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

8 August 1984

EXAMINER HEARING

IN THE MATTER OF:

Application of Apollo Energy Inc. for salt water disposal, Lea County, New Mexico. CASE 8293

BEFORE: Richard L. Stamets, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: W. Perry Pearce
Attorney at Law
Oil Conservation Commission
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

E X H I B I T S

MR. STAMETS: We'll call next Case 8293.

MR. PEARCE: That case is on the application of Apollo Energy, Inc. for salt water disposal, Lea County, New Mexico.

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

MR. PEARCE: Are there other appearances in this matter?

(Witness sworn.)

M. Y. MERCHANT,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Mr. Merchant, would you please state your name and occupation, please, sir?

A My name is Mohammed Yamen Merchant. I'm with Apollo Energy, Incorporated of Hobbs, New Mexico.

I'm a petroleum engineer by degree.

Q Mr. Merchant, have you previously testi-

fied before the Oil Conservation Division as a petroleum engineer?

A Yes, I have.

Q And have you prepared for purposes of your testimony today certain exhibits and the completed Commission Form C-108?

A Yes, I have.

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

MR. STAMETS: He is considered qualified.

Q Mr. Merchant, I have marked as Apollo's Exhibit Number One Commission Form C-108, which includes all the attachments. For purposes of your testimony I will direct my questions to you based upon the Form C-108.

Did you prepare the C-108 and all the attachments?

A Yes, I have.

Q Would you identify for the Examiner what you propose to accomplish with this application?

A In Section 13, Township 9, Range 35, which is shown in Exhibit Two, the land map, in Unit letter C we have well in the Bough C formation.

We intend to convert that particular well for salt water disposal to be used strictly for produced water produced from the producing wells in the same section.

Q All right, looking in Section 13, then,

would you identify for us the producing wells that will contribute water for this disposal well?

A Yes. The producing wells located in the same section, Section 13, Unit letter E, which is Well No. 2, and Unit letter K, which is Well No. 4-A, are the two wells which will be contributing to the -- water produced off them will be disposed in the injection well we're asking for.

Q Do you have plans to drill additional producing wells that will contribute water for this disposal well?

A No, we don't have any plans to drill additional wells. We do have plans to return Well No. 4-A to production. The well was making 50 barrels a day, 50 barrels of oil a day, before it was temporarily abandoned because of lack of facilities to dispose water.

Q Would you describe for us what has been some of the history of the well that you propsoe to convert for salt water disposal?

A I'd like to turn over to exhibit -- page two, Exhibit One, showing the well data on disposal well.

The well was drilled back in the fifties as a Bough C completion. It was currently -- it was producing as late as two months ago but it's currently temporarily abandoned. It was producing from the open hole 9597 to 9615. It's a marginal producer at the present time.

Q What is the anticipated average volume in

barrels of water per day that you propose to dispose of in the well?

A We're looking at approximately 2000 barrels of water per day.

Q All right, sir, and what is the maximum disposal rate that you're requesting?

A No more than 3000.

Q Are you familiar with the Division guideline on the surface limitation pressure on disposal in injection wells?

A Yes, I am.

Q And will this well, do you anticipate that this well will exceed the 0.2 psi per foot of depth limitation?

A No, I don't believe this well will for more than one reason.

There's an offsetting well in Section 12 in Unit letter B, which was approved for salt water disposal. It's being used currently for commercial disposal operations and they are disposing approximately 3000 barrels a day and do not have any pressure, or hardly any pressure.

Q All right, sir. will you go to the page in the C-108 and describe for us what wells have been included in the tabulation of wellbore information in that portion of the exhibit?

A Okay. Exhibit Three shows all the wells which are within the 1/2 mile radius of the proposed dis-

posal well located in Section 13.

Some of these wells are plugged and some of them are still producing.

Q All right, so the tabulation not only has the producing wells but also has the plugged and abandoned wells that either produce from this formation or had wellbores that penetrated this formation.

A That's correct.

Q All right. In reviewing the information that went into this tabulation, Mr. Merchant, do you find any of the currently producing wells that have not been adequately cemented across the disposal interval?

A I've reviewed it and we do not find any wells which are currently in that shape. They all have proper cement jobs --

Q All right.

A -- across the proposed injection zone.

Q With regards to plugged and abandoned wells within the area of review, do you find any plugged and abandoned wells that do not have adequate cement plugs immediately above and immediately below the disposal interval?

A No, sir, we don't.

Q In your opinion are all these wells, the producing and plugged and abandoned wells, completed or plugged in such a fashion that water disposed of in the Bough C would not use those adjacent wellbores as a way to migrate those fluids into some other formation?

A Using the data we have available to us, there is no such possibility.

Q Have you also reviewed the geology in the area, Mr. Merchant?

A Yes, we have.

Q Let's turn to your Exhibit Number Six, which is the attachment to the C-108, and have you describe for us the proposed disposal interval in terms of thickness, the depth, and the injection interval.

A Yes. As shown on Exhibit Six, and the information is basically the thickness is averaged thickness within the offset wells, as well as the well we're going to use for injection.

Q In studying the geology, Mr. Merchant, do you find any evidence of faulting or hydrologic connections between the Bough C disposal formation and any sources of fresh water in the area?

A No, sir, I don't.

Q Are there any sources of fresh water in this area?

A Not in the immediate area, to my knowledge.

Q All right, sir, if we go now to Exhibit Number Eight, those are the water analyses. Would you describe the water analyses that you've attached to the exhibit?

A These water analyses came from the Devon-

ian, Devonian formation. That's the water we will be using to dispose into the Bough Penn formation in the disposal well.

One was done back in '71 by Halliburton; the other one was done by Martin Water Lab, and they're basically the same thing.

The third one is the water analysis from the Bough Penn formation.

Q That's Exhibit Ten?

A That's Exhibit Ten, I'm sorry, getting ahead of myself.

Q Are there any incompatibilities in the produced water that will be disposed of in the Bough C?

A No, sir, we haven't found any.

Q Who is the surface owner at the location where the disposal well is?

A Mr. Milton, I believe, Milton Bonds.

Q All right. Have you notified Mr. Bonds of the application in this case?

A Yes, we have notified him by certified mail and we have also visited him personally.

Q All right, sir, and have you also notified the other offset operators within a half mile radius?

A Yes, sir, we have.

Q And those are Layton Enterprises and MNG Oil, Inc.?

A Yes, sir.

Q And those have also been notified by certified mail, return receipt?

A Yes, sir, they have been.

Q All right, let's turn now to Exhibit Number Thirteen and have you discuss for us the wellbore schematic of the disposal well.

A What we propose to do is, currently the well have just regular 2-7/8ths tubing, which is not plastic coated. We're going to pull it, inspect it, run it through plastic coating, run a plastic coated Lokset packer and of course inhibit, run inhibited fluid on the back side to prevent the tubing as well as the casing, and inject in the open hole, as shown in the Exhibit Eight -- Exhibit Thirteen, rather.

Q Will you have some device on the surface to measure the pressure on the casing-tubing annular space?

A On the tubing we will have a pressure gauge and if necessary we'll put one on the casing, also, so we'll have a constant monitoring.

Q All right, sir, and then the following schematics are what, Mr. Merchant?

A These are schematics of the plugged and abandoned wells within the half mile radius showing the casing left in the hole, cement plugs, where they're set, bridge plugs, and what not, which --

Q This is a schematic representation of the information that's on the tabulation exhibit you discussed

earlier?

A Yes, sir.

Q All right. And you prepared those schematics?

A Yes, I prepared them or they were prepared under my supervision.

Q And in reviewing that data you don't see any problems with any of the wells that are plugged and abandoned.

A That's correct.

Q All right, sir.

A I would like to add, initially, when this application was submitted we did not have information on the plugged well in Unit letter A of this Section 13, which was drilled back in 1951 by Magnolia.

Q That's the Magnolia Matthew Federal No. 2 Well?

A Yes, sir.

Q Okay.

A We did receive the information by telephone through the BLM yesterday, day before yesterday, and then yesterday did receive the information on paper by Federal Express and we confirmed that that well has been plugged properly.

Q All right, have you attached any of the exhibits, the additional information that you received from the BLM?

A Not from the B -- not directly, but I used their information to come up with Exhibit 19, which is the last page of the package.

Q All right.

A Showing where the casing was cut and pulled and where the plugs are set.

Q All right, sir. Subject to that additional comment, Mr. Merchant, is there anything else that you'd like to add to your application?

A I do have a copy of the information received from the BLM and if the Commission desires, we'd be glad to submit that as separate piece of information.

MR. KELLAHIN: That concludes my examination of Mr. Merchant, Mr. Stamets.

We move the introduction of our Exhibit Number One, which is Commission Form C-108 and the attachments thereto.

MR. STAMETS: The exhibit will be admitted.

CROSS EXAMINATION

BY MR. STAMETS:

Q Mr. Merchant, on Exhibit Number Five I've got a couple of questions.

A Yes, sir.

Q The top well, the Federal "A" No. 5, it shows 5-1/2 inch casing set at 12,018 feet and the top of

cement at 9100 feet.

Then down below it has on November 28th, '83, "ran pipe recovery log. Top of cement, 11,340."

Are those two figures in conflict with one another?

A They are -- glad you brought that up. Those are -- those are conflict. The top of the cement, 9100 feet, that was calculated. These were previously Amoco Production Company's wells and that information came to my attention yesterday that they had ran pipe recovery log, which wasn't in our files, and the pipe recovery log showed that the top of cement was 11,340, based on what Amoco submitted to the -- to the USGS, and pursuant to that they had gone back in and done a squeeze job using 1200 sacks of cement and circulated between the 9-5/8ths and 5-1/2.

Q It looks as though that the perforated interval was at 4960 and does that mean that the annular space between the depth of 4960 and 11,340 doesn't have any cement behind it?

A It would be hard to -- I would -- I don't know how I would answer that question whether it's empty or is cemented, or what.

I don't know why they perforated at 4960 and then brought the cement up from there on up.

Q Okay, let's move down the page to the Federal "A" No. 7.

There we see the 5-1/2 set at 11,966 with

300 sacks and top of cement at 9000 feet. Is that calculated top again?

A Yes, sir, that is calculated top.

Q Based on the amount of fill that was achieved, apparently, with 250 sacks on the Federal "A" No. 5, do you think that that 9000 feet is a reasonable top?

A If you put it that way, that may not be reasonable top, but one may have to monitor the pressures on the back side on both -- both those wells, especially No. 7, if the permission is granted to dispose water in the disposal well.

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

Anything further in this case?

The case 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. 8293 heard by me on 8-8, 1984.

Richard L. Stamets, Examiner
Oil Conservation Division