

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

25 May 1983

EXAMINER HEARING

IN THE MATTER OF:

Application of Union Oil Company of
California for salt water disposal,
Eddy County, New Mexico.

CASE
7886

BEFORE: Richard L. Stamets, Examiner

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation
Division:

W. Perry Pearce, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant:

William F. Carr, Esq.
CAMPBELL, BYRD, & BLACK P.A.
Jefferson Place
Santa Fe, New Mexico, 87501

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I N D E X

EVERETT STANGLE

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2 MR. STAMETS: We'll call next Case
3 7886.

4 MR. PEARCE: That case is on the ap-
5 plication of Union Oil Company of California for salt water
6 disposal, Eddy County, New Mexico.

7 MR. CARR: May it please the Examiner,
8 my name is William F. Carr, with the law firm Campbell, Byrd,
9 and Black, P. A., of Santa Fe, appearing on behalf of Union.

10 I have one witness who needs to be
11 sworn.

12 MR. PEARCE: Are there other appear-
13 ances in this matter?

14
15 (Witness sworn.)

16
17 EVERETT STANGLE,
18 being called as a witness and being duly sworn upon his oath,
19 testified as follows, to-wit:

20
21 DIRECT EXAMINATION

22 BY MR. CARR:

23 Q Will you state your full name and place of
24 residence?

25 A Yes. My name is Everett Stangle. I reside

1
2 in Midland, Texas.

3 Q And how do you spell your last name?

4 A S-T-A-N-G-L-E.

5 Q Mr. Stangle, by whom are you employed and
6 in what capacity?

7 A I'm employed by the Union Oil Company of
8 California in the capacity of District Engineer.

9 Q Have you previously testified before this
10 Commission or one of its Examiners and had your credentials
11 accepted and made a matter of record?

12 A No, sir, I have not.

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

15 A I received a degree in mechanical engineering
16 from Kansas State University in 1950.

17 For the past thirty-one years I've been em-
18 ployed by various oil companies in the capacity of petroleum
19 engineer or engineering supervisor.

20 For the past twenty-one years I've been em-
21 ployed by the Union Oil Company of California, also as a
22 supervisor of engineering or staff engineer. I'm currently
23 employed as a Senior District Engineer.

24 Q Does your area of responsibility include
25 Eddy County, New Mexico?

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A. Yes, it does.

Q. Are you familiar with the application filed in this case on behalf of Union Oil Company of California?

A. Yes, I am.

Q. And are you familiar with the subject well?

A. Yes, I am.

MR. CARR: Are the witness' qualifications acceptable?

MR. STAMETS: They are.

Q. Mr. Stangle, will you briefly state what Union is seeking with this application?

A. Yes. Union Oil Company seeks authority to dispose of produced salt water into the subject well, Union's Wersell Federal No. 1, in Eddy County, New Mexico.

Q. Would you please provide Mr. Stamets with a brief history of the Wersell Federal Com No. 1 Well?

A. Yes. The subject well was spudded August 30th, 1973; was completed October 26, 1973, at a total depth of 11,660 feet.

The well was originally completed to produce from the Middle and Lower Morrow formations from 11,268 to 11,505. The well produced gas from the Morrow until 19 -- till September 25th, 1982, when it was plugged back to 5192 and recompleted as a Delaware oil well through perforations

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2 at 4392 to 4396 and 4458 to 4466.

3 The well at that time potentialized for 103
4 barrels of oil plus 200 barrels of water per day from the
5 Delaware on September 28th, 1982.

6 Q Now, Mr. Stangle, you're proposing to re-
7 complete this well, is that correct?

8 A Yes.

9 Q And you are seeking authority to dispose
10 in one horizon and produce from another?

11 A That's correct.

12 Q You originally applied for administrative
13 approval of this application, did you not?

14 A Yes.

15 Q And you were advised by the Commission it
16 would have to come on for hearing because you were seeking a
17 dual completion.

18 A That's correct.

19 Q Will you please refer to what has been
20 marked for identification as Union Exhibit Number One, ident-
21 ify this, and explain what it shows?

22 A Exhibit Number One is Union Oil Company's
23 application for administrative approval to dual complete this
24 well as a producer/disposal well, and accompanying that ap-
25 plication was Form C-108 with all the pertinent data required

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by the application.

Q I'd like you to look at the C-108 and generally review the information contained thereon.

A C-108 application includes the statistics as to location of the well, a casing record and how that casing was completed, a tubing record. It includes the proposed setting depth of the packer to separate the disposal and the producing zones; identifies the injection formation; identifies the producing formation.

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

A We propose to inject at the beginning 100 to 200 barrels per day up to a maximum of 500 barrels per day.

Q Will this be an open or a closed system?

A It will be closed.

Q And you are proposing to inject under pressure?

A Yes.

Q What is the maximum injection pressure that you're proposing?

A We propose a maximum of 1000 pounds per square inch.

Q Now, what is the top of the top perforation

1
2 in the injection interval?

3 A. The injection interval would be from 4822
4 to 4838, as proposed in the application.

5 Q. Would a pressure limitation of .2 of a pound
6 per foot of depth to the top of the injection interval be
7 satisfactory for the -- for Union's purposes?

8 A. Yes, sir, it would.

9 Q. What is the present status of this well?

10 A. The well currently produces from the Upper
11 Delaware. It produces approximately 31 barrels of oil, plus
12 121 barrels of water per day.

13 Q. And you're proposing to dispose also in the
14 Delaware?

15 A. Yes.

16 Q. Is this below the producing horizon?

17 A. Yes, this injection interval is more than
18 300 feet below the bottom of the -- of the producing interval.

19 Q. Would you now refer to what has been marked
20 for identification as Union Exhibit Number Two, identify this,
21 and explain what it shows?

22 A. Yes. Exhibit Number Two is comprised of
23 two plats. One of these plats is a lease ownership plat,
24 which shows the subject well with a circle one-half mile in
25 diameter and also a circle two miles in diameter. It shows

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all the wells drilled within those two circles.

It shows also the lease ownership offsetting the subject lease.

Q That's on the second page of the exhibit.

A The second page also shows the same circles. Shaded in yellow is the limits of the lease for the subject well. Shaded in green is the proration unit for that subject well.

Q I note on this Exhibit Number Two, on the smaller of the two plats, that you have indicated there is a water well.

A Yes.

Q Are there any other water wells within the area of review?

A No, there is not.

Q Are there any other wells at all within the area of review?

A No other wells, oil, gas, or water, within the area of review.

Q And no plugged and abandoned wells?

A No plugged or abandoned wells.

Q Will you now refer to what has been marked for identification as Union Exhibit Number Three and review this for Mr. Stamets?

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2 A. Exhibit Number Three is a schematic drawing
3 of the proposed completion of the well. You will note that
4 we propose to complete with two strings of tubing, one, the
5 shallow string, to produce the upper production from the Upper
6 Delaware; the other string of tubing to be internally plastic-
7 coated tubing to extend to the lower injection interval; the
8 two zones being separated by a permanent type packer.

9 You'll also note that the entire -- casing
10 through the entire Delaware, including below the injection
11 interval, is entirely encased in cement so that there is no
12 possible communication from zone to zone.

13 Q. Mr. Stangle, would Union be agreeable to
14 filling the annulus space with an inert fluid and placing an
15 appropriate gauge on the surface as required by the Federal
16 Underground Injection Control Program, to enable you to moni-
17 tor the well and assure that there is no escape of the in-
18 jection fluid into any other horizon?

19 A. We would not object to that at all.

20 Q. In your opinion does the proposed completion
21 conform with good engineering practices?

22 A. Yes, it does.

23 Q. And you are going to inject fluid produced
24 from the Delaware into another Delaware zone, isn't that cor-
25 rect?

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A. Yes, that's correct.

Q. What are you presently doing with the water that you propose to inject?

A. We currently haul that water to disposal.

Q. Would you refer to what has been marked for identification as Union Exhibit Four and review this for Mr. Stamets?

A. Yes. Exhibit Number Four has on it two water analyses. One water analysis is the -- is from the water of the produced interval in the Delaware from the subject well. The other is the analysis of fresh water from the well indicated on the plat.

Q. What are the fresh water zones in this area?

A. Fresh water, the only fresh water zones include the Santa Rosa and the Ogallala water at, we believe, at a maximum depth of some 1900 feet.

Q. And what is the depth of the producing zone again?

A. The depth of the producing zone is -- let me look that up -- depth of the producing zone is 4392 through 4466.

Q. In your opinion, in view of the cementing and the -- that you propose and also your willingness to put inert fluid in the annular space and a gauge at the surface,

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2 is there any possibility of contamination of any fresh water
3 in the subject area?

4 A. No. In view of the completion procedure
5 which we propose, there's not a possible chance of there being
6 any connection.

7 Q. Do you happen to know from what depth the
8 water well shown on Exhibit Number Two is producing from?

9 A. Yes, according to the owner of the well,
10 it produces from 90 feet.

11 Q. Will you now refer to Union Exhibit Number
12 Five and identify this for Mr. Stamets?

13 A. Yes. Exhibit Number Five is a subsurface
14 log of the Union's subject well, the Wersell Federal No. 1,
15 which we have marked the top of the Delaware series, the
16 bottom of the Delaware series, and the proposed intervals for
17 injection and production.

18 Q. Will you now refer to Exhibit Number Six
19 and explain what this is?

20 A. Exhibit Number Six is a tabulation of the
21 test data taken on the producing interval in the subject well
22 from the potential through the latest date -- test taken,
23 April of 1983.

24 We also state on here that there have been
25 no tests taken of the injection -- of the proposed injection

1
2 interval.

3 Q And this all the test data that you have
4 on the producing interval?

5 A Yes.

6 Q Will you now refer to the Exhibit Number
7 Seven and identify this?

8 A Exhibit Number Seven are copies of the
9 letter of notification to the surface land owner and to all
10 of the offset operators around the subject proration unit,
11 together with their -- with copies of the certification that
12 the letters were sent by certified mail.

13 Q Mr. Stangle, have you examined the available
14 geologic and engineering data and have you found as a result
15 of this examination any evidence of open faults or any other
16 hydrologic connections between the disposal zone and any
17 underground source of drinking water?

18 A No, I have not. I've examined it. I've
19 consulted with our resident geologist, and we find no -- no
20 connections between the disposal zone and any underground
21 source for fresh water.

22 Q Mr. Stangle, in your opinion will granting
23 this application be in the best interest of conservation, the
24 prevention of waste, and the protection of correlative rights?

25 A Yes.

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2 Q Were Exhibits One through Seven prepared by
3 you or have you reviewed them and can you testify as to their
4 accuracy?

5 A Yes.

6 MR. CARR: At this time, Mr. Stamets,
7 we would offer into evidence Union Exhibits One through Seven.

8 MR. STAMETS: These exhibits will be
9 admitted.

10 MR. CARR: That concludes our direct
11 examination of this witness.

12
13 CROSS EXAMINATION

14 BY MR. STAMETS:

15 Q Mr. Stangle, what did you say the source of
16 the water was that's to be injected into this well?

17 A The source of the water would be from the
18 Upper Delaware, the oil producing zone in the Upper Delaware
19 of that same well.

20 Q So in essence, this one well is the only
21 reason you need an injection well.

22 A At the current time that's true.

23 Q The way the well is constructed, it is pos-
24 sible that you could get a leak in the injection tubing and
25 wind up injecting into the producing horizon. I assume that

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2 wouldn't happen very long.

3 A. Well, no, we'd know pretty quick. That
4 would be our bad news as well as anyone else's, of course.

5 Q. The only occasion I can see where that
6 could be a problem is that the well eventually ceased to
7 produce in the Delaware and you began to use it, say, for
8 commercial purposes or for disposal of water from other of
9 your leases in there, in which case injection could be going
10 on in these upper perforations without our knowing about it.

11 A. Well, now, the upper -- the upper tool in
12 this well is not a packer. That's a parallel anchor, so it
13 affords communication from above the packer to the top of the
14 hole, which we can monitor.

15 Q. I see, so we can find out during a periodic
16 testing --

17 A. Yes, sir.

18 Q. -- whether or not -- well, how can you load
19 the annulus if that is an anchor?

20 A. Well, we can load -- well, that's -- that's
21 true. Without that packer we couldn't load the annulus.
22 We'd have to monitor from a standpoint of pressure would in-
23 crease, but, however, all of our surface casing, all of our
24 production strings, we keep a gauge on the surface, and inas-
25 much as these strings are cemented, it precludes, almost pre-

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2 cludes any eventuality that we could have a leak prior to the
3 time that any disposal water would reach the surface, so we
4 think we can monitor that.

5 Q I was more concerned there about drowning
6 out the Delaware zone than I was about the fresh water.

7 A Well, of course, as soon as our production
8 increases drastically we'll find out why, water production.

9 MR. STAMETS: Are there any further
10 questions of the witness? He may be excused.

11 If there is nothing further --

12 MR. CARR: There is nothing further.

13 MR. STAMETS: -- the case will be taken
14 under advisement.

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16 (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. 7886, heard by me on 5-25-83.

Richard P. Hamel Examiner
Oil Conservation Division

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