SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF SAN BERNARDINO

DEPARTMENT NO. S-32 HON. JOHN P. WADE, JUDGE

CHINO BASIN MUNICIPAL WATER DISTRICT, et al.,	)	
Plaintiff,	)	
vs.	)	NO. RCVRS 51010
CITY OF CHINO, et al.,	)	
Defendants.	)	

REPORTER'S TRANSCRIPT OF ORAL PROCEEDINGS

February 2, 2009

APPEARANCES:

(See next page)

REPORTED BY: BETTY J. KELLEY, C.S.R.
Official Reporter, C-3981

APPEARANCES:

FOR THE WATERMASTER:	BROWNSTEIN, HYATT, FARBER & SCHRECK BY: SCOTT S. SLATER BY: MICHAEL FIFE
FOR CITY OF CHINO:	JAMES E. ERICKSON Of Counsel to City Attorney
FOR CITY OF CHINO HILLS:	JENKINS & HOGIN BY: JOHN C. COTTI
FOR CITY OF POMONA:	LAGERLOF, SENECAL, GOSNEY & KRUSE BY: THOMAS S. BUNN III
FOR AGRICULTURAL POOL OF THE CHINO BASIN:	REID & HELLYER BY: STEVEN G. LEE
FOR MONTE VISTA WATER DISTRICT:	MC CORMICK, KIDMAN & BEHRENS BY: ARTHUR G. KIDMAN BY: TRAM T. TRAN
FOR CUCAMONGA VALLEY WATER DISTRICT:	BEST, BEST, & KRIEGER BY: JILL N. WILLIS
FOR THREE VALLEYS MUNICIPAL WATER DISTRCIT:	BRUNICK, MC ELHANEY & BECKETT BY: STEVEN M. KENNEDY
FOR CHINO BASIN WATER CONSERVATION DISTRICT:	BRUNICK, MC ELHANEY & BECKETT BY: STEVEN K. BECKETT
FOR CITY OF ONTARIO:	NOSSAMAN LLP BY: FREDERIC A. FUDACZ
FOR CITY OF UPLAND AND WEST END CONSOLIDATED WATER COMPANY:	RICHARDS, WATSON, GERSHON BY: STEVEN R. ORR
FOR INLAND EMPIRE UTILITIES DISTRICT:	CIHIGOYENETCHE, GROSSBERG & CLOUSE BY: JEAN CIHIGOYENETCHE
FOR WESTERN MUNICIPAL WATER DISTRICT:	JOHN J. SCHATZ Attorney at Law
REPORTED BY:	BETTY KELLEY, C.S.R. Official Reporter, C-3981

I N D E X

INDEX OF WITNESSES

SAN BERNARDINO, CALIFORNIA, MONDAY FEBRUARY 2, 2009

9:30 a.m.

DEPARTMENT NO. S-8 HON. JOHN P. WADE, JUDGE

(Betty J. Kelley, C.S.R., Official Reporter, C-3981.)

THE COURT: Chino Basin Municipal Water District versus City of Chino. Appearances, please.

MR. SLATER: Yes, your Honor. Scott Slater, S-l-a-t-e-r, on behalf of Watermaster.

MR. FIFE: Michael Fife, F-i-f-e, on behalf of Watermaster.

MR. KIDMAN: Arthur Kidman on behalf of Monte Vista Water District.

MR. KENNEDY: Steve Kennedy on behalf of Three Valleys Municipal Water District.

MR. COTTI: John Cotti on behalf of Chino Hills.

MR. BECKETT: Steven Beckett for Chino Basin Water Conservation District.

MR. LEE: Steven Lee on behalf of the Agricultural Pool.

MR. FUDACZ: Fred Fudacz, F-u-d-a-c-z, on behalf of Ontario.

MR. ERICKSON: Jim Erickson on behalf of the City of Chino.

MR. CIHIGOYENETCHE: Jean Cihigoyenetche on behalf of Inland Empire Utilities Agency.

MS. TRAN: Tram Tran on behalf of Monte Vista Water District.

MS. WILLIS: Jill Willis on behalf of Cucamonga Valley Water District.

MR. ORR: Steven Orr on behalf of the City of Upland.

MR. SCHATZ: John Schatz on behalf of Western Municipal Water District.

MR. BUNN: Thomas Bunn on behalf of the City of Pomona.

THE COURT: All right, counsel. Just one word of future advisement. When you address the Court, make sure you give me your last name so that the court reporter will be able to accurately reflect who is talking to the Court.

This hearing is an information-gathering hearing for the purpose of all of us. So whether you participate or ask questions or whatever, we'll need for you to identify yourself as the hearing goes on, except for Mr. Slater and Mr. Fife, who we know who they are.

Did you gentlemen wish to identify yourself?

MR. PARK: Patrick Park, Chino Basin Watermaster.

MR. CHIANG: Wen-Hsing Chiang.

MR. SLATER: Your Honor, for the convenience of the Court and counsel, we have a request if they might inhabit the jury box during the hearing.

THE COURT: That's certainly a good idea. If we

can accommodate them, that's a good idea.

If any counsel wants to sit in the jury box, that's fine, you can do that. It might make it easier, sir.

All right. The first order of business is we have a motion for approval of the intervention of Agua Capital Management to the overlying or non-agricultural pool. Apparently, there's no opposition. Does anyone have opposition to that?

All right. That's approved.

All right. It's Mr. Fife, isn't it, sir?

MR. FIFE: Yes, your Honor.

THE COURT: Mr. Fife, are you prepared to go forward?

MR. FIFE: Your Honor, Mr. Slater will open for us. Thank you.

THE COURT: Mr. Slater, do you want to call a witness?

MR. SLATER: Your Honor, if I may take a couple of moments, we did transmit to your Honor a proposed outline as we promised to do at the November 13 hearing. That outline provides a summary of the witnesses and the areas of testimony that we expect to go forward with today.

If it would please the Court, Watermaster counsel would like to take up to 15 minutes, and no more, to provide a contextual outline of what the witnesses are going to say and how it relates to the responsibilities under the

judgment.

THE COURT: Okay, sir.

MR. SLATER: So with that, your Honor, on November 13th, when we met, the Court identified three general areas that were of primary interest to the Court. They included the physical solution. They included the recharge component and the progress towards implementing the OBMP, which is the Optimum Basin Management Program, and then lastly, as related to Watermaster's performance obligations, the subject of governance.

My job here today is to try to provide a high level structural overview of the Watermaster responses to those issues consistent with the stipulation and in the context, again, of that outline.

In addition, what I want to do is focus on the root obligations that gave rise to the Watermaster performance obligations under the judgment, the Peace Agreement and the Peace II Agreement that are the subject matter of the hearing today.

If I can indulge the Court for a second, the judgment itself is the starting place for all of our discussions. The judgment governs the ground water basin, which is within a water shed of roughly 235 square miles. It is the primary water supply to about 1.2 million people, and if the supply were monetized, it would have a value of several billions of dollars.

There are hundreds of parties that are bound by the judgment, several dozen of which remain active today. And what is of particular interest to Watermaster and the parties in the court is the fact that this judgment is a hybrid. The judgment was entered in 1978 as a judgment by stipulation.

But what is interesting about this judgment, your Honor, is that it also contained an element where it seated jurisdiction to the Court to monitor the ongoing activities of Watermaster and the parties in complying with the judgment.

The Court, in its focusing on the question of the progress of the physical solution, raises the question of what do we mean by the physical solution? The California Supreme Court, in the Barstow versus Mojave case, tells us that essentially, physical solution is a pragmatic or a practical method of maximizing the reasonable and beneficial use of water within the basin while not causing harm to prior and paramount rights.

The judgment, however, while grabbing ahold of that traditional notion, introduces two -- introduces another notion as related to that traditional notion of a physical solution.

The traditional notion of physical solution as applied in ground water basins in Southern California customarily is that each of the parties is entitled to

produce ground water consistent with what their right may be to, in fact, overproduce and then to place a burden on the Watermaster to go out, procure replacement water supplies and bring it into the basin to keep the basin whole.

But the second component is this interest in flexibility. And the Court will find this in paragraphs 41 and 42 of the judgment in which the physical solution is described. Thereafter, paying deference to the historical notions of replenishment, the judgment recites an obligation to maintain flexibility, and in that vein, the judgment vests the Watermaster with the responsibility to develop an Optimum Basin Management Program.

So if we fast forward to the time that the judgment was implemented, or I guess go back in time to '78, the preconditions in the basin were that there was a downward decline in ground water levels. The judgment is imposed and essentially halts that decline.

But between 1978 and the mid to late nineties, there was no formal adoption of an Optimum Basin Management Program. The Watermaster functioned, again as traditional Watermasters did, essentially allowing the parties to produce water and then procure replenishment water from whatever source available, typically the Inland Empire Utility Agency.

But in the mid to late nineties, it was observed that conditions in the basin were changing. Modeling techniques

were becoming more improved. There were changes in land use, urbanization. There was water quality degradation and supply patterns had effectively shifted. These reasons, among others, went to a process that was initiated to start an OBMP.

The testimony will reflect that effectively, four basic goals were adopted under the original OBMP, and that was to enhance water supply reliability, to protect and enhance water quality, to enhance ground water management efforts, and lastly, to come up with a financing vehicle to do all these things because all these goals are lofty, if we can't figure out who is going to pay for them, they won't happen.

So with those four goals in mind, the parties, under the leadership of the Watermaster, began a process to negotiate the structural agreements to allow an Optimum Basin Management Plan to move forward. That agreement takes the form of the Peace Agreement approved by the Court and executed by the parties in 2000.

Attached to that agreement is an Optimum Basin Management Program Implementation Plan. It had nine elements. Each of those elements will be presented to the Court today, and through witnesses, we'll provide a snapshot in time as to where we are in the progress of each of the elements.

Once the plan was adopted, parties began making

significant investments, moving forward. The Court will note and hear today that serious investments were made, for example, in the desalting facilities in the central-southern end of the basin.

As we move forward, the modeling continued to improve and conditions continued to change. It became apparent to Watermaster that there was an opportunity to adopt and pursue a new management strategy, which was in fact a refinement of earlier elements of the OBMP.

This effort was generally paraphrased as hydraulic control, which, in practical terms, means it was an effort by the parties to halt the discharge of ground water from the Chino Basin into the Santa Ana River and thereby allow the basin to be managed more holistically and to enhance the prospect of using recycled water.

In order to accomplish this result, once again, agreements needed to be reached among the parties. This again gave rise to the Peace II documentation and an amendment to the OBMP.

So the original nine program elements were amended to account for the implementation of this basin management strategy known as hydraulic control. That was the subject of the Court hearing in November, and ultimately, the Court's approval of the Hydraulic Control Peace II measures in December of 2007.

The Court granted Watermaster and the parties their

approval in December subject to certain limitations. And Watermaster prevailed on the Court to approve the hydraulic control plan and the related measures on condition that it continued to make progress with its recharge element.

Because there was a fear among the stakeholders and the Court that if progress was not made on the recharge element, that the effort to pursue hydraulic control would leave Watermaster with a deeper, bigger hole and a thirst which could not be satisfied through water supply replenishment if it didn't take proper measures to be ready for the day when that occurred.

So over the past 12 months, Watermaster has been engaged in an ongoing process to develop a Recharge Master Plan, to include input from the parties, and it has embarked on that process and you'll hear testimony today which describes where Watermaster is in and the prognosis for the future.

We're going to turn to my partner, Michael Fife, to walk each of the witnesses through their testimony and demonstrative exhibits.

But before I do that, your Honor, we're lucky today, I believe, to have nine members of the Watermaster Board. I would like to take the opportunity to identify them to you, your Honor, and then make them available if your Honor has any questions of them individually. Most of them will be here through the day, but they did want to be here and let

your Honor know that they understand they serve at your pleasure, and they take their jobs very seriously.

I'd like to start with Chairman of the Board Ken Willis.

Ken, will you stand.

Ken is elected from the City of Upland.

MR. WILLIS: It's my third term on the City of Upland, your Honor. Prior to that, I've also served on the Santa Ana Regional Water Quality Control Board for a period of years, and in addition, served in the California State Water Resources Control Board in Sacramento, which is the board that handles all water right issues in the State of California.

In addition to that, I served on the San Antonio Water Company Board of Directors, as well as the Westend Consolidated Board of Directors, and I also serve on the Advisory Committee to the Inland Empire Utilities Agency.

I enjoy working with water issues, your Honor, and it's a privilege to be able to represent the people we were elected to do so for.

THE COURT: Nice to meet you, sir.

MR. WILLIS: Thank you, sir.

MR. SLATER: We also have Vice-Chair Robert Kuhn from the Three Valleys Municipal Water District.

MR. KUHN: Good morning, your Honor. My name is Bob Kuhn. I was elected to Three Valleys Municipal Water

District and was appointed to serve on the Chino Basin Watermaster about five years ago. I think I'm going into my fifth year.

Before that, before I was -- the last 12 years I've been on the Three Valleys Municipal Water District. Before that, I was involved with city government as an elected city councilman and mayor of Glendora. I found water very interesting. And when I gave that up for two years, I do have an insurance agency in the day that I do as a real daytime job. This is really part-time, but I find it very interesting. I found water interesting and that's how I got elected to Three Valleys to represent the City of Glendora and San Dimas.

THE COURT: Good morning, sir.

MR. SLATER: Next, James Curatolo, from -- representing the Appropriator Pool and Cucamonga Valley Water District.

MR. CURATOLO: Good morning, your Honor. I have served as an elected official on the Cucamonga Valley Water District Board of Directors for almost 10 years, and I was appointed to the Board of Watermaster about a year ago and I'm also a firefighter. That explains my tardy response here today. I just got off duty this morning -- sorry -- but this is very important to us for the whole region. It's an honor to serve on Watermaster, and I'm certainly looking forward to working with you as well as the other members of

the -- the other member agencies as we move forward.

Good morning.

THE COURT: Good morning, sir.

MR. SLATER: Paul Hoffer from the Agricultural Pool.

MR. HOFFER: If you'll excuse me, your Honor, I'll stand here so I don't have to go past everybody.

Paul Hoffer. I represent agricultural and have since the board's new inception. I represent the Agricultural Pool on the Board of Directors.

Just as another point, your Honor, I'm immediate past president for the Chino Basin Water Conservation District, where I also still serve as a board member there.

THE COURT: Good morning, sir.

MR. SLATER: Mike Whitehead, the President of San Gabriel Water Company.

MR. WHITEHEAD: Yes, your Honor, Michael Whitehead. This is my second opportunity to serve on the Watermaster --

THE COURT: Sir, could I get you to move outside the pole so the Court reporter can see you. Sometimes it's easier for her to take you down if she can see you.

MR. WHITEHEAD: Yes. This is actually the second term that I've had the opportunity to serve on the Chino Basin Watermaster. My day job is as President of San Gabriel Valley Water Company and Fontana Water Company here

in San Bernardino County.

I also have served on the Main San Gabriel Basin Watermaster for a number of years, and I presently serve as a director of the San Gabriel Basin Water Quality Authority of the San Gabriel Valley.

In addition to that, I'm an officer and director of Fontana Union Mutual Water Company. It has its own extensive rights in the Chino Water Basin and wells there.

Good morning.

THE COURT: Good morning, sir.

MR. SLATER: Geoffrey VandenHeuvel on behalf of the Ag Pool.

MR. VANDEN HEUEL: Good morning, your Honor. Geoffrey VandenHeuvel, and I'm a dairy farmer in Chino. I've been on the Watermaster Board since the inception of this new nine-member board. I serve as a director on the Chino Basin Water Conservation Board, also.

THE COURT: Good morning, sir.

MR. SLATER: Judge Charles Fields from the Western Municipal Water District.

MR. FIELDS: Good morning, your Honor. My name is Charlie Fields. I spent 27 years as an attorney with the firm of Best, Best & Krieger in Riverside, and I sat on the bench in Riverside for almost 15 years. And since my retirement from that, I got elected to the Western Municipal Water District Board. I've been on that board for two

years.

When I was with Best, Best & Krieger, I was not a water attorney; however, the senior partner, Jim Krieger used to draft a bunch of us to serve on water cases, and I was introduced and constantly impinged upon for that service. So I have had a moderate amount of water experience.

THE COURT: Good morning, Judge.

MR. FIELDS: Good morning.

MR. SLATER: Michael Camacho on behalf of the Inland Empire Utilities Agency.

MR. CAMACHO: Good morning, your Honor. I'm recently elected as of this last November to represent Inland Empire Utilities Agency, Division Five. I have also recently been appointed to the Chino Basin Watermaster Board as well.

My day job, I've been doing design and engineering oversight program projects, construction management for large infrastructure projects and school bond programs, and I'm looking forward to getting involved in the water issues and working with the Court.

THE COURT: Good morning, sir.

MR. CAMACHO: Good morning.

MR. SLATER: And last, Robert Bowcock on behalf of the Non-Ag Overlying Pool.

MR. BOWCOCK: Good morning, your Honor. My name

is Bob Bowcock. I represent the Non-Ag Overlying Pool, which is predominately the industrial producers of water in the Chino Basin. I come from a public works background and am now a private water resources consultant. I have been serving at the pleasure of the Los Angeles Superior Court as a Main San Gabriel Watermaster for 20 years and have been active on the Chino Basin Watermaster starting my sixth year.

THE COURT: Good morning, sir.

MR. SLATER: Your Honor, we wanted to take the opportunity to introduce them because, again, they do serve at your pleasure and they assume really three roles within the Watermaster function:

There is the responsibility for quasi-legislative matters, executing agreements, drafting resolutions and implementing policies.

There's a quasi-adjudicative responsibility in which they make findings about harm on other parties or to the basin.

And lastly, there's an administration responsibility that they have oversight control over, which is carried out through staff.

So with that, I think I'm happy to answer any questions your Honor may have. Other than that, we'll turn it over to Michael to run through the specific witnesses.

MR. KIDMAN: Excuse me, your Honor. Art Kidman.

I'm wondering if we could have Mr. Slater briefly review the procedural stipulations that the parties agreed to in order to make this hearing work a little more informatively for you and avoid contention.

THE COURT: Do you want to go ahead and do that? It's fine with me.

MR. SLATER: Yes, your Honor. And I apologize to counsel if that was what was expected.

The parties, again, in the transmittal of January 26, included a series of procedural stipulations which were thought to be very important. They were intended to avoid surprise testimony, recognizing there wasn't an opportunity for depositions, and we agreed to those procedural guidelines that are contained at the back of the transmittal.

There are -- In sum, there are nine total. They speak for themselves, and so I dare not paraphrase. I think that the primary focus is that what Watermaster is intending to do today is not present the position of any specific party.

We are presenting the people most knowledgeable about the performance obligations under the OBMP. We are offering them. It is Watermaster's view that they provide a representative synopsis of the status. No party is supporting or subscribing to the evidence that Watermaster is offering.

Is that sufficient?

MR. KIDMAN: Thank you.

MR. SLATER: Thank you, your Honor.

THE COURT: Okay.

I say this to all of you and this is off the cuff. I don't have any prepared remarks concerning this. I just want to say that I don't have any agenda here. My job, as I see it and always have seen it, is the resolution of disputes in a lawful manner. And I don't -- If I don't have a dispute in front of me to resolve -- and I don't at this time -- so I don't have any decision to make.

What I'm trying to do, obviously, there's much more expertise in this area in this room than I will probably ever have, so what I'm trying to do is to get the facts and figures down and the plan for the future in such a way that information is disseminated and everyone can then, if they have concerns and if they think that their concerns are not being addressed, they can bring it to the Court and we'll try to address them as we go along to see, as we progress, if we can avoid disputes that need to be resolved and we can all be on the same path to making sure that the present and the future is productive for the citizens in which we all serve in this area. Because there cannot be anything more important than the preservation and continued production of water facilities for people.

So I can't think of anything more important than

that, and I'm sure you all share that common feeling. And for the people that you represent and are concerned about directly, your constituency, whoever that might be, you can rest assured that these hearings are not to further any agenda that I might have for any one of you or any party or any constituency. It's simply to inform and give every one of you and your constituencies opportunity to put their input in, ask questions and become better informed. Okay?

Do you want to start, sir?

MR. FIFE: Thank you, your Honor. We'll call Jeff VandenHeuvel.

Your Honor, while Mr. VandenHeuvel is taking the stand, a housekeeping issue that we did not address in the stipulation. We'll have a number of graphics to show throughout the day. They're purely for illustrative purposes, and they sometimes make it easier to understand what the witness is talking about. We had not intended to offer these into evidence. We can if it would be your pleasure. We do have hard copies that we could offer to you if you want to mark them as we go or we can simply offer them all in at once at the end.

THE COURT: Whatever graphic exhibits that you have that are being used in your presentation, then I'll just take them in and make them part of my record without making them formal exhibits.

MR. FIFE: Thank you, your Honor. So we'll

dispense with marking things as we go. That will save a lot of time.

THE COURT: There's no need for that at this time.

MR. FIFE: Thank you, your Honor.

THE COURT ATTENDANT: Stand here, face the clerk and raise your right hand, please.

GEOFFREY VANDEN HEUVEL,

called as a witness by the Watermaster, was sworn and testified as follows:

THE CLERK: You do solemnly state the testimony you shall give in this matter shall be the truth, the whole truth and nothing but the truth, so help you God?

THE WITNESS: I do.

THE COURT ATTENDANT: Please be seated.

Will you state and spell your name for the record, please.

THE WITNESS: Geoffrey VandenHeuvel, G-e-o-f-f-r-e-y, V, as in Victor, -a-n-d-e-n capital H-e-u-v-e-l.

THE COURT: Go ahead, sir.

DIRECT EXAMINATION

BY MR. FIFE:

Q Good morning, Mr. VandenHeuvel.

A Good morning.

Q Can you tell us how long you've lived in the Chino Basin.

A Since 1975.

Q And what is your occupation?

A I am a dairy farmer.

Q And how long have you been engaged in that?

A Since 1979.

Q How long have you been involved with the Chino Basin Watermaster?

A Since about that time, 1980 or so as a producer.

Q And when were you appointed to the Watermaster Board?

A I believe that was '98 when the new nine-member board was established.

Q Are you involved with any other water-related entity in the Chino Basin?

A Yes, I'm a director on the Chino Basin Water Conservation District.

Q And are you familiar with the Chino Basin governance structure?

A You mean Chino Basin Watermaster governance structure?

Q Yes.

A Yes, I am.

Q And are you familiar with the Chino Basin governance?

A Yes.

Q In your opinion, what is important about the relationship between the judgment and the governance structure of the Watermaster?

A The relationship between the judgment and the governance structure is important, but in order to understand that, I think we have to kind of back up to why there's a judgment.

And as I understand it, what you had in the Chino Basin is an area that has been intensively farmed and occupied for -- since the late 1800's. And what became clear as time passed, by the 1960's and early seventies, was that more water was being extracted out of the Chino Basin ground water basin than was being replenished. And the evidence for that was dropping in water levels, and it was beginning to be a major concern and something needed to be done about that.

The folks that were impacted by that, which was everyone, decided to use a legal tool to get a handle on this problem and took the form of a lawsuit. And all of the producers of water in that basin were a party to that lawsuit.

And what emerged out of that was a judgment. And in that judgment, all of those folks who had rights to produce water were accounted for in that judgment. They were grouped into three broad categories based on similarity of use.

You had agricultural producers who had an overlying right that was tied to their land. You had some industrial users that had wells, and they had overlying rights but they were not ag, and so that was a group. And then you had appropriators who basically pump water out of the ground to sell it.

And so the governance structure of Watermaster that emerged from the judgment was one that organized the producers into these three broad categories: the overlying non-ag pool for the industrial folks, the overlying ag pool and then the appropriators.

And within those pools, each one of those pools has a certain amount of autonomy. They meet -- and this has continued to this day -- they meet and they decide the affairs of their pool. And then to do the business of Watermaster, these pools feed into an Advisory Committee, which is really the policy-making body of the Watermaster.

The Advisory Committee has representatives on it from the ag pool, from the overlying non-ag and from the appropriators. And there was a division of the political weight of the Advisory Committee, based to some extent on rights but not completely.

The agricultural pool, as a pool, was granted 20 percent of the vote in the Advisory Committee. The overlying non-ag was granted five percent of the vote, and the remaining 75 of the voting power on the Advisory

Committee was allocated out to the various appropriators based on their share of the safe yield.

And so the Advisory Committee -- so really where the Watermaster governance structure is a bottom-up structure, ideas, concern originate in the pools, and if it needs Watermaster to make a decision, that flows then to the Advisory Committee, the Advisory Committee handles the issue and, hopefully, produces a consensus.

But if there's a vote, there's a way to appropriate that vote, apportion that vote. And then the Watermaster Board is actually over the Advisory Committee but not in a sense that most people would understand a board to be. The power -- the actual power of the board is very limited. If a measure passes the Advisory Committee with a 50 percent plus one vote, but something less than 80 percent, that is when the board has some ability to make a decision.

If a motion passes the Advisory Committee with an 80 percent or more vote, it becomes a mandate on the Watermaster Board, and they really don't have discretion to turn it down. They can send it back to the Advisory Committee if they don't agree with it and they'd like them to consider some other things, but it becomes a mandate to them.

So there is -- so this governance structure was set up to meet the needs of all of the producers who were going to be bound by this judgment.

Q Thank you, Mr. VandenHeuvel.

Are you familiar with the details of the transition of the board from the Chino Basin Municipal Water District to the current nine-member board?

A I have an understanding, and there's no doubt others who would have a different perspective or a more detailed understanding. But as Mr. Slater said in his opening, the judgment was entered into in, I believe, around 1977, and the immediate concern of the parties and the Watermaster was overdraft. And the Watermaster did a very effective job of arresting or stopping overdraft by keeping very good tabs on what everyone was producing and buying replenishment water when production exceeded the safe yield. And for 20 years, that -- the Watermaster did a pretty able job of addressing that one concern.

But with regards to the development of an Optimum Basin Management Plan -- and you've got this marvelous resource here in the Chino Basin with all this potential. In terms of actually taking advantage of this potential, beyond just stopping overdraft, there was very little progress that was made. And some of the -- and I think there was a general sense the Watermaster Board, in the first 20 years of the judgment, was the Chino Basin Water District Board.

Chino Basin is now called the Inland Empire Utilities Agency. But it was assigned to be the Watermaster Board for

that period of time. And as I understand it, they did not, in terms of oversight policy, there was not a lot of energy put in by the Chino Basin Water District Board in terms of Watermaster efforts. They had their responsibilities to deal with all of the things that were part of their jurisdiction. The Watermaster stuff, as I understand it, typically happened at the end of the meeting. It was pretty pro forma. Whatever the Advisory Committee brought to them to be essentially rubber stamped was done and there was not a lot of energy put behind Watermaster stuff.

Now, there was some controversy. Some folks at Chino Basin Water District did play a very important role in the first desalter, and there were -- and my knowledge of this is more general than specific -- but suffice it to say there were folks that were upset about the way some of those things were handled, and we got to a point in time toward the late 1990's where the Advisory Committee actually exercised their discretion and voted to change who was the Watermaster Board and to take it away from Chino Basin.

And as I understand it -- and then I was not appointed at that time, but I was, you know, familiar with the people who were involved -- there was a lot of back and forth what should replace the Chino Basin Board and there were a lot of various ideas and nobody could really agree. And my memory is we beat up that issue for almost a couple of years with different ideas, lots of fighting and

bickering and not any progress being made.

And then finally, an agreement was put together to form the nine-member board with more of a broader representation of various stakeholders and a separate office. That happened, too. The Watermaster staff actually physically moved out of the building of the Chino Basin Water District, created their own identity, a nine-member board was established, and that's really when I came on board as a representative of agriculture. I don't know what more I can say on that.

Q Now, there's one point of view that the reason for the transition from Chino Basin Municipal Water District to the current nine-member board is that the water district ignored the policy mandates of the Advisory Committee and that in recommending the nine-member board, the producers were actually seeking greater control over the Watermaster. Could you comment on that?

A Yeah. You know, there's a lot of different opinions about history and, you know, I don't doubt that there are folks that have that opinion. I think the facts speak for themselves.

The fact of the matter was we didn't make much progress. We had a lot of potential, and certainly, the mandates were -- you know, the opportunity to do it -- that were in the documents, they weren't carried out so we needed to do something different. And, you know, how that

transpired was, you know, was difficult but, you know, the folks on the Chino Basin Water District Board were elected primarily by their constituents to deal with the water and sewer issues that they ran on. The Watermaster was not their primary function. And so consequently, there was not much progress that was made.

Q And so then can you explain how, in your view, the Watermaster reconciles its duties to fulfilling the instructions from the judge and the judgment with its duty to carry out the will of the producers as expressed through the pools and the Advisory Committee?

A Well, there's always attention -- and I might add that, you know, when the nine-member board was constituted, Judge Gunn gave this nine-member board a very short leash. He appointed the nine-member board, and I believe he gave us 26 months to produce an Optimum Basin Management Plan. And he said, "If you don't, I'm going to take authority -- I'm going to take the Watermaster Board function away from you and I'm going to give it to the State Department of Water Resources." So he put some teeth in that order and so that was an important measure to focus our thoughts on what could be done.

In terms of the tension between the producers and the judgment, you know, I think it's important to remember that while the Watermaster process uses democratic principles, it's not a democracy as much as we think of like, for

example, the other type of agencies that we have in society.

When a person votes for a city council member, they basically execute their right as a citizen and they've delegated this person to represent their interest on the city council.

In the Watermaster, nobody's really given up their rights. And so the structure that's been created is one that has -- I mean it really is a beast when you look at all of the various moving pieces. But it requires a high level of consensus to get anything done, and that's probably appropriate because everyone in that process continues to have rights. And so you're trying to find solutions to problems that -- where you have to respect everyone's rights and so there's a tension.

Folks who are large in this process tend to think that maybe they should have more weight. Those who perceive themselves to be less large in terms of share of water rights, really still have rights, and those rights can't be ignored, so there's always a tension.

And in this process that's been created with a nine-member board, really the large producers have the major part of the weight in the Advisory Committee. The Watermaster Board is a much broader representative group. But as I described earlier, the Watermaster Board actually doesn't have a whole lot of authority to independently act on its own. So there's a tension between producers and the

board.

Q So you've touched on this a little bit but could you explain in more detail how the political process of developing consensus serves to protect everyone's rights and how this relates to a majority rule situation?

A Well, because of the -- you know, it's a grass roots kind of bottom up structure, everything has to start in the pools, and in the pools is where you have the broadest participation. Any producer can show up at a pool meeting and can participate in that pool process. And then those pools, what flows out of the pools goes to the Advisory Committee, and then the Advisory Committee has to produce a motion.

And what they tend to want to do is to work out their issues there so that they could express a unified front to the Watermaster Board. So there's a large insight of trying to work this all out in this process. There's lots of opportunity to do that. But ultimately, you do need people that are interested in get -- in cooperating and trying to make progress.

And when -- the rest of today we're going to hear about the tremendous amount of progress that's been made over the last 10 years. And I don't think it's necessarily the system that produced that but the system didn't stand in the way of producing that. We've had a pretty remarkable group of people from a broad diversity of backgrounds and

interests who have been pretty ably lead. Watermaster staff and consultants and legal provided some real good leadership. And so I mean it does come down to people, in terms of being able to make progress, and we've been blessed with some great folks, and the process itself hasn't stood in the way.

And because there's a lot of ways to block things, you know, you can't just pass something with a four to three vote. It just doesn't work at Watermaster. That will work on a city council. That will not work in Watermaster. The structure won't allow for that type of a situation. And so yeah, it's a different model from what we're conventionally used to and what we think of as a democratic process. Watermaster really is not a true democratic process.

Q And so then -- Strike. How do the producer parties then maintain the necessary independence to carry out the judgment? Can a majority change the rights of a dissenting party?

A I don't believe the majority can ever change the rights of the minority party. I mean if someone ends up not believing that they've been treated fairly or that their rights are being impinged, they always have that opportunity to come to the board. The judges may take continuing jurisdiction.

It's in everyone else's interests, knowing that, to try to resolve all legitimate concerns of any party. So

there's a high degree of incentive to try to produce a, you know, win-win situation. And there's a lot of moving pieces in Watermaster so, you know, while one particular area may favor -- be more beneficial for one party than another, there are other areas where that can be compensated.

And when you look at the last 10 years of history and the pretty elaborate plans that have been in place between the OBMP and Peace I and Peace II, you see that there has been a lot of that kind of trading that has gone on. And at the end of the day, we've been able to produce stuff that's really positive for everyone.

But the process really demands that because a minority party cannot be run over illegitimately. If that party has a legitimate grievance, you know, everybody knows it and they may very well find a sympathetic ear in the judge. So you need to take care of those concerns.

Q Were you on the board in 2005 when the board authorized legal counsel to request a five-year extension of the term of the board?

A Yes, I was.

Q And are you familiar with the commitments made by the board with regard to governance at that time?

A You know, probably not as familiar as I should have been. I am now familiar with those, yes.

Q And are you aware that the commitment of the board to form a governance committee was conveyed to the Court and

became a part of the rationale for the Court's extension of the term of the board?

A I'm now aware of that.

Q And in your view, has the board satisfied its commitments?

A Well, I think it's technically satisfied that commitment. As I remember that whole governance issue, when we kicked off the discussions for Peace II, Peace I had been accomplished in about 2000. There were a number of issues that were left to be resolved later because, for one reason or another, they were -- we were going to learn more or whatever over time. And so there were some fairly significant -- when the Peace Agreement was implemented, the OBMP and the Peace Agreement in 2000, we began to carry that out, but we knew that in about 2005, we would need to revisit some issues.

Leading up to the discussion that we were going to have as the parties in 2005, there was some grumbling about the governance structure. As I recall, the Watermaster Board did not want to get involved in those discussions. We had a lot of issues and we essentially instructed our counsel, which was facilitating the discussions between the stakeholders, to leave that issue out in terms of governance. "Let's see if we can resolve everyone's concerns without addressing that."

We were able to do that. It took quite a while. We

produced the Peace II Agreement, very aggressive part of the physical solution. A lot of infrastructure has to be built or was going to be built and contemplated a lot of different things. And the governance issue, it seemed like just sitting as a board member, I didn't really hear that that was still an issue.

Then subsequently at that same time we filed that Peace II document with the Court, we also needed to get reauthorized because our authority as a board was for five years, and that was expiring. And as part of the reappointment motion, there was that commitment to do a committee on governance.

Frankly, you know, when -- once the Court approved the Peace II, we got busy working on hydraulic control and there was an enormous amount of work that needed to go into how to build the third desalter, where to go, how to finance it, all that, and it slipped through, at least my mind, that we had an obligation out there to do something about governance.

That got brought to our attention, frankly, mid-2008 in some other correspondence that that was a commitment that we had made that hadn't really been fulfilled. And we realized that yes, that had slipped through our fingers. And so we sent the issue back to the pools and asked for advice.

And the pools discussed this as part of their meeting

agendas and had no specific advice for Watermaster. And then that went to the Advisory Committee, and the Advisory Committee took action to take no action. They brought it to the Watermaster Board without any advice on what to do with governance.

So as a board member, receiving this report that this issue had been at the pools and at the Advisory Committee and had not produced any advice to us at all, I made a motion at the board, because I felt that we did make -- we did make a commitment to form a committee to do something on governance, and so I made a motion at the board that as a board, we would appoint ourselves as the committee and then we would simultaneously report out that no change to the status quo was necessary because we got no advice from anyone on that. And so there really wasn't any point in -- you know, we're driven by our constituents. If there's no issue amongst our constituents, we really don't have a reason to go do something different.

So we passed that motion as a board. We basically appointed ourselves as the committee and immediately reported out that there would be no change.

So technically, I think we have complied with that provision. You know, there doesn't seem to be any interest -- there wasn't any interest. If there is interest, the one thing about the Watermaster process, it's very transparent. Anybody can play. And those who have

ideas on this always have the opportunity to bring them forward through the process and have them discussed and considered. So that opportunity still exists.

Q Now, one point of view is that the motion you made which you've just described to us was more of a repudiation rather than a fulfillment of the commitment the Watermaster made to the Court. How do you explain that?

A I just described what my thinking was and how I view the issue. I don't think it's a repudiation at all. I think it's a demonstration that the process that we have, while not perfect, has produced results that we could be proud of. So I think there's a really, really high bar for anybody who proposes changes to this governance structure to demonstrate that whatever they're proposing is going to produce better results.

THE COURT: Sir, Mr. Slater, in your opinion, now, just your opinion, what did Judge Gunn want from the Governance Committee and what was he seeking to accomplish by that requirement?

MR. SLATER: Your Honor, my opinion is, to have my recollection refreshed by reviewing your order, is that the Court has distinguished between rationale in describing what the Watermaster Board had committed to and the ordering provisions. There was no requirement from the Court in the order that a committee be established.

The second thing, your Honor, is that again, my

opinion is that being the general counsel for Watermaster, that Mr. VandenHeuvel describes the motion that came to the Watermaster Board by action of the Advisory Committee. The commitment that was made by the board in this instance to examine the governance question came to them on an 80 percent mandate from the Advisory Committee. So it was -- the board was prepared to transmit the recommendation to the Court to reestablish the nine-member board.

The Advisory Committee sent a mandate to the board. So it was our view that counsel and staff's view both that having had the issue identified by some of the moving parties, that we referred the matter back to the individual pools for their input and for input from the Advisory Committee.

Recognizing that the matter had come to the board by action of the Advisory Committee and this time the Advisory Committee making no recommendation, the board properly looked at the matter and said that the recommending body was no longer requesting any specific action. And so consequently, it is my view that the board had complied with the Court's order.

THE COURT: Do you think that Judge Gunn was seeking to just put this up for people to put their input in to see if someone wanted to desire a change in the way that the governance worked for the Watermaster Board and the advisory pools? Do you think that that was his motivation?

MR. SLATER: I believe, your Honor, that Judge Gunn and the parties have a specific process to address governance on a five-year basis. The stipulation among the parties makes reference to that in paragraph nine. Your Honor's appointment of the nine-member board historically has been for a five-year period.

So it was my understanding that the parties would contribute to a process where Watermaster would take input and then ultimately a recommendation would be made in connection with the reappointment of the nine-member board. As director, VandenHeuvel has stated the parties are welcome at any time to bring to the Court's attention or to the Watermaster Board the desire to pursue a different approach to governance.

THE COURT: Do you remember concerns, prior to the appointment of the -- the reappointment of the board for the next five-year term, do you remember people bringing up concerns about the governance process of the board itself?

MR. SLATER: Yes, your Honor, and I'd like to -- if I might, the word governance to the Watermaster family means different things. And as I was mentioning in my opening remarks, you have Watermaster, which is really taking on responsibilities to do three different things: Quasi legislative, the adjudicatory responsibility and then administration.

And so for some, it is the Byzantine process that Mr.

VandenHeuvel has described, that is, that needs to be corrected. For some, and I believe it is my opinion that the root of the suggestions at that time were grounded in the makeup of the nine-member board and whether a specific interest should be more heavily weighted.

And lastly, there's a view that Watermaster's administration should be more customized to specific programs. So how Watermaster deploys resources to carry things out has been an issue. But to the best of my knowledge, none of that was ultimately articulated in any of the processes.

THE COURT: All right. That answers my question. How about that?

Go ahead, Mr. Fife.

Q (BY MR. FIFE:) So we just have one more question, Mr. VandenHeuvel. In general then, do you think the governance needs to be addressed at this time? Even if the Watermaster process isn't broken, do you think it could function better?

A You know, I'm a pragmatic person, and the system works and we've produced a lot of good stuff. We've got a lot of things to do to serve our constituents, and I don't think, you know, changing seats around or whatever in the governance structure is going to make, you know, make it better. So no, I think we've got other things to do with our time and leave that issue be.

MR. FIFE: Your Honor, that's all the questions that we have for this witness.

THE COURT: Any other attorneys wish to ask any questions of this witness?

Okay. Seeing no hands, you may step down, sir.

We'll be in recess, ladies and gentlemen, until 10 minutes to 11.

(Recess.)

THE COURT: Mr. Fife, call another witness, please.

MR. FIFE: Mr. Manning, if you could come to the witness stand, please.

Your Honor, while he's taking the stand, these next three witnesses are intended to give an overview and context both of the physical Chino Basin and institutionally, and then we'll also provide just a few minutes of basic detail about how Watermaster administers things, its budget, its assessments, just to give you an overview of things.

THE COURT: All right.

THE COURT ATTENDANT: Face the clerk, raise your right hand.

KENNETH R. MANNING,

called as a witness by the Watermaster, was sworn and testified as follows:

THE CLERK: You do solemnly state the testimony

you shall give in this matter shall be the truth, the whole truth and nothing but the truth, so help you God?

THE WITNESS: I will.

THE CLERK: Thank you.

THE COURT ATTENDANT: Please be seated.

Will you state and spell your name for the record, please.

THE WITNESS: My name is Kenneth R. Manning. K-e-n-n-e-t-h, R., Manning, M-a-n-n-i-n-g.

DIRECT EXAMINATION

BY MR. FIFE:

Q Mr. Manning, what's your position in the Chino Basin?

A I'm the Chief Executive Officer.

Q The Chief Executive Officer of --

A The Chino Basin Watermaster.

Q And how long have you held this position?

A About four and a half years.

Q Could you describe other things in your background relevant to ground water basin management?

A Yes. My background, I have a Bachelor's Degree in Architectural Design and a Masters in Public Administration. I have for 20 years managed and owned an architectural engineering firm that did work in the San Gabriel Valley, Chino Valley and areas east.

I also spent 12 years on the Upper San Gabriel Valley

Municipal Water District Board and 12 years on the San Gabriel Basin Water Quality Authority Board acting as its first chairman and one of the designers of the system that we use still today to clean up the Super Fund Site in the San Gabriel Basin.

Q So based on this experience, could you describe ground water basin management in Southern California generally and how the Chino Basin fits into that?

A Yeah. I had a slide prepared. It's on the board behind me. It shows the ground water basins within the Southern California area, primarily within the Metropolitan Water District territory, and you'll see from the slide there are a number of different basins that are listed there. Some of them are very small. Some of them are medium sized, and there's a number of them that are larger.

The Chino Basin, which is shown there, is one of the larger basins in Southern California. Of the basins that you see there, most of those basins are managed and they're managed with a variety of different systems.

As we move throughout the State of California, there are literally hundreds of small, medium and large ground water basins throughout the State of California.

As we move out of Southern California, most of those basins are not managed at all. There are a number of them that are managed by the Department of Water Resources. Many of those tend to be agricultural in nature.

And then within those that are managed, there are essentially two different structures. There are those that are managed through the adjudication process similar to the Chino Basin. And then there are those that are managed through a governance structure that is similar to a council or special district.

And Chino Basin Watermaster is, of all of those, as far as the adjudications go, it was not the first adjudication and I think it took advantage of a lot of the adjudications that preceded it in terms of how it was structured.

Q Could you characterize the Chino Basin Watermaster in comparison to other watermasters in Southern California?

A Yeah. Kind of building off of what Mr. Slater said in his opening remarks, the Chino Basin Watermaster is not a simplistic Watermaster. Many of the functions of a basin manager is very simplistic in that they keep track of the water in and water out and sort of the basic accounting structure.

Within the Chino Basin Watermaster, we have a more three-dimensional structure to us. Besides the acting function and keeping track of what's going on between the pumpers and also in the replenishment area, we also have a planning function and an oversight function within the Chino Basin which gives it a dimension that most Watermasters or most governance structures over basins do not have. And it

has done -- I think it helped us quite a bit over the years in being able to deal with a lot of issues that we've had.

Q Could you explain in more detail what you mean by the oversight function of the Watermaster?

A Yeah. The oversight function built into what Watermaster does is the material physical injury analysis. So as Watermaster is presented with projects and/or decisions, we have to do a material physical injury analysis. And so we have our engineers go through that process, and what we're looking for there -- and it will be described in further detail with Mr. Wildermuth, I think, in his testimony -- is we're looking for whether or not the activity that's going to be called upon is going to affect anybody else within the basin to its detriment.

And through that process, we have the ability to be able to make decisions about projects that are in the best interests of the basin in general.

The other is monitoring. And Watermaster has an extensive monitoring program. You're going to hear a lot about that in future testimony. But I have -- and I have said this throughout Southern California, as I talk to organizations and at conferences, is that most basins, in fact, when they talk about monitoring, they're looking at their basins in one dimension. I characterize the Chino Basin as being in high def, and you'll understand why when you see a lot of the presentations that are going to come a

little bit later.

Q And what do you mean by the planning function of Watermaster?

A Well, the Watermaster, through the Optimum Basin Management Program, has the ability to work with the parties in developing programs that fit the needs of the basin for future generations.

So as we start looking at whether it be subsidence issues, replenishment issues within the basin, we are looking for how we are going to fill -- fulfill the demand of the OBMP and the nine elements that we're going to be having. And I think those nine elements are behind me now. The rest of the testimony that you're going to be getting today is going to be a refinement talking about how those nine elements are being dealt with.

As you look at them, you'll notice there's a great deal of overlap between them, and there is. There is some overlap, so we have grouped those together because the strategies or the programs that we've developed within Watermaster over the last 10 years sometimes will deal with more than one of the nine elements.

Q Now, you mentioned in your answer replenishment activities of Watermaster. Could you tell us what those are?

A Well, Watermaster is charged with replenishing the overdraft within the basin, the water that has been pumped

out of the basin in excess of water right. And so Watermaster, in conjunction with the Inland Empire Utilities Agency, the Water Conservation District and the County of Los Angeles, we have a four-party agreement wherein we use facilities that were developed by all of those different agencies to recharge water into the basin primarily using water imported from the Metropolitan Water District off the Rialto pipeline, which is at the northern part of our district.

You're going to see maps that show where that pipeline is and the different turnouts are. But using the river system, as they were developed long ago, and additionally then fortified with concrete, and the facilities that were developed by the Conservation District, Inland Empire, and the County of San Bernardino, we have improved those in order to be able to have an effective replenishment program that meets our needs today. I'll use the word today.

Q Could you briefly explain the land use developments in the Chino Basin that led to the OBMP?

A Yeah. I have a series of slides that I think -- I have found to be best to illustrate what has happened in the Chino Basin over the last 100 years that helped get us where we are today. And if I could walk through those with you, I would like to do so.

First of all, the first slide is what the basin

looked like in around the year 1900, 1905. This reflects what Mendenhall found in the Chino Basin as he made his expedition through this area. And the arrows on this map show the flow of water from the north to the south.

You'll also note in the area that we now would call Chino, Chino Hills and parts of Pomona, that area was a marshy land. It was very wet and water flowed and water rose in that area naturally. And this was before populations really inhabited much of most of what we call today the Chino Basin.

The next slide please. The next slide moves us all the way to 1933, and you'll see the gray areas are the urbanization. So on the far left or the western part of the basin, you'll see Pomona. The central part of the basin is a little bit of Ontario and Upland. This area that's urbanized in the south is what was Chino. And then to the far eastern portion is Fontana.

But what you'll also see is the dark green is the irrigated agriculture. The gold is citrus, and there's a large -- lot of citrus crops in the Chino Basin going back from early 1900's all the way back into the 1940's.

And then you've got the non-irrigated or vineyards, in general, in the light green. What I like to point out here is in 1933, there was only one significant dairy in the Chino Basin, and that's in the Fontana area. That's the gold area on the far eastern portion of the basin.

Could we go to the next map, please. 1949. So this now represents post-war Chino Basin, and we're seeing an increase in population now in the Chino Basin. Those urban areas I described earlier are starting to expand. We're starting to see a few more irrigated crops, a little less of the non-irrigated crops coming in.

Next slide, please. 1957. This was about the time that if you lived in the Lakewood or in the Lakewood, Pico Rivera, Hawaiian Gardens, those areas, you were living amongst a lot of dairies.

And during that period of time, there was a lot of movement amongst governmental agencies to talk dairies into moving out of that particular geographic area and moving somewhere else. So about this time, 1957, you're starting to see a lot more migration of dairies so you're starting to see the gold start to trickle into the southern portion of the basin. Still some in the north but mostly into the southern area amongst the irrigated agriculture.

Next, please. 1963. Now, you're starting to see the major migration of populations moving from the eastern portions of Los Angeles County now into the Chino Basin, the western part of San Bernardino County. There's still at this point in time a lot of vineyards in the area in the center, and you're seeing a little less of the irrigated crops and still a few more dairies starting to come in. The center area is -- The Ontario Airport is right in the

center. Chino Airport is in the southern, geographically where you are.

Next, 1975. Again, now we're starting to see the real push into Chino Basin of population growth. So now we're starting to see agriculture be devoted strictly to the south except for a few vineyards still sprinkled throughout the areas of Cucamonga and Fontana. But areas of Upland, Ontario, Chino, Montclair, Pomona, those areas are all starting to develop very heavily and becoming very dense in 1975.

What's interesting is this is also the same period of time that we're talking about the judgment starting to be implemented. So many of the discussions about the judgment are going on right at this moment in time. So you're starting to see the pressures in terms of the increase in population within the Chino Basin starting to impinge upon agriculture and the tensions that are starting to grow that are leading towards the judgment in the Chino Basin.

Next. 1984. Again, the same kind of phenomena. You're seeing areas in the south of the 60 Freeway now start to develop with houses. The Riverside County area, which is the eastern portion of this area, is now starting to become highly urbanized, what we call Eastvale and Jurupa, is becoming highly urbanized. Fontana is really starting to grow very heavily in the 1980's, most of it driven by the industry brought to the Ontario International Airport.

Nextly, 1990. Now we're starting to see massive migration from Orange County and from L.A. County into the Chino Basin, and you're still seeing a heavy agriculture in the south part of the basin.

Now, in the 1960's, 1970's and early 1980's, Chino Basin was a highly dense dairy cow area. At one point in time I've been told that the Chino Basin was the highest density of dairy cattle anywhere in the world. Approximately 400,000 cattle inhabited the Chino Basin, mostly in that southern portion of the basin. And so you can imagine what it was like. You're going from a highly urbanized area in the northern part of the basin to a much highly-developed agricultural community in the south.

Now, the year 2000. And here we are just a few years ago, and we still have a dairy and irrigated agricultural presence, but for the most part, the rest of the basin has been urbanized and highly populated. The population in the year 2000 in this basin is approximately 750,000 people.

It's estimated that the population will grow to about 1.2, 1.25 million by the year 2030, and you'll see most of the agriculture in the south will be gone.

Watermaster does not believe that agriculture will ever be gone completely from the Chino Basin. There will always be some in the south, and there's a lot of reasons why, but we think there's always going to be agriculture within the Chino Basin.

So this gives you a good idea of the kinds of pressures that have been moving into the Chino Basin and what have led to many of the projects that have been evolving through the Chino Basin and why it's important that we do those.

The desalters in the south, as a strategy to dealing with the conversion of pumping by agriculture. At one time, agriculture was pumping 80,000 acre feet of water in the south creating a hydraulic barrier by itself of water moving into Orange County. As that agriculture starts to move out and that pumping in the south starts to desist, then we have a problem because water's now moving into the Santa Ana River and then down to Orange County, and they don't like that. It's not very good water.

So we have to come up with strategies, artificial ways of keeping that same barrier in place and making that water available to people within the Chino Basin. And hence, we have the Desalter Authority, which started back in the 1990's.

So that kind of gives you an idea of what's happened in the Chino Basin over the last 100 years.

MR. FIFE: Thank you, Mr. Manning.

Your Honor we have no further questions for this witness.

THE COURT: Any questions anyone wants to make?

All right. You may step down, sir.

MR. FIFE: Mr. Wildermuth, if you could come up.

THE COURT ATTENDANT: Face the clerk and raise your right hand, please.

MARK WILDERMUTH,

called as a witness by the Watermaster, was sworn and testified as follows:

THE CLERK: You do solemnly state the testimony you shall give in this matter shall be the truth, the whole truth and nothing but the truth, so help you God?

THE WITNESS: I do.

THE CLERK: Thank you.

THE COURT ATTENDANT: Please be seated.

Would you state and spell your name for the record, please.

THE WITNESS: Mark Wildermuth, M-a-r-k, W-i-l-d-e-r-m-u-t-h.

MR. FIFE: Sorry, your Honor, just a moment while we find his presentation.

THE COURT: All right.

DIRECT EXAMINATION

BY MR. FIFE:

Q Mr. Wildermuth, what's your occupation?

A My occupation is I'm an engineer and the Chairman of Wildermuth Environmental.

Q And what is Wildermuth Environmental?

A Wildermuth Environmental is a consulting firm that I founded in 1990 to do environmental engineering with an emphasis in water.

Q And how long have you been involved in the Chino Basin.

A For 29 years.

Q And where is the Chino Basin?

A I'm going to stand up and talk loud. Is that okay?

THE COURT: Yes.

THE WITNESS: Could we go to the first slide.

This is a map of California. This is Central Valley. This is what we call the State Water Project. It's an aqueduct coming down to Southern California. This little area in yellow, this polygon is the Santa Ana Water Shed. Right in here, right near the terminus of the state's project is the Chino Basin. This is a map of the Santa Ana Water Shed to give context to the Chino Basin. Santa Ana River flows from way up here in San Bernardino County down from San Bernardino County to the ocean.

These are the regional water agencies in the area, and the Chino Basin is shown here in yellow. This is a little more context. This area shown in this tan color is the Chino Basin again, and these are the various water supply agencies and how they overlie the Chino Basin.

In the center is Ontario. On the southern end is

Jurupa Community Service District, and the Santa Ana River Water Company. Up in the northern end is Fontana, Cucamonga Valley Water District, City of Upland, Monte Vista Water District, City of Pomona, Chino and Chino Hills. Sprinkled in the middle in there are some small private water agencies.

This is a map of the Chino Basin. It shows several things. The first thing of interest is this red line that surrounds the basin. This is the boundary of the basin as is described in the Chino Basin judgment. It's a little bit different than this area in green, which we call the hydrologic boundary. We just know more now than we did when the judgment was done. One of the major features at the bottom is the Santa Ana River, which comes through the bottom of the basin. The basin is bordered by other ground water basins in the north, Claremont, Cucamonga and Rialto, Colton. That's it.

Q Could you describe the history of ground water pumping that accompanied the land use changes described by Mr. Manning.

A Okay. Can we go ahead two slides, unless you want me to cover this other stuff. One more, please.

In Mr. Manning's testimony, he just showed you these land use maps that show the transition of a basin going heavy in agriculture to a basin that was becoming urbanized. So what this chart shows is the historic pumping going from

1932 to the present and a projection period to show what the pumpers are planning on producing.

So as you recall Mr. Manning's presentation from the thirties to about 1950, the area was highly in agriculture. You can't distinguish a difference in those maps. In that time, the total pumping in the basin was about 260,000 acre feet, which is substantially more than it is today.

In the period of rapid urbanization from the late forties to the early sixties and the mid-sixties, the pumping dropped substantially. In this period of time from in the mid-sixties to the present, which averages these pumpings out, is about 166 to 170,000 acre feet per year. An acre foot is like a football field one foot deep. It's about 330,000 gallons.

As we go forward in time, we develop these projections. And the current interest in developing these projections is on the Recharge Master Plan as to the Watermaster. But these projections are based on interviews and discussion with the actual appropriators, pumpers in the basin, all the pumpers in the basin, and these are current as of September of 2008.

Could we go one more slide, please.

Now, corresponding with that production history, I want to give you an example of how the basin was responding. And so I picked two wells in the center of the basin that are very close to each other. The reason is the data for

one stops, so I wanted to carry it on with a new well in the same level to give you some idea of how water levels have changed over the basin.

These ground water levels correspond to the water level in a well that you can measure from the ground surface. And so if you were at this well, Ontario 7, and you dropped a device in the well to check the water level, it would tell you back that the elevation, the water elevation of the ground. Same concept would be about 740 feet. So this is going back to mid-thirties. And as we come forward in time, you can see this continual decline in the water levels through the mid-seventies.

And then after the mid-seventies, from this time on, it's really fairly constant. This other Ontario well has the same behavior because the weir input continues on and pretty much shows the same thing. You have a slight decline.

The Chino Basin judgment has a feature in it that allows 200,000 acre feet of overdraft to occur in the first 40 years of implementation. So once this judgment comes into play, there should be some gradual decline. That could be part of that decline.

One of the more interesting things on this graph is this gray line is sort of a difficult concept. It demonstrates the climatic trend that's going on. Whenever this line is going up, it tells you you're in a wet period,

and when it's going down, it tells you you're in a dry period. So one of the more compelling things on this map, on this drawing, is that this is the wettest period in the last hundred years in the Chino Basin. And we see very little response, which tells us a lot about the hydrology of this basin and how the basin's evolved over time.

Q And are there any other significant changes in the basin associated with land use changes?

A There are. And with the land use changes themselves are some things that occur that relate to the hydrology of the system. But I'm going to talk about one of the more important ones that we've recently been concerned about and that is the lining of channels. All these drainage channels going from north to south over the Chino Basin over time have been lined. What I mean is instead of having a soft channel with gentle edges, we've replaced all of them now with these concrete channels, which are very efficient. I'll go through a chronology very quick and show you how that's changed over time.

These are the channels we're going to talk about. This is the San Antonio Creek in the west, Cucamonga Creek in the center and Day Creek and San Sevaine. What I'm going to go through real quick is a series of slides that shows how extensive this lining has been in the last 50 years.

In 1950, in the late fifties, '58, they lined San Antonio Creek across the northern part of the basin. In the

seventies that lining was essentially complete. You see a little channel starting to come in here and be done. More in the seventies, and in the eighties, it's very dramatic. We've essentially at this point reduced all the recharge in these channels.

One more.

There are little pieces of these channels which aren't necessarily complete, but you can see from this that any storm water recharge to this basin, which has been a component of recharge, has essentially been eliminated by the channeling.

THE COURT: Let me ask you, the -- we're talking about storm water running into these channels?

THE WITNESS: Yes.

THE COURT: And then you capture the water to place back in the basin?

THE WITNESS: We do now. From the OBMP, we've gone through a program to try to replace this loss.

THE COURT: How did it go about that? Did you put in reservoirs?

THE WITNESS: We have diversions off of these streams into basins. In some cases, there were existing basins but they were for flood retention only, so the storm water would be captured just momentarily and then released in the same day. And we've gone through and improved those but engaged in new diversions, and we capture and hold water

and let it just recharge.

THE COURT: Is that a percolation process?

THE WITNESS: Yes.

I'm going to wrap this up. This is a stack bar chart. In each of these colors represents one of those channels. This vertical access is a total stream bed recharge that occurred historically. And in this period of time before San Antonio Creek was lined, we used to get about 14,000 acre feet a year, which doesn't sound like a lot, but it took a lot of years to fill this basin up with water, about 10 or 12 million acre feet of water at the time when it was once full.

As you see these channels start being lined, you started seeing these channels shrink, and eventually go to '87, it's zero. So this is a land use planning and decision done by not anybody in this room but by the cities, public works, and the County of Riverside, San Bernardino, and the Army Corps of Engineers.

MR. FIFE: And, your Honor, before we move on to the next question, just to clarify your question, Mr. Wildermuth will be returning this afternoon to testify about the percolation basins and the Recharge Master Plan.

THE COURT: That's fine. Thank you.

Q (BY MR. FIFE:) Mr. Wildermuth, were there water quality concerns leading to the OBMP?

A Yes, major water quality concerns. Can we go to the

next slide. This map shows again the Chino Basin, this kind of gray tone here (pointing).

Each of these dots shown on this map represents the location of a well, and they're color coded by the amount of salt that comes out of water produced in these wells. And if it's blue -- Let me back up. There's a drinking water standard for salt, referred to as TDS, as 500 milligrams per liter. And if it's blue, it's less than half that drinking water standard shown on this map. If it's green, it's between the drinking water standard and a half, so it's less than 500.

When you get to yellow, it's between 500 and a thousand, or twice the drinking water standard. Orange is two to four times the drinking water standard, and red is greater than four.

And as Mr. Manning was alluding to, going into this OBMP process, one of the concerns was this -- he believes this area would go from ag to developed uses and needed a water supply for it. And what they to have done without the OBMP is increase pumping up here and built pipelines down here.

But having done that, a great deal of this high TDS water would have escaped to the river. It would have caused a lot of regulatory problems for the producers in the basin. The people who treat waste water in the basin would have a lot of trouble with that, so this was a major issue going

from the past is how to manage this salt.

The same thing for nitrate. Nitrate is a much more pernicious thing. The drinking water standards there is based not to taste, like TDS, or injury to appliances or processes. This is a health standard. So same kind of color scheme. The dots represent locations of wells. If it's blue, it's half the drinking water standards. If it's green, it's between the drinking water standards and half of its value, and it gets worse as you go out here (pointing). You can see this area in red here is substantial.

Before you saw a lot more of the lower TDS water up here. You'll see higher nitrates showing up here, kind of like it does down here sometimes. And the reason is that in the old days when that pumping was 200,000 acre feet, they flood irrigated that land, and that kept the TDS down. But they were pouring lots of these fertilizers in. Down in here, they're much more water conscious, and sort of the management of the dairy manure in the area is largely responsible for these really high concentrations down here.

The same problem. We developed this area. We have to have treatment to deal not only with salinity but with a high nitrate problem.

Of great concern also to the appropriators was we knew about most of these plumes back then. Some of them we know more today. But many of them were concerned about the impact of the salting plumes impacting their wells in the

future. So going into the OBMP, we were concerned about managing nitrate, TDS and a whole plethora of plumes throughout the region.

Q Can you explain what you mean by a plume. What's being shown on this map?

A Well, at some point in time, there was a release to the ground water system, somebody was dumping some waste through the soil. It hits the water table and the ground water's flowing in this direction (pointing) and just creates a plume, like a plume of smoke, if you will, like it leaves from a smoke stack. So we think we know who produces most of these plumes, and there are actions against most of these parties who are responsible for them. But this is just basically contamination spreading out in the direction of the ground water flow.

Q So could you describe the stakeholder process leading to the completion of the OBMP?

A Sure. Back in 1998, when Judge Gunn came up with his ruling in February, the day after that, the parties got together at the Watermaster's offices and developed a work plan, process to develop the OBMP.

So they spent a few months developing the work plan, and in June of 1998 they began to execute the work plan. It consisted pretty much of going back and looking at all those water quality concerns we were looking at, the changes in pumping patterns and trying to come up with what we call a

state of the basin, what is the state of the basin, much like the state of the union, only technical.

Once we did that, we went through a process of developing goals, and these are the same goals that Mr. Slater elaborated on. And in that process was a much more detailed description of these goals. Once we got out there, we said, "What are the impediments to these goals? What's keeping us from reaching those goals?" And from that, we developed initiatives or things we could do to get rid of these impediments. When they were done developing all those actions, they became what we call the program elements of the OBMP.

Q What other basin management strategies have evolved since implementation of the OBMP began?

A Well, I think there are principally two:

One of them was the so-called max benefit process, which we went into after the OBMP because we noted that to implement the OBMP we had certain regulatory constraints. And because of all the things we were doing in the OBMP, it became pretty clear that we did not need to have a level of regulatory scrutiny, in other words, what we were doing was going to preserve the beneficial uses of the basin, and if we -- one of the action items in the OBMP was to get what Mr. Slater referred to as hydraulic control.

And that was actually a goal. Rather than having all that highly contaminated ground water leave the basin by

avoiding pumping it, we were going to go move in and pump it and stop that flow from going out. So if we're doing all the other things in the basin and accomplishing that, then we can protect all the beneficial uses in the basin.

So we went to the regional board and asked them if they would raise certain standards, total dissolved solids, salinity standards. We found that when we were going to implement the OBMP, whether we did a reclamation or not made no difference on what the salinity in the basin was going to be.

You're going to hear about it later this afternoon from the executive officer of the regional board, but that was a big step.

To make that happen and make hydraulic control work, we found that there was subsequent engineering work that we needed to do, reoperation. What reoperation does is it makes it easier to accomplish hydraulic control with certainty. Without doing reoperation, we probably will not be able to get hydraulic control. Reoperation is basically lowering the storage in the basin, lowering the volume of the water in the basin in the northern part of the basin to take the pressure off of the southern end of the basin.

Q In your opinion, what is the status of implementation of the OBMP and the OBMP goals?

A We've been very dutiful in the implementation of the OBMP. These are the nine program elements that Mr. Manning

showed, the ones that basically remove all the impediments and allow us to achieve our goals. When each of these was put into the Peace Agreement and the implementation plan, most of them suggested the development of programs themselves. So the question we went and asked ourselves is have we developed these programs?

And the answer is yes.

Are they in some state of implementation?

And the answer is yes.

And this last column, I've put who the implementers are. And one of the things that stands out, when you look at this, is that the implementation, Watermaster's got its hands on it somewhere, but the implementers are stakeholders. I'll walk you through an example.

The Comprehensive Recharge Program. We were ordered to implement the OBMP in October of 2000. Before the end of 2000, we had developed a Recharge Master Plan. We kind of jumped the gun. We knew. We developed a Recharge Master Plan, and then we implemented it, pretty much having it done, by about 2005.

Subsequently, we know we have to do it again and we'll be doing it every five years.

For ground water monitoring, program element says do monitoring, monitor these things to answer these questions. So subsequent to the Court order, we developed detailed plans, and we modify all those plans from time to time, but

they are being implemented. So I will tell you that in sum, that we've been very good at implementing so far.

MR. FIFE: We have no further questions for this witness.

THE COURT: Any questions anyone has?

Yes, sir. Would you identify yourself.

MR. KIDMAN: Art Kidman, your Honor.

CROSS-EXAMINATION

BY MR. KIDMAN:

Q I just have a clarifying question because it's not necessarily intuitive, but can you explain the concept of rising ground water and how that affects the lower or southern end of the Chino Basin and why there's a possibility of degraded water escaping the Chino Basin and getting into the Santa Ana River.

And then what are the regulatory constraints that you referred to a couple of times?

A Sure. Can you roll back to the first map with the color pattern for the wells.

Too far. The other way.

That's good.

What Kidman's -- Mr. Kidman's referring to, the way ground water flows in the basin, it flows from the north and the northeast to the south. So just like this (indicating). And when we started pumping ground water, most of that went

down there. And back in probably the early eighties going backwards in time, no water left the basin, very little water left the basin as rising ground water. Santa Ana River water would flow down here and it would sink. A lot of it would flow into the basin and some of it would flow in and come up here as rising water.

Now, if this pumping were to decrease significantly, some of this contaminated ground water would come to the river and it would rise up, raise the TDS in the river. Now, there's a standard here, below Prado Damn and the Santa Ana River, that says the five-year volume weighted TDS concentration has to be less than some number.

Our concern was if the sudden influx of 20 to 40,000 acre feet of this high TDS water would cause a violation of that objective, if that was to occur, the waste water plants operated by Riverside and Inland Empire and Corona down here, who discharge the river, they would suddenly have to take salt out of their F-1. It's extremely expensive, and the irony of it, they have to throw the F-1 back into the river to dilute the river.

So basically, we'd be putting additional treatment on the back end of a waste water plant to reduce the salt in its effluent, to reduce the TDS concentration in the effluent, put it in the river, and then that would blend with the other flow of the river, including this high ground water as well, to produce a TDS in the river that would be

satisfactory to Orange County.

So now, what we decided to do in the OBMP was we wanted to capture this water because it has great value. We'd be throwing this water away, too. And so we put the desalters in, we capture this water, put it back into beneficial use, and we stopped the outflow. And with reoperation, we're making absolutely sure we never have any water leaving this basin by taking the water levels up here and depressing them, bringing them down, and this takes the pressure off the bottom end of the basin.

THE COURT: Any other questions?

Thank you, sir. You may step down.

Another witness, Mr. Fife?

MR. SLATER: Sheri Rojo, if you can approach the stand.

THE COURT ATTENDANT: If you'd stand here, face the clerk and raise your right hand, please.

SHERI ROJO,

called as a witness by the Watermaster, was sworn and testified as follows:

THE CLERK: You do solemnly state the testimony you shall give in this matter shall be the truth, the whole truth and nothing but the truth, so help you God?

THE WITNESS: I do.

THE CLERK: Thank you.

THE COURT ATTENDANT: Please be seated.

Will you state and spell your name for the record, please.

THE WITNESS: Sherry Rojo, is S-h-e-r-i, R-o-j-o.

THE COURT: Go ahead, Mr. Fife.

DIRECT EXAMINATION

BY MR. FIFE:

Q Miss Rojo, what is your occupation?

A I am the Chief Financial Officer and Assistant General Manager of Chino Basin Watermaster.

Q And what is your background independent of the Watermaster?

A I've been at Watermaster for seven years, and during that time, I've taught accounting classes at the college. I was a CPA. I am a CPA. And prior to coming to Watermaster, I audited water districts for a CPA firm.

Q Could you describe the basic administrative functions of the Watermaster.

A Sure. Watermaster's basic administrative duties could be broken down. I think the main -- one of the main items is to serve notice on the parties for the Court and for meeting notices as agenda packages and meeting packages, Court filings. So we send those all out to the affected parties, as well as maintaining the contact data bases, putting together the budgets to fund the projects that

you're hearing about, coming up with the assessments, how we bill all the parties to get the money we need to fund the projects and then putting together an annual report.

Q And over the years that you have been involved with the Watermaster, how has the process of notice to the parties evolved?

A It used to be about 800 notices were sent out whenever there was any type of Court filing or meeting agenda. Over the years, that's whittled down. I think seven years ago, when I first started at Watermaster, we sent out about 200 notices every time there was a meeting or a Court filing.

What we started doing about five or six years ago was sending out the notices electronically so we would -- instead of sending by mail the whole package of information, we would send a PDF document through e-mail to all of the affected parties. And then that was pretty large files people had a hard time opening, so then what we did is we started E-mailing out a link, which is in our website, where people could find those documents.

Q And could you turn around. Is that website on the screen?

A Yeah, there it is. Right here is the Watermaster website. We have a lot of information on the website. If you click on the FTP button over here on the left side and here is all of the different directories and all of the

different filings that we have since -- you know, most recently. We keep them up there.

These ones are almost a years worth of different types of data that people are still asking to see. So all of our notices, when we send out a notice to the parties, we have a link that goes right into this folder.

Q And over the years, how has the management of the parties to the judgment evolved?

A What used to be -- Before computers, managing all of their information, I guess, manually, and since then we've created different data bases that we're able to pull the different interested parties from. So whether it's just an attorney group or whether it's all Watermaster interested parties that we're going to serve a notice on, so we have a contact data base that we maintain and keep updated so whenever we get updated information, we're able to keep that posted.

Q Can you tell us what is the Watermaster assessment package?

A The assessment package is a way -- is the document that divides up the costs among the parties based on agreed upon methodology, based on the different costs and based on the Watermaster budget.

Q And what is the approval process for the assessment package?

A The assessment package, just like the budget package,

what we do is we put on workshops. For Mr. VandenHeuvel's presentation, the broad based group at the pool level, so we put on workshops where a lot of people come. A lot of the pools bring their staffs and they come to the different workshops that we have. Then the package gets approved through the entire pool process, through the Advisory Committee, and then it goes to the board for approval.

Q And over the years, how has the assessment package evolved?

A I think it used to be a pretty simple process that was typed into a document. Over the years, we've added components on. As we formulated the OBMP, it adds a whole new dimension to the assessment package and how we're going to divvy up the cost for implementing that type of program.

What we've done more recently, what we had in the past was a series of spread sheets that we tried -- that were attempted to be managed to try and capture the costs and how they should be allocated and passed out to the various parties. And what we've done over the last few years is develop a data base so we're able to enter into -- we have a series of data bases, but we're able to enter in production into a production data base system that's tied to our contact data base system, and once we tie out the production -- and it's more than just production, it's all of the annual water activities, so it's transfers, it's land use, it's land use conversions, it's water assignments and

so forth. We summarize all the annual activity. We send out that summary to the parties and we ask them to positively confirm that yes, this is the activity that we did over the past year.

Once we have the water activity completely reconciled for the year, then it becomes easy. We just assign the dollars from the budget that had already been approved, assign those dollars into the data base, and it just comes up with everybody's assessment.

Q And can you briefly describe the Watermaster budget then.

A The Watermaster budget is broken into four main categories for expenses.

The first is administrative expenses.

The second is OBMP.

The third is what they call implementation projects, which are the nine program elements that were listed previously.

And then a fourth dimension that we also bill for is for replenishment water purchases. So it's those four categories of expenses. We add up the amount of the budget for those four different items and then that determines our cash requirements for the next year. So it's that number that goes into the assessment package.

Q And finally, could you briefly describe Watermaster's annual report.

A The annual report, for your information, is just a summary of the basin activity for the year. It encompasses items from the assessment package, items from the budget as well as an update on progress and status of different projects and program elements that we're working on and where they are in the construction phase.

MR. FIFE: Thank you. We have no further questions for this witness.

THE COURT: Does anyone have any questions of this witness?

You may step down, ma'am.

Another witness, Mr. Fife?

MR. FIFE: Your Honor, are we going to take a break for lunch at noon?

THE COURT: Yes, we are. To allay your fears, yes, we are.

MR. FIFE: Well, I'm just thinking our next couple panels are, I think, a little bit lengthier than 15 minutes, but we could, if we went a little bit out of order on the outline, I think we could pull a witness that would be about 15 minutes.

THE COURT: That's okay. We can interrupt someone if you want. So go ahead and call somebody.

MR. FIFE: Mr. DeLoech.

So while he's making his way to the stand, your Honor, we ordered the outline in a way that was logical in

terms of the OBMP, in terms of understanding, but each of the areas is fairly distinct, so what you'll be hearing about is storage from Mr. DeLoech.

THE COURT ATTENDANT: Raise your right hand, please.

ROBERT DE LOECH,

called as a witness by the Watermaster, was sworn and testified as follows:

THE CLERK: You do solemnly state the testimony you shall give in this matter shall be the truth, the whole truth and nothing but the truth, so help you God?

THE WITNESS: I do.

THE COURT ATTENDANT: Please be seated.

Will you state and spell your name, please?

THE WITNESS: Robert DeLoech, R-o-b-e-r-t, D-e, upper case, L-o-e-c-h

DIRECT EXAMINATION

BY MR. FIFE:

Q Mr. DeLoech, what is your position in the Chino Basin?

A I am currently the General Manager and CEO of the Cucamonga Valley Water District, and I am also the Vice-Chair of the Advisory Committee. In the past I have chaired that committee as well as the appropriator chair and

served as chair of the Water Quality Committee.

Q How long have you been the General Manager/CEO of the Cucamonga Valley Water District?

A Since 1997.

Q Other than Cucamonga, have you had any other experiences in the Chino Basin?

A I have. My previous employer was the City of Pomona, and I first started working in the Chino Basin in approximately 1991.

Q In your time in the Chino Basin, have you become familiar with storage issues in the basin?

A Yes, I have.

Q Were you involved in the development of program elements eight and nine of the OBMP?

A Yes, I was.

Q And what are program elements eight and nine?

A Program elements eight and nine deal with storage management and then storage and recovery.

Storage management, which is program element eight, actually dealt with that component of storage and Watermaster's responsibility to manage basin water and storage capacity within the basin for basin users so to put that water to maximum beneficial use.

Program element nine dealt with Watermaster's ability to regulate not only storage but the ability to recover that water at a later date.

Q Can you explain for the Court what is meant by the term storage?

A Well, storage is that available space or capacity within the confines of the basin. Sometimes we refer to the basin like this big tilted bathtub, and there's the ability to put water in and there's the ability to take water out. And there still is available storage capacity within this large basin.

Q And how is water put into storage?

A Well, there's multiple ways. The most simplest way, without human intervention, is natural rainfall, percolation that falls on the ground and percolates into the ground and is captured and stored in the basin.

But as pointed out in previous testimony and presentations, Watermaster has done a job or taken on a task of capturing storm water, recharging that water back into the aquifer where it's stored. Water that is not produced in any given year by a producer within the basin has the ability to carry that water over and store it within the basin.

Water can also be imported from outside the basin, bought from Metropolitan Water District, as an example, or from other producers or other parties and brought into the basin, recharged and stored within the basin. Kind of a somewhat new technology, not new to the industry but new to our basin, is the ability to inject water back into the

basin. Simply put, that's just a ground water well almost in reverse where instead of pumping water out, you're actually taking water that's imported and putting that back into the basin to store that water.

Q And what are the different types of storage programs in the Chino Basin?

A Well, I think, as described in these two elements, we come into two types: One, local storage. And the other is storage and recovery.

Local storage accounts are those accounts that are managed by Watermaster for ground water producers to meet their local demands from year to year. Those accounts are managed and regulated by Watermaster through agreements.

The storage and recovery program, as envisioned in program element number nine, was a very ambitious, large scale storage, or what we call conjunctive use program, where Watermaster anticipated through its analysis and engineering that we could actually store upwards of 500,000 acre feet of water in the basin at any one time without causing harm or damage to other producers.

That program was successful from the perspective that we did the analysis that showed that we could do that type of a large scale storage and recovery program, although we never did effectuate such a program.

Watermaster, a number of years ago, put out a request for proposal to any of these that may want to import water

into the basin, store it and leave it there for a period of time to meet future drought demands or whatever conditions might be the case. We did have some interest from as far south as San Diego County and Northern Los Angeles County but nothing that really amounted to a large scale storage and recovery.

Q But are there any storage and recovery programs currently in place in the basin?

A Well, that program I just described, the large scale storage and recovery, is still in place in terms of the ability to effectuate such a program. But probably the most current program is a program that Watermaster, in conjunction with Metropolitan Water District and the producers, which is called the Dry Year Yield Storage and Recovery Program. Under this program Metropolitan District, as the wholesale importer of water, stores up to a hundred thousand acre feet of water in this first phase, provides capital to the ground water producers to then build facilities to pump that water and treat that water.

When Metropolitan makes a determination that because of their supplies in a dry year, they will ask and require us to quit taking imported water, and we'll have to shift, using those facilities we've constructed, to producing ground water to meet our needs rather than import water.

There's another small program that's really not a storage and recovery program in the strictest definition of

element nine, but that's a small program where our agency, The Cucamonga Valley Water District, entered into an agreement with an Orange County retail agency, Santa Margarita Water District, and in that program, it's basically what we would, I guess, classify as an insurance program. Santa Margarita Water District, under its obligation of state law to meet water supply requirements due to development concerns, has to show that they have adequate water supply in their water portfolio to meet a 20-year demand at any one time.

So they approached Cucamonga, who had water in a local storage account with Watermaster, to reserve a portion of our supply held in storage for their future use. That program's been in place for a number of years, and there's mechanisms in there by which if Santa Margarita should ever make a call or demand on that water, we can actually shift or transfer that water to them.

Q What is the role of Watermaster in that program?

A Watermaster actually was just kind of the administrative agent for the agreements between both parties. Really, the agreements would be between the Metropolitan agencies. If Santa Margarita Water District wanted to place a call on that water, it would trigger then the wholesale agencies, Inland Empire Utilities Agency and the like agency in Orange County, of making a transfer of that water.

Q In your opinion, why are program elements eight and nine important to successful implementation of the OBMP?

A I think you're going to see, in conjunction with all the other elements of the OBMP, eight and nine provide significant flexibility to Watermaster and the ground water producers to manage local supplies. They allow us to store water. They allow us to place water in that basin so we can meet future demands. They allow us to produce that water or recover it at different times of the year.

All that being said, it provides Watermaster with a variety of tools to manage the basin. Also, I think in furtherance of the judgment, allows us to maintain the safety of the basin.

Q And finally, in your opinion, has Watermaster so far met its obligations into the implementation of the OBMP objectives regarding storage?

A In my opinion, they have.

MR. FIFE: Thank you. No further questions.

THE COURT: Any questions from anyone of this witness?

All right, sir. You may step down. Thank you.

We'll be in recess then till 1:30, ladies and gentlemen.

(Lunch recess.)

SAN BERNARDINO, CALIFORNIA, MONDAY, FEBRUARY 2, 2009

1:30 p.m.

DEPARTMENT NO. S-32 HON. JOHN P. WADE, JUDGE

(Betty J. Kelley, C.S.R., Official Reporter, C-3981.)

THE COURT: All right, Mr. Fife. Your next witness.

MR. FIFE: Mr. Malone. Your Honor, while he's making his way to the witness stand, I just want to sort of reorient us after lunch so up on the screen, I've put Mr. Manning's slide of the nine OBMP elements.

What we are going to do for the rest of the afternoon is basically walk through these elements. We've tried to structure the outline so that we're not simply going through one, two, three, four, five. As Mr. Manning indicated, some of these are related, so we've grouped them and we've tried to group them around current -- the most current issues at Watermaster right now. So it's sort of a hybrid of sticking to the list of nine, going with the most current issues, grouping things logically.

Just before lunch then, we covered eight and nine. Now, we're going to go back up to the top of the list and we'll start out with number one. We'll go through monitoring. Then we'll skip down to Management Zone One strategies and then march through the rest as indicated on the outline. So I just wanted to sort of orient you to

where we are in the presentation.

THE COURT: All right.

THE COURT ATTENDANT: Raise your right hand, please.

ANDREW MALONE,

called as a witness by the Watermaster, was sworn and testified as follows:

THE CLERK: You do solemnly state the testimony you shall give in this matter shall be the truth, the whole truth and nothing but the truth, so help you God?

THE WITNESS: Yes, I do.

THE CLERK: Thank you.

THE COURT ATTENDANT: Please be seated.

Will you state and spell your name for the record, please.

THE WITNESS: Andrew Malone. A-n-d-r-e-w, M-a-l-o-n-e.

DIRECT EXAMINATION

BY MR. FIFE:

Q Good afternoon, Mr. Malone. What is your occupation?

A I'm an associate scientist and a partner at Wildermuth Environmental.

Q How long have you been with Wildermuth Environmental?

A Over 11 years.

Q Have you been involved with Chino Basin that whole time?

A Yes, I have.

Q What has been your involvement with Watermaster's monitoring programs?

A Well, I'm a project manager for some of the programs, which means that I help design the programs. I go out in the field from time to time and actually collect the data. I've been involved in developing some of the data bases that -- where we store the data, and I analyze and report on the data. So I'm pretty intimately involved in the data through its whole life cycle.

Q And what types of data are available about the Chino Basin?

A I'm going to stand up, if that's all right. I've listed here some of the main data types that we collect, and you can basically break it down into two major types.

It's ground water data, and that would include geologic data from the wells that we drill. Pumping data, obviously, is a very important piece of data for Watermaster. They measure the pumping and they compare it against pumping rights, and that's the way they calculate overproduction and replenishment obligations.

Ground water levels, where we measure the ground water level in the wells, and that's how we track storage and storage changes over time. And it's how we determine

how ground water flows and which direction ground water flows. It's all pressure driven, and we do that with ground water level data.

And, of course, the ground water quality, which you can substitute the word chemistry there, for ground water quality.

Then the other major category of data is surface water, and that comes in the form of precipitation. We collect that data from flood control districts mainly. But then we have a lot of surface water flow and quality that we measure in the streams. And now with recycled water becoming more and more a resource that we're utilizing in the basin, IEUA tracks a lot of that from their environment and the quality of that water.

And then we're taking that water and we're putting it into the recharge basins as a form of supplemental water supply for the ground water basin, and so we're monitoring the quality and the amounts of water that are going into those basins as well.

There's a last item here called land subsidence that we do a lot of monitoring as well, and that's really a mechanical response that's going on inside the aquifer system as ground water levels are going up and down. Land subsidence can be a mechanical device that's going on within the aquifer sediments, and that has been an issue in Chino, so we monitor that very closely since the implementation of

the OBMP.

Q How does Watermaster obtain this data?

A Well, we obtain it -- Watermaster has staff, and they've hired Wildermuth Environmental staff, also, to go out and collect data mainly from the private wells in the basin. But there's also a lot of data that's collected by the municipal pumpers themselves and other agencies out there, other water agencies, and what Watermaster staff does is they go out and collect that data from the -- from those agencies that collect it and they compile it into their data bases.

Q And who are those entities?

A Those would be all the municipal pumpers, as well as IEUA and the USGS, they do some monitoring out in our basin, the DTSC, where they're monitoring some super fund sites. There's other ground water contamination plumes in the basin that are being monitored by the potential responsible parties. We collect that information mainly from the regional board. We go to the regional board's office and collect all that data that's been collected at those sites. Flood control districts might be another data source.

Q And now you indicated that you wanted to walk through some photographs to demonstrate the different types of data that are collected.

A Your Honor, I put together a couple slides here, just some photographs that will give you some visual explanation

of what we do out here as far as collecting data.

THE COURT: Okay.

THE WITNESS: I thought it might bring some additional understanding.

Really, where most of our data on the ground water basin comes from is from the wells. These very same wells that we're pumping the water out of the aquifer from, that's where we collect all of our information. They're our eyes into the ground water storage reservoir. So all the data that we get from them, it starts in the very beginning when we drill the well. When we drill the well, this is an example of what comes up out of the hole as we're drilling it.

So what you're seeing here at different depths within the aquifer system are the actual aquifer sediments that are coming up. You can see it's very highly variable in terms of the composition and the texture of these sediments.

You have very course grain sands and gravels and you have very fine silts and clays here, and they're all inner bedded. It's very complicated when you're watching one of these wells being drilled and trying to log these sediments as they come up out of the hole.

When a well turns on, the water is sucked mainly out of the course grain sediments. These course grain sediments, they have a lot of pore space and water can flow in between the pores to the well. So they enter -- water

enters the well through these course grain sands and gravels.

The clays are also saturated. They have water in them, too, but they're not very permeable so water can't flow horizontally towards a well within these clays.

But what does happen is that water can leak into the sands and gravels and then make its way to the well. And when that happens, when the water drains out of these clays, the clay can compress. And so that manifests itself as land subsidence on the ground surface, and we'll talk more about that a little later on.

But I thought this graphic was a good explanation of how that works. So at any rate, we log all this data at every well that we can get it, we log all this information about where the sands and gravels are and where the clays are in depth, and we do that at a number of wells.

Can you go to the next slide.

So what we do, what you're looking at here is what's called a hydrologic cross-section. So this is looking through a slice of the earth here. And this is about a thousand feet, and there's a lot of vertical exaggeration because this is several miles here.

But what we do is we plot up all that well log information, we call it, on one of these cross-sections and we can tell where the consolidated bedrock is. This is non-water bearing, as opposed to the unconsolidated aquifer

sediments, and we can even tell a little something about the differences between the sediments in the shallow zone and the sediments here in the middle and the sediments here in the deep. And we can tell whether or not it's more permeable here or less permeable here and so forth.

We use a lot of this information when we generate our computer simulation ground water flow model. This gives us some idea of the physical geometry of the aquifer system and then some of its properties as well. They're all very important to understand.

So we use all the well data from the well drilling to come up with models like this.

And this is what a typical water supply well is. I don't know if you're familiar with this or not, but basically, here's the well head and the pump motor, so all the water is pumped here, and then it enters this discharge pipe to go out into the supply system. This tube right here in this well, this is called the sounding tube, and we unscrew this and this is where we drop a device in to take a water level measurement.

There's a spigot right here, and this water that's pumped, that's where it's sampled from. And the water is sent off to analytical laboratories to better understand its dissolve chemistry. And then right here, you have a flow meter. And this is where we monitor how much water is pumped through this discharge pipe and out into the system.

Can you go to the next slide.

And this is a close-up of what the flow meter looks like. It's measuring here the flow rate, the instantaneous flow rate, 627 gallons per minute, and it also has an odometer here in thousands of gallons. That's the units that's used. And periodically, someone comes out and reads this number, records the date and time. The next time they do it, simple subtraction, and that's the volume of water.

Watermaster collects all this data from the appropriators, and they go out to the private wells and they collect it themselves.

Can we go to the next slide, please.

This here is an example of a monitoring well. It's one bore hole. It's got five wells inside of it. They all go down to different depths within the aquifer system.

The third dimension of the aquifer system is very important. Sometimes we think of things in two dimensions here on the surface of the earth, but in the ground water basin, we've got a third dimension down there. And so we build wells like this to help us understand what the water levels and what the water quality is like at different levels within the aquifer system.

And here we have what are called transducers that are measuring water level and recording them once every 15 minutes. And so we do this especially when we're doing some testing, and we can learn a tremendous amount about the

aquifer system when we install facilities like this. And we've got quite a few of these now across the basin.

What you're looking at here is a recharge basin where recycled water is being recharged and storm water is being recharged.

THE COURT: When you say "recharged," what do you mean by that term?

THE WITNESS: Percolated. And the water that's percolated saturates through the unsaturated zones and finally reaches the saturated zone, which is where we pump our ground water from. It might be in this location. It might be two or 300 feet that it would have to percolate before it would hit ground water.

What we have is one of our staff here that's not only taking a water level measurement at a monitoring well here, but these tubes right here are sucking some water out of the monitoring well and is taking a water quality sample. And the reason why he's doing this monitoring here so close to this recharge basin is because recycled water is being percolated here and it's part of the Health Department's regulations as far as allowing the basin to be recharged with recycled water.

Q (BY MR. FIFE:) And so, Mr. Malone, how much data does Watermaster collect?

A Well, it's a tremendous amount of data. And you heard Mr. Manning talk about high def, and I think when you

see these graphics here, you see how many wells we have across the basin and how much data is collected from each well, I think you can get that sense.

What you're looking at here is a graphic of ground water production during the year 2005 and 2006, and the larger and the redder the dots are from the wells -- on the wells, that means the more water was produced during that year, pumped from the aquifer during that year.

As you can see, most of the municipal pumpers pump up here in the northern part of the basin. They have fewer wells but they're bigger wells that pump a lot more water. And down here in the agricultural area, we've got fewer -- or many more wells but they're smaller; they don't pump as much.

Some of these bigger dots down here, these are the newly drilled desalters wells, and so they are municipal supply wells now and they pump to reverse osmosis facilities where the water is treated and then served for municipal purposes. So that's why we have some bigger dots down here as well.

Q Mr. Malone, could you call attention to where on this chart indicates how much wells we're collecting data from?

A About 700 wells where we collect production data in the basin. Thank you, Michael.

This graphic here is showing where we collect water level data from. And the different colors on the wells here

represent the frequency that we go out and collect water level data from these wells. The blue represents we go out twice a year. The orange dots is we go out once a month and measure water levels. The green dots, the owners, and it's mainly the municipal pumpers, they go out about once a month and measure water levels. And then the red dots are where we have these pressure transducers where we're recording water levels once every 15 minutes.

And so minus those 15-minute data, we collect about 1500 manual measurements of water levels of private wells down here at private wells in the basin every year. We have about 115 of these wells with pressure transducers and we go out quarterly and download that data. So it's quite a bit of data.

The next slide, please.

And this is water quality data, and all of this sampling here didn't go on last year but over a five-year period. These wells aren't often required to go out and monitor every year. Some of them are once every three years. Water quality typically doesn't change very rapidly in a well, and so every three years is typically a good frequency to go out and measure.

But again, the green wells are the municipal wells. The red wells are the private wells, and then the blue wells are from a lot of these point source ground water contamination plumes where we go to the regional board and

we collect their data.

So you can see they've got lots and lots of monitoring wells where they're collecting data.

And then lastly, we have the surface water, and the surface water is mainly -- our surface water monitoring is mainly concentrated down here in the lower half of the basin. (Pointing.)

And you've been told this a number of times, but I'll just reinforce it. Basically, our ground water flow directions are from the north to the south, and our ground water levels get very shallow down here. And when they get shallow in the little stream valleys, you can have ground water that's rising and becoming surface flow so you can have this ground water basin feeding the surface flow here.

And because this ground water is pretty high in salt and nitrate, we're concerned about it because we have a neighbor down here in Orange County that recharges all this water, surface water that makes its way past Prado Basin. And so we actually have regulations in the basin plan that call for us to control the ground water levels down here, try to depress them down here so that we minimize our effect on the water quality and the flow in the Santa Ana River.

But also, part of that is to do the monitoring to back it up. Are we impacting it or not? So we do monitoring here at some of these green dots where Watermaster staff actually comes out and does the monitoring

of flow and water quality at some of these locations. And then the red dots here where IEUA is discharging their recycled water, and they monitor very closely how much they're discharging and what water quality, and we use that information to figure out what the effects of the ground water basin is on the Santa Ana River.

So we stay up here, collect about 220 surface water quality samples and about 100 flow measurements along the Santa Ana River and its tributaries over the past year.

Q Mr. Malone, do you know the cost of the monitoring that Watermaster does?

A The cost of the monitoring, in terms of labor -- annual cost of the monitoring in terms of labor and laboratory fees, is about a million dollars a year.

Q And does this amount include the monitoring that's done by others?

A It does not. And it also does not include any capital expenditures. Sometimes we go out and we have capital expenditures on monitoring facilities, and that's not included in that one million, as well as monitoring that's done by the pumpers. They do a tremendous amount of water quality monitoring, especially at their wells under their regulations with the Health Department, their permits.

Q And do you know how much, in dollar figures of value, that would be?

A I don't personally know it, but I had a conversation

with Mr. Manning last week and he gave me rough justice numbers of about three million dollars.

Q Mr. Malone, why does Watermaster collect this data?

A Well, there's two main reasons:

One is the OBMP, the obligations under the Optimum Basin Management Program. When you saw these nine program elements, monitoring was the first one. Monitoring was the first one, but all the subsequent program elements, they depend in some way on the monitoring data that we collect. So we're not just out there monitoring for monitoring sake. It's very specific monitoring designed to answer certain questions for all these other program elements.

So it's OBMP commitments, and then there are regulatory commitments like we were just talking about with the surface water here. There are regulatory commitments as to why we do some of our monitoring as well.

Q And how does Watermaster store the data that it collects.

A In what's called relational data bases. It's a tremendous amount of work, in terms of being part of these monitoring programs, is the collection and the compilation of the data. We check the data very closely before we put it in the data bases. So in order to do it right, it's a lot of labor to maintain these data bases.

Q And has this data been used to construct a computer model of the Chino Basin?

A Yes, it has.

Q And can you tell us very briefly what is a computer model?

A Well, a computer model, it's software code. When you say model, sometimes you think of a physical construction. But we sit down at a computer and we construct what the ground water basin looks like geometrically and physically, and then what we do is we calibrate the model. And the way we calibrate the model is we take all the historical data, and it's used as input and as a check against the model results.

And what we're trying to do is simulate the past as closely as we can with the model. If we're successful at simulating the past with the computer simulation model, then it gives us confidence that we can use it as a predictive tool for predicting what's going to happen in the future.

When I say what's going to happen, I mean what's going to happen to water levels, how is ground water flow going to change in the aquifer system? If we recharge in this way and we pump in this way, how is the ground water basin going to respond to that? And we use that information to help us do the CEQA process for a lot of our planning that we're doing.

Q And in your opinion, how effectively does the Chino Basin model simulate reality?

A We have data here that indicates that it's a very

well calibrated model. So it gives us a lot of confidence that it's a good predictive tool in our planning scenarios. So what -- How can I explain this to you really quickly? What we have on the X axis here is measured water level. And what we have on the Y axis here is the simulated or predicted water levels at wells during our calibration. So we're looking at historical data and comparing to how our model compares with its simulation of historical conditions.

So perfect match would be everything plotted right on this line. And you can see that its very tightly clustered around this line.

And another thing is that there's no bias to one side or the other side of this line. So these are the types of charts we put into our modeling reports to demonstrate that we have a well calibrated model present.

MR. FIFE: Now, we have about a three-minute presentation that Mr. Malone is going to go through to show you some of the features and capabilities of the model.

THE COURT: All right.

THE WITNESS: So what you're seeing here is the software program that my colleague over here, Wen-Hsing Chiang developed, and it's a 3-D visualization tool. So we use all the information that we generate to generate the model, we put it into this program here so we can visualize not only the model but some of the model results. So what Wen-Hsing has here is we're looking down, it's a map view on

the Chino Basin, and you can see a lot of the ag area, the fields down here, how it's so well urbanized up in this region, and this is our model boundary right here in yellow, the Chino Basin. We include a little bit of what's called the Temescal Basin down here on the other side of the Santa Ana River because it's connected.

What Wen-Hsing is doing now is he's tilting it. You can see that the air photo is draped over the top of a digital elevation model. And so we can now come in and see what's underneath here in the model. Just put a little transparency to the digital elevation model and the air photo.

And what he's turned on here are the wells and the well depths, so the location of the wells and the well depths.

And then what he's turned on here is the bottom of the aquifer.

So again, we developed this surface of the bottom of the aquifer based on the well data itself, those cross-sections. I showed you one cross-section, but we have probably 12 or 15 of those cross-sections in different locations. And it helped us construct the bottom of the aquifer here.

So again, ground surface above, we have some well depths here, and then you're looking at the bottom of the aquifer.

What he's going to turn on next is the water level, I believe. You can tilt down, and then he's got a transparent water level here so you can see the unsaturated zone between the land surface and the water table. Everything beneath the water table, all those sediments are saturated fully with water, their pores bases are saturated with water.

And then with the model, what we can do is look at flow directions. And so what Wen-Hsing has just plotted on here are vectors of the direction of ground water flow. He's plotted it in two dimensions, and if you go to the top, Wen-Hsing, you can see how some of these vectors are showing flow in towards the wells. This is a model result from December 2035.

So what we're actually doing here is visualizing what some of our model results are. We had certain pumping programmed into the ground water flow model, and we had certain recharge programmed into it, and then we ran the model over a number of years out into the future. And this is -- we're just looking at a snapshot in time here of December, 2035.

And you can see here --

Can you back out a little bit more, Wen-Hsing, please.

What you can see here is the Santa Ana River, and Mr. Wildermuth was talking earlier about water recharging in the Santa Ana River and then flowing out into the basin. And

that's what this model is predicting here, that this is occurring, recharge in the Santa Ana River, and then it's flowing out in the basin and it's being pumped ultimately by these desalter wells right here. (Pointing.)

I think lastly, what Wen-Hsing has are some path lines that he's going to turn on to give us the third dimension that I've been talking about. And what he's showing here, again, this is two-dimensional vectors, but there's a third dimension here. And so what he's done is he's injected some water particles upstream, and he's watching how the model is showing how that water particle would travel and ultimately come up and be produced by some of these desalter wells here. So we have the ability to really look in three dimensions what our model results are telling us.

A lot of this can be just very useful information.

If you back up a little bit, Wen-Hsing.

We have, again, a lot of these point source water -- ground water contamination plumes up in this area, and we can use this model to predict where those are going to go in certain scenarios of recharge or pumping across the basin. So that gives you a little sense of what we've been up to.

MR. FIFE: Thank you, Mr. Malone.

Your Honor, Mr. Malone is going to stay up and he's going to begin our testimony for subsidence, the next section, but I think this would be an appropriate time if

there's cross-examination concerning monitoring or if you have questions about Watermaster's monitoring element.

THE COURT: Does someone want to ask a question of this witness?

(No response.)

THE COURT: Go ahead, Mr. Fife.

Q (BY MR. FIFE:) So we'll move straight into our discussion of subsidence.

Mr. Malone, were you involved in the development of the long-term plan for the management of subsidence?

A Yes, I was.

Q And what was your role in the development of the long-term plan?

A I've been the project manager. So again, just like with the monitoring programs, I helped develop the scientific investigation to investigate the subsidence phenomenon in Chino Basin. I've facilitated all the meetings of the MZ-1 Technical Committee, and I drafted the first draft of the long-term plan, and I've reported on -- drafted all the reports on the technical investigation, the results and conclusions of the technical investigation.

Q And what is land subsidence?

A I've got some more graphics to show here, essentially, what land subsidence is. This is a before and after picture. Land subsidence is the vertical downward displacement of the land surface. But what we think we have

in Chino Basin is pumping-induced land subsidence.

And so remember back to my discussion on the clays. What I'm trying to represent with here is that we've got some wells here and their well screens, and these white areas are sands and gravels. And the green blobs here, layers, are the clay layers. So what happens is when you turn on this well, you have water flow towards the wells and the vertical drainage of water out of the clays.

And again, what can happen is if you pump enough water and you draw water levels down enough, you can have the water draining out of the clays and the compression of those clays occur in a permanent fashion where the water can never again come back into these clays and reinflate them. They're going to be compacted like this permanently, and that results in permanent land subsidence.

Q And has there been land subsidence in the Chino Basin?

A Yes, there has. I believe I've got some graphics to show what the historical data has shown us.

What you're looking at right here is a graphic of the west side of Chino Basin. So you have the 10 up here and the 60 here and the 71 here (pointing), so this is the City of Chino and Pomona, Montclair up here and Ontario over here. And the shading on here is telling us about land subsidence. We obtained this data from radar satellites, and I'll explain that in more detail later. But for now,

this is giving you a gist of where the subsidence has occurred in the basin in the past.

Right now, what we're looking at is subsidence that occurred from January, '96, to April, 2000. And these values here are contours and these values are in centimeters. So we had about 12 centimeters of subsidence in these dark red areas. But you can see that we've had subsidence across a good portion of Western Ontario and up here in Pomona and, of course, all across Chino here. If you go to the next slide, please.

Now, we lost a lot of the color here, but I want you to note that we've got higher values as well. And this was earlier in the 90's, September, '93, to December, 1995. And you can see here where we have over 50 centimeters of subsidence down here in the southern part of Chino.

And we still had our subsidence occurring in these other areas, but it was pretty severe down here. And what it was accompanied by, this subsidence, were ground fissures which are shown here in brown. And this is really how we first discovered that subsidence was occurring was because we had fissures open up in the ground surface, and we've got some photographs of those, I believe. That's going to be the next couple slides is actual photographs.

Yeah. This here is a fissure that opened up in December of '92, and this is at prison property at the California Institution For Men. And, of course, it had made

them abandon this building here, and they had to fill in this fissure.

And this here is an ag field also on prison property. It opened up in February of '91.

THE COURT: Does the subsidence affect the capacity of the water basin?

THE WITNESS: That's a good question. People ask that question quite often. But it doesn't really. Yes, that water is drained one time out of those clays, but it was always in those clays and never really participating in the circulation system, for lack of a better term, the circulation system of the basin. You did mine that water out of the clay, but it was never there for the taking in the first place. But you did take it and now it's gone.

So yes, we did lose some storage in the basin, but it really wasn't part of the circulation system in the sands and gravels. I think that's the best way I can explain it. Yeah, it's ground water mining, but you didn't really lose capacity, storage capacity, because it's not part of the circulation system.

Can you go back to -- Yeah, go back. Just to give you a little history on what happened, is that we had a number of wells, deep wells over here in this part of the basin that pumped a lot of water here in the 80's and early 90's. And we drew down water levels to all-time historic lows in this deep part of the system. And then these ground

fissures appeared.

Now go on. Once these ground fissures appeared, what happened is it spurred some scientific studies of what was going on over here. And there was a ground level survey that was done in 1987 and then maybe 1993. After these fissures appeared, they did an additional survey. And then they did them periodically all the way through till 1999.

And what they came up with was this contour map of subsidence from 1987 to 1999. You can see here that we had over two feet of subsidence in these areas here. It's more of a trough of subsidence, and it's a very steep sided trough right here where we have no subsidence that occurred out here, but two and a half feet here, and it's a little more gradual over here.

So immediately, it began to -- we began to see the link between this very steep -- we call this differential subsidence where you have none here and then a lot here -- you see this very steep grading of the subsidence which could have led to these ground fissures, the stretching of the earth at the surface.

And then also the fact that these subsidence rings were concentric around wells, it led us to believe that the ground water production was potentially the cause of the land subsidence and then the land subsidence was the cause of the fissuring. That was the theory that we had in the Optimum Basin Management Plan program, and it lead us to

doing a more detailed investigation to really figure out the cause and pin down what some of the management criteria might be.

Q (BY MR. FIFE:) Hence, Mr. Malone, what does the OBMP call for with regard to subsidence?

A So the OBMP, what it called for was immediately to try to minimize subsidence in the short-term while we would conduct an investigation to collect the information to better understand subsidence. We wanted to understand the extent and the rate that it was currently occurring and what are, most importantly, some of the mechanisms behind the subsidence and the ground fissuring. And with that information -- and this was going to be about a five-year study -- with that information, to try to come up with a long-term management plan with the goal of reducing or abating future land subsidence and ground fissuring to occur.

Q And what actions did Watermaster take to comply with these requirements?

A They took all these actions. They formed a technical committee, first and foremost, and the Technical Committee consisted of Watermaster staff and then all representatives and their consultants from MZ-1 pumpers. When I say MZ-1, what I mean is the western side of Chino Basin, so pumpers in the western side of Chino Basin, they were on the Technical Committee, and so were some of their technical

consultants, and we formed that committee to design the investigation and to meet periodically to revise the investigation, to look over the results and so forth. And it was also our information clearing house where we would share data and ideas.

Q And so what has Watermaster done by way of investigation of subsidence?

A Well, what we essentially did -- what our investigations essentially entailed was a lot of ground level monitoring, so we continued those ground level surveys but on a more frequent basis. We go out twice a year and do ground level surveys across the entire west side of Chino Basin.

We also employed this radar satellite imaging of the ground water basin as well and the way this works is pretty interesting. There's a satellite that shoots a radar beam down to the ground surface and then it reflects back. And then it moves on, circles the earth and comes back a month later and takes another one. And it measures very precisely the amount of time it takes for that radar wave to rebound off the land surface and come back.

And so then it interprets any differences in the time it takes for that as a land surface change. And it has a very high resolution, and we can learn a lot from it and it's spatially continuous everywhere where our surveys are pointed, measurements at certain locations. So we use this

data quite a bit, along with the surveys to monitor land subsidence.

We also built a facility.

Patrick.

This is what some of the radar data looks like. And what you're looking at here is the west side of Chino Basin, again, and then you can see our subsiding trough here and this very steep gradient of subsidence right here -- and it's shown here in cross-section along the transect right here. It's shown what that means, and that's 12 centimeters over the course of a couple of years. But we built an installation that's called the Ayala Park Extonsometer.

What an extonsometer is, it is a deep bore hole. In this case, it was 1400 feet deep, and we put a cement plug down at the bottom of it. And then we take a steel pipe and we insert it into the hole and we just rest it on the bottom of that cement plug. And the steel pipe comes and pops out of the ground and it sits right there. Then what we do is we build this very stable ground surface datum. These piers go down about 30 feet. And they're anchored very solidly at a ground surface. So if there's compaction that's occurring in the aquifer system, this whole ground surface datum will come down but that pipe will stay stationary.

And so what we do is we measure the displacement between this ground surface datum and that pipe, and we do it with transducers and we record it every 15 minutes. And

we do the same thing with the water levels and the pumping. We really know what's going on with the wells and the water levels and then what's going on mechanically in the aquifer system. And this was instrumental in our investigation of the land subsidence.

And what we did is we ran pumping tests where we purposefully tried to draw water levels down so low that we would cause some interlastic permanent compaction to occur and some permanent land subsidence. Not much of it is occurring anymore, so we needed to do a test where we could find that water level that we didn't want to exceed in the future so that that would become our management criteria in the future. That was the whole purpose of the test in a nutshell.

This is what the extensometer looks like, and we actually have two of them, one really deep and one shallow, so we got some resolution in where most of the compaction was occurring in the aquifer system.

But here's this steel pipe. This is the well and here's the steel pipe coming up out of it. These counter weights right here stretch this steel pipe a little bit. It's 1400 feet of steel and it's going to bend on itself and rub up against the insides of the well. We wanted a frictionless environment in here. So we take about 75 percent of the weight off the pipe and we stretch it out there a little bit.

And here's our transducer, and this is our ground surface datum that you can barely see up above. And we have a transducer here that's recording the vertical displacement between the pipe and that ground surface datum up top.

Q And, Mr. Malone, what were the results of your investigation?

A Well, we were successful in identifying this threshold water level. And we did cause a tiny bit of permanent compaction. And so I would say that was the main result.

Q And what actions has Watermaster taken to reduce or abate subsidence?

A So they've implemented the long-term management plan. And again, the long-term management plan uses this threshold water level as our main criteria for the management of water levels and, hence, the management of land subsidence in this area here.

What we did was we identified -- this was the main study area here, and this is the location of the Ayala Park Extensometer, and then you have your ground fissures right here. And these are a lot of the deep pumping wells that are in the area. And so we call these wells here the managed wells. And so -- but then we basically have a water level here, an index water level here that we're tracking very closely. And so far, water level -- we've kept water levels above.

THE COURT: I don't think you answered the last question really. What steps have been taken to reduce or abate the subsidence and fissuring?

THE WITNESS: I think I would go back to the establishment of this water level as our management criteria. What we've done is we've established that water level here. We've informed all the parties that this is the water level, and we'll show you the water level on our website. And you should manage your production here so that you don't draw water levels beneath it.

THE COURT: All right. So that's a base line situation?

THE WITNESS: Yeah. And --

Q (BY MR. FIFE:) Mr. Malone, why don't you tell us, what are the major elements of Watermaster's long-term plan to reduce subsidence?

A Just to make sure I covered them all, Michael, I've written them down.

Well, first of all, it's a voluntary plan. That's something you should know. It's not a mandatory plan. Watermaster has asked the pumpers to comply with this plan voluntarily.

Defined the managed area and the managed wells, established the guidance level. It's called for the free exchange of data between the MZ-1 parties here and Watermaster. So Watermaster shares all of its monitoring

data, and the parties share all their pumping data and water level data with Watermaster.

And it also calls for ongoing monitoring to occur here. It also calls for expanded monitoring in other areas of subsidence concern.

One of the results of our study not only was to deal with this area right here but we also noticed that there was subsidence occurring further to the north and further to the east. And those areas we haven't done this sort of investigation in. We didn't know as much about that threshold water level and about the sediments and about subsidence in general. And we're concerned about those areas, and so part of the long-term plan is to expand our monitoring out into these areas and collect more information and do some testing in the future, if necessary.

And then lastly, the long-term plan, one of its key elements is that we meet annually and we review the data and discuss it. And if we want to modify the plan based on that data, we have that opportunity on an annual basis to modify the plan. So we like to think of it as a good example of an adaptive management plan that can change over time based on changed conditions that we note in our monitoring.

Q Mr. Malone, is subsidence still occurring in the managed area?

A In the managed area, it seems to be completely abated. We are not measuring any more permanent subsidence.

In fact, we had to run that test there very hard. We had to draw down water levels very deep in order to even cause for permanent compaction to occur.

Q Are there other areas that are of concern?

A Yes. And like I said, this northern area -- Can you go on to the next slide.

This is our managed area down here in green, but we have this area up here to the north that we really don't know too much about. But we see the same sort of feature in the satellite data that's indicated that the conditions for the northward propagation of this fissure zone, that it's there. And so we fear that and so we're doing a lot of monitoring.

These black lines here represent where we're doing on our ground level surveys. And so we're doing extra monitoring in this area up here and trying to figure out that subsidence phenomenon like we did down here.

And then off to the east here, this is an area where our satellite data isn't too good. This whole gray area represents the agricultural area and the satellite doesn't work so well in the agricultural areas where there's a lot of plowing, and there's just not a whole lot of consistency to the ground surface like we have in urbanized areas.

So we also have a desire to pump from this region over here in the deep zone. When I say "we", the City of Chino and Chino Hills have wells over here that they've

drilled but are not pumping from yet. And then these over here are desalter wells in white, and there's plans for new desalter wells to come in down here and pump even harder.

And remember, our plans are to control water levels down here, depress them, and then what you're going to be hearing later on, this whole concept of basin reoperation, where we plan on drawing down water levels out here in the eastern and central parts of the basin.

So we think it's very prudent to be investigating this subsidence potential over here in these areas as well as in the future.

Q And finally, Mr. Malone, in your professional opinion, will the long-term plan be effective to meet Watermaster's commitments in the OBMP regarding subsidence?

A Well, I'll remind you that it's a voluntary plan. So if the parties comply with the voluntary nature of the plan and if we continue to do the monitoring and expand out into these other areas, I think it has the potential to be a very successful management plan for subsidence in the Chino Basin, yes.

MR. FIFE: Thank you, Mr. Malone. We have no further questions of this witness, your Honor.

THE COURT: Any other questions?

Thank you, sir

MR. FIFE: I will next call Dave Crosley.

Your Honor, and we'll still be on subsidence for the

next couple witnesses.

THE COURT ATTENDANT: Would you stand here, face the clerk and raise your right hand, please.

DAVID CROSLEY,

called as a witness by the Watermaster, was sworn and testified as follows:

THE CLERK: You do solemnly state the testimony you shall give in this matter shall be the truth, the whole truth and nothing but the truth, so help you God?

THE WITNESS: I do.

THE CLERK: Thank you.

THE COURT ATTENDANT: Please be seated.

Would you state and spell your name for the record, please.

THE WITNESS: David Crosley, D-a-v-i-d, C-r-o-s-l-e-y.

DIRECT EXAMINATION

BY MR. FIFE:

Q Mr. Crosley, what is your position with the City of Chino?

A I'm the Water and Environmental Manager for the City of Chino.

Q And how long have you been with the City of Chino in that position?

A 14 years.

Q Were you involved in the subsidence issue on behalf of the City of Chino?

A Yes, I was.

Q And can you tell us very briefly about the history of subsidence in the City of Chino?

A Yes. In the early 1990's, fissuring in South Chino located east of Central Avenue was observed on the State of California property located at the Chino Institution For Men prison and also on private property. At that time both the State of California and the City of Chino commissioned studies to evaluate the fissuring conditions. And the results of those studies indicated that the fissuring was associated with a rather significant land subsidence and that the land subsidence was due to the lowering of ground water levels as a result of ground water extraction from deep wells.

Q And what actions did the city take in response to those observations?

A Well, the city did not allow the City of Chino Hills -- the City of Chino did not allow the City of Chino Hills to complete the construction of Chino Hills Well Number 18, which is a deep well located in the vicinity of the fissuring that was observed.

Also, the City of Chino elected not to complete the construction of one of its own deep wells also located in

the southern portion of Chino. The City of Chino hired additional consultants to further evaluate the fissuring and subsidence conditions and to confirm or not the results of the earlier studies, and also, to more definitively determine the cause of the subsidence.

Among those consultants were experts in the application of synthetic aperture radar technology, the technology that Mr. Malone mentioned a few minutes ago. And the results of the radar work agreed favorably with the ground level survey work that had been conducted earlier.

It confirmed that approximately two to two and a half feet of land subsidence had occurred generally along Central Avenue between Schaefer and Eucalyptus, which is a distance of about one mile, and that that subsidence had occurred within the most recent 12 to 13-year period.

Geotechnical consultants that were hired by the City of Chino considered several different theoretical possibilities for why this land subsidence might have occurred and determined, based on their evaluation of the available data, that the most likely cause of the subsidence was the extraction of ground water from deep wells located in the affected area.

Equipped with that information, the City of Chino approached the Watermaster and asked the Watermaster for assistance in regulating the amount of ground water that could be produced from the wells and was advised that it

should pursue a Paragraph 15 motion. And so the City of Chino did file a motion pursuant to Paragraph 15 of the judgment requesting that the Court assume jurisdiction over the subsidence matter.

However, that motion was continued when the Watermaster stakeholders agreed to convene a process to address the subsidence. That process involved the development and implementation of the short-term plan followed by a long-term plan.

The short-term plan logically included forbearance of ground water production from certain wells. It also included an ambitious program of data collection and analysis that Mr. Malone also described a few moments ago.

That data included ground level survey data, the synthetic aperture radar information, ground water production information, ground water level information, and also, the measurement information provided by the extensometer that had been built. The analysis of all of that data led to the identification of this critical threshold depth. It was demonstrated that if the ground water level was allowed to fall below this critical depth, that there would be a permanent compaction of fine grain soil materials resulting in the subsidence.

Q Do you disagree with any of the technical information presented by Mr. Malone?

A No, I do not disagree with it.

Q Did you participate in the development of the long-term plan?

A Yes, I did.

Q And what is the city's view of Watermaster's long-term plan?

A Well, the long-term plan is a guideline. It's not a requirement. It is in large measure a continuation of many of the activities that were initiated with the implementation of the short-term plan.

Certainly, we hope that the long-term plan will yield satisfactory results, but it is a voluntary plan and so it depends on the full cooperation of the Watermaster parties.

Q And does the City of Chino intend to voluntarily comply with the long-term plan?

A Yes.

MR. FIFE: Your Honor, I have no further questions for this witness.

THE COURT: Any questions from anyone?

Thank you, sir.

MR. FIFE: Our next witness will be Ron Craig.

THE COURT ATTENDANT: Raise your right hand, please.

RON CRAIG,

called as a witness by the Watermaster, was sworn and testified as follows:

/ / /

THE CLERK: You do solemnly state the testimony you shall give in this matter shall be the truth, the whole truth and nothing but the truth, so help you God?

THE WITNESS: I do.

THE CLERK: Thank you.

THE COURT ATTENDANT: Please be seated.

Would you stated and spell your name for the record, please.

THE WITNESS: Ron Craig, R-o-n, C-r-a-i-g.

DIRECT EXAMINATION

BY MR. FIFE:

Q Mr. Craig, what is your relationship to the City of Chino Hills?

A I am a water resources consultant.

Q And when did you first become involved with Chino Hills on Chino Basin matters?

A In 1996.

Q And were you involved with the subsidence issue on behalf of the City of Chino Hills?

A I was. I am.

Q Mr. Craig, you've heard the City of Chino's testimony about the causes of subsidence. Does Chino Hills agree with this view?

A In general, yes. We just have felt that it is a broader issue than strictly deep well pumping in one

specific location, I think, as evidenced by some of the information that Mr. Malone had presented.

Q And do you believe that Watermaster's long-term plan is adequate to address those issues?

A The plan, as ultimately developed and included in the Peace II Agreement, we do believe has the mechanisms in place to be successful.

Q And why is that?

A Well, first of all, as described earlier, it does tie to a managed ground water level. We felt that was important from day one.

Number two, there's a commitment associated with Peace II in the long-term plan by Watermaster for actual wet water recharge within Management Zone One specifically. There's also a commitment by Watermaster to look at expanding recharge capabilities within the area, whether it's ASR, artificial storage recovery wells or other mechanisms to allow water to be further introduced into the ground water basin.

And finally, the commitment by Watermaster, as described by Mr. Malone, to continue to monitor and learn more about the basin, its characteristics and how we might optimize the capabilities of the basin within Management Zone 1.

Q And do you believe that Watermaster will follow through with these commitments?

A We're very confident that Watermaster will follow through with the commitments. They're tied hand in hand with the Peace II documents, and also, the more recent Chino Desalter Authority Expansion Provisions. So we're confident that it will be successful.

Q And what has Watermaster done to follow through to date?

A Mr. Malone described a significant amount of research, investigation and monitoring that's gone on. There has been wet water recharge back to the time that the actual forbearance started where we were actually getting wet water recharge in the Management Zone One and the ongoing monitoring and testing that will, hopefully, allow us to move into expanded production or actually production on the more eastern side of the basin as alluded to by Mr. Malone.

Q And now, you heard the description of the long-term plan as a voluntary plan. Does the City of Chino Hills intend to comply with the plan?

A We do. Whether the plan was voluntary or compelled, we certainly do plan to adhere.

MR. FIFE: Thank you. No further questions of this witness.

THE COURT: Anyone have any questions for Mr. Craig?

All right. Thank you, sir

THE WITNESS: Thank you.

MR. FIFE: Next we'll call Mark Kinsey.

Your Honor, with this next witness, we're going to continue under program element four dealing with Management Zone One issues, but we're leaving the subsidence issue and we're going to be dealing with other issues with regard to management.

MARK KINSEY,

called as a witness by the Watermaster, was sworn and testified as follows:

THE CLERK: You do solemnly state the testimony you shall give in this matter shall be the truth, the whole truth and nothing but the truth, so help you God?

THE WITNESS: I do.

THE CLERK: Thank you.

THE COURT ATTENDANT: Please be seated.

Will you state and spell your name for the record, please.

THE WITNESS: My name is Mark Kinsey, M-a-r-k, K-i-n-s-e-y.

DIRECT EXAMINATION

BY MR. FIFE:

Q Mr. Kinsey, what is your occupation?

A I'm currently the General Manager of Monte Vista

Water District.

Q And how long have you held this position?

A Since 1998.

Q Have you held any other positions in the Chino Basin?

A Beginning back in 1981, I was employed by Chino Basin Municipal Water District, which is now Inland Empire Utilities Agency. I've held several water-related positions there.

Q And in your capacity of both Monte Vista Water District and the Inland Empire Utilities Water Agency, have you been involved in management issues with the Chino Basin?

A Yes, I have. I was originally employed by Chino Basin to work for Watermaster. After about a six-month period of time, I was reassigned to the formerly or Long Range Regional Planning Program on the sewer side.

Q And in addition to subsidence, what other issue is important for the successful management of Management Zone One?

A Management Zone One, Ramsey 1, is like probably anywhere else in the Chino Basin other than the current subsidence programs that we have. We have water quality, high nitrates, super chlorate problems. One of the issues that has been kind of discussed today is long-term hydrologic issues. And simply put, that's, over a long period of time, the amount of water extracted from the basin is roughly equal to the amount of water which is put back

into the basin.

Q Now, Mr. Kinsey, we've touched on the issue of recharge a little bit in the prior testimony. Could you explain in more detail what is meant by recharge.

A We have talked about it already. For the Chino Basin, there's mainly two types of recharge and in the context of supplemental recharge. There's wet water recharge, which we physically spread water back into the basin. We've talked about that at various spreading basins where we might capture storm water, recycled water or supplemental imported water supplies.

The second type of recharge is what we call paper recharge, where an individual or an agency who has production rights in the basin is not using those will sell or assign those to a producer who will use them as part of meeting their demand.

Q And why is recharge important to your agency?

A I think when you talk about recharge, it's really important to the entire Chino Basin. Under the judgment, there's a concept of equal access to the basin. The judgment considers the basin a big bathtub. And all the parties have equal access or equal rights to the ground water basin regardless of where recharge or production is occurring within the ground water basin.

So under that concept, what Watermaster needs to do or what the parties need to do is to ensure that recharge is

put in locations that will balance production with actual recharge.

Q And what prompted your agency to so actively promote wet water recharge?

A I think I kind of alluded to that a little bit just a minute ago. Again, the basin is treated as a big bathtub, and all the parties have common access to it. Over a period of time, we saw that the Watermaster was moving from a wet water recharge approach to managing overproduction in the basin to really paper transfers. That began occurring in the 1990's.

THE COURT: When you say paper transfer, what do you mean?

THE WITNESS: That's where an agency who has unused production rights will sell those or transfer those to an agency who uses those to offset overproduction.

Q (BY MR. FIFE:) And you just testified that in the 1990's, Watermaster's approach to recharge was to emphasize paper transfers. Has that approach changed since the OBMP?

A Under Peace Agreement I, there are specific provisions established where with the management zone, Watermaster would recharge 6500 acre feet a year, at a minimum. And then also, any other unmet recharge activities would occur first on the west side of the basin and then move over to the rest of the Chino Basin.

Q Has Management Zone One seen any benefits from this

change in management approach?

A Over the short-term, yeah. Our wells, in specific, we've seen some increase in ground water levels when the recharge program was occurring. We also have some water quality improvements, which as long as you're recharging the water, we do see improvements in water quality.

Q And what are some of the ongoing issues with wet water recharge in Management Zone One?

A I think when you talk about wet water recharge, there's really two issues within the Chino Basin. Some of that Watermaster can't directly control. Others it can.

Right now, we're in drought conditions so access to supplemental imported water supplies to recharge in the basin is severely restricted or not available. So at least in the near term, there's a limitation on how much water is available for recharge.

Within the Chino Basin, there's a couple of issues. One is to make sure, as we proceed with our recharge master plan, that we properly identify the location for recharge facilities, whether they be spreading basins or injection facilities, to make sure that the recharge is in the proper location within the basin. And then also, within the Chino Basin, we have these requirements of maintaining long-term hydrologic balance. And what that probably long term will necessitate is some sort of program for Watermaster to develop where there's a balance between paper transfers and

wet water recharge.

MR. FIFE: Thank you, your Honor. No further questions for this witness.

THE COURT: Any questions for this witness from anyone?

Yes, sir?

MR. KIDMAN: Art Kidman.

CROSS-EXAMINATION

BY MR. KIDMAN:

Q Mr. Kinsey, I'd like you to describe a little bit more this paper water-versus-wet water transfer. When a party overproduces in the basin, that is, produces more than their production right under the judgment, they're required to pay an assessment; is that right?

A That's correct.

Q And that assessment then is used to purchase water?

A That's correct.

Q And that water would then be physically recharged, spread or sunk or percolated into the ground water basin or injected?

A Yes.

Q Okay. Now, you, as a water manager, then have a choice, if you have overproduction, that you can go and buy someone else's production rights that has unused production rights; correct?

A That's correct.

Q So that's what you meant by a paper transfer?

A Yes.

Q But in that instance, there's no assurance that the recharge is going to follow the production because you're still producing but there's no wet water involved?

A That's correct.

Q So just explain to the judge again why that's a problem and how it's being addressed.

A I guess it would become a problem if you had a situation where production within the Chino Basin, in either the management zone or elsewhere or in the entire Chino Basin, overproduction was being met completely by paper transfers. And that would create a situation where while water's being taken out of the basin, there's no physical wet water recharge being put back into the basin. And that would affect the principal -- could affect that principal long-term hydrologic balance.

THE COURT: Thank you for that question, sir. Anybody else?

MR. SLATER: Yes, your Honor, just briefly, one clarification question.

CROSS-EXAMINATION

BY MR. SLATER:

Q Mark, Mr. Kinsey -- sorry -- when you mentioned paper

transfers, Mr. Kidman was walking you through the distinction between paper transfers and wet water recharge. The paper transfer represents a water right or production right which is elsewhere in the basin; correct?

A That's correct.

Q And so a party has an allocated share of operating safe yield which they hold; correct?

A That's correct.

Q And then when they underproduce, they then have an excess right, which they can either store or transfer; correct?

A That's correct.

MR. SLATER: Thank you.

THE COURT: Anyone else?

All right. Thank you, sir.

All right. We'll take a recess. We'll be in recess until 3:00.

(Recess.).

MR. SLATER: Your Honor, given the hour of the day, it's our opinion that with four witnesses left with approximately 20 minutes, we may be able to finish by 4:30.

THE COURT: Okay.

MR. SLATER: If that suits your Honor.

THE COURT: Well, it doesn't.

THE COURT: My staff has to start wrapping up at 4:00. So in the old days, we sometimes would bend those

rules, but we can't do that anymore. So we're going to stop at 4:00 or around 4:00.

MR. FIFE: And, your Honor, we'll try to get the next four witnesses by 4:00.

THE COURT: That may cut down on any questions.

All right. Let's go.

MR. FIFE: Mr. Wildermuth, please run.

THE COURT ATTENDANT: Stand here, face the clerk and raise your right hand.

MARK WILDERMUTH,

called as a witness by the Watermaster, was sworn and testified as follows:

THE CLERK: You do solemnly state the testimony you shall give in this matter shall be the truth, the whole truth and nothing but the truth, so help you God?

THE WITNESS: I do.

THE CLERK: Thank you.

THE COURT ATTENDANT: Please be seated.

Will you state and spell your name for the record, please.

THE WITNESS: It's Mark Wildermuth, M-a-r-k, W-i-l-d-e-r-m-u-t-h.

/ / /

/ / /

/ / /

DIRECT EXAMINATION

BY MR. FIFE:

Q Mr. Wildermuth, were you involved in the development of the Recharge Master Plan?

A I was involved in the development of the original plan in '98 that was done by our firm or completed in '98, and our firm collaborated with Black & Veatch on the post-OBMP Recharge Master Plan that was completed in 2000.

Q And we've heard about recharge a couple times already so very, very briefly, could you tell us what is meant by recharge.

A Recharge is the act or process of putting water back into the bath to replenish the ground water basin.

Q What are the elements of the Recharge Master Plan?

A The major elements of that plan were to take existing flood control basins and convert them into conservation basins, multipurpose basins that could do both flood control as well as to capture and hold and recharge storm water. We improved some existing conservation basins. We built new basins and we built facilities, conveyance facilities, improvements, diversions, et cetera, to make them work better.

Q And there's a graphic up on the board behind you. Does this show -- Is this a map of Watermaster's recharge facilities?

A Yes, it is. The map again is that familiar green

polygon of the Chino Basin. All these ones shown in blue are active recharge basins as a result of the OBMP.

Q And could you, as an example, could you explain the work of the Recharge Master Plan for one particular basin?

A This is the Turner Basin Complex, and I don't have a pre-project air filter to show you.

Prior to the OBMP's first Recharge Master Plan, this basin existed, this one existed but not used, and this whole area was formerly in conservation but not used. In this project, we installed a drop inlet here in Dear Creek, which enables water to be moved into this Turner I and Turner III Basin. We actually created these basins and improved their shape. We built a rubber damn up here, which is an inflatable device, it's a bladder which you fill up with air; it becomes a damn. In order to divert more water into Turner I, there's interconnections with these. Not shown are recycle water pipelines which are to discharge recycled water into these basins for additional recharge.

Q And can you tell us what were the original expectations regarding the Recharge Master Plan?

A There were really two expectations. The first was that we would be able to get new storm water recharge of about 12,000 acre feet.

The supplemental water recharge, that is a portion of the plan dedicated to replenishing the basin for Watermaster with supplemental water, we originally designed that to

provide an average annual replenishment of 44,000 acre feet. But because replenishment water is not available every year, we had to oversize them to in the mid-sixties, mid-60,000 acre feet. By the time we completed these basins, we ended up building basins that had a supplemental water recharge capacity of closer to a hundred thousand acre feet.

Q And why is there now a renewed interest in updating the Recharge Master Plan?

A Well, there are a few reasons. The first is that from the time we did the OBMP and we came up with that replenishment demand of 44,000 as an ultimate replenishment requirement, production projections more recently have shown that we need substantially more replenishment capacity.

The second reason is we're not getting as much storm water recharge as we originally thought. We thought we were going to get 12. We're probably getting closer to six. And then the availability of state project water is substantially less and its reliability is substantially less than it was with the original Recharge Master Plan.

Q In your earlier testimony, you described a basin management strategy known as basin reoperation. How does the Recharge Master Plan relate to basin reoperation?

A Well, basin reoperation allows the desalter program, the CDA, to use up to 400,000 acre feet from storage for replenishing purposes. The CDA, their facilities, have no water right in the basin per se other than to pump. So any

pumping they do needs to be replenished. So by allowing them access to that 400,000 acre feet of control of reduction and storage, it defers their replenishment obligation into the future.

Well, that's going to come soon. About half of that replenishment obligation will become real for wet water recharge 2016 or 2015, so we need to get the recharge capacity in before that happens.

Q And so could you describe for us the current ongoing process to update the Recharge Master Plan.

A The first thing we're doing is we're validating the ground water production projections. We're done and we're trying to work with the producers to better understand the dynamics of that production.

Mr. Malone's demonstration of some of the ground water modeling capabilities, the future productions are showing that -- these projections are showing that we're having some problems getting water to everybody in the basin who wants to pump. It's acute in the center of the basin, and it's acute in the area where Jurupa Community Service District is. So we're trying to do the balance of recharge and discharge. We're actively involved in that.

One thing I forgot to mention a moment ago, and the reason to do this is we're also projecting the safe yield to go down in the future because of the urbanization of the basin and the loss of recharge that occurs when the land was

in ag. So what we're doing is we're coming up with a series of alternatives to meet the replenishment demand, replenishment capacity demands, which could be facilities, potentially new supplemental water sources, we're going to roll those things out over time but we're going to match that replenishment demand to these facilities. So that's going to be happening this spring and through the summer.

All this is being done in a very transparent process. We began working on what the scope of the Recharge Master Plan was last spring, and we submitted that to the Court as to what the outline of that report would look like. We spent the summer scoping. We rolled out a scope of work, a schedule and what the deliverables would look like in the fall, and the work is ramped up and is going a hundred percent right now.

Q Could you describe for us what you anticipate the updated Recharge Master Plan will look like?

A In simple terms, we're going to have a schedule of replenishment obligations out into the future that Watermaster must meet. We're going to develop, again, some alternatives which will meet that schedule, and the alternatives will be ones like our current process where we just buy supplemental water from Metropolitan. We have some recycled water we recharge, and we go off into the future with that.

We'll have alternatives that deal more with targeted

recharge, that deal with injection to get a better balancing of recharge and discharge. We'll have alternatives that look at other supplemental water sources. We'll have these alternatives spelled out. We'll have cost estimates prepared. We'll come up with a list of implementation barriers on the environmental side. We're going to present this to the group through workshops scheduled throughout until -- starting in March and going through June of 2010. And by the end of that process, we'll have created what I call a palate that Watermaster and the stakeholders can decide which alternatives they want to pursue.

Q Did you prepare the schedule for the development of the Updated Recharge Master Plan that was submitted to the Court in compliance with condition subsequent number seven?

A I did.

Q And does that schedule depend on deliverables from other entities?

A It does. It depends on deliverables from the Chino Basin Water Conservation Destrict, Inland Empire and the consultants working on the project.

Q And in your opinion, are Watermaster and these other parties on schedule to complete the Recharge Master Plan as required by the Court in the December 21st order?

A Yes.

MR. FIFE: Your Honor, that's the last question for this witness. We do have the issue of condition

subsequent number seven, which was submitted to the Court.

This was submitted -- this was approved unanimously by all the pools, the Advisory Committee and the board for submittal to the Court. We have no objection to the requested approval for that condition so I'm not sure when you want to deal with that.

THE COURT: We can deal with it now. I thought that it had previously been approved. Perhaps I forgot to say that at the November 13th meeting.

MR. FIFE: Yeah, number seven was submitted subsequent to that hearing. That hearing only dealt with one through six.

THE COURT: Yes, okay, you're right. Well, without opposition, I'll approve it.

MR. FIFE: And then that was the last question for this witness.

THE COURT: Any questions?

All right, next witness.

MR. FIFE: Next we'll call Mr. Thibeault.

THE COURT ATTENDANT: Stand here, face the clerk and raise your right hand, please.

GERARD THIBEAULT,

called as a witness by the Watermaster, was sworn and testified as follows:

THE CLERK: You do solemnly state the testimony

you shall give in this matter shall be the truth, the whole truth and nothing but the truth, so help you God?

THE WITNESS: Yes.

THE COURT ATTENDANT: Please be seated.

Will you state and spell your name for the record, please.

THE WITNESS: Gerard Thibeault, G-e-r-a-r-d, T-h-i-b-e-a-u-l-t.

DIRECT EXAMINATION

BY MR. FIFE:

Q Mr. Thibeault, What is your job title?

A I'm the Executive Officer of the California Regional Water Quality Control Board, Santa Ana Region.

Q And how long have you held that role?

A For about 20 and a half years.

Q What is the role of the Regional Water Quality Control Board with respect to ground water in the Chino Basin?

A The regional board is a state regulatory agency. We're not a member of Watermaster. We're not associated with Watermaster or the Inland Empire Utilities Agency. We are a state regulatory agency with regional jurisdiction, the Santa Ana Watershed.

Q And how do you develop and implement the regulatory programs in the water shed, including for the Chino Basin?

A Our programs are developed through the Water Quality Control Plan for the Santa Ana Region, which is commonly referred to as the Basin Plan. It contains the water quality standards for the entire water shed, both surface and ground water.

Q What challenges did the Basin Plan pose for ground water operations in the Chino Basin?

A The recently revised Salt Management Plan showed that there was no assimilative capacity in the Chino Basin and that because of the level that the standards for the Chino Basin were developed in compliance with state law, that recycled water could not be used for ground water recharge in the Chino Basin.

Q And what was the response to these challenges?

A Chino Basin Watermaster and Inland Empire Utilities Agency proposed a program that's come to be known as a Maximum Benefit Program, which is taking a phrase out of the state's anti-degradation policy, which allows -- the policy allows quality objectives or water quality standards to be changed if those standards continue to protect all the uses of the water and if that change is to the maximum benefit of the people of the state.

Q And is this approach used in other ground water basins?

A No. Well, other ground water basins, Chino, Yucaipa and Beaumont, but no other areas of the state have used it.

Q What commitments did Watermaster and IEUA make in order to use this approach?

A Well, to demonstrate that a change of standards was to the maximum benefit of the people of the state, Watermaster and Inland Empire Utilities Agency committed to do a number of things:

To have desalting in the basin, to pump up the poor quality ground water and desalt it, export the salt, to increase the salt -- desalting, to capture high quality storm water runoff and build new facilities for doing that, to reduce the use of water softeners in the basin to the greatest extent they could, to recharge state project water when that water is available and high quality.

And then most importantly, from our perspective, is to operate the basin and to establish hydraulic control of the ground water in the basin so that the poor quality of water from the south end of the basin did not migrate into the Santa Ana River and affect water quality in Orange County.

Q Now, before lunch, we did hear a little bit about what hydraulic control means. But could you explain from your perspective what is meant by hydraulic control and why that's important to the regional board.

A From our perspective, it's reversing the gradients of the Chino Basin ground water so ground water doesn't enter the Santa Ana River. And our understanding of that is that

its accomplished using the Chino desalting wells to pump the ground water in the midpart of the basin and cause the ground water to flow away from the river back to the north so that the poorer quality water is then desalted and kept from entering the Santa Ana River.

Q What happens if Watermaster and IEUA do not meet the commitments that they made to the regional board?

A For the most part, Watermaster is doing a good job in meeting its commitments. But with respect to hydraulic control, we've had some problems. We all entered into hydraulic control with the understanding that it's a very complicated process. We make the first effort at achieving hydraulic control, and then if it didn't work, you make adjustments. And there was -- there were provisions in the Basin Plan and in the Watermaster commitments where if hydraulic control was found not to be occurring, then Watermaster would take certain steps to correct that within a certain period of time.

And because of the structure of Watermaster, it seems to us, certain members of Watermaster could essentially hold the process hostage so that the commitments that Watermaster made to reestablish hydraulic control would be held up by one or two of the agencies not working in concert with the rest of the agencies to help achieve the hydraulic control within the commitments made by Watermaster.

Q And so at this point in time, though, in your

opinion, how is Watermaster doing in meeting all of these commitments?

A Lately, just very recently, Watermaster has taken the steps to meet the commitments, but we were very near pulling the trigger on reverting from the maximum benefit objectives back to the other more restrictive objectives until Watermaster was able to get all the members lined up and start doing the things necessary to achieve hydraulic control.

Q And, in your opinion, what do you think would be an appropriate response going forward to ensure that the commitments are met?

A Well, there are two things that could be done:

One, as I said, the regional board can make the -- If the regional board makes a finding that the commitments are not being met, then the anti-degradation, the more restrictive objectives will kick in automatically.

And the other option we'd rather see is for the Court to take jurisdiction and require that Watermaster and Inland Empire Utilities Agency meet the commitments that they made in getting the regional board to establish these objectives that allow the operation of the Chino Basin as has been described here earlier.

Q Are you also working with the Watermaster to address plumes in the water basin?

A Yes.

Q How are you doing that?

A There are a number of plumes in the basin that were not being addressed simply because of resources not being available at the state to attack all of these plumes. And Watermaster made the offer to do the engineering and the scientific work to investigate the plumes, the location, the direction they're moving, information with respect to water quality in these plumes to help the regional board take the enforcement actions necessary to address the plumes that hadn't been investigated up to that point.

MR. FIFE: Thank you. No further questions for this witness.

THE COURT: Any questions for this witness? Thank you, sir.

MR. FIFE: Next is Mr. Jeske.

THE COURT ATTENDANT: Stand here, face the clerk and raise your right hand, please.

KENNETH JESKE,

called as a witness by the Watermaster, was sworn and testified as follows:

THE CLERK: You do solemnly state the testimony you shall give in this matter shall be the truth, the whole truth and nothing but the truth, so help you God?

THE WITNESS: I do.

THE CLERK: Thank you.

THE COURT ATTENDANT: Please be seated.

Will you state and spell your name for the record, please.

THE WITNESS: Kenneth Jeske, K-e-n-n-e-t-h, J-e-s-k-e.

DIRECT EXAMINATION

BY MR. FIFE:

Q Mr. Jeske, what is your occupation?

A I'm the Director of Public Works and Community Services for the City of Ontario.

Q And how long have you held this position?

A A little over 10 years.

Q Have you held any other positions in the Chino Basin?

A Yes, actually, several. I was the Director of Public Services for the City of Fontana, and for a good part of the seventies and eighties, I worked in water supply regulatory services for the County of San Bernardino.

Q And in your capacity with the City of Ontario, have you been involved with the desalter project in the Chino Basin?

A Yes.

Q And can you tell us briefly what is the purpose of the desalter elements of the OBMP that's program elements three and seven?

A Well, there's two basic purposes:

One, we just heard testimony on hydraulic control. The other two elements relate to water quality.

Element three is a more generic element. Element seven is the salt management. So the purpose of the desalters is to manage the salt water quality and assist in achieving hydraulic control through the pumping.

Q And how do desalters work?

A Desalters are very complex systems. In fact, the ones that we operate through the Desalter Authority work with several different chemical mechanisms. There are essentially today two and three treatment plants because of the nature of the water quality.

But basically, to desalt, you force water through a membrane by reverse osmosis, consuming a lot of power to do that, and you're forcing the salts and contaminants off and taking the water. In this case, we use it as product water for resale. But we also have ion exchange and air stripping for other contaminants.

Q How many desalters are there in the Chino Basin?

A Currently, there's two. They've been built in two different phases. There should be a map, as we bring it up, that shows the first phase of the desalters. This built plant number one over in this area. This shows the distribution and raw water supply pipelines necessary.

The yellow on this map, for perspective, is the City of Ontario's limit so it's an extremely large system.

The second phase -- and you can see the size of each phase on the diagram. The second phase built the second desalter plant, so there are currently two, and expanded the first desalter plant and you can see the expanded amount.

The third phase, which is currently in design, which is the one that achieves the total of the hydraulic control, is then shown in green. It adds additional ground water pumping sources.

A key element is the well field over in this area. By the way, those test wells have completed the environmental process. We have to go through environmental process to do all this.

THE COURT: When do you expect phase three to be running?

THE WITNESS: The plan is to have it up in about three years and running. There's a number of factors that could affect that process and that might be a subsequent follow-up.

Putting this entire project together, this is about a 150 million dollar expansion. All of these activities we've heard of by Watermaster, by the desalters, are primarily placed as a cost back on the appropriators. The appropriators are the water service agencies for everyone. So all of these costs are passed back through to the rate payer or customer of the water agency.

Q (BY MR. FIFE:) Now, you just indicated a cost for

the expansion. Can you give us an idea of the financial cost for the first two phases of the desalter project?

A It was around 160 million. We have a depreciated value today of 137 million.

Q And what, again, is the monetary value for the expansion project?

A It's around 120 million to 130 million.

Q Who owns and manages the desalters?

A The Chino Basin Desalter Authority. It's a joint powers made up of several cities, water districts and a private company.

Q And what is the relationship between the Chino Desalter Authority and the Watermaster?

A There's really no direct relationship. The Chino Desalter Authority is a self-governed entity, so it serves to meet goals through a partnership or cooperative approach with the Watermaster. It was formed to help further some of the goals of the OBMP and it's moving forward in that role.

Q And do the existing desalters fully satisfy the OBMP goals for desalting?

A No. The existing ones do not but the expansion will. I think currently we're removing 27,000 tons a year of salt and we need to get up to about 38,000 in the expansion.

Q Could you describe for us some of the challenges the CDA has faced in implementing the extension of expanding these desalters?

A One of the first challenges was we needed a customer for the water. Desalting is a very expensive process. Raw costs of desalting itself is much higher than anybody's retail water rates that I know of today in this region. So we needed another customer. Through the Peace Agreement II process, Western Municipal Water District indicated they would participate with that. Not all of the agents that were owners of the existing facilities wanted to participate in expansion. So we needed to restructure the entire organization of the Chino Desalter Authority. That took about 12 months.

I know we heard testimony from the state that they were a little disappointed in the length of time that took, but I seem to recall it took pretty close to 10 years to get everything in place for the first desalter, five for the second, so we seem to be charging uphill on a pretty good rate.

There, of course, is environmental work needed. There's a lot of technical work needed. Again, when we look at the map, this is miles and miles of pipeline and inter-ties and delivery and they all have to tie into many agencies' different operating systems. We have not stopped that work. In fact, three agencies decided to move forward with the expansion, the City of Ontario, the Jurupa Community Services District and Western Municipal Water District. We entered into a three-party agreement to help

fund these first phases, preliminary and environmental design, and are moving forward with that. We also applied to receive grants to assist in some of the not only design work but construction work.

Now, unfortunately, we have learned that some of those were Prop. 50 grants from the State of California. We've got notification that those are being withheld right now due to some of the economic crisis, and we've also been able -- unable to look at assumed bond sales program with the financial crisis that we have right now. So there's been a number of issues that need to be worked through with this desalter authority.

Despite that, we are still moving forward with the design and environmental work and still planning to meet the obligations of expanding this project.

Q Actually, I think we skipped this slide. Can you tell us what this is.

A This is a slide -- This is actually a photo taken from an aerial of plant number one, so you get an idea of the type and size of the plant. The reverse osmosis is in a building that I don't know if the pop up on this picture will show up. I guess not. But inside that plant, you'll see tubes, links of the reverse osmosis tubes. It's a very capital intensive, very design intensive process with a number of different treatment facilities, all of which require a lot of hard construction work.

Q Thank you.

And so back to your previous question, despite all of the challenges that the CDA faced in the expansion, in your opinion, do you believe that the expansion will ultimately be completed?

A Yes.

MR. FIFE: Thank you.

No further questions for this witness.

THE COURT: Any questions for this witness?

Thank you, sir.

MR. FIFE: Next we'll call Rich Atwater.

THE COURT ATTENDANT: If you'll stand here, face the clerk and raise your right hand, please.

RICHARD ATWATER,

called as a witness by the Watermaster, was sworn and testified as follows:

THE CLERK: You do solemnly state the testimony you shall give in this matter shall be the truth, the whole truth and nothing but the truth, so help you God?

THE WITNESS: I do.

THE CLERK: Thank you.

THE COURT ATTENDANT: Be seated.

Will you state and spell your name for the record, please.

THE WITNESS: Yes, Richard Atwater,

R-i-c-h-a-r-d, A-t-w-a-t-e-r.

DIRECT EXAMINATION

BY MR. FIFE:

Q Mr. Atwater, I apologize. We put some of the computers away, so I don't have the slides that I promised you at the break.

Can you tell us your occupation.

A Yes. I'm General Manager of the Inland Empire Utilities Agency.

Q And how long have you held that position?

A Since the summer of 1999.

Q And did you have anything to do with the Chino Basin prior to that?

A Prior to that, I was a consultant to Chino Basin Watermaster during the preparation of the OBMP.

Q Who is IEUA?

A The Inland Empire Utilties Agency, formerly known as Chino Basin Municipal Water District, is a municipal water district formed in 1950 by a vote of the people under the Municipal Water District Act.

Q And can you tell us what are the principal functions of IEUA currently?

A As a municipal water district, we were formed originally in 1950 to become a member of the Metropolitan Water District of Southern California so that we could

purchase imported water at that time from the aqueduct from the Colorado River, and since the late 1970's, water from the California State Water Project.

Also, in addition, since the 1960's, the district has provided waste water treatment services throughout the western part of San Bernardino County, the seven cities of Fontana, Rancho Cucamonga, Upland, Montclair, Chino, Chino Hills and the City of Ontario.

Q Can you tell us what is meant by imported water, how that system works?

A Yes. As one of the 26 member agencies of the Metropolitan Water District Southern California, the Metropolitan Water District has its own Colorado River aqueduct and imports water from the Colorado River. And then in addition, they contract with the California Department of Water Resources and import water from the State Water Project, which, of course, is from Northern California, the principal feature is Lake Oroville on the Feather River.

Q And what is recycled water?

A Recycled water is highly treated municipal waste water that is governed by regulations, Title 22 of the California Administrative Code.

Q And why is recycled water important in the Chino Basin?

A It's not only important in Chino Basin but it's

certainly important throughout Southern California and statewide, both the California State Water Resources Control Board and the water plan adopted by the California Department of Water Resources looks at recycled water as the most important new water supply.

But within the Chino Basin, as previous witnesses have indicated, recycled water, because of the lack of availability and reliability of imported water from the Metropolitan Water District, from the Colorado River and the State Water Project, recycled water will increasingly become a significant supplemental source of supply within the Chino Basin.

Q How much recycled water does IEUA currently distribute in the Chino Basin?

A We have four waste water or sewage treatment plants within the western portion of San Bernardino County. One located in Rancho Cucamonga, one located in Ontario, and two treatment plants in the City of Chino. Currently, those four treatment plants produce annually about 60 million gallons per day or 65,000 acre feet.

About one-third of that, about 20,000 acre feet, is currently reused within the Chino Basin for irrigation of parks, schools, golf courses, industrial uses, nondrinking water purposes. And then we also recharge currently about 6,000 acre feet into the aquifer for supplemental recharge.

Q How much money has been invested in this supply?

A Since about year 2000, we've invested about 80 million dollars, and we have an overall adopted capital improvement program of about 200 million dollars. So we're going to spend about 120 million dollars over the next four to five years.

Q And where does the funding for this come from?

A Primarily, our funding, besides our rate base, but most of that funding is being provided by the State of California through both grants and low interest loans through the state agencies, and then the remaining portion is coming from the U.S. Government through the Bureau of Reclamation, and those are also federal grants.

Q Can you tell us what is the relationship between the use of recycled water in the basin and the regional board's Basin Plan Amendment that we heard about earlier?

A Yes. As Mr. Thibeault, the Executive Officer of the Santa Ana Regional Board indicated in his testimony, the basin plan, as he referred to it, for the Santa Ana River Water Shed calls for long-term salt balance in maintaining the water quality, the salinity of the Santa Ana River.

As part of that, for us to reuse and recycle our municipal waste water within the Chino Basin, both the ground water desalters and maintaining hydraulic control is a way of ensuring that the water quality downstream in Orange County is protected so that ultimately all the water, municipal waste water in the Santa Ana Water Shed, can be

reused and recycled within Riverside County, San Bernardino County and Orange County.

Q And what is your evaluation of the Overall Recycled Water Plan in the Chino Basin?

A Well, over the last decade, the State of California, both the Santa Ana Regional Water Quality Control Board, the California Department of Public Health Services, that regulates the use of recycled water, Chino Basin Watermaster and then on the part of the utility agencies and all the cities in our area, we've held numerous public hearings an such, and we have not today received any written testimony or any oral testimony in opposition to it. It's been a very strongly supported activity within the Chino Basin.

MR. FIFE: Thank you. No further questions from this witness.

THE COURT: Any questions for this witness?

All right. Is that all the witnesses you have?

MR. FIFE: We'll actually call one final witness, Ken Manning, to testify about contamination.

THE COURT: All right.

THE COURT: You needn't swear him back in.

KENNETH MANNING,

called as a witness by the Watermaster, having previously been sworn, was examined and testified further as follows:

/ / /

/ / /

DIRECT EXAMINATION

BY MR. FIFE:

Q Mr. Manning, you heard Mr. Thibeault's testimony that the Watermaster works closely with the regional board to manage the plumes of contamination in the Chino Basin. Are you familiar with the work that has been done recently regarding the plumes in the Chino Basin?

A Yes. As I mentioned in my previous testimony, I've been in the basin now four and a half years. And when I got here four and a half years ago, one of the things that the board had asked me to do was to get more heavily involved in development of a plan to work with these PRP's, potential responsible parties, to remediate those plumes.

One of those things we did -- and Mr. Thibeault mentioned that -- was we worked with him on developing the plan and paying for the cost of doing the science necessary for the orders to be written.

Q And could you briefly point to a couple of the major plumes and describe some of the progress that has been made in addressing them.

A Yeah, if I could. First of all, the largest plume in the center is the Ontario Airport. We refer to it as the OIA plume. This is a plume that is currently under investigation. It's an area south of the Ontario Airport, and currently, there are very few, if any, production wells within this zone that are giving us any information about

what's happening there.

So we are currently working with the responsible parties, potential responsible parties, on developing the wells necessary. There are four monitoring wells going in within the creek, and just east of the creek, in order to be able to tell where in fact this plume is originating. We have -- And that is, the regional board and the Watermaster have reason to believe that it's coming from previous post-war operations on the Ontario Airport area, so that's where we've been concentrating our investigations is on there. They seem to think it's coming from another location and they'd like the opportunity to prove that so they're working with that.

Another area where we're working very heavily now and with the regional board is on the Chino Airport plume of contamination, and that's a little further south. And it is moving down toward the Prado Basin. And we are currently working with the County of San Bernardino, which owns the airport, on the -- they are the potential responsible party on that particular plume -- in doing an investigation necessary in order to be able to come up with a plan.

What I think is important to note is that the remedy is already in place. The ultimate remedy is the Chino desalter wells. What needs to happen now is that the regional board, in working with the responsible parties and with Watermaster, is determining whether or not the current

location of wells is sufficient in order to be able to deal with these plumes or do we need to get more aggressive in going up into the plumes and being able to deal with them? If in fact we're going to do that, we'll have to work with them.

And then ultimately, however, those people will pay to the Chino Desalter Authority in order to offset their cost to do that.

The other couple of plumes that I think are prominent, these are G.E.'s. This is their Test Cell Plume and Flat Iron Plume that are both isolated at this point in time. They are not moving.

This is the Milliken Plume and it is not migrating. The regional board has worked with them on a closure plan that keeps it from migrating. And this is the Chino Institution for Men Plume and it, as well, is not.

This is the world-famous Stringfellow Plume that's located here. And the Department of Toxics is the lead agency on that one. We monitor and attend all of their meetings.

This small salt plume up here -- it's not small -- large salt plume up here is the Kaiser Well, and we're monitoring that. We have a number of sentry wells in place to monitor where that is going.

And overall, Watermaster has gotten much more aggressive in the last four or five years making sure that

we're monitoring all the wells.

Earlier on, there was one piece of the testimony that talked about perchlorate in the Chino Basin. We do have spot wells around the basin that have detected perchlorate. The work we have done in isotope studies at this point indicate that all of that perchlorate is from imported fertilizer from the Chilean Desert, and we're not finding any smoking gun. So PRP's or any manufacturers that you would find in other basins, we're not finding them here. So at this point we don't have any proof that anybody has produced anything that we're going to be able to go after them.

So each one of the well owners at this point is dealing with those individually.

MR. FIFE: Thank you, Mr. Manning.

And there are no further questions from this witness.

THE COURT: All right. Any other questions?

All right, fine.

MR. FIFE: Your Honor, that concludes our witnesses. I believe Mr. Slater --

THE COURT: So you're done with your presentation? We don't need tomorrow; is that correct?

MR. FIFE: That's correct, your Honor.

THE COURT: Give me -- There was something I wanted to look up in your book of copies of what you showed on the board. Do you have those hard copies?

MR. FIFE: I do, your Honor.

THE COURT: I need to look at one of them.

MR. FIFE: Perhaps, we might be able to direct your attention.

THE COURT: That's all right.

All right. For the purposes of further monitoring and further education of the Court and further creation of a record, I'm going to set another hearing, and we're going to talk about the first three -- At this next hearing, we're going to talk about the first three of the so-called program elements of the Optimum Basin Management Program.

And that will be comprehensive monitoring, comprehensive recharge and water supply plan for impaired areas, and I realize that there's some overlap, but I want to go deeper into this, although I didn't find any of your presentation deficient today. I thought it was well done.

I want you to talk -- to be prepared to present evidence on those three areas, the first three areas on that program element sheet. And I want you to talk about the present project condition, future plans for that particular project, projected time limits for the formulation and implementation of that project, future anticipated problems in implementation, whether they be in cooperation and/or funding or some other anticipated problems. In other words, environmental concerns that you think may arise or are showing themselves now.

And so we'll discuss those three at the next hearing, which I'm going to schedule for the 16th of April, at 10:00. I'll set aside a day for that.

The next thing is Judge Gunn ordered that reports be periodically provided, including annual reports and other periodical reports. Those orders still stand, and at the April 16th -- prior to the April 16th hearing, plenty of time for the parties to respond, I want disseminated a status declaration by the counsel for the Watermaster as to the status of all reports that are then due or soon to be due and produced. Okay?

MR. SLATER: Yes, your Honor.

THE COURT: Am I clear about all that?

MR. SLATER: Yes, you are.

MR. FIFE: Actually, I have a question.

THE COURT: Yes, sir.

MR. FIFE: So in saying that the reporting will continue, are you referring to the OBMP status reports and you would like those to continue to be produced?

THE COURT: Whatever reports previously ordered by Judge Gunn, I want a declaration as to what's been done, what needs to be done, if anything is late, I want some statement as to that. If it's in the process of being completed, I want a statement as to that. And then if something is soon to be due, I want a statement as to what progress is being made on that report. Okay?

MR. FIFE: Thank you, your Honor.

THE COURT: Because I don't want to have to go back myself and look it up, so I want you to do it for me. Okay? All right. That's about it.

Are these mine to keep?

MR. SLATER: Yes, sir.

Just a moment, your Honor.

Your Honor, just one quick point.

THE COURT: Sure.

MR. SLATER: It was the impression of Watermaster counsel and staff, following the hearing on November 13th, that this hearing and hearings like this might be used in lieu of preparing the more, in many cases, voluminous written reports. So we had suspended preparation of those reports. So I just want your Honor to know that there may be -- it would appear to be deficiencies in preparing those reports given the time period between November and now.

THE COURT: And I think that's fair. And one of my goals in setting this hearing and future hearings is to lessen the need for those reports to be as detailed as they have been in the past and to have that process go on of kicking the reports back and forth and analyzing and so forth. And if any of the parties desire more specific information, I do want the quantitative nature of the reports to be disseminated, but I don't need the updates because I'm going to have you do that by testimony.

MR. SLATER: I understand, your Honor.

THE COURT: If you understand what I'm saying.

MR. SLATER: Absolutely, your Honor.

THE COURT: I'm trying to avoid those kinds of reports in the future myself. I think they're money wasting and time wasting to a large degree.

MR. SLATER: We appreciate that.

Your Honor, I had just one other matter. I appreciate the indulgence of your Honor and your staff here today.

It was suggested to Watermaster counsel during a couple of the brakes that your Honor might be interested in taking a field trip of the Watermaster facilities at some point in the future. We have the hearing coming up but at some point, whenever it's convenient for your Honor to get out and see firsthand the physical facilities that the witnesses are describing, it might be useful to you.

THE COURT: Sometime I might do that if I feel like I've got nothing else to do.

MR. SLATER: Thank you, your Honor.

THE COURT: That hasn't happened in a couple decades, but it might happen. All right. I'll see you then next time.

(Proceedings for this date concluded.)

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF SAN BERNARDINO

DEPARTMENT NO. S-32 HON. JOHN P. WADE, JUDGE

CHINO BASIN MUNICIPAL WATER DISTRICT, et al.,

Plaintiff,

vs.

CITY OF CHINO, et al.,

Defendants.

NO. RCVRS 51010

REPORTER'S CERTIFICATE

COUNTY OF SAN BERNARDINO)
) ss
STATE OF CALIFORNIA)

I, BETTY J. KELLEY, C.S.R., Official Reporter of the Superior Court of the State of California, for the County of San Bernardino, do hereby certify that the foregoing pages 1 through 164, inclusive, comprise a full, true and correct transcript of the proceedings held in the above-entitled matter reported by me on February 2, 2009.

DATED this 10th day of February, 2009.

BETTY KELLEY, C.S.R.
Official Reporter, C-3981