BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
January 26, 1966

EXAMINER HEARING

IN THE MATTER OF:

Application of Coastal States Gas Producing Company for a pilot pressure maintenance project, Lea County, New Mexico.

Case No. 3366

BEFORE:

Elvis A. Utz, Gas Engineer

TRANSCRIPT OF HEARING

MR. UTZ: Application of Coastal States Gas Producing Company for a pilot pressure maintenance project, Lea County, New Mexico.

MR. CHRISTY: Sim Christy of Hinkle, Bondurant and Christy, Roswell, New Mexico, appearing on behalf of the applicant, Coastal States. We have one witness, Mr. Examiner. Would you stand and be sworn.

(Witness sworn)

J A C K R. M C G R E W, a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. CHRISTY:

Q Would you please state your name, address, by whom you are employed and in what capacity?

A My name is Jack R. McGrew, I work for Coastal States Producing Company, Abilene, Texas, as a Production Engineer.

Q I believe you have previously testified before this regulatory body and have had your qualifications accepted?

A Yes, sir.

Q And are you familiar in what is sought in Case 3366, and the area involved?

A Yes, sir.

MR. CHRISTY: Any questions on the qualifications of the witness?

MR. UTZ: No, you may proceed.

Q (By Mr. Christy) Now, briefly would you tell the Examiner what you're seeking in this application?

A Coastal States requests permission to initiate a pilot pressure maintenance project in the Flying "M" San Andres Field of Lea County, New Mexico. This proposed pilot project will consist of three injection wells at the present time. We also request that provisions be made so that all additional injection wells may be approved administratively.

The three injection wells are described as follows:

Southern Minerals State 15 No. 1,
Northwest Quarter of Southwest Quarter,
Section 15;

Southern Minerals State 21 No. 4,
Southeast Quarter of Northeast Quarter,
Section 21;

Gonsales Federal 33 No. 4,
Northwest Quarter of Northwest Quarter,
Section 33;

All in Township 9, South; Range 33 East.

The Southern Minerals State 15 No. 1 is presently being used as a salt water disposal well. Permission to inject produced salt water into this well was obtained by Commission Order No. R-2924 in June, 1965. This water is being injected into the aquefer below the water-oil contact in the Slaughter Zone of the San Andres. To date, 41,000 barrels have been injected at approximately 900 psi at 225 barrels oil per day. No beneficial effects have been detected as a result of this

injection program.

We are requesting permission to inject produced San Andres water into two additional wells, in order to further evaluate the possibility of maintaining the reservoir pressure by bottom water injection (injecting below the water-oil contact).

The Southern Minerals State 21 No. 4 is a replacement well for the Southern Minerals State 21 No. 3, which was drilled in August, 1964, and subsequently lost due to hole problems. Attached is a plat showing the exact location of the proposed replacement well. Also attached is a diagrammatic sketch showing how this well is to be equipped for injection, utilizing 2-1/2" plastic coated tubing for casing.

The Gonsales Federal 33 No. 4 was drilled to a total depth of 4534' in July, 1965. The Slaughter Zone was tested and found to be predominantly (98%) water productive. It is presently temporarily abandoned. Attached is a diagrammatic sketch showing the proposed method of converting this well to injection status.

Coastal States is not requesting any allowable change or transfer of allowables at this time. As soon as sufficient response has been demonstrated, efforts to unitize the entire field will be resumed.

The State Engineer, as well as all offset operators, are being notified by copies of this application.

Q In summary, as I understand you, you're seeking permission to inject salt water below the aquefer?

A Below the water-oil contact.

Q Below the water-oil contact in these two new wells to make three that will be getting it?

A Yes.

Q You wish to use water from any available source?

A Yes, sir, we are actively seeking an outside source of water.

Q Just not getting enough?

A We would like to put in more, in other words, than we're taking out.

Q Further, as I understand you, what you seek is more or less a pilot project under the Commission Rules for transfer of allowables or anything of that nature, but more importantly that the project area be the entire field because we have to try this well and it doesn't work, and we try this one and it does work, is that it?

A Yes, we're asking for these three wells, now. However, we do plan to try additional wells in the near future and we would like for those after proper notice, to be approved administratively.

(Whereupon, Applicant's Exhibit "A" marked for identification.)

Q Mw. Mr. McGrew, there has been identified Applicant's Exhibit "A" which consists of a letter which you read to the Commission which includes 11 exhibits. Let's start with Exhibit 2, I believe that shows in yellow the present salt water disposal well and the injections wells?

A Right.

Q In line with your statement a minute ago with respect to the project area being the entire field, would you envision that you might use Southwest of Southwest of Section 16 as a salt water disposal?

A As a pressure maintenance injection well, yes, sir. We do anticipate using this well in the very near future and it was a well that was drilled to the Bo "C", and pipe is left through the San Andres and it is not a San Andres completion but we would like to go back and inject water below the contact at a later date. However, we do not ask for it at this time.

Q But this type of well is what you would seek administrative approval on or ask subsequent development of this pressure maintenance project?

A Yes, sir.

Q What I mean, you were mentioning you were going to have to drill, which is the next to your Southern Mineral, the well in the Southeast of the Northeast of Section 21, blue?

A Yes, sir.

Q Actually that well will not be the dry hole, it will be slightly to the west?

A That's true.

Q The other well in the Northwest Northwest of Section 33, that is the present existing well, that's the Gonsales well?

A That's right.

Q I believe Exhibit 3 shows the existing lines from wells producing water to where its injected on those you're proposing?

A That's right, it shows the gathering point of the salt water and our injection lines delivering this water to the injection well.

Q Right. Now, let's refer to Exhibit 4 and tell what this is?

A This is a structure map on the top of the Slaughter Zone. It shows that the wells that we propose at this time are on the down-dip side located at or below the water-oil contact, and we have, as I said, tried to hold to this. However, at a later date if we move up to the well that you mentioned previous in Section 16, Southwest Southwest, we would go deeper in the section and inject into the aquefer below the water-oil contact, although it would be deeper into the producing section.

Q Now, with respect to method of completion, let's take up the southernmost well first which is in Section 33, the one that is not producing, and I'll refer you to Exhibit 5 and ask you if that is your proposed method of completion on that type of installation where you have the existing well?

A Exhibit 5 shows the type of completion we would like to use on the well drilled primarily for injection purposes.

Q Exhibit 5 is the one you drilled for injection purposes?

A Yes.

Q I beg your pardon, let's take that up. You show 8-5/8" casing, what about your cement?

A 8-5/8" set at about 250 and the cement is circulated on that.

Q That effectively seals off the fresh water zones?

A In that area, yes, sir.

Q Then you're going to perforate below the oil-water contact as you depict here?

A Yes, sir.

Q Exhibit "C" would be an instance where you had a 4-1/2" casing already there, is that correct?

A That's right. If it's an existing well. All the wells in the field have 4-1/2" casing except for one or two

that might have 5-1/2. In those cases we would run 2" plastic coated tubing and inject below a packer which would be set below the cement on the long casing.

Q And again you will protect the casing?

A Yes, sir.

Q Do you have a log on any of these wells?

A On the Gonsales Number 4 we show a strip of a section of the log.

Q That is Exhibit 7, is it not?

A That's right, and it shows the perforated interval that will be used to inject into this formation.

Q And, of course, we don't have a log on the other wells since they haven't been drilled?

A No, sir.

Q All right, sir. Now, has that new well that hasn't been drilled, has it been staked?

A Yes, sir, and it is shown on Exhibit Number 8.

Q Now, how about this salt water that we're injecting, what's the content of it?

A This Exhibit 9 is an analysis of the produced San Andres water in this Flying "M" San Andres Field, and it shows that it is fairly highly mineralized and it has a high chloride content and also a high calcium content.

Q And is the field a sample of the water?

A Yes, it is.

Q I see. And Exhibit 11, I think Exhibit 10 is meaning also Exhibit 11, what is this?

A This is a plot of the bottom hole pressure versus time in the field. This has been presented in prior testimony and it has been brought up to date on this plat. The last point out there is the most recent pressure we have obtained on those, what our bottom pressure is declining. And so we need to step up our rate of developing this pressure maintenance project.

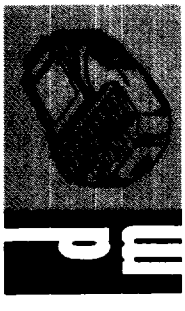
Q What would be the effect if the pressure maintenance project fails, will the field die?

A The field will continue to produce under primary mechanism until the bottom hole pressure gets down to such point it would be uneconomic.

Q So to institute pressure maintenance we're simply going to loose the entire field?

A That's right.

Q Now, again by way of quick review, as I understand you, you seek here a pressure maintenance project in an area defined as an entire field in the Flying "M" San Andres, you seek to inject both the produced water and such other water as you can obtain, you seek for administrative approval of expansion of this project and abandonment of unsuccessful



injection wells?

A Yes, sir, that's right. We would like to discontinue injecting in any well that proves to be unsuccessful and to change to another well at our discretion after proper notice has been given.

Q You assume you would envision the usual notices to offset operators and so forth?

A Yes.

Q And if any objections we would have a hearing?

A That's true.

Q Is there anything I did not ask you that you think would be of information to the Examiner?

A The only thing, the well we will drill, we will first test that well for possible oil production; it's right along the water-oil contact and would be oil productive and it will be tested and if it will produce oil we would like to produce it and drill another well at further down-dip.

Q Was this Exhibit "A" prepared by you or under your direction, supervision?

A Yes, sir.

MR. CHRISTY: I believe that's all from this witness.

CROSS-EXAMINATION

BY MR. IRBY:

Q Mr. McGrew, what is the age of these wells to be converted?

A Well, this Gonsales 4, I believe I said was drilled in July '65.

MR. CHRISTY: The other well we haven't drilled yet.

A The other well is not drilled. The 15-1 which had been on injection for about 8 months was drilled in about 1960.

Q (By Mr. Irby) Was the casing in this Gonsales well new?

A Yes, sir.

Q Now, you had another well over there to the west that you anticipated asking for later, is it an old well?

A It was drilled in '65, it was drilled to the Bo "C" and 8-5/8" was set through the San Andres, so if this is put on we will run tubing and inject through tubing with a packer set with the 8-5/8" as the casing.

Q Now, to go to your Southern Mineral State 21, Number 4, there are no specification on this plastic coated casing that you propose to put in there. What internal pressure will this casing withstand?

A We will run regular 2-7/8" tubing, J55, in this, and the internal pressure--just from memory I don't know exactly,

but it is approximately 4700 pounds and we will be injecting at a pressure not to exceed 2200 pounds.

Q Your maximum injection pressure, 2200 pounds?

A Yes, sir.

Q And you did testify that the surface casing in all instances was circulated with cement to the surface?

A Yes, sir, that is required and we do that on every one of them.

Q Now, has the Santa Rosa porosity been tested in any of the wells that have been drilled so far?

A No, sir, it hasn't.

Q I mean permeability, I'm sorry?

A The permeability of it has not been tested. We had discussed maybe drilling a cable to the well, to this Santa Rosa, to check it as a possible outside source of water. This has not been done, it has been done in the Tobac Field which is about five miles from this, and the sand is barren and does not contain water, and it's doubtful that it contains water in the Flying "M" area.

Q Do you plan to do this as a part of your drilling program on this Number 4?

A No, sir, we haven't planned to do that. It's impossible to test this effectively with a rotary rig.

Q I see. You intend to drill this with a rotary?

A Yes, sir.

MR. IRBY: That's all the questions of the witness.

MR. UTZ: The witness may be excused.

MR. CHRISTY: At this point I would like to offer Applicant's Exhibit "A" including 1 through 11.

(Whereupon, Applicant's Exhibit "A" offered into evidence.)

MR. UTS: Without objection the Exhibit will be admitted.

(Whereupon, Applicant's Exhibit "A" received into evidence.)

MR. CHRISTY: That's all.

MR. UTZ: The case will be taken under advisement and we will recess for lunch until 1:30.

(Whereupon, the hearing was recessed for lunch.)

I N D E X

E X H I B I T S

NUMBER	MARKED FOR IDENTIFICATION	OFFERED	ADMITTED
Applt's. A	6	14	14

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

I, BOBBY J. DAVIS, 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 29th day of March, 1966.

Bobby J. Davis
NOTARY PUBLIC

My Commission Expires:

March 13, 1969

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 3366, heard by me on Jan. 26, 1966.

Elvis A. Utz, Examiner
New Mexico Oil Conservation Commission