PUBLIC HEARING
STATE WATER RESOURCES CONTROL BOARD
DIVISION OF WATER RIGHTS
STATE OF CALIFORNIA
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SUBJECT: AMENDMENT OF CITY OF LOS ANGELES' WATER RIGHT LICENSES FOR DIVERSION OF WATER FROM STREAMS THAT ARE TRIBUTARY TO MONO LAKE

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Held in
Resources Building
Sacramento, California
Thursday, October 21, 1993

VOLUME IV

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

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SACRAMENTO, CALIFORNIA

THURSDAY, OCTOBER 21, 1993, 9:00 A.M.

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HEARING OFFICER del PIERO: Ladies and Gentlemen, this hearing will come to order. For purposes of introduction for those that might be new here today, my name is Marc del Piero. I'm Vice-Chairman of the State Water Resources Control Board.

This is the time and place for the hearing regarding the City of Los Angeles' water rights licenses for the diversions of water from streams that are tributary to Mono Lake.

Joining me today, although he just stepped out to go get me a cup, was our Chairman, Mr. John Caffrey, and also joining us today is my good friend and team mate, it seems like, on every water rights hearing in the last two months, Mr. James Stubchaer, sitting to my immediate left.

Also assisting us today are some individuals with outstanding credentials, our good Staff counsel for this matter, Mr. Dan Frink. We have two Staff environmental specialists who have spent literally hours working on this issue, Mr. Steven Herrera and Jim Canaday, and last but not least, our Staff engineers, Rich Satkowski and Hugh Smith.

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Yesterday when we broke, Mr. Roos-Collins, I believe, was preparing to begin his examination of the witnesses. Is that true?

MR. ROOS-COLLINS: Yes, Mr. del Piero.

HEARING OFFICER del PIERO: Fine, are you prepared, Sir?

MR. ROOS-COLLINS: Yes, I am.

HEARING OFFICER del PIERO: Good. Begin. Oh, I need to point out that our Court Reporter's changed. Mrs. Kelsey Anglin is going to be doing that today so that if you would indulge her in the same fashion that you indulged Ms. Book in terms of spelling your name and speaking as succinctly and distinctly as possible, we would appreciate it very much.

CROSS-EXAMINATION BY MR. ROOS-COLLINS

Q Good morning, Mr. Casaday. I'm Richard Roos-Collins, that's R-o-o-s, hyphen, C-o-l-l-i-n-s, attorney for California Trout.

Let's begin with the definition of the alternatives set forth in the Draft Environmental Impact Report. You stated yesterday that the 6383.5 foot alternative was environmentally superior compared to the point of reference scenario. Was that your testimony?
A BY MR. CASADAY: Yes.

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Q Is "environmentally superior" a term of art?
A I don't understand that question.
Q When you said that the 6383.5 foot alternative was environmentally superior to the point of reference scenario, what did you mean?
A CEQA requires the identification of an environmentally superior alternative. It does not give specific guidance in evaluating that.
Q Is it your testimony that the tributary fisheries would be superior under 6383.5 foot alternative than the tributary fisheries in the point of reference scenario?
A Yes.
Q You also testified yesterday that the 6390 foot alternative is environmentally superior by reference to the 1941 conditions. Was that your testimony?
A Yes. That's correct.
Q Are you saying, then, that the tributary fishery which would exist under the 6390 foot alternative would be superior to the fishery which existed before L.A. began diversions in 1941?
A Not necessarily, no. The environmentally superior alternative did not just focus on the fishery. It was a combination of all the physical environmental resources.

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Q In 1989, specifically August 22nd, 1989, which is the effective date for the point of reference scenario, in your opinion were the tributary fisheries inferior to the fisheries which existed in 1941 before L.A. began diversions?
A I'm sorry. Inferior at the point of reference compared to the pre-diversion?
Q Yes.
A Yes.
Q And are the tributary fisheries inferior today compared to 1941?
MR. BIRMINGHAM: I'm going to object on the lack of foundation.
HEARING OFFICER del PIERO: I think he's right.
Q BY MR. ROOS-COLLINS: Mr. Casaday, on Page 3-D-114 of the Draft Environmental Impact Report -- excuse me. 3-D-115 in the section entitled Affects of Lake Alternatives on Ability to Restore Pre-41 Fishery Conditions, it's stated, "None of the alternatives can restore and maintain pre-1941 fishery conditions for at least 50 or more years."
Is that your opinion?
A This section was developed by -- under the direction of Philip Dunn of our staff who will be on the next panel. I don't have any quarrel with that

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statement. I believe it's correct.
Q Is it your understanding, then, that it will take at least 50 years following the implementation of any of the alternatives in the Draft Environmental Impact Report to reestablish the fisheries which existed before L.A. began diversions?
A I believe this statement was made in absence of mitigation. I -- we would have to ask Mr. Dunn what he feels if substantial mitigation work were done through the stored fishery.
Q I'll refer the questions, then, on that issue until the next panel.
In your opinion, what are the principle causes for the degradation of the fisheries between 1941 and the present?
A I'm sorry. I didn't hear. And the?
Q Present.
A Present. Well, I believe there were several. The loss of riparian vegetation, the loss of undercut bank habitat, the loss of spawning gravels. Again, I believe Philip Dunn could give a more accurate answer, but I think all of those factors change during diversion period.
Q I would refer further questions on that issue until Mr. Dunn is before us.

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Let me turn to Page S-9 of the Draft Environmental Impact Report. You say there -- or the Draft Environmental Impact Report says in the second paragraph, "Pre-1941 fishery conditions cannot be accurately described." Is that your opinion?
A Again, I am in general agreement with that statement. That was a conclusion, again, of Mr. Dunn. I believe there's quite a difference of opinion on that issue, and I'm sure we will have to reconsider it as we help the staff prepare the final EIR. We may very well come to the same conclusion.
Q Are you familiar with the authorities which were relied on in assessing pre-1941 fishery conditions in the course of the drafting of this Draft Environmental Impact Report?
A I'm only vaguely aware of those authorities myself.
MR. FRINK: Mr. Chairman, it appears that we've had a whole string of questions on fishery issues, and the fishery experts who worked in preparing the EIR will be the witnesses presented. I think it would probably be more efficient to save those questions for that time.
HEARING OFFICER del PIERO: I'm not going to tell Mr. Roos-Collins how to pursue his line of questioning,

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but you do need to be aware, Sir, that you've got 20 minutes. That's all you've got, and you might want to use the time as expeditiously as possible.
MR. ROOS-COLLINS: I appreciate that direction.
HEARING OFFICER del PIERO: Given who's here to be cross-examined.
Q BY MR. ROOS-COLLINS: My next questions are for Dr. Hutchinson and Dr. Brown.

How was the LAMP model developed by the Jones and Stokes team in the course of the drafting of this Draft Environmental Impact Report?

A BY DR. BROWN: Well, the overall development is described in the auxiliary report that documents the land usage but, briefly, this was recognized early on by State Board Staff during the scoping phase of this process that an overall description of the amount of water available, the places that it can be stored, the diversion capacities, needed to be considered. Even though we were primarily looking at the four northern most streams in their diversions, the entire system built to deliver water to Los Angeles needed to be considered.

So there was advisory group called the TAG, or Technical Advisory Group, established that included L.A., the State Board, other of the parties, and the

consultant, and over the next two years, the model as was used was developed and tested and reviewed. And approximately a year ago, it was used to generate the conditions associated with these specified lake level target minimums, and the results of that model were used in other resource topic area assessments.

Q When you began to develop land, did you ask L.A. DWP whether it had a planning model which could serve the purpose that LAMP now serves?

A Initially, right when the EIR process began, L.A. wrote a conceptual description and proposed that they would author a planning model for the entire aqueduct system, thereby implying that they did not, at that time, have one, and they are the ones that for the first 18 months attempted to provide such a monthly planning model for use in the EIR.

Q Let me read a paragraph from Auxiliary Report Number 18, beginning on Page One continuing on to Page Two and ask if this conforms to your understanding of the history of development of LAMP.

"A technical advisory group was organized by the State Water Resources Control Board Staff to provide guidance and review of model development. L.A. DWP offered to formulate and program the model and provide necessary basic hydrologic data, L.A. aqueduct

capacities and operating constraints and other information needed to produce a successful simulation of the model. L.A. DWP formulated a conceptual plan and schedule in August 1989 and provided the initial version of the model in April 1991. Because the initial version of the aqueduct model was not considered by State Water Resources Control Board to be flexible enough to simulate the various Mono Basin EIR alternatives, State Water Resources Control Board directed its consultant to modify the initial aqueduct model to include more input variables that could be changed by the model user and to develop output summary statistics and graphics for comparing and analyzing results from the model."

Is that your opinion?

A Yes. That is my opinion.

Q Yesterday, Mr. Birmingham referred to a planning model which I believe that is acronym LAASM. When did you first see LAASM?
Excuse me, for the Reporter, that's L-A-A-S-M.
A LAASM was delivered to the State Board on September 22nd, I believe, or whichever was the last date to deliver testimony for these hearings.
Q September 22nd of this year?
A That's right.

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Q Let me return to my first question about LAMP. At the time that the draft EIR was first being drafted, did L.A. DWP offer to the State Board any operational model for the L.A. aqueduct system?
A Well, as was already described in what I have just said and in that paragraph, L.A. did deliver an initial operations model in whatever that date was, April of '91, approximately, 18 months after they had started work on it.
Q Dr. Brown, I asked a question which confused you or at least wasn't what I intended to ask. Let me back up and lay the foundation.
The Draft Environmental Impact Report describes LAMP as a planning model. Is that your opinion?
A Okay. That's -- that is a good word for it, planning.
Q Is there such a thing as an operations model that a facility operator would use to actually turn the levers?
A Yes, there is. That would be a different sort of model.
Q And what term would you use to describe the model used to turn levers at a facility?
A I would say that's an operations model.
Q At the time that you began the development of the

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Draft Environmental Impact Report, did L.A. provide you with an operations model for the L.A. aqueduct system?
A No.
Q Did you ask for one?
A No. Because we needed a planning model for the environmental impact assessment.
Q Dr. Hutchinson, did you ask for an operations model at the time that the DEIR was being drafted?
A BY MR. HUTCHINSON: At the time, no, but I have had -- dealt with the operations of the Los Angeles aqueduct since 1985 and was pretty familiar with the way they did their planning and operations. And at the time the EIR process started, unless they had developed one in the preceding three years, they did not have one, to my knowledge.
Q To your knowledge, how, then, were the levers turned at the dams and other facilities that comprised the L.A. aqueduct system?
A In early 1986, as part of my work for Inyo County, I had a meeting with the aqueduct planning and operations people in Los Angeles. This was at the beginning of a very wet year. If you recall, February of 1986 was a very high snowfall and rainfall month, and there was a tremendous snow pack built up in the

Sierra. And there was a lot of concern about how the
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aqueduct would be managed, the aqueduct system, especially in the Owens Valley would be managed that year.

The County's concern was primarily related to how much water would be used for spreading groundwater recharge activities as opposed to spilling or spreading out on the eastern part -- or the central part of the valley floor. At this meeting I attended, it was explained to me that the operations were planned by essentially figuring out what had been done in the past in a similar year.

In other words, in 1986, it was going to be approximately 150, 160 percent of average runoff year, so the plan was basically -- the planning process began by looking to see in the past what had happened during 150, 160 percent runoff year in terms of storage build ups, spreading, spilling, all those sorts of factors. So it was more of ad hoc planning in terms of what they had done in the past as opposed to anything rigid or based on a computer program.

Q Would it be fair to say that you developed LAMP partly from the model provided by L.A. DWP and partly from scratch because no operations model had been provided to the Jones and Stokes team by L.A. DWP?

A I would say a planning model and an operations
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model have different objectives. So a -- even if a -- even if an operations model had existed, it would have only been of limited use. Previous planning models had been completed. I had done a couple other planning models on an annual basis prior to the beginning of this EIR process which, between those models and the one that L.A. had developed as part of this Tag process, those were the basis for the first version of LAMP.

Q Dr. Hutchinson, did you first see --

A Excuse me, it's Mister. I'm not a doctor.

Q My apologies, although you deserve the honor.

Mr. Hutchinson, did you first see LAASM on September 22nd, 1993, or thereafter?

A Yeah. I think I got it the Monday after or something, when it came in the mail.

Q Had you reviewed LAASM subsequent to your receipt of it?

A At the time I received it, we weren't sure exactly how it was going to be reviewed or who was going to review it or what it was going to be used for. I have not done anything in any detailed review of LAASM except for the small part on the groundwater pumping component. It was more of just a curiosity thing on how they had done certain things as opposed to a real
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rigorous review.

Q Mr. Casaday, I have not been part of the discussions that have occurred between L.A. DWP, Jones and Stokes, and the State Water Board, of course, with respect to continued funding for Jones and Stokes work. Let me make sure I understand your testimony

yesterday.
Did you testify yesterday that at this time no funding is available to review LAASM?
A BY MR. CASADAY: Actually, I think Dr. Brown should probably answer that if he knows the answer. I have not -- I should point out that my role as project manager was not to manage the finances of this project. Our principal in charge has done that. He's not testifying. Dr. Brown probably knows if we now have the funding supplement for reviewing LAASM or not. That's been under discussion, I know.
A BY DR. BROWN: My only addition to this is that we made a distinction yesterday that the original contract and the funding for Jones and Stokes centers around the Environmental Impact Report. There is a segment that allows us to review comments made on the draft EIR and working with the Staff to produce the final EIR.
There is not a -- there never was a separate budget for assisting Staff in reviewing direct

testimony for the water right hearing, and the way LAASM was submitted, it would fall under that category. So we are not directly reviewing LAASM.
MR. ROOS-COLLINS: Mr. del Piero, was this my bell or someone else's?
HEARING OFFICER del PIERO: That was your bell, Sir.
MR. ROOS-COLLINS: I request ten extra minutes on the same grounds stated by Mr. Birmingham yesterday.
HEARING OFFICER del PIERO: Granted.
Q BY MR. ROOS-COLLINS: Let us assume that funding is available to review LAASM and otherwise to respond to comments about possible deficiencies in LAMP. Are you prepared to improve LAMP?
A BY DR. BROWN: We described yesterday that we are recently approved to make some minor adjustments and enhancements to LAMP in response to comments on the EIR primarily having to do with, well, a couple of items that have been identified. Perhaps the major change is actually to allow exports to be made to the Upper Owens River in a specified season or monthly pattern.
Right now, the logic exports it, as I stated, as soon as the lake releases have been satisfied for that year within the specified minimum and maximum on the Upper Owens and that does not allow a user to export

water, let's say, in a uniform monthly pattern to the Upper Owens. So we are going to make that particular change, as an example.
There were a couple of -- there are a couple of corrections that need to be made, also, on relatively minor things and, yes, we are going to clean the model up in response to comments.
Q Let me ask a broader question about your state of mind. Leave aside the particular improvements you have committed to make.
Are you willing and receptive to improve LAMP if funding is available to correct whatever deficiencies are demonstrated to you in the course of this hearing?
A Yes. We have always intended to have as accurate

a depiction of the aqueduct system as possible from the beginning. Whenever ideas or suggestions have been made, we have incorporated them in the past and are certainly -- remain willing to make changes as suggested by any of the parties.
Q Yesterday, Mr. Birmingham asked several questions about the model's failure to account for evaporation from downstream reservoirs. Do you recall those questions?
A Yes.
Q If you are persuaded that that failure undercuts

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the utility or reliability of this model and if funding is available, are you willing to account for evaporation?
A Yes. That is also one of the identified items under the class of errors. That was just an inadvertent leaving it out.
I would just say, though, that this will not change the LAMP results in any significant way. If you look at the total uses and losses that are specified in the Long Valley, Round Valley, and the Owens River Valley, there is approximately 125,000 acre-feet of water that's used each year for designated uses. This is irrigation and environmental and mitigations uses, Indian lands, this sort of thing. So these are sort of controlled uses of the 125,000 acre-feet.
There is an additional uncontrolled loss from this system, basically evaporation, all along the corridors, the river corridors, of 125,000 additional. So out of the 250,000 acre-feet a year of water that is lost in that system, we neglected to put in properly this 10,000 acre-foot that does evaporate from Timmaha and Haywee.
So you can see that the magnitude of what is left out is quite small compared to what is properly in the model at this time.

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Q Are you aware of any respects in which the model tends to under estimate the amount of water available for export to L.A.?
A No. I think as presently run it's a very accurate estimate of what water is exported to L.A. from Haywee.
Q Has L.A. recently received permission from the Department of Water Resources to store more water in downstream reservoirs than LAMP assumes?
A Yes. It's my understanding the reason that Haywee Reservoir was not used to its capacity nor has Timmaha been used to its capacity for a long time is earthquake dam safety issues, and apparently those were resolved allowing a greater volume of water to now be stored in Haywee.
Just from verbal communications from L.A., I understand that the usable storage in those two reservoirs combined is now 23,000 acre-feet, and this indeed is slightly higher than 20,000 acre-feet of usable storage that LAMP presently simulates. So we are certainly prepared to up the usable storage, that is the difference between the minimum and the maximum, from the currently simulated 20,000 acre-feet to the

new allowable 23. In fact, we'll just put it in as a user input since it looks like it's going to vary from time to time.

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Q Dr. Brown, in that respect, does LAMP under estimate the amount of water now available to L.A. for export?
A No. Because all of these operational facilities, which may store water, may spread water, may use water for irrigation, are a part of the overall system. To determine whether change in one of the features of the aqueduct system will actually affect this particular output from the system at Haywee, you have to rerun a model with that change. Anyone who's looked at LAMP realizes that the aqueduct right now is totally filled to capacity for six out of the twelve months in every year type and, then, as supplies are diminished in lower runoff years, the aqueduct is not able to be filled to capacity in some years in the second half of the water year or their runoff years.
So there is not -- there's not an ability for the aqueduct to hold very much more water, nor do I think there is a great error in these periods when the aqueduct is not filled.
Q One last question. As you testify today, do you know of a better planning model for evaluating the water supply impacts of the alternatives set forth in the Draft Environmental Impact Report?
A The only better model that I'm aware of will be

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the improved LAMP model. The particulars that can be corrected or improved will improve this overall model, but I'm not aware of any other better one at this point.
Q Mr. Hutchinson, is that your opinion as well?
A BY MR. HUTCHINSON: I would agree with him, yes.
MR. ROOS-COLLINS: Thank you very much.
HEARING OFFICER del PIERO: Thank you very much, Sir.
State Lands Commission and the Department of Parks and Recreation.
MR. STEVENS: No questions of this panel.
HEARING OFFICER del PIERO: No. Thank you very much, Sir.
U.S. Forest Service. Mr. Gipsman?
MR. GIPSMAN: No questions.
HEARING OFFICER del PIERO: Ms. Niebauer, U.S. Fish and Wildlife Service.
MS. NIEBAUER: Yes.
HEARING OFFICER del PIERO: I can point out for the record, while Ms. Niebauer's coming up to join us, that my good colleague Mary Jane Forster has joined us.
Good morning, Ms. Niebauer.
CROSS-EXAMINATION BY MS. NIEBAUER

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Q Good morning. Erika Niebauer, N-I-E-B-A-U-E-R, representing U.S. Fish and Wildlife Service. I have just a few questions this morning directed to this panel.

Mr. Casaday, on Page Eight of your written testimony, you indicate that the proposed project that's evaluated in the DEIR consists of the establishment and maintenance of instream flows and also the establishment and maintenance of water elevation requirements to provide, quote, appropriate protection, end quote, for public trust resources; is that correct?
A BY MR. CASADAY: That's correct.
Q And on Page Nine in your written testimony, you are discussing the various alternatives, and I direct your attention to Alternative 6377. And you make the statement in there that, "6377 lake level is the interim minimum target lake level intended to protect the lake's public trust resources until action can be taken by the State Water Board."
A That's correct.
Q Is that correct?
A Yes.
Q Is this the level that's -- that was established by the preliminary injunction?

A Yes.
Q And, in your opinion, is this appropriate protection to protect public resources?
A Well, I don't believe that I'm qualified nor charged to answer that, what's an appropriate balancing of the public trust.
HEARING OFFICER del PIERO: Are you soliciting opinion or are you soliciting --
MS. NIEBAUER: Yes, I'm asking his opinion. That's correct.
HEARING OFFICER del PIERO: You're entitled to give your opinion, if you have it.
MR. CASADAY: No, I don't.
HEARING OFFICER del PIERO: Okay.
Q BY MS. NIEBAUER: So you can't give me an opinion as to whether the lake level required to afford appropriate protection for public trust resources would be something more than 6377 lake level; is that correct?
A That's correct.
Q I'd like to turn your attention to Page 15 of your testimony. On Page 15 you talk about Mono Lake aquatic productivity, and you state that "Brine shrimp productivity is primarily a function of salinity within the surface area which are both dependent on the lake

level." And then you continue to state that, "Under the 6377 foot and 6380 foot alternatives, product activity would remain significantly lower than likely productivity during the pre-diversion period;" is that correct?
A Yes.
Q And do you have an opinion as to what would happen to brine shrimp productivity at the 6390 level?
A I think I should defer to Dr. Unger on that.
Q That'd be fine.
A BY DR. UNGER: Yes. It was our assessment that productivity would be higher at the 6390 level.

Q I'd like to turn your attention to Page 25 of your testimony. In the first paragraph on that page, you state that, "Identification of the environmentally superior alternative, however, is required by CEQA." And in response to Mr. Roos-Collins' cross-examination just recently, you indicated, I believe, that it was the -- it was required by CEQA that an environmentally superior alternative be identified.

Can you tell me, do EIR's typically contain more than one environmentally superior alternative?

A BY MR. CASADAY: They may.

Q Do they typically contain more?

A Oh, I guess I'd say no.

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Q You state that, "environmentally superior alternatives identify the alternative which would have the least impact on the physical environment, and then you go on to describe what the physical environment is which includes aquatic ecosystems and plant and wildlife communities."

Can you tell me or do you have an opinion as to the two environmentally superior alternatives that are found in your report, which environmentally superior alternative would have the least impact on the brine shrimp?

A Well, I believe -- well, I'm going to have to look back at our conclusion table for the brine shrimp to answer that.

MR. FRINK: I think Dr. Unger might know the answer to that.

MS. NIEBAUER: This is directed to the panel. That's fine.

DR. UNGER: Could you repeat the question?

Q BY MS. NIEBAUER: I could. The question is of both of the environmentally superior alternatives that are found within the DEIR, and recognizing the definition of what is an environmentally superior alternative, which one of those two would have the least impact on the brine shrimp?

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A BY DR. UNGER: So you're asking between the 6383.5 and the 6390 level which one indicated -- our assessment indicated had the more productivity of brine shrimp?

Q Correct.

A Yes. The 6390 level.

A BY MR. CASADAY: If I could add to that, we get into definitions, there. Impact is an adverse change from the point of reference. We didn't conclude that either of those alternatives would be an adverse change from the point of reference. We did conclude that 6383 foot would be a significant adverse change from the pre-diversion condition.

Q Okay.

A And that information's in Table 3-E-7.

Q Do you have an opinion or do you know, does CEQA require an analysis of both direct and cumulative impacts?

A Yes.

Q And does CEQA further require mitigation for both

direct and cumulative impacts?
A CEQA requires that we describe how identified significant impacts for both categories could be carried out, how they -- how impacts could be mitigated. Whether it requires the decision-making

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body to mitigate that, I guess I wouldn't consider myself prepared to speak on that at the moment.
Q Does the DEIR identify significant cumulative impacts to the brine shrimp?
A Yes. For some alternatives.
Q Are there significant cumulative impacts to the brine shrimp identified for the 6383.5 alternative?
A Yes.
Q Are there significant cumulative impacts identified for the 6390 alternative?
A No.
Q Are the significant cumulative impacts that are identified for the 6383.5 alternative, are they -- do you list mitigation measures for those?
A No, we do not. The choice of another alternative, that is, lake level wold not be considered a mitigation. It would be considered another alternative. So in that sense, there's no mitigation.
Q You state that on Page 20, that the DEIR does not contain a recommended alternative; is that correct?
A That's correct.
Q Now, at the bottom of Page 20, you do recommend an alternative in your testimony, do you not?
A No.
Q You do not. Can you explain to me what you are

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attempting at the bottom of Page 20 and continuing on to 21 wherein you reference all of the effects that the Board is to consider, and you focus your discussion on the environmentally superior alternative 6383.5?
A Yeah. I can explain that. I think two things here. One is I have listed the resource issues that, you know, I have concluded or probably the most important issues, having looked at these issues over the past three years, suggesting to the Board members those, at least in my opinion, are the ones that they'll want to at least look at first.
The second thing I've done there is taken the environmentally superior alternative and discussed some of its problems in -- with regard to those resource issues.
Q And why did you choose merely to discuss the 6383 alternative?
A Because we identified it as the environmentally superior alternative.
Q Did you not also identify another environmentally superior alternative?
A From the pre-diversion condition, yes.
Q And yet you chose not to discuss that in this particular section of the written testimony?
A That's correct.

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Q Have you remembered or reviewed L.A. DWP's Exhibit 22, which is John Melak's testimony?

A No, I have not. I don't know what -- no, I haven't.
Q Has anyone on the panel read that or reviewed it?
A BY DR. UNGER: I briefly looked at it, but I haven't really reviewed it.
Q Do you know if Mr. Melak or L.A. DWP has provided that type of information in its comments on the DEIR?
A That type being preferred -- preferred alternatives?
Q Well, the type of information that's contained in his testimony. Has Mr. Melak provided comments on the DEIR?
MR. BIRMINGHAM: Excuse me, Mr. del Piero. My name is Birmingham, B-I-R-M-I-N-G-H-A-M. For purposes of the record, opposing counsel is referring to Mr. Melak. I believe she's referring to Dr. John Melak.
MS. NIEBAUER: Thank you. That's right. Thank you.
Q BY MS. NIEBAUER: Do you know if he has submitted comments on the DEIR?
A BY DR. UNGER: No. Not on the entire DEIR. Only on the original draft of the environmental setting, but

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not the DEIR.
MS. NIEBAUER: That's all I have.
HEARING OFFICER del PIERO: Thank you very much.
Mr. Haselton, are you here, Sir?
MR. HASELTON: I have no questions.
HEARING OFFICER del PIERO: Fine. Mr. Silver on behalf of the Sierra Club? Is Mr. Silver here? And is there a Mr. Gleason from Metropolitan Water District?
One thing I had forgotten to ask today. Is there anyone here representing United States Environmental Protection Agency or the Great Basin Air Pollution Control District? Is counsel here for the district? When do you anticipate counsel for the district appearing?
AUDIENCE MEMBER: Possibly next week he will be here, and he will present something --
HEARING OFFICER del PIERO: That's fine. I just don't want to keep asking a question for which there's no answer.
Okay. Go ahead. Unless I'm mistaken, that exhausts everyone in terms of -- including Board members.
MR. CAFFREY: We're exhausted, but we're not finished.
HEARING OFFICER del PIERO: Mr. Frink?

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MR. FRINK: I was going to say. I didn't know how warmly it would be received, but I think Staff does have a little of redirect.
HEARING OFFICER del PIERO: Yes. You go right ahead.

REDIRECT EXAMINATION BY THE STAFF

Q BY MR. FRINK: These are questions for Mr. Brown, or Dr. Brown and Mr. Hutchinson. There were some questions raised about revisions in the LAMP model. My understanding is that the LAMP model covers operations

for the entire L.A. aqueduct system including both the Mono and Owens Basin. Is that correct?
A BY DR. BROWN: Yes, that's correct.
Q Okay. Historically, approximately what has been the amount of water delivered through the Los Angeles aqueduct on an annual basis?
A Well, the amount delivered, of course, has changed through time as their demands have changed and changed dramatically beginning 1971 when the second barrel of the aqueduct, and so we often use that period from 1971 to the present or in the impact report we had data through '89. And during that period, we should look the numbers up, but it was on the order of 475,000 acre-feet a year delivered. This is, by reference, could be compared to a completely filled aqueduct for

365 days a year which would deliver approximately 600,000. So --
Q Okay. Of the approximately 475,000 acre-feet per year that has been delivered on an average basis, approximately how much of that on an average basis has come from the Mono Basin?
A Well, for the same time period from 1971 to '89, approximately 80,000 acre-feet were exported from the Mono Basin.
Q Okay. Now, the errors, margins of errors, whatever, that were mentioned earlier regarding the LAMP model and the accounting for evaporation and other modifications that you may be making, those were based on improving the modeling of the entire aqueduct system; is that correct?
A That is right.
Q So one shouldn't assume that if there were a 5,000 acre-foot error in your modeling of the system that that equates to a 5,000 acre-foot error in your accounting for future water exports from the Mono Basin, should one?
A That is right. In fact, if we just wanted to reference the figure that's shown here, the one we've been using of the lake levels, we have what the current version of the LAMP model simulated for the

no-restriction case. The no-restriction case is the closest of the cases that we simulated to the historical operations because we imposed no minimum flows on the Mono tributaries. We imposed no lake level triggers for the elevation of Mono Lake. We imposed no constraints on the Upper Owens flows, and we were attempting to simulate the historical operation.
You can see we have written in on top, it's not in the actual figure, but it could be found in other tables, that the LAMP model simulated 85,000 acre-feet as the 50-year average coming out of the Mono Basin compared to the figure I just mentioned of 80,000 for the 7185.
MR. FRINK: Okay. Thank you. Other Staff -- yeah. Other Staff members have some follow-up questions.
HEARING OFFICER del PIERO: Mr. Canaday?
Q BY MR. CANADAY: This is direct to Mr. Casaday.

You've undertaken, in your years of experience as an environmental scientist, do you have an idea of how many EIR's you've worked on?
A BY MR. CASADAY: Do I have an idea?
Q A ballpark.
A 50.
Q Is the EIR that was prepared, the Draft EIR

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prepared for Mono Lake, is that a typical type of EIR?
A Far from it. This was the largest effort I've ever had to make in my career. I think I'm ready for retirement.
HEARING OFFICER del PIERO: Some of us were ready for retirement after we read it.
MR. CASADAY: My apologies. I did my best.
MR. BIRMINGHAM: Actually, I had a partner who did retire.
HEARING OFFICER del PIERO: Esteemed counsel just proved my case. This is truth or consequences, isn't it?
Please continue, Mr. Canaday.
Q BY MR. CANADAY: Typical projects that are analyzed by CEQA contemplate a project in the future sense. In other words, you have an existing condition, and then the analysis is based on the presumption that a potential project overlays the existing conditions and, therefore, is analyzed.
And so that -- getting back to my question of is this typical, in analyzing a project that has a, at least a 50-year footprint and analyzing it is unusual, correct?
A BY MR. CASADAY: This would certainly be a project that has some long-term -- much longer-term

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implications than some of the other projects I've worked in.
Q I'd like to direct questions to either Mr. Hutchins -- Mr. Hutchinson, or Dr. Brown.
Could you explain for the record the lake trigger mechanisms that was incorporated into LAMP of how, as -- whatever alternative protective target as you call it, what would happen to typical diversions as you approach that target from above as the lake declines towards that protected target?
A BY DR. BROWN: Okay. Depicted on this figure with the little triangles are the named lake levels corresponding to each alternative. These were viewed as a target minimum that was to be protected, and we were looking, then, to using the model as our tool, stimulate late conditions that would prevent the lake from dropping below that protected target level.
And the basic mechanism that we chose uses what we call lake trigger levels which are elevations somewhat above that minimum target protected level at which point additional water is required to be released to the lake, and so we call these lake releases.
And Mr. Hutchinson programmed the model so that you can specify three of these lake triggers for each case that you're running, and we selected, just for

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simplicity, one-foot increments above the protected level. So our first trigger is one foot above. Our second trigger is two feet above, and our third trigger is three feet above the minimum target protected level.

At each of those elevations, then, we developed the amount of runoff that would need to be released into the lake to halt the decline of the lake, if that's what was occurring, in a sequence of hydrologic years.

We then simulated the 50-year traces of lake levels, looked at the resulting elevation pathway, and determined if we had specified high enough triggers. If the lake was found to be dropping below our target minimum, we increased the amount of water that was required to be released at those triggers until we had achieved our goal which was to have triggers that would allow this minimum protected level indeed to be the minimum reserved level in our simulations.

MR. BIRMINGHAM: May the record reflect that the witness referred to Figure 2.1 as the figure on which there are little triangles?

MR. CASADAY: May I add a bit to that? Dr. Brown is correct with the exception of the higher lake level alternatives. As you can see on the chart, when you

try to maintain the lake as a very high level, it's difficult to prevent it from sometimes dropping below the target minimum. I think we should acknowledge that as shown on the graph.

HEARING OFFICER del PIERO: For the purposes of this discussion, the figure is 2-1. Mr. Canaday, further questions?

MR. CANADAY: Yes.

Q BY MR. CANADAY: Dr. Brown, we did receive comments to the Draft EIR relative to the LAMP model; is that correct?

A BY DR. BROWN: Yes, several parties had comments.

Q And in response to that and at the direction of the State Board Staff, you held a meeting in mid September with the commenting -- or some of the commenting parties; is that correct?

A Yes, that's right.

Q And what was the purpose of that meeting?

A The purpose of that meeting, in my view, was to attempt to directly explain to the commentors what it was that they were asking us about. In some cases, wondering what LAMP had done in a particular case, in other cases, pointing out potential errors. And so we were attempting to resolve, indeed, whether there were errors in the model and also explain what the

assumptions or the input conditions that we had specified for each of the alternatives clarifying those for the parties.

Q And the result of this meeting was a -- certainly one conference call to clarify what was being proposed, the changes that you were proposing to change in the LAMP model; is that correct?

A Yes. We were attempting to reach resolution that

some of these changes or -- answer the questions should some of these changes be made for purposes of the hearing.
Q And is it your understanding that that work now is to move forward?
A Yes. We're now authorized by letter from L.A. DWP to make several of the enhancements that were brought out at that September meeting. In addition, to correct at no additional cost to L.A. a short list of errors that remain in the model.
Q And when these corrections and enhancements are made, what time frame do you believe that will be done?
A Well, there is a date in the letter that promises November 15th, and we think that that is still possible to have those revisions made. And there is then a one-week review period for L.A. to confirm that the enhancements and corrections are indeed accomplished.

Q Well, while the letter refers to the City of Los Angeles, we also -- you also intend to provide the opportunity -- that one-week opportunity to other parties who have commented; is that correct?
A Yes. I believe that's right.
Q I'd like to shift a little bit to a question that was presented to you yesterday. You were handed some photographs and -- this is to Dr. Unger -- that typified or described the use of submerged vegetation for habitat, for alkali fly larvae, and I believe you said you hadn't analyzed that.
Can you clarify what you meant by that?
A BY DR. UNGER: Well, what I said was that I hadn't seen those photographs. Those photographs had been presented to me, and I was asked if I'd seen them. And I said no, I hadn't seen them.
We did, in fact, evaluate or discuss the possibility of submerged vegetation, the use of it as substrate for alkali fly larvae and pupae, and concluded that there was not enough information from which to -- with which to include it in our modeling. We acknowledged that there was a possibility that at higher lake levels there might be more submerged vegetation present that would be used but that there was just simply not enough information available to

base a conclusion.
Q Thank you.
A BY MR. CASADAY: And I could add that, on that basis, we qualified some of our conclusions to the higher lake levels stating that we could not, in fact, draw some of the conclusions without the higher lake levels because of that uncertainty.
HEARING OFFICER del PIERO: Thank you.
Mr. Canady, one last question?
MR. CANADY: One more question.
Q BY MR. CANADY: This is for Dr. Brown and Mr. Hutchinson. The, we'll call them errors or errors of omission in the LAMP model, but to clarify where those errors really affect the model.
And the first question would be those errors are generally errors or enhancements that occur to volumes

of water outside of the Mono Basin?
A BY DR. HUTCHINSON: Certainly -- excuse me. Certainly the Timmaha and Haywee evaporation are away from the Mono Basin.
Q Then the enhancements or the errors that were made in the model do not affect the analysis of the impacts of the alternatives, water wise, within the Mono Basin, itself. Is that correct?
A I'd go a little further than that. I don't think

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they'll have any significant effect on the entire analysis.
MR. CANADAY: Thank you.
HEARING OFFICER del PIERO: Mr. Herrera?
MR. HERRERA: Yes, I do. Thank you.
Q BY MR. HERRERA: While we're on the subject of the model, Dr. Brown, maybe I missed it earlier, but in the data that you reviewed for the model, what was the highest rate of diversion out of the Mono Basin?
A BY DR. BROWN: You're asking what L.A. has historically diverted?
Q Yeah. What is the highest rate of that at any one time in cfs?
A Oh. Well, of course, the diversions and exports out of the Mono Basin are constrained at all times by the capacity of the Mono Crater's tunnel, and it's a little bit difficult to know exactly what that is. But it's very close to 300 cfs.
Q Did that occur very often, or was that just an isolated incidence, or can you give me some frequency idea on that?
A Well, we do have historical records on the monthly averages. The 300 cfs or close to full Mono Crater tunnel capacity has occurred frequently in the past. I actually don't know the frequency.

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Q Thank you.
One other question on the model. You stated earlier that Los Angeles was working on development of the model for the EIR for a period of 18 months. Do you have any speculation or reasoning why, at that time period, that it was shifted to have your staff and consultants there, Doctor -- or, Mr. Hutchinson, to prepare that? What was the reason why the shift from L.A. to JSA?
A Well, one of the reasons is that 18 months put that particular task very far behind schedule, and so there was a general decision from your Staff that it simply was not being accomplished in the right schedule.
But perhaps more significant was the idea that what looked like was developing within the L.A.'s own effort did not match at least our opinion that the Jones and Stokes staff of what an environmental assessment model needed to do, the objectives of it. And perhaps I can make this a little more clear to everyone.
The model that was developed by L.A., once we named the lake level that you were trying to protect, had one and only one answer. Whereas, we were looking

for a model that allowed the users, in this case the

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State Board Staff and consultants, to develop a series of conditions throughout the aqueduct system corresponding to a lake level. So the general objective of having a number of user specified conditions to go along with the overall operation and hydrology appears lacking, even after the 18 months.

A BY DR. HUTCHINSON: If I could add to that, when we received L.A.'s version of the model in April of '91, Chuck Rich of State Board Staff asked us to look at it and comment on it with respect to the objectives of the entire project. And it was pretty clear that the model, while probably pretty decent in term of matching up historical operations, had very little in the way of flexibility to -- in any easy fashion it may be not even possible to really evaluate alternative scenarios of stream flows, lake level management, different operations to potentially mitigate any losses out of the Mono Basin with respect to water supply.

LAMP, on the other hand, has enough flexibility that these runs are fairly easy to make once the input data are decided upon.

Q Thank you.

I have a question regarding -- this may even be to Dr. Brown or Dr. Unger. Why did Jones and Stokes final the alkali fly model rather than Dr. Hurst or

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Dr. Kimmer?

A BY DR. BROWN: Well, we have perhaps a similar situation. Dr. Hurst was always responsible for the original data. As this process began, there was relatively little quantitative measurement of the alkali fly density or its seasonal development and population, life history, in comparison to the brine shrimp, which has a very extensive data base for Mono Lake.

So his responsibility from the beginning always was to develop the data in order to then prepare an assessment model.

Dr. Kimmer worked on the conceptual development of the model and delivered an initial version of that assessment model that was based on Dr. Hurst's data, I, again, don't have exact dates, but very late in the process of writing the EIR. And so it was a matter of both time and, again, the model was not quite what we had in mind as an assessment model. It, again, reproduced the observations which were for calendar year 1991, but it was not an easy thing in that initial model to estimate conditions throughout the range of lake levels that we wanted to investigate.

So we simply modified these -- the real data plus the initial ideas presented by Dr. Kimmer into a model

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that would much more easily simulate conditions throughout the whole range of lake levels that we were investigating, and we did this, then, right at the end of the period when these assessment models were due, in order to write the sections and do the assessment in discussion.

Q In the earlier proposals, there was another individual that was to assist, I guess, Dr. Hurst and Dr. Kimmer, and that was Dr. Bradley. And what was his involvement? Did he follow through with that, or what happened there? Can you explain that a little bit?
A Dr. Bradley initially proposed working with Dr. Hurst on the alkali fly, and he was going to -- or proposed to develop the population dynamics for describing the numbers that described the population in the lake. But his proposal, as an independent consultant to L.A. or in the EIR team, was not accepted by L.A., so he was not funded and, therefore, did not describe the team.
Q Did the lack of his participation hamper your ability to analyze the alkali fly scenario?
A Only in the sense that anyone certainly contributes to a team effort, and lacking his input. But I would not be able to say what those contributions might have been.

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Q I have one other question regarding -- and this would be either be for Dr. Brown or Dr. Unger -- on Dr. Melak's participation.
His information was based on -- and we were looking at scenarios on higher lake levels yesterday. His studies for the past, I guess it was, 10 or 12 years was directed at the lower lake levels and -- did I notice in a couple of tables we were looking at you didn't extrapolate the information at the higher lake level; is that correct? Maybe you can expand on that a little bit.
A BY DR. UNGER: Yes. The period of Dr. Melak's studies and his group's studies, the lake varied from I think about 6372 to 6381 was the full range of lake levels that occurred during that period. And so -- however, he -- the model that they developed was based on information that allowed them to extrapolate to a 6390 level in the modeling effort, but they did not simulate any lake levels above that level.
MR. HERRERA: I think that concludes my questions. Thank you.
HEARING OFFICER del PIERO: Thank you very much.
Mr. Satkowski?
MR. SATKOWSKI: Thank you very much. I have a few questions.

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Q BY MR. SATKOWSKI: The first question is for Mr. Casaday, and it deals with Page 13 of State Water Resources Control Board 23. This is under the title Upper Owens River Vegetation down toward the bottom of the page.
Down on the first paragraph in the last sentence, it talks about the river vegetation, and it says, "That restoration of pre-diversion stability could be accomplished under the 6410 foot or higher lake level alternatives or under other alternatives if a better flow change ramping schedule were adopted."
What do you mean by "better flow change ramping schedule"?
A Well, actually, I'm not sure because probably the

word "better" should be taken out of there because I'm not aware that there is a formal ramping schedule, although I might be wrong there.

There is a discussion in the EIR that the rate at which export volumes are changed from day-to-day is -- can be a problem in terms of causing bank collapse, and it's been somewhat contentious with the Department of Fish and Game recommending slower changes in export rates than the City of Los Angeles has historically practiced.

And we looked at that issue and realized that if a

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little more scrutiny was given to bank materials and conditions, that a sensible ramping schedule could probably be developed that would minimize the tendency of saturated river banks to collapse when the river stage drops.

Q Thank you.

My next question is for, I believe, Mr. Hutchinson, and it deals with the LAMP model.

Has the LAMP model been calibrated or verified or validated in any manner?

A BY DR. HUTCHINSON: If you look at Auxiliary Report Five, which is the documentation of the model, it talks about four objectives, and the fourth one was test the model using a variety of inputs to validate its -- or validate the model itself. That function was primarily carried out by Jones and Stokes. I took the microphone first because I wanted to explain as I developed a model, I did what you might call informal testing. Nothing specific, nothing documented, but it was more to satisfy myself that the thing -- that the model was working correctly, that it responded when certain things happened, that it responded appropriately, basically did the results make sense, and also checked the results of 1970 to 1989 to make sure that that basically matched up with historical data, since we

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were really operating second aqueduct operating conditions.

Q And you said that this information has not been documented?

A I did not document it. It wasn't part of my scope, so I turned it over to Russ to describe some of the other testing that's been done.

A BY DR. BROWN: I would only add a little to the -- what we've described earlier this morning. Of the cases that we simulated, the one that is closest to what could be used to match historical conditions is the no-restriction case where we imposed only the physical limits of the aqueduct system. And in thinking of what some of the comparison's that could have been made, the ones that were most important to us in preparing this EIR evaluation I would identify as three.

The first one that was very important is that the Owens River Valley groundwater pumping be in general conformity to the agreement that is in place between Inyo County and L.A. And the document that describes the numbers that are involved is something called the

Green Book, although the agreement is actually an agreement to negotiate each year on an acceptable pumping. So their -- even in this respect, it's

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difficult to find a number to match.

Nevertheless, there is a minimum pumping that's necessary in the Owens Valley to supply uses of approximately 40,000 acre-feet a year, and in the Green Book there's a discussion that the maximum, among all the well fields combined, should not greatly exceed 200,000 acre-feet. So this gives us a range that we should be matching.

In addition, there's the general understanding that the historical pumping in this same 1970 to 1989 period, which was approximately 110,000 acre-feet, this was probably all of the long-term pumping that would be allowed.

So we wanted the LAMP model to replicate these aspects of pumping, fall between 40,000 and 200,000 on any one year with the long-term average of near 110,000 acre-feet, and the LAMP model indeed replicates those measures of the historical pumping pattern.

In addition, there is figures provided in the auxiliary report that show the correspondence even on a year-to-year basis, the major variable being runoff and how much was available without doing pumping to fill the aqueduct to capacity. So there was significant testing and calibration for that aspect.

The second very important feature of the model is

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to properly allocate according to the lake level triggers -- or, sorry, properly allocate the available water in the Mono Basin under the no-restriction case giving the historical export in some valley that was close -- sorry, the simulated export that was close to the historical. And again, the match up would be expected to be closest in this last 20-year period, and the model was found to give that proper split within 5,000 acre-feet of the long-term average.

Again, the model uses a uniform rule over the entire 50-year period that only has the year type and the hydrology to guide it, so it does not have in it the year-to-year decisions that were actually made by Los Angeles in how to operate it.

And then the third one that we calibrated or worked with to be sure it was right was reproducing the total exports from the system down at the Haywee Reservoir, and I think I've previously stated that, again, for that 20-year period, the model stimulated for the no-restriction case, again, something within 5 or 10,000 acre-feet of the historical values.

Q Mr. Hutchinson, you said just a moment ago that the model wasn't formally documented in terms of its calibration and verification. If that's so, why wasn't it formally documented?

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A BY DR. HUTCHINSON: Well, again, if you go back to Auxiliary Report Five, that talks about the four objectives, and the fourth one was the testing. And that was not part -- that was never intended to be part

of Auxiliary Report Five.
Auxiliary Report 18, which Dr. Brown wrote, does have certain identifiable points where you could say, "Yeah, this is how -- this is the calibration and verification types of matches."
Would you agree with that?
A BY DR. BROWN: So just to finish, we tested the model until we -- for the purposes of the environmental impact assessment, were satisfied that it reproduced the major features of the aqueduct system, as we understood it.
Q My last question is, and this is for both of you. In your opinions, do you believe that the model, the LAMP model, works reasonably well?
A BY DR. HUTCHINSON: Yeah, I would agree. It works very well for what it's supposed to do, yeah.
Q Mr. Brown?
A BY MR. BROWN: I certainly agree with that. I think it's quite accurate in many details and certainly adequate for the differentiation among the lake level alternatives, which was the primary purpose of our use

of it for these proceedings.
MR. SATKOWSKI: Thank you. Those are all the questions I have.
HEARING OFFICER del PIERO: Thank you very much.
Mr. Smith?
MR. SMITH: No questions.
HEARING OFFICER del PIERO: Board members?
Mr. Caffrey?
MR. CAFFREY: No questions.
HEARING OFFICER del PIERO: Mr. Stubchaer has a question.
I need to point out just for the audience that, contrary to the way some boards operate, our Board is blessed. Both Mr. Brown and, particularly, Mr. Stubchaer have had extensive professional experience in both hydrologic as well as groundwater modeling. As most people know, Mr. Stubchaer not only served on the State Water Contractors or on the State Water Commission but served for 30 years as a general manager of the Santa Barbara Flood Control Water Conservation District and actually did a lot of the modeling during the course of the Bay Delta discussions that took place last year, much to the surprise of some of our Staff. He was able to master some of the stuff from the Department of Water Resources before some of

our Staff was capable of doing it. So it was an interesting experience for me to discover that we had someone with that degree of technical expertise on the Board itself.
Mr. Stubchaer.
MR. STUBCHAER: Those are kind remarks, Mr. del Piero, but in all honesty, our Staff acted as the intermediary between the Department and myself in getting me data that I could further analyze. And also I'm not a modler of the Mono Lake or Owens River Basins.
Q BY MR. STUBCHAER: But during the discussions

yesterday, there was talk about the fact that water was accounted for in Lake Crowley in excess of its capacity, and listening to the discussion and the answers, it's not clear to me that some judge reading the transcript of the proceedings would understand what was going on. I didn't understand why the water was allowed to accumulate in Lake Crowley instead of some other account, and so perhaps you could further amplify why that was done and where the water really belonged.
A BY MR. HUTCHINSON: Lake Crowley has inputs from two sources; one is natural runoff, and the other is water that's exported from the Mono Basin and brought into the Owens River Basin.

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There's a constraint on Lake Crowley in terms of export or outflow capacity. If inflow -- if the total inflow exceeds the capacity, storage will increase. There is no constraint --
Q Why doesn't it spill?
A It could.
Q And go into some spill account instead of into the lake account?
A That was an oversight. That was an oversight. Basically, what happened in the development of the model, it was never intended in my mind that water would be forced out of the Mono Basin during a wet year because that had never happened. In wet years, water was spilled into Mono Lake, and the lake was allowed to rise.

Subsequent to or after I gave the model to Jones and Stokes, that was something that was, in essence, added when -- they didn't add it. It was more of an input construction to go ahead and force that water in. So what was happening is water was just going into the Long Valley area, and storage was allowed to build up. Otherwise, it -- correctly, it should have spilled and done something else, but basically as a planning model, all that's really important is that something broke. The storage built up too high; it spilled. In any

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case, something is telling you that this operational scenario is not accurate. These input instructions are not reasonable or appropriate.
A BY DR. BROWN: And I would just add for understanding this one of reasons that we don't simulate spill from Lake Crowley is that although Lake Crowley has a spillway that could be used, since it was constructed in 1941, Lake Crowley has never spilled. And one of the reasons now that it won't spill is that there is a protected fish in the downstream reach.

And so, as I think I mentioned yesterday, we were using this overfill of Lake Crowley as an indicator that we had over constrained, that is, forced too much inflow in or did not allow enough outflow out because we do, in the modeling, specify the Owens minimum/maximum. And this would indicate that in real operations they would have had to do something different than the planning model did.

In actual operations, as I mentioned, they would know the water was coming and begin to release at

capacity earlier in the year. The model only does so when its in trouble later in the runoff season, and just to finish, when we simulated the case, the no restriction, which is closest to the historical, it was perhaps a little overstated yesterday what this error

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was. For the no-restriction case, Lake Crowley filled to greater than 183,000 acre-feet only one time. This was during the sort of flood of record in 1969, and it only filled to a total volume of 195,000. So the model simulated on the closest to historical, it only overshot the available storage by 15,000 for a period of two or three months, and this was with the reservoir constrained to a minimum of 120.

So I mentioned that the actual operations would, in a wet year, go dip below that 120, and can you see that if they would have started at a minimum of just 100,000, just 20,000 less. in that one year there would have been no overshoot of the model storage in Lake Crowley for the closest to the historical.

Q You can probably see, though, that the person reading the results of the model just doesn't fit physical reality, and so it causes the questions.

Is that amount of water -- should that amount of water have gone into Mono Lake, then, as opposed to into Crowley?

A BY DR. HUTCHINSON: In reality, operations would dictate that you're not going to, in a very wet year, you're not going to put more water into an already overflow situation, so you have more water that would normally go to Mono Lake. That's the historic

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practice, but I think, as Russ explained yesterday, the idea was to try and minimize the fluctuations of Mono Lake. Operationally, that doesn't appear to make too much sense in some of these very wet years.

Interestingly enough, in the past, that was considered just a loss of water. In the future, if lake level minimums are established, that's not so much a waste anymore because there will be credit, in essence, gained by having the water in Mono Lake over the minimum level, which may defer future releases to --

Q That was going to be my next question. The following year you might be able to export more and still save the lake.

A That's right. So depending on how much fluctuation is considered reasonable, it's almost like a pseudo reservoir in the future.

Q Are you going to address this issue in the revisions you're going to make to the model?

A BY DR. BROWN: This is probably the other major point that's unclear of what you could do with the model right now compared to what it needs revising. Right now, we could change these -- the decision or the assumption to export all available water from the Mono Basin which, at the time, since we are trying to

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allocate water between in-basin uses and export, seemed like a reasonable decision, especially coupled with

resource analysts saying that lake-level fluctuations were not desirable. So we could immediately, or your Staff can immediately look at some rules for the Upper Owens that would leave more of the wet water in the Mono Basin.

And we could simulate what that would do, too. That would recharge the Mono Lake elevation or raise it, and the only loss from the storage idea is the extra evaporation that's occurring because you have expanded the lake area. That portion of the water is not recoverable, but those could be simulated. Those -- these are slightly different assumptions for how to run one of the alternatives, and the effects of that on the overall aqueduct operation, including the effects of the available water to Los Angeles at the downstream end at Haywee, could be evaluated with the existing model today.

Q Thank you.

A BY MR. CASADAY: May I clarify something Dr. Brown just said about lake level fluctuations? He said our resource staff felt they were not desirable. I want to qualify that.

We believe that natural fluctuations, of course,

are desirable and some fluctuation is inevitable and also desirable. What we were trying to avoid were extreme fluctuations of the lake level so that a given alternative lake management level would not cause unnecessary harm to some of the resources around the lake. In other words, a moderate lake level would not, during a very wet period, cause the Tufa to be knocked down or washed away at the other end would not drop down and cause predation on gull nesting. So we were, in fact, trying to limit how much fluctuation there was but not eliminate it.

HEARING OFFICER del PIERO: Thank you. Ms. Forster? Questions? No.

Mr. Canaday, you have two more?

MR. CANADAY: Two short questions.

Q BY MR. CANADAY: We were -- we received comment to the draft on the LAMP -- this is for Dr. Brown -- some concerns expressed by the Upper Owens River ranchers, the landowners, private landowners of how water would be distributed by the model, the present cases how that water was distributed or forced out of the basin.

One of the things that you're undertaking now is to be able to forecast the water years, say April 1st, and then be able to, instead of pulsing water out in the Upper Owens as the model would suggest now, the

enhancement would be then to allow the water to be distributed. Based on comments from the Department of Fish and Game, if you want to distribute that water in equal amounts over the months, that's the enhancement. In other words, we're being responsive to that comment.

A BY DR. BROWN: That's right. That's one of the identified items that will be adjusted. So right now, all that you can do is specify a minimum monthly flow and maximum monthly flow, and that is not sufficient to

do this spreading out of the export over the year. But we will be adding that feature.
Q When you analyzed or used LAMP to analyze the alternatives, we had the flexibility at that time to incorporate any final recommendations from the Department in an analysis; is that correct?
MR. BIRMINGHAM: Excuse me, Mr. del Piero. I'm going to object to Mr. Canaday's question on the grounds that it's vague as to which department he's referring to.
MR. CANADAY: The Department of Fish and Game.
HEARING OFFICER del PIERO: Is that satisfactory?
MR. BIRMINGHAM: Yes, thank you.
DR. BROWN: Can you clarify? You're asking what capabilities?

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Q BY MR. CANADAY: Yesterday there was a question posed to you that -- questioning why we didn't use Fish and Game for recommendations in our analysis of the alternatives and the Draft EIR, and what I'm asking you, we had the flexibility of the models prepared to incorporate those kinds of flow recommendations in an analysis if we chose to do so; is that correct?
A BY DR. BROWN: That's right. The type of flows that are being recommended by Fish and Game, which basically involve dividing years into dry-year types, normal-year types, wet-year types, and then for each of those year types, specifying a specific minimum flow, and then adding to that a specified amount of flushing flow, either as a flow cfs or a volume. All of those have always been a part of the LAMP model, and we're simply awaiting recommended numbers to insert into those input locations.
MR. CANADAY: Thank you.
HEARING OFFICER del PIERO: Thank you very much.
That extinguishes the questions we have for the panel. Mr. Frink, unless there's anything else, I'm going to allow these folks to regain their seats, and then we can call the next panel after we've broken for about 15 or 20 minutes.
MR. BIRMINGHAM: Excuse me, Mr. del Piero. I was

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wondering if we could be afforded an opportunity to ask very limited recross.
HEARING OFFICER del PIERO: Certainly, Sir. That opportunity is available at this point. However, it's going to be available only after the break. We're in recess for 15 minutes.
(Whereupon a recess was taken.)
HEARING OFFICER del PIERO: Okay. Mr. Frink, do you have the next panel?
MR. FRINK: I believe Mr. Birmingham wanted to ask some questions on recross.
HEARING OFFICER del PIERO: Forgive me, Mr. Birmingham. Please come up and begin.
RECROSS EXAMINATION BY MR. BIRMINGHAM
Q I have some very limited questions on recross examination. First, I'd like to ask, and I don't know if these questions are more appropriately directed at Dr. Unger or another member of the panel, but this

morning Ms. Niebauer, on behalf of the Fish and Wildlife Service, asked a number of questions related to brine shrimp and the effect of different lake level alternatives on brine shrimp.

Were those questions directed at you, Dr. Unger, as I recall?

A BY DR. UNGER: For the most part, I believe so.

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Q I'd like to follow up very briefly, if I can. During the last 14 years, a period which the lake has fallen to a level of 6372 feet approximately and has risen to approximately 6381 feet, has there ever been a time when brine shrimp in Mono Lake were not super abundant? Let me state it differently.

Isn't it correct that during the last 14 years, brine shrimp have been super abundant in Mono Lake at all lake levels?

A Well, I don't know what you mean by "super abundant."

Q Has there ever been a time in the last 14 years when brine shrimp in Mono Lake were at or near extinction?

A I don't believe so.

Q There has never been a time in the last 14 years when the salinity levels in Mono Lake endangered brine shrimp; is that correct?

A I don't think I could say for sure because the effects of something like salinity might -- might -- they might have effects over a long period of time and in combination with many other factors, so I wouldn't want to say -- make that statement for sure.

Q I believe someone on this panel this morning distinguished between the amount of data that are

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available on the population of brine shrimp versus the population of alkali flies; is that correct?

A BY DR. BROWN: Yes. I made that distinction.

Q Isn't it correct that all of the data on brine shrimp that have been collected at Mono Lake over the last 14 years have been collected by or under the direction of Dr. John Melak?

A Yes. That's right, and as far as I'm aware, they provided all of that data to our assessment team.

Q And then members of this panel would agree that Dr. John Melak is the foremost authority on Artemia monica at Mono Lake; is that correct?

A BY DR. UNGER: I'm not sure I would agree with that. He's some -- some of his -- the people working for him, I would say, were Gail Ben, Bob Jellison, people like Lenz.

Q Are you aware of any opinion expressed by any of those individuals that during the last 14 years there has ever been a time when Artemia monica were endangered at Mono Lake of extinction?

A No, I'm not.

Q This morning, in response to a question asked by Board Member Stubchaer, there was reference to an endangered or a protected species below Crowley Lake; is that correct?

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A BY DR. BROWN: I made that reference.
Q Is it correct that if Crowley Lake spills, it would result in a take of an endangered species protected under the Endangered Species Act?
MR. THOMAS: Objection, that calls for a legal conclusion.
HEARING OFFICER del PIERO: That's right.
Q BY MR. BIRMINGHAM: Is it correct that if Crowley Lake spills there is a potential that the habitat of an endangered species would be adversely affected?
A BY DR. BROWN: I didn't make any statement like that. I only meant to imply that it is not foreseen that the spillway, which does exist at Lake Crowley, is never intended to be used, and so simulations of the aqueduct system are reasonable to assume that same feature. Although the spillway exists, it's not intended to be used.
Q I understand you didn't say that this morning, but I'm asking you the question now. Isn't it correct that if Crowley Lake spills there is the potential of an adverse effect on the habitat of a species listed as threatened or endangered under the Federal Endangered Species Act?
A I think you should ask the next panel.
Q Thank you.

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Yesterday, Mr. Casaday, Mr. Dodge asked several questions of you concerning riparian vegetation.
A BY MR. CASADAY: Yes.
Q And you stated that recruitment of riparian vegetation could take decades if conditions were right. Was that your answer to his question?
A Essentially, could take decades if conditions in any given year were not right for recruitment.
Q Isn't it correct that if conditions are right, natural recruitment of riparian vegetation could take significantly less time than several decades?
A That's correct.
Q Isn't it also correct that in 1991, the Department of Water and Power, in connection with the restoration activities of Rush and Levining Creeks, decided to restrict grazing along the riparian corridor of Rush and Levining Creeks?
A Grazing was restricted. I can't attest to who made the decision.
Q Have you or has any member of this panel inspected the recovery of riparian vegetation along Rush and Levining Creeks since that decision was made?
A Not formally, although we have been on the ground doing fieldwork and observed conditions since the grazing exclosures were installed.

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Q Isn't it correct that the grazing exclosures were installed to test the difference between unusual recovery or to determine how the rate of natural recovery without grazing?
PANEL ATTORNEY: Objection. Calls for speculation.
HEARING OFFICER del PIERO: It does call for speculation, but I also think that if you rephrase it

slightly, you're going to get the answer you're looking for. So go ahead.
Q BY MR. BIRMINGHAM: What was the purpose, if you know, of installing the grazing exclosures, which you mentioned in your last answer?
A BY MR. CASADAY: I should say that I don't have any firsthand knowledge of that. That was carried out by the restoration technical committee. So to the degree that it was intended as a test, I really can't say -- I would presume that that was a major element of it.
Q Is it correct -- or have you been in the Mono Basin in 1993?
A Yes, I have.
Q Is it correct that many of the grazing exclosures are hidden from view because of the natural recovery riparian vegetation that has taken place along Rush Creek?

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A I don't know. I was in the Mono Basin, but not for the purpose of looking at the riparian vegetation.
Q Mr. Dodge asked you, Mr. Casaday, about opinions or concerns that are expressed in the Draft Environmental Impact Report concerning bank stability.
A Yes.
Q And you indicated that the concerns about bank stability that were expressed in the Draft Environmental Impact Report with respect to Rush and Levining Creeks are based entirely on the opinions of Woody Trihey. Do you recall that, that answer?
A Yes. I said that the thresholds for channel damage were based on the opinions of Mr. Trihey.
Q Are you aware of opinions of other experts who have conducted inspections of banks in the Mono Basin on the subject streams that are different than the opinions expressed by Mr. Trihey?
A No, I'm not. We went to Mr. Trihey as the lead on the restoration technical committee.
Q Finally, Mr. Dodge asked questions yesterday concerning the state and federal water quality anti-degradation standards. Do you recall those questions?
A BY DR. BROWN: Yes. I believe I answered those.
Q And I believe that it was your testimony that the

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standards were established by determining the concentration of salinity in Mono Lake at the time the applicable regulations were adopted; is that correct?
A There are two that we're discussing. Which one are you asking about?
Q Well, first let's focus on the state standard. How was that standard adopted?
A Well, it's my understanding that the numbers that were used in the basin plan document specifying the water quality of Mono Lake were based on the available measurements that they had at the time, which would have been the early seventies, from Mono Lake.
Q And the federal anti-degradation standard of 85 grams per liter. That was a number that was fixed because that was the salinity of Mono Lake at the time the federal standard was adopted; is that correct?

A Not entirely. That number is only a reference value that was provided by us looking up our projected salinity of Mono Lake for the year that that anti-degradation section was added to the law, and I believe that is 85 grams per liter using our salinity determination or estimation of the lake.
Q Now, the federal and state standards generally are applicable to fresh water. Isn't that correct?
A Well, there are standards for all sorts of waters.

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Q Well, in this context, what we are talking about is saline lake. Isn't it correct that a -- from a biological standpoint, the standard of 85 grams per liter does not have a lot of significance or meaning?
PANEL ATTORNEY: Objection. Unintelligible.
HEARING OFFICER del PIERO: I'm somewhat torn at this point because I have personal knowledge of exactly the standards that are being discussed.
Why don't you try and clarify the question in terms of what that standard is being applied to, at least in terms of your mind, what biological organisms you're attempting to elicit information about.
Q BY MR. BIRMINGHAM: Is it correct that if the concentration of salinity in Mono Lake exceeds 85 grams per liter, the lake will remain a productive ecosystem for brine shrimp?
MR. ROOS-COLLINS: Objection, ambiguous.
HEARING OFFICER del PIERO: I think you can answer that question.
DR. BROWN: Okay. The 85 grams per liter which I am not characterizing as a standard, I'm simply saying this is a reference value of what the lake was at at the time the law was added, is within the observed range of salinity under which Dr. Melak and his team have observed what you characterized as super abundant.

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And so that lake salinity is within the range of observed values.
Q BY MR. BIRMINGHAM: In fact, Mr. Dodge brought out yesterday through his questioning that the salinity levels in Mono Lake have been in excess of this threshold's number for a good part of the time in the last 14 years; isn't that correct?
A That is right.
Q And that those salinity concentrations have not prevented brine shrimp from reproducing?
A That is right, although reproducing is not only the response variable that we might want to determine out of salinity.
Q Salinity concentrations in excess of 85 grams or thereabout have not resulted in significant mortality of brine shrimp; isn't that correct?
A Well, all we know from the measurements is that there's still lots of them there.
Q And there are still lots of brine flies there; isn't that correct? Or alkali flies?
A Right. The only significant measurement or coordinated measurements were done in 1991. There is an amazing number of alkali flies.
Q And there's an amazing number of other types of

invertebrate organisms; isn't that correct?

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A Well, there's actually a lack of other invertebrate organisms from the information that I have.
Q But that lack of invertebrate organisms is not a result of a salinity in excess of 85 grams per liter; isn't that correct?
A I have no idea what causes their lack of being there.
MR. BIRMINGHAM: I have no further questions.
HEARING OFFICER del PIERO: Thank you very much.
I see hands going up, so we're going to do this in an organized fashion. Mr. Thomas?
MR. THOMAS: No. We have no questions.
HEARING OFFICER del PIERO: Okay. Mr. Dodge?
MR. DODGE: I think I have maybe two questions, but whenever I say that, I get into trouble.
HEARING OFFICER del PIERO: We'll afford you a little latitude, Mr. Dodge.

RECROSS EXAMINATION BY MR. DODGE

Q Mr. Casaday, looking at Pages 20 to 21 of your prepared testimony. Do you have that, Sir?
A BY MR. CASADAY: Yes.
Q You're talking there about the environmentally superior alternative, and in the course of that discussion, you discuss the key resources in this

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balancing. Do you see that? And then you have a list of eight?
A Yes.
Q And we talked about it yesterday, the fact that the restoration of duck habitat and duck populations was not a key resource, correct?
A Not that I listed here, no.
Q Right. Now, my question to you, I only have one question, and that is if the restoration of duck habitat and duck populations were thought to be a key resource, how would that affect the analysis of the environmentally superior alternative?
A Well, our conclusion about duck habitat was that it would increase under the 6383 foot alternative, and then it would gradually increase for the higher lake level alternatives reaching pre-diversion levels by the 6410. So if the Board, One, were to consider duck habitat as important, it would tend to push the environmentally preferred upward. But it's -- it's difficult to say that it would be one -- one would conclude another alternative would be balancing all these physical impacts would be, therefore, the environmentally preferred alternative. A long way of saying you get more duck habitat definitely at 6390 than you do at 6383. After that it's a judgment call.

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Q And more still at 6410; isn't that right?
A Yes. And by 6410, you've essentially got everything that you're going to get.
MR. DODGE: I did it in two questions.
HEARING OFFICER del PIERO: I appreciate it, Mr. Dodge. Thank you very much.

Mr. Roos-Collins, further questions, Sir?
MR. ROOS-COLLINS: I do have further questions.
HEARING OFFICER del PIERO: Please.

RECROSS EXAMINATION BY MR. ROOS-COLLINS

Q Mr. Casaday, I have several further questions regarding the stability of the channels of the tributaries to Mono Lake and specifically about the conclusion on Page 3-C-23 of the Draft EIR which reads as follows: "These data indicate that all these creeks without overflow channel relief are potentially unstable in the event of fairly frequent flood flows. Parker, Walker, and Levining Creeks are considered especially susceptible, but damaging flows in Rush Creek occur at an average interval of less than 20 years."

Is that conclusion based entirely on the data and opinions provided to you by Mr. Trihey?

A BY MR. CASADAY: No. It's a combination of that information, which was the exclusive data we used for

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damage thresholds, that data in combination with the LAMP model outputs about how often those flows would occur. When we gathered the information from Mr. Trihey, he was not aware, and neither was I, of the frequency with which those flows would be exceeded. We subsequently took his thresholds, compared it to the model outputs, and drew these conclusions about frequency of damage.

Q The erosions or instability thresholds, then, are based entirely on data provided to you by Mr. Trihey.

A Yes. That's correct.

Q Subject to the release of the Environmental Impact Report, have you had an occasion to review Mr. Trihey's August 30th, 1993, letter to Mr. Canaday submitting comments on that grant?

A No, I haven't. I hope to have by the time our terrestrial resource panel appears.

Q At the risk of surprise to you, let me ask you to read for the record certain paragraphs on Pages Four and Five of Mr. Trihey's letter to Mr. Canaday beginning with the paragraph, "Finally, I wish to comment." Mr. Casaday, could you read those paragraphs for the record?

A All right. These two paragraphs, three paragraphs, I guess?

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MR. FRINK: I would object, Mr. Chairman. We're getting information into the record that the witness has never seen.

HEARING OFFICER del PIERO: That's -- I was just -- just about to ask the question.

Mr. Roos-Collins, can you explain to me what the purpose of this is?

MR. ROOS-COLLINS: Mr. Trihey is the sole basis for the erosion or instability thresholds cited in the Draft Environmental Impact Report.

HEARING OFFICER del PIERO: And the source of the information you're attempting to introduce?

MR. ROOS-COLLINS: I'm going to ask Mr. Casaday what his opinion is of Mr. Trihey's comment.

HEARING OFFICER del PIERO: Did you introduce this as part of your exhibits?
MR. ROOS-COLLINS: This is a comment letter which has been previously submitted to the State Board and is included in the record for the Draft Environmental Impact Report.
HEARING OFFICER del PIERO: Okay.
MR. FRINK: I'll withdraw my objection.
HEARING OFFICER del PIERO: Have you seen the correspondence before, Sir?
MR. CASADAY: I actually glanced at this, and I

knew that it was in here. But I've not sat here and read it and thought about it.
HEARING OFFICER del PIERO: All right. Take one moment. Take two moments. Go through it. Take a look at the three paragraphs. Familiarize yourself with it, and then Mr. Roos-Collins can ask you questions about it.
MR. DODGE: Mr. Gatley is going to be in a subsequent panel. Maybe it makes sense to have --
HEARING OFFICER del PIERO: Let's keep in mind who the person is who just asked the question.
Do you have an opinion?
MR. ROOS-COLLINS: Mr. del Piero, my opinion is that this question is properly before Mr. Casaday on that panel. He has been asked a number of questions on erosion and stability.
HEARING OFFICER del PIERO: Mr. Casaday, be kind enough to view it.
MR. CASADAY: Would you like me to read it aloud?
HEARING OFFICER del PIERO: I'd like you to review it. If you wish to have it read aloud, that's obviously your prerogative, but inasmuch as it's already in the comments to the Environmental Impact Report, it's in our record. So that's not necessary.
One of the prerequisites for serving on this Board

is being capable of reading in the English language.
MR. ROOS-COLLINS: Mr. del Piero, respectfully, I would request that the witness read those paragraphs aloud; otherwise, my question will not be intelligible to the Board members.
HEARING OFFICER del PIERO: In all candor, Mr. Roos-Collins, whether or not your question is intelligible to the Board members is a function of the Board members' understanding, not yours. So why don't you go ahead and proceed with your cross-examination. Okay?
Have you reviewed that, Sir?
MR. CASADAY: I'm trying to listen to what's --
HEARING OFFICER del PIERO: Mr. Roos-Collins and I will both be quiet while you review that. You're reviewing that on my time. Okay?
MR. CASADAY: All right. I've read them.
HEARING OFFICER del PIERO: Please proceed, Sir.
Q BY MR. ROOS-COLLINS: Mr. Casaday, having read the paragraphs on Pages Four and Five of Mr. Trihey's August 30th, 1993, comment letter to the Board, has your opinion about the channel stability of the

tributaries to Mono Lake as expressed on Page 3-C-23 changed in any way?
A Well, I would have to admit that uncertainty has

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been injected into our conclusions. I would not, at this point, change my conclusions. I believe this statement simply raises additional questions.

Mr. Trihey, when asked by myself about channel damage thresholds, was -- at least I made it very clear in my opinion that I was talking about loss of riparian vegetation and not fish habitat. The statement, actually, now says that -- seems to say that he gave those thresholds with respect to refuge habitat and stream bed gravel movement and that, however, these thresholds would not be appropriate to changing the stream's plan form and bed topography, which I think is perhaps a way of saying threats to bank vegetation.

I would simply then want to go back to the RTC, or some of the technical people doing the work, and ask them again do they have some threshold estimates for flows that would damage the riparian vegetation. So I don't have any new opinion to express.

MR. ROOS-COLLINS: Thank you very much.

HEARING OFFICER del PIERO: Thank you very much.

Mr. Stevens?

MR. STEVENS: Nothing further. Thank you.

HEARING OFFICER del PIERO: Thank you.

Mr. Gipsman?

MR. GIPSMAN: No questions.

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HEARING OFFICER del PIERO: Ms. Niebauer?

RECROSS EXAMINATION BY MS. NIEBAUER

Q I'd like to refocus your attention to Mr. Birmingham's recross. Who was it that answered his questions regarding the extinction issue of the brine shrimp? One of you did.

HEARING OFFICER del PIERO: It was -- you'll forgive me, but it was one of these two gentlemen on the left. And I don't recall which one.

DR. BROWN: Then it must have been me.

Q BY MR. NIEBAUER: Okay. Then these questions are directed towards you.

Mr. Birmingham asked questions regarding brine shrimp populations and whether those populations were at or near extinction and whether or not the brine shrimp was ever in danger of extinction in Mono Lake.

Do you recall those questions?

A BY DR. BROWN: Yes.

Q Are you familiar with the definitions of "threatened" or "endangered" species pursuant to the Federal Endangered Species Act?

A I am generally familiar, but not in any specifics.

Q Are you familiar with the criteria that is required to list a species as an endangered or threatened species pursuant to the Federal Endangered

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Species Act?

A No.

Q Are you an expert in Endangered Species Act applications or interpretations?

A No.
Q When you gave your answer to or your answers, excuse me, to Mr. Birmingham's questions regarding brine shrimp populations and extinction, did you give those answers in an expert capacity?
MR. BIRMINGHAM: Excuse me, Mr. del Piero. To be fair to Ms. Niebauer, I believe it was Dr. Unger who answered these questions. If you go back and look at the record, it was Dr. Unger.
HEARING OFFICER del PIERO: Is that true, Dr. Unger?
DR. UNGER: I think we both answered the questions at different times.
HEARING OFFICER del PIERO: Then, Gentlemen, in order to insure that we've got adequate answers in regards to these questions, I would rely on you to comment when a question is asked that follows up on a previous question so that we are getting answers on that subject matter from the same parties.
MS. NIEBAUER: Well, that's my last question and maybe I can ask you to answer that question asked.

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Then I'll ask Mr. Unger the same questions, I guess, to make the record complete.
Q BY MS. NIEBAUER: The last question I have is did you -- if you did give an answer regarding brine shrimp and extinction in Mono Lake, did you give that answer in an expert capacity?
A BY DR. BROWN: I was giving that answer in response generally that the levels of salinity that he was asking about are within the observed range of salinity covered by Dr. Melak's studies. So only as the assessment team leader, those two things correspond, the period of available data with this range of salinity that he was asking about.
Q So you were not testifying as an expert of endangered -- Federal Endangered Species Act expert; is that correct?
A No.
Q Mr. Unger, I'll ask you the same questions. You were present when Mr. Birmingham asked questions regarding brine shrimp populations and extinction in Mono Lake, were you not?
A BY MR. UNGER: Yes.
Q And are you familiar with the definitions of "threatened" or "endangered" species pursuant to the Federal Endangered Species Act?

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A Not the specifics. In a general way.
Q And are you familiar with the criteria that is used to list a particular species as a threatened or endangered species pursuant to the Federal Endangered Species Act?
A No, not really.
Q And are you an expert in Endangered Species Act applications or interpretations?
A No.
Q Now, when you answered your questions asked by Mr. Birmingham regarding brine shrimp populations and extinction, did you answer those questions in an expert

capacity?
A I don't think that I actually said at any point that -- if you'll recall when he asked me about the salinities and whether or not such salinities could lead to extinction of the brine shrimp, I said at the time that I didn't know because there could be other factors involved.
I just want to make it clear that I don't think that I, at any point, said -- what I did say is that there was no evidence -- there was no extinction occurred under conditions that were present during the period that John Melak made his study.
Q Well, I could ask the Reporter to read back the

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question, but I do believe that Mr. Birmingham asked the question whether brine shrimp were ever in danger of extinction at Mono Lake.
Do you recall that question?
A Yes.
Q And I recall your answer as being no.
A Okay. It could have been.
Q So my question to you is when you gave that answer to that question, were you testifying in an expert capacity as a Federal Endangered Species Act expert?
A Not as a Federal Endangered Species Act expert, no.
MS. NIEBAUER: Thank you. That's all I have.
HEARING OFFICER del PIERO: Thank you very much.
Mr. Haselton? Mr. Silver? No. Mr. Gleason? No. Staff? Mr. Smith?
MR. SMITH: I had one question for Dr. Unger.
REDIRECT EXAMINATION BY THE STAFF
Q BY MR. SMITH: You admitted in front of God and everybody that you're not an expert under the federal, but you did mention during your testimony that there were some experts.
In response to the question about the expertise Dr. Melak, you said that Dr. Jellison and two others are, and you didn't fill out the rest of that

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sentence. They are what? They're experts, too? They're --
A BY MR. UNGER: They are experts on the biology, ecology of Mono Lake brine shrimp. I don't know that they are experts on the Federal Endangered Species Act or whatever the term was either.
MR. SMITH: Thank you.
HEARING OFFICER del PIERO: Any other questions by staff? No? Ms. Forster?
Q BY MS. FORSTER: I would like a clarification, and I don't know. I guess I'll just continue with the person who's been asking.
In the testimony this morning in the issues relating to the brine shrimp and endangered species, I'd like a reinforcement. Was it said that the brine shrimp was a candidate for the National Endangered Species Act?
A BY DR. UNGER: I don't believe that was ever discussed this morning.
HEARING OFFICER del PIERO: Do you know that to be

the case?
DR. UNGER: It is a candidate. I believe so, yes.
HEARING OFFICER del PIERO: I thought I was going to ask a question, but I don't think so. I think that

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concludes this panel. Gentlemen, thank you very much for your kind consideration.
Mr. Frink, it is currently quarter to twelve. We have another panel to bring forward. We have 15 minutes in which to do it before we would break for lunch. It's my sense that that's probably not the most expeditious thing to do.
Anybody have speeches at noontime today? No speeches today. Ladies and Gentlemen, we're going to break. We're going to come back at 1:15. Okay? 1:15, and we will start promptly at 1:15. Thank you very much and Gentlemen on that first panel, let me express my deep appreciation for your attentiveness and participation in the course of the last day. Thank you.
(Whereupon the lunch recess was taken.)
HEARING OFFICER del PIERO: Ladies and Gentlemen, this hearing will again come to order. One face is the same and the rest have changed. Two faces. Pardon me.
Mr. Frink, do you want to begin this?
MR. FRINK: Yes, Mr. del Piero. The next witnesses that Staff would like to call are the gentlemen who did the fisheries assessment in the Environmental Impact Report, and the first of those is

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Philip Dunn, the second is William Mitchell. I don't believe either one of them have been sworn yet.
HEARING OFFICER del PIERO: Good. Gentlemen, would you stand and raise your right hand? Do you promise to tell the truth during the course of these proceedings?
(Answering affirmatively.)
HEARING OFFICER del PIERO: I believe you Gentlemen are familiar with our procedures after having spent innumerable hours with us during the course of the last few years or so. Didn't you guys work on Mokelumne, too?
THE GENTLEMEN: Yuba.
MR. FRINK We'll begin with Mr. Dunn.
DIRECT EXAMINATION BY MR. FRINK
Q Please state your name and place of employment for the record.
A BY MR. DUNN: My name is Philip L. Dunn, and I work with Jones and Stokes as an associate principal.
Q Did you prepare a document that is titled The Written Testimony of Philip Dunn for the Mono Basin Water Rights Hearing 1993?
A Yes, I did.
Q And have you seen that that document has been designated as SWRCB 21 for this proceeding?

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A Yes.
Q Is Attachment A -- excuse me. Your testimony

indicates that you served as the team leader for evaluation of fishery issues or the Draft EIR reviewing the City of Los Angeles' water rights in Mono Basin.
Could you please briefly summarize your educational and professional qualifications relevant to that area of work?
A Yes. I have a Bachelor of Science degree in zoology from UC Davis and a Master of Science degree in fisheries biology from Humboldt State University. I worked with Jones and Stokes Associates for nine years on a variety of water resources, water right, and fishery type projects. I've been involved in numerous IFIM studies and habitat and fish population studies on a wide variety of streams in California.
Q Okay. And for the record, an IFIM study is what?
A That's Instream Flow Incremental Methodology.
Q Is Attachment A to your written testimony a true and accurate summary of your professional education and experience as it relates to the work you did on the Draft EIR?
A Yes, it is.
Q And what specific section or portions of the Draft EIR did you assist in preparing?

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A Under the direction of our project manager, I was the team leader responsible for the fisheries section of the Draft EIR.
I also was involved with Appendix O, which was the fisheries technical appendix, and I worked with other staff at Jones and Stokes Associates, primarily Bill Mitchell here, in developing the fisheries portion of the document.
I also managed the instream flow incremental methodology study on the Middle Owens River, and that was Auxiliary Report 23. And I coordinated the preparation of Auxiliary Report 10, which was done by Balance Hydrologics, and that was a geomorphic assessment of the Middle Owens River.
Q Is SWRCB Exhibit 21 a true and accurate summary of your testimony in this proceeding, Mr. Dunn?
A Yes, it is. And I would like to add several very brief statements to that written testimony, if I may.
Q Are these by way of clarification?
A Yes.
Q Additional information you've learned since submitting the testimony?
A Right. Right.
Q Okay. Please do.
A Since preparing my written testimony, I have had

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an opportunity to review the comments on the Draft EIR and also to conduct a very cursory analysis, not even analysis, but just more perusal of the testimony from some of the other parties, and so I have an idea of the main themes that they've brought out. And I want to quickly address three major issues that became apparent in my review.
First, it's very apparent that there's a large discrepancy between the parties regarding the pre-1941 fish population and habitat conditions particularly in

Rush and Levining Creeks, and some parties have presented new information on this subject that was not made available to us during EIR preparation.

The environmental setting for the fisheries was sent out to several parties for comment at an early stage in the process, and we received either no comments or we received comments that were too late in the process to incorporate into our Draft EIR. Nonetheless, all of this information has now been brought out, and we will review and consider this information as it relates to comments on the Draft EIR as we begin to prepare the Final EIR.

The second point is regarding minimum instream flows for the Mono tributary streams. The EIR does not contain required minimum stream flow, but it only

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evaluated the effects on fisheries from each of the alternatives. I do believe there is sufficient existing information to establish such flows in the Final EIR, but that has not yet been a charge for Jones and Stokes at this point.

I'd also like to point out that the DFG final recommendations for several streams were received at the end of August 1993, and so those recommendations could not be incorporated or reviewed for the Draft EIR. And again, we will review and consider this information as we develop the Final EIR.

Third and lastly regarding the effects of high flows on Rush and Levining Creeks, I think the 1993 high flows have brought out some new information regarding the effects of high flows on Rush and Levining Creek, channels and habitat restoration, work that's been done there, and I think prior to these high flows in 1993, we could only speculate about what potential effects these high flows would have.

And also, it appears that some parties have modified their positions to some degree regarding the effects of the high flows and, certainly, we will again consider this information and any alternative interpretations of existing information that could change our conclusions in the Final EIR.

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Q Okay. Are those the only additions you wish to make to your written testimony?

A Yes.

Q Thank you very much.

We'll move on to the second witness, William Mitchell, and then place each of the witnesses -- make each of the witnesses available for cross-examination as a panel.

Please state your name and place of employment, Mr. Mitchell.

A BY MR. MITCHELL: My name is William T. Mitchell, and I'm an environmental specialist with Jones and Stokes.

Q Okay. Did you prepare a document that is titled Written Testimony of William T. Mitchell for the Mono Basin Water Right Hearing 1993?

A Yes, I did.

Q And is that the document that has been designated as SWRCB Exhibit 22 for this proceeding?

A Yes, it is.
Q Your written testimony indicates that you also assisted in the fisheries issues analysis for the Draft Environmental Impact Reports.
Would you please summarize your education and professional qualifications that are relevant to that area of work?

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A Yes. I hold a B.S. degree in biology from San Diego State University and an M.S. degree in fisheries biology from Humboldt State University. I've been employed with Jones and Stokes for the last four years, and during that time, I've been engaged in designing fisheries studies, developing and applying fish habitat and population models, and conducting numerous fisheries impact assessments.
Q Okay. Thank you.
Is Attachment A to your written testimony a true and accurate summary of your education and experience relating to the work you did on the Draft EIR?
A Yes.
Q Thank you. What particular portions of the Draft EIR or auxiliary reports did you assist in preparing?
A Under the direction of Phil Dunn, I was responsible for carrying out the fisheries impact analyses for the Draft Mono Basin Water Rights EIR, which is Chapter 3-D entitled Fishery Resources and also Appendix O entitled Fisheries Technical Appendix.
And I also assisted in preparing an instream flow incremental methodology study for the Middle Owens River, which is reported as Auxiliary Report Number 23.
Q Thank you.
In summary, do you affirm the SWRCB Exhibit 22 is

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a true and accurate statement of your testimony in this proceeding?
A Yes.
MR. FRINK: Okay. I believe that's all the questions we have, Mr. Hearing Officer.
HEARING OFFICER del PIERO: Thank you very much, Mr. Frink.
Mr. Birmingham?
MR. BIRMINGHAM: Thank you very much.
As a procedural matter, Mr. del Piero, I would note for the record that earlier Mr. Frink had asked for the admission of the testimony of several of the witnesses that were on the previous panel, and I wondered if now would be an appropriate time to consider their admission.
HEARING OFFICER del PIERO: I'll take that up when all the panels are done.
MR. BIRMINGHAM: I will direct the questions that I have on this issue primarily to Mr. Dunn, but in the event that Mr. Dunn or Mr. Mitchell feel that Mr. Mitchell would be better qualified to answer the question, then I would invite a response from either or, in fact, anyone on the panel.
HEARING OFFICER del PIERO: And, Gentlemen, you're so directed.

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CROSS-EXAMINATION BY MR. BIRMINGHAM

Q First, with respect to the historic conditions that are described in the Draft Environmental Impact Report, much of the discussion of the historic conditions on Rush and Levining Creeks was based upon the 1990 court testimony of Eldon Vestal; is that correct?

A BY MR. DUNN: That was one of the references that we used, one of many.

Q Mr. Vestal was a Department of Fish and Game employee that was in the Mono Basin in the late thirties and early forties and in the fifties; is that correct?

A I'm not sure if he was there in the late forties and fifties. I know in the thirties he was.

Q Much of Mr. Vestal's testimony in the 1990 proceedings related to the quality of spawning gravels and the vegetation as a measure of the pre-diversion fishery. Is that right?

A Could you repeat that question, please?

Q Much of Mr. Vestal's testimony in 1990 related to the quality of spawning gravels and vegetation as a measure of the pre-diversion fishery.

A I don't recall whether he was characterizing pre-diversion fishery, although I do recall that he did

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have -- there were statements regarding the quality of the gravels and the extent of the gravels.

Q And he made statements in his testimony concerning the extent of the riparian vegetation; is that correct?

A Yes, I believe so.

Q The condition of the pre-diversion fishery, and when I say "pre-diversion," I mean prior to the diversions by L.A. DWP. The condition of the pre-diversion fishery would have been affected by flows in the streams. Is that correct?

A That's correct.

Q The Draft Environmental Impact Report at Page 3-D-3 states that, "Between 1930 and 1940, water was diverted from Levining Creek for irrigation and the generation of hydroelectric power;" is that correct.

A Could you please just refer me again to --

Q Well, is it correct -- I'll just ask you. Is it correct --

MR. DODGE: Mr. Chairman, I would object to this line of questioning on the grounds of irrelevance. We believe, as set out in some depth in our opening statement, that pre-1940 water diversions, whether they be by DWP or by some third party, whether they be legal or illegal, are simply irrelevant under Cal Trout II, and that the fishery that sought to be restored is a

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continuous fishery that is not interrupted by irrigation.

HEARING OFFICER del PIERO: Mr. Birmingham?

MR. BIRMINGHAM: Quite to the contrary, Mr. del Piero. The Court in Cal Trout, II, the Third District Court of Appeal, is very specific concerning the obligations of this Board and the obligations of the Los Angeles Department of Water and Power.

It was clearly stated that it was the obligation of this Board to condition the licenses of the City of Los Angeles to immediately restore flows to the four streams from which the Department of Water and Power was diverting water.

Further, it is very explicit in Cal Trout, II, that it is the obligation of the Los Angeles Department of Water and Power to restore the pre-diversion fishery, and the conditions that existed in Rush and Levining Creek in 1940 relate specifically to the fishery that would have existed in those streams.

Therefore, the evidence concerning historic conditions is relevant to the condition of the fishery which Los Angeles is obligated to restore under what is now the law of this case.

HEARING OFFICER del PIERO: I have Cal Trout, II. I figured this issue was going to be coming up.

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A question of you, Mr. Birmingham, in regards to this matter. Explain to me the relevance of the diversion as they relate to the pre-diversion fisheries.

MR. BIRMINGHAM: Well, Mr. del Piero, hypothetically, if there were stretches of Rush Creek or Levining Creek which in 1940 or '41 contained no water or no flows, then it's likely to conclude that the fishery that existed in that portion of the stream was not a good fishery. Los Angeles Department of Water and Power is not obligated under Cal Trout, II, to restore anything beyond the fisheries that existed in these streams.

And again, if there were portions of the stream that were dewatered or that were negatively affected by other pre-L.A. DWP diversion activities, then that information is relevant to L.A. DWP's obligation, what it is we are required to restore under Cal Trout, II. Here I'm talking specifically about the obligation described by the Court in Cal Trout, II.

HEARING OFFICER del PIERO: Have a seat, Sir, just for one moment.

Yes, Mr. Thomas, do you have a comment in regards to this matter?

MR. THOMAS: Mr. Chairman, Mr. del Piero, we don't

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want to litigate or go over an issue which, in effect, is a legal issue in this proceeding, and I would encourage the Board to view the issue in terms of the narrow function of the closed setting that we're doing today and not the larger function of judicial determination but some of the lingering baggage from the Cal Trout series.

With that, I'll sit down.

MR. ROOS-COLLINS: Mr. del Piero, may we be heard on this?

HEARING OFFICER del PIERO: Yes, Sir.

MR. ROOS-COLLINS: California Trout concurs with Mr. Birmingham that the rights used by predecessors to the City of Los Angeles are relevant with this proceeding. We disagree emphatically with Mr. Birmingham's interpretation of this Board's

obligations, but we agree that those rights did affect the fishery and the fishery habitat that existed in 1941 and, accordingly, are a proper subject for direct or cross-examination here.

HEARING OFFICER del PIERO: I'm going to allow the questioning to be answered. I'm going to point out also, however, that the value of the information that I assume will be forthcoming in response to these questions is going to be weighted upon the specific

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time frame in which the witnesses can testify as to specific information as it relates to diversions. In the event that the diversion took place in 1941 or that the witnesses have information as to the diversions that might have taken place in 1941, I'm interested in hearing the specifics of it.

However, in regards to the questioning, Mr. Birmingham, I am also particularly interested in finding out with the degree of detail possible from the witnesses exactly the specific time frames in which modifications to the natural stream flows were taking place so that we don't have a situation where representations may be given at some future time that a modification for a 12- or 24-month period of time would, in fact, be construed as the pre-existing condition in those creeks.

Do you understand what I just said, Sir?

MR. BIRMINGHAM: Yes, I do, Mr. del Piero.

HEARING OFFICER del PIERO: Good. So as to the information that will be forthcoming, the weight of that evidence will be evaluated by this Board within those parameters.

Now, why don't you proceed with your questioning?

MR. BIRMINGHAM: In light of the comments that were just made by the Hearing Officer, I'd like to ask

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these Gentlemen a question.

Q BY MR. BIRMINGHAM: In their expert capacity, and I would direct it either to Mr. Dunn or to Mr. Mitchell, isn't it correct that the diversions for irrigation that occurred in Rush Creek in 1939 would have affected the condition of the fishery as it existed in 1941 when the Department of Water and Power commenced its diversions?

A BY MR. DUNN: Well, I think the diversions you're referring to -- you know, we'd have to look at specifically how much water was being diverted, how much water might have been seeping back into the system. It would depend where on Rush Creek you are and the duration of those flows. It's a complicated matter, and I don't think, you know, we can address that and say specifically what was the -- what were the fishery conditions at a particular point in time.

Q In fact, we don't know what the fishery conditions were in 1941; isn't that correct?

A Well, I think many parties have presented their interpretations of what fishery conditions were. What we have in this EIR document is based on the available information that we had, and what we tried to do is make a reasonable estimate of what the fishery

conditions were, not rely on any one source for

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evaluating numerous sources.
HEARING OFFICER del PIERO: Mr. Dodge?
MR. DODGE: I apologize. I'm not familiar with your rules on the point. I would like to just have a continuing objection to any line of questions relating to pre-40 diversion and not make continuous objections.
HEARING OFFICER del PIERO: So noted. The record will so reflect.
MR. DODGE: Thank you.
Q BY MR. BIRMINGHAM: I've asked you at the beginning of our discussion before Mr. Dodge objected that -- isn't it correct that in the 1930s and 1940s, water was diverted from Levining Creek for irrigation and hydroelectric generation?
A BY MR. DUNN: Okay. We're off of Rush Creek now and on to Levining?
Q My question related to Levining Creek.
A To the best of my knowledge, that's true.
Q The Draft Environmental Impact Report states that historical sources indicate that the diversions did not dewater Levining Creek, although irrigation diversions significantly reduced late summer flows in drought periods. Specifically, that's on Page 3-D-3 of the Draft Environmental Impact Report; is that correct?
A That is correct. That's where we site Trihey and

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Associates.
Q Now, in reaching that conclusion, did the drafters of the Environmental Impact Report, and I would assume that is you two gentlemen, consider data from the 1934-35 period that shows there were zero flows in Levining Creek at the county road?
A BY MR. MITCHELL: Well, 1934 and 1935?
Q That's correct.
A I don't recall having that available to us, if it, indeed, exists.
Q Would zero flows in Levining Creek have resulted in a poor fishery in 1934-1935 at the county road?
A You know, again, I think it would depend in what location those flows were occurring, and obviously, if there's no flow at a certain section of the creek, there would be no fish populations.
Q Is it correct that if there were no or small fish populations in 1934-1935 as a result of no flows in a portion of Levining Creek, that that could have had an effect on the condition of the fishery in Levining Creek in 1941?
MR. DODGE: Objection, unintelligible.
HEARING OFFICER del PIERO: Mr. Birmingham, can you add a degree of specificity to the question?
MR. BIRMINGHAM: I certainly can try.

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Q BY MR. BIRMINGHAM: If there was a portion of Levining Creek that had no flows in it in 1934 or '35, and I'm referring specifically to that portion of Levining Creek at the county road crossing, and the fact that that creek had low flows in it or no flows and, therefore, there was a poor fishery, would the

existence of that poor fishery in 1934 or 1935 possibly affect the condition of the fishery that existed in that stream in 1941?
A BY MR. MITCHELL: Well, again, I think we -- we need to be aware that a single event that occurs in a single year may have an effect on the populations a year or two hence. However, if it is a single event, it probably -- its effects will diminish through time, particularly if in the subsequent years there are better flows. It depends on the magnitude of the habitat that's affected and whether or not those areas are important to the population, but we need to look at the magnitude, duration, and frequency of these events in order to conclusively say whether or not fish populations are going to be significantly affected.
HEARING OFFICER del PIERO: Excuse me, Mr. Birmingham. Pardon me for interrupting you.
Mr. Mitchell, Mr. Birmingham, are you -- I'm having difficulty with the question. I know a couple

of the Board members are having difficulty with the question, too. Asking about an event taking place in the mid 1930s having impact on a fishery in 1940 or 1941 at this point appears to the Hearing Officer to be so speculative as to be beyond answering. Mr. Mitchell is struggling.
As I indicated, I had hoped you were going to add a bit more flesh to the bones that we're talking about here. So if it's possible, in terms of getting definitive answers to definitive questions, I'd appreciate it. Frankly, from the standpoint of the record, it would improve the quality of the information the Board has to consider.
Q BY MR. BIRMINGHAM: The Draft Environmental Impact Report talks about the effects of irrigation diversions out of Levining Creek in the decade of the thirties. Is that correct?
A BY MR. MITCHELL: That's correct.
Q And it indicates that there were significant reduction in flows during the period of the thirties in Levining Creek because of irrigation diversions; is that correct?
A BY MR. DUNN: Okay. I'm reading from the EIR, and basically, "Between 1930 and 1940, water was diverted from Levining for irrigation and hydroelectric," and

then we cited Trihey and Associates that, "Levining is not dewatered, although irrigation diversions significantly reduced summer flow drought periods."
Q Would those historic conditions, those conditions that existed in the thirties, affect the condition of the fishery in 1940 or '41 in Levining Creek?
A Again, I think we really have to speculate on that, and without having specific information about specific flows in various portions of Levining Creek, without specific information on the habitat structure that was there, those are all important considerations, and also, as Mr. Mitchell testified to in terms of fish in other portions of the stream and depending on what the flows were in those areas, all of those are

important factors. And it's -- you can't just answer that question yes or no with the available information.
Q So what you're telling us is that you don't know what the condition of the fishery was in 1941 in Levining Creek because you don't have that specific information; is that correct?
A Well, we have some information that has been generated, but to say in any specific year or month or reach what the conditions were, you know, becomes somewhat speculative.
Q I'd like to ask some questions, if I may, about

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Rush Creek. I'll ask them for the period 1939. Isn't it correct that in 1939 there was significant diversions out of Rush Creek for irrigation?
A I can't attest to specifically in 1939, but overall, that's a true statement over that period.
Q And, in fact, isn't it correct that during significant periods of time -- let me be a little more specific for purposes of the record. For instance, according to a report by Dr. Scott Stein, a report upon which the preparers of the Draft EIR relied, for the period of 1930 to 1935, the Rush Creek channel at Old Highway 395 was dry 28 out of the 60 months; isn't that correct? That's what Dr. Stein reported in his report on which you relied?
A I don't know to the specifics of those numbers of months, but I do recall a report that there were, you know, dry periods at times, yes.
Q In 1939, didn't Eldon Vestal estimate that the flow in Rush Creek at Old Highway 395 was one cfs?
A I can't recall the specifics of that.
Q I'd like to show you a blowup of Figure Six from the direct testimony of Dr. Donald Chapman and Bill Platts, which has been marked as an exhibit, as L.A. DWP Exhibit 1.
Q Are you able to see the Figure Six from L.A. DWP

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Exhibit 1?
A BY MR. MITCHELL: Yes.
A BY MR. DUNN: Yes.
Q I apologize for the quality of the photo, but it is purportedly a photo taken in 1939 by Eldon Vestal at Highway 395.
I would ask you, do the conditions -- are the conditions that are depicted in Figure Six conducive to a good fishery if, in fact, Mr. Vestal was correct that that represents one cfs?
A BY MR. MITCHELL: To tell you the truth, I'd be very reluctant to comment on a photograph, assessing fishery conditions based on one photograph, and it would be difficult for anyone to extrapolate from one photo to the rest of the creek.
Q Well, let me ask you about this one photograph because it was taken, according to Mr. Vestal, looking upstream from Old Highway 395. And I'd ask you if you can see in the photograph, and I'm pulling in here from the Environmental Impact Report, the, quote, dense stands of cotton woods and willows across the flood plain above Old Highway 395." And that's a quote

that's from Page 3-D-5 of the Draft Environmental Impact Report.
Do you see the dense stands of cottonwoods in this

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photograph?
A BY MR. DUNN: Again, we're referencing the Trihey and Associates report in 1991 in regards to the lower two miles, and what you are showing here in this exhibit is a photograph of, you know, maybe 50 yards. And it's also very difficult to tell how much flow is moving through there.
In the photo that you have there, there is not extensive riparian area in that particular photo.
Q In fact, you might conclude that there is no riparian vegetation in that photo; is that correct?
A In the foreground of the photo, which is a very short section, there's no riparian, and in the background, there may or may not be because you just can't see much of the creek except for this one short section.
Q At some point during the hearing, we will attempt to get a better copy of this photograph. In fact, I believe it was reproduced by Mr. Trihey in a report.
But let me ask you a question, and it's going to be a hypothetical question because, admittedly, it's difficult to interpret this photograph. But hypothetically, I'm going to ask that you assume that there's one cfs of water flowing through this section of Rush Creek in 1939 and that there is no riparian

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vegetation in this portion of Rush Creek and that there are no banks in this portion of Rush Creek.
Would you conclude that this portion of Rush Creek would support an excellent fishery? That's a hypothetical question.
A I might try to answer that. First, let me say that when I look at that one photograph and to say whether that can support a good fishery, a good fishery is not dependent on one specific section of stream. There's a continuum there that produces the effects that would affect the population, and I can look at that photograph and say in the lower half of that photograph it looks like basically no adult brown trout habitat in that particular stretch of stream, although that could be good fry-rearing habitat and possibly spawning habitat. I can't see with that flow in that picture.
So again, hypothetically, you're asking me to comment whether it could be a good fishery, and I think a fishery is more than a 50-foot section of stream.
Q You said, Mr. Dunn, in response to questions by Mr. Frink at the commencement of your testimony, that you have, since circulation of the Environmental Impact Report, learned that there's a large discrepancy among the parties regarding the pre-1941 habitat conditions

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and the fish populations; is that right?
A That's correct.
Q And you feel that, for the purposes of the Final Environmental Impact Report, it will be necessary to

analyze the different information which you now are aware of; is that correct?
A Yes.
Q Did the Draft Environmental Impact Report consider the effects of grazing on the fishery as it existed in 1941?
A That was one component that we did look at, yes.
Q And is it correct that you concluded that grazing in 1941 had an adverse effect on the fishery on Rush and Levining Creeks?
A I don't know if specifically in 1941 and, again, we were utilizing other sources for evaluating the effects of grazing, and certainly grazing occurred and would have some effects on the fishery habitat.
Q I'd like to show you a photograph, a blowup of Figure 3 from L.A. DWP Exhibit 1, and it purports to be a photograph taken in February 1947 by Eldon Vestal. And the caption at the bottom says, "Livestock have destroyed bank integrity on the right bank. Hoof sheering has caused a segment of the right bank to sluice into the stream creating a false bank.

Livestock probably caused the disc-shaped rather than box-shaped cross-section."
Hypothetically, if there were similar effects of grazing in 1941 as there are depicted in this photograph that was taken in 1947, would that have negatively impacted the fishery?
MR. ROOS-COLLINS: Mr. del Piero, I request clarification as whether the caption purports to be Mr. Vestal's words or L.A.'s witness' words.
MR. BIRMINGHAM: They are L.A.'s witness' words, Mr. del Piero. I apologize for my confusion.
HEARING OFFICER del PIERO: Do you wish to restate your question, Sir?
MR. BIRMINGHAM: I didn't know that it was in the form of an objection.
HEARING OFFICER del PIERO: No, your question for the witness. Would you restate it?
Q BY MR. BIRMINGHAM: The conditions that are depicted in Figure 3, if they -- hypothetically, if they resulted from livestock grazing and if there were similar effects of livestock grazing in 1941, would that have -- would those effects negatively impact the fishery?
A BY MR. DUNN: Again, I think we're focusing on a specific photograph that shows a certain area where

there has been some bank sloughing and, again, it would be pure speculation to say that what is depicted in that photograph was occurring along all or a certain section of the creek other than what we're looking at right there.
Grazing impacts are recognized in our EIR. It was a contributing factor to the conditions that were there. It was certainly not the sole one, and I think there's testimony and some of the reports that we reviewed that certainly indicate that much of the habitat was not in the condition that is depicted on that photograph.

So I think it's -- you know, to say that that's potentially hypothetically that's what occurred throughout the stream system doesn't, to me, make sense where there is evidence that says that's not what was there.
Q Perhaps you misunderstood my question because I didn't purport to represent those were the conditions that existed throughout the stream.
My question relates specifically to this section of the stream. Would that type of grazing effect negatively impact a fishery?
A Again, it would depend on the extent of that grazing activity, but if I look in the middle of that

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photo, photograph, and see banks where it has been sloughed off for whatever reason, typically, in a section like that, the habitat is not that good.
MR. BIRMINGHAM: I'd request an additional ten minutes, Mr. del Piero?
HEARING OFFICER del PIERO: Yes, Sir.
Q BY MR. BIRMINGHAM: The Draft Environmental Impact Report concludes that the fishery in Rush Creek was excellent in the 1930s; isn't that correct? That's the conclusion on Page 3-D-8 of the Draft Environmental Impact Report, isn't it?
A Yeah. I believe that is correct.
Q And isn't it correct that during the period of the thirties, the Department of Fish and Game annually planted fish in Rush Creek?
A I'm not sure if it was every year, but I knew -- I know that they frequently planted the creek.
Q And Eldon Vestal carried out a Department of Fish and Game study on the fishery in Rush Creek in the late forties and fifties. Isn't that correct?
A That's correct.
Q And didn't Mr. Vestal conclude that in order to -- well, let me ask a foundational question. The study that was performed on Rush Creek -- Rush Creek was selected as the site for that study because it was

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considered a typical eastern Sierra stream at that time. Isn't that correct?
MR. ROOS-COLLINS: Objection. Calls for speculation.
HEARING OFFICER del PIERO: Is there anything in the documentation that says that, or is that your -- is that --
MR. BIRMINGHAM: I believe, Mr. del Piero, and I'll get the document, if I -- if I need to, but I believe that the 1954 report by Mr. Vestal, the document cited in the Draft Environmental Impact Report, states that Rush Creek was selected as the study site for two reasons; One, it was accessible by automobile and, Two, it was typical of eastern Sierra streams. Do you recall that?
HEARING OFFICER del PIERO: Mr. Birmingham, what you want to do first is ask them if they know what the study is and then ask them if they're familiar with it and then ask them the question to get to the point we need to be at.

Q BY MR. BIRMINGHAM: Did you rely on a 1954 study by Eldon Vestal of the conditions of fisheries in Rush Creek in preparing the Environmental Impact Report?
A BY MR. MITCHELL: Yes, that report was used.
Q And in that report, did Mr. Vestal describe the

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results of a study that he conducted in the forties and fifties on the fishery in Rush Creek?
A Yes.
Q And did Mr. Vestal report in that 1954 report that that study was conducted in Rush Creek because Rush Creek was considered to be typical or representative of an eastern Sierra stream?
A I was trying to recall his words, but I do recall that accessibility was important.
HEARING OFFICER del PIERO: Excuse me. That's not responsive. Accessibility is not indicative of it being a typical or an atypical --
MR. MITCHELL: What I'm saying is I don't recall that particular statement, that it was a typical eastern Sierra stream, but I do remember Eldon Vestal stating that it was accessible. And that was one of the reasons for selecting it.
HEARING OFFICER del PIERO: Thank you. Pardon me for interrupting.
MR. BIRMINGHAM: Excuse me for wasting the Board's time.
Q BY MR. BIRMINGHAM: I'd like to refer you to the first page, actually it's Page 89, and this comes from the record. It's Cal Trout -- it's attached to the testimony of Eldon Vestal which has been submitted as

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Cal Trout Exhibit 5.
May I approach the witness, Mr. del Piero?
HEARING OFFICER del PIERO: Certainly.
MR. BIRMINGHAM: I'm handing or showing to Mr. Mitchell and Mr. Dunn the first page of a document that is entitled Creel Returns from Rush Creek Test Stream, Mono County, California, 1947, 1951; is that correct?
MR. DUNN: Yes.
MR. MITCHELL: Yes.
Q BY MR. BIRMINGHAM: And is this the first page from the document on which you relied, the 1954 report of Eldon Vestal, in preparing the Environmental Impact Report?
A BY MR. DUNN: This, again, was one document that we used of many.
Q So the answer to the question is yes, this is the document, the 1954 report that you referred to in preparing the Environmental Impact Report?
A Correct.
Q Now, I'm reading from a portion of the first page, and isn't it correct that it says, "The lower portion of Rush Creek was in many ways ideal for use as a test stream. It's location, Figure 1, in Inyo-Mono County vacation land only three miles from U.S. Highway 395

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assured both heavy fishing and ready accessibility for planting. The stream was fairly typical of heavily

fished trout streams on the east slope of the Sierra-Nevada."
Does the document state that?
A Yes, it does.
Q So apparently the reason this stream was selected was that it was accessible and it was, using Mr. Vestal's term, fairly typical of eastern Sierra streams; is that correct?
A Correct.
Q Now, didn't Mr. Vestal conclude as a result of this 1954 study or the 1947 to '51 study, which he reported in 1954, that in order to sustain a sports fishery in Rush Creek which was typical of eastern Sierra streams, it was necessary that there be annual planting of fish?
A BY MR. MITCHELL: Again, I don't recall whether he said that it was necessary. He did indicate that it was an important part for sustaining the demand that he expected on that creek, but he did not term -- I don't recall him stating that it was a necessary management practice.
In fact, what was concluded is that there was a fairly significant wild population also in the creek

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which contributed to that fishery.
Q What I would ask that you do, and Mr. del Piero, perhaps, so that we don't waste the Board's time, may I defer this question and during the recess afford the witnesses an opportunity to read Mr. Vestal's paper to refresh their recollection?
HEARING OFFICER del PIERO: Certainly.
MR. BIRMINGHAM: Thank you very much.
HEARING OFFICER del PIERO: How many questions do you have?
MR. BIRMINGHAM: I have just a few more questions.
HEARING OFFICER del PIERO: Fine. One that will be upcoming in a little while.
Q BY MR. BIRMINGHAM: Now, let's talk very briefly about the flows that are described in Chapter 3-D of the Draft Environmental Impact Report.
Isn't it correct that the -- excuse me. Isn't it correct that the Draft Environmental Impact Report concludes that changes in the fishery resource conditions under the 6383.5 feet alternative would not significantly differ from the impacts on the fishery resource conditions under the 6377 feet alternative?
A BY MR. DUNN: This is for which creek?
Q Actually, this is for both creeks.
A Both Rush and --

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Could you repeat the question again?
Q Yes. Isn't it correct that the Draft Environmental Impact Report concludes that the changes in the fishery resource conditions under the 6383.5 feet alternative would not be significantly different from the impacts of the 6377 feet alternative?
A And that's relative to which base case?
Q Rush -- well, let me refer you specifically to Page 3-D-75 of the Draft Environmental Impact Report, and I'd ask that you take a moment and review that

page.
A We've reviewed that page.
Q I don't know whether it would be better to wait until the Hearing Officer returns or should we proceed?
MR. CAFFREY: That's all right. You can proceed. I've taken over. He'll be back shortly. We won't do too much damage in his absence.
Q BY MR. BIRMINGHAM: Isn't it correct that the Draft Environmental Impact Report concludes that the fishery resource conditions under the 6383.5 feet alternative would not be significantly different from the impacts of the 6377 feet alternative?
A I would agree with that, yes.
MR. THOMAS: Objection. It misstates the -- Page

3-D-75 explains the resource conditions not fishery resource --
Q BY MR. BIRMINGHAM: Chapter 3-D refers to the fishery resources; isn't that correct?
A BY MR. MITCHELL: That's correct.
Q That's the subject of Chapter 3-D. So wouldn't you conclude that the Draft Environmental Impact Report concludes that the changes in the fishery resource conditions under the 6385 feet alternative would not be significantly different from the impacts under 6377 feet alternative? And you answered that question a moment ago yes; isn't that correct?
A BY MR. DUNN: Yeah. I would agree with that. That was based on the information that we had at that time, and it was based on our impact assessment using LAMP. That is correct.
Q Well, let's focus for a moment on just the information that you had because that's only fair. In terms of the total habitat, in terms of total fish habitat, and I'm including now fish habitat in the Owens River, the Upper Owens River, isn't it correct that the 6377 feet alternative results in more fish habitat than the 6383.5 feet alternative?
A Are you adding the habitats together, then, the habitat values of Rush, Levining, and then Upper Owens?

Q I'm asking you doesn't the Draft Environmental Impact Report conclude, based upon the studies that you conducted, when you combine the habitat values of Rush Creek, Levining Creek, and the Upper Owens River, the 6377 feet alternative results in more fish habitat than the 6383.5?
MR. DODGE: Objection on the grounds of relevance. The Fish and Game Code requires that certain flows be sent down the four tributary streams. It doesn't have any provision for balancing against the Upper Owens River.
MR. BIRMINGHAM: Perhaps I can clarify this with a few questions, Mr. del Piero.
HEARING OFFICER del PIERO: Why don't you clarify with a discussion now of what you intend to do before you ask the questions? That way we don't muddle up the record if I decide to rule with Mr. Dodge.
MR. BIRMINGHAM: The 63 -- Mr. Dodge is correct.

The Department of Water and Power is obligated under Fish and Game Code Section 5937 to release sufficient water to maintain in good condition the fishery that exists.

HEARING OFFICER del PIERO: Excuse me?

MR. BIRMINGHAM: I'm --

HEARING OFFICER del PIERO: 5937 of which code are

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you referring to?

MR. BIRMINGHAM: Fish and Game Code.

HEARING OFFICER del PIERO: 5937 of the Fish and Game Code doesn't say that. The Fish and Game Code, as I recall, says it's the fishery that exists or fish that may be planted below it.

MR. BIRMINGHAM: That's correct. I was paraphrasing it. It says the fishery that either may be planted or exists below diversion facilities.

HEARING OFFICER del PIERO: Okay.

MR. BIRMINGHAM: That is different than optimizing fishery conditions, and I believe, Mr. del Piero, that I, through a number of questions, can bring out that the flows that are discussed in the Department of Fish and Game report as analyzed in the Environmental Impact Report were developed, and here I'm quoting from Page 3-D-45 of the Draft Environmental Impact Report, were developed --

HEARING OFFICER del PIERO: If you'd wait one moment until I can find that.

MR. DODGE: I'm sorry, Mr. Chairman. I missed the page reference.

HEARING OFFICER del PIERO: 3-D-45, Mr. Dodge. What paragraph are you referring to?

MR. BIRMINGHAM: I'm referring to the last

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paragraph immediately before the section on the effects of the Mono Basin, and it states, "The Department of Fish and Game recommendations developed to optimize fishery conditions."

MR. FRINK: Mr. Chairman.

HEARING OFFICER del PIERO: Mr. Frink?

MR. FRINK: Mr. Dodge's objection was based on the grounds of relevancy, that what the Board has to determine here is the amount of water needed to protect or enhance or, in this case, restore the pre-existing fishery and that, therefore, the comparison between relative amount of fish habitat between the 6377 alternative and the 6385 alternative is irrelevant. That would be the case only if the Board had already made a determination on what alternative is needed to protect or restore the pre-existing fishery.

The Board hasn't made that determination yet, so until that's done, I think Mr. Birmingham's question as to which condition would have the overall best or maximum amount of fishery habitat would be relevant.

HEARING OFFICER del PIERO: As to the -- as compared between the two alternatives that he's raising? Because he's only comparing two.

MR. FRINK: Yeah. Well, he could ask it even to a third alternative.

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HEARING OFFICER del PIERO: I understand, but as to the questions he's asking, the comparison is only going to be limited to the two alternatives that he's suggesting.

MR. FRINK: Yes.

HEARING OFFICER del PIERO: Good. Then based on that understanding, so the Board understands that this is based on only two alternatives and not necessarily the full variety of alternatives that are necessarily reviewed in an EIR, I'll allow your questions, acknowledging your continuing objection.

MR. DODGE: No. No. May I be heard on this?

HEARING OFFICER del PIERO: Certainly.

MR. DODGE: I think that perhaps my position was not understood. I did not make it clear.

Mr. Birmingham talked about Section 5937 not calling for, quote, optimization.

HEARING OFFICER del PIERO: I understand.

MR. DODGE: And I think -- I have no objection to his cross-examining on the grounds of whether the DFG is optimizing versus something else.

HEARING OFFICER del PIERO: The standard in 5937 is "in good condition," and at this point, it is my understanding that it is within the prerogative of this Board in rendering that decision to determine what "in

good condition" is within the constraints --

MR. DODGE: I don't have any quarrel with that. Contrary to what Mr. Frink said, that wasn't the focus of my objection.

Mr. Birmingham's question called for a comparison at various lake elevations, 6383.5 and 6377, of total fish habitat that included the Upper Owens River. It was that part of the question to which I objected on the basis of relevance because the Upper Owens River has nothing do with compliance with the Fish and Game Code.

HEARING OFFICER del PIERO: Pardon me, Mr. Dodge. I did not understand that.

Mr. Birmingham, as to the Upper Owens River, I'm going to rule in favor of Mr. Dodge on that. The relevance of that, at this point, has no bearing on the issue in terms of Mono Lake.

MR. BIRMINGHAM: May I address that, Mr. del Piero?

HEARING OFFICER del PIERO: Yes.

MR. BIRMINGHAM: I would respectfully dissent. Assuming, and we have to assume this at this point, assuming that the optimum, the flows necessary to optimize fishery conditions are in excess of those needed to maintain in good condition fish that are

either planted or exist below the dams, assuming that that excess exists, the creation of fish habitat in the Owens River would be a beneficial use of water diverted out of the river or out of the Mono Basin and, therefore, relates directly to the benefit to the public interest that is derived from diverting water out of the Mono Basin. And it is relevant to the public trust balancing with respect to lake level

issues.
HEARING OFFICER del PIERO: I understand -- I understand the point that you're raising, Mr. Birmingham. That's not the point that's being addressed here, though. We're mixing apples and oranges. Either we're going to deal with the Fish and Game Section that relates to the amount of water to be released from a reservoir so as to sustain a fishery below the dam site, or we're going to talk about public trust values that may have artificially been enhanced due to diversion of the water out of the Mono Basin into the Upper Owens River.
At this point, I've ruled. I appreciate your concern about it, but at this point I've ruled. And that's what it is. So let's proceed.
MR. BIRMINGHAM: Let me just ask two more questions then. Actually, it may be even more than

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two.
Q BY MR. BIRMINGHAM: Is it your understanding that the -- based upon reference to Page 3-D-45, is it your understanding that the Department of Fish and Game recommended flows were developed to optimize fishery conditions?
MS. CAHILL: I object. This is asking for his interpretation of Fish and Game intent. I believe the letters that conveyed those stream reports speak for themselves.
Q BY MR. BIRMINGHAM: Let me just ask the question this way. Isn't it correct that Page 3-D-45 of the Draft Environmental Impact Report, which is the subject of my cross-examination, states that the Department of Fish and Game recommendations were developed to optimize fishery conditions?
A BY MR. DUNN: Yes, that's what it states.
Q And isn't it possible that the flows that are necessary to optimize fishery conditions may be in excess of the flows that are required to keep in good condition fish which either are planted or exist below DWP's diversion facilities in Russ and Levining Creeks?
MR. ROOS-COLLINS: Objection. Calls for a legal conclusion. He cannot properly ask this witness what's

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necessary to comply with the mandate of Section 5937. He can ask this witness about biological conditions.
HEARING OFFICER del PIERO: Mrs. Anglin, can you read the question back?
THE REPORTER: Sure.
(Whereupon the record was read as requested.)
HEARING OFFICER del PIERO: The question is is it possible. You can answer yes, or you can answer no.
MR. DUNN: Well, you know, we did not get into, in our EIR, keeping fish in good condition and optimum conditions, and we did not try to differentiate between those. And this sentence here in terms of Fish and Game --
HEARING OFFICER del PIERO: I'm not referencing the sentence. I'm referencing the question Mr. Birmingham asked. He asked if it was possible. As

to whether or not -- I will acknowledge, One, you are not a lawyer. Two, you are not required nor are you expected to give us an interpretation as to what is "in good condition" within the context of the Fish and Game Code. The question is is it possible.

MR. DUNN: Let's go back to your original question and just ask the question, and I'll give a simple answer.

HEARING OFFICER del PIERO: Mr. Birmingham?

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Q BY MR. BIRMINGHAM: Certainly. Let's put it in biological terms.

HEARING OFFICER del PIERO: That would help.

Q BY MR. BIRMINGHAM: Is it possible that the flows necessary to optimize fishery conditions are different than the flows required to keep in good condition in biological terms fish in a stream?

A BY MR. DUNN: I would agree it is possible, yes.

Q And you stated a moment ago that the Draft Environmental Impact Report doesn't address -- this is my final question, Mr. del Piero.

HEARING OFFICER del PIERO: I was just telling Mr. Stubchaer I'm going to give you a little extra time because of the objections and the time you lost.

MR. BIRMINGHAM: Thank you.

Q BY MR. BIRMINGHAM: And I believe you said a moment ago that the Draft Environmental Impact Report does not address flows that are necessary to keep in good condition in biological terms fish that exist in Rush or Levining Creeks?

A BY MR. MITCHELL: It contains information that could lead to a conclusion, but there is no conclusion in this -- in the Draft EIR.

MR. BIRMINGHAM: Thank you. I have no further questions.

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HEARING OFFICER del PIERO: Thank you very much.

Mr. Thomas?

MR. THOMAS: Ms. Cahill will take care of our questioning.

MR. BIRMINGHAM: Excuse me, Mr. del Piero. I stated I had no other questions. I do have one pending question concerning Mr. Vestal's report.

HEARING OFFICER del PIERO: And we're going to do that on break after we've had the opportunity to reference the exhibit that you asked him to review.

CROSS-EXAMINATION BY MS. CAHILL

Q Good afternoon. I'm Virginia Cahill representing the Department of Fish and Game.

You partially answered my first question which was had you, in fact, reviewed the EIR comments, and you've already indicated that you have. Are there certain conclusions that you already know you will be changing as a result of that review?

A BY MR. DUNN: No. I don't -- I haven't looked at all of the information at a level that would warrant me stating right now that we would change any of our conclusions, but we will certainly look at that information and consider it.

Q I'd like to look at Table S-1 in the summary

section. To the extent that there are tables in the
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summary that relate to fisheries, are you responsible for the preparation of those tables?
A Yes.
Q Okay. If we look at Table S-1, Page Two, this is not directly fishery related, but did you have any input to this table with regard to tributary riparian vegetation?
A No.
Q Let's go on, then, to Table S-1, Page Five. So you're responsible for the preparation of this table?
A Right. On Page Five, Page Six, and Page Seven.
Q Okay. On table -- on Page Five, could you explain as briefly as possible how the figures were derived that show the percent change in the brown trout adult habitat?
A BY MR. MITCHELL: I'll try to be brief. The main source for the information to do this is what are called habitat discharge relationships that were developed by the Department of Fish and Game, their consultants. We relied on these reports for Rush and Levining Creek and on these relationships.
And what the relationships tell is how the amount of habitat changes with a given amount of flow.
Q Right. So in other words, you used the peak results on -- the result of the peak IFIM on Rush Creek
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and aquatic systems on Levining?
A That's correct.
Q And then you applied those to monthly flows; is that correct?
A Yes. Monthly hydrologic output from the LAMP model.
Q Okay. And where would we find that monthly hydrologic output? Which of the reports is it in?
A The monthly flows shown as a distribution over the 50-year simulation period are part of Chapter 3-A, which covers the hydrology, so the stream flows for each alternative, since they are quite an important element of the EIR, are laid out there in a full series of tables giving you monthly flows for each alternative as a distribution of time.
Q Can you specifically identify which table that would be?
A Yes. These are a series of tables that begin Table 3-A-10, which is for the point of reference scenario, 3-A-11, which is the no-restriction alternative, and continuing through Table 3-A-17, which is the no-diversion alternative, the highest alternative.
Following these tables are a series of graphics that show some of these same characteristics, but the
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tables would be the most complete in the summary form.
Then the actual month-by-month-by-year so the whole 600-month sequence, which is actually what Mr. Mitchell used, are available in the actual files from the LAMP model.
Q So the month-by-month figures aren't actually

here. The month-by-month figures you used, but you took those month-by-month figures and then applied the staged discharge or the habitat discharge relationships from the IFIM studies.
A That's correct.
Q So basically, you are averaging for each month. You're -- if, in a given month, you had a variety of flows and they corresponded to different amounts of habitat, the number you are using is an average over that month?
A Well, it's difficult to say because we're using a model output which gives us monthly values, and to the extent that the hydrologic modeling is dependent on those monthly values, we, too, are dependent on the monthly values.
Q Yeah. Let me try this again.
My understanding of the output of the IFIM studies would be that you would find for a particular discharge a particular amount of weighted usable area. Is that

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right?
A That's correct.
Q And you are taking, my understanding is, a monthly average flow produced by the LAMP model, finding out what the equivalent amount of habitat at that flow is, and then basically assigning it almost for a whole month, in effect?
A Yes. The monthly output from the model is used to calculate the monthly habitat value.
Q Okay. And that may not, in fact, reflect what actually happened in the stream because the monthly average could be the result of fluctuating daily numbers that would, each of them, correspond to a different amount of habitat?
A Well, in reality, under real conditions, those could occur, yes.
Q I'd like to go on to another one of the columns here. There's a characterization in Footnote A that, "This is a preliminary DFG recommended maximum flow limit." It's the column that's labeled "Rush Creek percent of years flows exceed 100 cfs," and there's a footnote saying, "Preliminary DFG maximum flow limit."
Did you understand at that time that the DFG had recommended 100 cfs as a maximum?
A Yes.

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Q Okay. And on what was that based?
A The 100 cfs maximum flow?
Q Yes.
A Was based on the threshold that was determined to avoid impacts on the channel such as erosion and channel meandering, if we're talking about Rush Creek. And for Levining --
Q Did --
A Pardon me?
Q Go ahead.
A And for Levining Creek, there were also impacts --
Q Actually let's do Rush first.
A Let's do Rush first. Right. For Rush Creek, the 100 cfs was based on the DFG recommendation as a

maximum flow limit to prevent channel damage in the lower reaches of Lower Rush Creek.
Q Did the DFG report actually state that flows never should go above 100, or did it simply say those flows should be evaluated?
A The way it was stated was that it was a maximum flow limit. My understanding of that that this should not be exceeded.
A BY MR. DUNN: That was our interpretation of the report.
Q Okay.

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MR. BROWN: A question, Mr. Chairman.
HEARING OFFICER del PIERO: Mr. Brown.
MR. BROWN: Is it because of potential of erosion in the channel invert, or because of potential erosion on the channel vertical sides, or both?
MR. MITCHELL: I think both. The flows in excess of 100 cfs were related to both bank instability and scouring of the channel.
MR. BROWN: Which would cause a loss of habitat?
MR. MITCHELL: Potentially, this would.
Q BY MS. CAHILL: And do you believe that the Department of Fish and Game has informed you in its comments on the DEIR that it had not intended that 100 to be a maximum? Are you aware of those comments?
A BY MR. DUNN: I believe that's correct, yes. We're aware of that.
Q And I think you said, Mr. Dunn, that one of the areas in which you were perhaps reassessing based on new information had to do with the channel stability and the effects of higher flows on that channel stability; is that correct?
A That's correct.
Q And you may well change your opinion of whether flows over 100 cfs are damaging in light of actual observed results in the channel in the past year or in

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the last few years. Is that right?
A BY MR. MITCHELL: We would certainly look at all available information that's been, you know, submitted in this hearing and reevaluate that.
Q Let me go on, then, to the column under Levining Creek, percent of flows -- percent of years flows exceed 100 cfs. There is a Footnote B here that says, "This is the maximum flow limit to avoid significant adverse impacts on brown trout population."
What was the basis of that footnote and the conclusion that 100 was a maximum flow limit on Levining Creek?
A This came from evidence of trout mortality and the displacement of trout under higher flows. There were two flow events, I believe, that were monitored, and it was determined that both had some degree of adverse effect on the fish population; namely, in the form of downstream displacement of trout and actual flushing of the trout out of their -- out of certain stream sections.
Q And where were those events recorded?
A Those were recorded in the aquatic systems

research report provided by the Department of Fish and Game.
Q And in at least one of those cases, was a very

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high flow either immediately preceded by or immediately followed by a near zero flow?
A There was contradictory information in the report that I recall. In the text, it was reported that there was a zero flow, but in a graph figure showing the hydrograph, we did not see that zero flow.
Q Let me go back. I think we actually didn't walk all the way through the percent change in brown trout habitat derivation.
Once you had your monthly flows, tell us what you did. You got habitat per month.
A Habitat --
Q Did you include all of the reaches of the stream when you did that?
A We included the streams that contributed the most to the habitat. We elected not to use certain habitats because of modeling problems in one case and, in another case, because the particular part of the stream was a single, uniform channel, a return channel in Rush Creek.
Q Okay. So in effect, you eliminated the return channel. When you figured out what the weighted usable area was in Rush Creek, you didn't consider the habitat in the return channel?
A That's correct.

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Q And isn't the return channel, in fact, a significant portion of habitat on Rush Creek?
A In terms of weighted usable area, we didn't -- the evidence was that it was not an important habitat.
Q Is it used by trout?
A The observations -- there have been trout observed there, but I'm speaking directly on the basis of habitat. The physical quality of the habitat.
Q The physical quality --
A The physical quality based on the weighted usable area measurements that we -- that were in the report.
A BY MR. DUNN: I also believe that when we reviewed the report, and Mr. Mitchell might correct me, but as I recall it, the number of transects that were across the habitat, even though it was a uniform habitat, when we were out on the site reviewing it, we did not feel that those transects were very representative of that habitat type. And that was another consideration that we made, that plus the -- based on what we observed out there, the flow -- given the type of channel that was, the flow habitat relationship, it would not change much. And so we had several concerns, I think, with using that segment.
Q Okay. Is it possible had you included that segment, though, that you would have gotten different

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amounts of habitat for the discharge, for different levels of discharge?
A Well, we could speculate. The numbers would change. Which way those numbers would change, I don't

know, and I also, again, would have a problem with including those. If the transects were not very representative of the habitat, then you're using some quantitative numbers, but I think we felt that they weren't very accurate.
Q Okay. Originally, you said you rejected it because it was a single, uniform channel, and now you're telling me that you rejected it because the transects weren't typical. So if it's a uniform channel, wouldn't that tend to lead to transects that were typical?
A You would think that it would but, as I recall, where those transects were located seemed to have very different habitat, micro habitat characteristics in terms of depth and velocity than from the majority of the habitat. And I'm not sure what -- the reason was, but at least on the date when we were out on the site, that's the way it appeared.
Q And on Levining also you left out certain segments?
A BY MR. MITCHELL: Yes, we did.

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Q Once you had those monthly values, then what did you do?
A The monthly values for each year were then put -- I should say the monthly values for the entire 50-year period for a specific life stage were then presented as a time series indicating the annual variation in habitat that would have occurred under that alternative. And the values that were used to estimate the percent change in habitat between alternatives was based on an average for the entire 50-year period.
Q Okay. So those numbers are based on 50-year averages.
A The numbers that were used for calculating the difference between alternatives were 50-year averages.
Q And do you lose some of the variability in habitat by going to a long-term average? Are you getting further away from what actually is happening day-to-day on the stream?
A Well, we use -- I have to clarify here that we used monthly, and we didn't have daily data to work with. And so that -- that's the reason why we used the monthly values for characterizing the habitat for a given alternative.
Q Okay. Let's go on. On this same table, on Page Five of Table S-1, the effect on Walker and Parker

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Creeks, what flows were put into the model or what flows were considered in looking at Walker and Parker?
DR. BROWN: Do you want me to answer that for you?
The question is the flows going into this analysis. These are the flows coming out of LAMP. Flows coming out of LAMP are the result of, as I described yesterday, taking a look at the hydrologic record by months, arranging the monthly flows in increasing order, selecting the ten percentile, that is, the lowest 10 percent of the time which is towards the end of -- towards the bottom of the actual stream

flow, but giving a little range for fluctuations in measurements and such.

So this is the expected minimum monthly flows that have historically occurred in Walker and Parker.

The way LAMP is formulated, those are the only flows that are passed through the -- or over the conduit and into the channel, so those are the flows that the fisheries are --

Q BY MS. CAHILL: When you're operating LAMP and you are making -- you're deciding which stream will contribute to the lake releases, how do you allocate among the four tributaries?

A BY DR. BROWN: The current -- the specification that

we used for these alternatives were that Walker and Parker would not contribute these additional runoff period releases to the lake and that lake releases are made exclusively down Levining and the Rush corridor.

Q So Walker and Parker, in effect, would have only the minimums? What would be left in Walker and Parker?

A And I did forget one thing. Beginning with the '77 alternative and all higher alternatives, Walker and Parker also have the median June flow. This is highest runoff month, and to provide the type of flow being discussed by many parties for flushing purposes of various sorts, Walker and Parker joined Levining and Rush in having a median June flow, that is a relatively high June flow, the flow that would occur in 50 percent of the years.

So this, totaled with 10 percent minimum monthly flows, is what is going down Walker and Parker for the '77 alternative and all higher alternatives.

HEARING OFFICER del PIERO: Ms. Cahill, hold on for a second. Pardon me.

Q BY MS. CAHILL: It's directed that all of the figures here on the percent change in the brown trout habitat were developed using outputs from the LAMP model when it was being operated without the Fish and Game flows, the Fish and Game required flows?

A BY MR. DUNN: That's correct.

DR. BROWN: And -- sorry, I have one last correction. I may be losing my mind, but the no-diversion case then has the full actual historic runoff from all streams going down the corridor, so that would be the exception to the rules that I described. So for that no-diversion alternative, the full actual monthly flows were input to the fisheries evaluation.

MS. CAHILL: Thank you.

HEARING OFFICER del PIERO: The record will reflect that that was not a definitive statement only. A temporary impression.

Q BY MS. CAHILL: All right. If you would turn, then, to Page 6 of 15 on Table S-1. The question I have here is down at the bottom, the very last line, pre-diversion, and in the column significant impacts from water temperature increases and significant impacts from water quality degradation, in each case it says, "Yes."

If, as you have done throughout the EIR, pre-diversion -- your cumulative impact and pre-diversion analysis is prior to Los Angeles' diversion and, in this case, Los Angeles' augmentation of the Owens River, pre-diversion would have -- how can

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the higher lake level alternatives have a significant cumulative impact from the pre-diversion condition? Shouldn't, in fact, those last two columns under pre-diversion be no?

I mean, any -- it's possible that augmentation will reduce what was a natural condition, but lack of augmentation would not change the pre-diversion condition.

A BY MR. DUNN: I'm not sure I understand your question, but this is between the no-diversion --

HEARING OFFICER del PIERO: Excuse me. I'm not sure I understand it, either. So if you can get a little more specificity, it will help.

Q BY MS. CAHILL: All right. This deals with the Upper Owens River where, instead of taking water out of the stream, the impact of Los Angeles' project is to put extra water in the stream. Hot Creek is a natural tributary to the lower portion of the Upper Owens River and has higher temperatures naturally than the upper portions of the stream.

To the extent that additional water or cooler water were imported in, it might reduce that natural water temperature level, and I think that's what the effect of this column is. Will more water --

HEARING OFFICER del PIERO: Rather than explaining

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it to me, you want to ask him the question.

Q BY MS. CAHILL: So the question is will the pre-diversion question -- why would you have a yes for pre-diversion --

A BY MR. CASADAY: May I answer that? I believe that's a typographical error. If you look at Table 3-D-8 in the chapter itself, I believe you have correctly stated "unknown" rather than "yes" for those two entries. Is that the question?

Q That would help. I would think it would be no, but if it's unknown rather than yes, that's more understandable.

A BY MR. DUNN: You wondered why I was puzzling over that.

HEARING OFFICER del PIERO: That's a typographical error then? Is that the -- is that the answer to the question?

MR. DUNN: Yes, that is correct. There's a typographical error on Page 6 of 15 and a summary under pre-diversion where it says, "Significant impacts from water temperature increases," that should be unknown -- it should be unknown all the way across where it says, "Pre-diversion."

Q BY MS. CAHILL: If we would turn now into the text to Page 3-D-45, and this is something we may have -- we've

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already touched on.

The DEIR states that beginning with lake levels at

6377 -- the 6377 foot alternative, average monthly flows would exceed DFG's recommended maximum flow of 100 cfs. As we've explained before, you are aware now, are you not, that DFG does not recommend a 100 maximum?
A BY MR. DUNN: Yes, we're aware of that.
MS. CAHILL: Mr. del Piero, could we have ten more minutes?
HEARING OFFICER del PIERO: Yes, and then we're going to take a break.
MS. CAHILL: Would you prefer to take a break now?
HEARING OFFICER del PIERO: Yes. As a matter of fact, I would. No offense.
We'll be back in ten minutes.
(Whereupon a break was taken.)
HEARING OFFICER del PIERO: Ladies and Gentlemen, this hearing will again come to order.
Q BY MS. CAHILL: When we broke, we were looking at the statement on Page 3-D-45 of the DEIR stating that beginning with the 6377 foot alternative, the average monthly flows would exceed DFG's maximum recommended flow of 100 cfs. I think I had asked and Mr. Dunn had answered that he was now aware that DFG was not

recommending 100 as a maximum.
I am wondering whether on the last figure in the summary, Figure S-2, where you show significant impacts and cumulative impacts for the alternatives, if the sort of narrow and then increasing impacts starting down at either 6377 or even 6372-B under fisheries was based entirely on that supposed 100 cfs maximum limit?
A BY MR. DUNN: No. It was not based entirely on that.
Q Was it based on the 350 cfs limit that Mr. Trihey had provided, or were you even aware that Mr. Trihey, in the vegetation chapter, had indicated that perhaps flows could go up to 350 cfs in Rush Creek without channel damage?
A I believe we were aware of that. Let me describe this figure which is a graphic portrayal of what the impact would be, but in some ways I think it really oversimplifies. What the intent was there was to show the effects of the -- all of the -- the effects of a specific alternative on Rush Creek, Levining, Parker, Walker, and the Upper Owens collectively, which is very difficult to do. And the reason that the shaded area there increases with increasing lake levels, I can think of two reasons why; one was the effects on the Upper Owens River where we believed there were impacts associated with higher lake levels, thereby reduced

flows in the upper Owens, and also it was a part -- partly because of the high flow impacts which we've been discussing on Rush and Levining Creeks. So there's a couple of reasons for the way that drawing --
Q Okay. So if, in fact, we were to look -- if you were to decide in light of new information about channel erosion that the channel could accommodate higher flows than you thought and if we were to look only at the tributary streams and decide what they needed to keep the fish in good condition, is it

possible, then, that this figure would be changed also and show impacts -- show that there would not be those impacts at those lower lake levels?
A Well, again, this figure is a composite, and it possibly could be revised based on the information, or maybe it's too -- maybe it over simplifies too much.
Q Doesn't it, in fact, leave out the fact that at lake levels below 6383.5, you are unable to meet the Fish and Game required flows?
A Well, again, the Fish and Game recommended flows as of the August '93 reports? Is that -- those weren't a part of this.
Q No. But if they were, in fact, wouldn't you show fisheries impacts up to some point probably between 6383.5 and 6390 because at every point below that you

would be unable to meet those flows?
A I just really can't commit to an answer on that. I'd have to look at all of the information.
Q Let me ask you just a couple of general questions. First you, Mr. Dunn, and then Mr. Mitchell.
I assume that you are, as a fisheries biologist, familiar with trout?
A Yes.
Q Can you tell me, do brown trout use -- adult brown trout use water that's a foot deep?
A It's -- you know, again, it depends on the stream and different conditions, but in general, they would prefer, I think, deeper water if it was available.
Q Would they use three foot deep water?
A Again, I would say yes, they would use three feet greater than they would one, say, one foot deep water.
Q And typically, would adult brown trout use water that was four feet deep?
A Yes.
Q And five feet deep?
A Yes.
Q What about rainbow trout? Would adult rainbow trout use water that was two feet deep?
A Again, these are fairly general. I would say, you

know, it depends on the specific situation, but rainbow trout, I think, generally prefer to use water that's somewhat less deep than brown trout. But they also overlap in the depth distributions that they would use.
Q What would be a good range for an adult rainbow trout in terms of depth?
A Well, again, it would really vary on the types of streams that you have. You know, they could certainly be found in water that's two feet deep or four foot deep, and it would depend not just on depth but on the velocity, and cover, available food. There's lots of factors involved in that.
Q All right. Mr. Mitchell, let me ask you the same questions. If you were to tell me what depths of water are used by adult brown trout, what would be the range?
A BY MR. MITCHELL: I would have to answer the same way that Mr. Dunn did in that it would depend on the stream

because different streams offer different depths to the fish, and they would use them differently depending on the availability.
     However, the general range that Mr. Dunn gave was what I would consider suitable depths.
Q   And so for brown trout that range would be, adult brown?

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A   I think Mr. Dunn said one -- two to four feet would be acceptable.
Q   Okay. And rainbow?
A   Probably the same -- same depths for adults.
Q   Okay. Let me ask just one last set of questions. On Page 3-D-110, there apparently is the thought that releases at Mono Gate should be reduced below the Fish and Game recommended 100 in some months down 80 to reflect flows in Walker and Parker Creek.
     If, in fact, you reduce releases at Mono Gate, isn't it true that the flows in Reaches One through Three would be reduced?
A   Yes. That's correct.
Q   Would the weighted usable area, the habitat in Reach One, be reduced?
A   I don't know if the habitat would be reduced. The flows would certainly be reduced.
Q   Who developed the recommended flushing flow rates in this paragraph?
A   This is the paragraph on 3-D-110 that says, "Similar to Rush Creek"?
Q   This is the one that says, "Rush Creek instream flow releases is measured immediately below the diversion, should not exceed 80 cfs," and then at the end it says, "An example channel maintenance and

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flushing flow schedule would be -- "
A   Right. I think this was an example schedule of showing how flushing or channel maintenance flows could be increased over time as the channel stabilized, and this was an example of how recommendations might be made in terms of specific channel maintenance flows rather than being just one flow for several years. We recognize that the conditions in the channels would potentially change.
Q   Were you actually recommending these flows, or was this, in fact, an example?
A   No. I believe this was an -- what it says, an example.
     MS. CAHILL: Thank you. I have no further questions.
     HEARING OFFICER del PIERO: Thank you very much.
     Mr. Dodge?
          CROSS-EXAMINATION BY MR. DODGE
Q   My questions are for Mr. Dunn, although if Mr. Mitchell feels that he's more knowledgeable or -- please proceed to answer.
     I just have one follow-up question on Ms. Cahill's examination before I do mine, and that is you were talking about Levining Creek and the genesis of the hundred cfs maximum. And as I understood your

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testimony, that related to two trout mortality issues where high flows had displaced trout. Is that right?
A BY MR. DUNN: That's correct.
Q And would one remedy for this sort of a problem be a restoration program which created refuge habitat?
A Yes. I think that would be one possible solution.
Q As opposed to limiting flows, you could create refuge habitat.
A Yes.
Q And are you aware that in 1992 the R.T.C., through Mr. Trihey, in fact, did some construction work on Levining Creek?
A I'm aware that they did do some construction work, yes.
Q And part of that was creation of refuge habitat, wasn't it?
A I can't state exactly whether they called it refuge habitat. I do know that they rewatered at least one historical channel, which may fall into that category.
Q And creating pools also creates refuge habitat, doesn't it?
A Yes, given -- given the proper cover as well.
Q Have you gone back since the 1992 work and made an assessment as to whether there's any problem at 100

cfs?
A Since the 1992 work? Could you specify what you mean?
Q Yes, Sir. Since 1992 work.
A The restoration work.
Q Yes.
A No, I have not.
Q Let me ask you to switch to Rush Creek, and can you tell us in terms of fish populations today versus pre-diversion, and I'm speaking about brown trout, what information you can give to the hearing board or -- excuse me, the Water Board?
A I'm not sure exactly how to answer that. Basically, information we collected we presented here in terms of the conditions on Rush Creek. Are you looking for something more specific?
Q No. I'm asking what conclusions you reached in terms of fish populations in Rush Creek before diversions and today?
A Well, certainly when you say today, we were looking at August '89. We weren't looking at --
Q I'll amend the question, Sir. August of '89 versus pre-diversion.
A Well, I think Mr. Mitchell and I can both try to answer this. Essentially, there was population work

done on Rush Creek leading up to 1989, which was the basis of what we did here, and the fish population information that was available pre-1941 is certainly not near to the level of specificity and sampling that occurred, nowhere near, occurred in, say, 1989 and several years previous.
Again, I think based on the information that we looked at at that time, I would say that certainly the

trout -- it seemed to appear that there were more brown -- I'm sorry, larger brown trout in the pre-1941 conditions than there are presently, just based on the information that we reviewed.
Q How about population numbers?
A Well, I'll answer and then let Bill. Frankly, I just don't recall -- in terms of population numbers, there really were no real good estimates of population abundance. There were -- that are comparable. There were more general statements about, you know, the condition of the fishery of you could catch some fish during a certain time period. These were more like indices of the population levels, and they were fairly general as compared to the specific sampling designs we have now.
A BY MR. MITCHELL: Yeah. I just would maybe add to that that the -- there were a few population estimates,

I believe, but they were sporadic. And the estimate was developed by unknown means and, therefore, it's very difficult to make a -- or make a comparison, a valid comparison between those numbers and the numbers that are being generated over the last three or four years.
Q I understand your point about the difference in the quality of the data pre-1940, but the DEIR Page 3-D-8 does talk about 50,000 adults between the dam and Mono Lake.
Now, assuming that were a fact, and I understand you have some doubts about that, isn't that many times the number of adults that are in Rush Creek today?
A BY MR. DUNN: Well, it does state that this estimate was based on personal observations. It's a very approximate estimation, but certainly if it was precise, which I'm not sure, I don't think it is, but if it was, yes, I would say, concur, that that would be more fish than would be there in 1989.
Q My question said many times as many. Isn't that true?
A I would agree with that.
Q Thank you.
Now, I want to recur to one of my favorite topics, and that is Rush Creek below the narrows, which is

depicted here on Figure 1-3. Now, if I read the DEIR correctly, you concluded that at Page 3-D-6 that that was ideal habitat conditions for trout. Do you recall that conclusion?
A Right. I think we cited Trihey and Associates in that statement.
Q And it's true, isn't it, that there were springs down here pre-1940, substantial springs, correct?
A That's correct.
Q So that regardless of what irrigation was occurring upstream, there was constant flow down that part of Rush Creek, correct?
A BY MR. MITCHELL: Correct. But the flow was in part due to irrigation return flow, as well as natural seeps and springs that entered Rush Creek at that point.
Q Can you explain to the Water Board what conditions

exactly there were that led to your conclusion about ideal habitat conditions for trout? Describe the conditions in that lower portion of Rush Creek.
A Well, this is a conclusion of Trihey and Associates based on the statements that were made. "The springs and the associated high water table in the meadows supported dense stands of cottonwood and meadows covering more than 150 acres."
They also cite, "Water temperatures are probably

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very stable throughout the year providing cool water temperatures during summer and ice-free habitat during the winter." And these are conclusions on Segment Five as stated by Trihey and Associates.
Q And were there also multiple channels in Rush Creek below the narrows?
A Yes. Those are also identified as a component of the stream in this area.
Q And they had -- these multiple channels carried year-round water. Is that your understanding?
A There is a citation to variable flow. I think that refers to the amount of flow in each of the channels. I really -- there are no indications here of year-round flow, but I would assume that, based on the information here, that that was -- that's what is implied.
Q And these multiple channels had an abundant pool habitat; is that correct?
A Yeah. I think in terms of the habitat that was there that the geomorphic structure was there such that there were pools. There were meanders. The habitat, based on our review of this information, was that it was fairly complex.
Q And deeper water?
MR. BIRMINGHAM: Objection, vague and ambiguous.

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MR. DODGE: You're right. I'll withdraw the question.
Q BY MR. DODGE: Is the water deeper than it is today?
A BY MR. DUNN: I think certainly there were more pools and, therefore, the water would be deeper in many areas than it is today where pools are lacking or the only pools that are there now have been due to restoration projects.
Q In fact, Sir, in the lower portion of Rush Creek, there have been no pools dug as yet; isn't that right?
A I think -- I believe that there's a work plan to do some pilot studies. I do not know the status of those -- that work at this time.
HEARING OFFICER del PIERO: Excuse me, Mr. Dodge. Was the question dug? There were no pools at this point that had been dug?
MR. DODGE: That's correct.
Q BY MR. DODGE: Let me ask you to compare the historic conditions below the narrows with what is there today.
MR. BIRMINGHAM: Excuse me, Mr. del Piero. I'm going to object on the grounds that the question is going to call for speculation. I think it's evident from the testimony that these gentlemen have not been to the stream and have no personal knowledge of the

conditions of the stream as they exist today.

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HEARING OFFICER del PIERO: The question -- I understand.

Mr. Dodge?

MR. DODGE: Well, they have read, apparently, Mr. Trihey's reports dealing with historic and existing conditions.

HEARING OFFICER del PIERO: And you're asking?

MR. DODGE: And my question is what is their understanding of the habitat today? They weren't there in 1940, either, but they certainly testified about what was there.

MR. FRINK: Could you distinguish between 1989 and today? Are you referring to '89, the conditions recorded in the Draft EIR?

MR. DODGE: I'm happy to accept an answer on '89 or today, either one.

HEARING OFFICER del PIERO: Gentlemen, I'm going to allow the questioning, but it's going to go -- their responses are going to go to the weight of the value of the evidence. If their opinions are developed expressly from studies or historic analysis, then that's going to go directly to the value of that.

MR. DODGE: Thank you.

MR. DUNN: We were out on the stream in 1992 and -- so since that time, we had not observed it.

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And, in fact, I thought there were some ongoing restoration on Rush Creek this past summer, although I guess I'm incorrect in that. I had not been out there. Neither one of us has been out there since 1992.

Q BY MR. DODGE: Will you describe the channel in 1989 or when you saw it in 1992 of Rush Creek below the narrows?

A BY MR. MITCHELL: Well, the channel itself, there's a single channel that was apparent when we were there at higher flows. I couldn't say what the stream would look like. We were there under low-flow conditions. The single channel had variable depths, some pools, and run-riffle type habitat.

Riparian -- the riparian vegetation which provides the cover for trout is available in a few areas, but -- in fact, there's one area that I recall when there's fairly extensive riparian vegetation in that section, and then downstream, the channel conditions become worse offering fewer pools, and particularly below the county road, there's generally little pool habitat and little cover.

Q Would you agree with me that there's a smaller percentage of pool habitat today than was there historically?

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A In the lower delta area, I don't think I can answer that question. It appears from the historical information that that is true for Segment Five down to the county road.

Q And Segment Five is the narrows down to the county road, correct?

A Yes.
Q All right. And would you agree with me that that same Segment Five tends to be straighter than was true historically? You mentioned the sinuosity historically.
A I think that, yes, there's evidence that the stream now is shorter and has lost the number of side channels that did exist there.
Q And would you agree with me that the water tends to be shallower than it did historically?
A I don't think I could answer that question with the available information.
Q Now, you say that there were multiple channels historically, and there's a single channel today. Now, a logical inference from that, isn't it, that some channel length had been lost?
A I think you could infer --
Q Have you made any effort to quantify that?
A No.

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Q Let me ask you to assume hypothetically that it's possible to rewater historic channels that are now dry but that carried water. Assume that.
Would that rewatering affect the IFIM analysis?
A Could you repeat the question, please?
Q Yes. I want you to assume that in Rush Creek below the narrows that, in fact, it's feasible to rewater historic channels and, in fact, that's done. Historic channels are rewatered.
How, if at all, would that affect the IFIM analysis?
A That would depend on the extent of change. Of course, the more different that the channel is in terms of length, numbers of channels, the more reason there is that -- the more reason there is to conclude that there would be a new set of channel features to characterize and so on. Perhaps the IFIM analysis would have to be either modified to reflect those changes or redone.
Q Well, in all probability, it would increase the weighted usable area, wouldn't it?
A BY MR. DUNN: Again, I would like to say that, you know, we're somewhat speculating on that. That's a better question for, I think, Department of Fish and Game who placed -- and their consultants who placed the

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transects and, you know, would have a better feel for the types of habitats when they were out there doing their study that they modeled and how it might be affected by putting water down side channels.
If those side channels were not included within their IFIM study and water is put down into those channels, it could increase fish habitat because you're basically putting water in areas that had no water and had no habitat.
Q It could lead to a conclusion that higher flows should go down Rush Creek, couldn't it?
A Well, there's many different conclusions. Again, it depends on how much water is going down and the specific habitat discharge relationships in those side

channels, which I just don't know how much of those potential side channels Fish and Game looked at in their IFIM.
Q I'm asking you hypothetically if you put water in those -- as you put it, side channels, it -- that fact could lead to a conclusion that higher flows down Rush Creek were appropriate. Isn't that correct?
MR. BIRMINGHAM: I'm going to object on the grounds that it's vague and ambiguous.
HEARING OFFICER del PIERO: I'll overrule the objection, but I'm going to direct you to answer either

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yes or no. It's much like that question that was asked earlier, is it possible. Mr. Dodge is asking you could it happen.
MR. DUNN: Yes.
Q BY MR. DODGE: And one more question along these lines. Looking at Table S-1, Page 5 of 15, under the category "Rush Creek percent change in brown trout adult habitat," let me ask you a similar question. These percentages that are shown under that column, if the now dry historical channels in Lower Rush Creek were rewatered, that potentially could affect those numbers under that -- under that column. Isn't that right?
A BY MR. DUNN: That's correct.
Q Now, I want to focus particularly, Sir, on Page 3-D-44.
HEARING OFFICER del PIERO: Mr. Dodge.
MR. DODGE: I would ask for an additional 20 minutes. I hope not to need it, but --
HEARING OFFICER del PIERO: Why don't we give you an additional ten and see how you're going along?
MR. DODGE: Thank you.
Q BY MR. DODGE: 3-D-44, you say, "Establishing even equivalent conditions that benefitted the pre-1941 fishery is impossible in the short-term and possible in

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the long-term only if aggressive and substantial habitat restoration programs in concert with major instream flow releases are undertaken."
Now, let me ask you initially, what sort of restoration program, if any, did you have in mind?
A BY MR. DUNN: Well, I think what we were referring there was to some of the restoration activities that are ongoing, certain elements of those restoration activities.
Q Would rewatering historic channels potentially be one aspect of that?
A It certainly could be.
Q Would you agree with me that the historic channels in the Rush Creek bottom lands will not be rewatered naturally in all probability?
MR. BIRMINGHAM: I'm going to object on the grounds that it lacks foundation.
HEARING OFFICER del PIERO: Sorry. I didn't hear the justification for the objection.
MR. BIRMINGHAM: Lacks foundation.
HEARING OFFICER del PIERO: Lacks foundation.
Actually, I'm going to rule in Mr. Birmingham's

favor on this. I think you'll need to establish some before you go on.
Q BY MR. DODGE: Have you made any assessment as to

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whether the now dry historic channels in the bottom lands would be rewatered naturally? Have you made any assessment of that?
A BY MR. CASADAY: Let me answer that. I have, as part of the riparian vegetation investigation. I don't think Mr. Dunn has separately done so.
And our finding was generally that the high flows, and that is flushing flows that have been released down Rush Creek -- are we talking about Rush Creek?
Q Yes, Sir.
A -- are largely incapable -- are incapable of charging overflow channels with one exception.
Q Do you know what exception that is?
A That would be one of the channels above Highway 395. In the bottom lands, I think the answer is no channel.
Q Thank you, Sir.
Now, let me ask you to stick on that same page. You talk about 50 or more years needed to accomplish this. Let me ask you a series of questions. If you were going to hypothetically dig pools out there, you could do that in less than 50 years, and it would have an effect in less than 50 years, correct?
A BY MR. DUNN: Yes.
Q And if you were going to put gravel in, you could

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do that pretty quickly, and it would have an effect in a matter of -- a short period of time, correct?
A Yes, that's correct.
Q And if you were going to restore historic channels, the same would be true, correct?
A No, I don't think so.
Q You think it would take 50 years to restore historic channels?
A You're saying to restore historic channels with the complexity, the meanders, the woody debris, that would take many years, I believe.
Q How about putting boulders or logs in as cover objects. That would take only a short period of time, correct?
A Well, yeah. They could be placed in there quickly, yes.
Q So -- and to the extent we're concerned about restoring riparian vegetation, I take it from prior testimony that that's a gradual process, and if you want to get the large riparian vegetation, that might take potentially 50 years, correct?
A I think the riparian would take time, and also, I don't want to get away from the geomorphic structure of the channel. You can put gravel in there. You can put pieces of wood. You can put boulders, but from what I

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viewed out there, the channel itself to get back to pre-diversion conditions is going to take a long, long time. And that's why we said 50 or more years.
You can certainly enhance and do certain things

that would get you closer to that in a shorter amount of time, but the specific channel structure itself, to get that back is what's really the most difficult element in recreating that historic condition.
Q So your reference to 50 years focused primarily on the channel structure?
A That's correct.
Q And can you tell the Hearing Board in any more detail what you mean by "channel structure"?
A Well, I think it would just be the hydraulic characteristics and the channel sinuosity, the water depths, velocities, root structure that affects the types of habitats that are there, the large root instructs from certain species. You know, it's all of those factors that would make up, you know, the geomorphic structure of that channel. Also, the slope of that channel would also be critically important in determining the characteristics of the channel.
Q But would you agree with me that a restoration program, assuming it was well done, would have some short-term effects in addition to -- would have

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short-term effects that wouldn't, you know, play out only after 50 years?
A There could be some short-term benefits if it was done properly, yes.
Q Let me ask you a couple of questions about the Upper Owens River. Pre-diversion, no Mono Lake water went to the Upper Owens River, correct?
A From Mono Basin into the Upper Owens, that's correct.
Q Okay. And as to the point of reference, August 22, 1989, what assumption did you make as to the amount of water going to the Upper Owens River from the Mono Basin?
A BY DR. BROWN: The point of reference? Sorry. I wasn't listening well enough.
Q The amount of water going from the Mono Basin to the Upper Owens River at the point of reference, August 22, 1989.
A Okay. August 22, 1989, was, as we all know, a drought year, and there was actually no water going to the Mono Basin in that particular month. But in reference to the environmental point of reference used in the document, the point of reference includes not only the conditions on that date in history but those conditions and restrictions played out over the

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hydrologic record.
So, when you look at what would have happened with the lake level injunction and the two temporary stream flow injunctions played out over the 50 years, we find that there was, on average, 73,000 acre-feet of water leaving the Mono Basin.
Q So you used, on average, 70,000 acre-feet as the point of reference into the Upper Owens River. Isn't that correct?
A That is correct.
Q And, in fact, on August 22, 1989, there wasn't any water going from the Mono Basin to the Upper Owens

River; isn't that right?
A That is right. And as I stated, the point of reference for this Environmental Impact Report includes the 50 years of variable hydrology played out for each of the conditions that represent -- that is represented by an alternative. So there would be periods in any of the alternatives when no water would be leaving the Mono Basin.
Q Well, isn't the difference sort of that Judge Finney had enjoined export in June of 1989? He hadn't done that in any of the other 50 years, had he?
A Until the lake was above the 6377 elevation.
Q Right. Now, if you were to say that, in fact, at

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the point of reference, zero water was going from the Mono Basin to the Upper Owens River, how would that affect the calculations set out on Page 6 of Table S-1 under the column "average percent change in brown trout adult habitat"?
Q Well, it would change it. I would have to speculate in terms of what, but it would change, if it was changing the LAMP results upon which we based, you know, our habitat results.
Q Well, would you agree with me that if you assume, for point of reference purposes, that there is zero water leaving the Mono Basin and going into the Upper Owens River, that this minus 21 percent and minus 26 percent shown in that column would just disappear?
MR. FRINK: Objection. Mr. Chairman, I believe that the question misstates what the EIR assumed to be the point of reference.
Mr. Dodge, if you'd look at Page 225 of the Draft EIR, it refers to, as a point of reference for comparison of the environmental impacts and various alternatives, "This EIR used the existing environmental conditions of Mono Lake and the tributary streams which were present before the issuance of the preliminary injunction by the El Dorado County Superior Court on August 22nd, 1989."

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So I'm not sure I understand your question, but you seem to be assuming that the point of reference assumed that the preliminary lake level injunction is in effect. And I don't believe that's the case.
Q BY MR. DODGE: Do I have an answer to my question?
A BY MR. DUNN: I'm sorry. Could you ask it again, please?
Q Yeah. Assuming that the point of reference, in fact, consisted of zero exports from the Mono Basin to the Upper Owens River, wouldn't these figures, minus 21 and minus 26 on Page 6 of Table S-1, simply disappear?
HEARING OFFICER del PIERO: It's a hypothetical. You can answer yes or no.
MR. DUNN: Well, if you say they would disappear, I'm not sure I know the answer to that.
MR. DODGE: I have one more topic that I wanted to talk about and that is the topic of erosion or potential erosion at high stream levels. If there are other people who are coming along who can talk about that topic, I'll be happy to stop now. I didn't really

get answers from Mr. Casaday yesterday, and I'm searching for the right person to talk to.
HEARING OFFICER del PIERO: Who's the right person, Mr. Casaday?
MR. CASADAY: Are you interested in effects on

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fish habitat or on the riparian habitats?
MR. DODGE: I'm interested in the extent to which the DEIR addressed corrosive impacts of high flows on stream beds and stream banks and riparian vegetation.
MR. CASADAY: Well, I believe I'd be the right person to answer those questions.
MR. DODGE: Okay. So --
MR. CASADAY: But it didn't work apparently earlier, so --
HEARING OFFICER del PIERO: You weren't correct yesterday, so perhaps you've done a lot of reading.
Mr. Dodge, I'm going to give you another five minutes --
MR. DODGE: I don't wish to retread ground with Mr. Casaday. I thought I obtained his input yesterday on this point.
HEARING OFFICER del PIERO: It's his representation there's no one else here who's capable of answering these questions, at least on this panel; is that true?
MR. CASADAY: On any panel. On the terrestrial resource panel, which will appear later, I was the team leader and, in fact, directed the investigation of tributary riparian vegetation. So I would be the appropriate person to ask that.

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HEARING OFFICER del PIERO: Why don't you reserve those questions until the next panel is embodied?
MR. DODGE: Let me see if I can just make sure I can understand this.
Q BY MR. DODGE: In terms of potential for interruption with the stream bed and in terms of the potential for erosion of the stream banks and associated riparian vegetation loss, you looked to Mr. Trihey's planning?
A BY MR. CASADAY: That's correct.
MR. DODGE: Thank you. That's all.
MR. BIRMINGHAM: Mr. del Piero? I was wanted to ask that we let the record reflect that Mr. Dodge took longer on cross-examination than I did only because he will live to regret it.
HEARING OFFICER del PIERO: So long as I don't live to regret it.
MR. DODGE: I don't understand that reference except to the fact that in Judge Finney's courtroom where a number of us have spent much more time than we ever expected we would, Mr. Birmingham has never once given a shorter cross-examination than I have.
HEARING OFFICER del PIERO: Well, we may be achieving something here today.
MR. DODGE: He is, I assure you, a reformed man.
HEARING OFFICER del PIERO: Mr. Birmingham, you

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have one question, Sir, that we put off. Before I call the next person for cross-examination, I'd like you to

take care of that.
MR. BIRMINGHAM: Yes, I do, Mr. del Piero. Thank you.
I had asked Mr. Mitchell and Mr. Dunn a question related to the 1954 report that was prepared by Eldon Vestal. And I'd asked the question -- I don't have my notes in front of me, but I believe I asked -- wasn't it correct that Mr. Vestal concluded that to sustain a sport fishery in those stream -- in Rush Creek, it was necessary to annually plant the stream?
MR. MITCHELL: Yes. I -- I did reread that, and he did conclude that plantings of catchable trout were important for maintaining high fishing success. Those were his conclusions.
MR. BIRMINGHAM: Thank you.
HEARING OFFICER del PIERO: Thank you very much.
Mr. Roos-Collins. We got to get you a table, Mr. Roos-Collins. It's more difficult for you to get out of the chair than it seems like anybody else. That's what happens when you come in last, you know.
MR. ROOS-COLLINS: Mr. del Piero, since we're sharing our secrets from El Dorado Superior Court, let me advise you that Mr. Dodge claims that the

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plaintiff's table there belongs to him and that Cal Trout sits at that table courtesy of the Mono Lake committee.
HEARING OFFICER del PIERO: Mr. Dodge, how much rent do you charge him?
MR. THOMAS: The psychic rent is untold.
HEARING OFFICER del PIERO: Why don't you proceed, Sir?
MR. ROOS-COLLINS: Thank you.
HEARING OFFICER del PIERO: Certainly.
CROSS-EXAMINATION BY MR. ROOS-COLLINS
Q Mr. Dunn and Mr. Mitchell, my questions will be addressed to both of you. Answers will be welcome from either of you as you choose.
The draft EIR on Page S-1 states that, "One of the two objectives for this proceeding is to determine the stream flow necessary to reestablish and maintain fisheries that existed in these streams prior to the city's diversions."
As of August 22nd, 1989, were the fisheries in these streams inferior to those that existed before L.A. began diversions in 1941?
A BY MR. DUNN: This is in reference to, say, Rush Creek and Levining Creek?
Q Yes.

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A Again, with the caveat that pre-diversion information is not near to the level of the more recent information, I would -- and the basis -- or all the information that we've looked at, I would say that's generally a true statement for certain reaches of the creek and -- for certain reaches of Levining and Rush Creek, the lower sections of the Creek. Some of the upper sections where the information is not as definitive, I'm not sure.
Q Let me ask you to turn to Table S-1, Page 5 of 15,

which you've previously discussed with Ms. Cahill. The column meets "pre-diversion fishery condition standards set by court" shows that none of the alternatives and the point of reference scenario as well meet the pre-diversion fishery condition standards. Is that your opinion?
A Yes.
Q When you use the term "fisheries," what species are included in the term?
A Well, I think on Rush and Levining, we're predominantly talking about brown trout.
Q Let me refer you to Table 3-D-1 following Page 3-D-122, entitled "fish species reported to occur in Mono Basin." Is this an exhaustive list of the fish species reported to occur in the Mono Basin?

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A I think, to the best of our knowledge, those are the species that have been reported to occur in the basin.
Q Are you familiar with Fish and Game Code Section 45?
A No, I'm not.
A BY MR. MITCHELL: No.
Q Are you familiar with any definition in the Fish and Game Code of the word "fish"?
A BY MR. DUNN: Again, I'm not an authority on the Fish and Game Code, but I believe that the term "fish" in the Fish and Game code is -- includes other non-fish animals as well.
Q Could you give us an example?
A I really can't because -- I mean, I think, you know, again, this is a better question for Fish and Game, but I think mollusks and aquatic invertebrates.
Q Assuming for the moment that the Fish and Game Code defines "fish" to include mollusks and aquatic invertebrates. Does the Draft Environmental Impact Report address the impacts of alternatives on such mollusks and aquatic invertebrates?
A No. No, it does not. And I think the information base that we have, it would be impossible to do so.
Q Let's turn back to Page S-9, the second full

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paragraph, second sentence which begins, "Pre-1941 fishery conditions cannot be accurately described." Is that your opinion?
A Yes. I think we feel that -- that that is a true statement. They can't be accurately described in terms of being very precise, but they certainly can be described generally.
Q Are you referring in this sentence to fish population?
A It states "fishery conditions" which, you know, can be the habitat conditions as well as the fish populations. I think the answer is true in both cases, whether it's fishery conditions or fish populations, that they cannot be accurately described but, very definitely, there's adequate information to generally describe it.
Q Are you familiar with the November 2nd, 1990, agreement between the parties in the Mono Lake cases in

the El Dorado Superior Court?
A I may have read it at one point, but I certainly cannot recall it at this point. I'm not familiar with it.
Q Are you aware that the 1990 agreement directs the restoration consultant, Mr. Trihey, to undertake studies to identify and evaluate the conditions which

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benefitted the fisheries before L.A. began diversions in 1941?
A I knew definitely that there had been an order to do that. I'm not sure exactly which one. That sounds correct.
Q Are you familiar with the document by Trihey and Associates entitled "Comparison of Historic and Existing Conditions on Lower Levining Creek, Momo County, California, January 1992," which is Cal Trout Exhibit 9 in this proceeding?
A Yes. I think we're familiar with that document, or we used it in preparation of our document.
Q Does that document describe fishery habitat conditions which existed before L.A. began diversions in 1941?
A Yes. That's correct. I believe so.
Q Do you disagree with any of the data or conclusions in that report with respect to those historic conditions?
A I don't think we can really answer that. We'd have to go back and thoroughly review that report to answer that question.
Q Without intending to belabor the point, let me ask the same question with respect to Trihey and Associates' summary comparison of pre-1941 and

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post-1941 conditions affecting fish populations in Lower Rush Creek dated September 1993, Cal Trout Exhibit 15 in this proceeding.
A We have not reviewed that document.
Q Is it your opinion that riparian vegetation is a habitat condition that affects trout fisheries in the Mono Basin?
A Yes.
Q Let's turn to Table 3-C-2 in the Draft Environmental Impact Report. Does the table set forth estimates of the acreage of riparian vegetation that existed before L.A. began diversions in 1941?
A BY MR. CASADAY: Let me answer that. It does.
Q Do you consider the estimates to be reliable?
A Yes.
Q Do you consider them to be accurate?
A Yes.
Q Does the Draft Environmental Impact Report contain an estimate of the length of channel loss since L.A. began diversions in 1941 in any of the tributaries?
A I don't believe that information appears in the draft.
Q Mr. Casaday, do you know whether that information appears in the Trihey and Associates reports to which I just referred?

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A Well, my recollection is that it appeared in Dr. Stein's earlier report to us, and I believe the Trihey reports are an expansion on those -- that earlier report. But my recollection is not clear on that.
Q Let's return to Table S-1, Page 5, and focus on the column which you have previously discussed both with Ms. Cahill and Mr. Dodge entitled "Percent change in brown trout adult habitat."
Does that column assume the channels as they existed at the time the Department of Fish and Game conducted its instream flow incremental methodology studies?
A That is correct.
Q Let me follow up on the questions which Mr. Dodge asked. If currently dry channels were reoccupied, opened again to the flow of water, could the differences between the alternatives change as a result?
A They could, yes.
Q One last question about this table. The percentage change is in reference to the point of reference scenario. Is that correct?
A That's correct.
Q It is not in reference to pre-diversion conditions?

A That is correct.
Q You don't know how much fish habitat change would exist by -- in the comparison of any given alternative and pre-diversion conditions, do you?
A That's correct.
Q Let me ask several further questions with respect to -- as followup to Mr. Dodge's with respect to the period for attainment of the Cal Trout, II, mandate we established in maintaining the fisheries that existed before L.A. began diversions.
On Page 3-C-26, in your discussion of Levining Creek, the final paragraph on the page you state, "Since 1989," excuse me. It is stated, "Since 1989, several minor channel modifications and limited revegetation have been implemented to improve fish habitat as part of the interim stream restoration program."
Is that your opinion?
MR. BIRMINGHAM: Excuse me. May I ask the page reference?
MR. ROOS-COLLINS: Page 3-C-26?
MR. DODGE: 3-C or 3-D?
MR. ROOS-COLLINS: 3-C-26.
MR. CASADAY: The question is is this one of our opinions? Yes, at the time we wrote the section, we

used the words "minor channel" and "limited revegetation." I believe that was the case when we wrote the section.
Q BY MR. ROOS-COLLINS: Mr. Casaday, I mean no criticism. I understand that this Draft EIR was prepared under time constraints.
Let me ask you whether you are familiar with the Trihey and Associates report entitled "Rush and

Levining Creeks 1991 Restoration Work dated October 25th, 1991," Cal Trout Exhibit CT-14?
A BY MR. CASADAY: I haven't personally seen that. One of our botanists working on this project who is also on R.T.C. has, of course, had access to all that information.
Q Are you referring to Mr. Messick?
A Messick, yes. That's M-E-S-S-I-C-K.
Q Mr. Casaday, would you characterize the restoration work accomplished by Mr. Trihey as minor today with respect to Levining Creek?
MR. BIRMINGHAM: Objection, lacks foundation.
MR. ROOS-COLLINS: I'll withdraw the question.
Q BY MR. ROOS-COLLINS: Mr. Dunn and Mr. Mitchell, let's turn to Page 3-D-44, third full paragraph, which begins, "Several factors limit reestablishing pre-1941 fishery conditions in the Mono Lake tributary streams."

In your own words, what is the significant factors that limit the reestablishment of the tributary fisheries?
A BY MR. DUNN: Well, again, I think it's primarily the geomorphic structure, the channel structure is the primary factor, I think, that limits reestablishing the pre-1941 conditions.
Q But you are not familiar with the restoration work done by Mr. Trihey to change the geomorphic structure of Levining Creek?
A I think we are familiar with that. We reviewed some of the documents. I'm not sure how many of them that we reviewed, but we are familiar with the efforts there.
Q Are you aware that the restoration technical committee has directed Mr. Trihey to develop a feasibility study of alternatives to restore the pre-1941 habitat conditions in Rush Creek?
A No. I'm not familiar with that specifically. In general, I thought that was under his charge, mission to accomplish.
Q Let's turn to Table S-2, Pages 1 and 2 of 3, where you describe mitigation measures for fisheries. Among other things, this table mentions installing current deflectors, woody debris, and vegetation to stabilize

eroding stream banks and also installing pools, backwaters, and overflow channels to create refuge habitat.
Are you recommending that these mitigation measures be undertaken?
A Well, I think these are mitigation measures that are available to reduce some of the significant impacts that we've identified.
A BY MR. CASADAY: If I might add to that, I think a more general response was that all the mitigation measures in this report are measures available to mitigate significant adverse impacts, and it's not our place to recommend whether the Board adopt them or not.
Q Mr. Casaday, I agree with that caution. Let me ask you a more proper question.
In the definition of "alternative" set forth in

the Draft Environmental Impact Report, does it include any of these mitigation measures?
A Are these incorporated into the alternatives? Is that the question?
Q That's the question.
A No. These would be measures to mitigate impacts that resulted from those formulated alternatives.
Q Are you familiar with the condition of the now dry channels in the meadows of Rush Creek?

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A I've walked those channels myself.
Q If the mouths to those channels were reopened and water reintroduced, would there be fishery benefits?
A Well, I looked at them in terms of stimulating the recovery of the riparian system on the flood plain, and I really am not qualified to say whether they would provide fisheries. I believe that should be considered.

In fact, I believe the document in the riparian section where it addresses this as a potential measure to restore riparian vegetation points out that if these channels were also to be used for fishery habitat mitigation, it ought to be considered more thoroughly whether this would work and whether fish should be allowed to enter these channels.

I don't think Mr. Dunn has probably looked at all those channels on the ground, but he can offer his opinion.

A BY MR. DUNN: Well, I think we've, you know, when Mr. Mitchell and I were out there, we walked some of those areas. And, you know, again, it would depend on how much flow you're releasing and if you're just opening up those channels, are you reducing the flows in the main channel of Rush Creek, or are you augmenting flows, and what are the specific habitat

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conditions within those channels? There is a lot of variables there that would need to be determined. It certainly would have the potential to improve fish habitat if it was done properly.

HEARING OFFICER del PIERO: Mr. Roos-Collins, your time is up.

MR. ROOS-COLLINS: Mr. del Piero, I request ten additional minutes.

HEARING OFFICER del PIERO: I'll grant your ten minutes, and at the end of that ten minutes, we are going to adjourn until next Wednesday.

Ms. Scoonover? Is Mr. Stevens still here?

MS. SCOONOVER: He left.

HEARING OFFICER del PIERO: I would expect that if you have questions of this panel, you should be prepared for nine o'clock Wednesday morning next. That's when you'll be getting in.

Forgive me. I forgot to point out a couple of things. First of all, my good friend John Brown, who's been over in the Bay Area on Water Board business all day long, did come back and, as I indicated yesterday, the Board members were going to try their very best to participate in as much of this as possible. And he drove all the way back from Oakland.

Good to see you, John.

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Also, Ms. Forster asked for me to extend her apologies to everyone here. She is, in about an hour, going to be walking into a meeting with the Regional Water Quality Control Board in Santa Ana and had to get on an airplane to fly down there, so that's why she's left.

Mr. Roos-Collins, you go ahead and take your last ten minutes, and then we will call it a day until next Wednesday.

Policy sessions, policy statements, for those of you who are interested or may be passing information on, begin at two o'clock tomorrow, Mr. Canaday?

MR. CANADAY: Two o'clock tomorrow.

HEARING OFFICER del PIERO: Two to five in this room and then beginning again at seven o'clock until we get done or -- until we get done. Please.

Q BY MR. ROOS-COLLINS: Let's discuss briefly the Department of Fish and Game's stream evaluation reports which set forth the results of their instream flow incremental methodology studies.

Did Jones and Stokes conduct its own IFIM studies for the tributaries to Mono Lake?

A BY MR. DUNN: No, we did not.

Q You are relying on the Department of Fish and Game's fish flow studies?

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A Yes, we are.

Q Do you dispute any data in those flow studies?

A I guess I'd have to answer that the way I answered previously. We would have to look specifically through that to make a definitive statement. There might be portions of it, but I'm not -- I can't speak to those right now.

I guess just to amplify, those documents have a lot of information in them, extensive information that covered lots of areas in terms of stream ecology and fish populations, and I don't think that we can say that we agree with every word that is in those documents.

Generally, you know, I think that they are pretty good documents that we were able to use the results from.

Q Understanding that these documents are complex and that you have had very limited opportunity to review them, do you generally concur with the flow habitat pers set forth in them?

A I guess I would say generally yes to that. Again, we were relying on those studies, and for us to -- I think they were done pretty well for the most part and give us the type of information that we needed to develop our assessment for this EIR.

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Q Let's leave the Mono Basin and proceed downstream to the Owens Basin and focus specifically on the Upper Owens River.

Do you have an opinion whether the fishery below East Portal is larger or smaller in population today than in 1941?

A I don't think we can answer that. I don't know. I guess the answer is I don't know.

MR. ROOS-COLLINS: Thank you very much.

HEARING OFFICER del PIERO: Thank you very much.

MR. ROOS-COLLINS: Thank you.

HEARING OFFICER del PIERO: Before I go any farther, Ms. Soonover, you have no questions at this time?

MS. SCOONOVER: That's correct.

HEARING OFFICER del PIERO: Okay. Mr. Gipsman? Is he still here? He's not here. Erika Niebauer's gone. I think she's got some questions, so I'm going to do exactly what I said I was going to do. We're going to call it a day here, Ladies and Gentlemen.

MR. CASADAY: Should this panel expect to return, then?

HEARING OFFICER del PIERO: You should return. You shouldn't just expect it. You should be here, or we aren't going to have a lot to do at nine o'clock on

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Wednesday morning if you aren't.

With that, Ladies and Gentlemen, unless there's anything from Staff? Questions?

MR. HERRERA: Please remove all your materials. This room has to be cleaned out this evening.

(Whereupon the proceedings were adjourned at 4:36 p.m.)

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REPORTER'S CERTIFICATE

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STATE OF CALIFORNIA)
) ss.
COUNTY OF SACRAMENTO)

I, KELSEY DAVENPORT ANGLIN, certify that I was the official court reporter for the proceedings named herein; and that as such reporter, I reported, in verbatim shorthand writing, those proceedings, that I thereafter caused my shorthand writing to be reduced to typewriting, and the pages numbered 1 through 200

herein constitute a complete, true and correct record of the proceedings:

PRESIDING OFFICER: Marc del Piero
JURISDICTION: State Water Resources Control Board
CAUSE: Diversions from Mono Lake
DATE OF PROCEEDINGS: October 21, 1993

IN WITNESS WHEREOF, I have subscribed this certificate at Sacramento, California, on this 24th day of October, 1993.

_____

Kelsey Davenport Anglin, RPR
CM, CSR No. 8553