Exhibit I

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF SANTA CLARA

CERTIFIED TRANSCRIPT

ANTELOPE VALLEY GROUNDWATER CASES,	) Santa Clara) Case No.) 1-05-CV-049053) VOLUME IV

TRIAL TESTIMONY OF JOSEPH SCALMANINI

THURSDAY, JANUARY 13, 2011

WALNUT CREEK, CALIFORNIA

PAGES 418 - 556

as discussed yesterday I think at great length, but certainly earlier in this overall testimony, and the amounts of water that would ultimately derive from, again, referring back to the second subcolumn, 51.9 percent of the land use being dedicated to agriculture, then return flows would be expected to be from the ultimate computed sustainable or safe yield almost 10,700 acre feet per year. 13:42:10

And for the blend of sewered and non-sewered municipal-type land uses in the basin, the return flows from those would be expected to be a little over 11,000 acre feet per year. Return flows from operation of wastewater treatment plants is a rounded off number of high 400s but we used 500 acre feet per year. 13:42:36 13:43:00

So for the 1995 to '99 time period we would in effect compute, if we could refer back one exhibit to '92, that that broad double arrow pointing up in the middle of the figure that's called "Sustainable Yield (SY)" would be 82,300 acre feet per year and divided 51 -- 13:43:23

MR. DUNN: Counsel, with your agreement I'd like to adjust the phone. And we'll interrupt Mr. Scalmanini only because the phone is --

MS. SCHADT: It's on zero now. 13:43:52

THE WITNESS: It's on zero.

MR. DUNN: Thank you.

MS. SCHADT: Okay.

THE WITNESS: And so with -- in that time period 51.9 percent of the land dedicated to agriculture and 48.1 percent of the land dedicated to municipal-type uses, as was the case during that five-year time period on average, then the natural recharge of 60,000 acre feet per year would support with return flows attributable to those fractional uses of water a sustainable or safe yield of 82,300 acre feet per year. 13:44:00 13:44:20

It works out that -- for practical purposes that for the other time periods investigated, you know, for computation of native sustainable yield under fairly recent conditions, that for the ten-year period from '96 to 2005, that while the fractional uses of land for ag and M&I are slightly different, as was also the case in 2005, they're all sufficiently close to the same. 13:44:41 13:45:05

That with natural recharge the return flows from the agricultural portion of safe yield use and the M&I portion of safe yield use are close enough to the same as they were for the 1995 to 1999 time period that the native sustainable yield would 13:45:25

work out to be for all practical purposes the same.

So 82,300 acre feet per year would be the computed native safe yield for all the conditions that we examined from the mid 1990s to "the present"; the present in that case being at the end of the period of time that was studied which was through 2005. 13:45:42

BY MR. DUNN:

Q. Mr. Scalmanini, after you estimated the native safe yield for the basin as 82,300 acre feet annually, did you also estimate the supplemental safe yield for the basin? 13:46:04

A. Yes.

Q. Could I direct your attention, please, to Exhibit No. 95. 13:46:15

(Whereupon, Scalmanini Exhibit 95 was introduced for identification.)

THE WITNESS: Sure.

BY MR. DUNN:

Q. Who prepared -- strike that. 13:46:22

Exhibit No. 95 is labeled "Supplemental Safe Yield." Who prepared Exhibit No. 95?

A. My office did.

Q. What does Exhibit No. 95 show?

A. Well, Exhibit 95 shows the same land 13:46:36

use periods as were studied for native safe yield purposes with the exception that we did not spend any time analyzing supplemental yield for an early historical period because there was no supplemental water use in the early historical period. 13:47:02

So the 1995 to 1999, 1996 to 2005, and the 2005 single year periods are reflected only in Exhibit 95.

And tracking then from left to right, there is first in the second column labeled 13:47:20 "Supplemental Water Use (acre feet per year)," a tabulation of how much supplemental water was used on average during those respective time periods by agriculture and by -- or for M&I-type purposes. and as you can see, the total use of supplemental 13:47:43 water would be the sum of the two numbers in that column.

So, for example, in the '95 to '99 time period, you know, the sum of 19,550 and 48,100 would be 67,650 acre feet per year on average. And that 13:48:05 increased with time and the total of supplemental water use by the year 2005 had increased to the sum of the two numbers shown there, or 73,500 acre feet in that year, although the relative mix had changed where close to 20,000 acre feet were used by 13:48:33

agriculture on average in the five-year period prior to 1999, and not quite 10,000 acre feet were used in 2005. And the municipal industrial-type uses increased from about 48,000 over the '95 to '99 period to 64,000 in 2005. 13:48:57

Regardless, then as discussed or described schematically in an earlier exhibit also illustrated in Exhibit 94, which we haven't identified yet, but --

Q. Let's do that just for the record. 13:49:17

Turning your attention to Exhibit No. 94 labeled "Supplemental Safe Yield."

(Whereupon, Scalmanini Exhibit 94 was introduced for identification.)

BY MR. DUNN: 13:49:26

Did you prepare that exhibit?

A. Yes.

Q. And what does it describe?

A. Well, I've described it previously, but what we're trying to do now is put numbers on the 13:49:31 amount of recharge on the right-hand side that results from the importation of supplemental water or state water, which is abbreviated "SW," delivered to agriculture and delivered to municipal industrial-type use. And they produce respectively 13:49:51

recharge amounts that go into the groundwater basin.

And so the third broad column labeled "Supplemental Recharge (in acre feet per year)," those amounts are listed for the three periods of study and, you know, range from close to 5,000 acre feet of supplemental recharge from the use of imported water by agriculture in the 1995 to '99 period, and during the same period about 13,500 acre feet from municipal and industrial-type uses of supplemental water. 13:50:14 13:50:34

And agricultural use declined and so the supplemental recharge attributable to ag use declined by 2005 to just less than 2,400 acre feet, and the municipal-type use is increased and so the recharge attributable to that increased in just short of 18,000 acre feet per year. 13:50:53

Then in a fashion similar to native yield, the pumping and use of that water for the blend of land uses, which are again reflected in Exhibit 93, you know, the percentage of agricultural land use and the percentage of municipal industrial land use, in those respective periods produces return flows from the use of that supplemental recharge which range for agriculture from about 1600 acre feet per year prior to 1999 down to a little more than 13:51:19 13:51:40

800 acre feet per year in 2005 and increased for municipal-type uses because of the increasing use of supplemental water by municipal users from a little over 5,000 acre feet per year to a little over 7,000 acre feet per year. 13:52:00

So the supplemental yield that's attributable to the importation of supplemental water from the state water project and recharge that results from that contributes to, and depending on the selected time period, somewhere between about 13:52:18 25,000, but the calculated number is 25,300 acre feet per year of additional yield up to about a little more than 28,000, or calculated 28,200 acre feet per year of additional yield resulting from the use of supplemental water. 13:52:37

Q. And you're referring now to the column on Exhibit No. 95 on the far right-hand column?

A. Yes, I am.

Q. Okay. Thank you.

Mr. Scalmanini, what number -- or excuse me -- what estimate did you use for agricultural return flows in terms of percentage? 13:52:48

A. Well, on a crop-by-crop basis we computed the fractions of return flows, and they ranged for the -- I'll call it collection of crops grown in 13:53:07

the valley from 22 to 28 percent. Because of the varying crop mix and using periods of time and things of that type we used an average of 25 percent in the midst of that overall range of return flow rates. 13:53:24

Q. And that's the average return flows for all crops; is that correct?

A. Yes.

Q. And a similar question for the --

A. Well, I better back up. It's not an average. It's a selected midpoint amongst the collection of crops. We didn't compute an average among them. 13:53:31

Q. And for the estimated municipal return flows in terms of a percentage, how was that calculated? 13:53:46

A. Well, that's a bit of an exercise to try to describe. But we spent a fair amount of time -- well, the answer to the question is 28.1 percent, but I think you also asked how is that determined. 13:54:02

Q. Correct.

A. And so that's the part that will take a little while. We spent a fair amount of time looking at service areas of municipal purveyors and what you might call service areas of sewer agencies 13:54:15

that would collect domestic wastewater from typically inside water use; meaning inside the house, and routed to a wastewater treatment plant.

And then ultimately -- and we also looked at measured deliveries of water supply to M&I entities, or by M&I entities and/or purveyors, and then metered inflows and outflows at wastewater treatment plants to ultimately conclude that approximately 70 percent of the publicly-served areas in the valley are also served by sewer agencies that would route wastewater to treatment plants. 13:54:34 13:54:57

So we analyzed looking at water use records on a month-by-month basis how much water is approximately used inside the house versus how much water is used for landscaping or irrigation purposes outside the house and estimated return flows from the irrigation outside of the house. And in the case of sewered entities, routed all the inside water used to a sewer and to a wastewater treatment plant from which it was then treated, you know, as ultimately recycled water or treated wastewater. 13:55:15 13:55:31

For the non-sewered areas then we considered those to be served by so-called onsite waste treatment systems, individual onsite waste 13:55:51

treatment systems.

Q. Like a septic tank?

A. Yeah. In fact, you took the words out of my mouth. Yeah, basically a septic tank and leach field combination. Which means that assuming 13:56:03
outside water use is the same as it is in sewered areas, that a fraction of that water would route as deep percolation back to the water table. But the inside water use instead of being routed to a sewer is routed to a septic tank and in turn flows to a 13:56:17
leach field which constantly recharges the ground, or the groundwater.

And so based on an interpretation of how much water arrives at wastewater treatment plants, et cetera, and looking at monthly distribution of 13:56:32
water use, we concluded that about 45 percent of all water use in the Antelope Valley is used inside the house and about 55 percent is used outside the house.

And so in the case of onsite waste 13:56:47
disposal systems, we took that 45 percent inside water use, in effect routed it to a septic tank and in turn to a leach field and deep percolated it to the ground.

So if you take -- or into the ground. 13:57:00

If you take all of that combined and sort of integrate it with how much goes where, the net fraction of water for the sewered/non-sewered mix of municipal-type uses in the Antelope Valley produces about 28 -- we used the specific number that we calculated -- 28.1 percent return flow; meaning 28.1 percent of the water delivered for municipal purposes, deep percolates as return flow to the groundwater basin. 13:57:23

Q. And did -- 13:57:41

MR. ZIMMER: Hold on just a second. Objection. That goes beyond the scope of his deposition opinions.

It also incorporates the wastewater recycled water issue that we were told would not be testified to. We were prevented from taking Mr. Leffler's deposition on those issues. And motion to strike. And potentially cumulative if Mr. Leffler is going to testify or attempt to testify on those issues. 13:57:52 13:58:13

BY MR. DUNN:

Q. Mr. Scalmanini, do you have any return flow estimates for treatment plant operations?

A. Yes.

Q. What number did you use for your estimate? 13:58:21

A. We used 500 acre feet per year.

MR. ZIMMER: Same objections.

MR. DUNN: Did you -- I'm sorry. Did you --

MR. ZIMMER: I said "Same objections." 13:58:32

MR. DUNN: Okay.

BY MR. DUNN:

Q. And how did you arrive at the 500 acre foot per year number?

A. Basically a balance of how much water was 13:58:44 metered into and out of wastewater treatment plants and delivered to those environmental uses that we summarized in an exhibit yesterday, and there was a net, if you will, of deep percolation through treatment plant operations that in aggregate added 13:59:08 up to -- if I remember right, it was like 485 but we rounded off to 500 acre feet per year.

MR. ZIMMER: Same objections. Motion to strike.

BY MR. DUNN: 13:59:19

Q. Mr. Scalmanini, using the estimates of both the native and supplemental safe yields, did you arrive at a total safe yield for the basin for each of the land use periods described in the earlier exhibit? 14:00:21

A. Yes.

Q. If I could direct your attention to the next exhibit marked in order, premarked as Exhibit No. 96.

(Whereupon, Scalmanini Exhibit 96 was introduced for identification.) 14:00:28

BY MR. DUNN:

Q. Do you have Exhibit No. 96 before you?

A. Yes.

Q. This exhibit is labeled "Total Safe Yield." Did you prepare this exhibit? 14:00:33

A. Yes.

Q. Does this table in Exhibit No. 96 summarize your total safe yield calculations?

A. Yes. 14:00:48

Q. Would you please explain the total safe yield for each time period shown.

A. Sure. As I think I introduced with regard to the land use periods that we picked, we looked at what we called an earlier historic period just for information when the basin was predominated by agricultural land use and computed it in an approximate or estimated native safe yield of 80,000 acre feet per year for those conditions. There was no supplemental water use in that era. So the total 14:01:02 14:01:23