BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
June 26, 1968

EXAMINER HEARING

IN THE MATTER OF:

Application of Gulf Oil Corporation for salt water disposal, Lea County, New Mexico.

CASE NUMBER
3794

BEFORE: ELVIS A. UTZ, Examiner

TRANSCRIPT OF HEARING

MR. UTZ: Case 3794.

MR. HATCH: Case 3794, application of Gulf Oil Corporation for salt water disposal, Lea County, New Mexico.

MR. KASTLER: If the Examiner please, I am Bill Kastler from Roswell, representing Gulf, and our witness today is John Hoover.

(Whereupon, Exhibits 1 and 2 were marked for identification.)

MR. UTZ: Let the record show that Mr. Hoover is the same Mr. Hoover who was sworn in the previous case. Are there any other appearances? You may proceed.

JOHN H. HOOVER

called as a witness, having been previously duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KASTLER:

Q Mr. Hoover, what is Gulf seeking in this application?

A Gulf, for its subsidiary, Warren Petroleum Corporation, is asking for approval for Warren to dispose of water in the San Andres formation in the proposed Warren Petroleum Corporation Eunice Plant Number 161, salt water disposal Well Number 1. This well is to be drilled by Gulf for Warren at a location 2255 feet from the north line and 908 feet from the

3794

Case

BIP # 888

east line of Section 3, Township 22 South, Range 37 East, Lea County, New Mexico.

Q If this application is approved, Warren will actually be injecting water for disposal and not Gulf, is that correct?

A Yes, it is. The water to be disposed of is gasoline plant waste water and salt water produced from Warren's LPG storage wells when the liquid products are injected into the wells. Warren owns and operates these LPG wells in storage wells in conjunction with the Eunice Gasoline Plant Number 161 operations. They will likewise own and operate the proposed injection well after Gulf drills it for them, if this application is approved.

Q What is shown on Exhibit Number 1?

A Exhibit Number 1 is a plat showing the proposed location of the Warren Eunice Plant Number 161 salt water disposal Well Number 1. The well is circled and colored in red and the proposed location, as previously mentioned, is 2255 feet from the north line and 908 feet from the east line of Section 3, Township 22 South, Range 37 East, Lea County, New Mexico. This well is on acreage, the surface of which is owned by Warren's Eunice plant.

Q Are there any oil wells producing from the San Andres formation within two miles of this proposed injection

well?

A Yes. There is one well and that is in the Eunice-San Andres Pool. This well is Mobil's Carson Number 23 located in the southwest quarter, northeast quarter of Section 33, Township 21 South, Range 37 East. This well, in April, 1968, flowed sixty barrels of oil, 300 barrels of water, 11,640 m.c.f. of gas.

MR. UTZ: San Andres?

THE WITNESS: Yes, sir. It's referred to as the Eunice-San Andres Pool. As I understand, this well was originally drilled as a water supply well and they got oil.

Q (By Mr. Kastler) What have you shown on Exhibit Number 2?

A Exhibit Number 2 is a chematic diagram of the proposed injection well. We plan to set nine-and-five-eighths-inch casing at approximately 1100 feet. The cent will be circulated to the surface. Seven-inch casing will be set at approximately 4100 feet and we will cement to bring the cement back to the base of the salt which will be at approximately 2350 feet.

The well will be drilled to a total depth of 4900 feet or less. The well will be drilled out from below the casing and the injection interval will be in the open hole

San Andres formation. The well will be drilled to lost circulation zone which we anticipate approximately 4500 to 4600 feet. When we reach that point, we will stop or we will go to a total depth not to exceed 4900 feet in the San Andres. The well will be equipped with four-and-a-half-inch OD tubing which will be plastic-coated internally. In this particular well we plan to use a balanced fluid column in the casing tubing annulus and we will use a distillate which will fill the annulus and we will have a pressure gauge at the surface.

Q Although it's not shown on here, will you have a tension-type packer at the bottom of the plastic-coated tubing?

A Not in this well. We will use the balance method of the distillate in the casing tubing annulus, balancing the water in the tubing.

Q You stated that the water to be disposed of comes from operation of Warren's Gasoline Plant and LPG storage wells. Do you have any information on the quality of this water?

A Yes, sir. The storage wells for the LPG are completed in the salt section and the storage is created by dissolving the salt. Therefore, the water produced from the wells is almost a saturated salt solution. Analysis indicates approximately ninety-five per cent saturated, 181,289 parts per

million of chlorides, specific gravity 1.206.

The plant waste water is from the cooling tower overflow and the water blowdown which would be practically fresh water. Some salty water from the regeneration of the water softeners would also be disposed of in the well.

Q What is the quality of water produced from the San Andres formation?

A We don't have an analysis of the San Andres water at the proposed location. However, from other San Andres water in the vicinity indicates 3,000 to 4,000 parts per million of chlorides. The San Andres formation water is brackish.

Q What volumes of water do you anticipate will be necessary to inject?

A The storage of the LPG in the wells is dictated by market demand for the product or by the possible shutdown of the pipeline which takes the liquids from the plant. The rate could be as high as 4400 barrels per day during emergency pipeline shutdown, which is the plant production of liquid products. Probably a lesser disposal rate would be made over a two-month period when the product was going in just from market demand and then the well would have no injection of or no water production from the LPG wells for the remaining ten months. The normal plant waste water is about 2600 barrels per

day. Therefore, that would make the disposal rate vary from, oh, just plant waste water of 2600 barrels to a high of 7,000 barrels per day if we were going in maximum on the plant production.

Q In other words, that's normal operation plus the 4400 during an emergency period?

A Yes. We would --

Q Total 7,000 barrels --

A Probably the normal rate would be 2600 barrels of the plant waste water and probably storing of products in the well on just the market demand would be another 2,000 barrels, so we would have, not counting emergency, around 4600 barrels per day, but the possibility exists that we could go from 2600 barrels to 7,000.

Q Were offset operators furnished copies of Gulf's application?

A Yes, they were.

Q Do you have anything further to add in this case?

A No, sir.

Q Were Exhibits 1 and 2 prepared by you or at your direction and under your supervision?

A Yes, they were.

MR. KASTLER: I would like to move that Exhibits

1 and 2 be entered into evidence at this point, and this concludes my questions on direct.

MR. UTZ: Without objection Exhibits 1 and 2 will be entered into the record of this case.

(Whereupon, Exhibits 1 and 2 were offered and admitted in evidence.)

CROSS EXAMINATION

BY MR. UTZ:

Q In your opinion, will your injection of water in this area affect the San Andres production in that nearest well up in Section 35?

A No, sir. It would have no effect whatsoever. That well is one and seven-tenths miles from our proposed well and there are other San Andres wells in the area which are drawing water out for waterfloods and the rate that it is being drawn out exceeds our maximum rate that we would be putting in, so we couldn't possibly affect anything.

Q They are drawing it out of the San Andres?

A Yes, for waterfloods.

Q You fellows ought to get together.

A Well, of course, we're just trying to comply with the Commission's order and we have got to get the water in the ground and not rely on anybody else operating.

Q You say you are going to balance the annulus with distillate against your water injection. How much pressure are you going to use at the surface, did you say?

A I didn't say, Mr. Utz, but we anticipate on the normal rate of, say, three or four thousand barrels a day that it will be gravity on the maximum of 7,000 per day. It may take a little pressure, but we are hopeful that it will be practically no pressure and mostly by gravity.

We'll probably have to use a pump to move the volume through the well, of course, but we anticipate very low pressure and at this time we are hoping, by gravity.

Now, on balancing this distillate in the annulus, we will have to have a static water level in the well, normally, just under no injection conditions where the distillate will balance this static condition.

So, what we would have, then, would be all distillate on one side against the static column of water on the tubing side. And then the pressure gauge at the wellhead would show this pressure under the balanced condition, and then any pressure that we would encounter, having put the water in, or any fouling of the formation which would cause pressure to increase which would be reflected at the surface, we would have to start pumping it, would be reflected in this pressure gauge.

And this has worked very well in disposal wells of the size that we are asking for here, that is, the size, I mean, by volume that they're using this now in the salt water disposal systems. It has its advantage in that it gives you an indication of when trouble might be starting.

Q And to put a distillate in the annulus, you have to establish a water level and then pump it in at that water level and seal the surface?

A Yes, sir. You would have to actually pump your distillate.

Q It would stay the same?

A You would pump the distillate in and force the water out of the tubing casing annulus back in the tubing. The whole thing depends on that you have to have the static column of water. If we don't have that and can't do it, then you can't hold your distillate, then we would have to go to a packer. We feel, based on our experience with the San Andres, that we will have a water column.

MR. UTZ: Any other questions?

MR. PORTER: I have a question.

CROSS EXAMINATION

BY MR. PORTER:

Q Is this the only gasoline or extraction plant that

Warren operates down in Lea County?

A No, sir, not in Lea County. In fact, they have three.

Q They have three?

A They're right outside of Eunice, one just west of Monument and one up in the Saunders Pool.

Q Does the other one there -- now, this is your Eunice plant, does the Monument plant operate similarly to this one, do they have a storage well for their LPG and all that? In other words, does the company plan to have a disposal well for each one of their plants, or do you know?

A Mr. Porter, I don't know on the plans on those others.

Q It would depend on the quality of water, I suppose?

A Yes, sir. I know that the Saunders plant has no storage well, but I believe Monument has. I think the Saunders plant pumps, they pump all of their raw product down to the Monument plant where it is fractionated if necessary. It would be the Monument plant if they have one, and I think they do, but I don't know.

Q If this application were approved, how long do you think it would be before you had your disposal well in operation down there? Do you know what the schedule would be as far as going ahead and completing the well?

A Yes, sir. The location is staked, the bids have gone

out to drill the well.

Q So, you are ready to move on it?

A We're ready to drill the well. The only thing we are holding up on is if we can get an order. Now, on the drilling of a well, it shouldn't take very long; probably in thirty-five or forty-five days we should have it completed.

MR. PORTER: Thank you.

MR. UTZ: Are there any other questions? The witness may be excused.

(Witness excused.)

MR. UTZ: Any statements? The case will be taken under advisement.

I N D E X

WITNESS	PAGE
JOHN H. HOOVER	
Direct Examination by Mr. Kastler	2
Cross Examination by Mr. Utz	8
Cross Examination by Mr. Porter	10

E X H I B I T S

NUMBER	MARKED FOR IDENTIFICATION	OFFERED AND ADMITTED IN EVIDENCE
# 1 and 2	2	8

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

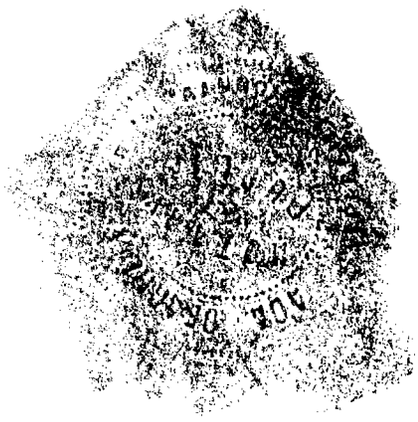
I, ADA DEARNLEY, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me; and that the same is a true and correct record of the said proceedings, to the best of my knowledge, skill and ability.

Witness my Hand and Seal this 6th day of July, 1968.

Ada Dearnley
NOTARY PUBLIC

My Commission Expires:

June 19, 1971



I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3284, heard by me on June 26, 1968.

Thomas C. McHugh, Examiner
New Mexico Oil Conservation Commission