STATE WATER RESOURCES CONTROL BOARD

PUBLIC HEARING

PHASE 2

TO REVIEW THE UNITED STATES BUREAU OF RECLAMATION WATER RIGHTS PERMITS (APPLICATION 11331 AND 11332) TO DETERMINE WHETHER ANY MODIFICATIONS IN PERMIT TERMS OR CONDITIONS ARE NECESSARY TO PROTECT PUBLIC TRUST VALUES AND DOWNSTREAM WATER RIGHTS ON THE SANTA YNEZ RIVER BELOW BRADBURY DAM (CACHUMA RESERVOIR)

TUESDAY, OCTOBER 21, 2003
9:00 A.M.

JOE SERNA CAL/EPA BUILDING
SIERRA HEARING ROOM
SACRAMENTO, CALIFORNIA

REPORTED BY: **ESTHER F. SCHWARTZ**
CSR NO. 1564

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SACRAMENTO, CALIFORNIA

TUESDAY, October 21, 2003, 9:00 A.M.

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HEARING OFFICER SILVA: Good morning, everyone. I want to start early and on time because we have so many people and so many things to do. I will get into my opening statement.

This is the time and place for Phase 2 of the Cachuma Project hearing. During this phase of the hearing the State Water Resources Control Board will receive evidence concerning whether to modify the U.S. Bureau of Reclamation's Water Right Permits 11308 and 11310 to protect public trust values and downstream water rights on the Santa Ynez River below Bradbury Dam.

The Board will also receive evidence concerning whether to approve petitions for change and purpose and place of use of Permits 11308 and 11310. I am Peter Silva, Vice Chair of the Board. I will be assisted today by staff members Dana Differding, staff counsel, Ernie Mona, staff engineer, and Andy Fecko, environmental scientist.

This hearing is being held in accordance of Supplemental Notice of Phase 2 of public hearing dated August 13th, 2003, and my subsequent rulings on procedural matters. The purpose of Phase 2 of this hearing is to

receive evidence that addresses the following key issues:

Number one, should Permits 11308 and 11310 be modified to protect public trust resources?

Two, have senior legal users of water been injured due to changes in water quality resulting from operation of the Cachuma Project?

Three, has operation of the Cachuma Project injured any senior water right holders through reduction in the quantity of water available to serve prior rights and, if so, to what extent?

Four, should Reclamation water right permits be modified in accordance with the Settlement Agreement between Cachuma Conservation Release Board, Santa Ynez River Water Conservation District, Santa Ynez River Water Conservation District, Improvement District No. 1 and the City of Lompoc relating to the operations of Cachuma Project?

Five, should the petitions for change in purpose and place of use be approved?

A Court Reporter is present to prepare a transcript of the proceedings. Anyone who wants a copy of the transcript must make separate arrangements with the Court Reporter. To assist the Court Reporter, please make sure you speak into the microphone. And she's asked that you do that the first two or three times that you come up so

she can get familiar with who you are.

At this time I will ask Dana Differding to cover any procedural items and introduce staff exhibits.

MS. DIFFERDING: Good morning. The Supplement Hearing Notice listed staff exhibits by reference and indicates which ones were accepted into evidence in Phase 1 and which ones will be offered into evidence in Phase 2. At this point I would like to offer only one of those remaining exhibits that were listed. The three exhibits are Item No. 10, the Draft Environmental Impact Report, including the references, Item No. 11, the Final EIR, and Item 12 which is additional volumes in the applications file for the Bureau's permits.

At this point I would like to offer into evidence only the last one because we don't yet have all the references for the Draft Environmental Impact Report, where I would like to work with the Bureau in getting the remaining references -- we've gotten most of them -- and then revisit the staff exhibits in November. The Final EIR, of course, hasn't been prepared yet. So we will offer that into evidence later. And I would like to amend Item 12 to include Volume 40. We are now up to Volume 40 in the application file. And at this point offer Item 12 into evidence by reference as amended.

H.O. SILVA: Thank you.

Now to get into the order of proceedings. With some exceptions, which I will address momentarily, participants will present their cases in chief and conduct cross-examination in the following order: Number one, U.S. Bureau of Reclamation. Number two, Cachuma Conservation Release Board and Santa Ynez River Water Conservation District, Improvement District No. 1. I guess their cases are coordinated. Number three, Santa Ynez Water Conservation District. Number four, City of Lompoc. Number five, City of Solvang. Number six, Santa Barbara County. Number seven, California Department of Fish and Game. Number 8, NOAA Fisheries. Number nine, Cal Trout.

The California Department of Water Resources has confirmed that it does not intend to participate. Judging from the fact that they have not submitted any exhibits, the California Sportfishing Protection Alliance and Dos Pueblos Associates do not intend to participate either.

I think as Ms. Differding informed you by phone, we have one minor scheduling change. I will permit Santa Barbara County Supervisor Gail Marshall to summarize her testimony before Reclamation's case in chief in order to accommodate scheduling conflicts Ms. Marshall has on other hearing dates. After cross-examination of Ms. Marshall and any redirect and recross, we will continue with the

other participants in order.

At the beginning of each case in chief the participant may make an opening statement briefly summarizing the participant's position and what the participant's evidence is intended to establish. After any opening statements we will hear testimony from the participant's witnesses. Before testifying witnesses should identify their written testimony as their own and affirm that it is true and correct. Witnesses should summarize the key points in their written testimony and should not read their written testimony into the record.

Direct testimony will be following by cross-examination by the other participants, Board staff and myself. Redirect testimony and recross-examination limited to scope of the redirect testimony will be permitted. After all the cases in chief are completed the participants may present rebuttal evidence.

I understand the CCRB and ID No. 1 intend to put on five different panels of witnesses. Santa Ynez Water Conservation District and the City of Solvang may include their witnesses on these panels as well.

I want to make sure that is the case.

MR. WILKINSON: That is correct, Mr. Silva. I did have one question, however. We have a couple of policy statements to be made as well. Where would those

be made, at what point in the proceedings?

H.O. SILVA: I would assume first.

MR. WILKINSON: That was our assumption.

H.O. SILVA: Why don't we do that first, then. In the interest of efficiency we will conduct cross-examination of the panel after all the witnesses on the panel have summarized their direct testimony. Then we will hear any direct, redirect of the panel followed by recross before moving on to the next panel. Participants are encouraged to be efficient in presenting their cases and cross-examination. I may not allow repetitive testimony or cross-examination. Except where I approve of a variation, we will follow the procedures set forth in the Board's regulations and the hearing notice.

The participants' presentations will be subject to the following time limitations. All opening statements will be limited to 20 minutes each -- I am sorry, for each participant. With one exception witnesses will have a maximum 20 minutes to summarize their direct testimony, not to exceed a total of two hours for all witnesses presented by each participant. CCRB and ID No. 1 have requested additional 20 minutes for Mr. Ali Shahroody to summarize his direct testimony. This is reasonable in light of the length and complexity of Mr. Shahroody's testimony. Cross-examination will be limited to one hour

per witness or panel of witnesses. I may allow more than two hours for a participant's case in chief or more time for cross-examination upon showing of a good cause. I will be liberal, but what I will do, just to let you know, I will use a timer. That will give you a sense of where you are at. I will be liberal, but just try to be respectful of everybody's time.

Oral closing arguments will -- oral closing arguments will be not permitted. An opportunity will be provided for submission of written closing briefs. I will set the briefing scheduling at the close of hearing. Then we can talk about length of briefs and all that when we get there.

At this time I will invite appearances by participants. Will those making appearances, please state your name and whom you represent so the Court Reporter can enter this information into the record. If you have not already made an appearance in Phase 1, please state your address as well. Why don't we start with the U.S. Bureau of Reclamation.

MR. PALMER: Good morning. Steve Palmer for the Bureau of Reclamation. And we had submitted a request for the filing of our direct testimony to coordinate the Bureau's testimony with the Member Units. You didn't mention that or I didn't hear that. I don't know if that

was acceptable. It may be more efficient.

H.O. SILVA: That will be fine.

Are you going to put them on the same panel, then?

MR. PALMER: It will be on the panels with the Member Units, yes.

H.O. SILVA: That's fine.

MR. PALMER: Thank you.

H.O. SILVA: Cachuma Conservation Release Board and Santa Ynez River Water Conservation District.

MR. WILKINSON: Good morning, Mr. Silva. Greg Wilkinson from the law firm of Best Best & Krieger representing the Cachuma Conservation Release Board and the Santa Ynez River Water Conservation District, Improvement District No. 1, which I think is the longest name of any client that I represent and will probably be referred to in the hearings as ID No. 1.

With me today also is Michelle Ouellette, my partner at Best Best & Krieger, and Ed Bertrand, who is an associate in our firm as well. They may be presenting some witnesses as well.

H.O. SILVA: Sorry we had to put you in the back.

MR. WILKINSON: Didn't have enough room.

H.O. SILVA: Thank you.

Santa Ynez Water Conservation District.

MR. CONANT: Morning, Mr. Silva. Ernest Conant of the Wooldridge Law Firm representing Santa Ynez River Water Conservation District, sometimes referred to as the parent district to distinguish it from Improvement District No. 1.

H.O. SILVA: Thank you.

City of Lompoc.

MR. MOONEY: Donald Mooney representing the City of Lompoc. Also with me is Sandra Dunn of Somach, Simmons & Dunn.

H.O. SILVA: I'm sorry, I say Lompoc and it's Lompoc, I guess. Lompoc, Lompoc.

City of Solvang. Solvang.

MR. CONANT: I believe Chris Campbell will appear.

H.O. SILVA: They are with you, I think.

MR. CONANT: They will probably participate with the rest of the group.

MR. WILKINSON: It is my understanding, Mr. Silva, they may have one witness, and I believe that witness will be participating on one of our panels as well. Again, we are trying to coordinate to be efficient.

H.O. SILVA: That is fine.

Santa Barbara County.

MR. SELTZER: Morning, Mr. Silva. Alan Seltzer, Chief Assistant County Counsel on behalf of the County of Santa Barbara. In addition to Supervisor Marshall, our witnesses will present a panel discussion in a few days.

H.O. SILVA: Thank you.

California Department of Fish and Game.

MR. BRANCH: Good morning. Harllee Branch, staff counsel appearing on behalf of the California Department of Fish and Game, relegated to the back.

H.O. SILVA: You need a table.

NOAA Fisheries.

MR. KEIFER: Christopher Keifer, counsel for NOAA Fisheries.

H.O. SILVA: And Cal Trout.

MS. KRAUS: Morning. Karen Kraus for the Environmental Defense Center on behalf of Cal Trout.

H.O. SILVA: Good morning. That is it.

Now I will administer the oath. Will all the witnesses and people who will be participating, will those persons who may testify during this hearing, please stand and raise your right hand.

(Oath administered by H.O. Silva.)

H.O. SILVA: Thank you. You may be seated.

Just want to make sure.

Before we start, are there any procedural questions of anybody that I have not covered or you are not clear on?

MS. KRAUS: Just one question of clarification about the coordination of the Bureau and CCRB, ID No. 1. Can you just clarify which witnesses for the Bureau are going to be on which panel?

H.O. SILVA: That is a fair question.

MR. WILKINSON: I think that is a fair question and we will do that as the panels are introduced. I think as they come up we will identify which witnesses are Bureau witnesses. In some cases there are, I think, two witnesses. In fact, I plan to do that in my opening statement, identify the --

H.O. SILVA: Is that satisfactory?

MS. KRAUS: Yes.

H.O. SILVA: Thank you.

Anybody else, any questions before we get started?

As I mentioned, what I would like to do is first go with Ms. Gail Marshall from County of Santa Barbara due to time constraints.

MS. MARSHALL: Thank you.

H.O. SILVA: Again, as we get started please give your name and affiliation.

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DIRECT TESTIMONY OF COUNTY OF SANTA BARBARA

BY MR. SELTZER

MR. SELTZER: Supervisor Marshall, for the record, would you state your name and position with the County of Santa Barbara?

MS. MARSHALL: Absolutely. I am Gail Marshall. I am a member of the Santa Barbara County Board of Supervisors.

MR. SELTZER: Is Exhibit 2 of the County's submittal a true and correct statement of your testimony on behalf of the County Board of Supervisors?

MS. MARSHALL: Yes, it is.

MR. SELTZER: Will you summarize your testimony with respect to the public policy issues considered by the Board with respect to the proposed surcharge of Lake Cachuma?

MS. MARSHALL: Yes. Cachuma Reservoir is an essential supply of water for people, fish and for critical recreation opportunities. The challenge for the involved agencies is to balance the three critical public policy issues: ensuring a reliable water supply, protecting endangered species and certainly protecting the public recreation and related public resources at the river and the lake.

We believe that local solutions developed in the

context of broad state and federal policy direction are the most effective in achieving the resolution that best serves the public interests. County staff, as you know, will be presenting a base surcharge alternative that best achieves the balance of the three major public interests affected by the plan to implement the Biological Opinion.

MR. SELTZER: Would you please summarize your testimony regarding the County's efforts to improve steelhead habitat and oak tree preservation and regeneration?

MS. MARSHALL: Yes. The County is the chair and the administrator of the Tricounty Fish Team whose mission it is to improve habitat conditions and provide restoration work that promotes the long-term recovery of naturally spawned salmon populations. Additionally, the County Board of Supervisors adopted a native oak tree protection and regeneration program that was broadly supported by the residents in Santa Barbara County on April 22nd of 2003.

Since the County manages the Cachuma Lake recreational area, the County standards we feel should be used to analyze the project impacts on oak trees and oak tree mitigation should be consistent with the County's oak tree protection and regeneration program.

MR. SELTZER: For the record would you

summarize your testimony about the recreational opportunities provided by Lake Cachuma?

MS. MARSHALL: Thank you. Lake Cachuma is, and I will quote from our parks director, the crown jewel of the county parks system. We provided recreational opportunities to Santa Barbara and the region for over 50 years. The County recognized by the Bureau for providing, I will quote, "nationally recognized opportunities for the people of California and the nation."

Lake Cachuma receives almost a million visitors a year. Approximately 21 percent of those visitors are from the central coast area. Around 60 percent those visitors come from other areas in the southern part of the state and, of course, the balance then come from other parts of the state and the nation.

Lake Cachuma is definitely a refuge for those people who live in highly urbanized areas, and we provide camping, boating, fishing, nature and wildlife cruises and an open space experience and relief from urbanized areas. We have critical facilities there to support the volume and type of recreation that we offer. We have a water treatment plant. We have a sanitation lift station. We have a boat launch and a marina, campgrounds and picnic area, roads, bridges and various other infrastructure.

MR. SELTZER: Would you please explain what

impacts or describe what impacts might occur if Lake Cachuma was forced to close?

MS. MARSHALL: Well, there would be large impacts. The 900,000 people who visit this park annually relate to tourist dollars in the surrounding communities: two cities, the city of Solvang and Buellton, and we have an unincorporated area in the Santa Ynez Valley that includes Los Olivos, Ballard and Santa Ynez.

These cities and townships greatly rely on the travelers from Lake Cachuma to provide additional sales tax dollars to insure their stable economy and the provision of services that they offer. Additionally, the cities of Solvang and Buellton utilize our facilities as part of their swim program through the use of the pool during the summer. Also, the Boy Scouts of America and environmental groups utilize the area. In fact, Camp Whittier is operated by the Boy Scouts, and it is used year-round and it is serviced by Cachuma water and sanitation infrastructure. The educational program provided by hikes as well as eagle and wildlife cruises are fundamental aspects of all elementary and primary education in the local area.

MR. SELTZER: And finally, would you like to make a comment regarding the County's proposal for phased surcharge of the lake as park facilities are modified and

relocated?

MS. MARSHALL: First of all, the Board does not agree that the County is solely responsible for the loss cost to recreational facilities silts caused by the surcharge. Nonetheless, as I testified earlier, we feel strongly in the benefit of all to work together to ensure that the services continue without interruption in its overall policy level and quality of life needs are met.

As you are aware, staff will present the details of our phased surcharge when the County presents its testimony in full. I want to just take this opportunity to thank Mr. Silva and staff for allowing me this opportunity to testify out of turn because of my schedule. Appreciate it very much.

H.O. SILVA: Why don't you stay there for a second. I won't go through the list. Is there anybody that wants to do cross-examination of the supervisor?

Why don't we go down the list.

Bureau, want to --

MR. PALMER: I can speak loud.

H.O. SILVA: Go ahead, as long as you speak loud.

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CROSS-EXAMINATION OF COUNTY OF SANTA BARBARA
BY BUREAU OF RECLAMATION
BY MR. PALMER

MR. PALMER: Ma'am, good morning.

MS. MARSHALL: Morning.

MR. PALMER: My name is Steve Palmer. I am with the Department of the Interior, Regional Solicitor's Officer, here for the Bureau of Reclamation. I had a couple questions regarding your testimony.

Isn't it true that the lands that County manages, Lake Cachuma, are federal lands?

MS. MARSHALL: Correct.

MR. PALMER: And that the County doesn't have any interest in those lands other than its management arrangements with the Bureau of Reclamation; is that true?

MS. MARSHALL: That's -- the question is -- you broadly stated. I think the County has an interest in those lands as they are supported by the residents, the community that surrounds the public trust lands. I don't know if that is the answer you want.

MR. PALMER: The County has no ownership in those lands? Put it that way.

MS. MARSHALL: We have the ownership that I am aware of has to do with the facilities that we are talking about.

MR. PALMER: The facilities that the County installed at Lake Cachuma?

MS. MARSHALL: Right.

MR. PALMER: The County manages the recreation area through a contract or other arrangement in the interim period with the Bureau of Reclamation; isn't that true?

MS. MARSHALL: Correct.

MR. PALMER: Do you know what that contract or other arrangement spells out, the funding arrangements as to whether the County, as you mentioned, you don't believe the County should be responsible for full funding of the facilities? Does that contract or other arrangement address that issue?

MS. MARSHALL: I wouldn't be in a position to answer that question. However, as I did state in my testimony, I think this has to be looked at as a partnership.

MR. PALMER: And then you mentioned regarding using County standards in relation to, I think, the oak trees if I understood you correctly.

Does the contract or other arrangements with the Bureau of Reclamation address that issue?

MS. MARSHALL: That would be -- no, I would assume it does not. That would be a question better

directed toward County staff.

MR. PALMER: That is all the questions I have.

H.O. SILVA: Thank you.

CCRB and ID 1.

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CROSS-EXAMINATION OF COUNTY OF SANTA BARBARA

BY CCRB AND ID No. 1

BY MS. OUELLETTE

MS. OUELLETTE: Good morning. Michelle Ouellette. Briefly you referred to the County's native oak tree protection program. Is that an ordinance that has been adopted by the County?

MS. MARSHALL: Yes.

H.O. SILVA: Can you hear in the back? Sorry, I want to make sure everyone can hear.

MS. OUELLETTE: Can you explain the provisions of that program?

MS. MARSHALL: Without the entire ordinance in front of me, I would be hard pressed to present all the provisions. It is a fairly extensive ordinance. It was worked on for a very long time. I wouldn't want to step into that.

MS. OUELLETTE: Isn't it true that the Bureau of Reclamation and the Member Units will implement a

long-term oak tree replacement program for trees that are lost to surcharging? Are you familiar with their proposal?

MS. MARSHALL: I am not familiar with their proposal. However, I think the purpose of my testimony was to indicate that we feel that our program that was so broadly accepted by the general public should trump whatever program might be suggested by the Bureau or the member agencies.

MS. OUELLETTE: I guess my question would be do you know that your program trumps or provides better protection for oak trees than what BOR and --

MS. MARSHALL: That is a very good question. I would like to have staff answer that.

MS. OUELLETTE: Thank you.

Secondly, with regard to the facilities in your testimony or staff testimony, you have identified certain facilities potentially impacted by the surcharge that are critical facilities. Could you explain what those facilities are?

MS. MARSHALL: Well, the boat launch facility is a critical facility due to the fact that it does provide a service at the lake that is widely used. And as I mentioned in my testimony, there are sales tax dollars involved in ripple effect, in the broader community to the

facilities that we have. So when I am talking about the critical facilities, I am not just talking, for instance, the sanitation and water infrastructure. I am also talking about the facilities that lead people to want to spend time at this park and then drive out and spend time in the surrounding area.

MS. OUELLETTE: I believe in the testimony staff does break down critical versus essential testimony. For example, in the testimony of Terri Nisich on Page 3 the County sets forth the critical facilities of the water treatment and intake facility and sewer lift stations. It merely references that as essentially the boat launch and the marina facilities. I just wanted to make sure that was clear.

MS. MARSHALL: I am clear on that.

MS. OUELLETTE: Is it also not true that no critical facilities which are, in fact, those facilities you designated as being important for public health and safety purposes would be impacted by a 1.8 surcharge?

MS. MARSHALL: I am going to allow staff to address that during their presentation.

MS. OUELLETTE: Two other quick things. Your testimony today has been based upon recommendation by staff including Rob Almy; is that correct?

MR. SELTZER: Could you rephrase that or

restate that?

MS. OUELLETTE: I want to make sure the testimony presented by the supervisor today has been based in part upon staff analysis, including Rob Almy's testimony.

MS. MARSHALL: Yes.

MS. OUELLETTE: And lastly, could you perhaps tell us what would happen to recreation on the lake if the lake levels were drawn down 30 to 40 feet?

MS. MARSHALL: No, I really can't answer that, other than with personal experience. I think a better answer to that question could come from staff, however, with their professional experience.

MS. OUELLETTE: Thank you very much.

H.O. SILVA: Thank you.

ID 1 or is that it?

MR. WILKINSON: That is our cross as well.

H.O. SILVA: City of Lompoc.

MR. MOONEY: No questions.

H.O. SILVA: Solvang?

Santa Barbara County, no.

California Department of Fish and Game.

MR. BRANCH: No questions.

H.O. SILVA: NOAA.

MS. KEIFER: No questions.

H.O. SILVA: Cal Trout.

Any recross on the testimony?

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REDIRECT EXAMINATION OF COUNTY OF SANTA BARBARA

BY MR. SELTZER

MR. SELTZER: For the record, you were asked about the mechanisms by which the County's oak tree preservation and regeneration program was implemented. I would like to show you the copies of the conservation element, the Article IX of Chapter 35, patent County Code, deciduous oak tree protection and regeneration program, the County draining ordinance and replacement pages for the land use element and environmental thresholds and guidelines manual and the conservation element.

Could you tell us if these documents are indeed the implementing mechanisms, ordinances and policies implementing the program?

MS. MARSHALL: Yes, they are.

MR. SELTZER: Mr. Vice Chair, in light of the questions regarding the manner in which these policies were implemented, I would like to ask that they be accepted into evidence at this time.

H.O. SILVA: Are they already identified as exhibits, do you know?

MR. SELTZER: No, they are not. These came in

as a result of cross-examination. I hadn't anticipated putting this into the record.

H.O. SILVA: The other option, if you want to do it as rebuttal evidence.

MR. SELTZER: We will wait, then. That is the end of our testimony.

H.O. SILVA: Any recross questions?

MR. PALMER: No, thank you.

H.O. SILVA: For everybody.

Thank you. Thank you very much.

That was a short one.

MS. MARSHALL: I set the tone.

H.O. SILVA: I am talking about the Bureau next. Why don't we get started with the Bureau. You want to get set up, if you want to set up the witnesses.

MR. WILKINSON: Panel.

H.O. SILVA: I'm sorry, policy statement.

MR. WILKINSON: Mr. Silva, we have two that I am aware of. I think we would like to present those.

H.O. SILVA: I forgot about that. How much time do you want, are you going to take for your policy statements?

MR. WILKINSON: For policy statements I think we will probably need about 30 minutes total.

H.O. SILVA: For two people?

MR. WILKINSON: I believe so.

H.O. SILVA: I will put in 30 minutes just to give you a total time.

MR. WILKINSON: Do you want us to go ahead and start with those now?

H.O. SILVA: Why don't you do that. I will put about three minutes on your sum up time so you have a sense where you are at. You can look at the clock and estimate where you are at. Again, your name, please.

MS. ABEL: Good morning, Mr. Silva and staff. My name is Jan Abel. I have been a Montecito resident for 38 years. I am currently the president of the board of the Montecito Water District, which along with the Goleta Water District, City of Santa Barbara and Carpinteria Valley Water District, comprise the Cachuma Conservation Release Board. I am also the president of the Cachuma Conservation Release Board, CCRB, and a board member and past president of the Cachuma Operation and Maintenance Board, which includes all of the Cachuma Project Member Units, consisting of the members of CCRB plus the Santa Ynez River Water Conservation District, Improvement District No. 1.

In addition to my local water agency positions, I also serve as a member of the Executive Committee of the Board of Directors of the Association of California Water

Agencies, ACWA, as well as serving as a two-term past chair. I was also recently reelected to a third term as vice chair of ACWA's Region 5, serving the coastal region of the state, from the San Francisco Bay area to the Ventura County line.

Through my extensive involvement with ACWA, including my over eight years of service on the ACWA board, I have become very familiar with the challenges and needs faced by water agencies throughout our state and particularly the needs to balance water demands and environmental stewardship in this semi arid region.

As to drought experience. I have served on the board of the Montecito Water District since 1991, joining that board during a particularly challenging period, at the height of the drought when our community was facing a number of both expensive and divisive choices concerning our water supply future. Many of my comments come from my Montecito experience, but they hold similarly true for all the Member Units.

All of the CCRB member agencies were in declared water shortage emergencies at that time. And as you may recall, the situation in Santa Barbara was dire, so dire that the national news story reported the fact that people were actually spray painting their dead lawns green. Water supply from the Cachuma Project that year reached

such a low point that an emergency barge and pump were floated in the lake to get the last bit of water out of the dead pool. And the City of Santa Barbara drilled alluvial wells in the silt of Gibraltar Lake in a desperate measure to extract the last bits of remaining water supply.

The Goleta Water District, the Montecito Water District, and the City of Santa Barbara also cooperated and shared in the phenomenal expense to develop an emergency desalination facility and establish a multi agency wheeling arrangement to bring in State water project exchange water through a series of actual and paper water transfers via the Metropolitan Water District and Casitas Municipal Water District to the south. The Montecito Water District had at that time been in a water shortage emergency since 1973, with a moratorium on new service connections and a long-term water allocation program.

Among my first responsibilities as a new Montecito Water District Board Member was to sit on the appeals committee for people with hardship requests from the allocation of water provided to them by the district under its rationing program. Those appeals were often heart wrenching, but were usually denied as we simply did not have the water. It was during that period of great need

that the Santa Barbara area emerged as a true leader in the realm of water conservation, an ethic which has continued and expanded even after the drought.

I raise these experiences so that you will understand that the long-term effects of water shortage and its impact on the community are real issues which the Santa Barbara area has faced in recent years. The result of the water shortage to our community was devastating, with the estimates of losses and landscape value alone in the hundreds of millions of dollars. And a deep implementing of conservation ethics, practices and pricing in the hopes that such a disaster can be avoided in the future.

So what have we done in regard to long-term supply planning? In response to the extremities of the drought in 1991 the Santa Barbara community not only incurred the costs of a temporary desalination plant, but also agreed to pay the approximately $500,000,000 to build the coastal branch extension of the State Water Project to Lake Cachuma. It was well understood at that time that State Project water was to be a supplemental supply only and that its value was primarily as insurance in periods of drought and to overcome the long-standing need for moratoriums and rationing, and that it did not represent new water to allow substantial new growth or development.

Santa Barbara has always recognized that the community has a very limited carrying capacity and growth has been very slow with a great deal of attention placed on planned growth. In particular the need to limit development so as not to overrun available water supplies has been a long-standing mantra for the area.

For the Montecito Water District this meant that in conjunction with the breaking of the drought in 1992 and the prospect of State Water Project deliveries, the district still worked closely with the County of Santa Barbara on a community plan update, which closely linked potential development with the availability of resources. And only after the adoption of that community plan update did the district end its water shortage emergency.

What have we done in regard to planned and balanced environmental stewardship? As a Montecito Water District Board Member and as the district's representative to its Cachuma related joint powers agencies, I was also involved in the mid 1990s in the renegotiation of the Cachuma Project water service contract with the United States Bureau of Reclamation, including review of the comprehensive environmental impact report and environmental impact statement prepared for that contract renewal. While the expense of that process was difficult to explain to my constituents, I am proud that we were

able to reach consensus resulting in that contract, which provided for permanent funding source for environmental stewardship and environmental restoration projects and other protective resources actions related to the Cachuma Project.

I was also involved in the State Water Resources Control Board's hearings in 1991 and 1994 and have actively supported the development of the Santa Ynez Technical Advisory Committee MOU process and its focused efforts to provide for balanced restoration and recovery for a steelhead fishery in the Santa Ynez River. I have also been involved with and have made many trips to Sacramento and to Washington, D.C., to seek funding for the Pacific Coastal Salmon Recovery Initiative which has turned into a very successful federal, state and local partnership to support the ground recovery efforts in a way that sets aside historic battles between fishery advocates and resource agencies to instead accomplish what we call the most bang for the buck with balanced environmental stewardship.

I was particularly proud to be an active member of the negotiation team between elected officials of the Cachuma Project Member Units and officials representing the Santa Ynez River Water Conservation District and the City of Lompoc to develop a historic Santa Ynez River

Water Rights Agreement. This agreement has reached a consensus based settlement of conflicting water quality and water quantity claims and demands which have plagued our communities and caused endless legal battles since the 1920s. We are particularly hopeful that you will embrace this settlement and to end those decades of bitter acrimonious and very expensive water wars.

Finally, I would like to come back to the issue of expense, which is one we elected board members for the Cachuma Member Units must always consider for the over 200,000 people in the Santa Barbara area who rely on the Cachuma Project for their primary source of water supply. Because we live in an area that is naturally water short, subject to periodic and sustained drought, with a high local environmental ethic, but also with the reasonable expectation that water will be available for that existing population and our limited planned growth. We also live with the reality that our water supplies are extremely expensive.

This is exacerbated by the fact that our community is to an extent isolated and not integrated with larger water systems, such as the urban water systems of the greater Southern California area or the Bay Area or the agricultural water systems of the Central Valley. And so we do not benefit from these economies of scale. We also

find that we are generally required and expected to solve our own local water supply problems with locally developed resources, including funding.

Contrary to popular belief, not everyone in Santa Barbara is a millionaire. But we do have one important thing in common, and that is that we all have extremely high water bills. The average residential customer within the Montecito Water District pays $136.80 per month for water, for 33 units of water with a one-inch meter. And our commercial water rates are 40 percent higher than those residential rates. This is a direct result of our extremely high incremental water rates for the supplemental sources of supply we have been forced to develop to make up for losses in our other sources of supply, such as from the siltation of Lake Cachuma and the ongoing releases which we make for the downstream water demands and to address the requirements of steelhead imposed by the National Marine Fishery Service.

Again, we have developed access to the State Water Project but at an extremely high price and for a supply which we still must very carefully manage in order to avoid a return to the drought shortage emergencies in those periodic cycles which we know will be facing us in the future.

On behalf of those over 200,000 people, I ask you to

very carefully consider the balance which has already been developed by the Cachuma Member Units and other interested agencies in the Water Rights Settlement Agreement and Fish Management Plan, and confirm that we are doing the best job we can under very difficult circumstances. We do not have other sources readily available, and we have already tapped all economically feasible supplies to meet the needs we know we will face in the inevitable next drought.

Thank you.

H.O. SILVA: Thank you.

MR. WILKINSON: We have one other policy statement.

H.O. SILVA: I guess in the interest of time I would ask that -- I notice that the statement was read verbatim. We would ask --

MR. CONANT: This is very short.

H.O. SILVA: Then you can summarize for other people listening, in the interest of time. Information was very useful.

MR. PICCIUOLO: This will be about five minutes.

H.O. SILVA: Thank you.

MR. PICCIUOLO: Good morning, sir. My name is Jon Picciuolo. I have the honor to serve as the president of the Board of the Santa Ynez River Water Conservation

District.

A primary purpose of the district since its formation in 1939 has been to protect the water rates of our landowners and residents. Our district encompasses most of the land located within the Santa Ynez Watershed downstream of Cachuma Reservoir. This includes Improvement District No. 1 and the cities of Solvang, Buellton and Lompoc, along with approximately 27,000 acres of irrigated agriculture within the Santa Ynez and Lompoc Valleys.

In accordance with your Board's orders our district directs the Bureau of Reclamation as to when and how much water to release from the Above Narrows and Below Narrows Accounts for the benefit of downstream water rights holders. We are in these proceedings principally to support the Settlement Agreement, to resolve hearing issues related to whether operation of Cachuma Reservoir, Cachuma Project, injures downstream water rights holders.

Your Board encourages parties to work out the differences through negotiation. We took that advice seriously. As you will later hear in more detail, the efforts to reach a global agreement of all downstream issues was a very significant effort. Years of work by policy makers, staffs and consultants went into the process. The Settlement Agreement is a historic

achievement and a remarkable document. For the first time in many decades, indeed for the first time ever, all parties to the agreement are in accord on Cachuma Project operations to protect downstream water rights. It is especially important to note that to address the public trust issues the Settlement Agreement commits the parties to mutually support National Marine Fishery Service Biological Opinion and the Fish Management Plan.

We encourage you, sir, to make the few changes to your existing orders necessary to implement the Settlement Agreement. We look forward to participating in these proceedings.

Thank you.

H.O. SILVA: I was asking a procedural question.

Thank you.

I guess given that we have allowed the Bureau to make a policy statement, I guess does anybody else want to make a policy statement, and if so it might be better to -- I guess given that we have allowed, we can do it all at once, at the beginning here, or let every party go as they present their cases.

What is the preference? Anybody else want to do a policy statement?

Hearing no takers, I am assuming -- go ahead.

MS. KRAUS: I guess Cal Trout would like to reserve their right. We have been under the assumption that policy statements were not going to be allowed.

H.O. SILVA: Right, exactly. Why don't we do this, if you would like, if you want to give a policy statement, you can give it at the beginning before your case in chief and just limit it. Again, I think we are all familiar with the issues, so just limit your comments. I will allow policy statements then prior to the presentation of your case in chief, if you so wish.

With that, want to get into your case in chief, Panel I.

MR. WILKINSON: Actually, Mr. Silva, we both have short opening statements.

H.O. SILVA: Okay.

MR. WILKINSON: We would like to give.

H.O. SILVA: I am going to set it up to 20 minutes. You will have threes minute wrap up, yellow light, 20 minutes per party.

MR. PALMER: Thank you, Mr. Silva. Steve Palmer again representing the Bureau of Reclamation. I just have a brief opening statement, and then after the opening statement for the Member Units then we would bring up our Panel I witnesses, which will include three Bureau of Reclamation witnesses: Mr. Michael Jackson, Mr. Antonio

Buelna and Ms. Joanne Struebing. They will be on Panel 1.

The Cachuma Project --

MR. BRANCH: Excuse me, Mr. Silva, we can hear back here, but not very well.

H.O. SILVA: Would you mind just sitting down and speaking into the microphone? That would be better for everybody.

MR. PALMER: Thank you.

MR. BRANCH: Thank you.

H.O. SILVA: No problem.

MR. PALMER: The Cachuma Project was authorized in 1948, and I refer to Department of the Interior Exhibit 1B from Phase 1, is the authorizing report that has all the details regarding that. In authorizing the project the Secretary of the Interior based that on various studies, including those by the State of California that determined the project was both urgently needed to provide the water supply to the South Coast Santa Barbara County and that no water from the project would be dedicated to the fishery in the river. Rather the municipal, domestic and irrigation needs were considered to outweigh the fishery needs.

This determination was also acknowledged by the Board in its Decision 88-6. You can refer to Page 25. The fishery resources were thus considered at the

inception of the Cachuma Project. In addition, subsequent review of water right issues began with the issuance of Board Order 73-37 in 1973. This was followed by various modifications to the terms of the permits issued for the Cachuma Project, including continuation of the riparian vegetation study which was ordered in 89-18.

Board Order 94-5, which set the stage for this hearing, also included various measures addressing fish and wildlife concerns. We are thus here once again to review those measures and address the future of these permits and the Cachuma Project.

Additionally, through its obligations under the federal Endangered Species Act, the Bureau of Reclamation completed consultation with NOAA Fisheries which resulted in a nonjeopardy biological opinion on project operation and maintenance. The Bureau of Reclamation proposed a number of additions and modifications to project operations, including conjunctive operation of water releases for downstream water rights, fish passage, Hilton Creek watering system, reservoir surcharge and enhancement of fish habitat in the main stem of the Santa Ynez River.

NOAA Fisheries concluded that these actions and others included in the Biological Opinion are "likely to increase the likelihood of survival and recovery of the steelhead by increasing its numbers and distribution."

These actions together with the implementation of the Fish Management Plan, which you've already heard addressed, provide benefits to the steelhead that will aid in its recovery.

The Bureau of Reclamation ask the Board, one, to approve the changes to Water Rights Order 89-18 as provided in the Settle Agreement and as will be shown in Department of the Interior's Exhibit 10.

Further, the Bureau asks the Board to acknowledge that the actions identified in the Biological Opinion and the Fish Management Plan, many of which have already been implemented, have and will continue to provide benefits to the steelhead. And also ask the Board to recognize the need to develop a recovery plan for the steelhead, which is, after all, required under federal law, and allow this process to move forward to completion, and at that time revisit the Cachuma Project permits, if needed, depending on the results of that recovery process. The Bureau of Reclamation is committed to working with NOAA Fisheries and the Member Units and other parties to continue the cooperative efforts already well underway to achieve the necessary studies related to recovery of the steelhead.

In Reclamation's view, the most efficient and prudent path to follow is to allow the parties to continue implementation of the actions identified in the Biological

Opinion and Fish Management Plan and, as I said, work cooperatively with NOAA Fisheries on the necessary studies to develop the steelhead recovery plan. Then, if necessary, any party not satisfied with that result could petition the Board for further review.

Lastly, we request the Board to approve the change and place of use that was the subject of the Phase 1 hearing.

Thank you very much.

H.O. SILVA: Thank you.

MR. WILKINSON: We've got a sound and light show to put on for this one.

Mr. Silva, what I have put up is a map that describes the Cachuma Member Units. It describes the Cachuma Member Units. You are going to hear a lot about them in this phase of the hearing. I thought it would be helpful to the Hearing Officer and staff to just get a refresher course on where they are.

The Member Unit that is in the upper left-hand corner of this side is ID No. 1. And as you know, there are mountains in between ID No. 1 and the other Member Units. Proceeding from left to right on the map, we have the Goleta Water District first, then the City of Santa Barbara, the Montecito Water District, which about 1995, 1996 incorporated into the Summerland County Water

District, and finally the Carpinteria Water District. That's roughly where their locations are.

The Member Units serve water to approximately 280,000 people. As Ms. Abel described, 200,000 of those people live in what is called the South Coast, which is where the four Member Units that are along the coast exist. Another 80,000 people in the Santa Ynez Valley receive their water either in whole or in part from the Cachuma Project. And in addition, there are about 9,100 acres of agricultural production spread through four of the Member Units. The one that does not have much in the way of agriculture is the City of Santa Barbara.

Four of the Member Units, the Cachuma Project water supplies encompass between one-third to one-half, I put the percentages up there for you, of the total water supplies to those Member Units. We are talking about the principal source of water in the region for consumptive uses.

When construction of the project was completed in 1953, Lake Cachuma had a capacity at that time of 205,000 acre-feet. The most recent survey, which I believe was the year 2000, shows that because of siltation, which is a problem in the watershed, reservoir capacity at Cachuma has shrunk to about 188,000 acre-feet. That is a loss of about 8 percent compared to what it was at completion of

construction. Now the operating safe yield of the reservoir is 25,000 and a little bit more acre-feet per year. That's, in fact, an operating safe yield. They intentionally drafted a bit more on the expectation that they will in times of drought run into some difficulties in the reservoir pool. But that's what is needed to serve the municipal and industrial and agricultural needs within the five Member Unit service area.

Now in 1993, this was prior to any State Board order to do this, the Member Units developed a memorandum of understanding to make releases that were earmarked for fish. The initial amount was 2,000 acre-feet per year. In Order 94-5 the Board affirmed that and said we have to continue it, which was frankly our intent anyhow. And so we have been providing until recently, until the Biological Opinion, through the 1990s about 2,000 acre-feet per year that were earmarked for fish resources. Those fish resources were allocated pursuant to directives that were provided by something called the Santa Ynez River Technical Advisory Committee or SYRTAC. You are going to hear something about the SYRTAC I am sure during these hearings.

Then in September 2000, exactly one year before the World Trade Center events, NOAA Fisheries issued a Biological Opinion, that the Member Units are adhering to

and currently are dedicating 2,500 acre-feet per year. That is about 10 percent of the Cachuma operating yield for fisheries resources.

Under the long-term release regime, which is contained in the NOAA Biological Opinion, higher target rearing flow releases of approximately 3,900 acre-feet, of 15 percent of the Cachuma operating yield, would be dedicated to fish. To put that figure into perspective, 15 percent is about the same reduction in project exports that arose out of D-1641 for the state and federal projects. It's a much larger acre-feet number, but the percentage is about the same. Again, to put a little perspective on that number, that is half again as much as the federal government, through the 417 process, cut to the irrigation district earlier this year. So it is a visible amount of water. And that amount of water, by the way, does not include either the fish passage flows or the adaptive management account that is included in the Biological Opinion. Those amounts vary depending on the hydrology, but the fish passage flows average around 700 acre-feet per year on a long-term basis. So we are approaching 20 percent of the water or of the operating yield for the Cachuma Project that would be dedicated to fish under the Biological Opinion.

Now, in early 2003, and as Ms. Abel and

Mr. Picciuolo described, the Member Units and the downstream interests, including the City of Lompoc, Santa Ynez Parent District and the Member Units, entered into a Settlement Agreement relating to the water right issues. The Settlement Agreement took months, in fact years, to resolve and develop. It resolved 50 years of disagreement on the lower river. Among other things in it, and we will describe for you later in one of the panels what the elements of the agreement are, the parties agree to support the Biological Opinion and the Fish Management Plan from which the Biological Opinion was developed.

I have put in here that approval by the State Board is not a part of the agreement. That is technically true. However, there are a couple of technical changes that are provided for in exhibits to the agreement, differentiation between whether the percolation curve used for the Below Narrows Account is the upper curve or the lower curve is one of them and resetting the location of some of the gauges for measuring stream flows is another one.

The important thing I think for the Board to understand is that the agreement, although it does not require Board approval, may likely fail if material changes are made to the flow releases provided in the BO and the Fish Management Plan simply because the agreement incorporates those documents as the basis on which the

Member Units have agreed.

The Biological Opinion links long-term releases for steelhead to surcharge at Lake Cachuma. The reason for doing that is pretty straightforward. Attempting to meet the long-term releases without a surcharge would have a severe, adverse impact during particularly drought periods on the water supplies of the Member Units. In a critical drought year, which is 1951 for purposes of the Cachuma Project, the shortage would be about 4,700 acre-feet at current levels of demands Over the three-year drought period the shortage is more than 7,000 acre-feet per year at current demand levels. And at 2020 level of demand it is more than 38,000 acre-feet cumulative over that period. So it is a very sizeable impact if we try to meet the long-term flows out of project yield rather than out of the surcharge.

I think it is important to understand as well that these kinds of shortages are not going to be made up by compelling the citizens within the service areas of the Member Units to just tighten up their belts. I think this Board and staff are well aware that Santa Barbara County urban users particularly and ag users as well given the price of water have been and are in the forefront of California water conservation efforts and have been that way for many years. Their efforts, including water cops

and other things have received national attention over the years.

Santa Barbara County agriculture, as I mentioned, pays some of the highest water rates in California. All of the agriculture water that is delivered from the Cachuma Project is metered. In some cases the rates are as high as $600 an acre-foot for ag water, and we will provide testimony regarding this. The efficiencies within the ag service area are already above, well above, the irrigation efficiencies that are projected by the Department of Water Resources for the year 2020. So I think we are doing a pretty good job there as well.

Demand in part within the service area has hardened because of efforts which have been undertaken especially in the larger water districts. We have two of the five Member Units that consume about 70 percent of the total Cachuma water. They have full-time water conservation people, and they have made really heroic efforts to install a variety of conservation measures, including low flush toilets, low flow showerheads, and the use of water audits. Because of these things, forcing every resident to tear up toilets, buy expensive front-loading washing machines, new dishwashers and the like, is going to produce fewer savings in the Santa Barbara area than it would in most of the other ares of the state. I will use

Sacramento as another example.

Have you got meters yet here?

To sum up, what we are going to show is what the Cachuma Project consists of and why it is important to the Member Units, what the Member Unit water supplies include and how the Member Units have acted to conserve water, how they have worked to resolve downstream water right issues and what amendments they are asking the Board to make to WR 89-18, how they have already worked and have worked diligently for ten or more years to improve conditions for public trust resources, what the Biological Opinion and the Fish Management Plan include, what the impact of Biological Opinion compliance means to the Member Unit water supplies and what efforts will be undertaken to minimize the impacts to water supplies and public trust resources.

I promised Ms. Kraus to indicate who's who on our panels. What we are going to do, as I think you recognize, Mr. Silva, is have five panels. The first one will include both Bureau and Member Unit witnesses and it will be for purposes of providing you some introduction and background of the Cachuma Project. I think that your site visit was useful to understand that. We are going to build on that a little bit. We will have Bill Mills and Ali Shahroody describe for you the watershed, the Santa

Ynez River hydrology -- I think what you can see is that this is a very, very flashy stream -- why the Cachuma Project was built, what it consists of and how it operates. We will have Michael Jackson and Tony Buelna from the Bureau of Reclamation to do that. Then also Joann Struebing from the Bureau is going to provide a brief history of State Board involvement, beginning with Water Rights Decision station 1486 on through to 94-5.

Panel two is going into a little more detail with regard to Water Right Decision 94-5, what the requirements were, a brief wrap-up. I think you were involved, Mr. Silva, in the Phase 1 proceedings, but just a refresher on that. Joann Struebing will do that.

Chuck Evans is going to describe the development of the MOUs that were developed by the Member Units and then adopted by the State Board in 94-5, a general description of the scientific studies that were undertaken and a general discussion of the things that led to the development of the Fish Management Plan.

Then Michael Jackson is going to describe as well in general terms the discussions that led through the Section 7 consultation process that eventually resulted in the 2000 NOAA Biological Opinion.

Panel II is going to devote itself to the subject of water supply and water conservation. Steve Mack, who is

the Director of water resources for the City of Santa Barbara, will describe the water supply situation that exists in Santa Barbara County.

Kim Rees, who is the General Manager of Cachuma Conservation Release Board, is going to testify about ongoing urban water conservation efforts among the Member Units.

Joe DeMaggio, we brought him back just for you, is going to describe agricultural water use efficiency within the Member Units, the four that have significant agriculture.

And Lee Bettencourt and Matt Roberts, who are farmers within the area, one in Carpinteria and the other with ID No. 1, will talk about on-farm agricultural water conservation efforts that are ongoing among the agricultural community.

Panel IV will devote itself to the Settlement Agreement. Chuck Evans we'll bring back to describe the discussions that led to the Settlement Agreement. They were extensive. They were long. They were arduous. They were agonizing, but we finally got there.

Again, we are going to bring Bill Mills and Ali Shahroody to talk about the provisions of the Settlement Agreement. Bill will talk mostly about the provisions. Then Mr. Shahroody will describe Exhibit C which is

relevant to you because that is the exhibit that contains the proposed changes to 89-1.

Joann Struebing from the Bureau of Reclamation will appear then to describe how Exhibit C amends WR 73-37 as amended by WR 89-18. And she will have some red line versions of that to show you so that you can see where the amendments would be. And then we will bring up a second group, really, of people in connection with this panel who will indicate their position on the Settlement Agreement.

Finally, Panel V, which will deal with public trust issues will include, first, Dr. Charles Hansen, who is going to describe the background of the studies that led to the Fish Management Plan and the Biological Opinion. This river has been well studied over the last -- well, really since 1993. I would venture to say that it is probably, maybe with the exception of the Carmel River, the most studied coastal stream in California.

Jean Baldridge will present the Fish Management Plan and describe the elements of it to you. David Young from the Bureau of Reclamation will talk about the development of the Biological Opinion. Scott Engblom will talk about the implementation efforts that have been underway for a period of time. John Gray will then describe the impacts of the Biological Opinion and the Fish Management Plan on other habitats, other species and recreation. And

finally, Ali Shahroody will describe the impacts on water supplies on compliance with the Biological Opinion and Fish Management Plan.

On this last panel we may alter the presentation some, but those are the people who will be testifying. So that is going to be our case, Mr. Silva.

H.O. SILVA: Thank you.

I just noted that the list that I have originally, you added quite a few people to the panels, at least the original panels. I don't know if that was something you submitted or we concluded from the information we got from you.

MR. WILKINSON: I am not sure that we have added really anyone from the panels that we intended to call initially.

H.O. SILVA: Not the people, but they were added to some of the panels.

MS. DIFFERDING: We didn't know who of the other parties were participating on which panel.

H.O. SILVA: At this time we would like to know how much time you are going to need.

MR. WILKINSON: I think in the letter that I sent to you that conveyed our notice of intent we asked for a bit less than four hours, and we expected that we would be within that time. I'm anticipating we might run

over a little bit, but I think we can do this in the direct in four hours.

MS. DIFFERDING: For all five panels?

MR. WILKINSON: Yes, for all five panels. We are hoping.

MR. PALMER: The Bureau is part of that, so we do have --

H.O. SILVA: I know.

MR. WILKINSON: I think Lompoc may be part of it and Solvang, so we are up to 12 hours pretty quickly.

H.O. SILVA: Lompoc's shaking their head no.

MR. WILKINSON: I guess that's right. They're going to put on a separate presentation.

H.O. SILVA: Let's try for four hours.

MR. WILKINSON: We'll try for four hours.

H.O. SILVA: I will be liberal with the time if it looks like you've got something.

MR. WILKINSON: We appreciate that. As you can imagine, this is a very important hearing for our folks.

H.O. SILVA: I would ask you to summarize in those cases that you can.

MR. WILKINSON: We will.

H.O. SILVA: Why don't we -- let's take -- if everybody wants to stick around, close by, take around 15

minutes while you set up, and we will begin. Take 15 minutes and come back at 10:30 with Panel No. I.

(Break taken.)

H.O. SILVA: Okay.

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DIRECT EXAMINATION OF PANEL I

BY MR. WILKINSON, MR. PALMER AND MR. CONANT

MR. WILKINSON: This is our Panel I, Mr. Silva, which is going to describe the background and provide some introduction to the Cachuma Project. We are going to start with Mr. Mills, so I will ask Mr. Mills, initially is Cachuma Member Unit Exhibit 201, Mr. Mills, a copy, a true and correct copy of your testimony?

MR. MILLS: Yes, it is.

MR. WILKINSON: Is Exhibit No. 202 of the Member Units a true and correct copy of your statement of qualifications?

MR. MILLS: Yes, it is.

MR. WILKINSON: And, finally, Mr. Mills, is Cachuma Member Unit Exhibit No. 234 a true and correct copy of your Power Point presentation?

MR. MILLS: Yes.

MR. WILKINSON: Will you please summarize your testimony.

MR. MILLS: Yes, thank you.

Good morning, Mr. Silva. The purpose of my testimony is to inform the Board about the water resources of the Santa Ynez River. I want to spend some time focusing on the role of the Cachuma Project in meeting the demands of nearly 300,000 people of that part of the county, while at the same time satisfying downstream water rights and maintaining fish management flows as well.

The Santa Ynez River supports the South Coast Santa Ynez Valley. The river is 90 miles in length and drains the Santa Ynez Watershed to the Pacific Ocean. Watershed is about 900 square miles in area, and the river is the essential water supply for the South Coast and an important water supply for a portion of Santa Ynez Valley. As already indicated, a population of around 280,000 people.

Imported water from the State Water Project is available and local groundwater and recycled water help meet the remaining demands of that particular area. This graphic shows the entire watershed of the Santa Ynez River. Not shown on there but bounded on the north side of the watershed are the Santa Rosa Mountains. On the south side the watershed is bounded by the Santa Ynez Mountains, which are fairly imposing mountains. You can see within the watershed the major communities, the cities of Santa Ynez, Solvang, Buellton, Los Olivos and finally

at the western end Lompoc.

And I would also point out on this graphic the area known as the South Coast area. And here the major communities are Goleta, Santa Barbara, Montecito, Summerland and Carpinteria.

Three reservoirs were constructed during the period 1920 to 1953 on this river to capture and store river water. And nearly all of that water is diverted and transported to the South Coast area. In 1920 the first reservoir was constructed, Gibraltar owned by the City of Santa Barbara. Ten years later Jameson owned by Montecito Water District. And in 1953, the Cachuma Project of the Bureau of Reclamation.

Now the combined storage capacity of all three reservoirs is about 200,000 acre-feet. I want to point out on my next bullet that none of the reservoirs are operated on a safe yield basis. Thus the area must rely on imported supplies or groundwater during critically dry periods.

The combined draft on all reservoirs is about 32,700 acre-feet per year, and that is also augmented by tunnel infiltration through the Santa Ynez Mountains. Interestingly enough, cloud seeding has been practiced in Santa Barbara County for a number of years, and it is estimated that cloud seeding actually augments the yield

of Cachuma by about 10 percent.

The next graphic shows the three major reservoirs which I just mentioned. To the east on the graphic, Jameson Reservoir, downstream a little bit Gibraltar and finally Cachuma about halfway up the river from the mouth of the river and the ocean.

I would like now to talk about the Santa Ynez Valley and its water supplies. The population, as previously indicated, is about 80,000 people in the year 2000. Now the communities of Santa Ynez, Los Olivos, Ballard and the City of Solvang are delivered Cachuma water by the Santa Ynez River Water Conservation District, Improvement District No. 1, which is usually called ID No. 1. The cities of Buellton and Solvang and Lompoc and the communities of Santa Ynez also derive water from the subsurface flow of the river and river recharge itself.

Important point here is about one-third of the total demand in that valley is met by the river and by Cachuma water. The remaining demands are satisfied by groundwater primarily and some imported water supplies.

My next graphic illustrates the extent and importance of groundwater in that particular watershed. On this exhibit there are groundwater basins represented in color by the color green and also by gold. Those are all primarily supported by the Santa Ynez River. The

other basins, which are in a light gray, are other groundwater basins in the area. And from east to west we have the Santa Ynez Uplands, the Buellton Uplands, the Santa Rita Uplands and finally the Lompoc Uplands.

Now we turn to the South Coast and its water supply. As indicated, situated south of the Santa Ynez Mountains with a population of about 200,000 people in the year 2000. There are four major water purveyors that serve that area. We have the City of Santa Barbara served by the city itself. And Goleta by the Goleta Water District. Carpinteria by the Carpinteria Valley Water District. Montecito and Summerland by the Montecito Water District. I am going to point out that you will hear later that all of these four agencies have somewhat different water demand characteristics.

Now all major purveyors, all these major purveyors, have Santa Ynez River water; that is Cachuma from Cachuma and groundwater and State Water Project supplies available to them. But again, I think the thing that is most important here is that Cachuma Reservoir does supply approximately 45 percent of the total water demand in the South Coast.

Now I would like to turn to each of the reservoirs very briefly. The first one for this upstream is Jameson Reservoir located about 88 miles from the Pacific Ocean.

And as you saw from that graphic, it is a concrete arch dam, approximately 160 feet in height. And I want to point out that it was constructed without any provision for fish passages. It has a very small tributary area of only 14 square miles.

Hopping down a little bit here on my graphic, the storage capacity of that reservoir is also small, around 5,000 acre-feet. At current draft levels of about 2,000 acre-feet per year, the long-term yield is estimated to be 1,800 acre-feet. And finally pointing out to you here the safe yield is only a little less than 1,200 acre-feet per year. So you can see that the reservoir is operated in an overdraft situation.

Next on the river, moving downstream to 73 miles from the Pacific Ocean, and this is the first one to be constructed, Gibraltar Reservoir, in 1920 by the City of Santa Barbara. This also is a concrete arch dam, a little bit higher, about 180 feet high, and again without any provision for fish passage. The drainage area here is 216 square miles and that includes the 14 square miles that are drained into Jameson itself.

I want to step down to the bullet point involving siltation. This has been a major issue in the watershed and especially with this reservoir. The initial capacity of this reservoir when constructed in 1921 was 14,500

acre-feet. But 27 years later that capacity has been reduced to only 7,600 acre-feet. This is due to substantial siltation in the watershed. So a year later the capacity was increased back up to about approximately its original capacity by raising the dam some 23 feet. Again, by the year 2001 we find that the capacity has once again been reduced through siltation down to around 7,100 acre-feet. The issue in the watershed, particularly with siltation, is the function of the frequency and extent, degree of fires in the watershed which expose the soil to erosion.

The draft on the reservoir, 5,000 acre-feet per year, produces a long-term yield of about 4,600 acre-feet, while the safe yield is only about 2,000 acre-feet. So, again, this reservoir, like the first one, is substantially overdrafted.

Now going to Cachuma, the subject of this hearing, is located 49 miles from the mouth of the river, formed by Bradbury Dam. The dam was constructed in 1953 by the Bureau of Reclamation to deliver water to the project Member Units of the City of Santa Barbara, Goleta Water District, Montecito Water District, Carpinteria Valley Water District, and Santa Ynez River Water Conservation District, ID No. 1.

It is an earth filled dam at a height of 279 feet,

and like the other dams has no provision for fish passage. Tributary area here is 417 square miles, including the 216 above Gibraltar.

Now again here with the storage capacity, initial storage capacity at an elevation 750 feet above sea level was about 205,000 acre-feet at the time of construction. But because of siltation by the year 2000 it had been reduced to 188,000 acre-feet. So siltation, as I said, is a major problem in the watershed.

Deliveries are made to the South Coast through a 6.4 mile Tecolote Tunnel through the Santa Ynez Mountains, and, in fact, those mountains provide water to the tunnel. Infiltration averages about 2,000 acre-feet per year.

Now, deliveries to ID No. 1, which, of course, is on the northern side of the mountains are made now by an exchange with the South Coast State Water Project water entitlements. Now the original contractual yield at this reservoir was 33,000 acre-feet. But interestingly enough at the time the reservoir was being constructed it is in the midst of a most severe drought in the history on the river, and so was never operated at that level. It was operated actually after its completion at a draft of 27,800 acre-feet.

But due to other changes due to siltation and operational changes and hydrology modifications, it again

has been reduced, and now the current draft is around 25,700 acre-feet per year. And that provides a long-term yield of about 25,000 acre-feet per year. But this is accomplished through the Member Units taking shortages during periods when the reservoir water level drops below a hundred thousand acre-feet. And as previously indicated, since 1997 State Water Project has been delivered into the outlet works of the dam.

Releases from Cachuma. Downstream releases are controlled by several of your Board orders here. State Water Project water deliveries are at times made into the reservoir and commingled directly with the Cachuma downstream water rights releases. And fish studies and habitat maintenance releases have been made since 1993, those result from an MOU, Biological Opinion and Fish Management Plan.

These are made in two locations. They are made into Hilton Creek and into a stilling basin below the dam. The capacity of the Hilton Creek system right now is about five cfs because it is a gravity system, but a pumping plant is currently under construction which will increase that capacity to ten cubic feet per second. To partially offset the impacts of the fish releases, the Cachuma Reservoir is currently surcharged to an elevation of 750.78 feet.

This graphic shows a summary of the water resources at the three reservoirs. The first column shows the actual draft on each of the reservoirs. These exclude any draft on the tunnel. The second column shows the average yield generated by that draft. And the third column, which is the point of this graphic here, shows the degree at which each of those reservoirs are now overdrafted. The total overdraft on the system, then, is around 1,400 acre-feet per year.

Now I would like to turn to the groundwater resources of the area. The river provides water to two groundwater systems. Groundwater systems in the valley are divided at what we call the Lompoc narrows. East of the Narrows and below Bradbury Dam, that system is considered as the subsurface flow of the river. We call this the Above Narrows area. And west of the Narrows, that is system is known as the Below Narrows system.

Now a little bit about the Above Narrows alluvial groundwater basin. As I indicated, this is known as the underflow of the Santa Ynez River. It is approximately 35 miles in length, all the way from Bradbury Dam down to the Narrows. It is composed of river channels and younger alluvium deposits which are very coarse in nature. In variation in width from .2 to 1.5 miles. It is not a very wide system either. The depth of the sediment along this

system vary between 50 and 150 feet. So it is a very shallow system as well.

It's been divided over the years into four sub areas here. The Santa Ynez, Buellton and the Santa Rita has been divided into the east and west. All theses basins are below Cachuma and also are replenished by tributary flows from below Cachuma as well.

This graphic slows that system in green. And we see the three divisions of the Above Narrows groundwater basins, the uppermost being Santa Ynez, the center one Buellton and Santa Rita being furthest to the west and it is divided into two points here.

I want to point out it is not shown here on this graphic, but the division between the green and the gold that is known as the Lompoc Narrows.

Now turning to the Below Narrows groundwater basin, which is just below the Narrows, the river recharges the eastern portion of this basin known as the forebay of the Lompoc basin. Now the reach just downstream from the Narrows, beginning at what is known as Robinson Bridge, all the way to Floradale in the City of Lompoc, a length of about six miles, this is the primary area for percolation of river water into that groundwater basin. Percolation west of the city or west of the Floradale Bridge is limited due to underlying clays and silts.

And this graphic repeated here again in gold shows the Lompoc basin. That is that very initial reach which heads, as you can possibly see, up to the north and west a little bit, and that is the six-mile stretch that provides most of the recharge to the groundwater basin.

Now I would like to turn to my conclusions. First of all, the river is a highly regulated system, and it is subject to diminishing yields due to the siltation that exists in this particular watershed. It is a very important water supply to a growing population of the Santa Ynez Valley and to the South Coast. State Water Project water is also subject, as you know, to regulatory and climatic limitations. So its reliability is somewhat limited as well.

Demand in the South Coast has hardened. By that, of course, I mean we don't have an additional ability to conserve more. So what we find is that the water conservation measures are some of the most progressive in the state, in my opinion, and, therefore, any additional regulatory requirements on Cachuma would certainly impact beneficial uses.

That concludes my testimony.

MR. WILKINSON: Mr. Silva, we are going to move right along. Our next witness is Mr. Ali Shahroody.

Mr. Shahroody, I would like to ask you, is Cachuma

Member Unit Exhibit No. 203 a true and correct copy of your testimony?

MR. SHAHROODY: Yes, it is.

MR. WILKINSON: Is Cachuma Member Unit Exhibit 204 a true and correct statement of your qualifications?

MR. SHAHROODY: Yes, it is.

MR. WILKINSON: Finally, sir, is Cachuma Member Unit Exhibit No. 235 a true and correct copy of your Power Point presentation?

MR. SHAHROODY: Yes, it is.

MR. WILKINSON: Would you please summarize your testimony.

MR. SHAHROODY: I would like to provide a brief description of Santa Ynez River Watershed characteristics. And to that effect most of the streams in Santa Ynez River Watershed including Santa Ynez River itself, they are intermittent streams. That means in summer months, most summer months, with the exception of wet years, they tend to dry out. And it is generally based on that runoff situation, it is based on prolonged periods of drought that you have small amount of runoff taking place in the Santa Ynez Watershed. It's interspersed with some wet years that would occur pretty heavy. Generally, the runoff in the wintertime, the peak runoff, occurs over a short period of time. And as a

result of that, I would say the system tends to be flashy.

The average annual natural flow at Cachuma Dam site, for instance, when you look at the average number which I am going to show and comparing that with the median, which is a 50 percent occurrence, that is basically influenced by some of the heavy wet years as I indicated. Years, for instance, like 1941, 1969 and 1983. Each of them produced about 450,000 acre-feet. As a result of that, when you take those numbers into the calculation, then the average tend to be significantly higher than the median flow, which is a 50 percent occurrence.

I would like to show graphically here where the average flow determination for the Santa Ynez area that I did, the average flow determination of actual flow is made at a point what I will call the Cachuma Dam site. And that means all of the watershed area upstream, up to the dam site and the amount of natural runoff for that area.

The second analysis that I did is the historical, if you want to call it prior to construction of the dam, of the daily flow occurrences as measured by USGS, and those measurements were made about three miles downstream of the dam at a location called San Lucas Bridge. So I am going to also make a presentation of that, what the flows were prior to the construction of the Cachuma Dam, at least give a comparative review of it.

As I indicated, this graph, Figure 4 in my testimony, it shows the frequency of flows from the Santa Ynez Watershed at the Cachuma Dam site on an annual basis. And that is based on natural flow calculations. That means no impairments from the upstream reservoirs, all three reservoirs. And that is done on an annual basis for the period 1918 through 1993, which is a pretty long period of 66 years. The average annual amount of natural flow at the Cachuma Dam site would be about 75,000 acre-feet.

And if you look at the frequency occurrence of this, that would happen -- that would be happening 30 percent of the time or more. Well, let's put it this way, 30 percent of the time would have a frequency. 70 percent of the time the flow would be less than 75,000 acre-feet.

My point here in terms of comparing this to the median flow of the natural flow at Cachuma Dam site, which is about 25,000 acre-feet. That means 50 percent of the time flows occurring at that location would be, on an annual basis, 25,000 acre-feet or less. As you see, there is quite a bit of diversions or discrepancy between the average and the median. Again, as I said, the average is influenced by the limited number of pretty heavy years.

Next I would like to turn my attention, as I indicated before, the basin experiences prolonged drought

periods. Most distinctly which occurred, as it was indicated by Mr. Mills, one 1947-1951 during the construction of the Cachuma Reservoir. That turned out to be one of the driest periods of record. And the second one of the driest period of record is the one we experienced recently in late '80s and early 1991.

The first one extended for about five years. The most recent one extended for about four and a half years. It was interrupted in March of 1991 with several storms. We call it the March Miracle. I would show that the amount of runoffs for each of those drought periods that actually was determined at the Cachuma Dam site.

The next one I am going to show, what was the situation of storage, storage hydrograph in Gibraltar Reservoir during that period of drought and also I am going to show the storage hydrograph of Cachuma Reservoir.

This Table 1 shows the runoff at Bradbury Dam site, as it was estimated for the period of 1947 through '51, which is a drought period. The total amount of runoff of the watershed at that site was determined to be about 23,100 acre-feet for the five years. That would average to something on the order of about 4,600 acre-feet per year over that five years.

As I indicated, the second drought period, of course, was slightly shorter, four and a half years, and

that totaled about not much more than '47 through '51 of 24,400 acre-feet.

MR. WILKINSON: Mr. Shahroody, just to clarify, that runoff figure that you just gave was for the entire period, from 1987 through 1991?

MR. SHAHROODY: That was the total for the period. As I said, for the '47 through '51, 23,100. If you want to take an average annual, that comes out to be about 4,600 acre-feet.

MR. WILKINSON: Thank you.

MR. SHAHROODY: This is the storage hydrograph for Gibraltar Reservoir during drought of 1987 through 1991. And it shows actually the storage and the reservoir went dry by sometime in 1990 and was dry basically going into 1991 as we have the occurrence of storms in March of 1991. And when I say dry, that was completely sand, there was no water there at all at the bottom of the reservoir.

The next one, the next graph shows the similar storage hydrograph for Cachuma Reservoir. Of course, you are talking about a much, much bigger reservoir, close to 200,000 acre-feet of storage as opposed to 8,000 acre-feet in Gibraltar. As you see, the storage hydrograph continued to go down in the drought of 1987 through 1991. In fact, the storage went down all the way to the sill of the Tecolote Tunnel. The sill of Tecolote Tunnel is about

storage 26,000 acre-feet. Water level was just, I would say, pretty much like inches above the sill. So there was not enough hydraulic head to make the gravity delivery to the South Coast. They had to actually put barges with a pumping plant to help the diversion into the Tecolote Tunnel. That is basically shown -- I mean, you could see that the storage hydrograph by March of 1991 was right there at Tecolote Tunnel sill.

As I indicated before, I would like to also show what presentation of flows prior to construction of the dam. And the closest location of actual gauge data that we have is the USGS gauge at San Lucas Bridge, which is about three miles downstream of existing Bradbury Dam. And they started making continuous flow record on a daily basis -- when I say daily basis, continuous flow records are made as the time goes on, but published on a daily basis -- from January 1929 and continued beyond the time the Cachuma Reservoir was completed. The impoundment in Cachuma Reservoir started in November of 1952.

So what I did, I took the record of the daily flow records from January 1929 through October of 1952. Just before the impoundment started and made analysis. There is one year, of course, we don't have any data. USGS for 1932 did not apparently collect data or the data is not available. So 1932 is missing. As a whole, we are

looking at 23 years of daily flow data which I made frequency analysis to see what the flows, first of all, were at the flow hydrograph prior to construction of the dam, what was the median flow during that period. I will show in terms of flow hydrographs, starting from 1929 that the hydrograph consists of two tiers. The upper tier shows the full magnitude of the flow occurrence near the Cachuma Dam site. The lower graph, it magnifies the same thing as we have in upper part of the graph, but shows it for the low flows.

MR. WILKINSON: For purposes of clarification, Mr. Shahroody, the time period for each of these is the same, but the lower graph is simply a focus on those low flow periods where you actually had flow?

MR. SHAHROODY: That is correct. The upper graph, for instance, in this situation goes from zero to 300 cfs. Whereas, if you want to show the low flows going close to two cfs to three cfs, that becomes difficult. That is one reason why I magnified it and showed it in the range of zero to 50 cfs.

Just looking at the period 1929 to 1972, of course, again, as I said, we didn't have data. And then as I said during the summer months flow basically disappears because zero. I specifically and purposely elevated the zero line to show that, and that happened in 1929, that happened in

1930. 1931, of course, throughout the period from January through September of that year we didn't have any flow. '32, from October through December we didn't have any flow.

Next graph, of course, continues the same type of presentation, except this covers from 1933 through 1936. Again, independent of the time of year we had experienced of the flow sizes. As you noticed in the upper curve, it goes from zero to practically 3,000 cfs in occurrences of the storm event. But again in summer months you are coming bank to zero flow conditions, and those are shown in each of those years, 1932, '33, '34, '35 and '36. Not to try to repeat myself again, here we have a condition of year 1938, flows went up to pretty close to 18,000 cfs occurrence. But again, when you look at the magnified version of it, comes summer and going into the fall, we have flows getting pretty close to zero, very negligible.

That situation continued, of course, in 1939 and 1940. And going to 1941 through '44, again we have '41, we have an extreme wet year. It came pretty close. Came down to a minimum flow of about, I would say, seven cfs in 1941. But the other ones, again, although the flows were pretty big, gravitated pretty close to negligible flows in the summer months.

Not to repeat myself again, this phenomenon is

repeated here. When we go to '47, '48, we pretty much don't have any flows at all, especially in '48. In '49, '50, '51, I must say those were, of course, dry years, as I indicated. And that the upper hydrograph was flat because the magnitude of the storage, but the lower hydrograph shows '51 there were no flows until '52. We had the storm event taking place and the Cachuma Reservoir was starting.

What I did, I took the daily flows for this 23 years. Did a frequency analysis to see what kind of a frequency of flows they experience prior to construction of the dam. This hydrograph, which is Figure 7, shows 50 percent of the days over that 23 years the experience or we experienced flows of .8 cfs or less. I think that is something to recognize as far as the nature of the watershed that we are working with.

I've already talked about period of drought, low flow condition. But also we experienced pretty heavy years, too. And the best example is the last ten years. The last ten years have been one of the driest decades of the record in the watershed system.

MR. WILKINSON: You mean one of the wettest decades?

MR. SHAHROODY: Yes.

MR. WILKINSON: You said driest.

MR. SHAHROODY: I am sorry, talking about dry too much.

One of the wettest decades in the watershed. Cachuma Reservoir by itself spills five times out of ten years. The next table I can demonstrate the magnitudes. This period is 1993 through year 2002. We were lucky about that to some extent, of course, because of fishery flows that started from 1993, and we have been able to actually put out water, and at the same time we have been experiencing heavy, wet winters. And you can see that in 1993, 280,000 acre-feet of a spill; 1995, 254- and goes on. In 2001, in fact, in a very short period, in March, we had more than a hundred thousand acre-feet of spill. If you add this up, over the ten years we experienced more than a million acre-feet of spill at Cachuma Dam.

In conclusion, I have to state again the streams in Santa Ynez Watershed, they are intermittent and they are characterized to be generally flashy. There are long drought periods, and, of course, we have the kind of wet periods that I showed.

But more importantly, the period prior to construction of the dam, based on actual USGS gauge data, it showed to us more than 50 percent of days over that 23-year period of record we experienced flows of .8 cfs or less than that.

That summarizes my testimony.

MR. WILKINSON: Thank you, Mr. Shahroody.

MR. SHAHROODY: Thank you.

MR. PALMER: Bureau of Reclamation calls Mr. Michael Jackson as the next witness.

Mr. Jackson, could you confirm that your testimony is at Department of the Interior Exhibit 5; is that correct?

MR. JACKSON: Yes, that is correct.

MR. PALMER: And that your statement of qualifications is Department of the Interior Exhibit 1A? That is from Phase 1.

MR. JACKSON: That is correct.

MR. PALMER: And do you affirm that the testimony that you provided here is true and correct to the best of your acknowledge?

MR. JACKSON: I do.

MR. PALMER: Would you please summarize your testimony regarding the background of the Cachuma Project.

MR. JACKSON: Thank you. Good morning, Board. The basis for the construction authorization of the Cachuma Project is found, as mentioned in Mr. Palmer's opening remarks, Exhibit DOI-1B submitted during Phase 1. This is a letter from the Secretary of the Interior transmitting a report and findings on the Cachuma Unit of

the Santa Barbara County Project California referred to the Congressional Committee on Public Lands, dated April 1, 1948. Principal features included in there for the Cachuma Reservoir, Tecolote Tunnel, South Coast conduit and appurtenant works.

Numerous federal, state and local agencies reviewed and commented on the report prior to the authorization of the Cachuma Unit or what we refer to today as the Cachuma Project. Included among others were Fish and Wildlife Service, the National Park Service, Department of Agricultural, Secretary of War, Department of the Army, Corps of Engineers, State Divisions of Water Resources, Fish and Game, Santa Barbara County Water Agency, City of Santa Barbara, Goleta, Carpinteria and Santa Ynez Water Conservation Water Districts as well.

The impetus for the project and the need for development came about as California was in the midst of a drought as Mr. Shahroody pointed to from 1947 to 1951 of about 23,000 acre-feet, which was again naturally replicated, as indicated in Mr. Shahroody's testimony, during the '87 to '91 period.

Santa Barbara County had a need for additional regulated water supplies to maintain existing irrigation and municipal demands, as well as to address groundwater overdrafting and its resulting seawater intrusion.

Following the authorization, the Santa Barbara County Water Agency, which I understand was formed in large part for the specific purpose of entering into a water service attainment contract with the United States via the Bureau of Reclamation, did indeed enter into a contract on September 12th, 1949. That contract was subsequently renewed on April 14th, 1996.

In addition to water supplies, considerations for flood control, recreational opportunities and fish and wildlife resources were also analyzed and incorporated into the project and its operation to the extent that they did not conflict with primary purpose of water supply. Even power production was considered, but determined to be infeasible at the time.

That concludes the summary of my testimony for this panel.

MR. PALMER: Reclamation calls as its second witness Mr. Tony Buelna.

And, Mr. Buelna, would you confirm your testimony is at DOI Exhibit No. 8?

MR. BUELNA: I do.

MR. PALMER: And that your statement of qualifications is Exhibit DOI No. 4 from Phase 1?

MR. BUELNA: Yes, it is.

MR. PALMER: And that your Power Point

presentation that you are going to give is DOI Exhibit No. 9?

MR. BUELNA: Yes.

MR. PALMER: Do you affirm that the testimony that you are about to give is true and correct to the best of your knowledge?

MR. BUELNA: Yes, I do.

MR. PALMER: Please go ahead and summarize your testimony regarding the operations of the Cachuma Project.

MR. BUELNA: I am the chief of operations for the Fresno office.

Next slide, please.

Bradbury Dam/Cachuma Project was constructed in 1950 through 1956. Storage at Lake Cachuma began in 1952. The total storage capacity is 189,240 acre-feet at the present time. There is 20 miles of pipeline in the system, seven and a half miles of tunnels, and a hundred miles of laterals.

This is a slide that has already been shown, but just to show you that Bradbury Dam is about the center of the watershed area. Cachuma Project facilities, Bradbury Dam, Lake Cachuma, Tecolote Tunnel, South Coast conduit, Glen Anne Dam and Reservoir, Lauro Dam and Reservoir, Ortega Dam and Reservoir, and Carpinteria Dam and

Reservoir.

The distribution system of the project is Goleta Water District, City of Santa Barbara, Montecito Water District, Summerland County Water District, now part of Montecito Water District, Carpinteria Water District.

Here's the location of those reservoirs. Glen Anne to your left. Lauro, Ortega and Carpinteria. The Bradbury Dam and Lake Cachuma is a zone earth filled embankment. It's 279 feet high. The crest length is 3,350 feet. 6.7 million cubic yards of material. The current storage capacity is 180,030 acre-feet. It covers 3,000 acres with 40 miles of shoreline. The spillway is a concrete-lined ogee crest. It's controlled by four 50 by 30 feet radial gates and has a capacity of 160,000 cfs. The river outlet works are two 30-inch fixed cone valves and one 30-inch [verbatim] butterfly valve. The current capacity is 150 cfs.

Bradbury Dam/Lake Cachuma continue Hilton Creek water supply pipeline. Delivers water from the reservoir to Hilton Creek. Current capacity is about 5.6 cfs. There is plans for modifications in 2004 to increase capacity to ten cfs. The State Water Project connection at river outlet works, Central Coast Water Authority. We have a contract, which is a Warren Act. It allows delivery of State Water Project into Lake Cachuma for

temporary storage and release into the Tecolote Tunnel for delivery to the Santa Barbara area. And the connection capacity is 22 cfs.

And here's a photograph of Bradbury Dam after the modification of the Save the Dam Program in 1995.

Here is a slide of the spillway. We are probably spilling about 10,000 cfs in March of 2001.

The Tecolote Tunnel and South Coast conduit, it is 6.4 miles to the Santa Ynez Mountains. It is a seven foot diameter concrete-lined free-flow tunnel. Design capacity is a hundred cfs. The South Coast conduit is 28 miles of a high pressure concrete pipeline. The sizes range from 48 to 27 inches. Sheffield Tunnel is six foot in diameter, horseshoe-shaped tunnel, 6,000 feet long. The pipeline passes through this tunnel.

The South Coast conduit system. We have Glen Anne Dam and Reservoir, an earth filled embankment about 130 feet high. The crest length is 240. Reservoir capacity is about 470. The spillway is uncontrolled.

Lauro Dam and Reservoir, an earth filled embankment. It's about 136 feet high. The crest length is about 540. The reservoir capacity is 640. Spillway is a concrete intake, 30-inch concrete pipe.

Ortega Dam and Reservoir, an earth filled embankment, 131 feet high. Crest length is 430. The

concrete lined basin is 60 acre-feet. Its inlet and outlet works and has an overflow spillway.

Carpinteria Dam and Reservoir is a four-sided earth filled embankment. It's 31 feet high. The crest length is about 1350 feet. It's a concrete lined basin. Its capacity is 40 acre-feet with an intake/outtake pipeline and an overflow spillway.

The modified storm operations is offered for information of the background of the modified storm operation, and we are not asking the Board to take action but rather, because it's an important component of the Settlement Agreement I thought I would mention that.

Cachuma Project was not authorized for flood control project. No storage space is dedicated for flood control. The project has provided incidental flood control benefits, and changing the operating procedure during certain storm events can reduce the risk to the public downstream.

A summarized report was developed by Santa Barbara County in December of 1998. The Bureau did a risk-based evaluation, and based on their conclusions it reduced out of channel flow downstream. And that was the main thrust of the modified storm operation that had been on February 5th, 1998. I got a call from John Alroth [phonetic] who explained to me that Vandenberg Air Base was about to get

flooded. And by taking advantage of space above the crest, the gates, on the radial gates, that gave us opportunity to reduce the flow downstream and capture the water in the Santa Ynez River.

MR. PALMER: Mr. Buelna, could you just identify who John Alroth is?

MR. BUELNA: John Alroth was a liaison for Santa Barbara County that was responsible for developing the flood control model that was used as a tool to develop this technique.

Part of the modifications we call precautionary releases. This was to draw down the reservoir in preparation of a large storm. Prereleases rates up to the maximum calculated inflow and to hold the reservoir at a drawdown stage until the storm inflow receded. The gate holding was what I mentioned about February 6th -- February 5th, 1998, where we surcharge the reservoir to provide additional reservoir capacity.

Here is a simulation. I would like you guys to look at the top of the gate and water surface on the first slide. As you can notice that there is a gap between the water level and the gate. This is under normal curve operations. This is the modified storm operations.

MR. PALMER: Mr. Buelna, could you just explain what a normal curve operation, can you explain

that?

MR. BUELNA: Based on our SOP, we have a standard operating procedure. When the lake -- like I said, Bradbury has no flood control. When the lake is full at 750, which is 25,000 original design -- if the inflow is 100,000 cfs, we release about 90,000 cfs. And the rule curve was developed to handle the largest flood on record. Here is a second. And during the modified operations, notice that the gate and water surface.

MR. PALMER: Could you describe what is happening in your slide for us, please?

MR. BUELNA: What is happening, we are able to cut the flow down on this particular graph you look at numbers about 50 percent. Under the rule curve, this would have been a release of approximately a hundred thousand cfs; and under the modified storm operation it cuts down to about 50,000.

This is just under the standard operating rules. You can see the green line is the outflow. The hidden line, the dark blue line, is what happens at Solvang, and the yellow line is what happens at Robinson Bridge. So they are almost superimposed on each other. And during the modified storm operation, by doing the precautionary releases and making prereleases you can see how we cut the flow down in the Lompoc Basin. The main objective of this

whole operation was to reduce the flooding downstream.

Here is a comparison based on the '98 storm. The Cachuma inflow was 46,000 without modified storm operation and with modified, so there is no change. But the Cachuma outflow based on that storm would have been 40,000. We released at the peak 23,000 for a reduction of 42 percent of peak. And the flow at Robinson Bridge would have been 43,000 without modified storm operation. And with it, it was 26,000, and it was a reduction of 40 percent.

Historical operations. The average annual numbers, State Project water inflow has been about 1,856 average acre-feet. The gross evaporation have been 11,040 acre-feet. The precipitation at the lake has been about 20 and a half inches for about 4,125 acre-feet. The average total deliveries, which includes downstream releases and spills, is 78,553 acre-feet. Direct diversions from the county parks has been about 180 acre-feet over the last 40 years. The Tecolote Tunnel has been 19,683 feet between that period. The Santa Ynez ID No. 1 has delivered about 2,571 acre-feet from 1960 to 1997.

Downstream releases have averaged 5,685 acre-feet, excluding releases for fish. Fish releases have been about 1,795 acre-feet from 1993 to 2002. Water right releases have averaged 5,327 acre-feet. And spills have

averaged 144,165 acre-feet, during the 18 years the Bradbury has spilled.

The average annual project water deliveries infiltration into Tecolote Tunnel has been 3,130 acre-feet. The total project deliveries have been 24,413 acre-feet from 1955 to 2002. The computed inflow, as Mr. Shahroody was mentioning, the low was 1,910 in 1977. The maximum was 525,400 acre-feet in 1969. The average inflow, based on the years 1953 to 2002, is a little bit higher than it was previously mentioned, from 19-, I believe, 18 to present, which is 88,647. Below average inflow occurred approximately 75 percent of the years, as Mr. Shahroody mentioned. And the annual computed inflow of less than 25,000 acre-feet occurred approximately 50 percent of those years.

Next.

Here is a graph of the inflow at Lake Cachuma. You can see that red line is the average during those 50 years I mentioned. And here's another graph, just arranged in a different order where you can see that the years that we spilled occurred the last 13 years.

The end.

MR. PALMER: Mr. Buelna, I want to make sure I understand. When you were talking about the modified storm operations, and I believe it was on your slide,

regarding the maximum elevation of the reservoir during a storm event when you were operating modified storm operations.

MR. BUELNA: We've implemented this three times during the project, 1998 in February twice and March 2001. I believe in 1998 the reservoir went up four feet. Elevation was 754.

MR. PALMER: Was that the highest of those events you were referencing, if you recall?

MR. BUELNA: The 1969 storm, the reservoir surcharged about 756.5, plus or minus a half a foot. The reservoir is designed to surcharge during a flood event. This is not the same surcharge as we are talking about raising the gates by four feet. This is a different type of operation. We are always going to surcharge the reservoir during a flood. As I mentioned earlier, if you had a hundred thousand coming in, the lake's full, you're going to be releasing 90,000. But the lake is designed to surcharge to an elevation 7766.

MR. PALMER: Thank you.

Call our next witness. Ms. Joann Struebing, I am going ask you if your testimony -- confirm that is Exhibit DOI No. 7; is that correct?

MS. STRUEBING: Yes, it is.

MR. PALMER: Do you affirm that the testimony

you are about to give is true and correct to the best of your knowledge?

MS. STRUEBING: Yes, I do.

MR. PALMER: Would you please, then, summarize your testimony regarding the history of the Board involvement in the Cachuma Project?

MS. STRUEBING: As introduced, my name is Joann Struebing. I am a water rights specialist for Reclamation's MidPacific Regional Office here in Sacramento. The purpose of my oral testimony for this panel is to very briefly cover Reclamation's water rights on the Santa Ynez River for the Cachuma Project in Santa Barbara County.

In 1946 Reclamation filed two water right applications with the former State Water Rights Board, Applications 11331 and 11332 These applications were to appropriate water from the Santa Ynez River in support of the Cachuma Project. In 1958 the State Water Rights Board adopted Decision 886, rather than, as was referred to earlier, Decision 1486. That is not correct. That was referred to earlier. In 1958, as I said, the Board adopted Decision 886, which approved these two applications, and the Board then issued Permits 11308 and 11310.

Under the two permits combined, Reclamation is

permitted to store up to a maximum of 275,000 acre-feet in Cachuma Reservoir each year. The storage season being between the period of October 1 of each year and June 30th of the following year. The purposes of use under these permits include irrigation, domestic, municipal and industrial, recreation, groundwater recharge, salinity control and stock watering. The place of use under these permits generally covers the service area boundaries of the five Cachuma Member Units, which include the units on the South Coast, Goleta Water District, the City of Santa Barbara, Montecito Water District and the Carpinteria Valley Water District, as well as the Santa Ynez River Water Conversation District which is downstream of Bradbury Dam.

This entire area covers approximately 175,000 acres under place of use. However, the place of use permitted for irrigation purposes is restricted to 61,000 acres within that gross area. The two permits also allow for the use of water for recreational purposes in and around the reservoir.

My testimony also briefly covers the Board's continuing reserved jurisdiction over Reclamation's permits on the Santa Ynez River, beginning with Decision 886 where the Board found that, while there was sufficient unappropriated water to justify issuing these two permits,

it was still necessary for the Board to retain its jurisdiction for a period of time that would be needed to determine what flow of the Santa Ynez River would be required for the protection of downstream water rights. Decision 886 reserved the Board's jurisdiction for a 15-year trial period. And under Condition 12 of this decision, Reclamation was required to conduct various monitoring studies to ensure that sufficient water was released from Cachuma Reservoir to satisfy downstream diversions and to ensure that the operation of the project would not reduce the natural recharge of groundwater from the Santa Ynez River in the upper and lower basins below Bradbury Dam, as you have seen in the presentation by Mr. Mills. He, in detail, described the basins.

In 1973, the Board issued Order 73-37, which continued the Board's reserved jurisdiction for another 15-year period. This order also amended Conditions 5 and 6 of Reclamation's permits. This amendment established a detailed accounting system for the storage and release of water at Cachuma Reservoir to enable the project to maximize its water supplies while still continuing to ensure the protection of downstream water rights.

During this trial period established under Order 73-37, Reclamation along with the other parties, Santa Ynez River Water Conservation District, the Cachuma

Conservation Release Board and the City of Lompoc, reviewed the new operating procedures that had been set forth under Order 73-37 and under 78-10, another separate order issued in 1978 by the Board. This order basically amended Condition 5 again, allowing for a change in the method of measurement of water from Cachuma Reservoir.

So the parties reviewed the new operating procedures to determine if the actual amended permit terms had provided for sufficient releases to satisfy downstream water rights. There were negotiations going on during this time. And during this review and negotiations, there was agreement among all parties that three new observation wells were necessary to provide additional data for further review and analysis.

In 1989 Reclamation requested that the Board allow additional time to give the parties an opportunity to collect additional data and to gain experience under the more refined operating procedures that had been agreed upon by the downstream users and proposed by Reclamation under a submittal to the Board dated March 13th, 1989.

On September 21st of 1989, the Board adopted Order 89-18. This again continued the reserved jurisdiction of the Board for another five years and further amended Conditions 5, 6 and 7 of Reclamation's permits as had been proposed by Reclamation.

In July of 1990, the Board began a consolidated hearing to consider all the outstanding issues in the Santa Ynez River Watershed. One of the issues at that time was a complaint that had been filed by California Sportfishing Protection Alliance. This complaint was filed in 1987, and the complaint alleged that the operation of Cachuma Reservoir was adversely affecting steelhead trout in the Santa Ynez River. That hearing was recessed at the end of August due to the fact that there was insufficient information available for the Board to act on the pending actions.

Later in 1994, the Board issued Order 94-5. This was issued in November of '94. This again continued the Board's reserved jurisdiction and set forth new conditions that required Reclamation to complete certain studies and investigations. Under this order, Reclamation was required to prepare any additional environmental documentation that was deemed necessary by the division chief for the Board's determination of whether any modification to Reclamation's permits may be necessary for the protection of downstream water rights and public trust resources affected by the Cachuma Project.

Condition 2 of Order 94-5 set forth a hearing date for December 1 of 2000. Phase 1 of that hearing was held on November 6 of 2000, and the recent supplemental hearing

notice, which was issued on August 13th of this year, brings us here today.

That is my testimony.

MR. PALMER: That is the end of Panel 1 presentation.

H.O. SILVA: Thank you. Any questions? Why don't we try to get through at least one party's cross. I don't know if anybody wants to cross.

Santa Ynez River Water Conservation District?

(Reporter changes paper.)

H.O. SILVA: Proceed.

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CROSS-EXAMINATION OF PANEL 1

BY SANTA YNEZ RIVER WATER CONSERVATION DISTRICT

BY MR. CONANT

MR. CONANT: Mr. Buelna, a couple clarifying questions.

Could you describe generally when modified storm operations is activated?

MR. BUELNA: When the National Weather Service Provides us a forecast in advance, about seven days, and the reservoir already spilled or is close to spilling, if the opportunity presents itself and if the precautionary releases that we release don't contribute to the downstream flooding that is occurring to the local runoff,

then we would implement a modified storm operation.

MR. CONANT: Thank you.

Secondly, does the modified storm operation program in any way affect yield of the project for the benefit of the Member Units?

MR. BUELNA: No.

MR. CONANT: Thank you.

H.O. SILVA: City of Lompoc.

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CROSS-EXAMINATION OF PANEL I

BY CITY OF LOMPOC

BY MR. MOONEY

MR. MOONEY: Donald Mooney on behalf of the City of Lompoc.

Mr. Buelna, I have a very quick question here for you. The one display that you put up on the modified storm operation, I think it is Exhibit I-56, do you have that?

MR. BUELNA: Yes.

MR. MOONEY: In here you reference the 1998 storm event. And on the flow with modified operations of 26,000 cubic feet per second and the flow without the modified operations at 43,000 cubic feet per second, correct?

MR. BUELNA: That's correct.

MR. MOONEY: Do you know what the channel carrying capacity was of the Santa Ynez River down -- initially you referenced Vandenberg Air Force Base. Do you know what the carrying capacity was at that time?

MR. BUELNA: Every year it changes, based on the sediment and the tules that grow on that particular river. I believe when we started in 1998, they were talking about 20,000 cfs right around Robinson Bridge.

MR. MOONEY: And Robinson Bridge is in the vicinity of the City of Lompoc?

MR. BUELNA: That's correct.

MR. MOONEY: So in your opinion, then, is the operation, those modified storm operations -- in your opinion, the modified storm operations in 1998 significantly curtailed the downstream flooding?

MR. BUELNA: Yes.

MR. MOONEY: Thank you.

H.O. SILVA: Thank you.

City of Solvang. They are not here.

Santa Barbara County.

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CROSS-EXAMINATION OF PANEL I

BY COUNTY OF SANTA BARBARA

BY MR. SELTZER

MR. SELTZER: For Mr. Jackson. In your

testimony, which I believe the written testimony is Exhibit 5, you reference the agreement to administer recreational or recreation area with the County of Santa Barbara. That is the agreement, isn't it correct, that the County administers the recreation area under lease agreement with the Bureau?

MR. JACKSON: Yes.

MR. SELTZER: I would like to show you, if I may, Exhibit DOI 25. In Paragraph 4F on Page 18 of Exhibit 25, which is the agreement to administer recreational area --

MR. JACKSON: On what page?

MR. SELTZER: I think it is on Page 18. It is Section 4(F), Subparagraph F.

MR. JACKSON: Okay.

MR. SELTZER: It provides, and I will paraphrase, the County is authorized to make and enforce such rules and regulations for the use of the premises as are necessary and desirable to protect plants, fish and wildlife, provided that all such rules and regulations shall be consistent with the controlling rules and regulations of local, state and federal regulatory authorities.

Isn't that a correct paraphrase of that paragraph with respect to the County's authority to make rules

necessary to protect plants?

MR. JACKSON: That would be a paraphrase; it is not an exact citing of what is there. But I will take it as paraphrased for now.

MR. SELTZER: It would be a correct paraphrase of the County's authority to make and enforce rules and regulations with respect -- necessary and desirable with respect to protecting plants, subject to the fact that such rules and regulations the County shall be consistent with controlling rules and regulations, among others, federal regulatory authority.

Is that a correct paraphrase?

MR. JACKSON: Of that particular section of the entire contract, that appears to be correct.

MR. SELTZER: Isn't it true that there are no controlling federal regulations or rules for the protection of native oak trees?

MR. JACKSON: I am not aware of any.

MR. SELTZER: For Mr. Buelna I have a question. You testified that in 1969 the lake reached the elevation of 756.5 feet?

MR. BUELNA: Yeah, plus or minus a half foot.

MR. SELTZER: Do you know for how long the lake remained at that elevation?

MR. BUELNA: I believe it was probably 12

hours.

MR. SELTZER: Do you know how long it remained at that elevation before it reached an elevation of 750 feet?

MR. BUELNA: I would have to go back to the records. I am sure it dropped within ten days.

MR. SELTZER: In 1998 you mentioned that under modified storm operations the lake reached 754 feet. Do you know how long the lake remained at that elevation?

MR. BUELNA: Probably 12 hours.

MR. SELTZER: And again, before it reached 750 feet, for how long?

MR. BUELNA: We probably brought it back down within ten days.

MR. SELTZER: Thank you.

H.O. SILVA: Thank you.

Fish and Game.

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CROSS-EXAMINATION OF PANEL I

BY DEPARTMENT OF FISH AND GAME

BY MR. BRANCH

MR. BRANCH: Good morning. Harllee Branch, staff counsel of Fish and Game. I have a quick question for Mr. Shahroody. In your testimony you spoke about daily flow hydrographs for the Santa Ynez River basically

between 1959 and 1952, correct?

MR. SHAHROODY: Correct.

MR. BRANCH: Would I be correct in saying that during that time there were two dams in operation, Gibraltar and Juncal?

MR. SHAHROODY: Correct.

MR. BRANCH: Can you briefly and generally describe what affect those dams might have on the hydrograph in the Santa Ynez?

MR. SHAHROODY: In terms of the larger flow, of course, since those dams are relatively small, looking at 5,000 acre-feet for Juncal and the quality at that time over that period we are looking at 7- to 8,000 acre-feet. For Gibraltar, of course, it was larger. It was still -- they built up, but generally in that range. So I would say comparatively for size of watershed at Cachuma Dam site of 428 square miles. They're small reservoirs.

In low flow periods, which I touched upon, the amount of flow, of course, very small, especially coming into dry summers. Generally in that reach of the river we have substantial free phreatophytes, and to the extent if you do not have dams and you pass down those low flows, I would say a good amount of those would have been consumed by phreatophytes.

So to summarize that, I would say the effect is very

small of those three dams.

MR. BRANCH: Would I be correct in saying, though, that those dams would be able to retain some amount of flow that would otherwise flow downstream?

MR. SHAHROODY: Correct, they would. To the extent they have available capacity.

MR. BRANCH: Thank you.

H.O. SILVA: NOAA.

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CROSS-EXAMINATION OF PANEL I

BY NOAA FISHERIES

BY MR. KEIFER

MR. KEIFER: Chris Keifer for NOAA Fisheries. I just have a couple quick questions for Mr. Mills.

Exhibit 234, Slide 22, there is a bullet point that said any additional regulatory requirement would impact beneficial uses. Is it your view that protection of public trust resources is a regulatory requirement and not a beneficial use?

MR. WILKINSON: I am going to object. That calls for a legal conclusion.

H.O. SILVA: Let the witness say if he feels comfortable responding.

MR. MILLS: This is not an area of my expertise.

MR. KEIFER: Fair enough.

Just have a couple quick questions for Mr. Jackson.

In your testimony, Exhibit 5 at Page 12, you discuss that Reclamation's view is that the Fish Management Plan and the Settlement Agreement will provide protection of public trust resources.

Did you consider public trust resources above Bradbury Dam in formulating that statement?

MR. JACKSON: No, I did not.

MR. KEIFER: Same question with respect to your views about Alternative 3C in the Draft EIR. Did you consider public trust resources above Bradbury Dam in expressing your approval?

MR. JACKSON: I did not consider resources above Lake Cachuma.

MR. KEIFER: Is it Reclamation's view that the NOAA Fisheries' Biological Opinion was intended to address the public trust interest in steelhead resources rather than the question of whether or not the proposed project would jeopardize the ESU --

MR. PALMER: He is asking for a legal conclusion.

H.O. SILVA: I will let the witness answer if he feels comfortable.

MR. JACKSON: Can I hear the question again,

please?

MR. KEIFER: Is it your view that the NOAA Fisheries BO was intended to address public trust interests in steelhead rather than a question of the Endangered Species Act?

MR. WILKINSON: Understand the question?

MR. JACKSON: Yes, I understand. I understand the question. My understanding of the Biological Opinion was that there -- at a minimum they had to deal with the Endangered Species Act issue. But it was also my view that based on other comments in the Biological Opinion that it could be viewed, one could view that as going beyond the jeopardy/nonjeopardy issue.

MR. KEIFER: Fair enough.

That is all I have.

H.O. SILVA: Thank you.

Cal Trout.

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CROSS-EXAMINATION OF PANEL I

BY CALIFORNIA TROUT

BY MS. KRAUS

MS. KRAUS: Mr. Buelna, in your written testimony you indicated that you're typically notified in April as to whether and when the parent district, Santa Ynez River Water Conservation District, will request

releases for downstream water rights for the following 12 months; is that correct?

MR. BUELNA: That's correct.

MR. KRAUS: Were you provided with such an estimate in April 2003?

MR. BUELNA: Yes, I was.

MR. KRAUS: What was the estimated schedule in that?

MR. BUELNA: They weren't planning to make any releases based on the current conditions.

MS. KRAUS: And can you -- when was the last downstream water rights release?

MR. BUELNA: 2002 I believe.

MS. KRAUS: What month?

MR. BUELNA: I have to look at some information here. I have it done on a yearly basis versus a monthly. I want to say they went into October, if my memory recalls.

MS. KRAUS: In your experience, what is the typical rate of release under the downstream water rights release?

MR. BUELNA: It varies from year to year, but normally it starts at the capacity of about 150 cfs. If it is going to be released at the middle of the Narrows account, it goes for about ten days and then it starts

ramping down to the target which is roughly from 25 to 35 cfs.

MS. KRAUS: So ten days and then would ramp down. Would that be within another week that they would typically be completed?

MR. BUELNA: It varies on their condition downstream. But they usually go for about two months.

MS. KRAUS: Two months total in the past.

MR. BUELNA: Yes.

MS. KRAUS: I left a question back there.

Mr. Shahroody, in response to a question from Mr. Branch of Fish and Game, you gave your general opinion on the impact of Juncal and Gibraltar Dam on the flow below where Bradbury now exists.

Could you -- was your opinion based on any modeling of the entire watershed?

MR. SHAHROODY: No. That is based on reviewing the flow data from Cachuma Reservoir Watershed down to Cachuma Reservoir. There are gauges below Gibraltar Reservoir, USGS gauges. Gauges referred to at Los Olivos Canyon before getting into Cachuma Reservoir, observing those and also observing gauges on the tributaries above the Cachuma Reservoir.

MS. KRAUS: Thank you.

I have no more questions right now.

H.O. SILVA: Thank you.

Staff.

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CROSS-EXAMINATION OF PANEL I

BY BOARD STAFF

MR. FECKO: I have a question for Mr. Mills. You have emphasized the siltation problems in the watershed; is that correct? You characterize them as severe?

MR. MILLS: I didn't say they were severe. I thought they were an important consideration in terms of reducing storage capacity.

MR. FECKO: Are you aware of any efforts underway to find a physical solution to those problems, or in your opinion does one exist?

MR. MILLS: I am not aware of any program to curtail, short of a natural system to reach wildfires in the watershed. Maybe Mr. Shahroody is.

MR. FECKO: If anyone else on the panel knows. Thanks.

H.O. SILVA: Well, let's just try to get through this panel before we break for lunch. Any redirect?

MR. PALMER: Yes, briefly.

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REDIRECT EXAMINATION OF PANEL I

BY MR. PALMER

MR. PALMER: Direct this to Mr. Jackson. In response to questions asked of you by Santa Barbara County, you were asked to refer to the contract between the Bureau of Reclamation and the County, which is Department of the Interior Exhibit 25.

Do you recall that?

MR. JACKSON: I do recall that.

MR. PALMER: Do you have a copy in front of you?

MR. JACKSON: I have a copy that the County provided me.

MR. PALMER: If you would, please turn to Page 14 of that document, and I direct your attention to the top of that page of Subparagraph 2(A). Could you read that 2(A)(1) for me please and tell us what that means to you.

MR. JACKSON: The United States shall have the right to close the area whenever the operation of the project requires its use by the United States.

What it means is what it says. To me, if the United States needs the area for its use, then the United States can close the area.

MR. PALMER: Would you also refer to Page 22

of that same Exhibit 25, and Paragraph 8, and the first four lines of that, if you can read it quickly to yourself and tell us how that relates to the issue of county parks.

MR. JACKSON: Are we referring to the jurisdiction over land paragraph?

MR. PALMER: That is correct.

MR. JACKSON: The United States through the Bureau of Reclamation shall have the ultimate control over the premises.

MR. PALMER: Lastly, I just would like to refer you, and I can show you if you don't have it in front of you, to Department of the Interior Exhibit 27.

Do you have that to look at, Mr. Jackson?

MR. JACKSON: Is that the letter to Ms. Jan Abel, Cachuma Operations and Maintenance Board dated July 12th, 2002?

MR. PALMER: Yes, that is correct. If you could turn to Page 2 of that letter, please, and the second paragraph. If you could read that for us quickly.

MR. JACKSON: That starts "In the event"?

MR. PALMER: Yes.

MR. JACKSON: In the event such an agreement cannot be reached, Reclamation may consider its option to terminate the agreement under the termination provisions of Article 11 or simply allowing the agreement to expire

without renewal?

MR. PALMER: What is that in reference to, that paragraph?

MR. JACKSON: Ms. Abel had inquired -- had sent us an incoming letter regarding Reclamation's responsibilities to recreation, in that the county parks had indicated that they should not be responsible for relocating certain park facilities for the proposed surcharge that is currently under investigation. I think -- I believe, as I recall, Ms. Abel wanted clarification on the contract and the Bureau's position with regard to the County's position. So this is addressing that particular -- those questions and that the Bureau of Reclamation has options should the County not peaceably, I guess, relocate the facilities or request that the Bureau pay for the relocation.

MR. PALMER: Does that letter still represent the Bureau's position on that issue?

MR. JACKSON: Yes, it does.

MR. PALMER: That is all I have, Mr. Jackson.

H.O. SILVA: Thank you.

Again, I'm going to ask for recross. You can only do recross on what was the redirect, which right now I think is the County-Bureau contracts for land.

So Santa Ynez River Water Conservation District?

No, okay.

City of Lompoc? No.

City of Solvang I don't think is here yet.

County, you can come up now.

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RECROSS-EXAMINATION OF PANEL I

BY COUNTY OF SANTA BARBARA

BY MR. SELTZER

MR. SELTZER: I came up to get my copy of the lease back. One other or two questions, and that is with respect to the lease agreement you have in front of you.

Counsel for the Bureau referred you to the County's use of the area on Page 14, Paragraph (A)(1). That the County's use of the area is subject to the following conditions, one of which is that the United States shall have the right to close the area whenever the operations of project requires its use by the United States.

Do any of the applications pending before the Board require closure of the area, the project, because of this proposed project by the United States?

Let me rephrase that. Does any of the applications pending before the State Water Board require the United States to close the area for operation of the project?

MR. PALMER: Could you please -- what applications are you speaking about that are pending?

MR. SELTZER: Either that applications to amend the water rights permits before the State Board or the Fish Management Plan or to implement the Biological Opinion.

Do any of those actions require closure of the recreation area for its use by the United States?

MR. JACKSON: I am sorry, I am not aware of any applications in that regard.

MR. SELTZER: With respect to the Cachuma recreation area, do you believe that the United States would have to exercise clause (A)(1) which I referred to in order to implement the Fish Management Plan or Biological Opinion?

MR. PALMER: Asked and answered.

MR. JACKSON: That depends.

MR. SELTZER: What would it depend on?

MR. JACKSON: We wouldn't need to close the area if the facilities could be relocated to a more prudent location. Some of the facilities you have mentioned, the water treatment plant and I think the boat launch, but in case of the boat launch I believe boats could launch their boats in different areas.

MR. SELTZER: And at this point does the Bureau intend to enter into a lease renewal with the County?

MR. JACKSON: The Bureau has extended the contract that expired for another two-year term while we develop a -- up until 2005. We are hopeful that the Bureau and the County can reach a mutual agreement to deal with the relocation of facilities issue.

MR. SELTZER: Thank you.

H.O. SILVA: Fish and Game.

MR. BRANCH: No questions.

H.O. SILVA: NOAA.

MR. KEIFER: No questions.

H.O. SILVA: Cal Trout.

Great. We have one panel done at least, almost right on time. Why don't we break for lunch, come back at -- since a lot of people hit all the same places -- make it 1:15. Give us a little more time to come back.

(Luncheon break taken.)

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AFTERNOON SESSION

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H.O. SILVA: I think we are ready to start Panel II. Thank you.

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DIRECT EXAMINATION OF PANEL II

BY MR. PALMER AND MR. WILKINSON

MR. PALMER: Next the Bureau of Reclamation calls back Ms. Struebing.

Again, to confirm that you're speaking from your direct testimony, it was DOI Exhibit 7?

MS. STRUEBING: Yes.

MR. PALMER: Would you please summarize your testimony regarding the events subsequent to the issuance of Water Right Order 94-5?

(Member Carlton enters.)

MS. STRUEBING: The purpose of my testimony for this panel is just to provide --

H.O. SILVA: Is the microphone on?

MS. STRUEBING: The purpose of my testimony for this panel is to provide a brief history of Reclamation's change petitions and its compliance with Conditions 3 and 4 of Water Right Order 93-5. The details of Reclamation's change petitions was covered during the Phase 1 and the testimony presented by Gail Hefler-Scott

which was Reclamation's Exhibit DOI-2. My intention is to provide only a very brief summary for this panel.

Reclamation originally petitioned the Board in 1983. Reclamation was requesting an expansion of the permitted place of use and consolidation of the purposes of use under the Cachuma permits. The purpose of the 1983 petition was to include all of the lands within locally approved annexations of the district boundaries that were located outside of the existing place of use.

This involved basically modifying the gross place of use area, which is 175,000 acres only, and leaving the net irrigated acres of 61,000 unchanged.

The 1983 petition had been amended several times to modify the requested changes. However, the scope and intent of that petition did not change.

In 1999 Reclamation filed a separate change petition, requesting the inclusion of an additional 130 acres. These lands were within the locally approved annexation to the Goleta Water District. The two change petitions combined that were now before the Board proposed to modify the existing place of use boundary from the gross area of 175,000 acres to a gross area of 192,636 acres. Again, the net irrigated acres would remain unchanged. It would still be 61,000 acres.

The place of use is shown on Reclamation Exhibit

DOI-3B from Phase 1.

There were six protests originally received by the Board in response to the change petition. Only one outstanding protest was addressed during Phase 1. That protest was one filed by the City of Lompoc. The recent Settlement Agreement, executed on December 17th, 2002, resolves this protest. The Settlement Agreement is identified as the Member Units Exhibit Number 220A. On Page 7 of that agreement, Paragraph 3.2, the City of Lompoc has agreed to withdraw its protest to the change petitions.

Under compliance on Order 94-5, Reclamation had certain requirements to comply with under Conditions 3 and 4 under that order. The details again of Reclamation's compliance under these conditions were presented in the testimony of Michael Jackson during Phase 1 proceedings, and that is Reclamation's Exhibit DOI-1.

During those proceedings, Reclamation provided evidence to show that it had complied with Conditions 3A, 3B, 3C and 3E of Order 94-5. Condition 3D of this order required Reclamation to provide to the Board any information developed and conclusions reached during the negotiations between the Member Units and the City of Lompoc. In response to this requirement Reclamation was offering again the Settlement Agreement, which is

identified as Member Unit Exhibit 220A.

Under Condition 4 of Board Order 94-5, the division chief had determined environmental impact report was required to disclose environmental effects of any changes in the conditions contained in Reclamation's water right permits for the Cachuma Project. Under this particular condition, Reclamation was required to prepare an administrative draft environmental impact report, and on June 8th of 2001 a copy of that administrative draft was forwarded to the Board.

That concludes my summary.

MR. WILKINSON: Mr. Silva, as our next witness we are going to call Mr. Charles Evans to the stand.

Mr. Evans is going to describe, as I mentioned earlier, the development of the Memorandum of Understanding that has taken place and a general description of the scientific studies and also the development of the Fish Management Plan from a process kind of perspective.

Mr. Evans, is Member Unit No. 205 a true and correct copy of your testimony?

MR. EVANS: Yes, it is.

MR. WILKINSON: Is Member Unit Exhibit 206 a true and correct copy of your statement of qualifications?

MR. EVANS: Yes.

MR. WILKINSON: Finally, is Member Exhibit No. 236 a true and correct copy of your Power Point presentation?

MR. EVANS: Yes.

MR. WILKINSON: Would you please summarize your testimony?

MR. EVANS: Thank you. I am chuck Evans, Director of the Goleta Water District and CCRB. From 1976 to 2002 I was the manager and staff person for CCRB. The purpose of my testimony, of course, is to discuss the development of fisheries MOU, the general description of the studies undertaken and a general discussion of the Fish Management Plan.

In 1990, the State Board asked for recommendations for operational changes to the Cachuma Project, asked for management actions, recommended management actions for maintenance of public trust resources in the form of the fishery on the lower river, and asked also for information on the conditions and needs of the fishery below Bradbury Dam. 1990 was -- we were in the midst of a prolonged drought, and for the next couple of years the focus was on providing local water needs.

But then in 1993 a program of cooperative fisheries investigations on the lower river was initiated. Participants in this evaluation, the studies, of course,

included Reclamation, local water agencies, the CCRB Member Units, the City of Lompoc, Santa Ynez District, ID 1, the county of Santa Barbara, state and federal resource agencies, including, of course, the State Department of Fish and Game, the federal U.S. Fish & Wildlife Service, and the National Marine Fishery Service, NMFS, which now is known as NOAA Fisheries, environmental interest groups and local landowners.

This first fisheries MOU in 1993 was signed by all parties who were interested in studying the condition of the fishery in the lower river. That first MOU outlined the program of investigation to develop an understanding of the hydrology, water quality and, of course, fishery resources in the river. That MOU established two committees, the Consensus Committee which, of course, was established to direct the activities, the investigatory activities of the program, the fisheries program, and also to approve funding for that program. That was chaired by the Bureau of Reclamation and has been chaired -- continues to be chaired by Reclamation today. Also created by this fish MOU was a Technical Advisory Committee. Now, of course, referred to as SYRTAC with the Department of Fish and Game as chair of that committee.

That SYRTAC consisted of experts, technical experts, to oversee the biological and hydrological studies. Some

of the studies that have been conducted since 1993, of course, are of fish distribution and abundance, water quality, hydrology and habitat characteristics. The Member Units did begin this investigation and evaluation in 1993, as I indicated, on their own. The State Board then directed in 1994, 1994-5, directed that, of course, that outlined the studies that were to be conducted and also indicated that to maintain fish below Bradbury and to accommodate those 94-5 studies Reclamation was then directed to continue to make releases in accordance with MOU, the 1993 MOU, and any extension or modification to the MOU.

The 1993 Memorandum of Understanding was extended in 1994 and 1995 and 1996. In 1996 a biology subcommittee was established that was chaired again by the Department of Fish and Game to synthesize information collected in previous three years, four years, really 1993 to 1997, to provide direction to the project biologist who was, of course, doing the studies. That MOU established, of course, a fishery water account of 2,000 acre-feet per year to be provided for fishery, releases to be made downstream to protect the fish; 2,000 acre-feet per year which was, of course, 10 percent of the project yield. And, in fact, during that period of time the average release for fish was about 1,800 acre-feet per year. That

account was under control of the biology subcommittee and, of course, was in operation to protect the fish.

In 1997, NMFS, NOAA Fisheries, listed the southern steelhead as endangered, and Section 7 consultation between NOAA Fisheries and the Bureau of Reclamation began in March 1998, the SYRTAC completed a fisheries management report, which included 26 potential management alternatives, and that included numerous projects on both the main stem of the river and also tributaries.

Also established by this fisheries management report were technical work groups which established a wide variety of technical experts to further define the descriptions, technical descriptions, of the management alternatives, to prioritize the actions and to develop implementation plan, an implementation plan, for these actions. Of course, all of that work from the technical work group, those work products, then became the Lower Santa Ynez River Fish Plan.

In the Section 7 consultation between Reclamation and NMFS, NOAA Fisheries, of course, biological assessment was prepared and then NMFS issued its Biological Opinion for protection of steelhead in September 2000. The Fish Management Plan itself was evaluated so that we, of course, wanted to be certain that the Fish Management Plan was consistent with the terms and conditions in the

Biological Opinion. And then subsequent to that in the year 2000 a new fisheries memorandum of understanding was approved. That included an Adaptive Management Committee for the first time. And that committee was established to evaluate data from a long-term monitoring program, to evaluate public and agency input and, of course, changing hydrologic conditions and to also manage the adaptive management account, fish account, that was 500 acre-feet per year was provided for use by the Adaptive Management Committee as they saw fit. Of course, the focus of that MOU, the 2000 MOU, was to carry out the provisions of the Biological Opinion and the Fish Management Plan rather than the fisheries studies that had been the focus up until that time.

I would like to comment that, as I indicated, resource agencies have been very heavily involved in the entire fisheries program on the Santa Ynez River, and I would just like to acknowledge those who have participated. My testimony does include all the participants who have participated in the fishery program. The California Department of Fish and Game is a major partner in the program. Chuck Raysbook is a member of the Consensus Committee. Mary Larson is a member of the Adaptive Management Committee. She has been instrumental in helping us to obtain approval for steelhead recovery

projects, the funding from the Department of Fish and Game Salmon Restoration Grant Program. U.S. Fish and Wildlife has been a major participant from the beginning of the process. Carl Benzs, a member of the Consensus Committee, Bridget Fayhee of the Adaptive Management Committee. And NMFS, of course, has participated, NOAA Fisheries has participated in this program throughout the years. Matt McGoogin is a current member of the Adaptive Management Committee.

Funding for the program, the fisheries program since 1993 has been funded by the Cachuma Member Units. Costs to date are nearly $5,000,000, and those costs don't include the cost of project water for the fishery releases and Reclamation staff time. Those also are paid by the Cachuma Member Units.

In summary, conclusions, there has been an effective, cooperative fisheries program undertaken on the Lower Santa Ynez River since 1993, and it should be continued. All resource agencies and Cachuma Member Units have contributed to the understanding conditions and habitats of the lower river and these actions have contributed to providing a reasonable balance between allocation of Santa Ynez River water between public trust resources and consumptive uses and carried out the terms of the Biological Opinion.

MR. WILKINSON: Thank you, Mr. Evans.

H.O. SILVA: I want to introduce my colleague, Gary Carlton from State Board will also be joining us as time permits.

MR. PALMER: Thank you. The last witness on this panel, Mr. Jackson.

Again, just to reaffirm that you're speaking again from your direct written testimony, Exhibit DOI-5 and your associated statement of qualifications, DOI-1 A; is that true?

MR. JACKSON: That is correct.

MR. PALMER: Please summarize your testimony regarding the Section 7 process that led up to the issuance of the 2000 Biological Opinion for the Cachuma Project.

MR. JACKSON: Sure. On or about August 18th, 1997, National Marine Fishery Service, also referred to as NOAA in these proceedings, listed the Southern California steelhead, also known O.mykiss, ESU evolutionary unit as endangered species under the Endangered Species Act. The steelhead does indeed inhabit the Santa Ynez River downstream of Bradbury Dam. During 1998 to '99, Bradbury Dam was modified by Reclamation pursuant to a Safety of Dams Act responsibility to enhance its seismic safety.

The seismic retrofit project resulted in .05 acres

of aquatic habitat loss. As mitigation for this loss the permanent Hilton Creek watering system was constructed. Reclamation delivered water to Hilton Creek through this newly constructed watering system based on the considerations outlined in the Biological Opinion. The water supply line makes it possible to provide year-round flows in an otherwise dry lower Hilton Creek, which would otherwise be an ephemeral stream.

Inaugural ceremonies for Hilton Creek watering system took place on December 16th, 1999, and a collage of dignitaries participated in the ceremony, including Jan Abel, President of the Cachuma Conservation Release Board; Jim Lecky who participated as Acting Regional Director for the National Marine Fishery Service; Kirk Rogers who was acting at the time who has currently moved into the Regional Director position for the Bureau of Reclamation; Dr. Craig Fusaro, Cal Trout; and Congresswoman Lois Capps.

I mention these folks to illustrate a recurring theme regarding public involvement as it pertains to Cachuma Project in its interaction with the environment; and that is, we have sought to not only keep the process open to the public, but more importantly we've strived to engage the public on the associated issues wherever it was practical to do so.

In regards to the project operations effect on the

Lower Santa Ynez River Reclamation prepared a biological assessment, dated April 7th, 1999, and a revised Section 3 dated June 13th, 2000, which are Reclamation's Exhibits DOI-12 and DOI-13 respectively.

The biological assessment outlines Reclamation's project description and proposed action for the Cachuma Project operations, including conjunctive operations of water releases for downstream water rights, fish passage related to barrier removal, the Hilton Creek watering system, reservoir surcharge, enhancement of fish habitat in the main stem Santa Ynez River.

During the period between Reclamation's forwarding of the biological assessment and NMFS issuance of the BO, exchanges of pertinent information regarding biological triggers, hydrologic modeling and various flow scenarios were reviewed and refined. The dialogue and communication that took place during this period was also indicative of the extraordinary cooperation and collaboration that was taking shape between the Member Units, Santa Ynez River Water Conservation District, the City of Lompoc, the National Marine Fishery Service and Reclamation.

On September 11th, 2000, NMFS issued a nonjeopardy Biological Opinion, which is staff exhibit by reference No. 11.

And that concludes my testimony on this panel.

MR. PALMER: That is the end of our presentation on Panel II.

H.O. SILVA: Santa Ynez River Water Conservation District?

MR. CONANT: No questions.

H.O. SILVA: City of Lompoc?

MR. MOONEY: No questions.

H.O. SILVA: Solvang. Are they here yet? No. Santa Barbara County?

MR. SELTZER: No questions.

H.O. SILVA: Fish and Game?

MR. BRANCH: Yes.

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CROSS-EXAMINATION OF PANEL II

BY DEPARTMENT OF FISH AND GAME

BY MR. BRANCH

MR. BRANCH: Mr. Evans, you testified about the Department's role in the ongoing SYRTAC process, the ongoing MOU process, Adaptive Management Committee, et cetera. To the best of your knowledge, when was the last time that the SYRTAC met?

MR. EVANS: I believe in the year 2002.

MR. BRANCH: 2002? Sure it is not 2001?

MR. EVANS: Could be incorrect, although I believe it was 2002.

MR. BRANCH: Who is currently the chair of SYRTAC?

MR. EVANS: In more recent years, in the last couple, two, three, the meetings have been held, really a meeting with Consensus Committee and SYRTAC together. And so because of that, Reclamation is the chair of sort of the parent committee, so they've been the chair of the meeting.

MR. BRANCH: It would be fair to say Fish and Game is no longer the chair?

MR. EVANS: I think -- I am not sure that we have established that.

MR. BRANCH: You said Bureau was heading it up. Does that mean Fish and Game is not?

MR. EVANS: That is fine; accept that.

MR. BRANCH: You spoke a little bit about the 2000 MOU and the Adaptive Management Committee pursuant to that. How many times have they met in person?

MR. EVANS: I am not -- I can't -- I don't have that information. It will be presented, much more information, in Panel V, much more detailed information in Panel V.

MR. BRANCH: Does one time sound familiar?

MR. EVANS: On the Adaptive Management Committee I think it is more than that.

MR. BRANCH: Are you sure?

MR. EVANS: I don't know. There have been some meetings by phone and some meetings in person.

MR. BRANCH: You are not sure how many?

MR. EVANS: No.

MR. BRANCH: I have no further questions.

H.O. SILVA: Thank you.

NOAA.

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CROSS-EXAMINATION OF PANEL II

BY NOAA FISHERIES

BY MR. KEIFER

MR. KEIFER: Mr. Evans, is NOAA Fisheries a signatory to any of the MOUs?

MR. EVANS: No.

MR. KEIFER: Mr. Jackson, does the biological assessment prepared by Reclamation address the effects of proposed action on O.mykiss upstream of Bradbury Dam of the value of connectivity through the entire watershed for O.mykiss?

MR. JACKSON: Not to my knowledge.

MR. KEIFER: That is all.

H.O. SILVA: Cal Trout.

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CROSS-EXAMINATION OF PANEL II

BY CALIFORNIA TROUT

BY MS. KRAUS

MS. KRAUS: Mr. Jackson, you indicated in your oral testimony, in your written testimony also, that steelhead inhabit Santa Ynez River downstream of Bradbury Dam. Would you also agree that there are landlocked steelhead above Bradbury Dam?

MR. JACKSON: Tell me what you mean by landlocked.

MS. KRAUS: Steelhead that cannot access the ocean because of Bradbury Dam.

MR. JACKSON: I don't know the answer to that.

MS. KRAUS: Regarding the Consensus Committee that Reclamation is the chair of, can you explain what the term consensus means in the context of that committee?

MR. JACKSON: How Reclamation has tried to approach the consensus is, one, we want to hear everybody's issue, everybody's view point, and from there we consider and weigh that information. We are the chair of committee, but we are not the only party to the the committee. Among the parties we try to balance those things and come up with agreement on how to move forward. The consensus is not the same thing as unanimous agreement.

MS. KRAUS: With respect to the Consensus Committee, there could be some parties who are involved in that committee that don't agree with every decision of that committee?

MR. JACKSON: Yes.

MS. KRAUS: Does the Technical Advisory Committee, which has also been referred to as SYRTAC, also operate by consensus?

MR. JACKSON: I am going on my recollection. I think -- I don't know the answer to that. There is Adaptive Management Committee pursuant to the Biological Opinion, and under that National Marine Fisheries Service would have final say on any action under that committee. It would not necessarily be by consensus.

MS. KRAUS: Mr. Evans, do you know the answer to that question about the SYRTAC, whether it operates by consensus?

MR. EVANS: It does.

MS. KRAUS: Under the same definition of consensus that Mr. Jackson described for the Consensus Committee?

MR. EVANS: Yes.

MS. KRAUS: For the SYRTAC Committee there could be some parties that do not agree with the decision of SYRTAC?

MR. EVANS: Yes.

MS. KRAUS: Thank you.

I don't have any more questions.

H.O. SILVA: Staff?

Redirect?

MR. WILKINSON: Just a couple.

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REDIRECT EXAMINATION OF PANEL II

BY MR. WILKINSON

MR. WILKINSON: Mr. Evans, you were asked whether NOAA was a signatory to the MOU. Do you recall that?

MR. EVANS: Yes.

MR. WILKINSON: I believe your answer was that they were not. Do you recall whether any NOAA personnel ever attended any of the Consensus Committee meetings or SYRTAC meetings?

MR. EVANS: Yes, I think they always did. They always were a very strong participant, but they indicated that it would not be appropriate to be a signatory because we, of course, were trying to carry out the terms of the Biological Opinion, their Biological Opinion.

MR. WILKINSON: Can you recall any decision that was ever made and implementation action that was

taken by either the Consensus Committee or SYRTAC that was taken over the objection of NOAA Fisheries or the Department of Fish and Game?

MR. EVANS: No.

MR. WILKINSON: Thank you.

H.O. SILVA: Any recross? I will just ask everybody. Anybody want to do a recross on this point, sort of limited?

Hearing none, thank you, Panel.

Panel III.

MR. WILKINSON: This is our panel on water supply and water conservation. This panel will be discussing the water supply situation in Santa Barbara County as well as conservation measures that have been undertaken by various Member Units within Santa Barbara County area. We have a number of folks here, and there were two additions that we noticed in our notice of intent. Charles Hamilton and Alison Jordan are here to assist in providing information that may come up on the subject of water conservation. They were listed in the notice of intent.

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DIRECT EXAMINATION OF PANEL III

BY MR. WILKINSON

MR. WILKINSON: To begin with, I would like to

start with Mr. Steve Mack and ask Mr. Mack whether Cachuma Member Unit Exhibit No. 207 is a true and correct copy of your testimony?

MR. MACK: Yes, it is.

MR. WILKINSON: Mr. Mack, is Cachuma Member Unit Exhibit No. 208 a true and correct copy of your statement of qualifications?

MR. MACK: Yes, it is.

MR. WILKINSON: Finally, Mr. Mack, is Exhibit 236 a correct presentation of your Power Point?

MR. MACK: Yes, it is.

MR. WILKINSON: Would you please summarize your testimony.

MR. MACK: Yes, I will. I am Steve Mack, water supply manager for the City of Santa Barbara. I am going to talk today about the water supplies of the Cachuma Project member agencies. Member agencies have been mentioned already: Goleta Water District, City of Santa Barbara, Montecito Water District, Carpinteria Valley Water District on the South Coast and Improvement District No. 1 in the Santa Ynez Valley.

Important point I want to make in my testimony is my testimony and the testimony of others and the EIR that was presented for this hearing summarizes and combines the water supplies of the agencies and comes to conclusions at

times. However, we must remember that these agencies are physically, legally and politically separate. In particular Improvement District No. 1 is separated from the South Coast by mountains and by a large lake, and it is very difficult for them to help us more than we are already working together and for us to help them, particularly during droughts. It would be very difficult to share water supplies between the South Coast and Improvement District No. 1.

Table 1 is from my testimony and summarizes the water supplies of the agencies in normal years. It shows a number of things.

Next slide please.

The Cachuma Project is an important part of each of our agencies' supplies. Montecito and the City of Santa Barbara each have other Santa Ynez River supplies. Goleta, Carpinteria and ID 1 depend more on local groundwater. Goleta and the City of Santa Barbara have recycled Santa Barbara projects. The Santa Barbara desalination facility does not show up in our normal year supplies as it is in long-term storage and would require an expense to bring back into operation. It is not operational at this time, and that existing supplies are adequate for current and planned future demand during normal years. We also look at drought water supplies. I

think all water agencies do.

Table 2 shows those drought water supplies and shows a much different picture. The drought period planning is the adequacy for our water supplies. And that is important to think of right now because the Cachuma Reservoir is at about 115,000 acre-feet of storage right now as we speak. If we have another dry, if we don't get rainfall this winter, we will be below a hundred thousand in May or June next year. That is what we consider a drought. So the drought period planning is really apropos at this period of time to think about it.

And the analyses that I have done during this in preparation for this hearing has really focused all of us on drought period planning again, and we have been able to reexamine where we are. Drought period planning also must recognize the need for reserves. Much of the modeling done for the EIR and for other analyses regarding the Cachuma Project uses the Santa Ynez River Model. The river model, if you don't stick in a reserve, the model knows in 1951 that it is going to rain in 1952. We as managers don't know that.

In the fall of 1990 we didn't know there was going to be a March miracle and decisions had to be made and resources allocated based on a continuation of drought. And that is how we operate. So my testimony includes

Cachuma water supplies with a reserve. So we don't know that 1951 is the last year of a drought, and so we've cut back a bit on the deliveries during the drought to accommodate for that.

And looking at Table 2, the critical drought period shows, Table 2 shows that Cachuma only provides 25 percent of our supplies during those critical periods. Also shows that state water may be curtailed as well. My analysis shows 50 percent delivery. A lot of discussion on what that should be, the worst that the Department of Water Resources shows is a 19 percent delivery. We are using a 50 percent delivery; that's probably reasonable, but a lower number could be used as well.

Local groundwater during these drought periods are very important for all agencies, and we use our supplies conjunctively. Using surface water in good years, and we're saving up our groundwater for the drier years.

Table 2 shows that meeting -- while we have enough water for current demands, but with some shortage, because one of our strategies will be to take -- to ask our residents to take shortages during droughts. Meeting planned future growth will require additional storage, additional strategies, including a marketing possibly through the State Water Project.

I would like next to talk about the State

Water Project. There has been some discussion that state water is the solution for everything, that all the problems on the South Coast and for ID 1. State water is important. It filled the hole during -- that was identified during the '90s drought. But we've got a state water delivery that is large enough to fill that hole and for planned future growth. The capacity is limited to the pipeline we've constructed, and we can't get more than that. Also, deliveries are variable from the State Water Project. We have a Table A entitlement. As you all know, we don't get a hundred percent of Table A entitlement every year, and it is difficult to plan in advance of what the Table A delivery is actually going to be. State water cannot be carried over. You use it in a year or you lose it. You can't save it for a drier year. Makes it difficult to plan for future deliveries. It is even difficult during the year. State water works on a calendar year. We don't know until April or May exactly what we are getting from state water. So state water is a big help for us. It is an important -- it is an important supply, but there are limitations. It is also relatively expensive, has a high fixed cost and relatively high variable costs. So we just -- at $250 an acre-foot, we just can't order large amounts of it because we want insurance.

Also, I would like to get into the cost of Member Unit supplies. Our Cachuma supplies and river supplies have relatively fixed low cost. Local groundwater also is low cost, but it is limited. We have coastal basins that are subject to seawater infiltration and are very limited compared to other parts of California. State water, as I mentioned, has high fixed cost and additional high marginal cost of $250 per acre-foot.

There has been talk about the Santa Barbara desal facility. Well, that is in long-term storage. We expect that it would cost us approximately $10,000,000 for startup. And once we made that cost, then it would be an additional $1,200 per acre-foot for delivery. So it is a very expensive supply that we got for emergency purposes, initially the 1991 drought. But it is not something that can be used on a whim either.

Next I'd like to talk about Table 4-16 for the EIR that purports to show the impacts on Cachuma Project agencies during a drought. I looked at it and thought the numbers needed to be changed. I have a Table 8 in my testimony that shows how I would redo Table 4-16. I would include a reserve. That is a more realistic way to show the actual reserve -- actual shortages that we are going to face in a critical drought. That shows that there is 60 percent plus shortages.

My Table 8 also shows that the Biological Opinion alternative, Alternative 3C, has significant shortages compared to the historical operations that we have been operating on. And in working with the Fish Management Plan and developing those fish releases, we knew that we were going to be facing bigger shortages and we willingly stepped up and are taking those shortages. Deliveries are 20 percent less during the critical period, according to the Santa Ynez River model.

The no surcharge alternative of the Biological Opinion included surcharge. If we don't get that surcharge charge, that adds significant shortages to our deliveries during the critical periods.

MR. WILKINSON: Excuse me, Mr. Mack, you've got the number 11 percent less. Would that be an additive to the 21 percent?

MR. MACK: Yes, that is added on to the 21 percent.

MR. WILKINSON: So the total shortage with Alternative 3A, then, during a critical drought period would be about 33 percent?

MR. MACK: Something like that, yes.

In conclusion, the Member Units have diversified supplies based on the Cachuma Project. Our current supplies are adequate for our current demands. The

supplies for planned future growth will have substantial shortages during a drought. Project agencies took significant impact with the Fish Management Plan. We did that willingly. But not having a surcharge, requiring the same releases would increase that impact.

Thank you.

MR. WILKINSON: Thank you, Mr. Mack.

Our next witness is Ms. Kate Rees.

Ms. Rees, I would like to ask you, first, is Member Unit Exhibit 209 a true and correct copy of your testimony?

MS. REES: Yes, it is.

MR. WILKINSON: Is Exhibit 210 of the Member Units a true and correct copy of your statement of qualifications?

MS. REES: Yes, it.

MR. WILKINSON: And finally, Ms. Rees, is Exhibit 238 a true and correct copy of your Power Point?

MS. REES: Yes, it is.

MR. WILKINSON: Would you please summarize your testimony.

MS. REES: Certainly. Good afternoon, Mr. Silva and Mr. Carlton. My name is Kate Rees, as I was just introduced. I am the manager of Cachuma Conservation Release Board. I think we all know who the members are

after hearing it several times from several other people. Today I am also speaking on behalf of not only CCRB, but also on behalf of ID 1, and so it makes up the entire five Member Units for the Cachuma Project.

Today I would like to present an overview of the Cachuma Member Units collective urban water conservation programs.

The Member Units are long-time leaders in water conservation. Some of them have had programs in place for more than 30 years, particularly Goleta Water District who started one of the first water efficiency programs in 1973. All of the Member Units are signatories to the California Urban Water Conservation Council MOU, and they are all implementing the BMPs over time under that memorandum of understanding. Each of them have also established a water conservation plan pursuant to their contractual agreement with the Bureau of Reclamation which also incorporates the guidelines of the state program relative to implementation of BMPs. These water conservation plans are updated every five years, so all of them are following both the federal and state requirements for water conservation programs. The City of Santa Barbara and the Goleta Water District together hold entitlement to about 70 percent of the Cachuma Project yield. So understandably they have the most comprehensive

water conservation programs because they supply water to the vast majority of the people within the Cachuma Project service area. The County of Santa Barbara also has developed a regional water efficiency program and all of the Member Units participate with the County in the County agency's regional program as well. The smaller Member Units have limited staff and resources, as you can manage, relative to the size of the city, and Goleta Water District. But they also participate regionally in the programs developed by both the county and the city and also Goleta Water District.

This slide illustrates the Cachuma entitlement relative to the amount of water that is used for agriculture. As you can see, it is approximately 26 percent of the Cachuma entitlement. So the vast majority is used for urban purposes, for residential, commercial, industrial and institutional.

Of that Cachuma entitlement for the urban water use for the water year 2002-2003, the majority of the water use as I just mentioned not only does Santa Barbara and Goleta hold the majority to the Cachuma Project, but they also do, of course, use the majority of the water. We have 80 percent of the urban water supply being used by these two districts. The Improvement District No. 1 utilizes only about 4 percent by contract of the urban

entitlement, which equates to about 800 acre-feet for urban use.

I wanted to just step through briefly some of the -- give you an overview of the water conservation programs that have been in place over time and also that have been developed long term. For early water conservation programs that actually began in the 1970s, water demand began to outstrip water supplies for a portion of the Cachuma Project service area, particularly in the Goleta Valley and also portions of Montecito. So water conservation measures really needed to be put in place very early on just because of not enough water being available. The drought also in the 1970s created the need for water conservation programs. So all of the Member Units got involved really early on, more than 30 years ago, in starting pretty serious conservation programs.

New water services. There was a moratorium on new water services during the 1970s. There were limited uses for water put into place, so that allocation systems with reduced use were initiated, and water savings fixtures were required for new construction and also for remodeling. So that houses and any kind of remodel were required to have more water saving features or fixtures than they had used in the past.

Water shortage emergencies at this time were also

declared by all of the Member Units. Ordinances were passed establishing these allocation systems. They weren't just voluntary. They were mandatory.

Public information programs became really information so that they could get the word out to the water agencies. So public information programs became an important part of the early programs as well. By the end of the decade all the Member Units had adopted water shortage policies, and they all acknowledged that water conservation was really needed to be part of their overall water supply planning.

In the 1980s water conservation programs were expanded to include a large number of programs. A few of them are listed here on the screen. I am not going to go through all of them. But pretty extensive and pretty wide ranging, from ultra low flow toilet rebate programs, particularly with Goleta Water District kind of leading the way again on this particular program. Sustainable landscape fairs, utilizing the CIMIS system for irrigation, water use reduction, and also introduction of some of the waterwise demonstration gardens, which have been really effective throughout our general area.

In addition to permanent water use reduction through a replacement of toilets and other plumbing fixtures, conversion of irrigation systems, the Cachuma water

service area began really in earnest starting to educate their ratepayers about trying to really make water conservation a way of life. In my opinion, succeeded very well.

As Mr. Mack just mentioned, drought is prevalent in our area. So drought programs during the 1980s were also introduced with even stricter measures because of the critical drought we had during the 1986-92 period. Santa Barbara County experiences cyclical drought. It's always come back. Sometimes it's long, up to ten years; other times it may be only a couple of years, but it is absolutely part of the climate and part of the water supply planning that has to be taken into consideration.

These programs that we just went through for the 1980s were in place prior to this very restrictive drought. During this time in addition there was significant increases in water rates, sometimes several times for all the Member Units. Additional water use restrictions were placed to outside watering. Someone earlier mentioned that water cops were running around giving out fines if you were watering outside landscaping. Residential water audit programs were really essential and use of gray water to help water and keep some of the landscaping alive. There were drought information workshops and there were fines levied, and it was a very

difficult time for the entire area.

But overall I think demands dropped to something like 45 percent during this very critical time. All of the programs in place were very effective in getting out the message and accomplished a great deal during this time. In addition, from that effort the Member Units -- sorry, during about 1993 after the drought ended, the Member Units put together a drought response report to also evaluate what measures should stay in place, which ones were effective, which ones should continue into the future.

(Fire drill.)

MR. WILKINSON: Ms. Rees, would you please continue with your testimony, trying to keep it a little less incendiary this time.

I was working on it the whole time.

MS. REES: While you were all outside, I finished my testimony, and they lived happily every after.

I think I was just trying to finish up some of the programs that were in place during the drought time. And just to summarize, the effect of the conservation programs of the 1970s and 1980s, along with the additional strict measures that were put into place during the substantial drought that we had in the late '80s and early '90s, are still really contributing to the significantly -- lower

demands significantly during that time, and many of those programs resulted in permanent reduction in demands that are still in place.

I want to come back a little bit and talk about water rates. I know that has been mentioned by other witnesses here today, that our water rates are very high. It is really a very important part of overall water supply planning in terms of water conservation.

High water rates, in my opinion, is probably the most effective way to bring about effective water conservation. I suppose the bottom line is if you charge customers a lot of money for the water they use, they are just not going to use as much. That is certainly true in the Cachuma service area where our water rates are very high. Some of the highest in the state.

As has been mentioned before, all of our water use is metered and has been since the early 1920s. This includes all urban water accounts and also agricultural water accounts. So everybody knows how much they are using and how much they have to pay for their water usage.

The Member Units raised their water rates during the last drought and some of them several times as an incentive to conserve water as much as possible. Several of the member units also initiated different water rate structures, such as tiered pricing, so the more they use

the more they had to pay, or they had very steep flat rates for water rates. Some of the Member Units have now changed their water rate structures as we have had significantly more rain in the last decade. But water rates have remained very high.

This is a table of our current water rates based on information I have received from the Member Units and also from the county water agency. And this chart simply shows that for -- I'll call it a typical water bill. It is based on 1000 cubic feet per month, which is not very much. If one were to use 1000 cubic feet of water, the rates range from about $36.30 sent a month to over $52 a month. And as Ms. Abel mentioned in her opening statement this morning, an average bill, for instance, in the Goleta Water District, where properties are quite a lot larger, is upwards of $135 a month. So our water rates are truly quite steep and will continue to remain that way.

Lastly, I would like to go through just a little bit of development of our long-term water conservation programs because this has really become a way of life in the Santa Barbara area. All of the Member Units have long-term programs in place. As I mentioned earlier, the largest program, of course, are with the Goleta Water District and the City of Santa Barbara. All of the Member Units have signed the CWCC MOU, and are implementing the

BMPs over time as required under that MOU. They also have Reclamation's water conservation plans in place and update those every five years.

One thing I find that is to me, anyway, very important is overall system improvements. Most of our water agencies have aging water systems as is true, I am sure, throughout the state. Some more than a hundred years old. There is a lot of leakage and a lot of loss that can occur with leaky, older systems. There is tremendous capital improvement programs in place that cost a great deal of money for all of the Member Units to try to implement system improvements throughout the distribution system.

Another important system improvement is the introduction of recycling water transmission pipelines. And Goleta and the City both have pretty extensive reclaimed water systems or recycling water systems that are in place. The City of Santa Barbara currently delivers approximately *855,000,000 acre-feet a year through the recycled water program. And this translates into about 64,000,000 gallons per year. For Goleta, they also have an extensive program. They provide about a thousand acre-feet of water per year of recycled water, which is about 300,000,000 gallons of water saved. So these are really big system improvements that save a great

deal of water.

We mentioned ultra low flow toilet replacement program. Thousands of toilets have been replaced. Thousands of plumbing fixtures have been replaced for also substantial savings. This has been ongoing in our area for many years. Outside water uses is always brought up as a way to try to cut down on excess water use or water that may be, could be saved. So landscaping and water use efficiency programs are very important as well. I will highlight those in just a moment.

A lot of it is based on getting the message across to the public to say you've got to really try to cut down on your overall water use. The only way to do that is through public information and educational programs. These are extensive throughout the Cachuma service area. Particularly with the county water agencies' educational programs. All of the Member Units participate in those. There are in every school. There is all kinds of events, landscape fairs, booths, sustainable fairs. Education is really very important in our area as is the public information programs.

Lastly, many of our water conservation coordinators participate on the state, national and local levels in workshops and conferences and committees. So just to highlight a little bit for both landscape and other water

use efficiency programs, one program that is a pilot program that looks to be like it will really be effective in the long term, it is rather expensive at the moment, is the ET controller for outside landscape use. And this evapotranspiration device allows data to be read from the CIMIS weather stations, to have adjustments automatically made as far as how much watering needs to be done for time of year so that adjustments are made or so the homeowner doesn't have to go out there -- every time I go out there with a power outage I have to reprogram my time. I never get around to it. This does it for you. Hopefully it has a good battery. It takes a little bit to get it in place, and the programs are expensive right now relative to the labor to get them installed for the customers. The County of Santa Barbara and the City of Santa Barbara received a grant for a pilot program for this and they're currently installing free of charge to their high end users for landscapes. So they are certainly starting to utilize this important technological advancement for water use outside.

On the commercial side of things, one good product that has hit the market and is going to seem to be quite effective as well is a commercial rinse and save program. These are nozzles that can be used in restaurants and really will cut down tremendously on the water use in

commercial and also restaurant usages.

Lastly, I wanted to highlight demonstration gardens. I know it sounds like a small thing, but all of our Member Units have very lovely drought tolerant or sustainable demonstration gardens in place at their offices. They also distribute information and have plant fairs for the public to come and learn about waterwise gardens in their own properties. This has been extremely effective during our last drought. As Ms. Abel also mentioned, we had people spray painting their brown lawns green. We had a lot of vegetation that died off because people were not allowed to water outside. When we had a little more water, people replanted, and there has been a tremendous improvement throughout the area of people utilizing natives and other sorts of plants that don't take quite so much water but still make a very attractive landscape. So this has been really effective for having this as a good example for the community. The City also has some beautiful demonstration gardens in public parks throughout the city. So these too public can enjoy and learn how to use it themselves.

So in conclusion, I just wanted to summarize that again for more than 30 years the Member Units have had effective water conservation programs in place. Permanent conservation measures have really remained ever since the

1986 to '92 drought. So there has been a permanent reduction in demand overall. Water demand is still significantly lower than before the drought. It's never reached the levels of predrought conditions, understandably, because there are a lot of permanent fixtures in place now to keep that water usage down. This is true even though there has been an increase in population. The demand levels are still lower. High water rates serve as a major incentive to conserve water. Efficient urban water use and a significant level of conservation has already been achieved throughout our service area because of long-term programs.

I just want to ensure the Board and the agencies here that CCRB and ID 1, we have a very strong commitment to mandatory and voluntary water conservation measures now and as we have been doing in the past, particularly in the future. These are dynamic systems. There is lots of technology out there that is going to be very useful in the future, and we wholeheartedly embrace all of those things with our programs.

Thank you.

MR. WILKINSON: Thank you, Ms. Rees.

You have had a chance to hear about urban conservation, now we're going to hear about agricultural water use efficiency. Our next witness is Mr. Joseph

DeMaggio.

Mr. DeMaggio, let me ask you, first, is Cachuma Member Unit Exhibit 213 a true and correct copy of your testimony?

MR. DEMAGGIO: Yes, it is.

MR. WILKINSON: Is Cachuma Member Unit Exhibit 214 a true and correct copy of your statement of qualifications?

MR. DEMAGGIO: Yes.

MR. WILKINSON: Finally, with respect to your Power Point, is Exhibit 239 of Member Units a true and correct copy of your Power Point presentation?

MR. DEMAGGIO: Yes.

MR. WILKINSON: Would you please summarize your testimony?

MR. DEMAGGIO: My testimony is going to describe the work that I performed to evaluate the agricultural water use efficiency with the Goleta Water District, for the Montecito Water District, Carpinteria Valley Water District and the Santa Ynez River Water Conservation Improvement District No. 1, hereafter referred to as ID 1.

My presentation, I am going to start defining what is agricultural water use efficiency. There is a lot of efficiency numbers floating around, and I just want to be

clear on how I defined it in my analysis. Then I am going to present the calculations that I performed and then I will present the results.

Agricultural water use efficiency is defined as the amount of water required divided by the amount of water delivered. If the water required -- if more water is required than delivered, then the efficiency is greater than 100 percent. As an example, if I calculate that two acre-feet is required by the crop, but only one acre-foot is delivered, then the agricultural water use efficiency is 200 percent.

Here is the agricultural water use efficiency in an equation form. It's basically the NIR which stands for the net irrigation requirement and we add to that the leaching requirement. Both those together make up the amount of water required by the crop. We divide that by the volume of water delivered to the farm, and that is how we are defining our water use efficiency.

To come up with the amount of water required by the crop I first need to determine what is the irrigated acres. And I look at the four water districts that are shown here in various colors. Blue is ID 1. Shown in yellow is Goleta. Shown orange is Montecito, and shown in red is Carpinteria Valley.

The irrigated acres of each of the districts are

shown here on this table, starting with Goleta. I got the irrigated acres for years 2000, 2001 and 2002. And what is important about this table is that below the irrigated acres I have the irrigated acreage receiving only district water. This is important because not all the lands get only district water. There is some of those supplemented by well water and other sources. And in order for me to do my analysis I had to look at just the land that receives district water that is metered by the district. So I want to make that clear.

So you can see with Goleta we have about 1900 acres that are receiving only district water. In Montecito there are about 531 acres, and basically all those lands are receiving district water. For the other two districts, Carpinteria we have around 500 acres receiving district water and ID No. 1 we have around 2,100 acres receiving district water.

I also want to point out that some years -- some of these tables show multiple years and in different years. We did our analysis on the years that we received data from the districts. You can see the years that we used.

My next step was to come up with what crops are grown. And here is a cropping pattern for the different water districts. As you can see in Goleta, shown there in blue, avocados are the predominant crop there. In

Montecito more than half the crops grown is avocados. And Carpinteria, again they've got avocados. They also have a lot of nurseries. That is shown there in the red color. And I want to point out that in nurseries, there are two types of nurseries. Nurseries that are closed nurseries and nurseries that have an outside operation. And I only looked at nurseries that have outside operations because I have no way knowing the climate conditions inside the closed nurseries. So I couldn't estimate the water usage for those.

MR. WILKINSON: When you say closed nursery, you mean a greenhouse kind of operation?

MR. DEMAGGIO: Right, greenhouse, enclosed nursery, a climate controlled environment.

In ID No. 1, you see the predominant crops there are vineyards and truck crops. Truck crops are basically row crops. Then once I know irrigated acres, the cropping pattern, the next thing is to determine the theoretical water literally for those particular crops. And the way that is done is first I look at the net irrigation requirement and leaching requirement.

The net irrigation requirement is defined as the crop evapotranspiration. We subtract from that the effective precipitation. The effective precipitation is only a portion of the actual precipitation; that is, the

effective precipitation is defined as that amount of precip available for the crop to use. That is why we subtract it from the crop evapotranspiration. The crop evapotranspiration is calculated based on a reference crop evapotranspiration which is ETO, and we multiply that times the crop coefficient, the crop coefficient varies by crop.

Here are the numbers that I used for the reference crop evapotranspiration, ETO. So this is the baseline and with this number I multiply the crop coefficient to come up with the evapotranspiration for each crop. And as you can see here, these are the numbers for the districts. For Goleta for 2000, 2002, a little over 40 inches. Montecito is anywhere from 39 48. Carpinteria for those five years in the 40 to 50 inch range. And ID No. 1 has higher numbers. They are in the mid 40s up to high 52 inches. These are in inches of water per year that a crop would use, theoretical maximum crop would use. The reference crop evapotranspiration.

The crop evapotranspiration is defined, as I mentioned earlier, as the crop evapotranspiration -- equals the crop evapotranspiration -- the reference evapotranspiration times the crop coefficient. That is how you come up with the crop evapotranspiration.

Here is the numbers that I calculated for each

different crop, each different district. As you see on this graph, on the left side is the ETc which stands for the evapotranspiration for the crop. And we have three different years. As you can see, it varies from year to year, depending on the climate conditions.

Next one is for Montecito. You can see that avocados are shown in blue is higher than the ETc for citrus.

In Carpinteria, you can see here shown in green, the pasture has the highest crop evapotranspiration. The lowest one is cherimoyas, if I am pronouncing that correct.

Here in ID No. 1 we have alfalfa as the highest water use crop, and the lowest one is vineyards.

The next thing is to determine the net irrigation requirement, and that is defined as the crop evapotranspiration. We subtract from that the effective precipitation. As I mentioned earlier, effective precipitation is only a portion of the actual precipitation that falls in a given year.

Here we have the calculated net irrigation requirements for Goleta for the four different crops. As you see there, they differ from year to year and each crop has a different one because of the different crop coefficient and different growing season as well.

And this table shows the Montecito net irrigation requirements for avocados and citrus. You can see the range, anywhere from 9.9 inches per year up to a high of 25.5 inches per year in 1999 for avocados.

And here we have Carpinteria net irrigation requirements for five different crops. You can see they vary year by year, crop by crop.

And last we have ID No. 1 net irrigation requirements with alfalfa ranging anywhere from 18.1 inches up to a high of about 33.2 inches. So you can see there is quite a range year by year analysis of net irrigation requirements.

I want to talk about the types of irrigation systems. This comes in to play in the efficiency and what type of system we had out there. We have microsprinklers. We have drip. We have sprinkler systems. These are in terms of irrigation applications are the most efficient types of system. Here is an example of a microsprinkler irrigation system in citrus groves. You see lemons there.

And we have a drip irrigation system on the vineyards. That black pipe is suspended on the wires on the trellis there. That is a drip system. And next we have a drip irrigation system for truck crops. I believe those are peppers.

So finally, the theoretical water delivery

requirement is equal to the net irrigation requirement, and we have to add to that the leaching requirement. A leaching requirement is essential because this is the amount of water that is required to move harmful salts out of the soil. Sometimes this is a forgotten component in determining how much water is required by the crop.

And here we have the leaching percentage for drip irrigation systems. It is not a large percentage. You can see vegetables are just 1 percent; is almost nothing. Up to a maximum of about 6 percent in Carpinteria for avocados.

Here we have the leaching percentage for sprinklers. Sprinklers, even though it is growing the same crop, it would have a higher leaching requirement if you are using sprinklers versus using a drip system. We have a separate leaching percentage. It is a function of crop type and also a function of crop system that is being used to grow that crop.

Here you can see avocados again have about the highest leaching requirement of about 15 percent in Carpinteria.

And when I come up with the theoretical water delivery requirement on an acre-by-acre basis, this is the number I come up with. This is acre-feet per acre, the units here. And you can see they are generally in the one

to about two acre-feet per acre. And this is weighted average based on the crop mix that I described earlier and the crop water requirements. If we multiply those units, acre-feet per acre, times the acreage that I've previously shown in those tables, we come up with a total acre-feet requirement as shown on this table, and you can see the average for Goleta is about 3,000. For Montecito is about almost 900 acre-feet and Carpinteria is 965, and ID No. 1 is a little over 2,000.

Once we know the top of the equation, which was the water delivery required, next I need to determine what is the agricultural water delivery. And the water delivery numbers that I received, those from each of the districts, as mentioned earlier, these are metered deliveries so I had numbers. I didn't have to take any guessing on any of this. This is just to tabulate the metered numbers for the particular year, for the particular field I was looking at. And I sum all those up, average it all out. These are the average numbers that you can see in terms of the water delivery. For Goleta it is about .83 acre-feet per acre. Montecito, .72. Carpinteria, .66. And ID No. 1, .97.

Just like when I calculated the water requirements on a total basis, I calculated the water delivery on a total basis by multiplying times the acreage to come up

with the acre-feet required. And you can see here how it changes year by year. And I have the average numbers there.

Just to compare these two, looking at the unit water requirements, acre-feet per acre, for each of the four districts, that is shown in the first column of this table. Ranges anywhere from 1.54 to 1.91. We compared that to the unit water delivery. And as you can see, those are a little below one. As you can see in this table, the water required is higher than the actual water delivered.

So to run the calculation for acreage that was studied. The average efficiency turned out to be in a range from a 159 percent up to 288 percent as shown on this table for the four different districts.

The question comes to mind how can efficiency be greater than a hundred percent. Basically what that means is that the water delivered is actually less than the water required. And I was struggling with this when I did the calculation and I am attributing this basically to the high cost of water and metered deliveries, that the farmers are basically deficit irrigating in order to conserve water and save money. They found this is the most effective farming operation for them.

MR. WILKINSON: Mr. DeMaggio, just to ask a

question at that point. Is what is going on here then something like a trade-off between yield and water price or water cost?

MR. DEMAGGIO: I would suspect. I haven't studied the yields, so I don't know if they are getting full yields. My crop order requirement estimation is based on a full yield. So I have no way of knowing if they are getting reduced yield. That is what I suspect may be happening.

In conclusion, the agricultural water practices within the four water districts located in the Cachuma Project service area mainly rely on drip, microsprinkler and sprinkler irrigation systems. These types of irrigation systems are among the most efficient methods used for irrigation in California. By the year 2020 the California Department of Water Resources assumes that the on-farm efficiency in the state of California will average 73 percent. This number is considerably lower than the average efficiency of the four districts located in the Cachuma Project service area that I calculated.

MR. WILKINSON: Thank you, Mr. DeMaggio.

Our next witness is Mr. Bettencourt.

Mr. Bettencourt, let me ask is Cachuma Member Unit Exhibit 215 a true and correct copy of your testimony.

MR. BETTENCOURT: Yes, it is.

MR. WILKINSON: Is Exhibit 216 a true and correct copy of your statement of qualifications?

MR. BETTENCOURT: Yes, it is.

MR. WILKINSON: Would you please summarize your testimony?

MR. BETTENCOURT: Thank you. My name is Lee Bettencourt. I am a farmer in the Santa Ynez Valley. I am owner-operator of our own vineyard. It is a family operation. And I am familiar with the irrigation practices of many of the farms in the Santa Ynez Valley. My operation is typical of the area.

I have 115 acres of nine different types of grapes, of wine grapes. My income is derived entirely from farming. I am a sixth generation Californian, fourth generation in the Santa Ynez Valley. My grandparents bought the ranch in 1923, and my family has been farming there for 80 years. My wife, my mother, my son, his children and his wife all live on the ranch and share in the work.

My father, Boyd Bettencourt, was the secretary of the Santa Ynez River Water Conservation District and the ID No. 1 from May of '65 to -- March of '65 to May of '92. I am a trustee of the Santa Ynez River Water Conservation District, ID 1, and have been since 2000. I have been a Director of the Cachuma Resource Conservation District

Board for Santa Barbara since 1993, and I am trustee of the Oak Hill Cemetery District. My family and I have been longtime members of Farm Bureau. I attended college at Cal Poly University. My experience and my heritage, I have a good working knowledge of the water in our area.

Our ranch, which we now farm, is part of a 35,000 acre land grant that supported the Catholic college in our area. Our Lady of Refugio and later changed to Our Lady of Guadeloupe, was established in 1844. And the house I live in is part of the chapel for that college. The college was gravity fed from a ditch that was about three miles and delivered water from a town near Santa Ynez. It was an open ditch, and at the time the Sanja Cota Creek was a live stream. The water used to irrigate the land and operate the griss mill near the town of Solvang for the Santa Ynez Mission.

My grandfather bought the land in 1923 because it was one of the few ranches in the valley that was irrigated. He had a dairy and hogs. He raised pasture, hay and corn silage and some row crops. It was all grown with flood irrigation. The cost of the water was about a dollar an acre-foot. Some of the costs were ditch maintenance, repairs, pumping, vegetation management. As the years passed, more and more deep farm wells were developed upstream of Sanja Cota Creek, and it decreased

the water flow to the ranch, made it necessary for us to develop a sprinkler irrigation in order to conserve water and still maintain our farming acreage.

We grew alfalfa, corn silage, permanent pasture, all to support the dairy we had. We installed a huge booster pump system, distribution piping and enlarged our holding ponds and bought sprinkler irrigation. In the 1950s the water cost was about $7.50 an acre foot. In drought conditions it was hard to irrigate in a timely manner and a lot of the crops suffered from lack of water.

When the Cachuma Project was delivered to the ID No. 1 in 1960 or the '60s, we got a more reliable source of water. It was better quality and the water was adequate pressure for sprinkler irrigation. It was no longer necessary for us to boost the water pressure. Therefore, we conserved a lot of energy. Because the water source was reliable, we were able to irrigate on a more efficient schedule. The water cost was over $40 an acre-foot. The 1960s, a lot of crops grew in the valley, tomatoes, corn, sugar beets and other field crops, which is because the new source of water from the Cachuma Project.

Over the years these crops have given way to higher income crops due to the higher cost of water and the pressure of land development. In 1968 my family established the first commercial wine grape vineyard in

the Santa Ynez Valley, and the grapes are a higher income, so, therefore, we could absorb the cost of water.

At the time the University of California said that you should plant grapes on a six by twelve spacing with permanent irrigation for frost control and irrigation. In 1976 we sold our dairy and started the first winery in the area, the Santa Ynez Valley Winery.

With the advent of drip irrigation newer vineyards in our area have either drip irrigation or duals for frost and irrigation. Our vineyard, even though it is more costly, we have added drip irrigation since the mid '80s in conjunction with our existing overhead irrigation that we keep for frost protection.

The early drip systems didn't compensate for the change in pressure, and we are a real hilly terrain, and so the emitters water didn't deliver water as efficiently as they do now. The new drip emitters compensate for this pressure and you get a more exact water. The dual -- with a dual system water delivery we are a bunch more efficient than we were before with just the overhead.

Once you have a good irrigation system, it is important that you use it properly. It is important to monitor the moisture in the soil in both the conservation of water and quality of grapes. Only quality grapes make quality wine. There are many delivery devices that has

helped me measure the crop water over the years. We have used the shovel, the tensiometers, neutron probes, CIMIS weather stations. We now use an electronic moisture probe called an AquPro. It gives a soil profile of the different moistures at different depths in the soil. We've established that the grapes need more than 60 percent moisture presence to continue to grow. Once the moisture presence is at 60 percent, we irrigate in order to fill up the ground to about 90 percent. By this we eliminate runoff and we try to irrigate only at night with less evaporation from wind and the sun. By all these methods we use less water and, therefore, have less costs.

Many field crops, such as peppers and broccoli, lettuce and other crops like that are grown in the valley now due to the advent of drip irrigation. And these water conservation methods have made it cheap enough that they can grow these crops. One of the things that is not seen in the Santa Ynez Valley is tailwater from row crops. It is inefficient. It is costly and there is actually no place for the water to go. At present the water rate in our area is $121.97 per acre-foot, and even these crops probably will not remain viable in our area much longer.

Hysterically -- historically agricultural has been the best method of keeping open space and the scenic space for a growing community. Horse ranches, golf courses,

parks, cemeteries, all additional examples of open space. The Cachuma Resource Conservation District has an agriculture and turf water evaluation service that is available to the residents of Santa Barbara County. The district has tested over 50 water systems per year. Since 1985 the total impacted acreage is 57,000 acres with a potential savings of 16,656 acre-feet of water per year countywide. Many of the landlords in the Santa Ynez Valley have used this service to make their systems more efficient.

With viable agriculture it is easier to hold off the pressure of residential development. But ag water's interruptable. In the case of insufficient water supply, ag water is the first to be limited. Consequently with these influences of higher taxes, higher cost of production and the pressure of urban development, my income and my way of life may be in jeopardy.

As a trustee of ID No. 1, I am concerned about the long-term reliability of adequate water supply for our community. As a farmer, I need adequate water at an affordable rate to sustain my vineyard. As a resident of the Santa Ynez Valley, I am concerned with keeping a balance of agriculture and rural residential living. As a grandfather, I am worried that without intelligent water planning and water use my grandchildren will not be able

to carry out family heritage of farming. I am fortunate that my son has chosen to live on the ranch, raise his family and continue with my family heritage.

Thank you.

MR. WILKINSON: Thank you, Mr. Bettencourt.

Our next witness, Matt Roberts.

Mr. Roberts, I would like to ask you first whether Cachuma Member Unit Exhibit 217 is a true and correct copy of your testimony.

MR. ROBERTS: Yes, it is.

MR. WILKINSON: And also, Mr. Roberts, whether Cachuma Member Unit Exhibit 218 is a statement of your qualifications and that it is true and correct?

MR. ROBERTS: Yes, it is.

MR. WILKINSON: Would you please summarize your testimony.

MR. ROBERTS: Good afternoon, Mr. Silva and Mr. Carlton. It's nice to be here today. My family moved to Carpinteria Valley in 1870. At that time they were attracted to the area's natural beauty, its fertile agricultural soil, and the family has been involved in agriculture ever since.

I personally have been growing avocados and other permanent or tree crops since 1980, beginning immediately after I received a degree in business economics from the

University of California at Santa Barbara. I have also received certifications from the University of California ag extension office on subtropical agriculture, especially as it relates to the growing of avocados. I have participated in the California Avocado Society's conferences ever since and am a member of that society.

I have an eight-year tenure acting as an elected representative to the California Avocado Commission and held the position of marketing committee chairman. The Avocado Committee makes decisions on how to spend grower's assessment on marketing and avocado research. I continue to grow avocados and lemons, cherimoyas is the proper pronunciation.

Has anybody had a cherimoya up there? Very good.

And have served on the Carpinteria Valley Water District Board for the last eight years. Because the family has been involved in agriculture since 1870 in the Carpinteria Valley, we go through many adaptations. And the cost of agricultural water is one of the biggest inputs to our output on the farm and is another big cause for adaptation.

When I started, the ranch had a lot of overhead sprinklers, a lot of high volume sprinklers and I can't remember what the cost of water was per acre-foot. But in our district now for agricultural water it is $600 an

acre-foot plus the monthly meter fees, which for a two-inch meter exceed $135. So we have two of those for $270 a month whether we buy any water or not.

The first thing that we have done over the years, and it's through the technology that has been disclosed to us through our international associations with avocado growers throughout the world, with the avocado society connections has been the use of drip and microsprinkler irrigation. Our soils are heavy clays, and they are susceptible to runoff. By applying the waters more slowly we get better penetration, we keep water in the root zone, and get a very high efficiency from that application.

The technology that some of our drip and microsprinkler irrigation has includes a pressure regulator at each emitter. This allows us to irrigate slopes without having excess water being applied in the lower parts of that slope and an inadequate water supply being delivered to the upper parts. That is very important technology that we have embraced.

A tactic that we have decided to use is the use of mulch, organic mulch. And this is a win-win situation all around because we divert a lot of green waste from landfills and conserve that resource. We also get the benefits of improving our soils, getting better growing media in that heavy clay mineral soil. But it also does a

great deal of good for the conservation of moisture. It helps us reduce the frequency of our irrigation. It helps us to reduce the depth of our irrigation. We think that is one of the best things that we can do on the ranch, and it really has paid off.

Another tactic that we use that is different, another adaptation that we have embraced, is the use of cover crops on our hillsides. That helps preserve our topsoil. Our topsoil is the best soil to hold moisture during the summer. Our cover crops are then mowed in the spring and become a mulch layer, again helping to conserve moisture.

We have embraced the notion of nighttime irrigation. This is important because microsprinklers emit small droplets and are susceptible to being blown in the wind and also to evaporation. By applying it at night we avoid wind displacement of our irrigation as well as also improving or reducing the amount of evaporative losses.

Most of these things have come from uses of information exchanges through our U.C.'s extension office and through our avocado society membership. A lot of my friends in the Carpinteria Valley who are also farmers have embraced other technology. It was mentioned earlier that Carpinteria does have quite a bit of greenhouse agriculture. That is considered some of the highest tech

agriculture in the area.

And a lot of the growers there are actually employing hydroponics or growing in a soilless media. They condition their water. They introduce all the nutrients in the water, and then they reclaim that water and use it a second time. Often on open field agriculture. I've heard an estimate of about 224 acre-feet of agriculture irrigation water is actually recycled and reused.

Myself and others are beginning to use soil polymers. This is an interesting technology. When we set out new trees, we plant with soil polymers. We place them at the appropriate depths so that irrigation water is retained there. Nutrients are retained there, and water doesn't go beyond the root zone. Again, that really helps improve our efficiency for water, irrigation water.

We are preparing and looking into the use of the CIMIs program. I know other growers in the area have used it. At one point there was a transmitter station placed on our property, the California Irrigation Management Information System, and it helps us to use evapotranspiration data to apply our irrigation water most efficiently. Also, we know there is available to us the Cachuma Resource Conservation District water audit service, and those are also a very useful tool in our

area.

Thank you.

MR. WILKINSON: Mr. Roberts, what is the cost of irrigation water in your area per acre-foot?

MR. ROBERTS: It's just at $600 an acre-foot plus the meter fees.

MR. WILKINSON: Do you meter all of the water you receive from Cachuma Project?

MR. ROBERTS: My ranch is a hundred percent dependent on water district water.

MR. WILKINSON: Thank you very much.

Mr. Silva, Mr. Carlton, before we conclude this panel, I would like to introduce as well Mr. Charles Hamilton who is the general manager of the Carpinteria Valley Water District and just ask him very briefly:

Mr. Hamilton is Cachuma Member Unit Exhibit No. 211 a true and correct copy of your statement of qualifications?

MR. HAMILTON: Yes, it is.

MR. WILKINSON: And Ms. Alison Jordan who is a water resource specialist with the City of Santa Barbara.

Ms. Jordan, is Exhibit 212 a true and correct copy of your statement of qualifications?

MS. JORDAN: Yes, it is.

MR. WILKINSON: Thank you very much.

Mr. Silva, Mr. Carlton, that concludes our direct testimony of Panel III.

H.O. SILVA: Thank you.

Then we will go to Santa Ynez.

MR. CONANT: No, I don't.

H.O. SILVA: I thought you were getting up to cross.

City of Lompoc?

MR. MOONEY: No.

H.O. SILVA: City of Solvang, not here yet.

Santa Barbara County?

MR. SELTZER: Have no questions for this panel.

H.O. SILVA: Fish and Game?

MR. BRANCH: No questions.

H.O. SILVA: NOAA?

MR. KEIFER: No questions.

H.O. SILVA: And Cal Trout?

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CROSS-EXAMINATION OF PANEL III

BY CAL TROUT

BY MS. KRAUS

MS. KRAUS: Mr. DeMaggio, the analysis that you described you conducted, did that include an evaluation of other further efficiencies to be gained

through additional conservation measures?

MR. DEMAGGIO: I simply analyzed the amount of water required by crops and the amount of water delivered at this time. I didn't do any projections into the future.

MS. KRAUS: Ms. Rees, you mentioned in your testimony that all the Member Units have prepared five-year updates to the conservation plans that are required by Reclamation?

MS. REES: Correct.

MS. KRAUS: Do you know when ID No. 1 submitted its final update, most recent update, to Reclamation?

MS. REES: I believe they submitted their final update, I am going to say, about a month ago. They have not yet heard back from Reclamation on approval.

MS. KRAUS: Same question regarding the Carpinteria Valley Water District. Do you know when they submitted their most recent update?

MS. REES: I believe they were all probably submitted right about the same time. They have received approval on their five-year update as have all the other Member Units.

MS. KRAUS: Montecito as well?

MS. REES: Yes.

MS. KRAUS: Thank you.

Mr. Mack, some follow-up questions for you. You mentioned the desalinization plant. Can you indicate what the current capacity is of that plant?

MR. MACK: The installed pumps right now for production of approximately 3,000 acre-feet per year.

MS. KRAUS: What is the design or the permitted capacity of the plant?

MR. MACK: I believe the permitted capacity is 7,500 acre-feet per year.

MS. KRAUS: Thank you.

You mentioned that in 1990 when the city was experiencing the extreme drought conditions that the city responded by, among other things, pursuing alternative water supplies.

Was one of those supplies desalinization?

MR. MACK: Yes, it was.

MS. KRAUS: What process did the city conduct in its pursuit at desalinization?

MR. MACK: I don't know about process, but the steps was in the -- I arrived in the city in August of 1990. Some of this happened before I arrived there. But in the spring of 1990 the city put out a request for proposals for additional water supplies, just any proposal. Received just a wide range of ideas and

proposals. Narrowed those proposals down to tankering and desalination. Selected -- and the proposal included a requirement that this be a design build proposal, that we want somebody else to do it and give us the water. And went through a selection process. And also asked a neighboring water district if they wanted to participate. Montecito and Goleta said they did.

So we got down to selecting one firm, Ionics, Incorporated, to design, build and operate a desalination facility for the City of Santa Barbara for a five-year period. And it is a five-year contract.

MS. KRAUS: Was there any environmental review associated with that?

MR. MACK: Yes, there was.

MS. KRAUS: Were there any hearings involved as part of that?

MR. MACK: We had a hearing every week in the City of Santa Barbara during the drought. People were really concerned about it. With respect to the desal facility I don't recall what hearings there were, but it was thoroughly discussed in the community, and there was wide community support for it.

MS. KRAUS: Can you -- from the time -- you mentioned at the first step the request for proposal. From that point in time to the point that the facility was

actually constructed, can you estimate how long that took?

MR. MACK: Depends when you start it. But I'm working off of recollection. This is in my testimony. But my recollection is that the agreement to start with Ionics was in August or September of 1990. The facility delivered water in March of 1992. Now that was done under emergency, so some of the -- we went through environmental review, but some of the time frames were reduced, some of the city environmental or planning requirements were waived. But it was started in August or September of 1990. Completed in March of '92.

MS. KRAUS: Approximately a year and a half?

MR. MACK: Correct.

MS. KRAUS: Also referring back to the steps you mentioned to get to the point of delivering water. Which of those steps would be required now to implement desal in the event of a drought?

MR. MACK: I don't know what steps would be required. We have a permitted facility. In the event of a drought I don't know. We estimate internally it would take us one year to get the facility going again, but I am not sure that includes any required permits.

MS. KRAUS: Have the costs of the desal increased or decreased since the city built the plant?

MR. MACK: There are a number efficiencies

that have been reported in the membranes, and the city uses a reverse osmosis technology. However, the cost of electricity has really increased. We haven't done any internal investigation ourselves as to what the efficiency of membrane gained, how that would be offset with the cost of electricity. Many of the new proposals that have been -- that are happening in Southern California have achieved power source. We don't. We are -- we just have to buy our power from Edison, and I don't know what that would be.

MS. KRAUS: You had identified a cost per acre-foot that you estimate it would currently cost for desal water?

MR. MACK: That is correct.

MS. KRAUS: Is that more or less than it was at the time the plant first operated?

MR. MACK: That is approximately the same. And again that is our best guess, not based on any real analysis. We are assuming that the efficiencies in membranes will offset the increased cost of electricity, and that is why we are saying about 1,200 per acre-foot, $1200 per acre-foot.

MS. KRAUS: Does the city's drought contingency plan include desal as a water supply option during a critical drought year?

MR. MACK: If we have a demand and that -- well, if the supply and demand mix is such that we need to pull our desalination facility back on, it is our last resort supply for the city, yes.

MS. KRAUS: I should clarify, the City of Santa Barbara.

That'S all the questions I have right now.

H.O. SILVA: Thank you.

Staff?

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CROSS-EXAMINATION OF PANEL III

BY BOARD STAFF

MS. DIFFERDING: I have a couple questions for you, Mr. Mack. My questions have to do with some of the figures in your tables. And these as you know differ in some respects from the numbers in the State Board's draft environmental impact report. In particular, the numbers that you have for Cachuma Project supply in a critical drought year are different because you have -- the numbers in the State Board Draft EIR are based on the Santa Ynez River hydrology model. Whereas, you have built in a reserve, a carryover reserve; is that right?

MR. MACK: Correct. My numbers are based on the Santa Ynez model as well.

MS. DIFFERDING: Plus an assumption concerning

a certain amount of reserve that an operator would set aside for the following year?

MR. MACK: Yes. The Santa Ynez model has an option that allows you to add an additional 1951 to it. So you click that, you put a one in that spot in the model and you get an additional 1951 which reduces the first 1951 results by having to supply water in the following year.

MS. DIFFERDING: Essentially it assumes that you have back to back 1951s?

MR. MACK: Correct.

MS. DIFFERDING: How much would the reserve have to be, do you know, if you build that assumption into the model?

MR. MACK: I didn't look at these numbers this time. But basically it divides it in half. So I believe the reserve is the same as the -- or very similar to the amount that is shown as the delivery for 1951. That is typically how we operated in 1990, was we knew we had that much water in the reservoir. We didn't worry about the model. We just split it in half and said we are taking this much in 1990.

MS. DIFFERDING: I think I understand that. I just had one minor follow-up question, which is I noticed that the numbers in your Table 2 for the Cachuma Project

supply are slightly different from the breakdown in your following tables with individual Member Units. There is a slight discrepancy there. I was wondering if you knew the reason for that.

MR. MACK: I may have made a mistake. They should be the same.

MS. DIFFERDING: Do you think the numbers in Table 2 are correct or the numbers in the following --

MR. MACK: Which one are you talking about?

MS. DIFFERDING: Well, all of them. I think there is a slight difference with every number listed for Cachuma Project delivery in Table 2, if you compare them to the following tables. If you don't know, you don't know. That is okay; I just thought I would ask.

MR. MACK: I don't know.

MS. DIFFERDING: Thank you.

That is it for my questions.

H.O. SILVA: Redirect?

MR. WILKINSON: Just a few.

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REDIRECT EXAMINATION OF PANEL III

BY MR. WILKINSON

MR. WILKINSON: Mr. Mack, just to follow up on the last couple of questions. Are there different assumptions about the nature of year between Table 2 and

Table 3 or are they the same?

MR. MACK: They should be the same.

MR. WILKINSON: One is not critical drought year and the other is normal year or are the both critical drought years?

MR. MACK: Table 2 is the summary. Table 3 is the supplies for Carpinteria Valley Water District, the column for normal year and the column for critical drought year. The column for normal year should be the same numbers as in Table 1 and the column for critical drought years should be the same as numbers from Table 2. And the same would be true for Table 3 through, I think it is, 7.

MR. WILKINSON: Three through 7, when added up produce or should produce Table 2-7?

MR. MACK: Correct. I may have made a mistake moving things around, not in the addition but moving numbers from one table to the other maybe I made a mistake somewhere.

MR. WILKINSON: There were I believe, please correct me if I am wrong, several other differences between the tables that were in your testimony and those which appeared in the Draft EIR of the State Board. For example with respect to ID 1 is there a difference there?

MR. MACK: I think all the -- with ID 1, yes, there is a difference. The State Board EIR had more

groundwater for ID 1. So that is a difference.

MR. WILKINSON: Can you explain why that difference exists in your testimony?

MR. MACK: I don't know exactly how the State Board number got there. But for us, as I said in my earlier remarks, this whole EIR process and coming up with testimony sparked a lot of discussion about local water supplies and what are the correct numbers. And we did a real examination of each of the water agencies, quite a bit of back and forth of what is the real groundwater number, what can you count on in a drought. And it is not just a summation of the pumping capabilities of the various wells. It is -- you have to take into consideration that it is a drought and different agencies are going to be in a different position. ID 1 in particular, they are constrained somewhat because of the fact that it is a drought and the riparian wells are not going to have as much supply and in the upland areas there are other pumpers that are going to be somewhat of a constrain on their ability to pump.

MR. WILKINSON: Do you recall approximately what the difference was for ID 1's groundwater supply in drought year circumstance in your testimony versus the State Board Draft EIR?

MR. MACK: I believe the State Board EIR it is

somewhere around 8,000 acre-feet, and my testimony is somewhere around 3,700 acre-feet.

MR. WILKINSON: Let me turn to the desal facility. Was that facility processed as an emergency project in early 1990s?

MR. MACK: In the early 1990s it was permitted and built under emergency environmental review and under local emergency. We then did a full environmental review and permitting as part of the city's long-term water supply program.

MR. WILKINSON: Is my understanding correct that the permits that were initially issued for the project back in the early 1990s have expired and you would have to go back and acquire new permits at this time?

MR. MACK: Those permits have expired and the permits that were acquired as part of the long-term water supply program, I believe some of them have expired. So the Regional Board -- I am working on memory here. But I believe they only would issue a permit for a five-year operation. It's been more than five years, so we would have to go to the Regional Board to get permission to use that facility.

MR. WILKINSON: I was going to ask you, what permits do you expect you would have to obtain in order to reactivate the facility?

MR. MACK: Two that I know or I believe. One is the Regional Board and then another is the Coastal Commission. I don't know what others. I am sure the Department of Health Services.

MR. WILKINSON: Thank you.

I think you indicated that it would cost approximately $10,000,000 to reactivate the facility. Could you describe for us what the components of that figure include?

MR. MACK: Well, that is a very soft number, I want to start with.

MR. WILKINSON: Could be higher, could be a little lower?

MR. MACK: Could be a littler higher; could be a little lower. We investigated. We looked at getting a firmer number this past year. It was -- we were told a firm would do it for us for $100,000. We didn't feel it was worth knowing it that much. But we know we have to replace -- we have to purchase membranes. That is a major cost component, probably the major cost component. We have to reopen the outlet works. Those are sealed up right now and reestablish the outlet -- no, the intake. We have to reestablish the intake and the intake structure. Those are the two major expenses that I can think of. We would have to redo the filters that filter

the seawater before it goes into the reverse osmosis, actual reverse osmosis units.

MR. WILKINSON: Does your $10,000,000 figure include the cost of acquiring the necessary permits?

MR. MACK: No.

MR. WILKINSON: And the one-year time estimate I think you said did not include the time necessary to acquire permits; is that correct?

MR. MACK: Correct.

MR. WILKINSON: Does the City have any existing staff on hand to operate the desal facility?

MR. MACK: No, it does not.

MR. WILKINSON: And does the City have a readily available power source to operate the facility?

MR. MACK: Well, we have the -- we believe we have the capability of powering up the facility. There is sufficient power close to the facility that was put in for the emergency. That is still there.

Mr. WILKINSON: Can you tell me how much water the facility has ever delivered?

MR. MACK: I believe the number is around 250 acre-feet.

MR. WILKINSON: Thank you very much.

That is all I have.

H.O. SILVA: Thank you.

Cross-exam, Santa Ynez?

MR. CONANT: No.

H.O. SILVA: Lompoc?

MR. MOONEY: No.

H.O. SILVA: Santa Barbara County?

MR. SELTZER: No.

H.O. SILVA: Fish and Game.

MR. BRANCH: No.

H.O. SILVA: And Cal Trout.

MS. KRAUS: No.

H.O. SILVA: Thank you. I guess we are done with Panel III. Why don't we take a ten-minute break. Back at five after. Be ready to be ready to go with -- see how far we can go with Panel IV.

(Break taken.)

MR. WILKINSON: Mr. Silva, this is Panel IV group. This group is going to talk about, first, the discussions that led to the Settlement Agreement and then a description of the provisions of the agreement and then a description of what we refer to as Exhibit C, which is that portion of the agreement that contains the so-called technical amendments that would involve 89-18. It is something that we felt the Board should know some details about. To begin with this group the first witness will be Mr. Charles Evans who testified previously.

DIRECT EXAMINATION OF PANEL IV
BY MR. WILKINSON AND MR. PALMER

MR. WILKINSON: Mr. Evans, I would like to ask you simply whether Exhibit 219 of the Member Units is a true and correct statement of your Panel IV testimony?

MR. EVANS: Yes, it is.

MR. WILKINSON: Is Exhibit 240 a true and correct copy of your Power Point presentation for Panel IV?

MR. EVANS: Yes.

MR. WILKINSON: Would you please summarize your testimony.

MR. EVANS: Mr. Silva, I am going to comment on the discussions leading to the Settlement Agreement. First of all, in 1993 the Cachuma Member Units entered into an agreement with the City of Lompoc to establish a process for negotiations to address Lompoc's concerns with Cachuma Project impacts.

Lompoc felt that the Cachuma Project and the way it was operated was impacting both the quantity and quality of water that got to the Lompoc groundwater basin for recharge. Lompoc claimed that the project degraded Lompoc's groundwater supplies by 40 milligrams per liter TDS and also caused increased treatment costs for the city.

Board Order 94-5 acknowledged that agreement and directed that there be reporting back to the Board regarding the agreement.

In 1996, a work plan manager process was initiated, and the goal/purpose of that process was to determine what impacts, if any -- there were any impacts and to abate those impacts of the Cachuma Project operations on the Lompoc groundwater basin.

In 1999, all parties concluded that that analysis could not answer the questions that were outstanding about Cachuma Project impacts. The studies considered were continued and consensus-based models were developed by Stetson Engineers and a technical advisory committee that met regularly with Stetson Engineers and which included all parties, and those models then used were included in the State Board Cachuma Project EIR.

Because there hadn't been enough progress, the CCRB and ID 1 invited the City of Lompoc and the parent Santa Ynez District to talk, to discuss a possible cooperative program of water quality improvement for the Lompoc groundwater basin. That was in January of 1999. An ad hoc committee was formed to carry out those discussions and that was made up of two elected officials from each of the four entities, CCRB, ID No. 1, the parent Santa Ynez District and the City of Lompoc and, of course, then

managers also of those four water interests on the Santa Ynez River.

During the negotiation process which took actually some three years, the Lompoc and the parent Santa Ynez District particularly wanted the modified winter storm operations to continue for flood purposes, for protection of life and property in the area below the dam and, of course, the City of Lompoc. And they also particularly wanted to schedule state water deliveries to allow the maximum commingling with Cachuma water rights releases so that the state water, with very much lower total dissolved solids, would commingle with Cachuma water releases and lower the TDS in the river, of water into the river downstream of Bradbury.

The water Member Units particularly wanted mutual support of all four water interests in the State Board hearings, and they also particularly wanted that claims in the lawsuits of the City of Lompoc against Cachuma Project operations that had been -- there had been numerous claims and lawsuits in the '90s, in the 1990s, against the Cachuma Project operations would end. All of those concerns were agreed to in the Settlement Agreement.

MR. WILKINSON: Mr. Evans, was one of those lawsuits brought against the State Board?

MR. EVANS: Yes, one was.

A historic Settlement Agreement was approved in December 2002 and January 2003. It was approved by all four of the water interests. It resolved actual and potential disputes regarding Reclamation obligations to release water protection of downstream water right holders. It meant that there was peace on the Santa Ynez River water right -- water rights peace for the first time ever; that is, with this historic Settlement Agreement. And we hope the State Board can help to continue that.

The Settlement Agreement determined that the downstream water rights holders were protected and that the State Board would not need to take any additional actions to protect the rights of the downstream water right holders. The Settle Agreement also found that if the State Board were to issue an order not consistent with WR 89-18 as modified by the Settlement Agreement the cooperative agreement may be ended.

All parties agree that the Settlement agreement provides protection for public trust resources through endorsement of the Biological Opinion and the Fish Management Plan and, of course, is noted that the Settlement Agreement is supported by Reclamation and the cities of Buellton and Solvang.

That completes my testimony.

MR. WILKINSON: Thank you, Mr. Evans.

Our next witness is Mr. William Mills.

Mr. Mills, I would like to ask you whether Cachuma Member Unit 220 is a true and correct copy of your testimony?

MR. MILLS: It is.

MR. WILKINSON: And whether Exhibit 241 is a true and correct copy of your Power Point presentation?

MR. MILLS: Yes, it is.

MR. WILKINSON: Would you please summarize your testimony?

MR. MILLS: Yes. Mr. Silva, my job here will be to present an overview of the Settlement Agreement. It is a two-part agreement. I will focus on the specifics of part one, and Ali Shahroody will focus on the specifics of part two.

The Settlement Agreement between Cachuma Member Units, the Santa Ynez River Water Conservation District and the City of Lompoc. Importantly here is the objective of that agreement is to resolve outstanding water rights and water quality issues including hearing notice issues No. 4 and No. 5.

As I indicated, the Settlement Agreement is presented in two parts. Part one is an overview of the agreement provisions and in that area there are two areas that I will briefly describe that require two changes in

the Board order and other provisions that do not require any changes in the Board order.

Part two, as I mentioned, describe those needed order changes which include two items, the calculation of the B and A or what we describe as the Below Narrows Account credits and Exhibit C. Part one here is an overview of the agreement is summarized here. These are the critical components of that.

First of all, is the support of 89-18. Secondly, conjunctive operations with fish releases, delivery of state water during releases, review of conjunctive operations after a specified operating experience, a modified storm -- with the storm operations and withdrawal of claims by the City of Lompoc, and, finally, the protection of public trust resources.

Now for each one of those. Paragraph 1.1, which is in support of 89-18. Here all parties agree that the order, as modified, will protect downstream water rights and not adversely effect downstream water quality. It's a very important issue. The City of Lompoc's concerns over water quality are satisfied by the concurrent state water releases with those of downstream water right releases, and those will be discussed further under Paragraph 1.5.

Paragraph 1.2 describes the conjunctive operations with fish releases. This is actually -- there is also an

Exhibit 220B associated with this, but this is what is involved here. It requires that future downstream releases will be made in a manner similar to those that took place historically. It requires that water rights releases average 65 days per year over a ten-year period, and a ten-year period is a ten-year moving average period.

What this does is that it ensures that the water rights releases will help meet the target flows of the Biological Opinion. The conjunctive release operation, of course, helps minimize fish release impacts on the Cachuma yield. And this is an item that does not require Board action.

MR. WILKINSON: Let me ask if we can keep that one slide up there. The provision about water rights releases averaging 65 days per year, was that included in the agreement to provide the South Coast entities some assurance that the in-basin users of water, project water, would also be contributing to the fish flows?

MR. MILLS: Exactly, that was the purpose of that.

MR. WILKINSON: Thank you.

MR. MILLS: Paragraph 1.3, which is the conjunctive operation with the Below Narrows Account and Paragraph 1.4, technical amendments to 89-18, both of those I think will be presented by Mr. Shahroody. And

both of those require Board actions.

Paragraph 1.5, our deliveries during downstream water rights release. This is a key issue for the City of Lompoc as discussed by Mr. Evans. State Water Project water is now delivered into the outlet works of Bradbury Dam. I have Exhibit 220C, my next exhibit. And what shows is the green is a pipeline actually coming in from the intake tower of Lake Cachuma, delivering Cachuma water to the dashed area on the right-hand side of the slide. The dashed area is, in fact, the outlet works.

The red arrow is a pipeline that brings water from the State Water Project into the outlet works area. There are basically three valves which are shown or three pipelines shown in blue in the outlet area here which discharge water. But it is the central one here which is a smaller valve system over here, wherein the commingling of the Cachuma water coming from the green pipe and state water coming from the red pipe would be commingled and discharged into the river.

Going on with Paragraph 1.5, the second bullet there indicates that the State Water Project deliveries are deemed made concurrently with downstream water releases. That commingling would result in improved quality of the released water. And my following exhibit shows Exhibit 220D. This graphic shows on the left-hand side the total

dissolved content of the released waters being discharged from Cachuma Dam. And on the bottom it shows the frequency of occurrence. The line at the top, the blue line, indicates what the quality of releases would be without any addition of state water or any mixing or commingling of state water with those releases, while the green or lower line shows what they would be based on commingling with state water. As you can see, there is approximately for most of the time about a hundred milligrams per liter improvement in water quality.

My third point on this chart indicates that the Biological Opinion does limit state water additions to the releases that are no more than 50 percent of the total released, but that is only during periods when fish are being reared downstream. You can actually do more at other times.

MR. WILKINSON: And the reason for that limitation, Mr. Mills, as you understand it, is to avoid imprinting the fish with State Water Project water?

MR. MILLS: That is exactly the reason for that.

The objective, of course, is also the schedule here. The objective of this paragraph is to schedule State Water Project deliveries as much as possible to coincide with downstream water rights releases. And as indicated here,

no Board action is required on this one.

Paragraph 1.6 speaks of a subsequent review process of the conjunctive operations. Here the parties agree to review and evaluate the conjunctive operations after a ten-year period of experience. Now they indicate that the revision can, of course, be done by all mutual consent or, if a disagreement, that the objectives of the agreement are not being met then they would plan on returning to State Board for further action there.

Other provisions of the Settlement Agreement include Paragraph 2, which is the modified winter storm operations, and those were very well as described by Mr. Buelna this morning. All parties here agree to adopt and support the operational procedures.

Paragraph 3. Lompoc withdraws its claims here. The City of Lompoc withdraws its protest of the change in place and purpose of use and other claims that Mr. Evans described those very well a moment ago.

Paragraph 4 is the protection of public trust resources. Those are to be consistent with the Fish Management Plan, and those will be presented later by Ms. Jean Baldridge.

That concludes my testimony.

MR. WILKINSON: Thank you, Mr. Mills.

Mr. Shahroody, I believe that your SOQ has already

been discussed and you are sharing the same testimony with Mr. Mills so would you please summarize your portion of that testimony?

MR. SHAHROODY: I will do that. What I am going to cover briefly are the components or elements involved in terms of the modification of the order WR 89-18. The settlement actually requires, as Mr. Mills said, their elements. They are not required for approval of the Board, but the settlement requires two provisions to have to be approved by the Board.

One is related to what is referred to as percolation curves which are used for the purpose of determining the Below Narrows Account. There are two percolation curves. All along the percolation Curve A, which is the upper curve, has been used and Board order WR 89-18 states that until additional data is collected the parties could agree as to when the lower percolation curve, meaning that percolation B could be used for the calculation of the Narrows account.

As a part of the Settlement Agreement on this matter, we have referred to that as the conjunctive operation of the Below Narrows Account. That is one modification that is required in the order. The second type of modifications are basically technical. Those are due to change conditions and also related to additional

gauges that have been established since 1989, WR 89-18. I'll go ahead and describe briefly those two types of changes.

First, the conjunctive operation of Below Narrows Account as I referred to, the order WR 89-18 in Paragraph 2.2.1 of Condition 5 that actually provides that Bureau of Reclamation collect data for five years. Of course, that was extended by another five years to ten years of data, including stream measurements and also water, groundwater level measurement in order to determine with the parties agreement, a switch, if you want to call it, or trigger or triggers as to when the lower curve could be used as opposed to the upper curve. That percolation curve is demonstrated in Attachment E to the U.S. Bureau Exhibit 1 of December 1989. That is shown as Attachment E on the top, and, of course, we refer to it as an Exhibit 220E.

Basically, as I referred to, curve A is the upper curve and curve B being lower curve, that the X axis on the bottom is the monthly flow of Santa Ynez River at Narrows. The Y axis is described on the right-hand side, and, of course, the magnitudes are cfs -- I'm sorry, acre-feet. They are on the left-hand side. Those are the monthly percolation of Santa Ynez River.

So as you notice that, of course, the curve to some extent is linear. After that it becomes nonlinear. It

means the fact that more water goes down there at the Narrows to the Lompoc basin, that doesn't mean that the same amount of water would percolate. They are nonlinear. This curve is designated to be used as a basis to determine the impairment of the percolation in Lompoc groundwater basin caused by the Cachuma project. As I indicated earlier, upper curve has been used all along. But then, of course, there is a provision in the order that says that the parties collect data and agree on the switch and come back to the Board and then submit their agreement for the approval.

The data, of course, as I mentioned collected for a period of ten years and was analyzed, and the parties sat down and tried to negotiate that to determine what triggers or trigger would be for the switch from the upper to the lower curve. This was this agreement for a number of years. But finally as a part of the Settlement Agreement we have an agreement, and that is what is referred to as BNA conjunctive use operation, and a switch has been agreed upon. And basically the trigger now is cumulative flow at the Santa Ynez River starting from October 1 until 50,000 acre-feet is measured cumulatively at the USGS gauge at the Narrows. After that, prior to that, the upper curve would be used and after that, although the upper curve would continue to be used for the

calculation of the Below Narrows Account, but the lower curve would also be used to make a determination as to the difference in the amount of credits between the upper curve and the lower curve. That credit amount, of course, then split in half; half then is set aside, what has been referred to as drought water credit on the South Coast entities, and that would be used when the Cachuma Reservoir goes below a hundred thousand acre-feet, that is the time Member Units take shortages. Of course, if there is credit in the Below Narrows Account, storage in Cachuma Reservoir, then the accumulated drought water credit, which would not exceed any more than 3,200 acre-feet would be tapped into.

That is basically the principle of that agreement. What we refer to as conjunctive use operation of Below Narrows Account.

Specific changes for this determination and agreement basically are spelled out in the Bureau of Reclamation's Exhibit DOI-10, and those are basically in a red line that means going over WR 89-18 and spelling out or specifically showing it in red line at location where the changes would be made to accommodate this conjunctive use operation of the Below Narrows Account.

The second type of change, as I mentioned, arise from the change condition in the Santa Ynez River. One of

the changed conditions, in fact that would be the primary changed condition, is related to releases for the purpose of fish from the Cachuma Reservoir. Under the provision of Paragraph 1.4 of the Condition 5, there are livestream stations that have to be observed daily by the Bureau of Reclamation in order to make a determination whether there would be a credit in Above Narrows Account or there would not be a credit in the Above Narrows Account that day. And those livestream stations start all the way from below the dam and extends all the way to the eastern part, eastern and somewhat north of the Lompoc plain which is referred to as Floradale Bridge.

So we start all the way from the San Lucas Bridge below the dam. There are stations in between; the last one is Floradale Bridge.

MR. WILKINSON: Mr. Shahroody, just to interrupt, the purpose of the measuring points is to ensure that the ANA earns credits only when there is not a livestream condition; is that correct?

MR. SHAHROODY: That is where I was going to go.

In days where we have inflow for the Cachuma Reservoir and there is continuous flow observed livestream in those stations and the notion is continuous flow, of course, to the ocean. In those days there would not be

any credit to the Above Narrows Account. That means downstream water requirements already are satisfied; there is a continuous flow. In those days inflows coming into the Cachuma Reservoir would be impounded, would go into the project water supplies. In days that one of the livestream stations do not show a livestream, that means before we don't have a continuous flow and the water to downstream is not satisfied.

In those days the inflow coming into Cachuma then would go into an Above Narrows Account. Of course, that has its own limitations; you cannot just build up the account. The account will be accumulated on a daily basis. But at the end of the month it is checked against the space in the groundwater in the alluvial basin. It cannot exceed that space. So if you have accumulated an account of 6,000 acre-feet, let's say, in that month for a total account of 6,000 acre-feet by the end of that month, and then Bureau of Reclamation have as part of the order 25, what we call it, observation nodes that the groundwater basin is divided into small nodes that have indicator wells, they make measurements and make a determination of the space available, what has occurred for the water to storage. And as I said, if the total account is 6,000 acre-feet, but Bureau of Reclamation determines that the water storage is only 4,000, the

account collapses down to 4,000 acre-feet. It cannot exceed what is available in the water storage. Of course, account is subject to losses too, due to spill and groundwater recovery.

But at any rate, that is the basic principal in terms of the observation of livestream. I sort of detracted.

The observation of livestream is critical to the extent, of course, we had water being released, the livestream observation was not possible on the Santa Ynez River itself to be made primarily at the San Lucas gate, which is the first gate below the dam. To the extent, of course, the Board order also states that, any releases that are made, that is not considered to be considered livestream of -- that is not considered to be the flow of the Santa Ynez River consistent with that. Then a decision had to be made, even going to 1993, because that is when the official releases started.

In order to accomplish observation of the livestream of Santa Ynez River, the Bureau of Reclamation then made observation on the San Lucas Creek, which is the most immediate, largest tributary above San Lucas Bridge or 154 Bridge. So that is really the tributary which produces the natural flow in the Santa Ynez River to have an observation of the livestream at the San Lucas Bridge.

So since 1993, the observation point actually got shifted to San Lucas Creek instead of San Lucas Bridge. So, therefore, what they are asking here, the Board approve this practice that has been in place since 1993.

The second one, of course, would be happening in the same nature, of course, would be happening under the long-term flow. Of course, the flows are going to be somewhat more specifically in the spill year and year after spill where you have to release more water and, of course, there should be water all the way to Alisal Bridge. Under those circumstances, the flow, especially in spill years, after the spill stops, when the releases are made, the official releases could find its way all the way down to the Narrows to some extent. Narrows gauge is used to calculate existence of a livestream at Floradale Bridge, which is the last livestream station. In fact, this was a matter presented to the Board back in 1989. It is a similar problem that which I expressed in respect to the San Lucas Bridge, because the flows are causing -- fish flows are causing problems to make natural observation.

Floradale, which is the last observation point -- Lompoc, in fact, discharges its effluent immediately upstream of Floradale. So it is difficult to make a livestream observation there. So as sort of a proxy, if

you want to call it, or a substitute means of determination of the livestream at Floradale was devised, was incorporated back in 1989 in the order itself, which then used the flows at Narrows to indicate whether it would have a livestream at Floradale or not. It is a multiple regression table for simple parameter, I would say. For instance, under certain circumstances when the flows at the Narrows gauge is less than 15 cfs, it's indicated to be no livestream at the Floradale gauge. The reason for that, of course, 15 cfs would disappear by the time it would get to Floradale. It is more complicated than that. There is cumulative flow account factor.

But any rate, Narrows being a station of livestream determination for Floradale, then the adjustment that we ask here is that to the extent we have a livestream to the Narrows and the flows, fish flows, are reaching there, there ought to be an amendment or adjustment made. That is reflected Attachment H submitted by Bureau of Reclamation as a part of DOI-10.

MR. WILKINSON: Let's see if I can summarize that. Are we saying, Mr. Shahroody -- probably I will mess it up -- that because of the existence of the fish flows which, in fact, result in flow in the river, that in order to correctly determine credits for the Above Narrows Account and Below Narrows account, there needs to be some

adjustment made in the measuring stations; is that correct?

MR. SHAHROODY: In the livestream observations stations.

MR. WILKINSON: In the livestream observations. And one of those changes is at San Lucas Bridge, to move it to San Lucas Creek?

MR. SHAHROODY: Correct.

MR. WILKINSON: The other is to make a change at Floradale -- I'm sorry, at the Narrows that would account for the fish release flows being released?

MR. SHAHROODY: Under the long-term deal, yes.

MR. WILKINSON: Thank you.

MR. SHAHROODY: And thank you.

The last changes are indicated. They are basically related to additional gauging stations put in place since 1989. And they are, which are not in WR 89-18, is the water quality measurement at the Narrows. The water quality and water quality measurement at Alisal Bridge and also gauging the CCWA delivery, and the State Project delivery for the Cachuma Reservoir has to be measured.

In summary, the changes are, one, related to Below Narrows Account calculation as to the lower curve would be used in place of upper curve. That is calculation of the percolations. The second one would be related to San

Lucas Bridge versus San Lucas Creek and some adjustment to flow at the Narrows. The third is recognition of the new gauges for water quality and water quantity in the Santa Ynez River.

That ends my testimony.

MR. PALMER: The next witness is Ms. Struebing, and she is still speaking from her testimony which was DOI-7.

And please summarize your testimony regarding the particular changes that are being requested to be made in the water right permits for the Cachuma Project as a result of the Settlement Agreement. If you wish, I have some extra copies of the red line strikeout. I can hand it to you if you would like to see it. I don't know that you need that. I do have extra copies of the complete package of DOI-10 if there was any need to look at that. What I have handed is just the red line strikeout changes that Ms. Struebing is going to discuss.

MS. STRUEBING: Right. The purpose of my testimony, my offer, for this panel is to just explain my part in drafting these proposed amendments to Reclamation's permits which is identified as Reclamation DOI-10. This was incorporated by reference to Board staff Exhibit 12.

I basically took Exhibit C of the Settlement

Agreement and compared it with Water Right Order 89-18. I took the precise language under each of the three technical amendments that were being proposed and incorporated them, this language, into the appropriate paragraph within Order 89-18. I created the red line strikeout version you have, so that all the parties could review. And once all parties were assured that we did have -- we accurately reflected the modifications as proposed in the Settlement Agreement, that I also created a clean version for convenience of the Board staff if, in fact, the Board does determine that the proposed amendments are necessary for the protection of downstream water rights.

So as you see, Reclamation Exhibit DOI-10 does actually include the letter from the Bureau dated March 21st, 2003, and two enclosures. One enclosure being the red line strikeout with the clean version, two separate documents as enclosure one. And then also enclosure two, with this letter is a copy of revised USBR Exhibit 1 dated February 1st, 2003. And this document was developed by taking original USBR Exhibit 1 from 1988 and which is referred to in Order 89-18. So we took that exhibit and incorporated the necessary changes to be consistent with the proposed modifications to Reclamation's permits.

In closing, I would just point out that as Mr. Mills

had mentioned in his presentation that the Settlement Agreement does resolve Key Issues 4, 5 and also 7A. And secondly in response to Key Issue No. 6, Reclamation is requesting that the Board incorporate the proposed modifications to Reclamation's Permits 11308 and 11310 in order to provide measures for protection of downstream water rights on the Santa Ynez River below Bradbury Dam.

That concludes my summary.

MR. WILKINSON: Mr. Silva, we've got several other folks that we could have come up if you wish and then complete the direct on Panel IV, if you would like to do that, or we can start tomorrow morning with that. Also, Mr. Conant would like to make an opening statement on behalf of parent district before those folks testify.

H.O. SILVA: Why don't we call it a day if you don't mind. We will start -- I think it is a good spot to stop.

MR. WILKINSON: That is fine with us.

H.O. SILVA: Let's stop right now and we will start bright and early at nine tomorrow to continue the rest of your panel.

Thank you, everybody.

MR. WILKINSON: Thank you.

H.O. SILVA: Hope you enjoyed the recess.

(Hearing adjourned at 4:45 p.m.)

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 printed format, and the pages numbered 9 through 220 herein constitute a complete, true and correct record of the proceedings.

IN WITNESS WHEREOF, I have subscribed this certificate at Sacramento, California, on this 1st day of November, 2003.

_____
ESTHER F. SCHWARTZ
CSR NO. 1564