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

5 September 1984

EXAMINER HEARING

IN THE MATTER OF:

Application of Tenneco Oil Exploration and Production for salt water disposal, Lea County, New Mexico.	CASE 8332

BEFORE: Gilbert P. Quintana, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division:	Charles E. Roybal Attorney at Law Energy and Minerals Dept. 525 Camino de Los Marquez 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

E X H I B I T S

MR. QUINTANA: We'll call next Case Number 8332.

MR. ROYBAL: Case 8332. Application of Tenneco Oil Exploration and Production 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.

(Witness sworn.)

MR. KELLAHIN: Mr. Examiner, pursuant to the rules of the Oil Conservation Division, we have previously submitted Form C-108 to the Commission. We intend to use that exhibit, or that form as an exhibit in this hearing, and I have given you another copy of that completed C-108.

LETTY SAMUDIO,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Would you please state your name and oc-

cupation?

A Sure. My name is Letetia Samudio and I'm a production engineer with Tenneco Oil Company.

Q Ms. Samudio, would you explain to the Examiner when and where you obtained your degree in engineering?

A I received a Master of Science degree in petroleum engineering in 1983 from the University of Texas at Austin.

Q Subsequent to graduation, Ms. Samudio, have you been employed as a petroleum engineer?

A No.

Q Have you been employed as an engineer with any of the companies?

A No, I haven't.

Q All right, what is your employment with Tenneco, then?

A Well, I am a production engineer at this time.

Q All right. As a production engineer when did you start your employment with Tenneco?

A January of 1983.

Q All right, and what are your duties as a production engineer for Tenneco?

A I am what is known as an area engineer in charge of daily production operations for an area in southeast New Mexico and a small section of West Texas.

Q Does that area of responsibility include Lea County, New Mexico, and the subject of this application?

A Yes, it does.

MR. KELLAHIN: We tender Ms. Samudio as an expert production engineer.

MR. QUINTANA: Ms. Samudio is considered an expert production engineer.

Q Ms. Samudio, let me direct your attention to the Form C-108, if you please, and if you'll turn to the plat attached in the package of exhibits and identify by name and location the proposed salt water disposal well that Tenneco desires to use.

A Okay. The proposed well that we intend to convert to salt water disposal is the Jennings Federal No. 1. It's in Section 14, Township 24 South, Range 32 East. It's in Section C -- it's a --

Q Unit.

A It's in Unit C of Section 14, right in the center of that half mile circle on the plat.

Q While we're looking at the plat, Ms. Samudio, have you scribed on that plat a half mile radius circle?

A Yes, that's what that circle is.

Q Would you also identify for the examiner the producing wells in the immediate area that will produce water that will be disposed of in the well?

A Okay. We will be disposing of produced

from the Jennings Federal No. 4, which is right at the outside of that circle.

Q To the south edge?

A To the south edge.

Q All right.

A Okay, from the Jennings Federal No. 2, which is in the very southwest corner of --

Q Of 14?

A -- of Section 14, and from the Ernest Federal No. 1, which is in the very northwest quarter of Section 23.

Q These are all producing wells that produce from the Delaware formation?

A That is correct.

Q And you're going to dispose of the produced Delaware water into the subject well in the Delaware formation?

A That's correct.

Q All right. Now, within the half mile radius area of review, have you found any producing or plugged and abandoned wells?

A There are two wells, one of which is a producing well. It's the -- let's see, on the next page -- Gulf Hanagan Federal No. 2, which is an oil well. It's in Section 11.

Q It's in the section to the north of the well and it's the northeast offset to your well location?

A Right.

Q Okay, it's in Unit letter O of Section 11?

A Of Section 11, correct.

Q All right, that is a producing well?

A That is a producing oil well.

Q All right, where is the other well?

A The other well is a plugged and abandoned well. It's the Jennings Federal No. 3, and it's just to the east of the Jennings Federal No. 1 in Section 14.

Q Okay. Ms. Samudio, let's turn back to the wellbore schematic of the subject disposal well in the package of exhibits, and have you describe for us the way the well is currently completed.

A The well currently has 2-3/8ths inch tubing. It has rods and a rod pump and it was producing up until about a month ago.

We intend to pull the 2-3/8ths tubing and run in the hole with plastic-coated 2-3/8ths tubing and a plastic-coated Geiberson Uni-Pack 1 packer.

We would set the packer. It's a tension-set packer about 100 feet above the perfs.

Q All right, let's turn back to the page that precedes this schematic and have you identify for us what will be the injection or disposal interval in terms of footages.

A Okay, the injection interval is in the

Delaware zone. It's at 4956 feet to 4970.

Q In your opinion as a production engineer is the Jennings Federal No. 1 Well completed in such a way or will it be completed in such a way as to confine the water disposed of in the Delaware to the Delaware formation?

A Yes, we feel that it is. Cement -- the top of cement, as you can see on the following page in the schematic, is at 4400 feet and that was determined with a temperature survey, so we feel that it's above the Delaware.

Q Let's turn to the tabulation of the information for the two wells within the half mile area.

With regards to the producing well, the Gulf well --

A Right.

Q -- in your opinion is the cement in that well at a location that will cause the cement to be across the Delaware disposal interval?

A I believe it is. I did a calculation just based on the number of sacks of cement that they used and their casing and hole size and from calculation this top of cement should be about 3700 feet, which is well above the Delaware.

Q Directing your attention to the plugged and abandoned well, have you examined the information with regards to that well to determine whether or not that well has been properly plugged and abandoned to isolate the Delaware formation from any other formation?

A Yes, I believe it is. On the following page there is a schematic of the Jennings Federal No. 3 which shows the locations of the cement plugs.

Q All right. On that schematic you've indicated a bad casing top.

A Right.

Q And said probable --

A Probably shot off.

Q All right, probably shot off. Would you describe for the Examiner what you're talking about in reference to that item?

A When the well was originally plugged the casing was shot off or torn off at that point and when this well, when we went back into this well we found pieces of casing coming up 8-inch stringers, so we feel that the casing was completely destroyed above this point in the hole.

Q Do you have an opinion as to whether or not that will adversely affect the way in which the well was plugged and abandoned so that the Delaware is isolated in this well?

A No, I don't.

Q All right.

A We found up to the point of that casing top and put cement plugs above that and I don't see any reason that the Delaware should be open at that point.

Q All right. Have you caused to be made an examination to determine the location and the depth of any

fresh water sources in the area?

A Yes, I have.

Q All right, would you tell the Examiner what you have investigated and what you have found?

A Okay, we have, as seen on the next to the last page of the package, there are two water aquifers, the Ogallala, which is about 100 feet below ground level, and the Triassic, which is 5-to-600 feet below ground level.

The location of all these wells that are listed here is not anywhere near the well that we propose to convert to disposal, and the depths are such that we feel we have enough of a break between the Delaware zone and these fresh water zones to not allow for any contamination.

Q In making your study and investigation did you find any fresh water wells within one mile of the disposal well?

A No.

Q All these are wells more than a mile away.

A Right.

Q In making your study, Ms. Samudio, did you satisfy yourself that, from available geology, that there are no hydrologic connections between the Delaware formation or fractures that would -- fractures or faulting that would place the Delaware formation in communication with any of the fresh water aquifers?

A No, there would be no communication.

Q You have a summary sheet, I believe, of the project itself, indicating the average and the maximum daily disposal rates. If you'll turn to that page for us now, we'll talk about that information.

A Okay.

Q In terms of a pressure limitation at the surface, Mr. Samudio, the Commission has a guideline that would limit the surface pressure for this well at 991 pounds, psi.

A Right.

Q In terms of that limitation will your proposed project exceed that limit?

A No. I put down as a maximum injection pressure 750 pounds, and I don't expect that we'll really ever get near that. My hopes are that it will be on vacuum most of the time.

Q Would you describe to the Examiner what the average daily rates and the maximum projected rates are?

A The average daily rate is 100 barrels of water per day. The maximum will be 200, and that's another I don't expect to go over. The producing wells we have average about 150 barrels of water per day.

Q Have you appended to the application copies of certified receipts indicating that you have provided the surface owner with notice of this hearing?

A I have not. I just received them and I have them here and get you a copy.

Q I believe I've given them a copy. Which ones do you have?

A Okay, I've got --

Q Ms. Samudio, will in your opinion will approval of this application be in the best interest of conservation, the prevention of waste and the protection of correlative rights?

A Yes, it will.

Q Were the exhibits and information prepared and compiled in the C-108 information that you prepared or that was prepared under your direction?

A They were prepared by me.

MR. KELLAHIN: That concludes our examination of Ms. Samudio, Mr. Examiner.

MR. QUINTANA: Excuse me, again?

MR. KELLAHIN: That concludes our examination of this witness.

We move the introduction of the C-108 and the attachments thereto.

MR. QUINTANA: The C-108, along with the attachments will so be admitted in this case.

I have a couple of questions here.

CROSS EXAMINATION

BY MR. QUINTANA:

Q Ms. Samudio, one question.

A Sure.

Q I noticed your calculation here of the total volume over a 22-year period would be 803,000 barrels of disposal fluids.

Do you anticipate that this would affect any production from the wells in the area?

A Well, I don't expect that we're going to have 22 years of doing this. I don't see any problem with the types of rates we're going to be running as far as hurting anyone offset.

Q Would you -- it's your professional engineering conclusion that it will not affect any offetting production.

A No.

Q Thank you.

MR. QUINTANA: No further questions of the witness.

Case 8332 -- you may be excused.

Case 8332 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

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 8932 heard by me on SEPT. 5 1984.

Gilbert P. Quintana Examiner
Oil Conservation Division