STATE OF NEVADA

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

DIVISION OF WATER RESOURCES

BEFORE R. MICHAEL TURNIPSEED, STATE ENGINEER

In the Matter of
Application 9330
_____/

VOLUME II
(Pages 290 through 621)

TRANSCRIPT OF PROCEEDINGS

WEDNESDAY, JANUARY 31, 1996
THURSDAY, FEBRUARY 1, 1996
FRIDAY, FEBRUARY 2, 1996
CARSON CITY, NEVADA

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CARSON CITY, WEDNESDAY, JANUARY 31, 1996, 9:00 A.M.

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THE STATE ENGINEER: Hearing will come to order.

This is a continuation of the hearing in the matter of Application 9330 for the State Engineer. I should tell you now that we're going to see how it goes through today and early tomorrow, the Federal Court in the Alpine case is scheduled for oral arguments tomorrow afternoon.

I'll decide sometime tomorrow morning whether we continue through tomorrow, and John and Susan will conduct the hearing and then continue on through Friday, and I'll be here, or whether we have covered sufficient ground. And I'll need your help in sticking to the schedule that you outlined at the prehearing conference, but we'll make that decision sometime tomorrow.

As a matter of introductions, my name is Mike Turnipseed, I'm the Nevada State Engineer. On my left is Jon Palm from the hearing section. On my right is Susan Joseph-Taylor.

The authority for this hearing is outlined in NRS 533.375.

At this time I'd like to take a statement of appearances from the principal parties.

MR. VAN ZANDT: Michael J. Van Zandt, representing

the Applicant, Truckee-Carson Irrigation District.

MR. MACKEDON: Michael Mackedon representing the party, Corkill Brothers.

MR. COLLINS: Lynn Collins, United States, representing the United States in this case.

THE STATE ENGINEER: Those that are representing the people that have an interested person status, City of Fernley?

MS. HAROLD: Rebecca Harold, Fernley Town Attorney.

MR. CARPENTER: Bill Carpenter, City of Fallon.

MR. CAMPBELL: Brian Campbell, Churchill County.

MR. PELCYGER: Bob Pelcyger, Pyramid Lake Paiute Tribe.

THE STATE ENGINEER: The costs of the transcript are borne pro rata amongst the Applicant and the Intervener. And anybody that wishes a copy of the transcript should make arrangements with the court reporter.

Mr. DePaoli?

MR. DePAOLI: I'm not sure whether you had asked for interested party status. Gordon DePaoli representing Sierra Pacific Power Company. I'm not sure exactly what the status is.

THE STATE ENGINEER: Well, we have had people petitioned to intervene and they've been granted interested party status, and I understand your interest in the matter

Mr. Turnipseed.

At an earlier point in the hearing, I indicated, I indicated that Mr. Campbell was present and he is not, and at the same time I said that he represented the Town of Fernley which I didn't intend to say. He in fact represents Churchill County. Rebecca Harold who is present represents the Town of Fernley. Thank you.

THE STATE ENGINEER: With that correction then on the record, call your next witness.

MR. COLLINS: I am -- thank you. The United States would call Thomas Strekal.

THOMAS STREKAL,

called as a witness in this matter,

having been first duly sworn,

was examined and testified as follows:

MR. PALM: Thank you.

DIRECT EXAMINATION

BY MR. COLLINS:

Q. Would you state your full name and your business address for the record, please?

A. My name is Thomas A. Strekal, S-T-R-E-K-A-L. I work for the United States Bureau of Indian Affairs, 1677 Hot Springs Road, Carson City, Nevada.

Q. What's your position with the Bureau of Indian

Affairs?
A. I'm a fish and wildlife biologist.
Q. And are you familiar with the matters at issue in this proceeding?
A. Yes, I am.
Q. Mr. Strekal, did you offer testimony in the hearing that was held on, the consolidated hearing held on a number of applications on June 1st, 1994?
A. Yes, I did.
Q. If you were to be asked those same questions today, would your testimony essentially be the same?
A. I hope so, yes.
MR. COLLINS: For the sake of time, I would move also then for the adoption by the United States, of Mr. Strekal's previous testimony in support of the Tribe's position at that proceeding which began I believe at Volume 3 of the transcript at page 497.
THE STATE ENGINEER: Any objection?
MR. MACKEDON: I would object on behalf of Corkill for the same reasons I gave in the instance of Mr. Shahroody, the earlier witness.
THE STATE ENGINEER: The objection is noted.
MR. VAN ZANDT: No objection with the same reservation as to building the ability to cross-examine matters. Thank you.

THE STATE ENGINEER: All right. Objection noted.
MR. COLLINS: And then I would also move for the readmission or the entry into this record of Exhibit, I believe 94, which was the Cui-ui Recovery Plan issued by the United States Fish and Wildlife Service concerning, which Mr. Strekal testified in 1994 so the record is complete.
THE STATE ENGINEER: Any objection?
MR. VAN ZANDT: No objection.
MR. MACKEDON: I would make the same objection.
THE STATE ENGINEER: Objection noted. Exhibit 94 is admitted into the record.
(Exhibit 94 is admitted into the record.)
BY MR. COLLINS:
Q. Mr. Strekal, were you present in the hearing yesterday during the testimony of Mr. Chris Mahannah?
A. Yes, I was.
Q. And have you had an opportunity, or have you reviewed the report which is Exhibit 104 which Mr. Mahannah testified about yesterday?
A. Yes, I have.
Q. Mr. Strekal, in part that report deals with flows for fish and the Lower Truckee River; is that correct?
A. That's what it says.
Q. Now, if you have reviewed that report which you, which you have, you have testified you have, can you analyze

that report or give me an opinion as to the fish flows reflected in that report and how they comport with the Cui-ui Recovery Plan?

A. Although the fish flow regime that appears in the report is utilized in the plan, the application of that regime to the recovery plan has no relevance or has no relation to the recovery plan. It's taken out of context, I think.

Q. Could you explain that, please?

A. Yeah. I think the fish flow regime as applied in the report is, it's a bit too narrow and mechanistic in its approach and tends to be misleading.

On page 13 of the report, there's a quote, bottom of the page, it says that this application allows for the support of the enhancement of the Cui-ui Recovery Plan as set forth by the U.S. Fish and Wildlife Service. I'm going to assume that --

MR. VAN ZANDT: Excuse me, can you tell me exactly where on the page?

THE WITNESS: Bottom line.

MR. VAN ZANDT: The very last line?

THE WITNESS: Bottom line.

MR. VAN ZANDT: On page 13?

THE WITNESS: Page 13. Allows for the support of the enhancement of the cui-ui.

MR. COLLINS: It's the sentence that starts, four lines above it starts, "in addition".

MR. VAN ZANDT: Thanks.

THE WITNESS: And I took a leap of faith there and I assume what it meant to say, it allows for the support of fish flows as set forth in the recovery plan because flows will not help the recovery plan, flows will help the recovery of the species, but there is no other reference to the recovery plan in this report. It's not cited as a reference, so it's taken out of context right up front.

I would refer to what I assume is page C-1, it's Appendix C in the document, actually the number at the bottom of page 6, but that's because this has been taken from another report which has been referenced and the numbers that are used in the report are accurate, but I would draw your attention to a couple of key phrases.

And the first major heading attraction under the section rationale for the regime as published by Mr. Buchanan and myself, it is assumed that the minimum attraction value, and I just state that phrase, the emphasis on minimum again under the next heading, spawning incubation and rearing under rationale says flows in May will be 1,000 cfs or greater. Again the implication is a minimum value.

And as I had testified earlier, you don't manage a system for a minimum value unless the minimum is also the

maximum that you can supply a set demand every year. There's a variable response by the fish through time that the minimum value we said would achieve spawning, but more flow enhances the spawning and ensures greater recruitment. So, I wanted to make that point clear.

There's a statement, in fact, there are a number of statements that are made in the report, phrases, I'm not taking them out of context, I can read them verbatim, and the reason I am pointing to these is because the terminology that are used in this report do not appear in the recovery plan or at least if they do, not in the same context.

On page 1 or actually beginning the end of the second line from the top, it talks about unappropriated water to meet U.S. Fish and Wildlife Service spawning flows for the protection of the cui-ui.

On page five, there's a reference --

Q. Are you speaking page 5 of Exhibit 104?

A. That's right.

Q. All right.

A. It talks about, under the subheading "Unappropriated Water", there is a reference to cui-ui maintenance flows. Under the subheading "Cui-ui Spawning Flows", there's a phrase, "the flow necessary to", and I would assume that word is fulfill the right for natural spawning of the cui-ui fish as set forth in Table 1.

MR. VAN ZANDT: Are you still referring to page 5?
THE WITNESS: That last statement was page 5 also.
MR. VAN ZANDT: And that's cui-ui spawning flows?
THE WITNESS: To fulfill -- there's a typo there -- the requirement for natural spawning of the cui-ui fish. Again, that's a quote from Exhibit 104.
On page 9, there is a statement that relates to, under the heading "Manner of Use Summary" indicates that there is sufficient amounts of unappropriated water to satisfy both fish propagation and the needs of TCID. But my emphasis here is satisfy fish propagation.
And on page 10, there is a quote near the top under the heading Newlands Project Improvement while the spawning flows on the Lower Truckee River to protect the cui-ui are also met if this application was approved.
Those are all, I think, statements that are not merited by the recovery plan.
I would refer also to a statement on page 13, I'm going to jump ahead a little bit here on 13, that talks about -- excuse me, I misspoke. It's on page 9. The phrase under "Manner of Use Summary", Pyramid Lake Tribe's alleged requirement for fish flows was satisfied.
I don't think there's a statement in the recovery plan that references any allegation by the Tribe, but it causes me concern because in addition to taking the fish

flows out of context, I don't feel, and I'll get into this a little bit more, that the flows that are identified are sufficient for spawning.

They are also not sufficient to achieve recovery, nor would they address the question of a trust resource on the Pyramid Lake Indian reservation that would relate to some historic fishery that might be a requirement beyond that for recovery, but which the recovery plan doesn't exist.

MR. VAN ZANDT: Objection, no such right or claim is at issue in this application.

THE WITNESS: I'm only going back to historic record or a historic condition.

MR. VAN ZANDT: Same objection.

THE STATE ENGINEER: Comments?

MR. COLLINS: Well, we can restrict it to the requirements of the Cui-ui Recovery Plan and the Endangered Species Act.

THE WITNESS: Okay. So, I will say it does not address spawning and it does not address recovery as well, and there is no statement in the recovery plan regarding any allegation by the Tribe.

There is also a reference in the water, in item 104 that talks about, it's on page 14, there's one on page 10, excuse me, that says under, it's under Fish and Wildlife Endangered Species, the quote is, "Under scenario three, the

spawning flows for the Lower Truckee River to cui-ui are met in it, this action meets the objective of Sections 2007 of Public Law 101618."

And also a reference on page 14 to its, it would be the last, well, it's the only paragraph on the page, "The benefits of this application are consistent with the objectives of PL 101618." And the reason I relate to the references to 101618 under Section 207, the heading is, the title of that is "Cui-ui and Lahontan Cutthroat Trout and Recovery and Enhancement Program Subsection A, Recovery Plan Pursuant to the Endangered Species Act as Amended", the Secretary --

BY MR. COLLINS:

Q. Can you slow down?

A. "The secretary shall expeditiously revise, update and implement plans for the conservation and recovery of the cui-ui and Lahontan cutthroat trout. Such plans shall be completed and updated from time to time as appropriate in accordance with the Endangered Species Act as amended and shall include all relevant measures necessary to conserve and recover the species."

So, the thrust, the --

Q. That's the end of the quotation?

A. That's the end my quotation, that's not the end of the section.

Q. Right.
A. But the thrust of that is that Section 207 calls for recovery of the species, and my, the point of all this is that spawning flows are only one component of the recovery plan, albeit an important part of the recovery plan, but still they're, while water is made available in the lower river will assist spawning, there are also other requirements for water which in combination with the spawning flows provide benefits for cui-ui which ultimately will achieve recovery.
Q. And those benefits are a necessary part of the recovery; is that correct?
A. That's right. That's right.
Q. Let me ask you a couple specific questions, Mr. Strekal. Is the basis for the Cui-ui Recovery Plan, is the base line flow, inflow to Pyramid Lake Cui-ui Recovery Plan the water that Pyramid Lake has been getting now?
A. Right.
Q. That is the base line?
A. That's the base line condition.
Q. All right. And then the Cui-ui Recovery Plan calls for additional water beyond that; is that correct?
A. That's the requirement in the recovery plan, is in addition to the flow that is assumed to be getting to Pyramid Lake, now to acquire up to 110,000 acre feet of additional

water or as the plan says, equivalent benefits which are improvements in the lower basin which could take the place of water, habitat improvements, if you will, rehabilitation to riparian habitat, improvements in fish passage or the like.

But the base line condition assumes 1988 OCAP with the 215 end of June storage target. It actually assumed a greater irrigated acreage than in the Newlands Project than currently exists, but, 1988 is the base condition, yes.

Q. So, the 1988 operating criteria and procedures as well, which in effect dictates in some part the flows which go to Pyramid Lake, is a base line condition for the Cui-ui Recovery Plan?

A. Right, right.

Could I add something to what I was saying before?

Q. Please.

A. Because everything that I said earlier was getting to the point that I'm now going to make.

Q. Okay.

A. The base line condition in the recovery plan assumes approximately 415,000 acre feet of inflow to Pyramid Lake plus or minus, let's say two percent, because depending on the modeling run you do and the hydrology you assume, you can get some variation, but it won't be very great.

In fact, in Exhibit 104, on page, in appendix B, the summary of current operations, well, it's -- what is the

heading? Well, anyway, it's the table that is in Appendix B, the assumed average, average inflow to Pyramid Lake for the period 1901.

Q. Excuse me, Mr. Strekal, is that, does that table have a number associated with it on your copy? Is that Table 125?

A. Oh, yeah, that's right, it says Table 125, Derby Dam release.

Q. All right.

A. And for the period 1901 through 1992 as modeled, it shows an average annual inflow to Pyramid Lake of 423,000 acre feet. It's very close to the 415,000 number I said, certainly within two percent or three percent of the value.

And again, that was utilizing the model, the hydrologic model that's been used in negotiations for lower river settlement for many of the operations, many of the analyses for operations of the Truckee River Newlands Project used by many of the parties in the basin.

Q. Would you refer, is that model commonly referred to as the cui-ui model? Is that the one you're talking about?

A. That would be the river operations model or the negotiation model. That is the hydrology model that's used.

In reviewing the report, Exhibit 104 on page 8, I think it is, there's a reference to a large quantity of unappropriated water allowed for fish flows. That appears

under the heading scenario three, but there isn't anywhere in the report that I see an actual inflow number for Pyramid Lake specifically as relates to fish flow requirement.

I could make, I made one assumption that if you assume that the fish flow regime were in effect and there was sufficient water in the basin and you were meeting the minimum fish flow regime annually, your inflow to Pyramid would be 415,000 acre feet which would be half the recovery plan identifies as the base line condition, so that's even less than the, the condition that would be required for recovery.

From looking at data supplied for scenarios three and two and subtracting the, what I guess is assumed to be the unappropriated water as defined in this report, the actual inflow to Pyramid Lake for fish comes out to about 75,000 acre feet per year which is about a third of the water that the minimum flow regime would call for. And that's not even considering additional water that might be required, you know, you know, under base line conditions for habitat protection, maintaining a certain concentration of solids in Pyramid Lake, providing rearing habitat for the species, spawning habitat for the species, et cetera.

So again, I see no other number in the report other than the 204,000 acre feet per year under the minimum flow requirement and the 75,000 acre feet that I calculated as a

difference between the two unappropriated water categories. So, I would say in that respect, this report is highly deficient in terms of recognizing the needs for maintaining the present population or certainly achieving recovery.

Q. Thank you. Mr. Strekal, in your opinion and maybe I should get this on the record, I think it's on the record as a result of your testimony of 1994, what is your relationship to the Cui-ui Recovery Plan?

A. I'm the team leader for the cui-ui recovery team and I'm one of the major authors of the recovery plan.

Q. Thank you. Now, in your opinion as a fisheries biologist, Mr. Strekal, if 9330, the application at issue in this proceeding were to be granted by the State Engineer, what impacts would you predict, or would you foresee on the cui-ui and if you know, on the Lahontan cutthroat trout?

A. From my reading of Exhibit 104 as relates to 9330, it would be unlikely, first of all, that we could achieve recovery of cui-ui.

Secondly, by decreasing the inflow to Pyramid Lake, we would be reducing the elevation of Pyramid Lake which would increase the salt concentration of Pyramid Lake which could be devastating to all the indigenous biota, fish and the food that the fish depend on would change the hydraulics in the lower river, would exacerbate the problems with the Delta because as the lake level recedes, the Delta becomes

far extended.

The problems with operating I think that we experience now, I cannot imagine what they would be, I can't anticipate what fish passage would be like were the lake to recede another 30 feet or 40 feet, whatever the number might be by providing either 204,000 acre feet a year or 75,000 acre feet a year.

So, I would say it would further endanger cui-ui and it would not benefit Lahontan cutthroat trout, would not promote re-establishment of a fishery for Lahontan trout in the river.

MR. COLLINS: That's all the questions I have.

THE STATE ENGINEER: Mr. Van Zandt?

MR. VAN ZANDT: Can I have just a moment?

CROSS-EXAMINATION

BY MR. VAN ZANDT:

Q. Mr. Strekal, good afternoon.

A. Hi.

Q. You indicated in your direct testimony that you are the team leader, this is for the U.S. Bureau of Indian Affairs on the Cui-ui Recovery Plan; is that correct?

A. I work for the Bureau of Indian Affairs, but the recovery team is under the banner of Fish and Wildlife Service. It's the regional director of U.S. Fish and Wildlife Service in Portland that has actually formed the

team.

Q. So, it's kind of a cooperative effort between BIA and Fish and Wildlife Service?

A. Only insofar as my services are allowed to be provided. The recovery teams can be composed of people from many different affiliations, so in this instance when, I was first a member of the recovery team, when I became team leader I worked for Bureau of Reclamation. I've also worked for Fish and Wildlife and remained team leader, and the same with Fish and Wildlife.

Q. How many years with the cui-ui recovery process?

A. With a, say since 1989, but with the use in the Truckee Carson basin, since 1982.

Q. So, you're very familiar with how the recovery plan was put together and its perimeters?

A. Sure.

Q. Is it also true that you keep track of information concerning cui-ui recovery?

A. Yes.

Q. Okay. So, you'll be able to answer my questions as to, for example, do you know what the spawning run in 1993 was and the inflow? I'll stop at that question. Just the spawning run, the number of fish counted during the spawning run in 1993?

A. It was approximately 18,000 fish, approximately

15,000 via fish way, 3,000 via the river trap. The inflow during the spawning flow was 130 acre feet. I've rounded the numbers just for the sake of convenience.

Q. In '94?

A. '94, approximately 65,000 fish, 66,000 fish, let's say approximately 47,000 via the fish way and approximately 19,000 via the river trap. And the inflow in, I'm sorry, did I get -- which were you asking me for?

Q. '94.

A. I'm sorry, I have the years reversed. The first --

Q. Actually I think that's right, '96 was 66 if my information is correct.

A. No, I'm speaking in terms of the inflow.

Q. The inflow?

A. I gave you the wrong --

Q. The inflow?

A. I gave you the '94 data, the '94 inflow data for '93.

Q. '94 inflow was 130,000 acre feet during the fish run?

A. Right.

Q. Okay. What was it in '93 then?

A. '93, again rough rounding, say 217,000 acre feet. It's going to be plus or minus. I did a quick calculation.

Q. And '95?

A. In '95, approximately 113,000 fish, 94,000 via the fish way, 19,000 via the river trap. And these data are provisional, they still have to be reviewed, and the inflow, there was an awful lot of water. An awful lot of water, that's a technical term, the total inflow for the year, approximately 580,000 acre feet.

Q. 580?

A. That's for the entire year.

Q. That's the entire year?

A. During the spawning season over 300,000 acre feet.

Q. Over 300,000?

A. Yeah.

Q. Would you consider the cui-ui run in 1995 to have been successful?

A. I would recognize that there were a lot of fish that were passed upstream and spawning occurred and larvae were produced, so I would say in terms of a spawn, yes, it was successful because at least we've recognized the passage of fish and the production of larvae. But I don't know of the survival of the larvae beyond their passage to the lake right now.

Q. You referred to, and I believe it's been readmitted now what was previously Exhibit 94 -- I assume we're retaining the same numbers; is that correct?

THE STATE ENGINEER: Correct.

BY MR. VAN ZANDT:

Q. Which is the Cui-ui Recovery Plan, this, the document that you're referring to, one of the team leaders?

A. Yours has a nicer cover than mine.

Q. Yes, it does. And the fish is going the opposite direction?

A. It's the same document, yes.

Q. It's coincidence. You said 113,000 fish were counted in 1995. Could you just describe quickly for us how they actually do the counting of the fish to get those numbers, 113,000?

A. This year they were using a technique using a video camera because of the number of fish that were coming in, that's why I say the data are provisional, because they want to review the, you know, the films to see how many fish were passing. But normally counts are done by lifting the river trap, passing them through the building and doing a count of fish. With 113,000 fish, I think there's also going to be some estimating as well, just because of the manpower, person power constraints dealing with that many fish.

Q. Now, is this, is this total number of fish or is this the female population?

A. That's the total number of fish that were passed upstream, so it's composed of males and females.

Q. Now, referring your attention to page B2, Appendix

B2 of the Cui-ui Recovery Plan, the first question I have is, do you have a current estimate of the cui-ui population in Pyramid lake?

A. I don't personally, no. The population estimate is being updated. I don't do the research per se, the National Biological Service is actually doing the research in terms of enumerating the population and coming up with the estimates.

Q. Would you agree that the estimate that's in this recovery plan is approximately 300,000?

A. Where are you reading?

Q. I was afraid you were going to ask me that. In the narrative version there, there's population estimate. Go back and look for the page, but my recollection is there was an estimate of 300,000 current population in the, in the lake. Let me see if I can find it. Well, I'll have somebody look for that while I'm --

A. It's a population within the realm of possibility anyway, so --

Q. Let's just assume that for a second so we can get a page number. We have a number number of the book, but referring you back to page B2, in that large paragraph that's in the middle of the page, that paragraph refers to some calculations that can be done under various conditions of the lake in order to arrive at the population of the cui-ui in the lake; isn't that correct?

A. On B2?
Q. On page B2.
A. B2 only relates to the relation of inflow to spawning size.
Q. Spawning size, if you read in the middle of the paragraph, it says --
A. Maybe we have a different paragraph that we're reading. Why don't you show me which one?
Q. I'll show you my copy, you show me yours. Maybe our fish will turn around. This paragraph right here, I'm referring right about the middle of the paragraph beginning with the language, "For example if Pyramid elevation is below."
A. Um-hum, that relates to fish passage, that doesn't relate to population per se.
Q. The next sentence states that, "At this elevation less than 1.0.1 percent of the population would enter the fish way with an attraction flow of 51,094 acre feet."
A. Okay.
Q. And it goes on, 1.5 percent with 176,000 acre feet and 5 percent for flows greater than 349,000 acre feet, but it refers to a population; does it not, Mr. Strekal?
A. No, it refers to a factor that's applied to the population. You have no idea what the population is by looking at this sentence.

Q. So, you're saying that if the number of fish that are attracted during the spawning route is 66,000, for example with an inflow of 130,000, roughly from these perimeters you can't calculate what the population of the fish in the lake is, of the adult fish in the lake?

A. I don't think it works that way. I mean, you're talking about, you're talking about --

Q. Are you familiar with Appendix B --

A. I certainly am.

Q. -- Mr. Strekal?

A. Yes.

Q. So, this language in the report is wrong?

A. No.

Q. You can't calculate the population?

A. No, I said you can't calculate the population based upon the statement on page B2. What it tells you, what this says is assuming these conditions, if a certain flow develops and you apply the percentage that's associated with that percentage to the population that you've identified, the model assumes a certain number of fish will run upstream. You can't, you don't normally go the other direction.

In terms of the calculation, you would have to know what the population is. And again, this is a model condition, this is not an actual field condition. This was based upon some data that was collected back in the early

80's trying to relate inflow to passage.

Q. Let's just take a quick hypothetical using the perimeters that are contained here on page B2 of Exhibit 94. The lake level we'll assume is below 3,812 and we'll assume that there's 66,000, just for sake of argument, 66,000 fish observed during the spawning run at a flow of 51,094 acre feet. If that, those numbers were put into the model, according to these calculations, isn't it true then that you would actually have 66 million cui-ui in the lake as an adult population?

A. The model doesn't operate that way, but if you were to make that calculation, I would say yeah, you could assume that. The thing is that the 66,000 number that you're talking about, the total population, the total number of fish, the number related to the fish way were 47,000, so using your calculation, it would be 47 million, not 66 million. But again, this was a condition, this was an idealized situation based upon some observed data about ten years ago.

One thing that we're doing right now with regard to the recovery plan, re-reviewing all the information that's been collected over the years trying to look at the relation of attraction flow to population size, we're trying to understand a little bit more the dynamics in the lower basin of the river because the lake elevation has fluctuated so

drastically over the years. Problems with the Delta are very difficult to calculate. It becomes a stochastic event.

Q. You've answered my question. You'er answering some other question at this time.

Let me just keep going through this calculation. I'm finding it useful, at least that is if we assume again the lake is below 3,812, we have 66,000 fish observed, and the flow regime is 176,000 acre feet, then there's a 1.5 percent factor that's applied to that, by my calculation with the help of some of my friends here, the population is given of 4.4 million, again assuming the calculations are done the way I described them to you; is that correct?

A. Your calculation is probably correct, but the model doesn't function in the way you're describing it.

Q. I understand that, and we'll just go on for purposes of closure. If at 66,000 for 349,000 acre feet of flows into the lake, it's a five percent factor and you get about 1.3 million in the population; isn't that correct?

A. I haven't done the calculation. I'll assume your calculation is correct.

Q. Okay. I appreciate that. There is -- now, let's see, in '95 you indicated that the flows were much higher at the 300,000 range with observed fish about 113,000. I've done -- the information that I have, I guess was anecdotally recorded, was 122,000, so I, I won't take the time to redo

the calculations, but bear with me on the hypothetical.

If we run through those same calculations at the 122,000 level, and let's just assume it's the 349,000 inflow, that gives us a cui-ui, adult cui-ui population of about 2.4 million, you'll have to assume, I guess my calculation is correct?

A. This time I won't.

Q. This time you won't?

A. But, I again make the statement you're talking it out of context, the way the model operates. Taking it out of context is no benefit.

Q. Let me ask you this, Mr. Strekal. You're saying that the cui-ui model, that you input a number of variables obviously and it gives you some kind of prediction based on flows and some other perimeters, I assume you're looking at temperature of the water and how fast the flows come in and over periods of time, and I assume that's spread out over a four or five-month period; is that your understanding?

A. In terms of the way the model is used in doing comparisons of flow regimes, it gives a calculation and that calculation is the index, but that index incorporates lake elevation, river flow, the comparison flows, meeting certain threshold values, mortality rates for the species. It incorporates a lot of environmental variables in it to come up with the number.

Q. To your knowledge, has the, has anyone gone back and attempted to validate the cui-ui model based on the historical, historically observed conditions over '93 through '95?

A. In other words, to take the model and play in those values and see what comes out?

Q. And see if what was predicted under the model comes out with X?

A. No.

Q. So, we observe with Y and try and reconcile them?

A. The model isn't predicted in that regard, it's only a comparative tool in terms of looking at water management plans.

Q. So, you don't go back and validate the model; is that what you're saying?

A. We're doing that now, but you don't do it on an annual basis necessarily. We're trying to gather additional information, especially on mortality rates on how fish are responding to inflow, what the stochastic events are that relates to changes in the Delta that might provide for access to the fish at elevations different in the report because we realize fish have been moving up river, but not with the freedom you would expect were you to have much better access.

Q. When was the cui-ui listed as endangered?

A. 1967.

Q. And how long has the fish been studied by the U.S. Fish and Wildlife or other agencies that you worked for?
A. Oh, at least since the early 80's.
Q. And how long has the model existed?
A. Well, the -- let's see what the data is. 1988. Well, the iterations that we're using now essentially came out in 1988. This is the cui-ui model, is that what you're talking about?
Q. Correct, cui-ui model.
Mr. Strekal, isn't it true that the cui-ui model underestimates the reproductivity potential of the cui-ui population because it assumes there's no spawning below 3,812?
A. No.
Q. It does?
A. It assumes there's spawning at flows less than 3,812. It's just that there's a different avenue for passage of fish upstream.
Q. And there's some factor that's given to that to reduce amounts? In other words, there's more potential for spawning higher numbers of fish, spawning of the lakes above 3,812 or below?
A. The assumption is the higher the lake elevation and particularly as it relates to a certain threshold, and in this instance it's 3,812, that the freer the access for the

fish, the more fish will pass upstream, the less restrictive the passage avenue, the greater likelihood that more fish will make it upstream and that more fish will spawn.

Of course that higher elevation is also assuming there's more water flowing in the lake, so the more water that's flowing into the lake, the more conducive the conditions are to spawning recruitment, rearing and recovery or persistence of species.

Q. Do you know what the lake level was in 1995 when you had 113,000 fish, fish in the spawning period?

A. I'm going to guess, let's see, it was under 3,800.

Q. Under 3,800?

A. Sure.

Q. But you had a pretty successful fish run?

A. There were a lot, it was a fortuitous condition.

Q. The Cui-ui Recovery Plan, again I'd offer a page citation, but I believe it makes a statement that the juvenile population, that is the unmature population of cui-ui in the lake is in the several million range; is that your recollection?

A. Um-hum, yes.

Q. Okay. Would it be fair to say it's about five million juvenile population?

A. You could say that.

Q. How is that calculation made?

A. There are tagging studies that are done in the lake and certain fish are implanted with these tags. Fish are released back to the lake and then fish are recaptured and depending on the number of fish recaptured, there's a calculation, a standard procedure that is used to come up with that number. And the more often you can do that sampling in successive years, the more accurate your number becomes.

Q. So, it's fair to say right now in the lake there's several million, perhaps as many as five million juveniles in the lake and perhaps several million mature adults in the lake as well; isn't that correct?

A. I don't know that that's correct, I'd say it's possible, but I don't know that's correct.

Q. Have you personally done a survey of the fish population?

A. No, I don't to the research.

Q. You don't do it, so somebody else does the research. When was --

A. Research is ongoing, research has been --

Q. Do you receive periodic reports on the fish population in the Pyramid Lake?

A. Yeah.

Q. When was the last time you got such a report?

A. I can't remember the exact date. I've seen a

figure of a million adult cui-ui.
Q. Of a million?
A. In a recent, in a recent correspondence, but we are --
Q. Not two or three million?
A. No.
Q. Or six million?
A. No.
Q. Just a million?
A. Not adults, no.
Q. Do you know what the methodology was for coming up with that population figure?
A. I just said what it was, it was the tagging and recovery procedure.
Q. I thought that was the one that was part of the juveniles.
A. That's a procedure that's done to evaluate --
Q. The whole population?
A. -- the number of fish population.
Q. Mr. Strekal, isn't it true that there is a, and I think there's a mention in the Cui-ui Recovery Plan, significant pelican predation?
A. Pelican predation has been observed.
Q. And also isn't it true that the fish way has limitations and causes mortality to the cui-ui?

A. Oh, any procedure that involves handling of fish or puts them in a stressful condition can prove fatal, sure.

Q. And is it also true that Marble Bluff Dam inhibits the passage of the cui-ui up river?

A. Yes.

Q. It's mentioned, I guess in the Cui-ui Recovery Plan, that there's been some consideration of the dredging of the Delta. Do you know if that's been accomplished?

A. No, it hasn't been, because it hasn't seemed to be successful. The sediments are far too mobile to promote that procedure.

Q. There's been some kind of a feasibility study on that then?

A. It's been looked at several times in recent years, but again, the Delta is so wide and the channel seems to vary so much, the alluvial settlements are just moved around so much that when a channel opens, it very soon fills.

And we've had situations like that in '93 when to our surprise there was several, there were several channels that opened in the Delta that for short periods of time allowed passage of fish, but because the river was moving so dynamically, that many of these passage avenues were closed off, fish were stranded and died.

Q. Are you familiar with the cui-ui index, Mr. Strekal?

A. Yes, I am.
Q. Have you seen any calculations or runs of models that would develop a cui-ui index recently?
A. Tens of thousands.
Q. Tens of thousands. Have you ever seen a present index of the cui-ui that shows that under present conditions the cui-ui index would be about 93,000, adult female population?
A. I've seen a lot of numbers that purport to be present conditions.
Q. You never heard that number before then?
A. No.
Q. No, you've never heard that number before?
A. I've heard the number, but whether it actually relates to a cui-ui index for present conditions, it's -- I would have to know, I would have to know the conditions that the assumptions that that number was predicated on.
Q. You don't track cui-ui index numbers in performing your work?
A. I've had model runs done.
Q. What's the current cui-ui number you're working on under present conditions?
A. It depends on the assumption that go in the model, it's variable. What hydrology you're dealing with, what management, what demands are in place, what year you have.

Q. Let's take 1995.
A. I can't tell you.
Q. Okay.
A. I don't run the model on a regular basis, but I know what the model does and I know the assumptions that are built into it.
Q. Mr. Strekal, on page C6 of Exhibit 94, there's a calculation, I guess it actually begins on C5 of survival rates which I believe is tied to a number of different things. It is a whole long calculation there that's tied to survival, eggs and also to juveniles and the fish themselves; is that correct?
A. Yes.
Q. I may be oversimplifying it.
A. No, in fact, the simpler the better with regard to the calculation.
Q. In the middle of that page on page C6, it's referring to some of the assumptions that are made about those calculations. There's a sentence that says on the presumption that the truth should lie somewhere between the minimum and maximum estimates, .002 was picked as the best guess value.
Is it true that that's referring to, I guess it's one of the last calculations, it has to do with the larvae survival; is that correct?

A. It relates to larvae survival, yeah.
Q. So, there's some kind of choices that are being made what is termed best guess value?
A. It's trying to define limits, range of values.
Q. So, when the calculations are done in the Cui-ui Recovery Plan for how many cui-ui actually survive a spawning, there's a lot of assumptions that go into that; isn't that correct?
A. Oh, sure, a lot of factors that come into play.
Q. And there's various survival rates that have been developed to determine what the predicted number of cui-ui to survive a run are?
A. Well, the survival rate for larvae will determine what, what the adult population has the potential to become.
Q. Okay. And there were a lot of best guesses in developing those assumptions; is that correct?
A. This says the best guess.
Q. The best guess, I'm sorry. There are a lot of the best guess?
A. No, it just was the best guess.
Q. What about the other assumptions that were made, are they valudated assumptions, the 85 percent survival rate for adults, for example?
A. Those are values that, at least for the purpose of this analysis, was based on documented evidence from other

and related species, and this is one of the factors that's being looked at currently by the National Biological Service in trying to improve the numbers based upon recent current research.

We think that the mortality rates or survival rates if you want to call them that, are an important component, both of the model and of developing a management strategy for the species.

Q. But they're based on some conservative assumptions along with some best guesses or the best questions?

A. You could say conservative assumption or best guesses, but they're also numbers that have been on the literature, so they haven't been pulled out of the air.

Q. For the record, they have identified for me on page 8 the population size in paragraph 7, talks about 300,000 adults and one to several million juveniles. Is that your understanding, page 8 at the top of the page?

A. It's not C8, but page 8?

Q. Yes, page 8?

A. Okay.

Q. Do you agree with that?

A. Yes.

Q. Okay. Now, you testified that Exhibit 104, the report prepared by WRD had some problems because they hadn't adequately incorporated some of the ideas from the Cui-ui

Recovery Plan; is that correct?
A. That's correct.
Q. But the fish flow information that was used to do the calculations, you indicated that you recognized the table that was used which was on Exhibit 104, that Appendix C; is that correct, do you recognize that?
A. Which table?
Q. It's Table 1 which is at Appendix C. of Exhibit 104, flow regime for cui-ui spawning?
A. I recognize it.
Q. Isn't it a fact that the U.S. Fish and Wildlife Service developed this table?
A. In part, yes.
Q. In part, and you had the other part; is that correct?
A. I assisted, yeah.
Q. You assisted in this, okay. And this is a table that was used in doing the calculations in Exhibit 104, the WRD; correct?
A. This is the table that's assumed to be the minimum manage flow requirements for spawning.
Q. And the flows that we have observed in the last several years in the Truckee River which have resulted in cui-ui runs, which I believe you testified to, 18,000, 66,000, 113,000, there's been a significant increase in the

number of fish over those three years; isn't that correct, observed during the spawning runs?

A. Compared to previous year, yes.

Q. And isn't it true that the Cui-ui Recovery Plan is looking for approximately what, 350,000 -- 300,000, I'm sorry, 300,000 adult cui-ui during a spawning run; isn't that true?

A. No, we're assuming that would be maximum passage. We're not, we're not necessarily saying that, you know -- let me go back to see what it says.

We would allow the facilities to pass a maximum of that many fish.

Q. Okay. What is the number that you're looking for that would give you an indication that the species is on it's way to recovery?

A. The 300,000 number that you're referring to essentially assumes unrestricted passage upstream. That's the significance of that number.

Q. Unrestricted passage?

A. Right.

Q. But isn't it true that the fish facilities at Marble Bluff Dam essentially are limited to, I believe it's 120,000?

A. Well --

Q. 120,000 females?

A. -- that the fish facilities are limiting is a recognized fact, and that's one of the reasons we're looking to try to improve the fish passage facilities for the fish.
Q. Okay. And then you didn't answer my, the one question, you answered one out of sequence. I'll put it to you again.
What is the population number that you're looking for for fish spawning run to indicate that the species is on its way to recovery?
A. We don't have a criterion or an optimum number or we have a very -- haven't established that number.
Q. So, if it's 66 million fish, that's not, that's not a number that would indicate recovery?
A. If there were 66 million fish, we wouldn't be here right now.
Q. If it was 12 million, would we be here right now?
A. I don't know that.
Q. What's the capacity at Pyramid Lake to sustain a fish population; do you know, Mr. Strekal?
A. What do you mean capacity?
Q. In other words, at a certain point you're going to have so many fish in the lake that it overwhelms the resources, the lake no longer can sustain the population; has that calculation ever been done?
A. There has been a study that was done in, might have

been 1979, that looks at potential food resources, but I have never determined the carrying capacity of Pyramid Lake, although there are a lot of fish. Again, another scientific term, a lot of fish is 90 percent of the bio masses. So, there are other fish in the lake besides cui-ui and Lahanton trout.

Q. Including predators of the cui-ui?

A. Historically there have been too, that's part of that eco system.

Q. One last thing, Mr. Strekal. Under the conditions we have right now with unappropriated water now flowing to Pyramid Lake and hopefully we'll ask for conditions like we had last year where we had plenty of water, under those conditions, would you believe that the cui-ui recovery would continue at the slated rate that it is during the past three years?

A. Can you ask me that again?

Q. Well, I'm looking at some of the conditions that we saw in '94 and '95 in which we had a tripling of the number of fish from '93 to '94 and a doubling of the fish from '94 to '95. If those conditions continue in the next few years, would you say that there is significant recovery of the cui-ui under those conditions?

A. I would say were those conditions to continue, then I would say the status, status of the species would be very

much enhanced.

Q. Would that mean the recovery would occur a long before the year 2016 as a re-recovery plan?

A. It would depend. One of the basic tenants of the recovery plan is securement of the benefits of the species, so we may be seeing certain conditions as a short term trend, but I don't know how long that trend will continue.

Again, I made reference before to the fortuitous events in the Delta that passage actually developed for a period of time, something that, of course, the model doesn't incorporate, but this is what I would consider a stochastic event. It's not something that you could predict from the knowledge of the conditions in the Delta per se.

Q. For the record, would you define what stochastic means?

A. Stochastic would be a random event.

Q. Is it your opinion that if the inflows to Pyramid Lake continue at 204,000 acre feet per year --

A. You mean if they are 204,000 per year?

Q. If they are, if they continue and the previous, one of the previous witnesses testified there's 403,000 acre feet of unappropriated water on average in the river, and under a regime that allows with 130,000 acre foot flow into the lake of 66,000 fish or a regime that allows 300,000 in flow and gets observed number of fish of 113,000, that with 403,000

acre feet of unappropriated water there's still a hundred thousand acre feet of water that might be appropriated for another purpose?

A. I don't understand your question.

Q. Well, during the fish run, you were saying there's 300,000 acre feet of water that flowed into Pyramid Lake?

A. Okay.

Q. Okay. And your, the witness for the United States, Mr. Shahroody, testified that the amount of unappropriated water was approximately 403,000 acre feet?

A. But that's, the 403,000 is annual value. The 300,000 is only a portion of the year.

Q. I understand that.

A. Okay.

Q. But I'm just saying that during this taking the 300,000, or maybe the 130 is better, let's take the 204,000, if you take the 204,000, and I don't know if these are proportional or not, but you've got at least 66,000 fish, would you consider that to be a good fish run, 66,000 during a fish run?

A. It's one of the highest, it's the second highest number on record for managed facilities, yes.

Q. If you sustained that over the next 15 years, would that put the cui-ui on its way to recovery?

A. I'd have to go back and see how that data comports

with the data that we already have and subject it to the same analysis that we used in developing the recovery plan initially.

Q. Would you say that the number is bad for recovery of the fish, the 66,000?

A. Again, I would have to put it through the same analysis before I'd hazard a guess.

Q. Okay.

A. It's an impressive number.

Q. The second highest number, and you can't give us an answer to whether or not it's a good run or a bad run or good or allows for the recovery of the fish in the future?

A. Reports in the early part of the century was millions of fish ran up the river, so you compare 66,000 to several million and you can do a proportion from that and make another determination, so 66,000 in and of itself tells me nothing without knowing what factors have led to that number, and if that number will continue or if those, if the conditions that led to that number will further enhance the conditions. So, I think you're asking me to make a leap of faith here which I'm not in a position to do.

Q. Well, what I'm, I guess I'm asking you is, isn't it true that at some point in your analysis you're going to have to make a determination that the fish population showing up during the spawning runs is, in fact, indicative of a

recovered species?

A. We're working on the data right now to try to, to try to make sense of the recent data and put it into a revised model that we hope and we're certain will be an improvement upon what had been done before.

Again, the recovery plan is four years old now and we've accumulated a lot of additional information, and it's our intent, you know, part of our charge as a recovery team to incorporate all of this information, and we will do that.

Q. Just two or three more questions and I'm finished.

You indicated that we had 66,000 fish, 130,000 acre feet of inflow, and you also indicated that the number you were working off of that inflows now down to Pyramid Lake is down to 204,000, about half of what you require is under, on the base line?

A. I'm not sure how you used the 204,000.

Q. You were the one that used it. You indicated on some historical basis there's 204,000 acre feet of water flowing into Pyramid Lake?

A. No, I said basing the assumption I was making and being very generous, was that Exhibit 104 was providing or could provide as much as 204,000 acre feet a year in the lake. This was the reference.

Q. And the base line you're working off of is 4 --

A. 400,000 plus.

Q. 400,00 plus. Okay. But if there was, if you could sustain a population at 204,000, say at 66,000 or 80,000, whatever the fish run would be, and you had 403,000 acre feet of unappropriated water on the river, isn't it true that you would have an at least an additional 100,000 acre feet to be appropriated for another purpose?

A. I think you're assuming that that 204,000 acre foot number is adequate for either maintenance of a certain population or for recovery, and I've already made the statement that that number is inadequate, so, no, I would not say that.

Q. You referred to early reports of a million spawners in the river. Do you know what report you are referring to?

A. I'm just -- these are things that I have heard, you know, reports way back when.

Q. Way back when?

A. Way back when.

Q. Before your time?

A. Certainly.

Q. Some anecdotal report?

A. It's anecdotal, but there were many, many fish that were procured from the river, that fish were exported from the basin, that native peoples would gather at the river and fish extensively and have celebrations and smoke fish for later use. It indicates to me a very productive system.

And again, conditions back then were different because there were not the same diversions, the hydraulics of the river were different, the hydrology was different. It's real difficult to make a comparison unless you're specifying the exact parameter you're interested in.

Q. Okay. Are you familiar with the term environmental base line, Mr. Strekal?

A. Yes.

Q. Okay. And as that term is used by the U.S. Fish and Wildlife Service in preparing biological opinions?

A. That's one of their considerations, yeah.

Q. Are you aware that the U.S. Fish and Wildlife Service has stated that one of the components they look at for establishing environmental base line is whether or not the water that's being used for a particular purpose has already been appropriated under state law or through a decree process?

A. I've heard that stated.

Q. Okay. Are you familiar with the Pinion Pines project?

A. No, I'm not.

Q. Okay. But it's your understanding that the Fish and Wildlife Service takes the position that if the water you're attempting to use in your project has been adjudicated under state law or through some kind of a decreed process,

that that amount of water will be within the so-called environmental base line for the project?

A. I'm aware of that.

Q. That is, that this will not cause because it is decreed water, an environmental impact; is that correct?

A. It will not create an impact in the future beyond that which is, will have already caused.

Q. And will not cause, it will not put the species in jeopardy; isn't that correct?

A. Well, I'm not going to conjecture on that, that's -- I have not seen the document, and I have not issued the statement with regard to that, so --

Q. If the rights that we're talking about here are, end up to be supplemental to the Newlands Project rights, that is the rights that are in Application 9330 --

A. Right.

Q. -- and those rights have already been recognized in the Orr Ditch Decree, would you have to conclude based on the U.S. Fish and Wildlife statement that is within the environmental base line, that is that the water sought in Application 9330 --

A. You're asking me to assume those rights are incorporated in the Orr Ditch Decree?

Q. In the Orr Ditch Decree.

A. I can't suppose what the service would conclude on

that.

MR. VAN ZANDT: Okay. I have no further questions.

THE STATE ENGINEER: Mr. Mackedon?

MR. MACKEDON: Yes. Thank you, Mr. Turnipseed.

CROSS-EXAMINATION

BY MR. MACKEDON:

Q. Mr. Strekal, does BIA have services?

A. Certainly, all federal agencies do.

Q. Does the BIA have trust responsibilities toward the water right owners and successors to entryman within the Newlands Project?

A. It's not the same trust, if that's what you're talking about.

Q. What trust does the BIA owe, I'm talking about the BIA owe to the water right owners and successors to entryman within the Newlands Project?

A. I don't understand your question.

Q. What trust, if any, you said it's not the same trust, so what trust, what kind?

A. Are you speaking specifically of the Fallon tribes?

Q. I'm talking about the BIA, its trust responsibility to the water right on the other landowners of the Newlands Project.

A. I haven't seen that written anywhere. I don't understand your statement.

Q. I think it does not, I think the BIA does not; does it?
A. I have never seen that written anywhere.
Q. It has responsibilities to the Indians and that's -- and not others?
A. You can't divorce the Bureau of Indian Affairs from the rest of the nation, but as a bureau of the Department of Interior, your Indian Affairs has been recognized as a lead agency for trust resources or trust assets for Indian tribes, yes.
Q. That's its responsibilities and that's the people it owes, to whom it's obligated; correct?
A. I'd say on a, on a very, on a general level, yes, but again, it's not, it's not divorced the rest of the government.
Q. Does the BOR have trust responsibilities for the Pyramid Lake Indians?
A. Yes.
Q. Does the BOR have trust responsibilities toward the water right owners in the Newlands?
A. Bureau of Reclamation has obligations to the water rights as members of the project, but I have never seen the word "trust" used in the same manner as that used for Indian tribes.
Q. In your result, the BOR would have trust

responsibilities to Indian tribes, but it would not have equivalent trust responsibilities to water right owners within irrigation projects?

A. I didn't hear a question.

Q. Is the cui-ui plan, the recovery plan that you've been referring to in your testimony been referenced in the 1926 contract or any other contract for Mr. Corkill?

A. I'm sorry?

Q. Is the Cui-ui Recovery Plan that you referred to in your testimony incorporated in the 1926 contract? If you know what the 1926 contract is.

MR. COLLINS: I think we can stipulate it is not because the cui-ui -- recovery date was what?

THE WITNESS: The most recent, 1992.

MR. COLLINS: And the cui-ui, 1967?

THE WITNESS: 1967.

MR. COLLINS: It would have been difficult to incorporate a plan in the 1926 plan.

MR. MACKEDON: Thank you.

BY MR. MACKEDON:

Q. Are the individual water right owners in the Newlands Project under the Endangered Species hact?

MR. COLLINS: I would object to that question, that's not relevant to this proceeding.

THE STATE ENGINEER: Well, it calls for all kinds

of conclusions. This is following -- this witness is not qualified to answer.

MR. MACKEDON: We've been here a long time, one of the questions I've had about this whole issue of the survival of this species is I believe that the country has decided that it's important to society to, to invest in the survival value of species, but that burden of that cannot be placed on an individual category or group of people, but must be shared throughout the area, if not society at large, and that you cannot take water from Mr. Corkill to assist this species or any other except by condemnation. And that's the point I'm leading to.

And now, do you understand the nature of my question?

THE WITNESS: Vaguely.

MR. COLLINS: I'm going to continue to object to this question. I don't see that it's relevant to this proceeding and this is not a debate on the viability of the Endangered Species Act.

THE STATE ENGINEER: Well, I think we would stipulate that, I mean, it's in 101618, it's in OCAP, that the Bureau of Reclamation has to deliver the decreed water right to the farmer. And I don't know if the recovery plan states that, but --

MR. MACKEDON: And water can be taken out of that

decree, out of that water right for the benefit of the species.

THE STATE ENGINEER: That's correct, subject to certain management responsibilities, beneficial use and all kinds of those things.

THE WITNESS: Mr. Turnipseed, in answer, in response to your statement, going back to a statement I made earlier that the Cui-ui Recovery Plan recognizes OCAP, so by recognize --

THE STATE ENGINEER: Recognizes decreed rights and other vested waters.

THE WITNESS: And the application of OCAP and water management in the basin, so, yes.

THE STATE ENGINEER: So, the Cui-ui Recovery Plan anticipates that all decreed and vested water rights will be served.

BY MR. MACKEDON:

Q. Is the information that you have compiled as the team leader for the recovery of the cui-ui species fish, is that public information available to Mr. Corkill?

A. Which information are you referring to?

Q. Anything, all of the information that your offices have available to you concerning --

A. I can't speak for other agencies, I mainly have the recovery plan and it is a public document.

Q. And how about the information, other information you referred to in the course of your testimony?
A. Other information can be requested from the people that are producing the information.
Q. Thank you. It would be then public information?
A. I'm not certain that I would make that blanket statement, but I said that it could be requested from the people that are developing the information.
Q. You've been in this business a while, under what circumstances would it be confidential or not public?
A. Oft times, I'm thinking of water reports that are done by Geological Survey, that they oft times have provisional data that they're not willing to release or that they do not want to have published in a public forum because that information might lead to false conclusions until they've had an opportunity to validate the information.
Q. And that kind of information would not be submitted to a regulatory or administrative agency to make important decisions on provisional data; would it?
THE STATE ENGINEER: I'm not sure that's a relevant question and on occasion --
THE WITNESS: I don't know how to answer.
THE STATE ENGINEER: -- on occasion we will use provisional data.
MR. MACKEDON: Finally, I promise this is my last

question.
BY MR. MACKEDON:
Q. And I mean this genuinely, from the way you've described the model and the difficulties of predicting from stochastic processes, are you literally uncertain about the conclusions contained in the cui-ui report?
A. No. At the time the report was produced, we used the best available information and the best people we had to do it. And as a follow-up to that, one of the, one of the statements in the recovery plan, that it will be updated, revised as new information becomes available, and that is one of the charges of the team to, in fact, that's being done now, that the information relative to the species is being reviewed, revised, updated to conform to the current state of knowledge.
Q. Do you believe that the recovery plan you've testified to is sufficiently reliable to make, to justify and support water right allocations or the reallocation of waters?
A. No. I think what the recovery plan does is identify the resources that are required to achieve recovery and yes, I have faith in the document because I put my name on it.
Q. Well, I understand that, but you also have indicated that you were gathering more data?

A. Certainly.
Q. And my question is, we're trying to make decisions regarding the allocation of water and have to be perhaps made now before this additional data is done, can we rely on that report to make those judgments now?
A. It is still the recovery plan, so yes, it's the document we're using.
Q. You'll share your information you have?
A. I have not withheld any information.
Q. I just want to make that clear. Thank you very much, Mr. Strekal.
THE STATE ENGINEER: Redirect?
REDIRECT EXAMINATION
BY MR. COLLINS:
Q. Just a couple questions. Thank you.
Mr. Strekal, are you familiar with the nature of the flows into Pyramid Lake during a period, say 1980 to 1986, whether those flows were low flows, high flows, what kind of flows you were experiencing into Pyramid Lake in that period of time?
A. There were some very good flow years early in 1980.
Q. Would you say that maybe they were unusually high flows into Pyramid flows?
A. They were very high flows, they added a lot of water to Pyramid Lake and they increased the elevation of the

lake substantially.

Q. Is it possible, based on your experience and your training, Mr. Strekal, that the relatively healthy current cui-ui population, and I use that term advisedly because I'm not quite sure what a current healthy population you would consider, but the kinds of numbers that we're seeing now, are related directly to those high flows and not do anything that's happened in the 1990's, for example?

A. That's right, you wouldn't really know what's happened in the 1990's in the population because the fish are not old enough to count. They're still very small fish, but fish that were spawned and recruited to the population in the 80's are now of a sufficient size to be captured, enumerated and evaluateed, and the numbers of fish that were recruited in the 80's, yes, do relate to an increased inflow to the lake I'm sure.

Q. At the risk of embarrassing you, Mr. Strekal, do you have an idea how long it takes for a cui-ui to become sexually active?

A. Yes, but I won't say.

Q. I guess -- let me rephrase that.

From the time a cui-ui spawns and leaves and goes, how long does it take to come back? What's the period of time of, the lifetime?

A. That's an interesting question. The assumption in

the recovery, the fish would become sexually mature, oh, let's say between the ages of seven and 12, it would take let's say a minimum of seven years up to 12 years to become sexually mature and reproductively active in the population, but recent information has shown that the maturity with regard to reproduction is greatly a function of size more than age. And fish are not growing as fast as we had assumed when this was being done.

That's another reason we're going back and looking at the recovery plan, because that maturation process is an important factor in model operation in the predictive capacity and assessing the health of the system.

Q. Okay. Just one last question with inflows, as you characterize them very good flows in the early 1980's, did Pyramid Lake rise during that period of time? I would expect that it would, what was your --

A. We assume nine meters, so 27 to 30 feet let's say.

MR. COLLINS: Thank you. That's all I have.

THE STATE ENGINEER: Recross?

RECROSS-EXAMINATION

BY MR. VAN ZANDT:

Q. I just have one question. Is it possible, Mr. Strekal, that one of the reasons that the cui-ui may not grow as much or as quickly is because its food source is not abundant enough to supply the population?

A. And that is a possibility. There could be environmental stresses, it could be other fish competing for the same resource.

Q. But it's possible that the population of the fish in the lake could have overwhelmed the resources of the lake in order to sustain it, that might explain why the fish are small?

A. I don't know if that's necessarily the situation now, but every --

Q. My question is is it possible?

A. Oh, certainly it's possible, but that happens in any system.

MR. VAN ZANDT: That's all the questions I have.

THE STATE ENGINEER: Mr. Mackedon?

MR. MACKEDON: No, no.

THE STATE ENGINEER: I have no questions.

Questions from staff?

MR. PALM: No questions.

MS. JOSEPH-TAYLOR: No questions.

THE STATE ENGINEER: You can be excused, Mr. Strekal.

THE WITNESS: Thank you.

THE STATE ENGINEER: What's your pleasure, you want to take a break or continue on?

MR. COLLINS: It's what everybody else's pleasure

is. I'm willing to continue on.

We have two more witnesses, they shouldn't be, well, I wouldn't expect they would be that long, but maybe we should take a break so people can attend to things they need to attend to.

THE STATE ENGINEER: Let's take a short break. Ten minutes.

(Short break taken.)

THE STATE ENGINEER: Call the hearing to order.

MR. COLLINS: Did you direct me to call the next witness?

THE STATE ENGINEER: We're missing an attorney.

(Off the record.)

THE STATE ENGINEER: Be back on the record.

Call your next witness, please.

MR. COLLINS: United States calls Mr. Paul Wagner.

PAUL WAGNER

called as a witness in this matter,
having been first duly sworn,
was examined and testified as follows:

MR. PALM: Thank you.

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DIRECT EXAMINATION

BY MR. COLLINS:

Q. Mr. Wagner, would you please state your full name and your business address?

A. Paul Wagner. I'm the director of fisheries at Pyramid Lake Fisheries, Sutcliffe, Nevada.

Q. How long have you been the director of fisheries at Pyramid Lake, Mr. Wagner?

A. Ten years.

Q. Were you -- and so then you were the director of fisheries in 1994; is that correct?

A. That's correct.

Q. Did you appear and give testimony in the proceeding, in the consolidated proceeding involving a number of the unappropriated water applications on or about June 1st, 1994?

A. Yes, I did.

MR. COLLINS: I would move then the adoption by the United States of Mr. Wagner's testimony in that other proceeding which begins at Volume 3 of the transcript, page 538.

THE STATE ENGINEER: Any objection?

MR. VAN ZANDT: No objection with the same reservation I made for the other two.

MR. MACKEDON: I object, Mr. Turnipseed, if you're

going to admit it. I don't object to having it incorporated.
THE STATE ENGINEER: Objection noted. We'll incorporate Volume 3, page 538.
MR. COLLINS: And that also involves then Exhibit 95, Pyramid Lake elevation versus time chart, and so I would move that that be incorporated into this record as well.
THE STATE ENGINEER: Any objection?
MR. VAN ZANDT: No objection.
MR. MACKEDON: Same objection.
THE STATE ENGINEER: Objection noted. Exhibit Number 95 of the June '94 hearing will be incorporated into this record.
BY MR. COLLINS:
Q. Mr. Wagner, let me ask you as I think I've asked the others, if you were asked the same questions that you had been asked in 1994, would your testimony be so lengthy the same as then?
A. It would be the same length, the same as then. Since that time, there have been some additional studies that have been concluded and do add some additional support to the conclusions I was drawing at the time.
Q. Let me ask you prior to you getting to those, Mr. Wagner, were you present yesterday during the testimony of Mr. Chris Mahannah?
A. Yes, I was.

Q. And have you had an opportunity to review the report that Mr. Mahannah submitted and about which he testified, the report of Water Research Development, Incorporated?

A. Yes.

Q. Having reviewed that, Mr. Wagner, and concentrating on those elements of that report that deal with satisfaction of the needs of the cui-ui flows or whatever in this report that deal with the satisfaction of the needs of the cui-ui, do you have an opinion with regard to what's stated in this report?

A. Yes, I do.

Q. Can you please tell me what that is?

A. Well, the opinion is a lot of the points that Tom Strekal made are very, I agree with them on a more broader sense, but it was oversimplified, okay?

The report was somewhat simplistic in its analysis. To use an analogy, if we were making the, using an analogy of an alfalfa field, okay? Apply a water duty which would cause the alfalfa to sprout from the ground and begin to grow, and that would be it, there would be no application that it was a commercial crop. There it was being grown repeatedly and harvested, that the field needed to be kept wet, that you needed erosion control on the field. It missed the big picture of what needs to be understood when it comes to

managing the Pyramid Lake resource which is a holistic view of the resource.

And an aspect of the report which really sort of told the picture well and that hasn't been alluded to yet, is Table 3. When you look at the Truckee River flows below Derby Dam --

Q. Just a moment, let's get to Table 3, Mr. Wagner. That is at page 22; is that correct?

A. Yes.

Q. All right.

A. Okay. The average flow for this century beginning from 19, whatever, 18 to 1993, is 268,997 acre feet, roughly 267,000 feet has flowed below Derby Dam. Okay. Where did the rest go? It went through the canal. What happened? Pyramid Lake was destroyed as an ecosystem.

The lake level dropped, the trout were extinct by 1938, the cui-ui were on the brink of extinction by 1967, the lower river turned into an erosional mess, a Delta was built within Pyramid Lake as the Truckee River just turned into a wash, and all its sediments that supported trees and birds and fish ended up as a Delta which caused the trout to die which caused cui-ui to nearly go extinct.

That's where that 300,000 acre feet was to irrigate alfalfa. Here we are again, and we're asking to do the same thing to set this in motion again.

MR. VAN ZANDT: Objection. Is he making a speech or is he answersing the question that there's something wrong with the WRD report?

THE STATE ENGINEER: Please limit your questions, I mean your answer to the question asked.

THE WITNESS: Okay. That -- well, it was an answer, it was an answer that this report says it's going to divert water again in excess of what Pyramid needs to sustain itself as an ecosystem, for cui-ui recovery to occur, for fish passage to occur, for the lower river habitat to be reconstructed, and it just isn't going to happen.

It says it's going to be fine, it isn't.

BY MR. COLLINS:

Q. Mr. Wagner, you mentioned at the beginning of your testimony that you have additional information that has come to your attention since you testified in 1994, and you talked about, you mentioned reports or something. Could you amplify on that a little bit, please?

A. A report that's been recently produced was produced by the Army Corps of Engineers, it's a reconnaissance report on restoration of fish passage problems and habitat problems of the lower Truckee River. It was concluded in July of 1995. What this report determined is that --

Q. Just a moment, Mr. Wagner, let me -- is this the report you're talking about, the U.S. Army Corps of

Engineers, Sacramento District, Lower Truckee River Reconnaissance report dated July 1995?

A. Yes, it is.

MR. COLLINS: I would ask this be marked as an Exhibit.

MR. VAN ZANDT: I'm going to object to the admission of this report. First of all, there's not any foundation for it, it wasn't listed on the exhibit list. It is not indicated that it's being offered in rebuttal to anything. I think we were obligated under the prehearing order to reveal what exhibits we were going to introduce.

MR. COLLINS: It was not listed on the exhibit list for the United States. I'm willing to let Mr. Wagner answer specific questions. I think it's relevant to this proceeding, however it's a study completed this summer by the Army Corps of Engineers which I didn't even have at the time we submitted our list.

MR. VAN ZANDT: Of course, I don't have to state the obvious, if it had been on the list, we could at least attempted to get a copy of it if it was published in July of 1995.

MR. COLLINS: I might also add it is in the nature of rebuttal because it is, if you will contrast it to the report of Water Research and Development.

THE STATE ENGINEER: Is it possible for Mr. Wagner

to summarize the conclusions in the report and the analyses used to reach those conclusions in the form of rebuttal if I assume we're rebutting Exhibit 104?

MR. COLLINS: Yes, that's correct.

THE STATE ENGINEER: Without actually introducing the exhibit?

MR. COLLINS: Sure, I'm willing to do that. Mr. Wagner, could you do that?

THE WITNESS: Sure.

BY MR. COLLINS:

Q. Could you summarize for us then --

MR. VAN ZANDT: Excuse me, before he does that, could we at least see the report and maybe we could follow along even if it's not being offered?

MR. COLLINS: I apologize for the cover of this one, Mr. Mackedon, it was in Mr. Wagner's car. I think it got a little bit wet on the cover.

MR. MACKEDON: Don't be concerned.

MS. HAROLD: Are there any extras?

THE STATE ENGINEER: Pardon?

MS. HAROLD: You don't have any extra copies?

MR. COLLINS: I do not.

BY MR. COLLINS:

Q. Mr. Wagner, could you summarize then the portions of that report that you consider to be in opposition or at

least contrary to the report of the water research and development which you would like to be on this record, please?

A. Sure. The main finding of the report was Pyramid Lake needs more water than what it's presently getting. The minimum that they built their case upon in assumptions was 410,000 acre feet of inflow. That is the amount of flow that the lake would receive under the assumptions of the 1988 OCAP. That was the minimum.

What they actually identified was that they needed more water than that for about a 20-year period because the lake at its present level is too low. The level that it's at now is about 3,796, the minimum level they identified in order to facilitate fish passage, and to assure fish package will continue in the future is a level of 3,810.

In order for the lake to achieve that level, it needs an inflow of about 525,000 acre feet for the next 20 years and then it needs a minimum of 410,000 acre feet to maintain that level. The reason that's required is to allow fish passage so they can get up river to spawn.

It specifically states, and this is on page 4-1, first paragraph down, cutting of the river bed on the lower channel. And the last sentence of that paragraph, however, if lake levels were to drop below elevation 37 --

MR. VAN ZANDT: Slow down, I'm having trouble

following you and I'm sure the court reporter is too.

THE WITNESS: Okay. However, if lake levels were to drop below elevation 3,795 feet, meaning sea level, the start of a steep dropoff of the lake bed, a renewed period of down cutting could occur that may threaten Marble Bluff Dam and subsequently the rest of the river.

MR. MAHANNAH: Excuse me, what page are you on again?

THE WITNESS: 4-1. It's the fourth chapter, first page and what that refers to is a process that is actually occurring. Marble Bluff Dam was created as a grade control feature on the river and a fish passage facility. A picture of it, it's in color.

MR. VAN ZANDT: Which page are you referring to now, Mr. Wagner?

THE WITNESS: That's chapter eight, follows 7-38. And what this shows is a view looking up river at the dam and you see there's energy dissipaters on the dam and there's a row of about four of them showing. Okay.

If you look at that dam now, you'll see about 12 rows of dissipaters showing. The river has down cut dramatically below the dam. It is just melting away this lower river section to a point where the Bureau of Reclamation is looking at making modifications to the fish passage facilities presently at the dam.

MR. VAN ZANDT: Objection. Is he now summarizing the report, or is he now going off into another area?
THE WITNESS: Well, this is getting to, adding substance to the process that's occurring and the problems that it will cause for fish passage.
MR. VAN ZANDT: I'm sorry, I didn't direct that question to you.
Mr. Turnipseed?
MR. COLLINS: Maybe we could do this. Maybe you could restrict yourself at this point to just summarizing what's in the report and then we can get the specific questions or responses.
THE WITNESS: Okay.
MR. COLLINS: Is that acceptable?
THE STATE ENGINEER: That's fine.
THE WITNESS: So, it identified the lake needed a higher level, needed more water to achieve that. Not less, not a lot. In fact, 75,000 acre feet more suggested water rights and acquisitions to accomplish this. This is the Corps talking, Walker instead of Mort (sic).
I also identified that the best solution for the lower river environment is more water, that riparian vegetation is the key to re-establishing a lower river viable ecosystem. But in the type of country where you have sand and gravel as your river banks, the only thing to keep it in

place is vegetation and its roots. And they identify the means to achieve that by causing high water flows in the spring and gradually reducing them through the summer. Okay.

So, you allow the cottonwood seeds to get disbursed on the terraces and slowly bring the water down so their roots can grow to a depth that they'll be established and live and grow and allow the river to stop its erosive processes and become a viable habitat.

MR. VAN ZANDT: Excuse me, which portion of the report is about the cottonwoods, Mr. Wagner?

THE WITNESS: The cottonwoods is in Chapter 5.

MR. COLLINS: I think 5-14, is that approximately where you're summarizing from?

THE WITNESS: On page 5-14 at the very last sentence on that page it states, "Table 5.5 indicates that late spring flows on the order of 700 cfs to 4,000 cfs are required for the re-establishment of riparian cottonwood seedlings at appropriate stream bank elevations."

It also concludes on page 6-2, the middle sentence of that last paragraph on the page, "That restoration of habitat is not possible without the provisions for adequate flows that emulate conditions."

Again speaking to the need for water and natural flows which is absent diversions as much as possible.

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BY MR. COLLINS:

Q. All right. Thank you, Mr. Wagner.

In your analysis then, in leaving the Corps of Engineers report, you had mentioned at least another report or more reports that you were familiar with. Can you tell us what those are, please?

A. UC Davis conducted a water quality study on Pyramid Lake during the years 1989 to 1993. They produced a series of four volumes of technical reports and Volume 5 is in draft form. Volume 5 determined that the lake needs a minimum of 395,000 acre feet inflow annually to maintain the lake as an environment for the fish that are presently there.

Q. Thank you. Is there anything else, any other report that you're familiar with?

A. There's no other reports that speak directly to this issue that I'm --

Q. All right. Thank you.

Mr. Wagner, in your review of the reports submitted by Mr. Mahannah, did you find any evidence in that report that lake level elevation at Pyramid Lake was considered?

A. No, I didn't.

Q. Is lake level elevation important to the cui-ui?

A. It's essential. It is, you know, it is the basis for flows, that if you don't have the elevation, the minimum level, the spawning flows don't relate to the real need.

Q. So, the spawning flows in and of themselves are not, they're critical, but they're not the whole picture; is that what you're saying?

A. Correct.

Q. Are you familiar, Mr. Wagner, not only with the cui-ui, but with the Lahontan cutthroat trout?

A. Yes, I am.

Q. And can you tell us -- so, can you just tell us briefly your opinion, if Application 9330 were to be granted and if up to 100,000 acre feet of water were to be taken out when those flows are available, out of the flows now reaching Pyramid Lake what, in your opinion, would be the impacts on the cui-ui and on the Lahontan cutthroat trout?

A. They'd be detrimental for the reasons --another issue, there's two aspects of Lahontan cutthroat trout that needs to be considered as well as the cui-ui. There's the lake habitat and there's the river habitat.

The diversions under the application being considered would have a negative impact on both, and it would do it in several ways. The lack of inflow would cause a TDS in the lake to increase which has been demonstrated to be negative, and the lack of water to the lake would also result in fewer nutrients entering the lake.

MR. VAN ZANDT: I think for the record can we have TDS, please?

MR. COLLINS: Would you care to --
THE WITNESS: Total dissolved solvents.
MR. COLLINS: Thank you.
THE WITNESS: The number that's been identified as essentially being the threshold level for Pyramid Lake is approximately 5,900, and the present time we're in the range of 5,800. That's milligrams per liter total dissolved solids, so any decrease in inflow will result in a decrease in lake level concentration of those salts and negative consequences as a result.
BY MR. COLLINS:
Q. Who determines those, the level at which that becomes detrimental, who makes those determinations?
A. UC Davis came up with the number, it was based on a research that was done by Lock Heed Environmental Services that was conducted on the cui-ui population in the 1970's.
Q. Thank you.
A. The other effective nutrients is water steadily entering Pyramid Lake brings the flow of nutrients and nutrients feed the food chain which allows fish to get big, and Pyramid Lake historically had very big trout, the kinds people go to Flaming Gorge now to catch.
Today those fish are smaller and we have been seeing a trend for smaller fish since 1986, which just so happens to coincide with the decrease in lake level. Okay.

There's two things that happen. The TDS increases which is more stressful on the fish and it also -- okay, the decrease in lake level reflects less inflow coming into the lake bringing in fewer nutrients fueling the food chain, allowing the fish to grow to their potential which is one of the goals of our program, to achieve the potential of the fish.

Q. Let me just -- I maybe have one more question for you.

In your opinion, is the problem with regard to the size of the fish that you're seeing now likely caused by an over-population of fish in the amount of lake that you have?

A. No. We have plenty of lake at the moment, we have too little food and we have too small of a lake compared to what it should be. As the lake level dropped, a lot of the shore line along the lake, okay, what's called the lateral zone --

Q. I'm sorry, what zone?

A. Lateral.

Q. Okay.

A. It's a, shallow waters that get plenty of sunlight and support lots of invertebrate forms and is the most productive part of the lake.

As the lake level dropped, you reach the edges of the lake which have steeper drop-offs and are less productive

from a food standpoint, so where a higher lake level allows for a more productive system to allow the fish to reach their potential.

MR. COLLINS: I have no further questions of Mr. Wagner.

THE STATE ENGINEER: Mr. Van Zandt?

MR. VAN ZANDT: I just have a couple of questions.

CROSS-EXAMINATION

BY MR. VAN ZANDT:

Q. Mr. Wagner, can you tell us what the current population of cui-ui in Pyramid Lake is?

A. I don't have those numbers right off the top of my head. I believe the numbers that you have quoted for the benefit of Mr. Strekal, several million juveniles and the number for the adults fluctuates a good deal from year to year. 400,000 to 800,000, I believe has been the range, and a lot of that just has to do with your making a population estimate.

There's no firm number. You have juveniles that are entering the adult population, so it's hard to say exactly what that true size is. Pelican predation was believed to be a serious problem in reducing the numbers because I think it went from 800,000 to 400,000 one year. We said oh, my goodness, these guys, you know, we've got a bird feeder going here in terms of how quickly the population

is being diminished by pelican predation. The next year bounced back.

Now, how much of that was new recruits coming in and just an error in estimating, I can't say, but in terms of trying to arrive at that estimate, the U.S. Biological Survey is doing a great job, those guys are just really --

Q. Let me just ask you a question then. You say they're doing a great job, are you a trained marine biologist?

A. I am a fisheries biologist, yes.

Q. Fisheries biologist, and where did you get your degree?

A. Humboldt State University.

Q. And how long have you been practicing as a fishery biologist?

A. 18 years.

Q. 18 years. And how long have you been at Pyramid Lake?

A. Ten years.

Q. Ten years. In the ten years that you've been at Pyramid Lake, have you ever had an estimate of the adult population of the cui-ui expressed to you by the people who are doing the population surveys?

A. Yes.

Q. And what number was that, and what year are we

talking about?
A. Well, that's where, you know -- I mean, I hate to say it. Over these 18 years of work, my memory has turned into, right over only, as the computer term.
Q. You've been on the Pyramid Lake ten years?
A. Right. But, what specific years they relate to, I mean if I stated it, I could very much be in error which I hate to do since it becomes an issue. I believe 400,000 related to 1994 and 800,000 related to 1993 which showed a sudden drop.
The 1995 numbers I believe were closer to 800,000 again, but I'm speaking just not with these numbers in front of me, they're from a meeting maybe eight months to a year ago.
Q. You're saying that in 1993 when there was a fish spawning run of approximately 18,000 mature cui-ui, there were 800,000 fish in the lake, and in 1994, when there was 66,000 fish observed during the spawning run, there was a population half that size; is that what you're saying, Mr. Wagner?
A. I can't remember what you had said for the 1993.
Q. 1993 was, according to the testimony from Mr. Strekal, you were here for that testimony?
A. Yes.
Q. You heard him testify 18,000 fish during fish run

in the 1993?

A. Right.

Q. And then in 1994 it was 66,000, but your testimony is that from half the population we received almost, it's more than triple, triple the amount of spawning fish; is that correct?

A. That's correct.

Q. And in 1995 we went back up to 800,000 and we doubled the number --

A. That's correct.

Q. -- of spawning fish? Can you account for that disparity?

A. Yes, at least in part.

Q. Okay.

A. I have theories. A lot.

Q. This is your theory personally?

A. It's my theory personally. I think others may share it. A lot of the numbers are a result of fish passage. The facilities that are presently in place are not adequate. And that's one of the goals of the reconnaissance report was to identify better passage facilities so you can allow the population to fully realize its potential.

In 1993, there was some serious problems in the operation of things. 1994 --

Q. The operation of the fish ways?

A. The fish ways. The fish ways were designed for Lahontan cutthroat trout. They weren't designed for cui-ui. Nobody knew what a cui-ui fish passage facility looked like and I hate to say it, we still don't know exactly what it should look like. We have some ideas.

This year we're testing one of those ideas and hope to gain a better understanding and move towards a facility that allows the population to freely pass from the lake to the river. Until those are in place, the population will not realize its potential.

Q. So, from that explanation, is it fair to conclude one of the reasons that the cui-ui population, if it is deflated, if I can use that term, is, at least in part due to the inadequate facilities that are located at the lake now to enhance recovery?

A. That was one of the findings of the Cui-ui Recovery Plan.

Q. So, it's not strictly tied to an insufficient supply of water; is it, Mr. Wagner?

A. Their length?

Q. Their length.

A. If you have too low of a lake level, no matter what facility you have in place, it's not going to operate.

Q. The numbers that you quoted for waters that are required to flow into the Pyramid Lake in order to support

fish runs under OCAP and the additional water that's needed for those waters, those numbers which are supposed, and I haven't seen the numbers in the Corps of Engineer plan, those are really just taken out of the Cui-ui Recovery Plan; weren't they?

I mean, they're the same numbers; isn't that true?

A. No.

Q. You're saying the Corps of Engineers did an independent analysis of how much water it would take?

A. Yep.

Q. For the cui-ui to survive, they hired their own biologist?

A. It wasn't for the cui-ui to survive, it was to maintain the level of 3,810. They used an evapotranspiration number, they developed a model, they applied the UC Davis model that they utilized which was the calibrated model to allow for evaporative loses and inflow, so they did the separate analysis and they came within three percent of each other.

Q. Isn't it true, Mr. Wagner, that Marble Bluff Dam really hinders the recovery of the cui-ui?

A. No, no, it --

Q. Isn't that what's stated in the Cui-ui Recovery Plan?

A. Well, it hinders the upstream migration of the

fish, but if you took the dam out, the whole river would just melt away, and it would absolutely destroy the habitat up river. So, it's a balance. You've got a dam that's acting as a grade control to prevent further degradation of the environment, but at the same time it's an impediment to fish passage, so trying to resolve those fish issues when you get continued degradation below the dam is --

Q. So, it's kind of like damned if you do, damned if you don't?

MR. COLLINS: It's water over the bridge.

MR. VAN ZANDT: I'm sorry, I apologize on the record for that one.

BY MR. VAN ZANDT:

Q. I believe that in the report, I'm trying to hurry this up or we'll spend all night here, there was a reference that you made to supporting the cottonwood flow, supporting the cottonwood population and the flows to re-establish the riparian habitat in the 500 to 4,000 cfs range; is that correct, Mr. Wagner?

A. That's correct, 704,000.

Q. Isn't it true that the Cui-ui Recovery Plan says that the flows from May, from May and June should never exceed 2,005 cfs into the lake?

A. Well, that involves potential scouring of the eggs, but there are certain years where you're going to get flows

in excess of that, it's just uncontrolled runoff, and during those years it's maybe a good idea to take advantage of them especially.

Q. But there is an inconsistency there between those two numbers, isn't that correct, in what's required for riparian recovery and cui-ui recovery?

A. The remanaged flows, if you had the opportunity to manage it, you would keep it at 25,900 cfs level and that was also built upon information that existed at the time. As time goes on and we get flows within this range and it proves positive, then you incorporate it in in new reports and new recommendations.

Q. Are you familiar with the provisions under the Federal Clean Water Act which require setting of water quality standards for surface water?

A. Yes.

Q. Is UC Davis the regulatory agency that sets water quality standards for such a water of body?

A. No.

Q. Who's the agency that would set such a standard?

A. The Pyramid Lake Tribe.

Q. The Pyramid Lake Tribe on the reservation?

A. Yes.

Q. So, not UC Davis?

A. Right.

MR. VAN ZANDT: I don't have any further questions.
THE STATE ENGINEER: I'm sorry. Mr. Mackedon?

CROSS-EXAMINATION

BY MR. MACKEDON:

Q. Very quickly now, Mr. Wagner, as a part of your experience there at Pyramid Lake, have you studied the surrounding geology of the lake and attempted to understand the history of that lake even before, say, Fremont?

A. Yes. Me personally, no. I've supported the efforts of Larry Benson who's a paleo climatologist. He works for the U.S. Geological Survey research division, he's done extensive work on the two formations, historic lake levels, terrace levels, model lake levels historically.

Q. And from that information you've learned that the level of Pyramid Lake was much higher say in 1800 than it was in 1850?

A. Well, with that, I think Mr. Benson takes issue that the surveying instruments that they used at the time had a great deal of air. Usually what they used was, oh, essentially an altimeter, it's -- you measure atmospheric pressure.

So, these guys would measure the atmospheric pressure at a known benchmark, get on a horse, a storm front could come in and the measurements were vastly in error, so their reported levels sometimes don't make sense to paleo

evidence. He reputes a lot of the reported levels.
Q. Does the lengthy records, say, over many, many years indicate the lake is declining?
A. The lengthy record, well, its present level, this was a finding, that the lake is at its lowest level in 20,000 years and without diversions, it would still be at, its spill point in Winnemucca would still exist. That's his findings, that the lake declined relatively as a result of, from 5,000 years ago. But, there's no evidence that it's ever been lower ever present than it has been.
Q. Would the evidence suggest its elevation 5,000 years ago, that would be before Derby?
A. The evidence --
MR. COLLINS: We'll stipulate to that.
THE WITNESS: The evidence suggested that Walker Lake dried up, but it did not suggest Pyramid be at any level lower than the present lake.
BY MR. MACKEDON:
Q. 5,000 years ago was it higher?
A. Yes.
Q. Was it hundreds of feet higher?
A. I can't say specifically.
Q. Those lines that you see that indicate against the hillside --
A. Right.

Q. -- does that show the elevation of water and water receding over time; is that what they indicate?
A. Well, water has risen and fallen and essentially stabilized during this time, but they do record past lake levels.
Q. The exhibit that you showed us begins, that's showing the decline of the lake, the graph, where does that begin, what year?
A. That begins in 1867.
MR. VAN ZANDT: Which exhibit are we referring to?
MR. COLLINS: That's Exhibit 95. Do you have a copy from the previous proceeding?
BY MR. MACKEDON:
Q. That begins in 1867?
A. Correct.
Q. Do you have a graph that goes back before 1867?
A. There were -- no.
Q. From your paleontologist?
A. We do, we do.
Q. And would the elevations on this side be higher?
A. Oh, yes.
Q. Would show a steady decline even before, steady in the sense that over time the lake is declining; it does go up and down?
A. I'd have to take a look at how that went.

Q. Finally, you said when you showed the State Engineer this, we were experiencing the same old thing that Pyramid Lake will suffer for alfalfa. I take it you regard growing alfalfa versus maintaining lake levels for exchange; is that right?

A. Taking water out of the Pyramid Lake basin is not a good idea.

Q. That's your personal feeling?

A. That's my personal and professional feeling.

Q. And you understand that Mr. Corkill isn't trying to grow more alfalfa with this application or add to his land, however poor you may think that exchange is, but rather supplement the right that he has; you understand that?

A. I understand that.

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

THE STATE ENGINEER: Redirect?

MR. COLLINS: Yeah, just one question. Thank you.

REDIRECT EXAMINATION

BY MR. COLLINS:

Q. I should have cleared this up probably on direct my way, Mr. Wagner.

You mentioned University of California Davis studies, and the report, I think you said four volumes with the fifth one soon to be out or something like that?

A. Correct.
Q. Is that correct?
A. Correct.
Q. Who retained the UC Davis studies in that and what was their role in the study process?
A. The Pyramid Lake Tribe retained them to perform the studies.
Q. And did they -- they performed the studies with their own personnel and so on?
A. We performed it jointly. It was, it was done -- we would often collect, we'd collect the samples, we'd analyze the samples in conjunction with them to make sure there was adequate quality control on the samples. The study was actually funded by EPA. The money came from EPA to the Tribe which we contracted with UC Davis to perform the studies.
Q. Excuse me, go ahead. I didn't mean to cut you off.
A. The goal was to acquire the information to set a meaningful quality of water in Pyramid Lake, in the Lower Truckee River, and we needed information on how the resource functioned, what the fate of nutrients coming into the system and how that led to life, and what it would mean in terms of the quality in the lake over time as well as the Lower Truckee River.
MR. COLLINS: Thank you. You just answered my second question. I have no further questions.

THE STATE ENGINEER: Any recross?
MR. VAN ZANDT: I have just one or two questions.

RECROSS-EXAMINATION

BY MR. VAN ZANDT:

Q. Mr. Wagner, you're aware that as a terminus lake in the high desert, that Pyramid Lake's ultimate fate is to probably dry up; is that correct?

A. No.

Q. You don't believe that a high desert lake like that that are terminus Lakes eventually will dry up like the Carson Lake did and some of the other ones, ancient lake Lahontan?

A. A great deal of it reflects present management.

Q. So, if you say that humans were around when ancient lake Lahontan dried up, we would have intervened and prevented that?

MR. COLLINS: Objection.

MR. VAN ZANDT: He just said that.

MR. COLLINS: It's argumentative.

THE WITNESS: Well, I think --

THE STATE ENGINEER: I think we even have records in our office somewhere that tracks the lake level today and the lake level that would have been had man not interfered with the Truckee River flow. I don't, I think it's pure speculation as to whether Pyramid would end up a dry lake.

Mr. Wagner may be able to tell us because it would reach some, part of the reason because we're blessed with these wide ranges of flows to the extent they're impossible to capture all the flows that would flow down the Truckee River. He might be able to tell us whether it would biologically die. It would eventually reach some equilibrium where the annual flow reached evaporation, yet it may not totally dry.

MR. VAN ZANDT: He testified to some of the this. I thought he would be able to answer question.

BY MR. VAN ZANDT:

Q. Isn't it true, Mr. Wagner, that around 2,000 years ago the Truckee River actually flowed to Lake Lahontan?

A. There's no clear evidence, I mean, I think that's a disputed point with --

Q. There is --

A. -- to where --

Q. To lake Lahontan?

A. Sure, 2,000 years ago. Well, where is Lake Lahontan?

Q. Wherever it was 2,000 years ago. It's far south of Pyramid Lake?

A. I can't say, you know, what --

Q. You're aware of scientific literature that makes that kind of statement; aren't you?

A. No, to tell you the truth, I'm not. There is, there is a question as to -- no.

MR. VAN ZANDT: I won't take the time to show it to you. I have it with me if you want to look at it afterwards.

BY MR. VAN ZANDT:

Q. You really love Pyramid Lake; don't you, Mr. Wagner?

A. It's a unique feature on the planet.

Q. And you love your job as the fishery manager there; don't you?

A. At times.

Q. I kind of get the feeling that you also love the fish as a species; isn't that correct?

A. Yeah.

MR. VAN ZANDT: I have no further questions.

MR. COLLINS: I think maybe with regard to the question about flowing the Lake Lahontan, if Mr. Van Zandt was referring to ancient Lake Lahontan, I believe Pyramid Lake is a remnant of that; correct?

THE WITNESS: Correct.

THE STATE ENGINEER: That was my understanding as well as Walker Lake.

THE WITNESS: Right, and Honey.

MR. VAN ZANDT: That wasn't what I was referring to, it was a separate flow from the Truckee River.

THE STATE ENGINEER: Any questions from Mr. Mackedon?
MR. MACKEDON: No, Mr. Turnipseed.
THE STATE ENGINEER: I have no questions.
Questions from staff?
MR. PALM: No questions.
MS. JOESPH-TAYLOR: No questions.
THE STATE ENGINEER: Mr. Wagner, you can be excused.
Call your next witness, please.
MR. COLLINS: This I anticipate will be the last witness for the United States, Mr. Turnipseed. The United States calls Mr. Chester Buchanan.

CHESTER BUCHANAN,
called as a witness in this matter,
having been first duly sworn,
was examined and testified as follows:

MR. PALM: Thank you.

DIRECT EXAMINATION

BY MR. COLLINS:

Q. Mr. Buchanan, would you please state your full name and your business address for the record?

A. Yes. I'm Chester C. Buchanan, B-U-C-H-A-N-A-N. I

work with the U.S. Fish and Wildlife Service, 4600 Kietzke Lane in Reno, Nevada. I will not give the zip code.

Q. What is your position with the U.S. Fish and Wildlife Services?

A. I'm a fishery biologist serving as the assistant state supervisory for the Nevada state office.

Q. How long have you been in Reno with the Fish and Wildlife Service?

A. 15 years.

Q. During that 15-year period, for that 15-year period have you essentially been familiar with the issues which are being discussed in this proceeding with regard to the Truckee River, the Carson River and Pyramid Lake?

A. And cui-ui, yes.

Q. And cui-ui. Now, you're not a member of the cui-ui recovery team, are you, Mr. Buchanan?

A. No.

Q. But you have some relationship?

A. Yes. I'm the liaison officer for the Fish and Wildlife Service, basically I'm the go-between between the original director and the team. I'm the task master.

Q. Okay. Mr. Buchanan, in connection with the consolidated hearing on a number of water right applications for the unappropriated water, the hearing which took place specifically on June 1st, 1994, did you appear as a witness

in that proceeding?

A. Yes.

MR. COLLINS: At this time, I would move for the adoption of Mr. Buchanan's testimony from that proceeding for the United States in this case and it began Volume 3. I'm sorry, Volume 4 and it was June 2nd, 1994. I misspoke. Volume 4 of the transcript of proceedings of June 2nd, 1994. Direct examination began at page 563.

MR. VAN ZANDT: No objection with the same reservation for the Applicant.

MR. MACKEDON: I object, your Honor.

THE STATE ENGINEER: Objection noted. Transcript of the proceedings on June 2nd, 1994, Volume 4, page 563 and so on will be incorporated into the record in this proceeding.

MR. COLLINS: And my records indicate there were no exhibits that would necessarily have to be moved in with Mr. Buchanan's previous testimony.

MR. VAN ZANDT: That's correct.

BY MR. COLLINS:

Q. Mr. Buchanan, and I want to make this, I don't want to prolong this any longer than necessary, I know that people have places to go, but I also want to make sure that we're thorough in terms of what we're doing here.

With that in mind, I will ask you if you were

present yesterday during the testimony of Mr. Chris Mahannah?
A. I was only present for the cross-examination that you did.
Q. Have you had -- are you familiar with the report which is now marked as Exhibit 104 in this proceeding which was prepared and submitted and about which Mr. Mahannah testified yesterday?
A. Is this the one I'm holding?
Q. Yes.
A. Yes, okay.
Q. By Water Research Development, Incorporated?
A. Yes.
Q. Have you had an opportunity or have you reviewed that report, Mr. Buchanan?
A. Yes.
Q. Let me just briefly then ask you if you agree with the analysis and conclusions set forth in that report with regard to adequacy of protection for the cui-ui?
A. I, the answer is yes. I have drawn a conclusion. I find that there's really no foundation in here for the conclusion that I read on page 10 of the report which stated that, this is a quote under scenario three, "The spawning flows for Lower Truckee River to protect the cui-ui are met if this application is approved", unquote.
I don't find sufficient foundation in this report

for that conclusion. The basic problem that I have with it is the simplistic approach in here. There's really no analysis in terms of the various factors that affect cui-ui spawning runs, the reproduction, their success in reproducing.

Q. Mr. Buchanan, are you familiar with and we've had testimony here today from Mr. Strekal, are you familiar with the cui-ui model?

A. Yes. Tom and I were prime authors of that. Tom Strekal.

Q. And are you familiar with what's referred to as the cui-ui index?

A. Yes.

Q. We've had testimony about that as well in this hearing today.

With regard to Application 9330, are you familiar with that application?

A. Oh --

Q. That's the application.

A. The water right in question?

Q. That's here today.

A. Yes.

Q. If Application 9330 were to be granted by the State Engineer, do you have an opinion as to what the withdrawal of additional water from the Truckee River, what impact that

would have on the cui-ui?

A. It's my opinion that the advancements that we've made with the cui-ui in the last decade and a half which are quite evident in the last three years would be greatly reduced. We could be back into the situation where we were back in, say, the 1960's type situation.

We would have a situation, in my opinion, where cui-ui would be spawning less frequently, and when they did spawn, the larvae would not be as robust, that is, have very good survival in the lake. We'd probably have problems as Mr. Wagner testified with the quality of the water in the lake itself. We could be back in the situation, for example, and I think it comes out of the recovery plan, where in 1966 we only had three-year classes, this is groups of fish. Those are the years in which they were born.

I think one group was 1942, '46, and sometime in the early 50's.

Q. And this was what period of time that there were these three-year classes; you gave a date in 1961?

A. It was 1966 that observation was made. In fact, I think it, again, this is also in the report of Gary Scopotoni who's the leader for the National Biological Service in Reno, through his population studies found out in 1983 that 97 percent of all the adults in the lake came from the 1969 year class.

Q. Thank you. We've had testimony here today, Mr. Buchanan, that lake level is an important component of cui-ui, not only cui-ui survival, but cui-ui recovery. Do you agree with that?

A. Yes.

Q. We've had testimony here today that, that lake level is directly affiliated with inflows to Pyramid Lake. Do you agree with that?

A. Yes, because the -- there's a definite relationship, it's a fuzzy relationship, but there's a definite relationship between inflow lake level and the passage avenue for cui-ui to enter their historical spawning grounds up in the Truckee River.

In our analysis and again, this is based on data from 1980 to '87, we found a fairly decent relationship and that's how we came up with the figure 3,812 in terms of elevation. In the last few years we have noticed that there are opportunities that exist for cui-ui in some situations which we fully do not understand, that some of the population may be able to get over the Delta at lower elevations.

For example, in the last few years the lake has varied between 3,796 and 3,794. We've had a portion of the run make it over the elevation over, excuse me, over the Delta. So, what is quite evident is that there are situations where some fish can get over, but I think the

clear picture is that once you are, once the lake has risen 3,812 or in that neighborhood, then you have free, clear, easy access. Lower than this we do have clear, free access.

Q. Are you familiar, Mr. Buchanan, with the operation of Stampede Reservoir?

A. Yes.

Q. Is Stampede Reservoir important in the Cui-ui Recovery Plan --

A. Yes.

Q. -- effort?

A. It is an essential component to our management scheme. The way we use Stampede Reservoir is to try to maximize the benefits that we receive downstream from unregulated flows, as I call them, flows that arrive downstream of Derby Dam.

We use Stampede to try to achieve at least the minimum instream flows that we've identified in the recovery plan. Our objective here is to try to maximize the potential benefits that we have out there so we can improve the spawning success and also the quality of the larvae. I think it's quite evident how successful we've been.

Q. Would it be your opinion then, Mr. Buchanan, that if Application 9330 were to be approved and we've had testimony in this proceeding that, that with a 1930 priority date for that application which precedes the date for

Stampede Reservoir, if that were to be approved, would that impact the ability to store water in Stampede Reservoir for the benefit of the cui-ui?

A. It's my understanding since it would have a lower priority for storage or diversion of that water, that the amount of water available to be captured in Stampede would be a lot lower. Therefore, the net result is that we would have spawning flows less frequent in the future and the quality of those flows would be a lot less. Of course, this all depends on future hydrographs.

Q. Of course. Let me ask you maybe one final question, Mr. Buchanan.

You mentioned a moment ago that with regard to the cui-ui in 1983, I think you testified that approximately 97 percent of them were from a single year class --

A. Right.

Q. -- is that your testimony?

In your opinion, what does that tell you about the health of the cui-ui population?

A. In terms of historically, that is going back pre 1980, we had a situation where cui-ui were spawning infrequently. Through genetic analysis, we also found out the possibility the cui-ui have gone through a bottleneck. What we mean by a bottleneck is only a few fish have got up to spawn, got up into the river to spawn, and the net result

is most of the population have come from these fish, you lose your genetic diversity in the population and you can have some real problems down the road.

So, what we have been trying to do since about 1980 is trying to increase the frequency in which the fish are spawning, that is, the number of years from which they have suitable flows to get upstream and spawn and therefore trying to build the population up and hopefully at the same time try to recapture some of this genetic divert if possible.

MR. COLLINS: Thank you. I have no further questions for Mr. Buchanan.

THE STATE ENGINEER: Mr. Van Zandt?

MR. VAN ZANDT: Thank you, Mr. Turnipseed.

CROSS-EXAMINATION

BY MR. VAN ZANDT:

Q. Maybe you can answer this question for me, Mr. Buchanan. What is the current population of the cui-ui in Pyramid Lake?

A. As of 1994, it was one million fish approximately. The numbers that I have are personal communication from Gary Scopatoni with the National Biological Service in Reno.

Q. You have no numbers for 1995?

A. No. The reason we do not, we -- the reason they do not have a number is because they have to recapture the fish this year. It's sort of a delayed type of effect, but no, we

do not have the numbers for 1995 yet. We will have them this coming summer.

Q. Would you say, given the fact that there are 113,000 fish that were observed during this, during the fish run in 1995 compared to the 66,000 observed in 1994, that the population has more than likely increased?

A. Yes. The population has increased primarily from recruits from fish that were born during the early and mid 1980's when we had some extremely high flow water years.

Q. When you say that the population is one million, you're talking about mature adults?

A. Mature adults.

Q. So, there's still several million juveniles?

A. Yes. The numbers of juveniles are not exactly known. In fact, it's a very difficult number to come up with primarily because of the lack of technology to tag them. The very young fish, it's almost impossible.

Q. You testified that the, the lake level in, excuse me, most of the fish who were spawning in the 80's, I guess it was, were from the year group 1969?

A. Yes.

Q. Is that the proper characterization?

A. Yes, they were the parents.

Q. And you also testified that success of the spawning run is tied to this 3,812 lake level; is that not correct?

A. What was that again?
Q. That the success of the recovery of the cui-ui is tied to this the lake level being set at 3,812?
A. Right.
Q. Isn't it true that in 1969 the lake level was 3,790 or thereabouts?
A. Yes. I don't know the exact number, but I would agree with what you were saying because you probably know it.
Q. I don't know if you have Exhibit 95 there in front of you, I'll show you a copy of it, I believe this is 95; is that right, Mr. Collins, lake level surface elevations?
MR. COLLINS: Yes. I'm sorry.
BY MR. VAN ZANDT:
Q. Showing you now Exhibit 95 which is entitled "Pyramid Lake Surface Elevations" that we are trying to find 1969 extrapolating in there some way?
A. Yeah, about right in there someplace, I agree.
Q. Around 3,790?
A. Yes.
Q. So, it wasn't at 3,812; is that correct?
A. Right. But your dynamics at that time, that is the dynamics of the Delta could and probably were different. I can't tell you because nobody else really knows.
Q. During the fish runs in the last couple of years which you alluded in your testimony seem to be successful, I

think specifically you were referring to '94, '95, I assume, isn't it true, that the lake level during those two runs was approximately 3,795, well below 3,800?

A. Yes, I agree with you.

Q. You testified as to Exhibit 104 that you didn't believe that it accounted for all this, all the various perimeters that needed to be accounted for in order to determine whether a recovery of the fish could be accomplished; is that correct?

A. Yes.

Q. You described it, I believe as simplistic; is that correct?

A. Yes.

Q. And you also talked specifically about Stampede Reservoir, is that not correct, in saying that Stampede was an important component to the cui-ui recovery?

A. Yes.

Q. If the spawning flows from Stampede were accounted for in the analysis of water available as unappropriated water in the Truckee River and still there was additional water available, would that be a benefit or a detriment to cui-ui recovery?

A. If we had the water we have today plus additional water plus Stampede, yes, that would be a benefit.

Q. And my question was if that unappropriated water is

not allowed to flow to Pyramid Lake, and in the analysis that was done, the storage rights in Stampede were taken into account and fish flow was taken into account, and hence still there was unappropriated water some of which could flow to Pyramid Lake, but some of it might be appropriated under Application 9330, could that be of a benefit or a detriment to the cui-ui?

A. So we still have Stampede flowing in?

Q. Right.

A. And we have all the water flowing in except for some of the quote, unquote appropriated water?

Q. That's correct.

A. Yes, I would say that would be a detriment to them because over the long run when we do our analysis, it's not one year, two years, three years, it's the type of analysis where you have to look at things over time and we have to see what is the overall impact on, say, lake elevation, the passage issue you and I have been talking about, the age composition of the population, because that influences them, the looking at the eggs, the age composition. We also have situations, there's a variety of variables you have to look at. You can't just look at one.

Q. Maybe you can answer this question because I don't know the answer to it. But why is it that there is no population number in the Cui-ui Recovery Plan that will tell

the manager of the recovery operation that he has an indication that the cui-ui is on its way to recovery? Why is there no population number?

A. Because the problem with cui-ui is it's the habitat. If we were to take all diversions off the river today, we could walk away from cui-ui. They recover themselves, it's habitat.

The foundation of the recovery plan is trying to secure habitat. If we can get the habitat secured so the cui-ui have a certain probability of persisting, we don't care how many cui-ui are in there, all we want to know is do they have a good chance of surviving down the future, into the future.

Q. But there's some things that are not related strictly to the inflow of water that are important to the cui-ui habitat; isn't that correct? I mean, food source and some other things that are necessary for the cui-ui to survive; isn't that correct?

A. Okay, yes.

Q. And one of the things that we heard from prior testimony is that Marble Bluff Dam is both a detriment, you know, and a benefit to the cui-ui?

A. Yeah. Yes.

Q. You would agree with that?

A. I would agree to that. It's the type of situation

that Marble Bluff Dam has been a real benefit, still a hindrance, but it has been a benefit. It's helped us tremendously in bringing the population up and we're doing our best to try to improve the capacity of that facility.

And I think can you see in the numbers, part of the reason we have these passage numbers, we have made some improvements to the fish way, but in terms of where are we going ultimately with this, we're going to be able to pass greater numbers ultimately.

Q. But for example, it's possible to have a reduced amount of water flowing into Pyramid Lake that would, you know, stimulate the same kinds of recovery. The numbers that we saw in the last couple of years, I believe Mr. Strekal testified to them, 66,000, 113,000, and 66,000 was at 130,000 inflow during the fish run. We can have reduced inflows of water to Pyramid Lake to not all of the unappropriated water and past successful spawning runs; isn't that correct?

A. Yes. As Mr. Strekal and I think Mr. Wagner also testified, that 1993, '94, '95, we had tremendous runs and the flows in, I guess it was 1994, I think were below normal, but actually what happened there in 1994, is that we had a very warm spring, the snow melt started coming off very quickly, the water turbided up. It was very warm water and cui-ui started moving very, very early in the year.

That was a real advantage because it allowed two

things. Number one, the cui-uis move into the system early, it allowed for them to spawn, for the adults to move out. And also for the, a larvae to move out at a consequence because we're trying to be very conservative with Stampede because there are other uses such as recreational with Stampede, so we're trying to be very conservative, so we were able to cut off the flows early that year.

But just the opposite happened last year, it was a very late spring, I know my garden didn't grow, it was a very late year and the cui-ui moved very late that year. This year the water was cool, it was clear and we had some high flows, but they did start moving around. I think it was the first part of, first to middle part of June, and the larvae were not out of the system until almost the end of July. So, if does vary year to year.

Q. So, would you agree from the statement, from that testimony that reduced inflows of water to Pyramid Lake, if other conditions are somewhat optimum or reaching optimum, will produce the same result, you'll have a good fish run; is that correct?

A. We may be able to attract fish and provide them habitat to spawn in, but then the real question is what's the quality of the larvae? Are you going to get good production?

For example in 1987, I think it was, the survival rate on our larvae was one percent. That's really low.

Usually we get someplace between five and eight percent from an egg, fertilized egg to two-week-old larvae. Usually it's five to eight percent. 1987 was one percent.

Q. Now, would you agree, I don't know, we tried to do some calculations on average, you've heard the number that from the, from an observed number of fish to an, all the way through to a survival of the adult, that a single adult female can in a single run produce as many as 33 additional cui-ui?

A. No, I haven't seen that calculation.

Q. You haven't seen that calculation?

A. I haven't seen that calculation.

Q. Let me ask you, are you familiar with the term environmental base line --

A. Yes.

Q. -- as used by Fish and Wildlife Service?

A. Yes.

Q. Are you familiar with the Pinion Pines Project?

A. Yes.

Q. Pinion Pine Power Project?

A. And it used to be called Pilot too.

Q. Did you work on that project, Mr. Buchanan?

A. I consulted with the Sierra Pacific Power Company on it.

Q. Are you familiar with the, what I guess is an, in

essence, a no jeopardy opinion that was prepared by the U.S. Fish and Wildlife Service?

A. It was the Sierra Pacific -- it wasn't Sierra -- excuse me, wasn't -- the Department of Energy I think prepared a biological assessment and they asked for our concurrence that it would have no adverse impact on cui-ui and we concurred in the letter you're referring to.

Q. Okay. I'm going to show you that letter and I apologize, because I only have one copy of this, but I would like to offer it.

Is that the letter that you're familiar with on the Pinion Pines Project?

MR. COLLINS: Is that letter on your exhibit list?

MR. VAN ZANDT: No, it's not, but it's being presented to you, Mr. Collins, in rebuttal. And it's not as thick as your document.

THE WITNESS: I'm almost positive it is. Like you say, it's -- 1994, it's been a couple of years since I've seen it, but it should be the same.

MR. VAN ZANDT: I'd like to have this document marked.

THE WITNESS: Let me see the last paragraph, that's how I can zero in.

MR. VAN ZANDT: I apologize for some annotations on it that I ask you to ignore.

THE WITNESS: Okay.
THE STATE ENGINEER: A three-page document on letterhead by the United States Department of the Interior, Fish and Wildlife Service, Nevada Ecological Services state office has been marked as Exhibit 111.
If the other parties want copies of this, I can restart the copy machine and make copies when you're ready, if people want copies before they leave.
MR. COLLINS: It might be helpful.
MR. PELCYGER: Does that mean that Exhibit 111 -- that is the Army Corps of Engineers report was withdrawn?
MS. JOSEPH-TAYLOR: It was never offered.
MR. COLLINS: Yes, it was never offered.
THE STATE ENGINEER: We'll continue.
BY MR. VAN ZANDT:
Q. Okay. Mr. Buchanan, you indicated that you are familiar with this letter; isn't that correct?
A. Yes. I'd have to read it thoroughly, but go ahead, I know the gist of it.
Q. You know the gist of it. I'm specifically zeroing in on a determination by the Fish and Wildlife Service on the potential impact of a water right that has already been adjudicated under the Orr Ditch Decree. Are you familiar with that issue?
A. Right of the -- yes.

Q. That's addressed in this letter, in Exhibit 111?
A. Yes.
Q. And what was the conclusion, if you recall, that the Fish and Wildlife had as to the environmental, what's called the environmental base line and the Orr Ditch Decree for the water rights that were adjudicated?
A. What we concluded was that since these were Orr Ditch water rights, they had not been activated, but they had been adjudicated, and also that the Applicant was going to take the water out of the same diversion point without modifying any, any structure to increase the diversion out of that, that therefore there would be no effect because the Orr Ditch rights were already included in our base line.
Q. Okay. Now, if, Mr. Buchanan, the Orr Ditch right for the Newlands Project is as described in the, in the decree 1,500 cfs, wouldn't that be part of the environmental base line that the Fish and Wildlife Service would have to include in its analysis under the same policy?
MR. COLLINS: Objection, legal conclusion.
MR. VAN ZANDT: Wouldn't they have to -- I think the question was wouldn't they have to treat it the same, I guess, or was the question --
THE STATE ENGINEER: I guess you're saying since the Pinion Pines Power Project had a decreed water right in the Orr Ditch decree and that was incorporated in the base

line, you're asking him if the 1,500 cfs under Claim Number 3 was also included in the same base line?

MR. VAN ZANDT: Would be treated under the same policy as the Pinion Pines decision, that the water, the use of that water was within the environmental base line.

THE STATE ENGINEER: I don't know if it calls for a legal conclusion, if it does, he drew a legal conclusion when he sanctioned or wrote the letter. I think it's a fair question.

THE WITNESS: I didn't draw the legal conclusion here, our solicitor in Washington, DC did.

THE STATE ENGINEER: So then you can't answer the question?

THE WITNESS: No, I can't.

BY MR. VAN ZANDT:

Q. Well, let me put it this way. Is this, would this be characterized as a policy or do you think that's an actual legal determination?

A. I think it was a legal determination I was asking for.

Q. All right.

A. To help me figure out what was the base line.

Q. Why don't I ask you this question, Mr. Buchanan? Do you believe the law should be applied equally to all parties similarly situated?

A. I guess the law should be always applied equally to anybody and everybody, no matter what.

Q. Equally; is that correct?

A. We live in the United States.

Q. I hope we are. The question is, if that's, if that is a legal slash policy determination of the U.S. Fish and Wildlife Service as applied to that project and a similar condition existed in the Newlands Project, should the U.S. Fish and Wildlife apply the same legal standard and/or policy determination?

A. If it was legally determined that the 9330 was to be included as part of our base line and I was advised by counsel to do that, we would include it, and we'd probably have to go back and reinitiate some consultations on other projects such as this one.

Q. Okay, I appreciate that.

MR. VAN ZANDT: I'd like to admit Exhibit 111, offer that into evidence at this time, please.

THE STATE ENGINEER: Any objection?

MR. COLLINS: No, that's fine.

THE STATE ENGINEER: Mr. Mackedon?

MR. MACKEDON: No objection.

MR. VAN ZANDT: Just a couple more questions.

THE STATE ENGINEER: Exhibit 111 will be entered into the record.

(Exhibit 111 admitted into evidence.)
BY MR. VAN ZANDT:
Q. A couple more questions, Mr. Buchanan.
Is the cui-ui fish more important than the Bald Eagle, American Bald Eagle?
A. They're both listed in the Endangered Species Act and so therefore, we would have to consider the situation at hand at the particular moment.
Q. Are they given equal weight in determining impacts one against the other?
A. Yes, but again, you'd have to look at the situation.
Q. The same proposal affected one endangered species versus, I realize the Bald Eagle is only threatened versus endangered, but isn't it true that for any of the species on the endangered species list, that when you are trying to assess the impacts of a, of a proposal or an action, that you don't favor one endangered species over the other?
A. That's right.
Q. And that would apply to the Peregrine Falcon as well?
A. Yes.
Q. What about Fish and Wildlife Service responsibilities as to wetlands which might be part of a national wildlife refuge system --

A. In relation to?
Q. -- in relationship to judging whether an endangered species may overwrite a proposal for flowing water into a wetlands area?
A. It's my opinion that the endangered species will take precedence.
Q. Even if they are an endangered species in the wetlands?
A. It depends on how the endangered species are utilized in those wetlands, and you would have to evaluate if those wetlands were not there would it jeopardize the continued existence of that species. And you use the same standard with all species and that's how you would come to a conclusion.
Q. What is the Fish and Wildlife Services' position as to gauging a proposal that has a potential impact on endangered species, but also has a potential to have a serious detrimental effect on domestic water supplies, how is the balancing done in that case?
A. The one thing that we do when we review a project and if it looks like it's going to have an adverse impact, we try to use informal consultation with the applicant. Or not the applicant, but the action agency, sometimes with the applicants, and try to figure out a way to reduce this impact, so to actually eliminate the impact.

If we cannot eliminate the impact, it would go to formal consultation. At that time, we will make an evaluation whether this activity will or will not jeopardize the species. If it does jeopardize the species, the action as proposed could not go forward with our concurrence, but what we do propose and this is required by the law, is provide a prudent alternative to the situation. That if it was enacted in this manner, then they could, then they would have an exemption under Section 7, they could go forward.

So, just because you get a jeopardy opinion does not stop the project.

Q. I'm referring specifically to Application 9330 of the, if Application 9330 is not approved, we'll assume for purposes of this question there's going to be detrimental impact on the water supply in Lahontan Valley and that proposal is going through a proposal with the U.S. Fish and Wildlife Service to determine if there's a jeopardy to the cui-ui, you're saying that we, that the service would have to go out and try to find alternatives to try to lessen the impact on the domestic water supply?

A. If, if this was approved, is that what you're saying?

Q. If the application was approved.

A. If the application is approved, then we would consult with the, probably the Bureau of Reclamation, I'm not

sure who the actual agency would be, and try to make some kind of determination as to the impact of this project on any and all threatened and endangered species.

Depending upon what the project looked like, I can't tell you, we would try to develop any alternative language if it looked like we were going to form, provide a jeopardy opinion. I can't tell you whether we would or would not provide a jeopardy opinion, an analysis hasn't been made.

Q. Okay. If the U.S. Fish and Wildlife Service could not get adequate supplies of water for Pyramid Lake for recovery of the cui-ui, the Fish and Wildlife Service at that point would have, I guess, some limited options?

A. Yes.

Q. One of them might be extinction of the cui-ui?

A. Yes.

Q. The other one might be relocation of the cui-ui to a place where they could be sustained; is that not correct?

A. In the worse case scenario, yes.

Q. That would be an option that would be looked at if there was insufficient water supplies to maintain?

A. Yes.

Q. Mr. Buchanan, 400,000 plus acre feet of water evaporates from Pyramid lake every year?

A. That's my understanding.

MR. VAN ZANDT: I have no further questions.

THE STATE ENGINEER: Mr. Mackedon?

CROSS-EXAMINATION

BY MR. MACKEDON:

Q. Yes, Mr. Buchanan, you indicated in your direct testimony that you had examined this report and examined the effect of diversions that might occur if Application 9330 were granted.

A. Okay.

Q. And in your opinion, if in fact, if it were granted, that it, that the cui-ui recovery program would be set back where it was in the 60's?

A. Um-hum.

Q. Is that right?

A. Right.

Q. And that's your opinion?

A. Yes.

Q. What's the total quantity of diversions that you've assumed will occur as a result of this application?

A. I think -- let me -- I made some averages, but the problem I had with the analysis from what I saw in terms of looking at the operations with Stampede, I think we only had, what was it, a 12-year period of analysis, '83 to '93. I think that's what it was. Hold on a second.

Which table is that, is it 13 and 14?

MR. VAN ZANDT: Table 13 and 14.

THE WITNESS: Yeah. That's what I'm looking for. I was looking at scenario three which I assume we would still have Stampede, and I think during this time period, what was it, about 500, excuse me, 5,640 acre per year, that was the average I came up with, but I looked at your additional supplies and divided that by 12.

If you were to, say, go into the future for 90 some odd years and we maintain the, exactly the same hydrograph that we've had for the last 94 years, my rough estimate is Pyramid would probably drop about five feet.

BY MR. MACKEDON:

Q. In 90 years?

A. Yes, from what I see here.

Q. Now --

A. Making a lot of assumptions on a hydrograph.

Q. I understand. How much would it drop in, say, ten years according to the way --

A. It depends on what the future hydrograph is.

Q. Averaging the same way, you said it dropped in 90 years, it would drop about --

A. Let's put it this way. If we assume that this average that you have here that I calculated, 5,640 acre feet per year is a constant and holds true no matter what, well, then what is it in ten years, what, a quarter of a foot, a half a foot, something of that nature.

Q. So, the prediction there is you arrive at a condition equal to that of the 60's in about 90 years?
A. Would you restate that?
Q. You arrive at a condition equivalent to the 60's in about 90 years according to those averages?
A. In about 90 years if we maintain the same hydrograph.
Q. Now, you indicated that you, it was insufficient foundation for what Chris Mahannah or what Mr. Mahannah for the conclusions he was making in terms of the cui-ui fish credits he was applying there?
A. Right.
Q. Do you know what he was relying on for a foundation?
A. He was relying upon the minimum flow regime that was in your appendix.
Q. And is that in fact at exhibit, what is that, Appendix C?
MR. VAN ZANDT: Appendix C, 104.
MR. MACKEDON: Appendix C.
THE WITNESS: I think it is. I'll take your word for it.
BY MR. MACKEDON:
Q. This isn't my report?
A. Yes.

Q. And that's --
A. Yes.
Q. So, the foundation, you may be mistaken in your estimation, but he does have a foundation for the estimates he makes and it's contained in Appendix C?
A. And that was my problem, was that foundation.
Q. I understand now.
A. Okay.
Q. The final question I have is to inquire who prepared this document?
A. Initially I developed the flow regimes back in the 80's and I think that one there was developed by myself and Tom Strekal.
Q. In 1988?
A. Yes.
Q. Okay. So, he's relying on the information that you and Mr. Strekal prepared in putting in this document?
A. Right.
MR. MACKEDON: Thank you. I have no further questions.
THE STATE ENGINEER: Redirect?
MR. COLLINS: No redirect.
THE STATE ENGINEER: I have no questions of Mr. Buchanan.
Do you have any questions?

MR. PALM: No questions.
MR. COLLINS: Mr. Turnipseed, there is one last item before we, before the United States closes, I would like to know what the current status of Exhibit, I believe 91 is in the record?
THE STATE ENGINEER: I think there might need to be some -- let's go off the record for a moment.
(Off the record.)
THE STATE ENGINEER: Back on the record.
We've had an off-the-record discussion about the admissibility of Exhibit 91. I'd also like you to look at Exhibit 88, it shows that it's in the record and in fact it was stricken from the record from the earlier hearing.
While you're thinking about that, Exhibit 91 was entered in the previous record in the consolidated hearing. It is a Memorandum of Understanding of the State of Nevada as signatore to that memorandum as well as the Pyramid Lake Tribe.
MR. PELCYGER: And the Department the Interior.
THE STATE ENGINEER: And the Department of the Interior. I was not personally a signatore to that, and in fact, the State of Nevada has all kind of memoranda and things on various different agencies and I don't always give them the weight maybe that -- I mean, I consider the State of Nevada to be just like any other party to a proceeding before

me whether it's the Division of Wildlife, whether it's State Lands, whether it's the Department of Business and Industry.

At any rate, I don't know if that makes any difference in the arguments here, but it's already been admitted and it says what it says, whether there is bias in it or whether there are other things that can be read into it, that's up to you people to argue, I suppose.

So, anyway, the conclusion is Exhibit 91 is already in the record for whatever substance. It says it's a piece of paper that's signed by three parties and it says what it says.

Part of this hearing, this is a public hearing and I have to, before we conclude, offer any public comment to go onto the record or any other party.

MR. VAN ZANDT: I'm sorry, Mr. Turnipseed, I do have to call one rebuttal witness for a very short statement on this issue of the cui-ui index, if I may. And I apologize, but I believe it's necessary.

THE STATE ENGINEER: All right. Call the witness.

MR. VAN ZANDT: Call Mr. Lyman McConnell.

(Off the record.)

THE STATE ENGINEER: We'll be back on the record for, first of all, clarifying the record. Exhibit 88 has been stricken from the record, and it's not part of the record in this proceeding.

Mr. McConnell, you're still under oath.

MR. COLLINS: May I just interpose an objection to Mr. McConnell's testimony unless he's somehow qualified to testify about the cui-ui or --

THE STATE ENGINEER: What is the purpose of Mr. McConnell's testimony as it pertains to the cui-ui index?

MR. VAN ZANDT: I understand from the previous ruling of the State Engineer that there was a concern that the witness, Mr. Zippen, who was being asked questions about the specific information that was provided within the context of the TROA was not qualified to answer questions regarding a previously offered exhibit because he had no personal knowledge, didn't, didn't know the underlying assumptions and so forth.

Mr. McConnell on the other hand as to that exhibit is in fact the person who requested the exhibit from the author, was at the meeting where the information was presented and knows the underlying assumptions, and can provide testimony that would help the State Engineer understand the context of the cui-ui index as it was presented in the context of the TROA.

And again, the import of this is it's rebuttal to the information contained in Section, in the letter referred to as the Rieke letter, Exhibit 87, and its assertion that under Section 207 and implementation of Public Law 101618

there is going to be cui-ui recovery.

MR. COLLINS: We would object to the use of any information in this proceeding that resulted from those negotiations. I think we've been through that before.

THE STATE ENGINEER: I guess it doesn't matter whether the exhibit is in or whether the exhibit is out. If the testimony, if he's just going to read the exhibit, it's the same as having the exhibit in.

Mr. DePaoli, do you have any feelings about whether Mr. McConnell testifies to the exhibit and any of the information contained in it?

MR. DePAOLI: I would have the same objection for the same policy reasons regardless of who's talking about it.

THE STATE ENGINEER: And that's because it was information generated as part of a negotiations and settlement?

MR. VAN ZANDT: Well, again, I'd like to remind the State Engineer just for the record that it was a public session and there is no restriction, and Mr. McConnell will testify that to his knowledge there was no restriction and it's difficult to believe that information like that given out in a public forum like that could in fact be so restricted.

THE STATE ENGINEER: How --

MR. COLLINS: We stated our objection.

THE STATE ENGINEER: How does, I understand that Mr. McConnell can testify for the reasons why the letter was constructed and the reason that he requested it, but as to the analysis and the numbers and what conclusion might be drawn from the numbers, I don't see how he's qualified to do that.

MR. VAN ZANDT: Well, I'm not -- the issue is whether or not a witness could lay a foundation for the document which I believe Mr. McConnell can.

The other thing is that as one of the negotiators, this information is presented to the various people who are participating in the TROA process, they have to absorb this information, so from the District's standpoint, Mr. McConnell is the person appointed by the District to go to these meetings, absorb this information and react to it in the process. So, he must, at least from the District's standpoint, be able to comprehend the impact that this information has on the District and its participation in the TROA process.

And in fact, what he testified to, not whether the numbers are valid, but only that he received the numbers and what the District's reaction was, it was --

MR. COLLINS: The fact that Mr. McConnell was a negotiator in that process, I think is, just indicates why it should not be used in another proceeding. He received it in

that context.

THE STATE ENGINEER: Mr. DePaoli?

MR. DePAOLI: Well, it would seem to me at least that the reaction of the District to that letter is not relevant to the issues before the State Engineer.

MR. VAN ZANDT: We object to the -- I thought Mr. DePaoli's reason for objecting has to do with protecting the product that was developed by Westpac.

MR. COLLINS: Then the United States will object on the grounds of relevance.

MR. VAN ZANDT: Thank you, Mr. Collins.

THE STATE ENGINEER: Well, I don't think the District's reaction to the letter is necessary relevant. I guess the question I have is its relevance to Exhibit 87. I still don't quite see the tie there.

I believe we heard earlier that there were computer runs and this is one of hundreds or thousands and they all show various things and people draw various conclusions from those. And are you trying to tell me that the Assistant Secretary of the Interior who drew conclusions out of these runs similar to this one, therefore I should allow the evidence in?

MR. VAN ZANDT: No, I'm saying that in the offer of proof I made previously that, and I'll simplify this, that it's our position that using Section 207 of Public Law 101618

related to cui-ui recovery as a bar to the use of the facilities by TCID under Application 9330 when the actual implementation of the public law as against the base line that has been developed in the cui-ui index demonstrates that if Public Law 101618 is, in fact, implemented in the manner in which it is proposed to be implemented that, at least in some of the computer model runs, it will have a detrimental effect.

In other words, Public Law 101618 is implemented in the manner they're intending to implement it right now, it will have a detrimental effect on the Truckee recovery and not a benefit, and that's what the chart in Exhibit 111 shows.

THE STATE ENGINEER: I think one of the reasons of detrimental effect is because one of the assumptions in 101618 and the Operating Agreement is considering a number at build-out of the Sierra Pacific system, and we don't know exactly what that will look like at this point, but as more water is used in the Truckee River and more water passes through the sewage treatment plant, et cetera, et cetera, et cetera, there has to be impacts. So, maybe, some may be negative.

In this case, you're going to show one example of how it could be negative, implementation of the public law.

MR. VAN ZANDT: The information is clearly

relevant. Whether or not it carries any weight with the State Engineer is entirely up to you, but I believe it's admissible in these proceedings.

THE STATE ENGINEER: I've already ruled on the exhibit. Can he testify without using the exhibit just in a general sense on why he requested the information and what he did with it and maybe what his opinions are of the information?

MR. VAN ZANDT: I believe he can, yes.

THE STATE ENGINEER: Please proceed.

LYMAN McCONNELL,

recalled as a witness in this matter,

having been first duly sworn,

was examined and testified as follows:

DIRECT EXAMINATION

BY MR. VAN ZANDT:

Q. Mr. McConnell, you are the project manager for Truckee-Carson Irrigation District; is that right?

A. That's right.

Q. In that position, you represent the District in various proceedings and meetings in the local area on various issues; isn't that correct?

A. That's correct.

Q. One of those issues has to do with the Truckee

MR. VAN ZANDT: 75.
THE STATE ENGINEER: Is that possible?
MR. VAN ZANDT: It's going to be tough.
MR. COLLINS: Not to exceed 50 pages as a suggestion.
THE STATE ENGINEER: Not to exceed 50 pages.
MR. COLLINS: That's fine.
THE STATE ENGINEER: All right. All the briefs will not exceed 50 pages.
Are there any other matters that need to come before this hearing? Hearing none, this hearing is closed.
(The proceedings concluded.)

STATE OF NEVADA)
)
CARSON CITY)

I, MICHEL LOOMIS, a Certified Shorthand Reporter, do hereby certify;

That on January 31, February 1 and 2, 1996, at 123 East Nye Lane, Carson City, Nevada, I was present and took stenotype notes of the hearing held before the Nevada Department of Conservation and Natural Resources, Division of Water Resources in the within entitled matter, and thereafter transcribed the same into typewriting as herein appears;

That the foregoing transcript, consisting of pages 1 through 621 hereof, is a full, true and correct transcription of my stenotype notes of said hearing.

Dated at Carson City, Nevada, this 14th day of February, 1995.

_____
MICHEL LOOMIS, CCR #228