NEW MEXICO OIL CONSERVATION COMMISSION

EXAMINER HEARING

SANTA FE, NEW MEXICO

Hearing Date JULY 7, 1994 Time: 8:15 A.M.

NAME	REPRESENTING	LOCATION
Todd W. Moehlenbrock	Texaco EAP	Midland, TX
Bill Hay	TEXACO E&P	MIDLAND, TX
Todd Lackey	TEXACO E&P	HOBBS, NM
Glenn W. Lanque	Phillips Petroleum Company	Odessa, TX
Tanya Trujillo	Campbell, Carr, Berge & Sheridan	SF
James Bruce	Hinkle Law Firm	SF
Charlie Gibson	BURK ROYALTY	Wichita Falls, TX
W. Kellahin	Kellahin & Kellahin	Santa Fe
Ken Schrantz	Phillips Petroleum	Odessa

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

APPLICATION OF BURK ROYALTY COMPANY

CASE NO. 10,985

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

July 7, 1994

Santa Fe, New Mexico

27 1994

This matter came on for hearing before the Oil Conservation Division on Thursday, July 7, 1994, at Morgan Hall, State Land Office Building, 310 Old Santa Fe Trail, Santa Fe, New Mexico, before Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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I N D E X

July 7, 1994
Examiner Hearing
CASE NO. 10,985

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E X H I B I T S

	Identified	Admitted
Exhibit 1	7	16
Exhibit 2	7	16
Exhibit 3	8	16
Exhibit 4	9	16
Exhibit 5	15	16
Exhibit 6	15	16

* * *

A P P E A R A N C E S

FOR THE DIVISION:

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Santa Fe, New Mexico 87504-2068
By: JAMES G. BRUCE

* * *

WHEREUPON, the following proceedings were had at 8:19 a.m.:

EXAMINER CATANACH: At this time we'll call first case, 10,985.

MR. CARROLL: Application of Burk Royalty Company for a waterflood project, Lea County, New Mexico.

EXAMINER CATANACH: Are there appearances in this case?

MR. BRUCE: Mr. Examiner, Jim Bruce with the Hinkle Law Firm in Santa Fe, representing the Applicant.

I have one witness to be sworn.

EXAMINER CATANACH: Any additional appearances?

Okay, please swear the witness in, Mr. Carroll.

CHARLES GIBSON,

the witness herein, after having been first duly sworn upon his oath, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. BRUCE:

Q. Will you please state your name and city of residence for the record?

A. My name is Charles Gibson. I live in Wichita Falls, Texas.

Q. What is your occupation and who are you employed by?

A. I am a petroleum engineer for Burk Royalty

Company.

Q. Have you previously testified before the Division?

A. No, I have not, not in New Mexico.

Q. Would you please outline your educational and employment background?

A. I graduated from the University of Texas in 1979 with a bachelor's of science in petroleum engineering.

I went to work for Sun Oil Company, worked for them for 11 years in California and Texas in various phases of petroleum engineering, production, reservoir, drilling.

I went to work for Burk Royalty in 1990 and have worked for them since, been in all phases of petroleum engineering, again, mostly in reservoir engineering, and in that capacity I've testified in Texas and Oklahoma in front of the Railroad Commission and the Corporation Commission, respectively.

Q. And are you familiar with the engineering matters related to this Application?

A. I am.

MR. BRUCE: Mr. Examiner, I tender Mr. Gibson as an expert petroleum engineer.

EXAMINER CATANACH: Mr. Gibson is so qualified.

Q. (By Mr. Bruce) Briefly, Mr. Gibson, what does Burk seek in this case?

A. Well, we're the operator of the Hanson Federal "C" lease, which covers the southwest quarter of Section 23, Township 20 South, Range 34 East in Lea County, and we seek authority to inject produced water into the Yates interval through our Hanson "C" Well Number 4, located 1650 feet from the south line and from the west line of Section 23, and we believe the injection will increase the production in our offset wells.

Q. What's the current status of the "C" 4 well?

A. It's currently TA'd. Earlier this year, the BLM, as the well had been inactive for a long time, said to, you know, do something with the well, either make it active or plug it.

And at that time there was a packer stuck in the hole, and we milled it up. And when we were successful doing that, we decided to apply for an injection permit for this well.

Q. What is the history of the well? What year was it drilled and what happened to it thereafter?

A. It was drilled back in 1963 -- or, excuse me, January of 1964. And it did not make a producing well, so it was TA'd at that time for future use as a disposal well. They did use that as a disposal well from 1969 till 1975.

Q. And it's been inactive since 1975?

A. That's true.

Q. Would you please refer to Exhibit 1 and discuss it briefly for the Examiner?

A. Exhibit 1 is a map of a portion of Lea County. Highlighted in yellow is the Hanson "C" lease. It shows the four wells on that lease, the 1, the 2, the 3 and the 4.

The 2 was a dry hole. The 4, as I said, never made a producer, and the production from the lease has been from the Number 1 and the Number 3 wells.

The map also shows a line from the A to A' that I'll refer to in a later exhibit.

Q. And does the map also show the offset operators?

A. It does.

Q. What pool do you seek to inject into?

A. It's the Lynch Pool.

Q. And could you then move on to Exhibit 2 and discuss that, please?

A. Exhibit 2 is the same map -- or a map of the same area, but it shows a structure on the top of the Yates sand, and also it shows the Hanson "C" highlighted in yellow. The stippling on the map is Burk's leasehold in the area.

Q. And all of the wells on the Hanson "C" lease are at about the same structural depth, are they not?

A. They are. The well we seek authority to inject

into is 11 feet low to the Number 1 and 13 feet low to the Number 3.

Q. Would you then move on to Exhibit 3 and identify that for the Examiner?

A. Exhibit 3 is the cross-section that I referred to earlier, from the Hanson "C" down to the -- down through our Neal lease.

It shows both the top of the Yates, relatively consistent through all of the wells, and it shows a porosity interval in the lower Yates that is easily correlatable and well developed through the area.

Q. Is the Lower Yates the main producing zone?

A. It is. There are a couple other porosity intervals in the upper and middle Yates, but clearly the majority of the production has come from the --

Q. And that's why you believe you can do well injecting into that zone?

A. Yes, we do.

Q. Is production from this lease in an advanced state of depletion with respect to primary production?

A. It is. The lease has had a cumulative of 169,000 barrels, but now it's down to only seven barrels a day.

Q. From both producing wells?

A. Yes.

Q. Total?

A. Yes. So an average of 3.5 barrels per day per well. So, you know, this project will increase the recovery and increase the production.

Q. What is Exhibit 4?

A. Exhibit 4 is the OCD form C-108 and the attachments to that, which is our Application for Authorization to Inject. The -- I'll go through the Application.

The second page of the Application is our proposed parameters. Our desired injection rate is 300 barrels per day. We think that we might get up to 1500 barrels per day eventually.

It's a closed system. We think that it won't take over 300 pounds to inject into it. At some point we think that the injection pressure might get up to 1500 pounds, but currently we'll only ask for 700 as that's within the .2 p.s.i. per foot that the Division allows.

The sources of injection fluid will be produced water.

Q. From what zone will the produced water come from?

A. It will come from the Yates and also possibly from the Seven Rivers. The injection zone is the Yates sandstone, upper Permian in age. The top of the Yates in the "C" 4 is at 3462, and the well is perforated from 3564 to 3585.

There are no underground sources of drinking water below the Yates.

Above the Yates, the Quaternary alluvium to about 80 feet is the only source of ground water in the area, also called the Ogallala.

The next two pages are the land owner and the leasehold operators offsetting the Hanson "C" 4 lease.

Not all these companies have producing wells directly offsetting the C-4, but they have interest rights in the leases offsetting.

The next page is the wells which penetrate the proposed injection zone. Including the "C" Number 4, there are seven wells in the half-mile area of review.

The "C" 4, as I stated before, is currently inactive.

The "C" 1 and "C" 3, as I said, are both active.

The "C" 2 was drilled and abandoned. At the time that this table was prepared, I didn't have all the plugging information on that well and the other two wells that I don't have casing records for. The "C" 2 was drilled in 1963, drilled and abandoned. It had a 50-sack cement plug from 3572 to 3672, 20-sack plugs at 3300 and 1750, 35-sack cement plug at 300 feet, which went across the base of the surface casing. It has 8 5/8 cemented at 250 feet, and then they put a 10-sack cement plug at the

top of the 8 5/8 and a 10.4-pound rotary mud spacers between the cement plugs.

The Hanson Federal "D" Number 1 had 5 1/2 at 3728. Its record of completion is attached. It was plugged and abandoned.

The Hanson Federal "D" Number 2 was drilled October, 1963. It had a 50-sack cement plug at 3667, a 20-sack -- 20-sack plugs at 3320 and 1740. Those intervals are at the base of the salts and at the top of the salt. A 35-sack plug at the base of the 8 5/8 casing, and then a 10-sack plug in the top. The 8 5/8 was at 220 feet.

And then the last well on the list is the D&E Federal Number 1. It was drilled and abandoned in August of 1961. They set 7-inch at 1632, and they had 8 5/8 at 1600, but they only -- They didn't use very much cement when they set these strings, and they pulled that pipe from 900 and 950 feet, respectively. They had a 35-sack cement plug from 3501 to 3601, an 18-sack cement plug from 3315 to -65, 41-sack plugs from 1600 to 1700 and 950 to 1050, a 125-sack plug from 200 to 300 and a 15-sack plug at the surface.

Q. Is the mechanical integrity of these wells sufficient to prevent injected water from reaching any freshwater sources?

A. Yes, it is.

Q. Okay. Please continue with the next part of your C-108.

A. After the table or the completion reports for the Hanson "C" 4 showing that it was drilled and cased and cemented, according to all the regulations, and should provide protection from any migration of fluids, the "C" Number 1 shows the same.

If the Examiner would like, I can read all of this into the record, or just let the Application show that.

Do you want me to go through all the casing on all the wells?

EXAMINER CATANACH: No.

THE WITNESS: Okay.

Q. (By Mr. Bruce) Why don't you move on to your proposed recompletion of the "C" 4?

A. Okay. The schematic that shows the 8 5/8 at 258 feet. It was cemented to the surface, the 5-1/2-inch casing was set at 3692 and cemented to the surface with 500 sacks. So we have, you know, good casing and cement to the surface.

Our perforations are from 3564 to -70, 3574 to -76 and 3583 to -85.

We'll run a packer on 2 3/8 tubing to approximately 3450 to isolate the casing from the tubing in

the injection zone. It shows the plugback is 3656, 70 feet of rathole.

We'll have a pressure gauge on both the tubing and the tubing casing annulus to monitor pressures.

Q. Will the condition of this well and of the other wells in the area of review allow you to safely conduct waterflood operations?

A. We believe it will.

Q. The final page is just the advertisement that Burk royalty had done in the local newspaper; is that correct?

A. It is, the *Hobbs Daily News Sun*.

Q. Now, referring back to Exhibit 1, there are three little red X's on that exhibit, one in the northeast of Section 22, one on your lease and another one in the northeast quarter of Section 26. What do those red marks indicate?

A. They represent fresh water wells that were drilled in the area. They were drilled for stock tank purposes. We're not sure if they are active; we're going to inspect that tomorrow. And if they are active, then we'll collect samples and submit that analysis.

MR. BRUCE: We'd request permission, if those wells are active, to submit the water analyses after this hearing, Mr. Catanach.

EXAMINER CATANACH: Okay.

Q. (By Mr. Bruce) Now, the wells in Section 22 and Section 26 are stock-tank wells. What about the well in Section 23? What is it?

A. Okay, it was a freshwater well drilled as a ground bed water source for -- that provided protection for Phillips Petroleum's pipeline, and as such it's not in use as a water supply well for anything but just as a source to keep their -- wet.

Q. Are there any faults or hydrologic connections between freshwater sources and the objection [*sic*] formation?

A. None that we can tell from inspection of the electric logs of the area.

Q. Okay. Now, you mentioned the injection water will come, I believe, primarily from the Seven Rivers?

A. The Yates does not produce a lot of water in its primary phase of production, and there are other wells in the area where we talked to the operators and we're going to be able to use their water.

Q. Is the injection water compatible with the formation water?

A. It is. You know, there aren't any serious scale or corrosion problems. We'll treat for scale, but it's not a problem.

Q. Okay. And what about the initial -- the project area for this waterflood?

A. It will be the south half of the southwest quarter of Section 23 and the northeast of the southwest of 23.

Q. Now, when you initially filed the form C-108 with the Division, did you also notify the surface owners or lessees and the offset operators or lessees?

A. Yes, we did.

Q. And is Exhibit 5 your cover letter to the C-108 and the certified returns?

A. Yes, it is.

MR. BRUCE: Also, Mr. Examiner, because this was set for hearing, I went ahead and notified all of the same companies of the exact hearing date, and Exhibit 6 is my affidavit of notice with the notice letter and certified return receipts attached.

EXAMINER CATANACH: Okay.

Q. (By Mr. Bruce) Mr. Gibson, in your opinion will the granting of this Application be in the interests of conservation, the prevention of waste and the protection of correlative rights?

A. Yes, it will. If we don't do this project, then the lease is going to reach its economic limit sometime soon, depending on the price of oil, of course, and this

should extend the life of the lease for a number of years.

Q. Were Exhibits 1 through 6 prepared by you or under your direction or compiled from company records?

A. They were.

MR. BRUCE: Mr. Examiner, I move the admission of Exhibits 1 through 6.

EXAMINER CATANACH: Exhibits 1 through 6 will be admitted as evidence.

EXAMINATION

BY EXAMINER CATANACH:

Q. Mr. Gibson, I believe you testified that the Number 4 well has previously been used or -- I'm sorry. Which well has been previously used as a disposal well?

A. The well that we're applying for the permit today.

Q. The Number 4 well?

A. Yes. At the time that they did it, they did not have any extraneous water source, and so it's simply a disposal operation. And the records are a little bit unclear as to why they quit using it.

Q. Do you have any idea what permit number that well had?

A. I don't have that, but we could research it. I can get it for you.

Q. Was it injecting into the same perforations that

are currently in the well?

A. It was.

Q. Your plans are to just utilize the two producing wells; you're not going to drill any additional wells on that lease?

A. Not at this time. The spacing for the pool is 40 acres, and so we only have 120 acres that we'd have to apply for increased density.

Q. Do you have any estimates of what you might recover by this operation?

A. Well, the primary for the two wells was 169,000, and some offset floods could approach that. So, you know, we probably won't reach one to one, but we should produce in the range of 120,000 to 130,000 barrels.

Q. Now you're just producing out of the Yates; is that correct? Seven Rivers is not productive?

A. Not in our wells. In the area it is, but not on the Hanson "C" lease. So yes, we're only producing from the Yates sand.

Q. You went through some information on the P-and-A'd wells. What I need for you to do is submit schematics after the hearing, submit schematic drawings of all the P-and-A'd wells, showing all the plugging details on those wells.

A. Okay.

Q. And the freshwater wells, you're going to make a determination if those are producing; is that correct?

A. We're going to make a determination to the status of those. And if we can, we're going to get samples.

Q. Okay. How are you going to make that determination?

A. We're going to go look at the -- inspect them.

Q. Do you know how deep those water wells are?

A. They are, I believe, 220 feet. They're less than 250 feet deep.

Q. Is the project area -- Is the interest common in the project area? Is all the interest the same on each of these tracts?

A. Interest -- You mean the working interest?

Q. Working interest.

A. On the Hanson "C" it is, the three wells. The interests are a little bit different on our other leases in the area.

Q. But all the "C" wells are the same?

A. Yes, they are.

Q. And this is all one federal -- one common federal lease?

A. It is.

EXAMINER CATANACH: I don't have anything else, Mr. Bruce.

MR. BRUCE: Nothing else, Mr. Examiner.

EXAMINER CATANACH: Okay, there being nothing else, and pending the submission of the additional two or three exhibits, Case Number 10,985 will be taken under advisement.

(Thereupon, these proceedings were concluded at 8:43 a.m.)

* * *

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 10985, heard by me on July 7 1994.

David R. Catanach, Examiner
Oil Conservation Division

CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
COUNTY OF SANTA FE)

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL July 8, 1994.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 1994