STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
Santa Fe, New Mexico

21 January 1987

EXAMINER HEARING

IN THE MATTER OF:

Application of Kendall & Associates Inc. for salt water disposal, San Juan County, New Mexico. CASE 9066

BEFORE: David R. Catanach, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division: Jeff Taylor
Legal Counsel to the Division
Oil Conservation Division
State Land Office Bldg.
Santa Fe, New Mexico

For the Applicant:

MR. CATANACH: Call next Case 9066.

MR. TAYLOR: The application of Kendall & Associates, Incorporated, for salt water disposal, San Juan County, New Mexico.

The applicant has requested that this case be continued.

MR. KELLAHIN: Excuse me, Mr. Examiner, we'd like that one continued to the February 18th docket, if possible.

MR. CATANACH: That's when it's continued to, Mr. Kellahin.

MR. KELLAHIN: Thank you.

MR. CATANACH: Case 9066 is continued to the February 18th Examiner's docket.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY the foregoing Transcript of Hearing before the Oil Conservation Division (Commission) 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. 9066, heard by me on 1/21, 1987.

David R. Catanach, Examiner
Oil Conservation Division

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
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SANTA FE, NEW MEXICO

18 February 1987

EXAMINER HEARING

IN THE MATTER OF:

Application of Kendall and Associates Inc. for salt water disposal, San Juan County, New Mexico. CASE 9066

BEFORE: David R. Catanach, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Commission: Jeff Taylor
Legal Counsel for the Division
Oil Conservation Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant: W. Thomas Kellahin
Attorney at Law
KELLAHIN, KELLAHIN & AUBREY
P. O. Box 2265
Santa Fe, New Mexico 87501

I N D E X

E X H I B I T S

MR. CATANACH: Call next Case 9066.

MR. TAYLOR: The application of Kendall and Associates for salt water disposal, San Juan County, New Mexico.

MR. CATANACH: Are there appearances in this case?

MR. KELLAHIN: If the Examiner please, I'm Tom Kellahin of Santa Fe, New Mexico, appearing on behalf of the applicant and I have one witness to be sworn.

MR. CATANACH: Are there other appearances in this case?

Will the witness please stand and be sworn in at this time?

(Witness sworn.)

MR. KELLAHIN: Mr. Examiner, we have submitted to you what is marked as Kendall Exhibit Number One. It is the substance of the C-108 application and for convenience in going through the application we have simply numbered the pages of Exhibit One, beginning with page number 1, all the way through page 67, and that consti-

tutes the presentation of Mr. Kendrick this morning.

A. R. KENDRICK,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Mr. Kendrick, for the record you please state your name and occupation?

A A. R. Kendrick, petroleum consultant, San Juan Basin.

Q Mr. Kendrick, as a petroleum consultant have you previously testified before the Division and had your qualifications as a petroleum engineer accepted and made a matter of record?

A Yes, sir.

Q Pursuant to your employment as a consulting engineer for Kendall and Associates, Inc., have you made a study of the facts surrounding its application in Case 9066?

A Yes, sir.

MR. KELLAHIN: We tender Mr. Kendrick as an expert petroleum engineer.

MR. CATANACH: He is so

qualified.

Q Mr. Kendrick, let me ask you to direct your attention to Exhibit Number One, and using that exhibit locate and orient the Examiner as to where the proposed disposal well is located.

A The proposed disposal well is in Unit letter G of Section 23, Township 29 North, Range 11 West, in San Juan County.

It's approximately one mile east of the town of Bloomfield. On page one of Exhibit One it's identified by a red arrow pointing to a little circle on the copy of a USGS topo sheet.

Q Did you prepare the Form C-108 and the exhibits for presentation to the Examiner today?

A I prepared a supplemental Form C-108, which should be pages two and three, and utilized that format rather than trying to fill in the form I obtained from the Oil Conservation Division Office in Aztec.

Q Describe generally to the Examiner why you've chosen to modify the form in order to organize the presentation of this case today.

A The form had requested information to be -- fill in the blank or to add supplemental data, and the blanks are, as usual, either too short or too long for the information requested, so this format seemed to be more

apropo.

Q Approximately how many wellbores did you investigate within the half mile radius of review?

A Approximately fifty wellbores.

Q Because of the magnitude of wellbores in the area of review, have you separated that information in terms of formations or intervals?

A Yes, and on later pages in Exhibit One the dry holes are shown on one exhibit. The wells completed in the Farmington formation are shown on another page. The Fruitland formation on a separte page, and each producing formation that has a portion of the proration unit within a half mile of this 40-acre tract are shown on individual pages representing each formation.

Q Let's turn to page four of Exhibit One, and let's use that diagram to describe for the Examiner what Kendall and Associates seeks to accomplish.

First of all would you locate for us the disposal well?

A The disposal well is the middle well on the east, or righthand side, of the tract, and this square represents the 40-acre tract of Unit G of Section 23, Township 29 North, Range 11 West.

Q What is the proposed disposal formation?

A The proposed disposal formation is the

Farmington formation. The three black dots on this are three oil wells operated by Kendall and Associates, completed in the Farmington formation, and produce only from the Farmington formation.

There are three gas wells shown on here, one identified as EPNG Hare No. 1, which is currently under the name of Meridian, Incorporated. That well is completed in the Fruitland formation as a gas well.

The Amoco Production Company Hare Gas Com B No. 1 Well is a Dakota well.

The Amoco Production Company Hare Gas Com F No. 1 is a Chacra well.

These are the only wells that are located on the 40-acre tract where the proposed injection well is located at the plot shown on the east side of the 40-acre tract there, the Kendall No. 1 Hare.

Q What's the reason the applicant is seeking to utilize this wellbore for disposal purposes?

A The applicant is the surface owner and the total production from the three wells is his total production and the cost of building an evaporation pit would utilize the total resources from about two years worth of production from this 40-acre tract.

Q Have you made an examination of an alternate means of disposal other than the disposal well, such as

the surface pit disposal?

A Yes. We considered trucking the oil to the Basin Disposal evaporation pit, a commercial service nearby. The minimal charge would be $100 for trucking fee, which is two hours; $50 for evaporation at the pit, which runs into a dollar figure of $150 for 80 barrels, which is almost $2.00 a barrel for water disposal.

That's more money than he makes off the oil.

Q What is the total daily water producing rate that would be disposed of in the disposal well? Do you have an estimate of that number?

A The average daily rate I'm told would be about five barrels of water per day. If all three wells are producing at one time, that day he may produce as much as 10 barrels of water. The average daily rate, due to down time on these little wells, would be five barrels per day.

Q Is there a pressure limitation on the disposal of this fluid into the disposal well?

A He can live with .2 of a pound per foot. He would like to gravity flow the water in the formation and thinks that the formation will accept the water on gravity from the surface, and there may be times when the porosity if the well face starts to plug up, then he may have to apply a little pressure, but if he has to exceed .2 per pound

per foot, fuel cost of pumping will be too much to -- for him to survive in the oil business.

Q Based upon your examination of the facts surrounding this application, Mr. Kendrick, do you have a conclusion as to whether or not this disposal well, as the applicant proposes to utilize it for this volume of water, is a use that is consistent with the conservation rules of the Division?

A I think it is. The water to be disposed of will be produced from this same formation on this same 40-acre tract. It will merely recycle the water among these four wells on this tract.

Q Do you have an opinion as to whether or not the method of disposal constitutes a risk to fresh water sands in the area?

A In my opinion it would not constitute a risk to the fresh water.

Q Have you studies the geologic environment in the area to determine whether there's any open faulting, hydrologic connections of any kind between the disposal interval and shallow fresh water sands?

A I've studied the interval for several years and I find no evidence of faulting or of fracturing in this area that would communicate this disposal formation with any of the shallower formations.

Q Let's turn now to the diagram of the injection well, which I believe is found on exhibit page number five, and have you describe for the examiner the disposal well.

A The total information we have about the disposal well was from a Bureau of Mines card showing the well was drilled in 1938, completed in 1939 at a total depth of 755 feet.

At some time back in the late thirties or early forties the well was plugged and abandoned.

The well was located as a plugged and abandoned wellbore in the middle 1950's and in 1958 James B. and Otto Reynolds cleaned out whatever plugging was in the well to a total depth of 735 feet. Their report indicated that they thought the well was cased with 6-5/8ths inch casing to 710 feet.

We have no evidence of amount or volume of cement that was placed behind the pipe at the time the well was drilled.

Q Should the Division approve this well for disposal purposes, what procedures will take place after approval and before injection in order to equip this well in such a way that it's suitable for disposal?

A Because of the operation in the No. 2 Well, which is 330 feet south of this, that well was success-

fully acidized without casing failure about one or two years ago. It's believed by the operator that the existing casing in this Well No. 1 is still in good shape and that it is completed only into the Farmington formation; therefore we would test the integrity of the casing as is there and attempt to gravity feed the water into the wellbore.

Q Is this an area in which the Farmington formation contains produced water that's corrosive or detrimental to the casings?

A Apparently it's not corrosive because this casing has been in the ground for approximately 50 years. The offset well owned by Meridian was drilled in the middle fifties. Apparently there's no cement across the Farmington formation in that wellbore. It has not had a casing failure and that casing's been in the ground for approximately 30 years.

Excuse me, therefore the answer to your question is the water is not corrosive.

Q Do you believe it would be necessary to take remedial action on offsetting wells that do not have cement across the casing string in the Farmington interval?

A In my opinion it would not be necessary to cement the other strings on offset wells and that our proposed injection or recycling of the water would not cause water to flow toward anyone else's well except toward the

Amoco wells and Amoco's pattern was to attempt to circulate cement on each string of casing.

I believe that Amoco did cover the Farmington formation in their wells, which are to the west of the injection wells and they're the producable wells.

Q Will the re-injection of the produced water back into the Farmington formation in this well re-pressurize the Farmington formation?

A I don't think so. The formation's been producing from Wells No. 1 and 2 and No. 3 since before 1960 and therefore there should be a substantial void in that formation for whatever volume has been removed during the thirty-five or thirty years since wells started producing.

We would be putting the water back into that same void.

Q Let's turn to Exhibit Number Six, now, Mr. Kendrick, and have you identify and describe that exhibit.

A Page -- page --

Q Starting with Page 6, please.

A Page Six and Page Seven is a list of the wells that are shown on the later plats in there, being wells within a half mile of this 40-acre tract, including the nine wells on the tract, nine or ten wells that are on the 40-acre tract.

Q What's the source of this information that's on the tabulation?

A This is all the informaton that we could determine from the records in the Aztec Office of the Oil Conservation Division.

Q All right, sir, if you'll turn to Page Eight and identify and describe the information on that page.

A Page Eight is a data sheet showing the name and location and the well data that we know about the injection well, and a list of all of the current operators of wells within one-half mile of this 40-acre tract, showing the formation from which these operators produce their wells.

Q Were the offset operators within a mile of the disposal well notified of the application?

A Yes, sir.

Q All right, sir, let's turn to Page Nine and have you identify that one for us.

A Page Nine is a plat showing the 40-acre tracts. The Unit G of Section 23 is the center 40-acre tract.

This shows the dry holes on each of these 40-acre tracts as reflected in the records of the Oil Conservation Division.

There are two wells that are shown on later reports as producable wells, which I would bring to your attention as being dry holes, that are not shown on this plat.

Q All right, let's go to Page Ten.

A Page 10 represents the Farmington formation and is the same area. Each of the 40-acre tracts has the unit letter shown except for the Unit letter G in the subject 40-acre tract.

The injection well is shown and all producing wells from the Farmington formation are shown on Page Ten.

Q All right, sir, and Page Eleven?

A Page Eleven shows all the wells completed in the Fruitland formation.

In the Unit letter I of Section 23, the southeast offset from the injection 40-acre tract, the Roy Cook Davie No. 1 has been plugged and abandoned and is not shown on the other plat as a plugged and abandoned well.

Q Page Twelve.

A Page Twelve shows the Pictured Cliffs formation.

Excuse me, let me back up to this other plat.

In Unit L of Section 24 on the Fruitland

plat there should be a well plugged and abandoned which is shown on the list on Page Seven as Manana Gas, Incorporated, Davie No. 1, and when this plat was constructed it was in the process of being changed from dry hole status or plugged and abandoned status to a producing status, and therefore got omitted on both plats.

On Page Twelve the Pictured Cliffs formation, the only proration unit which offsets the injection tract is to the east and the well is in Unit letter F of Section 24.

On Page Thirteen the Chacra wells are shown, identified by operators, and are spotted to be in the proper unit letters for the various formations, and at the top of the page you'll notice some are offsetting the 40-acre tracts shown on the plat but the proration unit is -- a portion of the proration unit is included within the half mile circle.

Q And Page Fourteen is the Dakota formation.

Q All right, sir, let's go to Page Fifteen and have you describe the purpose of this exhibit.

A Page Fifteen shows the wells on the Unit letter G and the footage distances from the proposed injection well to each of the other wells on this 40-acre tract.

The three wells with the black spots

being the Kendall and Associates Hare No. 2, 3, and 4, would be the producing wells to which we would recycle the injected water.

Q Have you obtained a water analysis of the produced water in the area?

A A water analysis was run in December of 1985 on the produced water and it is shown on a report on Page 16, done by UniChem International.

It shows the total dissolved solids as 13,624. The sodium at 4,857 ppm; chlorides at 8,000 ppm, which utilizes most of the 13,000 parts per million.

Q Do you have available a water analysis on any of the drinking water within a mile of the disposal well?

A No, sir.

Q What is your understanding and belief about the depth of any fresh water sources in the area?

A All of the fresh water sources would have to be shallower than the Ojo Alamo formation, which overlies the Farmington formation in this area, because the waters below the Ojo Alamo formation are all too saline to use as domestic water.

And in this area the preferable use -- preferable source of drinking water is from the San Juan River. This is in the San Juan River Valley.

Q Do you have an opinion as to whether this disposal in this formation serves as a risk to the groundwater in the river?

A In my opinion this will not affect water in the river.

Q Now, starting withn Page Seventeen through the rest of the exhibit book, through Sixty-Seven, would you describe generally what you have done?

A I drew some pattern cross sections and made several Xeroxed copies of each and attempted to show the casing, hole size, cement and calculated 100 percent fill-up for any cement that we had information on.

On part of these I tried to type in X's to identify cement on these formations and found that to be too time consuming so I started using the Magic Marker, so there are two different patterns of identification for cement in this.

Some of these schematics, the only information we have is the total depth of the well, so there is no definition or no entry into the positions for hole size, casing size and depth, or height of cement.

This is all the information we have on these wells.

At the name of the well at the top of the page I did attempt to identify the date the wells were com-

pleted when we have no further information.

If the well is still a producable well, I did not show the completion date but for the antiques I did not -- where I had no other information to show, I did show the date of the well's being drilled and completed.

Q Mr. Kendrick, do you have an opinion as to whether or not if this application is approved the applicant will be afforded the opportunity to produce oil from this formation that he would not otherwise be able to recover?

A Yes. If this application is denied, the operator's only recourse is to plug these wells.

Q Approximately what per barrel volume of produced oil does the applicant produce from the three wells on a yearly basis?

A I haven't calculated that on a yearly basis, but apparently he's producing about two barrels of -- two to three barrels of oil per day and his water rate is to average about five barrels per day.

Q Do you have any estimates of the remaining productive life of the three producing wells if the disposal well is approved and utilized?

A No. Since -- since these wells were never large volume producers and they're holding in there at the range of about three barrels per day for the three

wells, they may produce for another ten or fifteen years.

Q Was Exhibit One and all the parts contained therein compiled by you or compiled under your direction and supervision?

A Yes.

Q In your opinion, Mr. Kendrick, will approval of this application be in the best interests of conservation, the prevention of waste, and the protection of correlative rights?

A Yes, sir.

MR. KELLAHIN: Mr. Examiner, we move the introduction of Kendall and Associates Exhibit Number One.

MR. CATANACH: Exhibit Number One will be admitted into evidence.

CROSS EXAMINATION

BY MR. CATANACH:

Q Mr. Kendrick, are there no fresh water wells in the area?

A I checked through the Bureau of MInes Hydrologic Reports and found none.

There are several houses in this area. The City of Bloomfield has a rural city-type water supply system of treated water and any water well that would be

drilled in this area would be drilled in the river valleu alluvium and would be utilizing essentially river water that's underground.

Q What records did you examine to determine that the fresh water or the depth of the fresh water in the formation, or did you determine that?

A The only known fresh water in the San Juan Basin has to be above the Ojo Alamo formation, and the Ojo Alamo formation here is about 600 feet or less, less than 600 feet. The Farmington starts at about 600 feet in this area.

Q Mr. Kendrick, how would you propose to test the casing in the well?

A We'd run a string of casing -- excuse me, a string of tubing with a packer and set the packer near the bottom of the casing and pressure at the back side.

Q Would Kendall and Associates also be willing to repair the casing if they found it to be in bad shape?

A If the casing appears to be in bad shape we'll abandon the whole project.

Q Mr. Kendrick, what does the Ojo Alamo consist of?

A The Ojo Alamo is a sand to gravel facies of deposits, which is essentially blanket sands, across the

San Juan Basin, but they do contain waters and are exposed to the south and west of the San Juan Basin, and in the south and west from the -- south from the San Juan River. The further south one encounters the formation, the cleaner the water is, but from the San Juan River north, the water has too much sulfates to be usable even for stock water.

Q Do you have any idea what the water analysis from the Ojo Alamo would be?

A It would all depend on how far from the outcrop that you took the sample.

The Ojo Alamo formation only outcrops in two places where it is vented. That is in the San Juan River about seven miles west of Farmington and in the Animas River about five miles southwest of Aztec.

It does not outcrop further north and to the east, so the wells close -- the water in the deeper part of the formation cannot be exchanged because the saline water is heavier than the fresh water that runs in the outcrop to the south, and so the formation only vents out into the two river valleys and let's the water clean up to the outcrop. The further down dip you go the saltier the water is in the Ojo Alamo formation.

Q So I imagine it has pretty good porosity and permeability?

A In most places it does, yes.

Q Is it possible that the injected water into the Farmington formation could migrate up through the Ojo Alamo?

A I don't think that it can under gravity flow. The Ojo Alamo does flow by -- in wells on the south side of the San Juan River, and has been used periodically by some of the ranchers as stock water, but on the north side of the river it's too salty to use as stock water.

We would gravity flow the produced water back into the Farmington formation into the voids that have been created over the approximately thirty years of production from that formation on this same 40-acre tract.

Q Was this proposed disposal well, was that produced at all?

A Yes, it's been produced since 1959, 1958 or '59 when it was cleaned out by the Reynolds organization.

Q You stated earlier that you didn't know what the economic limit of the other three Farmington wells would be?

A We don't know how long that we can gravity dispose of the water into this, but if we encounter problems that an acid job will not solve, we'll have to go out of business as far as the oil business is concerned, and plug these wells.

Q What are you currently doing with the

water?

A I think it's been just put into a pit to hope that it evaporates. Some of it's probably been percolating into the ground.

Q Do you have any idea, Mr. Kendrick, what the water saturation would be currently in the Farmington formation in that general area?

A No, sir.

Q Do you have any estimates of what horizontal area might be affected by your injection?

A Since we intend to just recycle the formation -- cycle the water in this 40-acre tract, just what's identified between these wells on this Farmington plat on page -- I think it's on page ten -- would be the only area involved.

Q Okay. With the volume of water you propose to inject, you're saying that you think that that's the only area that will be affected, that 40-acre tract?

A Yes. All the water that would be injected is produced on this same 40-acre tract. We'd be merely recycling the same water on this tract.

Q Well, I understand that, Mr. Kendrick, but you don't know where that water is going to go.

A That's true, but since it comes to these producing wells now, I don't see any reason for it to go

somewhere else.

Q Is there any pressure on the Farmington formation at all?

A I really don't think so. There's not enough pressure there to cause these wells to flow. They've had to pump these wells since 1958.

Q Would that -- would the Farmington formation in the disposal well be up structure from the producing wells or is it pretty well --

A The producing intervals in the Farmington formation are deltaic, lens-type sand deposits within the shale body, and they are not correlative for as much as a half mile, to be in the same lens a half mile away.

It's my belief that the gas well shown in the -- near the center of Unit H offsetting it to the east is completed in a different lens than the oil wells that are pumping in Unit G, and therefore not connected.

Q The proposed injection would be -- would that be down tubing?

A We believe that we can safely and efficiently gravity it down the casing without even leaving the tubing in the well.

If -- if it's required, we would put tubing in the well.

Q But you stated that you didn't think that

water was corrosive.

A That's true.

Q With 13,000 TDS?

A That's true.

Q What was that based on?

A Based on the fact that this casing has been in this well and in the offset well for fifty years without casing failure, without any apparent casing failure.

Q That you know of, right?

A Right. Now the offset well was treated with acid and they pressured the acid into the formation and did not wind up producing water. They produced oil after -- after the acid job, so apparently it didn't open up the shallow -- any aquifers that might be behind the pipe.

Q Mr. Kendrick, were the offset operators notified?

A Yes, sir.

Q Do you have any proof of notification?

A No, sir.

Q Were they supplied a copy of the application or were they notified by letter?

A They were notified by a copy of the application from the legal office, those shown on page eight.

MR. KELLAHIN: Mr. Examiner, I think your files will reflect our letter dated December 23rd

of '86 in which we have shown offset operator notification pursuant to the application, which sets forth the offset operators.

A If I might add, at the time this first -- this case was first called four weeks ago, I telephone notified all of the operators that the case would not be heard at that time to eliminate excessive cost to them, to anyone to come and appear and object, so that they were also notified that that case would not be heard at that time and that it was rescheduled.

Q Do you feel that volume of water is insufficient to reach of the other wellbores that you don't know anything about?

A Yes. I think we're just going to recycle it right there on the -- probably on 5 or 7 acres here.

Q Has the water production from the -- from the three wells, three Farmington wells located in that quarter section, has that pretty much been stable for quite a period of time?

A The information I've been given is to the effect that it is remaining relatively constant.

Q So you don't -- you don't think it will go up, the water production?

A Not tremendously. He can't afford to handle much more water. His total production in 1986 was 724

barrels of oil from the -- all the wells.

The -- if you refer to the plat of Farmington wells on page ten, the gas well in Unit letter H, the Orion Allen Seitzinger No. 1 is used for domestic use only, so that well will not create any pressure decline over there to cause the water to flow in that direction.

To the north the Hare No. 1 is pumped periodically. It is within a half block or so of the highway that runs through that area and I drive by there quite often and the last three months I have not seen the pumpjack operating on that well.

And these are the only two wells within a half mile of this thing that would cause any kind of problem.

MR. CATANACH: I have no further questions of the witness.

He may be excused.

Is there anything further?

MR. KELLAHIN: Excuse me, Dave's got a question.

MR. CATANACH: Oh, I'm sorry.

MR. BOYER: I have to ask a few questions as to this.

MR. CATANACH: Please identify yourself for the record.

MR. BOYER: My name is David Boyer and I'm a hydrogeologist with the Division and I'm with the Environmental Bureau.

I have a couple of questions of Mr. Kendrick just real quick here.

QUESTIONS BY MR. BOYER:

Q Did you indicate on the proposed well whether there's any surface casing in that well?

A We don't know.

Q You don't know if there's any --

A There is no record.

Q There's no record and there's no visual evidence that there's a surface casing at the location itself, the well site itself?

A I have not examined the wellhead to see if there's anything out there, but if there is, we don't have any identity of the size, depth, or cement, or any surface casing.

Q So that would be all found out as part of the remedial action if the permit is approved?

A No, sir, we cannot go find surface pipe.

MR. GHOLSON: Al, there is surface pipe in the wellbore.

Q And that answered that question. I was

wondering, Mr. Kendrick, if -- if you had any total dissolved solid value for the Ojo Alamo formation water in that are? Did you -- did you mention that you had a TDS for that water in that area or not?

A No, we do not have anything for the Ojo Alamo water in that area.

Q Did Dr. Stone's report, the report you referenced there, did that have anything for specific conductants (sic) or anything that could be used as an indication of total dissolved solids in that area?

Did you check -- was that checked by --

A I checked his report and he had no information on any well within two miles. There were two wells about two miles away that were abandoned at the time they were drilled.

Q In the Ojo Alamo.

A In the Ojo Alamo, and one about two and a half miles away and the quality of the water was a statement or a remark that it was too salty to use, or something like that, was the only indication of any quality of the water.

Q No numerical.

A Right.

Q When you looked for shallow domestic wells when you made the review in this -- in Dr. Stone's report, did you also utilize the U. S. Geological Survey re-

port that's in 1984 on additional domestic wells in the area?

A No, sir.

Q You did not? Have you been to the site yourself?

A Yes.

Q What is -- do you know offhand what the approximate shallow groundwater depth is that way -- in other words, I'm talking about the depth of water in the very shallow alluvium in that particular area?

A This well is about -- on the Bloomfield Quadrangle this is about -- about one and a half contour lines above the river level.

Q I don't know what the contour interval is.

A I don't know whether --

(Thereupon a discussion was had off the record.)

A I don't have a copy of the Quadrangle with me that has the code at the bottom of the page there, but the source water in that area would be in the river alluvium.

Q Right. I agree. Do you have a copy of your pit registration form for that particular location?

A No, sir.

Q I was wondering if you had any plans for what your surface facilities might be to -- if the application is approved, in the way of storage or an emergency overflow or anything like that.

A He's agreed to put a surface tank to catch the separator discharge and gravity feed from the surface tank into the wellbore.

Q Is it going to be an above ground tank, then?

A Yes, above ground tank.

MR. BOYER: I have no further questions.

MR. GHOLSON: I'd like to make one statement.

Al, you are aware of the well over on the -- the water well on the old Gale place that was drilled to the Fruitland, I believe, and converted to a water well by Emory Arnold? At least he signed the affidavit of responsibility.

You know about it?

A Yes, sir.

MR. GHOLSON: Is it an Ojo Alamo well?

A No, it was completed in the Farmington

formation and was plugged back and I don't know whether the landowner has every perforated it as a water well. It was, at the time it was plugged, there was a bottom hole plug set in the well and no shallower plug was set and left the casing available for the landowner to perforate and complete it as a water well at his option.

MR. GHOLSON: It is an artesian well; I've been out by there before, and the water is probably not usable for human consumption but it is okay for livestock.

A It's probably from the Ojo Alamo, then.

MR. GHOLSON: That's all I have.

A The Ojo Alamo is the only formation in that area that I know that would be artesian.

MR. CATANACH: Are there any other questions of the witness?

He may be excused.

Is there anything further in Case 9066?

MR. KELLAHIN: No, sir.

MR. CATANACH: If not, it will be taken under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY the foregoing Transcript of Hearing before the Oil Conservation Division (Commission) was reported by me; that the said transcript is a full, true, and correct record of this portion 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. 9066, heard by me on February 18 1988.

David R. Catanach, Examiner
Oil Conservation Division