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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:) CASE NO. 11,042
APPLICATION OF MERIDIAN OIL, INC.)
_____)

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: MICHAEL E. STOGNER, Hearing Examiner

August 4, 1994

- 2 pages

Santa Fe, New Mexico

This matter came on for hearing before the Oil Conservation Division on Thursday, August 4, 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

August 4, 1994
Examiner Hearing
CASE NO. 11,042

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FOR THE DIVISION:

RAND L. CARROLL
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Santa Fe, New Mexico 87504

FOR THE APPLICANT:

KELLAHIN & KELLAHIN
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P.O. Box 2265
Santa Fe, New Mexico 87504-2265
By: W. THOMAS KELLAHIN

ALSO PRESENT:

DONALD R. CANDELARIA
PAUL M. CANDELARIA

FRANK CHAVEZ
New Mexico Oil Conservation Division
Aztec Office

* * *

1 WHEREUPON, the following proceedings were had at
2 11:26 a.m.:

3 EXAMINER STOGNER: At this time I'll call Case
4 Number 11,042, which is the Application of Meridian, Inc.,
5 for saltwater disposal, Rio Arriba County, New Mexico.

6 At this time I'll call for appearances.

7 MR. KELLAHIN: Mr. Examiner, I'm Tom Kellahin of
8 the Santa Fe law firm of Kellahin and Kellahin, appearing
9 on behalf of the Applicant, and I have three witnesses to
10 be sworn.

11 EXAMINER STOGNER: Are there any other
12 appearances?

13 Yes, sir?

14 MR. PAUL CANDELARIA: We're -- We want to voice
15 our objections.

16 EXAMINER STOGNER: Okay, I'll tell you what, I'm
17 going to invite you gentlemen -- Why don't you come forward
18 and occupy this table, and that way you'll be provided
19 copies of the exhibits and you'll be accessible to examine
20 them at your convenience and comfort.

21 And this is somewhat of an informal type of a
22 session, but I assume that you're not represented by
23 counsel; is that correct?

24 MR. PAUL CANDELARIA: No.

25 EXAMINER STOGNER: Okay. Why don't you state

1 your name and essentially your affiliation in this matter.

2 MR. PAUL CANDELARIA: My name is Paul M.
3 Candelaria from Farmington, New Mexico, and we own land
4 within that area of the proposed well site, and we also
5 hold the grazing lease to that particular property that the
6 proposed well is on.

7 EXAMINER STOGNER: When you say landowner, are
8 you referring to the surface or the mineral rights?

9 MR. PAUL CANDELARIA: The surface.

10 EXAMINER STOGNER: The surface. And the
11 grazing -- I assume you're -- the land you don't own,
12 you're referring to the federal or state grazing?

13 MR. PAUL CANDELARIA: Yes, sir.

14 EXAMINER STOGNER: And is that federal?

15 MR. PAUL CANDELARIA: It's a federal lease.

16 EXAMINER STOGNER: And that would be with the
17 BLM?

18 MR. PAUL CANDELARIA: Yes, sir.

19 EXAMINER STOGNER: As opposed to the Forest
20 Service or some other entity?

21 MR. PAUL CANDELARIA: No, it's BLM.

22 EXAMINER STOGNER: And do you have somebody else
23 with you?

24 MR. PAUL CANDELARIA: Yes, I do. This is my
25 brother.

1 MR. DONALD CANDELARIA: Donald R. Candelaria.

2 EXAMINER STOGNER: I assume you're a landowner
3 and owner of the grazing rights also?

4 MR. DONALD CANDELARIA: Yeah, we are.

5 EXAMINER STOGNER: Are you all a partnership?

6 MR. PAUL CANDELARIA: Yeah.

7 EXAMINER STOGNER: To make it more convenient, if
8 you'll discuss amongst yourselves when you do ask a
9 question or present something, perhaps maybe one of you for
10 questioning --

11 MR. PAUL CANDELARIA: That would be fine.

12 EXAMINER STOGNER: -- but that's not to say that
13 both of you aren't welcome to; it just might -- It will
14 make his job a little bit more easier and such as that.

15 What I will do is have Meridian, the Applicant in
16 this matter, present their evidence and their witnesses
17 first.

18 After Mr. Kellahin questions the witness, then
19 you will be allowed to ask any questions. Please keep in
20 mind to make it pertinent to the individual's expertise,
21 whether it be land, geology or engineering. But feel free
22 to ask a question. At which time, then, I will ask some
23 questions of that witness.

24 And subsequent to Meridian's presentation you
25 will be allowed, or both of you will be allowed to present

1 any type of evidence or supporting or whatever the case may
2 be that you would like.

3 And at that time, at the -- Also, Mr. Kellahin
4 will be able to ask you some questions of that, so be
5 prepared for that, or myself, to make things clearer.

6 At which time, at the conclusions of this
7 particular case, you'll be given the opportunity to
8 finalize it by making a statement, as will Mr. Carr -- I'm
9 sorry, Mr. Kellahin, my apologies.

10 Today will not be -- A decision will not be made.
11 What mine is is a recommendation to the Division Director,
12 as to the outcome of the case. And so the case will be
13 taken under advisement if that so applies after today's
14 proceedings, at which time the matter -- I will present in
15 the form of a written recommendation to Mr. LeMay for his
16 signature for an order. And he has -- he can either change
17 that or take my recommendations and feel free to do what he
18 wants to with them.

19 At which time, then, you will be given a copy of
20 the final order. And then there's other proceedings that
21 you can take forth of that if you agree or disagree, as
22 Meridian is.

23 So are there any questions with the proceedings,
24 gentlemen?

25 MR. PAUL CANDELARIA: Just -- You have our letter

1 that we wrote to Mr. LeMay; is that right?

2 EXAMINER STOGNER: That is a letter dated July
3 11th -- I think we received it July 14th, Mr. LeMay -- and
4 it's signed by both of you gentlemen; is that correct?

5 MR. PAUL CANDELARIA: Yes, it was.

6 EXAMINER STOGNER: And this letter is to voice
7 your objection and you outlined it in five different ways,
8 and have given a phone number.

9 Mr. Kellahin, were you provided a copy of that?

10 MR. KELLAHIN: No, sir, I have not seen the
11 letter.

12 EXAMINER STOGNER: You have not seen it.

13 Do you by chance have copies, sir?

14 MR. PAUL CANDELARIA: I have my copy.

15 EXAMINER STOGNER: You have your copy.

16 Okay, I tell you what, let's do this at this
17 time: Let's swear the witnesses in or -- Will each of you
18 be giving testimony today?

19 MR. PAUL CANDELARIA: Just voicing our
20 objections.

21 EXAMINER STOGNER: -- objection. Okay, if at any
22 time we feel that we need to swear you in as a witness, we
23 will at that time. But at this point I don't see it
24 necessary. So I'm going to ask the three witnesses for
25 Meridian to stand and be sworn. You gentlemen can be

1 seated.

2 (Thereupon, the witnesses were sworn.)

3 EXAMINER STOGNER: Okay, Mr. Kellahin, if you
4 feel it necessary for me to get a copy, I will take a short
5 recess and do that.

6 MR. KELLAHIN: May we take a moment and make some
7 copies, Mr. Examiner?

8 EXAMINER STOGNER: Okay, let's take a five-minute
9 recess at this time.

10 (Thereupon, a recess was taken at 11:31 a.m.)

11 (The following proceedings had at 11:40 a.m.)

12 EXAMINER STOGNER: Hearing will come to order.

13 With this, I assume that Meridian has been
14 provided -- Do we need to wait for your brother?

15 MR. KELLAHIN: Yes, sir, let's do that.

16 EXAMINER STOGNER: Okay, sorry about that. We're
17 off the record.

18 (Off the record)

19 EXAMINER STOGNER: Hearing will come to order.

20 I assume at this time that you have been provided
21 copies, Mr. Kellahin, of the July-11th-dated letter from
22 Mr. Candelaria to Mr. Bill LeMay, the Division Director?

23 MR. KELLAHIN: Yes, sir, I have a copy of that.

24 EXAMINER STOGNER: And have you provided Mr. Paul
25 Candelaria and Donald Candelaria copies of your exhibits

1 that you are presenting today?

2 MR. KELLAHIN: Yes, sir, we have distributed to
3 the attendants in the hearing room copies of the Meridian
4 exhibit book. I've given Mr. Candelaria a copy of that
5 book, Mr. Chavez has a copy, and it's been distributed to
6 you and the witness, Mr. Examiner.

7 EXAMINER STOGNER: Okay. With that, then, please
8 continue with your proceeding.

9 MR. KELLAHIN: Sir, we're going to present to you
10 three witnesses.

11 Mr. Van Goebel is a petroleum landman. This is
12 within his area. He'll describe for you the ownership and
13 his various efforts to get the necessary approvals for the
14 disposal well.

15 Mr. Bill Hobbs is a petroleum geologist. He's
16 going to provide you the geologic setting in which Meridian
17 proposes to dispose of produced water from various sources,
18 taken from Dakota, Mesaverde, coal gas and place it in this
19 disposal well in the Entrada formation at a depth in this
20 area of something in excess of 8400 feet.

21 The third witness is Mr. Brian Ault. Mr. Ault is
22 a petroleum engineer. He and others have prepared the
23 C-108, and we will go through that process. He'll describe
24 for you his proposal for the drilling.

25 This is a new well, as opposed to the conversion

1 of an existing well. This is a new well to be drilled from
2 the surface to the disposal interval, and he'll describe
3 that process for you.

4 At this point, let me direct my questions to Mr.
5 Van Goebel.

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

9 DIRECT EXAMINATION

10 BY MR. KELLAHIN:

11 Q. For the record, sir, would you please state your
12 name and occupation?

13 A. My name is Van Goebel. I'm a landman for
14 Meridian Oil.

15 Q. And where do you reside, sir?

16 A. Farmington, New Mexico.

17 Q. On prior occasions have you testified as a
18 petroleum landman before the Division?

19 A. Yes, I have.

20 Q. Is this proposed disposal well, the Jillson
21 Federal Disposal Well Number 1, within your area of
22 responsibility as a landman?

23 A. Yes, it is.

24 Q. First of all, tell us how to spell it. I think
25 we've spelled it two different ways.

1 A. Yes, we did. In some of the correspondence that
2 went out to the state and to the offset owners an
3 additional "i" popped up. It is spilled J-i-l-l-s-o-n.

4 Q. All right. What is the proposed location for the
5 well, Mr. Goebel?

6 A. The well will be located in Section 8, Township
7 24 North, Range 3, in the southeast of the northwest
8 quarter.

9 Q. Have you made yourself familiar with the
10 ownership within Section 8?

11 A. Yes.

12 Q. Have you assisted the technical people in
13 identifying these sources of fresh water within the area of
14 review?

15 A. Yes.

16 Q. And have you made contact and discussions with
17 the Bureau of Land Management concerning this proposed
18 well?

19 A. Yes, I have.

20 MR. KELLAHIN: We tender Mr. Goebel as a
21 petroleum landman.

22 EXAMINER STOGNER: Mr. Goebel is so qualified.

23 Q. (By Mr. Kellahin) Let's start, sir, by looking
24 at how you've organized the exhibit book. Tell us how that
25 has been organized.

1 A. Exhibit 1 contains the C-108 Application and
2 correspondence with the Oil Conservation Division. It also
3 contains copies of the newspaper notice and letters to the
4 offset operator and surface owner of the water well.

5 Q. Let's turn -- We'll come back to that
6 information. Let's turn to Exhibit Tab Number 2, and look
7 at the first display behind that exhibit tab. Identify for
8 us what you've shown.

9 A. Okay, under Exhibit 2, the first plat is a
10 locator plat showing the location of the project area in
11 the State of New Mexico.

12 Q. Where is it?

13 A. Okay, it's located five miles off of 371, which
14 runs between Highway 44 to Dulce.

15 Q. You're just north and west of Lindrith?

16 A. Yes.

17 Q. All right. Turn past that display, and let's
18 look at the next display.

19 A. The next plat is a surface ownership plat
20 indicating private surface ownership of Donald and Paul
21 Candelaria, and the green indicates federal surface, Bureau
22 of Land Management.

23 Also indicated is the location of the Jillson
24 disposal well and the Candelarias' water well.

25 Q. Upon what information did you base your

1 conclusion, as shown on this display?

2 A. Okay, we did a records check of the surface to
3 determine who was the owners, we contacted the State of New
4 Mexico Water Division to determine if they had any records
5 of water wells in the area. They do not show any in their
6 records.

7 We therefore had our production foreman have
8 switchers do a physical check of the area, and they
9 discovered this particular water well in the area where we
10 plan to do the disposal well.

11 Q. Are you familiar with the OCD concept of the
12 half-mile-radius area of review?

13 A. Yes.

14 Q. Within that area, did you find, either by
15 searching the State Engineer's records or making surface
16 inspections, any other freshwater source within that area,
17 other than the well you've shown on this display?

18 A. We found no other water wells within that radius.

19 Q. To whom do you attribute ownership of that fresh
20 water well, based upon your search?

21 A. From our record check, Paul and Donald Candelaria
22 are the owners of that water well.

23 Q. Okay. Do they have any tenants or other
24 occupants of the property in which the water well serves?

25 A. In our preliminary work in putting together our

1 C-108 form, our production foreman contacted Mr. Candelaria
2 and he advised that Mr. Shipley was leasing that surface
3 from him.

4 Q. Based upon your investigation of all sources,
5 including contacts with Mr. Candelaria, did you determine
6 if there were any other freshwater sources within the half-
7 mile radius?

8 A. No, we found no others.

9 Q. This is the only one.

10 A. Yes.

11 Q. The proposed well location is located on BLM
12 lands?

13 A. Yes.

14 Q. Have you contacted various representatives of the
15 Bureau of Land Management to determine what, if any,
16 procedures they would require of you for the permitting and
17 approval of this well as a disposal well?

18 A. Yes, I did. When we sent our notice letter out
19 to Mr. Candelaria, he telephoned me and advised me that he
20 objected to our location and that for a period of two years
21 they had been working with the BLM on a potential land
22 swap.

23 Upon learning that, I did contact the Farmington
24 BLM office, talked to their representatives, and they did
25 confirm that they were talking with Candelaria on a land

1 swap, but it had not been determined to follow through on
2 that project.

3 Q. Based upon your study, including the
4 conversations with the Bureau of Land Management, what did
5 you ultimately conclude to be the ownership of the
6 minerals, as well as control of the surface with regards to
7 the permitting of your disposal well?

8 A. In conversations with both the Albuquerque BLM
9 office and the Farmington BLM office, they have confirmed
10 that the Minerals, as well as the surface, are still owned
11 by the federal government and are under their jurisdiction.

12 Q. Did you have any indication, direction or other
13 requirements made of you by the BLM that you must obtain
14 the concurrence or consent of the Candelarias for locating
15 this well where you propose to locate it?

16 A. No, they did not.

17 Q. Let's turn now to the letter following that
18 illustration, which is the next item behind this exhibit
19 tab. Were you involved in having this letter generated?

20 A. Yes, I was.

21 Q. Give us the facts and circumstances by which you
22 understand this letter was issued.

23 A. When I learned of the potential surface issues, I
24 talked to both the Farmington and the Albuquerque BLM
25 offices, and they had written this letter to Mr. Catanach

1 to clarify their position in regard to the surface
2 ownership as well as the minerals and that they were aware
3 of our proposed disposal well project.

4 Q. As part of the permitting of the disposal well on
5 federal properties, did Meridian file an APD to cause this
6 well to be drilled?

7 A. Yes, we have.

8 Q. And where did you file that APD?

9 A. We filed it with the Albuquerque BLM office.

10 Q. And is that the appropriate place, in your
11 opinion, in which to file that APD?

12 A. Yes, with the restructuring of the BLM. The
13 Farmington office at one time handled Rio Arriba County,
14 but they have redivided the districts and the Albuquerque
15 office now has jurisdiction over this area.

16 Q. As part of that filing process, did you notify
17 the BLM of Meridian's intent to utilize this wellbore for
18 disposal purposes of water produced from areas off of what
19 would otherwise be the oil and gas lease that affected this
20 portion of the federal lands in Section 8?

21 A. Yes, we did, we noted that in our APD.

22 Q. All right. As a landman, what do you understand
23 to be the use to which this well is going to be put?

24 A. That under the regulations and approval of the
25 state and the BLM, that we would be allowed to use this as

1 a disposal well.

2 Q. What is the status of the BLM's approval of your
3 APD for this well?

4 A. They are at this time currently reviewing our
5 APD.

6 Q. Are you personally familiar with the nature and
7 the character of the objection raised by the Candelarias to
8 the use of this well for disposal?

9 A. Yes, as they expressed it to me.

10 Q. All right. Describe for us when and under what
11 circumstances you had your first contact with the
12 Candelarias concerning any objection they had to your well.

13 A. When we sent out the initial notice letter, we
14 sent it out certified mail. That was sent out June 7th.

15 On June 8th, Paul Candelaria called me and we had
16 a telephone conversation where he made me aware of his
17 concerns.

18 Q. What did Mr. Candelaria express to you to be his
19 concerns at that point?

20 A. At that time he expressed his concerns in that he
21 was going through the procedure, attempting to carry out
22 this land swap, and he felt that our operations, if he was
23 successful, would interfere with his surface use.

24 Q. Are there other oil and gas operations taking
25 place in Section 8, both on the federal and nonfederal

1 lands?

2 A. Yes, there are.

3 Q. Is there a plat that shows the extent to which
4 Section 8 has been utilized?

5 A. Under Exhibit 3 we have a plat spotting well
6 locations in Section 8, as well as the area surrounding
7 Section 8.

8 Q. In this first conversation with Mr. Candelaria,
9 did he express to you any concerns, reservations or
10 problems in relation to any freshwater well he may have in
11 this vicinity?

12 A. Not at that time.

13 Q. Subsequently, did he?

14 A. Not to me.

15 Q. Okay. Did you have any other conversations with
16 Mr. Candelaria?

17 A. No.

18 Q. When we look at the plat behind Exhibit Tab
19 Number 3, identify for the record what we're looking at,
20 Mr. Goebel.

21 A. This is a land plat showing the project area. We
22 have spotted in the southeast of the northwest quarter of
23 Section 8 where the Jillson disposal well project will be
24 placed.

25 In the southeast quarter of Section 8 we have

1 spotted Mr. Candelaria's water well.

2 The green circle is the half-mile radius around
3 the disposal well. The dotted square is the area that we
4 notified offset operators. And then the large dotted
5 circle indicates a two-mile radius of wells located within
6 that area.

7 Q. You've spotted all wells that, based upon your
8 records and the search of the other records, are all wells
9 that have been drilled within the two-mile-radius area?

10 A. Yes.

11 Q. All right. Do you have an illustration or a
12 survey or other descriptions to show us the relationship of
13 your proposed disposal well to the Candelarias' freshwater
14 well?

15 A. Under Exhibit 4 we had a survey done, and this is
16 a survey plat which indicates the distance of the water
17 well from our proposed disposal well. That would be the
18 first plat.

19 Q. Neale Edwards has certified this is a
20 professional land surveyor?

21 A. Yes.

22 Q. Mr. Edwards generally does work for Meridian?

23 A. Yes.

24 Q. And have you found his work to be accurate and
25 reliable?

1 A. Yes.

2 Q. And do you drill and locate wells based upon his
3 surveys?

4 A. Yes.

5 Q. How far does he demonstrate your disposal well to
6 be on a direct line from the -- what is identified as the
7 "Existing Ranch Water Well"? That's the Candelaria's well
8 that the properties lease to the Shipp lease?

9 A. Yes.

10 Q. Okay, how far?

11 A. He's indicating that it's 2674.02 feet.

12 Q. As part of your search and review of the records
13 and information, did you find any other disposal wells
14 being utilized by either Meridian or any other company in
15 this area?

16 A. We found in the area one other disposal well
17 operated by Mobil.

18 Q. Do you have a survey plat from Mr. Edwards that
19 shows us the distance from the freshwater well that the
20 Candelarias own to Mobil's disposal well?

21 A. Yes, the second page under that exhibit is a
22 survey plat showing the distance from the water well to
23 Mobil's disposal well.

24 Q. Apart from your notifications to the Candelarias,
25 what other notifications, if any, did you cause to be made?

1 A. We also gave notice to the offset operator, as
2 shown under the Exhibit 3, under that square. In the south
3 part of Section 5 there's an offset operator, Carolyn Clark
4 Wiggins Oil Properties. We sent them notification of our
5 projects.

6 Q. What, if any, communications or telephone
7 inquiries, conversations, did you have with Wiggins
8 concerning your request?

9 A. They sent us a letter back indicating they had no
10 objection to our project.

11 Q. Let me show you my certificate of mailing in
12 compliance with notice obligations of the Division and have
13 you look at the copy appended to the certificate and have
14 you tell me whether or not we have notified all the
15 appropriate parties of your Application.

16 A. Yes, we have.

17 Q. Let's go back to Exhibit 1 now. The first part
18 of Exhibit 1 is the Application for Administrative
19 Approval, and attaching to it is the advertisement,
20 notifications, proof of mailings, and then as you continue
21 your way through there you're going to find a well-staking
22 worksheet. Are you with me?

23 A. Yes.

24 Q. It's about three pages ahead of the first green
25 sheet that separates the portions of the exhibit.

1 A. Yeah, I have the --

2 Q. The Jillson Federal Salt Water 1 says "Well
3 Staking Worksheet". What is intended to be the importance
4 of this?

5 A. Okay, this is a worksheet used by Meridian. When
6 they go out to stake a well they have various parties go
7 out on the staking that are involved with the particular
8 project and have them sign off to indicate that they were
9 at the project site.

10 You'll notice that the Bureau of Land Management
11 representative, Pat Hester, was out there May 12th, 1994,
12 and was aware of our project and was evaluating the
13 location.

14 Q. Okay. Behind that worksheet, what is the next
15 display?

16 A. Next display is a topo map indicating the road
17 into our proposed disposal well.

18 Q. Okay, and after that is the wellbore schematic
19 for the disposal well?

20 A. Yes.

21 Q. We have the green sheet, and then we're looking
22 at the C-108 information?

23 A. Yes.

24 Q. Is this the C-108 information that you
25 distributed to the BLM and to the Candelarias and to

1 Wiggins when you sent your mailing as you've described to
2 us?

3 A. Yes, it is.

4 MR. KELLAHIN: That concludes my examination of
5 Mr. Goebel, Mr. Examiner.

6 We move the introduction of the information
7 behind Exhibit Tabs 1, 2, 3 and 4.

8 EXAMINER STOGNER: Exhibits 1, 2, 3 and 4 will be
9 admitted into evidence at this time.

10 Thank you, Mr. Kellahin.

11 Before I open up the questions, Mr. Candelaria,
12 I'd like to ask Mr. Goebel something.

13 EXAMINATION

14 BY EXAMINER STOGNER:

15 Q. Do you have a copy of the APD that was submitted
16 to the BLM?

17 A. I would have to look. I think I may have brought
18 it.

19 Q. Okay. Well, let me rephrase that. Is it
20 included in the -- today's exhibits?

21 A. It is not included in the book, no.

22 Q. It was not included in the book?

23 Now, you said on there that the APD included a
24 statement of what waters were to be or what leases the
25 waters were from that were to be disposed of?

1 A. There is a statement on the APD that water would
2 be brought in from other wells in the area.

3 Q. Okay. Is a statement like that included in those
4 exhibits today?

5 A. No, it is not. It's on the APD.

6 EXAMINER STOGNER: Mr. Kellahin, could I have you
7 subsequent to today's hearing submit a copy of that APD and
8 the statement if it's separate? I think all I need will be
9 the federal form.

10 I can't remember the federal form number, but I
11 think you know what I'm talking about.

12 MR. KELLAHIN: Yes, sir, we have it here
13 somewhere.

14 EXAMINER STOGNER: And I don't need all the
15 attachments like the archeological site or a lot of the
16 other things that the BLM --

17 MR. KELLAHIN: Yes, sir, we'll provide that to
18 you, Mr. Stogner.

19 EXAMINER STOGNER: Okay, and if you have it here
20 with you today, we can even take a little recess here after
21 a while and make copies of it.

22 Before I ask any other questions I will open it
23 up at this time to the Candelarias.

24 Do you have a question of this witness at this
25 time?

CROSS-EXAMINATION

1
2 BY MR. PAUL CANDELARIA:

3 Q. Well, first of all, I'd like to respectfully
4 disagree with you that I did not voice my concerns about
5 water contamination the day I had that phone call with you,
6 because I did. Okay? But that's past.

7 But second of all, do you realize that there's
8 two other water wells besides that one in the general area?

9 A. Not -- We were not aware of one in your vicinity
10 of the half-mile circle.

11 Q. Nobody bothered to ask us before you guys made
12 your Applications and whatever else you made.

13 EXAMINER STOGNER: I take it, Mr. Candelaria,
14 that you're aware of some other water wells out there?

15 MR. PAUL CANDELARIA: Yes, there is. We have two
16 other water wells within a mile of that particular site.
17 The one is right, oh, 150 to 200 feet from the one that
18 we're talking about in Section 8.

19 EXAMINER STOGNER: Okay, we're getting near
20 some -- We're getting near where we'll need to probably
21 swear you in.

22 But if you'll refer to that second page map of
23 Exhibit Number 2 -- that's the pretty colorful one --

24 MR. PAUL CANDELARIA: Yes, sir.

25 EXAMINER STOGNER: -- the two other water wells

1 that you referred to, would they be included in this map or
2 that portion of this map?

3 MR. PAUL CANDELARIA: One of them would be, yes,
4 sir.

5 EXAMINER STOGNER: One of them would be. And
6 there's another one within a mile, you say?

7 MR. PAUL CANDELARIA: The other one is in Section
8 -- It would be in the southeast quarter of Section 9 there.

9 EXAMINER STOGNER: Okay, Mr. Kellahin, it would
10 appear that there might be some more review or research
11 whether there are or are not some water wells that need to
12 be included in your C-108.

13 MR. KELLAHIN: I don't want to confuse the
14 process, and perhaps we should wait for Mr. Candelaria to
15 testify and tell us his information.

16 The information from the State Engineer's Office
17 shows no report by Mr. Candelaria for any well, and so in
18 an abundance of caution we sent our field people out in
19 pumpers searching the neighborhood for wells, and this is
20 the only one they could find. If there are others, we're
21 happy to look again. If he'll aid us with some
22 information, that might expedite the process.

23 EXAMINER STOGNER: Okay, with that --

24 THE WITNESS: May I speak?

25 EXAMINER STOGNER: Okay, Mr. Goebel, why don't

1 you respond to his questions or -- up this point then.

2 THE WITNESS: What I'd like to clarify is that --
3 within -- when we went our half-mile radius in order to
4 look for water wells for the project, we only spotted those
5 water wells that would fall within that. We did find water
6 wells, some of them over two miles away, but we did not do
7 that -- or work with those wells, because they did not fall
8 within the half-mile circle.

9 MR. DONALD CANDELARIA: There's a pumphouse
10 there, so you didn't spot that well.

11 THE WITNESS: Well, we would only spot the one
12 that fell within that half-mile circle.

13 MR. DONALD CANDELARIA: The one pumps the water
14 into the reservoir. But there's another pump that pumps
15 water into the house.

16 MR. PAUL CANDELARIA: Mr. Examiner, the whole
17 thing is, is that I think that Meridian Oil was very, very
18 derelict in their process, and they should have contacted
19 the Candelarias, that Meridian Oil is very, very well aware
20 of who owns that property there. It's not like they just
21 bought it yesterday.

22 EXAMINER STOGNER: Okay, let's go on with the
23 questions at hand, then we'll deal with this issue. I'm
24 going to assume that you probably have a map or some
25 exhibits later on that you'll present.

1 So if you have any questions of this witness, you
2 may continue.

3 Q. (By Mr. Paul Candelaria) Well, I'll just -- When
4 you contacted BLM, BLM did not make you aware of the fact
5 that we were in a land exchange; is that correct?

6 A. They indicated to me that for a period of two
7 years they have been talking to you about a land exchange.
8 They indicated that they have not made a final decision to
9 do that.

10 It's my understanding now that they were waiting
11 for appraisals on properties to see if they would do the
12 land exchange. They were not happy with the appraisals,
13 and it's my understanding now that the Farmington office is
14 backing off and that it will be deferred to the Albuquerque
15 office and that they had indicated to me that you were now
16 maybe looking at purchasing the property.

17 MR. DONALD CANDELARIA: There's some truth to
18 that.

19 EXAMINER STOGNER: Any other questions?

20 Mr. Kellahin, do you have any redirect?

21 REDIRECT EXAMINATION

22 BY MR. KELLAHIN:

23 Q. Mr. Goebel, did the BLM indicate to you that they
24 would delay, postpone or otherwise not process Meridian's
25 APD because of the possibility of a land exchange with the

1 Candelarias?

2 A. No, they told me that it was their position that
3 the federal government still owned the surface and the
4 minerals and that they would work with us under our oil and
5 gas lease as the mineral owner and work with us on the
6 disposal well project.

7 They also indicated to me that if they were to do
8 a land swap or sell that federal acreage, they would
9 conditionally sell it with the understanding that the new
10 surface owner would respect all facilities and operations
11 currently in existence.

12 MR. KELLAHIN: Mr. Examiner, I have found the APD
13 that was utilized by Meridian with the BLM, and the
14 attachments in that APD that make reference to the off-
15 lease water disposal.

16 For purposes of the record, I'd like to show this
17 to the witness, have him authenticate it, introduce it as
18 an exhibit, and then we'll subsequently make more copies.
19 But it goes to the question that you've asked.

20 EXAMINER STOGNER: Okay.

21 FURTHER EXAMINATION

22 BY EXAMINER STOGNER:

23 Q. Mr. Goebel, is it your understanding that
24 Meridian and only Meridian will be utilizing this well for
25 disposal of produced water, or will it be classified as a

1 commercial disposal well?

2 A. It will not be a commercial well; it will be used
3 for our operations.

4 Q. Okay, just for Meridian's operations.

5 Do you know roughly how many other leases are
6 involved?

7 A. Well, it would be -- The reason we've located
8 here is that it's strategically located for our operations,
9 also provides all-weather facilities in that we would have
10 winter access with minimum problems. We would be bringing
11 water in from our -- mainly the federal leases in the area,
12 the wells that we operate in the area.

13 Q. Would there be waters -- Strike that, I'm not
14 going to ask that question.

15 Is it your understanding, when you filed the APD,
16 that this particular well, classified as a saltwater
17 disposal well, would be covered under the federal bond that
18 I'm assuming Meridian has with the BLM?

19 A. Yes.

20 Q. And that is the staked location, 2305 from the
21 north, 2415 from the west?

22 A. Yeah, you're looking at the survey plat?

23 Q. And your well data information --

24 A. Yeah.

25 Q. -- and the APD.

1 A. Yes.

2 Q. And that has been approved -- Well, where did you
3 say the APD was at this time?

4 A. The BLM has the APD, and they are processing it
5 now.

6 EXAMINER STOGNER: If there are no other
7 questions of this witness, he may be excused.

8 Mr. Kellahin?

9 MR. KELLAHIN: A little housekeeping to do here,
10 Mr. Examiner. May the witness authenticate the -- Do you
11 want that part of the record, the federal portion of the
12 form, with the APD?

13 EXAMINER STOGNER: With the page 3?

14 MR. KELLAHIN: Yes, sir.

15 EXAMINER STOGNER: Yeah. Do you propose that as
16 probably an attachment to Exhibit 1 or --

17 MR. KELLAHIN: Yes, sir, if you please.

18 EXAMINER STOGNER: Say Exhibit 1A?

19 MR. KELLAHIN: Yes, sir.

20 FURTHER EXAMINATION

21 BY MR. KELLAHIN:

22 Q. Mr. Goebel, for the record let me ask you to look
23 at what the Examiner has been reviewing and have you
24 identify that for me, please.

25 A. Okay, what I'm looking at is page 3 of the APD

1 which was submitted to the BLM for our permit on the
2 Jillson Federal Saltwater Disposal Well.

3 Q. Is this part of the paperwork that you referred
4 to earlier when you said you had put the BLM on notice that
5 produced water would be taken off lease and put into this
6 injection well or disposal well?

7 A. Yes, it is.

8 EXAMINER STOGNER: Thank you, Mr. Kellahin.

9 MR. KELLAHIN: I submit, Mr. Examiner, the
10 portion of the APD that deals with this topic as an
11 addendum to the exhibits and have it introduced as Exhibit
12 1A. We so move.

13 EXAMINER STOGNER: And at the earliest
14 convenience we'll make copies of that, and if you'll
15 provide Mr. Candelaria a copy of that.

16 MR. KELLAHIN: Yes, sir.

17 EXAMINER STOGNER: Okay. With that, you may be
18 excused, Mr. Goebel. Mr. Kellahin?

19 MR. KELLAHIN: Call at this time Mr. Bill Hobbs.

20 BILL HOBBS,

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

23 DIRECT EXAMINATION

24 BY MR. KELLAHIN:

25 Q. Mr. Hobbs, would you please state your name and

1 occupation?

2 A. Bill Hobbs. I'm a petroleum geologist with
3 Meridian Oil.

4 Q. Mr. Hobbs, on prior occasions have you testified
5 before the Division as a petroleum geologist?

6 A. No, I have not.

7 Q. Summarize your education, sir.

8 A. I graduated from Oregon State University in 1965
9 with a bachelor's degree in geology. Also from Oregon
10 State in 1967 I graduated with a master's degree in
11 geology.

12 Q. Summarize your employment experience.

13 A. Initially I went to work for Mobil Oil
14 Corporation, and since that time I've worked for various
15 oil and gas companies in the US and have been with Meridian
16 the last seven years.

17 Q. Is it your geologic responsibility to review the
18 geologic data with regards to the Jillson Federal Saltwater
19 Disposal Well Number 1?

20 A. Yes, it is.

21 Q. Have you made that review?

22 A. Yes, I did make that review.

23 Q. And based upon that review, have you reached
24 certain conclusions and opinions concerning this
25 Application?

1 A. Yes, I have.

2 MR. KELLAHIN: Mr. Examiner, we tender Mr. Hobbs
3 as an expert petroleum geologist.

4 EXAMINER STOGNER: Mr. Hobbs is so qualified.

5 Q. (By Mr. Kellahin) Mr. Hobbs, let me have you
6 give us the geologic setting in this particular area, and
7 let's find a type log or a sample that you would like to
8 use so we can illustrate to the Examiner the relationship
9 of the various formations from the surface down to the
10 Entrada.

11 What do you have available that we might look at?

12 A. I brought an exhibit, a composite type log I put
13 together. I made this from three different wells in the
14 south half of Section 8, Township 24 North, Range 3 West,
15 Rio Arriba County.

16 Not all of the wells logged stratigraphically the
17 whole section, which is why I had to put three different
18 logs together, including the W.O. Hughes Number 6 Well,
19 which Mobil drilled in 1984 down through the Entrada.

20 Q. Okay.

21 A. And these are not part of the exhibit book.

22 Q. We will mark them as an exhibit that supplements
23 your geologic presentation. I'm going to mark that as
24 Exhibit 5A; is that all right?

25 A. Yes.

1 Q. You're soft spoken, Mr. Hobbs. You're going to
2 have to speak up for us.

3 A. Okay.

4 Q. Do you have two copies?

5 A. Yes, I do.

6 Q. Why don't you hold on to one and hand me one?
7 Are they both color-coded in the same fashion?

8 A. Yes, they are.

9 Q. I'm going to hand the Examiner this composite log
10 and have you take your copy, then, and let's discuss the
11 information on here that's of importance to you.

12 A. As I stated earlier, this is a composite log.
13 The first portion of the log --

14 Q. Let's talk about --

15 A. -- this is a geophysical log.

16 Q. Let's talk about the composite. Are you
17 satisfied that you have taken portions of reliable logs and
18 selected them so that this is a typical representation of
19 what we'll find when we drill this well at this location?

20 A. Yes, it is.

21 Q. All right. First --

22 A. Excuse me, even though there is a 200-foot
23 stratigraphic gap between 3100 feet and 3300 feet, I looked
24 at offset logs, and that is a shale section, and it would
25 be represented in the proposed Jillson Federal log.

1 Q. All right. Let's go to the bottom of the log.
2 Let's find the proposed injection interval in the Entrada.
3 Define for us on this composite log what you anticipate to
4 be the top of the Entrada as you've shown it.

5 A. Okay, first let me identify where this portion of
6 the log came from. This portion of the log, from 7070 feet
7 down to the bottom of the log at 8700 feet, is taken from
8 the Mobil production W.O. Hughes Number 6 Well, which was
9 drilled in the southeast quarter of Section 8, 24 North, 3
10 West, so it's about a 3/8 of a mile southeast offset to our
11 proposed location.

12 This is the only well in the township that did
13 penetrate the Entrada formation, and we, after reviewing a
14 number of logs well outside this area, felt that it was
15 very representative of both the stratigraphy and the rock
16 type that we would get -- encounter in the Entrada, which
17 occurs on this composite log.

18 The top of the Entrada is at 8400 feet, and the
19 bottom of the Entrada formation where it's in contact with
20 the Chinle formation is at approximately 8640 feet on this
21 log.

22 Q. Within this area, is the Entrada known to be
23 hydrocarbon-productive?

24 A. There have been wells that have had shows, but
25 for the most part all the wells within a five-township area

1 around this well have tested water, salt water.

2 Q. What is your geologic opinion about the
3 probability of encountering hydrocarbons in the Entrada at
4 this location?

5 A. At this location, I would say there's a -- of
6 encountering hydrocarbons?

7 Q. Yes, sir.

8 A. I would say a less than one-percent chance of
9 encountering hydrocarbons in even a -- subeconomic
10 quantities.

11 Q. In certain areas of the Basin, I think the
12 Entrada could be characterized as fresh water. In other
13 words, it would have total dissolved solids within the
14 range allowed by the State Engineer to be classified as
15 fresh water?

16 A. Yes, that's true in the -- much further south of
17 where we are. What the State Engineer allows as fresh
18 water is total dissolved solids of 10,000 parts per million
19 or less.

20 Approximately 30 miles south of our location,
21 structurally updip on the Chaco slope, there are five
22 fields of produced oil and relatively fresh water, even by
23 the State Engineer's definition, in Medio field, southwest
24 Medio field, Snake Eyes and Paper Wash.

25 As you come closer -- producing fields that come

1 closer to our location, I believe it's Paper Wash field,
2 which is still 20 miles south of us, updip closer to
3 outcrop, where the fresh water would enter the formation,
4 the produced water in that field is 11,000 parts per
5 million.

6 Q. Do you have a geologic opinion about the
7 probability of encountering water in the Entrada at this
8 location that would be classified as fresh?

9 A. Again, I would still put that at less than one or
10 two percent.

11 Q. When we look at the geology in the Entrada, why
12 have you chosen the Entrada as a probable candidate for the
13 injection of this produced water?

14 A. In other parts of the northern part of the basin,
15 the Entrada has been successfully used by a number of
16 operators for years as a very successful water injection
17 zone.

18 We eyed this formation as we came down into our
19 area of responsibility. We picked the Entrada because of
20 the very thick volume of reservoir or sand at this
21 location. The porous and permeable Entrada was 240 feet
22 thick.

23 Also because of its depth, 8400 feet, we're down
24 below all the known and proven producing formations such as
25 the Dakota formation and Pictured Cliffs, which produce in

1 this area, and also that puts us approximately 8200 feet
2 below all of these surface water wells.

3 So through the 8400 feet, probably, I would say,
4 65 to 70 percent of the entire stratigraphic section would
5 be a shale section, which would give us a good effective
6 geologic seal from surface formations.

7 Q. Are you familiar with the point in the formations
8 that Mobil has chosen to dispose of produced water in their
9 disposal well?

10 A. Yes, my understanding, initially, they started
11 disposing of this water -- You're referring to the water in
12 Section 9, I believe.

13 Q. Yes, the Lindrith B 25 Number 1 Well.

14 A. Same township. They initially started injecting
15 produced water into the Mesaverde formation, which on this
16 composite log occurs -- the top of which occurs at
17 approximately 4668 feet.

18 For some reason, they have -- our understanding
19 is, they have abandoned that zone as an injection zone and
20 now are injecting water in the Chacra sands, which on this
21 composite log occur at -- the top of which occurs at 3915
22 feet, and there's two very thin Chacra sands there that
23 look like composite. They might be 15 feet thick, which we
24 think -- which again is the reason we preferred our
25 location and the Entrada location as looking at a large

1 enough formation to take the volume over a very long term
2 that we're proposing for the Jillson site.

3 Q. When you look at the geologic information in this
4 area, what is your opinion of the greatest depth of fresh
5 water that is being utilized in this area?

6 A. I would have to go by the water well records,
7 which my understanding -- and I guess we don't know this
8 for sure -- the Candelarias' wells produced from -- or have
9 fresh water down to a depth of approximately 200 feet, 250
10 feet.

11 The top of this composite log, which is a
12 spontaneous potential and resistivity log, starts at 370
13 feet, and the sands that we see in the San Jose formation
14 on here, it looks like they're starting to get into the
15 brackish water zones. So --

16 Q. If you had --

17 A. -- I would say the fresh water would be very
18 shallow in this area and confined to the upper part of the
19 San Jose formation.

20 Q. Do you know what has been the custom and practice
21 in this area in terms of operators where they'll set the
22 surface casing string for these producing wells?

23 A. Yes, according to the State Engineer's approval
24 and the NMOCD, operators have generally set surface casing
25 down below known freshwater zones, which in this case

1 surface casing would be set down to or below 300 feet.

2 Q. Based upon your geologic study, do you have an
3 opinion as to where you would recommend the bottom of the
4 surface casing string be set in this disposal well?

5 A. I think in this particular well we have enough
6 offset wells that seem to -- through a number of years of
7 production, have provided adequate protection of the
8 surface water rights and salinity. I really think 300, 350
9 feet would be most adequate.

10 Q. Okay. When we look at the exhibit book behind
11 Exhibit Tab Number 5, there's a couple of logs. What are
12 we looking at here?

13 A. This is a type log. It's from the -- The two
14 geophysical logs are from the W.O. Hughes Number 6 well
15 that Mobil Oil drilled and logged in September of 1983.
16 They're merely blow-ups of the log used on the bottom of
17 the small composite log that we've been talking from.

18 The geophysical log on the left is a dual
19 induction lateral log. These are normal tools run in the
20 normal oil field to evaluate subsurface formations.

21 The geophysical log on the right-hand side is a
22 density compensated neutron log which, in combination, we
23 use to evaluate reservoir and non-reservoir rocks in the
24 subsurface.

25 This particular log is kind of a blow-up of the

1 composite log. It shows the top of the Entrada formation,
2 Entrada -- the only sandstones that approximate 8400 feet,
3 extending down to a depth of 8642 feet, where the Entrada
4 sands sit on top of the interbedded sandstones and shales
5 of the Chinle.

6 These sandstones and shales would provide a good
7 floor seal, we believe, for the Entrada as an injection
8 zone.

9 And the Summerville Todilto shales and
10 interbedded limestones and anhydrites, which extend on this
11 log from 8338 feet down to the top of the Entrada at 8400
12 feet, we feel provides a very adequate top seal for the
13 saltwater disposal zone.

14 Q. As part of your study, have you looked for any
15 evidence of open faults or other hydrologic connections by
16 which disposal fluids interjected into the Entrada could
17 migrate into the shallow freshwater sands?

18 A. Yes, I have. I've examined all of the well logs
19 in the -- basically within the area on the map marked
20 Exhibit Number 3. I've looked at all the logs inside of
21 the red square, and I have -- and basically we had
22 subsurface logs on all these wells, not just the available
23 ones. We do have very good records.

24 I looked at surface geologic maps and did not
25 find any evidence of faulting or extensive fracturing that

1 would allow the migration of these fluids up towards the
2 surface.

3 MR. KELLAHIN: That concludes my examination of
4 Mr. Hobbs. We move the introduction of his Exhibit 5 and
5 his Exhibit 5A.

6 EXAMINER STOGNER: Exhibit 5 and Exhibit 5A will
7 be admitted into evidence at this time. Thank you, sir.

8 EXAMINER STOGNER: Mr. Candelaria, I'll allow you
9 to ask Mr. Hobbs any questions pertinent to his testimony
10 today as a geologist.

11 EXAMINATION

12 BY MR. PAUL CANDELARIA:

13 Q. The only question that I could possibly have
14 would be -- is, what assurance can you give us with water
15 wells in that area that those fluids will not come up?

16 A. I think that question can be more adequately
17 answered by Brian Ault, who's the engineer who's going to
18 follow me, and -- when he talks about the cementing
19 procedures.

20 As far as any faults or fractures, I think, away
21 from the wellbore, on these fluids coming up, again,
22 because of our depth and so many thick shales between the
23 Entrada formation and up to the surface, most of those
24 faults aren't going to go up through the very young
25 formations that you take the water out of. So...

1 Of course, we can't offer any guarantees, but I
2 feel that this whole section in here would be more suitable
3 than trying to inject water into, say, a much shallower
4 zone. So we kind of have triple protection, if you will.

5 Q. Incidentally, the water well, the one particular
6 water well that we're talking about is 270 -- 370 feet.

7 A. 370 feet? Okay.

8 Q. So that might be well known by --

9 A. Yeah, we were going to get together with you and
10 see if we could either find out the depth or, if you didn't
11 know the depth, maybe measure the well to find out how deep
12 it was.

13 Q. Well, not trying to be redundant, but that's the
14 thing that kind of upset us, that you folks, you as
15 Meridian or you guys as Meridian, did not contact us and
16 get with us and ask us questions pertaining to this
17 situation. You know, that's where we're coming from.

18 MR. DONALD CANDELARIA: As a matter of fact, the
19 way that we found out was when BLM told us about that
20 injection well that you guys were planning. You didn't --

21 MR. KELLAHIN: I don't want to argue with the
22 Candelarias about this issue, Mr. Examiner. I'll be happy
23 to engage them in a moment, but I don't think it's
24 appropriate for this witness.

25 MR. PAUL CANDELARIA: Well --

1 EXAMINER STOGNER: I concur. Is there any
2 questions of this witness?

3 Okay, if not, let's take a -- I'm sorry, Mr.
4 Chavez?

5 MR. CHAVEZ: Frank Chavez, Oil Conservation
6 Division, Aztec Office.

7 EXAMINATION

8 BY MR. CHAVEZ:

9 Q. Is it part of your duties to -- in reviewing
10 applications in this particular area, and Meridian
11 activities, to understand the hydrology of the area and how
12 that might be affected by Meridian activities?

13 A. The hydrology as pertains to the shallow --

14 Q. Specifically shallow groundwater, yes.

15 A. In general, I would say no. And we generally
16 refer -- or defer -- to the State Engineer's office, or
17 state agencies, for that kind of information.

18 Q. Okay.

19 A. It's not common practice for us to do surface
20 hydrological studies.

21 Q. We're talking about groundwater, shallow
22 groundwater hydrology, how that might be affected. That's
23 what I was trying to address, to see whether or not as your
24 geologic duties in this area you had to understand the
25 shallow groundwater in, for example, the permitting

1 processes, casing design process and all, for the Meridian
2 activities that might have an effect on shallow
3 groundwater.

4 A. Only insofar -- My responsibilities would be to
5 identify basically from subsurface logs, such as we've
6 exhibited or used here, the existence of freshwater
7 aquifers and then work with the -- and identify any other
8 potential drilling hazards, either at the surface or on the
9 way down to TD, and work with the engineering team and the
10 drilling department to make sure that we are setting
11 surface casings deep enough and our intermediate strings
12 down -- casing strings all the way down to total depth.

13 Q. In order to identify groundwater in the area,
14 would -- is there a consistent process you go through
15 besides looking at logs to identify potential groundwater?

16 A. Probably one of the first sources we look at is,
17 particularly in the San Juan Basin where most of our
18 drilling activity occurs, we look at what's been done by
19 previous operators. So we look at the casing designs,
20 where they set the surface casing on pre-existing wells.
21 So that's kind of deferring back to -- If that process was
22 approved, you know, unless we see something glaring wrong
23 with that, that decision, then oftentimes where we decide
24 to set casing is dictated by what was acceptable at all the
25 offset producing wells.

1 MR. CHAVEZ: Okay, thank you. That's all I have.

2 EXAMINER STOGNER: Thank you, Mr. Chavez.

3 I have no other questions of Mr. Hobbs at this
4 time.

5 Let's take an extended 30-minute recess at this
6 point, maybe grab some snacks. We'll reconvene -- Let's
7 make it an even 1:15.

8 (Thereupon, a recess was taken at 12:43 p.m.)

9 (The following proceedings had at 1:28 p.m.)

10 EXAMINER STOGNER: Hearing will come to order.

11 Mr. Kellahin?

12 MR. KELLAHIN: Mr. Examiner, during the break Mr.
13 Chavez advised me that he had talked to the Candelarias
14 about the Meridian Application, and had them convey to him
15 their concerns.

16 The result of that conversation was some
17 recommendations from Mr. Chavez. The Candelarias and I
18 have taken those recommendations and have stipulated as to
19 a solution that addresses their concerns, and I would like
20 to make that representation to you now on behalf of
21 Meridian and then let Mr. Candelaria verify if that is his
22 understanding of the agreement.

23 First, there is a question about the depth of the
24 Candelaria's deepest freshwater well in this area.
25 Apparently there's another domestic well in close

1 proximity, but it is shallower. The one we're talking
2 about that's located on the exhibits, Mr. Paul Candelaria
3 believes, is 371 feet.

4 What we propose to do with his agreement is that
5 we will measure the depth of that domestic well, we will
6 notify the Candelarias so that they may be present and
7 witness that measurement. Based upon the results of that
8 measurement, then, Meridian is committed to setting the
9 surface string 200 [sic] feet below the depth of that
10 freshwater well. For example, if it's confirmed to be 371,
11 we will set at 471, and then cement from the bottom of that
12 surface casing string to surface.

13 EXAMINER STOGNER: Did you say 100 or 200 foot
14 deeper?

15 MR. KELLAHIN: One hundred feet --

16 EXAMINER STOGNER: One hundred feet.

17 MR. KELLAHIN: -- below the deepest measured
18 depth of the freshwater well. Mr. Chavez says that it's
19 the practice in the District Office to require only 50
20 feet, but we're going to double that distance and go to 100
21 feet below.

22 In addition, we have agreed that we will sample
23 that freshwater well every six months and that we'll have
24 the water sample analyzed for total dissolved solids, and
25 we will send a copy of that analysis to the Candelarias for

1 their information.

2 That stipulation, then, addresses the concerns
3 that the Candelarias have with regards to this injection
4 well.

5 Mr. Donald Candelaria has asked for an absolute
6 guarantee with regards to protecting the quality of the
7 freshwater well, and my client is unable to commit to an
8 absolute guarantee.

9 But other than the guarantee issue, which we have
10 refused, the other issues, I believe, are in agreement and,
11 it's my understanding, satisfy their objections before you
12 as to this case.

13 EXAMINER STOGNER: Thank you, Mr. Kellahin.

14 Mr. Candelaria, or either one of you gentlemen,
15 do you have anything further to add?

16 MR. PAUL CANDELARIA: No, I don't believe we do.
17 I think that our concern has been taken care of. We're
18 satisfied.

19 EXAMINER STOGNER: All right.

20 MR. PAUL CANDELARIA: Thank you.

21 EXAMINER STOGNER: I assume you gentlemen
22 probably want to stick around for the remainder of the
23 hearing. You're more than welcome to.

24 Okay, with that, Mr. Kellahin?

25 MR. KELLAHIN: Mr. Examiner, I've called Mr.

1 Brian Ault, who is an engineer with Meridian. He and
2 others prepared the C-108 filing, and we would like to
3 review that subject matter with you.

4 BRIAN AULT,

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

7 DIRECT EXAMINATION

8 BY MR. KELLAHIN:

9 Q. For the record, Mr. Ault, would you please state
10 your name and occupation?

11 A. Brian Ault, production engineer for Meridian Oil.

12 Q. Mr. Ault, on prior occasions have you testified
13 as a production engineer?

14 A. No, sir.

15 Q. Summarize for us your education.

16 A. I received a bachelor of science degree in
17 petroleum engineering in 1986 from Marietta College. I've
18 worked five years as district engineer with the Western
19 Company in stimulation and cementing surfaces, 14 months
20 with the Southern Ute Tribe as an operational engineer, and
21 a year with Meridian Oil.

22 Q. Identify the other engineers that assisted you in
23 the preparation of the C-108 that was submitted to the
24 Division for this case.

25 A. Sean Wolverton, the reservoir engineer, seated

1 back there, and there was some input from our drilling
2 engineer, Dan Vages [phonetic], who's not in attendance.

3 Q. All right, sir. Have you reviewed and agreed
4 upon a procedure for drilling the disposal well?

5 A. Yes.

6 Q. As part of your study of the requirements
7 necessary for approval, have you looked at and reviewed all
8 the details for the C-108?

9 A. Yes, sir.

10 MR. KELLAHIN: All right, we tender Mr. Ault as
11 an expert production engineer.

12 EXAMINER STOGNER: Mr. Ault is so qualified.

13 Q. (By Mr. Kellahin) Let's find the double circle
14 map, the area of review, behind Exhibit Tab Number 3, Mr.
15 Ault. Have you got that?

16 A. Yeah.

17 Q. When we look at the area of review, the half-
18 mile-radius circle, within that area did you find
19 information for any other well that had ever been drilled
20 to or through the Entrada?

21 A. Yes, I did.

22 Q. How many wells did you find?

23 A. Only one well.

24 Q. Where is that well?

25 A. It's in the -- I believe the northeast of -- or

1 the northwest of the southeast. It's the W.O. Hughes
2 Number 6.

3 Q. Is there a schematic of that well somewhere in
4 this package of exhibits?

5 A. Yes, there is.

6 Q. Help us find it.

7 A. It was submitted as part of a C-108 behind
8 Exhibit 1.

9 Q. The C-108 has got some page numbers on the lower
10 right-hand corner?

11 A. Yes.

12 Q. What page number do we need to look at?

13 A. Page number 22.

14 Q. All right. Give us a quick summary of the Hughes
15 Number 6 well. It was drilled initially for what purpose?

16 A. It was drilled initially to go to the Entrada
17 formation, realizing while they were drilling it that the
18 Dakota interval was the primary producer.

19 The well was drilled, surface pipe was set and
20 cemented to surface, intermediate string was set and
21 cemented to surface, and then they drilled all the way into
22 the Entrada formation. And at that time it was so wet,
23 with no hydrocarbon show, whatsoever that they decided to
24 plug and abandon that section of the hole and move up and
25 set their long-string pipe to the bottom of the Dakota

1 interval.

2 Q. And then what did they do?

3 A. At that time, after they drilled out, tagged the
4 cement to know where their cement was at the bottom, they
5 set their long-string pipe, did a two-stage cement job,
6 circulated cement to surface on both stages, perforated the
7 Dakota interval, and it is currently a Dakota producing
8 well.

9 Q. How old is this well? Do you have an
10 approximation?

11 A. It was done in 1983.

12 Q. Have you satisfied yourself that this well has
13 been properly plugged out of and isolated from the Entrada?

14 A. Yes, I have. After checking the well file and
15 the information and the -- calculating the cement volumes
16 and the hole size, I was satisfied that the amount of mud,
17 cement mud and cement that was placed in the hole
18 adequately seals off the Entrada from any possible fluid
19 migration.

20 Q. Is there a calculation or a measured top for the
21 cement plugs?

22 A. They did both. When they decided how much cement
23 to pump, they made that off of a volume calculation. And
24 then when they drilled out the cement to set their long-
25 string pipe, they tagged the cement, drilled out 91 feet of

1 hard cement, and knew they had good cement below that.

2 Q. Do you have an engineering opinion as to whether
3 or not the Hughes 6 Well could be a conduit to allow
4 injection fluids from the Entrada to migrate through that
5 wellbore somewhere else?

6 A. Yes, I do.

7 Q. What's your opinion?

8 A. It would be nearly impossible for any fluid to
9 migrate and use that wellbore as a conduit, based on the
10 fact that the long-string pipe was cemented to surface with
11 a competent cement job, and that the Entrada zone has been
12 plugged and abandoned appropriately.

13 Q. Okay. Do you have any engineering evidence to
14 cause you to conclude that there's any open faulting or
15 hydrologic connections between the Entrada and any of the
16 shallow freshwater sands?

17 A. No, I didn't see anything.

18 Q. Find me the schematic that shows the Jillson
19 disposal well.

20 A. It would be page 13 of that same section, same
21 Exhibit.

22 Q. Just in front of the green tab -- or I mean the
23 green page?

24 A. Yes.

25 Q. Okay, let's talk about the drilling procedure.

1 Give us a quick summary of how you're going to drill this
2 well, what type of drilling fluids or mediums are used from
3 the surface through the freshwater sources. And let's
4 assume for purposes of that question it's from 300 -- from
5 100 feet down to 370-plus, all right?

6 A. Okay. The hole will be a 12-1/4-inch hole.
7 We'll use water and bentonite, and the bentonite will be
8 used to maintain the hole integrity and keep the water
9 circulating and bring the returns to the surface. And
10 that's the only fluids that will be used to 100 feet below
11 the depth of Mr. Candelaria's well.

12 Q. All right. Any reasonable probability that
13 hydrocarbons would be introduced into the fresh sand
14 aquifers by that activity?

15 A. No, sir.

16 Q. Having gotten past the freshwater sands, you
17 drill to total depth, get your well, and then what?

18 A. We have proposed a three-stage cement job,
19 setting a stage tool just below the Ojo Alamo, another
20 stage tool in the Mancos at 5703, and we'll pump
21 approximately -- the calculations right now are
22 approximately 2100 feet of cement. Those will be checked
23 by caliper, and then we'll pump a certain amount of excess
24 cement over caliper in an effort to circulate cement on all
25 three stages back to the surface.

1 Q. All right. You're talking about the long string
2 is circulated back to the surface --

3 A. That's correct, the 7-inch pipe will have cement
4 across the back side from TD to surface.

5 Q. All right. Go back and tell me what you're going
6 to do about setting the surface string.

7 A. Okay, we'll set -- In that 12-1/4-inch hole,
8 we'll set 9-5/8-inch casing to that depth, cement it back
9 to surface as well.

10 Q. And it will be consistent with our commitment
11 with the Candelarias about the setting depth for that
12 casing string?

13 A. Yes, it will.

14 Q. All right. And you'll cement up the back side,
15 then, for that surface string?

16 A. Yes, we will.

17 Q. Once you do that, what's your engineering opinion
18 about the integrity of that wellbore?

19 A. Given the entire scenario of setting the surface
20 pipe and the long-string pipe and having competent cement
21 jobs behind, any nearby aquifers will be adequately
22 protected from any fluid migration or hydrocarbon migration
23 from this wellbore.

24 Q. How do you measure or determine the integrity of
25 the cement bond?

1 A. We're required to do a mechanical integrity test
2 on the back side. We'll set a 4-1/2-inch tubing just above
3 the Entrada interval, put a Baker packer in the hole and
4 fill the back side with a corrosion-inhibiting fluid.

5 And at that time we'll do a mechanical integrity
6 test, apply pressure to that back side, and it's allowed to
7 lose 10 percent or less pressure over the testing period.
8 And if that test is successful, we have adequately shown
9 the integrity of our back side.

10 Q. What then do you do?

11 A. At that time we'll run a step-rate test on the
12 Entrada interval to set injection pressures for the Entrada
13 interval, surface injection of pressures for that interval.

14 Q. Division guidelines provide that you'll have an
15 initial surface limitation pressure equivalent to .2 p.s.i.
16 per foot of depth from the surface to the top of
17 perforation. Are you aware of that?

18 A. Yes.

19 Q. All right. And then they normally provide a
20 procedure where you can obtain increases in surface
21 pressures, based upon step-rate tests. Are you also aware
22 of that?

23 A. Yes.

24 Q. All right. And is your anticipated point?

25 A. Yes.

1 Q. Where you will get the water that you propose to
2 put in the disposal well?

3 A. The produced water from nearby leases to the
4 Jillson federal lease.

5 Q. What kind of production comes from those nearby
6 leases?

7 A. It's gas and water out of Fruitland, Fruitland
8 Coal, Pictured Cliffs, Mesaverde, Gallup and Dakota
9 intervals.

10 Q. Does the C-108 contain copies of water analysis
11 of the produced water from each of the formations that you
12 plan to take water from?

13 A. Yes, it does.

14 Q. And do you have -- Well, you don't have a water
15 sample on the Entrada yet, do you?

16 A. No.

17 Q. Do you plan to take a water sample on the Entrada
18 when this well is drilled --

19 A. Yes.

20 Q. -- and submit that to the Division?

21 A. Yes, we do.

22 Q. All right. Are you going to run any kind of
23 compatibility test on the water?

24 A. All of the fluids will be tested for
25 compatibilities, and the TDS of that fluid will be checked.

1 Q. How do you monitor the well during its produce --
2 or its injection period to determine if you've got any
3 leaks in the tubular setup of the well?

4 A. We continuously will be monitoring backside
5 pressure above the packer, so if at any point the tubing or
6 the packer were to fail, an alarm would be activated and
7 injection operations would cease.

8 Q. Does the C-108 contain a water analysis taken
9 from a sample of the Candelaria that we've talked about
10 earlier today?

11 A. Yes, it does.

12 Q. Okay, it's in the book here somewhere?

13 A. Yes, it's at the very back of the C-108, page 44.

14 Q. What's the necessity to have this disposal well
15 located where you propose to put it?

16 A. It's strategically placed, as Van mentioned
17 earlier, to our operations in the southeast portion of the
18 San Juan Basin. There is existing roads to this location,
19 so we minimize the impact there.

20 And as far as a choice, for this location, the
21 Entrada was -- we have some information on the Entrada from
22 the W.O. Hughes well, and we felt that the Entrada would
23 both satisfy our long-term needs for water disposal and
24 that we would have the capacity there to do such.

25 Q. Any engineering evidence that the Entrada at this

1 location is productive of hydrocarbons?

2 A. No, there's not.

3 Q. In your opinion, would approval of this
4 Application provide a means by which you might dispose of
5 produced water in an economic fashion but do so in a way
6 that will protect freshwater sources?

7 A. Yes, this was very much a part of our concern as
8 we looked at many alternatives that seemed to be the most
9 environmentally sound choice that we could make, as well as
10 the capacity.

11 Q. With regards to the surface use for the disposal,
12 you meet or exceed all the requirements of the Division,
13 the BLM and any other regulatory agency with regards to
14 surface use?

15 A. Yes, we do.

16 MR. KELLAHIN: That concludes my examination of
17 Mr. Ault.

18 We move the introduction of his C-108 as part of
19 the attachments to Exhibit 1.

20 EXAMINER STOGNER: Which exhibit again?

21 MR. KELLAHIN: It's Exhibit 1, Mr. Examiner. I
22 think it's already --

23 EXAMINER STOGNER: All right, the remainder of
24 Exhibit 1 will be submitted into evidence, or in its
25 entirety.

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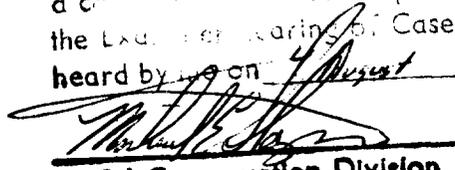
Actually, I have no questions of Mr. Ault at this time, so...

MR. KELLAHIN: That concludes our presentation, Mr. Examiner.

EXAMINER STOGNER: Then with that, Case Number 11,042 will be taken under advisement.

(Thereupon, these proceedings were concluded at 1:48 p.m.)

* * *

I do hereby certify that the foregoing is a correct copy of the proceedings in the Examiner's hearing of Case No. 11042 heard by me on 4 August 1964.

Examiner
Oil Conservation Division

MERIDIAN OIL

CASE # 11042

AUGUST 4, 1994