy County east of the Pecos and extends far beyond the study area. This formation consists of more than 75 percent salt deposits with minor amounts of clastic rocks, anhydrite, and dolomite. The Salado is the source deposit of the potash which is mined in the region.

As a soluble unit underlying Lindsey Lake and the entire potash area, the Salado exerts major control over the shallow and surficial structure of the area. Collapse structures, such as Nash Draw, are widespread and exert control over the deposition of eolian and alluvial material.

Structure contours on the top of the Salado Formation show that the Nash Draw depression, in which Lindsey Lake is located, reflects a similar trough in the top of the salt (Vine, 1963, pl. 1). There are closed depressions in the top of the salt in the area of Salt Lake and Laguna Uno. The depth to the top of the Salado Formation in the vicinity of Lindsey Lake and Laguna Uno is approximately 275 feet.

#### Rustler Formation

The Rustler and Salado Formations are separated by a leached zone approximately 60 feet thick. This insoluble residue is regarded as basal Rustler Formation by some authors (Cooper and Glanzman, 1971) and as uppermost Salado Formation by others (Vine, 1963, p. 7). Regardless of the name used, this zone consists of an insoluble rubble of brecciated clastics and limestone which collapsed following the solution of underlying evaporite deposits. This rubble represents material from the Lower Member, the Culebra dolomite, and insoluble deposits from the Tamarisk Member.

The Lower Member of the Rustler Formation consists of 60 to 120 feet of siltstone and fine-grained sandstone that locally contains gypsum, anhydrite, and halite (Brokaw and others, 1972, p. 50). It is overlain by the Culebra dolomite which is a distinctive and persistent marker bed about

Table 1. Summary of deposits in vicinity of proposed Lindsey Lake disposal site.

Formation	Member or Zone	Description	Water-bearing Characteristics
Dewey Lake Redbeds		Siltstone, locally sandy or clayey	Zone used for discharge by Mississippi Chemical; stock wells produce slightly saline water; 200-250 feet thick
	Forty-niner	Gypsum and siltstone	Small capacity stock and domestic wells; water potable outside Nash Draw; up to 65 feet
	Magenta	Dolomite; some anhydrite	May be tapped by wells at AMAX; generally not an aquifer; 20 feet
Rustler	Tamarisk	Predominately gypsum; some siltstone	Zone used for discharge by International Minerals; does not yield water to wells; 115 feet thick
	Culebra	Dolomite	Produces brine to wells used by Mississippi Chemical; probably tapped by AMAX; 30 feet thick
	Unnamed	Siltstone, fine-grained sandstone, some gypsum; included in rubble zone	Not known to be tapped by wells; water should be very highly mineralized; 120 feet thick
	Upper leached zone	Brecciated siltstone, gypsum, anhydrite	Forms the "brine aquifer" penetrated by exploration wells. Saturated brine present in large quantities; 50 to 200 feet thick.
Salado	Massive salt zone	Halite, anhydrite, potash minerals	Non-water-bearing. Up to 2,000 feet thick



30 feet thick. Where tapped by wells, the Culebra produces large quantities of highly mineralized water, as in the vicinity of Mississippi Chemical Corporation in section 11, T. 21 S., R. 29 E.

The Tamarisk Member (Vine, 1963, p. 14) was named for its exposures at Tamarisk Flat where Lindsey Lake is located. This deposit consists of about 115 feet of massive, coarsely crystalline gypsum in the outcrop but is chiefly anhydrite in the subsurface. Throughout most of the area of Nash Draw, the Tamarisks deposits are blanketed by a thin layer of silt and clay that has washed down from the rim of the Draw. This sheetwash is particularly evident in Tamarisk Flat; however on the east side of Lindsey Lake, there are massive exposures of deformed gypsum beds and large selenite crystals indicating recrystallization by the movement of ground water.

Brine from the potash refineries in and near Nash Draw is being deposited primarily into disposal ponds excavated in the Tamarisk Member.

The Magenta and Forty-niner Members of the Rustler Formation have been removed by erosion from Nash Draw and generally do not affect the discharge of waste in the project area.

#### Topography Setting

Nash Draw is the principal surface feature in the potash mining area of Eddy County. According to Vine (1963, p. B38) this feature is an undrained depression which resulted from regional differential solution of evaporite deposits in the upper Salado and lower Rustler Formations. The solution of these deposits resulted in large-scale collapse of the Lower Member, Culebra dolomite, and the Tamarisk Members. Evidence for solution within the Rustler can be found almost everywhere that the formation is exposed.

Contour lines drawn on top of the massive salt in the Salado Formation show a high degree of correspondence between the topography of Nash Draw and the top of the salt. The Salt Lake overlies a closed depression on top of the Salado. Likewise, there is a large closed depression northeast of Salt Lake which is ringed by a series of surface lakes including Laguna Uno and Lindsey Lake (fig. 1). Laguna Uno is the discharge point for International Minerals Corporation; Lindsey Lake is the disposal site proposed by Michael Grace.

Although the regional dip of the beds is toward the east, the rocks exposed along the margins of Nash Draw dip toward the depression. This also is true in Clayton Basin farther north. In addition, hydration of anhydrite to gypsum causes localized doming. Sinkholes and domes influence the direction of ground-water movement, which in turn controls the development of collapse structures.

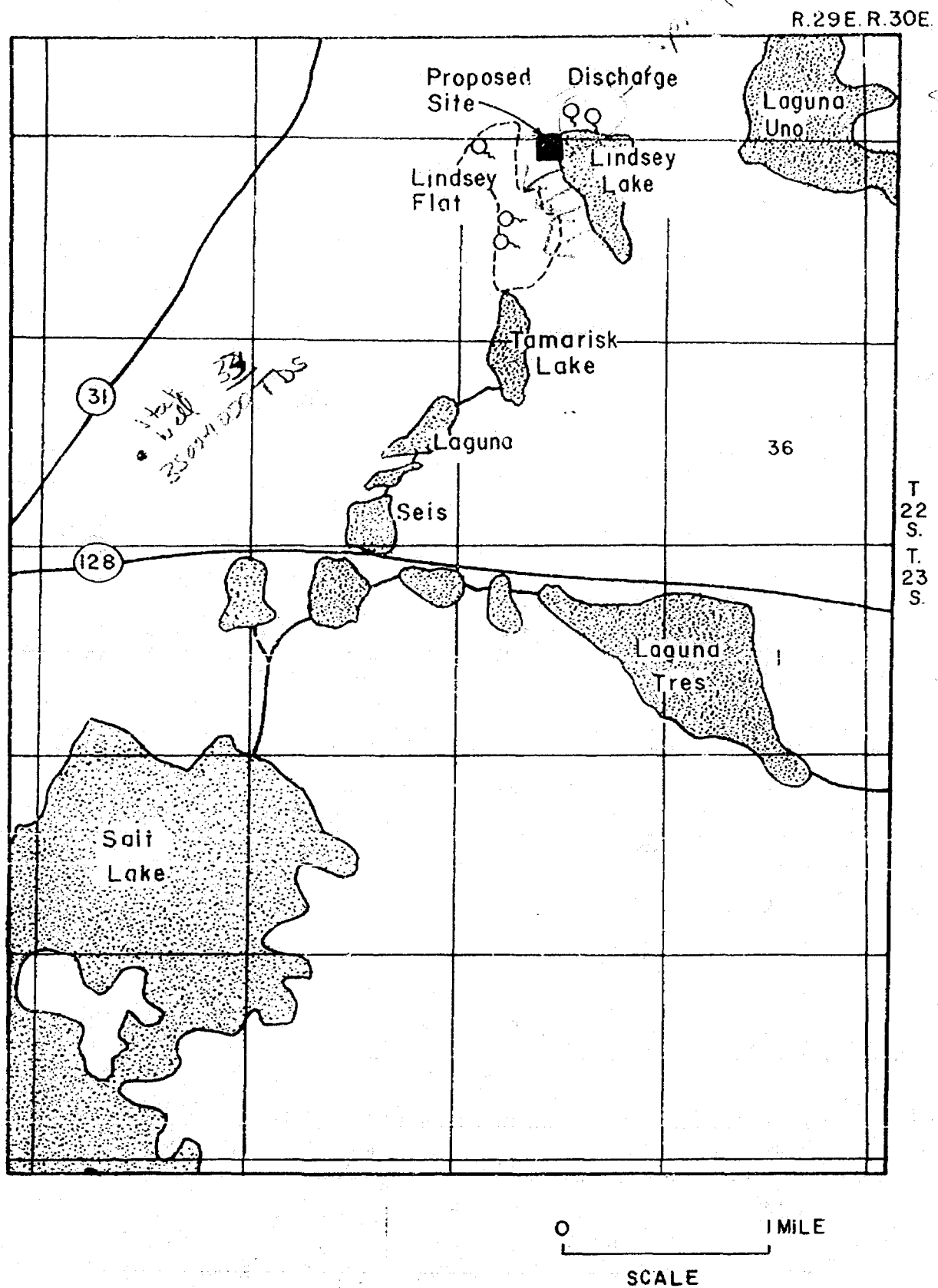


Figure 1. Distribution of lakes in the vicinity of IMC refinery and Salt Lake.

## Hydrology

### Ground Water

Two comprehensive studies of the hydrology of the potash area have been made by Brokaw and others (1972) and Geohydrology Associates, Inc. (1979). These studies have shown that the normal hydrologic system has been modified by collapse of Nash Draw and Clayton Basin. This has been further complicated by discharge from the various potash refineries in the area.

Hendrickson and Jones (1952, pl. 3) mapped the water table in Eddy County. East of the Pecos River the ground-water movement is predominately from north to south. Topographic divides exist along the Eddy-Lea County line and Quahada Ridge which tend to divert the regional flow into Nash Draw. The shallow ground water is potable to slightly saline in most areas. Wells outside Nash Draw generally produce adequate quantities of water to meet the stock and domestic requirements of the ranchers. However along the boundaries of Nash Draw, the regional water table intersects the land surface where ground water discharges as a series of seeps and springs. There is no known potable water within Nash Draw itself.

Saline water is present in most of the deeper aquifers. It has been shown that the regional dip of strata in the subsurface is from west to east. The Culebra dolomite Member of the Rustler crops out along the Pecos River, and a few wells have tapped this strata in the subsurface. Highly mineralized water was produced from wells drilled by AMAX Corporation in T. 19 S., R. 30 E. and by Mississippi Chemical Corporation in T. 21 S., R. 29 E. The AMAX wells most likely were completed in the Culebra, although it is possible that they tap the shallower Magenta Member of the Rustler Formation. The Mississippi Chemical wells are known to tap the Culebra.

The so-called rubble zone between the Salado and Rustler Formations has been called "the brine aquifer" by workers at the WIPP site and in Nash Draw. Although not everywhere present outside Nash Draw, it is as much as 60 feet thick near Salt Lake. Virtually all of the water produced from the rubble zone is very highly mineralized.

In addition to the natural ground-water flow into Nash Draw, there is a considerable amount of refinery waste released annually. Approximately 9,248 acre-feet per year is discharged as brine by refineries located in Nash Draw (Geohydrology Assoc., Inc., 1970, p. 60). In most cases this discharge is a saturated brine containing as much as 30 percent solids in the form of suspended clay.

During 1977 it was calculated that International Minerals Corporation released slightly less than 5,233 acre-feet of brine into Laguna Uno (fig. 1). Although much of the water would have been evaporated from the lake surface, this would further concentrate the salts in the lake. The remaining brine enters the shallow ground-water system within Nash Draw where there is a general movement of ground water and surface water toward Salt Lake.

#### Surface Water

The surface of Lindsey Lake has a land-surface elevation of about 2,975 feet, or approximately 29 feet lower than that of Laguna Uno. Nevertheless there is no surface inflow from Laguna Uno to Lindsey Lake. Some springs and seeps were noted along the north and northwest side of Lindsey Lake in May 1982; however the total inflow probably did not total 30 gpm (gallons per minute). Yet at the outlet of Lindsey Lake to Tamarisk Lake, the flow was estimated to be approximately 100 gpm.

Tamarisk Lake has a surface elevation of 2,970 feet. In addition to the inflow from Lindsey Lake, there are a number of springs and seeps located along the west side of the lake. It is difficult to estimate the total rate of spring and seep inflow due to the small quantity at any given site; however this inflow probably does not exceed 100 gpm, most of which comes from Tamarisk Flats. Although Tamarisk Lake has a combined inflow of approximately 200 gpm from the Flats and from Lindsey Lake, the total outflow was estimated to be nearly 1,000 gpm which enters Laguna Seis (fig. 1). Since most of this water cannot be attributed to surface inflow, nearly 80 percent of the lake outflow must be derived from ground-water discharge into Tamarisk Lake.

There appears to be no direct connection between Laguna Seis and Salt Lake to the south.

Detailed studies have shown that large quantities of water are lost by evaporation from the surface of the many lakes in Nash Draw (Geohydrology Assoc., Inc., 1979, p. 29). Inasmuch as evaporation rate is a function of many physical and climatic factors, the rate of evaporation varies significantly between summer and winter months. For example it was determined that the summer evaporation rate was 6.69 gpm per acre of surface area and the winter evaporation rate was 0.369 gpm per acre of surface. These studies were made at Laguna Uno which is located approximately one mile east of Lindsey Lake. Presumably the values would apply at both sites.

In May 1982 the surface area of Lindsey Lake was determined to be approximately 180 acres. Tamarisk Lake had a surface area of approximately 145 acres, and Laguna Seis and its drainage system an additional 95 acres. This combined surface area of 420 acres is adequate to evaporate 2,810 gpm during peak summer days and 155 gpm during the winter when minimum evaporation would occur.

## CHEMICAL QUALITY OF GROUND WATER

Ground water in the vicinity of Lindsey Lake ranged from slightly saline to saturated brine, using the classification of Kelly (1970, p. 3). The slightly saline samples were collected from wells located along the boundary of Nash Draw where inflow from the shallow water table aquifer has not yet been mineralized. All of the surface-water sources are very highly mineralized and frequently represent saturated brine solutions. A sample from Laguna Uno contained 361,380 mg/l (milligrams per liter) dissolved solids. A sample from the outflow of Lindsey contains 345,836 mg/l. Salt Lake contains 334,892 mg/l dissolved solids.

## DISCHARGE PROPOSAL

The oil field brine disposal system proposed by Michael Grace would have a maximum capacity of 3,000 barrels per day. The brine would be obtained from various oil-field operations. After being temporarily held in storage tanks, the brine would be released to Lindsey Lake. This quantity would represent a discharge of about 88 gpm into the lake.

The chemical quality of water that would be discharged has not been identified. It is assumed that the brine would be obtained from oil wells in the area, and most of these tap the Bone Springs and Morrow zones. Samples from these zones were published by the Roswell Geological Society (1956, 1960, and 1967). A comparison of selected anions and cations from various samples are shown in Table 2.

## CONCLUSIONS

1. The discharge system proposed by Michael Grace will not adversely impact the existing ground-water or surface-water systems in the vicinity of Lindsey Lake.

2. The surface area of Lindsey Lake is sufficiently large to allow for 1,204 gpm summer evaporation and 66 gpm winter evaporation. With a proposed discharge by Grace of about 88 gpm, the total annual evaporation from Lindsey Lake would be adequate to evaporate the total amount of brine discharged for the year.

Assuming that some overflow might occur during the winter months, this quantity of brine would be evaporated from either Tamarisk Lake or Laguna Seis which are connected with Lindsey Lake.

3. The chemical quality of water from oil-field reservoirs in the area is very similar to that in Lindsey Lake and Salt Lake. No adverse impact should occur as a result of the proposed discharge.

Table 2. Partial chemical analyses of oil-field brines and other brine sources in the project area.

Source or Field	Formation	Na + K	Ca	Mg	Cl parts per million	SO <sub>4</sub>	Total Solids
Bell Lake	Bone Springs Limestone	52,450	20,600	3,100	126,250	1,050	
Scharb	Bone Springs Limestone	67,600	12,800	1,940	131,000	1,880	
Lea	Bone Springs Limestone	57,408	10,400	1,701	115,607	450	
Atoka	Morrow	17,350	1,760	316	30,000	610	
Atoka, West	Morrow	20,648	1,840	405	35,989	130	
Burton Flat	Morrow	14,591	640	261	23,791	56	
Wilson Deep	Morrow	15,962	1,160	264	26,500	990	
Salt Lake		103,687	425	5,250	178,697	5,500	334,892
IMC Discharge		116,250	350	3,750	188,400	8,250	361,380
Lindsey Lake		103,000			185,969		345,836

CORE LABORATORY  
Preliminary Lab Report

Field	Formation	Na	K	Ca	Mg	Cl	SO <sub>4</sub>	TDS
Indian Flats Pearl State #1	Delaware	39,700	410	5,540	1,540	75,000	2,200	127,500
South Culebra Bluff	Atoka Delta Rally	67,200	1,000	1,930	190	114,000	750	189,000
Nash Draw Nash Unit #3	Atoka	10,200	41	480	38	15,100	230	28,550
Bone Springs	Maddox Erg.	77,300	930	30,400	3,650	184,000	190	298,000
Loving	Cherry Canyon	53,300	830	29,700	3,320	123,000	910	200,500
SE Lindsey Lake		-	-	540	6,990	-	15,800	-

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Dockets Nos. 19-82 and 20-82 are tentatively set for June 23 and July 7, 1982. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: COMMISSION HEARING - WEDNESDAY - JUNE 2, 1982  
OIL CONSERVATION COMMISSION - 9 A.M.  
MORGAN HALL, STATE LAND OFFICE BUILDING  
SANTA FE, NEW MEXICO

CASE 7522: (DE NOVO - Continued from May 17, 1982, Commission Hearing)

Application of Santa Fe Exploration Co. for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox location 660 feet from the North and West lines of Section 14, Township 20 South, Range 25 East, Permo-Penn, Strawn, Atoka and Morrow formations, the N/2 of said Section 14 to be dedicated to the well.

Upon application of Chama Petroleum Company, this case will be heard De Novo pursuant to the provisions of Rule 1220.

CASE 7521: (DE NOVO)

Application of William B. Barnhill for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval of an unorthodox location 660 feet from the South and West lines of Section 35, Township 19 South, Range 25 East, Permo-Penn, Strawn, Atoka and Morrow formations, the S/2 of said Section 35 to be dedicated to the well.

Upon application of Chama Petroleum Company and William B. Barnhill, this case will be heard De Novo pursuant to the provisions of Rule 1220.

DOCKET: EXAMINER HEARING - WEDNESDAY - JUNE 9, 1982  
9 A.M. MORGAN HALL, STATE LAND OFFICE  
BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

CASE 7599: Application of Barber Oil Inc. for an Exception to Rule 705-A Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to the provisions of Rule 705-A of the Division Rules and Regulations to permit 37 temporarily abandoned injection wells in its Russell Pool waterflood project to remain inactive for a period of up to three years without the required cement or bridge plugs being installed therein to isolate the injection zone.

CASE 7600: Application of Gulf Oil Corporation for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Seven Rivers and Queen formations in the perforated interval from 3338 feet to 3448 feet in its Arnott-Ramsay (NCT-B) Well No. 4 located in Unit D of Section 32, Township 25 South, Range 37 East, Langlie Mattix Pool.

CASE 7548: (Continued from April 14, 1982, Examiner Hearing)

Application of Tahoe Oil & Cattle Co. for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres formation in the perforated interval from 4932 feet to 4992 feet in its Schwalbe Well No. 1, located in Unit P of Section 21, Township 9 South, Range 37 East, West Sawyer-San Andres Pool.

CASE 7601: Application of Claude Walker for an oil treating plant permit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority for the construction and operation of an oil treating plant for the purpose of treating and reclaiming sediment oil at its salt water disposal site in the NE/4 NE/4 of Section 11, Township 10 South, Range 35 East.

- CASE 7602: Application of Riqueza, Inc. for an oil treating plant permit, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority for the construction and operation of an oil treating plant for the purpose of treating and reclaiming sediment oil in the NE/4 of Section 26, Township 22 South, Range 29 East.
- CASE 7603: Application of Riqueza, Inc. for an exception to Order No. R-3221, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an exception to Order No. R-3221 to permit the commercial disposal of produced brine into an unlined surface pit located near its proposed oil treating plant in the NE/4 of Section 26, Township 22 South, Range 29 East.
- CASE 7519: (Continued from May 26, 1982, Examiner Hearing)  
Application of S & J Oil Company for special pool rules, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks the promulgation of special pool rules for the Seven Lakes-Menafee Oil Pool to provide for wells to be located not nearer than 25 feet to the quarter-quarter section line nor nearer than 165 feet to lands owned by an offset operator.
- CASE 7604: Application of Rio Pecos Corporation for compulsory pooling, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the surface to the base of the Pennsylvanian formation underlying the W/2 of Section 2, Township 19 South, Range 32 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well.
- CASE 7605: Application of Yates Petroleum Corporation for compulsory pooling, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the top of the Wolfcamp formation through the uppermost 100 feet of the Mississippian Chester Limestone underlying the W/2 of Section 35, Township 19 South, Range 24 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well.
- CASE 7606: Application of MTS Limited Partnership Company for compulsory pooling, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the surface through the base of the Abo formation underlying the NW/4 of Section 5, Township 7 South, Range 26 East, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well.
- CASE 7592: (Continued from May 26, 1982, Examiner Hearing)  
Application of OXOCO for compulsory pooling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests from the surface to the base of the Mesa Verde formation underlying the E/2 of Section 20, Township 32 North, Range 8 West, to be dedicated to a well to be drilled at a standard location thereon. Also to be considered will be the cost of drilling and completing said well and the allocation of the cost thereof as well as actual operating costs and charges for supervision, designation of applicant as operator of the well and a charge for risk involved in drilling said well.
- CASE 7586: (Continued and Readvertised)  
Application of Standard Resources Corp. for designation of a tight formation, Chaves and Eddy Counties, New Mexico. Applicant, in the above-styled cause, seeks the designation of the Abo-Wolfcamp formation underlying all or portions of Township 15 South, Ranges 23 through 25 East, Township 19 South, Range 20 East, and Township 20 South, Range 20 East, all in Chaves County; in Eddy County: Township 16 South, Ranges 23 through 26 East, Township 17 South, Ranges 21, 23, 24, and 25 East, and Township 18 South, Ranges 21, 23, 24 and 25 East, Township 19 South, Ranges 21, 23 and 24 East, and Township 20 South, Ranges 21, 23 and 24 East, containing 460,800 acres, more or less, as a tight formation pursuant to Section 107 of the Natural Gas Policy Act and 18 CFR Section 271. 701-705.

**CASE 7607:** Application of El Paso Natural Gas Company for the abolishment of the Blanco-Pictured Cliffs Pool and the expansion of the South Blanco-Pictured Cliffs Pool in Rio Arriba, Sandoval and San Juan Counties, New Mexico. Applicant, in the above-styled cause, seeks the abolishment of the Blanco-Pictured Cliffs Pool and the expansion of the horizontal limits of the South Blanco-Pictured Cliffs Pool to include the abolished acreage.

Also to be considered will be the appropriate method for institution of gas prorationing for wells affected by the change in pool designation.

**CASE 7608:** Application of Tenneco Oil Company for designation of a tight formation, San Juan County, New Mexico. Pursuant to Section 107 of the Natural Gas Policy Act of 1978 and 18 CFR Section 271. 701-705, applicant, in the above-styled cause, seeks the designation as a tight formation of the Dakota Producing Interval underlying the following described lands:

All of:

Sections 1 thru 6, Township 29 North, Range 8 West;

Sections 1 and 2, Township 29 North, Range 9 West;

Sections 1 thru 18 and Section 24, Township 30 North, Range 10 West;

Sections 7 thru 9, 16 thru 21 and 25 thru 36, Township 32 North, Range 7 West;

All sections, Township 32 North, Range 8 West; and

All sections, Township 32 North, Range 9 West;

Also:

All of Township 30 North, Range 8 West except Sections 3 thru 5 and Section 35;

All of Township 30 North, Range 9 West except Sections 31 thru 34;

All of Township 31 North, Range 8 West except Section 32; and

All of Township 31 North, Range 9 West except Sections 27 and 28

containing 149,760 acres, more or less.

**CASE 7609:** In the matter of the hearing called by the Oil Conservation Division on its own motion for an order creating and extending certain pools in Chaves, Eddy, and Lea Counties, New Mexico.

- (a) CREATE a new pool in Eddy County, New Mexico, classified as a gas pool for Middle Bell Canyon production and designated as the Brushy Draw-Middle Bell Canyon Gas Pool. The discovery well is the J. C. Williamson EP-USA Well No. 2 located in Unit O of Section 26, Township 26 South, Range 29 East, NMPM. Said Pool would comprise:

TOWNSHIP 26 SOUTH, RANGE 29 EAST, NMPM  
Section 26: SE/4

- (b) CREATE a new pool in Lea County, New Mexico, classified as an oil pool for Bone Spring production and designated as the Legg-Bone Spring Pool. The discovery well is the Amoco Production Company State LT Well No. 1 located in Unit K of Section 32, Township 21 South, Range 33 East, NMPM. Said Pool would comprise:

TOWNSHIP 21 SOUTH, RANGE 33 EAST, NMPM  
Section 32: SW/4

- (c) CREATE a new pool in Chaves County, New Mexico, classified as a gas pool for Atoka production and designated as the White Ranch-Atoka Gas Pool. The discovery well is the Depco, Inc. White Ranch Unit Well No. 1 located in Unit F of Section 8, Township 13 South, Range 30 East, NMPM. Said Pool would comprise:

TOWNSHIP 13 SOUTH, RANGE 30 EAST, NMPM  
Section 8: W/2

- (d) EXTEND the Austin-Mississippian Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 36 EAST, NMPM  
Section 5: N/2 and SW/4

- (e) EXTEND the Baum-Upper Pennsylvanian Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 14 SOUTH, RANGE 33 EAST, NMFM  
Section 18: NE/4

- (f) EXTEND the Burton Flat-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 20 SOUTH, RANGE 28 EAST, NMFM  
Section 8: S/2

- (g) EXTEND the East Burton Flat-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 20 SOUTH, RANGE 29 EAST, NMFM  
Section 6: S/2

- (h) EXTEND the Cedar Lake-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 30 EAST, NMFM  
Section 34: N/2  
Section 35: N/2

- (i) EXTEND the Crooked Creek-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 24 SOUTH, RANGE 24 EAST, NMFM  
Section 3: S/2  
Section 10: N/2

- (j) EXTEND the EK Yates-Seven Rivers-Queen Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 34 EAST, NMFM  
Section 9: SW/4

- (k) EXTEND the Elkins-San Andres Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 7 SOUTH, RANGE 28 EAST, NMFM  
Section 22: S/2 NW/4

- (l) EXTEND the Empire-Pennsylvanian Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 17 SOUTH, RANGE 28 EAST, NMFM  
Section 20: N/2

- (m) EXTEND the East Grama Ridge-Morrow Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 21 SOUTH, RANGE 35 EAST, NMFM  
Section 31: S/2

- (n) EXTEND the Hoag Tank-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 24 EAST, NMFM  
Section 34: N/2

- (o) EXTEND the House-Drinkard Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 38 EAST, NMFM  
Section 35: SE/4

TOWNSHIP 20 SOUTH, RANGE 38 EAST, NMFM  
Section 2: NE/4

EXAMINER HEARING - WEDNESDAY - JUNE 9, 1982

EXAMINER HEARING WEDNESDAY-JUNE(

- (p) EXTEND the South Kemnitz Atoka-Morrow Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 16 SOUTH, RANGE 34 EAST, NMPM  
Section 19: S/2

- (q) EXTEND the EastLaRica-Morrow Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 34 EAST, NMPM  
Section 35: S/2

- (r) EXTEND the North Loving-Atoka Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 28 EAST, NMPM  
Section 5: All

- (s) EXTEND the North Loving-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 23 SOUTH, RANGE 28 EAST, NMPM  
Section 6: S/2

- (t) EXTEND the Maljamar-Atoka Gas Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 16 SOUTH, RANGE 33 EAST, NMPM  
Section 28: E/2

- (u) EXTEND the South Salt Lake-Morrow Gas Pool in Lea County, New Mexico to include therein:

TOWNSHIP 21 SOUTH, RANGE 32 EAST, NMPM  
Section 6: Lots 1, 2, 3, 4, 5, 6, 7, and 8

- (v) EXTEND the Sand Hills Grayburg-San Andres Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 20 SOUTH, RANGE 39 EAST, NMPM  
Section 31: SE/4

- (w) EXTEND the Shugart-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 19 SOUTH, RANGE 31 EAST, NMPM  
Section 4: N/2

- (x) EXTEND the Tom-Tom San Andres Pool in Chaves County, New Mexico, to include therein:

TOWNSHIP 7 SOUTH, RANGE 31 EAST, NMPM  
Section 35: NE/4

- (y) EXTEND the Travis-Upper Pennsylvanian Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 28 EAST, NMPM  
Section 13: N/2 NW/4

- (z) EXTEND the North Turkey Track-Morrow Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 28 EAST, NMPM  
Section 27: E/2

- (aa) EXTEND the White City-Pennsylvanian Gas Pool in Eddy County, New Mexico, to include therein:

TOWNSHIP 25 SOUTH, RANGE 26 EAST, NMPM  
Section 13: All

- (bb) EXTEND the North Young-Bone Spring Pool in Lea County, New Mexico, to include therein:

TOWNSHIP 18 SOUTH, RANGE 32 EAST, NMPM  
Section 4: SE/4  
Section 11: W/2

\*\*\*\*\*  
Docket No. 18-82

DOCKET: EXAMINER HEARING - THURSDAY- JUNE 17, 1982

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

The following cases will be heard before Daniel S. Nutter, Examiner, or Richard L. Stamets, Alternate Examiner:

- ALLOWABLE: (1) Consideration of the allowable production of gas for July, 1982, from fifteen prorated pools in Lea, Eddy, and Chaves Counties, New Mexico.
- (2) Consideration of the allowable production of gas for July, 1982, from four prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico.

BEFORE THE OIL CONSERVATION DIVISION

DEPARTMENT OF ENERGY AND MINERALS

STATE OF NEW MEXICO

IN THE MATTER OF THE  
APPLICATION OF RIQUEZA,  
INC. FOR A TREATING  
PLANT PERMIT AND AN  
EXCEPTION TO ORDER  
R-3221, AS AMENDED  
EDDY COUNTY NEW MEXICO

Case 7602

APPLICATION

COMES NOW Riqueza, Inc., by its undersigned attorney,  
and hereby makes application for a treating plant permit and an  
exception to Order R-3221, as amended and in support of this  
Application would show the Division:

1. That its principal place of business is located in  
Eddy County, New Mexico.
2. That this Application is made pursuant to the provi-  
sions of Rule 312 of the rules and regulations of the New Mexico  
Oil Conservation Division and Order R-3221, as amended.
3. That the proposed location of the treating plant and  
the salt water disposal site is in the NE $\frac{1}{4}$  of Section 26,  
Township 22 South, Range 29 East, NMPM, Eddy County, New Mexico.
4. That disposal of salt water as an exception to Order  
R-3221, as amended, will not constitute a hazard to or impair-  
ment to fresh water supplies in the vicinity of the treating  
plant site or the salt water disposal site.
5. That the type and capacity of the plant are of suf-  
ficient volume and quality to store and treat the sediment oil  
and tank bottoms incoming into the plant.

RECEIVED

MAY 18 1982



WHEREFORE, Riqueza, Inc. requests that this Application be set for hearing before a duly appointed Examiner of the Oil Conservation Division at the next available hearing date, that notice be given as required by law and the rules of the Division, and that this Application for a treating plant permit and an exception to Order R-3221, as amended, be approved.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Ernest L. Padilla", is written over a horizontal line.

Ernest L. Padilla  
Post Office Box 2523  
Santa Fe, N.M. 87501  
505-988-7577

Attorney for Applicant

ERNEST L. PADILLA  
ATTORNEY AND COUNSELOR AT LAW

P.O. Box 2523  
Santa Fe, New Mexico 87501  
(505) 988-7577

May 17, 1982

Mr. Joe D. Ramey  
Director  
Oil Conservation Division  
Post Office Box 2088  
Santa Fe, New Mexico

*Case 7602*

Re: Application of Riqueza, Inc. for a Treating Plant Permit  
and an Exception to Order R-3221

Dear Mr. Ramey:

Enclosed for filing in the above-referenced case  
is an Application in triplicate. We request that this Applica-  
tion be set for hearing at the next available hearing date.

Very truly yours,

*Ernest L. Padilla*  
Ernest L. Padilla

Enclosures  
cc: Riqueza, Inc.

MAY 18 1982

DIANE

STATE OF NEW MEXICO  
ENERGY AND MINERALS DEPARTMENT  
OIL CONSERVATION DIVISION

JAR

IN THE MATTER OF THE HEARING  
CALLED BY THE OIL CONSERVATION  
DIVISION FOR THE PURPOSE OF  
CONSIDERING:

CASE NO. 7602

Order No. R-7026

Roll  
MS.

APPLICATION OF RIQUEZA, INC.  
FOR AN OIL TREATING PLANT PERMIT,  
EDDY COUNTY, NEW MEXICO.

JAR

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on June 9, 1982,  
at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this \_\_\_\_\_ day of June, 1982, the Division  
Director, 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 Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Riqueza, Inc., seeks authority to construct and operate a chemical, <sup>floculation, and air flotation</sup> ~~and heat-treatment~~ type oil treating plant at its salt water disposal site in the NE/4 of Section 26, Township 22 South, Range 29 East, NMPM, Eddy County, New Mexico, for the processing of approximately 3000 barrels per day of raw material from tank bottoms, disposal water, and waste pits.

(3) That dikes, dams and/or emergency pits should be constructed around the plant capable of holding the entire capacity of all tanks and vessels at the plant location in order that sediment oil, reclaimed oil, or waste oil cannot escape from the immediate vicinity of such plant.

(4) That the proposed plant and method of processing will efficiently process, treat, and reclaim the aforementioned waste oil, thereby salvaging oil which would otherwise be wasted.

(5) That the Director of the Division should be authorized to administratively grant approval for the expansion or modification of said plant.

(6) That the subject application should be approved as being in the best interests of conservation.

IT IS THEREFORE ORDERED:

(1) That the applicant, Riqueza, Inc., is hereby authorized to install and operate a chemical, <sup>floculation, and air</sup> ~~and heat-treatment~~ type oil treating plant at its salt water disposal site in the

*floculation*

NE/4 of Section 26, Township 22 South, Range 29 East, NMPM, Eddy County, New Mexico, for the purpose of treating and reclaiming sediment oil to be obtained from tank bottoms, waste pits and disposal water.

PROVIDED HOWEVER, that the continuation of the authorization granted by this order shall be conditioned upon compliance with the laws of the State of New Mexico and the rules and regulations of the New Mexico Oil Conservation Division;

PROVIDED FURTHER, that prior to commencing operation of said plant, the applicant shall file with the Division and obtain approval of a performance bond in the amount of \$10,000.00 conditioned upon substantial compliance with applicable statutes of the State of New Mexico and all rules, regulations and orders of the Oil Conservation Division.

(2) That the operator of the above-described oil treating plant shall clear and maintain in a condition clear of all debris and vegetation a fireline at least 15 feet in width and encircling the site upon which the plant is located.

(3) That dikes, dams and/or emergency pits shall be constructed around the plant capable of holding the entire capacity of all tanks and vessels at the plant location and capable of preventing the escape of any sediment oil, reclaimed oil, or waste oil from the immediate vicinity of said plant.

(4) That the disposal of waste water accumulated in conjunction with the operation of the above-described plant on the surface of the ground, or in any pit, pond, lake, depression, draw, streambed, or arroyo, or in any watercourse,

or in any other place or in any manner which will constitute a hazard to any fresh water supplies is hereby prohibited.

(5) That the Director of the Division may administratively grant authority for the expansion or modification of said plant upon request and a demonstration that such expansion or modification is upon contiguous acreage and is otherwise consistent with this order and Division Rules and Regulations.

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

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

STATE OF NEW MEXICO  
OIL CONSERVATION DIVISION

JOE D. RAMEY,  
Director

S E A L



**DOCKET MAILED**

**5/28/83**