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 TRANSCRIPT OF ORAL PROCEEDINGS

APPEARANCES:

(See next page)

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

APPEARANCES:

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FOR CITY OF CHINO:	JAMES E. ERICKSON Of Counsel to City Attorney
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
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SAN BERNARDINO, CALIFORNIA, MONDAY, APRIL 27, 2009

9:40 a.m.

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

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

THE COURT: Good morning everyone.

MR. SLATER: Good morning, your Honor.

THE COURT: I didn't hear the chorus of voices I expected to hear. All right. We're here today to provide a report to the Court as directed at our last hearing, which was on February 2nd, 2009, in which the Court specified certain areas to be covered today, and so we might as well get to it.

Would you give your appearances, counsel.

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

MR. FIFE: Good morning, your Honor. Michael Fife on behalf of Watermaster.

THE COURT: Any other counsel present wish to give an appearance?

MR. KIDMAN: Thank you, your Honor. Arthur Kidman for Monte Vista Water District.

MR. FUDACZ: Fred Fudacz on behalf of the City of Ontario.

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

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

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

MR. KENNEDY: Steven Kennedy for Three Valleys Municipal Water Districtt.

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

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

MR. BUNN: Good morning, your Honor. Thomas Bunn on behalf of the City of Pomona.

THE COURT: Mr. Slater or Mr. Fife, did you wish to make some sort of opening remarks before you call the first witness?

MR. SLATER: Yes, your Honor, just for the contextual pleasure of the Court.

The Court has reminded us at the last hearing your Honor set a specific area of coverage, and so consequently, today Watermaster's prepared to address the three substantive issues, which are the first three elements of the Optimum Basin Management Program, those being comprehensive monitoring, comprehensive recharge and the water supply plan for the impaired water supply areas. So those are the three substantive areas.

Your Honor also asked counsel to prepare a

declaration as to the status of reporting. We have prepared and submitted such a declaration along with an exhibit, and we're going to offer a witness today from Watermaster, Mr. Manning, to walk through the status of each of the reports and to respond to any questions that the Court may have.

With that, we are going to present a total of four witnesses. We think it will take about three hours of direct testimony to move through their subject matter, and Mr. Fife is going to take each of the witnesses through their testimony.

So with that, I'd turn it over to Michael.

MR. FIFE: Your Honor, just as a preliminary matter, each of the witnesses will have a presentation. We have hard copies on the back table available for everybody. We also have a set for you, if you'd like those in advance.

THE COURT: Yes, I would, please. Thank you.

MR. FIFE: So as Mr. Slater indicated, we have four witnesses. They will go through the three substantive areas as well as the issue of reporting. These will be the same three -- or the same witnesses that covered these areas at the previous hearing, but this time they'll go into much greater depth, as the Court indicated that was the Court's preference. They are prepared, during the course of their testimony, to answer any questions the Court may have as they go along.

I think we would ask if other parties have

cross-examination or their own questions, they maybe could wait till the end of the testimony. That might be more efficient, but the witnesses are prepared to address your questions as they go through the presentation.

THE COURT: When you say the end of the testimony, you mean the end of each witness's testimony?

MR. FIFE: Yes. So our first witness will be Mr. Malone. We won't qualify them or anything like that since you have already heard from all of these witnesses.

THE COURT: Thank you.

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

ANDREW MALONE,

called as a witness by 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: Andrew Malone, A-n-d-r-e-w, M-a-l-o-n-e.

/ / /

DIRECT EXAMINATION

BY MR. FIFE:

Q Good morning, Mr. Malone.

A Good morning.

Q Now, Andy, you have a presentation that you're going to give to the Court that addresses the Court's four substantive areas of present project conditions, future plans, time lines and anticipated problems. But before you get into your testimony about the current monitoring that's going on in the Chino Basin, can you tell us prior to the OBMP, so prior to program element one, what kind of monitoring was occurring in Chino Basin?

A Most of the monitoring was being done by the municipal pumping agencies and IEUA in compliance with regulations such as the Department of Public Health regulations for drinking water. That was mostly occurring in the northern part of the basin.

In the southern agricultural part of the basin, there wasn't much monitoring going on at all in terms of water levels, water quality or ground water production.

Q And so what was the Optimum Basin Management Program response to this situation?

A Well, there's nine elements to the program elements. The first one is monitoring, comprehensive monitoring. And all of the program elements have some form of monitoring associated with them, but for efficiency sake, we grouped

all of the monitoring into program element one because there is some overlap between monitoring required for different program elements.

Q And so would you like to now begin your presentation about the OBMP monitoring?

A Yes, please.

Your Honor, we went over a number of these types of data that we collect in the Chino Basin. It includes geologic and well information, pumping, ground water levels and quality, surface water, including recycled water discharges and artificial recharge that occurs at our recharge basins and land subsidence. Those are the main types of data that we collect in the Chino Basin.

The reasons why we collect it, there's basically two reasons: The Court-approved agreement, which includes the Peace Agreement and the OBMP. Another example is the MZ-1 Subsidence Management Plan, which was approved in 2007, and it has a monitoring element associated with it. So there's three agreements as to why we conduct monitoring.

And then there's also regulatory requirements. The basin plan, for instance, has a number of programs that specifically relate to monitoring in the Chino Basin.

And how we go about constructing our monitoring programs is, first of all, we clearly try to define a question. And the program elements do that. What we try to do is define what we need to know to answer those questions,

try to also define what we know already, and the difference between the two is going to be our monitoring program and how we construct it.

What we did with the OBMP, first off, is we did a comprehensive look at what could be monitored in the basin, especially in the southern end of the basin where there hadn't been much monitoring going on in the ag pool, in the agricultural wells.

So for the first couple years, we sampled every well that can be sampled. We measured it for water level. We sampled it for water quality. We took a look at the data and looked at the questions we were trying to answer, and we reduced our monitoring to a set that could answer our questions. So these are the so-called key well programs that we ultimately are implementing now. But first of all, we took this comprehensive look.

And occasionally, we've had monitoring requirements that have arisen as we have been implementing the OBMP since the year 2000, and we'll go over those in more detail.

Again, our main sources of data are the municipal pumpers, other agencies like IEUA, the USGS and the Regional Board that are out there collecting data as well. And Watermaster staff now collects most of the data in the agricultural pool area. And we try not to duplicate our monitoring efforts.

Can you go on to the next slide, please.

This is an example of that. We have, let's say, two different geographic regions in the basin where we have specific reasons why we're conducting monitoring. And in this yellow area here, let's just say for argument that we have four measurements that need to be collected per month, and in this area here we only have one measurement that needs to be collected per month.

We often times have overlap between areas and monitoring programs where monitoring needs to be conducted. And so in this case here, it would be well number two where we would do four and not five. We wouldn't duplicate.

Now, that seems like pretty much common sense, but when you're talking about hundreds of wells and you're talking about multiple different reasons why we're monitoring, it becomes a more complex issue and it requires a lot of organization and work, especially when you get into water quality monitoring where there's different analyzed things you want to be analyzing for. So we spend a great deal of time trying to make our monitoring programs as efficient as possible.

What we have here is what's in your handout and on the poster board here. But basically, across the top it's a matrix of all the reasons why we do our monitoring. And so the program elements two through nine are listed first, and then there's some other reasons why we do monitoring that have arisen either as part of the implementation of the

Peace Agreement or as basin plan requirements that have come during the implementation of the OBMP.

And down on this axis here are the different types of data and monitoring programs that we have. Ground water levels, ground water quality, ground water production and so forth. So wherever there's an X, it's that the program elements or another requirement for doing our monitoring requires this type of data.

So what I'm going to do is go down through on the left-hand side column, go down through each one of these different types of monitoring. I'll start with ground water level, and I'll give you a brief summary on the program in general and talk a little bit about our plans for the future and any issues that we might have in implementing those plans.

Again, this is the entire basin. But we have different reasons for doing monitoring in different areas of the basin. Some of them are basin-wide monitoring programs. Some of them are site specific.

So what you're looking at here is a map that has all the wells where we have collected ground water level data before in the past and where we're collecting it currently, too. And they're color coded by who collects the data and the frequency with which it's collected.

The green wells that you see up here in the northern part of the basin, those are primarily the municipal pumping

agencies. And they monitor water levels typically about once per month.

Down here, these are the agricultural wells primarily, with a few of the green wells in here that represent some municipal pumpers in this area. And they're color coded as either an orange well, which we collect water levels once per month, a blue well, where we collect water levels once every two years -- twice a year - excuse me -- and red, where you see the red dots, those are where we have a transducer that is installed in the well that collects data once every 15 minutes, a very, very high resolution data. It provides us with a lot of information. It also is a significant investment. We spend a lot of time and money in installing them, maintaining them and then processing the data. It's a lot of data, but we learn things that we couldn't learn otherwise with just periodic measurements of water level of wells.

The use of the data. I've tried to summarize some of the main uses of the data here for you, and you'll be hearing about some of these uses in subsequent testimony. But some of the main uses are to estimate storage in the basin. The water levels tell us what the top of the water table is. We have a good idea of what the bottom of the basin is so we can calculate storage. And that storage changes as water levels change. So it's important to measure those for reasons such as this.

In 2010-2011, we're going to redetermine the safe yield of the basin. And knowing how your storage has changed over time is a very important element to calculate safe yield.

There's also a requirement in the Peace Agreement to assess the balance of recharge and discharge in all areas and subareas of the basin. And what storage changes can tell us is where you're out of balance. If you're losing storage in a certain area, it's an indication that you may be out of balance.

We also use the data in our ground water flow modeling. It's our calibration data. And, of course, we use our ground water flow model to implement a lot of the program elements.

It's also very important -- it's a very important piece of data that tells us how water is flowing through the ground water basin. Ground water flows under a pressure gradient, from higher elevations to lower elevations, so we make these contour maps of ground water level elevation, and that tells us how the water is flowing through the aquifer system. You'll see a map of that here momentarily.

And then for subsidence monitoring, it's very important because the water level changes actually cause the aquifer system to compress or expand, which makes the ground surface go up or down. And so it's the driving cause, the water level changes are the driving cause behind the

subsidence so it's very important data for us is subsidence monitoring as well.

THE COURT: Define subsidence.

THE WITNESS: It's the vertical displacement of the ground surface. It can happen elastically. It can go up or down, but if you have too much water level draw down, it can actually go down permanently. And where it goes down in a differential fashion, you can have ground fissures open up. And that's really our major threat in the Chino Basin. It's happened before. We're trying to not let it happen again.

THE COURT: How can you prevent that?

THE WITNESS: By managing your ground water levels through recharge or pumping.

THE COURT: Okay.

MR. FIFE: Your Honor, just to clarify, we have an entire program element about subsidence, so in the future you'll have a lot of testimony about that.

THE COURT: Okay, thank you.

THE WITNESS: So our current state -- You were interested in knowing this. In the current state and then our plans and time limits and problems, and this is how -- we'll go through each one of the monitoring programs. But our current state, again, you can tell from the map, is that we have about 150 municipal wells that we collect monthly data from.

We have cooperator wells, these USGS monitoring wells, they could be monitoring wells associated with the remodeling project, that data gets reported to the Regional Board and we go into the Regional Board and collect that data from the Regional Board. So there's these cooperators that we go out and we collect data from. This isn't measured directly by Watermaster staff. It's measured by others, but we collect it and put it into our data bases.

And then down here is what Watermaster staff does. About 80 wells where we collect monthly data. 150 wells with transducers, and then we have this program here, 250 wells, where we collect semi-annual data from.

This is our key well program here. These four are our key well programs. This right here is not part of the key well program, and what we're proposing for 2009 and 2010, we think we've collected enough data over the last eight years to expand our key well program slightly and eliminate the semi-annual monitoring. We don't believe it's providing us with necessary information any longer. We think we can do it with a subset of the wells. So that's what we plan to do for 2009-2010.

One major issue with not only the ground water level but it's going to be with the ground water quality, any program where we're collecting data from the southern end of the basin, as agriculture levels and urban land uses move in, we're losing some monitoring wells down here or wells

that we collect data from for our monitoring programs. And so what we're going to have to do is when we lose enough of these wells, we're going to need to replace them with dedicated monitoring wells. And so this is going to happen over the next few years.

THE COURT: Would you put those -- those transducers in those areas?

THE WITNESS: We would. New monitoring wells would provide us with some really good data. We know exactly how the well is constructed. We may put wells down at different depths so we could get a more three-dimensional understanding of not only the pressure but the water quality with depth. So we already have about nine of those monitoring wells down in the southern end of the basin. We'll need to augment that as time goes on and we lose more of these private wells.

I'm going to spend a little bit of time with you here on what we call our hydraulic control monitoring program, and it's going to demonstrate to you how we use our ground level water data. But it's also going to familiarize you with some concepts that's going to be important in later testimony that have to do with new yield, how we're generating new yield in the basin and some of our regulatory requirements that we're complying with right now.

This is the southern end, the agricultural southern end of the basin, and you have the Santa Ana River here.

And we have our desalter well fields. This is the Chino I Desalter Well Field located down here. It's about 15 -- 14 or 15 wells. And we have about nine wells up here that are part of the Chino II Desalter. And the Chino II Desalter feeds a reverse osmosis and ion exchange facility to the north of it, and the Chino I Desalter, a similar facility that's located over in this area. So there's pipelines that collect all these wells to these treatment facilities.

All the other wells on here are either private wells or are dedicated monitoring wells. And what you see, the little numbers you see next to them are the ground water elevation for Spring 2008.

And what we try to do with this data is develop contours, equal elevation contours of the ground water table. And like I told you, the elevation is important to tell you how ground water flows. From higher elevation, this is 580, 570, 560, so ground water is flowing from the north to the south towards our desalter well fields here. You can see over here from the Santa Ana River ground water is flowing more in a westerly direction towards the desalter well fields.

These green areas here on the map are ground water contaminant plumes and they more or less tell you the direction of ground water flow, too. They're more or less a tracer. This one is coming from some area up near the Ontario International Airport. The Chino Airport is located

in this area, and its plume is located like this. (Indicating.)

One thing, one very important thing that you should know here is that ground water elevation or ground water levels get very shallow down here in the southern end of the basin, so shallow that the ground water can feed the surface water streams, and ground water can become surface water and flow down here to Prado Dam. The ground water down here is typically very high in salinity and in nitrogen.

And so what we worry about is this ground water becoming surface water and impacting beneficial uses in the Santa Ana River and your downstream neighbor here, which is Orange County, which uses all the flow in the Santa Ana River to recharge its ground water basin, which is used for municipal drinking water as well.

So the regional -- What IEUA and Watermaster did was when the basin plan was being updated, they petitioned the Regional Board for elevated ground water quality objectives for salinity and nitrogen up here in what we call the Chino North Management Zone, where we are trying to implement programs like recycled water recharge without mitigation. So the Regional Board gave us elevated water quality objectives which allowed us to implement some of these recharge programs up here.

But what they wanted in return was some demonstration that you're protecting beneficial uses, you're protecting

them in your basin and you're protecting downstream beneficial uses, too.

Well, what we were doing was putting in these desalter wells anyhow. And the reason why we were putting in the desalter wells was to treat this water and put it to beneficial use for drinking water. But also, we knew that the agricultural production was leaving the basin and that water levels may rise and we'd lose this water, we'd lose the water and we might impact beneficial uses.

So another reason for putting the desalter wells in here was to lower water levels, purposely lower water levels and reduce that ground water outflow, which would help our yield, maintain our yield, and it would help protect the water quality of the Santa Ana River.

So what the Regional Board wanted us to do in exchange for these elevated water quality objectives was to show, through a monitoring program, that we were indeed lowering ground water levels and we were indeed reducing the out flow of ground water to the surface water system down here.

THE COURT: As the agricultural users leave the area, is that going to reduce the nitrogen problem to some degree?

THE WITNESS: To the extent that they contribute nitrogen, yes. And it may not happen immediately. These systems, there's a vadous zone, it's the unsaturated zone,

and so it takes a while for water to percolate through that vadous zone and for the contaminants to make their way through the vadous zone to the ground water table.

So we draw one of these maps every year to demonstrate to the regional board the extent of hydraulic control. And what we think we're showing here is that we are having water that percolates in the Santa Ana River. We are having it flow in towards these desalter wells now. We're starting to see these cones of impression, these lowering of ground water levels all along the east side of our desalter system here.

Over here on the west side, this is where we do not have hydraulic control yet. Water is flowing past the desalter wells that are located over in this area and down to the south. So this is an area where we admit we don't have hydraulic control yet. And this is the area where we are proposing new desalter wells to come in here and draw down water levels and create hydraulic control as well as providing a municipal drinking water source.

So this is some of our plans that Mr. Jeske is going to talk to you about later on today.

But this, again, is how we use our water level data to demonstrate hydraulic control or the state of it.

MR. FIFE: Your Honor, just to emphasize that point, program element three is about the desalters so you'll have much more testimony about this later this

afternoon.

THE COURT: Okay.

THE WITNESS: This right here, just to finish up on this topic, is taking this 2008 map and comparing it to a 2000 map. So it's a change in water level map, and these contours in here, the red areas indicate this where we've drawn water levels down, and the green areas are where water levels have come up slightly.

So what we have here is 10 feet of draw down near the Santa Ana River, almost 40 feet of draw down up here near some of the desalter wells. So this is showing, again, that we do have a regional cone of depression that we're beginning to create here. It has migrated all the way out towards the Santa Ana River, and this is where new yield to the basin may be occurring as we enhance the recharge from the Santa Ana River.

THE COURT: Uh-huh.

THE WITNESS: That's a concept you're going to be hearing in later testimony today. This is a source of new yield where once we may have had outflow, now we're having inflow and maybe even enhancing the inflow.

THE COURT: Because of the changing of the subsidence situation?

THE WITNESS: Because of the changing of the water levels. Again, water levels flow under a gradient so if you increase the gradient, then you increase the velocity

and flow rate of the water from one area to another.

So moving on to ground water quality, a similar map that I showed you for ground water levels. Initially, we took a comprehensive view of the entire basin and then we have reduced it to more of a key well set that we do our monitoring. But this shows you here all the private wells in red where we have collected water quality samples since implementation of the OBMP.

The blue are cooperator data. This is the Stringfellow Acid Pits Monitoring Site here where they have a bunch of monitoring wells, and we collect their data. You can see the location of a couple of other ground water quality contaminant plumes that are being monitored, and we collect their data there as well.

The green wells, again, are the municipal pumpers that we collect their data from them. They do their sampling. Again, our desalter wells are down here in the southern end of the basin.

So some of the uses of the data here, we have -- every three years the basin plan requires us to compute the ambient water quality for TDS and nitrate nitrogen for the entire basin. That goes along with some of those elevated water quality objectives that we received. So we need to collect enough data to estimate current ambient water quality every three years.

As we expand the desalters, the people that are doing

that work, they need to know what the quality of the water is that they should expect to be treating. And so Watermaster supplies them with that data.

For the Recycled Water Recharge Program there's some down gradient monitoring that needs to be done in compliance with DPH and Regional Board requirements that allow us to recharge recycled water. So there's monitoring that goes on for that.

We do monitoring to characterize the contaminant plumes and their movement and assist in identifying some of the sources that are not known for some of the plumes.

And then for the analysis of hydraulic control, there's a ground water quality component of that, too, and so we collect data to support the hydraulic control monitoring program as well.

So our current state, about 120 mainly private wells in the south end of the basin where Watermaster staff goes out and collects that data once every two years, about 200 municipal wells that we collect data from them and then about 100 cooperator wells where, again, we go to the Regional Board, or wherever that data may exist, and we collect that data and put it into our data bases.

What we're doing here, what we believe after analyzing this data for eight years, we believe that we can reduce this one, once every two years to once every three years at our key well program. So that's what we're

proposing to do starting here in 2009-2010, and again, this problem with the loss of private wells and installing monitoring wells to replace those wells over time, mainly down here in the southern end of the basin.

A similar map for ground water production. This is a map here where these wells are color coded by the amount of water that's produced at the wells. You can see most of the municipal wells are bigger wells, they produce a lot more water and they're located mainly up in the northern end of the basin.

Some of our desalter wells down here produce a lot of water, too; they're large producers. And all the small dots in here are the relatively small agricultural wells that don't produce too much but there's a lot of them. So as we lose them, you can see that we would lose a significant amount of ground water production and there is that threat of water levels rising down here in the southern end where we don't want it to occur. The desalter wells are coming in more of a concentrated area, but they're replacing that production.

The way we use this data, Watermaster uses it to calculate its replenishment obligation annually. There are certain pumping rights that each producer has, and we compare it to what they produce. And if they overproduce, then they have a replenishment obligation annually. We're going to use this data to redetermine safe yield in 2010-

2011.

Same thing here, to assess the balancing of recharge and discharge, ground water pumping is our main source of discharge from the ground water basin. So it's very important to understand that to assess balancing of recharge and discharge.

And then for our ground water flow modeling, it's the input data, it's the major stress to the system. Also, recharge to the system, but again, discharge is our main source of input data for ground water flow modeling.

So our current state here is to collect and compile the data on a quarterly basis. The municipal pumpers report that data to Watermaster staff and it's compiled in data bases.

And then Watermaster staff goes out and reads meters at the private wells in the southern end of the basin. As part of the initial implementation of the OBMP, a lot of those wells down there did not have meters, so Watermaster initiated a program to install meters on all wells down there that could have meters installed on them. So that was completed successfully, and now Watermaster staff goes out and reads those meters once per quarter and combines it with this data.

THE COURT: Have you had any issues in the past with reports from municipal pumpers as to accuracy and timeliness?

THE WITNESS: Not that I'm aware of.

One thing that we're trying to do in the western side of the basin here where we're concerned about subsidence and studying is that we are going to ask some of the producers over here on the west side to provide us with higher resolution data. They typically record data at a higher resolution than quarterly. They summarize their data and then provide it to Watermaster quarterly.

Well, we're interested in understanding on a more frequent basis what these wells are doing. It's going to help us, again, understand subsidence so we don't anticipate any problems. They are technically very forthcoming with their production data. And so if they are recording it at a higher resolution, we're going to try to collect that to assist us with some of our subsidence investigations.

But other than that, there's no plans to change what we're doing.

Moving on to ground levels, this is the subsidence monitoring we've been talking about.

Again, what we're seeing is the entire Chino Basin here outlined in red. And what you're seeing here in orange and yellow and in blue is remote sensing data. It's a radar satellite that collects radar data periodically from space, and we can use that data over time to tell us what the ground surface did vertically.

Where it's blue -- and we have a contour of one over

here -- this represents one centimeter of uplift of the ground surface.

Where it's orange and red is where the ground surface has subsided. And we have almost 12 centimeters of subsidence over here in the Pomona area over this time period, October, 2005, to October, 2008.

Over here in the Ontario area, about nine or 10 centimeters of subsidence that occurred there.

This area right down here is our so-called managed area, and this is the area where we did an intensive investigation of subsidence because in the early nineties we had ground fissures open up down here near this black line.

And so as part of the OBMP, it was to -- it was program element four of the OBMP, it was to conduct this investigation and try to develop a long-term management plan to address subsidence here, manage it so that subsidence and ground fissuring doesn't occur here in the future.

And so we have -- In 2007, we have come up with that plan, and it is being implemented. We are managing ground water levels down here. And as you can see, we don't have much of anything in terms of subsidence that occurred over this time period here. So we think we're doing a good job down here of managing subsidence and ground fissuring now with our plan. But we'll continue to collect data down here fairly intensively, and on an annual basis we'll evaluate that data to see if our management plan maybe needs to be

changed in the future. So this monitoring here, intensive monitoring here is ongoing.

What we do basin-wide, though, is we take a look at this remote sensing data, it's called inSAR, but we take a look at this on an annual basis.

And can you go one more. And then on a semi-annual basis, where these black dots are, these are bench mark monuments that are on the ground. And we do conventional surveying along these transects here at these monuments. So we do both remote sensing and conventional leveling surveys in these areas.

One thing to note is that the inSAR doesn't collect data very well in the agricultural parts of the basin. As these build out, it will begin to collect better data. It likes very hard surfaces, very hard, reflective surfaces. It just does a better job --

THE COURT: I see. I was about to ask you why and that explains it.

THE WITNESS: Yeah. Here fields are being plowed, cows are stepping on it, and you just don't get consistent hard surfaces over time.

So this is one of the reasons why we bring this ground level survey down into this area. We know we have clays that can compress and cause subsidence, but we don't get very good inSAR data down here. So we do some conventional leveling down here.

The reason why this is important is because, again, we've had fissuring that's occurred here in the past.

Where the subsidence is differential -- Can you go back one. Where you have very -- a lot of contours all tightly grouped here, this is where differential subsidence is occurring and this is where you potentially have a threat for fissuring to occur. And so we look at this data in that way.

We also know that we have planned draw down that will occur of ground water levels over time. This concept of reoperation, our ground water model tells us that we should have draw downs, fairly significant draw downs in the central and eastern parts of the basin here. The eastern part, from a subsidence perspective, doesn't really concern us too much. There's not a whole lot of clay over in this area. And we just have never really measured very much subsidence in the eastern part of the area. But there are areas over here on the western side where it does concern us and we are planning draw down.

Down here in the area of the desalter wells, we're also planning draw down. New wells that come in here, we're purposely trying to draw down water levels. So subsidence is a possibility in these areas of the basin where we have a lot of clays, which is mainly the west side in Management Zone I and Management Zone II. So we keep a close eye on this through our remote sensing and our ground level survey

monitoring.

I think I've explained a lot of this here, response of the ground surface to basin management programs, identifying areas of potential ground fissuring, and then a lot of this data down here in the southern end in our so-called managed area is to support our Subsidence Management Plan that was approved by the Court in 2007.

Our current state here is inSAR analysis annually, bench mark surveys once every two years and this focused area where -- I didn't mention this -- we also monitor horizontal movement across the historic fissure zone. And so we do fissure zone monitoring, and we also do very intensive aquifer system monitoring down here in this area, too, since the aquifer system is the cause of the subsidence that's been measured here in the past.

We have no plans to expand what we're doing right now. And then again, here, this issue of planned overdraft in areas that are prone to subsidence, something we're keeping a close eye on.

Any questions before we move on from there?

Our surface water monitoring program, I'll talk about the monitoring program at the recharge basins up in the north, but we also monitor down here surface water in the southern end of the basin, and it's mainly -- it mainly has to do with our hydraulic control monitoring program. And so what we do is along the Santa Ana River here, we measure

flow and we measure quality of the surface flow to see if we can see the ground water coming into the surface water system. We can't really see it too well. There's a lot of recycled water discharges to the river here. It's what's called an effluent dominated stream, a lot of flow in the river, and it mostly comes from the agencies that discharge recycled water to the stream here. So we measure the flow and the quality along here, and we also measure the direct discharges to the surface water streams. IEUA in this case here, they measure the discharge from their plants and we collect that data from them.

The USGS has some monitoring stations here in yellow where they measure flow, and in some places quality, and we collect that data from them as well. So what we have learned from a hydraulic control perspective here is that we can't -- this data is not too useful to us. It hasn't indicated that there's much ground water coming in and affecting the quality and flow in the surface water system. And we believe our ground water level and ground water quality monitoring around the desalter wells is really what we should be concentrating on.

So what we're going to be proposing this year to the Regional Board is that we reduce and maybe ultimately eliminate the surface water monitoring along the Santa Ana River here, that Watermaster and IEUA conduct and focus more of our resources on the ground water level and ground water

quality monitoring around the desalter wells. Again, we're going to be building more monitoring wells in this area.

THE COURT: Something I didn't understand that you said earlier, the -- you talked about recycled water being placed into the Santa Ana River water.

THE WITNESS: Yes.

THE COURT: But who does that?

THE WITNESS: It's City of San Bernardino, City of Riverside. As we move down here, City of Corona. This is the Western Regional Plant down here, and IEUA has multiple discharges not directly to the Santa Ana River but to tributaries that ultimately come there.

THE COURT: Is that for replenishment purposes? Is that what we're talking about?

THE WITNESS: No, sir. This is discharge of the water. They have a permit with the Regional Board that has limitations on the chemistry and volume of discharge that they're allowed to discharge. And so that all comes down here as disposal of their water. But again, what we're doing now is we're taking some of that water and we're moving it back up to the recharge basins up in the north and that is becoming recharge.

THE COURT: Okay.

THE WITNESS: That's kind of new.

THE COURT: Okay. That's interesting to me. Okay.

THE WITNESS: Historically, it's all been disposal. And the flow in the Santa Ana River has increased, progressively increased over time as populations have increased. And then Orange County Water District, again, they take all of that water and they recharge it down there. So they've been recycling for many, many years.

THE COURT: Yeah, they have kind of an efficient program, as I understand.

THE WITNESS: They have a new program right now where they are highly treating their recycled water. Their recycled water, they're highly treating it and they're bringing it back up to their recharge basins and they're taking the Santa Ana River water and their recycled water and putting it in their recharge basins and so they're drought proofing themselves down there.

THE COURT: I'm sorry for interrupting. Go ahead.

THE WITNESS: No problem. So I think that's about all I have to say on the surface water monitoring at this point.

Again, it's mainly used to help us with hydraulic control. But we think that we can back off on that and concentrate more on the ground water monitoring.

I've covered these topics.

Okay. We've been looking at the southern end of the basin a lot. Now, we're up in the northern end of the basin

and what you see in red, green and blue, these are the flood control or we call them sometimes water conservation basins that we can hold the water in there and let it recharge. These pipelines here are imported water pipelines, and these yellow dots are turnouts where we can take water out of these pipelines and let it flow down into these basins to replenish our aquifer or recharge it.

IEUA is doing most of the monitoring of the volumes of water that are making it into these basins and the quality of that water. We put into these basins not only recycled water that we've talked about but we also put the imported water and storm water. There's been a lot of improvements to these basins to try to improve the capture of storm water, which is typically a very good quality. And it helps us dilute some of our recycled water that are going in here to help us meet some of our regulations that are -- our regulations to recharge recycled water. And Mr. Wildermuth will be talking about that in more detail in the recharge portion of his representation.

The way we use this data, this concept of new yield that Mark will be talking about somewhat, pursuant to the Peace Agreement, we'll be using to determine that new yield comes from storm water capture. That storm water used to just flow on past the basin, but now we're capturing it and putting it to beneficial use. So we consider it to be new yield to the basin.

Provide estimates of recharge volume and water quality to comply with our recharge permit that we have with the Regional Board.

To redetermine safe yield. Obviously, it's a form of recharge. It's a form of yield to the basin.

And to assess the balance of recharge and discharge.

And again, IEUA is doing most of the monitoring of the storm water, recycled water. We get our imported water quality and volumes from Metropolitan Water District and DWR. That's who we buy the water from for imported water.

Storm water monitoring and recharge volume estimation. Mark is also going to be talking about the Recharge Master Plan, and all the storm water monitoring and recharge volume estimates will be reviewed in that Recharge Master Plan. And improvements for the monitoring and recharge estimate will follow the completion of that Recharge Master Plan.

This doesn't belong in here. I think that's the end of what I have.

THE COURT: Okay.

THE COURT: Anyone wish to ask Mr. Malone questions?

THE COURT: Okay, sir.

MR. KIDMAN: Your Honor.

THE COURT: I'm sorry.

MR. KIDMAN: Art Kidman for Monte Vista Water

District.

Can we go back to the slides that show the ground water surface elevation, real early slides.

THE WITNESS: Go down some.

MR. KIDMAN: Thanks. Just for a clarification for the judge's benefit and maybe my own, you pointed out that the contours across the top of the slide are indicating a higher ground water elevation.

THE WITNESS: Yes.

MR. KIDMAN: And the ones towards where the well fields are -- yes, the desalter well fields are showing a lower ground water elevation. Are those ground water elevations measured in terms of sea level?

THE WITNESS: Yes.

MR. KIDMAN: So they're not measured in terms of distance to the surface of the ground?

THE WITNESS: No. That would be depth to water. But the way it's actually measured is that somebody goes out to these wells and measures that depth to water. But we have an elevation relative to sea level at the point where we're doing the measurement, and so we just subtract that depth to the ground water from our elevation at our measuring point to get the ground water elevation, then we draw our contours.

MR. KIDMAN: Okay. So the ground water elevation then, you expect water to flow in the direction from a

higher elevation to a lower elevation?

THE WITNESS: Yes.

MR. KIDMAN: Now, looking at the south part of the basin where we have higher ground water elevations, is water then -- is the flow reversed and going back toward the well fields?

THE WITNESS: Well, that's actually what the Regional Board wants to see is they want to see some component of reversal at least near the well field back towards the wells. That would indicate that you have a cone of depression around the desalter wells and that everything is flowing from -- that is flowing from the north is being captured by the wells.

This down here has shown to be not too much water entering the surface water system, and that's not what they're so concerned about. They're concerned about our management activities up here somehow impacting the outflow down here. And so if we can show a regional cone of depression and complete capture of the water flowing from the north to the south, if we can show that, then the Regional Board is satisfied that that's hydraulic control.

MR. KIDMAN: And just another point just to both clarify and confuse, are there other things besides gravity that influence the direction of ground water movement?

Maybe I clarify that. Sometimes ground water is actually under pressure so that water could be moving in the

opposite direction of that flow that you indicated; is that right?

THE WITNESS: It's always flowing under a pressure gradient. Pumping causes water levels to go down. Recharge causes water levels to go up. So what we do with our basin management practices by artificially recharging or taking water out through wells, we modify the natural gradient, which is typically the same as the ground surface gradient. And so that's what we're actually trying to do down here is we're trying to modify the natural gradient through pumping and lower water levels here so that we modify the ground water flow patterns.

MR. KIDMAN: Thank you very much.

THE COURT: Anyone else?

All right. Thank you, sir.

Call another witness.

MR. FIFE: Would you like to move to program element two or take a break?

THE COURT: No, we'll take a break about 11.

MR. FIFE: Our next witness is Mark Wildermuth.

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

MARK WILDERMUTH,

called as a witness by 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.

THE WITNESS: I think I'm just going to stand.

THE COURT ATTENDANT: Will you state and spell your name for the record, please.

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

DIRECT EXAMINATION

BY MR. FIFE:

Q Mr. Wildermuth, you have a presentation about program element two?

A I do.

Q Please begin.

A Okay. Can you pull that first slide up. The next one

Per your request, when I talk about program element two, and I'm going to cast it in these terms, I'm going to talk about what the present project condition is, our future plans, time lines, and our problems with implementation.

The Watermaster parties are currently involved in doing a Recharge Master Plan. It was ordered by the Court.

It's part of the Peace II Agreement. We've submitted some papers on that, some summary progress reports and an outline back prior to last July. And I think that -- Do you have a copy of the report outline? I think it should be with what Mr. Fife sent you. It's a separate document.

I point out to you that it shows a very comprehensive study or investigation.

THE COURT: Are you talking about this (indicating)?

THE WITNESS: No, it's coming. This is the outline of the report and a special referee of Judge Gunn's, special referee's report, Anne Schneider, that was incorporated into Judge Gunn's December, 2007 court order. It had a series of questions and things that it would like to see answered. And we've designed those questions into that.

And we have a scope of work that's dealing with all the subpoints in there. So I just wanted to point that out. We've begun this work in earnest. We've really started doing a lot of technical work in the fall of 2008, so we're in implementation. So what I'm going to talk about today is really what we've learned so far and what we can almost speculate with almost certainty about where this thing is going to go.

So one more slide. Sorry. Back up one more. Go forward one. We'll talk about the present condition. You

have to talk about these first four things.

Ground water production. Ground water production drives replenishment. We have storm water recharge, which also affects replenishment, and I'll explain in a minute. And then we have the effective supplemental water recharge capacity, which is kind of a difficult term. That's what that big table does and that looks nasty but I'll take you through it and demystify it. And then near the end of the present condition, I'll talk about the conclusions which are driving the Recharge Master Plan from this point forward.

Ground water production projections. We've had a lot of -- There is -- We've done a lot of work over the last several years. The investigations were done by Inland Empire in 2008. They published the memorandums, and we needed those projections to do some fairly new investigations for the Dry Year Yield Expansion Program. So while this is sort of an eye burner, it shows three different categories of producers.

The judgment has three pools of producers. We have an overlying ag pool, which is basically farmers using water on their lands.

We have this overlying non-ag pool, sort of like an industrial pool, if you will. Their water demand, again, is an overlying use, and it's a function of the number of things they make or use. And if you're generating power, your water usage is based on the number of widgets or

whatever they generate.

And then we have the appropriative pool. The ag pool has been projected to be around 26, 27,000 acre feet and drop in just 10 years to about 5,000, and then we'll have this residual ag from that point on.

This overlying non-ag pool, we don't really see a change in there. We note that some of those companies or entities are being purchased by appropriators. And while those pumping may go up, it's going to basically offset production, and I'll explain how that works in a minute.

Finally, we have the appropriative pool, and they're about 152,000, but they're expected to get up by 2030 to about 211,000, so that's a pretty substantial increase.

Overall, we'll go from 182 to 219,000.

Now, that's production.

Now, we have to look at what our production rights are. Our production rights start with the safe yield and have a full series of adjustments. Safe yield is 140,000. It's projected through our model and worked to go down. It's primarily a land use and drainage issue. It takes a long time for those effects to percolate down and hit the water table, so these land use changes have mostly happened, the drainage changes have mostly happened, and we should start seeing those changes in the future.

The controlled overdraft, the judgment provides for 200,000 acre feet of control overdraft and 5,000 acre feet

per year, and that runs out in 2017. So you'll see here in 2010 at 5,000 and you'll see it zero thereafter.

New storm water yield, that's the new storm water recharge that occurred post the Peace Agreement, and it's related to the Chino Basin Facilities Improvement Program.

It's actually occurring -- I'll explain in a little more detail in a moment and explain what goes on. That -- The new induced Santa Ana River recharge, that's caused by a combination of the placement and operation of our desalter system wells that Mr. Malone talked about, and this so-called reoperation concept where we're going to do control and overdraft of an additional 400,000 acre feet, which is already under way, which is this reoperation term.

You can see that in 2010, it's around 28,000 it's projected. It dropped because we're actually using up the water to about 10,000 acre feet in '20 -- to '20, and in 2030, it's actually there, but in 2031 it goes to zero. So I'm just showing it zero here, not to mislead people.

And then this recycled water recharge, these are projections from IEUA, and it goes from around 10,000 and it's projected to reach 28,000.

If you total these up, about 183,000, and you see it dropping over time and that's because the control overdraft tails off in 2017 and reoperation goes down and the safe yield goes down, so you're going to see the production rights going down over time.

Now, if you subtract these production rights from the production, that gets you a replenishment obligation. And it so happens that it's a little bit higher in 2010 than the estimated production. And we made an assumption here that's a very key assumption. We said that the volume of water is so great that if somebody underproduces, they're going to have a credit and that water will somehow be exchanged with people who overproduce, and that will occur before we buy replenishment water. How good of an assumption it is is not clear. I think in the long term it's going to be true because the water will be so valuable.

In the short term, I'll point out then in '08-'09 we have replenishment obligation the prior year of about 21,000 acre feet. Watermaster's only been able to secure 7,000 acre feet from buying it from parties in the basin, so we're short 14,000. So that assumption, on any individual year, may not be very good. It's probably not very good in the early years. In the outer years, we're hoping it works.

So the replenishment obligation is kind of projected to be kind of near zero or balanced now and reach about 25,000 acre feet in 2030, and that's pretty much a combination of growth and the timed history of these production rights.

Now, this is the beginning of what we need for what we call our wet water replenishment capacity. We need enough to put that in the ground. But also, remember, we're

doing recycled water recharge. When you add those two together, you get some large numbers. You're talking 80,000, 85,000 range in the out years of actual wet water recharge capacity. Being an engineer, we wouldn't design it exactly for that. We have to have redundancy for things going out and going down. So we are thinking in terms of larger numbers.

Okay. So where did the 6,000 acre feet come from? Let's go one more slide. It's kind of complicated. I'm going to go through this slow and demystify it. This is a bar chart that shows the timed history over the last five years of storm water recharge, total storm water recharge. That's what these big blue bars represent.

This horizontal blue line here represents the average of those numbers at about 10,600 acre feet. So on average, 10,600 acre feet per year.

Now, in the Peace Agreement, there's a baseline storm water recharge of 5600 acre feet. Professionally speaking, it's too high. It was never that big. But that's in the Peace Agreement.

The new storm water is really the difference between this blue line here, at 10,600, and this baseline of 56. That's 5,000 acre feet.

Now, if you look at the rainfall history that generated this five years, and you take the trend in this data with the rainfall, you look at the completed rainfall

record, which is over 80 years long, this number is closer to 6,000 -- excuse me -- that's where the 6,000 came from. This also happened to be the four-year average.

If you look at this, this becomes eleven-six and you also get six. It's kind of interesting how that worked out.

Can I see the next one.

What Watermaster did back when we were contemplating constructing these facilities, we anticipated wide swings in storm water recharge, as you can imagine. We have dry years and wet years. So to sort of stabilize that impact on production rights and replenishment assessments, we decided to look at the long-term average of what we thought the facilities would do, which was 17,600, and subtract the 5600 from that, and that gave us 12,000 acre feet.

We would go for five years, and as we operated the facilities for five years, we'd see what they really did and we'd make a correction.

So Watermaster assumed 12,000. The average was about six. So that means for five years, we overestimated at 6,000 acre feet a year. That's 30,000 acre feet. So the next five years, which is the next five, we're going to take no storm water recharge credit, no new yield credits from storm water recharge, and then we're going to be actually recalculating this in much more detail this summer, using simulation tools to figure this out. This is a pretty complicated concept right here. Are you okay with this?

THE COURT: Yeah.

THE WITNESS: The next slide.

So what is the effect of supplemental water recharge capacity? What does that term mean?

There's a whole lot more to recharge capacity than just having a facility, a hole in the ground that you put water in. There's complicating factors that relate to the reliability of our source supplies. They don't come all the time. They come in certain years, not all years. We call that a reliability issue. We have hydraulic capacity locally and the pipelines that can get water to these facilities, and we have the facilities themselves.

This is a map that's identical to the one Mr. Malone had up. I made it out of poster board so I could go between two or three things at once. So this is the -- We call this the Rialto reach of the Foothill Feeder, and it comes down through the northern end of the Chino Basin. Little yellow dots with little labels are turnouts. The Etiwanda Intertie that comes down to the upper feeder, and this upper feeder contains Colorado River water, pretty high in salt, very low in nitrogen. When this intertie comes down, it sort of blends it down, makes it a little bit lower in the salt. This is just State Water Project water, which is very low in salt.

The polygons in red here are various recharge facilities. They are flood control facilities that have

been highly modified. Kind of modifications we make where they put gates on uncontrolled outlets. The way they would normally work is water would fill up and they would drain out through gravity through tubes, if you will, that come out of the basins. If they got really full, they'd spill over the top on through a spillway. So we gated these things, put controls on them, electronics, so we could alter them remotely.

In some cases down here at RP-3 area, we actually built these ponds. Up here in College Heights, we built those ponds. Everything else was pretty much a retrofit of some kind of hardware.

So let me wander over here and go over this chart. In this first column, we list all the facilities that we use for supplemental water recharge, supplemental being imported water and recycled water.

This year is the average storm water recharge. Hold that thought for a moment.

These next set of columns are scoped from January through December is the availability of the basin. And we went through a pretty rigorous statistical analysis on the number of events in a month, how long the events were to figure out how many days that we had. If we wanted to use this basin as much as possible except for when it rained, there are certain operational things we have to do. Like the day before it rains, we have to empty the basin. We end

up coming up with these fractions which represent the fraction of availability. So this would be 71 percent of the days out of January we can use those basins. In July and August, there's zero. The basins are down.

We can move these around a little bit. You'll also see that the basins become more available around the summertime because it doesn't rain as much.

This column here, it says "average recharge rate in cubic feet per second". That's sort of been determined by looking at sustainable levels in basins when we actually operate them. So if we're putting water in the Montclair Basin one through four, we note that we can put 60 CFS in for a couple of days when they fill up. But to maintain the levels, 40 CFS is what it will take, which is a good estimate of the percolation rate. 40 CFS is 40 cubic feet per second.

If we look at this availability and turn that into days that we can use it, times this CFS, and convert to acre feet, we come up with this column here, which is a maximum supplemental water recharge capacity unconstrained by supply limitations.

Now, what that means is if there were no constraints on the supply, we have this percolation rate, we have this availability, we would get these kinds of numbers. And at the end of the day here, it looks like 92,000 acre feet.

Here we have the turnout names, which correspond to

the map, and we make a "yes" or "no" answer here. We say, "Is the turnout limited? Does the capacity of a turnout from that pipeline limit the capacity of the basin?" And for all cases, it's no except for the San Sevaine Basins over here. This CB 13 has a rate capacity of 30 CFS but can only do about 23 CFS, and that's due to pressure issues in this pipeline. And that affects the downstream users, not the actual turnout itself. So when they run that, they can -- it's got five little cells in here, and they can use the first two and maybe the third. So this fourth and fifth cell don't get used. It represents a lot of lost capacity.

Now, there's a way to get some water from this turnout down in here, and we're sort of working with that now, so that can improve that a little bit later.

THE COURT: Mr. Wildermuth, I'm going the take a break now. We'll be in recess until 15 after 11.

(Recess.)

THE WITNESS: I thought before I jump back into that table, maybe I should summarize a few terms and come back to this and show what motivates this.

We have a safe yield. It's the supply to the basin, long-term sustainable supply. This controlled overdraft is something that's in the judgment. It says, like I mentioned earlier, it's 200,000 acre feet, parsed out over 40 years, and it ends in 2017.

This new storm water yield is something that was not

in the judgment. It was in the Peace Agreement. And it basically says that we can make new storm water recharge after the beginning of the Peace Agreement, the start date of the Peace Agreement, which is late 2007, we can count that against our production. So that's what that new yield is. The new yield up here is the new storm water recharge post Peace Agreement, which is November-ish 2007. So it's in addition to the otherwise sustainable recharge of the basin, something new, because of our activities and our financial investments in the facilities.

Reoperation comes from Peace II. It's a judgment amendment that allowed us to do that. It came out in December, 2007. And you can see what happens. It sort of defers the need to do replenishment. Replenishment is when we overpump our rights, we have to put water back in the ground so we keep things sustainable.

The operation is a departure from that temporarily. And we know we're going to have this replenishment problem out in the future so it defers it. So we were very motivated to do this Recharge Master Plan. The Peace Agreement says we have to do it every five years. So we did it in 2000, right when we got authorization to go with the Peace Agreement. But we thought we did enough.

So in 2005, we didn't do it because we were building all these facilities, and we thought we were going to have a fabulous amount of recharge capacity. And then Judge Wanger

came in, drought came in, changes in projections went way up and we find ourselves in somewhat of a conundrum.

So coming back to this table, all this table does -- it was meant to be a one large view of showing what effective supplemental water recharge capacity and supplemental recharge water capacity is determined in the judgment. It means imported water and recycled water. It's something that is supplemental to the native supply.

So we've kind of marched through this thing, just looking at it in sort of summary form. Again, for the reporter's views, we're looking at table view from task 57.1 memorandum, which was submitted in evidence. And we're at this column 20, and it talks about the maximum supplemental water recharge capacity constraints by turnouts.

Now, the physical capacity of the basin, as we said moments ago, was 92,000, but because we have some constraints in turnouts, it drops to about 79,000. That's a small hydraulic constraint at one of these valves that would put water in the San Sevaine Basin. If we look at the availability of replenishment water serviced from Metropolitan, there's a special category of service from Metropolitan called replenishment water service. It's a special category of service they have. It's a less expensive water than they normally would have, a normal municipal supply. And it comes when Metropolitan Water District has surplus water, when they can find it and get

it.

Because of the environmental conditions in the Delta, with the Delta Smelt, in particular, the reliability of that supply, instead of being seven and 10 years, has now gone to three and 10 years. There's virtually no surplus water available for Metropolitan to get, even when things are good, so they've gone from 70 percent to 30 percent. And if you assume that three out of 10 years we can use these basins, our capacity to recharge effectively drops to, with imported water from Metropolitan, down to 24,000 acre feet.

So we started out at 90,000 acre feet of capacity. Now we're down to 24,000. We have certain limitations on our ability to put recycled water in the ground. We have to have dilution water. And dilution water is storm water, which is in that first column, that average storm water, and imported water. When we put those limitations on it, we can only get about 7,000 acre feet of recycled water in the ground. Remember that production rights chart I showed you awhile ago. Inland Empire was forecasting 28,000. That will not happen under our current regulatory paradigm and this supply of water. It just won't happen.

When you look at our total capacity average, annual capacity to put water in the ground for replenishment purposes, it's only around 31,000 acre feet. So this is a big challenge. Before we saw that we had a wet water need for 80,000, but this is our wet water effective capacity,

30,000 acre feet. So when you do all this engineering and gaming on our supplies, it presents kind of a dour picture for the future.

So what we did was we said what could we change of our assumptions there to improve that supplemental water recharge capability, to get the water in the ground?

So we looked at three things: We looked at -- Again, we're looking at this effective supplemental water recharge capacity. That's the average amount we can get in the ground every year. Some years will be dry; some years we'll be running them flat out. But the average is 31,200.

We said to ourselves if we doubled the availability, which is this relative percent axis on this chart -- what I'm looking at is the chart that shows the sensitivity of the effective supplemental water recharge capacity through changes in key parameters -- Watermaster and the parties may have some ability to change. If you look at storm water and you increase the storm water recharge, that effectively makes more dilution water for recycled water. So if all we're doing is doubling it, which is a hundred percent increase in that, it has a very modest increase in the supplemental water. All we can do is throw some more recycled water in the ground.

If we change our regulatory regime, right now, a good number, is we can only have about 30 percent of the water recharge be recycled water. 30 percent of the water we can

recharge artificially can be recycled water in any given recharge basin. If we were to double that, which is this increase here, we could take it up to about 44,000. So that's a 13,000 acre foot jump. The most sensitive one is the imported water. If we were to double its reliability from 30 percent to 60 percent, we can see the effective supplemental capacity gets up close to 60,000 acre feet. It goes from 30 to 60 by doubling. It sort of makes sense that that would be the case.

So as it turns out, in order to meet the 85,000, we have to triple it. It has to be 90 percent. That's a major finding because Metropolitan would probably never be able to supply us water with 90 percent reliability.

So this is a situation -- As we go into looking at solutions now, this is a situation we see ourselves in, that we're probably okay in the near term. But by 2020, we're going to be short recharge capacity. And in the out years, we're very short.

Are you okay?

THE COURT: Uh-huh.

THE WITNESS: Okay. So we have a series of conclusions.

Reliability of replenishment water service from Metropolitan is not adequate. There's other services they have. They have -- We could buy something called tier two water. It's very expensive, if it's available. I mentioned

a moment ago we have to be at 90 percent on our overall supplemental imported water reliability, and my sense is that we're going to have to find some other water supply. If Metropolitan can't do it with the replenishment service and they can't deliver it from other sources they have, we're going to have to go out and find some other water. And that's a big deal to do. It's extremely expensive and very difficult to effect.

We need to do some minor improvements, I think, to improve the capability of our existing basins but it's relatively minor. The CB 13, which is located on this map right above the San Sevaine Basin right here, we probably need to expand that or make that work better. I think overall what we're going to be doing is these basins are generally fine. We just need to find ways to get water to them and we'll talk about that in a minute.

New spreading basins are not required but ASR, which stands for aquifer storage and recovery, wells are. These are wells where you can inject treated water into the ground and store it for a season and pull it back out, maybe for a year or two at a time. We're doing an investigation to, as Andy referred to, Mr. Malone referred to, as the balance of recharge and discharge, where you're running computer simulation models of the future pumping projections.

And we noted that there was some pumping holes which are big depressions, significant depressions in the ground

water surface, so the depth to ground water can get quite deep. And our main concern is in the Cucamonga-Ontario area. We've noted that there's quite a deep pumping depression, over a hundred feet.

In the Jurupa Well Field area, they have a pumping depression building up. There's evidence for it today, and the models show it getting quite deep. So these are areas that we're looking at targeting injection in those areas to keep the area sustainable.

The modeling projections for the Cucmonga-Ontario area show that it's not sustainable in the out years and so we -- the recharge basins are too far away. We're talking an area down in this area where this pumping -- I'm sorry -- where this pumping hole is. And we have no recharge assets of any significance in there. There's some small ones but we're talking about 10, 15,000 acre feet of water potentially in these areas.

So a few moments ago I mentioned that we can't get the amount of recycled water that Inland Empire is projecting. The Inland Empire is projecting 28 in the out years, and we're projecting 75 is all they can do, based on the availability of diluent water. So if we were to increase that imported supply from Metropolitan or any imported supply to 90 percent of the time, we still only get 16,000 acre feet of recycled water. So we're not going to get to the 28,000 projected unless we can change this

regulatory paradigm. And probably the only way to do that is to add more treatment to the recycled water, similar to what Orange County is doing or something on that order, which would be putting virtually pristine water into the ground.

This one is -- We really haven't, I think, done as good a job with storm water recharge as we intended. Back when we did the Recharge Master Plan in 2000, we thought we could probably get about 17,000, on average, storm water recharge, subtract the base line of 5600, which is in the Peace Agreement. The pre-Peace Agreement recharge we had 12,000 acre feet. We're not close to that number as a new yield from storm water.

And so why that happened -- Why did that happen? Well, the improvements that were conceived of in the master plan weren't built. Some of them were. Some of the ones they built they just didn't build them the way they should have. To save costs, they just sort of dumbed down the project, if you will.

In terms of operations, an interesting statement here is that we're saying we're not matching our operations and maintenance investments to the value of the water that we recharge. For example, replenishment water from Metropolitan costs about $300 an acre foot, soon to go up. It seems to me that if you were to increase your maintenance costs a little bit, you could still get another acre foot of

water for less than $300 an acre foot. We ought to be thinking about doing the appropriate amount of maintenance to get as much water as we can up to the value of the replenishment cost of water from Metropolitan. So this is something that's -- being a consultant on the Recharge Master Plan, is trying to go through all this.

What are the future plans?

Well, we just started the Recharge Master Plan really. If we had this hearing a year from now, we could talk about a lot of the things that we're actually going to do, but we're not sure yet. We're going to complete this plan on time by July 1 of next year. There's no hurdles in the way of getting that done that we know of.

And kind of the things that it's going to contain is probably increasing water conservation. Now, I haven't really talked about it, but one of the facets of our study is we're going to come back and tell everybody what it's going to cost to get 85,000 acre feet of capacity in that basin, recharge capacity. And they may decide they don't want to pump as much. So conservation -- They may even decide to stop pumping.

We're going to secure additional reliable replenishment supplies. I don't know what that means yet. Maybe it means buying water rights or short-term supply some other places and bringing it down to the project.

We may have to improve the hydraulic capacity. It's

more than just San Sevaine. Metropolitan has not yet confirmed that they can deliver us water to all these basins, when all the basins are available. If you look at all these basins operating at once, it may be too much of a diversion off their pipeline.

Not shown on this map of the spreading basins is another pipeline that parallels this that just goes across the basin. There are no turnouts. It goes from the same source as this does, which is the Devil's Canyon Afterway Bay up here in San Bernardino, but it goes out to the San Gabriel Valley, so there's a lot of surplus capacity in that. And by making some hydraulic changes in that, we can get water in these basins through that pipeline.

So that's something -- That's definitely something we're looking at. The construction of the ASR wells in the pumping depression areas, and then again, aligning our investments in storm water recharge to the value of the avoided supplemental water recharge.

Projected time lines. Go one more.

Again, we'll complete this on time, by July 1. Again, there's nothing that we know of that will get in the way of that. It's going to have a recommended implementation time-line and projects, things to do. I suspect that -- The Watermaster can't own things. It can't really do a lot of physical things, so agreements will have to be developed among the parties to actually implement it.

And just based on past experience, that's probably going to take a few years to do. We're not in a crisis on supplemental water recharge capacity, but it will take probably, I would guess, two or three years to get those agreements in place to begin actually implementing whatever comes out of the Recharge Master Plan.

The biggest problem we see existing in the future is the availability of imported water as we've talked about. It's difficult; it's expensive. If we were to buy water from outside the basin, say the Central Valley or the Sacramento Valley, there's all kinds of environmental hurdles and wheeling issues to move that water down as well as cost.

Metropolitan, again, has not committed even to delivering us the water we need when they have it in those facilities, so that 31,000 could be shaky if they decide they can't do it.

There's some equity issues, and this is not a technical thing. This is something in my discussions I pick up. Who should pay for the expanded recharge? Should growth pay for it? In other words, the growth and demand, should that pay for it?

So it's kind of unclear as to how to distribute that cost. So that, I imagine, will not so much be an issue in our report that comes out in July of 2010. It will be the subject of that period of the implementation agreement

development through 2012-ish.

Of course the cost of funding. This is going to be extremely expensive. If we have to buy water from other sources than Metropolitan, it's going to be extremely expensive. Most of the facilities are simple. Wells, pipelines, pump stations, they cost a lot. But the cost of new water rights or long-term contracts will be really expensive. I think the capital cost for this, the acquisition of water rights and facilities could exceed 200 million. It could be undoubtedly more than that. But I think 200 million is a good discussion number for us right now.

THE COURT: Anyone have any questions?

Okay, sir. Thank you.

Mr. Fife.

MR. FIFE: Would you like to proceed on to the next witness?

THE COURT: Yes, sir.

MR. FIFE: Mr. Jeske.

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

KEN JESKE,

called as a witness by 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: Ken Jeske. K-e-n, J-e-s-k-e.

DIRECT EXAMINATION

BY MR. FIFE:

Q Mr. Jeske, do you have a presentation for us about program element three? Proceed.

A Thank you. If I could stand, can you hear me?

If we go to the next slide. I'll just kind of point at you and go through them.

The first thing I want to go over is what is the current condition of some of the impaired areas, show a couple of maps so we can see where some of those impaired areas are, focusing on the largest area, which is the area that we're doing the desalters, showing how that ties into hydraulic control, and then going over the current status of the desalters.

The benefits of what we're doing with desalting is we are removing salts, currently about 27 tons a year. You know, I'll say that's five or six full refuse trucks full of salt being hauled out to the ocean every year today.

We have achieved partial hydraulic control. The prior testimony, I think, has shown the value of doing that to prevent downstream pollution.

Interesting enough, of course, the cost is being paid for by Inland Empire residents, not downstream residents. It allows recycled water use and recharge, which is very important, particularly the direct reuse for irrigation and other industrial purposes of recycled water. And it cleans up legacy plumes and pollution. We didn't have too much discussion on that, and we're providing a potable water supply to help pay for it.

This map shows nitrate as nitrogen in ground water, and I put a map of the entire basin on here so we can see the whole thing at one time. And you will see that there are elements in addition to the historic agricultural industrial dairy area. There are treatment plants treating those. Chino has a treatment plant. Monte Vista Water District has one. Upland has one. The City of Ontario has one. In fact, we found some of that perchlorate involved with them as well. There's been studies done that show the likely source of this perchlorate came from mass loadings of fertilizer that was mined in Chile and it was a naturally occurring substance there. It had a little different fingerprint than the perchlorate you would see out here in Rialto that's made all the newspapers. We find the same treatment technology is working for both.

This is showing total dissolve solids, and they're simple maps to read. As they go more toward red, they're higher levels. Again, you can see the concentration in the south, and that's what we're trying to stop from migrating on down the river.

Now, this is an interesting chart because this one shows some different ground water plumes in the area. And these are plumes that come from what we would term more of an industrial source. So you have Stringfellow. You have Kaiser Steel Plume. You have G.E. Test Cell. You have G.E. Flat Iron. You have Milliken Land Fill. This is the Chino Airport. This is from Chino institute for Men. This one is contained. According to the Regional Water Quality Control Board, G.E. has theirs contained with a treatment plant. Several of these required various litigation.

The Kaiser Plume is projected to migrate down and be picked up in the desalter well field, and that was the game plan approved by the Regional Board for that one.

These are all to be contained up in this area. This is under cleanup and abatement orders, and the containment is being designed now.

This one is contained.

This one is still an unknown. The sources are not completely known. It's suspected that it came from historic industrial uses and military uses on the Ontario Airport. You can see it's now getting down to the well field for the

desalters, so we may ultimately see actions on that. The Regional Board is reviewing data. Test wells are going in now. So there's more than just the desalting to deal with when we look at ground water plumes and cleaning them up, and also looking for responsible parties to help pay for that.

This shows where the desalter wells are located, and it shows the general ground water flow. And this was the area over here by the Chino Creek where we still have not fully completed hydraulic control, although when you start looking at what's happening, when you saw Andy Malone's testimony, you could see we were reversing that flow, saving our water up here in the Inland Empire.

This slide is just to give us an idea of why it's important to remove salts from the basin so that we can use recycled water.

This is the plan of all the regional pipelines being put in through cooperation with Inland Empire Utilities Agency and the various cities and water districts to be able to supply water to the entire region for nonpotable purposes. We want to try to bring down as much as possible that 80,000 acre feet of water that you heard.

The next slide, which shows, for example, in the City of Ontario, how extensive this system would be. In particular in the area that has yet to transition from agricultural to urban, that becomes a very substantial piece

of the water supply picture for the Inland Empire, and you'll see similar plans for all the other cities.

And it's used for many uses. In fact, we're even using it on agriculture today. We're using it on our golf courses. We're using it on parks. We're using it on schools. We're converting out city parks, land use areas and industrial and cooling water uses.

Now, to look specifically at the current status of the desalters, the top picture is taken out of a bucket truck for the Chino I Desalter, which is the first one that was made, that was built. And then this aerial is of Desalter II, which is located just east of Etiwanda Avenue.

This map shows the raw water pipelines that were put in place for the first phase of the desalters. And it shows one of the typical ground water wells that they're working on. These are high capital, intensive facilities and grounds. A ground water well nowadays is over 200 million dollars to install.

There's prefilters on the raw water that comes in, and then it goes through reverse osmosis treatment systems. These are large pumps that have to force the water through these membranes. It works the opposite of membranes in our body. These are very heavy, thick materials to move them through. I was going to try to bring a little core sample of one end so the Court could see what it's like and why it takes so much energy and pressure to move the water through

these to remove the contaminants. The contaminants are then disposed through the industrial waste water line out to the ocean. They're not hazardous materials. They're high salts, and so actually we're diluting the ocean.

Ion exchange system. This is similar to what -- you use resins and you pass the water through it. It's similar to what we did for nitrate control. There's some of the wells that do not need as much TDS removal, so we're able to do it cheap, a cheaper process, and then blend the waters back. And we also, at plant one, do have to remove some volatile organics, so we use systems for that, carbon and air stripping.

Then this shows the pumps to deliver the water back out to the retail agencies, which then introduce it into their systems and sell it to customers.

And this shows the pipeline. So that's a significant amount of pipeline when you consider this is up on top of the hill in Chino Hills, and this is way over past the golf course over there along the river in Jurupa and this is up by the Ontario Airport.

The project originally was conceived in a consortium with the Santa Ana Water Shed Project Authority and the Watermaster. The conception started in 1990. It became operational in 2000. The capacity was 92 million gallons a day. It supplied Norco, Chino, Chino Hills and Jurupa Community Services District. It cost around 65 million

dollars at that time to put that first phase in.

This just gives you a little close-up map of what was put in for that initial first phase.

Chino II -- In fact, I think that might have been Chino II. Chino I Expansion and Chino II Desalters are now complete. So these are the results of the Peace I Agreement that we did in the year 2000. They expanded that first plant, which was located over in the City of Chino, and added a second one, which is the plant that's over in Jurupa-Mira Loma area.

At that time the Chino Basin Desalter Authority, I'll call it the CDA, was formed as a joint powers authority amongst those parties that were paying for the product water, receiving the product water. And the joint powers authority then assumed the operation for both plants. These plants supply water into the delivery system. And it made a lot of sense for joint powers authority of the customer agencies essentially to operate it as effectively as possible.

That involved purchasing out the 65 million that was a stated loan, so it purchased that one out. It was 89 million dollars to construct the expansions. We were able to receive Prop. 13 funding of 48 million. The rest of it is embedded in the water cost to the retail agencies, and they pass that through to their customers.

This shows the agencies then that are currently

involved. At that time the City of Ontario and the Santa Ana River Water Company, Mutual Water Company came in. Had that additional demand not come on, there was not demand for the project water. Bringing, in particular, Ontario in, allowed the sale of the water, which is funding the operation, and also, the bonding of the facilities. There were joint bonds issued. Since I happen to work for Ontario, I know Ontario floated their own municipal water bonds to pay for their share.

So the red facilities was Chino I's operation. The blue ones are phase two, which adds another 14.9 million gallons. You can see a lot of facilities were built, wells, treatment plant, pump stations, and the ability to get it up to the zones where we have current demands. We do not have demands down in this area today. It's primarily an agricultural area.

This gives a total of the expansion facility where we're at now, and it shows 24.1 million gallons today.

The Desalter I expansion was completed in August, 2005; Desalter II in June, 2006. And in fact, we're producing more water today than was subscribed for, and that's a good thing because it took awhile to ramp up to that subscription so we had this deficiency. So we're currently producing excess to catch up that underproduction. We hope to have everybody whole by the end of this year.

Future plans is what we call Chino Desalter III. So

this is the desalter that came out of the Peace Agreement of 2005 to 2007. And what we hope to show is we're starting to compact these time tables a bit to get things done. In fact, just getting the agreements done was done much quicker than the earlier agreements. It took eight years to get the first one -- to get the agreements in place, and it took us about a year to amend all of the JPA agreements to move forward with this expansion, in fact, even bring a new member in, Western Municipal Water District.

This will complete the hydraulic control by doing the Chino Creek Well Field. It's not necessarily a well field that the desalter authority would have done. There may be some other areas where it would be more beneficial, from a cost benefit standpoint, to bring the water out. But it achieves the OBMP. So we're trying to work together to get that done. It will also then meet the regulatory mandates of the Regional Water Quality Control Board so that we could continue to expand our recycled water systems.

And when you heard the term reoperation of the basin, that's essentially lowering the ground water in that area to allow -- keep it from leaving the basin. But another benefit is it does allow for future storage and recovery projects. So when we talk about the need to get supplemental water to recharge, doing this whole program gives us more flexibility in going places to find water to bring it in.

And it also keeps contaminant plumes from leaving the area. And we have that one plume that has been called the Ontario Airport Plume, but they're not quite sure exactly what that anomaly is yet. That will be picked up in the desalter wells. It won't escape the basin. And then we get product water.

The status of it is we have completed all the formation agreements. We've admitted Western in. The Chino Creek Well Field is in review now for environmental review. We've got the design capacity of it identified through the Watermaster studies and feasibility studies complete to make sure that this is a workable program for the retail agencies and for the Watermaster.

The engineer's estimates today is 135 million dollars. Due to expense, we currently have 7.8 million dollars in grants and local funds that we're using. We do have some additional grants we expect to get but they're on hold right now with the budget crisis at the state level.

A little harder to see the facilities in green, but these are the additional pipelines and well facilities for phase three, and then further expanding the same two treatment plants. We looked at a number of alternatives, including a third treatment plant, and determined it was cost beneficial to use the properties we had.

I'm just going to click through these real quick because one of the questions the Court asked is what is the

schedule? It's quite a detailed schedule. There's a lot of elements of this plan. So if we keep clicking through these, you can get an idea of how many pages of schedule that we're working on through design, environmental review. And actually, there's one error here. We typed in the last date here. It's actually 2014 when the construction is done. That ends the final engineering on some of the intertie work.

The first plant that goes in, we want to intertie it in so that all the parties can reap the benefit. By the time the final work is done on the Chino Creek Well Field and the Chino I Expansion, particularly with water quality unknowns, VOC contaminants from that Chino Airport, it will likely be around 2014.

The Court also asked what are some future anticipated problems? Well, land acquisition is one. We still need some well sites and pipelines.

Design, test well and well performance. Depending on the test wells and the well performance, we may have to design treatment differently than we first thought.

So those are anticipated problems that are typical ones you work through. The same with construction contract issues. They can delay the schedule, but you typically get the job done.

Water quality can delay the project. In fact, it could build the costs so high that we have to go back and

reconsider some of the agreements.

Who pays for plume cleanup is going to be a long issue. I mean we're talking about major companies right now that have been identified by the Regional Board. These things typically drag on. It could be decades. So we need to figure out how to complete the water quality work and keep it going.

And construction financing could be an issue. The bond market, even for those agencies that can go out and sell bonds, the bonds market is still pretty uncertain for them. Although interest rates are low, you can't always get it.

THE COURT: I'll stop you here, Mr. Jeske. We're going to break for lunch. We'll reconvene at 1:30, ladies and gentlemen.

(Lunch recess.)

SAN BERNARDINO, CALIFORNIA, MONDAY, APRIL 27, 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: Okay, Mr. Jeske, you're up.

THE WITNESS: Thank you, your Honor.

We were talking about future anticipated problems. Some of the things that could pose future problems is the cost of the project water. It's currently over and above what we all agreed to in the Peace Agreements. So far, the agencies buying the water have not shut down the facilities. We're operating them. We're operating within the parameters of the Peace Agreement.

But we're faced in the future with the potential to lose local program subsidies from the Metropolitan Water District, which is what helps make this financially feasible. If that happens, there could be issues that we all need to discuss.

Also, changes in the water quality. As we saw when we looked at the treatment techniques, that could require future unfunded treatment. That could require, again, discussions on how to fund all of that work.

Water demand projections could be reduced through more conservation and better use of water. In the short-term, what we're seeing right now is the projections

we had five years ago of water demand are falling way behind, generally, because of the slow down in the economy. We're not seeing the development that we thought we would have today. We don't think we're going to see it for the next three years. That delays the retail need for this third increment of water.

So what we're doing is if that sale of product water repays the construction financing and operating so we're actually going to have to substitute this higher priced water for lower priced water, which then has to get reflected back into the customer rates. And there's some challenges with that because our customer rates are subject to this Proposition 218 election process. Retail customers now could actually deny the rate increase that funds this through that type of election process. And they could have incentive to do that if a lot of information comes out that there's not the need for this today, for this supply of water, that we have other supplies of water that are lower cost. Of course, we would then lose the benefits on the recycled water side and the hydraulic control side. So it's pretty much a tangled web where we have to consider our retail customers; we have to consider the regulatory agencies, the downstream users and our need to build capacity for the future.

Next slide. Also, there was subsidy money which is making this affordable today tied to expanding the dry year

yield storage and recovery program that we do with Metropolitan. This is where we put water in the ground in wet years and pump it out in dry years. That's going to require involvement of agencies that are not in the Chino Desalter Authority to make it happen. Those of us in the Desalter Authority have pretty much maximized our use of that program. We can only put water in according to how much we've used from that water in the past. So that's a potential issue that's going to require some regional institutional agreements.

Also, there's funding of replenishment water. In the Peace Agreements -- That's the responsibility of the appropriative pool and the water agencies. When you see the numbers that Mr. Wildermuth showed on recharge needed, I think the largest single one is for the desalters in the future.

When the hydraulic control is met and the ground water is lowered, all of that requires replenishment water. So that's 40,000 acre feet a year out of that, I think it was, 53,000 that we saw on the screen, is due to this program. So keeping the program together during the terms of the Peace Agreement and beyond and actually finding that replenishment water and putting it in through the Recharge Master Plan, that's what creates the links and that's probably one of the largest issues we'll have to deal with 20 years from now. Hopefully, 20 years from now the water

supply climate and institution of California will be a little more advantageous for urban customers than it is today.

Also, we've heard reports from the State Department of Water Resources on water management where they've indicated they're recommending taking over that management much like they do surface water. That would remove basin management from this Court. Locally, we're not thrilled about that idea. We think the management plan and process that we have in place has worked. It's created all these facilities. You could have someone out of the area in Sacramento at a staff level determining they don't like hydraulic control, stop it, in which case we've just stranded literally hundreds of millions of dollars of our ratepayers' facilities. So that's a future issue we may have to deal with.

Of course, any party could file with the Court and litigate, and the Court would determine the outcome of what that meant. But that could change timing and could change elements of the plan, whether it's the desalter facilities or any other one of these water quality plumes that we had up.

Downstream water interests could also litigate. Although we think we're on solid regulatory ground today with what we're trying to do and they benefit from this hydraulic control, they could litigate over, you know, water

that maybe they would have had or some other reason.

We also note they're not funding these improvements today either. So they could put themselves in a worse situation than they are today, but that usually doesn't stop people from litigating.

Future availability of the desalter replenishment water, I already talked about.

Finally, there could be regulatory changes that could affect this whole process, any one of the things Watermaster's doing.

Now, I just thought I'd wrap it up with what our expectations are. Because this is what we're all working toward. We're working toward completing the project for hydraulic control and cleanup of impaired water. We're working toward interagency cooperation.

We expect to have regulatory consistency. That's probably less certain than the first two.

We expect to continue to have Court review and assistance when there are differences of opinion.

We expect to have reasonable costs to our customers, which are the residents and businesses in the area, although we know that will increase.

And we anticipate being able to have maximum benefit use of our local water resources, to allow economic growth and smart growth in this area.

And we expect that from the technical side, we'll be

successful. We'll clean up the impaired water and we'll use it for product, our product water supply in the area. And I think that's the last slide. Thank you.

THE COURT: Any questions? All right. Thank you, sir.

THE COURT: You said you had someone else, Mr. Fife?

MR. FIFE: Yes, we have one more witness, Mr. Manning, and he will talk about Watermaster reporting issues.

THE COURT: All right.

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

KENNETH MANNING,

called as a witness by 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 R. Manning, M-a-n-n-i-n-g is the last name.

DIRECT EXAMINATION

BY MR. FIFE:

Q Mr. Manning, Watermaster prepared a matrix of all of the reporting that's done in the Chino Basin. Are you familiar with this matrix?

A Yes, I am.

Q And is this the chart that's to your right?

A Yes, it is.

Q Could you explain this chart for the Court and walk us through it?

A Sure, if I could please stand, sir. What we tried to do here, your Honor, is tried to present to you an idea of all of the different reports that go on from Watermaster's offices, as well as the kind of reports that are made available to parties within the Chino Basin that are outside of our purview but are referencing our data and information.

You heard, I think, some very good testimony this morning already from Mr. Malone and Mr. Wildermuth and Mr. Jeske about all the different data that's derived within the basin.

Watermaster takes it very seriously that this information is public information and tries to make that available to them as much as possible. So we tried to outline all the different reports we have for you.

You'll notice actually only four of the reports that are here today listed are actually Court mandated. The rest

of these reports are brought either voluntarily or from the Regional Board or state agencies, and are more particularly suited to a particular project or entity.

So if I could, I'd like to walk through those with you. Some are fairly standard reporting that our parties will get, such as the audit. It's done annually. Since I've been with Watermaster, and I understand a few years even before that, Watermaster audits have always been clear, no exceptions or comments at all from auditors on our report. The annual report is a report that's been done every year since the inception of Chino Basin Watermaster.

At the very beginning, the Watermaster's annual reports are, in essence, just eight and a half by 11, folded over, and they listed some information.

Currently, Watermaster actually takes a lot more information and puts it into these reports and uses it not only as an annual report providing all the parties all the information from the year, but also as a public relations to many. And so all of that information coming together folds into the annual report, and that was just filed with the Court just recently on March 3rd.

The next three reports all tie to each other, and let me kind of walk through them.

The first one is the budget. Now, the budget is done annually. It's due in June and we're working on that budget as we speak. As soon as the budget is concluded and adopted

by the board, we then move into a process what we call the water activity reports.

Now, Mr. Malone, in reference to a question that you asked, had asked about cooperation amongst all of the parties and whether or not we have good cooperation. And Mr. Malone's answer was very positive about the cooperation we get. In general, that's true. But trying to get all of this information from these parties at the end of our fiscal year, our budget year, is very difficult. Even though they give us quarterly reports, those quarterly reports don't normally just add up to their annual report.

Prior to the creation of the water activity report, which we started only a few years ago, it was kind of a process where the Watermaster would develop assessment -- the assessment package and actually end up producing it five, sometimes as many as 10 or 12 times before it was actually adopted. The water activity report was meant to stop that.

So what happens is we ask the agencies to provide us with this water activity report. We then take the budget, the water activity report, and then that becomes, in essence, the assessment package, and that is filed every year and it's approved generally by the board in November, and then we assess the parties on their yearly assessments.

The State of the Basin Report, you actually heard that referenced earlier in the testimony. It's the report

that is required by the Court. It's one of our more important reports that we do for the parties during the year.

Another report, which is at the same time, it's required by the Peace Agreement, is the Balance of Recharge and Discharge. You heard Mr. Malone, I think, refer to that, and Mr. Wildermuth, since they both are required at the same time, we fold them together into one report even though they are specifically two separate entities.

The Semi-Annual OBMP Reports, those are the reports that we file with the courts. They started off as semi-annual back years ago. Then the Court decided that they wanted them actually quarterly. And so Watermaster, for a series of about five or six years, actually did those quarterly.

About five years ago, we went back to the Court and asked if we could go back to semi-annually. The information that was being derived quarterly just was not that much. No progress was being made, so we went back to the semi-annual reports. That report was just filed and approved by the Watermaster Board.

The Monthly Supplemental Form Recharge Reports, this is actually a voluntary report that Watermaster started a couple of years ago trying to provide information to the parties that let's all of them know exactly how much recycled water, how much storm water, and how much imported

water were going into the basins on a monthly basis so they could keep track of that information for some very important purposes.

The HCM, Hydraulic Control Monitoring Program, you heard that referenced earlier, that's a quarterly report. The next one's due in July. It's required by the Regional Board as is the next item, which is the Chino Basin Max Benefit Monitoring Program. That one is annually, and it's also required by the Regional Water Quality Control Board. That was just completed and the next one is due a year from now.

The Recharge Master Plan and the second one that follows it, which is the progress report, both of those are reports that are important. The first one is the court order, and that says that starting 2010, every five years, we have to do the Recharge Master Plan.

The update progress report was a report that the Court felt was important in order to be able to make sure Watermaster was kept on task, and so it's a report that we're doing. And it's next due in July, and we'll be prepared to come to court and present that to you.

A 20-year TDS and Nitrogen Projection, that has to do with our regional permits and it's IEUA and Watermaster working together.

The MZ-1, MZ Annual Report talks about issues like subsidence within the MZ-1 area.

Progress reports to the State Water Resources Control Board, those are annual, and we have actually three different permits with the State Water Resources Control Board. The first one is on Day Creek Canal. The other one is on San Sevaine, and just recently the state gave us a new permit, which was an umbrella permit, that gives us permits for conservation of waters off the streams in any of the streams within the Chino Basin. So we maintain and work with them on that.

Now, as a condition to the last permit that we got, we have a report that we also have to do to the Department of Fish and Game, and that's due annually. We sit down with them and talk about what diversions we've made off the streams and if it's there's implications for having to deal with them.

Desalter Progress Reports, those are the reports that were referenced that Mr. Jeske had talked about in terms of what we're doing with desalters. And I put down at the bottom down here this Watermaster data base, Hydrodave. And it uses consultants.

We have so much data. And, your Honor, when I talk about Chino Basin and the amount of data that we have here, I am very active with ground water basins up and down the State of California, and I can honestly tell you that Chino Basin has more data about our basin than any other basin in the State of California. Quite often people talk to me and

they want to know about what we're doing here. And I talk about if their basins -- and talk about the communications, theirs are like regular T.V.. Our basin is in high definition. It's just that much difference between other basins and ours.

This data base allows any of the parties to the Chino Basin an opportunity to go in and see any data other than the private well data, the agricultural pool data, at any time within the basin. So if they're making decisions about where they're going to put a well or how they're going to deal with issues, they can use all the data that we've acquired over the decades of activity here within the Chino Basin and they can call that information on demand by using this computer program that we developed through Watermaster.

The other reports that I've listed here are reports that are done by IEUA or SAWPA or other agencies that we work with, and they're available to all the parties at any time that they wish.

Now, the other dynamic that I'd like to mention here is that all of these reports, plus the reports that are peripheral to the Chino Basin, are all available on the web. We have an entire web site that you can go on to, FTP site, and you can pull up any of these. As a matter of fact, because the Recharge Master Plan is such a big site, we actually created an entirely separate web site for that one activity alone.

What I'm trying to portray here is that Watermaster is trying to be as open and transparent and as useful as we can to the parties within the Chino Basin.

THE COURT: Anyone have any questions?

MR. FIFE: I have a couple of followups to finish his testimony.

THE COURT: All right.

Q (BY MR. FIFE:) So, Mr. Manning, do you feel that there would be a benefit to additional reporting beyond what is already being done?

A Well, Chino Basin, as projects evolve, and that's what really happens within the Chino Basin, as we start to see issues that arise, whether it be a subsidence issue or desalting, as those kinds of projects evolve, generally, because we have to get approval either from the Court or Regional Board or State Board or all, a number of reports come with that, I don't see any reason why, personally, there's more reporting that should be done. I mean right now we cover pretty much everything.

Q And on the other side of it, do you feel that there are opportunities or benefits to trying to consolidate or streamline the reporting that's currently being done?

A We do that on an ongoing basis. We're always looking for ways to try and streamline the data and try and make it as transparent as possible. So we're always looking for those, and where it makes sense, we implement those. And

where it doesn't make sense, because that information is so specific or if parties request certain information, we'll also provide that.

MR. FIFE: Thank you.

THE COURT: Anything else? Anybody have questions?

Okay. Thank you, sir.

All right. The next hearing we'll conduct will be on June the 29th. We'll start at 9:30.

I want to address program elements four, five and six, which are the Management Zone-1 strategies, Regional Supplemental Water Program, cooperative programs with the Regional Board and other agencies. And just as we did today, I would like a presentation of the present project condition, future plans for that particular project, projected time limits for the formulation and implementation of the various projects, future anticipated problems dealing with all areas, environmental, funding, cooperation, et cetera, as you did today.

I want to commend you for the presentation today. It was quite complete and good, and I thank you for that.

As for reports, as I went back when I first was assigned this matter, I went back and read several of the prior reports, and I was surprised that they were as elaborate as they were, which is not a bad thing. It's just that for the purposes of this Court, you can, if you want

to -- it's up to you how elaborate you want to make the reports -- but for the purposes of the Court, they can be containing quantitive materials and be conclusionary. It's sufficient that I get this information in this regard for me.

And along with that, I'm relieving the Watermaster of the requirement to produce this 2010 Recharge Master Plan Update Progress Report, which is due on July the 1st.

Anything else, counsel?

MR. SLATER: No, your Honor.

MR. FIFE: No, your Honor. Thank you.

THE COURT: I'll see you back here in June.

MR. FIFE: Thank you, your Honor.

Your Honor, would you like to keep these?

THE COURT: No.

MR. SLATER: Can we convince you to keep them?

THE COURT: No.

THE COURT: I appreciate the work you've done, gentlemen.

(Proceedings 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 88, inclusive, comprise a full, true and correct transcript of the proceedings held in the above-entitled matter reported by me on April 27, 2009.

DATED this 5th day of May, 2009.

BETTY KELLEY, C.S.R.
Official Reporter, C-3981