STATE WATER RESOURCES CONTROL BOARD

PUBLIC HEARING ON AMENDED JOINT PETITION OF THE IMPERIAL IRRIGATION DISTRICT AND THE SAN DIEGO COUNTY WATER AUTHORITY FOR APPROVAL OF A LONG-TERM TRANSFER OF CONSERVED WATER PURSUANT TO AN AGREEMENT BETWEEN IID AND SDCWA, AND APPROVAL OF CHANGES IN POINT OF DIVERSION, PLACE OF USE AND PURPOSE OF USE UNDER PERMIT NO. 7643 (APPLICATION 7482).

MONDAY, MAY 13, 2002
9:00 A.M.

BONDERSON BUILDING
SACRAMENTO, CALIFORNIA

REPORTED BY: ESTHER F. SCHWARTZ
CSR 1564

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SACRAMENTO, CALIFORNIA

MONDAY, MAY 13, 2002, 9:00 A.M.

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CHAIRMAN BAGGETT: Good morning. We will go back on the record. It is hard to take a week off. Back into it by the end of the day. We will be back at it, I'm sure. A couple -- cell phones, anybody who has them, please turn them off. A couple of comments, just sort of to give you a heads up.

One is I will be sending out interrogatories on the Board's own motion to the Colorado River Indian Tribes asking for some specific information regarding water rights and time and so on. Those should be out in a day or two. And we'll also submit a time for responses, time for them to submit, time for responses or so. I just wanted to give you a heads up.

The second issue is I have decided we are going to have presubmittal on all rebuttal testimony. So we will allow some time frame. I wanted to give you, again, heads up so you can start -- I am sure you are thinking about it already as the parties have gone already. I might want to give you a little notice, and we'll see how this week goes in terms of allowing people the time to submit that.

MR. OSIAS: Does that mean sharing any exhibits we wan to use by presubmittals?

CHAIRMAN BAGGETT: Just like we do on a normal case in chief and witnesses.

I think it will save us some time in the long run, although it may cause us a week or two delay. I think maybe honing the questions and no surprises, and we'll see how it works. I know the Board has not done that in the past. I think it will be worth trying, given the complexities of the issue and the amount of testimony we have in this file.

With that I think we've decided we'd lead off today with Phil Gruenberg and the Regional Board. Should be no case in chief, if you will, just a witness and some comments, unless there is any questions before we --

MR. FLETCHER: I wondered if we should deal with the scheduling matter considering the E-mail from Colorado Tribes. I received an E-mail yesterday.

CHAIRMAN BAGGETT: I was just made aware of that. They didn't copy me on the E-mail yesterday when I was at home, at least I didn't notice it.

MR. OSIAS: We haven't seen it either.

CHAIRMAN BAGGETT: Here is the E-mail. There has been a death in the family of their chief witness, and so certainly that is something we can take into account. They won't be available until Thursday.

I think at this point we will put them on after we do the environmental panel unless there is an objection.

MR. ROSSMANN: Not an objection, your Honor. I did see Mr. Shepard's E-mail last night and responded to all the parties. Our witnesses are hoping to get on on the 16th and the 17th. So I suggested that perhaps the Tribes could go after that. And Mr. Shepard did send me a reply this morning which said that that sounded good to him. But I guess they are not here this morning?

CHAIRMAN BAGGETT: No.

Is that a problem with anyone?

MR. FLETCHER: I don't think it will be a problem for us, at least, Defenders that is. Of my four witnesses, two will be here in the morning; two others in anticipation of their case will be here later in the day. One of those two may be available later in the morning if needed. So I think just by juggling witnesses maybe there shouldn't be a problem.

CHAIRMAN BAGGETT: So at this point we'll go through Regional Board, then the Salton Sea Authority, then we will do the environmental. Then we'll do County of Imperial.

MR. ROSSMANN: Yes, sir.

CHAIRMAN BAGGETT: Then we will follow with CRIT.

MR. ROSSMANN: Just for the Board's information and the parties' information, Mr. Heuberger can be here the afternoon of the 15th if we make really good time. Otherwise we are ready to start on the 16th.

CHAIRMAN BAGGETT: Very good. In the meantime let's see how the day goes.

MR. ROSSMANN: Yes, sir.

CHAIRMAN BAGGETT: Mr. Gilbert.

MR. GILBERT: My witnesses are planning to be here Thursday and Friday, if necessary.

CHAIRMAN BAGGETT: I think we'll just have to see how the day goes and tomorrow, we'll have a much better idea tomorrow once we get through the opening of the environmental, certainly if we get to the environmental. Do the Salton Sea today.

So then we will let the Tribes know that they will go after the County of Imperial. We'll just follow the schedule each morning. We can put an update on where we are in the schedule of the hearing. With that, we are ready for the Regional Board. And I think we haven't sworn you in, Phil.

(Oath administered by Chairman Baggett.)

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DIRECT TESTIMONY OF REGIONAL WATER QUALITY CONTROL BOARD

BY MR. GRUENBERG

MR. GRUENBERG: My name is Phil Gruenberg. I am the Executive Officer with the Regional Water Quality Control Board, Colorado River Basin region. We have jurisdiction over the Salton Sea and the Colorado River watershed in

California. I've worked for the Regional Board since 1971 and have been Executive Officer since '89. I have a degree in marine biology from Cal State University at Long Beach. I have submitted written comments previously. I swear to best of my knowledge that those comments that were submitted are true and correct.

I also submitted Exhibits 2, 3 and 4 that were prepared by Regional Board staff. Those were prepared by Jose Angel, supervising WRC engineer who has been with the Regional Boards for a good many years, and he is an outstanding employee; Dr. Carpio, an environmental scientist with a Ph.D. in ag and environmental chemistry from U.C. Davis; and Dr. Zeywar, who has a Ph.D. in soil water irrigation science from the University of Arizona.

I did request those staff to prepare comments in writing to back up my own testimony, particularly on the topic of selenium which I do not have a lot of expertise or detail on. So at this point I am going to give you a brief overview of the high points of the written comments that I previously submitted, and these comments are going to focus on the water quality impacts that are of concern associated with the proposed IID/San Diego water transfer.

Next.

Before I get into those specific concerns, I want to just very briefly and rapidly go over the beneficial uses of

the water bodies, the subject water bodies, with the transfer. In our water quality control plan we designate beneficial uses for all of the water bodies in the region. For the Salton Sea these are the beneficial uses that are designated: Warm water habitat, which for the Salton Sea is an extremely important beneficial use. The Sea supports a prolific fishery which supports in turn many fish eating birds.

Another very important beneficial use of the Sea is wildlife habitat. The Sea supports over 400 species of birds, includes a federal wildlife refuge and part of the Pacific Flyway. So very important beneficial use.

Water contact recreation is also an important beneficial use at the Sea, particularly if fishing is considered a water contact sport. The Sea is not used extensively for swimming or water skiing, but does see a minimal amount of that use also. Nonbody contact water recreation, primarily things like bird watching is important at the Salton Sea.

And finally preservation of rare, threatened and endangered species. The Salton Sea is home to several of those, so that is another important beneficial use of the Sea. Then, finally, this is not recognized as a beneficial use, but it is the primary purpose of the Sea which is as a sump for agricultural drainage as designated by Congress

initially in 1994.

Next.

MR. OSIAS: Excuse me, Mr. Chairman. This wasn't submitted as an exhibit so if we can get one eventually, that would be helpful.

CHAIRMAN BAGGETT: If you can provide a copy of the Power Point. Normally we have these submitted in advance.

MR. GRUENBERG: Sorry about that. It was done at the last moment.

CHAIRMAN BAGGETT: We have pretty formal rules. This isn't quite the same as the Basin Plan.

MR. GRUENBERG: I am sorry.

The tributaries to the Salton Sea in the Imperial Valley include the New and Alamo River and over 1,300 miles of agricultural drains. The beneficial uses designated for these are warm water habitat, and it is probably a minimal use, these drains are not highly important in that regard, but they do serve some purpose.

Wildlife habitat, again, a minor use if it is compared relative to Salton Sea. Some habitat for rare, threatened and endangered species. Again, relatively minor in comparison to the Sea. A minor amount of recreational activities. And, finally, an extremely important beneficial use, freshwater replenishment. These waterways are the ones that feed Salton Sea and support its beneficial uses.

Next.

Those are the water quality impacts that are of primary concern. The first one is Salton Sea salinity.

Next.

The present salinity of Salton Sea is about 45 parts per thousand. Ocean water is approximately 35 parts per thousand. The Sea is at a point right now where the fish and aquatic life are probably suffering from the elevated levels of salinity. It is projected that when it reaches 60 parts per thousand, that fishery will be lost and thus affecting the fish eating birds at the Sea.

Another impact from salinity increase is potential for a Salton Sea restoration project. It is possible to reduce and stabilize the salinity at the Sea through an engineered project. However, if the freshwater inflows to the Sea decline to a great enough point, then it is going to be impossible to address that problem.

The water conservation measures that are selected for the water transfer are going to have a great bearing. Depending on which ones are selected, that will have either a moderate impact on the Salton Sea or a severe impact on the Salton Sea.

Next.

In the upper left corner is a photo showing tailwater return flow. There is a pump there that takes tailwater

from the end of the field and returns it back for reuse. If all of the water that is conserved for the transfer is conserved by utilizing this method, this will result, if the transfer is for 300,000 acre-foot per year, in that total amount of reduction of inflow into the Sea. Such a reduction of inflow into the Sea would probably make the Salton Sea restoration project impractical because of costs. At one point in time the Regional Board recommended pump back systems as a means of addressing pollution control. However, because of Salton Sea and the desire to address the salinity problem, we backed off from that and are now recommending end-of-field treatment or BMPs for wastewater control.

In that middle picture there is an example of that, of some end-of-field BMPs.

Finally, in the lower right photo that shows ground, former farm ground that is now being fallowed. If that was the means by which water would be conserved for the transfer, that would have the least impact on the Sea. For a 300,000 acre-feet per year transfer that would result in only approximately a hundred thousand acre-foot per year loss to the Sea. That could even be seen as somewhat of a benefit, some loss of water to the Sea because the Sea is right now at almost a flood stage, and any severe flooding events could cause it to create problems. So some loss of

flow might be beneficial.

Next.

The other water quality impact of concern is selenium. There is presently an advisory recommending a limited consumption of Salton Sea fish that has been fairly longstanding and issued by the Department of Health Services. The wildlife threat in selenium buildup is well documented by Kesterson and other situations. I am not going to attempt to go into that.

Finally, there is a federal water quality standard of five parts per billion set on selenium in water. The Regional Board has also adopted that in its water quality control plan. Most of the tributaries flowing into the Sea exceed that at present.

They -- like the salinity situation, the water conservation measures that are selected for the transfer are going to have a great bearing on selenium concentrations in the drainage ways and in the Salton Sea.

Next.

There is a bunch of question marks there on the Sea itself. And all I can say to that is we are not sure what is going to happen to the Sea. There is not enough known about the science of selenium in the Sea to project what further increases in concentration in the flows tributary to it would do, particularly if the Sea is reduced in size. It

becomes a smaller sea. We just don't know.

The New River has a lower background level of selenium than the Alamo River and the other Imperial Valley drains, partially because or actually primarily because one-third of the flow comes from Mexico, and that water is low in selenium. However, note in yellow that there is a potential significant increase depending on which conservation measures are selected. Same for Alamo River and the rest of the drains in the valley.

Next.

On the left is a slide showing tile water that is a primary source of the selenium that is flowing into the drains and into Salton Sea. It averages about 25 parts per billion of selenium. On the right is tailwater. It is very low in selenium. It is actually diluting out the selenium in the tile water. So, again, if the conservation measures focus on tailwater pump back as a means of conserving water selenium levels will go up.

That concludes my overview.

CHAIRMAN BAGGETT: Thank you. You are available for cross-examination?

MR. GRUENBERG: Yes, I am.

CHAIRMAN BAGGETT: Have a seat.

Mr. Gilbert, do you have any questions?

MR. GILBERT: Thank you, Mr. Chairman.

CROSS-EXAMINATION OF REGIONAL WATER QUALITY CONTROL BOARD

BY MR. GILBERT

MR. GILBERT: Good morning, Mr. Gruenberg.

MR. GRUENBERG: Morning.

MR. GILBERT: Was the Salton Sea intentionally created for wildlife and recreational uses or was it a secondary effect of using Colorado River water for agricultural uses?

MR. GRUENBERG: It was specifically -- well, it was historically created in 1905, is when its beginnings were when the Colorado River overflowed its banks and it appeared that it would undergo a natural cycle, which in the past meant that it would fill up and then dry up. However, agriculture became developed in Imperial Valley and discharged into the Sea. As I pointed out in my presentation, in 1924, that is when the Salton Sea was initially decreed an agricultural sump.

Since then the other beneficial uses have developed there.

So, no, I would have to say that based on that, my take is that it was not specifically created in 1924 as a wildlife habitat. It developed into that, though, however.

MR. GILBERT: Thank you.

That is all.

CHAIRMAN BAGGETT: Thank you.

Mr. Du Bois.

CROSS-EXAMINATION OF REGIONAL WATER QUALITY CONTROL BOARD

BY MR. DU BOIS

MR. DU BOIS: Mr. Gruenberg, I believe you said in your testimony that the selenium effect could be mitigated?

MR. GRUENBERG: That was in one of the staff exhibits that was submitted, attached to my testimony and, correct, I believe they indicated that it could possibly be mitigated.

MR. DU BOIS: Could you describe the methods by which we or you could -- farmers or the Board or others could mitigate the effect of selenium?

MR. GRUENBERG: I prefer not to. That was one of the exhibits that I attached that staff wrote up for me. That would be better accomplished by staff, in my opinion. I could make that staff available in the future if requested to come here and discuss that.

MR. DU BOIS: Is it, in your opinion, feasible for the farmers to mitigate the effects of selenium?

MR. GRUENBERG: I believe it is something that should be considered, but I am not in a position here today to decree that it is feasible. The economics of it would have to be considered. It would come down to an economic question and technical question. I don't believe there is enough information for me to attempt to answer that in a yes or no fashion.

MR. DU BOIS: That is all I have.

Thank you.

CHAIRMAN BAGGETT: Thank you.

Mr. Rodegerdts.

MR. RODEGERDTS: Pass.

CHAIRMAN BAGGETT: Mr. Rossmann.

MR. ROSSMANN: Yes, sir.

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CROSS-EXAMINATION OF REGIONAL WATER QUALITY CONTROL BOARD

BY COUNTY OF IMPERIAL

BY MR. ROSSMANN

MR. ROSSMANN: Just a few quick questions, sir. Your concerns are just -- your Board's concern is water quality; is that correct?

MR. GRUENBERG: That is correct.

MR. ROSSMANN: You don't consider air quality?

MR. GRUENBERG: No, we don't.

MR. ROSSMANN: How about economic impacts?

MR. GRUENBERG: Yes.

MR. ROSSMANN: In saying that fallowing might offer a less damaging way to carry out the project, did you evaluate the economic impacts of fallowing on the County of Imperial?

MR. GRUENBERG: No, I didn't. My reply to that is the economics of everything need to be considered for a full picture, the economics of the potential loss of the Salton Sea and all its beneficial uses, the economics from a

buildup in selenium, the economics to Imperial Valley should fallowing be considered or implemented. There is many different facets of which economics needs to be looked at, in my opinion, and that will probably lead a way through this problem.

MR. ROSSMANN: I understand your position not to be advocating a particular course of action, but rather just providing information for the Board to consider.

MR. GRUENBERG: Correct.

MR. ROSSMANN: Thank you very much.

CHAIRMAN BAGGETT: Mr. Fletcher.

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CROSS-EXAMINATION OF REGIONAL WATER QUALITY CONTROL BOARD

BY DEFENDERS OF WILDLIFE

BY MR. FLETCHER

MR. FLETCHER: Morning, Mr. Gruenberg.

MR. GRUENBERG: Good morning.

MR. FLETCHER: Could we put up the chart showing selenium levels in the various water bodies that you have concern with? I think that would make things a lot easier.

Thanks.

What is the water quality objective shown on the chart for selenium in the drains, the Alamo River, New River and the Salton Sea?

MR. GRUENBERG: The water quality objective for all of

those water bodies is five parts per billion. That is right at the light green line where it says WQO, water quality objective.

MR. FLETCHER: Where does that water quality objective come in from and how was it set?

MR. GRUENBERG: It was initially set as a federal standard. It was adopted by the Regional Board a few years ago.

MR. FLETCHER: What considerations go into setting standards?

MR. GRUENBERG: Technical capability, economics, many different things.

MR. FLETCHER: I guess the chart there shows the current levels of selenium in the Sea, rivers and the drains. What are those approximately, for the record?

MR. GRUENBERG: In the Salton Sea the water level or the water concentration of selenium is approximately one part per billion. In New River it is approximately four parts per billion. In Alamo River it is approximately seven or eight parts per billion. And in Imperial Valley drains, identical to Alamo River, approximately seven or eight parts per billion.

MR. FLETCHER: The Sea's level of selenium seems to be pretty low in comparison to its sources. Why is that?

MR. GRUENBERG: Because the selenium is getting uptaken

in the food chain, and thus the fish have accumulated it, and thus the advisory on fish consumption, of limited fish consumption in Salton Sea.

MR. FLETCHER: So let's just go through it. It looks like the Sea and the New River currently do not violate the water quality objective; is that right? And Alamo River and the drains do?

MR. GRUENBERG: The Sea doesn't violate the water concentration objective, no. The New River usually doesn't. I believe if you looked at it over a period of time, you might find some violations at various times imbedded in here, but the average, no, does not exceed the standard.

MR. FLETCHER: And it looks as though -- what are the approximate levels there of selenium concentration should the transfer be implemented? I assume that -- is that a ramp up?

MR. GRUENBERG: Yes. That is under a worst case situation. If there was use of tailwater pump back, for example, to accomplish the transfer goals at 300,000 acre-foot per year, it would result in what appears to be there, a 25-, 30-, 30-percent increase.

MR. FLETCHER: So, if the transfer is implemented, the selenium concentrations for the Sea and New River which currently don't violate the objective would violate the

objective; is that correct?

MR. GRUENBERG: For the Sea it might. We have question marks. We don't know what is going to happen to the Sea. For New River, likely it would go into a violation situation. It would also increase and become more of a noncompliance matter with the Alamo River and the Imperial Valley drains.

MR. FLETCHER: There is some uncertainty indicated there regarding what is going to happen to the Sea. Why is that uncertainty there?

MR. GRUENBERG: Not all the science is known about the Sea.

MR. FLETCHER: You stated just a minute ago that some of the selenium currently is being uptaken by the food chain?

MR. GRUENBERG: We do that.

MR. FLETCHER: If that food chain were to vanish or be fairly substantially altered, what would happen to the selenium?

MR. GRUENBERG: I am not prepared to speculate on that.

MR. FLETCHER: Can you describe for me State Board Resolution 6816 that is mentioned in the Exhibit 2 on Page 1?

MS. OKUN: Objection. That calls for a legal conclusion, and 6816 speaks for itself.

You can answer.

MR. FLETCHER: I'm not requesting a legal conclusion. Just what are its common terms, the State Board Resolution 6816?

MR. GRUENBERG: It is a nondegradation policy.

MR. FLETCHER: Would the -- what does that policy state?

MR. GRUENBERG: It states that the beneficial use of waters of the state shall not be adversely affected and water quality will be maintained at levels at which it is at unless it is in the public interests to do otherwise.

MR. FLETCHER: You have to bear with me for a minute.

What are some of the potential impacts on -- Strike that.

In the testimony it stated that wildlife biologists have indicated that increases in present selenium concentrations could have disastrous consequences in the drains.

Can you tell me what that statement means, what that statement refers to?

MR. GRUENBERG: That one kicks back to exhibit -- one of the exhibits?

MR. FLETCHER: That statement is in exhibit --

MR. GRUENBERG: I think Exhibit 3. Yes, Exhibit 3. I will be honest, I don't think Exhibit 3 really touches the question what would happen to the Salton Sea. It just

explains that selenium has created great environmental problems in other areas.

I think the best I can offer you is that if there are increases in selenium levels going into the Sea or increases in concentrations of selenium, which is a more likely situation of tributaries to the Sea, it is like a roll of the dice and could turn out to be a catastrophic situation. It may turn out to be short of that, but it is certainly not a desirable thing to have happen.

MR. FLETCHER: Are current levels of selenium impairing beneficial uses of the rivers and drains?

MR. GRUENBERG: That is a good question. I would say that what is in the river is above the water quality objective. So it is a problem in that, if nothing else. We have not seen the buildup in fish tissue that we have seen in Salton Sea. So there is some different effects going on here, but it certainly is not as desirable situation to have. I just think there hasn't been much research and science looking at aquatic life in the drains and selenium impacts there.

But anytime you have a violation of water quality objective, it is a serious situation. And, of course, there is a safety factor for many of these water quality objectives, but it is not prudent to go beyond them because you are starting to enter a questionable or danger zone.

MR. FLETCHER: Earlier in Phase II there was testimony that indicated as part of HCP1, which is one alternative for a habitat conservation plan, to mitigate for effects on threatened and endangered species at Salton Sea. That plan would consist of building a series of ponds that would hold fish to feed fishing birds at the Salton Sea. It was indicated that one potential source of water for those ponds was the New River.

Assuming the selenium concentration increases in the New River as indicated in that chart, would there be water quality concerns for those ponds?

MR. GRUENBERG: Yes.

MR. FLETCHER: How might they affect wildlife, the wildlife that those ponds are designed to support?

MR. GRUENBERG: I can't speculate on exact impacts, but, again, if you kickback to the exhibit here and assume situations that we have known about, that I am not ready to forecast what would happen.

If we have bid question marks, like is up there for Salton Sea, but, again, we are entering a potential danger zone, in my opinion.

MR. FLETCHER: Is the Regional Board planning to develop TMDLs for selenium at the Salton Sea?

MR. GRUENBERG: Not at the present time because we don't believe -- we have some higher priorities, and we are

not convinced that the economics and technology is there to support moving ahead on that.

MR. FLETCHER: How about the drains in the river?

MR. GRUENBERG: Same thing. Well, let me back up, though. That is if the present situation remains. If it gets worse, than it is a whole new ball game. So getting worse may not be considered by the Board to be an acceptable situation.

MR. FLETCHER: If the transfer does impair existing beneficial uses in the drains and rivers and the Sea, could you just take some of those uses out of the Basin Plan, like contact recreational, threatened endangered species habitat, warm freshwater habitat? Can you just take them out?

MR. GRUENBERG: Those are existing uses. I would have to say, no.

MS. OKUN: I would object to the question as calling for a legal conclusion.

CHAIRMAN BAGGETT: I would sustain.

MR. FLETCHER: What is the process for taking out beneficial uses from a Basin Plan?

MR. GRUENBERG: It is done on a use attainability analysis, getting that approved by the Regional Board, getting that approved by USEPA and the State Board.

MR. FLETCHER: No more questions.

Thank you.

CHAIRMAN BAGGETT: Thank you.

Mr. Doyle.

Nobody from Wildlife.

CHAIRMAN BAGGETT: Audubon, Mr. Yates.

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CROSS-EXAMINATION OF REGIONAL WATER QUALITY CONTROL BOARD

BY NATIONAL AUDUBON SOCIETY CALIFORNIA

BY MR. YATES

MR. YATES: Thank you, Mr. Gruenberg.

In Exhibit No. 2 of the exhibits prepared by Jose --

Is it Angel?

MR. GRUENBERG: Angel.

MR. YATES: That seems to be a review of the Draft Environmental Impact Report/Environmental Impact Statement on the Imperial Irrigation's transfer project; is that correct?

MR. GRUENBERG: A lot of those comments were oriented in that direction; that is correct.

MR. YATES: On Page 2 of the memo I believe your staff, Mr. Angel, is having difficulty with the conclusion that the significant impacts attributed to the Salton Sea tributaries are unavoidable and unmitigable.

Is that correct?

MR. GRUENBERG: I believe that is what it says, yes.

MR. YATES: Then Mr. Angel does go through a list of

items that actually have occurred here in California. Are you familiar with the algal bacteria process to reduce selenium in the Panoche Water District near Las Palmas?

MR. GRUENBERG: Specifically, no.

MR. YATES: Did your staff review that information?

MR. GRUENBERG: I believe so, yes.

MR. YATES: The statements here that the selenium reduction could be as much as 70 percent, the citation to Stewart is accurate as far as you know?

MR. GRUENBERG: I haven't researched it. I cannot answer that.

MR. YATES: Other than this document being addressed to you, you don't have knowledge of?

MR. GRUENBERG: I didn't look into the specifics on most of it, no.

MR. YATES: You're familiar with the fact that in the Upper Colorado River there is a water users association that is working on addressing selenium problems in the Colorado River?

MR. GRUENBERG: I believe so.

MR. YATES: Were any of those addressed in the EIS/EIR, as far as you are aware?

MR. GRUENBERG: Not as far as I am aware. But I did not go through the detailed analysis that my staff went through on the transfer EIR.

MR. YATES: Are you aware of whether your staff was contacted at all about the creation of 5,000 acres of fish ponds as a mitigation proposal in the Habitat Conservation Plan?

MR. GRUENBERG: Repeat the question. They were contacted?

MR. YATES: Was any of your staff contacted as they developed the 5,000 acre fish pond to mitigate certain impact?

MR. GRUENBERG: Not to my knowledge.

MR. YATES: Are you aware of the letter, I think from the State Water Board, pointing out that use of river water may require an additional permit for finding water for the 5,000 acre fish ponds?

MR. GRUENBERG: Repeat again.

MR. YATES: Are you aware of a letter from the State Water Board suggesting that an additional permit would be required if Colorado River water was to be used for these fish ponds?

MR. OSIAS: Objection. I think that misstates the letter. I think it is an amended rather than additional.

MR. YATES: Amended.

CHAIRMAN BAGGETT: Thank you.

MR. GRUENBERG: No, not specifically.

MR. YATES: Mr. Angel did suggest in his letter that

use of Colorado River water may not be appropriate for filling up these fish ponds; is that right?

MR. GRUENBERG: I believe he said that. I have to take no position on that, the validity or accuracy of that statement. We have nothing to do with water rights at the Regional Board. We are strictly a water quality control agency. Sometime water rights does spill over into the water quality realm.

MR. YATES: If we can have that chart back up that was previously put up.

Thank you.

Again, to the point that was raised by Mr. Fletcher. If we are to somehow fill up these ponds, the EIR/EIS doesn't even address where the water comes from. But if we were to use the New River and Alamo, wouldn't that address your concerns about water quality?

MR. GRUENBERG: I think if water from the New and Alamo River was impounded to create a wildlife habitat and the concentrations of selenium had increased, even if they hadn't increased, they remained the same, I think it is a potential problematic situation. If they increased, it is certainly a potential problematic situation in the development.

MR. YATES: Do you monitor the existing wildlife areas around the Salton Sea, as far as water quality?

MR. GRUENBERG: Yes. We have done -- we set up water quality monitoring stations at the outlets of the New and Alamo River, in the Salton Sea and in some of the drains. And also we have been involved with the State Board and Department of Fish and Game and the toxics substances monitoring program which has been underway since about the '70s and collects fish and aquatic life and analyzes those for the types of pollutants that tend to bioaccumulate. There is a good database from that also.

MR. YATES: Would that type of procedure have to be utilized in the ongoing monitoring of the fish ponds?

MR. GRUENBERG: Absolutely.

MR. YATES: National Audubon has a real interest in the restoration of the Salton Sea, which you addressed in your comments and also in the table that was attached to comments that your Regional Board prepared. I believe it is Page 3, comment number 3 from Page ES-9 of the Draft EIR/EIS, Paragraph 7.

The claim made in the EIR/EIS is that it is not inconsistent with the potential Salton Sea Restoration Project. In that your agency disagrees with that determination.

Is that correct?

MS. OKUN: Which exhibit are you referring to?

MR. YATES: I am referring to Colorado River Water

Quality Control Board comments regarding Imperial Irrigation District water transfer project draft habitat conservation plan and draft environmental impact statement.

MR. GRUENBERG: Is that transfer EIR comments?

MR. YATES: Yes.

CHAIRMAN BAGGETT: Could you repeat that for the record?

MR. SLATER: Clarification, Mr. Chair. Is this an existing exhibit? Is it in the record?

MR. YATES: This is not in the record?

MR. GRUENBERG: We did not submit that, no, not for this hearing.

CHAIRMAN BAGGETT: No, it is not. This is the --

MR. YATES: It is --

CHAIRMAN BAGGETT: These are the comments on the HCP?

MR. YATES: Yes.

CHAIRMAN BAGGETT: Are they an exhibit?

MS. OKUN: We didn't introduce these.

MR. GRUENBERG: They were submitted directly for that project, but not here for this hearing?

CHAIRMAN BAGGETT: Are they part of this record? I thought they were.

MR. KIRK: Mr. Chairman, point of clarification. I assume that, in fact, with the environmental process ongoing that the EIR/EIS was going to be a part of this

environmental effort, and in fact, all the comments will eventually be made a part of this record as well.

Is that not true?

CHAIRMAN BAGGETT: Incorporated by reference at the end. Our intent was that the EIS is certified. As it's progressing through, it is of interest.

MR. KIRK: There wouldn't be any change to the comments?

CHAIRMAN BAGGETT: Right. I understand.

MR. SLATER: Mr. Chair, we may not object if a proper foundation is laid for this witness' knowledge of the comments, et cetera. It is not part of their case in chief. If they want to cross on an extraneous document, does this witness subscribe -- has he authored the comments? Prepared at his direction? Does he know about them?

CHAIRMAN BAGGETT: Okay. I would accept that.

Do you want to lay the -- we were addressing this --

MR. ROSSMANN: Your Honor, may I also suggest it would be helpful to have a copy of that available for the rest of us if that is, in fact, going to be considered part of the record. For example, just this morning we brought in the Imperial County EIR comments to the supplement so that everybody would have those in advance of our witness being on the stand.

I think that previously some other comments, like the EPA comment letter, was distributed to everyone before it

was submitted. I appreciate Mr. Kirk's sensitivity to having the record include those, but I think it is really up to us to bring them in if we are going to make them part of the discussion here, to have copies available for all of us.

MR. SLATER: Mr. Chair, we join in that request. To the extent that they are going to be part of the record ultimately, we have no problem having a discussion and testimony on those so long as the witnesses are competent to testify about the content of the comments.

CHAIRMAN BAGGETT: So if you could lay a foundation and also provide copies to the parties. If you are going to plan on using that as one of the exhibits, ultimately it will be in record. If you are going to use it sooner than later, if you can provide copies, Mr. Yates, later. If you want to use it, if you can lay a foundation.

MR. YATES: What exhibit number would that be?

MR. FECKO: Audubon 18.

CHAIRMAN BAGGETT: This will be noted, Exhibit 18.

MR. YATES: Are you familiar with the comments that your agency prepared on the Draft EIR/EIS?

MR. GRUENBERG: I prepared the initial comments, and staff prepared some specific comments that went out under staff's signature. The staff that prepared those would be best able to respond specifically to any questions on the

content of those comments, and those include the comments, I believe, that you showed me a moment ago.

MR. YATES: Did you prepare the comments on the issue of the proposed transfer project impacts on the Salton Sea Restoration Project?

MR. GRUENBERG: No. The comments I prepared preceded those detailed comments. It was about three weeks prior to that. It was a two-page letter. I asked staff to prepare more detailed comments on the document, and that is what those represent.

MR. YATES: You are not prepared to speak to these comments?

MR. GRUENBERG: Not in general because I feel that the staff that prepared them is better prepared to respond. On some of them I could probably respond. My preference would be to have the staff at least present that prepared the comments.

MR. YATES: Mr. Chairman, under the circumstances, I think because these will eventually become part of the record, I don't think I am going to have Audubon go to the trouble of paying for this exhibit.

CHAIRMAN BAGGETT: We should note that they also are on the website as comments received from the Regional Board. If anybody wants to look at them, they are on the IID website.

Are you going to still put them in as an exhibit?

MR. YATES: No, sir.

CHAIRMAN BAGGETT: Thank you.

Sierra Club. Is anybody here from Sierra Club?

Ms. Douglas.

MS. DOUGLAS: No questions.

CHAIRMAN BAGGETT: Mr. Kirk.

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CROSS-EXAMINATION OF REGIONAL WATER QUALITY CONTROL BOARD

BY SALTON SEA AUTHORITY

BY MR. KIRK

MR. KIRK: Morning, Mr. Gruenberg.

Selenium, just got a series of questions related to selenium. Again, I appreciate you're not the selenium expert for the Regional Board. There is uncertainty what happens at the Salton Sea with respect to selenium concentrations under the transfer proposed project, correct?

MR. GRUENBERG: Yes.

MR. KIRK: In fact, there is some uncertainty about what is happening today with selenium in the Salton Sea with current inflows; is that correct?

MR. GRUENBERG: Yes.

MR. KIRK: It is fair to say selenium levels are lower than, in fact, some models would predict at the Salton Sea?

MR. GRUENBERG: I think different models have shown

different situations. I am not sure that all the science is in place on the selenium issue. I do know that the Sea continues to suffer a problem as long as the health advisory remains in effect. That is kind of a warning sign in and of itself that things aren't quite right out there.

MR. KIRK: The selenium levels in the Sea are, in fact, lower than the inflows themselves, correct, at least the Alamo and New Rivers?

MR. GRUENBERG: They are lower in the water, but unfortunately higher in the aquatic life.

MR. KIRK: I will address that.

What does bioavailability mean, that term?

MR. GRUENBERG: Bioavailability?

MR. KIRK: Yeah.

MR. GRUENBERG: I guess it kind of forecasts how much the uptake rate would be of a pollutant that is in the water column or in the sediment or in the environment.

MR. KIRK: At the Salton Sea do we find higher levels of selenium in the sediments? Are there selenium hot spots in the sediments of the Salton Sea?

MR. GRUENBERG: I believe that some of the previous studies show that there were elevated levels in several locations of selenium in the sediment, yes.

MR. KIRK: In fact, don't those studies suggest that there is hot spots in some of the -- away from some of the

shallower areas of the Salton Sea, in deeper water areas of the Salton Sea?

MR. GRUENBERG: I believe that is correct.

MR. KIRK: Are deeper water areas right now in the Salton Sea, right now, are those deeper areas generally anoxic much of the year and don't support a whole lot of life?

MR. GRUENBERG: They are generally anoxic during the warmer months of the year. I'd say during the summer months waters below 30 feet deep are generally devoid of oxygen in the Sea.

MR. KIRK: As the Sea becomes shallower under the proposed project, would those deeper areas be more subject to having selenium bioavailable to the food chain?

MR. GRUENBERG: I am not prepared to answer that.

MR. KIRK: No further questions.

CHAIRMAN BAGGETT: Thank you.

Mr. Slater.

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CROSS-EXAMINATION OF REGIONAL WATER QUALITY CONTROL BOARD

BY SAN DIEGO COUNTY WATER AUTHORITY

BY MR. SLATER

MR. SLATER: Good morning, Mr. Gruenberg.

MR. GRUENBERG: Good morning.

MR. SLATER: How are you?

MR. GRUENBERG: Fine, thank you.

MR. SLATER: Just a quick piece of clarification, if I can. It is your testimony that you are not opposed to the transfer, correct?

MR. GRUENBERG: That's correct.

MR. SLATER: I have no further questions.

CHAIRMAN BAGGETT: Mr. Osias.

MR. OSIAS: Thank you.

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CROSS-EXAMINATION OF REGIONAL WATER QUALITY CONTROL BOARD

BY IMPERIAL IRRIGATION DISTRICT

BY MR. OSIAS

MR. OSIAS: Good morning, Mr. Gruenberg. I don't think we met. I am David Osias. I represent Imperial.

MR. GRUENBERG: Pleased to meet you.

MR. OSIAS: Actually, Imperial Irrigation District.

MR. ROSSMANN: Appreciate that clarification, sir.

MR. OSIAS: The Regional Board submitted four exhibits for this hearing, correct?

MR. GRUENBERG: Yes.

MR. OSIAS: As Executive Director, was the decision to participate at all in this hearing yours?

MR. GRUENBERG: The decision to participate, yeah, that was mine, yes.

MR. OSIAS: So you asked your staff to help you, right?

MR. GRUENBERG: Yes, yes.

MR. OSIAS: They prepared these four exhibits under instructions from you to do something?

MR. GRUENBERG: They prepared three of the exhibits. The first exhibit I prepared myself.

MR. OSIAS: I actually caught myself, too.

MR. GRUENBERG: I asked them to prepare the three exhibits because I knew my background on the selenium matter was rather weak compared to the staff I had. In fact, the staff can much better answer many of these questions that have come up already on selenium that I am able to attempt to answer myself.

MR. OSIAS: I take it from that that you have, therefore, a great deal of confidence in your staff when it comes to selenium issues?

MR. GRUENBERG: A lot more than I have in myself.

MR. OSIAS: Do you have a lot --

MR. GRUENBERG: Yes, yes, I do.

MR. OSIAS: So you submitted Exhibits 2, 3 and 4 because you wanted this Board to consider them, right?

MR. GRUENBERG: Yes.

MR. OSIAS: Although you are not prepared to answer questions about them, you want them considered by the Board nonetheless?

MR. GRUENBERG: I think they should be reviewed.

MR. OSIAS: Should they just be observed or should they actually be read for their content?

MR. GRUENBERG: They should be read for their content.

MR. OSIAS: And was it your decision not to bring staff to this hearing?

MR. GRUENBERG: It was my decision to bring staff to this hearing. I thought I was having the full contingent here, but there was one staff member who is obviously not present here who was not able to attend unfortunately. Two of the staff that prepared the exhibits are here.

MR. OSIAS: Which two?

MR. GRUENBERG: Dr. Carpio and Dr. Zeywar.

MR. OSIAS: Would it be fair to say, in your opinion, that you would like to see tailwater continued to flow into the drains and, therefore, into the Salton Sea?

MR. GRUENBERG: If there is a decision to restore the Salton Sea. If there is a decision not to restore the Salton Sea, then I would answer no. That would make perhaps elimination of the discharge the best way to go, if you cannot clean things up, eliminate the discharge source. As long as the Salton Sea and potential salinity control project remains viable, I feel it is our obligation to support that and the beneficial uses that the Sea represents.

MR. OSIAS: Let me rephrase my question, then.

Until Salton Sea restoration is no longer being explored, you would like to see tailwater continue to flow in the drains of the Sea?

MR. GRUENBERG: I think that is in the best interest of the present situation with the beneficial uses, yes.

MR. OSIAS: Maybe going a step further, until Salton Sea restoration is no longer being explored, would you like to prohibit the elimination or reduction of tailwater?

MR. GRUENBERG: We at the Regional Board, I do not believe, have that authority. However, if there is noncompliance with water quality objectives, we take appropriate enforcement actions which potentially could lead to elimination of the discharge as one of the means of addressing it. I don't believe that we could order that.

MR. OSIAS: Your testimony didn't limit itself to what you can order; isn't that right?

MR. GRUENBERG: I just tried to give you a fair overview of things, what our responsibilities are.

MR. OSIAS: Let me -- you have suggested, for example, that there might be the retirement of some farmland as a way to do something. You don't have authority to order that, correct?

MR. GRUENBERG: Absolutely not.

MR. OSIAS: I wasn't actually asking you in my earlier question whether you had authority to prohibit it. I just

asked whether until Salton Sea restoration is no longer being explored, would you desire a prohibition on the reduction or elimination of tailwater?

MR. GRUENBERG: The best I can respond to that is as long as the Salton Sea continues to support beneficial uses, as long as there is a desire by the community to continue to see those beneficial uses supported, we are going to do the best we can at the Regional Board to attempt to back that up.

MR. OSIAS: Might that include, if you could persuade those who do have authority, to mandate the tailwater not be eliminated?

MR. GRUENBERG: I think as far as I am going to go with that question is the point that I went with my overview and my written testimony, which is that recently we have not recommended tailwater pump back as a best management practice for Imperial Valley in consideration of the Salton Sea situation.

But we recognize that that is an unenforceable recommendation. It is simply that because any farmer is free to cease discharging tailwater any time that farmer desires to do so.

MR. OSIAS: I assume just for efficiency sake that if a farmer came up with a way to eliminate tailwater other than pump back, your comment would be the same?

MR. GRUENBERG: The impact would be the same because it would be a loss of freshwater flow into the Sea. But, again, we have no control over the fact that that discharge is occurring or in attempting to -- in any kind of attempt to continue it or to continue to force it to occur. That is up to the farmer.

MR. OSIAS: I thought I heard now actually two different -- dates is not the right word -- two different considerations regarding tailwater and flows into the Sea. I thought you originally had said that at least until Salton Sea restoration was no longer being explored tailwater is serving a useful purpose.

Then in a later answer you said so long as the Sea is capable of supporting some of the beneficial uses that you had listed in your slide show, tailwater should continue. Those aren't necessarily the same time frame, correct?

MR. GRUENBERG: That is correct. Because I guess you could have a situation where it was decreed that the Salton Sea was, from a cost standpoint, an unreasonable pursuit, and that could be declared tomorrow, for example, in theory. And that, sure, there is still some beneficial uses there that are occurring.

I think you would have to look at time frames and what the community's desire is, the public's desire on this. I don't think I would be ready to make any drastic maneuvers

at that point. I think we would hold public hearings and then decide if we should pursue -- the Board would decide if they want to pursue tailwater pump back in light of the conditions or not.

MR. OSIAS: Just because you answered two ways, I'm trying to get clear which one is your personal view. If, in fact -- let's take your hypothetical, Congress said we are not going to fund it. State said we are going to fund it. Nobody finds money laying around to self fund it.

If those statements are out there, but the Sea is still serving some beneficial uses, would you want to see tailwater continue until those beneficial uses disappear, or at that point would you reconsider and say it's time to consider reducing tailwater?

MR. GRUENBERG: I would take that question to my Board and recommend that we have a public workshop on the topic.

MR. OSIAS: You don't have any view at the moment yourself?

MR. GRUENBERG: If I did, I'm not ready to present it here today.

MR. OSIAS: You don't want to tell me even if you have one?

MR. GRUENBERG: Correct.

MR. OSIAS: I take it you are not recommending anything to the Board on that subject either?

MR. GRUENBERG: Not at the moment, no. But that is a hypothetical at the moment. I remain convinced that there is a movement to address the Salton Sea salinity problem.

MR. OSIAS: When do you predict that we would know whether Salton Sea restoration was viable and going to continue to be something that the federal and state governments might fund?

MR. GRUENBERG: There is others that could respond to that better than I could.

MR. OSIAS: I am sure, but I am asking you.

MR. GRUENBERG: I am not going to make a forecast on that, not speculate.

MR. OSIAS: You don't have any idea?

MR. GRUENBERG: I'd rather keep my ideas on that to myself, again. I don't want to speculate on that.

MR. OSIAS: You weren't here when the experts from Natural Resources Consulting Engineers were testifying, right?

MR. GRUENBERG: No.

MR. OSIAS: Did you read their testimony that was submitted in advance?

MR. GRUENBERG: I have read many of the testimonies, but I haven't had time to read it all. It is about this high now. I have read some of it, not the details, though, on most of it.

MR. OSIAS: Are you aware from your review that they testified that if you are going to improve on-farm efficiency, the only realistic potential is by reducing tailwater?

MR. GRUENBERG: No, not aware of it.

MR. OSIAS: Does that sound right?

MR. GRUENBERG: I am not going to respond.

MR. OSIAS: You don't know?

MR. GRUENBERG: Not going to respond to that.

MR. OSIAS: How long have you been with the Regional Board?

MR. GRUENBERG: Since 1971.

MR. OSIAS: You were there when hearings were held before this Board which led to the Decision 1600?

MR. GRUENBERG: I was at the Regional Board then. I wasn't specifically working in that subject area. There was another Executive Officer at that time.

MR. OSIAS: That was in the '80s?

MR. GRUENBERG: Pardon?

MR. OSIAS: The State Board took up the subject of IID's reasonable use in the '80s?

MR. GRUENBERG: Yes, correct.

MR. OSIAS: Were you aware that the District urged the State Board to find that the use of Colorado River water for maintenance of the Salton Sea fish, wildlife and

recreational uses should be considered a beneficial use, not a misuse? Did you know that IID asked the State Board to make that finding?

MR. GRUENBERG: I wouldn't be surprised, but I can't verify that.

MR. OSIAS: Would you be surprised to learn that this State Board said, "Well, thank you very much for that suggestion but, no, we don't consider it that. That is an incidental benefit"?

MR. GRUENBERG: I believe that that fairly accurately characterizes the results. But I would say in fairness that the State Board at that time, there was not a federal effort that was underway to address the Sea salinity problems. It has been looked at in the mid '60s and early '70s and found to be too costly, and at that time there was virtually no movement similar to what is ongoing at the moment and has been for the last, say, eight years.

MR. OSIAS: Would it -- were you aware that not only was the question of beneficial use and incidental beneficial use raised, but were you aware that the State Board said, quote, the second point to be recognized is that the issue is not whether the inflow to the Salton Sea has an incidental beneficial effect, but whether it is a reasonable and beneficial use of water? Were you aware that they also looked at reasonableness of flows into the Sea?

MR. GRUENBERG: I believe they did, yes.

MR. OSIAS: Then you are aware that they concluded that continuing flows into the Sea at the level that they were in the '80s was not a reasonable use of water?

MR. GRUENBERG: I believe that is correct.

MR. OSIAS: Now, what was your position in 1988?

MR. GRUENBERG: My position in 1988 was that there wasn't much underway, if anything, that I recall to address the Salton Sea's problems and that it was likely that the salinity was going to increase and that the fishery would die out.

MR. OSIAS: Let me cut you off. I was asking your title.

MR. GRUENBERG: Pardon?

MR. OSIAS: I asked what your position was, not on an issue, I meant your job.

What was your job in 1988?

MR. GRUENBERG: I was Environmental Specialist IV.

MR. OSIAS: I can't use the word "position." In that status were you aware that there was another hearing before the State Water Resources Control Board?

MR. GRUENBERG: Which led to Decision 88-20.

MR. OSIAS: They addressed, again, the subject of both beneficial and reasonable use of water and flows into the Sea. You are aware of that?

MR. GRUENBERG: Yes, as far as I know.

MS. OKUN: I object to these questions. I don't see how Mr. Gruenberg's awareness of what happened in 1980 or 1988 is relevant.

CHAIRMAN BAGGETT: Explain.

MR. OSIAS: I am trying to figure out whether it has influenced his current conclusion that tailwater should continue despite that this Board has made a ruling already in a Board that is superior to the Regional Board or whether he ignored it. I want to make sure he knew about it before I ask him if he ignored it.

Of course, I let the cat out of the bag now. That is the relevance.

CHAIRMAN BAGGETT: Maybe you should just get to the relevance.

MR. OSIAS: If I asked him if he ignored it, he might say I didn't know about it, and then I would get an objection like you haven't laid a foundation.

CHAIRMAN BAGGETT: Continue, continue.

MR. OSIAS: Do you know where I am going?

MR. GRUENBERG: Yes. Cut to the chase. I think I have a response.

MR. OSIAS: Do you want --

CHAIRMAN BAGGETT: Ask the question so it is clear on the record.

MR. OSIAS: Apparently you are aware that both in 1984 and 1988 the State Board determined that sending flows principally from tailwater into the Sea was not a reasonable or beneficial use of water.

Did you take those into account into your -- with respect to your earlier testimony that you would like to see tailwater flows continue while Salton Sea restoration is still being explored?

MR. GRUENBERG: What I primarily took into account was the fact that our water quality control plan lists freshwater replenishment of Salton Sea by the tributaries to it as a beneficial use, and that was a Basin Plan. It was approved by the State Board and USEPA.

MR. OSIAS: In developing that state plan, that use plan, replenishment of freshwater, is that another way of saying we would like to see tailwater flows continue?

MR. GRUENBERG: I believe so, yes.

MR. OSIAS: That's what I thought it meant.

In developing that plan, did the Regional Board get out the State Board's earlier decisions and say, "Are we allowed to do this in light of their finding that it is not a reasonable beneficial use"?

MR. GRUENBERG: I don't know what went behind the scenes at Board meetings that led to the adoption of beneficial use some period of time ago, no. It might have.

I don't know. I'm not going to speculate on that.

MR. OSIAS: So your reliance in your current recommendation was on the water use plan, and you don't know whether the water use plan considered the earlier State Board decisions, correct?

MR. GRUENBERG: I believe it did, but I am not ready to respond to that as I don't recall being physically present at the meetings where the Board acted on the Basin Plan and adopted the freshwater beneficial use for the tributaries to Salton Sea.

MR. OSIAS: You are not an economist, right?

MR. GRUENBERG: No.

MR. OSIAS: Nor at least are any of the staff who you had submitted exhibits to this hearing?

MR. GRUENBERG: No, that is correct.

MR. OSIAS: Let me finish before you answer.

MR. GRUENBERG: Okay.

MR. OSIAS: I think in response to someone else's question you suggested that economic studies of fallowing were needed and on other things as well, I think you said, but they hadn't been done yet; is that right?

MR. GRUENBERG: I believe they have been done. They haven't been done by us, but I believe they have been done by others.

MR. OSIAS: So has the Regional Board studied these

economic analysis in order to come up with a recommendation?

MR. GRUENBERG: No.

MR. OSIAS: Notwithstanding, you made a recommendation; isn't that right?

MR. GRUENBERG: I wouldn't call it a recommendation. Well, in a way I guess it was a recommendation. We have recommended that best management practices for the moment is not promote tailwater pump back, but again we haven't prohibited that.

MR. OSIAS: In fact, you have recommended even in your testimony that the water transfer be accomplished by marginal cropland retirement, right? That is your testimony personally, correct?

MR. GRUENBERG: I think that is less of a recommendation and more of this is a situation we have. You need to consider all these factors and decide which way you want to go. If cropland is retired, that is going to result in a lesser impact on selenium and to the Salton Sea. So you need to weigh that in in the decision making process.

But I said elsewhere that water transfer, I'm not opposed to it, and I'll stand by that. I am not trying to force any particular viewpoint on anybody on this. I think that all of these matters need to be looked at in great detail. I think the economics is incredibly important.

MR. OSIAS: Maybe if I could make your answer shorter.

CHAIRMAN BAGGETT: Yes.

MR. OSIAS: First, you are not recommending as a Regional Board that fallowing be used for the transfer, correct?

MR. GRUENBERG: Correct.

MR. OSIAS: You have said it should be looked at among other alternatives; is that more correct?

MR. GRUENBERG: That is more correct.

MR. OSIAS: In fact, the Regional Board itself has not looked at any economic analysis incoming to its own opinion, correct?

MR. GRUENBERG: Not by itself, no. In fact, the Regional Board has not acted on any of those matters.

MR. OSIAS: You would agree that the use of the word "marginal" is an economic term?

MR. GRUENBERG: Yes.

MR. OSIAS: And you would agree that term hasn't yet been defined by any work done for the Regional Board, correct?

MR. GRUENBERG: Correct.

MR. OSIAS: I'm not sure that that word has been used by any of the economic studies referenced in the EIR/EIS; isn't that true?

MR. GRUENBERG: Perhaps.

MR. OSIAS: Assume marginal means to you who wrote this

not as available as something else?

MR. GRUENBERG: Correct.

MR. OSIAS: I assume it means to you that the land's still being farmed?

MR. GRUENBERG: Yes.

MR. OSIAS: So it is worth something to the person farming it, correct?

MR. GRUENBERG: I believe so.

MR. OSIAS: Otherwise he won't be doing it?

MR. GRUENBERG: I would think so.

MR. OSIAS: You can't retire land that is not being farmed because you don't generate any water?

MR. GRUENBERG: Correct.

MR. OSIAS: Audubon asked you some questions regarding Exhibit 2. This would be the selenium removal. And I think as you said earlier, although you didn't prepare this, you wanted this Board to review this exhibit, take its content into consideration.

So, I think he was looking at Page 2 of the Exhibit 2. Perhaps I could direct your attention there.

You have to tell me you have that in front of you.

MR. GRUENBERG: Yes, I do.

MR. OSIAS: Thank you.

Then I will steer you. If you look at -- I'm sorry, look at the next page, three. If you look down to the --

what looks like the second full paragraph on that page, it starts with the word "Stakeholders."

Do you find that paragraph?

MR. GRUENBERG: Yes.

MR. OSIAS: If you will just look at that for one moment, I think that references selenium removal options that Audubon was asking you about.

MR. GRUENBERG: Right.

MR. OSIAS: And you wanted this Board to believe that those are things that should be considered; is that right?

MR. GRUENBERG: These are based on an opinion by one of my staff.

MR. OSIAS: And who you have confidence in?

MR. GRUENBERG: Yes, I do.

MR. OSIAS: That isn't a trick question. You wanted the Board to take this statement of your staff into account in coming to its decision?

MR. GRUENBERG: Yes.

MR. OSIAS: Because you have confidence in your staff, you believe that these are correct statements?

MR. GRUENBERG: I can't verify that, no.

MR. OSIAS: If you didn't believe in your staff's talents on this subject area, you wouldn't have submitted it, would you?

MR. GRUENBERG: I have a lot of confidence in my staff,

but does that mean everything that the staff does or says is absolutely correct? I don't believe I can answer that in the affirmative.

MR. OSIAS: That wasn't the question I asked you. The question I asked you was: If you didn't think -- if you didn't have enough confidence in this staff member's discussion of this subject, you wouldn't have submitted it to this Board, correct?

MR. GRUENBERG: I have considerable confidence in staff that submitted it, but I am not going to say that everything that that staff person writes up is absolutely correct all the time.

MR. OSIAS: Perfect. If I asked you that question, you can give me that answer. But let's look at what he wrote up here, and I think he discussed three selenium removal options. And one is algal bacterial, a second is wetlands. And a third I think is the Colorado experience.

Is that a fair summary?

MR. GRUENBERG: Yes.

MR. OSIAS: The Colorado River experience is described as declining water levels, correct?

MR. GRUENBERG: Yes.

MR. OSIAS: That reduces selenium from infiltrating sediments, correct?

MR. GRUENBERG: Uh-huh.

MR. OSIAS: You have to answer yes or no.

MR. GRUENBERG: Yes.

MR. OSIAS: You are not recommending lining of the drains, are you?

MR. GRUENBERG: No.

MR. OSIAS: In fact, you think that would be harmful to the habitat?

MR. GRUENBERG: I think it is impractical.

MR. OSIAS: And lining of the laterals is not really the source of selenium that you are concerned with with respect to the drains or the rivers, correct?

MR. GRUENBERG: I don't believe it is, no.

MR. OSIAS: This solution at least does not appear to be particularly transferable to the Imperial Valley; is that correct?

MR. GRUENBERG: That's correct.

MR. OSIAS: Wetlands on the other hand is something that is actually being explored currently?

MR. GRUENBERG: Yes.

MR. OSIAS: It is your understanding -- I am not trying to make you into a scientist, but it is your understanding the results at least have been positive so far; is that correct?

MR. GRUENBERG: I am not prepared to address that from the standpoint of selenium. The results have been positive

from the standpoint of suspended solids reduction and some other pollutants. I need to see some more data on selenium. There is hopes that selenium would be reduced by some of the constructed wetland projects, but I think it needs to be studied more.

MR. OSIAS: Would you agree the preliminary data from the task force, which is the Citizens Congressional Task Force, shows selenium reductions in the order of 15 to 20 percent?

MR. GRUENBERG: I haven't reviewed the results. I'm not prepared to respond to that. It certainly sounds impressive, but I'm not sure that on a widespread basis that's become a fact yet.

MR. OSIAS: Do you think that your staff member thinks that that is at least noteworthy?

MR. GRUENBERG: I'm not going to speculate on what the staff may think.

MR. OSIAS: You didn't review any of these before they were filed with the Board?

MR. GRUENBERG: I reviewed them. I read them. That was about the extent of it. I didn't research them to determine the accuracy of them, no.

MR. OSIAS: If it was your staff member's belief that that was what the preliminary data showed, that would be a positive development, would it not?

MR. GRUENBERG: Yes.

MR. OSIAS: That is something you would like to see happen, isn't it?

MR. GRUENBERG: Yes.

MR. OSIAS: Do you think that because I am asking you the question I have a different agenda?

I'll withdraw that question.

CHAIRMAN BAGGETT: Thank you. Or strike it.

MR. OSIAS: Let me show you Exhibit 12 of the Salton Sea Authority.

Mark, do you have one of those?

I take it you probably don't have one of those up there?

MR. GRUENBERG: No.

MR. OSIAS: Do you have that in front of you now?

MR. GRUENBERG: Yes.

MR. OSIAS: And if you would turn to Page 8, I think we put convenient stickers on there. You see the number on the upper right-hand corner?

MR. GRUENBERG: Yes.

MR. OSIAS: Got it up here.

MS. DIFFERDING: What page?

MR. OSIAS: Page 8.

Do you see the bottom paragraph on that page that starts with the two words "for example"?

MR. GRUENBERG: Yes.

MR. OSIAS: If you go down about five lines you will see a sentence that reads, Likewise it has not been demonstrated in the pilot project on the New River that wetlands reduce concentrations of selenium reaching the Sea. Instead, by slowing the flow of selenium containing drain water, the wetlands may become another aquatic habitat in addition to the irrigation drains which the element is available to be concentrated through the food chain.

Do you see that sentence?

MR. GRUENBERG: Yes.

MR. OSIAS: That's probably -- because you are not the expert, that is probably inconsistent with your staff member's view on the relevance of wetlands, correct?

MR. GRUENBERG: Yes.

MR. OSIAS: And if you will flip to Page 28, and if you'll look down to the bottom of that page where it says, in principle -- again, the Salton Sea Authority says, quote, in principal it might be possible to design a treatment wetlands for removal of selenium by adding sediment basins ahead of the wetlands, but there are no even approximate estimates of the cost of doing this or of the reductions that might be expected.

Your staff member thinks at least on preliminary data the estimates are 20 to 50 percent, right?

MR. GRUENBERG: I believe that is what it says.

MR. OSIAS: So the Salton Sea Authority and the Regional Board, at least to this date, have inconsistent opinions on the viability of wetlands. Is that a fair --

MR. KIRK: Objection.

MR. GRUENBERG: No.

MR. KIRK: Mr. Chair, that document he references is not a Salton Sea Authority document. Actually agree with the substance of what Mr. Osias says.

CHAIRMAN BAGGETT: You need to stand.

MR. KIRK: The Salton Sea Science Office Workshop, but I suspect the conclusions are, in fact, as Mr. Osias points out. It is not the Salton Sea Authority's opinion.

MR. OSIAS: Let's go back to the front page. First, it is Exhibit 12 submitted by the Salton Sea Authority, right? Or maybe you can't tell. I'm sorry.

I'll make an offer of proof. It is Exhibit 12 submitted by the Salton Sea Authority.

CHAIRMAN BAGGETT: Yes.

MR. OSIAS: In fact, its title In Valuation of a Proposal for Conversion of the Salton Sea Ecosystem; is that right, Mr. Gruenberg?

MR. GRUENBERG: Yes.

MR. OSIAS: It doesn't say at the top it is a report of a workshop by the Salton Sea office held December 2001?

MR. GRUENBERG: Yes.

MR. OSIAS: Given that it was submitted by the Salton Sea Authority and they ran the workshop and they prepared the report, do you think it was misleading you in referring to it as a Salton Sea Authority document?

MR. ROSSMANN: Your Honor, I'll object as someone who wasn't there, but this looks to me like it is the United States Department of Interior Salton Sea Science Office. I believe that is a distinct body from the Salton Sea Authority.

CHAIRMAN BAGGETT: I'll sustain the objection.

MR. OSIAS: I'll rephrase my question, then.

At least the opinion expressed on 28 by whomever the author is, is at least at the moment inconsistent with the Exhibit 2 submitted by your staff member?

MR. GRUENBERG: Yes, that's correct. That was submitted by my staff. It is not a position taken by the Regional Board.

CHAIRMAN BAGGETT: That wasn't the question. Can you answer the question.

Can we speed this up a little bit?

MR. OSIAS: I am reluctant to cut him off. But if you want me to, I'll be glad to if he answers other questions.

You mentioned in your direct testimony -- in fact, can we put the first picture up, the title, all the way back to the beginning of the show. There we go.

That is a picture of the Salton Sea; is that correct, Mr. Gruenberg?

MR. GRUENBERG: Yes. I believe that is the Alamo River Delta.

MR. OSIAS: If we look -- I see a line slanting. If that was a compass, it would be heading southeast. Do you see that straight line, looks like a road. Is that what that is?

You see that line? I'm now pointing to it.

MR. GRUENBERG: Yes.

MR. OSIAS: This line right here, do you see that line?

MR. GRUENBERG: Yes.

MR. OSIAS: At least part of that line is the border to the Sea; is that correct?

MR. GRUENBERG: At the time the photograph was taken, correct.

CHAIRMAN BAGGETT: We should -- just to clarify the record, Mr. Osias is referring to a line, a straight line at the bottom of the photograph.

MR. OSIAS: Right.

CHAIRMAN BAGGETT: Moving from the bottom right corner up towards the left?

MR. OSIAS: Yes. Thank you. A diagonal.

CHAIRMAN BAGGETT: On a diagonal.

MR. OSIAS: Do you know the date of this photograph?

MR. GRUENBERG: No, I don't.

MR. OSIAS: Do you know if that is the condition of the Sea today in terms of that picture?

MR. GRUENBERG: It probably isn't. Not unless this photograph was taken today.

MR. OSIAS: If it were taken yesterday, it would be inaccurate?

MR. GRUENBERG: The Sea changes.

MR. OSIAS: That rapidly?

MR. GRUENBERG: To some extent, yes.

MR. OSIAS: When this picture was taken, the fact that the shoreline of Sea is a straight line, that is not a natural condition, is it?

MR. GRUENBERG: No.

MR. OSIAS: In fact, that depicts a dike, does is not?

MR. GRUENBERG: Depicts probably a dike and a road on top of the dike.

MR. OSIAS: Thank you.

The dike is to keep the Sea off the land that is at the lower portion of the picture; is that correct?

MR. GRUENBERG: Correct.

MR. OSIAS: Do you think that dike is still there?

MR. GRUENBERG: As far as I know, it is still there.

MR. OSIAS: Do you think it is still serving a purpose?

MR. GRUENBERG: Yes.

MR. OSIAS: The Sea is still threatening that land, is it not?

MR. GRUENBERG: Yes.

MR. OSIAS: You testified, in fact, that some reduction in the Sea would be beneficial because flooding is a problem, correct?

MR. GRUENBERG: Flooding could potentially be a problem, yes.

MR. OSIAS: Do you remember in 1984, 1988 there was a problem then, was there not?

MR. GRUENBERG: Yes.

MR. OSIAS: That actually influenced the State Board decision?

MR. GRUENBERG: Yes.

MR. OSIAS: Certainly, if we took the dike away, that would not be the natural shoreline, correct?

MR. GRUENBERG: Yes.

MR. OSIAS: Therefore, the current height of -- withdraw the word "current." The height on the Sea on the date of this picture poses some costs associated with protecting land from the Sea, correct?

MR. GRUENBERG: Yes.

MR. OSIAS: The Sea contains salts as you have already testified, right?

MR. GRUENBERG: Yes.

MR. OSIAS: So it wouldn't be a benign event for that Sea to hit the farmland?

MR. GRUENBERG: No.

MR. OSIAS: When the Sea evaporates, it leaves behind not just salts, but the selenium; is that correct?

MR. GRUENBERG: It certainly leaves behind salts. Selenium is getting removed by the food chain. There is some selenium in the water column of the Sea and there is some selenium in the sediments of the Sea.

I don't know that -- I do not believe that selenium is following the same pattern that evaporation follows with salt.

MR. OSIAS: Let me make my question simpler.

Do you think selenium evaporates with the water vapor, whatever is in the water column?

MR. GRUENBERG: I don't believe it does, no.

MR. OSIAS: Thank you.

So to the extent it is in the water or the soil, which I don't believe evaporates, to the extent it is in the water, when the water evaporates, the selenium is left behind, correct?

MR. GRUENBERG: To some extent, yes.

MR. OSIAS: Similarly, when you leach a field that is growing crops -- back up.

You understand what leaching is?

MR. GRUENBERG: Yes.

MR. OSIAS: When you leach a field that is growing crops to remove the salt, that takes the selenium with it, correct?

MR. GRUENBERG: Yes.

MR. OSIAS: When the plant takes the water from the soil and leaves the salt behind it, it leaves the selenium behind, too, correct?

MR. GRUENBERG: Yes.

MR. OSIAS: Thank you.

Nothing further.

CHAIRMAN BAGGETT: Thank you.

I have no questions. Richard has none.

Dana? Andy?

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CROSS-EXAMINATION OF REGIONAL WATER QUALITY CONTROL BOARD

BY STAFF

MR. FECKO: Just a couple. We saw a slide with some wastewater objectives depicted on it. How are those objectives come to?

MR. GRUENBERG: The objectives are adopted by the Regional Board at a water quality control plan.

MR. FECKO: I guess, how does the Regional Board develop those objectives? Do they get input from other agencies? Do they do their own research?

MR. GRUENBERG: Both. We do our own research and we get input from other agencies and the public. There are public hearings held before those are adopted.

MR. FECKO: And so the selenium water quality objective is set -- is that set with some -- let me back up.

Is wildlife considered when developing those objectives?

MR. GRUENBERG: Absolutely.

MR. FECKO: Has there been any -- is there evidence of toxicosis from selenium in the Imperial Valley now to wildlife?

MR. GRUENBERG: Don't think I am the best person to respond to that question. I'm going to leave it at the fact that selenium concentrations have exceeded our water quality objective, which is a problematic situation, and the fact that there has been an advisory issued limiting consumption of Salton Sea fish.

MR. FECKO: One last one I have is regarding selenium and Colorado River water that is coming in the Valley. Has that been on the increase or is it expected to increase?

MR. GRUENBERG: I believe that is being addressed, and my expectation is that that will decrease.

MR. FECKO: Thank you.

CHAIRMAN BAGGETT: That is all the cross-examination.

Do you have redirect?

Should we take a break and come back with redirect?

MS. OKUN: Yes, five minutes.

CHAIRMAN BAGGETT: We'll take a ten-minute break, and we'll come back with redirect and then recross.

(Break taken.)

CHAIRMAN BAGGETT: Back on the record.

Is there redirect at this time?

MS. OKUN: There is no redirect. I would like to move Regional Board Exhibits 1 through 5 into the record. Exhibit 5 is an errata that was E-mailed last week, making corrections to three typos to Exhibit 2.

CHAIRMAN BAGGETT: Are you intend -- this would be -- we should enter the Power Point as Exhibit 6, would that be appropriate?

MS. OKUN: We can introduce it if there is no objections. If anyone objects, we don't particularly care if it gets introduced or not.

CHAIRMAN BAGGETT: I would -- I think we have a lot of discussion on one picture in the record, I think. If you would move it.

MS. OKUN: I will identify the Power Point presentation as Exhibit 6 and move that into the record as well.

CHAIRMAN BAGGETT: Is there any objection?

If not, they're in.

MR. OSIAS: I believe we got the errata, so if we can

just get one of those.

MS. HASTINGS: We did not.

CHAIRMAN BAGGETT: The errata will be posted on our --

MS. OKUN: I have copies here.

CHAIRMAN BAGGETT: Exhibit 5 is the errata.

MS. DIFFERDING: Both 5 and 6 you will serve on everyone else?

MS. OKUN: Exhibit 5 has already been served, and we will serve Exhibit 6.

CHAIRMAN BAGGETT: Very good.

Thank you.

Make your flight now.

While we are waiting for Mr. Kirk and Salton Sea Authority setting up, we also have supplemental written testimony from the County of Imperial. Everybody has gotten one? Please notify everybody that is not here.

MR. ROSSMANN: I did distribute it to everyone I thought was here. There are extra copies on this table on the west wall there for any of the parties who didn't receive that. One copy for each party, I might mention.

CHAIRMAN BAGGETT: I assume you will propose to add this when you give your case in chief?

MR. ROSSMANN: Yes, with Mr. Heuberger.

CHAIRMAN BAGGETT: I wanted to make sure everybody had copies.

MR. ROSSMANN: Thank you, sir.

CHAIRMAN BAGGETT: Thank you.

MR. KIRK: I've got a brief opening statement, Mr. Chairman. By the way, Mr. Brownlie and I will be a panel to conserve some time and hopefully energy this morning and early this afternoon.

The question that this phase of the hearing proceedings addresses is whether the water transfer, as proposed, would unreasonably affect fish, wildlife and other instream beneficial uses of water. The petitioners have the initial burden of showing that the proposed project would not have such an impact.

The petitioners had to entirely rely on their EIR to answer that question. As you have already heard, the EIR relies on unsubstantiated assumptions and underestimated impacts and have ignored the implications of the proposed project on preserving fish and wildlife populations through restoration.

The petitioners have failed to demonstrate that the transfer would not unreasonably affect fish and wildlife populations. The painful irony is that proposed project, when compared to the other project alternatives considered in the EIR, is actually the most harmful to fish and wildlife populations. So at their least, the petitioners have failed to make their case, and at best we don't know if

they have made their case or not. The petitioners acknowledge in the record that few details are available with respect to the habitat conservation plan. It assumes that the HCP sufficiently mitigates most of the pressing biological impacts of the Sea.

The petitioners acknowledge they're reelevating issues related to PM-10, odors and environmental justice. They acknowledge that they have received many comments on the EIS/EIR. The discussions two weeks ago suggest that many of those comments may question the adequacy of the document and underscore the concerns we heard two weeks ago concerning the use of the speculative baseline to minimize project impacts and inadequate coverage and analysis of biological impacts.

As you heard from Mr. Gruenberg, in the past several years restoration efforts have intensified. Over this period the appreciation for this peculiar, yet biologically rich body of water has grown. Congressman George Brown and Sonny Bono led the charge in the federal legislature and federal and state legislation and appropriations have followed.

The Salton Sea Authority was formed ten years ago by IID, CVWD, Riverside County and Imperial County. The Authority includes exofficio representation from the Torres-Martinez Tribe who will soon be a full member of the

Authority thanks to some state legislation. The Authority is the public agency leading and coleading the restoration effort. Together with our partners, particularly the Bureau of Reclamation and an independent Salton Sea Science Office, we have made tremendous strides in improving our understanding of this complex ecosystem and improving our ability to manage it over the long haul.

Many of the scientists that you will hear in future direct testimony were selected by the good work of the independent science subcommittee and its successor, the Salton Sea Science Office and funded through the Salton Sea Authority. They have greatly expanded our understanding of the Sea. Their efforts have established that the Sea is an incredibly diverse and rich ecosystem and is much more than its early designation as an agricultural repository.

Today the restoration team is running desalinization pilot projects, assisting with wildlife disease programs, improving the aesthetics of the Sea and testing strategies to improve water quality. You will hear from our expert witnesses about these programs. You will hear that the restoration is occurring in small substantive ways today. You will also hear that restoration is imperiled by the proposed project.

The goals of restoration are to maintain the Sea as a repository for agricultural drainage. We acknowledge that

relationship. It is also to provide a safe, productive environment for resident migratory birds and endangered species, to restore recreational uses of the Sea, to maintain a viable sports fishery at the Sea, and to enhance the Sea to provide economic development opportunities.

As you have already heard, the transfer EIR indicates that the proposed project is not inconsistent with restoration. Each of the environmental purposes of the restoration project is irreparably harmed by the proposed project. It is popular in some circles to suggest the transfer and the restoration project are two separate, distinct efforts. They are, in fact, as inseparable as the New and Alamo Rivers' inflows are to the Sea itself.

You will hear from our expert witnesses that restoration is directly related to water quantity, quality and habitat. First you will hear from Dr. Brownlie who has worked on the Salton Sea project for nearly four years. Explaining the impacts of the proposed project on the restoration of the Salton Sea are serious, and they have financial, political and environmental repercussions. This is the topic that is nearly ignored in the transfer EIS/EIR. In fact, as has been mentioned by me and others, the transfer EIS/EIR has nerve to describe the proposed project, which could reduce flows to the Sea by over 300,000 acre-feet per year, as being consistent with restoration of

the Sea.

This obvious distortion is indicative of the overall bias and integrity of the analysis of EIR. After hearing from Dr. Brownlie, you will hear from me. I will explain how massive reductions of inflows and greatly accelerating salinity are hardly consistent with restoration. I will explain the proposed project will likely render restoration infeasible.

The impacts on restoration are central to the issue of whether the proposed project will unreasonably affect fish and wildlife populations. The proposed project makes protecting the valuable fish and wildlife resources associated with the Salton Sea nearly impossible. The impact of these environmental resources are not just unreasonable, but in my opinion and the opinion of Salton Sea Authority untenable. Even without considering the impacts of the proposed projects on restoration, the proposed projects and environmental consequences are staggering.

As you will see in our comments on the transfer EIR and hear in our testimony, the potential impacts may irreparably harm the most productive inland fishery in the world, one of the richest stops for birds along the Pacific Flyway, Imperial and Coachella's air quality, and for an underrepresented people such as the Torres-Martinez Tribe

who are burdened with the environmental impacts of the proposed project, while coastal California only realizes benefits.

As you will hear, the Salton Sea Authority is not opposed to the Quantification Settlement Agreement. In fact, I suspect that our Board on the whole is supportive of the QSA. However, the Salton Sea Authority Board was unanimous in its opposition to the water transfer projects which significantly lowered the elevation of the Sea and which are inconsistent with full restoration of the Sea. The proposed project is not consistent with restoration of the Sea, and our expert witnesses and those that follow will demonstrate that the proposed project has an unreasonable effect on the environmental resources.

Thanks very much. Now I would like to turn the podium over to our General Counsel, Bob Hargreaves. I do want to note that Bill Brownlie hasn't been sworn in.

(Oath administered by Chairman Baggett.)

MR. HARGREAVES: Morning, Mr. Chairman. Once again, I'm Bob Hargreaves. I am with the law firm of Best Best & Kreiger. I have been General Counsel for Salton Sea Authority for roughly four years, and I have been invited here to facilitate the questioning of Mr. Kirk and Dr. Brownlie. It would be a little difficult to have Tom asking questions, running back there and answering them.

CHAIRMAN BAGGETT: Thank you.

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DIRECT EXAMINATION OF SALTON SEA AUTHORITY

BY MR. HARGREAVES

MR. HARGREAVES: Briefly, Mr. Kirk, would you explain your professional qualifications and your activities with the Salton Sea Authority.

MR. KIRK: I am the Executive Director of the Salton Sea Authority, and was hired as the first Executive Director of the Authority in late 1997, and have remained in that position until today. Prior to that, I worked for regional government dealing with the environmental, air quality and community resources issues for a couple years. Prior to that, I was an environmental land use consultant working largely in Southern California on large regional issues. My educational background includes a geography degree from UCLA and a regional planning advance degree from U.C. Berkeley, and I have graduated with various honors, but I gather the Board is hearing about honors.

CHAIRMAN BAGGETT: Only Phi Beta Kappa's.

MR. HARGREAVES: Mr. Kirk, is Exhibit 1 your testimony in this proceeding?

MR. KIRK: It is.

MR. HARGREAVES: And Exhibit 2 describes your professional qualifications?

MR. KIRK: Generally, it does.

MR. HARGREAVES: Dr. Brownlie, would you briefly describe your professional qualifications and experience with the Authority?

DR. BROWNLIE: I am a civil engineer and environmental engineer. I am senior vice president with Tetra Tech, a civil and environmental engineering firm. I have been with the company for over 20 years. I received my Ph.D. in civil and environmental engineering with an emphasis on water resources from Cal Tech in 1981, and have worked on large environmental impact statements since 1985.

About four years ago I got involved with the restoration project as project manager. For our activities we prepared a Draft Environmental Impact Statement that was published in January 2000. And since then, I have been continuing to support the project in a number of different engineering and environmental aspects.

MR. HARGREAVES: Briefly, Mr. Kirk, would you resummarize the activities that the Salton Sea Authority has undertaken since you have been Executive Director?

MR. KIRK: Taken in a large part and in combination with others, we are colead agency with the Bureau of Reclamation on environmental compliance issues. We did publish the Draft EIS/EIR. We prepared various engineering studies. We pled those engineering environmental efforts

together. In addition to that, the Authority has funded much of the science that has been done at the Salton Sea. We have been reasonably successful in getting federal and state funds, appropriations and grants to do so. And in that sense, we've supported the work of the independent Salton Sea Science Office and Salton Sea Science Subcommittee.

In addition to all that, we are actively engaged in various pilot projects at the Salton Sea, various efforts to study salt withdrawal techniques, a solar evaporation pond system and a disposal system on various sides of the Salton Sea. We also work in conjunction with the U.S. Fish and Wildlife Service on wildlife disease programs, and we are also doing things to clean up the aesthetics of the Salton Sea, picking up dead fish off the shoreline and soon to be off the surface of the Sea. And we are going to be conducting pilot projects on improving water quality in the Salton Sea, both to support Bill's efforts on the TMDLs and our own objectives for improved water quality at the Salton Sea.

MR. HARGREAVES: Based on the studies that have been done, what is the greatest immediate threat to the living systems at the Salton Sea?

DR. BROWNLIE: I would say raising salinity.

MR. BROWNLIE: Dr. Brownlie, are you the principal

author of the Assessment for Salinity Control for Varied Inflows dated April 2002, which is Exhibit 11?

DR. BROWNLIE: Yes.

MR. HARGREAVES: Generally, what was the purpose of that report?

DR. BROWNLIE: We were asked to look at restoration strategies, pull together a review of work that has been done to this point on alternatives and summarize the cost of these different alternatives under different inflow conditions.

MR. HARGREAVES: Would you describe that hydrologic model that you used in making that report?

DR. BROWNLIE: The basis for all of that is the Salton Sea Account Model. The model was originally developed by Rich Deary at CVWD, and has since been adopted by the Bureau of Reclamation. Hydrologists there have improved it, and who currently operates it is Paul Wakeforest in Denver. And that is the basis for the salt and elevation calculations that were used.

MR. HARGREAVES: Was that the same model that was used for the transfer EIR?

DR. BROWNLIE: Yes. I believe Paul also was the same hydrologist that ran it for the IID project.

MR. HARGREAVES: Would you explain how the cost information was developed with respect to that portion?

DR. BROWNLIE: The cost information was developed from two primary sources. The engineering firm of Parsons Engineering, working in conjunction with URS Corporation and Jones & Stokes, did the basic work for developing the cost of solar pond systems, and the Bureau of Reclamation, primarily their staff in Denver, did most of the background work for enhanced evaporation systems and conveyance and other aspects of the project. And I was asked to compile that information in this report.

MR. HARGREAVES: Would you briefly describe the relationship between the salinity in the Sea and the inflows and evaporation?

DR. BROWNLIE: If you pull that piece of paper off.

This is one of the figures from the report that is on Page 3 of the report, shows the relationship between -- for salinity for several different inflow scenarios.

MR. HARGREAVES: Approximately how much salt is entering the Sea each year?

DR. BROWNLIE: About 4,000,000 tons. There is some precipitation of salt as it enters the Sea. Historically it's been a little more than four. We use 4,000,000 tons as an average, rule of thumb number.

MR. HARGREAVES: What is the current salinity of the Sea?

DR. BROWNLIE: Current salinity is around -- this

shows the milligrams per liter. It could also be expressed, if you drop off the three zeros, in parts per thousand. It is around 44, 45 parts per thousand, or 45,000 milligrams per liter.

MR. HARGREAVES: What is the salinity of the ocean for comparison?

DR. BROWNLIE: About 35.

MR. HARGREAVES: What rate currently is salinity increasing at the Sea?

DR. BROWNLIE: Historically, it's been increasing about a part per thousand roughly every four years. And this is the current inflow situation. The average inflow over the past 40 years has been about 1.34. If that were to continue, this is what the model projects the salinity in the future would be.

MR. HARGREAVES: What is the effect of increased salinity on the Sea ecosystem?

DR. BROWNLIE: Most scientists believe that around 60 parts per thousand or 60,000 milligrams per liter is the salinity at which most of the fish in the Sea could no longer reproduce. So we've used that as the kind of a cap.

Our projects, our goals, are to keep it below 60, hopefully, closer to where it is now or reduce it. But 60 is kind of the death threshold at which point there would no longer be any fish.

MR. HARGREAVES: With these current inflows, which you said basically have been in affect for the last 40 years, how long would it take to reach that 60 parts per thousand?

DR. BROWNLIE: This chart shows that it would be somewhere out around 2060, maybe a little later.

MR. HARGREAVES: Under the transfer proposed project, when would you meet the 60 parts per thousand?

DR. BROWNLIE: Under the proposed project, the proposed project, we didn't have the exact inflows that they used in their transfer EIS when we were doing our analysis. But we ran a series, and this is probably the closest. Under the transfer, it would be a little bit less. It would probably be around .93 million acre-feet per year. But that shows that it would hit the 60 target around 2012 or so.

MR. HARGREAVES: This difference between when it hit the 60 target under the proposed project versus when it would hit the 60 under the no-project alternative, that's been referred to as the temporal impact?

DR. BROWNLIE: That's -- their baseline inflow is somewhere around 1.23 averaged out over the next 70 years, and that would be hitting there about 2023, I think something like that. These are pretty similar to what is shown in EIS, in the transfer EIS. This delta is the temporal, what they are calling the temporal impact of about a dozen years.

MR. HARGREAVES: That's about 11, 12 years?

DR. BROWNLIE: Yes.

MR. HARGREAVES: If we maintain the current inflows, what is the temporal impact?

DR. BROWNLIE: With the current inflows, the temporal impact would be more like 50 years.

MR. HARGREAVES: In addition to this temporal impact, would the transfer project have additional impacts on the Salton Sea?

DR. BROWNLIE: Yeah. I think -- maybe the elevation chart, if we can push the down arrow.

This chart shows the projected elevation under those same three inflows.

CHAIRMAN BAGGETT: Excuse me, could you identify the chart or where it is from?

DR. BROWNLIE: This is Figure 2. It is in the salinity elevation, Exhibit 11.

MR. OSIAS: Same page.

CHAIRMAN BAGGETT: Want to make sure it is clear for the record.

DR. BROWNLIE: So this chart shows that, again, with that inflow of 1,000,000 acre-feet per year, the Sea would drop, oh, say, somewhere on the order of 17, 15 to 17 feet in the first 30 years. And there, as I said, the transfer project would probably be a little bit lower than this

because I believe it would be more like .93.

In that top 17 feet of water in the Sea there is about 200,000,000 tons of salt. And if the Sea starts to dry up, all that salt would be consolidated, concentrated in the lower portion of the Sea that would remain. That is really what makes it so difficult for us to restore the Sea under that scenario. With the Sea dropping so quickly, the restoration project has little chance of saving the fishery.

And the reason I feel there is more than just a temporal impact is even under this somewhat closer to the base flow, there would be a gradual decrease in the Sea's elevation. We have a better chance of saving the Sea than if it plummets like that.

So, the Sea becomes so salty it's almost impossible to get all that salt out to save the fishery. We have 75 to a hundred square miles of exposed sediments. We have losses of resources, fishery -- recreational resources. It is more than just a temporal impact, in my opinion.

MR. HARGREAVES: What have been the principal goals of the restoration plan that you have been involved in?

DR. BROWNLIE: I think Tom stated it pretty well. There five primary goals.

MR. HARGREAVES: You want to restate them for the record, Tom.

MR. KIRK: Certainly. To maintain the Sea as an agricultural repository, protect fish and wildlife populations, both migratory and otherwise, protect and enhance recreational opportunities and usage, protect the sports fishery and enhance the Sea for economic development possibilities.

MR. HARGREAVES: What are the physical methods that you have been looking at in order to meet those objectives?

DR. BROWNLIE: Well, the primary thing would be the salinity control. We talk about the rising salinity as the acute disease facing the Sea, the heart attack that can kill the Sea.

In addition to the salinity control, Tom mentioned a number of other projects that are going on to improve water quality overall, improve aesthetics. There are some funds set aside for recreational improvements and so forth.

MR. HARGREAVES: Would you describe briefly what the evaporation ponds salinity control --

DR. BROWNLIE: The salinity control methods. Two primary ones that we have been looking at are solar evaporation ponds, which are similar to the ponds that are used in the salt mining industry for removing salt and mining it for commercial and other uses. There is a very large salt farm in Central California in the southern Bay Area. There is about a 40-square mile pond system that is

operated by Cargill Salts in South San Francisco Bay. And so the evaporation pond system that we were looking at would be very similar to that.

And then there are also enhanced evaporation systems which use mechanical means to speed up evaporation, blowers and things like that. The enhanced evaporation systems are a little more expensive, but they use less land.

MR. HARGREAVES: Let's focus on the solar pond alternative at this point. Have you done a cost analysis of how much it would cost to build this kind of project?

DR. BROWNLIE: If you can flip, I will show the chart. I think this is on page -- this is Figure 9. I think it is on Page 18 of our report.

MR. HARGREAVES: It's on Page 19, I believe.

DR. BROWNLIE: Page 19. This chart shows what it would cost to build ponds. If we built solar ponds within the Sea, they would have the advantage of controlling, helping to control elevation because they reduce the evaporative surface area of the Sea. If we built them on land, they are quite a bit cheaper to build, but they also would cause some water to be removed from the Sea, so they would add to the problem of elevation if the Sea's inflows are reduced.

So what we did is we looked at what it would take to build an evaporation pond system using a combination of in sea and on land ponds, how much that would cost at a number

of different salinity and elevation targets.

So here are the four lines showing four different possible salinity targets, 45 being very close to what it is now and maintaining the Sea at an elevation of minus 230, which is about three feet below where it is now. That would allow some drop, and there are some issues with relation to existing dikes around the south end of the Sea, would relieve that a little bit, but it would still leave the elevation pretty close to where most of the recreational people would want it and homeowners and so forth.

So if you look at the chart of this blue line here, that shows what it would be like to maintain, what it would cost to maintain the Sea close to its current salinity at minus 230 feet, about three feet where it has been recently and over a variety of different inflows.

The costs go up very rapidly because as the inflows start to go down, you have to build into deeper and deeper water with solar ponds inside the Sea. So we're starting down here at around $250,000,000 or so, up to, let's say, 120- -- at 1.2 we'd have a project that is under a billion dollars and then it rapidly escalates.

MR. HARGREAVES: At the current inflows, the 1.34 million acre-feet, what would be the cost of maintaining salinity at 50 parts per thousand?

DR. BROWNLIE: At 50 we are looking at maybe 200,000 --

200,000,000, I am sorry.

MR. HARGREAVES: What would the cost be to maintain that same level of salinity if inflows were at the proposed project, transfer project?

DR. BROWNLIE: It would be somewhere down around .93, I believe. So we are talking about just under $3,000,000,000.

MR. HARGREAVES: In rough numbers, how much would the proposed transfer increase the cost of restoring the Sea?

DR. BROWNLIE: I would say at least a factor of ten.

MR. HARGREAVES: Would a restoration project even be technically feasible if it was sized to support the reduced inflows?

DR. BROWNLIE: Down here we are probably looking at 70, 80, maybe a hundred square miles of in sea ponds. Whether we could really build those, whether this cost model even works at that point, it may be actually a lot higher than this. It is a seismically active zone, so we are talking about building deep water dikes, permitting issues, issues on affecting habitat in the Sea. Just a lot of things.

MR. HARGREAVES: Switch to Mr. Kirk for a minute.

Tom, how much -- you have had a lot of conversations with federal and state legislatures about the possibility of funding. How much do you believe realistically might be available?

MR. KIRK: It is really hard to say. It depends, of

course, who you ask. I remember our Salton Sea Symposium earlier this year. I think it was Secretary of Resources Mary Nickels who indicated that if restoration is under $500,000,000 is doable. I'm not sure if she meant that the state would cough up $500,000,000 or if the federal and state governments could. But, certainly, if a project is in a few hundred million dollars, $500,000,000 range, I believe it is politically and technically and otherwise possible. Once it gets up into the multi-billion dollars I am not sure.

MR. HARGREAVES: So, Dr. Brownlie, would you say under current inflows or modestly reduced inflows that restoration is feasible?

DR. BROWNLIE: Before I answer that, I would like to point out these are present value calculations that include not just the construction cost but some money set aside for operation and maintenance. I am not saying that that is a significant portion, but I want to mention that.

It would be possible to get funding less than this to have a construction project in and get the operation and maintenance funds at some point down the line. These are present values. I want to make that point.

MR. HARGREAVES: Once again under --

DR. BROWNLIE: Could you repeat your question?

MR. HARGREAVES: Under current inflows or modestly

reduced inflows is the restoration project feasible?

DR. BROWNLIE: Yes.

MR. HARGREAVES: Would a restoration project be feasible at the level of inflows projected by the transfer project?

DR. BROWNLIE: In my opinion, no.

MR. HARGREAVES: Mr. Kirk, turning briefly to the Salton Sea Restoration Act, would you briefly describe its legislative history?

MR. KIRK: There has been some question about that, Bob. The Salton Sea Reclamation Act of 1998, to my knowledge, was the first comprehensive piece of legislation to address the Salton Sea at the federal level. There have been before us some line items in authorizations and appropriations.

The Salton Sea Reclamation Act of 1998 was essentially a feasibility study act. It did provide a small amount of money for authorizing some science work and authorizing some work on the New and Alamo Rivers. It is essentially a feasibility study authorizing bill.

MR. HARGREAVES: Was that legislation designed to enable the water transfer?

MR. KIRK: Designed to enable that water transfer? I think that would be too strong. I think it is fair to say it is a House report, which is provided as an exhibit by

IID, does acknowledge and directs the Secretary of Interior to prepare restoration plans that consider and evaluate restoration under reduced inflow scenarios, in fact, all the way down to 800,000 acre-feet per year, which is on the far right of the exhibit, Exhibit 9, which Bill Brownlie has put up. In fact, that is what we have done.

The Salton Sea Authority and Bureau of Reclamation since 1998 have evaluated restoration under a variety of inflow conditions.

I think I'd just clarify one point, Bob, if that is all right. There has been some question about what did the act do and what did it tell the Secretary of Interior to do or not to do. The House report that is in IID's exhibit is, in fact, the House report, as I recollect it. But it is important to note that we have introduced another exhibit. It is exhibit -- we plan on introducing Exhibit 20, which is a full bill summary and status of the bill, and the House report reported on a bill at that time, the introduced bill by Congressman Hunter. The bill was, in fact, substituted several times by amendment, full substitution. And the bill that ended up at the end of the 1998 session was very different from the bill that was introduced.

The bill that was introduced remains -- this in some ways was a full authorization bill. It provided over $300,000,000 in federal funding, talked about financial

responsibility. The bill that ended up being approved, as I pointed out, was a feasibility study. The bill that was introduced included language limiting liability by San Diego, IID, even the Salton Sea Authority, limiting our parties' effects on the Salton Sea because it reduced inflows. The bill that was passed into law doesn't include that language. So it's difficult to read the House report and assume that that bill is the one that, in fact, was enacted. That is certainly not the case.

MR. HARGREAVES: Let's turn for a minute to the transfer EIR/EIS.

Dr. Brownlie, were you retained to review that by the Salton Sea Authority?

DR. BROWNLIE: Yes, Tetra Tech was.

MR. HARGREAVES: Are your -- are the comments that appear in Exhibit 19, were those prepared generally under your supervision?

DR. BROWNLIE: Yes. I had a team of four other people that supported the effort.

MR. HARGREAVES: In your opinion, does the -- let's back up.

How many EIRs and Draft EIRs have you prepared or reviewed professionally?

DR. BROWNLIE: More than a dozen. I was the project manager for the Draft EIS for the CalFed programmatic

EIS/EIR prepared a couple years ago. I worked on the MWD, the Site Reservoir EIR, and City of San Diego's water repurification project EIR/EIS. And then I have done dozens of others, forest service, Army, Navy, Air Force, Department of Energy.

MR. HARGREAVES: In your opinion, does the transfer, the draft transfer EIR/EIS adequately address impacts of the transfer projects on the Salton Sea?

DR. BROWNLIE: No.

MR. OSIAS: Objection to the extent it calls for a legal conclusion.

CHAIRMAN BAGGETT: Sustained.

MR. HARGREAVES: From a technical environmental planner point of view, in your opinion, does it adequately address those impacts?

DR. BROWNLIE: No. I believe a number of them are understated.

MR. HARGREAVES: In your opinion, would the proposed project have an irreversible effect on the Sea?

DR. BROWNLIE: Yes. Irreversible and irretrievable commitment of resource section of the EIR is pretty light, doesn't address it.

MR. HARGREAVES: Does the document adequately address biological impacts to the Sea, once again from a --

DR. BROWNLIE: Not in my opinion. It says that they

are not significant.

MR. HARGREAVES: The document states that impacts are just a temporal impact. Would you agree on that based on your review of the document?

DR. BROWNLIE: Yeah, I believe that is asserted in there.

MR. HARGREAVES: Based on your experience in preparing and costing out the restoration alternatives and your programming restoration projects, is it just a temporal impact or is it going to be a lot of other significant impacts?

DR. BROWNLIE: As I stated before, I believe it is a lot more than temporal impact because it's creating a situation, we are going to see, that makes it so difficult for us to restore it.

MR. KIRK: On the question of biological impacts, could I clarify?

MR. HARGREAVES: Sure.

MR. KIRK: I think you asked does the document identify significant impacts, and Bill might have said no. There are biological impacts that are identified in the document. I think that is a fair statement. And I think one of our concerns, and, again, I jointly prepared a letter to IID, is that in some cases they have identified impacts. In other cases, they haven't. And in other cases they've identified

significant impacts and indicated they would be fully mitigated by the HCP. And we don't have the details on the HCP. So I think that is one of our major concerns from the Salton Sea Authority perspective.

MR. HARGREAVES: Briefly, what is the mitigation proposed under the HCP No. 1? Would you briefly describe what that proposal is?

MR. KIRK: It is a challenge to describe if you weren't here for the first part of this hearing. Our understanding at this time is that IID is still working with Fish and Wildlife Service and perhaps Fish and Game to work on the details of the HCP. But it is my understanding it would be 5- to 6,000 acres of ponds perhaps fed by the New River, perhaps by some other water source, and that those ponds would be active for some period of time and support, if I remember correctly, four fish eating species of birds.

Is that what you recollect, Bill?

DR. BROWNLIE: Yes.

MR. HARGREAVES: Is that proposal in some ways similar to the Pacific Institute Proposal that the Salton Sea Science Office had an opportunity to review?

DR. BROWNLIE: Yes. Actually there are a lot of similarities. This was a document that was just being discussed in the last --

MR. KIRK: It was Exhibit 11, I think.

MR. OSIAS: Twelve.

MR. KIRK: Thank you.

MR. HARGREAVES: What did the panel of scientists that were convened by the Science Office conclude with respect to the Pacific Institute proposal?

DR. BROWNLIE: Well, there are probably at least two dozen concerns that I recall. There were issues with concerns about freshwater habitat, water quality in these ponds. Again, this is not exactly the same as the HCP1. It is a similar concept in that small -- much smaller set of ponds would be constructed and the remaining Sea would be allowed to deteriorate. There were issues with mosquitoes and vector issues, diseases. The current fishery in the Sea, which is a saltwater fishery, would be replaced by freshwater fish, whether algae, whether the algae blooms or not is an issue. Temperature. It is likely that these would be smaller ponds that would be shallower, would have very high temperatures.

Do you remember some of the others?

MR. KIRK: Selenium was another one.

DR. BROWNLIE: Selenium was a major concern. And then the effects outside of the ponds themselves, would the pond -- or, in fact, wetlands. We would expect additional evaporative losses from those projects which would reduce the elevation of the Sea even more and likely exacerbate the

air quality, aesthetic, recreation and other impacts that are elevation related.

MR. HARGREAVES: Let's turn to the air quality impacts for a minute.

Do you believe that the document adequately addresses the air quality impacts?

DR. BROWNLIE: No. I think really, mainly because they certainly acknowledge that there could be significant impacts from blowing dust from all the exposed sediments, but there really was not much analysis of it. I believe they stated in the document that it is not possible to do an analysis of this, of the blowing dust situation.

MR. HARGREAVES: Is the mitigation for the air quality impact adequate?

DR. BROWNLIE: I believe it says there is no feasible measures. But at Owens Lake we know that similar dust problems are being mitigated.

MR. KIRK: Bob, on the air quality we did -- the Salton Sea Authority with the Bureau of Reclamation asked the Science Office to convene a group of air quality experts, including those at Owens Lake, the Great Basin Air Pollution Control District. I believe they are the direct testimony of one of the environmental groups, so we probably don't need to get into a lot of detail now.

But this group did suspect that there would be problems

at the Salton Sea and did suspect that there could be efforts to model the potential impacts and efforts to potentially mitigate the potential impact. And even as we discussed before, even if we have only 1 percent of the problem of Owens Lake, we would far exceed the pollution threshold of both Imperial Valley and Coachella Valleys.

MR. HARGREAVES: Do you believe the EIR draft document adequately addresses impacts of odors?

DR. BROWNLIE: No, again, I don't think so. There is some discussion of odors. They say they are not significant because there would be only a few people that would smell them. While it is true that there -- some of the populations around the Sea are not great, these odors do get as far north as Palm Springs. I'm sure there have been times that I have smelled them.

MR. KIRK: In fact, we've received complaints from as far away as Moreno Valley, from Yuma and from Twenty-Nine Palms. So odors from the Salton Sea are a problem. For this document to say, well, there may be more odors, but nobody will smell them, I think somebody preparing the document either in San Francisco or elsewhere may not fully appreciate the environment in the Salton Trough.

MR. HARGREAVES: Would it be likely that under the transfer project the odors would increase?

DR. BROWNLIE: Yes. One of the things that we think

will happen is that during the stage where the fishery would collapse -- there are, I don't know what the latest estimate of the number of fish in the Sea, a couple hundred million, a couple hundred million fish in the Sea. We are not saying that those would die instantaneously. They would probably die off over a period of time. But as part of this process we believe that there will be increases in algae blooms and there would be more decaying fish on the shoreline. There would be exposed sediments from rocks that would have algae, exposed algae which would cause a lot of the odors. There would be probably additional hydrogen sulfide gas formed by some of the mixing issues. So I believe there will be a number of additional odors that would be created.

MR. HARGREAVES: Do you believe the document adequately addresses recreational impacts?

DR. BROWNLIE: No. Again, they do mention there would a significant impact to sportfishing as a result of lost fisheries. But I don't really believe it acknowledges other recreational impacts as being significant. And I believe there will be a significant loss of recreational use in the area. And some of the mitigation measures they recommend would be moving recreational facilities, such as boat launches, but, you know, people mainly go into the Sea to fish. If there is no fishery, I don't know what the point of moving the boat launches would be.

MR. HARGREAVES: One of the issues that has been commented on by the Salton Sea Authority is the issue with respect to the baseline that the transfer document used in its hydrology analysis.

Would you briefly describe the concerns regarding that baseline?

DR. BROWNLIE: We primarily looked at two issues. First of all, it is difficult to assess because while there is some information provided about the baseline, there is not a lot of details about certain aspects of how it was determined. But there are two issues that we looked at as being factors that we thought caused the baseline to be lower than it needed to be.

The first one was the entitlement enforcement factor which caused the baseline to be reduced by about 56,000 acre-feet per year. The second one was the use of the reduced reductions in the baseline because of the MWD/IID transfer number one that dates to about 1989. It appears that a hundred thousand acre-feet have been subtracted to account for that, and based on data that we have doesn't look like it was done appropriately.

MR. HARGREAVES: Does it appear that the Inadvertent Overrun Policy has been applied consistently throughout the document?

MR. KIRK: No. What we've heard in earlier testimony

is, in fact, the IOP in some cases was included in the baseline and in other cases it wasn't. In some cases it included the no-project and in other cases it is not. The IOP doesn't appear to be consistently applied. There are some issues with perhaps some under counting or hide the ball, as it were, with impacts associated with the IOP because of the use of the entitlement enforcement in the baseline projection.

MR. HARGREAVES: Are there other inconsistencies in the document?

DR. BROWNLIE: I believe that there is an inconsistent treatment of the impacts of HCP1 versus HCP2. When I go through the summary table, summary of impacts table, any place where fallowing is discussed, it always seem there is a worst case scenario taken. But when I look at the biological impacts, it says they're not significant because they are mitigated by HCP1.

On the fallowing side, the use of prime farmland, for example, is loss of prime farmland is taken as a worst case type of scenario and concluded to be significant, permanent loss of prime farmland, even though a fallowing program might be rotation type of thing.

So when you go through, every time it talks about fallowing, it's worst case, worst case language used, and that it looks like on the HCP side, HCP1 side, there wasn't

a worst case.

MR. KIRK: I don't know if you were asked about inconsistencies. Were you going to address environmental justice?

MR. HARGREAVES: Certainly.

MR. KIRK: I'm glad you asked. There is some inconsistencies there as well. In the document all the impacts are found in subregions, all the subregions other than the San Diego subregion or the coastal subregion. So all the negative impacts are found largely in the Imperial Valley, but obviously the Salton Sea as well.

The population profile of the Imperial Valley and the Salton Sea region is very different than that in San Diego. And I think it would be safe to say that the socioeconomic conditions are more dire around the shores of the Salton Sea and generally in Imperial Valley. So to have all the negative impacts in the Imperial Valley and the Salton Sea and all the positive benefits in San Diego, and then to suggest in the environmental justice section that there aren't significant environmental justice impacts in the Imperial Valley and the Sea, other than that associated with fallowing, I think is a terrible inconsistency in the document.

DR. BROWNLIE: Also, you might want to describe the Tribes.

MR. KIRK: I pointed out in my opening statement that the Tribe, particularly the Torres-Martinez Tribe, is a big part of the community around the Salton Sea. And the Torres-Martinez Tribe, unlike their brethren in the other parts of Coachella Valley, aren't doing so well. They don't have gaming enterprise. They are the largest and poorest tribe in the Coachella Valley. They are significantly impacted by the effects on the Salton Sea.

MR. HARGREAVES: In terms of concluding, then, would you say that the Sea can be restored and wildlife resources maintained indefinitely in the absence of the proposed project?

DR. BROWNLIE: Yes.

MR. HARGREAVES: Will the transfer project significantly impact wildlife resources associated with the Salton Sea?

DR. BROWNLIE: Yes.

MR. HARGREAVES: Will the proposed project significantly accelerate the environmental degradation of the Salton Sea?

DR. BROWNLIE: Yes.

MR. HARGREAVES: Would the proposed project essentially render infeasible any realistic Salton Sea restoration project?

DR. BROWNLIE: Yes.

MR. HARGREAVES: As a seasoned professional preparing environmental impact statements, do you believe that the proposed project could unreasonably affect fish and wildlife?

DR. BROWNLIE: Yes.

MR. HARGREAVES: Are there environmentally superior alternatives to the proposed project?

DR. BROWNLIE: Yes. HCP2.

MR. HARGREAVES: Thank you.

CHAIRMAN BAGGETT: Thank you.

At this point it doesn't make much sense to start the cross. Let's take -- we'll take lunch. I've got 13 till. Let's come back and plan on starting at one sharp. If everybody could be back here at a little before one, so we can be ready to resume at 1:00.

We are recessed.

(Luncheon break taken.)

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AFTERNOON SESSION

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CHAIRMAN BAGGETT: Let's go back on the record.

We are at cross-examination of Salton Sea Authority witnesses.

Mr. Gilbert.

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CROSS-EXAMINATION OF SALTON SEA AUTHORITY

BY MR. GILBERT

MR. GILBERT: Thank you, Mr. Chairman.

Just a few questions.

Dr. Brownlie, I think you testified that -- or did you testify that inflows to the Sea with the proposed project would probably be less than a million acre-feet, I think you said .93 million?

DR. BROWNLIE: Yes, that is my understanding.

MR. GILBERT: Did you also testify that the current inflows to the Sea are about 1.34 million acre-feet?

DR. BROWNLIE: Yes.

MR. GILBERT: Are you aware that the transfer involves 300,000 acre-feet?

DR. BROWNLIE: Yes.

MR. GILBERT: Can you explain where the other hundred thousand goes?

DR. BROWNLIE: Well, that is the issue with respect to

the projected that they claim in the transfer document where it would be 110,000 acre-feet per year lower than it has been in the recent past.

MR. GILBERT: So you were using the EIR baseline for the --

DR. BROWNLIE: EIR baseline reduction of 110,000 acre-feet plus the additional 300,000. So it would be about 410,000 acre-foot per year lower than it has been over the past four years.

MR. GILBERT: Maybe one question for Mr. Kirk.

I think you described the Salton Sea as the most productive fishery in the State of California. Is that based on fish taken by anglers per square mile of surface area or how is that measured?

MR. KIRK: I can't remember if I testified exactly that way. In fact, I may have been using even more hyperbole. That is my understanding, Mr. Gilbert. It is actually the most productive fishery, inland fishery, in the world, and that is based on the work by Dr. Costa-Pierce from the University of Southern Mississippi who has done extensive work on tilapia fishery. In particular he's a fisheries expert, and he couldn't believe the productivity of the Sea based on catch per unit covered, or CPUEs, and sometimes that means angling, sometimes that means netting. Doesn't matter what it is, they compare the same denominator

essentially across any lake.

MR. GILBERT: It is from an angler's perspective?

MR. KIRK: Not necessarily. It could be from a researcher's perspective as well. I mentioned netting. He actually went out and netted for fish in the Salton Sea, and he compared his net rates to net rates found in other research.

MR. GILBERT: Doesn't have anything to do with fish taken from the Sea per square mile or surface area?

MR. KIRK: Not to my knowledge.

MR. GILBERT: That is all.

Thank you.

CHAIRMAN BAGGETT: Thank you.

Mr. Du Bois.

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CROSS-EXAMINATION OF SALTON SEA AUTHORITY

BY MR. DU BOIS

MR. DU BOIS: Mr. Kirk, as I understand, you're recommending fallowing to maintain the Salton Sea at somewhere around its present level; is that correct?

MR. KIRK: It's a loaded question and maybe a loaded answer as well. If -- conditional on all sorts of things, I am not recommending fallowing, not recommending water transfer. Our testimony has been about the effects on the Salton Sea.

If the question is is fallowing easier on the Salton Sea, have fewer impacts, then I would say yes.

MR. DU BOIS: Have you calculated about how many acres it would take of fallowed irrigated land to maintain the Sea?

MR. KIRK: It depends. I assume that you are referring to how many it would take to maintain the Sea to allow us to restore it and also to proceed with the water transfer?

MR. DU BOIS: Yes, that is a way to put it.

MR. KIRK: The answer to the first question would be none. You don't need to fallow any land to maintain the Sea today. If current conditions continue and the Imperial Valley farms as it has been for the last 10 or 20 years, we wouldn't need to fallow land to maintain the Salton Sea, per se. It sure would be nice in some ways to get additional freshwater flows, but it is not a necessity.

If you are referring to how you pull off a water transfer and maintain the Salton Sea, the answer is it depends. It depends on how you accomplish the fallowing program. The typical rule of thumb that we have been using, we in the broadest sense, is every acre of land in Imperial Valley uses about six acre-feet of water. If you fallow for the water transfer and you want to move 300,000 acre-feet of water, you'd fallow 50,000 acre-feet of land. If you wanted to move that much water and not have any effect on the Salton Sea, 50,000 acres will have much less impact on the

Salton Sea in terms of inflows than some kind of conservation program. It would still have some impact. If you wanted to minimize that, you would then fallow some additional land, and estimates have been -- I have seen about 75,000 acres.

So the number we would use there is four acre-foot of water per acre land to have zero impact on the Salton Sea. 75,000 acres times four acre-feet, you come up with 300,000 acre-feet of water.

MR. DU BOIS: Do you think that would be a good plan?

MR. KIRK: Again, a loaded question. Would it be a better plan than the proposed project for the Salton Sea? Yes.

MR. DU BOIS: Have you considered the impact on Imperial Valley agriculture?

MR. KIRK: Have I considered the impact? No.

MR. DU BOIS: You agree that it would be wise to consider the impact before making a decision like that?

MR. KIRK: Yeah. The challenge with all of the expert witnesses, myself included, is we are responsible for a small piece of the puzzle and a small piece of the pie. My focus, Mr. Du Bois, as you know, is on environmental resources associated with the Salton Sea.

And I think when you look at the total picture in a public policy perspective, you not only have to look at the

environmental issues, but obviously the economic ones as well.

MR. DU BOIS: The purpose of fallowing to produce water for the Sea would be to maintain the fish for as long a period as possible; is that correct?

MR. KIRK: The purpose -- are you referring to what is described as HCP No. 2 in the EIS/EIR?

MR. DU BOIS: Not particularly. I was wondering if we were to fallow land to provide water for the Sea, it would be done for a specific purpose. Is that specific purpose to maintain the fish life for as long as possible?

MR. KIRK: My understanding, and again I go back to what you might be referring to, as the example that I give is the EIS/EIR. There it is suggested under HCP2, if IID were to proceed with on-farm conservation and major impacts on inflows, quantity and quality of water getting into the Sea, it is proposed that fallowing provide makeup water. I gather the strategy there, Mr. Du Bois, is to minimize and perhaps negate any impacts on the fishery, on birds, on habitat, on air quality, on recreation, on elevation, on aesthetics.

I think the intent, I believe, is broader than simply preserving the fishery.

MR. DU BOIS: The fish -- the objective of maintaining a fishery is primarily for fishermen or primarily for

birds?

MR. KIRK: Both.

MR. DU BOIS: Both?

MR. KIRK: Yeah.

MR. DU BOIS: I think I've heard the estimate or maybe read it, that there is somewhere around 200,000,000 fish in the Sea. Do you have a figure on how many fish the birds eat?

MR. KIRK: No, I don't. And that would be good cross-examination for IID. It is really unclear. We don't have a good census count for that. If I remember correctly, each pelican, as an example, eats three to five pounds of fish per day. There are 30,000 pelicans a day during the winter, anyway. Figure a hundred thousand pounds. Each fish is about a pound; each tilapia is about pound or two pounds. It is a lot of fish. That is just the pelican species. That is probably the biggest fish eater out there. But there are a lot of fish consumed by the birds.

MR. DU BOIS: Do you have a figure on how many fish the fishermen take?

MR. KIRK: No, I don't. Probably Fish and Game may have. They used to do some kind of creel. I think that's the term.

Andy, do you know?

MR. DU BOIS: Creel count?

MR. KIRK: Yeah, creel count. But I am not sure if they've been doing that recently.

Thanks, Andy.

MR. DU BOIS: I think I've heard references to the Sea dying. That is an incorrect terminology, is it not?

MR. KIRK: Yes.

MR. DU BOIS: Because Mono Lake is saltier than Salton Sea and Great Salt Lake is saltier than the Salton Sea?

MR. KIRK: Yes.

MR. DU BOIS: Both of those bodies of water are useful to birds, are they not?

MR. KIRK: Yes, they are useful.

MR. DU BOIS: So the Salton Sea, even if it reaches a hundred thousand parts per million of salinity, it would still be useful for bird life?

MR. KIRK: Yes, it would. And the difference would be in the quality of that habitat and the amount of productivity of the habitat, how many species are, in fact, supported by the Sea. Right now the Sea, as you know, supports an amazing amount and variety of birds. I think it is the most productive or has the most species certainly in the state of California, secondmost in the U.S. We would expect with hypersaline conditions that we would have more like a Mono Lake condition. There Mono Lake also supports lots of birds, but not lots of species. So biodiversity is

significantly reduced.

MR. DU BOIS: I'm puzzled by the expression of thought that it would be logical to -- let me put it a different way.

If you fallow land, you are going to reduce the food production that is usually eaten by people; is that correct?

MR. KIRK: Beyond my expertise. I am not sure if fallowing some land in the Imperial Valley, and there is currently fallowing going on everywhere that I know of in California where there is agriculture, whether that would directly affect liability to go into Ralphs and pick up whatever the case may be. I don't know. You probably know better than I.

MR. DU BOIS: I understand that response. But the land that you would fallow to produce water for Salton Sea, what is that land now producing?

MR. KIRK: I guess I'm a little unclear again. On your questions about fallowing, did you say you would fallow, are you suggesting that the Authority is proposing to fallow land for the Salton Sea?

MR. DU BOIS: If the decision is made to fallow in order to produce water for the Salton Sea, have you made any projections as to what effect that would have on food growing? Because if you fallow, you have to fallow

something that is producing now, otherwise you don't get any benefit.

MR. KIRK: If the IID -- if the proposed water transfer, the conservation and transfer program were to fallow, have I made any projections on food production or consumption? No.

MR. DU BOIS: I think I have no other questions.

CHAIRMAN BAGGETT: Mr. Rodegerdts?

MR. RODEGERDTS: Pass.

CHAIRMAN BAGGETT: Mr. Rossmann.

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CROSS-EXAMINATION OF SALTON SEA AUTHORITY

BY COUNTY OF IMPERIAL

BY MR. ROSSMANN

MR. ROSSMANN: Mr. Kirk, let me continue where Mr. Du Bois started and try to help us out here. The Authority is not endorsing fallowing as part of the transfer, is it?

MR. KIRK: That's correct.

MR. ROSSMANN: And, in fact, isn't it true that the Authority has considered the socioeconomic impact of fallowing in the Imperial Valley?

MR. KIRK: Yes. Considered in the broadest sense.

MR. ROSSMANN: Well, reading from your testimony at Page 3, that fallowing may seem like a silver bullet, it is not. It may minimize environmental impacts, but it may

significantly aggravate the economic conditions in the Imperial Valley.

MR. KIRK: You say it much more eloquently than I could.

MR. ROSSMANN: I am reading from your testimony, sir.

Do you still stand by that testimony?

MR. KIRK: I do, strongly.

MR. ROSSMANN: Is it not the resolution adopted by your governing board that water transfer solutions must mitigate impacts on the Sea and address socioeconomic impacts and conditions in Imperial Valley?

MR. KIRK: Absolutely. Yes, sir.

MR. ROSSMANN: We had some dialogue both this week and last about different forms of legislation. I would like to focus on those for a second.

You included Exhibit 20 as part of the legislative history of the Salton Sea Restoration Act. Am I correct that Exhibit 9 is the actual final version of the enacted bill?

MR. KIRK: Yes.

MR. ROSSMANN: I want to compare that, and I have literally and figuratively borrowed Exhibit 60 from our Imperial colleagues, from their file here. If you need this, I can place this in front of you, which is the House

report.

MR. KIRK: Thank you.

MR. ROSSMANN: Am I correct that by the time Congress got through with this bill, a finding that the Salton Sea was a national resource, that finding had been deleted from the bill?

MR. KIRK: Could you refer to me where in the report it suggests that?

MR. ROSSMANN: I think if you look at one of the very first elements of that version of the bill. By that version of the bill, I am referring to the bill reported out of the House Resources Committee.

MR. KIRK: I guess I don't remember that language.

MR. ROSSMANN: Let me approach and see if -- I found it a few minutes ago. I hope I will be as lucky.

Let me just quote from the top of Page 2. The Salton Sea, located in Imperial and Riverside Counties, California, is an economic and environmental resource of national importance.

MR. KIRK: Thank you. You are looking at the Table of Contents.

Thank you.

MR. ROSSMANN: Now that provision did not survive, if that is the right word, did not endure into Public Law 105372.

MR. KIRK: You appear to be correct.

MR. ROSSMANN: Yet both the bill that was reported on there and the bill that emerged contained restrictions on your Authority's ability to consider reliance on the Colorado River?

MR. KIRK: Yes.

MR. ROSSMANN: You participated in the legislative advocacy that produced this measure; is that correct?

MR. KIRK: I did.

MR. ROSSMANN: Can you give us a little bit of background whether the measure prohibits your Authority from even considering, in the words of the enacted measure, reliance on the importation of any new or additional water from the Colorado River?

MR. KIRK: In a word, politics. To elaborate, the reason that was included was, in my opinion, to secure the support or at least lack of opposition from many others in the basin, Colorado River Basin. At the time we had strong support from many in the California delegation. There was, I suppose, some suspect glances thrown the way of this legislation from the Arizona delegation. And I believe that that language is included to ameliorate or pacify their concerns.

MR. ROSSMANN: So the alternative was -- let me ask you this.

Has your Authority in your experience, as its sole Executive Director, ever considered the strategy of the Secretary making additional water from the Colorado for the Salton Sea that would not be charged to any state's allocation, but be rather a national responsibility?

MR. KIRK: Yes. We looked at it. And one of the challenges here, what the bill says here and what one does under a NEPA or CEQA process may be two different things.

MR. ROSSMANN: Thank you, sir. I appreciate that. Please elaborate on that.

MR. KIRK: It's just rare that somebody applauds along the way or even at the end of my statement, so I appreciate that.

The NEPA, CEQA really forces us to consider a wide range of alternatives. We certainly use the bill as some guidance, and, in fact, the Bureau of Reclamation and the Authority did include taking a look at some Colorado River water, just not what is called new. The Bureau of Reclamation at the time interpreted that as a new draw on the Colorado River unrelated to things like flood flows. So at one point in our analysis, during the preparation of the 2000 -- our 2000 EIS/EIR, we did consider the use of flows to support our restoration efforts, particularly under reduced inflow situations, in other words, water transfers.

MR. ROSSMANN: Did your agency, in commenting on the

NEPA document for this transfer, ask that alternatives be considered in respect to the Bureau's role as lead agency?

MR. KIRK: I don't believe so.

MR. ROSSMANN: You wouldn't object if the final EIS on the transfer addressed that alternative or other alternative means of securing national meeting of national responsibilities?

MR. KIRK: Only if I move to Phoenix would I object.

DR. BROWNLIE: That means no.

MR. KIRK: Clarify, that does mean no.

Thank you, Bill.

MR. ROSSMANN: Mr. Brownlie, you have testified that you're an experienced reviewer and preparer of environmental review documents?

DR. BROWNLIE: Yes.

MR. ROSSMANN: You obviously are very familiar with the document that is at your feet, the transfer EIR. Are you aware that projections have been made that the final Environmental Impact Statement and Report will be completed by May 30th?

DR. BROWNLIE: I am not aware of what their schedule is.

MR. ROSSMANN: You never heard that assertion before? If I represented to you that the testimony here two weeks ago was that that was the goal of the preparers to complete that document by May 30th, do you think that is a realistic

goal?

DR. BROWNLIE: It doesn't sound like it to me, no.

MR. ROSSMANN: If you were advising a client that had prepared that document and reviewing the comments that you have seen yourself so far, how long would you advise that client to expect it would require to complete an adequate final EIS/EIR?

DR. BROWNLIE: Well, I guess it depends on the size of the staff they have working on it. I would expect it would take a couple months.

MR. ROSSMANN: Thank you, sir.

Sir, could you turn to your graph again, and I don't know if it can be electronically put up here, but it is not that crucial. It is the first graph we looked at, Figure 1, Page 3. Let's recant it, if we can get it up there it might be very helpful.

(Discussion held off record.)

MR. ROSSMANN: There has been a lot of talk on baseline. I am curious that this graph, and I guess that Dr. Smith would agree that it is a graph, starts at 2000. Do you have any idea how this graph would have looked before -- between 1984 and 2000, that is to say starting from before the first Imperial Metropolitan water exchange?

DR. BROWNLIE: Yes. Salinity was -- for the last ten years it's been fairly flat. It's gone up a point or two

over the past ten years. I am not sure exactly what period. I can't recall exactly what it would have been in 1987.

MR. ROSSMANN: Let's go back to before this Board order and Decision 1600. Would those -- would that inflow, 1.34 million acre-feet per year, would that have been approximately the inflow at that time, pre-1984?

DR. BROWNLIE: If you looked at the 40-year period from 1960 to 2000, 1.34, it is fluctuates from year to year. No question about that. If you look at a ten-year period, that is pretty much where it's been for the past 40 years. Any ten-year period within the past 40 years has been pretty close to 1.34.

MR. ROSSMANN: So the first exchange, the Sea was basically able to survive that first conservation effort in the Imperial Valley without seriously impacting the Sea?

DR. BROWNLIE: Yeah. There is no -- there has been no visible effect of that that I can see.

MR. ROSSMANN: Let me ask a question to both of you since I see your colleague may be prepared to answer it. Why then does this one become the straw that breaks the camel's back?

MR. KIRK: The last water transfer, the impacts of that last water transfer have been balanced to some degree by increased water usage in the Imperial Valley. So during the

record in question, from 1987 to the year 2000, I believe there has been more double cropping and tripling cropping, more water usage. So, in fact, inflows to the Salton Sea have not been as significantly affected as one might think from a system based, system improvement based water conservation plan.

MR. ROSSMANN: That 3.1 million acre-feet cap that we heard about earlier in these proceedings, that seems to be a factor now that wasn't faced in the first transfer?

MR. KIRK: Yes.

MR. ROSSMANN: Dr. Brownlie, you mentioned in your testimony, both written and oral, a baseline that was affected by 56,000 acre-feet under the rubric of entitlement enforcement.

Could you explain that further and your understanding of how that 56,000 acre-foot number was derived and what it refers to?

DR. BROWNLIE: Probably --

MR. ROSSMANN: If Mr. Kirk can do it, that is fine.

MR. KIRK: I may be able to and Bill can jump in if I am unable to.

The 56,000 acre-feet that is called entitlement enforcement is actually about 57,000 acre-feet of an impact on the Salton Sea comes from a 58-, 59,000 acre-foot reduction in water diverted to either IID or CVWD. That

reduction comes from what is called entitlement enforcement. And what the document apparently did and the authors did was assume that there was some program where the federal government would be capping agricultural use of Colorado River water. They're currently capped at about 3.85 million acre-feet. They, IID Coachella, the Yuma Project and PVID. It is assumed that the Secretary would cap their entitlement, their use of water to 3.85, and it would be approximately a 58,000 acre-foot reduction to IID and CVWD, and that that reduction would be manifest in terms of its impacts at the Salton Sea, which, of course, we've got significant concerns about.

MR. ROSSMANN: I think I understand.

Thank you very much for explaining that one.

Mr. Kirk, while you are there, let me ask you the next question. You said your Authority is not opposed to the QSA; is that correct?

MR. KIRK: That's correct.

MR. ROSSMANN: But doesn't the QSA rise or fall on the execution of this transfer?

MR. KIRK: I don't know.

MR. ROSSMANN: If this transfer doesn't take place, doesn't the QSA not go into effect?

MR. KIRK: I don't know. What I can -- it is -- not trying to be evasive, Mr. Rossmann. I frankly don't know.

We hear from some quarters that, in fact, the QSA will fall apart if this -- a very large piece of it, this being the IID/San Diego water transfer, doesn't go forward immediately. And others that I have heard suggest that the QSA perhaps can continue on, at least in the short term.

As my counsel reminds me, I believe the Metropolitan Water District sent a letter to the Legislature or the governor some months ago to that effect.

MR. ROSSMANN: Your Authority has not taken a position that would oppose Imperial Irrigation District adopting a no-project alternative here?

MR. KIRK: That's correct.

MR. ROSSMANN: Let's come back to Exhibit 12 about which we had some dialogue this morning about its true origins. This was the report prepared in the workshop conducted by the scientific panel.

Could you explain who the author or authors of that report is or are?

MR. KIRK: There is a relationship to the Salton Sea Authority and Bureau of Reclamation in that Salton Sea Science Office is there to support much of the work we do. At the request of the Authority and the Bureau of Reclamation, the Salton Sea Science Office commissioned a study of the Pacific Institute proposal to address ecological issues at the Sea if, in fact, there is a major

reduction of inflows due to the proposed project.

The Salton Sea Science Office independently identified a series of researchers in the field of biological, ecology and other -- in biology and other areas and commissioned a workshop, and each of these researchers and scientists go off and prepare their components pieces. The pieces were then assembled, and this proposal or this report was authored by a Dr. Stuart Hurlbert, who, in fact, will be on direct testimony later for one of the environmental groups.

MR. ROSSMANN: He is a professor at San Diego State University; is that correct?

MR. KIRK: Yes. Once he authored it, the draft was sent out to the various participants for peer review. I think a complimentary copy was sent to the Pacific Institute. Comments were taken, and the report was finished up by the Salton Sea Science Office.

MR. ROSSMANN: Thank you, sir.

This morning we had some discussion about Decision 1600. And let me ask if your Authority views the finding of waste, of excess water going into the Sea in 1984, as binding on this Board now with the changed condition of not enough water being available to the Salton Sea?

MR. OSIAS: Objection. Calls for a legal conclusion. Outside the expertise of either of these two witnesses.

MR. ROSSMANN: He can tell us, your Honor, whether he

as the Executive Director or his Board has addressed that issue.

CHAIRMAN BAGGETT: Overruled.

MR. ROSSMANN: Thank you, sir.

MR. KIRK: The Salton Sea Authority hasn't taken a position on it. And while I'm certainly not an expert in the field, I would say I certainly don't consider -- I assume the Salton Sea Authority Board would not consider any water getting into the Salton Sea to be a waste. I suspect we would be very supportive of IID's original position to this Board on the issue.

MR. ROSSMANN: Does your Authority or do you professionally assert that the Sea is embraced within the California Public Trust Doctrine?

MR. OSIAS: Same objection.

MR. ROSSMANN: Again, trying to find out whether it is their position.

CHAIRMAN BAGGETT: Can you focus it as a non attorney. You can answer the question if you have any -- I would allow him to answer, not as a legal expert.

MR. KIRK: My limited understanding of the public trust suggests that, in fact, the Salton Sea could be a public trust asset. I understand there are some -- one does have to point out the natural history of a body of water. And this one has a record as a natural body of water and an

artificial body of water.

How that factors into public trust determinations, frankly, I don't know.

MR. ROSSMANN: Do you know who actually owns the Salton Sea at this point?

MR. KIRK: I know who owns pieces of land under the Salton Sea generally.

MR. ROSSMANN: That is a better question. Would you please answer that question?

MR. KIRK: The IID is the largest landowner under the Salton Sea. Other large landowners include the federal government through various agencies and department. And the Coachella Valley Water District is a large owner as is the Torres-Martinez Tribe. And there is some small ownership by private individuals.

MR. ROSSMANN: But to your knowledge, the State of California is not the owner of any of that submerged land?

MR. KIRK: I don't know. The state, if it is, is probably a small owner of some land.

MR. HARGREAVES: State park?

MR. KIRK: Counsel reminds me of the state park. But I believe the state park is leased land. There may be some state ownership of that land.

MR. ROSSMANN: Thank you very much.

Thank you, sir.

CHAIRMAN BAGGETT: Thank you.

Defenders of Wildlife.

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CROSS-EXAMINATION OF SALTON SEA AUTHORITY

BY DEFENDERS OF WILDLIFE

BY MR. FLETCHER AND MS. DELFINO

MR. FLETCHER: Mr. Brownlie, Mr. Kirk, before I begin I have a document that I will be introducing into evidence. I have copies here. I won't be using it extensively. I'll just be reading from it. It is a copy of the comments submitted by Pacific Institute on the EIR.

Do you need 12 copies?

CHAIRMAN BAGGETT: You can E-mail it if you don't have 12.

MR. FLETCHER: EIR/EIS transfer.

CHAIRMAN BAGGETT: I propose Exhibit 32.

MR. FLETCHER: Defenders of Wildlife 32.

CHAIRMAN BAGGETT: Checking to make sure.

MR. FECKO: 32.

CHAIRMAN BAGGETT: Very good.

MR. FLETCHER: I will ask a series of questions and then my colleague, Kim Delfino, will get up to ask another set of questions.

I will start with everybody's favor topic, baseline.

Now, Mr. Brownlie, you testified that you have a great

deal of experience reviewing and comparing EIRs and you're familiar with this EIR?

DR. BROWNLIE: Yes.

MR. FLETCHER: Both of you, in fact, commented in your written testimony and in your oral on the baseline used in the EIR, and I would like to ask some specific questions about that. We talked a lot about it so I would like to frame it with some more general questions to start.

Why basically is the baseline so important? Why are we spending so much time on this?

DR. BROWNLIE: Well, I think the why it is important is because it provides the reference point in the document for determining the significant impacts. If we compare it, the impacts, to the way things are today, they would probably look more significant than if we were comparing them to a reduced shoreline, reduced sea, degraded sea. So we are comparing it to a degraded sea. And the extent to which that line, whether it is closer to that line or closer to that line, it makes a big difference in what they have called the temporal impacts.

MR. FLETCHER: It is basically determining the extent of the impacts, providing a reference point for making that determination. Is that the purpose of having a baseline?

DR. BROWNLIE: Yeah. It doesn't necessarily change the total picture of how things would change, but it does make a

difference in the reference point for how you are assessing the significance of the impacts.

MR. KIRK: Mr. Fletcher, there is a quantitative and a qualitative aspect to it. We focus a lot on the quantitative. Is the temporal impact 11 years or is it 45 years or 50 years?

There is also this qualitative. If you read the EIS/EIR, you see it in multiple resource sections this notion that -- well, as an example, elevation impacts. The aesthetics impacts of the shoreline receding a mile to five miles aren't very significant because, after all, the shoreline was going to recede half a mile or two miles. And the same thing goes with air quality and all the other resource areas. Well, the total exposed area may be 90,000 acres of total exposure under the proposed project, whether it is 90 or a hundred I can't quite remember. But, by the way, 16,000 acres are going to be exposed anyway, so what's the big deal?

And you get that flavor throughout this document, that, hey, the Salton Sea is going to decline quickly, the elevation is going to drop significantly, so are those impacts really significant. That colors much of the impact analysis.

MR. FLETCHER: Now, two of you collectively, and I am not sure I also recall who responds to what, but the two of

you collectively have said they're really focused on a couple problems today in the baseline. One of those relate to the 1988 IID and MWD agreement. A second one relates to entitlement enforcement and Inadvertent Overrun Policy. I will take those in turn, starting with the IID and MWD agreement.

Does the baseline assume that inflows to the Salton Sea will decrease in the future due to water transfers implemented under the 1988 agreement?

DR. BROWNLIE: My understanding is that, yes, it does, based on statements in the document. Although the exact amount, the numbers, it is hard for me to trace through the numbers in there to determine exactly how much. There are statements in the document that say that future inflows will be reduced by a hundred thousand acre-feet because of that transfer.

MR. FLETCHER: Do you know why the EIR makes the prediction that inflows will be reduced by approximately a hundred thousand acre-feet?

DR. BROWNLIE: Do I know why?

MR. FLETCHER: What is the basis for that prediction?

DR. BROWNLIE: They transferred a hundred thousand acre-feet, so it just stated that there would a hundred thousand acre-foot reduction in the future.

MR. FLETCHER: Are you generally familiar from your

work reviewing this EIR and generally with the Salton Sea Authority with IID's recent usage of water?

DR. BROWNLIE: Yes.

MR. FLETCHER: Has the average volume of water used by IID decreased since the implementation of the 1988 agreement?

DR. BROWNLIE: No, not based on data that I have seen.

MR. FLETCHER: I handed out a document a minute ago that is Defenders' 32. That document is the comments of the Pacific Institute on the EIR, the transfer EIR. Could I ask you to turn to Page 7?

DR. BROWNLIE: Hydrology and water quality.

MR. FLETCHER: I have marked a bar there on the side of the first long paragraph and also to a footnote, indicating some material I would like you to look at. You can take a minute to look at that.

DR. BROWNLIE: I have seen Pacific Institute before, so I'm familiar with this document.

MR. FLETCHER: Where I have marked with that bar, the comments state that the data from the United States Department of the Interior's annual compilation of records in accordance with Article V of the decree of the U.S. Supreme Court in Arizona versus California show that IID's average annual use increased by roughly 200,000 acre-feet to roughly 2.9 million acre-feet per year since the 1988

agreement began implementation.

Is that right?

DR. BROWNLIE: That is what it states.

MR. FLETCHER: That is roughly in accordance with your understanding of IID's recent water use as well?

DR. BROWNLIE: Yes. The number for the last ten years I know has been recorded in a number of places. It is a little bit higher than 292-, but it is still around 3,000,000.

MR. FLETCHER: So if IID's current use remained constant and included the amount of water charged to IID under the 1988 agreement, would you expect Imperial Valley runoff to the Salton Sea would increase by 100,000 acre-feet per year as assumed by the DEIR?

DR. BROWNLIE: No. The data doesn't seem to support that.

MR. FLETCHER: I would like to move to the second area of concern. I'll confess this one I do not understand so well. I believe you referred to it under two rubrics, entitlement enforcement and also Inadvertent Overrun Policy; is that right?

MR. KIRK: That's correct.

MR. FLETCHER: What are those two things?

MR. KIRK: In some ways it is two sides of the same coin. Again, this relates back to my response to

Mr. Rossmann's questions on entitlement enforcement and the agricultural entitlement.

I believe that the entitlement enforcement is projected to be the reduction in use to either IID and/or Coachella in the future without a project. So it is included in the no-project condition, 59,000, 58,000 acre-feet reduction in diversion to one or both of those agencies.

The IOP, Inadvertent Overrun Policy, is the part of the proposed project. It is a part of the IID conservation and transfer EIS/EIR proposed project. It is the same amount of water, 59,000 acre-feet reduction at the river and a 57,000 acre-foot impact to the Salton Sea.

MR. FLETCHER: What is the relationship? You said they're basically the same amount of water. What is the relation -- if I can call it, IOP, what is the relationship of the IOP to entitlement enforcement?

MR. KIRK: Again, they're probably the same thing. We don't see -- and there was some confusion, at least in my own mind, when I was questioning Dr. Eckhart on the issue. The entitlement enforcement is included in that no-project and no-project and baseline condition, which is the same thing for much of the transfer EIS/EIR. That 1.23 million acre-foot line heading up through the middle of that graph? They're assuming that entitlement enforcement occurs under the no-project condition, and, in fact, it begins occurring

two years ago, in the year 2000. That, of course -- I am sure they'll clean that up in a revision to the document. That, of course, hasn't occurred to anybody's knowledge. There is no action that the Secretary has taken to reduce agricultural use by 57- or 58,000 acre-feet. So it is included in the no-action.

And then the document includes the IOP in the proposed project. And I know this gets a little confusing, but one of the cross-examinations pointed out to Bill Brownlie, well, 300,000 -- 1.34 million acre-feet less 300,000 shouldn't equal .92 million acre-feet, and it doesn't because they've included in that first 58,000 no-project and then they didn't include it in the project. So they've accounted for it in the baseline and they haven't accounted for it in the proposed project insofar as its effects on the Salton Sea.

You can actually see that in the document, Chapter 3 of the document, where it describes organization of impact analysis, Chapter 3 of the EIS/EIR, Page 3.0-1. Says organization of impact analysis. And with the IOP it's included in the analysis at the Lower Colorado River. And if you go to the second -- the next page, 3.0-1, it is included in the IID service area and then it is not included in the Salton Sea.

MR. FLETCHER: It is included in the baseline for some

purposes, but not for others?

MR. KIRK: That's right. Again there seems to be inconsistency there. In addition, I think the more significant issue, though, is it being accounted for in the baseline and then there is no impact to it in the proposed project. And it would be similar to me saying to you, Mr. Fletcher, I am going to build a 400-unit housing development on a wetlands, and when I do the impact analysis, I am going to assume that a hundred unit structure would have been built anyway. So I'm just going to take into account in my analysis that I have 300-unit impact on the area and a hundred units was going to be developed anyway. So it minimizes the project impacts.

MR. FLETCHER: By approximately how much?

MR. KIRK: By 58,000 acre-feet, 57,000 acre-feet.

MR. FLETCHER: It is a one-to-one impact, basically?

MR. KIRK: Yes. In my opinion, it should not have been included in the baseline and it should have been included in the project.

MR. FLETCHER: This is federal entitlement enforcement, right? Would that be federal actions?

MR. KIRK: Presumably. There is not a lot of detail there, but I assume it would be some sort of federal project.

MR. FLETCHER: I know that there are -- this spring

there have been a few EISs released on related activities, EIA, IOP. I confess I haven't read every page of every one of them. Are those impacts discussed in those EISs, to the best of your knowledge?

MR. OSIAS: Objection. Ambiguous as to which impacts.

CHAIRMAN BAGGETT: I would agree. Can you clarify? I got confused as to what EIR/EIS you are talking about.

MR. FLETCHER: There is a -- to begin with, the entitlement enforcement is a federal action. We've established that. And there is an EIS related to or developed for the IOP.

My question is: Is the impact on the Salton Sea analyzed in that EIS?

MR. KIRK: The impact of the Salton Sea is generally in a programmatic way is addressed. If the question is specific to the IOP's impact on the Salton Sea, which I assume it is --

MR. FLETCHER: Those 58,000 acre-feet.

MR. KIRK: Given this was such a burning issue, I made copies of various sections of relative documents, one which I believe is in evidence, the IOP EIS. The federal EIS on the IOP and implementation agreement, Page 3.1-41 reads, very last paragraph: In addition to water conserved for transfer purposes, additional conservation by IID would be required to comply with IID's priority 3A cap on diversions

and the IOP. These actions could have additional effects on reduced inflow to the Sea. The detailed analysis of the full range of IID's conservation measures and their impacts on the Salton Sea may be found in the IID water conservation and transfer project EIR/EIS.

So it acknowledges in this document that, yeah, the IOP could have impacts on the Salton Sea, go see the transfer EIS/EIR. You are not going to find those impacts addressed in the transfer EIS/EIR.

CHAIRMAN BAGGETT: Can you clarify where is that in the record? Whose exhibit is it? Just so we have it on the transcript.

MR. KIRK: It is the --

MR. OSIAS: I believe we put it in, but let me get our list out.

MR. ROSSMANN: It is Imperial 53, I think, your Honor.

CHAIRMAN BAGGETT: Imperial 53.

MR. KIRK: That is what I was referring to.

CHAIRMAN BAGGETT: Imperial Irrigation District Exhibit 53.

MR. FLETCHER: So basically this 59,000 acre-feet reduction in IID's entitlement, in IID's usage, which will have basically a one-on-one impact to the Sea, it is an escaped analysis, is that fair to say, in the original documents?

MR. KIRK: I don't know what the term means, but it does obscure the impacts of that part of the proposed project.

MR. FLETCHER: Let me rephrase so it is not so daring do. The 59,000 acre-feet will -- approximately 59,000 acre-feet will no longer flow into the Sea. The effects of that are not analyzed in detail in any document relating either to the transfer or to the federal actions required to implement the transfer?

DR. BROWNLIE: I think what we are saying is that the effects are not felt in this delta between the baseline and the project. The cumulative effect is felt because it was included in the baseline.

CHAIRMAN BAGGETT: Is that an affirmative response? Is that a yes or no to his question?

DR. BROWNLIE: I don't know.

MR. FLETCHER: I will rephrase one more time.

CHAIRMAN BAGGETT: Rephrase it.

MR. FLETCHER: Are the impacts on the Salton Sea of 59,000 acre-feet reduction in inflows analyzed in detail in any environmental document?

DR. BROWNLIE: With respect to the baseline?

MR. FLETCHER: With respect to the baseline.

DR. BROWNLIE: No.

MR. KIRK: I'd go one step further. In fact, the

effects are addressed in the baseline. Whether they're analyzed, I don't know exactly what you mean by that. Our real concern, Mr. Fletcher, is the impacts are not addressed in the project. They are accounted for in the baseline and not taken responsibility for in the proposed project.

MR. FLETCHER: I want to get back to basically how this plays out in relation to the graph and in relation to how impacts are analyzed in the EIR.

You pointed out several specific problems with the baseline from your point-of-view. If those problems were corrected, what would the -- how would the baseline in the EIR change?

MR. KIRK: We go up.

MR. FLETCHER: How much?

DR. BROWNLIE: Well, it would go up. If you look at the entitlement enforcement, it goes up by 56,856, to be precise. The IID transfer number one, it is really hard to say. It could be as much as a hundred thousand.

MR. KIRK: I think Mr. Eckhart testified that it would be an additional 50- or 60,000 acre-feet reduction in the future associated with IID/MWD's water transfer of 1998. And we're leaving out largely, because we have no information in the public domain, the impacts. There is a reduction of inflow associated with the CVWD's water management plan, which we don't have a public document to

review. And if you did the math, like some folks might, they would say that it is even more than 110,000 acre-foot reduction. The reason all those reductions add up to more than 110,000, one, we are using averages and, two, there is actually a projection of increased water use and additional leaching in the Imperial Valley because of additional salt in the Colorado River.

DR. BROWNLIE: Let me clarify. On the IID water transfer from '89, the reason it is not a full hundred thousand is because some of the hundred thousand has been felt in the last ten years. I think it is 60,000 or somewhere like that.

MR. FLETCHER: Let's go -- it does seem like it would be difficult to come up with a precise number that the baseline has been distorted by. But if you were just to come up with a rough estimate or even a range, mid to max, what would that number be?

MR. KIRK: The level of distortion?

MR. FLETCHER: The number -- what would be an appropriate baseline?

MR. KIRK: Without looking at all the details, it's hard to say because you don't have the information provided in this document. We don't have the CVWD exhibit. Without having that material publicly available and knowing exactly what the assumptions are, the safest thing would probably be

to use the 40-year baseline, the 1.34 million acre-feet.

MR. FLETCHER: Let's go through my resource area. How the baseline shows use in the EIR affects the EIR analysis of impacts.

How does it affect the projections for when the Sea will no longer be able to support fish?

DR. BROWNLIE: It probably doesn't have a great --

MR. FLETCHER: Actually, the graph illustrates it there?

DR. BROWNLIE: There is some. If we took out -- if the entitlement enforcement were shifted from the baseline to the project --

MR. KIRK: I didn't think that is the question. Is the question how does the use of the baseline in the --

MR. FLETCHER: EIR impact this.

MR. KIRK: 1.23 million acre-feet baseline affects the analysis in each one of these resource areas, first being impact on the fishery. And we have testified that it would extend -- the 1.23 million acre-feet baseline significantly reduces the temporal impact associated with the loss of the fishery.

MR. FLETCHER: How does it affect the projections for the decrease in the Sea surface area? I believe we actually have a slide on that. I believe Table 2, Figure 2.

DR. BROWNLIE: To be fair, I am saying there would be

some adjustment in the project. The project with the baseline, if the baseline was incorrect or was adjusted in a different way, the total project, the baseline plus the project could be a little bit less.

MR. FLETCHER: The net affect?

DR. BROWNLIE: Right. Anyway, the difference -- if we were to use the 1.34, and actually their line would be a little lower than this, the difference would be in comparing the project you would be comparing to this line as opposed to this line.

CHAIRMAN BAGGETT: We should just note for the record that this is Exhibit 11, Page 3, Figure 2.

MR. KIRK: To give you some sense of this, Brendan, in terms of numerical, I believe the transfer EIS/EIR accounts for a seven- to eight-foot drop in the Sea's elevation under the baseline condition and another 15 feet under the proposed project. In terms of elevation impacts, again, the document says, well, the elevation is going to drop seven or eight feet anyway, what's another 15 feet, in some ways.

So without that seven or eight foot, would you still have a 15-foot elevation drop? Yeah. In fact, if the IOP was included, as it should have been, in the proposed project, you would have another couple feet, maybe three or four feet, elevation drop.

MR. FLETCHER: How does that affect the projections for

the air quality impacts to the project?

DR. BROWNLIE: Certainly makes them look less severe. The amount of area exposed by the project is smaller than it would be if you compared it to the 1.34 inflow.

MR. FLETCHER: I am going to move on to another topic, and that is another one that's gotten a lot of discussion, which is fallowing.

In your testimony you mentioned that -- speaking to Mr. Kirk now. I am not sure if Mr. Brownlie did. You mentioned that conservation measures are mitigated through the transfer EIR's Habitat Conservation Plan 2. Mitigating environmental impacts would be diminished or eliminated. Let's assume that the methods employed in HCP2 were instead employed to simply generate water for the transfer.

MR. KIRK: I think Alternative 4. I think Alternative 4 of the EIS/EIR was the fallowing alternative. I can't remember exactly. There is a fallowing alternative.

MR. FLETCHER: How does the amount of fallowing required to implement HCP2 compare to the amount of fallowing required simply to conserve the water needed for the transfer?

MR. KIRK: I wish you would have asked IID. I don't know exactly.

CHAIRMAN BAGGETT: Answer.

MR. KIRK: I assume it is the same. One, I didn't put

together either of those estimates. It is IID's document. But I think the amount of land is -- actually should take that back. I believe in Alternative 4 is what is called direct water fallowing. So as I gave my account for fallowing early in terms of how much land might be necessary to generate water for the water transfer, I believe Alternative 4 assumes the direct water transferring, in other words, all the water that would go to the land would be transferred, conserved and transferred, losing some water to the Salton Sea.

So that would actually be presumably a little bit less land, maybe a third less land, than under HCP2. Under HCP2 you'd have to generate enough water to make up all the water lost under the proposed project. So I could assume, and I may be proven wrong here, the difference would be between 50- and 75,000 acres.

MR. FLETCHER: Are you familiar with IID Exhibit No. 62, which is the administrative draft of a draft alternative report that -- well, was never issued, but apparently was prepared for the Bureau of Reclamation and the Salton Sea Authority?

MR. KIRK: Yes.

MR. FLETCHER: Was fallowing considered as part of the restoration strategy in that document?

MR. KIRK: Yes.

MR. FLETCHER: Was that -- were the findings in that document scheduled to be presented at the Salton Sea Symposium in January?

MR. KIRK: Yes.

MR. FLETCHER: Why weren't they?

MR. KIRK: Because the Bureau of Reclamation made a decision to not release the report on that day.

MR. FLETCHER: Do you know if in considering fallowing as part of the restoration strategy, did the Bureau of Reclamation do any economic analysis of what kind of impacts that would have on the community?

MR. KIRK: Yeah, they did. I think Dr. Smith alluded to some of those discussions that were occurring between the IID team and the Salton Sea team to that issue.

MR. FLETCHER: Were the results -- how did the results compare with Dr. Smith findings?

MR. KIRK: As Dr. Smith pointed out when he was being crossed on this, he did present two types of analysis in his direct testimony. The results -- the results of the Bureau of Reclamation's economist were similar to Dr. Smith's result for the alfalfa or grass scenario that he did essentially a third of a job impact as compared to random fallowing of all sorts of crops in the Imperial Valley. They're using the same model. So it is not surprising that they would come up with nearly the same results.

MR. FLETCHER: If I remember correctly, Dr. Smith's analysis of a program under which alfalfa would primarily be retired assumed deliberate targeting of alfalfa; is that right? In other words, a deliberate decision to fallow alfalfa.

MR. KIRK: I don't know if he went into the -- I can't remember if he went into the mechanisms of how fallowing would occur. But I think it was some kind of targeting, if there is some way to target that. I think you're right.

MR. FLETCHER: Was there an assumption in Reclamation's? Did Reclamation's economist make a similar assumption that alfalfa would be targeted?

MR. KIRK: Not per se. They actually assumed that under a premarket system, that if the IID or anybody else were to pay farmers to conserve water and they are, farmers are given no condition on how best to do so, the IID economist assumed that farmers would generally fallow their least valuable land. And that tends to be in terms of revenue per acre, and Dr. Smith's testimony points this out, tends to be your grass crops.

MR. FLETCHER: Just a few more, then I will give it to Kim.

Exhibit 14 of your testimony is a resolution by the Coachella Valley Association of Governments. I won't say what it says. What does it say?

MR. KIRK: While it is similar to the resolution, in fact, passed by the Authority, there may be distinctions that I don't want to gloss over. It resolves for CVAG, the Coachella Valley Association of Governments, to oppose projects which significantly lower the level of the Sea, supports efforts to ensure that the impacts of water transfers on the Salton Sea and Coachella Valley -- impacts to water transfers on the Coachella Valley and the Salton Sea are complying with environmental laws, urges the IID's Board of Directors to pursue water transfer solutions which meet the terms of the QSA and do not create significant impacts on the Salton Sea, supports stringent review of state and federal legislation that aims to relax environmental laws. And there is just some sorted things there as well.

MR. FLETCHER: What entities make up the Coachella Valley Association of Governments? Call them CVAG for short.

MR. KIRK: I believe there are nine cities, nine or ten cities, and the County of Riverside and a couple of the Indian tribes in the Coachella Valley.

MR. FLETCHER: In your written testimony you stated that the CVAG resolution was developed in consultation with many regional interests. Can you tell us what some of those interests are, were?

MR. KIRK: Yeah. In fact, those same agencies, the

cities, the county, the development community, Building Industry Association, participated in discussions. The tribal community was also represented. A representative of the Coachella Valley Economic Partnership representing business interest in the Coachella Valley as well. And the resolution actually passed through the hands of a representative of CVWD, the Coachella Valley Water District, where some significant changes were made to the resolution, and it ended up somewhat changed, but it is the resolution before you and approved unanimously by those interests.

MR. FLETCHER: Why would the Building Industry Association be interested in making sure that inflows to the Salton Sea are not reduced?

MR. KIRK: I think it is in part because of air quality impacts. Currently the Coachella Valley is a -- once upon a time the Coachella Valley was a nonattainment area for PM-10, particulate matter below 110 microns. The Coachella Valley emerged out of that serious nonattainment into a moderate attainment, and now seems to be slipping back into serious nonattainment.

Building Industry Association is extremely concerned that if the Coachella Valley ends up being nonattainment, it could affect federal funds and it could affect the ability of developers to build if EPA comes down hard with Clean Air Act conformity requirements.

MR. FLETCHER: No more questions.

Thank you both.

I will have Kim come up.

CHAIRMAN BAGGETT: Thank you.

MS. DELFINO: Good afternoon. I am going to just be covering the Habitat Conservation Plan. And just sort of before we get started, it was your earlier testimony that you reviewed both the Draft EIR and Habitat Conservation Plan at length in preparing both comments for your testimony today and also the comments that you submitted as part of the public comment process, correct?

MR. KIRK: Yes.

MS. DELFINO: When I ask questions, I'm going to be directing them at you, and you guys, I don't know -- I can't remember who testified as to what.

MR. KIRK: Neither can we.

MS. DELFINO: Did you also, as part of the effort of preparing these comments in your testimony, have biologists review the HCP and Draft EIR/EIS?

MR. KIRK: Yes.

MS. DELFINO: It's true the HCP divides up its strategies for the impacts to the Sea into two strategies, correct, the Salton Sea hatchery and pond strategy, which is one, and the fallowing, which is strategy number two?

MR. KIRK: Yes.

MS. DELFINO: Hatchery and pond strategy number one, or HCP1, that is supposed to mitigate for impacts to fish eating birds, correct?

DR. BROWNLIE: Yes.

MS. DELFINO: Just a general question. Is the acreage, the total surface acreage of the Sea itself about 235,000 acres?

DR. BROWNLIE: I think that is right. I know it in square miles, 365.

MR. KIRK: It might be a little more than 235.

MS. DELFINO: So with the hatchery and pond strategy, the pond is supposed to be somewhere around 5,000 acres of ponds. Is it, in your -- is it your opinion that 5,000 acres of fish ponds would compensate for the ecological output of about 235,000 acres of Salton Sea?

DR. BROWNLIE: No.

MS. DELFINO: In what ways does it lack?

DR. BROWNLIE: By about 230,000 acres.

MS. DELFINO: Other than pure acreage.

DR. BROWNLIE: Well, we talked about the large number of fish eating birds that use the Sea. I think at some point we tried to do a calculation about how many pelicans would be bumping into each other over at these 5,000 acres of ponds.

MR. KIRK: It is hard in some ways to respond to the

question in much detail because not much detail is provided in the document, and we're told by IID that consultations are ongoing.

MS. DELFINO: That is true. It is a bit of a moving target. Let me go to some specifics, then.

Is temperature control for the ponds, is that an important issue?

DR. BROWNLIE: It could be.

MS. DELFINO: Does the HCP address that issue adequately, in your opinion?

DR. BROWNLIE: Not to my knowledge.

MS. DELFINO: Does it discuss it?

DR. BROWNLIE: I don't believe so.

MS. DELFINO: If temperature -- if ponds, which I understand are fairly shallow ponds, become too hot or too cold in the winter, what kind of impact does that have?

DR. BROWNLIE: It could have significant impact on the fish. And I think this was one of concerns that was also raised in the review of the Pacific Institute proposal, came up in a workshop.

MR. KIRK: Yeah.

DR. BROWNLIE: Were you concerned about temperature?

MR. KIRK: Right.

MS. DELFINO: What about the problem of avian disease in the ponds? Is that a potential problem with these

ponds?

DR. BROWNLIE: Yes. There certainly could be selenium concentrations. Higher concentrations of birds and wildlife could create more disease problems.

MR. KIRK: You probably heard wildlife disease is an issue in the Salton Sea region generally today. And one of the ironies is that the Salton Sea's salinity actually may be an inhibitor to some wildlife diseases. Having freshwater ponds, shallow ponds, perhaps using New River inflows could be a significant issue. And I know the folks with the National Wildlife Health Center, when they took a look at the Pacific Institute proposal, which has some of the similar characteristics, were extremely concerned about avian botulism.

Avian botulism is not necessarily the biggest killer of birds in any given year at the Salton Sea, probably our biggest challenge to address at the Salton Sea in many ways.

MS. DELFINO: Which species in particular are the hardest hit by avian botulism?

MR. KIRK: It depends on the year. Most of the fanfare, and appropriately so, goes to the pelicans.

MS. DELFINO: Brown and white?

MR. KIRK: Both, yes.

MS. DELFINO: When you were talking about avian botulism, you were talking about with respect to the ponds?

MR. KIRK: Yes, the HCP No. 1.

MS. DELFINO: You mentioned the New River as being a potential source or discussed source of water for the ponds, correct?

MR. KIRK: Correct.

MS. DELFINO: Or that was mentioned in testimony?

MR. KIRK: We have heard that from others.

MS. DELFINO: Does the EIR or HCP discuss at all any of the potential impacts of bioaccumulation of selenium in the ponds?

DR. BROWNLIE: Don't believe so.

MR. KIRK: I don't know.

MS. DELFINO: You also mentioned or made a comment about, I think, the failure to ask the question during the cross-examination of CH2MHill and the EIR as to the amount of fish being produced or consumed by birds of the Sea. Does the HCP -- you made a comment about birds bumping into each other in an effort to eat fish on the pond.

Are there foraging targets anywhere in the HCP for any of the four to 16 bird species that are purportedly covered?

DR. BROWNLIE: I don't think that is covered.

MR. KIRK: Just a clarifying. I believe they address somewhere in the document 16 fish eating birds, the ponds purportedly only cover four or are designed to address the needs of four of those birds.

MS. DELFINO: So the remaining 12, does the HCP account for impacts -- address impacts to those 12?

MR. KIRK: The testimony we heard earlier from IID indicated, no, it doesn't. That is their testimony, not mine.

MS. DELFINO: In reviewing HCP, did your biologists identify any analysis of impacts or mitigation for those 12 fish eating bird species?

DR. BROWNLIE: I don't really remember. We did provide our detailed comments of our biologist in the package here.

MS. DELFINO: Going to the Sea itself, it is your testimony that as on-farm conservation is put into place, flows to the Sea will be decreased, correct?

DR. BROWNLIE: Yes.

MS. DELFINO: As flows to the Sea decrease, the rate of salinity will increase, right?

DR. BROWNLIE: Yes.

MS. DELFINO: And that the quality of the water flowing to the Sea will increase in concentration for things like selenium, correct, pesticides?

DR. BROWNLIE: Yes.

MS. DELFINO: Correct?

MR. KIRK: I'm not too sure about pesticides. Selenium and salt, there certainly will be increases in those constituents.

MS. DELFINO: Do you know if there would be increase in concentration going into the Sea for pesticides?

DR. BROWNLIE: Well, the water in the Sea is not real high in pesticides concentration, but there would probably be some concentration of pesticides.

MS. DELFINO: As the Sea shrinks, there is less water. So you have less water with more concentrated --

DR. BROWNLIE: The substances are volatile, and if the water evaporates the constituents are left behind, they would concentrate.

MS. DELFINO: What about nitrates?

DR. BROWNLIE: Nitrates would probably increase.

MS. DELFINO: Would it be possible that we would have increases in algal blooms and issues related to eutrophication as the Sea shrinks?

DR. BROWNLIE: Very likely the Sea would be warmer, probably. The nutrients would tend to concentrate.

MS. DELFINO: What kind of impacts would that then have on the fish and bird species that rely upon the Sea?

DR. BROWNLIE: Well, the salinity with higher concentrations of nutrients and probably less oxygen and higher temperatures, you know, it's just going to be worse for the fish.

MR. KIRK: Of course, we are talking about the short period of time when there is still a fishery.

MS. DELFINO: Correct.

MR. KIRK: In fairness, the inflows are graduated to occur, but the salinity goes up much faster than probably the concentration of some other things like -- eutrophication of the Salton Sea is probably not on that same line of greatly increasing salinization, but we can probably see an increase in eutrophic conditions.

DR. BROWNLIE: There might be biological processes going on. I would say it is fair to assume that the nutrients are going to concentrate, too.

MS. DELFINO: Shoreline and shoreline habitat. The HCP discusses compensating for loss of nesting and roosting habitat, correct?

DR. BROWNLIE: Yes.

MS. DELFINO: Does the HCP indicate where that nesting or roosting habitat replacement would be?

DR. BROWNLIE: Not to my recollection.

MS. DELFINO: Does it contain any analysis regarding the effectiveness of using replacement habitat --

DR. BROWNLIE: No.

MS. DELFINO: -- for the bird species?

DR. BROWNLIE: No.

MS. DELFINO: Is that lack of analysis something that we should be concerned about from a biological point of view?

DR. BROWNLIE: One of the goals of our project is to maintain nesting and roosting habitat, so, yes.

MS. DELFINO: Does the HCP account for -- let me ask this. The HCP, the way it is framed, replacement habitat would not just immediately appear, correct? There would be a time lag between loss of habitat and when replacement habitat would be put in place, correct?

MR. KIRK: Correct. That is the assumption, anyway. Actually, we should say there is not a lot of detail on the time frame for HCP. And one of the biologists that we retained said he was very concerned about that time lag, between when impacts might occur and mitigation would be implemented and available.

MS. DELFINO: So there is very little on habitat to figure out?

MR. KIRK: Yes.

MS. DELFINO: Thank you.

What about shallow water habitat, does the HCP address the issue of loss of shallow water habitat? Is that something -- let me ask that question first. Does it address that issue?

DR. BROWNLIE: The Sea has how many miles of shallow water habitat? I think it is on the order of a hundred miles of shallow water habitat if you go around the boundary of the Sea. Talking about 5,000-acre pond, you know, you

might be cutting it down by maybe 5 percent of what there used to be.

MS. DELFINO: Let me ask this: Does the HCP appear to make the assumption that as the Sea shrinks, it will continue to maintain some amount of shallow water habitat at the Sea? Is that a safe assumption to be making, that the slope is --

DR. BROWNLIE: There would be some shallow water habitat. Of course, there would be less of it, and it would have a different quality.

MR. KIRK: One of the challenges is when you look at the bathymetry of the Sea, you have to take a hard look at that. Because one could assume that the Sea is going to be shallower, there is still going to be shallow water habitat. One of the concerns that has been really addressed and brought to the forefront by the U.S. Fish and Wildlife Service is when you look at the bathymetry of the Sea, there is actually some shelves, particularly in the south end of the Sea, the southeastern end of the Salton Sea that are wide expanses of very shallow habitat. And with a few foot elevation drop you would lose those and the elevation of the Sea drops off and less gradual or steeper slope after.

MS. DELFINO: So habitat conservation strategy one or the use of on-farm conservation will result in a significant loss of shallow water habitat at the Sea?

MR. KIRK: Absolutely.

MS. DELFINO: Isn't it true that the Sea supports the largest breeding population of snowy plovers?

MR. KIRK: The snowy plover is a bird that uses agricultural land more than it uses the Salton Sea, per se, to my understanding.

MS. DELFINO: Am I thinking of the mountain plover, because one of them does use --

MR. KIRK: I don't know why a mountain plover uses the Sea.

CHAIRMAN BAGGETT: Your witnesses will be tomorrow.

MR. KIRK: Maybe I will ask him.

MS. DELFINO: I will move on.

CHAIRMAN BAGGETT: Long day. Can you keep moving? We are going to stay until we are done with the Salton Sea tonight.

MS. DELFINO: For clarification, this timer device doesn't reflect how much time we have left. I have no idea if I've exceeded the hour.

CHAIRMAN BAGGETT: Probably have 15 minutes. I can put it on.

MS. DELFINO: That is okay.

CHAIRMAN BAGGETT: First time we had to use it on cross-examination for quite a while.

MS. DELFINO: Let me go to the drains, the HCP in the

drains. The HCP assumes that IID will create new wetland habitat to replace impacts to habitat in the drains; is that correct?

DR. BROWNLIE: Yes. I guess so. I would like to remind you that I am an engineer, not a biologist.

MS. DELFINO: My questions are directed to both.

MR. KIRK: My understanding is there is replacement habitat proposed in either the HCP No. 1 or somewhere else in the environmental document.

MS. DELFINO: Didn't your comments on the EIR, didn't it address this issue?

MR. KIRK: Yes.

MS. DELFINO: So it is fair to ask you these questions?

MR. KIRK: It is fair to ask, certainly.

MS. DELFINO: Let me just wrap up real quickly.

MR. KIRK: I think one of our issues is the replacement habitat on the drains, if I recollect correctly.

CHAIRMAN BAGGETT: Is there a question?

MS. DELFINO: Actually, I think he was reading my mind as I was about to formulate a question.

CHAIRMAN BAGGETT: We are going to be a long time at this rate. Ask and just answer the question. Maybe in general try to confine the answers to the questions asked. I've been fairly loose here. We're going to have to tighten this up or we are going to be here to 7 or 8:00

every night this week.

MS. DELFINO: I was going to ask a question on replacement habitat. The question is, is -- I have two questions. First one is: Does the HCP address the issue of the effectiveness of replacement habitat for impacts to the drain?

MR. KIRK: To my knowledge, no.

MS. DELFINO: The other question I have is: Does the HCP at all discuss use of mitigation for selenium, mitigating the actual selenium in the drains? I mean, selenium is increasing in the drains. Instead of creating replacement habitat, you actually take measures to reduce selenium in those drains.

MR. KIRK: Not to my knowledge.

MS. DELFINO: Is that an unreasonable or is that something that is unreasonable to ask? Can that be accomplished?

MR. KIRK: I don't know. If Phil Gruenberg doesn't know, I certainly don't know.

MS. DELFINO: My last question is regarding the 25 species in the HCP for which the HCP says there is insufficient information to develop a conservation strategy. I believe your comments -- you did have comments on that issue. Is it fair to say -- let me ask you this.

Does the research strategy incorporate any kind of

timeline whatsoever? Do you recall?

DR. BROWNLIE: No, I'm not aware of any timeline.

MS. DELFINO: Does the 25 species for which there is no information to assess to have any -- what is going to happen to them? Is there any discussion of scope of mitigation, potential mitigation, for these species?

DR. BROWNLIE: Not that I am aware of.

MS. DELFINO: In the years that you have prepared environmental documents and reviewed environmental documents, I am asking this strictly from a biological not legal conclusion.

MR. OSIAS: He's an engineer. I object. She's going to ask him a biological question.

MS. DELFINO: I am asking -- their biologists review this document. Mr. Kirk and Mr. --

MR. OSIAS: He is not a biologist.

MS. DELFINO: They prepared the written comments for the EIR. I think it is fair to ask them what their staff informed them.

May I proceed?

CHAIRMAN BAGGETT: You can answer.

MS. DELFINO: The question is: In your staff's experience, your experience, the comments that you have prepared on this, is that adequate analysis to assume that these species are going to be protected by the HCP, by

measures being set forth in the HCP?

DR. BROWNLIE: If I could generalize in response to that question, from my experience on other EISs is that normally at a project level, environmental impact statement would have a project level mitigation measure, in other words, a design that would be laid out on a map that would be costed out. And that level analysis is not here.

MS. DELFINO: Thank you.

CHAIRMAN BAGGETT: Thank you.

Let's take a ten-minute break, and we will come back with Audubon and PCL and the rest of the cross.

(Break taken.)

CHAIRMAN BAGGETT: Back on the record.

Mr. Yates, Audubon.

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CROSS-EXAMINATION OF SALTON SEA AUTHORITY

BY NATIONAL AUDUBON SOCIETY CALIFORNIA

BY MR. YATES

MR. YATES: Thank you, Mr. Chairman. Bill Yates on behalf of National Audubon Society California. I would like to address Mr. Kirk. I think most of my questions will deal with other exhibits that you have submitted to the Board. I think one exhibit is the Colorado River Delta, Connections of Brief Water History. It is Exhibit 16 in your list.

MR. KIRK: Yes.

MR. YATES: I notice on the top of the thing it is called Salton Sea Restoration Project. Is that different than the Salton Sea Authority?

MR. KIRK: It is. The restoration project includes efforts by the Authority, the Bureau of Reclamation and other partners to improve the health of the Salton Sea.

MR. YATES: Is this a newsletter that is put out by the Authority or by all of those parties?

MR. KIRK: It is mostly by the Authority. We oftentimes will consult with some of our partners on a story or two. It's essentially put out by the Authority.

MR. YATES: Are you familiar with the newsletters you put out?

MR. KIRK: Very.

MR. YATES: Did you help put together this publication?

MR. KIRK: Yes.

MR. YATES: If you could turn to Page 2 --

CHAIRMAN BAGGETT: Could you indicate what you are referring to?

MR. YATES: It is Exhibit 16. It is titled Sea Notes, a newsletter of the Salton Sea restoration project. And the title to this one --

CHAIRMAN BAGGETT: Just the exhibit number so we just have something.

MR. OSIAS: There is multiple of these behind Exhibit 16.

CHAIRMAN BAGGETT: Which one? Continue. I'm sorry. Which one?

MR. KIRK: It says August 2001.

MR. YATES: August 2001.

CHAIRMAN BAGGETT: Thank you.

MR. YATES: On Page 2 of the exhibit it goes through six figures. Essentially the title, The Chronology for the Colorado River Delta.

Would you explain those six figures.

MR. KIRK: This conceptually shows the changes in the Salton Trough and surrounding areas over time, traces the natural history of the Salton Sea and related water bodies through time, from millions of years ago to formation of the Sea in 1905.

Figure 1 showing the greater Gulf of California or Sea of Cortez.

Figure 2 showing the splitting of the Gulf of California with sediments flowing down the Colorado River, isolating the upper gulf from the lower gulf.

Figure 3 showing the saline body of water drawing up.

Figure 4 showing how the Colorado River would oftentimes flow northwest into the Salton Basin, filling up much of that basin into a lake that we oftentimes call Lake

Cahuilla.

Figure 5 shows that Lake Cahuilla as it is then isolated again from the Colorado River. It dries up.

Figure six shows the formation of the Sea in 1905.

And that last figure on the next page shows generally the Colorado River Delta.

MR. YATES: This -- on Pages 2 and 3 of this citation to a December 2000 report entitled An Inventory Evaluation of Lake Cahuilla Cultural Resources along Imperial Irrigation District's Assay Line, author Jerry Schaefer and Ken Moslak, that was one of the documents that you relied on in putting this together?

MR. KIRK: Yeah, for the archeological record for the past couple thousands years, we relied on the Schaefer study along with Waters and Wilks studies.

MR. YATES: Mr. Chair, I would like to point out that that Schaefer study is attached as Exhibit 2 of the Audubon-PCL joint exhibits, and it is a document that actually was prepared for the Imperial Irrigation District by Dr. Jerry Schaefer.

So in this it really talks about the fact, if you look at the Figure 4 on your thing, that for the last couple millenium this study suggests that the Colorado River flowed more often into the Salton Trough than it did into the Gulf of California; is that not correct?

MR. KIRK: That is correct.

MR. YATES: Are you also familiar with citations here to historical work done by Godfrey Sykes about the inundation of the Salton Trough?

MR. KIRK: Yes.

MR. YATES: I would also like to point out that those documents are attached as Audubon-PCL exhibits.

Isn't it true that around the time California became a state that the areas of the Salton Trough was, in fact, inundated?

MR. KIRK: According to Sykes and others that is correct.

MR. YATES: In fact, when the Spanish explorers came to North America and declared it for Spain, during that period of time the Salton Trough was inundated?

MR. KIRK: Likely to some degree.

MR. YATES: Thank you.

As you can imagine, the National Audubon Society is taking a great interest in the Salton Sea simply because of the number of birds. And I think the number that you have on one of your documents, which I can't remember -- this is an exhibit within a packet of exhibits of your newsletters.

MR. KIRK: Might be a fact sheet.

MR. YATES: Exhibit 13.

Do you feel that the EIR/EIS adequately represented the

biodiversity that you find in the Salton Sea?

MR. KIRK: You may be surprised by the answer. Yes. I think the EIR/EIS does a pretty good job of describing existing conditions.

MR. YATES: Is there -- in the EIR/EIS they talk about the significance of the Salton Sea from the standpoint of the Pacific Flyway?

MR. KIRK: Correct.

MR. YATES: They also, as pointed out here in your fact sheet, that the Sea has the second highest count of number of species as compared to the Texas Gulf Coast, correct?

MR. KIRK: Correct.

MR. YATES: Is there an adequate discussion in the EIR/EIS, you think, of the consequence of the demise of the Sea caused by the acceleration of the removal of the fishery?

MR. KIRK: No.

MR. YATES: The consequence -- in your mind and in the discussions that you have had in restoring the Sea, isn't its importance due to the fact there are some very few other places like it?

MR. KIRK: Not just that there are so very few places like it. In fact, there is no place quite like it. In fact, we've lost so much of our historic wetlands or prehistoric wetlands in the State of California.

MR. YATES: In developing an EPA plan for the Sea, have

you been able to isolate areas to restore for certain types of species of birds?

DR. BROWNLIE: Say that again.

MR. KIRK: Clarify the question.

MR. YATES: In the restoration work that the Authority is doing, have you sought to isolate areas of the Sea for certain types of bird species?

MR. KIRK: Generally, no. We looked at a holistic approach that recognizes the Salton Sea as a part of a larger biome that includes freshwater wetlands close to the Sea, that includes farmland in Imperial Valley and, in fact, includes desert and other ecosystems in the area.

MR. YATES: The surrounding agricultural area is as important for the birds as the Sea; is that not true?

MR. KIRK: It depends on the species. But there is no doubt that the agricultural area is critical for many species and great numbers of birds in the area.

MR. YATES: Fallowing could have a potential impact on those species?

MR. KIRK: Yes.

MR. YATES: In considering your restoration plan, you analyzed the Pacific Institute's proposed restoration project. Can you briefly describe what was the Pacific Institute proposal?

DR. BROWNLIE: Yeah. They looked at building dikes

along the ten-foot contour or the 15-foot contour starting from somewhere east of the New River and continuing on around, kind of -- then there were several possible strategies. But as far as up is, about as far as where I am pointing here. They would be constructed either at the ten-foot depth contour or 15-foot depth contour. The average depths in the ponds would be six, seven feet, maybe as much as ten feet.

MR. YATES: How many acres did they propose in that comment?

DR. BROWNLIE: Again, there were three, at least three different scenarios. I believe the largest one in terms of square miles was about 30.

MR. YATES: Thirty square miles?

DR. BROWNLIE: I think it went that high. Maybe as low as ten, eight to ten up to 30.

MR. YATES: But not as low as 5,000 acres?

DR. BROWNLIE: 5,000 acres is about 80 square miles. 240 is 10,000 acres. That would be the south impoundment. This one is pretty small. There was also a north -- I didn't mention it. They also proposed to do a small one up here, to catch water from the Whitewater River.

CHAIRMAN BAGGETT: Could you be more specific when you point to the map.

DR. BROWNLIE: We can probably bring up a better map.

CHAIRMAN BAGGETT: Just so that when you say "up here," it is going to be hard from someone reading the transcript to understand what you are talking about.

DR. BROWNLIE: I have a range for the south impoundment, which would pick up water from the New and Alamo Rivers, would range from 10,500 acres to 26,000 acres, 26,800.

CHAIRMAN BAGGETT: Do we need a map at this point? He gave us the numbers that is --

MR. YATES: I'm sorry, I was watching the map. What were the numbers again?

DR. BROWNLIE: South impoundment would be 10,500 to as much as 26,800. So the smaller one would be the south end of the Sea from the New and Alamo River and with a ten-foot depth contour. The larger one would be in the same area, 15-foot depth contour, but it would extend around the -- to what was --

Do you remember the water depth up here, Tom?

MR. KIRK: No.

CHAIRMAN BAGGETT: The chart you are referring to is Salton Sea Exhibit on the screen --

DR. BROWNLIE: The length of the dikes was about 17 miles. The chart --

MR. KIRK: The chart and the map that is being referred to is in Exhibit 18, just Exhibit 18. There is several

exhibits and maps that show the Salton Sea?

CHAIRMAN BAGGETT: Slide of the Salton Sea.

Thank you.

MR. YATES: Mr. Kirk, when the workshop was held to evaluate this proposal, what were some of the concerns raised about this diking proposal?

MR. KIRK: Cost was one. The proposal was identified in part initially as a reasonably low cost way of protecting some of the resources of the Salton Sea. Engineers found that that may not be the case, that you are building in relatively deep water at the Salton Sea. Cost could be much greater than that assumed.

Additionally, wetlands constructed were not estimated and wetlands construction cost were underestimated in the original proposal. The other biological issues related to some of the things we discussed earlier: wildlife disease, selenium, water quality, water temperature, species composition, et cetera.

MR. YATES: The Pacific Institute's proposal was actually utilizing the Sea itself for its proposal?

MR. KIRK: That's correct. Partially. It did include a component to -- because the Pacific Institute acknowledged, I believe, having the current inflows flow into an impoundment would create some significant water quality problems, they proposed constructing 9,000 acres of

wetlands that would be upriver from the Salton Sea.

MR. YATES: The Habitat Conservation Plan speaks to building up to 5,000 acres of ponds for feeding the essentially four species, correct?

MR. KIRK: That is my understanding. Whether it is 5,000 acres or 6,000 acres I've heard different numbers bandied about.

MR. YATES: In the review that was done at the Pacific Institute, does that include biologists that evaluated the effects of the impoundments on certain species of birds?

MR. KIRK: Yes.

MR. YATES: Was there a -- is there any differentiation in the DEIR/DEIS of species that might utilize the ponds even if they were created?

MR. KIRK: I know -- my understanding is they are targeted for those four fish eating birds. How much further the EIR/EIS goes or HCP, I don't recollect.

DR. BROWNLIE: That is the proposal up there.

MR. YATES: Would you identify --

CHAIRMAN BAGGETT: We have been through the same line of questions at least twice today. Is this something new that we haven't already gotten in the record?

MR. YATES: This is going to be it. I hopefully will end. I think the point is that some have talked about the engineering and the water quality aspects of the these

ponds.

The difficulty, Tom, in the evaluation of Pacific Institute or in an evaluation of these ponds, isn't it true that certain species of birds in the Salton Sea are more aggressive about foraging than others?

MR. KIRK: Yes, it is true. That was one of the concerns raised.

Thanks.

MR. YATES: So when you concentrate that, the complete size of the current Salton Sea to 5,000 acres worth of ponds, wouldn't the expectation be the more aggressive birds would get the food?

MR. KIRK: That is one of the concerns that was raised.

MR. YATES: It is reasonable in your estimation that you could, in fact, target ponds for white and brown pelicans?

MR. KIRK: That would be racist. I don't know. I don't know. I'm not a biologist. I don't know how to target bird species.

MR. YATES: Do you bird watch in the Salton Sea?

MR. KIRK: A little.

MR. YATES: Have you seen white pelicans?

MR. KIRK: Yes.

MR. YATES: Do they dive for food?

MR. KIRK: They do.

MR. YATES: How else do they feed?

DR. BROWNLIE: They dive for food.

MR. YATES: Brown pelicans dive for food; is that correct?

DR. BROWNLIE: I believe so.

CHAIRMAN BAGGETT: We've already stated they aren't expert ornithologists.

MR. KIRK: Now you are making it obviously clear.

CHAIRMAN BAGGETT: As I recall, we have something coming up in the next two days.

MR. YATES: Yes.

I think those are my questions.

Thank you.

CHAIRMAN BAGGETT: Thank you.

Does Sierra Club have any? They have an attorney?

Maybe you can state your name for the record.

MR. METROPULOS: Jim Metropulos.

CHAIRMAN BAGGETT: PCL, Ms. Douglas.

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CROSS-EXAMINATION OF SALTON SEA AUTHORITY

BY PLANNING AND CONSERVATION LEAGUE

BY MS. DOUGLAS

DR. BROWNLIE: Not the Pacific Institute, is it?

MS. DOUGLAS: If you can please put up that exhibit.

What number is this slide?

MR. KIRK: If you'd like we can introduce it. It's not a part of our current exhibit list. I suppose we can introduce it. That would be helpful, or we can give it to you and you introduce it in your direct.

MS. DOUGLAS: We can decide later if we want to introduce it.

CHAIRMAN BAGGETT: It's not, so you've got slides that weren't already introduced?

MR. KIRK: The slides you saw earlier were all introduced. This one Mr. Brownlie put up as a way of graphically showing the Pacific Institute proposal. That is not in our exhibit list.

CHAIRMAN BAGGETT: That is a problem that needs submittal for your --

MS. DOUGLAS: This would be No. 34 for PCL. If you -- Mr. Kirk, if you can make this image available to PCL, that would be great.

CHAIRMAN BAGGETT: And to the parties.

MS. DOUGLAS: I guess I will serve this slide to the parties.

CHAIRMAN BAGGETT: If it's electronically available, that would speed it up.

MR. HARGREAVES: Maybe for the record Dr. Brownlie could identify it.

CHAIRMAN BAGGETT: That would be helpful.

MR. HARGREAVES: How would you identify that exhibit?

DR. BROWNLIE: Just a map showing the pond locations in the Pacific Institute proposal. There was a minimal one --

CHAIRMAN BAGGETT: That is good enough.

MS. DOUGLAS: You said the Salton Sea is the most productive inland fishery in the world, right?

MR. KIRK: That is my understanding based on what was provided to me by experts in the field.

MS. DOUGLAS: Would it be your opinion that reproducing or replicating the most productive inland fishery in the world in 5,000 acres of fish ponds or in a Pacific Institute-type proposal is unlikely?

DR. BROWNLIE: Yes.

MS. DOUGLAS: You have spoken briefly about the panel that you convened to look at the Pacific Institute proposal. Were the people on the panel experts in biology and the Salton Sea?

MR. KIRK: Yes. Various experts. Actually Mr. Brownlie was a part of that panel.

Do you remember the nature of the expertise?

DR. BROWNLIE: Mine was on the engineering aspects of it.

MR. KIRK: Biologists, engineers, disease experts, et cetera.

MS. DOUGLAS: Briefly, how comparable is the Pacific Institute proposal to the fish pond proposal in the HCP? Can you compare and contrast just briefly?

DR. BROWNLIE: I would say the minimal Pacific Institute proposal was probably twice as big as the HCP.

MS. DOUGLAS: But they both -- would it be fair to say that the Pacific Institute proposal is sort of a bigger, better fish pond proposal?

DR. BROWNLIE: Bigger.

MS. DOUGLAS: Yes, bigger. All right. We will settle with -- would it be fair to say that the Pacific Institute is a bigger fish pond-type proposal?

DR. BROWNLIE: Yes.

MS. DOUGLAS: You said in your testimony that this panel identified dozens of serious ecological and human health concerns with the Pacific Institute proposal; is that correct?

DR. BROWNLIE: Yes.

MS. DOUGLAS: Could you briefly list what some of those concerns were? I think I have some idea.

DR. BROWNLIE: We talked about eutrophication problems, temperature fluctuations, vector issues associated with mosquitoes breeding in a very hot, shallow water habitat, lots of the current fishery replacement with other freshwater fish. The ponds would be brackish. Because of

the salts in the water that come in and evaporation taking place in the ponds, the salinity would probably be about three parts per thousand. So it would be a brackish environment.

CHAIRMAN BAGGETT: This is all in the testimony, so could you get to your questions.

MS. DOUGLAS: I do have questions.

You said in your testimony or -- I'm sorry, in the Salton Sea evaluation of the Pacific Institute's proposal that the contaminant levels in the impoundments would be about the same as the river that feeds them; is that right?

DR. BROWNLIE: Well, it would be concentrated. Most likely selenium would come in. There would be evaporation going on, so that it would be concentrations of selenium in the water column and in the sediments.

MS. DOUGLAS: We have heard that the fish ponds, the HCP fish pond proposal, would probably use New River water; is that right?

MR. KIRK: That is what we heard.

MS. DOUGLAS: If it does use New River water, would the HCP fish ponds proposal have the same sorts of contaminant problems that you identified in the Pacific Institute proposal?

DR. BROWNLIE: It would be worse because the Pacific Institute proposal included wetlands, scrub the water in the

New River before it reached the ponds.

MS. DOUGLAS: Were the wetlands -- did you find that the wetlands were effective in cleaning the water?

DR. BROWNLIE: The panel was mixed on wetlands; I would say mixed to negative. Thinking back, probably more negative. There were concerns that selenium could concentrate in the wetlands, would save the ponds maybe from selenium concentrations, but it could create other problems in the wetlands.

MS. DOUGLAS: What about -- would it be correct to say that the panel was concerned about the uptake of contaminant through the food chain in the Pacific Institute proposal?

DR. BROWNLIE: Yes.

MS. DOUGLAS: Could you explain why?

DR. BROWNLIE: Just, again, concentration of materials in the ponds. Moving to the food chain. Consumption by animals throughout the food chain, plants and animals.

MS. DOUGLAS: Would these problems be the same or worse in the HCP fish pond proposal?

DR. BROWNLIE: I would think similar problems. I don't know whether they would be worse.

MS. DOUGLAS: In terms of the evaluation of the Pacific Institute proposal, it says that parasites would be more prevalent and more likely to be present in fish in the Pacific Institute ponds.

Do you agree with that?

DR. BROWNLIE: Yes. The panelists were concerned about that issue.

MS. DOUGLAS: Do you think that problem would be present or worse in the HCP fish ponds?

DR. BROWNLIE: Probably be present.

MS. DOUGLAS: You mentioned briefly that the water in the Pacific Institute panels would actually probably be more freshwater than brackish water. Could you explain why?

DR. BROWNLIE: The water would flow into the ponds. And there was actually -- a model was run, accounting model, the Salton Sea accounting model was adapted to the Pacific Institute proposal, and it was run.

The water would flow into the ponds, and it would spill over into the remaining Sea, and there would be some retention time, some evaporation going on in the ponds. So that the water would be similar to the concentration of the inflowing waters but it would be a little bit higher, on the order of three to four parts per thousand.

MS. DOUGLAS: If the HCP ponds come from New River water, for example, then they would also be freshwater?

DR. BROWNLIE: We would expect similar, yes.

MS. DOUGLAS: So what fish species -- would you expect to see different fish species in these ponds than we see now in the Salton Sea?

DR. BROWNLIE: Yes, the panelists expect it to be totally different. Tilapia would probably be able to survive, probably be some different breed of tilapia that they could possibly survive.

The corvina is saltwater fish, would not survive.

MS. DOUGLAS: What other species of fish might survive?

DR. BROWNLIE: I don't remember specifically, but they talked about other freshwater fish that could survive.

MS. DOUGLAS: What about -- you also mentioned concerns about parasites that might affect humans in the fish ponds.

Are you familiar with that part of the report?

DR. BROWNLIE: Don't remember what they said about parasites affecting humans.

MR. KIRK: But I'd only be reading. They acknowledged there would be human disease and parasites associated with the impoundments.

DR. BROWNLIE: Mostly related to mosquitoes as I recall.

MS. DOUGLAS: Actually --

DR. BROWNLIE: Airborne.

MS. DOUGLAS: That brings me into another question. How is it that the Pacific Institute proposal would increase mosquitoes and biting insects in the area?

DR. BROWNLIE: Well, basically stagnate freshwater.

MS. DOUGLAS: Would that problem exist with the HCP

fish ponds?

DR. BROWNLIE: I believe so.

MS. DOUGLAS: Can you briefly summarize -- what would be the cost of the Pacific Institute proposal that your panel came up with? Is it up there?

DR. BROWNLIE: I believe that was their estimate, 382,000,000. We thought it could go as high as a billion.

MS. DOUGLAS: As high as a billion dollars. In your opinion would that proposal be ecologically beneficial at all to the Sea and the surrounding --

DR. BROWNLIE: Tom is pointing out that that doesn't count the cost of treatment wetlands, which we had a critical preliminary price of 450,000,000.

MS. DOUGLAS: So we are up to 1,450,000,000, approximately?

DR. BROWNLIE: Something like that. That is not correct. That should be 450,000,000.

MS. DOUGLAS: So as a return for $1,450,000,000 investment, do you think the Pacific Institute proposal has that kind of ecological benefit?

DR. BROWNLIE: The panel didn't like it, I can tell you that.

CHAIRMAN BAGGETT: Is that yes or no?

DR. BROWNLIE: How did you phrase it? No I think is the correct answer.

MS. DOUGLAS: What was the cost again of the HCP fish pond idea?

MR. KIRK: The IID fish pond idea?

MS. DOUGLAS: Right.

MR. KIRK: It is not really clear, actually. The estimates I've heard between a hundred and 200,000,000. I believe a socioeconomic impact analysis section, socioeconomic resource area of the EIR/EIS, they make some estimate, and it is several hundred million dollars. And a year ago I heard estimates of a couple billion dollars. So I am not sure really what the cost is assumed at this stage.

MS. DOUGLAS: If I summarize, it sounds like 100- to 200,000,000 on the low side and up to several million or even a billion.

In terms of the environmental values of protection that that buys you, do you think that that is a good return on --

DR. BROWNLIE: Are we talking HCP?

MS. DOUGLAS: We are talking HCP fish ponds.

DR. BROWNLIE: The billion was for this proposal because of the length of a dike that would essentially serve as a dam.

MR. KIRK: I was referring to the HCP No. 1, the original estimates proposed back -- submitted or considered by a group of environmentalists in Sacramento sometime ago.

The estimates were on the order of a couple billion dollars. But, again, today I think it is much more modest, in the hundred to $200,000,000 range.

MS. DOUGLAS: So for $200,000,000 we get the HCP fish ponds, maybe?

MR. KIRK: That is my understanding.

MS. DOUGLAS: From your ability to compare what you get from the fish ponds to the Pacific Institute proposal, is that an environmental plus having these fish ponds?

DR. BROWNLIE: I don't see that being a great help to the Sea.

MS. DOUGLAS: Or to the species that depend on the Sea?

DR. BROWNLIE: The species.

MS. DOUGLAS: Do you see them being possibly a hindrance in terms of concentrating contaminates and disease problems?

DR. BROWNLIE: There is certainly that possibility.

MS. DOUGLAS: Final question. What again is the low range of cost estimates for actual restoration of the Sea?

DR. BROWNLIE: Our lowest range is about 200,000,000.

MS. DOUGLAS: Thank you.

No further questions.

CHAIRMAN BAGGETT: Thank you.

Mr. Slater.

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CROSS-EXAMINATION OF SALTON SEA AUTHORITY

BY SAN DIEGO COUNTY WATER AUTHORITY

BY MR. SLATER

MR. SLATER: Good afternoon, gentlemen. Try to be mindful of the prior testimony and not to plow old ground. I would like to start with Mr. Kirk.

Just want to clarify, it is your testimony, correct, that the Salton Sea Authority is not opposed to the Quantification Settlement Agreement?

MR. KIRK: Correct.

MR. SLATER: And the Salton Sea Authority generally supports the California 4.4 Plan which is designed to reduce California's use of the Colorado River water, correct?

MR. KIRK: I don't know if the Board's ever taken a vote specifically on it, but the general sense I get from the Authority Board is support for the California Plan, yes.

MR. SLATER: So that is not a formal action of the Board, that is your opinion of what the Board --

MR. KIRK: I can clarify, even our -- I believe our exhibit showing our resolution of concern addressed QSA in a small way. If you see Salton Sea Authority Exhibit No. 5, the fifth whereas says, whereas the Salton Sea Authority understands the need and generally supports the implementation of the California 4.4 Plan, which is designed

to reduce California's use of Colorado River water in normal years to 4.4 million acre-feet without causing major economic and social impacts to the Imperial or Coachella Valleys.

MR. SLATER: So I should understand your testimony as consistent with the resolution?

MR. KIRK: That was the intent.

MR. SLATER: That is Exhibit 5, correct?

MR. KIRK: Correct.

MR. SLATER: However, it is your testimony that at least as related to impacts on the fish and wildlife that there are predominantly three areas of concern, correct?

MR. KIRK: No, not without further clarification of what those three areas are.

MR. SLATER: Could you take out Page 2 of your testimony, which is identified as Salton Sea Authority Exhibit 1, Page 2.

MR. KIRK: Page 20, which section?

MR. SLATER: Page 2 of your testimony, Exhibit 1.

MR. KIRK: What are you referring to on Page 2?

MR. SLATER: Generally, the Salton Sea Authority resolves to --

MR. KIRK: Resolution. I think your question might have been a little broader than that. But the resolution indicates that the Authority resolves to oppose projects

which significantly lower the level of the Sea, insist that water transfers comply with environmental laws, and urge that water transfers are accomplished consistent with the goals and objectives of full restoration.

That refers back to the resolution that I was referring to before. Your original question was more general about concerns on the transfer. We've got a lot of concerns as you heard.

MR. SLATER: With regard to your testimony, which is also on Page 2, at the bottom of the page and moving over to Page 3, is it your testimony that if the conservation methods are mitigated as suggested in the transfer EIR Habitat Conservation Plan 2 or 3 or through a water generation alternative that employs fallowing, that those concerns are minimized?

MR. KIRK: Yes, that's correct.

MR. SLATER: I could use the word "vanquished," correct, or "evaporate"?

MR. KIRK: I use the word evaporate all the time and vaporize, too?

MR. SLATER: Vaporize.

MR. KIRK: Yes, that is correct. Obviously, the devil is in the details. Generally fallowing would have less of an environmental impact on the Salton Sea.

MR. SLATER: But you also testified and I believe in

response to Ms. Rossmann you indicated that is not a silver bullet, correct?

MR. KIRK: That's correct.

MR. SLATER: It is not a silver bullet because why?

MR. KIRK: Because -- largely because of socioeconomic impacts.

MR. SLATER: And has the Salton Sea Authority undertaken any analysis on how to reduce or minimize socioeconomic impacts associated with the fallowing program?

MR. KIRK: In conjunction with the aforementioned report by the Bureau of Reclamation and the Authority, the Bureau of Reclamation took a look at fallowing's impacts. When we saw that, we took a look at various ways of mitigating problems associated with fallowing, such as direct compensation to people, such as employment training, such as encouraging other businesses into the Imperial Valley.

MR. SLATER: Do you have an opinion as to whether a conservation program ought to be directed by the Imperial Irrigation District as opposed to the Salton Sea Authority or Imperial County?

MR. KIRK: Whether -- the first part, a conservation program?

MR. SLATER: Strike that. I will rephrase.

Is it your opinion that the Imperial Irrigation

District is best suited to develop a conservation program to be carried out by its constituents?

MR. KIRK: Yes.

MR. SLATER: Just to make sure we are clear, do you have a definition, a working definition of what you mean by fallowing?

MR. KIRK: I don't know if anybody has a working definition of fallowing.

MR. SLATER: What do you mean when you use the term?

MR. KIRK: Temporary or permanent idling of farm ground. It could be a part of the farming process, rotating farm ground to protect, to sustain soil and eventual crop yields, or it could be permanent retirement of land. There are a variety of ways of defining fallowing and a variety of ways to accomplish it. I am certainly not an expert on defining it. I have yet to see a clear definition.

MR. SLATER: Do you have an opinion as to whether a temporary fallowing program would reduce the level of socioeconomic impacts below that which is identified in the EIR/EIS?

MR. KIRK: Probably.

MR. SLATER: Probably you have an opinion or probably a good question?

MR. KIRK: Fair point. Probably a temporary program could reduce the socioeconomic impacts.

MR. SLATER: Again for clarification, temporary means?

MR. KIRK: Temporary means instead of fallowing farmland -- I will define it by defining its opposite. Permanent would be fallowing farmland forever. Temporary could be expansion of existing processes that involve rotating farmland, periodically idling farmland, et cetera.

MR. SLATER: For some period of time, less than permanent?

MR. KIRK: I guess one could look -- if one was looking for a definition, one could look to the PVID program with Metropolitan Water District for how they define temporary fallowing.

MR. SLATER: Also for Mr. Kirk. Is it your testimony that the environmental document, the EIR/EIS, understates the environmental justice impacts?

MR. KIRK: Yes.

MR. SLATER: And that the greatest intensity of the impacts would be felt in Imperial County and the eastern Coachella Valley, right?

MR. KIRK: Correct.

MR. SLATER: The transferor under the San Diego/IID transfer agreement is the Imperial Irrigation District, correct?

MR. KIRK: That is my understanding.

MR. SLATER: Imperial Irrigation District is in

Imperial County?

MR. KIRK: It does have a service area that extends into Riverside County in part, but for our purposes, yes.

MR. SLATER: The San Diego County Water Authority under the transfer agreement is paying money to the Imperial Irrigation District to generate water for the transfer, correct?

MR. KIRK: That is my understanding.

MR. SLATER: IID is not proposing to transfer the water for free; is that correct?

MR. KIRK: That's correct.

MR. SLATER: San Diego is paying over a billion dollars over the course of the transfer agreement to Imperial, correct?

MR. KIRK: I haven't done the calculation, but it wouldn't surprise me if it was in those numbers.

MR. SLATER: Again for Mr. Kirk. I believe you testified in response to cross, I am sorry who generated the question, but that you were unsure about whether the transfer agreement was essential to the QSA moving forward. Am I correct?

MR. KIRK: Yes.

MR. SLATER: I believe you referenced a position of the Metropolitan Water District, correct?

MR. KIRK: Right.

MR. SLATER: Was that a letter?

MR. KIRK: Yeah. Again, it wasn't part of our direct testimony. I believe there is a letter written a number of months ago followed up with another letter clarifying Metropolitan's position.

MR. SLATER: There was a second letter. Do you have knowledge, personal knowledge, of what the second letter said?

MR. KIRK: I did at the time. I don't remember exactly, but it was something of a mop up if I remember correctly.

MR. SLATER: Was the timing of that letter before Dennis -- Strike that.

Were you here during the first phase of this proceeding?

MR. KIRK: I was not.

MR. SLATER: Were you aware that Dennis Underwood was a witness in this case?

MR. KIRK: I was.

MR. SLATER: Are you familiar with his testimony?

MR. KIRK: I am not.

MR. SLATER: Were you aware that Maureen Stapleton was a witness in this case?

MR. KIRK: I was.

MR. SLATER: Are you familiar with her testimony?

MR. KIRK: I am not.

MR. SLATER: In any event, the letter that you referenced from Mr. Gastellum, did it predate the -- did it predate the initial date of Phase I hearings in this matter?

MR. KIRK: Yes, it did.

MR. SLATER: Mr. Kirk, do you have an estimate of the total dollars that would be required to restore the Sea under a no-project alternative?

MR. KIRK: Yes. It's been provided in the direct testimony and specifically that of Mr. Brownlie's oral testimony.

MR. SLATER: Rough justice number.

MR. KIRK: Under no-project, again it is in the eye of the beholder. Under my no-project, the 1.34 million acre-feet, the rough estimate is in the couple hundred million dollars, 250,000,000, thereabouts.

MR. SLATER: 250-, roughly.

And it's your testimony that the Board's approval of the transfer agreements would make the -- Strike that.

It is your testimony that the Board's approval of the transfer agreements employing on-farm conservation would render restoration of the Sea infeasible?

MR. KIRK: For all intents and purposes, yes.

MR. SLATER: Why is that?

MR. KIRK: We've testified extensively on this.

Summing up, the elevation of the Sea drops, salinity accelerates and catching up with that dramatically increasing salinity is very difficult to do and very expensive to do.

MR. SLATER: It is your opinion that if mitigation costs are less than, say, 500,000,000 that -- sorry, less than 250,000,000 million, that restoration of the Sea remains feasible?

MR. KIRK: Not sure what the question is. If mitigation costs for which?

MR. SLATER: Let's go back to your original scenario, which is the no-project alternative. Correct?

MR. KIRK: Right.

MR. SLATER: Your estimate is that 250,000,000 is required to restore the Sea, correct.

MR. KIRK: That is the current estimate for solar evaporation ponds at that level of inflow, correct?

MR. SLATER: What is the present operating budget of the Salton Sea Authority?

MR. KIRK: About $400,000.

MR. SLATER: Is it your testimony that the Salton Sea Authority has secured briefly $20,000,000 towards restoration; is that correct?

MR. KIRK: Between the -- well, the Authority securing -- my testimony is that approximately $20,000,000 has been

secured from a variety of sources, yes.

MR. SLATER: Has the Salton Sea Authority secured any state legislation that promises additional money to bridge between the roughly 20,000,000 that you have presently secured and the potential 250- that would be required?

MR. KIRK: I think it would be unlikely to secure that kind of funding when we don't know the size of the project. The state legislature is looking hard at the water transfer right now. If inflows drop significantly, why invest $250,000,000? The direct answer to your question is no.

MR. SLATER: How about federal legislation?

MR. KIRK: Same response.

MR. SLATER: Have you received any form of a written promise from any state or federal agency expressing a commitment to fully fund the restoration of the Sea?

MR. KIRK: No. However, San Diego County Water Authority, Metropolitan Water District, Imperial Irrigation District and Coachella Valley Water District have all signed resolutions of support that support restoration and the funding of restoration. So we have friends out there.

MR. SLATER: With that, I have no further questions.

Thank you.

CHAIRMAN BAGGETT: Thank you.

Mr. Osias, are you awaiting or do you have some questions?

(Break taken.)

CHAIRMAN BAGGETT: We are on the record.

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CROSS-EXAMINATION OF SALTON SEA AUTHORITY

BY THE IMPERIAL IRRIGATION DISTRICT

BY MR. OSIAS

MR. OSIAS: Good afternoon, Mr. Kirk, Dr. Brownlie.

Mr. Kirk, you're the Executive Director. That is the senior most staff position at the Salton Sea Authority?

MR. KIRK: It is.

MR. OSIAS: The Board sets policy; you implement?

MR. KIRK: Fair.

MR. OSIAS: Dr. Brownlie, you sort have been the project manager for the environmental documents; is that correct?

DR. BROWNLIE: Yes.

MR. OSIAS: Mr. Kirk, you selected the exhibits that were submitted today?

MR. KIRK: I did.

MR. OSIAS: Reviewed them all?

MR. KIRK: At some point I have, yes.

MR. OSIAS: Now the Salton Sea Authority, I think we've heard, has produced, and you'll correct me so I'm inviting you to, if I misstate who the author is, has produced, I think, in Exhibit 6, you only have excerpts, but something

called Guide to the Salton Sea Restoration Project Alternatives, right?

MR. KIRK: Yes.

MR. OSIAS: That's a Salton Sea Authority document?

MR. KIRK: And the Department of Interior, Bureau of Reclamation.

MS. OSIAS: Many of these things are joint?

MR. KIRK: That's correct.

MR. OSIAS: Sort of a partnership?

MR. KIRK: Yes.

MR. OSIAS: And Exhibit 11, Draft Assessment of Salinity and Elevation Control for Various Programs, both a joint BOR, Salton Sea?

MR. KIRK: That one, in fact, is just the Salton Sea Authority.

MR. OSIAS: And Exhibit 12, the Evaluation of the Pacific Institute Proposal, I guess we heard that's the Science Office's document; is that right?

MR. KIRK: Correct.

MR. OSIAS: But the Salton Sea Authority had a role in causing that to be put together?

MR. KIRK: Fair enough, yes.

MS. OSIAS: And Exhibit 18, it's titled in your exhibit lists Tom Kirk and Mike Walker, Bureau of Reclamation, Power Point Presentation given to Salton Sea Symposium IV. That

is a joint document?

MR. KIRK: Yes.

MR. OSIAS: I heard you mention a -- I don't remember the exact title. It was an alternative proposal of some kind that was withdrawn in 2000?

MR. KIRK: Right.

MR. OSIAS: What is the title of that? Either of you if you remember.

MR. KIRK: Alternative report, I think.

DR. BROWNLIE: Actually, the document that was withdrawn was the draft.

MR. KIRK: The layperson's draft.

DR. BROWNLIE: The draft layperson's guide was going to be presented at a symposium. The exhibit was --

CHAIRMAN BAGGETT: What is the exhibit number?

MR. OSIAS: That is Exhibit 6.

MR. KIRK: We just went through it. It is Exhibit 6.

MR. OSIAS: That was withdrawn and you submitted here only excerpts?

MR. KIRK: Just to clarify, the exhibit that we included here is a draft that was prepared after January. The version that was withdrawn in January isn't provided here.

MR. OSIAS: Just to make sure, is that what you were referring to earlier when you talked about an alternatives

draft that the Bureau said don't release on this date?

MR. KIRK: It's a little muddled, if I may clarify.

MR. OSIAS: Please.

MR. KIRK: The layperson's guide to the restoration project alternatives, Alternative 6, is intended to be a layperson's guide to a bigger alternative document. So in January what we intended to do was prepare a layperson's guide, hand it out at this symposium and shortly thereafter hand out the more detailed alternatives document.

MR. OSIAS: The second step never happened?

MR. KIRK: Actually neither step happened.

MR. OSIAS: The alternatives report, therefore, is not officially out in the street; is that right?

MR. KIRK: It's officially not out in the street, has never been released to the public officially.

MR. OSIAS: Does this draft assessment in Exhibit 11, is that sort of to take its place?

MR. KIRK: No. Draft Exhibit 11 has much of the same material as would be found in the alternatives report, is a completion of a work task that we asked Tetra Tech to do a couple years ago looking at the relationship between inflows and salinity and elevation and how the Sea responds to that. We actually prepared this in advance of a workshop that the Salton Sea Authority Board requested we put on about a month and half ago.

MS. OSIAS: Did the Bureau refuse to be a joint publisher of Exhibit 11?

MR. KIRK: No. They were never asked. This wasn't a Bureau document.

MR. OSIAS: The other thing you mentioned is a Salton Sea EIR/EIS; is that correct?

MR. KIRK: Yes.

MR. OSIAS: That is not on the list. Did you submit that?

MR. KIRK: No.

MR. OSIAS: Do you have one here?

MR. KIRK: From the year 2000?

MR. OSIAS: Yes.

MR. KIRK: No.

MR. OSIAS: Is that the year it was?

DR. BROWNLIE: Yes, January 2000.

MR. OSIAS: Tetra Tech did that, too?

DR. BROWNLIE: We were the lead contractor.

MR. OSIAS: I'm sorry, technical terms.

You were the lead contractor for the EIR/EIS?

DR. BROWNLIE: Right.

MR. OSIAS: That was for both the Bureau and the Salton Sea Authority?

DR. BROWNLIE: Right.

MR. OSIAS: That's important background.

Your opening statement I believe, Mr. Kirk, said that you believe the proposed transfer would have substantial and reasonable effects on fish wildlife resources or something like that, correct?

MR. KIRK: Something like that, correct.

MR. OSIAS: You understand that IID is here as a petitioner seeking approval of its change petition, correct?

MR. KIRK: Yes.

MR. OSIAS: And the Salton Sea Authority here is opposing the granting of that petition or not?

MR. KIRK: The Authority opposes the proposed project because of its significant impacts on the Salton Sea.

MR. OSIAS: Trying to divorce yourself as hard as that is going to be from the EIR/EIS.

Do you oppose the Board approving the petition as submitted or not?

MR. KIRK: If the petition is related to the proposed project, yes.

MR. OSIAS: Yes, you oppose it?

MR. KIRK: Yes.

MR. OSIAS: The order you're seeking from this Board is petition denied?

MR. KIRK: That is not -- the petition, the order could be a conditional approval that provides for the project to go forward without unreasonably affecting fish and wildlife

populations.

MR. OSIAS: By the word "project" you're meaning something other than the change in point of diversion and change of place of use?

MR. KIRK: By proposed project I mean the proposed project, the conservation and transfer program.

MR. OSIAS: Mr. Brownlie, tell me if you agree with this statement. I'm sorry, Dr. Brownlie. I didn't mean that.

The project alternatives must be evaluated against a scenario that could reasonably be expected to occur in the foreseeable future if the project is not approved. Do you agree with that?

DR. BROWNLIE: Yes, it sounds reasonable.

MR. OSIAS: You agree, too, Mr. Kirk?

MR. KIRK: Could you repeat the question?

MR. OSIAS: Project alternatives must be evaluated against a scenario that could reasonably be expected to occur in the foreseeable future if the project is not approved?

MR. KIRK: Do I agree that there is such a statement somewhere?

MR. OSIAS: Do you agree with the meaning of that statement?

MR. KIRK: In the context of the EIS/EIR?

MR. OSIAS: Correct.

MR. HARGREAVES: Objection to the extent that it asks for a legal conclusion.

Is that a --

MR. OSIAS: To the same extent he answered all other questions about evaluating EIR/EISs, I ask this one.

CHAIRMAN BAGGETT: Answer.

MR. KIRK: Technically, from a technical standpoint, yes, I generally agree with the statement.

MR. OSIAS: Dr. Brownlie, tell me if you agree with this statement.

The no-action alternative describes probable future conditions based on the potential for current conditions to continue plus other assumptions about the physical, biological and socioeconomic changes that might occur without the project?

DR. BROWNLIE: I agree with that.

MR. OSIAS: Mr. Kirk, you agree with that, too, correct?

MR. KIRK: I do.

MR. OSIAS: And finally, you agree with this statement, don't you, Dr. Brownlie?

The no-action alternative includes historic and existing conditions and any changes or programs that have been approved and funded. In addition, the no-action

alternative includes expected and reasonably predicted changes to all aspects of the environment that can be anticipated without the project.

DR. BROWNLIE: Certainly anything that's been funded is fair game.

MR. OSIAS: And the second part of that had to do with expected and reasonably predictable changes. Do you agree with that part, too?

DR. BROWNLIE: Generally, yes, but that gets into a kind of interpretation area.

MR. OSIAS: But it is not the statement you disagree with?

DR. BROWNLIE: Right.

MR. OSIAS: It is the application?

DR. BROWNLIE: That's correct.

MR. OSIAS: The same with you, Mr. Kirk?

MR. KIRK: I potentially agree with the statement.

MR. OSIAS: Potentially, okay.

The Salton Sea today is a problem; isn't that correct, Dr. Brownlie?

DR. BROWNLIE: It's a problem?

MR. OSIAS: Yes. It is a problem in need of a solution?

DR. BROWNLIE: It's got problems.

MR. OSIAS: The Sea has problems with respect to fish and wildlife, correct?

DR. BROWNLIE: It has problems with respect to the future of their fish and wildlife.

MR. OSIAS: So maybe I am wrong, then. Is your opinion, Dr. Brownlie, that today the Salton Sea is not a problem?

DR. BROWNLIE: It certainly has things that could be improved. That is part of the restoration project.

MR. OSIAS: Without restoration and without looking into the future, today is not a problem in terms of the Salton Sea? Trying to start somewhere. You all thought it was important to have a starting point. I'm trying to start with today.

DR. BROWNLIE: The Sea has -- let's take a specific point. The Sea has a healthy fishery. Things could be done to the Sea to improve it.

CHAIRMAN BAGGETT: Mr. Osias, I am going to step in. Could you clarify "problem"? It is a pretty vague term. Let's focus us where we want to go. It's sort of vague.

MR. OSIAS: Does the Salton Sea today pose any risks to humans?

DR. BROWNLIE: There is a selenium advisory on eating fish.

MR. OSIAS: You can't think of anything else?

DR. BROWNLIE: Coliform levels are high in some areas. That could or could not be -- that may be an indicator of

possible human health issues.

MR. OSIAS: Does that exhaust your answer?

DR. BROWNLIE: There are no serious vector problems. People do have water contact with the Sea without health problems.

MR. OSIAS: Isn't it true today that the Salton Sea poses a serious flooding risk? Do you know? I'm asking you, Dr. Brownlie.

CHAIRMAN BAGGETT: If you don't know --

DR. BROWNLIE: I don't know. I would say I don't know. I'm not aware of any.

MR. OSIAS: Mr. Chairman, I have a series of exhibits that we will introduce on rebuttal. I'm going to use them now on cross. I will offer them on rebuttal.

CHAIRMAN BAGGETT: That is fine.

MR. OSIAS: I would like to start with Exhibit 67.

Dr. Brownlie, you can look through that if you wish, and I will ask you some specific questions.

Dr. Brownlie, in your work as a project manager on an EIR/EIS for the Salton Sea and for these other tasks you've done, you must have visited the Salton Sea, have you not?

DR. BROWNLIE: Yes. I can certainly clarify my response. We certainly are aware that the Sea has risen. There has been flooding in the past. However, the elevation has been stable for the past ten or so years. And is there

a serious threat to additional rising elevation in the Sea? Not that I am aware of.

MR. OSIAS: Is it possible that the Sea without rising could still be a flooding risk today; isn't that right?

DR. BROWNLIE: If a dike were to break, yes, there could be flooding.

MR. OSIAS: Have you ever seen a telephone in the middle of the Sea? Well, middle is an exaggeration. At least with water at its base.

DR. BROWNLIE: I have seen these similar situations in person, yes.

MR. OSIAS: These conditions still exist in many cases; isn't that right?

DR. BROWNLIE: They do.

MR. OSIAS: Because the Sea has not receded, correct?

DR. BROWNLIE: It was once at a much lower level.

MR. OSIAS: It must have been at a much lower level when the pictures in Exhibit 67 -- I'm sorry, when the structures in the pictures in Exhibit 67 were built, correct?

DR. BROWNLIE: (Nods head.)

MR. OSIAS: You have to answer out loud.

DR. BROWNLIE: Yes, yes.

MR. OSIAS: Let me refer you to Page 7 of Exhibit 67. At least if I numbered right, that should be a wave

splashing over the retaining wall of someone's home.

Do you see that?

DR. BROWNLIE: Yes.

MR. OSIAS: These conditions happen today when winds are up; is that correct?

DR. BROWNLIE: Yes.

MR. OSIAS: Same thing with Page 8. You are aware of these circumstances currently happening?

DR. BROWNLIE: Yes.

MR. OSIAS: If I could show you Exhibit 68 --

MR. HARGREAVES: Is there a representation as to the date of these photos?

MR. OSIAS: Yes, there is. They were taken at various times, some as recently as last year and some back into the '80s. We will put a witness on. The point is these conditions still exist not when they were created. He testified he observed a telephone pole in the water. He observed waves splashing when winds are up. These are illustrative. We will put on that foundation in rebuttal. If you want to attack that offer in evidence at that time, that is fine.

Let you look at Exhibit 68. You had already answered, Dr. Brownlie, that, of course, flooding could happen if a dike broke, so you are aware that there are dikes at the Salton Sea; is that correct?

DR. BROWNLIE: Yes.

MR. OSIAS: The purpose of a dike is, in fact, to prevent the hypersaline seawater from flooding whatever structures or fields are behind the dikes, correct?

DR. BROWNLIE: Yes.

MR. OSIAS: You were probably here for Mr. Gruenberg's testimony. I actually showed him a dike in his slide? Is that right?

DR. BROWNLIE: Yes.

MR. OSIAS: There is typically a road on top of the dike which we can see on Page 1?

DR. BROWNLIE: Yes.

MR. OSIAS: We start with Page 1. Does that look like a fair representation of the dikes you have seen?

DR. BROWNLIE: Yes.

MR. OSIAS: These dikes were built as the Sea was rising, presumably, right?

DR. BROWNLIE: Yes.

MR. OSIAS: Do you know --

DR. BROWNLIE: They were constructed over a number of years is my understanding. I am not sure exactly when this particular dike was constructed.

MR. OSIAS: I wasn't asking about this one, just in general. Do you know how many miles of dikes there are at the Salton Sea?

DR. BROWNLIE: The exact mileage, no, but it is -- I know it is substantial.

MR. OSIAS: Double figures -- double digits, I mean, ten to 20? More?

DR. BROWNLIE: I'm not sure.

MR. YATES: Excuse me, Mr. Chairman. I appreciate the illustrative nature of some of these things, but there is rationale for wanting to build dikes, to provide habitat for birds in and around wildlife areas. And there are dikes to prevent the sea from coming in. We have a mixed bag of pictures here of various dikes, some of which are in the Wister Wildlife Refuge, I assume.

MR. OSIAS: Is that an objection or description?

MR. YATES: I object. The point is these dikes were for the creation of habitat or for protection against the Sea.

MR. OSIAS: Is that an objection that is mutually exclusive?

MR. YATES: Yes.

CHAIRMAN BAGGETT: What is your -- you want to respond?

MR. OSIAS: I don't understand the legal basis of that objection. Let's start with Page 1.

CHAIRMAN BAGGETT: I think --

MR. OSIAS: I asked him about Page 1. I see a field.

I see a dike.

MR. HARGREAVES: The objection is there has been no foundation about when and where these pictures were taken and what exactly they show. If you want to lay that foundation with the witnesses, that might make sense. But the witnesses may not have ever seen these particular dikes.

MR. OSIAS: They may not. First of all, I haven't asked any questions about any particular dike yet.

CHAIRMAN BAGGETT: I assume that when you introduce them in rebuttal, you have specific sites or specific pictures, and I would expect a foundation to be laid then and objections at that time. But the purpose now?

MR. OSIAS: It's to cross.

CHAIRMAN BAGGETT: It's to cross and ask general questions about dikes is what I've been hearing so far. He is -- you are not asked specific questions about this picture and where it was or whether it is wildlife or what it is for. It is just general issues.

I would overrule.

MR. OSIAS: Part of my question is to figure out whether this gentleman who has been so involved in --

CHAIRMAN BAGGETT: I understand. Continue.

MR. OSIAS: -- knows about that. He does not know the length we just established.

Are there dikes at the southern end of the Sea, if you

know?

DR. BROWNLIE: There are other dikes around the Sea, but the major dikes are at the southern end.

MR. OSIAS: So you are familiar somewhat with the dikes at the Sea?

DR. BROWNLIE: Yes.

MR. OSIAS: Are you aware that some dikes have behind them farmland?

DR. BROWNLIE: Yes.

MR. OSIAS: And are you aware that in order for that farmland to irrigate it has to pump the drainage water off the field?

DR. BROWNLIE: Yes.

MR. OSIAS: Because gravity flows been destroyed, right?

DR. BROWNLIE: Right. I could cut to the chase on this. We have typically used as a part target for our elevation for the restoration project reducing the level of the Sea about three feet. Now we typically -- and it has been evaluated, and it is run by the Board of Directors, which includes IID, that minus 230 is a reasonable target. We recognize the need to reduce the level of the Sea.

MR. OSIAS: Do you know where that elevation would be vis-a-vis land that is behind the dikes?

DR. BROWNLIE: There might be some areas that would be

below, that it would still be a little bit above that.

MR. OSIAS: So pumping drain water, for example, would still be --

DR. BROWNLIE: Might still have to continue.

MR. OSIAS: Maintenance at least at some level of height on the dike would still be required, correct?

DR. BROWNLIE: Yes.

MR. OSIAS: You haven't done any analysis, have you, of the cost of maintaining dikes?

DR. BROWNLIE: No.

MR. OSIAS: I'm talking now under current elevation.

DR. BROWNLIE: Not in what we were contracted to do, no.

MR. OSIAS: So that is not a cost factor that has been taken into effect in any of your analyses today?

DR. BROWNLIE: No.

MR. OSIAS: Same answer with respect to drainage removal? When I say drainage removal, removing drain water by pumps?

DR. BROWNLIE: Yes.

MR. OSIAS: It is also correct, isn't it, that behind some of the dikes and protecting them from the current elevation of the Sea are geothermals?

DR. BROWNLIE: Yes.

MR. OSIAS: If you look to Page 8 of this exhibit.

DR. BROWNLIE: Talking about Exhibit 68 now?

MR. OSIAS: Yes. First, let me ask, have you ever seen a geothermal plant in the Imperial Valley?

DR. BROWNLIE: Yes, I have been down there.

MR. OSIAS: Have you seen them behind dikes?

DR. BROWNLIE: Yes.

MR. OSIAS: You have personal knowledge that some geothermal plants would be at risk if the dikes broke?

DR. BROWNLIE: Yes.

MR. OSIAS: If that happened, in fact, do you have any information about the kind of environmental mess that would be created?

DR. BROWNLIE: No.

MR. OSIAS: You don't know if the geothermal plants use toxic materials or substances?

DR. BROWNLIE: I am not sure what materials they use.

MR. OSIAS: Actually, not materials they use. I was talking about that brine that comes out of the ground.

Are you aware of the toxics, if at all, in those?

DR. BROWNLIE: I am not sure of the constituents.

MR. OSIAS: The status quo of the Salton Sea, at least with respect to humans, is in need of a fix at its current elevation, correct?

DR. BROWNLIE: I am not prepared to testify to that.

MR. OSIAS: Maybe not, maybe the status quo is fine

even with respect to humans. Is that your opinion?

DR. BROWNLIE: You're asking a very broad question. If you are asking with respect to flooding, you know, I am not sure. As far as I know, things have operated pretty well right now on the flooding side.

There are certainly aspects of the Sea that need cleanup and that is what the purpose of the restoration project is.

MR. OSIAS: Let me have you look at Exhibit 18, Dr. Brownlie.

DR. BROWNLIE: Salton Sea Exhibit 18?

MR. OSIAS: Yes, please.

DR. BROWNLIE: Yes.

MR. OSIAS: Could you turn to Page 6?

DR. BROWNLIE: I am there.

MR. OSIAS: I apologize for the size, but this is how it was handed out. If you look at the lower right-hand corner, do you see the current salinity trend graph?

DR. BROWNLIE: Yes.

MR. OSIAS: Will you tell us under this graph in what year does the fishery collapse, that is the range of years?

DR. BROWNLIE: Well, this shows the range from, like, 2020 to 2040.

MR. OSIAS: This document is dated, according to what Mr. Kirk said at the beginning, January of 2002, correct?

DR. BROWNLIE: Yes.

I would like to point out this is a slide that was prepared to give the public a general impression of when the fishery could collapse. It is not real precise. It is meant to show a range.

MR. OSIAS: I see.

In Exhibit 11, which we were looking at earlier in your testimony, you have a much more precise graph; isn't that right?

DR. BROWNLIE: Yes.

MR. OSIAS: It is a single line with respect to projected inflows at different levels, correct?

DR. BROWNLIE: Those are three projections that were run by the Bureau of Reclamation.

MR. OSIAS: And the degree of confidence for that single line is at the 95-percent level?

DR. BROWNLIE: That is an average of many, probably -- I don't know how many exactly they run, 5,000 traces.

MR. OSIAS: That wasn't my question. You understand what a confidence interval level is?

DR. BROWNLIE: It is a confidence interval around it. It's about a foot. I don't know what it is on a salinity chart. That is the average.

MR. OSIAS: That is the mean, correct?

DR. BROWNLIE: That is the mean of multiple

simulations.

MR. OSIAS: You've seen the EIR/EIS that IID had CH2MHill prepare? They already testified.

DR. BROWNLIE: Right. They showed the confidence limit on theirs.

MR. OSIAS: You didn't do that here, right?

DR. BROWNLIE: No.

MR. OSIAS: This was meant to be simplified for the public as well, correct?

DR. BROWNLIE: It was meant to present the mean.

MR. OSIAS: It doesn't say that, though, does it?

DR. BROWNLIE: It may not.

MR. OSIAS: Just to make sure we know where we are, your testimony was that starting in year 2000 and looking ahead, we should assume the continued inflow to the Sea at 1.34 million acre-feet a year?

DR. BROWNLIE: No, I didn't say that.

MR. OSIAS: Is that what the chart communicates?

DR. BROWNLIE: This chart communicates what the model projects if the historic inflows were to continue.

MR. OSIAS: Did I not hear you testify that in comparing the project impacts to the present day circumstance we should compare the reduced inflows to 1.34 million acre-feet a year?

DR. BROWNLIE: No, I don't believe I said that.

MR. OSIAS: You don't believe we should do that?

DR. BROWNLIE: I am not sure what baseline, future baseline, or future no-project should be used.

MR. OSIAS: You are not testifying today that the baseline should be 1.34 million acre-feet.

DR. BROWNLIE: No.

MR. OSIAS: If it were 1.34 million acre-feet, than this graph that we looked at would show we hit 60 parts per thousand in 2060, in a couple years?

DR. BROWNLIE: Roughly, the year.

MR. OSIAS: 2062, is that ballpark?

DR. BROWNLIE: Yes.

MR. OSIAS: Do you remember working on the Salton Sea EIR/EIS?

DR. BROWNLIE: Yes.

mr. OSIAS: You were the project manager?

DR. BROWNLIE: Yes.

MR. OSIAS: Do you recall if -- that document used a inflow of 1.363 million acre-feet, right?

DR. BROWNLIE: Correct.

MR. OSIAS: 23,000 acre-feet higher.

DR. BROWNLIE: Right.

MR. OSIAS: Isn't it true that you projected on a similar looking graph that 60 parts per thousand, using that higher inflow, would happen in 2050?

DR. BROWNLIE: Again, these are model runs that have been run by the Bureau of Reclamation. They have continued to make improvements. The Bureau came up with the 1.34 and they originally came up with the 1.36.

MR. OSIAS: So neither of those are your opinion of what we should use?

DR. BROWNLIE: Yes.

I am reminded by Mr. Kirk that since the Draft EIS was prepared, we have done quite a bit work on precipitation of salts in the Sea, and that was one of the factors that caused the change in the salinity charts.

MR. OSIAS: That work was done with the Bureau, correct?

DR. BROWNLIE: Yes.

MR. OSIAS: They know what they are doing when it comes to that part, right?

DR. BROWNLIE: Again, there was a belief the Science Office convened a panel, a panel of experts, included people from the salt industry, from academics. And they reviewed the issue of the precipitation of salts and came up with some recommendations. And there was always work down in the Bureau's lab on precipitation of salts, actually Salton Sea water precipitated in the lab.

MR. OSIAS: When we are looking at inflow to the Sea and we look backwards over the 40 -- actually, let me back up.

The EIR/EIS used a 50-year period, correct, for getting to the 1.36 number?

DR. BROWNLIE: Yeah, could have been.

MR. OSIAS: And the current cost assessment uses a 40-year period, correct?

DR. BROWNLIE: Yes. Again, that was based on analysis that was done by the Bureau. They show the periods to look at.

MR. OSIAS: At no time during the last 50 years or 40 years has California been limited to 4.4 million acre-feet; is that correct?

DR. BROWNLIE: I would -- yes, I would say that is correct.

MR. OSIAS: Do you know?

DR. BROWNLIE: Well, I believe that is correct.

MR. ROSSMANN: Let me ask for clarification on that. I think the Supreme Court might have said something about that. Is counselor meaning practically limiting?

MR. OSIAS: Actually means by available water versus by a Supreme Court decision.

Is that how you understood my question?

DR. BROWNLIE: Yes. It's really not my area of specialty.

MR. OSIAS: You did deal with it in these documents in terms of analyzing the EIR/EIS, did you not, with respect to

this critique of the enforcement obligation? You had to look into the 4.4 limit, did you not?

DR. BROWNLIE: Yes.

MR. OSIAS: You had to deal with it in the former EIR/EIS, did you not?

DR. BROWNLIE: Yes.

MR. OSIAS: So you know something about it?

DR. BROWNLIE: Yes.

MR. OSIAS: When California has only 4.4 million acre-feet available, the first three priorities, which we commonly call the agricultural component, is limited to 3.85 million acre-feet, correct?

DR. BROWNLIE: Yes, I believe that is correct.

MR. OSIAS: And the agriculture agencies have not been limited in the past to 3.85 million acre-feet in terms of available water, have they?

DR. BROWNLIE: Right, yes.

MR. OSIAS: You do understand they are legally limited that way? Or do you not understand that?

DR. BROWNLIE: Legally limited to?

MR. OSIAS: To 3.85 million acre-feet when there is only 4.4 available to California.

DR. BROWNLIE: Yes.

MR. OSIAS: You understand that is an existing legal condition?

DR. BROWNLIE: You know, I am not --

MR. HARGREAVES: I would object. First of all, he is not here to testify as to the substance of the law of the river and various documents and also somewhat confusing about -- I mean, suggesting that they're limited to 3.82 as the legal limit, suggesting that they're doing something illegal by diverting water and that is what they have been doing for 40 years, which is not case.

CHAIRMAN BAGGETT: Sustained.

Could you rephrase?

MR. OSIAS: Let me deal with that.

In the past they have been allowed to divert more than 3.85, correct?

DR. BROWNLIE: That's correct.

MR. OSIAS: And you believe they have been allowed that consistent with the law?

DR. BROWNLIE: Yes.

MR. OSIAS: Not in an unlawful way?

DR. BROWNLIE: Right.

MR. OSIAS: And you understand, not as a legal opinion, but as an environmental scientist and planner that when California is limited to 4.4, the agricultural agencies are limited to 3.85? You understand that?

DR. BROWNLIE: Yes.

MR. OSIAS: You understand that the reason for that

happened a long time ago?

DR. BROWNLIE: Yes.

MR. OSIAS: It's nothing that is going to happen next year based on some new lawsuit; is that correct, your understanding?

DR. BROWNLIE: Yes.

MR. OSIAS: Is it your understanding that the federal government has to choose to impose that limit of 3.85?

DR. BROWNLIE: You're asking me questions that are not part of my expertise, why I came to testify.

MR. OSIAS: Did you submit any comments on the entitlement enforcement portion of the EIR/EIS?

DR. BROWNLIE: Only as related to the baseline calculation.

MR. KIRK: Actually, I prepared most of those comments.

MR. OSIAS: As it related to -- I will come back to you. As it related to baseline, Dr. Brownlie, the entitlement enforcement assumption was something that you looked at, correct?

DR. BROWNLIE: Yes.

MR. OSIAS: To you that meant that someone in the future was going to limit the combined IID and Coachella diversions, right?

DR. BROWNLIE: Yes.

MR. OSIAS: And the shorthand in the document or at least in your testimony was entitlement enforcement related to that limit, correct?

DR. BROWNLIE: The way it is presented in the appendix to the EIS.

MR. OSIAS: That is how you understood it?

DR. BROWNLIE: Yes.

MR. OSIAS: You understand if there is no Inadvertent Overrun Policy adopted by the federal government that 3.85 million limit is still in existence? Did you understand that?

DR. BROWNLIE: Yes.

MR. OSIAS: The Salton Sea's EIR/EIS is at the public draft stage; is that correct, Dr. Brownlie?

DR. BROWNLIE: It was published as a draft, yes, in January of 2000.

MR. OSIAS: It's still out to public domain as the public draft?

DR. BROWNLIE: Yes.

MR. OSIAS: And comments were received?

DR. BROWNLIE: Yes.

MR. OSIAS: And further action is contemplated?

DR. BROWNLIE: We anticipate there will be a revised draft at some point. I think we made that public at various different meetings, but it is not currently scheduled.

MR. OSIAS: You agree with the following statement: As of April 2002 the Salton Sea Restoration Project EIR/EIS is at the public draft stage, and, therefore, the project itself should be considered reasonably foreseeable even if specific measures have not been identified as yet?

DR. BROWNLIE: Say generally, yes, that would be true.

MR. OSIAS: I'm sorry, Mr. Chairman. I have one for the Board, one for the witness. This is so long. We only started working on it this weekend. If I could have those delivered, we will deliver new ones and introduce it in rebuttal. I want to ask him questions about this.

CHAIRMAN BAGGETT: What is it?

MR. OSIAS: This is the Draft Salton Sea EIR/EIS put out by the Salton Sea Authority and the Bureau of Reclamation in January 2000 for which Tetra Tech, under the direction of Dr. Brownlie, was the project contractor.

CHAIRMAN BAGGETT: Do we have this electronically yet?

MR. FECKO: No, we don't.

MR. OSIAS: I don't have it electronically.

CHAIRMAN BAGGETT: Is it available electronically?

DR. BROWNLIE: It's been available on CD.

CHAIRMAN BAGGETT: That would be great if you can provide me. Mr. Osias, if you could provide everybody with a CD.

MR. OSIAS: If I get one.

DR. BROWNLIE: It is also on the Internet.

MR. OSIAS: CD would be better. If I can get one, I will have copies made.

MR. KIRK: We will try to track one down.

MR. OSIAS: Let me just walk you through this Draft EIR which is sufficient --

MR. SLATER: Mr. Chair, can we have a marking for this, proposed marking or identification?

MR. OSIAS: I'm sorry, let's call it 69.

MR. SLATER: IID 69. And for the record the title is?

MR. OSIAS: Salton Sea Restoration Project Environmental Impact Report/Statement, Environmental Impact Report Draft.

MR. SLATER: Thank you, counsel.

MR. OSIAS: With respect to the subject of fish impacts?

DR. BROWNLIE: Uh-huh.

MR. OSIAS: Actually, let's strike that.

If you would turn to Page 4-11. Are you there?

DR. BROWNLIE: Uh-huh.

MR. OSIAS: If you will look under the discharge no-action alternative, you will see, four lines down, a reference to the average inflow rate of 1.363. I just wanted to confirm that is the number we talked about.

DR. BROWNLIE: That is the number we used at this

stage.

MR. OSIAS: If you will turn two pages you should see Figure 4.1-6?

DR. BROWNLIE: Okay.

MR. OSIAS: And the top graph is the comparison of salinity for the no-action at current inflows, correct?

DR. BROWNLIE: Right.

MR. OSIAS: This graph actually shows the confidence intervals that we talked about before, correct?

DR. BROWNLIE: That is correct.

MR. OSIAS: Under this graph, the no-action impact on salinity for the dates where it reaches 60 parts per thousand using the 90-percent confidence interval are what days?

DR. BROWNLIE: The 95-percent confidence interval would be down around 2040. As I stated a few minutes ago, a lot of this stuff in this document now is considered out of date by subsequent analyses that has been conducted. I would say that that confidence interval is probably representative of a range that you would expect except that we believe, based on the information at the precipitation workshop, that the salinity was overstated at this point. So probably now I would say confidence interval would range from 2060 maybe to 2050. From the year 2060 to 2050 if you were looking at that same confidence interval range.

MR. OSIAS: Let me ask you, should the public and anyone else who is --

DR. BROWNLIE: There is a push in the other direction, obviously. It could be understated by that much if you want to look at confidence.

MR. OSIAS: Are you finished with your answer?

DR. BROWNLIE: Yes.

MR. OSIAS: Should the public utilize this Draft Salton Sea EIR/EIS at all?

DR. BROWNLIE: It is pretty heartily out of date right now.

MR. OSIAS: Therefore, it probably does not reflect a reasonably foreseeable project as described in it; is that correct?

DR. BROWNLIE: Well, it's -- the alternatives that are in this document have been substantially modified in the years since this was published, partially as a result of the large number of comments that we received, concerns about some of the issues.

MR. OSIAS: Flip to, if you would, Exhibit 19 of the Salton Sea Authority.

CHAIRMAN BAGGETT: Take a quick recess to change paper.

(Reporter changes paper.)

CHAIRMAN BAGGETT: Back on the record.

MR. OSIAS: Dr. Brownlie, the EIR/EIS for the Salton

Sea, as does the transfer one, has a section which describes the current settings, description of biodiversity and no-action, correct?

DR. BROWNLIE: That's correct.

MR. OSIAS: Then it has alternatives that it goes through?

DR. BROWNLIE: That's correct.

MR. OSIAS: I think you said right before the break that as to the alternative section they are obsolete because these alternatives are not going to be ones that are going to be proposed; is that correct?

DR. BROWNLIE: That's correct. The enhanced evaluation alternatives have been retained and modified and the pond alternatives have been substantially modified.

MR. OSIAS: So the IID or others who are planning projects that may have an impact on the Sea in order to determine how they may interact with the restoration project, they should not use this EIR/EIS. Is that your opinion?

DR. BROWNLIE: I think I know where you are going. I would say that is probably correct. That is when we did this, we knew that the transfer project was an intended project. We knew exactly what the inflows would be. We certainly have a look at inflows that might occur as a result of the transfer project.

MR. OSIAS: If you indulge me, perhaps, Mr. Chairman. He wants to finish. I want to finish. You will have a chance to do this on redirect. Try to answer my questions and then your counsel, who is very talented, will elicit from you the rest of whatever you want to tell us.

DR. BROWNLIE: Okay.

MR. OSIAS: As to the portion of the Salton Sea EIR/EIS that deals with what we find there today or in that case 2000, is that also obsolete, to be discarded or is that still generally good?

DR. BROWNLIE: The effect of following the environmental section?

MR. OSIAS: Yes.

DR. BROWNLIE: That is reasonably good, out of date by a year or two.

MR. OSIAS: If you can continue then to look at the chart on, I guess it's on, Page No. 4-14.

DR. BROWNLIE: Yes.

MR. OSIAS: The bottom of the chart deals with elevation. That is your more current Exhibit 11, correct?

You have to answer out loud.

DR. BROWNLIE: Yes.

MR. OSIAS: I understand it is easier to nod, but the reporter can't take that down.

Now the no-project actually shows increase in

elevation, does it not?

DR. BROWNLIE: Right.

MR. OSIAS: In fact, if you use the 95-percent confidence range, the increase in elevation could at the high end go up to minus 220.1 or something; does that sound about right?

DR. BROWNLIE: Yes.

MR. OSIAS: That would be a substantial flooding problem, would it not?

DR. BROWNLIE: Yes, it would. And we did a number of things that we looked at in the modeling, made some adjustments to that because we didn't believe that that was correct. We received a number of comments on that.

MR. OSIAS: You think it was in error to show increasing Sea under the no-project alternative?

DR. BROWNLIE: Well, we worked again with the Bureau of Reclamation and adjusted the baseline in the no-project inflow to 1.34. We do still show a slight raise in elevation with the 1.34 inflow.

MR. OSIAS: On Page 4-15, using the knowledge that you had at the time you wrote this report, you described that the elevation of the Sea would increase slightly from its current level of minus 227?

DR. BROWNLIE: I'm sorry, are you on Exhibit 19 now?

MR. OSIAS: No, Page 4-15, just flip that page from

where you were.

DR. BROWNLIE: These are out ever order.

MR. OSIAS: I'm horribly sorry. Do you find it now?

DR. BROWNLIE: They were flipped back to front.

MR. OSIAS: Do you see the elevation effects paragraph?

DR. BROWNLIE: Yes.

MR. OSIAS: It says back in 2000 when you had projected a rising Sea, that the elevation of the Sea would increase slightly from its current level of minus 212 feet, msl, due to the reduced rate of evaluation caused by the salinity increase.

Do you see that?

DR. BROWNLIE: Yes.

MR. OSIAS: It goes on to say, under current inflow conditions the elevation is expected to rise to about minus 223 by the year 2060, correct?

DR. BROWNLIE: It does say that.

MR. OSIAS: That four-foot elevation range was described as a slight increase, was it not?

DR. BROWNLIE: Yes.

MR. OSIAS: Isn't it correct that even back then when you were working on this report before you started your run, in the land use and agricultural sections there was no discussion of the flooding impact that that slight increase

of four foot would have on those who lived behind dikes; isn't that correct?

DR. BROWNLIE: I don't remember.

MR. OSIAS: Would you like to check on Page 4-153? See where it says no-action alternative? Are you with me?

DR. BROWNLIE: Uh-huh.

MR. OSIAS: Do you see where it says effective no-action alternative with continuation of current flow?

DR. BROWNLIE: Uh-huh.

MR. OSIAS: And the first sentence says continuation of current inflow would have no effect on agricultural resources, correct?

DR. BROWNLIE: Yes, it does.

MR. OSIAS: It does not describe any flooding impact on agricultural resources?

DR. BROWNLIE: No, we do not.

MR. OSIAS: Does that reflect your recollection that you didn't do land use or do I have to show that to you?

DR. BROWNLIE: If you read it, I will take your word for it.

MR. OSIAS: Thank you.

The '88 agreement was signed in 1988, right, between IID and Metropolitan?

DR. BROWNLIE: Yes, I believe '88 or '89.

MR. OSIAS: That was the one you also looked at with

respect to your baseline comments, correct?

DR. BROWNLIE: Yes.

MR. OSIAS: It was finished in its ramp up of projects in what year?

DR. BROWNLIE: I am not sure.

MR. OSIAS: If I told you 1998, would that refresh your recollection?

DR. BROWNLIE: That would probably be correct, if that is what it was.

MR. OSIAS: You don't know?

DR. BROWNLIE: I am not sure.

MR. OSIAS: It is relevant to whether it would show up against the 1.34, isn't it?

DR. BROWNLIE: I believe the transfer document says that the average effect is about 67,000 acre-feet over that period.

MR. OSIAS: It is relevant to know when the full volume of that transfer came into being, is it not? Or maybe it is not; maybe I am wrong.

DR. BROWNLIE: It is certainly relevant. The only thing I could comment on is that when we brought the issue to the Board's attention, we don't have exact calculations of how it was factored in.

MR. OSIAS: Yes. And you probably did have it available to you when it was completed, though, right, or

not? Did you not have that information?

DR. BROWNLIE: We probably did. I don't recall the exact date, though.

MR. OSIAS: If it was finished in '98, you wouldn't expect to see its impacts in a 40-year average, would you? Be dwarfed by too many years, wouldn't it?

DR. BROWNLIE: Some. There would be some.

MR. OSIAS: Is not the use by IID fairly volatile?

DR. BROWNLIE: Yes.

MR. OSIAS: Ranging over several hundred thousand acre-feet per year?

DR. BROWNLIE: Well, if I recall correctly, what is stated in the document is that it was an average of 67,000 acre-feet over ten years. So that effect over a 40-year period would have 15,000 acre-foot reduction.

MR. OSIAS: You're familiar with the notion of seawater intrusion, I take it?

DR. BROWNLIE: Yes.

MR. OSIAS: That happens in Orange County and Los Angeles?

DR. BROWNLIE: Yes.

MR. OSIAS: Have you worked in any seawater intrusion projects?

DR. BROWNLIE: I've worked on the Salton Sea project.

MR. OSIAS: Does that mean that is a seawater intrusion

problem?

DR. BROWNLIE: Can be.

MR. OSIAS: You're very elliptic in your answers.

Did you look at that question in your 2000 Salton Sea EIS/EIR?

DR. BROWNLIE: I don't recall.

MS. OSIAS: Would you look at Page 3-3?

DR. BROWNLIE: Got it.

MR. OSIAS: If we go down below the table, the first full paragraph starting with the words "the rate of groundwater inflow."

DR. BROWNLIE: Yes.

MR. OSIAS: In that document in 2000 you referenced a USGS survey done in 1966, correct?

DR. BROWNLIE: Yes.

MR. OSIAS: At that time it was estimated that there was a migration of freshwater of 30,000 into the Sea?

DR. BROWNLIE: Yes.

MR. OSIAS: Are you familiar with some of the stories that people have talked about that in the old days there used to be freshwater springs in the Salton Sea?

DR. BROWNLIE: I am not certain about that.

MS. OSIAS: Haven't heard those anecdotes?

DR. BROWNLIE: Can't remember.

MR. OSIAS: That would be consistent with what this

1966 survey found? Yes or no?

DR. BROWNLIE: I don't know.

MR. OSIAS: Since 1966 what's happened to Coachella Valley lower groundwater aquifer? Do you know?

DR. BROWNLIE: I am not sure.

MR. OSIAS: Is it relevant to the analysis of Salton Sea?

DR. BROWNLIE: The flow of water from Coachella to groundwater is relevant.

MR. OSIAS: In fact, if that groundwater basin was being significantly overdrafted, the equivalent of seawater intrusion could take place, correct?

DR. BROWNLIE: It could be.

MR. OSIAS: The water would flow out of the Sea into the groundwater basin?

DR. BROWNLIE: Uh-huh.

MR. OSIAS: You have to say yes or no.

DR. BROWNLIE: Yes.

MR. OSIAS: Sorry, for the reporter.

You didn't look at that in the year 2000, the overdraft situation in Coachella?

DR. BROWNLIE: I don't remember.

MR. OSIAS: Have you looked at it today?

DR. BROWNLIE: For what reason?

MR. OSIAS: For the reason of estimating the inflow to

the Salton Sea and outflow from the Salton Sea.

DR. BROWNLIE: The Bureau of Reclamation has been running the model, and I believe that they have taken that into account.

MR. OSIAS: Do you think at that time 1.34 assumes inflow or outflow from the groundwater to the Salton Sea?

DR. BROWNLIE: I think it various with time.

MR. OSIAS: Do you think it was inflow a long time ago?

DR. BROWNLIE: From the projections -- as I recall, the projections are presented in the document that there is a change in some of the numbers. I don't remember whether it is project, no-project. But that factor is included in the modeling analysis.

MR. OSIAS: If we had 30,000 of inflow in the '60s and now that has been eliminated and we have some outflow, the trend is clearly in the wrong direction in terms of inflow to the Sea. It is now outflow, correct?

DR. BROWNLIE: It could be in that case. I am not sure.

MR. OSIAS: In a smaller sample period it might be more relevant to predicting future sea flows, correct, rather than 40 years?

DR. BROWNLIE: I am not sure. I don't follow where you are going with the question.

CHAIRMAN BAGGETT: Just answer the question. You don't have to know where he is going.

MR. OSIAS: Everybody wants to know where I am going every time I ask a question.

You don't know today --

DR. BROWNLIE: I didn't understand the question.

MR. OSIAS: Do you know today if the Coachella Valley lower groundwater basin is being overdrafted?

DR. BROWNLIE: I believe it is, but I am not positive.

MR. OSIAS: You don't know the extent of it?

DR. BROWNLIE: I don't have any numbers with me today.

MR. OSIAS: I didn't ask you that question.

Do you know the extent of it?

DR. BROWNLIE: I do not know the extent of it.

MR. OSIAS: In developing 1.34 as the projected inflow to the Sea, at least for comparison of temporal impacts, did you consider that, in fact, Salton Sea water would be leaving the Salton Sea from the groundwater basin rather than entering?

DR. BROWNLIE: I guess I will have to repeat that I did not run the model, that that was a projection of what continued -- what would happen under continued inflows, historic levels.

MR. OSIAS: So it is your testimony --

DR. BROWNLIE: Never said that is the baseline.

MR. OSIAS: I understand you haven't said it is the baseline. I was going to confirm that it is not your testimony that the Bureau has said that 1.34 should used either, correct?

DR. BROWNLIE: No, it is not.

MR. OSIAS: So people who asked you to compare 1.34 to the effect of the project had to assume it was the baseline, right?

DR. BROWNLIE: One thing I can say is that 1.34 is a measured quantity that has been observed over 40 years. It's a point of reference.

MR. OSIAS: That wasn't the question I asked you either.

The people who asked you to compare the difference between 1.34 going forward into the future and, say, 1.0 million, which you have on your chart, the people who asked you to compare that for purposes of answering the question about the temporal impact had you assume that 1.34 was the inflow into the future, correct?

DR. BROWNLIE: Under the -- it is just a comparison.

MR. OSIAS: The 1.34 is not your opinion or the Bureau's opinion that that number should be used for future inflows?

DR. BROWNLIE: Well, it is not the Bureau's opinion. I can't speak for the Bureau, but it certainly

provides a point of reference.

MR. OSIAS: A hundred years average would provide a point of reference, would it not?

DR. BROWNLIE: I guess so.

MR. OSIAS: If you will look at Page 4-74.

DR. BROWNLIE: Of the old EIS?

MR. OSIAS: Yes.

DR. BROWNLIE: Thank you.

MR. OSIAS: Again, we're analyzing the no-action alternative and now we are in the intersection.

Do you remember doing that?

DR. BROWNLIE: Yes.

MR. OSIAS: You were in charge of this project?

DR. BROWNLIE: Yes.

MR. OSIAS: This EIR/EIS had you look at various inflow parameters, correct?

DR. BROWNLIE: Yes.

MR. OSIAS: One was the 1.36 and one was 1.0, correct?

DR. BROWNLIE: Uh-huh.

MR. OSIAS: You have to avoid that slang.

DR. BROWNLIE: Yes.

MR. OSIAS: Thank you.

And I think you did one even lower at .8, correct.

DR. BROWNLIE: Yes.

MR. OSIAS: That corresponds to what Mr. Kirk testified

about Congress' desire, correct?

DR. BROWNLIE: Yes.

MR. OSIAS: And isn't it true that the EIR/EIS at that time stated that if you reduce the inflow by 300,000 acre-feet there were no air quality impacts? Do you remember?

DR. BROWNLIE: Well, we were focused on the impacts of our project. I don't remember.

MR. OSIAS: Would you look at Page 4-75?

DR. BROWNLIE: I don't know what we said for the no-action case.

MR. OSIAS: Look at 4-75. The first sentence recognizes that if the Sea were reduced by a million feet, the Salton Sea would decline over time, correct?

DR. BROWNLIE: Yes.

MR. OSIAS: It would expose submerged areas, correct?

DR. BROWNLIE: Yes.

MR. OSIAS: And the salinity levels would rise, correct?

DR. BROWNLIE: Yes.

MR. OSIAS: Then it says, quote, but the major dissolved chloride and sulfates salts would be unlikely to reach saturation concentration within the next 100 years, correct?

DR. BROWNLIE: Yes.

MR. OSIAS: That was your professional opinion at that

time, correct?

DR. BROWNLIE: The analyst that wrote this, yes.

MR. OSIAS: Under your supervision as the project manager?

DR. BROWNLIE: Correct.

MR. OSIAS: It goes on to say, consequently, the decline in water levels would not be expected to produce significant new salt deposits around a shoreline of the Salton Sea. Is that a correct reading?

DR. BROWNLIE: Yes, it is. I might add that this is one of the major areas that was considered to be a flaw in this document.

MR. OSIAS: I see. So Tetra Tech in this area was not adequate?

DR. BROWNLIE: I'm sorry to say I don't believe it was.

CHAIRMAN BAGGETT: You have exceeded your hour.

MR. OSIAS: If I might, I have a few more things and I do believe Defenders of Wildlife had an hour and 20 minutes, between the two of theirs.

CHAIRMAN BAGGETT: They didn't. I was timing them. I will if you've got a few more questions.

MR. OSIAS: I do.

CHAIRMAN BAGGETT: Critical, I will allow you to continue.

MR. OSIAS: I am afraid others will think they are critical. I'm sorry. I do have just a few.

The solar pond cost estimate, did you develop those, Dr. Brownlie?

DR. BROWNLIE: I didn't actually do the engineering design work of costing it, the original costing analysis, but I did compile the information for the report.

MR. OSIAS: Mr. Kirk didn't do the cost analysis, did he?

DR. BROWNLIE: No.

MR. OSIAS: So the testimony that both of you gave is reporting someone else's work, correct?

DR. BROWNLIE: Well, Mr. Kirk contracted with Parsons Engineering to develop cost estimates for solar ponds.

MR. OSIAS: Did you have anything to do with that?

DR. BROWNLIE: Yes, I worked with the team.

MR. OSIAS: Do you believe in the cost estimates they came up with?

DR. BROWNLIE: That's preliminary cost levels, yes. They are preappraised for the level costs.

MR. OSIAS: That is just what I was going to ask you.

I thought they were appraisals. They are preappraisal levels?

DR. BROWNLIE: Yeah. I am not sure whether the Bureau would designate a preappraisal or appraisal level. They are

conceptual. They are cost estimates for conceptual designs.

MR. OSIAS: I am not familiar with that terminology. Briefly tell us what --

DR. BROWNLIE: They are not designs that are precisely laid out with every piece and component, maps and so forth. They are modular cost. It is a cost model that we developed.

MR. OSIAS: The cost of construction was one of the major things looked at?

DR. BROWNLIE: Yes.

MR. OSIAS: Do you remember in the critique that you participated in of the Pacific Institute project, that there were issues raised that they have failed to consider Division of Dam requirements? Do you remember that?

DR. BROWNLIE: Yes.

MR. OSIAS: Those were required because of the height being six feet or more?

DR. BROWNLIE: They were -- because they retention. They were basically built as dams that would retain water once the Sea declined.

MR. OSIAS: Well, these solar ponds could be in the Sea or not in the Sea, correct?

DR. BROWNLIE: Yes.

MR. OSIAS: You proposed to combined -- I'm sorry, you

didn't say proposed it. One of the examples you gave today was of the combined in-sea land?

DR. BROWNLIE: Yes.

MR. OSIAS: I looked through your appendix and your report, which are attached as Exhibit 11, and there is no discussion, is there, of the Division of Dam requirements?

DR. BROWNLIE: No, because we tried to design them to be very low head and very low elevation, shallow ponds. Pacific Institute was one single --

MR. OSIAS: It was a yes or no question.

DR. BROWNLIE: Sorry.

MR. OSIAS: Just to try to hurry here.

The requirements are triggered when there is 50 acre-feet behind the retention; isn't that correct?

DR. BROWNLIE: Yes.

MR. OSIAS: And six feet in height?

DR. BROWNLIE: Six feet in head.

MR. OSIAS: I'm sorry, six feet in head. Is that different?

DR. BROWNLIE: I believe six feet in head.

MR. OSIAS: Tell us what head means.

DR. BROWNLIE: The water height that is impounded.

MR. OSIAS: So from the bottom of the water to the top of the water, up against the impoundment has to be at least six feet?

DR. BROWNLIE: I am not sure if that includes freeboard. I don't think it does.

MR. OSIAS: The ponds that were evaluated had more than 50 acre-feet of water in them?

DR. BROWNLIE: They did.

MR. OSIAS: Substantially?

DR. BROWNLIE: Yes.

MR. OSIAS: They had an elevation in many cases in excess of six feet, did they not?

DR. BROWNLIE: They are not designed that way.

MR. OSIAS: Even the in-sea ones are not designed that way?

DR. BROWNLIE: The height of the dike, the height of the dike is yes.

MR. OSIAS: There would be that much water against it, the six feet?

DR. BROWNLIE: Could be, yes.

MR. OSIAS: And with respect to your critique of the Pacific Institute, you found that if you use Division of Dam requirements the cost estimate for the dikes more than tripled?

DR. BROWNLIE: Yes.

MR. OSIAS: So when you go back and go beyond the preappraisal level for these costs, you will take that into consideration I assume?

DR. BROWNLIE: I am not sure that the factor that we applied to the Pacific Institute proposal versus what we apply here would be the same.

MR. OSIAS: Did the Bureau of Reclamation contact you about releasing cost data?

DR. BROWNLIE: Contact me?

MR. OSIAS: Yeah, in the form of a letter or anything with respect to your cost estimates being made public?

DR. BROWNLIE: No.

MR. OSIAS: How about you, Mr. Kirk?

MR. KIRK: I don't believe so. In fact, the reverse is true. I've contacted them.

MR. OSIAS: So you don't know of any letter about premature release of cost estimates in your Exhibit 11? The letter is not in Exhibit 11. It is the cost estimates in Exhibit 11.

MR. KIRK: As I've testified, I sent them a letter with respect to the cost estimates.

MR. OSIAS: Thank you.

CHAIRMAN BAGGETT: Thank you.

I have one question. I just want to make sure I understand what I heard in your testimony.

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CROSS-EXAMINATION OF SALTON SEA AUTHORITY

BY THE BOARD

CHAIRMAN BAGGETT: What I heard was to prevent the acceleration and increase in salinity in the Salton Sea that would occur with the transfer of 300,000 acre-feet as proposed, that IID must cause to fallow 75,000 acres of land for the 300,000 acre-feet and an additional 20,000 acre-feet of lands.

MR. KIRK: No. If I could clarify.

CHAIRMAN BAGGETT: To make up the lost water, it's temporary or agriculture.

MR. KIRK: If I can clarify. Six acre-feet per acre of water in Imperial Valley to generate 300,000 acre-feet of water, that would be 50,000 acres of land. That would have some impact on the Sea, maybe a hundred thousand acre-feet of water would be lost from the Salton Sea. In order to make up that impact, you would divide that number by four, four acre-feet per acre. That is 25-. A total of 75,000. Would be 75,000 plus, it would be 50,000 plus 25-.

CHAIRMAN BAGGETT: Fifty plus 25-.

MR. KIRK: Yeah.

CHAIRMAN BAGGETT: That would either have to take place permanent or temporary or rotation?

MR. KIRK: There are all sorts of dimensions. One of the things that CIC -- the CAC report indicated -- I think

that is being introduced as somebody's exhibits -- indicated that you could target high water use or low water use. It changes the --

CHAIRMAN BAGGETT: Rotating cropping types.

MR. KIRK: It could be 75,000; it could be a hundred thousand acres or it could be 25- or 40,000 acres, depending on how you run the program.

CHAIRMAN BAGGETT: That is the only question I have.

Tom.

MR. PELTIER: I have a couple of questions.

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CROSS-EXAMINATION OF SALTON SEA AUTHORITY

BY STAFF

MR. PELTIER: Following up on that, is the Salton Sea Restoration Project possible with existing inflows?

MR. KIRK: Yes.

MR. PELTIER: You don't need more water?

MR. KIRK: No.

MR. PELTIER: I thought we heard discussion about salt removal, brine removal ponds?

MR. KIRK: Yes.

MR. PELTIER: You are not proposing to replace the removed water?

MR. KIRK: No.

MR. PELTIER: Wouldn't that affect the elevation?

MR. KIRK: Yes. As we discussed, there may be some advantage of bringing the elevation down a couple of feet.

MR. PELTIER: I am a little bit confused. My understanding was that you need to remove a substantial amount of brine to enable -- and we're talking about full-size Sea restoration not something lower.

So given those parameters, would you need more water to restore the Salton Sea?

MR. KIRK: No.

MR. PELTIER: Can you explain for me how that works?

MR. KIRK: You can think about in a couple of ways, and Bill I am sure can provide a better example than I.

Think about it just in terms of mass balance. If 4,000,000 tons of salt are getting to the Salton Sea every year, and you pulled out 5,000,000 tons of salt and, yes, you pull out a little bit of water, eventually you are going to bring the salinity of the Sea down.

The water is what you are getting caught up in. You are pulling water out, too, you are saying to yourself. Yes, you are. That is a downside of an on-land facility, whether it is a pipe to the ocean or on-land evaporation pond. You are pulling water out. It is a relatively small amount of water. The reason for that is the water coming into the Salton Sea is relatively fresh in terms of salinity. It is a tremendous amount of water. You're

pulling out a relatively small amount of water out of the Sea to balance that salt load.

MR. PELTIER: If you are keeping inflows constant or maybe slight reduction and you are pulling out, how much water do you need to take out to get the salt?

MR. KIRK: You could pull out 80,000 acre-feet or 90-.

MR. PELTIER: That 80,000 acre-feet doesn't need to be replaced with some other?

MR. KIRK: No.

MR. PELTIER: It won't affect elevation?

MR. KIRK: Yes, it will. It will drop the elevation a couple feet. If I had my way, yes, you would replace every drop of water with a fresh acre-foot of water.

MR. PELTIER: I am just trying to get a --

MR. KIRK: It is not necessary.

DR. BROWNLIE: Let me explain. If you did it on land, you would be pulling out, say, on the order 80,000 acre-feet. That means that effectively from historic you would be going from 1.34 to 1.26, say, 1.27, a little bit less than what they have as the base flow in the transfer document. So you would be dropping the elevation of the Sea by four or five feet. Now, if you built the ponds --

MR. PELTIER: Over what time period would you have a drop, a four- to five-foot drop?

DR. BROWNLIE: Over a period of 20 to 30 years. If you

built the ponds in-sea, you have no effect on elevation, with the possible exception it might rise a little bit. If you built some of the ponds in-sea and some of the ponds on-land, you could control the future elevation.

MR. PELTIER: And then what about that salt?

DR. BROWNLIE: If you built them in-sea, you reduce the surface, evaporative surface, of the rest of the Sea. That is why there is no net change in elevation or very little.

MR. PELTIER: How long would you propose to do this salt removal?

DR. BROWNLIE: Continuously.

MR. PELTIER: Continuously for eternity or --

DR. BROWNLIE: Yes.

MR. KIRK: Similar to Cargill Solar evaporation ponds. This isn't rocket science.

MR. PELTIER: I understand that. I am not asking about the science. I am asking how long and how much salt you are going to produce and what do you consider what to do with that salt.

MR. KIRK: Forever, potentially. It is a continuous project. It is a flow-through system until you get to the solid salt product. What do you do with it? Right now we are looking at a variety of ways of dealing with it. One is through solid waste landfills, essentially creating a tailings pond. Piling up the salt as you go. There is a

fair amount of land around the Salton Sea that is available for such purposes, for those of you that know the area. And the other thing we are considering in conjunction with a desalinization project that we are constructing on the south side of the Sea is reinjection of the brine into the geothermal field.

MR. PELTIER: If we have a little more time I have couple other questions.

One of the questions I had, in looking through the stuff here it seems like there is a lot of discussion about the habitat. And you mentioned earlier quality of habitat as an issue.

Can you give me an idea of what the factors are that you look at when you consider the quality of habitat?

MR. KIRK: When we consider the quality of habitat, generally the Salton Sea or in the rivers?

MR. PELTIER: You just used the term "quality of habitat" in comparing the Salton Sea to the ponds, I think.

MR. KIRK: You maybe -- I am not exactly sure what you are referring to in my statement or Bill's. But when we talk about one of the objectives of the restoration project is quality -- I am not sure if we used that term or not -- quality habitat for birds, what we mean is a habitat that includes roosting and nesting sites and opportunities like there are today, habitat that includes foraging

opportunities for shore birds. A habitat that includes the fish for the fish eating birds, and a habitat that is relatively free from wildlife disease.

MR. PELTIER: Would you say currently the Salton Sea is meeting those quality criteria?

MR. KIRK: One of the surprises, it is meeting and exceeding many of those criteria in many ways. Even the often publicized wildlife disease problems aren't as bad as you may think. When you hear every summer about birds dying at the Salton Sea, it, in fact, occurs. Since 1996 we have never had a die-off in a year that exceeded 1 percent of the total population of birds at the Salton Sea. And I compare that to the Davis Refuge, Saskatchewan and many other places along the Pacific flyway, and our percentage for healthy bird is pretty darn good.

MR. PELTIER: Thank you.

No more questions from me.

CHAIRMAN BAGGETT: Andy.

MR. FECKO: Very quickly.

We heard some testimony and on cross regarding costs of restoration. And I think that focused, seems like, on salt removal only. Are there other components to the restoration? Are those considered in those, we heard, $250,000,000? I am sure there is other components to it, restore the health of the Sea.

Could you go into that briefly?

DR. BROWNLIE: I think there are six other components in the program. There is a fund proposed to be set aside for restoration of recreational facilities. There is a wildlife disease control program for monitoring and continuing rehabilitation of sick birds. There is a fishery program that would include the development of a fish hatchery to maintain the genetic stock of the fish in the Sea in case there is a loss of fishery and salinity that exceeds six parts per thousand. There is a component for continuing work on nutrification, nutrient loading in the Sea.

MR. KIRK: When we talk about the restoration program, there is an obvious link to the TMDL process. That is a separate project, but obviously interlinked.

DR. BROWNLIE: I think those are the major pieces. I might have missed one or two.

MR. FECKO: But you primarily believe that the transfer affects the salt loading and not those other components?

MR. KIRK: I didn't say that.

MR. FECKO: That is the only thing that you addressed so far.

DR. BROWNLIE: We tried to talk about that at the beginning, that we kind of used the analogy of a sick patient, that salinity is kind of a heart attack. If the

fishery dies, then there are a lot of other effects on the Sea. So --

MR. KIRK: In an effort to streamline this process we have been focusing on a couple of pieces of the puzzle, while we recognize that other direct testimony is involved in other resource areas where we also have some significant concerns.

MR. FECKO: Fine.

Thanks.

CHAIRMAN BAGGETT: Any redirect?

MR. KIRK: Potentially. Can you give us two minutes to talk about it. If we do have redirect, we will make it very brief.

CHAIRMAN BAGGETT: Very good.

Let's take a five-minute recess.

(Break taken.)

CHAIRMAN BAGGETT: Back on the record.

MR. HARGREAVES: Mr. Chairman, we have no redirect. We would ask the Board to take into evidence the exhibits that have been offered on behalf of the Salton Sea Authority.

CHAIRMAN BAGGETT: Okay.

MR. OSIAS: Mr. Chairman, we have no objection to any of them other than in Exhibit 19. Which were their comments to the EIR/EIS --

CHAIRMAN BAGGETT: Let's wait just a minute so Dana

catches this.

MR. OSIAS: Objection.

CHAIRMAN BAGGETT: Wait for the objection. Hold your objection.

MR. OSIAS: I am frozen. Maybe we can talk briefly about --

CHAIRMAN BAGGETT: Dana is back.

So there is no redirect. So we have -- let's finish, let's go back on record for the exhibits.

You are moving into evidence all of the exhibits. We have an objection to --

MR. OSIAS: Just going to start. If you look at Exhibit 19, you will see that it includes the Salton Sea Authority's comments on the EIR/EIS. We have no objection to those being submitted in their comments. They also attach a legal memorandum which they ask the lawyer for, I believe, Audubon to write to them describing why the EIR isn't legally adequate with respect to the baseline.

I don't object to it going in as something they may have submitted on the EIR. But as to the content, it is legal argument that should be in their closing brief and not submitted as evidence. If you want to see it --

CHAIRMAN BAGGETT: Do you have a response?

MR. HARGREAVES: Mr. Chairman, we have no objection to stipulating that the letter not be part of the evidence we

are presenting in this particular phase of the proceeding.

MR. ROSSMANN: I think it is fair that it is evidence of what was presented as their comments on the EIR and that is what it is being offered for.

CHAIRMAN BAGGETT: Which is what Mr. Osias said, it is for what it is offered for.

MR. ROSSMANN: But not for the validity of --

CHAIRMAN BAGGETT: The validity of the legal argument. You can say Audubon could put it in their closing argument or someone else can.

With that proviso.

MR. OSIAS: No objection.

CHAIRMAN BAGGETT: No objection. They are entered into evidence.

Thank you.

Tomorrow we will start out with, I guess, PCL and Defenders. Do you want to do a joint opening statement and your two panels? Or how are we going to do it logistically? It seems a lot more logical.

Counsel, PCL and Defenders of Wildlife will be followed by Audubon and their witness panel, followed by National Wildlife opening statement before their witness panel.

MS. DOUGLAS: We aren't specifically giving a joint opening. Brendan will start with an opening statement on behalf of Defenders that all of the groups concur with.

Then I will do a brief opening on behalf of PCL. We will do that before our panels.

CHAIRMAN BAGGETT: Then followed by your two panels.

MR. FLETCHER: Right.

CHAIRMAN BAGGETT: So 9:00 we will begin with the two opening statements, panel one, and we will see how it goes. Maybe we can do both panels tomorrow. Certainly would like to do that.

MR. OSIAS: Point of inquiry. I observed that the Sierra Club lawyer is here for the first time. We have received no testimony.

CHAIRMAN BAGGETT: They have no witness or no testimony. They are just here for --

Sierra Club, do you have any comment?

MR. METROPULOS: We have submitted nothing.

CHAIRMAN BAGGETT: They will have an opportunity to cross-examine if they so desire. Tomorrow we will try to go through the first two panels and maybe have Audubon's panel ready late in the afternoon. Just in case. Be optimistic.

With that, it is good work and we will see you tomorrow. We are adjourned.

(Hearing adjourned at 5:00 p.m.)

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REPORTER'S CERTIFICATE

STATE OF CALIFORNIA)
) ss.
COUNTY OF SACRAMENTO)

I, ESTHER F. SCHWARTZ, certify that I was the official Court Reporter for the proceedings named herein, and that as such reporter, I reported in verbatim shorthand writing those proceedings;

That I thereafter caused my shorthand writing to be reduced to typewriting, and the pages numbered 1204 through 1463 herein constitute a complete, true and correct record of the proceedings.

IN WITNESS WHEREOF, I have subscribed this certificate at Sacramento, California, on this 24th day of May 2002.

_____
ESTHER F. SCHWARTZ
CSR NO. 1564