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01 PUBLIC HEARING
02 STATE WATER RESOURCES CONTROL BOARD
03 DIVISION OF WATER RIGHTS
04 STATE OF CALIFORNIA

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08 SUBJECT: AMENDMENT OF CITY OF LOS ANGELES' WATER RIGHT
09 LICENSES FOR DIVERSION OF WATER FROM STREAMS THAT ARE
10 TRIBUTARY TO MONO LAKE

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13

14 Held in
15 Bonderson Building
16 Sacramento, California
17 Monday, January 10, 1994

18

19 VOLUME XXIX

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23 Reported by: Kelsey Davenport Anglin, RPR,
24 CM, CSR No. 8553

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25

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01 BOARD MEMBERS

02

03 MARC DEL PIERO
04 MARY JANE FORSTER

05

06

07 STAFF MEMBERS

08

09 DAN FRINK, Counsel
10 JAMES CANADAY, Environmental Specialist
11 STEVE HERRERA, Environmental Specialist
12 RICHARD SATKOWSKI, Engineer
13 HUGH SMITH, Engineer

14

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17

17

18

18

19

19

20

20

21

21

22

22

23
23
24
24
25
25
0003
01
01 COUNSEL AND OTHERS
02
02 For the U.S. Fish and Wildlife Service:
03
03 ERIKA NIEBAUER
04 Assistant Regular Solicitor
04 Office of Solicitor
05 Pacific Southwest Region
05 2800 Cottage Way
06 Sacramento, California 95825
06
07 For the Sierra Club:
07
08 LARRY SILVER:
08
09 For California Department of Fish and Game:
09
10 HAL THOMAS
10 VIRGINIA CAHILL
11 McDonough, Holland & Allen
11 555 Capitol Mall, Suite 950
12 Sacramento, California 95814
12
13 For the U.S. Forest Service:
13
14 JACK GIPSMAN
14 Office of General Counsel
15 U.S. Department of Agriculture
15
16 For the National Audubon Society and Mono Lake
16 Committee:
17
17 BRUCE DODGE
18 PATRICK FLINN
18 Attorneys at Law
19 755 Page Mill Road
19 Palo Alto, California 94304
20
20
21 For California Trout:
21
22 RICHARD ROOS-COLLINS
22 CYNTHIA KOEHLER
23 Attorneys at Law
23 114 Sansome Street, Suite 1200
24 San Francisco, California 94104
24
25 For the City of LA and LA DWP:
25
0004
01 THOMAS W. BIRMINGHAM
01 JANET GOLDSMITH

02 Attorneys at Law
02 Kronick, Moskovitz, Tiedemann & Girard
03 400 Capitol Mall, 27th Floor
03 Sacramento, California 95814
04
04 For State Lands Commission, Department of Parks and
05 Recreation:
05
06 JAN STEVENS
06 MARY SCOONOVER
07 Assistant Attorney General
07 1515 K Street
08 Sacramento, California 95814
08
09 For Meter Water District of Southern California and
09 LA MWD:
10
10 VICTOR GLEASON
11 Attorney at Law
11 1111 Sunset Boulevard
12 Los Angeles, California 90050-0153
12
13
13 For Haselton Associates and John Arcularius:
14
14 FRANK HASELTON
15 Attorney at Law
15 P.O. Box Drawer 4687
16 Anaheim, California 92803
16
17 JOHN ARCULARIUS
17
18 For the California Air Resources Board:
18
19 OFFICER OF LEGAL AFFAIRS
19 2020 L Street
20 Sacramento, California 95814
20 BY: KIRK C. OLIVER, Senior Staff Counsel
21
21 For the Great Basin Unified Air Pollution Control
22 District:
22
23 PAUL BRUCE, District Counsel
23
24
24
25
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01 SACRAMENTO, CALIFORNIA
02 MONDAY, JANUARY 10, 1994, 8:30 A.M.
03 ---o0o---

04 HEARING OFFICER DEL PIERO: Ladies and Gentlemen,
05 this hearing will come to order.

06 Good morning, this is the time and place for the
07 continuance of the hearing regarding the amendment of
08 the City of Los Angeles' water rights licenses for
09 diversion of water from streams that are tributary to
10 Mono Lake. My name is Marc Del Piero, Vice-Chairman of
11 the State Water Resources Control Board, and I have
12 been acting and will continue to act in the capacity as
13 Hearing Officer in this matter.

14 So, joining me today, this first hearing day of
15 1994, Staff Counsel, Mr. Dan Frink. Our environmental
16 specialists, Mr. Jim Canaday and Mr. Steve Herrera, and
17 our Staff Engineers, Mr. Rich Satkowski and Mr. Hugh
18 Smith.

19 Everyone looks well and rested after the
20 holidays. Also with us today is Kelsey Davenport

21 Anglin, who's our Court Reporter. It's a pleasure to
22 see everyone. I hope everyone had a wonderful
23 holiday.
24 Mr. Canaday, I have received your publication, and
25 I appreciated it very much. In fact, I brought it

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01 along with me, read the appropriate page this morning.
02 So thank you very much for that.

03 We are beginning today with a panel on air
04 resources. It is my understanding that there are
05 witnesses that have been empaneled here today on behalf
06 of three different parties, the Air Resources Board,
07 the Great Basin Air Pollution Control District, and I
08 believe there's one witness on behalf of the U.S.
09 Forest Service.

10 Mr. Gipsman? There you are. Is Mr. Paul Bruce
11 here? Mr. Bruce. And also Kirk Oliver? Mr. Oliver.
12 Good.

13 Who's making the initial presentation here this
14 morning, Gentlemen?

15 MR. BRUCE: Mr. Del Piero, if I can --

16 HEARING OFFICER DEL PIERO: Mr. Bruce.

17 MR. BRUCE: -- make a brief statement with regard
18 to this matter. First of all, I'm District Counsel for
19 Great Basin Unified Air Pollution Control District, and
20 this morning the panel is comprised of members, as you
21 correctly pointed out, from three agencies. The
22 majority of the panel members are from Great Basin
23 Unified Pollution Control District, and we have the
24 addition of two other panel members with related
25 testimony on air quality: Luci McKee from the U.S.

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01 Forest Service, and Andy Ranzieri from the Air
02 Resources Board.

03 Now, the Great Basin Unified Air Pollution Control
04 District is a unified control district and covers the
05 counties Inyo, Mono, and Alpine Counties in California,
06 and within that area, of course, it covers the Mono
07 Basin. The district, for a number of years because of
08 the air quality problems in the Mono Basin, has been
09 studying air pollution and air quality at the Mono
10 Basin, particularly at the lake, and in such capacity,
11 having undertaken those studies as part of its
12 regulatory functions, is particularly well-qualified to
13 present some facts and evidence here today for your
14 consideration.

15 On the panel, the first presentation will be made
16 by Luci McKee, who is a hydrologist and air quality
17 manager with the U.S. Forest Service Inyo National
18 Forest. The next presentation will be made by Duane
19 Ono, who is the deputy air pollution control officer
20 for Great Basin Unified Air Pollution Control District.
21 He will be followed by Mr. Ken Richmond, who is a
22 consultant and expert to the Great Basin Unified Air
23 Pollution Control District and who actually completed
24 the modeling for the district concerning the Mono Basin
25 and Mono Lake.

0009

01 Followed by that, will be Mr. Andy Ranzieri from
02 the California Air Resources Board who, in fact,

03 reviewed the modeling and validated the model that was
04 used by the district concerning Mono Lake. He will be
05 followed by Dr. David Groeneveld, who is an expert and
06 consultant to the district regarding vegetation. And
07 the last party on the panel is Mr. Ted Schade who is a
08 project manager for the district, and he will provide
09 testimony concerning the attempts by the district to
10 find viable mitigation measures for dust problems on
11 Inyo and Mono Lake.

12 Today, the testimony by the Great Basin Unified
13 Control District is going to point out several facts.
14 And if you'll just let me take a second, what our
15 evidence is going to show in summary is that the
16 average lake level must be raised to the 6392
17 alternative or higher in order to meet the applicable
18 Federal Air Quality Standards.

19 Two, the average lake levels below the 6390
20 alternative will likely result in violations of
21 National Air Quality Standards.

22 Three, lake levels which result in violation of
23 the National Air Quality Standards will cause adverse
24 health effects.

25 Four, the Federal Air Quality Standards applicable
0010 to the Mono Lake and the Mono Basin must be met.

01 Five, the standards in the Clean Air Act cannot be
02 balanced against other interests.

03 Six, raising the lake level is the only reasonable
04 mitigation measure for fugitive dust emissions from
05 Mono Lake.

06 Seven, without extensive irrigation, there is no
07 realistic way to enhance vegetation growth to reduce
08 the blowing dust from the exposed Mono Lake playa that
09 currently has poor or no vegetation cover.

10 And lastly, that the modeling upon which the
11 district bases its opinions and evidence today
12 regarding the attainment of Federal Air Quality
13 Standards is reliable in accordance with the EPA
14 requirements.

15 With that, I would like to turn the podium over to
16 Mr. Gipsman with regard to Luci McKee.

17 HEARING OFFICER DEL PIERO: Good morning,
18 Mr. Gipsman.

19 MR. GIPSMAN: Good morning.

20 HEARING OFFICER DEL PIERO: Nice to see you, Sir.

21 MR. GIPSMAN: Nice to get back. Even though I
22 have not been here that much, I did feel a certain
23 emptiness in the past three weeks.

24 MR. BIRMINGHAM: We've missed you, too,
0011

01 Mr. Gipsman.

02 MR. GIPSMAN: Thank you.

03 Before we get too excited about air quality, we
04 have a short matter to take care of with regard to
05 water rights. There will be three parts to Ms. McKee's
06 presentation, and the first five minutes will be
07 devoted to this small water rights issue, the second
08 will be a very short video, and the third will be a
09 very short narrative with respect to air quality of
10 less than five minutes.

11 HEARING OFFICER DEL PIERO: Mr. Birmingham?
12 MR. BIRMINGHAM: Mr. Del Piero, I did not
13 understand that this hearing was noticed for purposes
14 of determining water rights of the United States Forest
15 Service or the Town of Lee Vining. I know that there
16 are --
17 HEARING OFFICER DEL PIERO: I don't know that
18 that's what the nature of the presentation is about.
19 MR. GIPSMAN: No. The nature is the uses that the
20 Forest Service is going to -- is making of this water.
21 It's our position that these are public trust uses and
22 should be considered by the Board in the determination
23 of the amount of water that needs to be set aside for
24 public trust.
25 MR. BIRMINGHAM: There are currently applications
0012
01 filed by the Town of Lee Vining.
02 HEARING OFFICER DEL PIERO: Through this Board?
03 MR. BIRMINGHAM: And the United States Forest
04 Service. They are applications for permits to
05 appropriate water, and the Department of Water and
06 Power has filed protests with respect to the
07 applications filed by the United States Forest Service.
08 And we presume that those applications will be the
09 subject of a hearing following the Board's normal
10 procedures.
11 MR. GIPSMAN: We understand that as well.
12 HEARING OFFICER DEL PIERO: Good. We all
13 understand what the procedure's going to be for a water
14 rights application. Mr. Birmingham, let me point out
15 that Mr. Gipsman is, in fact, allowed to put on his
16 case, and I'm cognizant of your constraint. This is
17 not -- this hearing has not been noticed to take up the
18 issue of a water rights application that you're
19 referring to, and I don't think there's any
20 representation that it is or it ought to be.
21 MR. GIPSMAN: That's correct.
22 HEARING OFFICER DEL PIERO: Why don't you go ahead
23 and proceed, Sir.
24 DIRECT EXAMINATION BY MR. GIPSMAN
25 Q Ms. McKee, will you identify yourself and spell
0013
01 your name for the record?
02 A BY MS. McKEE: My name is Lucinda McKee,
03 L-U-C-I-N-D-A, last name's Mc-K-E-E.
04 MR. BIRMINGHAM: Mr. Cane correctly points out --
05 Mr. Cane, who is a staff member of the Mono Lake
06 Committee, correctly points out that none of the
07 members of this panel have been sworn.
08 HEARING OFFICER DEL PIERO: I appreciate that very
09 much.
10 Ladies and Gentlemen, would you be kind enough to
11 stand and raise your right hand? Do you promise to
12 tell the truth during the course of this proceeding?
13 The answer is I do.
14 (All say I do.)
15 HEARING OFFICER DEL PIERO: Thank you very much.
16 Q BY MR. GIPSMAN: Ms. McKee, who are you employed by?
17 A BY MS. McKEE: I'm employed by the U.S. Forest
18 Service.

19 Q And what is your position with the U.S. Forest
20 Service?
21 A I'm the Forest Hydrologist and Air Quality
22 Coordinator.
23 Q And what are your responsibilities in that
24 position?
25 A I manage the hydrology and air programs for the
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01 forest and have familiarity with the applicable laws
02 and regulations and policy.
03 Q Will you take a look at U.S. Forest Service
04 Exhibit 22? Is this your statement that was submitted
05 to the Board?
06 A Yes.
07 Q Do you wish to make any corrections to that
08 statement at this time?
09 A Yes, I do.
10 MR. HERRERA: Luci, could you use the microphone
11 please?
12 MS. McKEE: Is that better?
13 HEARING OFFICER DEL PIERO: Much better.
14 Q BY MR. GIPSMAN: Could you please go through the
15 corrections?
16 A BY MS. McKEE: The first correction is on Page 3,
17 Paragraph 2, Line Number 5. I'd like to replace
18 "excellent" with "good".
19 The second correction is Page 3, Paragraph 2,
20 Line Number 6. I would like to delete the word
21 "substantial".
22 The next correction is Page 4, Paragraph 6, Line
23 5. I would like to replace "can" with "may."
24 And the last correction is Page 4, Paragraph 6,
25 Line 6. I'd like to delete the sentence beginning with
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01 "many" and ending with "arise".
02 Q With these corrections, Ms. McKee, is this
03 statement a true and accurate version of your
04 testimony?
05 A Yes, it is.
06 Q Would you please summarize your testimony for the
07 Board?
08 A I've been asked by the State Water Board Staff to
09 take a few minutes and discuss our water rights
10 applications as noticed in the October 18th, 1993, memo
11 from the Board. I'm going to use Figure 1.2 to quickly
12 describe what those petitions are and the condition of
13 water rights in the Lee Vining Canyon area.
14 Currently, we have two water rights licenses right
15 about there, a little north and west of the ranger
16 station. These licenses are for 9500 per day for
17 domestic, irrigating, and fire protection uses at the
18 ranger station and the compound.
19 We have two future uses that we anticipate in the
20 basin. The first use is at the visitor's center. The
21 second use is at some proposed campgrounds up Lee
22 Vining Canyon. We'll need approximately 20,000 gallons
23 per day at the visitor's center, and approximately
24 75,000 gallons per day for the campgrounds.
25 The petitions noticed in the October 18th memo
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01 describe three different changes that we'd like to
02 make. The first two petitions relate to the water
03 rights licenses that we currently have at Pashati
04 Springs. One change is we'd like to change the source
05 of the water from Pashati Springs to Lee Vining Creek
06 underflow.

07 The second change is to add the visitor's center
08 as a place of use under those two licenses.

09 The third change is to add a new well that was
10 drilled last winter as a point of diversion under those
11 licenses.

12 The last petition in that October 18th letter was
13 a request for the state assignment or release of about
14 20,000 gallons per day under State Filing Application
15 19769 for use at the visitor's center. This water
16 would be taken from our well up canyon and pumped
17 directly into the Town of Lee Vining Public Utility
18 District pipeline where the Public Utility District
19 would wheel our water down their pipeline, which
20 already goes to the Town of Lee Vining, and out to the
21 visitor's center, and we'll have an agreement for
22 that.

23 Now, in this October 18th letter, it did not
24 mention the 75,000 gallons per day which was mentioned
25 in my declaration. This is an update to that

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01 declaration. There have been some changes. It was
02 determined by the Forest Service and the board staff
03 that the 75,000 gallons per day in that new well was
04 not a right that needed an appropriative right, so that
05 was not in the October 18th letter. And that's it for
06 water rights discussion.

07 Moving on to the air quality portion of my
08 declaration. The goal of scenic area management, as
09 stated in the plan, is to protect the geologic,
10 ecologic, cultural, scenic, and other natural
11 resources. One of the critical natural and ecologic
12 resources in the Mono Basin is air quality. The
13 comprehensive management plan, hereafter referred to as
14 the CMP, recognizes that on most days, air quality in
15 the Mono Basin is good. However, episodes of blowing
16 alkali dust from relicted lands have caused short-term
17 air quality degradation in the scenic area which has
18 resulted in exceedences of the State and National
19 Ambient Air Quality Standards for P.M. Ten.

20 At this time, I'd like to show a video of about
21 five minutes of excerpts from dust event footage
22 recorded this spring by our visitor center personnel.
23 Hopefully, this video will allow those of you who have
24 never been to Mono Lake during a dust event to begin to
25 understand the magnitude and the impact that blowing

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01 alkali dust from the relicted lands has on the value
02 for which this area was created.

03 Jim, can you let me know about the sound?
04 (Video being shown.)

05 "It's Wednesday, April 21st. It's 3:40 p.m.
06 There's no significant wind blowing here at the
07 visitor's center, but there is a huge dust cloud over
08 on the land bridge. We did notice some dust storm

09 activity about an hour and a half ago on the east side
10 of the lake. Things are pretty quiet over there now.
11 There's some dust devils over on the east shore,
12 though.

13 "It is Monday, May 3rd, 1993, and yet one more
14 dust storm, and I'm sure not the last. You can
15 probably hear the wind howling into the building.

16 "Okay. It is still Monday, May 3rd, 1993, and
17 it's 10:00 a.m. now. An hour has passed. It's still
18 blowing. It looks like the east shore is now taking
19 its turn, although the land bridge, as you can see, is
20 still blowing pretty good.

21 "Hi, again. It is Monday, May 3rd, 1993, at 2:05
22 p.m. The dust storms have been going on all day.
23 They've gotten worse since the afternoon has been going
24 on. As you can see, you can't even see the mountains
25 beyond Paoha on the east shore anymore. Everything's

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01 totally obscured.

02 "It's four o'clock in the afternoon, Monday, May
03 3rd, 1993. Still lots of dust. Still can't see the
04 mountains on the east shore. Paoha looks worse. We
05 even have some toward the south and the east shore,
06 also.

07 "Again, that's May 11th, 1993, Tuesday. It is
08 12:24 p.m., and the dusts have been blowing since I got
09 into work this morning about 7:38. I noticed from the
10 barracks that the wind was blowing pretty hard, so I
11 wouldn't doubt that the storm has been going on all
12 morning. It's very thick on the east shore as we look
13 out past Negit and Paoha. It is obscuring the
14 mountains beyond. You can hear the wind again. These
15 wind storms are really frequent this month and last.

16 "Well, it's still Tuesday, May 11th, 1993. It's
17 3:30 in the afternoon. The dust is still going
18 strong. The previous footage is from the same day at
19 noon or about 12:30. We are starting to be able to see
20 the mountains on the east shore where there seems to be
21 more dust now on the land bridge. Still very hazy out
22 because of the dust."

23 (End of video.)

24 MS. McKEE: The dust storms you've just seen don't
25 happen only as isolated occurrences in the spring.

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01 This year we've begun monitoring dust events from the
02 Mono Basin visitor's center. It's important to point
03 out that we were not monitoring air quality. We were
04 just monitoring dust events as viewed from the
05 visitor's center, and I'd like to make one correction
06 to Exhibit No. 4. I'd like to change the title of
07 those forms from "air quality monitoring forms" to the
08 more accurate "dust event monitoring forms."

09 Our data indicate that relatively large dust
10 events occur in the winter and summer as well as the
11 spring. Furthermore, we compared our data to the Great
12 Basin Unified Air Pollution Control District, hereafter
13 referred to the APCD, data and found that we recorded
14 events for which APCD data was either not collected or
15 the dust event apparently missed the single monitoring
16 site maintained by the APCD. We are mandated by law to

17 to protect the scenic area resources and human health
18 from the anthropogenic dust events like the ones
19 you've just seen.

20 We know that frequent dust events occur in the
21 Mono Basin which may be harmful to human health. The
22 general public has access and utilizes all of the
23 scenic area including the relicted lands. Human health
24 must be protected everywhere in the Mono Basin, not
25 just in the two or three most highly-used areas. At
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01 the time the CMP was approved, it was assumed that
02 mitigation measures could be identified that would
03 alleviate the air quality problem and also be
04 consistent with the CMP. The relicted lands, which
05 include the primary sources areas for P.M. Ten, were
06 designated as a no-development zone, an area managed
07 essentially in natural condition, free of surface
08 disturbance.

09 The Forest Service, through the CMP, committed to
10 working with the APCD to bring the basin into
11 compliance with the P.M. Ten. However, the Forest
12 Service never anticipated that appropriate and feasible
13 mitigation would prove too difficult to identify. Both
14 the APCD and L.A. DWP have identified possible
15 mitigation measures including soil leaching for native
16 vegetation establishment, sand fences, volcanic
17 cinders, gravel, and other coverings, flood irrigation
18 systems, sprinkler systems, the use of non-native
19 vegetation, and raising the level of Mono Lake to at
20 least 6,390 feet.

21 We have determined that all of the possible
22 mitigation measures proposed to date with the exception
23 of raising the lake level are not appropriate or
24 feasible in the no-development zone and are also
25 clearly incompatible with the protection of resources
0022

01 in the scenic area. Therefore, the Forest Service
02 recommends that the 6390 alternative be chosen as the
03 preferred alternative to most adequately protect the
04 public trust values in the Mono Basin.

05 Thank you.

06 HEARING OFFICER DEL PIERO: Thank you very much.
07 Mr. Bruce?

08 MR. BRUCE: Thank you.

09 DIRECT EXAMINATION BY MR. BRUCE

10 Q Mr. Ono, would you please state your name and
11 spell it for the record?

12 A BY MR. ONO: Good morning, Mr. Del Piero. My name is
13 Duane Ono, and that is spelled D-U-A-N-E. Last name is
14 O-N-O.

15 Q Would you please describe your current employment
16 and its duties and responsibilities?

17 A I am currently the Deputy Air Pollution Control
18 Officer with Great Basin Air Pollution Control
19 District, and my primary area of responsibility, at
20 least as it pertains to this hearing, is for air
21 quality planning for P.M. Ten and also for doing
22 particulate matter research.

23 Q Mr. Ono, would you briefly describe your education
24 and experience which relate to your duties and

25 functions with the district in regard to P.M. Ten
0023
01 monitoring and management?
02 A Okay. Since May of 1989, I have been the Deputy
03 Air Pollution Control Officer for the Great Basin, and
04 I've been responsible, in my regular duties, for
05 developing and reviewing the technical information for
06 Owens and Mono Lake, especially for the fugitive dust
07 projects.
08 From September of 1983 to May 1989, I was employed
09 by the U.S. Environmental Protection Agency at Region
10 Nine in San Francisco, and there I was the P.M. Ten
11 Program Coordinator, and I coordinated P.M. Ten
12 programs in the western states including Arizona,
13 Nevada, California, Hawaii, and the Pacific Islands.
14 As part of my duties, I developed, reviewed, and
15 implemented policies and strategies for the P.M. Ten
16 program, reviewed legal issues and programs related to
17 P.M. Ten such as air toxics, visibility, acid
18 deposition, ozone, and oxides and nitrogen.
19 Also --
20 HEARING OFFICER DEL PIERO: Mr. Ono, were you here
21 before?
22 MR. ONO: I have been here on several occasions
23 and casually spoken with you.
24 HEARING OFFICER DEL PIERO: But before that?
25 MR. ONO: I don't think so. I don't think that I
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01 had anything going with Monterey Bay, and I know that's
02 where you were before.
03 HEARING OFFICER DEL PIERO: Okay. Thank you.
04 MR. ONO: I also provided technical and policy
05 evaluations for P.M.10 ozone air quality plans. That
06 included remodeling, monitoring, soil sampling. I
07 performed emissions inventory work, and developing
08 control techniques for P.M.10 and ozone. Also, I
09 developed resource models for the regional P.M.10
10 program and evaluated schedules and programs for state
11 and local agencies in Region Nine.
12 While I was at EPA, I also created and supervised
13 a P.M.10 task force and also a computer users group.
14 As a result of the experience that I had in the P.M.10
15 program, in January of 1988, I was awarded the title of
16 Regional P.M.10 Expert for EPA Region Nine, which was
17 one of a handful of expert positions that were created
18 at the regional level.
19 Q BY MR. BRUCE: Do you have any educational
20 qualifications that make you particularly suited to
21 deal with the issues of air quality and P.M.10?
22 A BY MR. ONO: Okay. I received two Bachelor of
23 Science degrees; one in environmental resources
24 engineering and another one in physics. I have my
25 Master of Science degree from the University of
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01 California at Davis in fluid mechanics where I also
02 worked on air pollution as an emphasis, and that was in
03 the mechanical engineering field.
04 Q Mr. Ono, have you had an opportunity to review the
05 written testimony along with the referenced exhibits
06 which were submitted as part of the Great Basin Unified

07 Air Pollution Control District's evidence in this
08 matter?

09 A Yes, I have.

10 Q Are there any changes or corrections to that
11 written testimony or any of the exhibits which you wish
12 to make at this time?

13 A I have no changes to my written testimony.

14 Q Do you hereby adopt that written testimony and all
15 the referenced exhibits as your testimony today?

16 A Yes, I do.

17 Q Would you briefly summarize for us the significant
18 aspects of that written testimony?

19 A My written testimony covered basically three
20 questions; the first question being what lake level
21 provides the appropriate level of protection for air
22 quality. The second question is what would be the
23 health effects at different lake levels, and the last
24 question, can air quality be balanced against other
25 resource interests. So these are the three primary

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01 questions that I've addressed in my written testimony.

02 With regard to the first question, what lake level
03 is appropriate to protect air quality? And based on
04 the investigation done by the district and based on
05 information provided through Jones and Stokes and the
06 EIR, we find, or I find, that about 6392 feet -- an
07 average lake level of 6392 feet would provide an
08 appropriate level of protection for air quality. And
09 this is very close to the 6391.6 foot average that is
10 included in the 6390 foot alternative, and so we
11 believe that the 6390 foot alternative will provide the
12 level of assurance that we need to believe that we will
13 be protecting the public for air quality purposes.

14 We believe that the NAAQS must be met, or the
15 National Ambient Air Quality Standard for P.M.10 must
16 be met and that any higher lake levels would also bring
17 the air into attainment of the air quality standard.
18 The 6410 foot alternative or the no-diversion
19 alternative would also satisfy the requirement for
20 protecting the air quality.

21 Lower lake levels, however, such as the
22 no-restriction alternative, 6372 foot alternative, 6377
23 foot alternative, and 6383.5 foot alternative, none of
24 those would satisfy the air quality requirements to
25 bring the area into attainment.

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01 To help us make the decision as to what the lake
02 level needed to be, we contracted with TRC
03 Environmental Corporation to run an air quality model.
04 The model that was chosen was the Industrial Source
05 Complex Two model which is an EPA approved model. And
06 in running this model, we followed all the regulatory
07 guidelines that were set out by the Environmental
08 Protection Agency, and we also followed guidelines for
09 collecting the information that went into the model
10 including meteorology and the emissions inventory
11 information.

12 This model and the results from the model were
13 reviewed by the California Air Resources Board, and
14 Andy Ranzieri is here to testify on that part. So with

15 regard to the second question, what would be the effect
16 of different lake levels on health effects, the U.S.
17 Environmental Protection Agency has set a national
18 ambient air quality standards of 150 micrograms per
19 cubic meter as a level of air pollution for P.M.10 that
20 needs to be met. And based on their health studies,
21 they feel that this level will protect sensitive
22 individuals, and by sensitive individuals, EPA includes
23 the elderly, children, people with heart or lung
24 diseases, or people with influenza. All those people
25 will be considered sensitive individuals who could be

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01 adversely impacted by bad air quality at Mono Lake.

02 And again, the solution for health effects is to
03 bring the lake level up to a level that would protect
04 the air quality standard. The 6390 foot alternative or
05 a higher lake level would be the level that would be
06 needed to do that.

07 With the final question, can air quality be
08 balanced against other resource issues? And the answer
09 to that is no. There's a national ambient air quality
10 standard. There's the Clean Air Act that federally
11 mandates us to meet those standards. The Mono Basin
12 was just recently designated as a non-attainment area
13 for the P.M.10 standard, and this officially occurred
14 on December 29th, 1983, and there's a Federal Register
15 notice to that effect and because of this and because
16 of other information in the congressional record that
17 has already been entered into evidence, we do have to
18 meet the air quality standard, and it cannot be
19 balanced against other issues.

20 That concludes my summary of my testimony.

21 Q Mr. Ono, the modeling that you relied on, was that
22 the modeling performed by TRC by Mr. Ken Richmond?

23 A Yes, it was.

24 Q Can you describe for us just briefly the national
25 air quality standard and how that relates to

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01 violations?

02 A The national ambient air quality standard for
03 P.M.10 is statistically based. You're allowed to have,
04 on the average, one exceedence or less per year of the
05 P.M.10 standard, and it really doesn't matter what that
06 level is. If you're only exceeding once per year but
07 maybe the standard is set at 150, if it's maybe 1,000
08 or 2,000, if that only occurs once per year, that is
09 still an attainment of the standard. However, if you
10 have multiple exceedences of that 150 value per year,
11 then you would be in violation of the standard. So,
12 for instance, values of 200 micrograms per cubic meter
13 that occur for maybe two or three times on the average
14 per year, such as the case in the Mono Basin, that
15 would be considered a violation of that standard. Q
16 Based upon your review of the data and the modeling and
17 your opinion that the 6390 alternative is the minimum
18 lake level at which the national air quality standard
19 can be met, what level of assurance are you able to
20 provide that the 6390 alternative will, in fact, meet
21 the national air quality standards?

22 A We believe that it provides a reasonable level of

23 assurance. There is -- it's not absolute that -- we
24 can't give 100 percent guarantee that the air quality
25 standard would be met with the 6390 alternative.

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01 However, we believe that there is a reasonable
02 assurance, and that's really all that's required when
03 we submit an air quality plan is that we have a very
04 good idea that the standard would be met with the
05 strategy that's included in the plan.

06 Q Now, Mr. Ono, there are other methodologies to
07 model the dust problem at Mono Lake; is that correct?

08 A There are different models that are available,
09 yes.

10 Q And why did you select the IST, I believe it is,
11 model?

12 A The ISCST Two is, I think, the proper name,
13 Industrial Source Complex Short-Term Version Two. That
14 model was selected because the U.S. Environmental
15 Protection Agency -- when asked which model should be
16 used, they directed us to use a regulatory guideline
17 model, and that was ISCST Two, that has been approved.
18 Other models have not been approved for regulatory
19 purposes.

20 Q In your opinion, is that ISCST Two the most
21 appropriate model to use for the Mono Lake study?

22 A In this case, yes, because of the regulatory
23 needed.

24 Q Mr. Richmond, I'd like to ask you to please state
25 your name and spell it for record.

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01 A BY MR. RICHMOND: My name is Kenneth James Richmond.
02 It's spelled K-E-N-N-E-T-H, R-I-C-H-M-O-N-D.

03 Q Mr. Richmond, would you describe your employment
04 at the current time with TRC and your employment and
05 educational background?

06 A I am currently employed with McCully, Frick and
07 Gillman, formerly employed with TRC. My title is
08 Senior Air Quality Scientist. I've been conducting air
09 quality studies for fugitive dust since 1980 and have
10 been developing and applying models since roughly
11 1978.

12 My education was from the University of
13 Washington. I received a Bachelor of Science degree in
14 physical oceanography. I attended graduate courses in
15 atmospheric sciences before joining a consulting firm
16 called Dames and Moore. I was employed with Dames and
17 Moore as an air quality scientist from 1978 to 1986.
18 That was the period that I was in Australia, and during
19 my period in Australia, my principal task was to model
20 dust from the uranium coal mines.

21 In 1986, I was transferred to Santa Barbara and in
22 that capacity, I was modeling fugitive dust from
23 Superfund sites throughout the western United States.
24 Subsequent to that, I was hired by TRC in Seattle and
25 while under TRC's employ, I conducted the modeling that

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01 was done for the Great Basin. In addition, I have been
02 under contract to the EPA to develop several different
03 models, fugitive dust models, and I have conducted
04 several model evaluation studies. As of the summer, I

05 joined another firm, my current firm.

06 Q And have you been retained by the district to
07 perform certain services related to Mono Lake and the
08 Mono Basin?

09 A Yes.

10 Q And exactly what tasking were you given by the
11 district in this regard?

12 A I've been the principal author or investigator of
13 two major studies. The first study was to contrast or
14 compare two models and two different types of
15 approaches to try and see how well these modeling
16 approaches described ambient air quality at Mono Lake
17 and decide if one model is better than the other and to
18 see if modeling couldn't even come close to the P.M.10
19 values that were being observed at Mono Lake.

20 The second study was a study that was to look at
21 different areas or different lake levels and to see how
22 as the lake level rose, what impact that would have on
23 the spatial extent and the number of exceedences of the
24 24-hour P.M.10 standard.

25 In the second study, we also, at that time, had
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01 more extensive P.M.10 data when we conducted a revised
02 model evaluation study based on this new information to
03 see if we were still performing adequately.

04 Q And have you had an opportunity to review your
05 written testimony and the studies which are attached to
06 that testimony as referenced exhibits?

07 A Yes, I have.

08 Q Do you wish to make any changes or corrections in
09 that written testimony or any of the exhibits?

10 A No, I don't.

11 Q Do you adopt that as your testimony here today?

12 A Yes, I do.

13 Q Let me ask you a couple of questions. You
14 indicated that you were tasked with determining whether
15 or not one or more models would be able to allow some
16 predictions concerning the air quality at the Mono
17 Basin. How many studies or models did you test?

18 A We tested two models and two initial approaches.

19 Q What were those models?

20 A FDM, which stands for fugitive dust model, and the
21 older version of the ISC model called ISC short-term.

22 Q Is that the model that Mr. Ono just got done
23 referring to?

24 A We, actually, in the later study applied a more
25 recent version called -- it was Version Two in the more

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01 recent study, and the difference is primarily a
02 difference in the coding of the model. The important
03 technical algorithms are very similar to our previous
04 model.

05 Q In reviewing the two models in the initial study,
06 did you make any determination as to what was the best
07 model to be used in providing predictions concerning
08 air quality at Mono Lake?

09 A Yes, we did. We -- based on our first study on
10 that data set, we concluded that all things considered,
11 the FDM model was scientifically more accurate.
12 However, when we -- if you looked at the comparisons

13 with the data, both the ISC and FDM model compared
14 quite closely or predicted similar concentrations and
15 in some instances, the ISC model was better, and in
16 some instances, the FDM model was better. So
17 scientifically, the FDM model, it would be my opinion
18 that it would be a more accurate model, but practically
19 and statistically, neither model was different from one
20 another in this particular application.
21 Q Just so I can be clear, did you find any
22 significant differences between results from the ICST-2
23 and the fugitive dust model?
24 A In this application, we found no significant nor
25 practical differences.

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01 Q Thank you, Mr. Richmond.
02 I'd like to turn now to Dr. David Groenveld.
03 Would you please state your name and spell it for the
04 record? Excuse me. How about Andy? Mr. Andy
05 Ranzieri. Excuse me.
06 I understand, Mr. Ranzieri, from your attorney,
07 you're a self-starter, so can you state your name and
08 spell it for record and carry on from there?
09 MR. BIRMINGHAM: Excuse me, Mr. Del Piero. I
10 wonder if since Mr. Ranzieri is appearing on behalf of
11 a different party, if Counsel for that other party is
12 going to examine Mr. Ranzieri.
13 HEARING OFFICER DEL PIERO: That's a fair
14 question. Mr. Oliver?
15 MR. OLIVER: Whatever the preference of the Board
16 is.
17 HEARING OFFICER DEL PIERO: No. It's whatever
18 your preference is.
19 DIRECT EXAMINATION BY MR. OLIVER
20 Q Mr. Ranzieri, why don't we be consistent with
21 everyone else here today.
22 Please state and spell your name for the record.
23 A BY MR. RANZIERI: My name is Andrew Ranzieri. My
24 last name is spelled R-A-N-Z-I-E-R-I.
25 Q Where are you employed, Mr. Ranzieri?

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01 A I am employed at the California Air Resources
02 Board as the manager of the modeling support section.
03 Q And is that your job title? Manager of the
04 modeling support section?
05 A Yes, it is.
06 Q Could you briefly describe your job duties and
07 then your educational background?
08 A Okay. My job responsibilities are mainly in three
09 different areas. One is to develop modeling guidelines
10 to ensure that models are applied properly throughout
11 the State of California for impact assessment. I also
12 am responsible for applying air quality models to
13 support the Air Resources Board's ongoing air
14 management program. And lastly, I'm also a technical
15 manager of the San Joaquin Valley air quality study.
16 Q And could you describe your educational background
17 for us, Mr. Ranzieri?
18 A Yes. My educational background is in
19 engineering. I have a B.S. and a Master's Degree in
20 civil engineering.

21 Q Could you identify your written testimony for the
22 Board here today, Mr. Ranzieri? I believe it appears
23 at ARB Exhibit 8. Is that your written testimony?

24 A Yes, it is.

25 Q Do you have any changes to either it or the
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01 exhibits attached to your testimony?

02 A I do not.

03 Q Do you adopt that testimony as being true and
04 correct here today?

05 A Yes, I do.

06 Q Would you please summarize the major points of
07 that testimony for the Board here today, Mr. Ranzieri?

08 A Yes, I will. We have been asked to evaluate the
09 methodology used by TRC in their modeling work for the
10 Mono County Lake air quality study. My written
11 testimony has been submitted for the record which goes
12 into more detail of our evaluation.

13 To summarize our findings, a TRC modeling analysis
14 was conducted in accordance with the currently accepted
15 modeling protocols. It is a sound approach that
16 reasonably estimates ambient P.M.10 concentrations
17 which may be anticipated from the exposed playa of the
18 lake -- of Mono Lake under various water levels.

19 Q Is that all you have today as far as your summary
20 goes, Mr. Ranzieri?

21 A Yes, it is.

22 Q Well, thank you very much.

23 DIRECT EXAMINATION BY MR. BRUCE (CONTINUED)

24 Q Now, Dr. Groeneveld.

25 A BY DR. GROENEVELD: Thank you. My name is David
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01 Groeneveld, last name spelled G-R-O-E-N-E-V-E-L-D.

02 Q Would you please briefly state your educational
03 experiences and employment history that makes you
04 qualified to give testimony today concerning vegetation
05 in the relicted areas of Mono Lake?

06 A Yes. I have a Bachelor's and Master's Degree from
07 the University of Colorado in environmental biology and
08 continuing along the same lines of study, a Doctorate
09 from Colorado State University at Fort Collins.

10 Q And would you please just briefly state some of
11 your experiences, work-related, that qualify you to
12 testify in this area?

13 A In 1981, I began work with the Inyo County Water
14 Department and evaluated much similar vegetation to
15 that which grows in the Mono Basin relative to its
16 needs for groundwater and its ability to survive once
17 groundwater pumping had isolated the roots from the
18 water table, and with that information from a series of
19 studies that began in '81 and were completed in '87,
20 put together a monitoring protocol, groundwater
21 management protocol, which was the underpinnings for an
22 agreement between the City of Los Angeles and Inyo
23 County.

24 In 1985, I was contracted by the Great Basin Air
25 Pollution Control District to evaluate vegetation

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01 growth on the shores of Mono Lake and to determine the
02 rate at which those plants were becoming established on

03 what's called relicted lands and to determine if there
04 was a way of speeding that process up.
05 Q Have you done any work or research on similar
06 areas in California? Areas similar to the Mono Lake?
07 A Yes. As I mentioned, much of the Inyo County area
08 has similar vegetation.
09 Q Now, have you had an opportunity to review your
10 written testimony which was presented to the Hearing
11 Board as an exhibit and the related exhibits?
12 A I have.
13 Q Do you wish to make any changes or corrections in
14 that?
15 A No, I do not.
16 Q Do you adopt your written testimony and all the
17 exhibits referenced therein as your testimony here
18 today?
19 A I do.
20 Q Would you briefly summarize the most pertinent
21 points of your testimony?
22 A Certainly. If I may draw your attention to the
23 map that's on the wall, my comments will be --
24 HEARING OFFICER DEL PIERO: You need to take the
25 microphone.

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01 DR. GROENEVELD: Thank you.
02 If I may draw your attention to the map that's
03 presented here. Looking at the rate of vegetation
04 establishment around the lake in regard to air quality,
05 much of the western margin, there's essentially no
06 problem with vegetation establishment. Because of the
07 amount of fresh water that comes into the system,
08 plants become established relatively rapidly and,
09 therefore, have the ability of constraining fugitive
10 dust.
11 It's only on the east margin of the lake that
12 we're concerned, and essentially, in the zone from Ten
13 Mile Road in a band about to the middle of the zone on
14 the eastern shore between Simons Springs and Warm
15 Springs. There are other areas which are up in the
16 zone of 6390. For instance, there's an extended vetch
17 zone up in here which, although it's showing poor
18 vegetation establishment today, it eventually will, in
19 my opinion, become vegetated. That zone perhaps could
20 be accelerated. But in this zone between Ten Mile
21 Springs and the Warm Springs area and then a small
22 piece in this zone which is more shoreward, the zone
23 being between Warm Springs and Simons Springs, the
24 vegetation establishment is being controlled
25 essentially by the natural hydrologic processes and

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01 especially the quantity and quality of groundwater,
02 and not by lack of plant material.
03 Thus, unless you provide extensive irrigation with
04 fresh water in those zones, there's no way to
05 effectively enhance vegetation growth to reduce blowing
06 dust, and that's essentially a condition which will
07 last probably up to tens to hundreds of years.
08 Q BY MR. BRUCE: Thank you, Dr. Groeneveld.
09 Turning now to Theodore Schade. Would you please
10 state your name and spell it for the record?

11 A BY MR. SCHADE: Theodore D. Schade. Last name
12 S-C-H-A-D-E.
13 Q Mr. Schade, would you please briefly describe your
14 employment at the current time?
15 A I'm currently employed by the Great Basin Air
16 Pollution Control District.
17 Q Tell us what your duties and functions are.
18 A I'm a project manager. I'm responsible to oversee
19 the fugitive dust mitigation research activities
20 occurring on both Owens and Mono Lakes.
21 Q And would you tell us what educational and
22 employment experiences qualify you for these duties?
23 A I have a Bachelor's Degree in civil engineering
24 from the University of Notre Dame and a Master's Degree
25 in civil engineering from California State University

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01 at Long Beach. I'm also a registered professional
02 engineer in the State of California. I have 13 years
03 of experience in the field of engineering. My primary
04 areas of expertise are in public works design,
05 construction, and contract management.
06 Q Have you had an opportunity to review your written
07 testimony and the exhibits referenced thereby?

08 A Yes, I have.

09 Q Do you wish to make any changes or corrections to
10 that testimony or any of the exhibits?

11 A No, I don't.

12 Q Do you adopt that written testimony and the
13 referenced exhibits as your testimony here today?

14 A I do.

15 Q Would you please briefly summarize the pertinent
16 points of your testimony?

17 A The district is involved with solving dust
18 problems, not only on Mono Lake, but also on Owens Lake
19 in Inyo County. Since the early 1980s, the district
20 has tested a number of fugitive dust mitigation
21 measures at Owens Lake and one measure at Mono Lake.
22 The measures tested at Owens Lake have included patched
23 up surface, thrust, placement of layer of coarse
24 gravel, application of chemicals to stabilize the
25 surface, the creation of artificial sand dunes, and

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01 installation of sprinkler systems, tree survivability
02 test. All of these measures -- all of the measures
03 tested with the exception of the gravel blanket did not
04 reduce fugitive dust levels enough to be considered
05 successful and appropriate for large scale limitation.

06 The mitigation measures currently being tested on
07 Owens Lake include flood irrigation, sand fence arrays,
08 and grass and shrub establishment. As these tests are
09 underway, the success of these measures have not been
10 established at this point.

11 The only measure tested to date at Mono Lake has
12 been vegetation establishment without modifying soil
13 and groundwater conditions, and these tests, as
14 testified by Dr. Groeneveld, have been largely
15 unsuccessful.

16 Great Basin has not identified any other
17 mitigation measures that have a reasonable chance of
18 success at Mono Lake.

19 The large-scale test required to validate the
20 proposed mitigation measures is not possible at Mono
21 Lake because the portions of the lake bed that emit
22 fugitive dust are contained in an area designated by
23 the Forest Service as a no-development zone and as a
24 consequence, this designation prohibits surface
25 disturbances as well as motorized vehicle access making

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01 it difficult or impossible to test the measures.

02 With regard to the actual implementation of
03 mitigation measures, should a successful mitigation
04 measure be identified, in order to implement on a large
05 scale any of the mitigation measures tested or being
06 tested at Owens or Mono Lakes, there would need to be a
07 large amount of land disturbance in the construction of
08 the supporting infrastructure. This infrastructure may
09 include roads, pipelines, wells, power lines, fences,
10 sand fences, or excavation pits.

11 Again, as with mitigation testing, it would not be
12 possible to implement these measures without violating
13 the requirements of the Forest Service's no-development
14 zone.

15 In conclusion, despite testing numerous dust
16 mitigation measures, the district has not specifically
17 identified any measures that have a reasonable chance
18 of succeeding at Mono Lake. The testing and
19 implementation of mitigation measures involve
20 considerable surface disturbances and the construction
21 of support infrastructure. These disturbances are not
22 compatible with the Forest Service's designation as a
23 no-development zone, therefore, based on this, it is my
24 professional opinion that there is no other reasonable
25 fugitive test mitigation measure for Owens Lake other

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01 than raising the lake level -- other than raising the
02 lake to a level that allows federal air quality
03 standards to be met.

04 Q Thank you, Mr. Schade.

05 At this time, I would like to move the
06 introduction of the written testimony and exhibits
07 referenced thereby by the Great Basin Air Pollution
08 Control District staff and its consultants as Great
09 Basin Unified Air Pollution Control District Exhibit
10 No. 33.

11 HEARING OFFICER DEL PIERO: Mr. Bruce, it's been
12 our common practice to have the offer of evidentiary
13 exhibits to be made after cross-examination has taken
14 place, so if --

15 MR. BRUCE: Thank you. I'll withhold that offer
16 until that time.

17 HEARING OFFICER DEL PIERO: Thank you very much.

18 MR. FRINK: I believe there is a question of
19 identification, though. The testimony of the witnesses
20 appearing on behalf of the Air Pollution Control
21 District was all included in a single volume that has
22 not been given an exhibit number before now.

23 Mr. Bruce --

24 MR. BRUCE: Can we mark it for identification as
25 Great Basin Exhibit 33?

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01 MR. FRINK: Okay. Thank you.
02 (Great Basin Exhibit No. 33
03 was marked for
04 identification.)
05 HEARING OFFICER DEL PIERO: Mr. Birmingham? Are
06 you doing air, Mr. Birmingham?
07 MR. BIRMINGHAM: Yes.
08 HEARING OFFICER DEL PIERO: Did you have a good
09 holiday, Sir?
10 MR. BIRMINGHAM: I had a wonderful holiday.
11 HEARING OFFICER DEL PIERO: Certain individuals
12 find their stockings stuffed at your house?
13 MR. BIRMINGHAM: Yes, they did. And I have to say
14 that cross-examination will never hold the same appeal.
15 (Laughter.)
16 HEARING OFFICER DEL PIERO: As we get older, we
17 learn the errors of our ways, right?
18 MR. BIRMINGHAM: Yes, we do. I hope that your
19 holiday was equally as pleasant.
20 HEARING OFFICER DEL PIERO: I'm still all together
21 and here, so that's -- given my activities during the
22 holidays, that's about as much as I could hope for.
23 CROSS-EXAMINATION BY MR. BIRMINGHAM
24 Q The first series of questions I have are for
25 Ms. McKee. First I should introduce myself. My name
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01 is Tom Birmingham. I am one of the attorneys that
02 represents the Department of Water and Power of the
03 City of Los Angeles and the City of Los Angeles in
04 these proceedings.
05 Ms. McKee, the video that you -- that you showed
06 here this morning, who narrated that video?
07 A BY MS. MCKEE: The video was narrated by visitors
08 center personnel who just happened to be working at
09 that time.
10 Q You can't tell us who the narrator of the video
11 was?
12 A Not right now, no. There were several different
13 narrators.
14 Q And you're not sure who those individuals are?
15 A No. If you wanted me to find out, I could,
16 though.
17 Q During the video, we saw a number of episodes of
18 dust blowing from the playa around the lake; is that
19 correct?
20 A We saw a number of dust events filmed from the
21 visitor's center.
22 Q It appeared that in at least one of those dust
23 events, there was also dust blowing from the area
24 between the visitor's center and the lake; is that
25 correct?
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01 A It looked as though the morning of the 3rd there
02 was some general dust blowing as well as alkali dust.
03 Q And what was the wind speed on the morning of May
04 3, 1993, do you know?
05 A I was not there at the time nor did I look at any
06 meteorological equipment. I understand that the winds
07 that day were blowing very hard, in excess of 100 miles
08 an hour, at least in the Owens Valley.

09 Q But you don't know what the wind speed was in the
10 Mono Basin?

11 A No, I don't.

12 MR. ONO: Can I volunteer that information?

13 MR. BIRMINGHAM: If you know it, Mr. Ono, that
14 would be fine and, in fact, perhaps the panel should be
15 made aware of the rule that if a question is asked that
16 one panel member can't answer, it's perfectly
17 acceptable for any member of the panel to respond to
18 the question.

19 HEARING OFFICER DEL PIERO: That is, in fact,
20 correct Ladies and Gentlemen. So if you'd be kind
21 enough to respond in the event that you do happen to
22 know the answer to a question that the individual to
23 whom it's been asked may not know the answer, we'd
24 appreciate it for the completeness of the record.

25 MR. ONO: Okay. On May 3rd, we have monitoring
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01 sites at Simis and at Lee Vining and the peak hourly
02 average wind speed at Simis Ranch was almost 36 miles
03 an hour. That's the ten meter wind speed.

04 HEARING OFFICER DEL PIERO: That's average?

05 MR. ONO: Hourly average.

06 HEARING OFFICER DEL PIERO: Hourly average? Over
07 what period, 12 or 24?

08 MR. ONO: For one hour. That was from four
09 o'clock 'til five o'clock in the afternoon or -- excuse
10 me. Three o'clock 'til four o'clock in the afternoon.
11 For comparison, the gusts on that day were peaking out
12 at almost 55 miles an hour, so, yeah, it was a windy
13 day and from our review of the records over the last
14 five years, and I think Ken Richmond may be able to
15 address this a little bit better, this day was an
16 extraordinary day in terms of meteorology. There were
17 very high wind speeds.

18 At the Lee Vining site on the same day, on the
19 3rd, the hourly average wind speed peaked at around ten
20 o'clock in the evening, and that was 35 miles an hour.
21 The gusts on that day went up almost to 61 miles an
22 hour, and that was at around midnight on May 3rd, going
23 May 4th.

24 HEARING OFFICER DEL PIERO: Thank you.

25 Mr. Birmingham?

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01 Q BY MR. BIRMINGHAM: Thank you very much.

02 Now, Ms. McKee, did you participate in the
03 preparation of the Comprehensive Management Plan?

04 A BY MS. MCKEE: No, I did not.

05 Q So on Page 4, Paragraph 8 of your testimony, it
06 states, "At the time the CMP was approved." The CMP
07 there refers to the U.S. Forest Service Comprehensive
08 Management Plan; is that correct?

09 A That's correct.

10 Q It says, "At the time the CMP was approved, it was
11 assumed that mitigation measures could be identified
12 that would alleviate the air quality problem and also
13 be consistent with the CMP." You, as matter of
14 personal knowledge, do not know what was assumed by the
15 Forest Service when it approved the CMP; isn't that
16 correct?

17 A It is my understanding from talking to Ms. Upland
18 and Mr. Rickford and Mr. Warren, who were present when
19 the CMP was written, that that was the case.

20 Q But you don't know from your personal knowledge
21 what the Forest Service assumed when it approved the
22 CMP?

23 A It's my understanding based on talking to the
24 people who wrote and approved the CMP.

25 Q But you weren't involved in the preparation --
0051

01 A I was not involved in the preparation of the CMP.

02 Q Now, you've changed part of your testimony. In
03 Paragraph 2, you've changed the testimony from stating
04 that the Comprehensive Management Plan recognized that
05 on most days air quality in the Mono Basin is excellent
06 to air quality in the Mono Basin is good. Why did you
07 make that change?

08 A Well, I got a little carried away writing the
09 testimony and upon checking and confirming my
10 references, I found that the CMP listed air quality in
11 the Mono Basin as good. I think if it were not for
12 blowing dust from the relict lands, it would be safe
13 to say that air quality was excellent in the Mono
14 Basin.

15 Q And you've also deleted the word "substantial"
16 from the next sentence of the testimony; is that
17 correct?

18 A That's correct.

19 Q Now, in the paragraph that is on Page 3,
20 immediately after Paragraph 4, Paragraph 5.

21 A Yes.

22 Q It says that, "The dust storms that you've just
23 seen don't happen only as isolated occurrences in the
24 spring." The dust events that were depicted in the
25 video that you showed, those dust events are -- well,
0052

01 maybe I'll ask Mr. Ono.

02 Mr. Ono, what were the recorded measurements of
03 P.M.10 at your monitoring stations on May 30, 1993?

04 A BY MR. ONO: Why don't you give me a few seconds
05 here?

06 Q Certainly. Take your time, please.

07 A On May 3rd, 1993, the concentration at the Simis
08 Ranch site was 810 micrograms per cubic meter, but that
09 was measured starting from 12:30 in the afternoon 'til
10 midnight. We have recalculated that value to assume
11 that in the period from midnight 'til 12:30 when we
12 started the instrument, that the concentration was
13 zero, and this gives the benefit of the doubt to anyone
14 who wants to call this an exceedence. But the number
15 that we gave to the Air Resources Board and the EPA is
16 402 micrograms per cubic meter. That's a conservative
17 number, but that's a clear indication of a violation on
18 May 3rd. The standard for comparison is 150 micrograms
19 per cubic meter.

20 Q The 12-hour measurement you said was 800
21 micrograms per cubic meter, Mr. Ono?

22 A Yes.

23 Q You assumed that from the period from midnight to
24 12:30, the concentration was zero?

25 A Yes, we did.

0053

01 Q But that that was a very conservative estimate
02 which gives benefit of the doubt to anyone who wants to
03 argue about whether or not this is an exceedence?
04 A Exactly, yes.
05 Q My question is this, Mr. Ono. The dust storm that
06 we saw depicted in that May 3 video, that was a pretty
07 major dust storm, wasn't it?
08 A Yes. I would consider that a big one.
09 Q And that's not typical of the dust events that
10 occur in the Mono Basin, is it?
11 A What do you mean by "typical"?
12 Q Well, isn't it correct that dust storms exceeding
13 the Federal Air Quality Standard, the current P.M.10
14 standard, at current lake levels occur, in your
15 estimation, about three times a year?
16 A Our monitoring data at Simis Ranch, and that's the
17 only one that I can attest to, shows a statistical
18 average of about 3.2 exceedences per year from the
19 period 1988 through 1992.
20 Q And the model that we've heard testimony about, it
21 estimates that there will be about three exceedences of
22 the P.M.10 standard per year; is that correct?
23 A At what site are you talking about?
24 Q At the Simis site.
25 A At the Simis site, the estimate is about 5.3

0054

01 exceedences per year.
02 Q Now, there are more than three dust events in the
03 Mono Basin which would impact the Simis site; is that
04 correct, Mr. Ono?
05 A Could you repeat that question?
06 Q Yes. There are more than three dust events in any
07 given year which would produce concentrations of P.M.10
08 at Simis Ranch?
09 A There are many dust events. Some of them may not
10 be exceedences at Simis Ranch, yes.
11 Q That's the point, isn't it, Mr. Ono, that based on
12 your monitoring data -- and monitoring data's the most
13 accurate data, isn't it, Mr. Ono?
14 A It's accurate for that site. It's not a clear
15 indicator for the entire lake.
16 Q The monitoring data indicates that there will be
17 approximately three exceedences per year at Simis
18 Ranch. But the dust storm that was depicted on May 3,
19 1993, and the video that we saw had a concentration of
20 at least 800 micrograms per cubic meter at Simis
21 Ranch. Isn't that correct?
22 MR. BRUCE: Objection. Misstates his prior
23 testimony.
24 HEARING OFFICER DEL PIERO: Excuse me.
25 Ms. Anglin, would you be kind enough to read that back?

0055

01 (Whereupon the record was read as requested.)
02 HEARING OFFICER DEL PIERO: Mr. Birmingham, do you
03 want to restate that question?
04 MR. BIRMINGHAM: Sure.
05 HEARING OFFICER DEL PIERO: Good.
06 Q BY MR. BIRMINGHAM: Your monitoring data from Simis

07 Ranch indicates that there were approximately 3.2 days
08 per year where the P.M.10 standard will be exceeded;
09 isn't that correct, Mr. Ono?
10 A BY MR. ONO: Yes, it is.
11 Q And isn't it also correct that the dust event, May
12 3 dust event, depicted on the video that we saw during
13 Ms. McKee's testimony, had a measured concentration at
14 Simis Ranch of at least 800 micrograms per cubic meter?
15 A For what sampling period are you talking about?
16 Q For the sampling period of May 3, 1993?
17 A Okay. This requires some clarification because --
18 HEARING OFFICER DEL PIERO: And I understand that,
19 Mr. Ono, so you go ahead and take your time in terms of
20 clarifying this on the record because nobody out there
21 objected to your question as being ambiguous, but it is
22 given the circumstances here, Mr. Birmingham. So,
23 Mr. Ono, go ahead and outline that, okay?
24 MR. ONO: The concentration out there was 810
25 micrograms per cubic meter for an averaging period of
0056
01 710 minutes, but the 24-hour average, we can't say what
02 that concentration was, whether or not it was higher
03 than 810 micrograms per cubic meter or lower than 810.
04 There's no way that we can conclude that from our
05 monitoring data.
06 We can conclude, however, that the concentration
07 was over 402 micrograms per cubic meter.
08 HEARING OFFICER DEL PIERO: Does that answer your
09 question, Mr. Birmingham?
10 MR. BIRMINGHAM: Yes, it does.
11 Q BY MR. BIRMINGHAM: And, Mr. Ono and Ms. McKee, I can
12 ask either of you this question. Isn't it correct that
13 the dust storm that was depicted in that video was of a
14 greater magnitude than dust storms that would occur in
15 the Mono Basin except perhaps maybe three days a year?
16 MR. GIPSMAN: I'm going to object to the question
17 as to relevance. The key question is whether a dust
18 storm exceeds federal air quality standards. It
19 doesn't matter how large it is if there is a violation.
20 HEARING OFFICER DEL PIERO: I'm going to overrule
21 the objection as to relevance. You are can go ahead
22 and answer the question.
23 MR. ONO: In terms of magnitude?
24 HEARING OFFICER DEL PIERO: Do you you need to
25 have the question reread?
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01 MR. ONO: I'd like to have a clarification of the
02 question because what he means by magnitude isn't
03 really clear to me.
04 HEARING OFFICER DEL PIERO: Why don't we start
05 with having the question reread.
06 (Whereupon the record was read as requested.)
07 MR. BRUCE: I'd like to object on the basis of
08 ambiguity. It doesn't identify which dust storm in the
09 video Mr. Birmingham was referring to.
10 HEARING OFFICER DEL PIERO: I'm going to overrule
11 the objection.
12 Mr. Ono, do you understand the question?
13 MR. ONO: If I may restate the question.
14 HEARING OFFICER DEL PIERO: I don't want you to

15 restate it. I want you to answer my question. I asked
16 you did you understand the question?

17 MR. ONO: No, I didn't.

18 HEARING OFFICER DEL PIERO: Fine.

19 Mr. Birmingham, do you want to restate the
20 question, please?

21 MR. BIRMINGHAM: Thank you very much,

22 Mr. Del Piero.

23 Q BY MR. BIRMINGHAM: When I'm talking about magnitude,
24 Mr. Ono, I'm talking about concentration of P.M.10. So
25 if I use the term "magnitude," I'm going to use that

0058

01 term with respect to concentrations of P.M.10. And let
02 me explain the reason I'm asking these questions. Ms.
03 McKee, in her testimony, states that the dust storms
04 that you've just seen don't happen only as isolated
05 occurrences in the spring, but if I understand the
06 testimony of the Great Basin Unified Air Pollution
07 Control District, Mr. Ono, the kind of dust storm that
08 we saw depicted in that video, the May 3 dust storm,
09 those dust storms happen a few times a year. Is that
10 correct?

11 A BY MR. ONO: At Simis Ranch, the exceedences happen
12 about three times per year. Those kind of dust storms,
13 I'm not quite sure what you mean by "those kinds,"
14 but --

15 Q Let me say dust storms of that magnitude.

16 A Of that magnitude, meaning the concentration at
17 Simis Ranch, and I can only attest, again, to Simis
18 Ranch. We don't have monitors all over the lake bed,
19 but there are higher concentrations that have been
20 recorded at Simis Ranch. This last spring, we had a
21 concentration of 981 on May 11th. That was larger than
22 the May 3rd concentration that was measured. On May
23 12th, 658 was measured. That also was higher than the
24 May 3rd concentration.

25 And, again, we don't monitor every day, so there

0059

01 may have been other days that could have been equally
02 as high in magnitude as the storm on May 3rd or they
03 could have been greater.

04 Q Mr. Ono, isn't it correct that among the reasons
05 that you placed the monitor at Simis Ranch was that
06 Simis Ranch is in the area towards which dust normally
07 blows from the Mono Lake playa?

08 A Yes. It's one of the areas that we would expect
09 to see high concentrations. However, one of the things
10 that we found out through the modeling is that of the
11 entire north shore, that was one of the lower
12 concentration areas on the north shore, and a higher
13 concentration may have been towards the east shore near
14 Warm Springs where we placed a portable monitor.
15 However, we do expect to see high concentrations on the
16 entire north shore of the lake.

17 Q And is it correct, Mr. Ono, that for a period of
18 time, the Great Basin Unified Air Pollution Control
19 District operated a program of actually turning on its
20 monitor at Simis Ranch when it expected a dust storm?

21 Q Yes, we did. And that program was -- didn't catch
22 every dust storm. There were days that they failed to

23 make the prediction. There were days when we predicted
24 that the storm would occur on Tuesday, the storm
25 occurred on Wednesday. There were many days that were

0060

01 missed even within the period that we tried to catch
02 the episodes.

03 Q And is it correct, Mr. Ono, that the data that was
04 collected during the program just described was used in
05 preparation of the TRC model?

06 A As much of the good air quality data as we could
07 gather, we used that in preparing the TRC modeling
08 outputs.

09 Q Ms. McKee, during your oral summary of your
10 written testimony, you said that you wanted to change
11 the title of Exhibit 4, U.S. Forest Service Exhibit 4
12 from "Air quality monitoring form" to -- to what?

13 A BY MS. MCKEE: "Dust event monitoring form."

14 Q Now, in going through the forms that make up U.S.
15 Forest Service Exhibit 4, I note that there are a
16 number of people who prepared the forms. Is that
17 correct?

18 A That's correct.

19 Q Have you spoken with each one of the people that
20 prepared these forms?

21 A No, I haven't.

22 Q Does the Forest Service have a written protocol
23 that is used to fill out the forms that are attached as
24 Exhibit 4 to U.S. Forest Service --

25 A No. We don't have a written protocol.

0061

01 Q Are the individuals who fill out these forms, are
02 they given specific instructions as to how to fill them
03 out?

04 A Yes, they are.

05 Q And the back of the form contains a diagram; is
06 that correct?

07 A That's correct.

08 Q And on each one of these diagrams, it indicates an
09 area from which dust is being emitted; is that correct?

10 A The back of the form just has the diagram, and
11 then the person who filled out the form did or did not
12 try and sketch in just whatever they happened to see as
13 they were looking out of the visitor's center.

14 Q And you can't tell us what the concentration of
15 P.M.10 were on the days that these events were
16 reported; is that correct?

17 A Our monitoring effort was a dust event monitoring
18 effort, and we did not monitor P.M.10.

19 Q So you can't tell us what the concentrations of
20 P.M.10 were on the dates that these dust events were
21 recorded?

22 A I have used Great Basin data in discussing with
23 Duane to compare -- just to cross check our forms with
24 the P.M.10 forms just for general interest, but the
25 purpose was not to try and calibrate our dust event

0062

01 monitoring.

02 A BY MR. ONO: Can I volunteer some information here?

03 Q If it's responsive to my question, please.

04 A On May 11th, which was one of the storms that was

05 depicted in the video, the concentration --
06 Q Mr. Ono, here I'm talking about the U.S. Exhibit
07 4. U.S. Forest Service Exhibit 4, not the video.
08 A Okay. Do you have specific dates?
09 Q I'm just asking Ms. McKee if she knows the
10 concentrations of P.M.10 on these dates.
11 HEARING OFFICER DEL PIERO: Am I incorrect,
12 Mr. Ono, were you going to provide that information on
13 the P.M.10 levels?
14 MR. ONO: Just about any day that he wants I can
15 tell you what the concentration is.
16 HEARING OFFICER DEL PIERO: Mr. Birmingham, was
17 your question to determine whether or not Ms. McKee had
18 the information or what the information actually was?
19 MR. BIRMINGHAM: My question was whether or not
20 there was an effort made by Ms. McKee or anyone from
21 the Forest Service to determine what the ambient air
22 quality measured concentration was on the dates
23 reported on these forms.
24 MS. MCKEE: Is that the question?
25 MR. BIRMINGHAM: Yes.

0063

01 MS. MCKEE: An effort was made to just cross
02 check. I have the Great Basin data written on each of
03 these forms just in preparation for this hearing.
04 Q BY MR. BIRMINGHAM: You have the information written
05 on your forms; is that correct?
06 A BY MS. MCKEE: I have the values that Duane gave me
07 as the average value for the day written in the top
08 right-hand corner.
09 Q Well, let's look at June 4, 1993. What was the
10 concentration of P.M.10 at Simis Ranch on that day?
11 A I do not have the concentration on that day.
12 Q The dust event that is referred to is referred to
13 as a localized dust devil. Do you have an opinion as
14 to whether or not that localized dust devil would have
15 resulted in a P.M.10 concentration in excess of 150
16 micrograms per cubic liter?
17 MR. BRUCE: Objection. Lack of foundation.
18 MR. GIPSMAN: Also, Ms. McKee is not an expert in
19 evaluating whether these dust events exceeded P.M.10
20 concentrations. Her testimony is solely factual from
21 the visual recording of dust events.
22 HEARING OFFICER DEL PIERO: I think I'm going to
23 sustain the objection without a better foundation,
24 Mr. Birmingham.
25 MR. BIRMINGHAM: Well, can I ask that

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01 Mr. Gipsman's objection be reread?
02 (Whereupon the record was read as requested.)
03 MR. BIRMINGHAM: I'll just ask to have that
04 marked.
05 Q BY MR. BIRMINGHAM: Ms. McKee, you're not an expert
06 on P.M.10?
07 A BY MS. MCKEE: No.
08 Q You're not an expert on how P.M.10 concentrations
09 affect human health?
10 A No, I'm not.
11 Q So basically, your testimony is that the Forest
12 Service fills out forms, and you brought the forms to

13 the State Board for its consideration. Is that the
14 purport of your testimony?

15 A The summary more accurately reflects my testimony.

16 Q But where there are references to the effects of
17 P.M.10 on human health, you're not an expert in that
18 area?

19 A No.

20 MR. GIPSMAN: Objection. I think the question is
21 vague and ambiguous. References where to the effects
22 on human health? I don't believe that she made any
23 except that it may effect human health. That's the
24 only reference in her testimony.

25 HEARING OFFICER DEL PIERO: I'm going to overrule
0065

01 the objection. The witness' testimony, the witness'
02 written testimony speaks for itself. The nature of her
03 qualifications are also in the record.

04 So given that, Mr. Birmingham, why don't we move
05 along.

06 Q BY MR. BIRMINGHAM: Ms. McKee, you can't tell us at
07 what lake level the ambient air quality standards,
08 federal P.M.10 standard will be achieved?

09 A BY MS. MCKEE: The Forest Service is not an air
10 regulatory agency, and we do not make regulatory
11 decisions. We rely on the California Resources Board,
12 the Environmental Protection Agency, and Great Basin
13 Air Pollution Control District to advise us.

14 Q Mr. Ono, the Great Basin Unified Air Pollution
15 Control District is a state agency; is that correct?

16 A BY MR. ONO: No.

17 Q Is the Air Resources Control District not a
18 district created by state law?

19 A This is getting out of my area of expertise, and
20 so I can't answer that.

21 MR. FLINN: I was going to object on the grounds
22 that that appeared to call for a legal conclusion, and
23 I suspect we're going to get closer into that area.

24 HEARING OFFICER DEL PIERO: I'm going to sustain
25 the objection. In fact, for the record, all air
0066

01 pollution control districts in the state are creations
02 of statute, however, they are governed on a localized
03 level by boards of directors that are made up of
04 locally elected or appointed officials. And so from
05 the standpoint of their establishment, they're
06 established by statute, however, for all intents and
07 purposes, function as local agencies.

08 Mr. Birmingham, if you wish to proceed, you can go
09 ahead.

10 MR. BIRMINGHAM: Sure.

11 Q BY MR. BIRMINGHAM: Mr. Ono, the Great Basin Unified
12 Air Pollution Control District, is that the agency
13 created by statute that is responsible for implementing
14 the Clean Air Act in the area of the eastern Sierra in
15 which the Mono Basin is located?

16 MR. BRUCE: Objection. Calls for a legal
17 conclusion and analysis of statutory both federal and
18 state regulations.

19 MR. BIRMINGHAM: Mr. Del Piero, I'm at loss here
20 because we have a witness who comes in and presents

21 testimony and attorneys for the agencies start standing
22 up and objecting on the grounds that my questions are
23 asking for legal conclusions. If we struck every legal
24 conclusion from Mr. Ono's testimony, there wouldn't be
25 very much left and, in fact, the third question he

0067

01 analyzed is strictly a legal question.

02 Now, if we want to strike that from the record, I
03 can sit down, and we can all go home a little earlier
04 today.

05 HEARING OFFICER DEL PIERO: Mr. Oliver?

06 MR. OLIVER: I believe it does exceed the scope of
07 Mr. Ono's direct testimony. He's not been qualified as
08 an expert on the jurisdictional aspects of state and
09 federal Clean Air Act law. Neither does his testimony
10 open the door to this kind of cross-examination.

11 HEARING OFFICER DEL PIERO: Mr. Flinn?

12 MR. FLINN: Just one other additional observation.
13 The particular question that was asked appeared to be
14 the allocation of responsibility with regard to the
15 Clean Air Act compliance as against Great Basin or
16 perhaps some other agencies, the California Air
17 Resources Board or someplace else, and I don't think
18 that anything in Mr. Ono's testimony addressed that
19 particular distinction. And it may be important
20 because I think where Mr. Birmingham may be going,
21 given their legal position before, had to do with
22 restrictions that might apply to Great Basin that may
23 not necessarily apply to the Air Resources Board.

24 HEARING OFFICER DEL PIERO: Mr. Birmingham, I'm
25 going to sustain the objections. Let me point out that

0068

01 if you wish to pursue that, you need to establish
02 foundational information as to whether or not Mr. Ono
03 is qualified to answer a question as to the statutory
04 nature of how the Great Basin Air Pollution Control
05 District is organized and what their functional
06 authorities and responsibilities are.

07 MR. BIRMINGHAM: May I ask for a stipulation,
08 Mr. Del Piero, that Mr. Ono is not a legal expert or
09 qualified to answer legal questions? That's the basis
10 of the last objection which you just sustained.

11 HEARING OFFICER DEL PIERO: We don't have
12 stipulations in here, as I pointed out to you one time
13 earlier when you asked for one from me. So proceed,
14 okay?

15 MR. BIRMINGHAM: All right.

16 Q BY MR. BIRMINGHAM: Mr. Ono, let's look at your
17 testimony. Your testimony on Page 18 says that,
18 "National ambient air quality standard for P.M.10 must
19 be met in the Mono Basin. This is a federal mandate
20 that cannot be compromised or balanced against other
21 resource interests." Is that your understanding of the
22 law, Mr. Ono?

23 A BY MR. ONO: Yes, it is.

24 Q But you are not an expert in the application of
25 the Clean Air Act; is that correct?

0069

01 A As it pertains to the P.M.10 program, I am very
02 familiar with what's required under the Clean Air Act.

03 Q Actually, I don't think your counsel gives you
04 enough credit because you and I have spoken before, and
05 I know that you're quite knowledgeable in that area.
06 So let me see if I can lay an appropriate foundation.
07 You worked for the EPA; is that correct?
08 A Yes, I did.
09 Q And as part of your responsibilities at the
10 Environmental Protection Agency, you were involved in
11 enforcing the Federal Clean Air Act; is that correct?
12 A Yes.
13 Q And, in fact, you were involved in the development
14 of the P.M.10 standard; is that correct?
15 A No. That is not correct.
16 Q Were you involved in the application of the P.M.10
17 standard within states?
18 A I was involved with the application of the P.M.10
19 program as it related to protecting the P.M.10
20 standard.
21 Q And that included its application in California;
22 is that correct?
23 A Yes. That is true.
24 Q Is it correct that under the Clean Air Act, if an
25 area of the State of California is designated by the
0070 Environmental Protection Agency as a non-attainment
01 area, it is up to the state to develop a proposed
02 implementation plan?
03 implementation plan?
04 A That --
05 Q Well, let me just ask you -- let me read from your
06 testimony, and I'll ask you if what you've said in your
07 testimony is correct. "Federal P.M.10 non-attainment
08 area -- that the designation of the Mono Basin as a
09 federal P.M.10 non-attainment area will require that a
10 state implementation plan be submitted to demonstrate
11 how the Mono Basin will be brought into compliance
12 with the federal P.M.10 standard." That's correct,
13 isn't it, Mr. Ono?
14 UNIDENTIFIED SPEAKER: Objection. I would like to
15 have the reference in the written testimony where that
16 is, at least have the witness be given the opportunity
17 to see that testimony.
18 HEARING OFFICER DEL PIERO: I'm going to overrule
19 the objection.
20 Mr. Ono, you're aware of where it is, I assume,
21 because you answered the question?
22 MR. ONO: I have it in front of me.
23 MR. BIRMINGHAM: I gave him the reference earlier.
24 HEARING OFFICER DEL PIERO: Mr. Birmingham, please
25 proceed.
0071
01 Q BY MR. BIRMINGHAM: Now, with respect to the
02 development of the state implementation plan, the
03 Federal Clean Air Act does not tell the State of
04 California how it is to comply with the Clean Air Act;
05 is that correct?
06 A BY MR. ONO: That is true.
07 Q It is up to the State of California to determine
08 what will be contained in the state implementation
09 plan?
10 A That gets into a gray area and maybe I can explain

11 this a little bit. The state has designated the Great
12 Basin Air Pollution Control District as the lead agency
13 to develop the state implementation plan for the Mono
14 Basin and they will oversee the process as we develop
15 that state implementation plan. And once that has been
16 completed and approved locally by the Great Basin Air
17 Pollution Control District, then it will be forwarded
18 to the state, and the California Air Resources Board
19 would, in turn, adopt that document as their own. And
20 then they would call that the state implementation
21 plan which would be, in turn, forwarded to the EPA,
22 satisfying the Clean Air Act requirements.

23 MR. HERRERA: Excuse me, Mr. Birmingham. It's 20
24 minutes.

25 MR. BIRMINGHAM: I make an application for an
0072 additional 20 minutes.

02 HEARING OFFICER DEL PIERO: I'll grant you the
03 additional 20 minutes, Mr. Birmingham, after I ask one
04 question and after the break.

05 MR. BIRMINGHAM: Sure.

06 HEARING OFFICER DEL PIERO: Mr. Ono, just for the
07 sake of clarification, in terms of the implementation
08 plan that you just referred to in your last answer, is
09 it not true that the State Air Resources Board does not
10 have the prerogative of ordering amendments or
11 modifications to that plan once the Great Basin plan
12 has been submitted, then, for adoption? They can
13 either adopt it or send it back, but they don't have
14 the authority to order the local board to change
15 something that's in that plan?

16 MR. ONO: I don't know if they do or not.

17 HEARING OFFICER DEL PIERO: Fine.

18 Ladies and Gentlemen, we'll be in recess for ten
19 minutes.

20 (Whereupon a short recess was taken.)

21 HEARING OFFICER DEL PIERO: Ladies and Gentlemen,
22 this hearing will again come to order. If we'll all
23 find our seats.

24 When last we left, Mr. Birmingham, I just
25 indicated you had another 20 minutes.

0073
01 Q BY MR. BIRMINGHAM: I want to go back, and I want to
02 look at this May 3 event because I was able to find
03 what I was looking for in the video. And the record
04 should reflect that I've turned the sound down. I'll
05 turn it back up, I guess. But we are at -- starting at
06 Frame 61 of the video

07 "Probably hear the wind howling through the
08 building."

09 Q BY MR. BIRMINGHAM: Now, I have just paused the video
10 on what is indicated on the counter as Frame 70. And
11 is it correct, Ms. McKee, that right off of the balcony
12 at the visitor's center there appears to be dust
13 blowing in the video?

14 A BY MS. McKEE: Yes, that is correct. The purpose of
15 the video was not as an air quality monitoring tool,
16 but a dust event storm.

17 Q If you would limit your responses to my questions
18 to -- just to my questions, I would appreciate it. As

19 you probably have noted, I don't have a lot of time or
20 my time is limited, and it would speed things along if
21 you would just limit your answers to my questions.

22 And it's correct that there appears to be dust in
23 this Frame 70 blowing immediately off of the balcony at
24 the visitor's center. Is that right?

25 A Yes. That's a disturbed area from new
0074 construction.

02 Q Now, the area that you've just characterized as
03 disturbed, the dust is not coming from the lake, that
04 playa; is that correct?

05 "Monday, May 3rd, 1993 -- "

06 Q BY MR. BIRMINGHAM: Is that dust coming from the lake
07 bed playa?

08 MR. BRUCE: I'm going to object. The video speaks
09 for itself. This witness has already indicated that
10 she didn't observe the events recorded in this video.

11 HEARING OFFICER DEL PIERO: I'm going to overrule
12 the objection.

13 But, Ms. McKee, I want you to answer the question
14 that Mr. Birmingham asked, and if you want the question
15 read back, specifically -- I'm expecting you to answer
16 this based on your inspection of what's there on the
17 video right now. He asked you that question. He asked
18 you a question about where that dust was coming from.
19 If you know, you can answer it. If you don't know, you
20 can answer "I don't know."

21 So do you want the question read back?

22 MS. MCKEE: No. I think I can recall the
23 question.

24 HEARING OFFICER DEL PIERO: Okay.

25 MS. MCKEE: No. I do not know where that dust is
0075 coming from.

02 Q BY MR. BIRMINGHAM: Have you ever been in a wind
03 storm at the Mono Basin, Ms. McKee, when there was dust
04 coming from areas other than the relict lake bed of
05 Mono Lake?

06 A BY MS. MCKEE: No, I have not.

07 Q In response to my questions about the wind
08 conditions on that date, Mr. Ono, you stated that this
09 day, May 3, 1993, was, using your words, "extraordinary
10 in terms of meteorology." Is that correct?

11 A BY MR. ONO: I believe that I said something like
12 that, yes.

13 Q So when you say that this was an extraordinary day
14 in terms of meteorology, then you would agree with me
15 that it's not a typical day in terms of meteorology?

16 A The May 3rd day was, I would say not typical of
17 the five years of data that we analyzed from 1988
18 through 1992. However, the spring of '93 was very
19 windy. There were several days which had high winds
20 similar to this.

21 Q And it's correct, isn't it, Mr. Ono, that one of
22 the principal factors contributing to dust storms in
23 the Mono Basin, both from the lake bed area and from
24 sources other than the lake bed, is meteorology?

25 A Yes.

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01 Q And it's correct, isn't it, Mr. Ono, that there
02 are dust storms in the Mono Basin where dust is
03 generated from areas other than the relict lake bed?
04 A On occasion, there will be dust coming from almost
05 any disturbed area in the Mono Basin, and this is not
06 unique to the Mono Basin. We've seen this in the Owens
07 Valley. In the San Joaquin Valley this certainly
08 occurs. On extremely windy days, those areas may blow,
09 and they may blow temporarily and then stop. I think,
10 later in the May 3rd video one of the things that you
11 will notice is that in the afternoon, that dust is no
12 longer blowing. It's a very limited event.

13 However, in comparison to the lake bed playa, you
14 may see that blowing continuously throughout the storm
15 in some areas, and that's what we would consider an
16 unlimited type of source and that will continue.

17 One of the things that we can use to possibly
18 compare the playa dust to the dust from disturbed areas
19 is looking at the P.M.10 concentration in Lee Vining
20 and comparing that to what we see at Simis. On May 3rd
21 of 1993, the date that Mr. Birmingham is asking about,
22 the concentration in Lee Vining for P.M.10 was 41
23 micrograms per cubic meter, and that's for a 740-minute
24 run. The corrected average is 21 micrograms per cubic
25 meter. During the same period as I had stated

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01 before -- let's see if I can find it, the value at
02 Simis was 402, and so if disturbed dust from areas
03 where the soil had been disturbed in the Lee Vining
04 area or anywhere else in the basin was a major factor
05 in the P.M.10 contribution, then we should have seen a
06 much larger concentration at Simis. The 41 as compared
07 to the 400 concentration at Simis is very small, so
08 we're talking maybe less than 10 percent is due to
09 disturbed areas, even on this extreme day.

10 Q Are you done, Mr. Ono?

11 A Okay.

12 Q I'm going to ask you the same thing that I asked
13 Ms. McKee. In responding to my questions, if you would
14 limit your answer to my question, I would appreciate
15 that very much. I asked you a question a few minutes
16 ago that could have been responded to yes or no, and
17 you went on for two and a half minutes. And I do have
18 a very limited time. So, again, I'm going to ask all
19 members of this panel, if I ask you a question, just
20 answer my question.

21 Now, Mr. Ono, you've just talked about Lee
22 Vining. See, this is the problem when you go beyond
23 the scope of my question, I have to ask three or four
24 more questions just to follow up. You just talked
25 about air quality monitoring at Lee Vining.

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01 HEARING OFFICER DEL PIERO: Mr. Birmingham, it's
02 January. The December holidays are over and in the
03 event that you need additional time for
04 cross-examination, Sir, all you have to do is ask.

05 MR. BIRMINGHAM: Thank you. I had hoped to get
06 through this panel in about five minutes. My hopes
07 were dashed.

08 HEARING OFFICER DEL PIERO: Hope springs eternal.

09 Q BY MR. BIRMINGHAM: Mr. Ono, you've just talked about
10 air quality monitoring in Lee Vining. You have a
11 station in the Town of Lee Vining; is that correct?
12 A BY MR. ONO: Yes.
13 Q The Town of Lee Vining is at the base of the
14 Sierra Nevada; is that correct?
15 A Yes.
16 Q As it enters the Great Basin?
17 A Sounds right to me.
18 Q Is that correct?
19 A Right.
20 Q Now, the Town of Lee Vining is protected from the
21 prevailing winds in the Mono Basin, isn't it, Mr. Ono?
22 A Not necessarily. It would really depend on which
23 direction the wind is blowing from.
24 Q Isn't it correct that on the days in which dust
25 storms generally occur, the wind is blowing from the
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01 south by southwest?
02 A Yes, that's true.
03 Q And on those days, the Town of Lee Vining is
04 protected from the wind; is that correct?
05 A There are still high winds at Lee Vining.
06 Q Again, Mr. Ono, in response to any question -- let
07 me ask it differently. You're familiar with the work
08 of Dr. Cahill? Thomas Cahill?
09 A I am familiar with some of the work of Dr. Cahill.
10 Q Dr. Cahill has studied the dust episodes in the
11 Mono Basin extensively?
12 A Yes, he has done studies.
13 Q And he is active as a consultant for the Great
14 Basin Unified Pollution Control District; is that
15 correct?
16 A BY MR. SCHADE: As a contract manager for the Great
17 Basin's activities, I'd like to answer that.
18 Q If you know the answer that would be fine.
19 A No, he is not.
20 Q Is it correct, Mr. Ono, that Dr. Cahill's work
21 indicates that one of the factors that contributes to
22 the generations of dust storms in the Mono Basin is
23 winds that come over the eastern Sierra and then fall
24 into the Mono Basin and then blow dust off of the
25 playa?
0080
01 A BY MR. ONO: I don't know.
02 Q And for the record, the attorney for the
03 representative of the Department of Fish and Game is
04 Dr. Cahill's spouse. And I say that not to impeach
05 either one of them.
06 MR. THOMAS: Object. Move to strike.
07 HEARING OFFICER DEL PIERO: It's in. Let's
08 proceed.
09 Nice to see you, Mr. Thomas. I was wondering if
10 you were awake back there.
11 MR. THOMAS: I arise to defend all of my people.
12 Q BY MR. BIRMINGHAM: Let's go back and talk about the
13 state implementation plan. I've got a hypothetical
14 question I'd like to ask you. I'm going to ask you to
15 assume that the State Water Resources Control Board
16 proceedings at which you're testifying today are not

17 ongoing. So let's just take these proceedings and put
18 them aside, and let's just assume that they're not
19 ongoing. I'm going to ask you to assume that the
20 Environmental Protection Agency has designated the Mono
21 Basin as a non-attainment area. I'm also going to ask
22 you to assume that as a result of that designation, the
23 Great Basin Unified Air Pollution Control District is
24 going to develop a state implementation plan. And then
25 I'm going to ask you to assume that in developing the

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01 state implementation plan, the Great Basin Unified Air
02 Pollution Control District has determined that a
03 mitigation measure to be pursued is raising the level
04 of Mono Lake.

05 Do you understand the assumptions that I've asked
06 to you make, Mr. Ono?

07 A BY MR. ONO: Yes.

08 Q Now, making those assumptions, if the Great Basin
09 Unified Air Pollution Control District wanted to pursue
10 raising the level of Mono Lake as a mitigation measure
11 to deal with the impacts of dust being emitted from the
12 playa, isn't it correct that the Great Basin Unified
13 Air Pollution Control District would have to go to the
14 legislature and ask for an amendment of the Health and
15 Safety Code?

16 MR. BRUCE: Objection. Calls for a legal
17 conclusion. Exceeds the scope of the direct
18 examination and the witness' expertise.

19 MR. FLINN: There's another fault in the question
20 and that has to do with the ambiguity of the term
21 "pursue." Even assuming, hypothetically, that the
22 Great Basin Air Pollution Control District's authority
23 is limited so that they could not interfere with L.A.'s
24 water-gathering efforts, even assuming that's the case,
25 the question is whether or not proposing to a superior

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01 California agency that might be, for example,
02 California's designee under the Federal Clean Air Act
03 is pursuit or not, and the clarification of pursuit is
04 important.

05 The question -- the other objection's overruled.

06 HEARING OFFICER DEL PIERO: I'm going to sustain
07 the first objection. I'm not going to comment on
08 Mr. Flinn's.

09 Mr. Birmingham, please proceed.

10 Q BY MR. BIRMINGHAM: I'm going to ask you another
11 hypothetical question, Mr. Ono. I'm going to ask you
12 to assume that on December 2, 1992, the level of Mono
13 Lake was at elevation 6390. Do you understand that
14 assumption that on December 2, 1992, the elevation of
15 Mono Lake was at elevation 6390?

16 A BY MR. ONO: Yes.

17 Q Now, Mr. Ono, making that assumption, would there
18 have been an exceedence of the federal P.M.10 standard
19 at Simis Ranch on December 2, 1992, had the level of
20 Mono Lake been at 6390?

21 MR. BRUCE: I'm going to object because I don't
22 understand the hypothetical. I don't know that there's
23 been sufficient facts given to the witness to allow him
24 to answer this particular question. For instance,

25 meteorological conditions.

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01 HEARING OFFICER DEL PIERO: Mr. Bruce, I'm going
02 to overrule your objection.

03 Mr. Ono, do you understand the question?

04 MR. ONO: Assuming --

05 HEARING OFFICER DEL PIERO: I don't want you to
06 assume anything, Mr. Ono. I want you to tell me if you
07 understand the question that's been put to you.

08 MR. ONO: Yes, I do.

09 HEARING OFFICER DEL PIERO: Okay. Then go ahead
10 and answer it.

11 MR. ONO: I would have to defer this question to
12 Mr. Ken Richmond who did the modeling, and I understand
13 that we're assuming that the meteorology is the same as
14 on 12-2-92, and that the lake level is at 6390 feet and
15 what would the model say?

16 MR. RICHMOND: First of all, we didn't
17 specifically look at a lower source boundary
18 corresponding to a lake level of 6390. I guess the
19 closest scenario that we simulated would be a lower
20 source boundary of 6393, and on the other side of it,
21 the lower source boundary that we simulated was 6387.
22 What we did is we summarized the top ten values for
23 that lake level at every separate location. So --

24 HEARING OFFICER DEL PIERO: Mr. Birmingham, do you
25 want to know the information he's offering?

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01 MR. BIRMINGHAM: I don't think that it's
02 responsive to my question.

03 HEARING OFFICER DEL PIERO: Mr. Richmond, I'm
04 going to ask all of the members of the panel to respond
05 specifically to Mr. Birmingham's questions rather than
06 volunteering information because although we don't have
07 unlimited time here, I want to make sure that he's
08 afforded the best opportunity to get answers to the
09 questions he's asked.

10 Q BY MR. BIRMINGHAM: Is there anybody on the panel who
11 can answer this question?

12 A BY MR. ONO: Could you repeat the question again?

13 Q Sure. I'm going to just ask you to assume that on
14 December 2, 1992, the level of Mono Lake was at
15 elevation 6390. Making that assumption and assuming
16 that all of the other meteorological conditions were
17 correct, would there have been a violation of the
18 P.M.10 standard at Simis Ranch?

19 HEARING OFFICER DEL PIERO: Does anyone on the
20 panel know the answer to that question?

21 MR. RICHMOND: I don't.

22 HEARING OFFICER DEL PIERO: I see no one
23 acknowledging that they have this information,
24 Mr. Birmingham.

25 Q BY MR. BIRMINGHAM: Is there anyone here that is

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01 familiar with Great Basin Unified Air Pollution Control
02 District Exhibit No. 20? This the Mono Lake transport
03 report for the period December 12, 1992, through July
04 6th, 1993?

05 A BY MR. ONO: Yes.

06 Q You're familiar with that report, Mr. Ono?

07 A Yes, I am.

08 Q And you relied on this report, Great Basin Unified
09 Air Pollution Control District Exhibit 20, in the
10 preparation of your testimony?

11 A I included it in my testimony. I don't know how
12 much I relied on it.

13 Q Who is responsible for the preparation of this
14 report?

15 A That would be me.

16 Q Does the report contain information about the
17 movement of sand from different areas of the playa?

18 A Yes, it does. In the location of Ten Mile Road.
19 It does not say anything about other areas of the playa
20 around Mono Lake Basin.

21 Q Now, does the report contain data for December 2,
22 1992?

23 A It does cover that period, yes.

24 Q Now, I'm looking at Page 2 of this report. In the
25 middle of the page it talks about sand movement. It
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01 states that, "The lower and middle playa areas up to
02 the wave cut platform at 6390 showed negligible
03 erosion. The upper playa from 6390 to 6400 showed a
04 substantial increase in erosion from near zero to 700
05 grams. Sand port samplers were not installed above
06 6400 feet during this period. On December 2, 1992, the
07 P.M.10 monitor at Simis Ranch measured 225 micrograms
08 per cubic meter. It is assumed that almost all of the
09 P.M.10 emissions were generated from the playas above
10 6390 feet."

11 Is that what the report states, Mr. Ono?

12 A Yes, that's what the report says.

13 Q Now, does reviewing this refresh your recollection
14 with respect to the question I asked about making an
15 assumption that the lake was at elevation 6390 on
16 December 2, 1992, would there have been a violation of
17 the P.M.10 standard at Simis Ranch?

18 A If the lake came up to 6390 tomorrow, suddenly,
19 there was a flash flood and it came up to 6390 and we
20 had this type of erosion that occurred above that, yes,
21 it would.

22 Q It's correct, isn't it, Mr. Ono, that there's
23 erosion from the playa above 6400 feet which
24 contributes to the emission of dust in the Mono Basin?

25 A There is sand movement above 6400 feet. Whether
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01 or not that's erosion or whether or not that's
02 deposition, you can't tell exactly from this
03 information. But if I could add this, what we have
04 found is that the area above 6390 appears to be a
05 deposition area, and that's where a lot of the material
06 from the lower playa is actually ending up. And so
07 it's building up in those areas.

08 Q I'd like to talk about how you selected 6390 as
09 the level which was going to be advocated by the Great
10 Basin Unified Air Pollution Control District. Is it
11 correct, Mr. Ono, that the Board of Directors of the
12 Great Basin Unified Air Pollution Control District
13 adopted a resolution that established 6390 as the
14 elevation which would be advocated by the Great Basin

15 Unified Air Pollution Control District in these
16 proceedings?

17 A Yes.

18 Q And when the Great Basin Unified Air Pollution
19 Control District Board of Directors was debating that
20 resolution, were there directors that wanted to support
21 a lower level?

22 A I don't know. I wasn't there at that meeting.

23 Q So you don't know what the individual members of
24 the District Board of Directors stated in the debate on
25 that resolution?

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01 A No, I don't.

02 Q Mr. Ono, when you were with the Environmental
03 Protection Agency, did it have a policy known as the
04 Fugitive Dust Policy?

05 A Yes.

06 Q What was the Fugitive Dust Policy?

07 A Specifically, the Rural Fugitive Dust Policy. It
08 allowed the exemption of some areas -- some rural areas
09 with small populations to not have to submit state
10 implementation plans for the total suspended
11 particulate standard for, I think this was started in
12 1977. And one of the things I would add to this as we
13 stated -- the Environmental Protection Agency stated in
14 their testimony, that policy no longer exists.

15 Q But at one point the Environmental Protection
16 Agency, when you were with the agency, had a policy of
17 allowing exemption from state implementation plans for
18 rural areas with small populations where the dust was
19 what was termed "fugitive dust;" is that correct?

20 A Yes. That's true.

21 Q Your testimony, your direct testimony talks about
22 the health effects associated with inhaling P.M.10. Is
23 that correct, Mr. Ono?

24 A It relates to the health effects as they are
25 explained for the standard, yes.

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01 Q Now, you are not an expert on the health effects
02 of P.M.10; is that correct?

03 A That's correct.

04 Q The dust which comprises the P.M.10 emitted from
05 the playa is composed of different elements than the
06 dust which was studied and served as the basis of the
07 federal P.M.10 standard; is that correct, Mr. Ono?

08 MR. FLINN: Objection. Lack of foundation.

09 HEARING OFFICER DEL PIERO: Sustained. Go ahead,
10 Mr. Birmingham. I'm interested in the line of
11 questions, but you need to lay a foundation.

12 Q BY MR. BIRMINGHAM: Are you familiar with the
13 studies, Mr. Ono, you relate them in your testimony,
14 that served as the basis of the federal P.M.10
15 standard?

16 A BY MR. ONO: I'm not familiar with the details of the
17 studies, but I know that some studies were done and in
18 general terms, I know of the studies, yes.

19 Q Is it correct that those studies generally
20 involved the study of the effects of urban pollutants?

21 A The studies were done in urban areas, but the
22 focus of the studies was on particle size, and in my

23 conversations with people who helped to set the
24 standard, they explained to me that the standard was
25 set purely on particle size and not on chemical
0090
01 composition of those particles. And so the concern was
02 for particles that would be small enough that they
03 would be inhaled, and so the studies, even though they
04 were done in urban areas, really reflected the size of
05 the particles. At least, that's how it was explained
06 to me by -- if I can say who it was Mr. John Bachman
07 (phonetic) -- or Dr. John Bachman (phonetic) at the EPA
08 in Washington D.C.
09 Q Now, when you were talking with Dr. Bachman
10 (phonetic) at EPA, did you discuss how different
11 elements that composed the P.M.10 might affect the
12 health effect that P.M.10 has on individuals?
13 A No, we didn't.
14 Q And if there were testimony in this proceeding
15 that the composition of the P.M.10 will affect how
16 P.M.10 affects the health of individuals, you wouldn't
17 have any basis for disputing that testimony, would you,
18 Mr. Owen?
19 MR. BRUCE: Objection. It's ambiguous. I mean,
20 what testimony is he offering under this hypothetical
21 that's been introduced?
22 HEARING OFFICER DEL PIERO: I want to sustain the
23 objection, Mr. Birmingham.
24 Q BY MR. BIRMINGHAM: You were present during the
25 testimony of Dr. Fedoruk; is that right, Mr. Ono?
0091
01 A BY MR. ONO: Yes, I was here.
02 Q Did you listen to the testimony of Dr. Fedoruk?
03 A Certainly.
04 Q Did you listen to the portion of the testimony of
05 Dr. Fedoruk where he opined concerning how the
06 composition of P.M.10 would effect the health affect
07 P.M.10 has on individuals?
08 A Yes, I did.
09 Q Now, you don't have any basis for disputing the
10 opinions expressed by Dr. Fedoruk, do you?
11 A No, I don't.
12 MR. HERRERA: Mr. Birmingham, that's 20 minutes.
13 MR. BIRMINGHAM: Can I ask for an additional ten
14 minutes, Mr. Del Piero?
15 HEARING OFFICER DEL PIERO: Granted.
16 Q BY MR. BIRMINGHAM: Mr. Ranzieri, I have just a few
17 questions for you. You reviewed the model developed by
18 TRC for Great Basin Unified Air Pollution Control
19 District; is that correct?
20 A BY MR. RANZIERI: We reviewed the model they applied,
21 yes.
22 Q You are with the California Air Resources Board;
23 is that correct?
24 A That's correct.
25 Q Do you know the question that was asked of Mr. Ono
0092
01 by Mr. Del Piero before the recess? Do you recall that
02 question?
03 A Could you repeat it, please?
04 Q He asked whether or not the California Air

05 Resources Control Board has the authority to direct
06 modification of, specific modification, of a state
07 implementation plan developed by a regional air quality
08 control district.

09 MR. OLIVER: Objection. Way way beyond the scope
10 of this witness' direct testimony.

11 MR. BRUCE: Also, lack of foundation.

12 MR. BIRMINGHAM: I asked him if he knew the answer
13 to the question.

14 HEARING OFFICER DEL PIERO: I'm going to overrule
15 the objections and -- do you know the answer to the
16 question, Mr. Ranzieri?

17 MR. RANZIERI: I do not.

18 Q BY MR. BIRMINGHAM: Fair enough.

19 Is it correct, Mr. Ranzieri, that in developing an
20 air dispersion model, the accuracy of the model depends
21 on the emission rates that are input into the model?

22 A BY MR. RANZIERI: Correct.

23 Q Now, you did not evaluate the emission rates that
24 were input into the TRC model; is that right?

25 A That is correct.

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01 Q And so isn't it correct that you really cannot
02 state with any certainty how accurate the dispersion
03 model is?

04 A We evaluate the methodology that was used in
05 carrying out those simulations. We did not evaluate
06 the emission rates, so we have no way of estimating --
07 "we" being my modeling group at the Air Resources
08 Board.

09 Q So you don't have any basis for expressing an
10 opinion concerning the accuracy of the model results,
11 just the methodology that was used?

12 A Methodology that was used, yes.

13 Q Now, in your testimony you state that the model --
14 actually, you state "it," and I presume you're
15 referring to the model, "It is a sound modeling
16 approach that reasonably estimates the ambient particle
17 concentration which may be anticipated from the exposed
18 playa of Mono Lake under various water level
19 scenarios"?

20 A Correct.

21 Q Now, with respect to that statement, you were
22 talking only about the methodology used by the model,
23 not the model results; is that right?

24 A That is correct.

25 MR. BIRMINGHAM: I have no further questions.

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01 HEARING OFFICER DEL PIERO: Thank you very much,
02 Mr. Birmingham.

03 Ms. Cahill? Who's doing air on behalf of the
04 Department of Fish and Game?

05 MS. CAHILL: I am.

06 HEARING OFFICER DEL PIERO: Okay. Great.

07 CROSS-EXAMINATION BY MS. CAHILL

08 Q Good morning. All of my questions are for
09 Ms. McKee. The rest of the panel can relax.

10 Good morning, Ms. McKee. Are you the hydrologist
11 for the Inyo National Forest?

12 A BY MS. McKEE: Yes, I am.

13 Q And so to the extent that I have questions that
14 are water related rather than air pollution related, I
15 can also ask you those questions?

16 A I guess so.

17 Q Are you familiar with the ongoing Federal Energy
18 Regulatory Commission relicensing process for Southern
19 California Edison's Lee Vining Creek project?

20 A I'm generally familiar with the process. It's
21 been going on for many years, much of which I wasn't
22 the hydrologist for the forest. But I'm generally
23 familiar with the process.

24 Q Insofar as FERC is looking at flows below the Pool
25 powerhouse, what stretch of the stream are they
0095 considering?

02 A I was not involved in that particular analysis,
03 although I have read the environmental assessment that
04 FERC wrote, and I recall that they stopped their
05 analysis at the L.A. diversion.

06 Q Thank you.

07 Are you aware of an agreement between Southern
08 California Edison and Los Angeles Department of Water
09 and Power regarding water storage in Saddlebag Lake,
10 which is the largest storage reservoir on the Lee
11 Vining Creek watershed?

12 A Yes.

13 Q And have you read that agreement?

14 A I don't believe so. It's been referenced in
15 numerous meetings, and I don't recall having seen a
16 copy.

17 Q Do you have any opinion on whether, if Saddlebag
18 storage can be controlled by that agreement to some
19 extent by Los Angeles Department of Water and Power,
20 whether that means that storage could be controlled to
21 affect flows at the Lee Vining diversion structure?

22 MR. BIRMINGHAM: May I ask that that be reread,
23 Mr. Del Piero?

24 (Whereupon the record was read as requested.)

25 MR. OLIVER: Objection. She's already testified
0096 she hasn't read the agreement.

02 HEARING OFFICER DEL PIERO: Sustained.

03 MS. CAHILL: Actually, Mr. Del Piero, I would like
04 to ask Mr. Birmingham if he would make that agreement
05 available.

06 MR. BIRMINGHAM: I don't have a copy of the
07 agreement. I can ask the Department of Water and Power
08 to send me a copy and if --

09 HEARING OFFICER DEL PIERO: Is it a public
10 document?

11 MR. THOMAS: Mr. Downey's here. Perhaps we can
12 ask --

13 HEARING OFFICER DEL PIERO: Mr. Birmingham, is it
14 a public document?

15 MR. BIRMINGHAM: I would imagine that it is a
16 public document. Mr. Downey states that all of the
17 Department's documents are public. I don't think I
18 want to go quite that far, but we will try --

19 HEARING OFFICER DEL PIERO: And given the way
20 malpractice is these days, I can understand that.

21 MR. BIRMINGHAM: But I will try to get a copy of
22 it and provide it to the Department of Fish and Game.
23 If we do, we will stipulate its admission into the
24 record.
25 HEARING OFFICER DEL PIERO: Can we see if we can
0097
01 secure that by the end of the week?
02 MR. BIRMINGHAM: I'll try and have a copy sent to
03 us by overnight mail so it will be here tomorrow.
04 HEARING OFFICER DEL PIERO: Thank you very much.
05 Please proceed.
06 Q BY MS. CAHILL: Just one last question, Ms. McKee.
07 Actually, it's not one last question, it's one last
08 line of questions.
09 I have given you a document that's entitled State
10 and Federal Agencies Memorandum of Understanding,
11 California's Coordinated Regional Strategy to Conserve
12 Biological Diversity. Have you seen this document
13 before?
14 A BY MS. McKEE: Yes, I have.
15 Q And has the Forest Service executed this document?
16 A The Forest Service has signed the document.
17 Q And do you understand this document to provide
18 that the maintenance and enhancement of biological
19 diversity will be a pre-eminent goal in the signatory
20 parties' protection and management policies? And that
21 would be found in Section Roman Numeral III-A of the
22 agreement.
23 HEARING OFFICER DEL PIERO: Do you know the
24 answer?
25 MS. McKEE: Could you repeat the question?
0098
01 Q BY MS. CAHILL: Is it your understanding that under
02 the terms of this Memorandum of Understanding, the
03 parties who signed the agreement agree to make the
04 maintenance and enhancement of biological diversity a
05 pre-emminent goal in their protection and management
06 policies?
07 A BY MS. McKEE: That's my understanding from looking
08 at the document.
09 MS. CAHILL: Mr. Del Piero, I would like to have
10 this marked as DFG Exhibit 78. And I would also move
11 its admission.
12 HEARING OFFICER DEL PIERO: Any objections? This,
13 just for my edification, I haven't had a chance to go
14 through it, but I think this is the Nat Catcher
15 Strategy, is that --
16 MS. CAHILL: Like Bruce Dodge, I'll say I just ask
17 the questions.
18 HEARING OFFICER DEL PIERO: I think I'm right.
19 MS. CAHILL: And that's, in fact, all the
20 questions I'm going to ask at this time. Thank you so
21 much.
22 HEARING OFFICER DEL PIERO: It'll be ordered into
23 the record.
24 (DFG Exhibit No. 78 was marked
25 for identification and
0099
01 admitted into evidence.)
02 MR. BIRMINGHAM: In fact, Mr. Dodge is not here,

03 but he offers the answers to the questions most of the
04 time.

05 HEARING OFFICER DEL PIERO: I'm reading Herb Caen
06 regularly now to make sure that I can find something
07 for him before the end of the process.

08 MR. GIPSMAN: But I will take the risk of
09 answering the question and say this is not.

10 HEARING OFFICER DEL PIERO: This is not the Nat
11 Catcher.

12 MR. GIPSMAN: No. It's just a general statement
13 of principles among the signatories that were working
14 for biodiversity.

15 HEARING OFFICER DEL PIERO: What was the date on
16 this document? Ms. Cahill do you know, or
17 Mr. Gipsman? There's no date here that's why I was
18 wondering.

19 MR. GIPSMAN: It's at least a year old. I don't
20 recall when I read it last.

21 HEARING OFFICER DEL PIERO: This was not the
22 precursor to the ultimate resolution on the Nat
23 Catcher?

24 MR. GIPSMAN: It may have been an umbrella
25 document --

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01 HEARING OFFICER DEL PIERO: It thought it was. I
02 think it is. I'm not positive of that. We'll look.
03 We'll check.

04 Mr. Flinn.

05 MR. FLINN: Good morning. I want to begin by
06 commending Ms. Cahill for her courage. It's a rare
07 person who is willing to compare themselves to Bruce
08 and adopt any of his particular mannerisms, and
09 courageous it was.

10 CROSS-EXAMINATION BY MR. FLINN

11 Q Good morning. My name is Patrick Flinn. I'm one
12 of the lawyers for the National Audubon Society and
13 Mono Lake Committee, and I've got a few questions.

14 HEARING OFFICER DEL PIERO: Did you have a good
15 holiday, Mr. Flinn?

16 MR. FLINN: I did. I did. I do want to point out
17 that today was supposed to be the first day of my
18 parental leave, a three-month leave. I don't believe
19 that my spouse has taken to tying a ribbon around a
20 tree in front of our house in Atlanta, Georgia, but
21 that's going to happen any day, I think. With that in
22 mind, I'll try to be as brief as I can.

23 I want to start, Mr. Ono, with a question to
24 follow up on an area Mr. Birmingham asked you about,
25 and I think this is to you, but anybody who wants to

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01 answer this -- and that has to do with whether there is
02 a difference between dust that comes from the exposed
03 lake bed playa as opposed to the dust that may be
04 generated from the roads or the disturbed areas of
05 general dirt that's out there on the desert.

06 Do you have an opinion, Sir, as to whether or not
07 the P.M.10 concentrations that were measured exceeding
08 federal and state law were caused simply by blowing
09 generic desert dust or whether they were caused by the
10 exposed lake bed?

11 MR. BIRMINGHAM: I'll object on the grounds it
12 lacks foundation.
13 HEARING OFFICER DEL PIERO: I'm going to sustain
14 the objection.
15 Q BY MR. FLINN: I'll lay this foundation. Mr. Ono, in
16 the years of study that you've done of the air quality
17 problem, have you had the opportunity to observe the
18 sources of blowing dust?
19 A BY MR. ONO: Yes.
20 Q And have you studied the method by which dust is
21 emitted from the features at Mono Lake?
22 A Yes.
23 Q And have you had the opportunity to observe both
24 dust that may be blown from the surrounding desert area
25 as well as dust that may be blown from the exposed lake

0102

01 bed playa?
02 A I would have to admit that I have not seen dust
03 blowing from the surrounding desert area in the Mono
04 Basin. I have seen dust coming from the pit that's
05 south of Mono Lake and from the playa, but I have not
06 seen it from other areas other than in this video from
07 the balcony of the visitor's center.
08 Q Are you familiar with comparisons, elemental
09 comparisons, of the material found in both the TSP
10 filters and the P.M.10 filters on the Great Basin's
11 samplers?
12 A I am familiar with some of the information, yes.
13 Q And are you aware that these showed that there is
14 a difference in the composition of dust that comes from
15 the exposed lake bed playa as opposed to dust that
16 comes from the surrounding area in the desert itself?
17 A In the Mono Basin. I never looked at that, so I'm
18 not --
19 Q You have been able to compare P.M.10 sampling data
20 from areas that are in the path of dust blown from the
21 exposed lake bed and areas like in Lee Vining that are
22 not in the path of that dust; is that right?
23 A Yes.
24 Q And how do they compare?
25 A Actually, I haven't looked at the TSP to P.M.10

0103

01 ratio, but I have looked at the concentrations
02 themselves and the concentrations in Lee Vining, which
03 is generally up wind of the dust storms, is very clean,
04 and the concentrations of Simis and Warm Springs, which
05 are on the downwind side of the eroding playa, are
06 extremely high. In this one case on May 3rd, we had a
07 concentration of 41 at Lee Vining and over 400 at Simis
08 Ranch, and I think that Ken Richmond, who has reviewed
09 the P.M.10 data for Lee Vining, can tell you that the
10 concentrations over the five-year period we looked at
11 were extremely low in Lee Vining even during all the
12 dust storms.
13 Q Are there any measured P.M.10 concentrations in
14 Lee Vining in excess of 150 micrograms per cubic meter?
15 A No, there were not.
16 Q And approximately how many were measured in the
17 area that's in the path of the playa?
18 A I don't have a number.

19 Q Is it approximately on the order of from 88 to 92,
20 a dozen or so?
21 A That would make sense, yeah.
22 Q Based on that comparison, Lee Vining, not in the
23 path of the playa dust and Simis in the path of the
24 playa dust, do you have an opinion as to whether or not
25 it's the playa dust causing the Clean Air Act
0104
01 violations?
02 A Yes.
03 Q What is that opinion, Sir?
04 A That opinion is that it is definitely the playa
05 dust that's causing the exceedences of the P.M.10
06 standard in the Mono Basin.
07 Q Okay. Now, Mr. Ono, I believe you were asked an
08 opinion about Dr. Fedoruk's testimony and whether or
09 not you agreed or had ability to agree or disagree with
10 some of his. I'd like to read to you some of his
11 testimony that he gave on November 16th, 1993, on Page
12 42 of the transcript and just simply ask you the same
13 question as Mr. Birmingham when I'm done, do you have
14 any reason to disagree with Dr. Fedoruk.
15 I read Dr. Fedoruk's written testimony of the
16 people who actually live out there in the north shore
17 area, and I asked him the following question.
18 "Question. Assuming that this is a typical
19 experience for someone who has to live out there, would
20 you characterize that as not some kind of public health
21 problem? Answer. No. I think that does represent
22 some type of public health problem."
23 Do you have any basis for disagreeing with
24 Dr. Fedoruk on that testimony?
25 A No. In fact, I agreed with that statement that it
0105
01 is a public health problem.
02 Q Now, earlier, we had testimony in this proceeding
03 from the Environmental Protection Agency and this was,
04 I believe, Mr. Calkins, and he was asked some questions
05 about the timing of complacency with the Clean Air Act.
06 Since his testimony, has the Great Basin Unified Air
07 Pollution Control district received correspondence from
08 the EPA on timing questions?
09 A Yes, we have.
10 Q I want to show you what's been marked as Exhibit
11 246. National Audubon Society and Mono Lake Committee
12 Exhibit 246.
13 MR. BIRMINGHAM: May I take a look that the,
14 please?
15 MR. FLINN: Yeah. You've got your own copy
16 there.
17 MR. BIRMINGHAM: Before you ask any questions,
18 Mr. Flinn, may I be given a moment?
19 MR. FLINN: Sure. Sure.
20 Q BY MR. FLINN: Can you identify Exhibit 246 as the
21 correspondence the Great Basin received from the EPA?
22 A BY MR. ONO: Yes, it is.
23 Q And can you summarize for us what the EPA has told
24 Great Basin about the time line for complacency with
25 the Clean Air Act?

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01 A Okay. Under the Federal Clean Air Act, there are
02 certain deadlines that have to be met in terms of
03 submitting a state implementation plan or an air
04 quality plan to show how the area would come into
05 attainment and dates when compliance of the standard
06 has to be met. There are, in addition, extensions that
07 are available under some circumstances.

08 Basically, what we're given is based on the
09 redesignation date of the Mono Basin to non-attainment,
10 which occurred on December 29th, 1993. We are now
11 given 18 months, which brings us to June 29th, 1995, to
12 develop a state implementation plan or air quality plan
13 that will show how we bring the Mono Basin into
14 attainment with the federal air quality standards.

15 And just to be brief, there are about three
16 extensions that can be given, and this brings us to
17 about 16 years from now where, at that point, the final
18 extension can be given, and that would require that we
19 submit a plan that shows that we can reduce the
20 emissions by 5 percent per year and ultimately reach
21 the standard.

22 And that brings it out to about December 31st,
23 2009, for the final plan.

24 Q You mentioned the redesignation. I will now show
25 you a copy of of the Federal Register, which we've
0107

01 marked as National Audubon Society and Mono Lake
02 Committee Exhibit 255, and ask you if this is the
03 publication of the final determination of the EPA of
04 Mono Basin as a non-attainment site for P.M.10 under
05 the Federal Clean Air Act?

06 A Yes, it is.

07 Q Mr. Ono, you and Ms. McKee were asked a certain
08 number of questions about the typicality of the storm
09 and the adjusted 24-hour -- I'll just throw my question
10 out over here.

11 You were asked questions about a May 3rd storm
12 that had a measured concentration of some 800, but if
13 you adjusted it for 24 hours, it was down to about
14 400. Do you recall that testimony?

15 A Yes.

16 Q Now, if you could look at -- I'm not sure of the
17 exhibit number, but it is the modeling report that
18 Mr. Richmond provided entitled Draft Mono Lake Air
19 Quality Modeling Study. If you could find that
20 document --

21 A Okay.

22 Q Let me just double-check with the -- I believe
23 that's Exhibit 10. And if you look at Page 16, Table 5
24 of that document.

25 A All right.

0108

01 Q Does this contain a table of observed -- among
02 other things, observed P.M.10 concentrations measured
03 at both Simis and Warm Springs sites?

04 A Yes, it does.

05 Q Now, the table speaks for itself, but I will just
06 represent to you that I counted the observations or the
07 days in which there was an exceedence of 150, and I
08 found approximately a dozen or so, 11, 12, I don't

09 remember exactly, about 11 or 12 exceedences. Let me
10 also represent to you that I counted the number of them
11 that were 400 or above at either Simis or Warm Springs,
12 and I found that there were about six.

13 Assuming that that is correct and that I counted
14 approximately accurately, it would be then fair to
15 characterize a storm of approximately 400 micrograms
16 per cubic meter typical of a storm that exceeds the
17 standard.

18 A One of the things about this table is that -- and
19 maybe Ken, you can help me if I'm wrong, is that the
20 observed values are the real values that we measured
21 for sometimes shorter periods.

22 Q So these are unadjusted for 24 hours.

23 A They're unadjusted. To do the comparison to the
24 model predictions we compare over the same time period,
25 not over the adjusted 24-hour period.

0109

01 Q So you --

02 A But there's no reason to believe that the number
03 of times that the value at Simis Ranch or at Warm
04 Springs could be over 400 is any different from what
05 you're stating.

06 Q Okay. The 24-hour concentration is a function
07 both of how much dust there is in any one five-minute
08 segment as well as for how long the dust storm blows,
09 whether it blows one hour or 20 hours; is that right?

10 A Yes.

11 Q And so that if one were to assume that this video
12 depicted simply what five minutes of a dust storm had,
13 even if it blew for 20 hours and this was a high
14 concentration as opposed to five hours and being a
15 lower concentration, it would again be fair to
16 characterize that as a typical dust event. Is that
17 right?

18 A The length of the dust events varies tremendously,
19 and I really couldn't say what's typical.

20 Q Okay. Finally, I want to ask you some questions
21 about a report that I believe was Attachment F to
22 Dr. Groeneveld's declaration. It's a Great Basin
23 Exhibit 30. But my questions may end up in Mr. Ono's
24 lap and yours, Dr. Groeneveld. This is a report by
25 someone named David D. Rogers.

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01 Mr. Ono, are you familiar with this report at
02 all?

03 A BY MR. ONO: I have read it, but I would refer the
04 questions to David, who is more familiar with this than
05 myself.

06 Q Let me ask you if you could take a look at -- it
07 doesn't have page numbers on it, but Figure 5 of that
08 report.

09 A What exhibit number is it?

10 Q 30.

11 A 30.

12 Q It's after Page 9. There'd be a cross section,
13 the Ten Mile Road area of the Mono Basin shoreline.

14 A Yeah. I have it.

15 Q Okay. When you reviewed the report, did you
16 happen to look at this figure?

17 A Yes.
18 A BY DR. GROENEVELD: Yes.
19 Q You did, doctor?
20 A I did.
21 Q Mr. Ono, did you look at it?
22 A BY MR. ONO: I saw it, but I didn't look at it in
23 detail. Again, I refer to Dr. Groeneveld.
24 Q Dr. Groeneveld, does this chart tell us how close
25 to the surface of the Ten Mile Road area the water
0111
01 table is?
02 A BY DR. GROENEVELD: Yes, it does.
03 Q And as a general matter, does this show us that
04 from approximately a little bit above 6400 down to the
05 lake, itself, that the water table actually curves and
06 is fairly parallel to the slope of the lake -- exposed
07 lake bed surface?
08 A Yes, it does.
09 Q Now, Mr. Ono, are you familiar with the process
10 of the creation of the efflorescent salt crust?
11 A BY MR. ONO: Yes.
12 Q And is the efflorescent salt crust the surface
13 condition on the playa that produces the material
14 that's generated -- that emits in these dust storms?
15 A It's some of it, yes.
16 Q Now, you're familiar with Mr. Pinsonnault's
17 testimony in this proceeding?
18 A Yes.
19 Q And you understand that among other things
20 Mr. Pinsonnault expressed the view that possibly
21 raising the lake level wouldn't necessarily solve the
22 air quality problem because it would raise the water
23 table and thus make areas that are not now efflorescent
24 become efflorescent. Do you recall that part of his
25 testimony?
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01 A Yes. Yes.
02 Q Assuming that Figure 5 is an accurate depiction of
03 the relative position of the water table, do you have
04 an opinion as to whether or not Mr. Pinsonnault's
05 concern is well founded?
06 A In my opinion, there's no foundation for his
07 opinion. There's nothing to support this conclusion
08 that there's, what I would term, an expanding doughnut
09 as the lake level rises.
10 Q In fact, Dr. Groeneveld, if Table 5 is correct,
11 the relative position of the water table to the
12 surface -- I need to ask a foundational question.
13 Dr. Groeneveld, is it correct that this
14 efflorescent crust is created by the presence of
15 subsurface water close to the surface of the lake bed
16 playa?
17 A BY MR. ONO: Yes.
18 A BY DR. GROENEVELD: Yes.
19 Q Both of you. Good. And so. Dr. Groeneveld, is it
20 correct that the rising of the lake level, as between
21 6400 and say 6375, would not make much difference with
22 regard to the closeness of the water table to the lake
23 surface?
24 A In this zone of the lake, that's correct, and the

25 reason being that the water level is controlled mostly
0113
01 by the position of the silt layers which are of poor
02 permeability underneath. Otherwise, if it was all just
03 unconsolidated material, it would drain down, and you'd
04 get a lower level. So the water level in the beach is
05 not affected in that zone by the lake level.
06 Q And this is one of the zones that, in fact,
07 contributes to, Mr. Ono, the emission of dust in the
08 storms; is that right?
09 A BY MR. ONO: Yes, it is.
10 Q One last question on the timing with regard to the
11 complacency with the Clean Air Act. Let me ask you to
12 assume that there will be direct testimony submitted by
13 the National Audubon Society, the Mono Lake Committee,
14 that a 6390 lake level can be reached in the future
15 along the following time schedules, that if we have the
16 wettest sequence of years in the historical record in
17 the future, the lake could reach 6390 in as few as six
18 to nine years, and that if you had the driest sequence
19 in the historical record, the lake could reach 6390 in
20 as long as 21 years.
21 Is that consistent with -- so we have a range, a
22 bracket of potential complacency with the Clean Air
23 Act. To your understanding, is that kind of range
24 consistent with the complacency schedule that you now
25 understand the EPA to be giving?

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01 MR. BIRMINGHAM: Objection. Calls for a legal
02 conclusion.
03 MR. FLINN: I'll withdraw the question. I have no
04 further questions.
05 HEARING OFFICER DEL PIERO: Thank you very much,
06 Mr. Flinn.
07 Mr. Roos-Collins? There you are.
08 MR. ROOS-COLLINS: Good morning.
09 HEARING OFFICER DEL PIERO: Good morning, Sir.
10 I would note for the record that the State Water
11 Resources Control Board's resident expert on P.M.10,
12 Mr. John Brown, joined us earlier, and also Mr. Bruce
13 Dodge has joined us. Mr. Flinn was making all kinds of
14 wonderful accolades about you earlier.
15 MR. DODGE: I'm sure they're all on the record.
16 (Laughter.)
17 HEARING OFFICER DEL PIERO: Those of them fit to
18 print.
19 Please proceed.
20 MR. DODGE: I'm glad to see that you haven't lost
21 your good humor.
22 HEARING OFFICER DEL PIERO: Thank you. Did you
23 have a good holiday, Sir?
24 MR. DODGE: Yes, I did.
25 HEARING OFFICER DEL PIERO: Good for you.

0115
01 CROSS-EXAMINATION BY MR. ROOS-COLLINS
02 Q Good morning. I'm Richard Roos-Collins, attorney
03 for California Trout in this proceeding.
04 Ms. McKee, my questions are for you. Your written
05 testimony describes four petitions for water use. You
06 are a hydrologist, correct?

07 A BY MS. McKEE: Correct.
08 Q You're not a fish biologist?
09 A No. I'm not a fish biologist.
10 Q So you would have no opinion as to the impact of
11 these petitions, if granted, on the fish in Lee Vining
12 Creek?
13 A No.
14 Q Do you have your written testimony before you?
15 A Yes, I do.
16 Q Paragraph 2 on Page 3, the first line refers to
17 "the plan," capital P. Which plan are you referring
18 to?
19 A The Comprehensive Management Plan.
20 Q And that is the Comprehensive Management Plan for
21 the Inyo National Forest?
22 A For the Mono Basin National Forest Scenic Area.
23 MR. ROOS-COLLINS: Thank you. No further
24 questions.
25 HEARING OFFICER DEL PIERO: Thank you very much,
0116
01 Mr. Roos-Collins.
02 Mr. Valentine or Ms. Scoonover.
03 MS. SCOONOVER: We have no questions of this
04 panel.
05 HEARING OFFICER DEL PIERO: No questions. It's
06 nice to see you back from Minnesota.
07 MS. SCOONOVER: Thank you.
08 HEARING OFFICER DEL PIERO: Ms. Niebauer's not
09 here. Mr. Haselton is not here. I guess that means
10 Mr. Frink.
11 MR. FRINK: Yes, I do have a few, Mr. Del Piero.
12 Thank you.
13 CROSS-EXAMINATION BY THE STAFF
14 Q BY MR. FRINK: Mr. Richmond, your written statement
15 indicated that in your modeling study, you used the ISC
16 model. Did you use the ISC model because it is the
17 model that is presently approved by the U.S. EPA?
18 A BY MR. RICHMOND: That is one of the reasons, yes.
19 Q I believe you also stated that you believe that
20 the FDM model is a scientifically more accurate model,
21 but that the FDM model and the ISC model produced
22 similar results in analyzing air quality in the Mono
23 Basin. Is that correct?
24 A That's correct. In this application, they're very
25 similar.
0117
01 Q Could you explain the reasons that you believe
02 that the FDM model would be more accurate from a
03 scientific standpoint?
04 A Yes, I can. The model was written to solve
05 problems of the plume depletion and deposition from
06 coarse particles. By "coarse," I mean typically 30
07 microns or between 20 and 30 microns and above, and the
08 algorithms that are obtained in the model are, in my
09 opinion, more scientifically correct than they are in
10 the ISC model.
11 The second area where the FDM model, in my
12 opinion, has a better way of simulating things is the
13 area source algorithm, and the FDM, in my opinion, is
14 more precise than the area source algorithm in ISC.

15 Q I'll pretend like I understood all of that.
16 HEARING OFFICER DEL PIERO: Mr. Frink, I
17 understood it.
18 Q BY MR. FRINK: I take it that the fact that the FDM
19 model has not been approved by the EPA, then, would not
20 dissuade you from placing credence in the results of
21 the output of that model in this instance; is that
22 correct?
23 A BY MR. RICHMOND: That's correct.
24 MR. FRINK: I believe that's all the questions I
25 have.

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01 HEARING OFFICER DEL PIERO: Thank you very much.
02 Mr. Smith?
03 MR. SMITH: Yes. I had a couple of questions from
04 Mr. Satkowski --
05 HEARING OFFICER DEL PIERO: I don't believe he's
06 under oath here, Mr. Smith.
07 Q BY MR. SMITH: Mr. Satkowski, before he left, asked
08 some general questions about some of the EIR runs and
09 the averages and medians that you were talking about.
10 In doing some computer runs with the early version
11 of the LAMP model, that's a computer model for
12 averaging lake levels, we came up with a median of
13 about 6387.5 from 6376.5 up to a maximum of about
14 6395. Now, that was a median, and we have an average
15 in the EIR Figure 3-A-20, I believe it is, shows that
16 after the lake level has gotten to 6390, an average
17 would be about 6392.5, or somewhere around that.
18 You've been mentioning 92 as an average, and this
19 brings me to my question, now.
20 What is the 6392 for you? Is that an average that
21 you try to attain? Is that a median? Is that, in a
22 fancy statistical sense of the word, is that a minimum
23 at the low end that you'd want to attain? For any one
24 of you who'd like to --
25 A BY MR. ONO: The 6392 level was based on our

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01 modeling, which was done at 6393 feet, and the one foot
02 difference is because we believe that there may be a
03 one-foot vertical buffer zone between the lake level
04 and where the erodible area starts, and this is one of
05 the things that we observed in our testing of the lake
06 bed playa.
07 And the 6390-foot alternative, if it does have an
08 average lake level of 6392.5, that would satisfy our
09 requirement for meeting the ambient air quality
10 standard. As I mentioned before, the standard is a
11 statistically based standard, so it does allow some
12 exceedences on the standard. It doesn't mean that you
13 have to meet it, you know, every year. You could have
14 two exceedences one year and none the next, and so if
15 the lake level goes low and we do have exceedences, you
16 could make up for that in high water years where it's
17 higher and you would have no exceedences. So, idea is
18 that this would average out in the number of
19 exceedences as well as averaging the lake level.
20 Q Okay. A couple of other questions. Can you give
21 me an approximation of the percentage of the playa more
22 that would be covered? How much more would be covered

23 at 6390? Are you covering 50 percent of the exposed
24 playa now? Are you going to be covering about 65
25 percent? I heard all sorts of figures. Does anyone

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01 have any idea?

02 A We have some figures, if you'd like us to --

03 Q Brief. I don't want a dissertation on it, but if
04 we could just get some approximation.

05 A BY MR. RICHMOND: I can speak to the areas that were
06 monitored, the different lake levels, if you like. For
07 6393 more source boundary which, as Duane said,
08 corresponds to a 6392 lake level, that's approximately
09 2.77 million square meters -- sorry for the units. If
10 somebody wants to do the conversion -- as opposed to
11 when we modeled or compared our model with ambient
12 observations, we assumed a typical lake level on the
13 order of 6376. The total source area under that
14 configuration was 1.98 times ten to the seventh meters
15 squared. So what's that, roughly eight times?

16 Q Okay. We can work out a simple percentage on
17 that. Thank you.

18 One last question. I heard some mention, I think,
19 of the fact that you had considered using sprinklers
20 for mitigation, covering the playas. That was
21 mentioned. I have only one question. Were they pop-up
22 sprinklers, or were they --

23 A BY MR. SCHADE: It was a solid set of an above-ground
24 aluminum pipe with 18-inch or 24-inch risers coming out
25 of that pipe. They didn't disappear.

0121

01 MR. SMITH: That's all the questions I have.

02 HEARING OFFICER DEL PIERO: Thank you.

03 Mr. Herrera?

04 MR. HERRERA: I have no questions, Mr. Del Piero.

05 HEARING OFFICER DEL PIERO: Mr. Canaday?

06 Q BY MR. CANADAY: The first questions I have are for
07 Ms. McKee. You testified that you were familiar with
08 the goals and objectives of the scenic area management
09 plan; is that correct?

10 A BY MS. McKEE: That's correct.

11 Q And in that plan, in your testimony, it identifies
12 that it's the goal of the plan to protect the geologic,
13 ecologic, cultural, scenic, and other natural
14 resources; is that correct?

15 A Yes.

16 Q Further, in your testimony, I believe it's Point 6
17 on Page 4, your statement reads, "We were mandated by
18 law, both by the Scenic Area Legislation and by the
19 Clean Air Act, to protect the scenic area resources and
20 human health from anthropogenic dust events like the
21 events you've just seen," and you're referring to a
22 videotape. I want to read you two statements from
23 previous testimony from Dr. Fedoruk and see if you
24 agree if that's consistent with the goals and
25 objectives of the management plan. I'm reading from

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01 Section 6, Page 105 and Point 6, Dr. Fedoruk's

02 testimony. "The population potentially exposed to dust
03 storms resulting from emissions from the playa is

04 extremely small. Consequently, if the lake were raised

05 and the number and extent of dust storms were lessened,
06 this benefit would only accrue to an extremely small
07 segment of the population."

08 How would you react to that statement?

09 MR. BIRMINGHAM: Objection. Lacks foundation.

10 HEARING OFFICER DEL PIERO: I'm going to sustain
11 the objection. You can ask some foundational
12 questions.

13 Q BY MR. CANADAY: Do visitors uses these particular
14 areas on the north and eastern shores of the lake?

15 A BY MS. McKEE: All of the areas of the Mono Basin
16 scenic areas are open for public use and yes, visitors
17 do use those areas.

18 Q Would you characterize the use as extremely small
19 as compared to other use areas around the lake margin?

20 A I'm not qualified to make that judgment.

21 Q In the Simis and Warm Springs area, those areas
22 are not paved; is that correct? To your recollection?

23 A I don't know.

24 Q Mr. Ono, Jones and Stokes used the FDM model in
25 their modeling effort of air quality; is that correct?

0123

01 A BY MR. ONO: Yes.

02 Q And did Jones and Stokes consult with Great Basin
03 Air Pollution Control District prior to choosing a
04 model in that modeling effort?

05 A Yes, they did.

06 Q What was your recommendation of a model that they
07 use?

08 A I did not specifically recommend a model. I
09 realized that they had a choice between FDM and ISC. I
10 suggested that they consult with the EPA find out what
11 the appropriate model would be for the Mono Basin, and
12 I can't say what happened after that.

13 Q Mr. Ranzieri, you also looked at the -- did you do
14 a similar kind of analysis on the FDM model that Jones
15 and Stokes used as you did on the ISC ST-2 model that
16 was used by the Great Basin?

17 A We did not.

18 Q Do you have any reason to believe that the FDM
19 model would not provide reasonable results?

20 A If it were applied properly with appropriate input
21 data, it would probably give very similar results.

22 Q Mr. Ono, currently, how many sites does the Great
23 Basin have in the Mono Basin for monitoring air quality
24 events?

25 A Currently, we have two.

0124

01 Q Two. And those are located --

02 A At Lee Vining and at Simis Ranch.

03 Q Can you point on the map to approximately where
04 Simis Ranch is? The map that we're talking about is in
05 the Mono Lake EIR and is Figure 1-2.

06 A Okay. The Simis Ranch site is a little bit west
07 of Ten Mile Road as is indicated on this map and
08 probably about a mile from the water. The Lee Vining
09 site is located at the CalTrans yard on the north side
10 of Lee Vining.

11 Q And let me ask you a hypothetical. In the state
12 implementation plan that the Great Basin Air Pollution

13 Control District would be required to develop, do you
14 believe that more monitoring stations would be
15 necessary than those existing currently?

16 A I don't know.

17 Q I'd like to refer you to the Great Basin's Exhibit
18 20 and on Page 6 of that exhibit.

19 A Okay.

20 Q Could you describe what that exhibit or that
21 portion of the exhibit explains?

22 A What this is is the labels that we put on the
23 different sections of the Mono Lake playa, the exposed
24 playa on the north shore near Ten Mile Road.

25 Q And the reason for identifying different levels or
0125 bands on the playa is based on what criteria?

02 A Well, there are physical barriers or physical
03 differences between those areas. There are wave cut
04 platforms or the terraces between these playas, and so
05 there are distinct changes in the elevation as you go
06 from the lower playa, to the middle playa, to the upper
07 playa.

08 Q Are there any changes in source material or
09 particle size material that may be a source of P.M.10
10 based on these different levels?

11 A We have seen differences in the types of material.
12 The black cinder terrace on the part above 6400 feet is
13 mostly coarse material coming from the Black Point type
14 cinders. Below that on the upper playa area, we see a
15 coarser material, mostly sand. Some salts are in that
16 area, and the lower-middle playa area have a lot of
17 salt during some periods of the year and then later go
18 into sand. These are generalizations and are not
19 specific to any one time.

20 Q Are the sand fractions in the middle and lower
21 playas, are they of a different aerodynamic size than
22 the upper playa?

23 A We haven't really done any analysis of that, so I
24 can't tell you exactly what the differences are.

25 Q In the general P.M.10 condition, does sand play a
0126 major portion of the P.M.10, or is it a minor portion?

02 And by "minor," I mean 10 percent or less.

03 A I can't really answer that.

04 MR. CANADAY: That's all I have. Thank you.

05 HEARING OFFICER DEL PIERO: Thank you very much.

06 Mr. Canaday.

07 Mr. Birmingham -- pardon me, I'm sorry. We've got
08 redirect. We're going to start -- I'm sorry.

09 Mr. Dodge?

10 MR. DODGE: I just had a procedural point.

11 MR. BIRMINGHAM: I am not surprised.

12 HEARING OFFICER DEL PIERO: This is the first of
13 the new year.

14 MR. DODGE: Happy New Year.

15 HEARING OFFICER DEL PIERO: Happy New Year to
16 you.

17 MR. DODGE: We sat last Friday at five o'clock to
18 set out subject matters of rebuttal, and we set five
19 o'clock today to set out people who might respond to
20 specific subject matters. And then we have the

21 rebuttal testimony itself, as I understand it, coming
22 in on Wednesday, most of it, and the rest of it on
23 Friday.

24 I don't think, realistically, that's workable. I
25 mean, we've got subject matters from Los Angeles like
0127

01 William Platt's, "stream restoration." I don't know
02 what that man's going to testify about, Mr. Del Piero,
03 and I don't know how I can be expected today or how you
04 can limit me today as to who I might call to respond to
05 him. It's just very, very general.

06 HEARING OFFICER DEL PIERO: I'll tell you what.
07 We'll talk about this off the record. We're going to
08 break for lunch. I'd like all the attorneys for all of
09 the parties to come up here after break. Okay?

10 Ladies and Gentlemen, we'll return here at 1:15.
11 (Whereupon the lunch recess was taken.)

12 HEARING OFFICER DEL PIERO: Ladies and Gentlemen,
13 this hearing will again come to order. When last we
14 left, we were getting ready for redirect.

15 Now, Mr. Bruce, I think you were on first, and
16 then Mr. Gipsman and then Mr. Oliver; is that correct?

17 MR. BRUCE: Yes, Sir. We have no further direct
18 testimony. Would this be the appropriate point in time
19 to move into evidence what's been marked for
20 identification --

21 HEARING OFFICER DEL PIERO: After recross.

22 MR. BRUCE: Thank you.

23 HEARING OFFICER DEL PIERO: Mr. Gipsman?

24 MR. GIPSMAN: I have no redirect.

25 HEARING OFFICER DEL PIERO: Thank you very much.

0128

01 Mr. Oliver?

02 MR. OLIVER: And likewise, I have nothing further,
03 Mr. Del Piero.

04 HEARING OFFICER DEL PIERO: Thank you very much,
05 Sir.

06 Mr. Birmingham?

07 RE-CROSS-EXAMINATION BY MR. BIRMINGHAM

08 Q During his cross-examination, Mr. Flinn asked some
09 questions about Figure 5 in Great Basin Exhibit -- I
10 believe it's 30. Is that correct, Mr. Flinn?

11 MR. FLINN: Yes.

12 Q BY MR. BIRMINGHAM: And it was a cross section of the
13 groundwater table near Ten Mile Road. Mr. Ono, do you
14 recall those questions?

15 A BY MR. ONO: Those were directed to Dr. Groeneveld.

16 Q I'm sorry?

17 A I believe those questions were directed to
18 Dr. Groeneveld.

19 Q Dr. Groeneveld, do you know, does the
20 cross-section that's depicted in Figure 5 of Great
21 Basin Unified Air Pollution Control District Exhibit 30
22 depict the groundwater table that underlies the entire
23 area of the playa?

24 A BY DR. GROENEVELD: No. That's just a Ten Mile Road
25 cross-section there.

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01 Q And the groundwater table that's depicted in
02 Figure 5 may or may not exist in a similar condition in

03 other areas of the playa; is that correct?

05 seeing here at Ten Mile Road, I've observed for the
06 majority of that north beach zone from here on into

08 Q So looking at Figure 1 from the Draft
09 Environmental Impact Report, you've observed a similar
11 Warm Springs?
12 A Yes. Yes, I have.

14 table that underlies the area of the playa west of Ten
15 Mile Road?
17 Road. I've taken no other measurements.
18 MR. BIRMINGHAM: I have no further questions.

20 Mr. Birmingham.
21 Ms. Cahill?

23 HEARING OFFICER DEL PIERO: Thank you.
24 Mr. Flinn?

0130
01 HEARING OFFICER DEL PIERO: Thank you very much,
03 Ms. Scoonover --
04 MR. FLINN: I'm sorry. I did have one. I just
06 RE-CROSS EXAMINATION BY MR. FLINN
07 Q We have a blow up from Mr. Ono of Exhibit 7 of
09 Mr. Ono, as a partial panoramic depiction of a dust
10 storm?
12 Q And when was this taken?
13 A It was May 12th, 1993.
15 A Yes, I was.
16 Q And when you took this picture, did you observe
18 specifically, was it emitting from the exposed lake
19 bed, or was it emitting from the surrounding desert?
21 I don't recall any dust coming from the surrounding
22 desert.

24 HEARING OFFICER DEL PIERO: Thank you very much.
25 Ms. Scoonover, no questions?

01 MS. SCOONOVER: No questions.
02 HEARING OFFICER DEL PIERO: Mr. Frink?

04 HEARING OFFICER DEL PIERO: Thank you.
05 Mr. Smith?

07 HEARING OFFICER DEL PIERO: Mr. Herrera?
08 MR. HERRERA: I have no questions.

10 MR. CANADAY: One.

11 HEARING OFFICER DEL PIERO: Go ahead, Sir.
12 RE-CROSS EXAMINATION BY THE STAFF
13 Q BY MR. CANADAY: This question's for Mr. Ono. I'm
14 looking at a letter dated December 16th, 1993, and it's
15 National Audubon Society/Mono Lake Committee Exhibit
16 246, and the letter is to Ms. Ellen Hardabeck. It's a
17 letter that has the schedules. I want to refer to the
18 second page.
19 So I'm clear on the timetables, I'll refer you to
20 the December 31st, 2008 date and on the left-hand
21 margin, it says, "Extension of attainment date. One
22 extension of no more than five years." So if there is
23 not -- my understanding of this, is this correct, is
24 that as of December 31st, year 2008, if attainment has
25 not been shown, that there is a one-time extension of
0132
01 five years from that date?
02 A BY MR. ONO: I would have to look at this closer, but
03 I believe that that five-year extension is from the
04 previous date, 2003. Five years would bring it to that
05 date. And 2008, we have, I think, until the next year,
06 2009, to submit a new plan that shows that 5 percent
07 per year reduction.
08 Q And that 5 percent reduction would start as of
09 December 31st, 2009, then?
10 A Correct.
11 MR. CANADAY: Thank you.
12 HEARING OFFICER DEL PIERO: Thank you very much,
13 Mr. Canaday.
14 Mr. Bruce? Now.
15 MR. BRUCE: We move into evidence Exhibit 33.
16 HEARING OFFICER DEL PIERO: Any objections? So
17 ordered.
18 (Great Basin Exhibits No. 33
19 was admitted into evidence.)
20 MR. BIRMINGHAM: Can I have a moment,
21 Mr. Del Piero?
22 HEARING OFFICER DEL PIERO: Yes, Sir.
23 I'm sorry. Mr. Smith? Did you have a question?
24 Mr. Frink?
25 MR. FRINK: Yes. Mr. Bruce, were you going to
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01 offer into evidence your other exhibits as well? The
02 testimony was labeled as Exhibit 33, but you had
03 Exhibits 1 through 32 identified previously?
04 MR. BRUCE: Yes. All of those exhibits are
05 referred to in the written testimony of the Great Basin
06 staff and when they adopted their written testimony
07 into evidence, it was my understanding that by
08 inference and by my direct questions, they also adopted
09 as their testimony the exhibits they referred to.
10 MR. FRINK: And you're moving them all into
11 evidence at this time?
12 MR. BRUCE: I am moving Great Basin 1 through 33
13 into evidence.
14 MR. FRINK: Thank you.
15 HEARING OFFICER DEL PIERO: Mr. Birmingham?
16 MR. BIRMINGHAM: I do have an objection.
17 HEARING OFFICER DEL PIERO: Which one?
18 MR. BIRMINGHAM: To the testimony of Mr. Ono.

19 HEARING OFFICER DEL PIERO: To the testimony of
20 Mr. Ono?
21 MR. BIRMINGHAM: Mr. Ono.
22 HEARING OFFICER DEL PIERO: The written
23 testimony?
24 MR. BIRMINGHAM: The written testimony of Mr. Ono
25 because it contains many statements of legal
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01 conclusions that he has reached. Rather than taking
02 the time to go through the testimony and --
03 HEARING OFFICER DEL PIERO: You know how I'm going
04 to rule, I think.
05 MR. BIRMINGHAM: Yes, yes, I do.
06 HEARING OFFICER DEL PIERO: Actually, I've changed
07 my policy over the holidays. I'm sorry. Please
08 finish, Sir.
09 MR. BIRMINGHAM: We have had one stipulation. It
10 was an understanding that we reached when Ms. Upland
11 was testifying, and I think the same stipulation would
12 apply here with respect to the testimony of Mr. Ono.
13 And, in fact, for that matter, to Ms. McGee.
14 Mr. Gipsman hasn't offered that testimony yet.
15 If we could have a stipulation that Mr. Ono is not
16 being offered as a legal expert on the Clean Air Act, I
17 have no objection to the introduction of this
18 testimony.
19 HEARING OFFICER DEL PIERO: As I pointed out
20 before, I'm going to overrule -- in similar
21 circumstances where objections like this have been
22 made, I've overruled the objection. Again, the
23 testimony, both oral as well as written testimony, is
24 given weight based on the qualifications of the
25 individual presenting it. And this is a situation
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01 where it clearly goes to the weight of the evidence as
02 to whether or not the individual's qualified to reach
03 legal conclusions, in effect, whether or not those
04 legal conclusions that he might reach might be based on
05 any particular expertise. That's reflected in the
06 record. Your objection is noted, and unless I hear
07 anything else, I'm going to direct all those exhibits
08 to be accepted into the record. Good.
09 (Great Basin Exhibits Nos. 1
10 through 32 were admitted into
11 evidence.)
12 HEARING OFFICER DEL PIERO: Mr. Gipsman?
13 MR. GIPSMAN: At this time, we would like to move
14 for admission of Exhibits U.S. Forest Service 3, 4, 5,
15 6, 7, 13, and 22.
16 HEARING OFFICER DEL PIERO: Same objection,
17 Mr. Birmingham?
18 MR. BIRMINGHAM: Same objection and with respect
19 to the video, I'm going to object on the grounds that
20 it lacks foundation. We don't know who took the
21 video. We don't know who was narrating the video, and
22 so there really is a lack of foundation. And also with
23 respect to Exhibit 4, which is a series of monitoring
24 sheets, I'm going to make the same objection on the
25 grounds of lack of foundation.
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01 HEARING OFFICER DEL PIERO: Based on?
02 MR. BIRMINGHAM: Lack of foundation.
03 HEARING OFFICER DEL PIERO: I'm going to -- do you
04 want to respond to that?
05 MR. GIPSMAN: No.
06 HEARING OFFICER DEL PIERO: I'm going to overrule
07 the objection. It's noted for the record.
08 Anyone else wishing to object to any of these
09 being introduced? No? Okay. Again, the absence of
10 identification of the author of the person who took the
11 videotape had been noted for the record.
12 Mr. Birmingham's objections are noted for the record.
13 The value of that evidence is based on what's been
14 presented here, in fact, in the record.
15 Yes, Sir?
16 MR. SMITH: Could you go over that list again,
17 please?
18 MR. GIPSMAN: Yes. 3, 4, 5, 6, 7, 13, and 22.
19 Now, we have some other witnesses on our list that
20 we will not be bringing here to offer testimony, and so
21 at this time, I would like to withdraw Exhibits 17, 18,
22 and 21.
23 HEARING OFFICER DEL PIERO: Any objections to his
24 withdrawal of the written testimony of individuals not
25 present for cross-examination? I can't imagine. Thank
0137
01 you very much, Mr. Gipsman. And all of the other
02 exhibits referenced are, in fact, directed to be
03 admitted into the record.
04 (USFS Exhibits Nos. 3, 4, 5,
05 6, 7, 13, 22, were admitted
06 into evidence.)
07 (USFS Exhibits Nos. 17, 18,
08 21, were withdrawn.)
09 HEARING OFFICER DEL PIERO: Now, Mr. Oliver, do
10 you have anything else to introduce?
11 MR. OLIVER: Yes, Mr. Del Piero. The Air
12 Resources Board would move for the admission of ARB
13 Exhibits 1 through 13 at this point.
14 HEARING OFFICER DEL PIERO: Okay. Any
15 objections? None? So ordered into the record. Thank
16 you very much.
17 (ARB Exhibits Nos. 1 through
18 13 were admitted into
19 evidence.)
20 HEARING OFFICER DEL PIERO: Ladies and
21 Gentlemen -- Mr. Flinn?
22 MR. FLINN: I forgot to move them. We marked
23 National Audubon Society and Mono Lake Committee
24 Exhibits 246 and 255. I would move those at this time.
25 HEARING OFFICER DEL PIERO: Any objection to those
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01 documents being introduced into the record? Hearing
02 none, those are ordered into the record.
03 (NAS/MLC Exhibits Nos. 246
04 and 255 were admitted into
05 evidence.)
06 HEARING OFFICER DEL PIERO: Ladies and Gentlemen,
07 thank you very much for your kindness and your
08 participation here today. You're excused.

09 We have a witness on behalf of, what is it,

11 MR. DODGE: Both.

12 HEARING OFFICER DEL PIERO: It's amazing how right

14 MR. DODGE: Were you able to sell the Encyclopedia
15 Britannica?

17 able to do that because I took it home, and my wife
18 assured me I didn't know everything, so --

20 promise to tell the truth during the course of this
21 proceeding?

23 HEARING OFFICER DEL PIERO: Thank you. Have a
24 seat. Thank you.

0139

01 MR. DODGE: Thank you. This is a witness called

03 Committee and Cal-Trout. This is Dr. Carl Mesick.

04 DIRECT EXAMINATION BY MR. DODGE

06 your last name, please?

07 A BY DR. MESICK: My name is Carl F. Mesick. My last

09 Q And can you, Sir, identify for me Cal-Trout
10 Exhibit 4 as your written testimony in this matter?

12 Q And have you, at Mr. Roos-Collins' request,
13 prepared an errata sheet dated January 10, 1994?

15 Q And I have marked my copy of the two-page errata
16 sheet as Cal-Trout Exhibit 4-C. Can you identify that

18 A Yes, that is it. I believe there are some tables
19 in there.

21 it?

22 MR. ROOS-COLLINS: Dr. Mesick, the changes to your

24 are made in the attached declaration.

25 DR. MESICK: The changes are included in the

01 letter.

02 Q BY MR. DODGE: And, in fact, due to the wizardly

04 understand it, a revised Cal-Trout Exhibit 4 which
05 incorporates all of the changes, correct?

07 Q And that's been distributed to the parties?

08 A I believe so.

10 correctly states your testimony, Sir?

11 A Yes, it does.

13 substance of your testimony, can you briefly describe
14 for Mr. Del Piero and everyone else in the room a

16 A Yes, I can. I began working in the Mono Basin in

17 1985 when I began to work for EA Engineering under
18 contract to the Department of Water and Power. These
19 studies consisted of fish population studies. They
20 began in Rush Creek in 1985 and in Lee Vining Creek in
21 1986. The fish population studies entail determining
22 the abundance of fish in the stream and also computing
23 the growth and survival of the fish.

24 And using that data, we conducted limiting factor
25 analyses which compare changes in the habitat or
0141 differences in the habitat in different areas of the
02 stream and how it affects the abundance, growth, and
03 survival of the fish.

04 I have also conducted two spawning habitat
05 surveys, one in 1987 and another in 1991, where the
06 amount of gravel suitable for spawning was estimated
07 and identified throughout the stream, and also, we
08 looked for nests where the fish were spawning and we
09 call those "redds" in fisheries terms.

10 I've also conducted food habit studies in both
11 streams in 1987 and 1988. I've conducted winter
12 habitat surveys in both streams in Rush Creek in 1988,
13 and in both Rush and Lee Vining Creeks in 1992.

14 Under contract to the Electric Power Research
15 Institute, I evaluated whether or not the IFIM data
16 typically used was suitable for predicting the areas
17 where brown trout would feed from in Rush Creek, and
18 that study was conducted by examining the behavior of
19 the trout during extensive snorkeling surveys.

20 I have also examined the abandoned channels in
21 both streams that used to function as the stream
22 channels prior to 1941. That work was done during the
23 summer of 1992.

24 I've also conducted other similar studies in other
25 streams in Mono and Inyo Counties. So I've looked at
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01 perhaps another five to ten streams and evaluated the
02 fisheries and the habitat in those streams as well.

03 Q All right. Can you now, in approximately 20 to 30
04 minutes, give us a summary of your testimony as set out
05 in Cal-Trout Exhibit 4?

06 A Okay. Based on my studies, it is my opinion that
07 the existing overall fisheries in Rush Creek and Lee
08 Vining Creek are lower today, and by that I mean, that
09 there's generally fewer fish, and in the case of some
10 of the sections of Rush Creek, the fish are quite a bit
11 smaller as well, than the fisheries and the habitat
12 that was present in 1941. So they're lower today than
13 they were in 1941, although there are some areas,
14 particularly in Rush Creek, where the fishery is either
15 similar to or better than it was prior to 1941. So the
16 condition of the fisheries varies considerably between
17 different segments, and I'll have to talk about the
18 different segments independently.

19 Most of my summary is going to be based on the
20 tables that are in Cal-Trout Exhibit 15, which is the
21 summary comparison of the pre-1941 and post-1941
22 conditions affecting fish populations in lower Rush
23 Creek that was produced by Trihey and Associates, and
24 also, Cal-Trout Exhibit No. 9, which is a similar

25 report for Lee Vining Creek. Basically, these tables
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01 just compare the fish populations prior to '41 and the
02 existing conditions and also discuss the changes in the
03 habitat.

04 I'll start with Rush Creek. I'll, at least, point
05 out the different segments on the maps.

06 MR. HERRERA: The microphone comes off the stand,
07 if you'd like.

08 DR. MESICK: Starting from the upstream direction
09 in Rush Creek, the first segment, which is Segment 1,
10 which is immediately below the Old Grant Dam, was about
11 three-quarters of a mile long. We have very little
12 information about the habitat or the fisheries in this
13 reach. Apparently, we couldn't find anybody who had
14 ever fished this segment and the stream channel has
15 been extremely altered today, so we don't even know
16 what it looked like except that from aerial photos, you
17 could tell that the stream was fairly straight relative
18 to other sections. And so it was probably just
19 typical, moderate, gradient habitat consisting of
20 riffles and runs and I would say it probably produced
21 average numbers of fish up to about 12 inches in
22 length.

23 However, there was a section in the lower third of
24 this segment that was a large forebay to the eight-inch
25 diversion, and that appeared to be like a large pond,
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01 had very low-velocity water, fairly deep water, and
02 it's fairly good conditions for fish. And I think
03 based on what the habitat looked like, it was likely
04 that large fish, a few large fish were produced in this
05 reach. We do know from studies conducted in the 1930s
06 that large fish were produced in Grant Lake, which is
07 fairly shallow and had similar conditions. So it would
08 probably be likely that a few large fish would be
09 produced in this forebay as well.

10 Under today's conditions, the channel is
11 dewatered. There is no flow and obviously, no
12 fisheries in this section of the stream. That habitat
13 has been excavated, just been widened and deepened, so
14 there's not very much of the fish habitat left. Most
15 of the riparian vegetation is dead, and there actually
16 isn't any means of releasing stream flow to the reach
17 as well. Today, this segment has been replaced by the
18 Mono Ditch, which is this dotted line shown here. This
19 section is approximately twice the length of the old
20 Segment 1, and it actually has very good habitat for
21 fish.

22 During the fall of 1992, electrofishing surveys
23 were conducted, and we found fairly abundant numbers of
24 fish between one and two pounds in weight, which are
25 quite large for most eastern Sierra streams. The
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01 reason that these fish were quite large is because the
02 growth conditions were good. These fish were only
03 three to four years old, which is an average age for
04 fish in these streams. However, they grew at
05 relatively rapid rates. It might take six or seven
06 years to get half that size in other portions of the

07 stream. So they grew quite well. I think that was
08 based on the conditions in the habitat and that the
09 gradient is quite low, so the velocities in the channel
10 are quite low regardless of the stream flow released.

11 The habitat is also quite complex, at least during
12 the summer and the fall, because there are dense beds
13 of aquatic plants that grow. They grow from the bottom
14 all the way to the surface of the water, which can be
15 as deep as four feet in this channel, so it's quite
16 deep as well. And those aquatic plants create channels
17 of flow through the stream such that the fish can find
18 very low-velocity water, which helps them to conserve
19 their energy and so they grow at a faster rate rather
20 than trying to swim against the current and expending
21 all their energy.

22 Food is quite abundant probably because some food
23 is released from the lake. There are small fish that
24 are released through the outlet and there's a lot of
25 plankton, even large fish will eat minute organisms if

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01 they're moving slow enough, and they catch them. The
02 plants as well also produce a lot of food.

03 Water temperature is also fairly optimum for
04 growth in that the releases are made from about the
05 middle of the depth of the lake, so they're relatively
06 cool. They're cool water releases especially relative
07 to the rest of the stream, and they're very moderate in
08 that they don't fluctuate very much. They're constant
09 during the day where other sections of the stream can
10 fluctuate considerably.

11 Another important part about the temperature is
12 that warm water is generally released from the bottom
13 of the reservoir in the wintertime, and so that helps
14 the fish to grow a little bit. In other sections where
15 the stream temperatures dropped near zero, they ceased
16 to grow in conditions -- they must rely on the energy
17 that they've stored up through summer. Sometimes
18 that's not enough.

19 The next section of the stream, which is Segment
20 2, which is a fairly high gradient, and the upper part
21 of Segment 3, which is identified as Segment 3-A, this
22 section, prior to 1941 probably produced average
23 numbers of fish up to about 12 inches in length and a
24 half a pound in weight in that neighborhood. That's
25 because the channel, even though it was quite complex,

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01 was higher in gradient, and because it was high in
02 gradient, the velocities increased considerably in
03 these reaches, and that forced the trout to expend a
04 lot of their energy trying to maintain their position
05 in the stream especially when floods occurred. So they
06 didn't quite grow to the same size they did in Segment
07 1.

08 And in the next sections, today I would say that
09 the fishery is essentially about the same as it was
10 prior to 1941. There have been some minor changes in
11 the habitat, though. Primarily, the major one is that
12 there's been a loss of woody debris, and woody debris
13 is quite important because it provides roughness to the
14 stream bottom. And the roughness tends to slow down

15 the stream velocities, especially during flood flows.
17 low-velocity water and conserve its energy. And
18 without the woody debris, they're expending virtually
20 to maintain their position. So there's been some loss
21 of this woody debris in the channel.
23 kind of at the border between Segments 3-A and 3-B in
24 that there's two sections of the original stream

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01 1941, there are two rock berms that block these
03 thousand feet in length, but these abandoned channels
04 are very complex, offering some pool habitat and other
06 than they do now in the existing channel. But that's a
07 small portion of the channel that's been abandoned
09 changes, but they're not drastic.
10 In Segments 3-B and 3-C, which are between the B
12 this section was occasionally completely dewatered,
13 especially during droughts in the 1930s, so obviously,
15 well. In fact, the fish either died or they moved into
16 another section. But the habitat was still very
18 was moderate gradient, fairly complex but still the
19 fish were exposed to moderate velocities and so there
21 about 12 inches in length and maybe about a half a
22 pound in weight.
24 consistent in this reach and so the fishery is also
25 consistent. And so this section has been slightly
01 improved under the existing conditions, but on the
02 other hand, the habitat has been degraded slightly and
04 complex. And that's because the riparian vegetation
05 has been degraded by the dewatering that's occurred,
07 riparian vegetation along the channel, it's less dense
08 and it's smaller, so it doesn't really afford the bank
10 important because during flood flows, as the water
11 rises, these trees are inundated, you know, willows,
13 trees are inundated with water and that serves as a
14 friction point that reduces the velocities. So these
16 areas in the stream. Now we don't have that under the
17 existing conditions.
19 stabilizing the bank in that it prevents what used to
20 be relatively narrow channels that were 20 to 25 feet
22 of Section 3-B and 3-C, excuse me, the stream is up to

23 50, 60 feet wide in some areas. So it's widened
24 considerably. And I would say on an overall average,
25 there's indication that the stream channels increased
0150
01 by 10 to 15 percent since 1987. That's based on the
02 fact that Beak Consultants conducted their IFIM studies
03 in 1987, and they used large rebar to anchor their
04 blocking nets across the stream when they were doing
05 their electrofishing studies.

06 These pieces of rebar were put on the bank, and
07 now when you examine the stream, they're two to three
08 feet within the stream channel. And that means that
09 has been about 10 to 15 percent of the stream channel
10 where the banks have been eroding away so the water's
11 getting shallower as the channels are right now. And
12 this also allows velocities to increase along the
13 stream bottom, the channel is becoming less complex.
14 It's becoming smoothed out, and that helps to increase
15 the amount of sediment that is mobilized during flood
16 flows and, you know, we're getting more erosion and
17 more simplification of the stream habitat.

18 I would say another minor change is that there
19 used to be a small amount of pool habitat, and I would
20 say that it's probably decreased by at least half
21 because of the loss of the woody debris. Now, they
22 have immature riparian vegetation, there's no large
23 trees falling into the stream as they die, and so the
24 riparian vegetation, the woody debris in the stream is
25 very important for scour. During high flows, the trees

0151
01 would scour out pool habitat and cause bottom
02 roughness, so that the fish could find areas where they
03 could avoid the high velocities.

04 From Segments 3-D -- we'll talk about that one
05 separately in that there was always flow provided by
06 Parker Creek and some spring action in this area, so
07 there were fisheries fairly consistently prior to
08 1941. However, again, the gradients were moderate, and
09 I would say that the population was generally average
10 in abundance, and a half-a-pound fish was about as
11 large as you would expect to see in this segment.

12 However, currently, there are gravel operations in
13 the area and when the stream had been dewatered after
14 1970, they tended to push their crushed rock into the
15 stream channel and then when the floods came through,
16 there was extensive degradation to that habitat. So
17 today, we still have fish in the area, but I believe
18 that they would be slightly smaller, maybe they're only
19 a third of a pound rather than a half of a pound, and
20 there are slightly fewer fish because the channel is
21 smoother and the riparian vegetation is not as dense
22 and is not as mature. We don't have as much woody
23 debris.

24 Another thing that's very important now between
25 Segments 3-B through 3-D is because the gravel --

0152
01 excuse me, the stream channel has been smooth, the
02 sediment is being transported at a higher rate and most
03 of the gravel that used to exist in this channel has
04 been mobilized out and no longer exists in this segment

05 of stream and so reproduction has been decreased. I
06 did a survey in 1987 and found small amounts of gravel
07 in the small subsidiary channels, and then redid the
08 survey in 1992, and found that essentially all the
09 gravel is gone. So it's just been a gradual flushing
10 from the stream, and the loss of this gravel has
11 greatly reduced the production of young in the stream.

12 Sections 4 and 5 in Rush Creek, combining the
13 whole length, was very similar in habitat prior to
14 1941. The stream channels were quite sinuous, which
15 caused them to be low in gradient. By winding back and
16 forth through the stream, it slowed the flow of water
17 down so the water became quite deep and very slow.

18 Another important factor to this reach is there
19 was considerable spring activity near the area marked
20 as The Narrows. And the springs actually produced
21 probably on an average of about 50, 54 cfs of
22 relatively cool water that was fairly high in dissolved
23 minerals that was important to the production of
24 aquatic insects which the trout feed on. So we would
25 have had low-velocity water, optimum temperatures, and
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01 the channels were quite narrow. So conditions were
02 very good for growth at this reach.

03 The riparian vegetation was quite high. You can
04 see evidence of that by looking at the abandoned
05 channels that are still in the area. Some portions of
06 them look intact as they probably were prior to 1941,
07 and the habitat is quite complex, even spawning gravels
08 are fairly abundant throughout the reach. Some of the
09 pools appear to be six feet deep and up to 300 feet
10 long. I'd say that's one of the biggest ones in the
11 entire section, but remnants of it still exist, and
12 it's quite impressive considering that a big pool today
13 is probably 15 to 20 feet long and three feet deep. So
14 they're quite a bit smaller.

15 MR. HERRERA: Excuse me, Dr. Mesick. Mr. Dodge,
16 that's 20 minutes.

17 MR. DODGE: Mr. Del Piero, we would apply for an
18 additional 20 minutes, and I believe that Dr. Mesick
19 will complete his direct examination during that time.

20 HEARING OFFICER DEL PIERO: Granted.

21 DR. MESICK: Because of these conditions that
22 existed in this reach, it is likely that large trout
23 were produced. I've talked to Mr. Eldon Vestal, who
24 used to work for the Fish and Game Department in the
25 late 1940s, and Mr. Don Banta, who was a long-term

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01 resident of Lee Vining, and he used to fish these
02 streams as a teenager. And they recalled that trout
03 between one and two pounds were commonly caught and
04 that some trout up to four pounds were caught
05 occasionally, so very large fish.

06 And I would say that the habitat conditions in
07 Segments 4 and 5 all the way to Mono Lake were actually
08 better than they are now in Segment 1 where numerous
09 one- to two-pound fish are produced because we have
10 permanent cover in these sections. They're not the
11 aquatic plants that die off every winter and the fish
12 have to leave, so the conditions were very adequate

13 year-round. You have all the food that's being
14 produced, optimum temperatures, and the low-velocity
15 water that helps produce the large fish.

16 Today, the changes have been dramatic in this
17 reach. We've had many of the channels that used to
18 flow are now abandoned, and so the stream is quite a
19 bit straighter and that has increased the gradient.
20 The new channels where they've relocated are very
21 simple. They almost look as if a bulldozer has made
22 the channels. They're very smooth, very uniform.
23 There's very little bottom roughness, so the fish are
24 exposed to relatively high velocities. There are still
25 some areas that are complex, but I'd say in the most

0155
01 part, most of the stream channels are quite simple in
02 this reach.

03 The riparian vegetation is also greatly reduced in
04 that it's less dense. It's pretty much confined to the
05 stream banks, and it's very immature, so it's not
06 really providing any refuge areas during floods or any
07 bank stability. We're still seeing channel widening in
08 this section, and there's just very little complexity.
09 The amount of woody debris that's in a channel has
10 decreased.

11 I've seen -- when I began the studies in 1985,
12 there was more woody debris than there is now, so
13 because of this simplification of the channel, the
14 woody debris and substrate as well are being mobilized
15 at a higher rate than what occurred naturally, so we're
16 losing it over time. And as it's lost, that leads to
17 further simplification of the channel and worsening
18 conditions.

19 We have also lost a lot of the gravel that
20 probably existed in the upper part of the reach.
21 There's still adequate gravel in the lower portions,
22 but for some reason, production of young has been
23 limited in the lower part. I believe it's because the
24 cover for juveniles is lacking and they're eaten by the
25 larger fish. Today, we have also lost the spring

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01 activity, so it's very likely that the stream
02 temperatures have increased, particularly in the upper
03 portion of this area, which is Segment 4. I believe --
04 we've estimated that the stream temperatures from the
05 spring would've been about 14 degrees Celsius, and now
06 we're seeing anywhere upwards of about 19 degrees. So
07 it's quite a bit of a change, and that would greatly
08 reduce the growth of the fish compared to what it used
09 to be.

10 The other thing is that with the loss of the
11 springs and the straightening of the channel, we would
12 have reduced food production. The springs provided
13 minerals that were important to the food production,
14 and the complex channel helped retain the organic
15 matter that was supplied by the riparian vegetation.
16 It stored it in the stream bottom, and that was an
17 important food for the aquatic insects. Now that the
18 channel is very straight and simple, much of this
19 material is flushed into Mono Lake and no longer
20 produces food. So there are many conditions that are

21 worse for the fish today.

23 because we have degraded habitat, there's another
24 limiting factor reducing the size of the fish and the

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01 channel complexity where the fish are exposed to higher

03 particularly important during the winter because the
04 water is so cold that the fish can no longer digest

06 amount of energy reserves that they've stored up
07 through the summer, and if they're not growing well

09 tend to exhaust their energy reserves at a faster rate
10 than lower stream flows would during the winter. And

12 as low growth when stream flows have been over 70 cfs
13 in Rush Creek.

15 of the fish to the restoration treatments in Rush Creek
16 very briefly. There were three large pools that were

18 monitoring the fish population since 1991, we've
19 observed that they improved their growth by quite a bit

21 weight, which is about twice the size of the fish in
22 the untreated sections of the stream. So by providing

24 restore the conditions that grew larger fish.

25 The problem is that these pools tend to attract a

01 lot of anglers, so we see a lot of turnover of fish in
02 these pools. They're caught at incredibly high rates,

04 what the fish are actually doing.

05 There are also treatments in the side channels

07 essentially a large pond. These treatments also
08 improve the growth of the fish. However, because

10 limited and very few fish use these treatments.

11 However, they were effective in improving the growth of

13 winter when streams flows were high. When fish were
14 not doing very well in the main channel, they did quite

16 good refuge from the flood flows, especially during the
17 winter.

19 the streams for spawning habitat increased the
20 production of the young-of-the-year by four to five

22 times over stream wide. So that also shows the
23 importance of gravel abundance, gravel availability for

25 Moving on to Lee Vining Creek, for Segments 1 and

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02 complexity, and some of the fish are exposed to

03 moderate velocities of water. And I don't believe that
04 they've reached anything larger than about 12 inches in
05 length or a half a pound, and that's based on the
06 anecdotal information that we've gotten from
07 Mr. Vestal. And I agree with that. There wasn't a lot
08 of deep, slow water that we had like in the Rush Creek
09 bottom lands.

10 Gravels are also quite abundant. They were even
11 quite abundant through the 1980s when I began doing my
12 studies, so reproduction was quite good in at least
13 Segment 1. Segment 2 --

14 Q BY MR. DODGE: Dr. Mesick, could you clarify, this
15 discussion of Segments 1 and 2, are you talking
16 pre-diversions, or are you talking current --

17 A BY DR. MESICK: Pre-diversions. It's just that my
18 basis that there were a lot of gravels in this section
19 is because there still were in the 1980s. So there
20 were average numbers of fish, about 12 inches in length
21 in Segments 1 and 2 of Lee Vining Creek.

22 After the streams were diverted in the late 1940s,
23 there were essentially no flow releases, but there was
24 seepage past the dam and there was spring activity that
25 kept a small amount of flow in the stream and that

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01 seemed to keep the habitat intact. It kept the
02 riparian vegetation alive and actually, there was a
03 fairly abundant trout population in these reaches
04 through 1989.

05 However, in May of 1990, there was an event where
06 the stream flows fluctuated greatly. They changed from
07 zero to over 100 cfs -- well, near zero to over 100 cfs
08 in a matter of hours, and also a large amount of fine
09 sediment was released that virtually buried the
10 sediment in Segment 1. Also, during this period, all
11 of the gravel essentially was flushed from Segment 1,
12 and this resulted in virtual elimination of the
13 fishery. I would say less than 5 percent of the fish
14 were left after this event. So, on one hand, you lost
15 all of the adult fish, almost, plus you lost most of
16 the spawning gravel, so from then on, the fishery even
17 got worse for a time. There was very little
18 reproduction.

19 Also, during this period, I believe that the
20 habitat became simplified to a small degree and a small
21 amount of woody debris was flushed from the channel.
22 And we have seen even worse survival of the fish during
23 the winter periods. The highest percentage of the fish
24 die during the winter, even though they appear to be in
25 good shape during the fall, and I think it's because

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01 they're exposed to high velocities and it just exhausts
02 their energy and they die by the end of the winter. So
03 the fishery is definitely not recovering in this
04 section.

05 Although gravels were added in the late summer of
06 1991 to this segment, they have since been mobilized
07 through and there are still very little gravels left in
08 the segment today.

09 In moving on to Segment 3, prior to 1941, there
10 were multiple channels that had a wide band of dense

11 riparian vegetation. They actually referred to it as
12 the jungle. It's very hard to even get to the stream.
13 The channels were very narrow and very deep and quite
14 complex. There wasn't a lot of pool habitat so, again,
15 we're probably seeing high numbers of fish, but they
16 weren't any bigger than 12 inches or maybe a half a
17 pound in weight. They weren't huge, but they were
18 probably fairly abundant.

19 Since the late 1940s, the dewatering and flood
20 damages essentially eliminated the fishery from this
21 section and the habitat became quite degraded. Many of
22 the channels were abandoned. The channels became quite
23 simplified, almost looking like a bulldozer made them.
24 And there was virtually no fish in this segment until
25 1990 and even so, now there are quite a few. The

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01 restoration work in Segments 3-A and 3-B has restored
02 much of the habitat complexity to the stream channels.
03 The only thing that seems to be missing in these
04 segments is that the riparian vegetation is less
05 dense. It's not as wide, and it's quite immature, so
06 it doesn't provide that much stability to the channel,
07 and it doesn't provide any refuge during the flood
08 flows.

09 There's a few areas that are still low in the
10 complexity in that they lack any kind of definition to
11 the bottom scouring that would have been caused by the
12 woody debris. I would characterize it as a small
13 percentage, maybe 20 percent of the stream is still in
14 degraded shape. And it's possible, I'm not sure, but I
15 believe that there were multiple channels in this
16 segment, and I know Mr. Trihey has rewatered some of
17 them, but there are still other channels that are
18 abandoned today. And I think it's a possibility that
19 some of them used to be watered, and that represents a
20 loss of habitat.

21 In Segments 3-C and 3-D, which are the lower most
22 portions of the stream, the riparian vegetation is
23 still quite immature. Very little work has been done
24 in this segment, and it's still quite degraded. The
25 woody debris is lacking. There's very little gravel

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01 for spawning, and the channel complexity is quite low.
02 It's smooth and wide.

03 Throughout these segments, there was a little bit
04 of work in this section, but most of it was in Segments
05 3-A and 3-B, which are up above through in here. And
06 in these areas, wherever treatment work was done,
07 survival of the young-of-the-year through the winter of
08 1992-93 was much higher than what occurred in the
09 untreated segments. So it's getting back to what it
10 used to be. It's improving the health of the fish and
11 their growth and survival.

12 The other treatment aspect was that gravels were
13 added to Segment 1 during the fall of 1991, and that
14 increased the production of young by about five times
15 in the vicinity of the gravel treatments, and most of
16 them died during the next winter. Most of the
17 treatments in Lee Vining Creek have not been utilized
18 because there's been very few fish in the stream.

19 There's no more than a couple hundred in a total of
20 four miles of stream, so the densities are quite low.
21 So it's hard to tell with so few fish whether or not
22 it's really benefiting them. But considering that most
23 of them had been produced in Segment 1 and then they
24 died within their first winter, I would say that
25 additional work needs to be done in Lee Vining Creek.

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01 In my opinion, neither the habitat nor the
02 fisheries of either Rush Creek or Lee Vining Creek is
03 recovering to the pre-1941 levels nor will it, even if
04 the stream flows are optimized or if the riparian
05 vegetation recovers because we can't recover the
06 channel complexity because the sediment that is being
07 transported down the stream is captured by the upstream
08 diversion points. And if you can't restore the narrow
09 width of the channel by having sediment moving in and
10 being deposited, we're going to end up with wide,
11 shallow channels that provide very little habitat
12 complexity for the fish. And some form of mechanical
13 alteration will be necessary to restore the channel.

14 That summarizes my testimony.

15 HEARING OFFICER DEL PIERO: Thank you very much.
16 Anything else, Mr. Dodge?

17 MR. DODGE: No. Thank you.

18 HEARING OFFICER DEL PIERO: And I assume,
19 Mr. Roos-Collins, you have nothing else or do you,
20 Sir?

21 MR. ROOS-COLLINS: I do have questions.

22 HEARING OFFICER DEL PIERO: Please come forward.

23 DIRECT EXAMINATION BY MR. ROOS-COLLINS

24 Q Dr. Mesick, good afternoon.

25 A BY DR. MESICK: Good afternoon, Mr. Roos-Collins.

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01 Q Let's begin with the term "limiting factor." Your
02 written testimony at Paragraph 30 on Page 24 states, "I
03 use the term limiting factors to describe those
04 environmental conditions which limit the
05 reestablishment of the pre-diversion fishery."

06 That is your testimony?

07 A Yes, it is.

08 Q So in your written testimony and also your
09 testimony here today, you use the term "limiting
10 factor" to refer to those environmental conditions
11 which limit the reestablishment of the pre-1941
12 fishery?

13 A Yes, I do.

14 Q There may be other factors which prevent the
15 establishment of an optimal fishery, but those factors
16 are not addressed by your testimony?

17 A That's correct.

18 Q Let's turn now to the limiting factors which you
19 have identified for Rush Creek. Let's begin with
20 habitat complexity which you discussed both in your
21 written and your oral testimony. What is the meaning
22 of the term "habitat complexity" as used in your
23 testimony?

24 A Well, one way to describe it would be as
25 represented by stream bottom roughness, anything like,

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01 large obstructions, woody debris, large boulders,
03 down.
04 Other factors that cause that would be low
06 sinuous stream channel would slow down the stream flow
07 and when you slow down the stream flow, it causes the
09 decrease, and that's quite important to the fish.
10 Narrow channels also do the same by creating most of
12 allowing a deep channel portion where most of the flow
13 moves through the stream such that there will be very
15 but high velocity near the top. And the fish can
16 simply utilize the areas near the bottom of the
18 the stream can be referred to as stream channel
19 complexity.
21 complexity limits the fishery in Rush Creek today. Is
22 that to say that more habitat complexity would benefit
24 existed before 1941?
25 A That's correct.

01 Q Would more habitat complexity benefit each age
02 class addressed in your testimony?

04 Q Would it benefit one age class more than others?
05 A It certainly would benefit the larger fish the
07 abilities than the larger fish do, so high velocities,
08 I believe, reduce the growth rates of large fish to a
10 Q Your written testimony states at one point that
11 older trout get heavier but not longer and, therefore,
13 A Yes, it is.
14 Q Inadequate habitat complexity is also a limiting
16 A Yes, it is.
17 Q For the same reasons you just discussed with
19 A That's true.
20 Q What limiting factors are present in Rush Creek
22 A Well, the loss of the springs in the Segments 4
23 and 5 of Rush Creek, those are limiting factors that
25 sinuous channel that was present in Segments 4 and 5 of
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02 longer there.
03 That sinuous channel is also important for the
05 fish. I'd say that those are the main two factors that
06 Rush Creek was unique.
08 factor. Paragraph 33 of your written testimony on Page

09 26 refers to daily summertime fluctuations in water
10 temperatures as a limiting factor. Is daily summertime
11 fluctuations in water temperature a limiting factor on
12 Rush Creek?

13 A No, it is not. I'd also like to point out,
14 though, that the increases in fluctuation in
15 temperature is related to the channel complexity. As
16 the stream channel is widened, there's more area for
17 solar radiation to heat up the water, and also heat is
18 lost at night to the night sky, so the width of the
19 channel simply exposes the water to a greater amount of
20 environmental influence and causes that fluctuation in
21 temperature. So it's related to the habitat complexity
22 or channel, and also the loss of springs in the bottom
23 lands.

24 Q Let me turn now to a related subject; namely, the
25 capacity of flow alone to remove the limiting factors
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01 you have identified for both creeks. Paragraph 41 on
02 Page 35 referring only to Rush Creek states that,
03 "Optimizing the stream flow releases for fish in
04 combination with allowing the natural recovery of
05 riparian vegetation will not result in the recovery of
06 the trout population to its pre-1941 level."

07 Do you have the same opinion with respect to Lee
08 Vining Creek?

09 A For some portions of Lee Vining Creek, probably
10 not as large of a percentage of the stream as would
11 occur for Rush Creek.

12 Q Why is it that optimizing the stream flow and
13 allowing recovery of riparian vegetation will not
14 establish a pre-41 fishery in Rush Creek in your
15 opinion?

16 A Well, in order for the channels to regain their
17 former width, which was a narrow width. They're much
18 wider today, it requires the input of sediment, fine
19 sediment, gravel, sand, that would be collected at the
20 edge of the stream and slowly narrow the channel.
21 Since the upstream dams stop the supply of the
22 sediment, I don't see what material is available in the
23 stream to rebuild the channels. So I assume what will
24 happen is that the riparian vegetation may come back,
25 but the channel itself will be wide and very simple.

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01 It will certainly remain wide. It will not narrow, and
02 I think that's crucial to rebuilding the streams.

03 We're going to have to be dealing with these
04 widely fluctuating temperatures if we can't reduce the
05 width of the channel, and I think that the fluctuating
06 temperatures are going to minimize the growth of the
07 fish, so we won't be seeing these large fish again
08 especially in Segments 4 and 5 of Rush Creek.

09 Q This Board has heard, on several occasions, from
10 Dr. Stine. You aren't a geomorphologist are you?

11 A No. I've had some minimal -- some training in it,
12 but not as much as Dr. Stine.

13 Q On the other hand, you have observed conditions in
14 these creeks since the mid 1980s, haven't you?

15 A Yes, I have.

16 Q Since the mid 1980s, other than the restoration

17 treatments undertaken by the restoration consultant,
18 have you seen substantial progress towards the removal
19 of the limiting factors you have identified for Rush
20 Creek?

21 A No, I haven't. And as a matter of fact, I would
22 say the limiting factors are gradually becoming worse
23 through time.

24 Q Same question for Lee Vining Creek.

25 A No. They haven't been restored, and I'd say to a
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01 lesser extent, they are becoming worse through time.

02 HEARING OFFICER DEL PIERO: Excuse me,
03 Mr. Roos-Collins. Why?

04 DR. MESICK: Because with the weakening of the
05 riparian vegetation and the loss of woody debris in the
06 channel, a lot of the sediment is simply being flushed
07 into Mono Lake, and we're getting wider channels.
08 They're becoming smoother. We're losing the habitat
09 complexity gradually. We've seen, particularly on Rush
10 Creek, the growth of the fish simply declines each
11 year, although, you know, not in relation to the stream
12 temperatures. So I think it's just a gradual
13 simplification of the habitat exposing the fish to
14 higher and higher velocities.

15 I've seen evidence where the stream channel in
16 Rush Creek has gotten wider and I've seen evidence
17 where incision of the channel in Lee Vining Creek is
18 continuing since the mid 1980s, so it's going in the
19 opposite direction than it should be.

20 MR. BIRMINGHAM: Could the Reporter mark that
21 please?

22 Q BY MR. ROOS-COLLINS: Dr. Mesick, is it your opinion
23 that the channel form of Rush Creek today is unstable
24 in ways that allow limiting factors to get worse?

25 A BY DR. MESICK: Yes. Today I'd say that's true.
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01 Q Same question for Lee Vining Creek.

02 A Yes. Again, the channel is unstable today.

03 Q Now, your testimony discusses the effect of the
04 restoration treatments undertaken by the restoration
05 consultant. I believe it was your written testimony
06 with respect to both creeks that these treatments have
07 caused localized but generally not system-wide
08 improvements in the fisheries.

09 Was that your written testimony?

10 A Yes. Except that the spawning gravels have
11 provided system-wide improvement, but the creation of
12 pool habitat or the creation of low-velocity water and
13 deep water has had only localized effects. That's not
14 entirely true. In Rush Creek, there was some work done
15 in Segment 1 where rock weirs, large boulders were
16 installed as a weir at the downstream portion of the
17 reach. And it was mainly intended to keep the gravel
18 in the segment, but it also had the effect of
19 increasing the depths in the channel and also reducing
20 the velocities. And since 1991 when those structures
21 were put in place, we've been catching large fish
22 downstream of Segment 1, only one or two, but these
23 fish have been one pound in weight. And, I mean,
24 they're not very frequent, but it still had not

25 happened before, so I think these fish are spreading
0173
01 out to the other segments of the stream.
02 Q So some treatments, including the placement of
03 spawning gravel and the structures you just described,
04 have had system-wide effects, correct?
05 A That's correct.
06 Q And other treatments have not --
07 A That's correct.
08 Q -- had system-wide effects, but instead have had
09 localized effects.
10 A That's correct.
11 Q What is your understanding of the purpose for the
12 restoration treatments undertaken by the restoration
13 consultant?
14 A Well, to restore the conditions that existed prior
15 to 1941.
16 Q Given your opinion that the treatments have, in
17 some instances, caused system-wide effects and
18 otherwise not caused those effects, would you
19 characterize the treatments to date as a success or
20 failure or neither?
21 A I would characterize them as a success because
22 those treatments such as the large pools that were
23 constructed, were simply intended to be a test of how
24 the fish would respond to them, and since they
25 represent localized areas where the stream habitat
0174
01 complexity was increased and we expect that, you know,
02 the entire stream length was very highly complex, then
03 it would simply be a matter of expanding on these
04 treatments throughout the stream. So it's just that
05 the work that was done where it was localized was
06 simply a test, and those tests did show that some of
07 the conditions were restored.
08 Q One final line of questions. Do you have
09 recommendations for this Board for further restoration
10 treatments for Rush Creek?
11 A Yes.
12 Q In order of importance, beginning with the most
13 important, what are they?
14 A Well, for Rush Creek, I would say the most
15 important thing that could be done is to rewater the
16 abandoned channels wherever they occur. They
17 particularly occur in Segments 4 and 5. As part of
18 that rewatering, some work would have to be done on
19 them. Some portions have been filled with gravel that
20 came from the upstream gravel operations. They were
21 washed into these channels during floods of the 1960s,
22 and that gravel would have to be excavated first.
23 It's also possible that some portions of these
24 channels might have to be modified to permit flow
25 again, some portions have lost their integrity, the
0175
01 stream banks have collapsed, and the streams might find
02 a new course and not follow the original line of the
03 abandoned channel, so that would have to be looked
04 into.
05 A second thing would be maintaining the amount or

07 think once that habitat complexity is restored to the
08 stream, it shouldn't be a problem. But now that the
09 stream channel is quite simple, the gravel is quickly
10 flushed from the stream, even at very moderate flows,
11 and it's because the habitat is so simple that the
12 velocities are too high near the stream bottom.
13 There's nothing to slow it down. So gravel may need to
14 be replaced periodically.

15 A third way to restore the fishery would be to add
16 channel complexity by adding woody debris to the
17 stream. Simply adding large, intact trees to the
18 channel would be a way to help scour out pools and help
19 slow down the flows and provide areas of refuge for
20 fish during floods. There are also sections of the
21 stream that couldn't be replaced by abandoned channels
22 and right now they've been degraded because the
23 channel's quite wide, and they've lost a lot of their
24 complexity. I would think that somehow these channels
25 would have to be narrowed again.

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01 It's important to try to keep the temperatures low
02 because the widened channels have a cumulative effect
03 and by the time we get to Segments 4 or 5 in Rush
04 Creek, they tend to cause the temperatures to fluctuate
05 too greatly in these segments, so we're going to have
06 to look at the entire length of stream and narrow it
07 down to a width of 20 to 25 feet. It might have to be
08 simply excavated.

09 I would say that the last thing of major
10 importance would be to try to jump start the recovery
11 of riparian vegetation. There are areas that have been
12 damaged by floods, and they don't seem to be recovering
13 very fast. The riparian vegetation is not very dense,
14 if there's any at all in some areas, and it leaves the
15 banks exposed to further widening and damaging, perhaps
16 some planting would be necessary in these areas.

17 I would also say that temperatures in Segments 4
18 or 5 of Rush Creek would have to be monitored and
19 perhaps some program to try to replace the effect of
20 the spring flow that used to exist or try to cool the
21 temperatures. There is a variety of mechanisms,
22 perhaps the management of Grant Lake, perhaps planting
23 riparian vegetation in a very wide band to try to
24 reduce the air temperatures in the vicinity of the
25 stream might be another. I suppose it's also possible

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01 that the springs themselves could be restored to try to
02 bring back this flow and reduce the temperatures, but
03 something along those lines might be required in order
04 to get the growth of the fish back the way it used to
05 be.

06 Q In order of importance, what are your
07 recommendations for Lee Vining Creek?

08 A I would say for Lee Vining Creek -- well, there
09 are two things that are almost equal in importance.
10 One is the amount of gravel available for spawning and,
11 again, because the channel is quite simplified, it's
12 rapidly flushed from the system. Once the stream has
13 had its complexity restored, that might not occur. But
14 in the meantime, it's going to have to be periodically

15 replaced.

16 The channel complexity is the other thing. I

18 be mechanically altered, like Mr. Trihey did in
19 Segments 3-A and 3-B of Lee Vining Creek, just dig

21 working quite well so far.

22 And lastly, I would say that wherever the riparian

24 additional plantings could be made to bring back the
25 riparian vegetation. It's extremely important.

01 Hopefully, no maintenance work will have to be done on
02 the stream because the riparian vegetation will

04 banks and provide refuse during the flood, but it has a
05 long way to go before that occurs, perhaps another

07 that process would be helpful.

08 Q Let me ask you now about monitoring of the fish

10 adopted by this Board and whatever restoration
11 treatments are undertaken in the future. Do you

13 described it, be monitored?

14 A Well, I do because I'm not convinced as to whether

16 maintained. It's possible that high flows, flood flows
17 in the future might degrade some of the habitat until

19 stabilize. And I believe that that might be 20 to 50
20 years off. So in the meantime, it's possible for the

22 It's also possible that where abandoned channels
23 have been rewatered, that the riparian vegetation is

25 could be becoming damaged over time, and it would be
0179

02 the channels as well in these areas to make sure that
03 we're not losing something that would cost a lot more

05 The same thing is true with the gravels. If the
06 complexity of the channel has not been restored, these

08 system and reproduction will gradually be reduced
09 through time. And eventually, it's possible to lose

11 Q My last question concerns a statement in the Draft
12 Environmental Impact Report. Let me read that

14 This statement is on Page 3-D-115 of Volume One of the
15 Draft Environmental Impact Report. It is as follows:

17 pre-1941 fishery conditions for at least 50 or more
18 years."

20 refers to flow regime alternatives and does not
21 contemplate specific restoration treatments. Are you

23 A Yes.

24 Q Can you envision a scenario that combines both
25 flow regime and restoration treatments where the pre-41
0180
01 fisheries in these creeks will be reestablished in less
02 than 50 years?

03 A Yes, I can.

04 Q What scenario is that?

05 A Well, to do the work that I just described,
06 increasing the channel complexity, the gravel, and the
07 riparian vegetation, particularly rewatering the
08 abandoned channels to restore the sinuosity of the
09 channel, especially in Segments 4 or 5 of Rush Creek,
10 and then allowing for the new riparian vegetation to
11 grow to a sufficient size, I think in that scenario, it
12 would be necessary to guard against floods during this
13 period until the riparian vegetation is large enough to
14 stabilize the banks and prevent any further degradation
15 to the habitat.

16 I would say that the channel can be restored
17 immediately, you know, by physical means, but keeping
18 it in good condition depends on the recovery of the
19 riparian vegetation. So in order to be able to walk
20 away from it and know that it's going to stay in
21 pre-1941 conditions might require 40 years in order for
22 the riparian vegetation to be sufficiently large to
23 provide the protection and also to start providing
24 woody debris. As the woody debris is flushed from the
25 system, it supplies new woody debris to take its place.
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01 So that takes quite a bit of time.

02 MR. ROOS-COLLINS: Dr. Mesick, thank you. No
03 further questions.

04 HEARING OFFICER DEL PIERO: Thank you very much.
05 Ladies and Gentlemen, we're going take a --
06 Mr. Birmingham?

07 MR. BIRMINGHAM: I was just standing up to take a
08 recess.

09 HEARING OFFICER DEL PIERO: We're going to take a
10 ten-minute break, and we'll be back at -- between ten
11 and five to the hour. Thank you very much.

12 (Whereupon a short recess was taken.)

13 HEARING OFFICER DEL PIERO: Ladies and Gentlemen,
14 this hearing will come to order again. We had just
15 concluded with Mr. Roos-Collins, and Mr. Birmingham had
16 decided he spent too much time in the chair and wanted
17 to stand up and do some cross-examination, I would
18 assume.

19 CROSS-EXAMINATION BY MR. BIRMINGHAM

20 Q Carl, how are you this afternoon?

21 A BY DR. MESICK: Pretty good.

22 Q You worked for EA Engineering for many years; is
23 that correct?

24 A Correct.

25 Q I think everybody in the room knows that EA
0182
01 Engineering Sciences and Technology is a consultant to
02 the Department of Water and Power.

03 A That's correct.

04 Q And you worked on many of the projects -- while

05 you were at EA, you worked on many of the projects
06 undertaken by EA for the Department of Water and Power;

08 A That's right.

09 Q Now, is it correct that when you were with EA

11 Department of Water and Power, the opinions that you
12 expressed to the Department of Water and Power on the

14 that you held as a biologist at that time?

15 A That's correct.

17 that you held because you were working for the
18 Department of Water and Power?

20 Q I asked that the Reporter mark an answer to one of
21 the questions that was asked of you actually by

23 back and read Mr. Roos-Collins' previous question, your
24 answer to Mr. Del Piero's question, and then your

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01 ask after that.

03 Q BY MR. BIRMINGHAM: Dr. Mesick, you've said that the
04 limiting factors, since the mid 1980s, the limiting

06 to talk specifically about Rush Creek. In the mid
07 1980s, the flow in Rush Creek was generally limited to

09 A BY DR. MESICK: That's correct.

10 Q And then, in 1990, pursuant to an order of the El

12 were increased beyond 19 cfs; is that correct?

13 A That's correct. Actually, I believe it was fall

15 Q Fall of '89. Thank you.

16 Did the increase in flows resulting from the

18 releases from 19 cfs to those flows specified in the
19 order, contribute to the gradual simplification of the

21 by Mr. Del Piero?

22 A Yes. But not as much as the flows that occurred

24 Q This is a question I was going to conclude my
25 examination of you with, but I'll ask it now. You were

01 involved in the preparation of the IFIM report that was
02 prepared by EA Engineering for the Department of Water

04 A To a very small extent.

05 Q Did you consult with Mr. Hanson on the preparation

07 A Not in the preparation of the report.

08 Q Did you consult with Mr. Hanson in the study that

10 A Yes, I did.

11 Q Mr. Hanson has expressed an opinion in this

13 time, but Mr. Hanson has expressed an opinion in this
14 proceeding that a flow in Rush Creek of approximately
15 20 cfs would, in his opinion, maintain the fish that
16 exist in the stream in good condition. That is an
17 opinion that you agree with, isn't it?

18 A Considering the existing conditions in the stream,
19 that they have been degraded, I would agree with that.

20 Q Now, Dr. Morhardt expressed an opinion in this
21 proceeding that the current population of fish in Rush
22 Creek is comparable to other eastern Sierra streams.
23 Are you aware of the report on which he based that
24 conclusion?

25 A Well, there were several that mentioned that
0185 conclusion.

02 Q That is also an opinion with which you agree,
03 isn't it, Dr. Mesick?

04 A Well, it depends, I would say that was more true
05 in the 1980s than it is today.

06 Q You identified in your testimony a number of
07 limiting factors that, in your opinion, contribute to
08 the existing population of brown trout in Rush Creek.
09 Is that correct?

10 A That's correct.

11 Q Let's see if I can find the area. On Page 20 of
12 your written testimony, and I'm referring to the
13 original Cal-Trout Exhibit 4, this is Paragraph 26-D on
14 Page 20, it states, "I believe that the production of
15 large adult trout in Segments 2 to 5 is currently
16 limited by a combination of a lack of deep,
17 low-velocity water with cover provided by complex woody
18 debris that provides refuge from high-water velocities
19 and predators, high and widely fluctuating summer water
20 temperatures, especially in Segments 4 and 5, which are
21 downstream of The Narrows, and a limited supply of
22 food."

23 Is that correct?

24 A That's correct.

25 Q Attached to your testimony is a report that is
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01 identified as Cal-Trout 4-B. And actually, there are a
02 number of documents that make up Cal-Trout 4-B; is that
03 correct?

04 A I'll have to refresh my memory.

05 Q If you take a moment, there's a letter that is
06 addressed to Mark Hill followed by a couple of pages
07 that are identified as restoration monitoring overview
08 dated July 28, 1992. Actually, I believe that's five
09 pages. And then there is a document, a third document
10 which makes up exhibit Cal-Trout 4-B, which is a
11 proposed plan for the monitoring of fish populations in
12 Rush and Lee Vining Creeks, Mono County, California.
13 Do you see those documents?

14 A Yes, I do.

15 Q You were involved in the preparation of those
16 documents; is that correct, Dr. Mesick?

17 A Not all of the documents, I believe.

18 Q Were you involved in the portion of Cal-Trout 4-B
19 entitled A Proposed Plan For The Monitoring of Fish
20 Populations in Rush and Lee Vining Creeks, Mono County,

21 California, which is the third document in Exhibit 4-B?
22 A Yes. But not in the final production of this
23 document. I was on vacation for the entire month of
24 July.
25 Q 1993?

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01 A Yeah --
02 Q Or '92?
03 A Yes. That's correct.
04 Q It doesn't seem like it could be that long ago,
05 but I guess it was.
06 Now, you did this work while you were with EA; is
07 that correct?
08 A That's correct.
09 Q And it was shortly after you did this work that
10 you left EA?
11 A That's correct.
12 Q Specifically, I'd like to look at Page 4, and this
13 is the second Page 4 in Exhibit Cal-Trout 4-B. Are you
14 able to find a second Page 4 which is in Section 3.0 of
15 the document?
16 A Is this within the proposed plan for monitoring
17 the fish populations?
18 Q Yes, it is.
19 A Yes, we verified it's the second Page 4.
20 Q There is a sentence in the top paragraph of
21 Cal-Trout Exhibit 4-B, second Page 4, that states,
22 "During summer months, water temperatures increased
23 which may cause a corresponding increase in the
24 metabolic rate of trout. During some summers, high
25 water temperature may result in poor growth or weight
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01 loss."
02 A A slight change in that, the first sentence you
03 said "which may cause" and my text says "which causes."
04 Q Which causes, excuse me. I beg your pardon.
05 You're correct.
06 A Otherwise, yes.
07 Q Now, it says, "During some summers, high water
08 temperature may result in poor growth or weight loss."
09 At the time this document was written, it was unknown
10 whether high temperatures were a limiting factor;
11 isn't that right, Dr. Mesick?
12 MR. DODGE: Objection. Ambiguous. By whom?
13 MR. BIRMINGHAM: By the authors of the report.
14 I'll clarify it. But to that extent --
15 HEARING OFFICER DEL PIERO: Thank you. Saved us
16 all a lot of time.
17 DR. MESICK: I would disagree with that,
18 Mr. Birmingham, because the evidence that we had was
19 that the growth of the trout ceased in the summer, and
20 the only thing that's different about summer than any
21 other season of the year is that the water temperatures
22 increase. So it's a very logical conclusion that high
23 summer water temperatures were reducing the growth of
24 the fish.
25 Q BY MR. BIRMINGHAM: There are other things that could
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01 reduce the growth of the fish; isn't that right,
02 Dr. Mesick? For instance, food availability would

03 reduce the growth of fish?
04 A BY DR. MESICK: That's true.
05 Q And, in fact, you've expressed the opinion that
06 food availability is a potential limiting factor for
07 adult brown trout in Rush Creek?
08 A That's true.
09 Q So you can't say with certainty that temperature
10 is a limiting factor. It's a limiting factor that you
11 would want to analyze, isn't that right, a potential
12 limiting factor?
13 A Well, in combination with temperature. None of
14 these factors stand alone. Obviously, if food is
15 limiting so that there's not a lot and temperatures
16 become a problem, the problem is aggravated more so
17 than if food is very abundant. It's possible, even
18 with the high temperatures, if food was quite abundant,
19 the growth would not stop. So it's a combination of
20 things. I would say that while food could have been a
21 factor, I think that all of us in the fishery
22 subcommittee would agree that temperature was part of
23 the problem.
24 Q Just give me one moment, Dr. Mesick, if you will.
25 A I would also -- there was temperature data
0190 existing at this time. Dr. Stacy Lee, who worked for
01 Beak Consultants and had done the Fish and Game study
02 in 1987 and 1988 and had recorded stream temperatures
03 during the summer found them to be quite high, so we
04 know at least during those two years, the stream
05 temperatures were way above the levels where brown
06 trout will even cease feeding. So, obviously, that
07 would have a direct impact on their growth rates.
08 Q Isn't it right, Dr. Mesick, that while you were
09 previously employed at EA, you prepared a document
10 concerning the potential limiting factors of adult
11 brown trout in Rush Creek?
12 A Was the document entitled --
13 Q No. I'm specifically referring to a document that
14 you prepared in 1990 entitled "A Sixth Year of Fish
15 Population Studies in Lower Rush Creek 1990."
16 A Okay. Yes. Most of the fish population reports
17 contained a discussion of limiting factors.
18 Q And isn't it correct that at that time, you
19 concluded that temperature in lower Rush Creek was not
20 a limiting factor?
21 A I believe that that statement -- that's true.
22 That statement was made, but I think it was referring
23 more to mortality of fish rather than their growth. It
24 was not limiting the number of fish in a stream, but it
0191 was certainly limiting their size.
02 MR. BIRMINGHAM: May I take a moment,
03 Mr. Del Piero? Thank you.
04 Q BY MR. BIRMINGHAM: Now, in your description of
05 historical conditions on Rush Creek, you talked about
06 the existence of a forebay in Segment 1 of Rush Creek
07 below Old Grant Lake, and you indicated that that
08 forebay provided good habitat for adult fish; is that
09 right?
10 A BY DR. MESICK: That's correct.

11 Q You said that there were large fish, average
12 length 12 inches long and reaching weights up to a
13 pound in that portion of Rush Creek; is that correct?
14 A Well, they would have been larger than 12 inches,
15 but I would say in the pound vicinity.
16 Q Now, the forebay that existed in this portion of
17 Rush Creek below Grant Lake in 1941, that was an
18 artificial structure; is that right?
19 A That's correct.
20 Q When you talked about the conditions of Rush Creek
21 today, you talked about Segment 1 of Lee Vining
22 Creek -- I'm sorry, Rush creek -- Segment 1 of Rush
23 Creek including the Mono Gate return ditch.
24 A That's correct.
25 Q Is it correct that the Mono Gate return ditch

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01 provides some of the best habitat for adult brown trout
02 in the entire length of Rush Creek?
03 A Today, that's true.
04 Q And that's an artificial structure?
05 A That's correct.
06 Q You've testified, Dr. Mesick, that in portions of
07 Rush Creek, spawning gravels is a limiting factor.
08 A That's correct.
09 Q I'd like to refer to the tables that are contained
10 in your report or your written testimony, Cal-Trout
11 Exhibit 4. And these tables contain data that were
12 collected during your studies of Rush Creek while you
13 were at EA and then after you left EA; is that right,
14 Dr. Mesick?
15 A That's correct.
16 Q Now, is it correct that the number of
17 young-of-the-year are an indication of the availability
18 of spawning gravels?
19 A To some degree. Other factors could be involved
20 as well, and I would say that's not always true for
21 even Rush Creek.
22 Q Well, is it correct that there were more
23 young-of-the-year in Rush Creek before spawning gravels
24 were placed there by Mr. Trihey than after spawning
25 gravels were placed there by Mr. Trihey?

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01 MR. ROOS-COLLINS: Objection. Ambiguous as to
02 time.
03 HEARING OFFICER DEL PIERO: You want to specify
04 time?
05 Q BY MR. BIRMINGHAM: In 1987, in the summer of 1987,
06 Dr. Mesick, there were 59,710 young-of-the-year in Rush
07 Creek; is that correct?
08 A BY DR. MESICK: That's correct.
09 Q That's an estimated number?
10 A That's true. It's based on the estimates from six
11 index sites, six study sites.
12 Q And then for 1990, you prepared another estimate
13 of the total number of young-of-the-year in Rush Creek,
14 Lower Rush Creek. Is that correct?
15 A That's correct.
16 Q And in 1990, there were 5,934 young-of-the-year
17 estimated in Rush Creek; is that correct?
18 A That's correct.

19 Q And in 1991, you estimated that there were 4,344
20 young-of-the-year in Rush Creek; is that correct?
21 A That's correct.
22 Q And in 1992, in the fall of 1992, you estimated
23 that there were 13,676 young-of-the-year in Rush Creek.
24 A That's correct.
25 Q Now, 1987 was before Mr. Trihey placed any
0194 spawning gravels in Rush Creek; isn't that right?
01 A That's correct.
02 Q And 1990 was the year in which Mr. Trihey placed
03 spawning gravels in Rush Creek?
04 A That's incorrect. It was the fall of 1991.
05 Q Fall of 1991. I see.
06 A Which would have affected only the numbers of
07 young-of-the-year that were observed in the fall of
08 1992, fish spawned in the previous year.
09 Q So in the fall of 1992, we have one year of data
10 which show that there were an estimated 13,676
11 young-of-the-year after Mr. Trihey placed spawning
12 gravel in the stream; is that correct?
13 A That's correct.
14 Q And that is compared to 59,710 young-of-the-year
15 in 1987 before Mr. Trihey placed spawning gravel in
16 Rush Creek.
17 A That's correct.
18 Q Now, Lee Vining Creek, is it correct that you have
19 opined that spawning gravel is a limiting factor in Lee
20 Vining Creek?
21 A Today, it is.
22 MR. HERRERA: Excuse me, Tom, 20 minutes have
23 expired.
24 MR. BIRMINGHAM: Thank you, Mr. Herrera. I'd make
0195 an application for an additional 20 minutes.
01 HEARING OFFICER DEL PIERO: Granted.
02 MR. BIRMINGHAM: Thank you.
03 Q BY MR. BIRMINGHAM: Now, you collected data similar
04 to those data collected on Rush Creek in Lee Vining
05 Creek; is that correct, Dr. Mesick?
06 A BY DR. MESICK: Yes. Sometimes they were in
07 different seasons so the numbers would be slightly
08 different based on the number of young-of-the-year.
09 Q Now, looking at Table 7, Table 7 contains an
10 estimate of the total number of fish in Rush Creek
11 during the years represented in the table; is that
12 correct?
13 A In Lee Vining Creek?
14 Q Lee Vining Creek, excuse me. Let me restate the
15 question. Table 7 on Page 38 of your testimony
16 represents the estimate of the total number of fish in
17 Lee Vining Creek in the years represented.
18 A That's correct except it's only Segments 1 through
19 3-B. It does not include the section of stream below
20 the county road.
21 Q Has Mr. Trihey placed any spawning gravels in the
22 section below the county road?
23 A I believe he did.
24 Q Let's look at the number of young-of-the-year. In
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01 1987, there were 9,000 young-of-the-year estimated in
02 Segments 1 through 3-B of Lee Vining Creek; is that
03 correct, Dr. Mesick?

04 A That's approximately correct, 9,007.

05 Q 9,007. And then in 1988, there were 8,676
06 young-of-the-year estimated in Lee Vining Creek.

07 A That's correct.

08 Q And then in 1992, there were 2,583
09 young-of-the-year estimated in Lee Vining Creek; is
10 that correct?

11 A You're reading from the uncorrected testimony.

12 Q That's correct. I thought I told you at the
13 beginning I was reading from the original four --
14 okay. I've got a corrected version now.

15 The corrected version of Table 7 shows that in the
16 fall of 1992, there were 2,308 young-of-the-year in Lee
17 Vining Creek; is that right?

18 A That's correct.

19 Q Okay. Now, I've got a corrected version of the
20 table. When did Mr. Trihey place spawning gravel in
21 Lee Vining Creek?

22 A The late summer of 1991.

23 Q So we have one year of data since Mr. Trihey
24 placed spawning gravel in Lee Vining Creek?

25 A That's correct.

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01 Q And from that one year of data, you concluded that
02 the placement of spawning gravel in Lee Vining Creek
03 was successful?

04 A Yes, by looking at the trends over time.

05 Q Now, looking at the trends over time, isn't it
06 correct, Dr. Mesick, before Mr. Trihey placed spawning
07 gravel in Lee Vining Creek, the data that's reflected
08 in Table 7 shows that there were more young-of-the-year
09 in Lee Vining Creek than after Mr. Trihey placed
10 spawning gravels in Lee Vining Creek?

11 A Well, if you simply look at the numbers of
12 young-of-the-year, that is correct, but if you look at
13 the numbers of Age One fish, you can see that they've
14 been reduced dramatically since after 1990. And that
15 is because the surveys that I did show that there were
16 ample gravels in the stream prior to that May 1990
17 event and immediately after that, the production of Age
18 One fish decreased dramatically, went from between 1100
19 to 3,000 to less than 65 for three years in a row.

20 Q Now, you indicated that there was a major event in
21 the fall of -- excuse me, May 1990, that resulted in
22 an increase, a fluctuation in flows, an almost
23 instantaneous fluctuation from near zero cfs to
24 approximately 100 cfs; is that right?

25 A Thereabouts. I'm not sure of the upper limit, but

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01 I know it was quite high.

02 Q And it's correct, isn't it, that that immediate
03 fluctuation in flows washed a lot of the fish out of
04 the stream?

05 A That's correct.

06 Q Now, isn't it possible, Dr. Mesick, that it was
07 that immediate fluctuation in flows that resulted in
08 the decreased number of young-of-the-year and Age One

09 fish after 1990?

10 A Could you repeat that again, please?

11 Q Yes. Isn't it right, Dr. Mesick, that it was that
12 almost instantaneous increase in flows in May 1990 that
13 decreased the number of Age One class fish in 1991,
14 1992, 1993?

15 A Well, certainly that was part of it because it
16 reduced the numbers of adult-sized fish, but on the
17 other hand, physical inspections of the stream shows
18 that the gravel had since disappeared from Segment 1,
19 and Segment 1 was where most of the reproduction had
20 been occurring.

21 Q Now, we've heard testimony from Dr. Stine that
22 Segment 1 of Lee Vining Creek has remained
23 substantially unaffected as a result of diversions by
24 the Department of Water and Power; is that correct?

25 A I don't know exactly what Dr. Stine's testimony
0199 was.

02 Q If Dr. Stine had testified that Segment 1 of Lee
03 Vining Creek had remained essentially unimpaired, that
04 the riparian corridor in Segment 1 of Lee Vining Creek
05 had remained essentially unimpaired as a result of
06 diversions by the Department of Water and Power, would
07 you agree with that opinion?

08 A Yes, I would.

09 Q Now, Mr. Trihey placed spawning gravel in Segment
10 1 of Lee Vining Creek in 1990; is that correct?

11 A 1991.

12 Q 1991. And since 1991, I think you've said that
13 the fish in Segment 1 of Lee Vining Creek are not
14 recovering.

15 A That's correct.

16 HEARING OFFICER DEL PIERO: Excuse me,
17 Mr. Birmingham. Why?

18 DR. MESICK: Well, again, with the lack of
19 spawning gravel, there's been no reproduction to
20 produce new fish. If you look at Table 8 on Page 39 of
21 my written testimony, it shows the numbers of fish in
22 Segment 1, and since 1990, there have been very few
23 fish compared to what was there prior to 1989 and
24 earlier. So for one thing, we have very few adult
25 fish, and then there's no spawning habitat for them to

0200 utilize and produce young the next year.

02 And then we still have a problem with habitat
03 being degraded by lack of woody debris. The upstream
04 diversion dam traps the debris and prevents it from
05 being recruited into Segment 1, and so we have slightly
06 less complex habitat and less refuge for the fish
07 during flood flows. So we've got low survival of the
08 young that are produced. There's very few young being
09 produced and very few adult fish to produce the young.
10 So those three things in combination are keeping the
11 population low.

12 MR. BIRMINGHAM: May I ask that that be repeated?
13 Repeated?

14 (Whereupon the record was read as requested.)

15 HEARING OFFICER DEL PIERO: Thank you.

16 Excuse me, Mr. Birmingham, one question. On that

17 chart on Page 39, you've got two categories, 1-SP,
18 1-FA. and 92-SP and FA. What do those refer to?
19 DR. MESICK: The SP are spring and the FA are
20 fall. And you would only expect to have
21 young-of-the-year in the fall samples, so when there's
22 an NA, they weren't present.
23 HEARING OFFICER DEL PIERO: Thank you. I'm sorry,
24 Mr. Birmingham.
25 Q BY MR. BIRMINGHAM: I want to go back and ask you
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01 about some things you just said because it fascinates
02 me, Dr. Mesick. And maybe it doesn't fascinate anybody
03 else, but after we ran back up the stream with
04 Judge Finney to look at what's been designated the
05 Birmingham Pool, I know there are a lot of things that
06 fascinate me that don't fascinate other people, but I
07 wanted to ask you a few things.
08 You just said that there was a lack of spawning
09 gravel in Segment 1 of Rush Creek or Lee Vining Creek;
10 is that right?
11 A BY DR. MESICK: That's correct.
12 Q But in 1991, Mr. Trihey put spawning gravel into
13 Segment 1 of Lee Vining Creek.
14 A That's correct, but it was flushed from the
15 segment during the high flows that occurred in the
16 summer of 1992.
17 Q That's something you hadn't mentioned yet.
18 A Excuse me. Last year.
19 Q The summer of 1993.
20 A Correct.
21 Q So last summer there were high flows that flushed
22 the spawning gravel out?
23 A That's correct.
24 Q Now, you've said that in Segment 1, there was a
25 lack of woody debris. That was a limiting factor. Is
0202
01 that your testimony?
02 A That's correct because when I began my studies in
03 1986, there was more woody debris than there is now.
04 Q In 1986, there was more woody debris than there is
05 now. And so you would think that it would be
06 counterproductive to go out there and take woody debris
07 out of the stream, wouldn't you, Dr. Mesick?
08 A It depends.
09 Q Well, isn't it right that if the presence of woody
10 debris in Segment 1 of Lee Vining Creek is a limiting
11 factor, that generally, it would not be a good idea to
12 take woody debris out of
13 Segment 1 Lee Vining Creek?
14 A That is true unless it forms a complete dam across
15 the stream. If it blocks the flow such that the stream
16 will jump the channel and form a new channel, that is
17 not helpful. It should be removed.
18 Q And except in those limited circumstances that you
19 just described, you think that it would retard the
20 restoration of the fishery to go out and take woody
21 debris out of the stream in Segment 1 of Lee Vining
22 Creek except in those circumstances that you just
23 described?
24 A Yes.

25 Q Now, I'm going to ask you a hypothetical question,
0203

01 Dr. Mesick. I'm going to ask you to assume, and
02 unfortunately I don't have the report here in front of
03 me, so I can't show it to you to ask you, but I'm going
04 to ask you to assume that in 1990, Mr. Trihey went out
05 to Lee Vining Creek and took woody debris out of
06 Segment 1 of Lee Vining Creek in a place where the
07 woody debris did not completely block up the channel so
08 that it would cause the channel to jump its banks.
09 Now, I'm going to ask you just to assume that that's
10 true.

11 In your opinion, that retarded the restoration of
12 the fishery in that portion of Lee Vining Creek, didn't
13 it?

14 A Well, it certainly would have retarded the natural
15 recovery of the stream. I don't know what Mr. Trihey
16 did in its place.

17 Q Now, you've talked in your testimony about the
18 success of the pools, the deep pools that were placed
19 in Rush Creek by Mr. Trihey back in 1990. Is that
20 correct?

21 A That was in 1991.

22 Q 1991. I've got to keep these years straight.
23 1991 was the first year of restoration; is that right,
24 Dr. Mesick?

25 A Yes. In September, I believe.

0204

01 Q Now, you talk about the success of these pools
02 that were put in Rush Creek in 1991, and part of the
03 basis of your opinion is the observation of large fish
04 in those pools; is that correct?

05 A That's part of the basis of my opinion.

06 Q Okay. What is the other basis of your opinion?

07 A By looking at the growth rates of the smaller
08 fish, in particular the young-of-the-year that would
09 migrate into these pools, they were larger than
10 young-of-the-year in the untreated sites, and that also
11 held true for one-year-olds and the two-year-olds, all
12 ages of fish. They all were slightly larger in the
13 pools than they were in the untreated sections. So
14 considering that we had large fish in these pools after
15 one season, you would assume that there would be a
16 cumulative effect as each age class grew at a higher
17 rate over time.

18 Q Now, we were involved in a very long debate on
19 monitoring in the El Dorado County Superior Court; is
20 that correct?

21 A That's correct.

22 HEARING OFFICER DEL PIERO: This debate took place
23 during cross-examination.

24 MR. BIRMINGHAM: This debate went on for months,
25 not Dr. Mesick and I, but all of the parties in this

0205

01 room, or virtually all of them. I don't think the
02 State Lands was there, but virtually everyone else was.

03 HEARING OFFICER DEL PIERO: Gee, just imagine what
04 a great time you folks missed.

05 MS. SCOONOVER: Damn.

06 MR. BIRMINGHAM: No. It was not a great time.

07 Q BY MR. BIRMINGHAM: But as I recall from what I heard
08 then, the study during which this data were collected
09 on the growth rate of the larger fish in these pools,
10 that data was collected by electrofishing the pools; is
11 that right, Dr. Mesick?

12 A BY DR. MESICK: That's correct.

13 Q Now, when you electrofish Rush Creek, it's
14 correct, isn't it, that the flow in Rush Creek is
15 reduced -- let me ask specifically so I don't get an
16 objection.

17 In the spring of 19 -- in the spring and fall of
18 1992, you fished Rush Creek; is that right?

19 A That's correct.

20 Q Electrofished Rush Creek.

21 A That's correct.

22 Q And in the spring of 1992 and in the fall of 1992,
23 in order to electrofish Rush Creek, it was necessary
24 that the flows in Rush Creek be reduced.

25 A It was a matter of degree. I think one of those
0206 periods was reduced more than during the other.

02 Q And in the period when it was reduced more for the
03 electrofishing than the other, it was because flows had
04 already been reduced to permit construction in Rush
05 Creek. Is that right? Actually, I don't think that is
06 right. I'm thinking of Lee Vining Creek,
07 Dr. Mesick, so I'll withdraw that question.

08 But looking at Rush Creek, when the flows were
09 reduced to permit electrofishing, isn't it correct that
10 some fish that would have occupied other portions of
11 the stream moved into the pools because of the reduced
12 flows?

13 A I don't see where that would have been the case.
14 I mean, the fish were there and about the same size and
15 abundance as they were during 19 cfs releases. If they
16 stayed within, you know, the different areas of the
17 habitat, I don't see why there would have been any
18 reason for them to have to move.

19 MR. BIRMINGHAM: Could I ask that that be reread?
20 (Whereupon the record was read as requested.)

21 HEARING OFFICER DEL PIERO: Excuse me. After
22 having heard the answer, it was nonresponsive to the
23 question.

24 Do you want an answer to the question you asked,
25 Mr. Birmingham?

0207
01 MR. DODGE: Mr. Chairman, I think the answer was
02 responsive.

03 HEARING OFFICER DEL PIERO: I don't think so,
04 because he asked whether or not -- well, Mrs. Anglin,
05 would you be kind enough to read the question back.

06 (Whereupon the record was read as requested.)

07 HEARING OFFICER DEL PIERO: The question elicited
08 a response either they did or they did not.

09 MR. DODGE: And the answer was no.

10 HEARING OFFICER DEL PIERO: The answer was he
11 didn't know.

12 Q BY MR. BIRMINGHAM: It's correct, Dr. Mesick, that in
13 response to the question that Ms. Anglin just read to
14 us, you don't know the answer to that question

15 definitively?

17 definitively.

18 Q And you said something -- in the response you gave

20 curiosity again. You said, "During 19 cfs releases,"

21 and when you said "during 19 cfs releases," you meant

23 Superior Court ordered the increased flows. Isn't that

24 what you meant when you said "during 19 cfs releases"?

0208

01 Q Now, we had a discussion during the monitoring

03 That discussion went on for months as well; is that

04 right?

06 Q Now, the fact -- when you conduct a survey to

07 determine the distribution of fish in a stream by

09 that you do it by electrofishing may be a confounding

10 factor? Is that right, Dr. Mesick?

12 Q Not necessarily, but it may be, isn't that right?

13 A Depends on the methods that you use, and I don't

15 Mr. Trihey caused the fish to redistribute.

16 MR. BIRMINGHAM: May I take just a moment,

18 I have no further questions of Dr. Mesick at this

19 time.

21 Mr. Birmingham.

22 Ms. Cahill?

24 Q Good afternoon, Dr. Mesick.

25 A BY DR. MESICK: Good afternoon.

01 Q When you gave your summary of the comparison

02 between the historic and the current conditions on Rush

04 the Rush Creek bottom lands was the existence of more

05 large fish pre-diversion than there are now?

07 Q You have indicated, I believe, that habitat

08 complexity is simpler now on Rush Creek than it was

10 A I believe so.

11 Q And you recommend, I believe, that habitat

13 that right?

14 A That's correct.

16 Creek trout to better withstand winter flows closer to

17 the natural winter flows?

19 Q And let me ask the same questions on Lee Vining.

20 On Lee Vining Creek, is there a lower level of habitat

22 A Yes, I believe so.

23 Q And you recommend restoration measures that would
24 increase habitat complexity on Lee Vining?
25 A That's correct.

0210
01 Q And if you had increased habitat complexity, would
02 the fish on Lee Vining be better able to withstand
03 flows close to the natural level of inflow?
04 A That's correct.
05 Q And one of the types of restoration measures then
06 would be the creation of what we would call winter
07 refugia; is that right?
08 A That's correct.
09 Q And you would recommend the creation of some
10 winter refugia?
11 A Yes, I would.
12 Q And you're also recommending the creation of some
13 high-flow refugia?
14 A That's correct.
15 Q You have indicated in your testimony that the
16 basic elements that comprise fish habitat include
17 channel geometry, riparian vegetation, bordering
18 wetlands, stream bed substrate, and stream flow. Are
19 water temperature and food also basic elements?
20 A Yes, they are.
21 Q And are these factors some of the basic components
22 that are needed to develop and maintain a healthy
23 ecosystem in a stream?
24 A Yes, they are.
25 Q And those are some of the factors that when they
0211
01 are positive, would allow a stream to attain its
02 biological potential?
03 A They are some of the factors, yes.
04 Q Are there others that come to your mind as you sit
05 here?
06 A Well, those are the primary ones.
07 Q Some of the factors that you have listed as
08 limiting factors, are those aspects of habitat?
09 A I believe they all are aspects of the habitat.
10 Q You answered a question regarding flows of 20 cfs
11 in Rush Creek. Were you assuming when you answered
12 that question that flows would be at 20 cfs both winter
13 and summer?
14 A I don't recall the original question.
15 Q Perhaps Miss Kelsey could find that. It was a
16 question by Mr. Birmingham who asked whether you
17 believe that a flow of 20 cfs would maintain fish in
18 good condition.
19 MR. DODGE: I can help. He said, "Yes, given the
20 greatest conditions."
21 Q BY MS. CAHILL: In fact, I believe you said
22 considering the existing conditions existing in the
23 stream.
24 HEARING OFFICER DEL PIERO: Do you need her to
25 find it, then?

0212
01 MS. CAHILL: Do you recall that?
02 DR. MESICK: Yes. And I would say that when I
03 said "20 cfs," I was referring to year-round stream
04 flows.

05 MS. CAHILL: I don't need it, then. Thank you
06 anyway.

07 Q BY MS. CAHILL: And your answer basically was
08 qualified by the fact that you were taking into account
09 existing conditions on the stream; is that right?

10 A BY DR. MESICK: That's true. And also, maybe it
11 would be helpful to define "keeping fish in good
12 condition." It simply means keeping them alive but not
13 restoring the pre-1941 conditions.

14 Q Do you believe that a year-round 20 cfs flow would
15 restore the pre-diversion conditions?

16 A No, I do not.

17 Q And if the habitat were able to be restored, then
18 would the stream be able to accommodate flows that were
19 closer to the natural flow levels?

20 A Yes, I do.

21 Q And if we had restoration and flows closer to the
22 natural flow levels, then would you expect to get
23 closer to recovery of the pre-41 fish populations?

24 MR. BIRMINGHAM: Excuse me. I'm going to object
25 on the grounds that this question is -- actually,
0213

01 excuse me. Well, go ahead. I beg your pardon.

02 HEARING OFFICER DEL PIERO: Excuse me. Doctor, do
03 you understand the question?

04 DR. MESICK: I would like to have it repeated,
05 first.

06 (Whereupon the record was read as requested.)

07 DR. MESICK: If you mean by "restoration"
08 restoring all the features that I've discussed in my
09 summary on the habitat complexity of the gravels and
10 all the other features, I'd say yes.

11 Q BY MS. CAHILL: Thank you.

12 Do brown trout like deep water?

13 A BY DR. MESICK: Yes, they do.

14 Q And is more deep water available at flows greater
15 than 20 cfs than is available at 20 cfs in Rush Creek?

16 A In some areas, it gets quite a bit deeper with
17 higher flows, but in other areas, it mainly gets faster
18 because of the lack of complexity.

19 Q But, in fact, even where it is getting faster,
20 it's also getting somewhat deeper?

21 A Somewhat deeper.

22 Q But there are some pool areas where it gets deeper
23 without involving excessive velocities; is that right?

24 A That's correct.

25 Q Do you have any explanation for what generated
0214

01 such a large 1987 young-of-the-year class on Rush
02 Creek?

03 A I do. I believe that the high flows that occurred
04 during the summer of 1986, which ranged up to 350 cfs
05 and probably averaged about 250 cfs for five months
06 straight, caused the stream channel to change its
07 location in some areas, and that excavated or produced
08 an additional supply of gravel that accumulated within
09 the side channels of the stream, and then the fish were
10 able to spawn there. So it increased the availability
11 of gravel for the fall of 1986, the fish spawned and
12 the young were produced in the summer of 1987.

13 Q So in other words, abundant gravel led to abundant
14 young-of-the-year?
15 A That's correct.
16 Q With regard to the Lee Vining gravel placement and
17 movement, if the Los Angeles diversion dam were not on
18 Lee Vining Creek, would you expect additional gravels
19 to come into Segment 1 from upstream?
20 A Yes, I would.
21 Q Do you believe that there is a potential
22 temperature problem in Lower Rush Creek at flows of
23 approximately 20 cfs?
24 A Yes, I do. In particular during drought years.
25 I'm not sure about normal water years or wet years, but
0215
01 when air temperatures and amount of snow pack is low, I
02 believe that it is a problem.
03 MS. CAHILL: Give me just a moment.
04 I think that's all the questions I have. Thank
05 you.
06 HEARING OFFICER DEL PIERO: Thank you very much,
07 Ms. Cahill.
08 Ms. Scoonover?
09 MS. SCOONOVER: I have no questions of this
10 witness.
11 HEARING OFFICER DEL PIERO: Mr. Gipsman, are you
12 still here? He's departed.
13 Mr. Frink?
14 MR. FRINK: Yes, I do have some questions.
15 HEARING OFFICER DEL PIERO: I've not missed
16 anyone, have I? Good. Mr. Frink.
17 MR. FRINK: Thank you.
18 CROSS-EXAMINATION BY THE STAFF
19 Q Yes. Dr. Mesick, you stated that the Mono ditch
20 is about twice as long as the pre-diversion channel was
21 that composed Reach One of Rush Creek and that it
22 provides excellent fish habitat; is that correct?
23 A BY DR. MESICK: That's correct.
24 Q On the basis of what you know about pre-diversion
25 conditions, do you believe that the fishery habitat
0216
01 provided by the Mono ditch equals the habitat that was
02 present in Segment 1 of Rush Creek prior to 1941?
03 A It's difficult to say --
04 MR. BIRMINGHAM: Excuse me, I'm going to object on
05 the grounds of lack of foundation. I believe it was
06 Dr. Mesick's testimony that they have no data
07 concerning the condition of the Segment 1 prior to
08 diversions by --
09 MR. DODGE: I don't know what Counsel means by
10 "data," but he also testified as to certain
11 observations that he made about historical channels.
12 HEARING OFFICER DEL PIERO: I'm going to overrule
13 the objection. In fact, the witness did testify as to
14 information about the historical channel, albeit not
15 particularly detailed. The way Mr. Frink phrased his
16 question, he asked with the caveat "given what you
17 know," and so I'm expecting the answer with that in
18 mind.
19 Do you understand the question, Sir?
20 DR. MESICK: Yes, I do

21 HEARING OFFICER DEL PIERO: Would you please

23 DR. MESICK: That's the hard part. It's
24 different. Some areas are better. Some areas are

0217

01 now consists of a completely different nature than it

03 as it was prior to 1941. There's more habitat, and
04 there could be more fish, but I believe that that

06 was probably good year-round and therefore, maybe even
07 though it was shorter habitat, the fishery was actually

09 that in my opinion, they were probably similar.

10 Q BY MR. FRINK: In what respect does the habitat in

12 A BY DR. MESICK: The presence of cover, it's only
13 provided currently by the existence of aquatic plants

15 virtually nonexistent during the winter. There is some
16 cover provided by riparian vegetation along the banks,

18 removes it to maintain conveyance in the channel. So
19 some years it's there, and other years it's not. But

21 maturity, so it doesn't really provide a significant
22 amount of cover throughout the entire segment.

24 that are there only during late summer and through the
25 fall.

01 Q If the riparian vegetation along Mono ditch were
02 allowed to remain in place, do you believe that Mono

04 than existed in Segment 1 of Rush Creek prior to the
05 diversions?

07 Q I believe you stated that channel widening and
08 erosion have been a problem on Rush Creek. Have

10 Vining Creek?

11 A I have noticed some portions of Segment 1 of Lee

13 mid 1980s, but I would say it's no more than 10 percent
14 increase in width. I have not noticed any channel

16 Segment 3 was already as wide as it was about to get
17 as a result of the 1960 floods. But channel widening

19 of Lee Vining.

20 Q In recent years, then, the majority of the problem

22 correct?

23 A That's correct.

25 by using -- excuse me. I have to clear my throat -- by
0219

02 A I don't believe so. It's still the magnitude of

03 the flow and the duration of the flow that's
04 important. The channel lacks bottom roughness that
05 would slow the flow of water and reduce the
06 velocities. So even though if you increase it slowly,
07 it's the final magnitude that's important.
08 Q Okay. You testified that one of your
09 recommendations for stream restoration on Rush Creek
10 would be to narrow the channels which have been
11 widened. How would you recommend the channels be
12 narrowed?

13 A There are two ways of doing it, I imagine. One
14 would be to simply excavate the material in the channel
15 and deposit it along the banks, making it deeper in the
16 center and, you know, piling substrate on the stream
17 banks that narrow the channel.

18 The other way would be to simply bring in material
19 and add it to the stream banks and, therefore, narrow
20 the channel.

21 Q How long of a stream section are you concerned
22 about having problems resulting from channel widening
23 on Rush Creek?

24 A Well, in most cases, the channel widening is
25 occurring where the floods that occurred in the 1960s
0220

01 have changed the location of the stream, and therefore,
02 the riparian vegetation is very weak. And you can see
03 by looking at the map in the areas where the stream
04 channels change, and now there's a dotted line
05 representing the existing channel, whereas the
06 historical channel is a solid black line. So in those
07 areas of the stream where it's changed, those are the
08 problem areas, and it appears to be about half of the
09 stream.

10 Q I believe that we heard some testimony from
11 Dr. Stine earlier in the hearing about the possibility
12 of the channel narrowing down eventually as a result of
13 vegetation. Do you not believe that that would occur?

14 A Well, the vegetation, itself, does not narrow the
15 channel. The vegetation traps fine sediment that's
16 being transported down the stream, and if the upstream
17 reservoirs collect all the fine sediment, there's
18 nothing to narrow the channels with. So I really don't
19 see how that process is going to occur, or if it's
20 going to occur, it's going to be an extremely long
21 period of time.

22 Q Now, if there is erosion in an immediately
23 upstream area as a result of a degraded channel
24 condition, wouldn't that erosion provide some of the
25 fine material that could collect in the vegetation
0221

01 along the edge of the channels?
02 A Well, the problem with that occurring is we're
03 assuming that in that case, one area of the stream is
04 going to continue to degrade while another area
05 improves. And if one area's going to improve, it's
06 because the riparian is beginning to recover and
07 stabilize the banks. And if it happens in one
08 location, it should be happening throughout the stream.
09 So if we're stabilizing the stream banks, there will be
10 less erosion in the future, so there will be less of a

11 sediment source from the existing channel. And we need
12 to depend on sediment from upstream areas above the
13 reservoirs.

14 Q The last paragraph on Page 22 of your written
15 statement states, and I quote, since the fall of 1989,
16 stream flows under the judicial orders in the Mono Lake
17 case has increased 100 to 110 cfs during the first
18 year, channel maintenance flows of 160 cfs were set for
19 two-week periods during summers, and stream flows were
20 resumed in Walker and Parker Creeks. These changes
21 resulted in further widening and smoothing of the
22 stream channels and also flushed much of the spawning
23 gravel from the streams, end of quote.

24 In view of the problems that you mentioned
25 regarding widening and smoothing of the stream channel,
0222

01 do you believe that it would be advisable to provide
02 channel maintenance flows of the order of 160 cfs in
03 future years?

04 A It's my opinion that the two weeks of 160 cfs had
05 much less of an effect than 12 months of 100 cfs. I
06 don't feel that channel maintenance flows are having
07 that much of a detrimental effect. However, I believe
08 it's important to monitor because I don't think anyone
09 can predict the effects of the channel maintenance
10 flows. It won't necessarily help the recovery of the
11 stream. It might, but it might not. It all depends on
12 the recovery of the riparian vegetation and then
13 recruitment of woody debris to the stream channel.

14 Q Would you suggest reducing both the channel
15 maintenance flows for the period of two weeks as well
16 as the flows during the rest of the year in order to
17 maintain channel stability?

18 A If no restoration work is done to increase the
19 channel complexity, I would say so. It would be best
20 to wait until the riparian vegetation has been
21 reestablished before high flows are released in the
22 stream.

23 However, if channel complexity has been increased,
24 either through restoration or recovery of the riparian
25 vegetation, then high flows should have no damaging

0223
01 effects and I believe that they would have a beneficial
02 effect towards recovery of the fishery.

03 Q Do you have an opinion as to how long it would be
04 before the type of channel complexity that you desire
05 could be achieved?

06 A Well, the riparian vegetation would have to become
07 large enough to stabilize the banks, and then also for
08 the riparian vegetation to be large enough that some of
09 it, you know, as it dies due to natural senescence, it
10 falls over into the stream and provides woody debris.
11 Those are important features that probably would take,
12 I would say -- I'm not an expert on riparian
13 vegetation, but from my observations, I would say at
14 least 30 years and perhaps as long as 100 years. I
15 don't know.

16 But the third part that's key to this is the
17 supply of the sediment from upstream. And it would be
18 difficult to totally recover the channel complexity

19 until there's some supply of sediment has been
20 reestablished.

21 Q If you were to undertake artificial stream
22 restoration measures, would that greatly reduce the
23 period of time you're speaking of?

24 A Yes, it would.

25 Q Do you have an idea as to how long would be
0224

01 required under the sort of restoration measures that
02 you've recommended in your testimony?

03 A Well, based on the observations that I made in Lee
04 Vining Creek, there was extensive restoration done in
05 Segment 3 of Lee Vining Creek, and then high flows were
06 released -- they weren't extremely high, but I believe
07 in the vicinity of maybe a little over 150 cfs during
08 the summer of 1993.

09 And I think high flows were also released in some
10 areas during the summer of 1992, and there was very
11 little degradation of this habitat. Apparently, there
12 was enough channel complexity that it reduced the
13 velocities near the bottom, and there was very little
14 incision or channel widening going on in these areas.
15 In fact, there was very little sediment transport at
16 all, so the stream bed started to become stable.

17 So it's possible that with reestablishing riparian
18 vegetation in the areas where it's not growing at this
19 time and that by doing the work in the channel to
20 increase the complexity, I would say it would recover
21 fairly quickly and could withstand high flows without
22 any problem at all maybe within less than five years.

23 Q Have you reviewed the stream evaluation reports
24 prepared for the Department of Fish and Game for Rush
25 Creek and Lee Vining Creek?

0225
01 A The report for Rush Creek prepared by Beak and --
02 Q Yes.

03 A I have reviewed preliminary drafts but not the
04 final draft, so probably most of it I'm familiar with.

05 Q And how about the stream evaluation report for Lee
06 Vining Creek?

07 A A preliminary draft.

08 Q Have you reviewed the flow recommendations that
09 the Department of Fish and Game has made for Rush Creek
10 and Lee Vining Creek in this hearing?

11 A I'm most familiar with those for Rush Creek. I
12 haven't thoroughly reviewed those for Lee Vining Creek.

13 Q As a biologist, are you familiar with the IFIM
14 instream flow study analysis that was used in the
15 reports?

16 A Yes, I am.

17 Q Is it your understanding that a major factor used
18 in making the DFG flow recommendations was the amount
19 of weighted usable area present at differing flow rates
20 in each of the two streams?

21 MR. DODGE: Objection. Lacks foundation.

22 HEARING OFFICER DEL PIERO: Sustained. You go
23 ahead and -- ask foundational questions.

24 MR. BIRMINGHAM: Excuse me. I'm sorry. May I ask
25 that the question be reread because I think Mr. Frink

0226

01 started the question by asking did he know? I may be

03 MR. FRINK: Okay. I know -- I've actually got the
04 question written down. I could reread it.

06 Q BY MR. FRINK: Is it your understanding that a major
07 factor used in making the DFG flow recommendations was

09 rates for Rush Creek and Lee Vining Creek?

10 HEARING OFFICER DEL PIERO: I'm going to change my

12 MR. DODGE: May I speak to the objection? He
13 hasn't established that this witness knows why DFG is

15 HEARING OFFICER DEL PIERO: No, he's not. He's
16 asked whether or not he knows one element of it.

18 HEARING OFFICER DEL PIERO: This -- you need to
19 qualify it from the standpoint of whether or not -- I'm

21 If it is, then you need to qualify it. You need to be
22 able to not run into the problem that's being addressed

24 Q BY MR. FRINK: I believe, Dr. Mesick, you stated that
25 you had reviewed the preliminary report on Rush Creek

01 is that correct?

02 A BY DR. MESICK: That's correct.

04 preliminary or the final report on Lee Vining Creek?

05 A The preliminary report on Lee Vining Creek.

07 it your opinion that the flow recommendations that were
08 made, at least in the preliminary reports, were based

10 A That was used. I don't believe it was the only
11 component that was used for the recommendation, but it

13 Q And in using the IFIM study methodology, is a
14 major factor in making flow recommendations the amount

16 rates?

17 A Yes, it's a major factor.

19 and the absence of riparian vegetation on Rush and Lee
20 Vining Creeks. Do you believe that channel erosion and

22 recommending lower instream flows than would ordinarily
23 be recommended if one were to apply the IFIM study

25 A If you were dealing with only the existing channel
0228

02 done, those would be considerations to make sure the
03 erosion wasn't occurring and channel widening was not

05 Q Until the restoration work that you have suggested
06 in your testimony is undertaken, do you have an opinion

08 Department of Fish and Game should be revised due to

09 the concerns you've mentioned about channel erosion or
10 channel stability?

11 MS. CAHILL: Objection. Ambiguous as to which
12 flows. Which periods of the year.

13 HEARING OFFICER DEL PIERO: Sustained. You need
14 to specify which flows.

15 Q BY MR. FRINK: Not having the DFG flow
16 recommendations in front of me right now, this is going
17 to be a little more difficult.

18 Do you have a concern about the flow
19 recommendations of the Department of Fish and Game for
20 Rush Creek during any months of the year in view of the
21 concerns you've stated about channel erosion or channel
22 stability?

23 A BY DR. MESICK: Of the flow recommendations that I
24 saw, they were all within the range that I believe
25 probably will not cause problems. However, they're

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01 also in the range where maybe monitoring should be
02 conducted to make sure that problems aren't being
03 caused. They're in the gray area. I don't think that
04 they're automatically going to cause a problem.

05 The highest flows are only for a relatively brief
06 period during the summer period, and I don't think that
07 they're high enough or of sufficient duration to cause
08 a lot of damage. But there also should be caution used
09 and monitoring of the stream channels should be
10 conducted.

11 Q In your experience as a fishery biologist, are you
12 familiar with any instances in which the IFIM study
13 methodology has been applied to determine the
14 recommended flows to be provided for restoring the
15 fishery in a stream channel that has been severely
16 degraded?

17 A Not that I'm aware of, no. Not that I can
18 remember.

19 Q Do you believe, then, that the condition of the
20 channel in a degrade -- strike that. In the case of a
21 stream channel that has been severely degraded, do you
22 believe that the existing condition of the channel
23 should be carefully considered in evaluating the
24 instream flow recommendations of an IFIM study?

25 MR. DODGE: Objection. Ambiguous.

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01 HEARING OFFICER DEL PIERO: You want to expand on
02 that?

03 MR. DODGE: It's just that I listened to the
04 question, and I have no idea what a yes or a no would
05 mean. I couldn't understand the question.

06 HEARING OFFICER DEL PIERO: Mrs. Anglin, would you
07 be kind enough to read it back?

08 (Whereupon the record was read as requested.)

09 HEARING OFFICER DEL PIERO: Sustained. You need
10 to restate that question.

11 Q BY MR. FRINK: You testified that in your experience
12 as a biologist, fisheries biologist, that you could not
13 recall an instance in which an IFIM study had been used
14 to recommend instream flow rates for the protection of
15 fish. In the case of Rush Creek and Lee Vining Creek,
16 I believe you also have testified that the channel

18 pre-diversion conditions of those channels; is that
19 correct?

21 that question you asked if I had any recollection of
22 IFIM studies where flows have been recommended for

24 order to protect the fishery.

25 Q Correct.

01 A In that case, yes. Most of the IFIM studies I'm
02 familiar with are in relatively healthy channels. So,

04 in damaged channels.

05 Q Okay. And you testified that you believe that the

07 have been severely degraded as compared to the
08 pre-diversion conditions; is that correct?

10 Q Do you believe that in applying the results of an
11 IFIM study to a severely degraded stream channel, that

13 degraded condition of the channel?

14 MR. DODGE: Same objection.

16 Mr. Chairman

17 HEARING OFFICER DEL PIERO: I'm going to overrule

19 Do you understand the question, Sir?

20 DR. MESICK: Yes.

22 answer it?

23 DR. MESICK: Well, yes and no, because insofar as

25 that represents the damaged channel. So in some ways,
0232

01 the IFIM is taking that into account. Yes, in some
02 degree, you're taking that into account. But as far as
03 the possibility of continuing damage to the habitat,
04 no, it does not.

05 So special considerations need to be taken into
06 account so that there isn't continued damage to the
07 habitat, such as channel widening, flushing of the
08 gravels, and channel incision, and events like that.
09 So those need special consideration. But if you're
10 simply using the IFIM in a straightforward manner, I
11 think you've already taken into account the effects of
12 the damaged channel on the fishery.

13 MR. FRINK: Okay. I appreciate that. I believe
14 that's all my questions.

15 HEARING OFFICER DEL PIERO: Thank you very much.

16 Mr. Smith?

17 MR. SMITH: Yes. I have a couple of questions for
18 Dr. Mesick.

19 Q BY MR. SMITH: There have been several suggestions
20 that we should perhaps consider, we, the Board, should
21 consider a bypass facility of some sort on Lee Vining.
22 It sounds like, from your testimony, that you would
23 consider something like that vital in your coordinated
24 approach to restoration; is that correct?

25 A BY DR. MESICK: That's correct. But I have a
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01 difficult time imagining how that would occur because
02 with the diversion structure, there's a pond habitat
03 above upstream of the diversion such that velocities
04 are reduced and most of the larger sediment is going to
05 be trapped by the lower velocity, and what will be
06 bypassed are fine sediments. So if there's a way to
07 transport all sizes of sediment, fines as well as also
08 the gravels and the cobbles, the larger substrate, up
09 to perhaps 12 inches in diameter through the system,
10 yes, that would be very beneficial.

11 Q Are you aware of any attempts to do something like
12 that, to create such a facility?

13 A I've never seen one. I've never seen an example
14 of one.

15 Q Okay. We have also heard a lot of testimony about
16 what rewatering the side channels all the way from just
17 scraping it out with shovels all the way to going in
18 with cats and digging out these large plugs. What is
19 your expert opinion on something of that sort? Do you
20 think it would do any good just to rewater those side
21 channels and let them go, or do you think we would have
22 to do some active work in these existing channels? I
23 think you said something like that.

24 A Yes. I said that there are some areas where it's
25 likely that active work would be necessary because the

0234
01 stream channel has been degraded and is virtually
02 eliminated in some areas. Perhaps sheep that were
03 grazing in the area trampled the banks. They're
04 weakened because the riparian vegetation is dead and
05 the integrity of the channel has been lost. Those
06 sections would have to be restored because if you
07 release flow into it and the stream channel disappears,
08 the water could flow in any direction and not
09 necessarily go and continue down in the historical
10 channel. So you would want to make sure that the water
11 followed its original course. So there are some areas
12 where work would be necessary.

13 But in the areas where the channel is in fairly
14 intact shape, I would not do any work other than work
15 to insure that the shape of the channel would be stable
16 while water is passed through it initially, until the
17 riparian vegetation can be reestablished.

18 Q And that leads me to my last question. You've
19 been emphasizing the fact that during all this period
20 of time, there needs to be some monitoring going on.
21 Would you recommend that the Board set up a river
22 keeper or someone of that sort? Are you familiar with
23 that term, excuse me, first off?

24 A Not really.

25 Q Someone who would be actively monitoring the
0235

01 restoration work, the temperature, the flow regime, the
02 restoration in terms of how much, how little, and this
03 kind of thing, coordinating all of that kind of work.
04 Those kinds of general kinds of things. Would you
05 recommend something like that?

06 A Certainly, the monitoring needs to be done and

07 should be done, in particular, in a concentrated effort
08 after, you know, the flows have been optimized to make
09 sure that there isn't continuing damage that everyone
10 is unaware of and it costs far more money to restore
11 the damage that's been done as a result of change,
12 continuing stream flows, or doing other work. So
13 whatever the form of this person or group or whoever
14 monitors, yes. I think that monitoring is important.
15 Q Your basic admonition to the Board, then, would be
16 be careful.

17 A Yes.

18 MR. SMITH: Thank you.

19 HEARING OFFICER DEL PIERO: Mr. Herrera?

20 MR. HERRERA: I have no questions, Mr. Del Piero.

21 HEARING OFFICER DEL PIERO: Thank you very much.

22 Mr. Canaday? I'd be surprised if you didn't.

23 MR. CANADAY: Yes.

24 Q BY MR. CANADAY: Dr. Mesick, you talked about, in
25 your earlier testimony, that you need to guard against
0236

01 flood flows. And I think you were talking specifically
02 in that time about Lee Vining Creek; was that correct?

03 A BY DR. MESICK: I think probably -- I probably would
04 have meant both streams.

05 Q Both streams. Could you expand on that more so we
06 understand what "guard against flood flows" means?

07 A If it would be possible to manage the reservoirs,
08 the upstream reservoirs, such that rather than a high
09 spike of flow, let's say, a thousand cfs could come
10 down the stream, it would be better to release it over
11 a long period of time by managing the upstream
12 reservoirs, observing a heavy snow pack, anticipating a
13 flood, and then making sure that the reservoirs are
14 adequate to intercept the flow and spread the releases
15 out over a longer period of time rather than a short
16 duration where perhaps more damage would occur.

17 Q Are you familiar with the upstream storage
18 capability on Lee Vining Creek?

19 A Fairly much, yes. It's quite small.

20 Q So do you believe that that ability to regulate
21 potential flood flow events exists on the Upper Lee
22 Vining Creek?

23 A Certainly, some type of agreement would have to be
24 worked out with the Southern California Edison Company
25 who controls the three or four reservoirs that are
0237

01 upstream. I can't recall which.

02 Q Could the possibility of diverting additional
03 flows from Lee Vining Creek and putting them into
04 storage at Grant for later release, could that possibly
05 be an alternative?

06 A It certainly could be an alternative.

07 Q You've discussed with various different
08 questioners about population monitoring. What is your
09 professional opinion that needs to be -- how often do
10 we need to monitor fish populations on an annual basis
11 in Rush Creek and Lee Vining Creek?

12 A It depends on -- on an annual basis?

13 Q How many times a year? Once or twice?

14 A Depends on what your goals are. If you want to

15 determine whether or not there are still factors that
16 are preventing the recovery of the fishery, it's
17 important to measure, I would say, twice, so you can
18 separate the conditions from the winter and the
19 conditions from the summer.

20 If you simply want to see if the fishery is
21 responding and increasing over time, once would be
22 adequate.

23 Q If you were going to sample twice a year under one
24 scenario, you would sample in the springtime and the
25 fall, correct?

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01 A Correct.

02 Q And then one time per year, you would sample in
03 the fall?

04 A It depends on the stream, I would say, and it also
05 depends on the goal, what information you want to
06 collect. If you want to match it with the existing
07 data, the majority of the data exists for spring in
08 both streams.

09 However, if you want information on production of
10 young-of-the-year, you should sample in the fall.

11 Q Getting back to monitoring, again, your testimony
12 suggests that we should monitor the streams, at least
13 until the riparian vegetation stabilizes and the
14 channel margin stabilizes, certainly, the fishery
15 response, the channel response itself, and the
16 availability of spawning gravels in the streams at
17 least in those three areas; is that correct?

18 A That's correct. I would also suggest that perhaps
19 stream temperatures as well in Segments 4 and 5 of Rush
20 Creek could potentially be a problem.

21 Q A continuous monitoring program?

22 A At least during the summers.

23 Q During the summers. And you believe that some
24 sort of planting, I assume that's what you meant by
25 "jump start." You used the words "jump start" riparian

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01 vegetation in some areas. You mean active planting of
02 cuttings?

03 A That's the method that I'm most familiar with.

04 Q Okay. And you were also advocating in the
05 short-term, meaning before some of the riparian
06 vegetation stabilizes the bank subchannels, adding
07 woody debris to recover?

08 A I would think that that would be one way to
09 increase the channel complexity, and it would be a
10 fairly natural means to do it.

11 Q Based on some of your -- I have a question on
12 spawning gravels. Based on your testimony and some of
13 the responses I've heard to the questions, is it your
14 opinion that an ongoing gravel recruitment, or gravel
15 placement in Rush and Lee Vining Creek is going to be
16 necessary?

17 A Until the channel complexity has been restored,
18 yes.

19 Q You're familiar with the EA Rush Creek study; is
20 that correct? The IFIM study that was done on Rush
21 Creek?

22 A I am familiar, primarily, with the collection of

23 data rather than the modeling.
24 Q Your opinion, then, is -- are you familiar with
25 the status of the stream at the time of the collection
0240
01 of that data? The stream complexity?
02 A Yes.
03 Q Is it your opinion that the complexity at the time
04 the data was collected in the late 1980s was
05 significantly different than in many sections of Rush
06 Creek, different than it was pre-41?
07 A Yes.
08 Q And how is that different?
09 A Well, that the gradient is higher in the stream
10 channel. The channel is wider. It doesn't have the
11 complexity, and that would set up a completely
12 different distribution of velocities across the stream
13 channel.
14 Q And the data -- to your recollection, was the data
15 collected over a range of flows?
16 A Yes, it was.
17 MR. CANADAY: It was? Thank you.
18 That's all I have.
19 HEARING OFFICER DEL PIERO: Thank you very much.
20 I have a question. Actually I've got a couple of
21 questions I think. They're all the same issue.
22 CROSS-EXAMINATION BY THE BOARD
23 Q BY HEARING OFFICER DEL PIERO: You indicated -- and I
24 forget who asked the question -- that in order to
25 restore or in order to restore the process for the
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01 deepening of channels -- and I think you were referring
02 to Rush Creek at the time, and it may have
03 applicability to Lee Vining, so you tell me if it does
04 or does not -- there were various alternatives that you
05 could use to attempt to deepen the channels for the
06 restoration of pools. One was excavation of the center
07 channel and deposition of the material excavated on the
08 side of the streams.
09 The other was to bring in material from some other
10 location and deposit them along the stream banks.
11 I've got a couple of questions for you -- and then
12 you indicated a third, and you talked about sediment
13 bypass from, I think that was in response to
14 Mr. Smith's questions on Lee Vining.
15 This is the question. If one were to excavate in
16 the center, would one not have to replace that which
17 was excavated with gravels in order to accommodate the
18 need for spawning gravels? That's the first question.
19 A BY DR. MESICK: Okay. First of all, I was primarily
20 talking about Rush Creek.
21 Q Okay. That's fine. If that's the case, then
22 let's just talk about Rush Creek.
23 A Okay. For Rush Creek, in the existing channel
24 today, where Mr. Trihey has not placed gravels, there's
25 very few gravels in the center of the main channel
0242
01 today. Most of been flushed out of the channel. There
02 are gravels where this might be the case in, I believe,
03 Segment 5 of Rush Creek. They're fairly abundant down
04 there, but you would still have gravels left after you

05 excavate the center of the channel. I don't think that
06 that would be a problem.

07 Q Okay. In those areas where the gravels don't
08 exist, could you excavate the center channel?

09 A Yes.

10 Q And would you have to backfill, then, with
11 gravels?

12 A Well, that would be --

13 Q Would you be down to -- would you be down to soil?
14 Would you be down to bedrock? What would you be down
15 to?

16 A I believe you'd be down to virtually the same as
17 what you have now, fairly large rocks from six inches
18 on up.

19 Q Okay.

20 A Depends on the segment -- most segments are --
21 especially down below what's called The Narrows in
22 Segments 4 and 5, rocks are generally between six and
23 12 inches in diameter. And I believe you'd probably
24 hit the same sizes as you excavate down.

25 Q Okay.

0243

01 A They don't really provide very much channel
02 complexity. There's not very much roughness to them.

03 Q Were you to choose the process of adding material
04 to the banks, describe for me what the process would be
05 if materials were added to the banks.

06 A Well, first of all, you would have to transport
07 the material to the stream causing minimal damage to
08 the riparian vegetation and the existing banks. That
09 would be difficult to do. You would probably have to
10 run the equipment down the center of the stream that
11 you're working in do that, and just choose one entry
12 point to minimize any damage.

13 And you would simply use a backhoe to carry the --
14 or some type of payloader to carry the material to the
15 site --

16 Q That's not what I'm asking. I'm not being clear.
17 Tell me the process -- describe for me the process of
18 the deepening of the channel that would result after
19 those improvements were put in. That's what I'm more
20 interested in. Would the channel, in fact, be
21 deepened? Or would you, in fact, simply have
22 established a circumstance where you had a deeper
23 channel that was higher than either side of the banks
24 that you'd established?

25 A Well, in Rush Creek, incision has occurred in the

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01 lower half of the stream, which means it has very high
02 banks. It would be very hard -- you could probably
03 reduce the width of the channel by half, and you still
04 would not be causing the water to flood across the
05 surface of the --

06 Q In the area where there's incision, though, why
07 would you be adding materials to the banks?

08 A Because not only has it incised, it has also
09 widened. It's wider than it used to be.

10 Q So would you be adding material, then, actually
11 within the stream course, itself?

12 A Yes, you would.

13 Q Okay. So you'd be eliminating a portion of the
14 stream course that had resulted from the widening
15 process?

16 A Right.

17 Q Okay. By adding that material, then, would --
18 I'll get back to my question again. Would you be
19 establishing what, in effect, amounts to an artificial
20 levee where you'd end up with the bottom of the stream
21 actually being higher than either side of the
22 artificial bank that you reestablished?

23 A I don't envision that at all because you wouldn't
24 be adding material to the bottom. You would not be
25 raising the bottom of the stream.

0245

01 Q So are you suggesting that -- I'm trying to
02 understand this because if there's a sedimentation
03 process that goes on and you've established what might
04 be considered artificial banks at this point simply
05 because of the erosion that's gone on and the widening
06 process that's taken place, whether that's artificial
07 or not remains to be seen. Assuming that you've
08 established these artificial banks somewhere within the
09 current course of the stream, would the channelization,
10 then, result in a deepening, or would the
11 sedimentation, the sediment that's carried along with
12 the water that's passing through that now-established
13 channel, cause an elevation, if you will, of the stream
14 bottom? Or do you know?

15 A I believe -- I've seen the results of a lot of
16 restoration work where the channels have been
17 narrowed. And, in fact, by returning the channel width
18 to its natural width, it increases the ability of the
19 stream to transport the sediment through the system in
20 a normal manner such that the sediment that would be
21 normally deposited in the center of the channel,
22 because the channel's too wide and the velocities are
23 too low, that process stops. So that you no longer
24 have deposition of sediment in the stream channel, if
25 you return the channel width to its normal dimensions.

0246

01 Q Okay. So the result of that, then, would be the
02 ultimate development of ponds?

03 A Ponds?

04 Q Not ponds. Pools, I'm sorry. Pools.

05 A Well, it depends on the gradient. You can still
06 have narrow riffles, narrow runs. They would be better
07 than they would before, but they would not be pools.
08 They still would not produce two-pound trout, but they
09 would produce more half-pound trout like they used to.

10 Q Okay.

11 A You would slightly enhance the growth of the fish.

12 Q Okay. Last aspect of that. In the event that
13 there were a sediment diversion established to allow
14 for sediment to pass those areas that are currently
15 catching sediment, particularly gravels, how long would
16 the restoration process take if you only used gravel
17 bypasses as opposed to being more, for lack of a better
18 term, pro-active methods that were the subject of my
19 first two questions?

20 A Well, it would still be a long process because on

21 both streams, there are reservoirs upstream of the DWP
22 diversion points, and those reservoirs would continue.
23 And you would have to put a bypass system for sediment
24 on each of these reservoirs as you go up through the
25 system. And, you know, if could you do that, then that

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01 would enhance the process, but if not, you're still
02 dealing with only receiving sediment from erosion in
03 very small sections of the stream that are essentially
04 healthy now. They have functioning riparian systems,
05 and so you wouldn't expect a lot of sediment transport
06 from these systems. So it would be quite slow. There
07 would be some, and it would probably be the fine
08 sediments that would perhaps be passed through the
09 upper reservoirs more than the larger sediment that
10 would all be trapped. I would say it would be a slow
11 process. It might occur, but it would be slow.

12 HEARING OFFICER DEL PIERO: Ladies and Gentlemen,
13 it's quarter to the hour. We're going to adjourn for
14 the day. We'll begin again at 8:30 tomorrow morning.

15 Any last comments? We'll see you in the morning.

16 The hearing is adjourned.

17 (Whereupon the proceedings were adjourned
18 at 4:45 p.m.)

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01 REPORTER'S CERTIFICATE

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02

03 STATE OF CALIFORNIA)

03) ss.

04 COUNTY OF SACRAMENTO)

04

05 I, KELSEY DAVENPORT ANGLIN, certify that I was the
06 official court reporter for the proceedings named
07 herein; and that as such reporter, I reported, in
08 verbatim shorthand writing, those proceedings, that I
09 thereafter caused my shorthand writing to be reduced to
10 typewriting, and the pages numbered 1 through 247
11 herein constitute a complete, true and correct record
12 of the proceedings:

13

14 PRESIDING OFFICER: Marc Del Piero

15 JURISDICTION: State Water Resources Control Board

16 CAUSE: Mono Lake Diversion

17 DATE OF PROCEEDINGS: January 10, 1994

18

19 IN WITNESS WHEREOF, I have subscribed this
20 certificate at Sacramento, California, on this 24th day
21 of January 1994.

22

23

24

24
25
25

Kelsey Davenport Anglin, RPR,
CM, CSR No. 8553