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

13 March 1985

EXAMINER HEARING

IN THE MATTER OF:

Application of Conoco, Inc., for salt water disposal, Lea County, New Mexico.	CASE 8527

BEFORE: Gilbert P. Quintana, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division:	Jeff Taylor Attorney at Law Legal Counsel to the Division State Land Office Bldg. Santa Fe, New Mexico 87501
For the Applicant:	W. Thomas Kellahin Attorney at Law KELLAHIN & KELLAHIN P. O. Box 2265 Santa Fe, New Mexico 87501

I N D E X

RONALD McWILLIAMS

Direct Examination by Mr. Kellahin 4

E X H I B I T S

Conoco Exhibit One, C-108 5

Conoco Exhibit Two, Plat 6

Conoco Exhibit Three, Table 7

Conoco Exhibit Four, Schematic 8

Conoco Exhibit Five, Schematic 8

Conoco Exhibit Six, Schematic 9

Conoco Exhibit Seven, Schematic 9

Conoco Exhibit Eight, Pressure Information 10

Conoco Exhibit Nine, Water Analysis 10

Conoco Exhibit Ten, Water Analysis 10

Conoco Exhibit Eleven, Water Analysis 11

Conoco Exhibit Twelve, Water Analysis 11

Conoco Exhibit Thirteen, Water Analysis 11

Conoco Exhibit Fourteen, Water Analysis 11

Conoco Exhibit Fifteen, Water Analysis 11

E X H I B I T S

Conoco Exhibit Sixteen, Water Analysis	11
Conoco Exhibit Seventeen, Tabulation	12
Conoco Exhibit Eighteen, Log	12
Conoco Exhibit Nineteen, Log	13
Conoco Exhibit Twenty, Water Analysis	13
Conoco Exhibit Twenty-one, Schematic	14
Conoco Exhibit Twenty-two, Schematic	14
Conoco Exhibit Twenty-three, Schematic	15
Conoco Exhibit Twenty-four, Schematic	15
Conoco Exhibit Twenty-Five, Receipts	15
Conoco Exhibit Twenty-six, Public Notice	16

MR. QUINTANA: We'll call next Case 8527.

MR. TAYLOR: Application of Conoco, Inc., for salt water disposal, Lea County, New Mexico.

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. QUINTANA: Are there other appearances in Case 8527?

If not, sir, would you please stand up and be sworn in?

(Witness sworn.)

RONALD McWILLIAMS,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q All right, sir, would you please state your name and occupation?

A My name is Ronald McWilliams. I'm a Senior Staff Engineer for Conoco.

Q Mr. McWilliams, have you previously testified before the Oil Conservation Division as a petroleum engineer?

A Yes, sir.

Q And had your qualifcations accepted and made a matter of record?

A Yes, I have.

Q Mr. McWilliams, pursuant to your employment by Conoco, have you compiled and prepared the application C-108?

A Yes, I have.

Q And have you made a study of the facts surrounding this particular application?

A Yes, I have.

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

MR. QUINTANA: He is considered and expert petroleum engineer.

Q Mr. McWilliams, let me direct your attention to what we have marked as Exhibit Number One, which is the plat attached to the C-108, and ask you to identify, sir, what Conoco seeks to accomplish with this application?

A Conoco is presently disposing of their produced water from the Cruz Delaware Field in the Field's No. 1 -- or No. 2 Well, located in Section 25 on this plat and identified by a green arrow.

This well has mechanical problems and it

has become necessary for us to seek another disposal well.

So we are asking for authority to convert our Marshall No. 2 Well in Section 19 to salt water disposal service. This is a former oil well that is now shut-in.

Q In the event the re-entry and utilization of the Marshall No. 2 Well is not suitable for disposal purposes, do you have a request of the Examiner for an alternative well?

A Yes. We would like to have the Marshall No. 1, also a shut-in oil well, designated as an alternative to the No. 2 Well.

Q All right, sir.

A In the event that --

Q When we look at Exhibit Number Two, Mr. McWilliams, would you identify for us the wells that are shown within the half mile radius of review?

A Within the half mile radius of review all of the wells with the exception of the Brininstool Unit No. 3, which is the easternmost well in Section 19, are wells that are either dry or -- or producing wells in the Cruz Delaware Pool.

The Brininstool Unit Well is a deep dry hole. It was drilled to the Devonian.

Q What will be the source of the water produced that will go into this disposal well?

A It will be produced water from the Cruz Delaware Pool.

Q Can you identify generally what the area is that those wells are that produce this Delaware water?

A The wells are shown in the half mile radius circles that have been drawn around the Marshall Nos. 2 and No. 1, and those represent the area where Conoco's produced water comes from.

Conoco is the only operator within the area of review.

Q Can you describe for us the approximate volumes of produced water that will be disposed of in this well?

A We expect to dispose of approximately 500 to 560 barrels of water per day.

Q Would you give us some of the history behind the two Marshall wells that you propose to use in the alternative for disposal?

A Both of these wells were originally drilled as oil wells in the Cruz Delaware Pool and have been produced and are now shut-in because they are no longer economical to produce.

Q Can you give us the approximate dates at which each of those wells were shut in?

A The No. 2 Well was shut-in in September of 1982 and the No. 1 Well was shut-in in June of 1976.

Q All right, sir, let's turn to Exhibit Number Three, now, and have you identify that.

A Exhibit Number Three is a table of well

data from all wells within the area of review and it supplies the information requested on Form C-108.

Q Within the information contained on Exhibit Number Three, have you located the various setting depths on the casing and the cement tops?

A Yes, they are given under the column entitled Casing, where it shows the size and depth.

Q All right, sir. Let's turn to Exhibit Number Four and have you identify that for us.

A Exhibit Number Four is a wellbore schematic showing the plugging procedure used in Conoco's Marshall No. 3, a dry hole within the area of review.

Q When we look at the area of review map, I notice two dry holes in Section 19, each with the number three on it. Which one is the Marshall No. 3?

A The Marshall No. 3 is the westernmost well. It is located 660 from the south and 1910 from the west line.

Q In your opinion, Mr. McWilliams, has this wellbore been properly plugged and abandoned?

A Yes, it has.

Q All right, let's go, then, to the next P&A schematic, which is Exhibit Number Five and have you identify that one.

A Exhibit Number Five is the wellbore schematic showing the plugging procedure used on Conoco's Marshall No. 4, a plugged and abandoned oil well.

Q If you'll look on the Exhibit Number Two, within the area of review would you locate for us the Marshall No. 4 Well?

A The Marshall No. 4 Well is located 1980 feet from the south and 625 feet from the west line of Section 19.

Q All right, and is this wellbore properly plugged and abandoned?

A Yes, it is.

Q All right. Let's go to Exhibit Number Six and have you identify that one.

A Exhibit Number Six is a wellbore schematic showing the plugging procedure used for Conoco's Brininstool Unit No. 3, a Devonian dry hole.

Q All right, sir, and is this wellbore properly plugged and abandoned?

A Yes, it is.

Q All right, now let's turn to Exhibit Number Five and have you describe this schematic.

A You mean --

Q I'm sorry, we're on Number Seven. Seven is the Fields Federal No. 1.

A Right. Exhibit Seven shows the plugging procedure used on H. L. Johnston's Fields No. 1 Well. This well is located in -- 1650 feet from the south line and 330 feet from the east line of Section 24.

Q All right, sir, and in your opinion is

this wellbore also properly plugged and abandoned?

A Yes, it is.

Q All right, sir, let's go to Exhibit Number Eight now, and have you go through with the Examiner the proposed injection rates and pressures.

A All right. Exhibit Number Eight shows our anticipated injection rates, which range from 21 barrels of water per hour to 24 barrels of water per hour.

It also shows our anticipated daily injection volume to be 500 barrels of water per day with our maximum rate at about 560 barrels of water per day.

It states that our injection system will be closed and it shows that our anticipated average injection pressure will be about 400 pounds, and our proposed maximum injection pressure is 1021 pounds, which represents 0.2 of a psi per foot of depth to the Ramsey Sands.

Q All right, sir, would you identify Exhibit Number Nine?

A Exhibit Number Nine is a water analysis from our Marshall No. 2, the proposed salt water disposal well. It was taken several years ago when it was a producing well in the Cruz Delaware Field.

Q Exhibit Ten?

A Exhibit Ten is also a water analysis from the Marshall No. 1 Well, our alternative well that we're requesting, and it was also taken at the time it was a producing well in the Cruz Delaware Field.

Q All right, sir, and Exhibit Eleven.

A Exhibit Eleven is a water analysis from our Marshall No. 5 Well, a producing well in the area, and it shows it's from the Ramsey Sand.

Q And Exhibit Twelve?

A Is a water analysis from our Marshall Well No. 6 from the Ramsey Sand interval.

Q And Number Thirteen?

A That's a water analysis from the Marshall Well No. 7, also producing from the Ramsey Sand.

Q And Exhibit Fourteen?

A Is a water analysis from our Marshall Well No. 8, also a producing well in the Cruz Ramsey Sand.

Q All right, and Fifteen?

A Fifteen is a water analysis from our Fields Well No. 1, a producing well, also producing from the Ramsey Sand.

Q And Sixteen?

A Sixteen is a water analysis from our Fields No. 4, another producing well in the Ramsey Sand.

Q All right, sir, and Exhibit Number Seventeen.

A Seventeen?

Q Seventeen, yes, sir.

A Okay. Before we move to Exhibit Seventeen, I might mention that these wells, all waters are from the Ramsey Sand. Their analyses show them to be

similar so we anticipate no compatibility problem for the water.

Exhibit Number Seventeen is a tabulation showing geological data of the disposal zone. It indicates that we are going to be disposing water in a sandstone. It will be a Ramsey Sand member of the Bell Canyon series in the Upper Delaware Mountain Group, and the sandstone is usually very fine grained in this interval and there are also some siltstones.

It indicates that the Ramsey Sand injection zone is approximately 87 feet thick in the Marshall No. 2 Well and that the top of this zone is at 5095 and the base is at 5082.

It also indicates that there are no fresh water zones below the producing interval of the well and it also indicates there are no -- or is no overlying aquifer; however, there are isolated instances of fresh water occurring in sand lenses.

Q All right, sir. let's go to Exhibit Number Eighteen.

A Exhibit Number Eighteen is a log on our Marshall No. 2 proposed SWD well. It shows the existing perforations in the well from 5005, 5105 to 5109, indicated by the block.

The arrows shown on this log are our proposed perforations that will be added when we convert the well to disposal.

Q Would you describe for us what is the thinking about the Marshall No. 2 Well that necessitates using the Marshall No. 1 as an alternative?

A Well, there is some indication from log analysis that there may be some additional oil below the present perforated interval, and it is our intention after perforating this well to production test it to see if there should be some additional oil, and in the event that it's determined to be productive at a commercial rate, then we would request permission to use the No. 1 Well.

Q All right.

A But if it's noncommercial, we'll use it for disposal.

Q All right, and Exhibit Nineteen?

A Exhibit Nineteen is a well log of the Marshall No. 1, alternate well, which shows the preent producing interval in that well and we have not added any proposed perforations to this well.

Q All right, Exhibit Number Twenty?

A Exhibit Number Twenty is a water analysis from a shallow fresh water well, located approximately 2/10ths of a mile west of our Marshall No. 2.

This well is completed in a sand at approximate depth of about 650 feet and the water from this well was used for drilling operations on the lease and for lease operations. It is also used occasionally by the rancher.

Q How far away is this from the disposal well?

A 2/10ths of a mile west.

Q Okay. Let's go to the wellbore schematic for the Marshall No. 2 Well and have you describe what you will do for the conversion of this well into a disposal well.

A Exhibit Number Twenty-one shows the present completion of the Marshall No. 2 Well and Exhibit Twenty-two shows the condition of the Marshall No. 2 Well after it will be converted to injection.

We plan to run plastic-coated tubing into the well and set a packer above the injection zone in that well.

Exhibit Twenty-two also provides the requested data on -- that is requested in Form C-108.

Q In your opinion, Mr. McWilliams, is the method of recompletion of this well for disposal one that will cause the produced water to be disposed of and remain confined in the disposal interval and not pose a risk to any shallow fresh water sands if there are any present?

A Yes.

Q All right. Let's go to the schematic for the other well.

We have the existing plugging on the No. 2, which is Exhibit Twenty-one. Exhibit Twenty-two then is the recompletion?

A Yes. that was how the well will look after we convert it to the disposal.

Q All right.

A Exhibit Twenty-three--

Q Let's go to Twenty-three then.

A --Exhibit Twenty-three shows the present condition of our Marshall No. 1 well.

And Exhibit Twenty-four shows the condition of the Marshall No. 1 well if we convert it to salt water disposal.

Here again we're planning to use plastic coated tubing and we'll set a packer above the injected part.

Q And you'll fill the annular space between the casing and the tubing with inert fluid--

A Yes.

Q --and have a pressure gauge at the surface?

A That's correct.

Q All right.

Was the owner of the surface at the--either one of these locations notified of the hearing?

A Yes, they were.

Exhibit Twenty-five is a copy of our certified mail receipts showing that the surface owner and the royalty owner in this case were both notified.

Q All right.

And Conoco is the offset operator within the half-mile radius?

A Yes. Conoco is the only operator.

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

A Yes, it will.

Q Are you aware of any hydrologic connections that would cause fluids disposed of in this formation to migrate into any possible fresh water sands?

A No. We don't think there are any hydrologic connections.

MR. KELLAHIN: The surface owner and the royalty owner were notified, Mr. Taylor, with a copy of this letter which I am giving you for your file.

MR. TAYLOR: Okay, thank you. Can we just keep this one?

MR. KELLAHIN: Yes, sir.

That concludes our presentation. We move the introduction of Exhibits One through Twenty-six.

MR. QUINTANA: Exhibits One through Twenty-six will be entered as evidence.

I have a question. Mr. Carr--Mr. Kellahin?

MR. KELLAHIN: Sir.

MR. QUINTANA: Mr. Kellahin, is it your client's contention that they would like an order asking for permission to inject into both wells or in an alternative--I mean, I guess what I'm asking--what I'm trying to get at is do you want the order to say right away one well and then on the alternative the other well or do you want--do you want me to give you time to go ahead and perf that first well and test it and see if there's production and then just issue an order on one well or the other?

MR. KELLAHIN: Let me ask Mr. McWilliams.

Would you prepare--prefer an order that authorized the No. 2, and have it written in such a way that if it is not commercial of oil then you'll have the right to use No. 1? Or do you want him to simply wait until you test the No. 2 and then grant you whichever order you need?

A I think we would prefer an order giving us the alternative to go ahead with No. 1 well in the event that the No. 2 does prove to be a commercial well.

MR. KELLAHIN: Let me prepare a draft order, if you like.

MR. QUINTANA: I had something in mind but that would be fine.

MR. KELLAHIN: All right.

A The reason, Gilbert, being that when we have the rig on No. 2 we'd like to just move right on to No.

l using the same rig.

MR. QUINTANA: Would you like this order expedited?

MR. KELLAHIN: In your usual fashion, Mr. Examiner.

MR. QUINTANA: Are there further questions of the witness?

If not, he may be excused.

Case 8527 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 that the foregoing Transcript of Hearing before the Oil Conservation 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

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