BEFORE THE
OIL CONSERVATION COMMISSION
Santa Fe, New Mexico

July 26, 1962

EXAMINER HEARING

IN THE MATTER OF:
Application of Sunray DX Oil Company for permission to dispose of salt water, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks permission to dispose of salt water into the San Andres formation through its Nancy Watson Well No. 2, located 1980 feet from the South line and 660 feet from the West line of Section 31, Township 8 South, Range 34 East, Roosevelt County, New Mexico.

CASE NO. 2604

BEFORE: Elvis A. Utz, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: Case No. 2604.

MR. DURRETT: Application of Sunray DX Oil Company for permission to dispose of salt water, Roosevelt County, New Mexico.

MR. WHITE: If the Examiner please, Charles White of Gilbert, White & Gilbert, appearing on behalf of Sunray DX Company. We have one witness to be sworn, Mr. Berry.

(Witness sworn.)

MR. UTZ: Any other appearances in this case?

You may proceed.

D. E. BERRY, JR.

called as a witness, having been first duly sworn on oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. WHITE:

Q Mr. Berry, will you state your full name for the record, please?

A D. E. Berry, Jr.

Q By whom employed and in what capacity?

A I'm employed by Sunray DX Oil Company as a staff engineer.

Q Have you previously qualified before the Commission as a staff engineer in petroleum engineering?

A Yes, sir.

Q And have your qualifications been accepted?

A Yes, sir.

Q Are you familiar with the subject application?

A Yes, sir.

(Whereupon Applicant's Exhibit No. 1 marked for identification)

Q Will you refer to what's been marked Exhibit 1 and explain that exhibit, please?

A Exhibit No. 1 is a plat showing the location of the Sunray DX Nancy Watson No. 2 Well, located 660 feet from the West

line and 1980 feet from theSouth line of Section 31, Township 8 South, Range 34 East, Roosevelt County, New Mexico. Also shown on this plat is the Nancy Watson No. 1 Well north offset which is presently producing from the San Andres formation. This No. 1 well is the only well producing from the San Andres within a two-mile radius of the Nancy Watson No. 2 well. In the Northwest corner of Section 31 is the Sunray DX New Mexico Federal No. 1, a dry hole which no production casing was run due to lack of commercial shows on logs and cores.

Q Was it plugged and abandoned?

A Yes, sir.

(Whereupon Applicant's Exhibits 2 and 3 marked for identification.)

Q Will you refer to your logs, Exhibits 2 and 3?

A We are submitting the electric log of Nancy No. 2, which is marked to show production perforations, casing points, and we are also submitting as Exhibit No. 3 the electric log of Nancy Watson No. 1 similarly marked.

Q And those exhibits are self-explanatory, are they not?

A Yes, sir. By our correlation, the perforated intervals in the two wells are essentially the same.

(Whereupon Applicant's Exhibit No. 4 marked for identification.)

Q Will you explain your diagrammatic sketch marked Exhibit 4 please?

A The diagram shows the 8 5/8ths surface point on which

the cement was circulated to the surface, also shows the 4½-inch casing point with the top of the cement on that particular string of casing. The diagram also shows the perforated intervals in the San Andres and shows a string of 2 3/8 internally plastic coated tubing set on a packer immediately above the perforations.

Q Mr. Berry, will you describe the source and nature of the water to be disposed of?

A The disposal water will originate from the Nancy Watson No. 1 well and is San Andres formation water.

Q What is the present rate of the salt water production?

A Approximately 250 barrels per day.

Q And what is the present rate of oil produced from the Nancy Watson Well No. 1?

A 23 barrels of oil per day.

Q Since the proposed salt water disposal will be into an oil reservoir, do you anticipate any damage to the well, that is the Nancy Watson No. 1 or No. 2?

A No, sir, I don't anticipate any damage to the Nancy Watson No. 2. This well was perforated extensively in the same zone as the north offset well and produced only a non-commercial amount of oil, about 1½ barrels of oil per day with a low GOR. The only reason we haven't abandoned this well is that we wanted to use it for a disposal well. Since the well is non-commercial, we do not feel that the proposed disposal will harm the well.

Q What is your opinion as to any harm being done as to the reservoir?

A The San Andres formation in this area requires a frac job to get any significant amount of fluids into the well bore. For this reason we do not anticipate any extensive movement of salt water through the formation except perhaps towards the producing well. If this type of movement occurs towards the producing well, we do not feel that it will harm the producing well and correlate any recovery of additional oil.

Q But you are not requesting this disposal program to increase the production of oil, but merely to dispose of the salt water, is that correct?

A Yes, sir, we are not anticipating any secondary recovery but we do anticipate that this program, if approved, will increase the amount of primary oil which we can recover.

Q How are you disposing of the water at the present time, and what is it costing the company?

A The salt water is trucked off the lease and is costing about $40 a day.

Q That represents how much net income from the reservoir?

A It would be the equivalent of about 20 barrels of oil per day production.

Q What do you estimate the cost of the proposed disposal to run?

A It will be about $4 a day or the equivalent of two

barrels of oil per day of production.

Q Would it be economically feasible to continue trucking of the salt water?

A No, sir, if we have to continue trucking the water, we will have to abandon the well at a producing rate of about 18 BOPD greater than we would if the proposal is approved. This resulting earlier plugging and abandonment of the well we feel will result in leaving a considerable amount of otherwise recoverable oil in the reservoir. With our present production at about 23 BOPD, we are practically at the economic limit for the trucking operation now.

Q In your opinion, will the proposed salt water disposal result in greater recovery of hydrocarbons and protect correlative rights?

A Yes.

Q Did you anticipate using other wells and other zones for this disposal?

A Yes, sir, we could dispose down the 8 5/8ths by 4½ casing annulus, but an injection test showed such disposal would require pressures at greater than the formation fracturing pressures, or we could use porous zones above the San Andres or porous zones of the San Andres below the present perforations, but either of these methods would require an extensive workover, and we would not have any prior occasion that such injection could be done.

Q Then you believe this proposal you are submitting today is the most practical one?

A Yes, sir.

Q Will you now describe the proposed system?

A The produced salt water will leave the lease heater treater and go into a sump tank on which we will keep an oil blanket to prevent air from entering the system. The water will then go down the plastic coated tubing and into the San Andres perforations. The tubing will be set on a packer.

Q Does that complete your testimony?

A Yes, sir.

MR. WHITE: At this time we formally offer the exhibits and that concludes our presentation.

MR. UTZ: Let's see what -- did you have two exhibits?

MR. WHITE: No, sir, I believe we had four, one, two, three and four.

MR. UTZ: Without objection, the Exhibits 1 through 4 will be entered in the record in this case.

(Whereupon Applicant's Exhibits 1 through 4 admitted in evidence.)

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Berry, are you asking here for this salt water disposal from the No. 1 well or from the entire lease?

A Well, the No. 1 well is the only producing well we have at the present.

Q You don't anticipate any more wells?

A No, sir. Or course, that's always a possibility and might prevent further application if we can get approval for the lease.

Q Your plat showing certain acreage in yellow was Exhibit No. 1, was it not?

A Yes, sir.

Q Does that yellow colored acreage on Exhibit No. 1 include all one lease?

A No, sir, the Federal "T" lease is a different lease in Section 31 and the Nancy Watson lease immediately south of it is a separate lease. This other yellow colored lease over in 36, I'm not familiar whether that is the same basic lease as either of the other two or not. It's a Sunray lease.

MR. WHITE: Can you supply that information to the Examiner?

A Yes, sir.

Q (by Mr. Utz) Now, referring to your Exhibit No. 2 which is your sketch, your diagram for your disposal well --

A Yes, sir.

Q I notice the cement casing, cement proposal, your 8 5/8ths circulated at 356?

A Yes, sir.

Q Now, what size is the production casing, 4½ is it not?

A Yes, sir.

Q And that cement is run to 3770?

A Yes, sir, top, yes, sir.

Q The TD is 4658?

A That is correct.

Q Now, between 3770 and the bottom of the 8 5/8ths, what formations do you have in this area?

A This top of the cement is, I would have to refer to my log for the top there.

Q Your what, No. 1?

A No. 2 well. The top of the San Andres there is 3847, so the top of this cement is above the top of the San Andres, so above that --

Q It's 38 what?

MR. WHITE: Forty-seven.

Q Forty-seven?

A Yes, sir.

Q Roughly a little less than a hundred feet then over the top of the San Andres?

A Yes, sir.

Q Any other oil producing zones above 3770?

A No, sir.

Q Any fresh water zones?

A The fresh water zones are behind the surface pipe.

Q What size tubing are you going to use, 2 3/8ths?

A Yes.

Q Internally plastic coated?

A Yes, sir.

Q Are you going to set a packer at the bottom of the tubing?

A Yes, sir.

Q What type packer?

A Baker retrievable packer.

Q How about the annulus, are you going to load it?

A Yes, sir, we'll load that with a non-corrosive fluid.

Q And I gather that you can use this fluid as a medium to determine whether or not you have any leaks in the tubing?

A Yes, sir.

Q The loss of water --

A It will show up at the wellhead if there were a leak.

Q I believe it was your testimony that this injection would not harm the production from your No. 1 well, which is the north offset?

A Yes, sir.

Q But rather, if anything, it would probably help that production?

A Yes, sir.

Q By some, well, by increasing the -- maintaining the pressure in the reservoir.

A Yes, sir, and possibly some sweep effect.

MR. UTZ: Any other questions of the witness?

If not, the witness may be excused.

(Witness excused.)

MR. UTZ: Any statements in this case?

We have two letters from the State Engineer, one which objects to this case, of July 19th, and another of July 23 which removes that objection.

The case will be taken under advisement.

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STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

I, MARIANNA MEIER, NOTARY PUBLIC in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached transcript of proceedings was reported by me in stenotype and that the same was reduced to typewritten transcript under my personal supervision and contains a true and correct record of said proceedings, to the best of my knowledge, skill and ability.

Marianna Meier
NOTARY PUBLIC

My Commission Expires:

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I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 2604, heard by me on July 26, 1962.

_____, Examiner
New Mexico Oil Conservation Commission