STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
State Land Office Building
Santa Fe, New Mexico

31 July 1985

EXAMINER HEARING

IN THE MATTER OF:

Application of McCasland Oil Disposal System Partnership for salt water disposal, Lea County, New Mexico. CASE 8661

BEFORE: Gilbert T. Quintana, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: Jeff Taylor
Legal Counsel to the Division
Oil Conservation Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant:

MR. QUINTANA: We'll call Case 8661.

MR. TAYLOR: the application of McCasland Oil Disposal System Partnership for salt water disposal, Lea County, New Mexico.

The applicant has requested that this case be continued.

MR. QUINTANA: Case 8661 will be continued till August 28th, 1985.

(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. 8661 heard by me on July 31, 1985.

Gilbert P. Quintana, Examiner
Oil Conservation Division

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

28 August 1985

EXAMINER HEARING

IN THE MATTER OF:

Application of McCasland Oil Disposal System Partnership for salt water disposal, Lea County, New Mexico. CASE 8661

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Division: Jeff Taylor
Attorney at Law
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For McCasland Oil: W. Thomas Kellahin
Attorney at Law
KELLAHIN & KELLAHIN
P. O. Box 2265
Santa Fe, New Mexico 87501

I N D E X

GARY FONAY

E X H I B I T S

MR. STOGNER: Call next Case Number 8661.

MR. TAYLOR: Application of McCasland Oil Disposal System Partnership 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.

MR. STOGNER: Are there any other appearances in this matter?

Will the witness please stand and be sworn?

(Witness sworn.)

GARY FONAY,

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

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Mr. Fonay, for the record would you please state your name and occupation?

A Gary Fonay. I'm with Lynx Petroleum Consultants, Incorporated, acting as a consultant for McCasland Disposal Systems in this case.

Q Mr. Fonay, have you previously testified before the Oil Conservation Division?

A Yes, sir, I have.

Q And in what capacity was that?

A As a consultant or as independent operator.

Q Do you hold any professional degrees, Mr. Fonay?

A Yes. I have a BS in petroleum engineering from Colorado School of Mines?

Q Pursuant to your employment as a consultant on behalf of McCasland Oil Disposal Systems Partnership, have you made a study of the facts surrounding this application for salt water disposal?

A Yes, sir, I have.

MR. KELLAHIN: If the Examiner please, we tender Mr. Fonay as an expert petroleum engineer.

MR. STOGNER: He is so qualified.

Q Mr. Fonay, let me direct your attention first of all to the plat which is marked as Exhibit Number One, and have you orient the examiner as to the site of the

proposed disposal well and the type of wells that are described on Exhibit Number One.

A The Exhibit One is a lease map of all wells in the area. The arrow points to the proposed well, the Steve State No. 1, located in Unit letter F of Section 1, 22 South, 35 East, Lea County, New Mexico.

It's about seven miles southwest of Eunice.

As I said, the map shows all wells in the area. The majority of the wells in the general vicinity are shallow Yates-Seven Rivers-Queen tight producers.

Q Would you identify for the examiner what the current status is of the proposed injection well?

A It's currently a shut-in gas well.

Q Would you describe for the examiner what the McCasland Disposal System constitutes and how this well will be integrated into the system?

A MsCasland Disposal System currently operates three disposal wells in the immediate vicinity, the Day No. 1 and Day No. 2, located in Unit letter C and D of Section 6, 22, 36, and ATHA No. 1, located in Unit letter N of Section 31, 21 South, 36 East.

Q This is a commercial disposal system for McCasland?

A Yes, it is. He disposes of produced --

trucked produced water from throughout the area to this facility and disposes into these three wells.

Q And how will the subject well be integrated into the existing system?

A Proposed to lay a pipeline from the existing facility located by the ATHA No. 1 to the Steve State No. 1 to integrate it into the system for additional disposal capacity.

Q All right, sir. Did you, sir, prepare the Commission Form C-108 and all the attachments thereto?

A Yes, sir, I did.

Q All right. Let's turn now to Exhibit Number Two, which is a copy of the C-108 form, and you executed this on behalf of McCasland Oil Disposal System?

A Yes, sir, I have.

Q All right, let's turn now to Exhibit Three and have you discuss for us the way the disposal well will be recompleted for disposal.

A Okay. It's shown there, as I stated, this well was spudded December 29th, 1980, and was originally drilled as an attempt at a potential gas producer in the Jalmat Pool.

Surface casing, 8-5/8ths was set at 417 feet and cement was circulated to surface.

Long string was set at 4300 feet, 5-1/2

inch string, cemented with 700 sacks of cement, was also circulated to surface on this string. So good cement on both strings.

The gross perforated intervals are listed there. These zones were tested selectively.

From 3243 to 4248 tested water and there is currently a cast iron bridge plug over those perfs.

The interval from 4250 to 4181 tested water; case iron bridge plug and 35 foot cement was put over these perfs.

Interval from 3824 to 3918 was tested as a real weak gas well; IP'ed for 60 Mcf a day and 80 barrels of water.

Currently the well is just shut-in.

What we propose to do would be to drill out those cast iron bridge plugs to get back to the Seven Rivers formation; open up all existing perforations; run 2-7/8ths plastic-lined tubing set at approximately 3700 feet with a packer set at 3700 feet; have packer fluid on the back side and set up for disposal.

Q Do you have an opinion as to whether or not this wellbore is suitable for disposal in the Yates and Seven Rivers?

A Yes, it is. The wellbore is in good shape; recently drilled and cemented properly, and the well-

bore is in good shape.

Q In your opinion is this wellbore capable of production of gas or oil at this time?

A Not commercially, no, sir.

Q Let's turn now to Exhibit Number Four and have you identify that exhibit for us.

A As per the C-108 requirements, the area of review encompasses the half mile radius around the Steve State No. 1.

There are three wells within that half mile radius of review with their name and date spudded and locations given on Exhibit Four. I think I've said all these wells have been plugged and abandoned. The details of the plug and abandonment of these three wells is shown on Exhibits Five, Six, and Seven, all the details of each of those plugged wells given on those exhibits.

Q All right. Let's go through the individual schematics for each of the plugged and abandoned wells and have you summarize for us the plugging method and render an opinion as to whether or not these wells are adequately plugged and abandoned to isolate the Yates-Seven Rivers disposal formation from contamination of any other formations through the plugged and abandoned wellbores.

A Okay. The first one is the Tenneco Amerada State located in Unit letter B of the same section. It

was drilled in 1956 and plugged in '71; drilled similar to the Steve State; surface casing set at 318 with cement circulated. 5-1/2 string was set at 3858 with top of cement shown at 3150. That was determined by temperature survey, as indicated in the Oil Conservation records. A 25-sack plug set above the perfs. Casing cut off and another plug there at the surface casing shoe and another at the surface. Plugged and abandoned properly; should be no problem.

Q All right, sir, turn then to Exhibit Number Six and describe that one for us.

A Exhibit Number Six is the Humble Oil and Refining New Mexico State "AR" No. 1; similar again, surface at 357 feet, circulated; casing set at 3,872, 5-1/2. Top of cement is up in 5-1/2, 8-5/8ths annulus, determined by temp survey.

It was completed open hole as well as perforated. Upon abandonment in 1957 the cast iron bridge plug was set above the perfs, cement on top, and another plug at surface. Again properly plugged and abandoned; no problem.

Q All right, sir, and Exhibit Number Seven.

A The final well within the radius of review is the Continental Oil Company State F 1-A No. 1, and it's located in Unit letter H of the same section.

This well was drilled somewhat older; was

drilled in 1939 and set an additional intermediate string. Surface was set at 273 feet, circulated; intermediate at 1803 feet and then production string at 3726 feet.

The well was completed open hole to 3949. Upon abandonment in 1947 a total of five plugs were set coming out of the hole with cast iron bridge plug at surface with 2600 foot of 5-1/2 and 670 foot of 7-5/8ths recovered.

Sufficient plugs and cement there should cause no problems whatsoever.

Q Let me ask you some questions now, Mr. Fonay, about Exhibit Number Eight in terms of the proposed method for operating this disposal well.

Would you describe for us what you anticipate to be the average daily volumes, the pressures, the source of the disposal water, and the general information depicted on Exhibit Number Eight?

A Okay. As stated earlier, McCasland currently operates three wells in the area; currently dispose of about 60-70,000 barrels per month on a vacuum into the Yates-Seven Rivers formation. This well would be added to that system for additional capacity.

Average daily injection volume will be in the range of 600, somewhere in that range, possibly less.

Run a closed system. Tanks are closed. The maximum we'd expect would be 1250, in that range, and

anticipate -- do not anticipate putting any pressured water into this system but request a maximum injection pressure of 700 if there was ever a need to -- for that type pressure to get rid of acquired water.

Also, Step Number Four there in Exhibit Number Eight refers to Exhibit Number Nine, and this is a sample of water currently being disposed of in the existing system. This produced water from throughout this area on leases that are producing water are trucked to this system and disposed of here; would be a variety of produced brines. The sample doesn't show anything unusual as far as chloride content or anything else and this water has been injected into this same formatin for some time and there's been no compatibility problem, and we would perceive none in the -- in the Steve State No. 1 out of the same formation.

Q Would you turn now to Exhibit Number Nine and identify --

A Exhibit Number Nine is that water analysis, as I said.

Q All right, and that is from the disposal system that McCasland operates.

A Yes, sir.

Q You also have a fresh water analysis subsequent in your exhibits.

A Yeah, we've got them later in the exhi-

bits.

Q All right. Let's go to Exhibit Ten, then, at this point and have you describe for us the information contained on that exhibit.

A Okay. Geologically, as I stated earlier, disposal would be into the Yates and Seven Rivers formations. Now the Yates is a series of sandstone and dolomite stringers, of a thickness about 400 feet thick in this area with the top at 3,760 feet.

The Seven Rivers is dolomite and lime and extends from its top at 4160 to TD. The majority of the water would probably be into the Seven Rivers formation as it's a more -- has higher porosity and permeability.

There is no fresh water wells within a half mile radius of the Steve State No. 1 but there is some fresh water just a little over a mile away in Section 6 of 22, 36. These wells produce from the Ogallala formation at a depth of approximately 175 feet.

No specific stimulation program is planned. If the well doesn't satisfactorily take disposed fluids, reperforation and acidizing may be required. The other wells had to be acidized periodically.

I have analyzed all available engineering and geological data available in the immediate vicinity and found no evidence of any problem as far as open faults or

any other connection between the formation we intend to dispose into and this Ogallala formation.

I have a sample here provided to me by the State Engineer on the fresh water well in Section 6. The date of this sample was November 16th, 1984, less than a year ago. Chloride content was roughly 2000 and there's been a good deal of disposal in this area for some time in this formation, over 7-million barrels. This well is obviously not being affected. We don't perceive any problem there, either.

Q Have you caused to be -- have you caused a search to be made looking for other fresh water wells in the immediate area?

A Yes, sir, I have. I've contacted the State Engineer's Office here in Santa Fe. I talked to Mr. Frank Craig. His correspondence back to me is Exhibit Number Thirteen, stating that, you know, he searched for the wells, found none in the half mile radius and the only thing in the area was these wells a little over a mile away in Section 6.

Q In terms of the surface limitation pressure for the disposal well, Mr. Fonay, will that be a surface limitation pressure that meets the .2 psi per foot of depth guideline of the Division?

A Yes, sir, it will.

Q And will your annular space at the wellhead be equipped with a pressure gauge or some other device to monitor the pressure on that annulary space?

A Yeah, that will be no problem there.

Q All right.

MR. KELLAHIN: Mr. Examiner, at this time we would also tender to you Exhibits Fourteen and Fifteen, which are the certified mail return receipts for notification of the offset operators.

For your information, we are working with Ray Graham down in the Oil and Gas Division of the Land Office. This wellbore, we believe, will require a salt water disposal easement from the Commissioner, as well as additional right-of-ways for pipeline and roads and we would request that your approval of this disposal well be contingent upon us also getting approval of the Commissioner.

Like I said, we're working with Mr. Graham and we have his cooperation in filling out the necessary forms. We believe that we will accomplish that shortly, but the Division is no good to us without Mr. Graham's approval and they ought to go hand in hand.

MR. STOGNER: What is the status of those negotiations with the Land Office?

MR. KELLAHIN: Mr. Graham has

given us all the necessary forms. He's researched his file and indicated to us hows to complete and file those documents.

MR. STOGNER: What kind of time limit are you all looking at on that?

A We'll get it done pretty quick, Mr. Examiner. It won't -- should be -- shouldn't be any problem.

MR. KELLAHIN: I would think within ten days, Mr. Stogner.

MR. STOGNER: I'll be in contact with Mr. Graham and (not clearly understood.)

MR. KELLAHIN: His approval is contingent upon the Oil Division's approval, so it requires that the two of you discuss this.

MR. STOGNER: Okay. Thank you for notifying me on that.

Let's see, I'm looking at your notices here. You have two sets of notices. This case was amended, was it not?

MR. KELLAHIN: Yes, sir.

CROSS EXAMINATION

BY MR. STOGNER:

Q You have one in here, your first one, Ray Pearce?

A It's the operator to the north.

Q In Section 36?

A Yes, sir.

Q Okay, and I show Gulf as being the operator in the southwest quarter, Mr. Pearce the operator in the west half of the southeast quarter?

A Yes, sir.

Q Okay, you show -- yeah, R. A. Pearce, for Crown Central, or something to that effect.

Warrior, Incorporated, they're to your immediate --

A East.

Q -- east, are they not? East.

How about Amerada Hess?

A Amerada Hess has a lease to the southwest and the half mile circle just barely clipped their 40-acre tract in the northwest of the southeast of Section 2. I went ahead an notified them.

Q Okay, now on the west half of Section 1, where you're located, who's the leasehold on that, or is that --

A Sol West and McCasland Disposal Systems has assignment of that lease from Sol West to the McCasland Systems that will be filed with Mr. Graham along with that acquired business lease.

MR. TAYLOR: Is there a surface user of that in the State, either grazing --

A Well, the State is the owner of the surface and they were also notified by registered mail of this application.

MR. KELLAHIN: There is no grazing lessee that we could find.

Q In Exhibit Number Eight, Part No. 4, you mention in there that offset wells currently are disposing of this type of water into the Yates-Seven Rivers formations.

Where are some of the nearest disposal wells?

A Okay, the nearest disposal wells would be those three operated by McCasland Disposal Systems: The Day No. 1 and Day No. 2, located in Unit letter C and D of Section 6, 22, 36, and the ATHA No. 1, located in Unit letter M of Section 31, 21, 36; just a little over a half mile away.

Q Okay, the water, as is shown in Exhibit Number Nine, is the same water as is being disposed in those three wells that you've just mentioned.

A Yes, sir.

Q Okay.

MR. STOGNER: I have nothing further of this witness.

Is there anything else of Mr. Fonay?

MR. KELLAHIN: Nothing other than to admit Exhibits One through Fifteen, if you please.

MR. STOGNER: Yes, sir, Exhibits One through Fifteen will be admitted into evidence at this time.

Is there anything further in Case Number 8661?

MR. KELLAHIN: No, sir.

MR. STOGNER: If not, this 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 (Commission) 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. 8661, heard by me on 28 August 1985.

Michael E. Stogner, Examiner
Oil Conservation Division