NEW MEXICO OIL CONSERVATION DIVISION

EXAMINER HEARING

SANTA FE, NEW MEXICO

Hearing Date APRIL 20, 2000 Time 8:15 A.M.

NAME	REPRESENTING	LOCATION
John Humphrey	Yates Petroleum	Artesia, NM
Tim Miller	Yates Petroleum	Artesia, N.M
Charles Moran	Yates Petroleum	Artesia, N.M
John Dam	Dugan Product	Farm NM
John Alexander	Dugan Product	Farm NM
W. Kellahin	Kellahin & Kellahin	Santa Fe
William F. Carr	Campbell, Carr, Berge & Sheridan	Santa Fe
SAM JOLLIFFE	NADEL AND GUSSMAN	MIDLAND, TX.
Scott Germann	NADEL & GUSSMAN Permian	MIDLAND TX
James Bruce	—	Santa Fe
B. Il Pierce	Penwell Energy Inc.	Midland, Tx

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 DUGAN PRODUCTION CORPORATION FOR SALTWATER DISPOSAL, SAN JUAN COUNTY, NEW MEXICO

CASE NO. 12,364

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: MARK ASHLEY, Hearing Examiner

April 20th, 2000

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, MARK ASHLEY, Hearing Examiner, on Thursday, April 20th, 2000, at the New Mexico Energy, Minerals and Natural Resources Department, Porter Hall, 2040 South Pacheco, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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I N D E X

April 20th, 2000
Examiner Hearing
CASE NO. 12,364

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E X H I B I T S

Applicant's	Identified	Admitted
Exhibit 1	18	18
Exhibit 2	9	18
Exhibit 3	9	18
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A P P E A R A N C E S

FOR THE DIVISION:

LYN S. HEBERT
Attorney at Law
Legal Counsel to the Division
2040 South Pacheco
Santa Fe, New Mexico 87505

FOR THE APPLICANT:

CURTIS & DEAN
P.O. Drawer 1259, 506 West Arrington
Farmington, NM 87401
By: JOHN DEAN

* * *

WHEREUPON, the following proceedings were had at 8:20 a.m.:

EXAMINER ASHLEY: This hearing will come to order for Docket Number 10-00. Please note today's date, April 20th, 2000. I'm Mark Ashley, appointed Hearing Examiner for today's cases.

Before we call the first case, I'd like to review the docket for any continuances and dismissals.

(Off the record)

EXAMINER ASHLEY: At this time the Division calls Case 12,364.

MS. HEBERT: The Application of Dugan Production Corporation for saltwater disposal, San Juan County, New Mexico.

EXAMINER ASHLEY: Call for appearances.

MR. DEAN: My name is John Dean, I'm an attorney representing Dugan Production Company. I have with me John Alexander, who's the vice president of Dugan.

EXAMINER ASHLEY: Call for additional appearances?

Will the witness please rise to be sworn?

(Thereupon, the witness was sworn.)

EXAMINER ASHLEY: Mr. Dean?

MR. DEAN: This an Application by Dugan Production to convert its Stella Needs A Com Number 1 to a

saltwater disposal service. The formation to be injected is the Mesaverde at 3500 feet. The Mesaverde in this area is not producing and is not part of any designated oil or gas pool.

This well was drilled in the 1960s and completed in the Dakota formation. The well is located in San Juan County near Hartford Hill, west of Farmington, and the maximum proposed injection rates are 700 barrels of water a day and a maximum pressure of 700 p.s.i.

Dugan operates a similar well within a very close proximity, which was administratively approved. We're going to use the same procedure on this well.

We have a list of exhibits which I'd like to go ahead and admit, if it's all right with the Hearing Officer, and they're indexed. The index is on the top. These were prepared by the witness and are made from records of Dugan Production, public records.

Also in this case, there was a mistake on the Application that this was part of -- the interval to be injected was part of a pool. It is not. It's a non-producing formation in this area.

Also, we've been told by the Commission that they'll stipulate as to the water analysis from the offset well as being water typical of the water found in this formation.

That water analysis is Exhibit C -- or Number 6, I'm sorry, that's in the documents that have been provided to you. It's our understanding that the Commission will stipulate that those are representative of the water from the Stella Com.

And I'd like to call Mr. Alexander as a witness, unless there's any questions beforehand.

EXAMINER ASHLEY: No, that's fine.

JOHN ALEXANDER,

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

DIRECT EXAMINATION

BY MR. DEAN:

Q. All right, would you please state your name?

A. John Alexander.

Q. And your occupation?

A. I am a petroleum engineer.

Q. And you work for Dugan Production?

A. I do work for Dugan Production Corporation. I'm vice president and chief operating officer.

Q. All right. And by training, what is your profession?

A. I am a petroleum engineer by education, University of Texas, 1968.

Q. Have you worked in your profession since that

time?

A. I've worked as a petroleum engineer since that time.

Q. And have you worked primarily in the San Juan Basin?

A. I've been working in the San Juan Basin since 1972.

Q. And have you testified in front of the Commission before?

A. Yes, I have.

MR. DEAN: I'd like to ask that he be recognized as an expert to testify in matters of petroleum engineering.

EXAMINER ASHLEY: Mr. Alexander is so qualified.

MR. DEAN: Thank you.

Q. (By Mr. Dean) Did you prepare the Application on behalf of Dugan Production for this Stella Needs A Com 1?

A. Yes, I did.

Q. Did you prepare that Application? And did you sign it, and are all of the items in it true and correct to the best of your knowledge?

A. Yes, they are.

Q. And did you prepare or supervise the preparation of Dugan Exhibits 1 through 8 on this well that have been turned in to the Commission this morning?

A. Yes, I did.

Q. Do you have those exhibits in front of you?

A. Yes, sir.

Q. All right. Basically, what is Dugan asking the Commission to do?

A. Dugan is asking the Commission to allow for saltwater disposal into the Point Lookout member of the Mesaverde at the Stella Needs A Com Number 1 Well, that well being located 1650 foot from the south line, 1650 foot from the west line of Section 36, Township 30 North, Range 14 West. And as I said, we're asking that we be allowed to dispose of produced water in that location.

Q. Are you currently operating a well similar to that near this location?

A. Yes, sir, we operate the Stella Needs A Com Number 1 E, which is in the same section. That application was administratively approved by the Commission in 1995. It's administrative order SWD-595.

Q. And so you've been operating that well since 1995?

A. Yes, we have.

Q. Have there been any problems with it?

A. There have not.

Q. All right. Did you notify the offsetting lease operators and surface owners to this well?

A. Yes, I did. Exhibit 2 is a map showing the wells within two miles -- the wells and leases within two miles of the subject well, and all wells and leases within one half mile of the subject well.

There is only -- Dugan Production Corporation is operator of all leases within a half mile, with the exception of the southeast quarter of Section 35, where Dugan owns from the base -- from the surface to the base of the Pictured Cliff, and Questar owns from the base of the Pictured Cliff to total depth.

Exhibit 3 is a copy of the certified mail return receipt to both the surface owners, being the Land Commissioner and the grazing rights owner, Rilla King, and then of course Questar as the mineral owner.

Richardson Operating was also notified, because there was some question about their ownership. But they, indeed, are not affected.

Q. Did you also cause a notice and proposal in the Farmington -- to be published in the *Farmington Daily Times*?

A. Yes, I did. I also published notification of this proposal on February 8th, 2000. Exhibit 4 is a copy of that notice published in the *Farmington Daily Times*.

Q. And have you received any opposition or comments about the proposal?

A. I have not.

Q. Okay. What is the water quality of the well of the Stella Needs A Com that's the subject of this Application?

A. Okay, we've asked the Commission to stipulate that the water contained within the Point Lookout and the current Stella Needs A Com Number 1 is similar to that found in the Stella Needs A Com Number 1 E, which is the -- I apologize for the confusion of names here, but the Stella Needs A Com Number 1 E is the currently authorized injection well.

If you'll look at Exhibit 5, Exhibit 5 is a log cross-section which shows the Stella Needs A Com Number 1 E there to the north in the left track. The right track is the Stella Needs A Com Number 1, which is the subject well of this Application.

If you can see, looking at the lower part of the log down here, the Point Lookout interval in the Stella Needs A Com Number 1 E shows the injection interval and the proposed injection interval in the Stella Needs A Com Number 1.

During my conversion of the Stella Needs A Com Number 1 E, we perforated the Point Lookout and swabbed 200 or 300 barrels out of it and took a water sample at that point. A copy of that water sample is shown in Exhibit 6.

This was the same sample that was used in the application for the Stella Needs A Com Number 1 E. It shows total dissolved solids of 59,361 milligrams per liter. And of course this is greater than the 10,000 milligrams per liter, which is the cutoff for water quality to approve injection.

Q. All right. Do you believe that that sample from the 1 E is reflective of the water in the Stella Needs A Com 1, which is the subject of this Application?

A. Yes, I do.

Q. And what about the water you plan to dispose in this well?

A. Referring to Exhibit 7, Exhibit 7 is a copy of a water analysis which I took here, or a few days ago, 4-17 of 2000. This sample was taken at the inlet to the Stella Needs A Com Number 1 E injection well, and it shows the total dissolved solids of 49,541.

This water comes from a water injection facility which is a few miles south of the Stella Needs A Com Number 1 E where we collect water primarily from the Fruitland Coal wells in the area.

From time to time, we also bring in water from Gallup and Dakota wells, and so my water quality -- or the type of water contained in that facility will vary slightly from time to time.

The Fruitland Coal water in this area generally averages around 30,000 milligram per liter, total dissolved solids. As you can see, this sample was 49,000. It was a little bit higher, so there may have been some Dakota or Gallup water in there. But this is typical of the water. This is about the highest total dissolved solids that would be disposed of in this well.

Q. And the same waters will be injected into the Stella Needs A Com 1 if that Application is approved?

A. That's correct.

Q. All right. What is the current wellbore configuration of this well?

A. Referring to Exhibit 8, this is a wellbore schematic of the Stella Needs A Com Number 1 as it will appear after a conversion to injection.

To familiarize you with what this schematic shows, the red intervals are cement that is currently known to be in place or that is currently in place, the blue intervals show cement plugs that I plan to set in preparing this well, and the yellow indicates the proposed injection interval.

If you will take a look at this, 8-5/8-inch casing was set at 268 foot. It was then cemented to the surface, and that was verified by circulation. 4-1/2-inch 10.5-pound casing was set at 6016 feet. It was cemented

with 100 sacks with an eight-percent gel in it, followed by 50 sacks of Class B.

The calculated cement top of 5200 foot was -- I made that calculation. They were pumping 251 cubic foot of total cement, used 75 percent of that volume because that's what customarily the BLM does when you don't have a caliper log, and so I calculated the primary cement top to be 5280 feet.

My proposal here to convert this well is that I would plug and abandon the Dakota. I would do that by spotting a plug from the -- below the Dakota top at approximately 5800 foot to 5650 foot, and this would abandon the Dakota with the Greenhorn top, which is generally considered to be the top of the Dakota, 5734 foot.

To abandon the Gallup, which would be above the calculated cement top behind pipe from the primary cement job, I perforate below the Gallup top at approximately 4992 foot and place an adequate volume of cement through that hole to leave approximately a 200-foot plug outside and inside of the casing at that point.

This brings us to how I plan to separate the Point Lookout interval of the Mesaverde and isolate it for injection. In order to do so, I need to isolate the lower portion of the Point Lookout, which is also the top of the

Mancos shale. I propose to do that by perforating 100 foot below the top of the Mancos shale. The Mancos shale top is 4027 feet, so I would perforate at approximately 4127 foot, run a cement retainer and set it, of course, above those holes, and spot an adequate volume of cement outside the casing to give me 200 foot of cement in the casing hole annulus, and leave about 100 foot inside of the 4-1/2-inch casing. This would effectively limit water from entering anything lower than the Point Lookout.

To seal above the Point Lookout, I plan to rely on a cement squeeze job that was done back in 1984 to repair a hole in the casing. 150 sacks of cement was squeezed through this hole, which was found to be at 3500 foot, and the calculated top of that cement would be 2950 foot, which is near the Menefee. And in this way I would limit the water from going up. I do realize it will have to pass a mechanical integrity test and those other things to be assured that the casing is in good shape beyond that point.

I further suggest that I be allowed to set the injection packer at 3500 foot. 3500 foot is where I know I have good cement, and I consider it good practice to set injection packers where I know I have cement behind the casing.

I realize that the interval from 3500 foot, which

is in the Menefee section of the Point Lookout, to 3690 foot, which is the top of the Point Lookout section of the Mesaverde, will be open to injection pressure. I don't think this will be a problem.

If you will refer quickly back to Exhibit 5, which is the log, in looking at the Stella Needs A Com Number 1 well here, you can see that the interval from 3500 foot to 3690 foot, which is here marked as the top of the Point Lookout, has only a minimal amount of sand, when compared to the Point Lookout. So I don't feel that the Menefee would take any water. I also feel that if it took any water, the water within the Menefee should be no different than it is from the Point Lookout. And that would be the way that I...

Q. All right, so you're going to place the packer a little higher than is typically done, because you know there's cement behind it there?

A. That's correct. Normally, the State of New Mexico likes to see its injection packer placed within 50 foot of the top of the perforated interval, and I completely understand the reason for that.

In this particular case, I know that there's cement behind the pipe at 3500 foot, and I would propose that I be allowed to set the packer at 3500 to inject through the perforated interval at 3690.

Q. In your experience, the Menefee would not be at risk then --

A. That's correct.

Q. -- from the injected fluids? Okay.

How do you intend to equip the well for injection service?

A. Again, referring to Exhibit 8, we would run internally plastic-coated 2-3/8-inch tubing, set in a plastic-coated Baker Model AD-1 tension packer. The tubing casing annulus will be loaded with a packer fluid to prevent any corrosion.

Q. All right. And have you had any experience in this type of process before, in what you propose to do to the Mesaverde in this case?

A. We've had some considerable experience, of course, in squeezing holes in casing, and the bulk of them have been in producing wells, but we have been very successful at it. Of course, it depends on the particular factors within the well at that time, but all the things we're talking about doing here are standard oilfield practice.

Q. All right, they've been successful for you in the past --

A. Yes, they have.

Q. -- and in the industry?

All right, in the Application you verified that you had studied available geological and engineering data to determine that there was no open faults or other hydrological connection; is that true?

A. That's correct.

Q. You're not concerned about this water going into known sources of drinking water in this area?

A. I am not. I'm also unaware of any wells in the area. In a review of the State Engineer's records we found no wells in the area.

Q. And there are no producing Mesaverde wells in the area of review?

A. There are not, within the Blanco-Mesaverde Pool is non-hydrocarbon producing.

Q. All right, so do you think your proposal as presented would protect the water quality, the associated rights, the correlative rights, public health and safety and the surface rights?

A. Yes, sir, I do.

Q. It would not pose any threats to them?

A. It would not.

MR. DEAN: I don't have any other testimony, except to move the exhibits into evidence, into the record, if they're not so done.

EXAMINER ASHLEY: No, they're not. How many

exhibits are there?

MR. DEAN: 1 through 8.

EXAMINER ASHLEY: Okay, Exhibits 1 through 8 will be admitted as evidence at this time.

MR. DEAN: 1 is just the original application. It may already be part of the record, but we also have it marked as an exhibit --

EXAMINER ASHLEY: Okay.

MR. DEAN: -- so you'll know.

We'll be happy to stand for any questions.

EXAMINER ASHLEY: Okay, give me a minute here.

EXAMINATION

BY EXAMINER ASHLEY:

Q. Mr. Alexander, did you say there are any wells in the one-half-mile AOR that penetrate the Mesaverde?

A. That's correct.

Q. What is this well that's just south?

A. That's a well called the O. Henry. It is a Fruitland Coal well, approximately 1200 foot deep. It is within the area of review, but it does not penetrate the Mesaverde.

Q. Mr. Alexander, has a bond log been run on this well?

A. It has not.

Q. Would a bond log tell you anything that we don't

already know here?

A. I think -- Mark, I think that's the only way that any of us are going to know for sure where this cement well -- We're fully prepared to expect you to ask us to do that. As I said, that squeeze job up there at 3500 that was done in 1984, we never had a bond log after that. So I totally think that that's reasonable, and it would -- it's the best way we can go about determining for sure where that cement is.

EXAMINER ASHLEY: Okay. Okay, I have nothing further.

MR. DEAN: Thank you.

EXAMINER ASHLEY: There being nothing further in this case, Case 12,364 will be taken under advisement.

(Thereupon, these proceedings were concluded at 8:46 a.m.)

* * *

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 12364, heard by me on 4-20 ~~19~~ 2000

Mark Ashley, 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 April 27th, 2000.

STEVEN T. BRENNER
CCR No. 7

My commission expires: October 14, 2002