

EXHIBIT “A”

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

SUPERIOR COURT OF THE STATE OF CALIFORNIA
FOR THE COUNTY OF SANTA CLARA

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

TRIAL TESTIMONY OF JOSEPH SCALMANINI
WEDNESDAY, JANUARY 12, 2011

PAGES 283-417

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

TRIAL TESTIMONY OF JOSEPH SCALMANINI,
taken at 2001 North Main Street, Suite 390,
Walnut Creek, California, commencing at
10:31 a.m., Wednesday, January 12, 2011,
before Janis L. Jennings, Certified Shorthand
Reporter No. 3942, CLR, CRP.

1 water users over time. And then finally the Quartz
2 Hill Water District is the lower most curve
3 reflected in green with circles instead of symbols
4 to show the trend in water requirements at Quartz
5 Hill.

11:15:09

6 MR. ZIMMER: Motion to strike based on
7 objections previously stated, also relevance to this
8 phase.

9 BY MR. DUNN:

10 Q. Mr. Scalmanini, if I could direct your
11 attention, please, to the next exhibit marked as
12 Exhibit No. 63.

11:15:19

13 MR. DUNN: And, counsel, this is a
14 replacement exhibit for 63 in the counsel-provided
15 packet of exhibits.

11:15:32

16 It is labeled as "Table D.3-3 Historical
17 M&I Water Requirements Antelope Valley Area of
18 Adjudication (acre-feet per year)."

19 BY MR. DUNN:

20 Q. Mr. Scalmanini, do you have Exhibit 63
21 before you?

11:15:54

22 A. I do.

23 Q. Who prepared it?

24 A. Our office did.

25 Q. Where is the -- what source of information

11:16:00

Page 320

1 was used -- or where does the information come from,
2 rather, for Exhibit 63?

3 A. Well, for the left, I'll say, you know,
4 two-thirds of this, the columns 2, 3, 4, 5, 6, 7,
5 8, 9, 10 and 11, for L.A. Waterworks District 40, 11:16:18
6 Palmdale Water District, Littlerock Creek Irrigation
7 District, Quartz Hill Water District, Rosamond
8 Community Services District, Antelope Valley Water
9 Company, Palm Ranch Irrigation District, Desert Lake
10 Community Services District, Boron Community 11:16:44
11 Services District, and Edwards Air Force Base, the
12 numbers reflected in the table and summarized in the
13 next column called "Main M&I subtotal" all came from
14 those respective individual entities and records
15 they provided of their historical water supplies -- 11:17:05
16 or "water deliveries" is a better word.

17 Q. And I believe you've already mentioned
18 as to the mutual and private water companies, the
19 estimated use for those entities; is that correct?

20 A. Yes, they are estimated. 11:17:21

21 Q. Okay. And there's also a column
22 immediately to the right labeled "Rural
23 Residential," and that was estimated as well?

24 A. Yes, sir.

25 Q. Okay. The column to the right of "Rural 11:17:30

1 Residential" is indicated "ASR Project LACWW 40."

2 What does that refer to?

3 MR. ZIMMER: Same objections. Also
4 relevance.

5 THE WITNESS: In, I'll say, recent years; 11:17:49
6 2005, 2006, 2007, L.A. Waterworks undertook what
7 you might call some fieldwork to -- I don't know,
8 "experiment" might be not totally a fair word, but I
9 will use that -- to experiment with the possibility
10 of taking surplus-available treated imported water 11:18:12
11 and injecting it into the aquifer system for
12 augmentation of natural or other recharge.

13 And so the column heading "ASR" is
14 a common abbreviation for aquifer storage and
15 recovery. And so this column reflects waters that 11:18:33
16 could be considered a requirement; meaning that
17 they were utilized from the system for a municipal-
18 type purpose, but in this case as contrasted to
19 delivering to the customers, those waters were
20 injected into the aquifer system in the years 11:18:52
21 reflected; as I said 2005, '6 and '7.

22 BY MR. DUNN:

23 Q. For groundwater storage; is that correct?

24 A. Yes.

25 MR. ZIMMER: Same objections. 11:19:01

1 MR. KUHS: Objection. Relevance.

2 BY MR. DUNN:

3 Q. Exhibit No. 63, Mr. Scalmanini, is the
4 information depicted in table format as contrasted
5 with the previous exhibit, Exhibit No. 62? 11:19:14

6 A. Well, I don't know about the contrasted
7 part, but what's plotted in Exhibit 62 is tabulated
8 in Exhibit 63.

9 Q. Thank you.

10 Mr. Scalmanini, are there other other -- 11:19:46
11 strike that.

12 Are there other water uses in the Antelope
13 Valley besides agricultural and M&I uses?

14 A. Yes, there are.

15 Q. What are the other water uses? 11:19:58

16 A. Well, we've chosen as part of this
17 analysis to call them environmental and open
18 space-type water requirements. One could argue that
19 in some respects some of it is a means for disposal;
20 in this case of treated municipal wastewater. But 11:20:14
21 regardless, it contributes to a certain amount of
22 environmental-type landscaping or land utilization
23 and so you could call them environmental and open
24 space water requirements.

25 Q. I'd like to direct your -- 11:20:34

1 MR. ZIMMER: Motion to strike for the
2 reasons discussed with the Court.
3 BY MR. DUNN:
4 Q. I'd like to direct your attention,
5 please, to the exhibit premarked 64. It is labeled 11:20:43
6 "Tabulated Environmental and Open Space Water
7 Requirements Antelope Valley Area of Adjudication."
8 (Whereupon, Scalmanini Exhibit 64 was
9 introduced for identification.)
10 BY MR. DUNN: 11:20:51
11 Do you have Exhibit 64 before you?
12 A. Yes.
13 Q. Who prepared Exhibit 64?
14 A. Our office did.
15 Q. Where did the information come from? 11:21:00
16 A. Records of water deliveries or discharges,
17 you can kind of choose your word, to open space-type
18 or park-type settings from the -- I'll say the
19 supplier of that water which would be Los Angeles
20 County Sanitation Districts 14 and 20. 11:21:29
21 Q. And what is depicted or shown here on
22 Exhibit 64?
23 MR. ZIMMER: Same objections.
24 THE WITNESS: Well, there are two,
25 I'll call it, targets or places where those 11:21:40

Page 324

1 environmental-type water uses are in place. You
2 know, as tabulated here, the second and third
3 columns refer to so-called Piute Ponds Wildlife
4 Refuge, which is an area on the Rosamond Dry Lakebed
5 where treated municipal wastewater is discharged 11:22:05
6 and supports, I don't know, plant growth that is a
7 wildlife refuge.

8 And so the amount of water that's been
9 delivered or discharged to that location over time;
10 you know, beginning in the mid 1970s with a little 11:22:23
11 less than a thousand acre feet per year, increasing
12 to as much as almost 10,000 acre feet per year by
13 2005, and then declining to around 7,000 acre feet
14 per year recently is reflected in tabular form
15 there. 11:22:42

16 There's also a small collection of lakes
17 in a county park in Lancaster called Apollo Lakes,
18 and those lakes are maintained by the delivery of
19 treated recycled water; you know, nominally a couple
20 hundred acre feet per year, and that's tabulated in 11:23:03
21 the third column. And the total, which is the sum
22 of the two, is tabulated on the right-hand side.

23 MR. KUHS: I'm going to object to both
24 exhibits 63 and 64 and the testimony as hearsay
25 except to the extent it's offered simply to support 11:23:20

1 this expert's opinion.

2 MR. ZIMMER: And I'm going to add to that.

3 We previously made the objections to the scope of
4 the deposition and opinions that are given by
5 Mr. Scalmanini to relevance as well. In addition to 11:23:33
6 that, I would add the objection that the comments
7 regarding recycled water, the application of
8 recycled water, are all clearly beyond the opinions
9 Mr. Scalmanini gave at the time of his deposition.

10 Furthermore, the expert who would be 11:23:46
11 testifying to recycled water, Mr. Leffler, is
12 Mr. Sanders' expert. Mr. Sanders has specifically
13 objected to any testimony by Mr. Leffler regarding
14 recycled water. And it was represented by
15 Mr. Sanders as well as the other group of purveyor 11:24:05
16 attorneys that there would be no testimony regarding
17 recycled water in this phase of the lawsuit, and
18 that's the only reason that there was any agreement
19 not to take Mr. Leffler's deposition in that regard.

20 BY MR. DUNN: 11:24:24

21 Q. Mr. Scalmanini, how is the tabulated
22 environmental and open space water requirements
23 relevant to the overall use of water in the
24 Antelope Valley?

25 MR. ZIMMER: Same objections. 11:24:39

1 THE WITNESS: Well, I tried to sort of, I
2 guess you could say, you know, hint at where we're
3 going. That ultimately we're going to look at, you
4 know, a fairly lengthy study period to try to
5 estimate natural recharge. And multiple methods 11:24:59
6 were used to make that estimate, and some of
7 those -- or at least one of those involves
8 accounting for waters within the Antelope Valley
9 groundwater basin.

10 And so one can't do a thorough accounting 11:25:17
11 of waters within the Antelope Valley groundwater
12 basin while ignoring any one piece of where water
13 might have gone. And so for completeness, then,
14 the accounting for applied water requirements for
15 agriculture and ultimately dealing with so what 11:25:42
16 water supplies were used to meet those requirements
17 and what was the fate of them after they were
18 applied is important.

19 The same is true for municipal water
20 requirements. What sources of water were used in 11:25:57
21 what volumes at what points in time and what was the
22 fate of those waters.

23 And lastly, such as there's a wastewater
24 component that's generated, it's -- it goes
25 somewhere and so it's accounted for as part 11:26:10

1 of the overall water budget in the basin by being,
2 in this case, summarized in graphical form in
3 Exhibit 63 and tabular form in Exhibit 64.

4 BY MR. DUNN:

5 Q. Mr. Scalmanini, let's look at the 11:26:26
6 exhibit premarked as 65. It is labeled "Historical
7 Total Water Requirements Antelope Valley Area of
8 Adjudication."

9 (Whereupon, Scalmanini Exhibit 65 was
10 introduced for identification.) 11:26:37

11 BY MR. DUNN:

12 Q. Do you have Exhibit 65 before you?

13 A. I do.

14 Q. Who prepared Exhibit 65?

15 A. Our office did. 11:26:44

16 Q. What is the source of information for
17 Exhibit 65?

18 A. Well, it's basically a collection of
19 information that is tabulated in Exhibit 61, 63,
20 and 64. 11:27:16

21 Q. What does Exhibit 65 show?

22 MR. ZIMMER: Same objections to scope.
23 Relevance. All of the objections previously stated.

24 THE WITNESS: Well, Exhibit 65 tracks
25 historical total water requirements, as the label -- 11:27:41

1 or as the title block says, versus time from about
2 1920 to the present; where the present is 2009.

3 It shows an early era, you know, buildup
4 of water requirements in the 1920s from less than
5 100,000 to about 200,000 acre feet per year. It's 11:28:06
6 somewhat recognized in the literature that the
7 decline reflected in the early 1930s was the result
8 of or coincident with the Great Depression. And
9 then there was a buildup somewhat linearly but
10 steeply as reflected by land use and by agricultural 11:28:26
11 water requirements in earlier exhibits through the
12 era of World War II and beyond to the early 1950s.

13 There was a period of peak total water
14 requirements that lasted for about two decades in
15 the 1950s and '60s. There was a reduction in total 11:28:44
16 water requirements in the 1970s but still rather
17 high in the bigger picture of things, and more or
18 less a linear decline through the 1980s to a low
19 point in demand by about 1989, '90, '91; followed by
20 a re-increase of total water requirements through 11:29:06
21 the 1990s to where, for the most part, excepting the
22 last year, you know, total water requirements today
23 are around 240- to 250,000 acre feet per year.

24 The historical values in terms of peak,
25 you know, total water requirements were more than 11:29:28

1 350,000 acre feet per year through much of the
2 19950s and '60s. The decline in the 19- -- into
3 the 1970s brought total water requirements down into
4 the area of, say, 250- or -60,000 acre feet per year
5 up to slightly more than 300,000, but say around 11:29:51
6 300,000 acre feet per year.

7 The decline through the 1980s brought
8 total water requirements down to around 140- or
9 maybe 130,000 acre feet by 1991. And then as I
10 just said, the re-increase brought them back up 11:30:07
11 into the neighborhood of 240- to 250,000 acre
12 feet to present.

13 MR. ZIMMER: Objection. Nonresponsive.
14 Out of the scope. Objections previously made.
15 Relevance, significant relevance problems. Motion 11:30:23
16 to strike.

17 THE WITNESS: The balance of the
18 figure shows how the individual components of
19 agricultural type-water requirements, municipal-type
20 water requirements, and environmental-type water 11:30:40
21 requirements have contributed to the total.

22 So through the early era; meaning prior to
23 about 1950 for all practical purposes, all the water
24 requirements were associated with agricultural land
25 uses. 11:30:56

1 Then municipal-type requirements began to
2 increase so the fraction of total water requirements
3 attributable to agricultural land use for the green
4 curve and squares plotted just below the total water
5 requirement curve separated from the total water 11:31:21
6 requirement curve, and a relatively small fraction
7 of total water requirements through the 1960s and
8 '70s and into the '80s was -- the municipal fraction
9 was relatively small, the agricultural fraction was
10 still quite high. 11:31:41

11 From about the time of the late 1980s when
12 municipal-type water requirements had significantly
13 increased and agricultural-type water requirements
14 had significantly decreased, the -- for all
15 practical purposes municipal and agricultural water 11:32:00
16 requirements were about the same; on the order of
17 about, say, 70,000 feet per year in 1990.

18 Since then both municipal and agricultural
19 water requirements have increased such that while
20 they're not identical, arguably, starting, I don't 11:32:19
21 know, in the late 1990s ag water requirements
22 were a little higher. I've already mentioned the
23 numbers, but, you know, ag water requirements got
24 up into the, say, 110- to 140,000 acre foot per year
25 range, and municipal water requirements up into 11:32:42

1 about, say, the 115- or -20,000 acre per year range.

2 And then the lower-most curve in red with
3 circles is the environmental water requirement which
4 relative to the total of 240- or 50,000 acre feet is
5 a relatively small number, less than 10,000 acre
6 feet per year.

11:33:05

7 MR. ZIMMER: Once again, nonresponsive.
8 There was no question pending to that last offering
9 by Mr. Scalmanini and all the previously stated
10 objections.

11:33:18

11 THE WITNESS: Actually, it was a
12 continuation of the answer that was interrupted.

13 MR. ZIMMER: It wasn't interrupted. There
14 was a significant period of time after you finished
15 talking, Mr. Scalmanini.

11:33:28

16 MR. DUNN: Counsel --

17 MR. ZIMMER: Well, I have to make the
18 record because the record won't reflect it
19 otherwise.

20 MR. DUNN: The record will reflect what
21 was indicated both by counsel and by Mr. Scalmanini.
22 It is the record.

11:33:35

23 BY MR. DUNN:

24 Q. Mr. Scalmanini, if you would direct your
25 attention, please, to Exhibit No. 66.

11:33:41

1 agricultural water requirements, municipal-type
2 water requirements and environmental water
3 requirements and the tabulated values are summarized
4 for each of those, and in total in Exhibit 66.

5 Q. So if we -- 11:35:41

6 A. In turn of plotted versus time in
7 Exhibit 65.

8 Q. So if we were to compare Exhibit 65 with
9 Exhibit 66, Exhibit 66 has the data from Exhibit 65
10 but in tabulated format; is that correct? Or in 11:35:59
11 table format?

12 A. I'd turn it around in the way that I said
13 it. The data reflected in Exhibit 66 is plotted
14 versus time in Exhibit 65.

15 So if you wanted to know, for example, 11:36:24
16 what number goes with one of the black triangles
17 in Exhibit 65 for total water requirements in a
18 particular year, but take the very last one, for
19 example, which looks by inspection to be somewhere
20 around 220,000 acre feet per year -- 11:36:44

21 MR. ZIMMER: It's nonresponsive.

22 THE WITNESS: -- you could go to
23 Exhibit 66 and go down the right-most column to
24 the last year, which is 2009, and the exact value
25 is 220,591. 11:37:02

Page 334

1 BY MR. DUNN:

2 Q. Mr. Scalmanini, when you look at
3 exhibits 65 and 66, are you able to determine
4 whether the water requirements in the Antelope
5 Valley were satisfied solely with groundwater 11:37:34
6 pumping?

7 MR. ZIMMER: Same objections.

8 MR. KUHS: The question is vague.

9 THE WITNESS: No.

10 BY MR. DUNN: 11:37:43

11 Q. Let's look, if you would, please at
12 the next exhibit marked in order, Exhibit 67.
13 Exhibit 67 is labeled "Historical Groundwater
14 Pumping Antelope Valley Area of Adjudication."

15 (Whereupon, Scalmanini Exhibit 67 was 11:38:00
16 introduced for identification.)

17 BY MR. DUNN:

18 Q. Do you have Exhibit 67 before you?

19 A. Yes.

20 Q. Who prepared Exhibit 67? 11:38:08

21 A. Our office did.

22 Q. What source or sources of information were
23 used for Exhibit 67?

24 A. Well, the sources were multiple. Of
25 the three curves reflected in Exhibit 67, the 11:38:31

Page 335

1 lower-most one is a historical track of municipal-
2 type groundwater pumping versus time. Most of the
3 data that went into that was derived from records
4 provided by the various purveyors that we listed a
5 few exhibits back. I can go dig them out if you 11:38:56
6 want.

7 The exception, of course, is that we
8 estimated rural residential water uses and assumed,
9 since we're not aware of any connections of other
10 water sources to individual rural residential 11:39:14
11 connections, that all of that water supply was
12 met by groundwater pumping.

13 And with regard to the mutual water
14 companies, there are some records available through
15 the State Department of Health Services which we 11:39:31
16 interpreted to come up with the amount of water
17 that was pumped by mutual water companies versus
18 the amount of water that was taken from supplemental
19 water sources; for example, from the state water
20 project treated water. 11:39:52

21 And so we -- as to the total amount of
22 water requirements estimated from the mutual water
23 companies we were able to account for a certain
24 amount being delivered from surface water sources;
25 treated surface water sources, subtracted that away 11:40:06

1 from a total to come up with an estimate of the
2 groundwater pumping.

3 On the agricultural side --

4 MR. ZIMMER: Motion to strike.

5 MR. DUNN: Counsel, if you would please 11:40:13
6 allow Mr. Scalmanini to finish before making your
7 objection or motion.

8 MR. ZIMMER: I don't think it's a
9 requirement.

10 THE WITNESS: On the agricultural side, 11:40:21
11 after going through the analysis as described thus
12 far to estimate total --

13 MR. ZIMMER: Same objections previously
14 stated as well as to the scope of the testimony,
15 the relevance, the failure to provide opinions 11:40:35
16 previously.

17 BY MR. DUNN:

18 Q. You may continue, Mr. Scalmanini.

19 A. Do you think we can kind of like get to
20 the end of a sentence this time? 11:40:48

21 That on the municipal -- excuse me --
22 on the agricultural side, that we had records of
23 deliveries of supplemental water from both local
24 as well as imported sources that were delivered to
25 agriculture. 11:41:06

1 We also had records of recycled water that
2 were delivered to -- or that was delivered to
3 agriculture as part of its water supply. So to
4 compute --

5 MR. ZIMMER: Same objections as to 11:41:19
6 "recycled water."

7 MR. DUNN: Mr. Zimmer, if you would allow
8 Mr. Scalmanini to finish his response, his answer,
9 that will allow you a further opportunity to make an
10 appropriate objection or other motion as you deem 11:41:34
11 appropriate.

12 MR. ZIMMER: Given the fact that the
13 answers go on for pages, it will be difficult --
14 extremely difficult to go back and try and ferret
15 out where he was giving improper testimony at a 11:41:45
16 later time. The answers that he gives are in
17 large part nonresponsive, incorporate multiple
18 objectionable material in an attempt to squeeze
19 it all in without any objections without anybody
20 noticing. 11:42:02

21 But I feel compelled to comment on and
22 make objections as they're occurring because of
23 that. If there was questions and answers and
24 Mr. Scalmanini gave a direct and succinct answer,
25 this perhaps wouldn't be necessary. 11:42:17

1 MR. DUNN: I would again ask you to
2 not interrupt Mr. Scalmanini during his response.
3 BY MR. DUNN:
4 Q. Mr. Scalmanini, you were testifying as
5 to the source of information, and specifically 11:43:19
6 the source of information for estimated rural
7 residential water uses and also for mutual water
8 companies and the records that were available
9 through the State Department of Health Services
10 which were interpreted. 11:43:32
11 Were you able to finish your response
12 before the -- before Mr. Zimmer made his motion to
13 strike?
14 MR. ZIMMER: It's vague.
15 THE WITNESS: I finished my response on 11:43:43
16 municipal type --
17 BY MR. DUNN:
18 Q. Sorry to interrupt you. I think you
19 were about to explain on the agricultural side.
20 Would you explain the source of information for 11:43:55
21 the agricultural side.
22 A. Right.
23 MR. ZIMMER: It's vague as to "explain the
24 source."
25 Do you mean what is the source? That's 11:44:09

Page 339

1 where we get tied up. The problem is that you'll
2 ask a question that's vague like that as to explain
3 the source and then he goes into a discussion
4 about how he did the calculations, and that's
5 objectionable. 11:44:21

6 I've tried to not object to the questions
7 as to what the source is because what the source is
8 is very simple. How he did the calculations is much
9 more difficult and/or complicated. And how he did
10 the calculations is in fact the objectionable part 11:44:34
11 of the information that he's given, or he's giving.

12 So if you could be clear in the question,
13 that would be helpful as to what you're asking. If
14 it's the source, that's one thing; if you're asking
15 him how he did his calculations, that's a completely 11:44:49
16 different question.

17 BY MR. DUNN:

18 Q. Mr. Scalmanini, would you please continue
19 with your response as to the source of information
20 for this exhibit, and specifically for agricultural 11:45:00
21 information indicated.

22 A. Well, the source of information is
23 a combination of the total agricultural water
24 requirements as developed in earlier discussion
25 this morning, along with accounting for the 11:45:20

1 contributions to those total water requirements from
2 local surface water supplies, "imported" meaning
3 state water project, water supplies, and recycled
4 water supplies, such that what's reflected in the
5 graph that is Exhibit 67 is a result of arithmetic 11:45:42
6 that nets out the amount of pumping by recognizing
7 the amounts of those other water supplies that were
8 utilized to meet part of the total agricultural
9 water requirements.

10 Q. Mr. Scalmanini, what does Exhibit No. 67 11:46:09
11 show?

12 MR. ZIMMER: Same objections previously
13 stated as to scope, relevance.

14 THE WITNESS: 67 -- Exhibit 67 shows
15 historical trends in total groundwater pumping, 11:46:24
16 agricultural-type groundwater pumping, and
17 municipal-type groundwater pumping versus time
18 from about the end of World War II to the present.

19 It shows that total pumping was in the
20 1950s and '60s, again, up in the same range as has 11:46:50
21 previously been discussed; meaning around 300 and,
22 say, 50 to almost 380,000, or about 380,000 acre
23 feet per year, at a peak, followed by a decline in
24 the 1970s and then an ongoing decline in the 1980s
25 to where total pumping got down to be around 90,000 11:47:14

1 acre feet per year. After which it climbed back
2 up, you know, into the area of 150- to 170,000 acre
3 feet per year early after 2000 and has fluctuated
4 between about 100 and, say, 35 and 155,000 acre feet
5 per year in time since then. 11:47:44

6 Of those two in round numbers, in recent
7 times anyway, about a third of that total pumping,
8 or about 50,000 acre feet per year, is pumped by
9 municipal -- or for municipal-type purposes and
10 about two-thirds or about 180,000 acre feet per 11:48:02
11 year, not a constant number in all years, is pumped
12 for agricultural-type purposes.

13 MR. ZIMMER: I will add to the
14 objection -- you stopped there Mr. Scalmanini.
15 I assumed you're finished? 11:48:16

16 Apparently he's finished.

17 I will add to the objection that the
18 testimony we're hearing over and over -- we've
19 probably heard it four times -- about the
20 agricultural pumping going up in the 1940 period 11:48:27
21 to the 1970s and then decreasing over time to about
22 1990 and then going back up to some degree in 2000
23 and 2010, it has probably been covered maybe ten
24 times.

25 The additional information that 11:48:45

1 Mr. Scalmanini is now attempting to put in through
2 the last several exhibits is information that's --
3 should not be relevant to this phase. It was
4 not -- in some regards it was not testified
5 previously at his deposition. 11:49:02

6 As to the main information in terms of the
7 overall pumping versus the overall supply which is
8 the focus of the -- this phase of the trial in terms
9 of the safe yield has been testified to multiple
10 times. So I'm adding a cumulative objection to the 11:49:15
11 objection previously stated.

12 MR. DUNN: And, Counsel, in the interest
13 of time when you state your objections, if you could
14 state the objection and avoid the use of speaking
15 objections, that would facilitate the limited time 11:49:30
16 that we have available for the use of further
17 questions and answers and also potential objections.

18 MR. ZIMMER: Given the complexity of the
19 issues and then how his testimony is coming about
20 and the substantial surprise of some of the 11:49:45
21 information that you're trying to get into the
22 record, I think that there needs to be some
23 discussion more than simply an objection. It
24 clearly needs to be pointed out what's really
25 occurring here. 11:50:00

1 MR. DUNN: I will note that what seems to
2 be occurring here are a series of ongoing objections
3 to interrupt the testimony of Mr. Scalmanini. The
4 objections, although noted for the record, are also
5 improper and they will be taken up I'm sure at the 11:50:16
6 appropriate time with the Court when we resume the
7 trial.

8 MR. ZIMMER: That's all we're doing is
9 maintaining a record so the Court can review those
10 things and so that we remember when it happened and 11:50:30
11 why it was significant.

12 MR. DUNN: The record will reflect that
13 there is more than just making objections taking
14 place with regards to this witness' testimony.
15 There appears to be a coordinated effort to 11:50:44
16 interrupt Mr. Scalmanini, and particularly at
17 times when his testimony is dry conclusions or his
18 testimony is referring to his explanations of the
19 exhibits which illustrate his testimony.

20 MR. KUHS: Mr. Dunn, I assume this line of 11:51:11
21 questioning is relative to overdraft and safe yields
22 and not some other issue?

23 MR. DUNN: Well, what's relevant --
24 Mr. Kuhs, we can take that up at another point. But
25 the Phase 3 proceeding is on safe yield and 11:51:24

1 overdraft.

2 MR. KUHS: Okay. I didn't want to have
3 a continuing relevance objection so long as I
4 understood that all this was foundational to
5 Mr. Scalmanini's opinion regarding safety as an 11:51:37
6 overdraft and not sort of an advanced play on the
7 prescription phase.

8 MR. ZIMMER: I assume, Mr. Dunn, you're
9 willing to represent on the record --

10 MR. DUNN: Let me -- 11:51:48

11 MR. ZIMMER: Well, I think he raised a
12 good point. I assume you're willing to represent on
13 the record that anything that's being testified to
14 here today and the exhibits that are being produced
15 are solely relevant to the issue of safe yield and 11:51:57
16 overdraft.

17 MR. WEEKS: This is Brad Weeks. Counsel,
18 all these things can be discussed after 12:00. What
19 we're doing now is burning up time that we will not
20 get back from this witness. 11:52:11

21 MR. ZIMMER: Well, we're burning up time
22 spending a lot of time talking about issues that it
23 seems to me aren't relevant overall to overdraft and
24 safe yield and are -- there's some attempt to put
25 this information in for other reasons without any 11:52:24

1 effective cross-examination because a lot of this
2 information has not been presented either in this
3 form before or is being presented for the first time
4 in terms of graphs or otherwise.

5 MR. LEMIEUX: It seems unlikely to me that 11:52:37
6 we're going to have a chance of resolving some kind
7 of relevancy objection right now. And if you have
8 an overarching concern about the evidence coming in,
9 obviously you need to bring that up with the judge
10 when we get back in front of the judge. 11:52:46

11 MR. ZIMMER: I agree with that. We're
12 going to do that. But we -- go ahead, Mr. Dunn.

13 MR. DUNN: All right. Can we have an
14 agreement amongst counsel that objections can
15 continue to be made, including motions, but that we 11:52:56
16 will continue to go forward with a minimal amount of
17 comment amongst counsel and a minimal amount of the
18 speaking part of the objections? Would that be
19 acceptable?

20 Mr. Joyce, did you want to say something? 11:53:14

21 MR. JOYCE: I'm not sure. I hope that we
22 kind of half resolved it with the stipulation in
23 order to just kind of plow forward here. I stand
24 kind of in between on some of the issues, but that's
25 neither here nor there. 11:53:32

1 The bottom line is I think we just need
2 to get this done and then we can deal with the
3 objections and the like when we have the opportunity
4 to have Komar available to rule upon them as -- as
5 and when necessary. 11:53:45

6 I mean, I don't know that the -- the one
7 clear observation is nothing can get resolved here
8 today as to any particular question. So other than
9 facing the ultimate reality we're going to have to
10 take it up at the appropriate time when we have the 11:54:00
11 ultimate adjudicator of the objection available, I
12 think we've got to kind of try to plow forward.

13 MR. DUNN: All right. Thank you,
14 Mr. Joyce.

15 BY MR. DUNN: 11:54:12

16 Q. Mr. Scalmanini, directing your attention
17 to Exhibit No. 66. Do you still have that before
18 you?

19 A. Yes.

20 Q. Or strike that. I'm sorry. Not 11:54:22
21 Exhibit No. 66.

22 I'm going to need some assistance here.
23 What exhibit were we last looking at?

24 A. 67.

25 Q. 67. Thank you. 11:54:38

Page 347

1 Let's go back to Exhibit No. 67, please.

2 This is the exhibit labeled "Historical Groundwater
3 Pumping Antelope Valley Area of Adjudication."

4 Do you have that before you?

5	A. Yes.	11:54:53
---	---------	----------

6 Q. Okay. Now, Mr. Scalmanini, this shows, I
7 take it, historical groundwater pumping for the time
8 periods indicated on Exhibit 67?

9 A. Yes.

10 Q. And how is that relevant, historical 11:55:02
11 groundwater pumping, to the issue of safe yield
12 and overdraft in this phase of the case?

13 MR. ZIMMER: Calls for a legal opinion.

14 THE WITNESS: Well, ultimately to compute
15 the yield as I tried to go back to, I'll call it, 11:55:21
16 re-discussing that early exhibit --

17 BY MR. DUNN:

18 Q. Is that Exhibit 12?

19 A. Yeah, thanks. -- there needs to be an
20 estimate of the natural recharge to the groundwater 11:55:49
21 basin. And we haven't gotten there yet, but to
22 estimate natural recharge to the groundwater basin
23 we undertook collectively; meaning myself and
24 others, efforts to estimate what that was. And one
25 of the efforts involves an understanding of how much 11:56:09

1 historical pumping is taking place and how much of
2 that pumping returned to the groundwater basin as
3 contrasted as to how much of it consumptively, if
4 you will, exhausted back to the atmosphere.

5 So the effort to get to pumping -- which I 11:56:28
6 might note we've only begun to discuss. We haven't
7 discussed it ten times. We've discussed land use
8 and things of that type multiple times, but we've
9 only discussed pumping on this one last exhibit.

10 Then it is important in part to look 11:56:42
11 at the total, but also importantly to look at the
12 two components because the two components of
13 municipal-type use and agricultural-type use
14 contribute different fractions of return flows to
15 the subsurface, all of which needs to be factored 11:56:58
16 into estimating at least using one of the methods
17 that we deployed what the natural recharge to the
18 groundwater basin is, from natural recharge then as
19 illustrated in Exhibit 12, but as to be discussed in
20 greater detail. 11:57:13

21 Then a computation of yield of the basin
22 under native conditions and later independent of
23 natural recharge, a consideration of supplemental
24 recharge which also relies on -- of course on
25 knowledge of how much supplemental water was brought 11:57:33

1 into the basin, but also then fractions of its use
2 by municipal as well as agricultural users and the
3 recharge that derives from that all is relevant to
4 ultimately computing or estimating a safe yield,
5 whether it be native, supplemental or total. 11:57:52

6 Q. Mr. Scalmanini, if I could have you look,
7 please, at the next exhibit marked as Exhibit 68.

8 MR. DUNN: Counsel, this is a substitute
9 for the exhibit packet earlier provided to counsel.

10 I will identify it. It is "Appendix D-7: 11:58:21
11 Table 2 Calculation of Agricultural Groundwater
12 Pumpage," and parenthetically it's -- it indicates
13 an "(AFY)" for in acre feet a -- per year.

14 (Whereupon, Scalmanini Exhibit 68 was
15 introduced for identification.) 11:58:39

16 BY MR. DUNN:

17 Q. Mr. Scalmanini, do you have Exhibit 68
18 before you?

19 A. Yes.

20 Q. Who prepared Exhibit 68? 11:58:49

21 A. Our office did.

22 Q. And the sources of information for
23 Exhibit 68 are what?

24 A. In the second column, historical total
25 agricultural water requirements are derived from the 11:59:10

1 work which we've explained, you know, in preceding
2 exhibits. I can go back to refer to those if you'd
3 like.

4 Then successive columns that are labeled
5 "SWP," which stands for state water project imported 11:59:24
6 water "(AVEK)," which is Antelope Valley-East Kern
7 Water Agency, or the next one which is
8 parenthetically "(LCID)"; Littlerock Creek
9 Irrigation District, and then the last is "(PWD to
10 LCID)," which is Palmdale Water Direct to Littlerock 11:59:46
11 Creek Irrigation District, come from records
12 supplied by those respective three state water
13 contractors; AVEK, Littlerock Creek, and Palmdale
14 Water District, for their importation of water
15 that was not treated or delivered as raw water for 12:00:04
16 agricultural purposes.

17 The next column is a sum of those three
18 for total state water project imported water from
19 those sources.

20 The next two columns have to do with local 12:00:18
21 surface water which is diverted off Littlerock Creek
22 by Littlerock Creek Irrigation District, so those
23 data came from Littlerock Creek Irrigation District.

24 The next column is a total of those.

25 WRPs recycled water is the amount of water 12:00:37

1 reported by the water reclamation plants as having
2 been delivered to agriculture versus time.

3 And then there's a total surface and
4 recycled water which is a summary of local surface
5 water, imported surface water, and recycled water 12:00:56
6 that was delivered to meet part of the total
7 agricultural water requirements.

8 And so arithmetically then groundwater
9 pumping was estimated to be the difference between
10 total surface and recycled water and historical 12:01:12
11 agricultural water requirements in the second
12 column.

13 And so calculated groundwater pumpage is
14 the result or the arithmetic difference between
15 total other -- all the waters used to meet 12:01:27
16 agricultural water requirements and total
17 agricultural water requirements.

18 MR. ZIMMER: Same objections previously
19 stated, and also nonresponsive.

20 MR. DUNN: It's noon. We'll take the noon 12:01:40
21 recess. We'll see everybody at 1:30 -- or actually
22 before 1:30 so we can start at 1:30.

23 THE VIDEOGRAPHER: This marks the end
24 of tape No. 1 of today's testimony of Joseph
25 Scalmanini, Volume III. 12:01:52

1 The time is 12:01 p.m. and we are off the
2 record.

3 (Whereupon, lunch taken from 12:01 p.m.
4 until 1:30 p.m.)

5 THE VIDEOGRAPHER: This marks the 13:30:19
6 beginning of tape No. 2 in today's testimony of
7 Joseph Scalmanini, Volume III.

8 The time is 1:30 p.m. We are on the
9 record.

10 BY MR. DUNN: 13:30:29

11 Q. Besides groundwater, what other sources of
12 water are used to meet the water requirements of the
13 Antelope Valley?

14 A. I think we touched on this briefly, but
15 there's local surface waters, off of Littlerock 13:30:43
16 Creek, imported water from the state water project,
17 and though they originate from either groundwater or
18 local surface water or imported water, then there's
19 some treated municipal wastewater or recycled water
20 that's used to meet some of the water requirements. 13:31:02

21 Q. I'd like to show you the next exhibit
22 which has been premarked as Exhibit No. 69. It is
23 labeled "Historical Local Water Use Antelope Valley
24 Area of Adjudication."

25 (Whereupon, Scalmanini Exhibit 69 was 13:31:14

1 introduced for identification.)

2 BY MR. DUNN:

3 Q. Mr. Scalmanini, do you have Exhibit 69

4 before you?

5 A. Yes. 13:31:19

6 Q. Who prepared Exhibit 69?

7 A. Our office did.

8 Q. And the information that's depicted in

9 Exhibit 69 comes from what source or sources?

10 A. It comes from the records of primarily 13:31:32

11 Littlerock Creek Irrigation District, but I think

12 also partially from Palmdale Water District and

13 records of diversions off of Littlerock Creek.

14 Q. What does Exhibit 69 show?

15 MR. ZIMMER: Same objections. 13:31:52

16 THE WITNESS: It basically shows that

17 there's been utilization of a small amount, maybe

18 up to a maximum of about 8,000 acre feet in any

19 given year, but typically down around, say, 4,000

20 acre per year of water when it's been available to 13:32:10

21 be diverted directly off Littlerock Creek for local

22 uses.

23 BY MR. DUNN:

24 Q. And, Mr. Scalmanini, is the water that's

25 referenced here in Exhibit 69, is that surface 13:32:22

1 water?

2 A. Yes, it is.

3 Q. Would you consider the amounts of local
4 surface water to be significant in the context of
5 water supplies in the Antelope Valley adjudication 13:32:38
6 area?

7 A. Well, significant in terms of a large
8 quantity, probably no. I mean, if there was a
9 total water demand of a quarter of a million acre
10 feet a year, then 4-, 5-, 6,000 acre feet a year 13:32:53
11 is not exactly significant, but it's certainly of
12 consequence as part of the overall water supply
13 picture.

14 Q. You mentioned that imported surface water
15 was also used to meet water demands in the Antelope 13:33:07
16 Valley. What is the source of that imported water?

17 MR. ZIMMER: Vague.

18 THE WITNESS: It's pretty straightforward.
19 It's the state water project.

20 MR. DUNN: Mr. Joyce, maybe we could get 13:33:24
21 your assistance to hit the -- or, Mr. Scalmanini,
22 if you can push the sound button down to its lowest
23 setting.

24 THE WITNESS: It's kind of stuck on 8 out
25 of 12. 13:33:40

1 Maybe if somebody on the other side could
2 talk, we could see whether it comes back.

3 MR. DUNN: Hearing nothing --

4 THE WITNESS: It's quiet.

5 MR. DUNN: -- we will proceed. 13:34:01

6 BY MR. DUNN:

7 Q. Mr. Scalmanini, if I could, please, I'd
8 like to direct your attention to Exhibit No. 70 that
9 was premarked for identification.

10 (Whereupon, Scalmanini Exhibit 70 was 13:34:10
11 introduced for identification.)

12 MR. DUNN: Counsel, this is an exhibit
13 which is also substitute -- a substitute for an
14 earlier premarked exhibit in the exhibit packet
15 for counsel. It's entitled "Boundaries of SWP 13:34:18
16 Contractors with Table A Amounts Antelope Valley
17 Area of Adjudication."

18 MR. ZIMMER: Mr. Dunn, do you know if that
19 was produced yesterday or --

20	MR. JOYCE: Yesterday.	13:34:34
----	-----------------------	----------

21 MR. ZIMMER: Yesterday? Okay.

22 MR. DUNN: I'm sorry, Counsel. The
23 question was was this exhibit --

24 MR. ZIMMER: I wasn't trying to find the
25 exhibit. 13:34:40

1 contractors with table A amounts within the Antelope
2 Valley area of adjudication?

3 A. I think I mentioned in passing this
4 morning, but the largest is the Antelope Valley-East
5 Kern Water Agency, commonly nicknamed AVEK; the 13:36:11
6 second in terms of table A entitlement is the
7 Palmdale Water District; and the third or smallest
8 is the Littlerock Irrigation District.

9 Q. And directing your attention to
10 Exhibit No. 70 in the lower left-hand corner 13:36:28
11 in the area marked or indicated as "Legend."

12 Do you see that?

13 A. Yes.

14 Q. Do you see the -- the acronyms for those
15 three state water project contractors listed there, 13:36:39
16 are those the acronyms for the three project
17 contractors?

18 A. Yes. The three state water contractors,
19 yes.

20 Q. I'd like to ask you a question about the 13:36:50
21 three state water contractor boundaries or service
22 areas. Are all of the boundaries of those three
23 state water contractors located in the area of
24 adjudication?

25 MR. ZIMMER: Same objections. Also 13:37:05

1 relevance.

2 MR. KUHS: Lacks foundation.

3 THE WITNESS: Well, are they located
4 within, at least partially so, yes. But in case
5 of two of them; AVEK and Palmdale Water District, 13:37:18
6 they have a service area that extends outside or
7 beyond the limits of the Antelope Valley area of
8 adjudication.

9 BY MR. DUNN:

10 Q. And are you aware of how much water has 13:37:34
11 been imported through the state water project to
12 meet water requirements in the Antelope Valley over
13 time?

14 A. Yes.

15 Q. I'd like to direct your attention, if you 13:37:45
16 would, please, to Exhibit No. 71. It is labeled
17 "Historical Supplemental (SWP) Water Use Antelope
18 Valley Area of Adjudication."

19 (Whereupon, Scalmanini Exhibit 71 was
20 introduced for identification.) 13:38:17

21 BY MR. DUNN:

22 Q. Do you have Exhibit 71 before you?

23 A. Yes.

24 Q. Who prepared Exhibit 71?

25 A. Our office did. 13:38:23

1 Q. The source of information or sources of
2 information used for Exhibit 71 are what?

3 A. The amounts of state water project use
4 recorded by the three state water contractors in the
5 Antelope Valley that we previously identified; AVEK, 13:38:42
6 Palmdale Water District, and Littlerock Creek
7 Irrigation District.

8 Q. And did you have access or available
9 to you the information from the three state water
10 project contractors regarding not only their service 13:38:54
11 areas, but their historical water use?

12 A. Their historical use of state water?

13 Q. Yes.

14 A. Yes. We sought that, you know, by direct
15 request and they provided it. 13:39:08

16 Q. And on Exhibit -- referring to
17 Exhibit No. 71, what does it depict or show?

18 A. It basically shows in time series
19 graphical form what the amount of aggregate; meaning
20 by all three of the state water contractors, use of 13:39:33
21 imported state water project water has been within
22 the Antelope Valley area of adjudication.

23 Q. And you're referring to the green line on
24 Exhibit 71?

25 A. Yes. 13:39:49

1 Q. The green boxes that are indicated on that
2 exhibit are what?

3 MR. ZIMMER: Same objections.

4 THE WITNESS: They are data points that
5 reflect on a year-to-year basis how much state water 13:39:58
6 was used in aggregate -- or I should say imported
7 in aggregate to the Antelope Valley area of
8 adjudication by the three state water contractors.

9 BY MR. DUNN:

10 Q. Exhibit 71 illustrates the use of -- or 13:40:14
11 the delivery of the state water project water by
12 these three state water project contractors. Why
13 does the amount as indicated on Exhibit 71 go up
14 and down?

15 A. And you think that earlier answers had 13:40:33
16 issues with length and complexity of answer. You
17 may not think that but others do.

18 I'll try to do it in quick summary. Okay.
19 I'd say it's a combination of demand; meaning a
20 willingness by local entities to take the water 13:40:53
21 that's imported and in some cases treat it to
22 drinking water standards for municipal-type water
23 supply and in other cases delivered as raw water,
24 untreated, typically for non-potable or irrigation
25 supply. It's a combination of, I'll call it, a 13:41:14

1 willingnes by local entities to take it along with
2 availability of state water that varies as basically
3 a function of hydrology on the state water project
4 system, typically in Northern California.

5 So if we could back up one slide to -- 13:41:31

6 Q. To Exhibit No. 70?

7 A. I said "slide," but Exhibit No. 70. That
8 in the legend on the lower left-hand corner, or in
9 the lower left-hand corner, are three parenthetical
10 numbers; you know, for AVEK 141,400 acre feet, for 13:41:48
11 Palmdale Water District 21,300 acre feet, and for
12 Littlerock Creek Irrigation District 2,300 acre
13 feet. Those numbers are the so-called table A
14 amounts for those three state water contractors.

15 The state water project has a certain 13:42:19
16 capacity. And I'm not a hundred percent sure, but
17 I think I'm close, I think there is a total of
18 29 state water contractors throughout the overall
19 system and each has a table A amount that adds up
20 to the total available supply. 13:42:40

21 But hydrology in Northern California that
22 accrues water in Lake Oroville and ultimately, you
23 know, works through the Delta into the state water
24 project system to be delivered to these various
25 state water contractors isn't the same every year. 13:42:57

1 So the State of California, the Department
2 of Water Resources, makes determinations that
3 progress through the wintertime as a function of
4 rain, runoff, storage, and snowpack accumulation
5 to progressively indicate what fraction of table A 13:43:13
6 amounts will be available to state water contractors
7 in that following year.

8 We've just experienced a very wet
9 December, for example, in terms of huge snowpack.
10 So the early season indication I think is at 13:43:28
11 50 percent, I'm not a hundred percent sure now, and
12 that number will change as we go through the rest of
13 winter and into spring, and typically by about April
14 or May the state indicates what the available
15 fraction of these table A amounts will be. 13:43:44

16 So now moving to Exhibit --

17 Q. 71.

18 A. -- 71, that in different year types,
19 regardless of what the interest might be on behalf
20 of local takers of state water, if it's made 13:44:01
21 available by the state water contractors, there can
22 be limits on how much the state water project can
23 make available.

24 So I realize it's already a little bit
25 longwinded, but the combination of availability on 13:44:18

1 the state water system and willingness to take the
2 water, whether treated or untreated locally, derives
3 or results in the kinds of fluctuations that are
4 reflected in the graph in Exhibit 71.

5 Q. In Exhibit 71 did you observe or do you 13:44:35
6 observe any trends in the use of the state water
7 project water?

8 MR. ZIMMER: Relevance. Same objections.

9 MR. JOYCE: I'll just -- I'll wait to hear
10 the answer. 13:44:50

11 THE WITNESS: You could probably extract,
12 you know, some, I'll call it, short-term trends.
13 You know, there was an initial kind of rapid
14 buildup, for example, in the use of state water but
15 there was a subsequent decline. There was, you 13:45:03
16 know, a period of significant increase in the use of
17 state water in the 1990s, but there was, you know, a
18 subsequent decline.

19 So to try to extract a trend, I'd say no.
20 Maybe in very, very gross terms you could say that, 13:45:21
21 you know, it went from, you know, humble beginnings
22 when water was first available in the early 1970 to
23 a fairly significant amount, you know, in the --
24 say, you know, this past decade or the first decade
25 of the 21st century that's for the most part, you 13:45:39

1 know, been in the range of, say, grossly 60- to
2 80,000 acre feet per year. A couple years it got
3 a little bit higher.

4 The last couple of years have been dry on
5 the state system and so the delivery of water from 13:45:51
6 the state water project has been lower. But, you
7 know, in general terms, you know, a very gross
8 trend has been to go from zero or near zero in its
9 beginnings; you know, 40ish years ago, to something
10 that's using, you know, more than 60,000 acre feet 13:46:07
11 typically at present.

12 BY MR. DUNN:

13 Q. Do each of the state -- excuse me.

14 Do each of the three state water project
15 contractors provide retail water deliveries to 13:46:19
16 customers?

17 MR. ZIMMER: Same objections.

18 MR. JOYCE: Lack of foundation.

19 THE WITNESS: I better ask you back what
20 you meant by "retail." 13:46:38

21 BY MR. DUNN:

22 Q. What I meant to ask, Mr. Scalmanini, is:
23 Are the three state water project contractors
24 wholesalers or retail water providers?

25 MR. JOYCE: Objection. Calls for 13:46:47

1 speculation. Lack of foundation.

2 THE WITNESS: My best answer is I don't
3 know for sure. That they each provide both treated
4 water; meaning it can be used for potable supply. I
5 know that in some cases that goes to an ultimate 13:47:06
6 retailer to customers and is not delivered, for
7 example, by AVEK directly. They also provide
8 untreated water for non-potable uses, for example,
9 by agriculture. And I think that's directly
10 delivered by them. 13:47:23

11 But, you know, as far as the rest -- the
12 ultimate, I'll call it, handling of water, who
13 processes the bills to the ultimate user, I don't
14 know all that for sure.

15 BY MR. DUNN: 13:47:33

16 Q. Mr. Scalmanini, if you would,
17 please, take a look at Exhibit 72 premarked for
18 identification. It is labeled "Historical Local and
19 Supplemental (SWP) Water Use Antelope Valley Area of
20 Adjudication." 13:47:59

21 (Whereupon, Scalmanini Exhibit 72 was
22 introduced for identification.)

23 BY MR. DUNN:

24 Q. Do you have Exhibit 72 before you?

25 A. I do. 13:48:04

1 Q. What is -- who prepared Exhibit 72?

2 A. Pardon me. Our office did.

3 Q. And where did your office obtain the
4 information for the preparation of the Exhibit 72?

5 A. Well, it's basically an aggregate of the 13:48:23
6 information that went into exhibits 70 and 71 -- I'm
7 sorry -- 69 and 71. So it came from the records of
8 the respective local water agencies or districts
9 that either diverted local surface water or imported
10 state water. 13:48:55

11 MR. DUNN: Counsel, just one moment.
12 We're picking up some phone conversations here. I'm
13 going to see if I can reach over and adjust the
14 sound.

15 Thank you. 13:49:17

16 BY MR. DUNN:

17 Q. Mr. Scalmanini, what do the different line
18 colors on Exhibit 72 illustrate?

19 MR. ZIMMER: Same objections. Beyond the
20 scope of the deposition. Beyond the scope of phase 13:49:30
21 issues. Relevance.

22 THE WITNESS: The bottom-most curve
23 which is blue highlighted with round dots to
24 illustrate -- or to indicate specific data points
25 on a year-to-year basis is a repeat of the same 13:49:51

Page 367

1 graph or curve reflected in Exhibit 69.

2 The graph reflected is lines connecting
3 green squares that begin in 1972 and come forward
4 to the end is a repeat of the graph reflected in
5 Exhibit 71. And the black diamond -- correction -- 13:50:25
6 triangles reflects simply a sum of the two curves
7 to show individually local surface water use,
8 imported state water use, and the combination
9 of those two.

10 BY MR. DUNN: 13:50:50

11 Q. Mr. Scalmanini, what is significant about
12 Exhibit No. 72 as it relates to your opinions on
13 overdraft and safe yield?

14 MR. ZIMMER: Same objections.

15 THE WITNESS: Ultimately we'll talk about 13:51:00
16 two components of safe yield; one being native
17 which derives from local waters, and one being
18 supplemental that derives from the use -- the
19 importation and use of additional waters over and
20 above what occurs naturally within the basin itself. 13:51:23

21 So thinking ahead to that, then the
22 significance of what's reflected in Exhibit 72,
23 particularly the imported water component, is
24 significant in ultimately analyzing that imported
25 water use, tracking its fate, estimating how much 13:51:43

1 recharge it contributes to the basin and how that
2 converts to a yield, that we'll ultimately call
3 supplemental safe yield.

4 This is also important because as we've
5 already gone through in some previous exhibits, and 13:52:00
6 I'll flip back to them if you'd like, is that in
7 tracking particularly on the agricultural side from
8 land use; cropping patterns, individual water duties
9 and estimating total water requirements, we have a
10 need in analyzing or estimating natural recharge to 13:52:21
11 know how much groundwater was pumped over time. And
12 to get from total water requirements to groundwater
13 pumping should properly account for any other waters
14 that were used to meet some of those agricultural
15 water requirements. 13:52:41

16 So this reflects how much local and
17 supplemental surface waters were used to meet
18 agricultural as well as in some cases municipal
19 total water requirements to get to groundwater
20 pumping. So it's important in both of those 13:52:55
21 regards.

22 BY MR. DUNN:

23 Q. Mr. Scalmanini, if you would, please,
24 take a look at the next exhibit premarked as
25 Exhibit No. 73. 13:53:14

1 well, let's just say over time both Littlerock Creek
2 Irrigation District and Palmdale through their
3 operations of Littlerock Creek Reservoir have
4 operated the diversion off Littlerock Creek so we
5 got data from them for the local surface water 13:54:55
6 diversions.

7 Q. What does Exhibit No. 73 show?

8 MR. ZIMMER: Same objections.

9 MR. KUHS: Hearsay.

10 THE WITNESS: Basically it is a summary of 13:55:05
11 the data that we received from those entities, how
12 much state water project water were imported by
13 them -- or excuse me -- was imported by them on a
14 year-to-year basis for municipal-type uses and for
15 agricultural-type uses, and in total, and how much 13:55:26
16 local; meaning diversions off Littlerock Creek
17 water, was diverted by them whether for municipal
18 purposes or agricultural purposes, and in total, and
19 then an aggregate of the two.

20 It's fundamentally the data points which 13:55:42
21 are reflected in graphical form in Exhibit 72.

22 BY MR. DUNN:

23 Q. If you would, please, Mr. Scalmanini, will
24 you turn to premarked Exhibit 74. It is labeled
25 "Recycled Water Disposition Antelope Valley Area of 13:56:19

1 Adjudication."

2 (Whereupon, Scalmanini Exhibit 74 was
3 introduced for identification.)

4 BY MR. DUNN:

5 Q. Who prepared Exhibit 74? 13:56:26

6 A. Our office did.

7 Q. And what were the sources of information
8 used for this exhibit?

9 A. Data supplied by Los Angeles County
10 Sanitation Districts 14 and 20, and I think some 13:56:49
11 from Rosamond Community Services District.

12 Q. What does Exhibit 74 show?

13 MR. ZIMMER: Objection -- same objections
14 previously stated. Beyond the scope of the
15 deposition, beyond the scope of phase issues 13:57:07
16 incorporating recycled water data apparently from
17 Mr. Leffler for which there was a specific agreement
18 that that water -- that that data and opinions
19 regarding recycled water will not be used in this
20 case. And also a foundational problem and hearsay. 13:57:25

21 THE WITNESS: Okay. I kind of lost the
22 question with all that.

23 BY MR. DUNN:

24 Q. I'll repeat the question. What does
25 Exhibit 74 show? 13:57:37

Page 372

1 MR. ZIMMER: Same objections.

2 THE WITNESS: Well, it tracks, as shown

3 in the legend at the bottom, how much recycled water

4 was used for irrigation purposes to offset part of

5 the total irrigation water requirements, how much 13:57:55

6 was discharged to what we described earlier as

7 environmental water demands at Piute Ponds and at

8 Apollo Lakes.

9 It tracks some what was at one time

10 classified as "land application and disposal" where 13:58:15

11 water was applied to the ground after treatment --

12 after lesser treatment than it receives today to

13 basically infiltrate and be disposed.

14 And it also tracks a very small amount

15 of treated wastewater that's been used for what we 13:58:34

16 just grossly call "other purposes" where it's made

17 available for construction water and things of that

18 type.

19 And then it aggregates all of those to

20 show how much recycled water has been generated and 13:58:47

21 then disposed in total, you know, increasing from

22 the early part of the record in the mid 1970s of,

23 I don't know, maybe about 3,000 acre feet per year

24 tracking up to their better part of 25,000 acre feet

25 per year over the last several years. 13:59:10

1 BY MR. DUNN:

2 Q. And why is the disposition of recycled
3 water a consideration for your opinions on safe
4 yield and overdraft?

5 MR. ZIMMER: Same objections. 13:59:19

6 THE WITNESS: Well, as I described before,
7 it's ultimately input to such as recycled water
8 offsets what might otherwise be groundwater pumping
9 for water supply. Then to ultimately quantify what
10 pumping is best estimated to be, it should be 13:59:38
11 accounted in that regard.

12 It's, I'll call it, of account, but no
13 contribution as far as we're concerned to the yield
14 of the basin that disposal or discharge of water to
15 places like Piute Ponds -- I'm sorry -- yes, to 13:59:57
16 Piute Ponds on the Rosamond Dry Lakebed because of
17 the nature of the, I'll call it, the dry lakebeds;
18 again, fine-grained materials, that for practical
19 purposes no water deep percolates through those
20 clays to contribute to the yield of the basin. 14:00:17

21 So we accounted for the water but recognized in
22 analyzing the yield that there's not a contribution
23 to the yield. The same is practically true with
24 regard to Apollo Lakes, although it's an almost
25 inconsequential amount of water; a couple hundred 14:00:32

1 acre feet per year.

2 And then this land application and
3 disposal, you can see with the trace or the track
4 of the blue line that's highlighted by individual
5 years that at one point in time, meaning prior to 14:00:50
6 2000, that the application of water at high rates
7 for purposeful infiltration and disposal got up to
8 be about 10,000 acre feet per year. But for water
9 quality reasons that was ordered to be reduced or
10 ultimately eliminated and that's why that tracks 14:01:13
11 down significantly.

12 So when we ultimately talk about yield,
13 we're going to talk about prevailing cultural
14 conditions in the basin and where that might have
15 once been a contributor to the yield because of the 14:01:24
16 application of a lot of water that was purposely
17 intended to deep percolate. The fact that it's been
18 progressively reduced and intended to be eliminated,
19 that it doesn't under prevailing cultural conditions
20 contribute to yield. So that's taken into account 14:01:39
21 also in estimating what the yield of the basin is.

22 BY MR. DUNN:

23 Q. A moment ago you mentioned that the water
24 or the use had been ordered reduced. Who ordered
25 that or what entity ordered that? 14:01:54

1 A. State Regional Quality Control Board.

2 MR. JOYCE: Hearsay.

3 MR. ZIMMER: Same objections. Join.

4 MR. DUNN: If I could direct your

5 attention to Exhibit No. 75, please. It is labeled 14:02:12

6 "Tabulation" -- or strike that.

7 It is labeled "Table D.4-3" -- Counsel,

8 this is another substituted exhibit for an earlier

9 premarked exhibit.

10 Again, "Table D.4-3, Historical Recycled 14:02:33

11 Water Antelope Valley Area of Adjudication," and

12 parenthetically it indicates "(acre feet per year)."

13 (Whereupon, Scalmanini Exhibit 75 was

14 introduced for identification.)

15 BY MR. DUNN: 14:02:43

16 Q. Mr. Scalmanini, do you have Exhibit 75?

17 A. Yes.

18 Q. Who prepared it?

19 A. Our office did.

20 Q. Where did the information -- or strike 14:02:55

21 that.

22 The data or the sources of data for this

23 exhibit, was that provided by the Los Angeles County

24 Sanitation Districts?

25 A. And by Rosamond. 14:03:06

Page 376

1 Q. And by Rosamond Community Services --
2 A. Yes.
3 Q. -- District?
4 That's a "yes"?
5 A. Yes. 14:03:15
6 Q. Okay. And does Exhibit 75 show the data
7 plotted on the previous exhibit, Exhibit 74, but
8 this time in a table format?
9 A. Yes.
10 Q. And, Mr. Scalmanini, can you describe -- 14:03:25
11 strike that.
12 Mr. Scalmanini, are you able or can
13 you describe how the different sources of water
14 available in the Antelope Valley were used to
15 meet water use in the Antelope Valley? 14:03:52
16 MR. JOYCE: Vague.
17 MR. ZIMMER: Vague and same objections
18 previously stated.
19 THE WITNESS: Yes, I think can.
20 MR. ZIMMER: Overbroad. 14:04:08
21 MR. DUNN: Let's take a look, if you
22 would, please, at the next exhibit premarked as
23 Exhibit 76.
24 MR. SLOAN: Before we move on to that, I'd
25 like to object and move to strike the testimony on 14:04:19

Page 377

1 historical recycled water.

2 And I'd like to note that the substitute
3 Exhibit 75 does not have the same footer or footnote
4 that the original premarked Exhibit 75 had. The
5 original Exhibit 75 that was premarked says in the 14:04:50
6 bottom left-hand corner "volumes in acre feet," and
7 then it says, "All data from P. Leffler."

8 And I would just note that in the
9 substituted exhibit that comment has been removed
10 and changed -- it's different than the original 14:05:10
11 premarked exhibit, and the motion to strike is going
12 to be based on the inability to obtain discovery on
13 Mr. Leffler.

14 MR. ZIMMER: Just out of curiosity,
15 Mr. Dunn, have there been any other modifications to 14:05:26
16 substituted exhibits of the nature that Counsel is
17 raising?

18 MR. DUNN: To be honest with you, I don't
19 understand what Mr. Sloan is saying.

20 MR. ZIMMER: He's saying that the exhibit 14:05:41
21 you originally had in the exhibits produced at the
22 first day of Mr. Scalmanini's deposition you had
23 in the booklet that all is attached together,
24 Exhibit 75.

25 Mr. Sloan is pointing out that in the 14:05:56

1 Exhibit 75 that you're seeking to substitute for the
2 Exhibit 75 in the original compilation, it is my
3 understanding these were simply substituted as being
4 clearer versions of the exhibits initially produced,
5 not that data or verbiage or lines or anything else 14:06:19
6 would be changed.

7 What Mr. Sloan is pointing out is if you
8 look at Exhibit 75 that you're asking to substitute
9 for the prior Exhibit 75, the words "All data from
10 P. Leffler" except -- no, I guess just the words 14:06:37
11 "All data from P. Leffler" have been taken out of
12 that exhibit by somebody.

13 So that raises a whole group of new issues
14 in terms of the accuracy of what's been substituted.
15 We were all under the assumption they were exact 14:07:05
16 copies of what was being substituted and apparently
17 it's not the case.

18 MR. KUHS: I object that Exhibit 75 lacks
19 foundation. Hearsay.

20 MR. DUNN: I still don't -- I still don't 14:07:22
21 think the three of you are on the same page, but let
22 me see if I can characterize --

23 MR. KUHS: I have not raised any issue
24 that Mr. Sloan and Mr. Zimmer raised.

25 MR. DUNN: Thank you, Mr. Kuhs. 14:07:33

1 BY MR. DUNN:

2 Q. Let me just ask the one question,

3 Mr. Scalmanini.

4 Exhibit No. 75, do you have it still

5 before you, sir? 14:09:00

6 A. Yes.

7 Q. Do you recognize this that's labeled

8 "Table D.4-3" --

9 A. Yes.

10 Q. -- as being an exhibit that was included 14:09:06

11 in the expert summary report that was produced in

12 this case?

13 A. Yes.

14 Q. Do you recall during your deposition over

15 a three-day period -- three separate days, rather, 14:09:18

16 that you had the expert summary report with you?

17 A. Yes.

18 Q. And were you asked questions during your

19 deposition about the expert summary report?

20 A. Yes. 14:09:31

21 Q. And this Exhibit 75 was in that report?

22 A. Yes.

23 Q. We'll move on.

24 Let's go to the next exhibit marked

25 Exhibit No. 76. 14:09:40

Page 381

1 components of total water use in the area of
2 adjudication.

3 In somewhat simple summary, the total
4 water use curve is a repeat of the total water use
5 curve in Exhibit 65, the groundwater use curve is a 14:11:44
6 repeat of the groundwater use curve in Exhibit 67,
7 the combination of local and imported state water
8 project use versus time is a repeat of that same
9 curve in Exhibit 71, and the recycled water curve
10 is a repeat of what's reflected in Exhibit 74. 14:12:07

11 BY MR. DUNN:

12 Q. What is the largest -- according to
13 the illustrations here on Exhibit No. 76, what is
14 the largest source of water supply for the Antelope
15 Valley area of adjudication? 14:12:41

16 MR. ZIMMER: Same objections.

17 THE WITNESS: Well, it is and always has
18 been groundwater.

19 MR. DUNN: Mr. Scalmanini, I'd like to
20 direct your attention, please, to Exhibit No. 77. 14:13:01

21 Counsel, this Exhibit No. 77 is a
22 substitute copy for an earlier premarked exhibit.
23 It is labeled "Table D.4-4, Historical Total Water
24 Supply Antelope Valley Area of Adjudication," and
25 parenthetically it indicates "(acre feet per year)." 14:13:25

1 (Whereupon, Scalmanini Exhibit 77 was
2 introduced for identification.)
3 BY MR. DUNN:
4 Mr. Scalmanini, do you have Exhibit No. 77
5 before you? 14:13:31
6 A. Yes.
7 Q. Who prepared Exhibit No. 77?
8 A. Our office did.
9 MR. JOYCE: Oh, I'm sorry.
10 MR. DUNN: Did you need more time, 14:13:44
11 Mr. Joyce?
12 MR. JOYCE: Yes, just one second. I
13 apologize. Thank you.
14 BY MR. DUNN:
15 Q. And does the table shown in Exhibit 77 14:13:57
16 provide the data or the backup data for the graph
17 shown on Exhibit 76?
18 A. Yes.
19 Q. And I take it Exhibit 77 shows in table
20 format the total water supply over time for the 14:14:21
21 Antelope Valley area of adjudication; is that
22 correct?
23 MR. ZIMMER: Hearsay.
24 THE WITNESS: I'm sorry. I drifted just a
25 little bit. 14:14:34

1 BY MR. DUNN:

2 Q. Yeah. What does Exhibit 77 show?

3 A. Basically a collection of values for

4 components of water supply, groundwater, imported

5 and local surface waters, and any other waters 14:14:52

6 used subdivided as components of water supply for

7 municipal industrial-type uses, for agricultural-

8 type uses, for environmental uses, as we defined

9 them earlier, and then in aggregate.

10 Q. Would you like to take a break? 14:15:11

11 A. That would be good.

12 MR. DUNN: With permission of all counsel,

13 Mr. Scalmanini would like to have -- can we have a

14 five-minute break, please?

15 MR. ZIMMER: That's fine. 14:15:21

16 MR. JOYCE: Sure.

17 MR. DUNN: Thank you.

18 May we go off the record?

19 MR. JOYCE: Please.

20 THE VIDEOGRAPHER: The time is 2:15 p.m. 14:15:27

21 and we are off the record.

22 (Off the record.)

23 THE VIDEOGRAPHER: The time is 2:24 p.m.

24 We are on the record.

25 BY MR. DUNN: 14:24:40

1 Q. Mr. Scalmanini, I direct your attention to
2 the next exhibit premarked as Exhibit No. 78. It is
3 labeled "Native Sustainable Yield."

4 (Whereupon, Scalmanini Exhibit 78 was
5 introduced for identification.)

14:24:52

6 BY MR. DUNN:

7 Q. Do you have Exhibit 78 before you?

8 A. Yes.

9 Q. Who prepared Exhibit No. 78?

10 A. Our office did.

14:25:05

11 Q. What does Exhibit 78 show?

12 A. Well, it's largely a repeat of I think
13 it's Exhibit 12. But segueing from 12, which was
14 intended to be just a conceptual illustration of how
15 recharge turns into yield, Exhibit 78 is intended
16 to, let me -- call a little more focus to the bottom
17 part where the various components of yield are going
18 enumerated in equation form. Sustainable yield,
19 (SY) equals natural recharge(NR), plus ag return
20 flows (RFag), plus M&I return flows (RFMI), when S,
21 which is indicative of groundwater storage, equals
22 constant over time. And it bracketed those
23 components of yields as "Fundamental Inputs."

14:25:31

14:26:13

24 So the computed native sustainable yield
25 one needs natural recharge and estimates of return

14:26:55

Page 386

1 flows from the use of water that derives from
2 natural recharge from agriculture or by agriculture
3 and by municipal industrial users, all ultimately
4 intended to keep groundwater storage a long-term
5 constant, but not literally constant.

14:27:20

6 And so as I think I mentioned when we were
7 discussing Exhibit 12, we attached a -- I'll call it
8 a hypothetical hydrograph to the water table over on
9 the right side where one might expect on a long-term
10 basis groundwater levels to fluctuate typically up
11 in wet cycles and down in drier cycles, and on a
12 long-term basis to average out to be a constant.

14:27:38

13 So the groundwater levels weren't
14 declining, groundwater storage wasn't declining; in
15 other words, avoidance of the undesirable results
16 that were enumerated as being possible if safe yield
17 were exceeded.

14:28:00

18 Q. What do the light blue arrows on the
19 left-hand side of Exhibit 78 depict or show?

20 MR. JOYCE: Jeff --

14:28:19

21 MR. DUNN: Yes.

22 MR. JOYCE: -- on this exhibit I'm making
23 the observation that other people have a variation
24 slightly different. Like, for instance, Mr. Kuhs'
25 arrows are dark blue, whereas mine are light blue,

14:28:34

1 as are yours. I'm just wondering --

2 MR. ZIMMER: It's a copy.

3 MR. JOYCE: -- which one is intended to be

4 used by the Court?

5 MR. DUNN: I'm informed, but you can 14:28:42

6 correct me if I have this wrong, that, Mr. Joyce,

7 the copy that you have and that I have and

8 Mr. Scalmanini has, those are the copies.

9 Mr. Kuhs, maybe -- I believe what you did

10 was print out your own copies; is that correct? 14:28:54

11 MR. KUHS: That's correct.

12 MR. DUNN: Yeah. So that's -- that may be

13 the reason why your copy might be different. But in

14 any event, we'd be happy to provide you with the

15 copy we have. 14:29:04

16 MR. JOYCE: All I'm just -- his printer

17 works better, I can tell you that.

18 MR. DUNN: But we'll work off -- but to

19 answer your question, Mr. Joyce, we'll work off this

20 copy, if that's fine with you. 14:29:13

21 MR. JOYCE: Yeah. I just wanted to make

22 sure I understood which one is going to be the

23 official.

24 MR. DUNN: Okay. Thank you.

25 BY MR. DUNN: 14:29:19

1 Q. All right. And, I'm sorry. I'll just
2 repeat the question. The light blue arrows on the
3 left-hand side of Exhibit No. 78 beneath the words
4 that say "Runoff/Infiltration," what do the light
5 blue arrows represent?

14:29:38

6 A. Well, they represent a combination of
7 runoff from the watershed and -- which would flow
8 onto the valley floor, or in this case the watershed
9 surrounding the Antelope Valley, and then flow onto
10 the Antelope Valley floor that can infiltrate,
11 deep percolate, reach the water table and in
12 effect contribute a component of so-called natural
13 recharge; "natural" meaning that the source waters
14 originate as precipitation within the watershed
15 surrounding the aquifer system that is the area of
16 adjudication.

14:29:57

14:30:15

17 The other light blue line, or whatever
18 shade of blue, is labeled "Mountain front recharge,"
19 and it's intended to reflect waters that again
20 originate in the watershed but infiltrate some
21 of which -- not detailed here, can resurface and
22 contribute to surface runoff, but some of which
23 stays in the subsurface and flows into the boundary
24 of the aquifer system around the edges, so to speak,
25 of the area of adjudication and contributes a

14:30:31

14:30:53

1 component of natural recharge in that fashion.

2 Q. On Exhibit No. 78, what do the darker blue
3 arrows represent?

4 A. Well, there are several. I'll start with
5 the ones in the subsurface. Okay. So more or less 14:31:15
6 at the confluence of the two light blue arrows there
7 is the symbol "NR" intended to reflect natural
8 recharge.

9 And so natural recharge, you know, in
10 effect joins the groundwater system; you know, 14:31:36
11 contributes to water in storage, and can be captured
12 by or picked up by, intercepted by, groundwater
13 pumping. So that arrow reflects in effect the flow
14 of natural recharge in this case to one schematic
15 well, but basically to water wells that are 14:31:57
16 installed to develop supply from the groundwater
17 basin.

18 And maybe I just better follow it
19 sequentially so I'll stick with just that subsurface
20 arrow for right now. 14:32:13

21 And then water in this case pumped to
22 the ground surface and into distribution systems,
23 whether for all agriculture or whether for municipal
24 uses, follows the two blue arrows which go left to
25 right immediately above the ground surface. To the 14:32:32

1 left is to municipal supplies and to the right is
2 to agricultural supplies. So let's arbitrarily pick
3 the one to the left first.

4 So municipal and industrial groundwater
5 pumping goes to users, some of which is 14:32:45
6 consumptively used or basically exhausted by
7 evaporation to the atmosphere. That's the C- --
8 excuse me, CUmi, or the blue arrow pointing up.
9 And some of the water that's delivered to municipal
10 users infiltrates into the subsurface and deep 14:33:08
11 percolates and can ultimately get back to the
12 water table or the groundwater basin as a return
13 flow contribution to the overall water supply and
14 the -- the overall groundwater supply, and that's
15 symbolized by the blue arrow pointing down labeled 14:33:31
16 "RFmi."

17 And analogous to that going back to the
18 wellhead, so to speak, the arrow pointing to the
19 right to agriculture irrigation, some of the water
20 applied for agriculture irrigation; in fact, a 14:33:49
21 fairly high fraction, is consumptively used; meaning
22 evapotranspired to the atmosphere, and that's
23 symbolized by that "CUag" and some applied to the
24 ground surface infiltrates, deep percolates past the
25 root zone, is not uptaken by plants, and ultimately 14:34:18

1 deep percolates back to the water table and provides
2 a return flow component symbolized by "RFag."

3 So ultimately the total amount of water
4 that is sustainably pumped under native conditions
5 derives from the natural recharge; the dark blue 14:34:39
6 arrow coming in from the left, at the confluence of
7 those symbolized runoff and mountain front recharge
8 components, along with the return flow components of
9 pumping that derives from the uses of groundwater
10 pumped from the basin; meaning that part of natural 14:35:03
11 recharge that's pumped and utilized for either, in
12 this case, agricultural or municipal-type uses on
13 the ground surface.

14 Q. On Exhibit 78 there is a triangle
15 indicating Delta S -- 14:35:19

16 A. Yes.

17 Q. -- "S = 0."

18 A. Yes.

19 Q. Why is that depicted there? In other
20 words, why is Delta S indicating change of storage 14:35:27
21 equaling zero?

22 A. Well, there's -- you know, that is
23 imprinted in a portion of the overall figure that is
24 hopefully in everybody's version hatched with some
25 blue dots. And there's a blue line that goes across 14:35:51

1 with some small triangles at the top of it, and then
2 that blue line is attached to the hydrograph on the
3 right-hand side. That is intended to depict the
4 water table. And groundwater storage, of course,
5 would be the water in the saturated zone below the 14:36:08
6 water table.

7 Q. Depicted by the area with the tiny blue --

8 A. With the tiny blue hatching, that's
9 correct.

10 And under sustainable or so-called safe 14:36:21
11 yield conditions, then going back to the definitions
12 that we worked our way through on the first day of
13 this, that safe or sustainable yield derives from
14 pumping an amount on an average basis; meaning
15 average annual basis, that does not result in 14:36:41
16 undesirable conditions such as lowering of water
17 levels, depletion of storage, degradation of water
18 quality, land subsidence, those kinds of things.

19 And as I think I mentioned when describing
20 those, most of them derive ultimately from a 14:36:58
21 declining water level condition but it's expressed
22 as a depletion of storage.

23 So under native sustainable or safe
24 yield conditions, then storage does not decline; or
25 expressed in the symbolic form, it's common to use 14:37:22

1 the Greek symbol Delta for change in the technical
2 literature. So Delta S would mean change in
3 storage. And if storage is not going to deplete
4 under sustainable conditions, then Delta S would be
5 equal to zero. Again, on a long-term average basis. 14:37:40

6 Looking at the hydrograph, you could
7 expect storage to increase and decrease through wet
8 and dry cycles. That's basically using the storage
9 to buffer your way through wet and dry cycles.
10 You use some water from storage during dry cycles, 14:37:58
11 expect it to refill during wet cycles and on a
12 long-term basis storage is not depleted.

13 Q. If you would, please, I direct your
14 attention to the premarked Exhibit 79. It is
15 labeled "Native and Supplemental Sustainable Yield." 14:38:33

16 (Whereupon, Scalmanini Exhibit 79 was
17 introduced for identification.)

18 BY MR. DUNN:

19 Q. Mr. Scalmanini, do you have Exhibit No. 79
20 before you? 14:38:40

21 A. Yes.

22 Q. Who prepared Exhibit No. 79?

23 A. Our office did.

24 Q. What does Exhibit No. 79 show?

25 A. It shows two things. The focus is 14:38:52

1 intended to be on the right-hand side, but for
2 completeness if we could divide it, you know,
3 basically down the middle -- and I think there is
4 a faint line -- a faint vertical line that does
5 that -- the left-hand side or left half, you know, 14:39:17
6 shows for all practical purposes the same things
7 as reflected in Exhibit 78. Okay?

8 So there are natural recharge component
9 and pumping and return flow components; in this case
10 including a return flow component from recycled 14:39:39
11 water from the -- on the municipal side. It's a
12 small component when we get into numbers. But
13 basically that's the same as we just discussed
14 with regard to native supplies.

15 The right side is added to it to try to 14:39:57
16 schematically illustrate how this supplemental water
17 use ultimately contributes to more yield.

18 So if I could walk through that, I think
19 it --

20 Q. Yeah. Would you please walk us through 14:40:15
21 the supplemental sustainable yield --

22 A. Sure.

23 Q. -- as shown here on Exhibit 79, please.

24 A. Okay.

25 MR. ZIMMER: Subject to objections 14:40:27

1 previously stated.

2 THE WITNESS: Okay. So starting at the
3 right side there are two horizontal arrows that
4 point in from the right but point to the left. One
5 is labeled "SWag," and the one next to it is labeled 14:40:38
6 "SWmi." And they illustrate that supplemental
7 surface water, in this case from the state water
8 project, is brought into the basin, but in contrast
9 to some other places where that water might be put
10 into spreading basins and infiltrated into the 14:41:09
11 ground or injected into wells -- we talked about ASR
12 for a brief moment this morning.

13 In contrast to that, in the Antelope
14 Valley supplemental water that's brought in
15 is delivered to users; agricultural users and 14:41:24
16 municipal-type users. And when that happens,
17 then just as with water that's pumped from the
18 groundwater basin under native conditions, some of
19 the water that's delivered to AG is consumptively
20 used, exhausted to the atmosphere; some of the 14:41:40
21 supplemental water that's delivered to M&I users is
22 consumptively used or exhausted to the atmosphere;
23 and that's reflected by the arrows pointing up above
24 where the SW arrows comes into the basin.

25 It so happens that the use of those 14:42:02

1 supplemental waters also produces some return
2 flows. So the delivery of supplemental water to
3 agriculture produces some return flow and the use of
4 supplemental water by municipal uses produces some
5 return flow. Those are recharges to the groundwater 14:42:23
6 basin that wouldn't occur if not for the importation
7 of that supplemental water.

8 So that recharge is, in terms of how it
9 contributes to yield, somewhat analogous to the
10 natural recharge that's coming in on the left-hand 14:42:39
11 side of this figure from local waters. It's not
12 a local water in this case, it's a supplemental
13 water. But it's a component of recharge that then
14 can be pumped and that's the next set of, I'll call
15 it, vertical well in the delivery of water that's 14:42:56
16 pumped from these return flows that derive from the
17 supplemental water importation into the basin.

18 And so the two recharges from the use
19 of supplemental waters can be picked up by wells,
20 but illustrated here by one well, and delivered to 14:43:18
21 agricultural users and to M&I users.

22 So much like we looked at with Exhibit 78,
23 the discharge from the well that's capturing these
24 recharges from supplemental water is partially
25 delivered to agriculture, partially delivered to 14:43:39

1 municipal-type users. In both cases parts of those
2 deliveries are consumptively used, so that would be
3 the CUag or mi on the two sides of the discharge
4 from that well that's capturing these recharges
5 from supplemental water. 14:44:05

6 And the delivery of that pumped water to
7 agriculture and municipal-type uses also produces
8 return flows labeled RFsag; meaning supplemental ag,
9 and RS -- I'm sorry, RFsmi; meaning supplemental
10 municipal industrial. And those two return 14:44:35
11 flows add to the recharge that derives from the
12 importation of supplemental waters on the right-hand
13 side and collectively add up to a supplemental
14 sustainable yield; meaning that there's yield added
15 to the basin as a result of that and it can be 14:44:55
16 quantified.

17 BY MR. DUNN:

18 Q. Mr. Scalmanini, as part of your analysis
19 did you pick or determine an appropriate study
20 period? S-t-u-d-y. 14:45:25

21 A. Yeah. Yeah. Also sometimes called a
22 "base period."

23 We actually used ultimately by the time
24 we get to the finish line about four of those. But
25 at this point in the overall discussion the answer 14:45:48

1 CERTIFICATE OF REPORTER

2
3 I, JANIS L. JENNINGS, a Certified
4 Shorthand Reporter of the State of California, do
5 hereby certify:

6 That the foregoing proceedings were taken
7 before me at the time and place herein set forth;
8 that any witnesses in the foregoing proceedings,
9 prior to testifying, were placed under oath; that a
10 verbatim record of the proceedings was made by me
11 using machine shorthand which was thereafter
12 transcribed under my direction; further, that the
13 foregoing is an accurate transcription thereof.

14 I further certify that I am neither
15 financially interested in the action nor a relative
16 or employee of any attorney of any of the parties.

17 IN WITNESS WHEREOF, I have this date
18 subscribed my name.

19
20 Dated: January 24, 2011
21
22

23 _____
24 JANIS JENNINGS, CSR NO. 3942, CLR, CRP
25