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BEFORE THE STATE ENGINEER, STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF WATER RESOURCES

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IN THE MATTER OF HEARING RE
APPLICATIONS 53987-53992

VOLUME VIII

RE CAVE VALLEY, DRY LAKE VALLEY,
DELAMAR VALLEY HYDROGRAPHIC
BASINS, LINCOLN COUNTY, NEVADA

Pages 1533 - 1738

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TRANSCRIPT OF PROCEEDINGS

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REPORTED BY:

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1 all the time.

2 MR. HERSKOVITS: Thank you. No further
3 questions.

4 HEARING OFFICER JOSEPH-TAYLOR: Cross-
5 Examination, Mr. Van Zandt. Since we're approaching lunch
6 hour, how much time are you looking at, Mr. Van Zandt?

7 MR. VAN ZANDT: Probably 20 minutes.

8 HEARING OFFICER JOSEPH-TAYLOR: Let's ahead and
9 keep moving.

10 CROSS EXAMINATION

11 BY MR. VAN ZANDT:

12 Q Good afternoon, Dr. Charlet.

13 A Good afternoon.

14 Q Would you agree that your expert report,
15 Exhibit 1150, mainly addresses terrestrial ecosystems,
16 correct?

17 A Correct.

18 Q And much of the discussion in that report is
19 about vegetation in Dry, Delamar, and Cave, and adjoining
20 valleys; is that correct?

21 A Yes.

22 Q You do talk about some animals and some birds
23 in there, as well, right?

24 A Yes, which are part of these systems.

25 Q Now, we heard testimony this morning about

1 disturbance along the right-of-way and some potential for
2 fire. Would you say that one of your main concerns in --
3 expressed in your report, Exhibit 1150, is the activities
4 that Southern Nevada Water Authority will engage in with
5 regard to the pipeline right-of-way?

6 A Absolutely. For the targeted basin valleys,
7 where the water is withdrawn, my predominant concern is --
8 is that, as you just expressed. Yes, sir.

9 Q Okay. And have you surveyed the right-of-way,
10 itself, in Dry, Delamar, and Cave Valleys?

11 A Walked it and made counts?

12 Q Yes.

13 A No, sir.

14 Q Have you been along the right-of-way at all?

15 A I don't know. I've been across the valley. I
16 never had a map of the proposed line. I'm certain that I
17 crossed it many times, because I crossed all of the
18 valleys.

19 Q Do you have some idea whether or not there are
20 any groundwater dependent species that exist within the
21 SNWA right-of-way?

22 A I was unable to find any -- of groundwater
23 dependent species, that's right, in those valleys.

24 Q Okay. You primarily relied on Dr. Myers'
25 report, Exhibit 1101, for your opinions on the

1 hydrological -- potential hydrological effects on the
2 terrestrial ecosystems?

3 A Yes, sir.

4 Q And you state that Dr. Myers has concluded
5 about potential impacts from pumping in Dry, Delamar, and
6 Cave, and on meadows and wetlands in White River, Pahroc,
7 and Pahrnagat Valleys. Do you recall that?

8 A Yes.

9 Q That's on page 21 (sic) of your report. I
10 think you also indicated, on page 11 of your report, that
11 there are extensive wetlands that exist in all three of
12 these valleys, including Pahroc Valley.

13 A In the Pahroc -- well, you know, to me, it's a
14 little -- a little bit funny, because not being a
15 hydrologist, I don't define valleys in the same way. So as
16 a more -- my physiography background, I see Pahroc Valley,
17 as a different area. So what I referred to there, though
18 was trying to be consistent with the hydrographic basin
19 terminology, so the Pahroc hydrographic basin would not be
20 where you would see Pahroc Valley marked on the topographic
21 map.

22 But I was consistent with that. So when you
23 say -- when I said, "Pahroc Valley," in that report -- just
24 so we're clear, it's a -- it's that area in the lowlands
25 between the White River Valley, and the hydrographic basin,

1 and the Pahranagat.

2 Q Okay. Well, I think we're talking about the
3 same area.

4 A Okay. Good.

5 Q Do you have knowledge of areas of extensive
6 wetlands in Pahroc Valley?

7 A Offhand, I -- I can't say. I've been through
8 the valley many times. I'm pretty sure I saw wetlands in
9 that valley. That's a small hydrographic basin, but,
10 again, I was -- well, I'm not exactly certain where that
11 boundary is on the map, because I was following a
12 topographic map, not a hydrographic map. The Pahroc
13 hydrographic basin is -- is a rather small area, so perhaps
14 it doesn't have extensive wetlands.

15 Q Okay.

16 A I can't give you a township, range, and section
17 on that.

18 Q That might be something you want to correct in
19 your report.

20 A Yeah, absolutely.

21 Q Thank you.

22 You were in the hearing room yesterday when
23 Dr. Bredehoeft was testifying?

24 A Yes, sir.

25 Q And you also heard Dr. Bredehoeft talking about

1 Dr. Myers' report?

2 A Yes.

3 Q And about the water budget he believed was not
4 accurate, and that it -- that he underestimated recharge
5 from Dry and Delamar Valleys and underestimated outflow
6 from those valleys. Do you recall that?

7 A I recall discussions regarding those particular
8 issues. I don't recall specific conclusions regarding
9 specific recharge values. I thought it was more
10 speculative, especially the since most everyone is just
11 simply modeling precipitation and not actually measuring
12 precipitation.

13 Q So if the recharge values that Dr. Myers used
14 were in -- or -- and those numbers are higher in the order
15 that SNWA has placed into evidence, would that change your
16 opinion with regard to impacts along the terrestrial
17 ecosystems in White River and Pahrnagat Valleys?

18 A Well, as I recall from Dr. Bredehoeft's
19 model -- or his figures, that presumably your assistant
20 here will be showing me soon -- it was a 20-foot contour in
21 the area where it was very dark blue. And, of course, a
22 20-foot contour would wipe out the wetlands in White River
23 Valley, because those bulrushes can only extend a few feet
24 into the ground. So they depend on surface water right at
25 the surface, as do the Cottonwood trees.

1 Q And do you recall Mr. Durbin's testimony?

2 A Yes, sir.

3 Q And the charts they used, the Figures 8 and 10,
4 in his report?

5 A Well, I don't remember 8 and 10, but I guess
6 I'll be seeing them soon.

7 Q Well, if the -- Ms. Bosque could look up the -

8 A Oh, yeah. Let's do that. Let me shut this
9 down -- and safely remove hardware, huh? Sorry. I've lost
10 too much stuff by not safely removing hardware. So I don't
11 want to lose that.

12 Q We appreciate that.

13 MR. HERSKOVITS: Are you talking about --

14 HEARING OFFICER JOSEPH-TAYLOR: We're off the
15 record, Carrie.

16 (Proceedings paused briefly)

17 HEARING OFFICER JOSEPH-TAYLOR: Okay.

18 Mr. Van Zandt, while she fires that up -- he's going to
19 switch subjects on you, Dr. Charlet, while she gets ready.

20 MR. VAN ZANDT: Are we back on the record?

21 HEARING OFFICER JOSEPH-TAYLOR: Yes, we're on.

22 BY MR. VAN ZANDT:

23 Q Dr. Charlet, you're familiar with the concept
24 of Population Viability Analysis or PVA?

25 A Yes, sir.

1 Q And, in fact, that's a tool that you use and I
2 think you mention in your report with regard to the
3 southwestern willow flycatcher, correct?

4 A I did not use that tool. I was reporting
5 published literature.

6 Q Okay. But you're familiar with it?

7 A Oh, yes.

8 Q Have you ever used any of these tools that --

9 A I've studied conifers, and so a 100-year event
10 horizon is ridiculous when you study individuals that live
11 4,000 years.

12 Q So would you say that Population Viability
13 Analysis for all the species that you included in your
14 Exhibit 1150, at the hundred-year threshold, that does not
15 apply?

16 A No, sir, I did not say that.

17 Q Okay. So you agree that the Population
18 Viability Analysis is limited to the hundred years, because
19 basically after that you're talking about a lot of
20 uncertainty in what's going to happen with the species,
21 correct?

22 A There's a lot of uncertainty within the hundred
23 years, too, sir.

24 Q So the ability to predict impacts or effects on
25 species out beyond that hundred years, to 2,000, or 4,000

1 years, does that become even more uncertain?

2 A Within a hundred years there's a tremendous
3 amount of uncertainty. It's basically a theoretical model
4 that has been -- is being developed in order to help in
5 emergency type situations, to try to save species. We --
6 we really don't know how well it works.

7 Q You mentioned that one of the things that you
8 were concerned about was a lack of specific information
9 about species in these valleys. You're aware that SNWA is
10 conducting extensive investigations and surveys of the
11 species?

12 A I'm delighted, and I wish that more collections
13 would actually get into museums so that the academic
14 community would have access to them, and we could expand
15 the knowledge base. It's wonderful. But, you know, we
16 need to get more things actually published.

17 Q Okay. And you have an understanding -- we have
18 the figure up there that we're going to talk about here,
19 which is -- it's in Mr. Marshall's presentation. I think
20 it's slide 29.

21 A Uh-huh.

22 Q Do you have an understanding, Dr. Charlet,
23 based on Mr. Marshall's testimony, that SNWA is conducting
24 pedestrian surveys along the entire right-of-way of this
25 pipeline?

1 A Yes.

2 Q And even to the point where we're picking up
3 even the smallest of species, such as those depicted here?

4 A I think they mean *Asclepias esastoodian*, not
5 "*esastoodiana*." But, yes.

6 Q And you have -- your attitude towards this type
7 of work, that SNWA is engaged in, is that you approve of
8 that?

9 A Absolutely.

10 Q And encourage it?

11 A Oh, yes.

12 Q So would that -- would that effort help
13 understand some of the potential issues that you have with
14 lack of knowledge with regard to this species along the
15 right-of-way?

16 A Sure. I mean, this -- this adds to the
17 geographic pool of data that we have. It doesn't really
18 add to the life history information, the network of those
19 interactions, how they respond to various kinds of
20 stresses, and so forth. But it's primary basic knowledge,
21 knowing where the species are is the first -- who they are
22 is number one. Where they are is number two. It's great.

23 Q And do --

24 A It's in infancy. We're just beginning.

25 Q Do you have an understanding that the

1 Biological Resources Team, under the stipulation with the
2 Department of Interior, between Southern Nevada Water
3 Authority, is charged with trying to understand some of the
4 issues that you just talked about?

5 A Yes. Uh-huh.

6 Q And that will add to the knowledge of these
7 plants species, right?

8 A Absolutely.

9 Q Let's go back to Figure 8, if we could, then,
10 please. So you talked a little bit about the 20-foot
11 contours that Dr. Myers talked about, and were you here
12 when --

13 A I think this was Dr. Bredehoeft's figure; is it
14 not?

15 Q I was just going to ask you that. Were you in
16 the room when Dr. Bredehoeft testified?

17 A Yes.

18 Q Okay. So when you look at Figure 8, here, and
19 you see the dark blue portion here --

20 A Yes.

21 Q -- in White River Valley, and then the dark
22 blue portion here in Pahrnagat Valley --

23 A Yes.

24 Q -- those are the regional spring areas, right?

25 A Yes.

1 Q And according to what Dr. Bredehoeft testified
2 to, we're talking about probably very little impacts from
3 pumping in those areas?

4 A I -- what I understood was that there was going
5 to be very little change in the discharge of the regional
6 springs in those areas until the system went to equilibrium
7 or steady state. However, that there was going to be a
8 drawdown of groundwater in those areas, which has effects
9 on phreatophytes.

10 Q And understand that --

11 A And there are already also springs, I
12 understood -- and maybe I misunderstood, but there are
13 other non-regional springs that are in those areas, that
14 may not be so -- so affected.

15 Q The map that we're showing here, Figure 8, also
16 includes -- well, the entire amount of pumping by SNWA, as
17 Dr. Bredehoeft saw, it over 2,000 years, correct?

18 A Yes.

19 Q Did you have an understanding that the pumping
20 that was used in Spring Valley was approximately 30,000
21 more than the Spring Valley Ruling allowed?

22 A Yes.

23 Q Would that have an impact on your opinion with
24 regard to how the species might be affected?

25 A I can't remember, offhand, what the best

1 opinion is on the interaction between the Spring Valley
2 hydrographic basin and this other system, the systems in
3 question today.

4 Q Okay. Can we go to Exhibit 1212, please?

5 So Exhibit 1212 is a chart that was created
6 from the output files from the Durbin model that
7 Dr. Bredehoeft testified about. And you see, at 75 years
8 there, the springs, including the regional springs are not
9 affected at all.

10 A I can say it's good news for Hiko Spring.

11 Q And Hiko Springs goes up, actually; doesn't it,
12 and then --

13 A How is that possible? But -- but, anyway, yes,
14 I see it.

15 Q That's -- it all has to do with modeling.

16 A Ah.

17 Q And then out to 2,000 years, we're talking,
18 about looking at the regional springs, very little decrease
19 in flows; isn't that correct?

20 A I see decrease in many cases, and some -- let's
21 see. There's a 10 percent decrease in Crystal Springs --
22 no, Hiko Spring now is going to decline 10 percent, if I'm
23 reading that right, minus -- from 5.93 to minus .54. I see
24 decreases. I see 1.52 to minus 1.22. Is that in
25 Butterfield Spring? Maybe I'm not reading this correctly,

1 but --

2 Q Well --

3 A But I see -- I see a whole bunch of minuses.

4 HEARING OFFICER JOSEPH-TAYLOR: Hold on. Hold
5 on. You're talking over each other. I don't think he
6 wanted you to read the chart. Go to your questions,
7 Mr. Van Zandt.

8 BY MR. VAN ZANDT:

9 Q The question is -- well, just looking at Hiko
10 Springs, it says minus .36 CFS. That's the change that the
11 model that the model predicts.

12 A Right.

13 Q Do you consider that to be a small difference?

14 A I consider it to be a difference in the
15 negative direction.

16 Q And in your mind is that unacceptable?

17 A In my mind that is a negative impact.

18 Acceptable or unacceptable is surely immaterial.

19 Q In your opinion is -- any negative impact, you
20 would not want to see in these valleys from pumping?

21 A A negative impact is a negative impact. What I
22 want to see is really not germane to this, I don't think.

23 Q Well, you offered an opinion about the
24 environmental soundness of those SNWA projects.

25 A In terms of negative or positive, not of what I

1 wanted.

2 Q Well, my question is: If you see a negative
3 impact, such as .36 CFS, is that part of -- does it form
4 part the opinion that you have about --

5 A Yes.

6 Q -- the --

7 A Yeah, it's a negative impacts.

8 Q You have to wait for me to finish the question.
9 Is that part of the basis for your opinion that this
10 project is environmentally unsound?

11 A Yes.

12 Q Are you also familiar with the term, "adaptive
13 management"?

14 A Yes.

15 Q And do you use adaptive management in your
16 work?

17 A No.

18 Q And you would agree that adaptive management is
19 an accepted method for managing natural resources when
20 uncertainty exists?

21 A It's an experimental method. It's never been
22 demonstrated to be successful, particularly. We're trying
23 it in Clark County in the Multi-species Habitat
24 Conservation Plan. We're still pretty much fumbling around
25 with it. I've attended a lot of the meetings. I was a

1 member of the Low Elevation Plant Technical Group. We
2 wrestled with the concepts of adaptive management, of what
3 it might mean. There is a great deal of uncertainty about
4 what it means.

5 Q Are you familiar with the efforts of SNWA and
6 others in the Las Vegas Wash?

7 A Yes.

8 Q And would you agree that adaptive management
9 methods are being applied there?

10 A Yes.

11 Q And you don't -- do consider that to be a
12 success?

13 A I'm not directly involved in that project, so I
14 haven't examined the data and tried to interpret it.
15 Again, I'm not a manager. I do basic research. I don't do
16 management research. I'm aware of these, because I'm aware
17 of these, because I've been asked to participate on a
18 number of committees involved with that situation.

19 But I'm not a manager, so I don't have to make
20 the decisions about whether or not this is how we should
21 change management direction.

22 Q The stipulation that was entered into between
23 the Department of Interior and SNWA, that's Exhibit 19 in
24 these proceedings, you're aware that it has a no-adverse-
25 environmental-effect standard that applies?

1 A Well, you know, I heard you --

2 Q Sorry. I just asked you if you were aware of
3 that.

4 A No, not as stated by you, just now.

5 Q That's not the standard -- let me ask: Have
6 you read the stipulation?

7 A Yes.

8 Q And you don't believe that standard is included
9 in the stipulation?

10 A I believe what it said, in every case, where it
11 said no adverse effect, there was another word in there
12 that said, "reasonable," so no unreasonable adverse effect.
13 I -- it's my recollection that I had seen that many, many
14 times.

15 Q Do you also agree that there's a provision in
16 there that says no injury to federal water rights?

17 A No unreasonable injury, I believe, is how it
18 was stated. So that's why I can't say that, yes, I was
19 aware, to your original statement, because you had a "no"
20 in front of the "reasonable" or "unreasonable," which was
21 my memory.

22 Q Well, assuming that it says no injury to
23 federal water resources, would you agree that that is a
24 standard that would address some of the concerns that you
25 have here today?

1 A If it was effectively implemented, yes.

2 Q So you're concerned about the commitment that
3 SNWA federal agencies has to protecting the environment?

4 A I'm actually not. I'm not concerned about the
5 commitment. I'm concerned about the effective
6 implementation. For instance, we have a -- we have lots of
7 laws, and we have lots of commitments. We have a law
8 against murder. Murder still occurs. We have people
9 committed to preventing murder. Murder still occurs.

10 So what I'm concerned about is -- once the
11 species go -- oh, you know, we all gave it our best shot.
12 We were all committed. We all tried really hard, and now
13 it's gone forever.

14 Q So I can understand your testimony, here,
15 you're equating the protection process, that is in federal
16 law embodied into the stipulation, with murder?

17 A No.

18 HEARING OFFICER JOSEPH-TAYLOR: Mr. Van Zandt,
19 I'm going ask you --

20 THE WITNESS: I'm --

21 HEARING OFFICER JOSEPH-TAYLOR: Dr. Charlet --
22 I'm good to move this along. We -- we need to wrap it up
23 and take a lunch break. So --

24 BY MR. VAN ZANDT:

25 Q Dr. Charlet, do you have an idea that -- or an

1 understanding that Southern Nevada Water Authority's
2 involved in the investigation and protection of the
3 southwest willow flycatcher in Pahrnanagat Valley?

4 A Yes.

5 Q Just one last quick series here.

6 You indicated that you had been to Cave Valley,
7 had crisscrossed the valley and had used binoculars to try
8 the find the stand of greasewood. You heard Mr. Marshall's
9 testimony --

10 A I did not, sir. I wasn't -- I hadn't arrived
11 yet. I arrived Sunday night.

12 Q Well, I'll represent to you that the -- well,
13 the greasewood stand that was discovered was in the playa,
14 in the southern part of Cave Valley. Is that your
15 understanding?

16 A I saw the map in his original report that
17 indicated a phreatophytic zone. I was uncertain of what
18 species, and then I heard greasewood, and so I'm uncertain
19 also whether or not it was Sarcobatus vermiculatus or
20 Sarcobatus --

21 HEARING OFFICER JOSEPH-TAYLOR: Dr. Charlet,
22 just try to answer his question. We're not going to get
23 out of here if we --

24 THE WITNESS: So what was the question, please?

25 HEARING OFFICER JOSEPH-TAYLOR: Just try to

1 answer.

2 BY MR. VAN ZANDT:

3 Q The question was: Do you have an understanding
4 that the location of the greasewood stand was in the
5 southern part of Cave Valley, in the playa?

6 A Yes.

7 Q Correct? Okay. And you indicated that you
8 were looking for it with binoculars. Would it surprise you
9 to learn it was only a quarter of a mile from one of the
10 roads?

11 A Yeah, it would.

12 Q And did you also understand that when the SNWA
13 people went into the greasewood stand they found over a
14 million Parish's phacelia plants?

15 A Yes, I was aware of that. I read it in the
16 wildland report.

17 Q You didn't discover those; did you?

18 A No, I wasn't looking for them.

19 Q Well, that's one of the species that you talk
20 about in your report, correct?

21 A Yes.

22 Q Okay.

23 A It was at the wrong time of year to make the
24 observation.

25 Q How many times have you been to Cave Valley?

1 A I think about 10 times over the last 20 years.

2 Q And you never went to the playa at the time
3 that the Parish's phacelia were --

4 A Mostly I have been going -- no, I haven't --
5 I'm not a Parish's phacelia specialist.

6 HEARING OFFICER JOSEPH-TAYLOR: I've got to
7 move it along. I don't even know what the relevance is,
8 Mr. Van Zandt. Do you want to wrap it up, please?

9 MR. VAN ZANDT: No further questions.

10 MR. HERSKOVITS: Two very quick questions just
11 to wrap things up here.

12 REDIRECT EXAMINATION

13 BY MR. HERSKOVITS:

14 Q Dr. Charlet, you were asked about wetlands in
15 the three valleys --

16 A Yes.

17 Q -- and you indicated that you had an idea of
18 the wetlands and not a clear understanding of which valleys
19 or where the boundaries were; is that correct?

20 A Yes. I say the hydrographic basin maps later,
21 and so I was following the topographic map, and that
22 indicates Pahroc Valley one place, and the hydrographic
23 maps say Pahroc Valley is in another place. And so I had a
24 discussion with Tom Myer after I went there, and told him
25 that I was confused, and had that somewhat clarified.