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

27 February 1985

EXAMINER HEARING

IN THE MATTER OF:

Application of Yates Drilling Com- CASE
pany for a pressure maintenance pro- 8502
ject Chaves County, New Mexico.

BEFORE: Michael E. Stogner, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

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

For the Applicant:

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MR. STOGNER: We will call now
Case No. 8502.

MR. TAYLOR: The application of
Yates Drilling Company for a pressure maintenance project,
Chaves County, New Mexico.

This case has been requested to
be continued.

Case No. 8502 will be continued
to the Examiner Hearing scheduled March 13, 1985.

(Hearing concluded.)

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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. 8502, heard by me on 27 February 19 85.
Michael E. Stagner, Examiner
Oil Conservation Division

1 STATE OF NEW MEXICO
2 ENERGY AND MINERALS DEPARTMENT
3 OIL CONSERVATION DIVISION
4 STATE LAND OFFICE BUILDING
5 SANTA FE, NEW MEXICO

6 13 March 1985

7 EXAMINER HEARING

8 IN THE MATTER OF:

9 Application of Yates Drilling Com-
10 pany for a pressure maintenance pro-
11 ject, Chaves County, New Mexico.

CASE
8502

12
13 BEFORE: Gilbert P. Quintana, Examiner
14

15 TRANSCRIPT OF HEARING

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17 A P P E A R A N C E S

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19 For the Oil Conservation
20 Division:

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

21
22 For the Applicant:

William F. Carr
Attorney at Law
CAMPBELL & BLACK P.A.
P. O. Box 2208
Santa Fe, New Mexico 87501

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MR. QUINTANA: We'll call next
Case Number 8502.

MR. TAYLOR: The application of
Yates Drilling Company for a pressure maintenance project,
Chaves County, New Mexico.

MR. CARR: May it please the
Examiner, my name is William F. Carr, with the law firm
Campbell and Black, P. A., of Santa Fe, appearing on behalf
of Yates Drilling Company.

I have one witness.

MR. QUINTANA: Are there other
appearances in Case --

MR. DOYAL: I'm Clarence Doyal
in opposition speaking for the Doyal and Graham family.

I have one witness.

MR. QUINTANA: Any other ap-
pearances besides these gentlemen?

In that case, would all the
witnesses please stand up and be sworn in at this time?

(Witnesses sworn.)

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

DIRECT EXAMINATION

1
2 BY MR. CARR:

3 Q Will you state your full name and place
4 of residence?

5 A My name is Tobin L. Rhodes and I reside
6 in Artesia, New Mexico.

7 Q Mr. Rhodes, by whom are you employed?

8 A I'm employed by Yates Drilling Company as
9 an engineer.

10 Q Have you previously testified before this
11 Division?

12 A No, I have not.

13 Q Would you summarize for Mr. Quintana your
14 educational background and your work experience?

15 A I have a Bachelor of Science degree in
16 petroleum engineering from Texas Tech University.

17 I have nine months experience in engin-
18 eering, assistant to the reservoir engineer, and since June
19 of 1984 I have worked for Yates Drilling Company as a petro-
20 leum engineer.

21 Q Are you familiar with the application
22 filed in this case on behalf of Yates Drilling Company?

23 A Yes, I am.

24 Q And are you familiar with the area that
25 is the subject of today's application?

A Yes, I am.

MR. CARR: Are the witness'

1 qualifications acceptable?

2
3 MR. QUINTANA: The witness is
4 considered a competent reservoir engineer.

5 Q Mr. Rhodes, would you refer to what has
6 been marked for identification as Yates Drilling Company Ex-
7 hibit Number One and identify this for the examiner?

8 A Exhibit Number One is an NMOCD Form C-108
9 and supplemental text regarding the application of Yates
10 Drilling Company to utilize the Doyal No. 3 Well as an in-
11 jection well.

12 The supplemental text briefly addresses
13 each of the fourteen sections of the C-108. All maps and
14 schematics, tabulations referred to in this supplemental
15 text will be presented as separate exhibits.

16 Q Has this C-108 with all attachments pre-
17 viously been filed with the Oil Conservation Division?

18 A Yes, it has.

19 Q Was it also filed with the District Of-
20 fice?

21 A Yes, it was.

22 Q Would you just, by way of background,
23 identify for Mr. Quintana the injection zone which is the --
24 the proposed injection zone that's the subject of this hear-
25 ing?

A The injection zone is the Queen forma-
tion, Upper Sand, at subsea +1435 to subsea +1429.

Q And what well are we talking about in

1 this case?
2

3 A This is the Doyal No. 3 Well.

4 Q When was this well originally drilled?

5 A The spud date on this well is 9-20-1984.

6 Q And what is the present status of this
7 well?

8 A This well is presently temporarily aban-
9 doned.

10 Q Would you now refer to Yates Exhibit Num-
11 ber Two, identify this and explain what it shows?

12 A Exhibit Number Two is a land plat showing
13 the acreage surrounding the Doyal No. 3 Well.

14 The outer circle has a radius of two
15 miles. This is to identify all leasehold operators within
16 two miles.

17 The inner circle has a radius of one-half
18 mile. This is the area of review and also identifies all
19 leasehold operators within one-half mile.

20 Q Would you now refer to the second page of
21 this exhibit and explain to Mr. Quintana what this shows?

22 A The second page of this exhibit is a map
23 showing all wells in the area of the Doyal No. 3 Well.

24 The circle on this map is -- has a one-
25 half mile radius to identify all wells within the area of
review.

Q Now all the wells within the area of
review, are they operated by Yates Drilling Company?

1
2 A All wells within the area of review are
3 operated, except for the Snow Oil Knowles Federal Well.
4 It's in the northeast of the southwest of Section 26.

5 Q Is Yates at the present time completing
6 any additional wells within this area?

7 A We are testing the well in the northwest
8 of the northeast of Section 34, 12 South, 31 East. This is
9 the DeLuna Federal No. 3 Well.

10 Q And you are just testing that at this
11 time.

12 A Correct.

13 Q Now, if you are injecting water, or auth-
14 orized to inject water in the Doyal No. 3 Well, will the
15 other wells within this radius of review be the wells from
16 which the water is produced?

17 A Yes, they will, with the exception of a
18 Pebble Queen No. 1 Well. This well is producing from the
19 Queen formation but we believe it to be producing from a
20 separate reservoir.

21 Q And you will also be taking water from
22 that well for this pressure maintenance project.

23 A Yes, we do, we intend to.

24 Q Now, in the southwest of the northeast of
25 27 there is a -- appears to be an abandoned well. Is that
correct?

 A Yes, there is, the Rich Federal No. 1 has
been plugged and abandoned.

1
2 Q Are there any other plugged and abandoned
wells within the area of review?

3 A No, there are not.

4 Q Would you now go to Yates Exhibit Number
5 Three and identify that for Mr. Quintana?

6 A Exhibit Number Three contains tabular da-
7 ta on all wells within the area of review which penetrate
8 the injection zone.

9 This exhibit has been revised to include
10 the DeLuna No. 3 Well, which I just mentioned.

11 The tabulation includes wells names, lo-
12 cations, total depth, casing program, cement program, per-
13 forations, spud date and completion date, stimulation, and
current status for each well.

14 Q With the exception of the information on
15 the Luna Federal No. 3 Well, has this information previously
16 been supplied to the Division with the C-108?

17 A Yes, it has.

18 Q Would you now go to Exhibit Number Four
19 and identify this, please?

20 A Exhibit Number Four is a downhole schema-
21 tic of the Rich Federal No. 1 Well. This is the well that
has been plugged and abandoned by Yates Drilling Company.

22 The schematic displays surface casing,
23 cement program on surface casing, and plugging program in
24 the open hole for this plugged and abandoned well.

25 Q Okay. Will you now go to Exhibit Number

1
2 Five, identify this, and review the information contained on
3 Exhibit Number Five?

4 A Exhibit Number Five is the proposed down-
5 hole schematic of the Doyal No. 3 Well. The surface casing
6 in this well is 8-5/8ths 24 pound cemented with 60 sacks.
7 Cement was circulated to surface.

8 The long string is 5-1/2 pound -- or 5-
9 1/2 inch 14 pound cemented with 700 sacks of cement. Top of
10 the cement is 630 feet. The TD of this well is 3,099 feet.
11 The injection interval will be 2991 to 2997. Plastic coated
12 tubing, 2-3/8ths tubing, will be used in this well, set with
13 a -- set in a plastic coated Baker 80 tension packer at
14 2945.

15 Q Will the annular space be filled with
16 fluid?

17 A Yes, it will.

18 Q Does Yates Drilling Company agree to
19 pressure testing of the fluid in the annulus as required by
20 the Federal Underground Injection Control Program?

21 A Yes, we do agree to that.

22 Q Now, into what formation are you propos-
23 ing to dispose?

24 A We -- we intend to inject water into the
25 Queen formation.

26 Q And what portion of that formation will
27 you be injecting into?

28 A In the Upper Sand from 2991 to 2997.

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Q What are you presently doing with the water that is being produced in this area?

A We're presently hauling the water, trucking the water, at a cost of approximately \$5000 a month.

Q Does Yates request that this order be expedited?

A Yes, we do.

Q So you will derive a double benefit; you'll be able to operate a pressure maintenance project and also relieve yourselves of this expense for trucking the water.

A Yes, we will.

Q What volumes do you propose to inject into this well?

A We will be injecting approximately 200 barrels a day with a maximum injection rate of 400 barrels per day.

Q And will this system be an open or closed system?

A We plan to use a closed system.

Q Do you propose to inject under pressure or by gravity?

A We will inject under pressure.

Q And what is the maximum injection pressure that Yates Drilling Company would propose to use in this well?

1
2 A The maximum pressure that we would want
3 to use would be 1500 psig surface pressure.

4 Q And upon what do you base this figure?

5 A This pressure is based on the fact that
6 breakdown pressure during treatment was 1500 psig surface
7 pressure. The additional pressure of the -- to the forma-
8 tion, due to hydrostatic pressure of the treating fluid,
9 would be greater than that hydrostatic pressure due to pro-
10 duced water; therefore we feel that 1500 psig would be a
11 safe pressure and would not damage the strata.

12 Q And what pressure do you anticipate
13 starting with?

14 A We really don't know what the starting
15 pressure would be. We might be able to work with the two
16 pounds per foot of depth to the top of the injection inter-
17 val that is recommended by the NMOCD.

18 Q So you might be able to use the 0.2 pound
19 per foot of depth to the top of the injection interval and
20 that might be a sufficient pressure to enable you to inject
21 the anticipated volumes into this well.

22 A Yes, it could be. We don't know at this
23 time.

24 Q How do you recommend that the Division in
25 an order deal with -- with this proposal?

 A If initial injection pressure is more
than 0.2 pounds per foot of depth to the top of the injec-
tion interval, Yates Drilling should be required to justify

1
2 the higher pressure by running a step rate test within sixty
3 days of the injection.

4 Q And what -- what if you're able to ini-
5 tially dispose or inject the water within the 0.2 figure?

6 A If we can use this 0.2 figure we would
7 like to be able to not -- not run a step rate test and just
8 use the 0.2 figure, but at a later date, if we should go
9 over the 0.2 per foot figure, we would be willing to run a
10 step rate test to justify that we're not damaging the stra-
ta.

11 Q So what you're doing is requesting an ad-
12 ministrative procedure whereby if you have to inject at a
13 pressure in excess of 0.2 pound per foot of depth to the top
14 of the injection interval, in that case you would then be
15 required to run the test and justify the higher injection
pressure.

16 A Yes, that's correct.

17 Q Would you refer to what has been marked
18 as Exhibit Number Six and review this for Mr. Quintana?

19 A Exhibit Number Six are water analyses
20 from five of the seven wells within the area of review.

21 Q And these are water analyses of the water
22 that will be actually injected if your application is ap-
proved.

23 A Yes, it is.

24 Q And you are re-injecting water back into
25 the producing formation, is that correct?

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A That's correct.

Q Are there fresh water zones in the area?

A Yes, there are. The source of fresh water in the area is the Ogallala formation of Tertiary age, the base of which is estimated to be at 300 feet in the area of the subject well.

The Chinle formation is also a fresh water aquifer which underlies the Ogallala formation. The base of the Chinle is estimated to be approximately 500 feet in the area of the subject well.

Q Are there fresh water wells within one mile of the proposed injection well?

A According to the records of the Division II State Engineer's Office in Roswell there are seven wells within one mile of the subject well.

Q And from what intervals are these fresh water wells producing?

A The total depth from four of the seven wells is unknown; however, the State Engineer's Office has stated that all wells are producing from the Ogallala formation, the base of which is approximately 300 feet.

Q Would you now go to Yates Drilling Company Exhibit Number Seven and review this?

A This exhibit contains water analyses for two of the seven water wells within one mile of the Doyal No. 3 Well.

The first analysis is from a well in the

1 northeast quarter of Section 27, Township 12 South, Range 31
2 East.

3 The second analysis is from a well in the
4 southeast quarter, Section 26, Township 12 South, Range 31
5 East.

6 Q Mr. Rhodes, would you not refer to what
7 has been marked as Yates Drilling Company Exhibit Eight-A
8 and review that for Mr. Quintana?

9 A Exhibit Eight-A is a cross section from
10 the Doyal No. 4 Well to the Doyal No. 3 Well to the Snow Oil
11 Company Towles Federal No. 1 Well.

12 This exhibit shows a continuity of the
13 Queen formation and also the oil/water contact in this por-
14 tion of the reservoir. The oil/water contact is shown on
15 this cross section by the dotted line.

16 Q And this cross section does contain the
17 log from the proposed injection well.

18 A Yes, it does.

19 Q Would you now go to Yates Drilling Com-
20 pany Eight-B and review that, please?

21 A This cross section is a cross section
22 from the Doyal No. 3 Well to the Doyal No. 2 Well to the
23 Doyal No. 1 Well.

24 This exhibit also shows the continuity of
25 the Queen formation and also the oil/water contact in this
portion of the reservoir.

Q So the purpose of both Exhibits Eight-A

1 and Eight-B is to show the continuity of the Queen pay.

2 A Yes, as well as the approximate oil/water
3 contact.

4 Q Would you now go to Yates Exhibit Number
5 Nine and review that, please?

6 A The first page of Exhibit Number Nine is
7 a structure map of the Queen formation, contoured on the top
8 of the Queen. Highlighted in yellow on this exhibit is the
9 subsurface, or subsea depth to the top of the Queen.

10 Page two of this exhibit shows the appro-
11 ximate oil/water contact in the reservoir. Highlighted in
12 yellow on this map, water saturation is calculated from the
13 log. Highlighted in orange is bulk volume of free water for
each well.

14 Page three of this exhibit is an Isopach
15 or porosity feet map with contour intervals of one, two, and
16 three porosity feet. The porosity feet for each well is
17 highlighted in yellow on this map.

18 Page four of this exhibit displays the
19 most recent shut-in bottom hole pressure on each one of the
wells in this area.

20 The purpose of this map is to demonstrate
21 the barrier between the well to the south and the wells in
22 this reservoir.

23 Q Mr. Rhodes, will you now refer to Yates
24 Drilling Company Exhibit Number Ten and identify this for
25 the Examiner?

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2 A Exhibit Number Ten are receipts from the
3 offset leasehold operators and from the surface owner, show-
4 ing that they have received a copy of this application.

5 Q And did Yates notify all the leasehold
6 operators within the area of review?

7 A Yes, we did.

8 Q And the surface owner?

9 A Yes, we did.

10 Q Was notice, actual notice, originally
11 given to the Doyals of this application?

12 A Original notice was not given.

13 Q And why was that?

14 A Because they are not a leasehold operator
15 or a surface owner.

16 Q Do you happen to know what their interest
17 is in this area?

18 A The Doyals interest in this area is they
19 have a royalty interest in the Doyal Lease.

20 Q Have you examined the available geologic
21 and engineering data and have you found as a result of this
22 examination any evidence of open faults or any hydrologic
23 connections between the injection zone and any underground
24 source of drinking water?

25 A No, I have not.

 Q Is Yates Drilling Company also seeking an
administrative procedure that would enable Yates to add ad-
ditional wells to this pressure maintenance project?

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A Yes, we would like to do that.

Q In your opinion will granting this application be in the best interest of conservation, the prevention of waste, and the protection of correlative rights?

A Yes, it would.

Q Were Exhibits One through Ten prepared by you or compiled under your direction and supervision?

A Yes, they were.

MR. CARR: At this time, Mr. Quintana, we would offer into evidence Yates Drilling Company Exhibits One through Ten.

MR. QUINTANA: Exhibits One through Ten will be entered as evidence.

MR. CARR: That concludes my direct examination of Mr. Rhodes. I pass the witness.

MR. QUINTANA: Are there any questions of the witness?

MR. DOYAL: Yes.

QUESTIONS BY MR. CLARENCE DOYAL:

Q Why would you use Doyal No. 3?

A Because that -- that well was drilled for purposes of producing oil. We tested the well and never produced any measurable amount of oil from that well.

Q The intent of Yates Drilling Company first came to our immediate notice when they moved on the northwest of the northwest of 35, where the Doyals own the

1
2 interest, 100 percent royalty interest, 100 percent. You
3 moved right in the corner on the Gallagher State No. 1 to
4 drain the oil from both sides of the Doyals.

5 The No. 3 elevation, you have the Galla-
6 gher Well much higher. The Gallagher Well is 13 feet lower
7 and I defy anybody in this office to send a man down there
8 and run it.

9 There's not an elevation there right.

10 A I believe the Gallagher State Well is a
11 legal location.

12 MR. QUINTANA: You're talking
13 about the well in the north --

14 MR. DOYAL: The Gallagher Well.
15 They moved right in the corner to drill it. It's not an un-
16 orthodox location. It's like this --

17 MR. PAUL DOYAL: It's legal;
18 330/330.

19 MR. DOYAL: It's like this
20 table top.

21 MR. QUINTANA: What's your
22 point, Mr. Doyal?

23 MR. DOYAL: That was their in-
24 tent when they moved in there, was to drain the Doyals from
25 both sides.

They could have moved anywhere
in that 40. They own leases on all three sides. There's no
need whatever for them to use the Doyal No. 3 for water-

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flooding. We and the Grahams are the total royalty owners.

There's no need for them to do that and we ask that they not be allowed to waterflood within 1320 feet of that, of any fee lands.

To give you an example, here -- here's the way the old well is finished. The pipe was set above the pay zone and cable tooled into it. When that bailer comes out with oil, there's no mistakes.

Yates Drilling Company drills all the way into the water zone and perforates.

In Well No. 3 they perforated into the water. The oil zone is above. You just perforate that six feet and it's much too deep. Your elevation's wrong to start with.

There's no excuse for Yates to waterflood that. They must learn to finish their wells first. I am a driller myself, I know.

MR. QUINTANA: So it's your contention, Mr. Doyal, that Well No. 3 was perforated too low into the water?

MR. DOYAL: I don't contend it. It was.

Mr. Yates has refused to let us take samples from adjoining wells but we have did so, which with their perforations are right, they pump oil.

The deeded land -- the fee land that's owned by the Doyals don't.

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Every elevation on that is wrong. They run right backwards. That land slopes from the northwest to the southeast.

MR. QUINTANA: Mr. Doyal, we'll take a short recess for a second.

(Thereupon a recess was taken.)

MR. QUINTANA: The hearing will come to order.

Mr. Doyal, some of the areas you got into in your testimony was, that the fact was, it was testimony.

If you want to state your concerns, we're going to have to follow the procedures of our organization here.

MR. DOYAL: All right.

MR. QUINTANA: As of now you're going to have to limit your questions to cross examination of his handouts, his exhibits.

If you want to testify, as soon as you finish cross examining and everybody else has cross examined him, then we can put you on the witness stand and you can state your concerns under oath.

MR. DOYAL: All right. I do have a question for him.

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Q You said the Doyal family was notified?

A I said you were not notified.

Q With this one publication in the Roswell paper for the 12th.

A Yes. The reason the Doyal family was not notified was they are not an offset leasehold operator and they do not own the surface rights, and that is what was required under the -- this -- this application.

Q Well, is that statement on that notice?

MR. CARR: Mr. Examiner --

A I believe it states anyone having an interest.

MR. CARR: Mr. Examiner, we'll stipulate that the legal ad in the Roswell paper is the only notice by publication that was provided in this case, and we will also stipulate that we did not provide direct notice to the Doyals because that was not required under the rules, and we did not know of their concern until the hearing two weeks ago when they showed up in Santa Fe. Had we known of their concern, we would have advised them of the continuance at that time.

We did yesterday advise them of today's hearing to be certain they knew we were going forward today.

MR. DOYAL: Yes. I did receive a phone call yesterday morning, that's right.

MR. CARR: But we -- we'll cer-

1
2 tainly stipulate that's the only newspaper notice or publi-
3 cation that was provided on this.

4 MR. QUINTANA: Mr. Doyal, they
5 have followed the rules and regulations of the Oil Conserva-
6 tion Division, which provides for notification of all offset
7 operators within a half mile radius of the well and surface
8 owners, and they're also required to publish their inten-
9 tions in the county in which the well is located, and that
is all they're required to do.

10 MR. DOYAL: All right.

11 MR. QUINTANA: So they have
12 followed the rules.

13 Q Another question. Do you have any idea
14 who run this survey on here for the elevations?

15 A Yes, I do. I have the surveys here with
16 me.

17 Which well are you concerned with?

18 Q Any particular one. This one.

19 MR. CARR: Mr. Examiner, we
20 have the Form C-102's on each of the wells within the area
of review.

21 MR. QUINTANA: Yes.

22 MR. CARR: And they indicate
23 who the surveys were actually run by and they indicate the
ground elevation.

24 We have only one set of these
25 with us. We'd be happy to make an additional set and mark

1
2 it as an exhibit for inclusion in the record, and also pro-
3 vide the Doyals with a copy of it.

4 These are simply copies of
5 forms that are public records filed with the Oil Conserva-
6 tion Division.

7 MR. DOYAL: I don't believe I
8 have any more -- further questions of him.

9 MR. CARR: With your permis-
10 sion, then, we would offer as Yates Exhibit Number Eleven,
11 copies of the surveys for each of the wells within the area
12 of review and we will make copies of those available to you
13 and to Mr. Doyal just as soon as we get them back, which
14 will be just a couple of minutes.

15 MR. QUINTANA: We would appre-
16 ciate that. Exhibit Eleven will be taken into evidence at
17 this time.

18 You have no further questions
19 of the witness at this time?

20 Q One more. Is there any reason why you
21 would move on the fee land when Mr. Yates has many dry holes
22 in that area that he can use?

23 A We were just trying to develop the reser-
24 voir the best way we knew how and that was drilling the lo-
25 cations we did drill.

 We have the legal right to drill such
wells through leases and -- and that's what we did, trying
to develop our reservoir.

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Q This is not a gimmick to wash the oil out from under the Doyal land without producing the wells?

A No, this is not a gimmick to wash oil out from under Doyal.

Q That will be the end result, will it not?

A I have no idea. I do not believe that that's what will happen.

Q Would you consent to Mr. Yates sending somebody back with a survey crew to run the elevations?

I would much rather this office did it.

A I think we could run -- re-survey some of those wells if there are discrepancies.

Q Okay. Would you believe that in each well there with the elevation there is a discrepancy, as much as 26 feet?

A No, I honestly don't believe that there's that much of a discrepancy. I have faith in the men that we had survey our locations.

If there is a problem we could have them re-surveyed.

Q Are you aware that I went out with a transit Monday and run them myself?

A No, I'm not.

Q Are you aware that the elevations are backwards?

A In what way do you mean backwards?

Q In the slope of the land? Are you aware

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of that?

A No, I'm not.

Q I believe they are.

MR. QUINTANA: Thank you, Mr. Doyal.

I have a couple of questions of the witness.

MR. DOYAL: Yes, sir.

CROSS EXAMINATION

BY MR. QUINTANA:

Q Mr. Rhodes, in your water analysis from producing wells within the area, have you included water analysis of that well that is producing from the Queen Pool that you say is a separate and distinct pool?

A Yes, I have. That is Pebble Queen No. 1; water analysis is the last page of Exhibit Number Six.

Q Also your two water analyses of fresh water wells within a mile, do those happen to be the two closest water wells to your proposed injection well?

A No, sir, there's one well that is closer; however, we do not have permission to go and catch a sample from that well, so therefore we caught samples from these two wells.

Q How much closer is it from the other wells?

A The closest well is approximately one lo-

1
2 cation to the east of the Doyal No. 3 Well.

3 Q If it is possible, would you try and seek
4 permission again to obtain a sample from the people that own
5 that property because I think it would be very pertinent to
6 have a water sample from the closest well to your injection
7 well there.

8 A Yes, I will.

9 Q In fact, if there should be a likely --
10 I'm not saying there would be but should any type of water
11 out of zone ever show up, it would show up in that well.
12 That would be the first well it would show up in.

13 If possible, you might want to try and
14 get another-- get permission to take another -- get a sample
15 from it and you can let me know the status of if you're able
16 to or not.

17 A Okay, I sure will.

18 MR. QUINTANA: Are there fur-
19 ther questions of the witness?

20 You may proceed.

21 REDIRECT EXAMINATION

22 BY MR. CARR:

23 Q Mr. Rhodes, I direct your attention to
24 the Doyal No. 3, the proposed injection well.

25 Has Yates Drilling Company evaluated all
zones in that well to determine if they are capable of pro-
ducing oil or gas?

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A Yes, we have.

Q And in making that evaluation, what did you examine? Did you look at the log?

A Yes, we did.

Q In selecting the zone in which you perforated, did you select that zone based on log information or simply the elevation based on the survey?

A The perforated interval is selected off of a log; therefore surface -- surface elevation is irrelevant. We would perforate off of a log in the same zone that -- that we have found production in the other wells in this area.

Q And that log is, a portion of that log is shown on Exhibit Eight-A, is it not?

A Yes, it is.

Q Are any of the wells on Exhibit Eight-A also producing wells in this area?

A The Doyal No. 4 Well is a producing well.

Q And are you -- have the wells been perforated in -- both in the Queen?

A Yes, they have.

Q And based on the log information do you have an opinion as to whether or not the Doyal No. 3 was based intentionally or unusually low?

A No, it is not.

Q And in completing and drilling the Doyal No. 3 Well, did Yates Petroleum Company drill that well with

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2 the intention of producing reserves that they hoped would be
3 there?

4 A Yes, we did.

5 Q And if you're able to use this well for
6 injection of water, what benefit will come from the pressure
7 maintenance aspect of that water injection?

8 A By injecting water we hope to slow the
9 decline of pressure in the reservoir until which time the
10 definition of the reservoir boundaries is determined.

11 Q And so you're going to be placing water
12 in this zone which is correlative and in communication with
13 the zones from which hydrocarbons are being produced in the
14 area.

15 A Yes, we are.

16 Q And what effect will this have on the
17 prevention of the waste of these hydrocarbons?

18 A I believe by slowing the decline of pres-
19 sure in this reservoir that we would increase ultimate pro-
20 duction and prevent waste in this reservoir.

21 Q I believe you heard testimony that the
22 Doyal No. 4 Well was completed an open hole.

23 A Yes, I did hear that.

24 Q Are you familiar with that well?

25 A Yes, I am.

Q Are you familiar with the completion of
that well?

A Yes, I am.

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Q Is that an open hole completion?

A No, it's not.

MR. CARR: I have nothing further on redirect.

MR. DOYAL: I don't believe that I said it was an open hole.

MR. CARR: Just to be sure we're straight on that.

MR. DOYAL: I was giving that depth in the old well.

MR. CARR: All right. I may have heard you wrong.

MR. DOYAL: No, sir, I didn't say it was open hole.

MR. CARR: I may have heard you wrong.

MR. QUINTANA: Are there further questions of the witness?

CROSS EXAMINATION

BY MR. TAYLOR:

Q Mr. Rhodes, you said that you didn't believe there was that much of a discrepancy in the elevations.

Do you know or believe there is any discrepancy at all in the elevations in any of your exhibits?

A No, I do not believe that there is any

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discrepancy other than what Mr. Doyal has presented.

Q Which is in the elevation of the surface, as you understand it?

A Yes, that's the discrepancy that I understand.

Q How many dry holes or plugged and abandoned wells does Yates have in this area?

A Do you mean in the area of review or --

Q Well, within, you know, within the --

MR. QUINTANA: Within the half mile circle?

A There's one -- there's one plugged and abandoned well.

Q There's one within a half mile.

A Yes.

Q How many are there within the -- the two mile circle that you've got here, or within the field that you're producing?

A I believe we have three plugged wells.

Q Within what area?

A Producing from the Southeast Chaves Queen Gas Associated Area.

Q What were the reasons that you picked the Doyal No. 3 for injection?

A We chose this well because it is below the oil/water contact in the reservoir and it is the only well other than the Rich Federal that is not productive.

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2 The Rich Federal Well has low porosity;
3 therefore, would not make a good injection well.

4 Q Which -- which of your wells on -- which
5 wells on Exhibit Number Two do you plan to affect by injec-
6 tion?

7 A Pressurewise, hopefully, we will in-
8 fluence the whole reservoir. As far as immediate effect, I
9 believe that the Doyal 2 and 4 and Doyal 1 would be most
10 affected due to the Isopach map in Exhibit Number Nine.

11 MR. QUINTANA: Mr. Rhodes, do
12 you expect the Garner Federal No. 9 and the Garner Federal
13 No. 7 to be affected eventually?

14 A Yes, I do.

15 MR. QUINTANA: Do you expect
16 the Doyal No. 2, the Doyal No. 4, and the Doyal No. 1 to be
17 first affected?

18 A Particularly the Doyal No. 2 Well.

19 MR. QUINTANA: Thank you. I
20 have no further questions.

21 MR. CARR: I'd like to ask one
22 question, please.

23 REDIRECT EXAMINATION

24 BY MR. CRR:

25 Q Mr. Rhodes, to be sure I understand your
testimony, do you believe there to be any discrepancies in
the surveys that we have submitted in this case?

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A No. I feel there is no discrepancy in our surveys.

Q And is Yates Drilling Company prepared to stand on those as submitted?

A Yes.

MR. CARR: I have no further questions.

MR. QUINTANA: Okay, Mr. Doyle, are you going to want to testify now?

MR. DOYAL: Yes.

MR. QUINTANA: All right, just a second.

Are there any further questions of the witness?

If not, he may be excused.

MR. QUINTANA: Before I allow you to testify --

MR. DOYAL: I'd rather you asked just questions.

MR. QUINTANA: Well, could you please summarize your background in the oil and gas industry in which you --

MR. DOYAL: I have drilled in that very field. The examples I gave you right here, let's understand these real carefully.

This is a proven way to drill in that field.

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MR. QUINTANA: Before -- for the record, we have to understand what your background is.

MR. DOYAL: Okay.

MR. QUINTANA: Do you have any degrees?

MR. DOYAL: I was raised on that homestead to start with, as a child. I know which way the water runs. I know the elevations.

MR. QUINTANA: Do you have any degrees in petroleum engineering?

MR. DOYAL: No, sir. No, sir.

MR. QUINTANA: Or any other --

MR. DOYAL: No, sir.

MR. QUINTANA: Have you completed any wells in this area?

MR. DOYAL: Many.

MR. QUINTANA: Many. And you are a royalty interest owner in this area?

MR. DOYAL: The Doyal family owns 100 royalty.

MR. QUINTANA: 100 percent.

Let the record show that Mr. Doyal is a royalty owner in the immediate area on some of the wells that may be affected by this well.

You may proceed.

MR. DOYAL: And Mr. Yates has shown his intent with moving that well into 35, the Galla-

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gher State No. 1, northwest/northwest.

It was not an unorthodox location and if Yates will stand for this elevation, as you said, they were right, I'll gladly pay the engineer.

If I'm right, let Yates pay the engineer, from this office, an impartial one.

I believe the witness never having been in the field has -- has no reason to state about the elevations.

The Gallagher No. 1 is the lowest elevation in that field.

The Garner 7 and 9 are two of the highest. They're shown much lower footage than the Gallagher is, and as you can see, the logs was run from the top. I don't know whether you've been around a log running or not. They're not always accurate, that's a perforating (not clearly understood.)

And another thing I would like to explain to the court, when this waterflooding reaches these perforations, which Yates finishes with perforations, when the waterflood reaches over that perforation, that's the end of that well.

In the old wells the waterflooding helped. In these, it will kill that royalty owner.

Yates knows that and so do I.

MR. QUINTANA: Mr. Doyal, I have a question for you.

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MR. DOYAL: Yes, sir.

MR. QUINTANA: Is your testimony that you're 100 percent, your family is 100 percent working interest -- I mean royalty interest owners in that?

MR. DOYAL: Right.

MR. QUINTANA: Does that include the Doyal No. 2, Doyal No. 4, and Doyal No. 1?

MR. DOYAL: Exactly, right, plus two undrilled locations that Mr. Yates would prefer to pump the oil out from under with waterflooding.

MR. QUINTANA: It was the -- Mr. Rhodes' testimony that the Doyal No. 1, Doyal No. 2, and Doyal No. 4 would benefit from injection into the Doyal No. 3.

MR. DOYAL: That was his testimony. Those are the first wells that would be killed with the waterflood.

MR. QUINTANA: On what do you base that? On what --

MR. DOYAL: Because the Doyal No. 2 is the first one to reach with a waterflood. It wouldn't surprise me if Yates pulled the No. 4 any time because it's just pumping 12 barrels of oil a day; the rest of it's water because of the low perforations.

Twelve times in a month that well's been shut down. The one right across the fence, the Gallagher Well, runs wide open.

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MR. QUINTANA: Do you happen to know what the production is in the Gallagher Well?

MR. DOYAL: Mr. Yates will not let us take samples from any surrounding wells, with his knowledge.

MR. QUINTANA: But you don't know what the production at this moment is in the Gallagher Well?

MR. DOYAL: We've been told different stories by different people. They tell us what they're told to.

MR. QUINTANA: So --

MR. DOYAL: The Doyal No. 4, right across from the Gallagher Well, the production they -- the pump was on it on December the 10th. Look on the paper and see when it went on, in January. Where the oil went, we have no idea.

MR. QUINTANA: So to summarize your --

MR. DOYAL: It didn't show up at Navajo.

MR. QUINTANA: To summarize your -- your concern, Mr. Doyal, you are concerned that by injection by Yates into the Doyal No. 3 it will push oil off your lease and will eventually affect the Doyal No. 2, the Doyal No. 4, and Doyal No. 1 Wells?

MR. DOYAL: Exactly.

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MR. QUINTANA: You believe --

MR. DOYAL: The No. 4, the waterflood will cover the perforations immediately.

MR. QUINTANA: Would you show me which other locations that could possibly be drilled on your property?

MR. DOYAL: Yes, sir, that could possibly be drilled on that property?

MR. QUINTANA: Yes, on the royalty -- the property that you own 100 percent interest on.

MR. DOYAL: The northwest of the southeast of 26.

MR. QUINTANA: The northwest of the southeast of 26?

MR. DOYAL: Right. And the southeast of the southwest of 26.

Wait a minute, what did I give you on the first one?

MR. QUINTANA: You said the northwest of the southeast.

MR. DOYAL: The northwest of the southwest of 26.

MR. QUINTANA: And then the --

MR. DOYAL: The southeast of the southwest of 26.

MR. QUINTANA: Thank you, Mr. Doyal.

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Are there questions of Mr. Doyal?

MR. CARR: No questions.

MR. STAMETS: Mr. Examiner, let me ask a couple of questions of Mr. Rhodes while he's still sitting at the table.

QUESTIONS BY MR. STAMETS OF MR. RHODES:

Q Mr. Rhodes, if these wells were re-surveyed, would it make any difference in the exhibits that you've presented here today, besides just putting some different numbers on the top?

A No, it would not. The surface elevation would be the same. The subsea depth to the top of the formation would be different, but as I mentioned before, we perforated off the log.

Surface elevation --

Q And the log is measured from the ground level, whatever that is.

A Whatever that is.

Q And if the surveyor made a mistake, that mistake is going to carry through for every measurement you make in that --

MR. PAUL DOYAL: For every well.

Q -- but you will still be perforating the

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interval that you want regardless of what the surface elevation may have read.

A That's true.

MR. DOYAL: Hogwash. That won't -- that won't do it.

Each one of those are measured. They're run off a log but if you've ever been around a log, which I've been around hundreds of them, they're so inaccurate. A perforating gun is inaccurate, and the idea you can go in there and hit the Queen with three feet of perforation, if you can do that, you can sneak down past a rooster.

And I believe that's what Yates is trying to do in this case.

MR. PAUL DOYAL: No. 4 Well's only got three feet of perforations.

MR. CLARENCE DOYAL: There's not a bad well in that field; it's bad finishing.

MR. QUINTANA: We'll take another short recess here for a second.

(Thereupon a recess was taken.)

MR. QUINTANA: Does anybody have questions of Mr. Doyal?

MR. CARR: No questions.

MR. QUINTANA: Do you have anything further Mr. Doyal?

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MR. CLARENCE DOYAL: Yes. On that survey in the 660 feet difference in the Gallagher Well and the Doyal No. 4, you show 11 feet discrepancy.

I had a bad transit. It showed one foot the other way. Maybe my bubble didn't balance but it balanced everywhere else.

I think the engineer that run them to start with was half a bubble off.

MR. PAUL DOYAL: Mr. Quintana, as the gentleman behind me stated, there will be producing wells there that is shown dry if they were perforated properly with the right location or the right elevation.

MR. CLARENCE DOYAL: If those are that bad, I request Mr. Yates return the leases. We'll get somebody on and produce them.

MR. PAUL DOYAL: This is true. That Queen pay is shallow enough that the difference of footage of the elevation will make a difference of whether it be a producing well or abandoned.

MR. CLARENCE DOYAL: Mr. Yates has many dry holes in that field and he owns many acres of Federal and State leases without bothering any fee landowner.

To say that he has only three is sad (inaudible).

MR. CLEMENTS: May I ask some questions?

MR. QUINTANA: Yes, you may.

QUESTIONS BY MR. CLEMENTS OF MR. RHODES:

Q Mr. Rhodes, what is the average net of or picked pay of the Queen through this area? Do you know?

A I would say approximately 6 to 7 feet.

Q Very small.

A Yes.

Q Do or does, excuse me, does Yates own the minerals or the rights to drill in the northwest half of Section 26?

A No, we do not.

Q Okay, thank you.

(Thereupon a discussion was had off the record.)

MR. CARR: Mr. Examiner, if I could say something in response to that.

There was an option to develop certain acreage in the north half of Section 26 on a checkerboard sort of a fashion. That option, we're not certain, but it may have expired.

I can tell as to the Yates interest in the northwest quarter of the southwest quarter of Section 26, that Yates no longer has the rights from HNG to develop on that -- on that tract.

MR. DOYAL: What about the

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south, the southeast of the southwest?

MR. CARR: Yates no longer has that interest.

MR. DOYAL: Mr. Woods from Houston Natural Gas informed yesterday that Mr. Yates said he had no intention of drilling those wells.

MR. CARR: We suspect that might be because they don't have an interest there.

MR. DOYAL: That could be.

MR. CLEMENTS: Thank you, that's all the questions I have.

MR. QUINTANA: Any further questions of Mr. Doyal?

Any further questions of Mr. Rhodes?

If not, Case 8502 will be taken under advisement.

MR. CARR: I have a brief closing statement that I would like to make.

Mr. Examiner, I 'd like to point out that Yates is before you today seeking permission to institute a partial pressure maintenance program.

They also will derive benefit from being able to dispose of water produced from the Queen formation in the immediate proximity of the injection well, the Doyal No. 3 Well.

There might be other wells in

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2 the area that could take water if the only concern was water
3 disposal but the Doyal No. 3 Well is located in a Queen
4 interval that is in communication with offsetting wells and
5 that if this application is granted Yates Drilling Company
6 will be in a position to inject water in the Doyal No. 3
7 into the zone which is producing in offsetting wells below
8 the oil/water contact, thereby being able to maintain the
9 pressure in this horizon and will, we believe, we able to
10 produce additional oil from the offsetting wells, wells in
11 which we submit that the Doyals have an interest.

12 We believe that what Yates is
13 proposing here today not only will prevent economic and
14 physical waste of oil, but will benefit the correlative
15 rights of all interest owners, including royalty interest
16 owners, in this area for it will ultimately increase the
17 production of oil from the portion of the Queen which is the
18 subject of today's hearing.

19 We request that the application
20 be granted and that it also provide for administrative
21 procedures for increasing the injection pressure, should
22 that be necessary, and furthermore, that it provide a
23 procedure whereby if development continues in this area
24 other wells can be converted to injection to carry forward
25 with the pressure maintenance program.

MR. QUINTANA: Do you have a
closing statement?

MR. CLARENCE DOYAL: Because of

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2 Mr. Yates' shown contempt for the royalty owners, I ask that
3 he be disallowed this and not be allowed any injection wells
4 within 1320 feet of fee lands, because of the economic in-
5 terest of the fee landowners.

6 MR. QUINTANA: Thank you, Mr.
7 Doyal.

8 Anything further in Case 8502?

9 MR. CARR: Nothing further.

10 MR. QUINTANA: If not, Case
11 8502 will be taken under advisement.

12 (Hearing concluded.)
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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 New Mexico 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 Examining hearing of No. 8502 heard by me on MARCH 13 1985.
Silbert P. Quintana, Examiner
Oil Conservation Division