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BEFORE THE
CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

CALIFORNIA WATERFIX WATER)
RIGHT CHANGE PETITION)
HEARING)

JOE SERNA, JR. BUILDING
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
COASTAL HEARING ROOM
1001 I STREET
SECOND FLOOR
SACRAMENTO, CALIFORNIA

PART 1B

Friday, November 18, 2016

9:00 A.M.

Volume 30

Pages 1 - 182

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APPEARANCES

CALIFORNIA WATER RESOURCES BOARD

Division of Water Rights

Board Members Present:

Tam Doduc, Co-Hearing Officer
Felicia Marcus, Chair & Co-Hearing Officer
Dorene D'Adamo, Board Member

Staff Present:

Diane Riddle, Environmental Program Manager
Dana Heinrich, Senior Staff Attorney
Kyle Ochendusko, Senior Water Resources Control Engineer

PART IB

For Petitioners:

California Department of Water Resources:

James (Tripp) Mizell
Thomas M. Berliner
Jolie-Anne Ansley

The U.S. Department of the Interior:

Amy L. Aufdemberge, Esq.

INTERESTED PARTIES:

For Central Delta Water Agency, South Delta Water Agency
(Delta Agencies), Lafayette Ranch, Heritage Lands Inc.,
Mark Bachetti Farms and Rudy Mussi Investments L.P.:

John Herrick, Esq.
Dean Ruiz, Esq.

For State Water Contractors:

Stefanie Morris

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APPEARANCES (Continued):

For The Environmental Justice Coalition for Water, Islands, Inc., Local Agencies of the North Delta, Bogle Vineyards/Delta Watershed Landowner Coalition, Diablo Vineyards and Brad Lange/Delta Watershed Landowner Coalition, Stillwater Orchards/Delta Watershed Landowner Coalition, Brett G. Baker and Daniel Wilson:

Osha Meserve

For California Sportfishing Protection Alliance (CSPA), California Water Impact Network (C-WIN), and AquAlliance:

Michael Jackson

For California Water Research:

Deirdre Des Jardins

For San Luis & Delta-Mendota Water Authority:

Rebecca R. Akroyd

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I N D E X

CENTRAL DELTA WATER AGENCY, SOUTH DELTA WATER AGENCY
(DELTA AGENCIES), LAFAYETTE RANCH, HERITAGE LANDS INC.,
MARK BACHETTI FARMS AND RUDY MUSSI INVESTMENTS L.P.:

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1 Friday, November 18, 2016 9:00 a.m.

2 PROCEEDINGS

3 ---000---

4 CO-HEARING OFFICER DODUC: (Banging gavel.)

5 Good morning, everyone. It is 9 o'clock.

6 Welcome back to this Friday edition of the
7 California WaterFix Water Right Change Petition hearing.

8 I am Tam Doduc. With me are: To my right,
9 Chair Felicia Marcus. I believe Board Member Dee Dee
10 D'Adamo will be joining us shortly. To my left are Dana
11 Heinrich, Diane Riddle and Kyle Ochendusko. We are
12 being assisted by Mr. Baker and Mr. Long.

13 And since I have declared today to be John
14 Herrick Day, Mr. Herrick, please do us the honor of
15 providing the three general announcements.

16 I'll tell you what, let's make it a little bit
17 more interesting for you: I will insist on the
18 evacuation and the silence-your-devices announcement and
19 I'll leave the third one to your discretion. As long as
20 it's within the boundaries of respectability and
21 professionalism, you can have some fun with it,
22 Mr. Herrick.

23 MR. HERRICK: Thank you, Madam Chair.

24 Everybody, please note that if there's an
25 emergency, you should go to the nearest exit you can

1 find, and you should find that right now.

2 We will go downstairs and meet across the --
3 kitty-corner in the Cesar Chavez Park, and we'll take a
4 head count to make sure nobody's in trouble.

5 Please move in an orderly fashion without
6 elbowing your opponents.

7 Any electronic device that you have should be
8 turned off, on silent, or vibration mode so that it does
9 not bar -- bother the Chair, who's extremely sensitive to
10 these things.

11 The third caution escapes me at the moment.

12 CO-HEARING OFFICER DODUC: Make up one,
13 Mr. Herrick.

14 MR. HERRICK: Please do not eat too many of the
15 doughnuts I provided in the back of the room so that I
16 can have some for lunch.

17 CO-HEARING OFFICER DODUC: Hear hear. Very
18 well done, Mr. Herrick.

19 MR. HERRICK: Thank you. Sorry.

20 CO-HEARING OFFICER DODUC: The only thing I
21 would add is, if you are not able to use the stairs,
22 please flag down one of us or someone wearing an
23 odd-colored hat or vest, and you will be directed into a
24 protected area.

25 With that, we will -- Before we resume, though,

1 with cross-examination, since we started off on such a
2 happy, cheery note, I would like to remain that way for
3 the rest of the day.

4 I'm going to ask Petitioners to speed up the
5 pace of your cross-examination.

6 Since this is John Herrick's Day, let me
7 encourage you -- and I can't believe I'm saying this --
8 to elevate Mr. Herrick that -- there could only be and
9 there should only be one John Herrick -- but I did very
10 much appreciate his concise, direct, crisp
11 cross-examination style, and I would encourage you to
12 follow suit.

13 I recognize that, as attorneys, you like to dot
14 the Is, cross the Ts, lay the foundation, get everything
15 into the record. But, as one Hearing Officer, I find
16 myself being nearly comatose during your
17 cross-examination, which is not a good thing.

18 So please speed up; get to the point. Let's
19 get this -- these witnesses done and hopefully on their
20 way home to enjoy a good Thanksgiving.

21 I would like to go through all of Mr. Herrick's
22 panel today. And, in that light, I'm going to encourage
23 you to, again, be focused, be concise, be clear, be
24 sharp, be fast, be like Mr. Herrick.

25 CO-HEARING OFFICER MARCUS: Not in all ways.

1 CO-HEARING OFFICER DODUC: Just in the positive
2 ways.

3 (Laughter.)

4 MR. MIZELL: I will endeavor to do that.

5 I spent some time last night trying to focus
6 these questions because I did recognize that I may have
7 been going on a little bit long on some of the points,
8 so --

9 CO-HEARING OFFICER DODUC: Thank you.

10 So, with that, we will continue with your
11 cross-examination of this panel.

12

13 THOMAS BURKE, TERRY PRICHARD and JEFFREY MICHAEL,
14 called as witnesses for the Central Delta Water Agency,
15 South Delta Water Agency (Delta Agencies), Lafayette
16 Ranch, Heritage Lands Inc., Mark Bachetti Farms and Rudy
17 Mussi Investments L.P., having been previously duly
18 sworn, were examined and testified further as follows:

19 CROSS-EXAMINATION (RESUMED) BY

20 MR. MIZELL: So I'll start back up with -- with
21 you, Dr. Michael.

22 And just for expediency purposes and the fact
23 that I did tend to go a little bit long yesterday, I just
24 want to review five very quick recap questions just so
25 that we're on the same page.

1 And I think these are going to be completely
2 uncontroversial. If you could just give me a yes/no
3 answer, I think that would really help.

4 So, to quickly recap: You relied upon
5 Mr. Prichard's Figure 4; correct?

6 WITNESS PRICHARD: I believe so. That's the
7 one with the yields at the 5 percent leach reduction.

8 MR. MIZELL: Yes. And you relied upon
9 Dr. Leinfelder-Miles' analysis to establish a 5 percent
10 leaching fraction; correct?

11 WITNESS PRICHARD: Yes. That analysis shows
12 5 percent throughout much of the Delta.

13 MR. MIZELL: All right. And the analysis in
14 your testimony is illustrative and not predictive;
15 correct?

16 WITNESS PRICHARD: That's correct.

17 MR. MIZELL: Okay. Crop revenue is influenced
18 by many factors; correct?

19 WITNESS PRICHARD: That's correct.

20 MR. MIZELL: And most influential of those
21 factors is commodity prices; correct?

22 WITNESS PRICHARD: Correct.

23 MR. MIZELL: Thank you.

24 This next series of questions is going to focus
25 on the BDCP Statewide Economic Impact Report as it's

1 cited in Dr. Michael's testimony.

2 So if we can bring up SDWA-134-R, Page 4.

3 (Document displayed on screen.)

4 MR. MIZELL: Okay. So the second half of this
5 first long paragraph, Lines 11 through 18.

6 So, is it true that you restate information in
7 this portion of the paragraph that's found within the
8 BDCP Statewide Economic Impact Report?

9 WITNESS PRICHARD: Yeah, this is a summary of
10 the findings in there.

11 MR. MIZELL: Okay. However, you performed a
12 calculation to generate the conclusion that there is a
13 1.1 increase in salinity; is that correct?

14 WITNESS PRICHARD: I don't know the -- The 347
15 to 351, that is definitely taken right from the report.
16 I don't remem -- recall whether the 1.1 is in the report
17 or whether I calculated that myself.

18 MR. MIZELL: Okay. Well, I did a word search
19 last night so I'll just assert to you that the 1.1 was
20 not in the report so I can tell that the numbers you've
21 just -- you just referenced are in the report.

22 So I guess the next question would be: So the
23 1.1 is a calculation that's based upon dividing 347 by
24 351; is that correct?

25 WITNESS PRICHARD: Yes, that's correct.

1 MR. MIZELL: Okay.

2 WITNESS PRICHARD: Actually, I think it's the
3 other way around, but, nevertheless. Yeah, 1.1's derived
4 from those two numbers.

5 MR. MIZELL: 1.1 . . . Okay. So you divide
6 351 by 347?

7 WITNESS PRICHARD: Yeah. I . . . I took the
8 difference and divided by 347, but it's . . .

9 MR. MIZELL: Okay. The BDCP Statewide Economic
10 Impact Report does not contain your opinion that larger
11 changes in water quality could lead to a much larger
12 impact on agricultural production; correct?

13 WITNESS PRICHARD: I believe that, sure. I
14 don't think they considered any scenario other than these
15 modeling results.

16 MR. MIZELL: Okay. But that portion of the
17 paragraph is your opinion, not contained in the report;
18 is that correct?

19 WITNESS PRICHARD: If you'd give me a line
20 number.

21 Oh, the last sentence, that (reading):

22 "Larger changes in water quality could lead to
23 much larger impacts on agricultural production."

24 That's true. I mean, such a statement is
25 easily derived from the results of the model that are

1 presented in that report as well as in the Economic
2 Sustainability Plan, which did consider and discuss the
3 possibility of larger changes in water quality, but that
4 particular sentence now does not come from that report.

5 MR. MIZELL: Thank you.

6 And in the Statewide Economic Impact Report,
7 the BDCP Statewide Economic Impact Report, the
8 1.86 million, the report indicates that this is less than
9 one-half of 1 percent of farm revenue in 2025 when the
10 Project begins operations; is that correct?

11 WITNESS PRICHARD: That sounds correct. I
12 mean, in the -- in the source data, we found \$700 million
13 in gross crop revenue in the Delta, so . . .

14 MR. MIZELL: Okay. I'm going to move on to
15 some questions about crop yields.

16 So, yesterday, we briefly looked at some graphs
17 I asserted were generated from information found on CDEC.

18 Do you recall those graphs?

19 These were the salinity charts.

20 WITNESS PRICHARD: Oh, are these the -- these
21 ones (indicating) that you handed out?

22 MR. MIZELL: That's correct, DWR-579.

23 WITNESS PRICHARD: Yes.

24 MR. MIZELL: Okay. And we also looked at a
25 chart from the San Joaquin County Agricultural

1 Commissioner's Report from 2014 on the field crop value
2 for the past 10 years.

3 Do you recall that chart?

4 WITNESS PRICHARD: Yeah. I have it in front of
5 me.

6 MR. MIZELL: Perfect.

7 Would you agree that these graphs and charts
8 are not illustrative but, instead, they show what
9 actually occurred?

10 WITNESS PRICHARD: That's true, yes.

11 MR. MIZELL: Okay. Let's look at DWR-579
12 again.

13 (Document displayed on screen.)

14 MR. MIZELL: So, yesterday, when we looked at
15 this chart in re -- in response to questions about the
16 percentage change represented in this graph, your counsel
17 objected to the question as vague because we didn't
18 specify a time period to compare.

19 So I'd like to give you -- I'd like you to give
20 us your opinion as to the percentage change but I'm going
21 to specify a bit more.

22 So, we're going to be looking for the maximums
23 and minimums in water quality for the graph on the Old
24 River at Tracy Station. This is indicated by the orange
25 line on those graphs.

1 Do you see what I'm talking about?

2 WITNESS PRICHARD: I do.

3 MR. MIZELL: Perfect. So, unless you care to
4 take your own estimate of it, I'll simply ask you for the
5 percentage change between an EC of 0.125, which I'll
6 assert is the EC in June of 2006, and an EC of 1.35,
7 which I'll assert is the EC in January of 2010.

8 And if you --

9 WITNESS PRICHARD: Can you --

10 MR. MIZELL: If you --

11 WITNESS PRICHARD: Can you repeat that?

12 MR. MIZELL: Sure thing.

13 What's the percentage change between 0.125 and
14 1.35? I have a calculator if you'd like.

15 THE WITNESS PRICHARD: 0.125 and --

16 MR. MIZELL: 1.35.

17 WITNESS PRICHARD: -- 1.35, yeah.

18 Yeah. A thousand percent, or something, off
19 the top of my head. I mean, what --

20 MR. MIZELL: So does --

21 WITNESS PRICHARD: I'm trying to reveal the
22 answer --

23 MR. MIZELL: -- 980 sound about right?

24 WITNESS PRICHARD: Huh?

25 MR. MIZELL: 980 is about right?

1 WITNESS PRICHARD: Yeah. I was pretty close.

2 MR. MIZELL: You're right.

3 Okay. And that's what I'm calling the minimum
4 of the entire decade and a maximum of the entire decade.

5 WITNESS PRICHARD: Um-hmm.

6 MR. MIZELL: So, now looking at a single year
7 where there's a high variability within a growing season,
8 I'm going to choose 2006, so that's towards the left-hand
9 side of that graph.

10 WITNESS PRICHARD: Okay.

11 MR. MIZELL: And I'll assert that the minimum
12 and maximum for this year are 0.125 and 0.9 EC.

13 What's the percent change between 0.125 and
14 0.9?

15 WITNESS PRICHARD: 700 and something percent.

16 MR. MIZELL: Yeah, it's -- I calculated it to
17 be about 620, so that's -- in your head, that's a lot
18 better than do I with a calculator, so . . . Yeah.

19 So these two percentages, I think, are pretty
20 self-evident that they're larger than 1.1 percent. And
21 if your model was an accurate predictor of economic loss
22 due to salinity, we would see a significant drop in
23 agricultural productivity unless commodity prices
24 compensated for that predicted loss and yield; is that
25 correct?

1 WITNESS PRICHARD: I mean, you're looking
2 within a -- within a year, so -- I mean, I would
3 compare -- I think I would compare more average values
4 across the growing season for the sort of simplified
5 calculation I made.

6 But you're right, the changes would be larger
7 if you were to look at those sort of things.

8 But, you know, the calculations are holding
9 everything constant. And you're -- And you're absolutely
10 correct that, you know, you can have a change relative to
11 water quality or water availability and the influence of
12 markets and crop prices is so large that it swamps it.

13 I mean, we've had actually a very vivid example
14 of that in California during the drought where we saw the
15 agricultural industry in California posting record levels
16 of revenue in 2014 and 2015 when water was scarce. And
17 so we know that those relationships can exist and yet at
18 the same time farmers can experience injury.

19 I believe your agency has expressed that
20 opinion to this Board in recent years.

21 It's also worth pointing out that, you know,
22 it's holding everything constant, and so those
23 calculations are based on 2009 dollars.

24 So if you get a -- an equivalent change in with
25 and without conditions in 2014 when prices are high, the

1 actual revenue loss as a result of the water changes is
2 higher, but the gross revenue to the agricultural
3 community in some area may be higher as well because of
4 the marketing effect that you described.

5 MR. MIZELL: Okay. Would you agree that field
6 crops largely predominate the Southern Delta?

7 WITNESS PRICHARD: I would agree with that,
8 yes.

9 MR. MIZELL: And so if we looked again at
10 DWR-586, .pdf Page 8.

11 WITNESS PRICHARD: Is that the crop report?

12 MR. MIZELL: That's the crop report.

13 MR. HERRICK: What page is that?

14 MR. MIZELL: Page 8.

15 (Document displayed on screen.)

16 MR. MIZELL: At the bottom of the page.

17 WITNESS PRICHARD: Are you referring to the
18 photo?

19 MR. MIZELL: I'm referring to the field crop
20 total.

21 WITNESS PRICHARD: You're referring to Page 6,
22 okay.

23 MR. MIZELL: Page --

24 WITNESS PRICHARD: Or at least it's labeled
25 Page 6.

1 MR. MIZELL: Yeah. It would be text Page 6,
2 .pdf Page 8.

3 WITNESS PRICHARD: Yeah.

4 MR. MIZELL: So, looking at the field crops
5 sort of as we've been talking here, the revenue is
6 trending higher over the same decade that we saw a
7 980 percent fluctuation in salinity; is that correct?

8 WITNESS PRICHARD: That's absolutely correct.

9 MR. MIZELL: And if we look at just 2006, the
10 field crops revenue is not markedly different than the
11 preceding year, despite an annual fluctuation in 2006 of
12 620 percent; correct?

13 WITNESS PRICHARD: Correct.

14 MR. MIZELL: Okay. But, again, these might be
15 explained by increasing commodity prices so that we
16 should look at maybe yield as a better predictor; is
17 that -- is that correct?

18 WITNESS PRICHARD: A better predictor of what?

19 MR. MIZELL: Whether or not salinity had an
20 impact on agriculture that year, or over the decade.

21 WITNESS PRICHARD: That would be somewhat
22 helpful, but this is a countywide dataset, not
23 specifically focused on that.

24 MR. MIZELL: But it does indicate field crops
25 which predominate the South Delta; correct?

1 WITNESS PRICHARD: That's correct.

2 MR. MIZELL: Okay. I'd like to turn to
3 DWR-587, please, and we'll hand out hard copies.

4 (Document displayed on screen.)

5 MR. MIZELL: Okay. So I'll assert that this is
6 a chart that DWR generated as a compilation of data from
7 the San Joaquin County Ag Commissioner's Office Annual
8 Reports for the years of 2005 through 2015. And we'll
9 lay the foundation for this in rebuttal.

10 And it details crop yield for those years.

11 There is no market decrease in crop yield over
12 the past decade; is that correct?

13 WITNESS PRICHARD: The handout I received is
14 acreage, not yields. Is there a different . . .

15 MR. MIZELL: These are numbers for crop yields
16 based on harvested acreage.

17 MR. HERRICK: Just for the record, it doesn't
18 say that.

19 MR. MIZELL: Right. The title -- The title
20 represents the harvested acreage, and these are the crop
21 yield numbers for that harvested acreage.

22 MR. HERRICK: Well, we -- The -- The witness
23 can certainly respond as best possible. I think we
24 should be clear that there's nothing for him to examine
25 that gives the framework for this information, and it

1 doesn't talk about crop yield.

2 WITNESS PRICHARD: This is -- Actually -- I
3 mean, just looking at the report you gave me, on the
4 page -- right above the table, 2014 harvested acreage for
5 San Joaquin County is reported at 467,000 and -- which
6 matches the number on the chart that you just gave me.

7 CO-HEARING OFFICER DODUC: All right. Thank
8 you for that, Dr. Michael.

9 MR. MIZELL: All right. Let me check my
10 numbers that I'm accurate in my questioning again.

11 WITNESS PRICHARD: I mean, I can make an
12 observation from the -- from the table. Page 8 -- Page 6
13 that you gave me that might be useful.

14 MR. MIZELL: Very well.

15 CO-HEARING OFFICER DODUC: You're too kind,
16 Dr. Michael.

17 WITNESS PRICHARD: Well, it's the column right
18 next to acreage is the -- is the yield. And just looking
19 what's in front of me right now, 2013 and 2014 are pretty
20 good years to compare because 2014 was -- had higher
21 salinity values than 2013, and that was a drought year.

22 And if you look at the corn grain row and the
23 yield per acre was 5.32 tons in 2013 and 4.67 in 2014.

24 Now, I wouldn't assert that that's entirely due
25 to water quality. There could be a lot of things

1 affecting that. But, you know, that's a two-year
2 comparison where we saw a change in conditions.

3 MR. MIZELL: All right. For the sake of time,
4 I will tender these questions to address harvest --
5 harvested acreage.

6 WITNESS PRICHARD: Okay.

7 MR. MIZELL: We'll have to deal with . . .

8 I'm laying the foundation, John, but I can't
9 verify it.

10 Over the course of the decade, however, we see
11 a fairly flat trend in harvested acreage on this chart;
12 is that correct?

13 WITNESS PRICHARD: For field crops?

14 MR. MIZELL: For total.

15 WITNESS PRICHARD: For total.

16 Yeah. I mean, there's some -- I don't know if
17 I would describe a flat trend. I mean, it's not -- I
18 haven't grafted -- graphed it but there's a significant
19 variation from year to year. I see some years at 695,000
20 acres and some as high as 877.

21 MR. MIZELL: Okay. I see that as well.

22 Would you describe the numbers you see on the
23 totals as representing a drop in production in harvested
24 acreage that would be indicative of a 980 percent change
25 in salinity over that same timeframe?

1 MR. HERRICK: If I may, I would object to that
2 as being misleading and not stating the facts so far.

3 The fact that there's a range of salinities
4 doesn't mean salinity rose 980 EC from one day at the
5 beginning of the decade to the last day of the end of the
6 decade. That's not what happened. We all know that.
7 There are fluctuations.

8 But -- The expert can answer as he can, but the
9 premise of the question is false.

10 CO-HEARING OFFICER DODUC: Mr. Mizell.

11 MR. MIZELL: Well, it is my hypothetical, and
12 we have established that, over the course of the decade,
13 we saw a 980 percent change in EC.

14 And the expert's testimony indicates that a
15 change as little as 1.1 percent would result in
16 significant economic injury. And I'm looking for data
17 that would back up his assertion in observed data rather
18 than an illustrative simple example is what he's given
19 us.

20 CO-HEARING OFFICER DODUC: All right. That's
21 enough.

22 WITNESS PRICHARD: There's a -- I -- I don't
23 believe I made any testimony that . . . that changes in
24 salinity within the range as I -- that we've seen in this
25 recent historical data would change the level of acreage

1 that's cultivated.

2 The testimony said if there could be some
3 change in yield -- that came from Mr. Prichard's
4 observations -- and it also said that -- that it could
5 impact planting choices.

6 MR. MIZELL: It would impact what? I didn't
7 hear that.

8 WITNESS PRICHARD: It could -- It could impact
9 planting choices, more -- more over time as averaging
10 conditions would change, but . . . Yeah.

11 MR. MIZELL: Okay. So if it would impact
12 planting choices, we should see a shift in the planted
13 acreage of high-value crops moving to low-value crops; is
14 that correct?

15 WITNESS PRICHARD: Not necessarily, because,
16 you know, we see a general macro trend in agriculture of
17 crops moving from lower-value crops to higher-value
18 crops.

19 I mean, what's -- what's notable to me in this
20 picture -- And this is of the county. And so what you
21 see in the county is, we see a shift towards these
22 higher-value fruit and nut crops overall in the county,
23 like we've seen overall in the San Joaquin valley.

24 You haven't seen that kind of shift in the --
25 in the Delta, but -- but there's a movement in response

1 to market forces in that direction.

2 And so, you know, when you hold things
3 constant, the difference that we're talking about here
4 could still show up as a positive in the aggregate but
5 it's less than one would expect if it were just tracking
6 the market in each instance.

7 MR. MIZELL: But you would --

8 WITNESS PRICHARD: Does that --

9 MR. MIZELL: -- agree that there's no data in
10 the harvested acreage that would indicate significant
11 movement in any one type of crop moving towards another.

12 WITNESS PRICHARD: The data for San Joaquin
13 County for harvested acreage is similar -- does show some
14 movement towards fruit and nut crops at the county level,
15 consistent with broader trends in California agriculture.

16 MR. MIZELL: So, over the course of time that
17 we've seen significant variation in salinity, we have a
18 movement towards higher-value crops.

19 WITNESS PRICHARD: That's correct.

20 MR. HERRICK: Well, let --

21 WITNESS PRICHARD: The --

22 MR. HERRICK: -- me object because we're -- The
23 question is mixing up the testimony that's been made.
24 We're talking about countywide informational chart and
25 then we start asking questions about what changes are

1 happening in the Delta or what people are doing.

2 So, there's no evidence that salinity changed
3 in Eastern San Joaquin County, but the data we're being
4 presented with to answer questions on deals with the
5 entire county, so conclusions about changes due to
6 salinity changes aren't -- you can't draw them. There's
7 no basis to make a conclusion.

8 CO-HEARING OFFICER DODUC: Noted, Mr. Herrick.

9 It is getting a bit dragging, Mr. Mizell.

10 MR. MIZELL: Right.

11 CO-HEARING OFFICER DODUC: Let's get to
12 whatever point you're trying to make and move on.

13 MR. MIZELL: Okay. I think I've made my point
14 with this chart so I will move on.

15 I believe that you indicated yesterday,
16 Dr. Michael, that you are familiar with Dr. Leinfile --
17 Leinfelder-Miles' report marked as SDWA-140.

18 Is that still correct?

19 WITNESS PRICHARD: Actually, I'm not -- I have
20 not reviewed that report in detail, no.

21 MR. MIZELL: You've not read it but you
22 utilized the numbers from it; correct?

23 WITNESS PRICHARD: I -- I've seen the report
24 and I asked what's the best-available data to
25 Mr. Prichard on -- you know, what's the best most-recent

1 available data on leaching fractions in the Delta, and he
2 provided the data from Dr. Leinfelder-Miles' report.

3 And so I used that for an assumption. If
4 there's better data, it's easily adjusted, you know.

5 MR. MIZELL: Okay. So you did not read the
6 conclusion of her report.

7 WITNESS PRICHARD: No, I didn't. I mean, the
8 data made sense to me in the sense that the econometric
9 model that we estimated that does show sensitivity to
10 salt. If the leaching fractions were 15 or 20 percent
11 throughout the Delta, those results wouldn't have made
12 sense, that there would be some sensitivity.

13 So, to me, I mean, there was sort of broader
14 consistency that, in our econometric model, if we show
15 some sensitivity in crop choices to salinity in the
16 Delta, then, you know, to me, this other finding that
17 there are significant areas of land that would have lower
18 leaching fractions and -- and . . . sensitivity is -- is
19 accurate.

20 Now, whether that's, you know, 50 percent of
21 the property in the Delta, or 30, or 80, I can't say
22 with -- with certainty, but this is an assumption we made
23 based on the data I was given.

24 MR. MIZELL: Okay. So, the 5 percent made
25 sense to you.

1 So would it also make sense to you that her
2 conclusion states that recent South Delta alfalfa yields
3 are similar or exceed the average in California?

4 WITNESS PRICHARD: There's a lot of things that
5 affect crop yield, so . . .

6 I mean, I'm -- I'm not an agronomist so maybe
7 you could ask Mr. Prichard that. I mean, I often hear
8 stories of the exceptional fertility of soils in the
9 Delta.

10 MR. MIZELL: Let's move on to the methodology
11 of crop yield you used on Pages 4 and 5 -- 5 and 6 of
12 your testimony.

13 So we're going to SDWA-134, Page 6.

14 CO-HEARING OFFICER DODUC: Just a reminder,
15 Mr. Mizell, that you only have 15 minutes left of your
16 requested two hours and you still have one more witness I
17 assume you still want to examine.

18 MR. MIZELL: Yes, please. And I -- I only
19 have, looks like, five left questions for Dr. Michael.

20 (Document displayed on screen.)

21 MR. MIZELL: Where can I find in your testimony
22 a methodology for calculating the numbers in the chart on
23 Page 6?

24 WITNESS PRICHARD: Yeah. So . . . the -- the
25 methodology -- I mean, there's a general description

1 above. There's a -- You know, the PowerPoint states
2 the -- the assumptions. But, no, it's not a -- there's
3 not a detailed paper that walks through each calculation.
4 It's pretty simple to -- to replicate it based on the
5 assumptions.

6 MR. MIZELL: Okay. Well, let's -- let's just
7 take one row for the moment, and let's try and do those
8 simple calculations because I -- I read through this and,
9 frankly, I wasn't able to find some of the information
10 that would allow me to replicate your -- your work.

11 So, looking at almonds in that first row, the
12 table on Page 6, what's the base value of the almond crop
13 in your example?

14 WITNESS PRICHARD: So the base value of the
15 almond crop would be the -- what's reported in the
16 Economic Sustainability Plan for San Joaquin County in
17 2009.

18 MR. MIZELL: And that number is?

19 WITNESS PRICHARD: And then that -- That value,
20 basically, if we're looking at, you know, a potential
21 year where we would see base salinities in this range,
22 that total value -- 1/6th of that value is sort of the
23 base in each column.

24 So it would have been, I suppose, pretty clear
25 if there were, you know, three tables that said this is

1 the base, here's the change, and, you know, this summary
2 table just shows the -- shows the change.

3 MR. MIZELL: Right.

4 Do you recall offhand what the base value was?

5 WITNESS PRICHARD: I don't, actually. I'd have
6 to refer to the -- to the Economic Sustainability Plan.

7 MR. MIZELL: Do you have a general citation for
8 where in the Economic Sustainability Plan? Just a
9 section number? I can look it up myself.

10 WITNESS PRICHARD: I don't have it in front of
11 me, but it would be in the -- the agricultural chapter.
12 It may be one of the appendices -- appendices with
13 details, but I think it should be in that agricultural
14 chapter.

15 MR. MIZELL: Okay. And did you use the table
16 on Page 5 of your testimony to determine what the
17 decrease in revenue would have been?

18 WITNESS PRICHARD: This table here
19 (indicating)?

20 MR. MIZELL: So this table here shows the
21 decrease in revenue. If we scroll up to Page 5 --

22 WITNESS PRICHARD: You know --

23 MR. MIZELL: -- there's -- there's another
24 table.

25 (Document displayed on screen.)

1 MR. MIZELL: Is this what -- Is this the factor
2 you used to determine the decrease in revenue?

3 WITNESS PRICHARD: Yeah. And I actually --
4 That's the more important table, in my view.

5 MR. MIZELL: Um-hmm.

6 WITNESS PRICHARD: There's . . . I think that,
7 yeah, that's the -- that's the more important table.

8 I mean, as you pointed out, there's a lot of --
9 In trying to take a table like this and get an idea of
10 what the scale of -- of revenue impacts would be, there's
11 a lot of missing information, and assumptions have to be
12 made to -- to get there.

13 But I think this is the more important table.

14 MR. MIZELL: Okay. So, for almonds, in the
15 table on Page 6, in the column marked 0.4 --

16 WITNESS PRICHARD: Um-hmm. So -- Yeah. So
17 what that would do, the base level of almond revenues
18 that was there should be 1/6th of San Joaquin County
19 Delta area almond revenues would be decreased by
20 4 percent. It's a move from .4 to .5, so it's -- it's a
21 very simple calculation.

22 MR. MIZELL: Okay. So the header -- So going
23 to the chart on Page 6.

24 Mr. Long, if we could go down to Page 6, back
25 to the chart on that page.

1 (Document displayed on screen.)

2 MR. MIZELL: So the header with 0.4, that
3 actually shows the impact of salinity levels at 0.5. Is
4 that what I'm understanding?

5 WITNESS PRICHARD: It -- Yeah. So it shows a
6 .1 increase to base EC ranging from 0.4 to .6.

7 So, yeah, that column shows the change from .4
8 to .5. And so that would represent that \$167,000 would
9 be 4 percent of the assumed base value.

10 MR. MIZELL: Okay. For the corn/alfalfa
11 combination, given that the table on Page 5 has different
12 rates of reduction in yield, how did you make the
13 determination for the combined row?

14 WITNESS PRICHARD: (Examining documents.)

15 Yeah. So those were, I believe, done
16 individually. Gosh. But . . .

17 So the -- it's similar in that there's a . . .
18 We have a total acreage in revenue for each of those
19 crops in San Joaquin County. And so the calculation
20 would be similar, and I aggregated them together in this
21 table.

22 MR. MIZELL: Okay. So --

23 WITNESS PRICHARD: I can't recall why I did
24 that first summary, so that's -- I apologize for that.

25 MR. MIZELL: No apology necessary. I'm just

1 trying to understand the chart.

2 So if we were to break this out so that corn
3 was in the same row as alfalfa, would alfalfa reflect a
4 zero in both the .4 and the .5 column?

5 WITNESS PRICHARD: Yes, it would.

6 MR. MIZELL: So we can assume that the 445838
7 reflected in the .5 column for that row is actually only
8 a loss derived from corn for this combined --

9 WITNESS PRICHARD: It should be, yes.

10 MR. MIZELL: Okay. Thank you.

11 Those are all the questions for Dr. Michael.
12 Thank you for your patience.

13 MR. OCHENDUSKO: Before we move further. For
14 this exhibit just brought up, for clarity of the record,
15 this is SDWA-134-R.

16 MR. MIZELL: Good morning, Mr. Prichard.

17 WITNESS PRICHARD: Good morning.

18 MR. MIZELL: Did you draft what's been marked
19 as SDWA-92?

20 WITNESS PRICHARD: Yes.

21 MR. MIZELL: Okay. And did anyone assist you
22 with that?

23 WITNESS PRICHARD: No.

24 MR. MIZELL: And the purpose of your testimony
25 is to demonstrate that salinity changes, water level

1 changes, residence time changes would result in economic
2 harm to Delta farmers; is that correct?

3 WITNESS PRICHARD: Salinity changes, yes.

4 MR. MIZELL: Just salinity changes.

5 And your testimony relies entirely upon the
6 testimony of Mr. Burke?

7 WITNESS PRICHARD: I relied on Mr. Burke's
8 modeled salinity at the SDN-1 site.

9 MR. MIZELL: Thank you.

10 And your testimony compares the H3 scenario to
11 the No-Action Alternative; is that correct?

12 WITNESS PRICHARD: Yes, it is.

13 MR. MIZELL: And I think we've established you
14 prepared Figure 4 of your testimony, and it was used in
15 Dr. Michael's analysis; is that correct?

16 WITNESS PRICHARD: Yes.

17 MR. MIZELL: And your Figure 4 relies upon what
18 I'll call FAO 29 but that's the Ayers and Westcot study;
19 is that correct?

20 WITNESS PRICHARD: Yes.

21 MR. MIZELL: If we could bring up SDWA-92,
22 please.

23 (Document displayed on screen.)

24 MR. MIZELL: Let's go to Page 9.

25 (Document displayed on screen.)

1 MR. MIZELL: Looking at the formula there.

2 So is this formula describing yield potential
3 in your testimony on Page 9 a generally accepted method
4 for calculating yield reductions in agricultural crops?

5 WITNESS PRICHARD: Yes, it is.

6 MR. MIZELL: And it's found in the Hoffman and
7 Mass 1977 study?

8 WITNESS PRICHARD: Yes. As well as FAO 29.

9 MR. MIZELL: Thank you for the clarification.

10 Further, does the formula and the associated
11 calculation of Slope b use the value E_{Ce}, which is a
12 measurement of average EC for soil salinity?

13 WITNESS PRICHARD: In calculating this, this is
14 the -- this is the soil salinity that would result in
15 yield -- zero yield reduction, or 100 percent yield
16 minus, the soil salinity, which is the EC, at the
17 100 percent field reduction -- I mean, at zero -- zero
18 yield.

19 MR. MIZELL: Okay. So I was simply trying to
20 clarify that the second EC in the -- should have the
21 Sub e next to it.

22 WITNESS PRICHARD: Yes, it should.

23 MR. MIZELL: Okay. Thank you.

24 If we were -- If DWR, hypothetically, were to
25 present numbers that are higher than those presented in

1 your testimony -- the ECe numbers to be higher than those
2 presented in your testimony -- would you -- in your
3 opinion, would that show less of a crop yield reduction?

4 WITNESS PRICHARD: Which -- Which numbers are
5 you referring to?

6 MR. MIZELL: The ECe numbers that would be used
7 in this formula.

8 WITNESS PRICHARD: So the question is, if -- if
9 you were to present different numbers than currently
10 exist in the literature, would it make a difference?

11 MR. MIZELL: Sure.

12 WITNESS PRICHARD: Sure. If you have different
13 numbers, the answer would be different.

14 MR. MIZELL: Okay. If they were higher ECe
15 numbers, would that result in less crop yield reduction?

16 WITNESS PRICHARD: Which EC? The one at zero
17 yield reduction or 100 percent yield reduction?

18 MR. MIZELL: Let's say 100 percent yield
19 reduction.

20 WITNESS PRICHARD: It could cause you to get a
21 different number, yeah. Obviously, any change is going
22 to cause a difference. If you have a hypothetical, one
23 larger or one smaller, that would be a different slope.
24 That's how you calculate the slope. So you'd have a
25 different slope, which is the response in terms of

1 percentage yield reduction as a function of each unit of
2 salinity increase.

3 MR. MIZELL: Right. I recognize that it'll
4 have an effect of some kind. I'm trying to determine
5 what effect it would have, generally speaking.

6 Would a higher ECe for the 100 percent yield
7 reduction result in a smaller crop yield reduction?

8 WITNESS PRICHARD: It could.

9 MR. MIZELL: Okay. Is there an important
10 difference between ECe and ECw where ECw -- I'll use that
11 term to represent the EC of applied water.

12 WITNESS PRICHARD: Can I have that question
13 again?

14 MR. MIZELL: Sure.

15 Is there an important difference between ECe,
16 the average soil salinity, and ECw, the applied water
17 salinity?

18 WITNESS PRICHARD: It's a measurement of the
19 salinity of the different -- It's not a measurement of
20 the same thing. One is the measure of the EC of the
21 water, the other's a measurement of the soil extract.

22 MR. MIZELL: So it is an important distinction
23 to make.

24 WITNESS PRICHARD: It's different.

25 MR. MIZELL: Is it important? I mean, it --

1 Some differences could be very small and result in
2 insignificant changes; others could be larger.

3 Would -- Would the distinction between applied
4 soil salinity and applied water salinity be a -- large?

5 WITNESS PRICHARD: You need to define "applied
6 soil salinity."

7 (Timer rings.)

8 MR. MIZELL: I will endeavor to be quick but
9 we're -- I have several pages more of questions that will
10 get into the methodology of the calculations done by
11 Mr. Prichard.

12 I would anticipate, if I can be effective --

13 CO-HEARING OFFICER DODUC: You must be
14 effective.

15 MR. MIZELL: -- another 30 minutes.

16 CO-HEARING OFFICER DODUC: I'll give you the
17 30, but I am going to push you.

18 MR. MIZELL: Very good. I appreciate that.
19 Thank you.

20 CO-HEARING OFFICER DODUC: Think: Be more like
21 Mr. Herrick.

22 (Laughter.)

23 CO-HEARING OFFICER DODUC: Sharp. Crisp.
24 Concise. To the point.

25 MR. HERRICK: Nasty?

1 CO-HEARING OFFICER DODUC: Nothing wrong with
2 being nasty under the right circumstances.

3 CO-HEARING OFFICER MARCUS: Those are words to
4 live by.

5 MR. MIZELL: All right. If we can scroll down
6 one page to Page 10, please. I'm looking for Line 8.

7 (Document displayed on screen.)

8 MR. MIZELL: All right. You represent here
9 that the ECe values you used for the crops specified in
10 your testimony in Figure 3 are found in Ayers and
11 Westcot?

12 CO-HEARING OFFICER DODUC: So why must we
13 repeat things and ask him to confirm what's in his
14 testimony?

15 MR. MIZELL: He hasn't cited where the ECe
16 numbers come from.

17 CO-HEARING OFFICER DODUC: Then ask -- ask him
18 that, please.

19 MR. MIZELL: Okay.

20 CO-HEARING OFFICER DODUC: I'm trying to nudge
21 you along.

22 MR. MIZELL: That's what I was trying to do.

23 Are the ECe numbers found in Ayers and Westcot?

24 WITNESS PRICHARD: Which EC numbers?

25 MR. MIZELL: The ones that you use in your

1 Figure 3.

2 WITNESS PRICHARD: And this is Figure 3?

3 MR. MIZELL: No. This was the only citation I
4 could find close to Figure 3.

5 WITNESS PRICHARD: That is -- So that is
6 Figure 3.

7 Those are the often-termed Hoffman and Mass
8 salinity coefficients. And they are . . . They are
9 published in Hoffman and Mass 1977, as well as Westcot
10 and Ayers FAO 29.

11 MR. MIZELL: All right. So the answer's "yes."

12 WITNESS PRICHARD: Yes.

13 MR. MIZELL: Okay. Can we please bring up
14 II-15.

15 (Document displayed on screen.)

16 MR. MIZELL: And if we scroll down to the Table
17 of Contents, can you please click on the link for
18 Section 2.4.3.

19 (Document displayed on screen.)

20 MR. MIZELL: All right. And if we scroll down.

21 (Document displayed on screen.)

22 MR. MIZELL: There we go.

23 So this table is Table 4 and this sets forth
24 all of the ECe numbers.

25 Is this the table you used?

1 MR. HERRICK: Could I just interject and just
2 ask that the document itself be identified for the record
3 rather than just by the exhibit number?

4 MR. MIZELL: Certainly.

5 II-15 was submitted by Islands, Inc., and it is
6 the -- it is the FAO 29 report, which is the Ayers and
7 Westcot report which we just identified is what was used
8 by Mr. Prichard.

9 Do you recognize this chart?

10 WITNESS PRICHARD: Yes.

11 MR. MIZELL: Okay. And the last column in this
12 chart that marks "0 percent maximum EC," is that what you
13 utilized for the 100 percent yield reduction?

14 WITNESS PRICHARD: You know, I -- I used the --
15 a table with the Hoffman/Mass coefficients listed on
16 that. This should be the same as that table.

17 MR. MIZELL: Okay. So it should be the same.

18 Would the column at the far right-hand side be
19 the column that would reflect the numbers you used?

20 WITNESS PRICHARD: It should be.

21 MR. MIZELL: Okay. Can you locate the row
22 that's entitled corn, please. I believe it's about
23 one-third of the way down the page.

24 Is there any way to highlight that row just for
25 simplicity?

1 (Corn row highlighted.)

2 MR. MIZELL: Thanks.

3 So what are the ECe and ECw values for corn?

4 WITNESS PRICHARD: The EC threshold value,
5 looks like 1.7.

6 MR. MIZELL: For the 0 percent maximum column,
7 far right-hand side?

8 WITNESS PRICHARD: No. The far left-hand side
9 is 1.7.

10 MR. MIZELL: I'm looking for the 100 percent
11 yield reduction column, and I believe we've established
12 that's the far right-hand side, 0 percent yield column.

13 WITNESS PRICHARD: It's 6.7.

14 MR. MIZELL: So the ECe is 6.7.

15 WITNESS PRICHARD: Yes.

16 MR. MIZELL: It's not the ECw?

17 WITNESS PRICHARD: Looks like the ECw to me,
18 from that graph.

19 MR. MIZELL: And so the ECe would represent a
20 value of 10; is that correct?

21 WITNESS PRICHARD: Yeah, that's right.

22 MR. MIZELL: Okay. I'd like to bring up
23 DWR-578 to try and make this quicker.

24 And we'll hand out a copy of that right now.

25 (Document displayed on screen.)

1 MR. MIZELL: What I've attempted to do here is
2 take your charts and put them next to the table we were
3 just looking at in a manner that allows us to compare
4 them easily.

5 Looking at this exhibit, does it appear that
6 your chart utilizes ECw and not ECe?

7 WITNESS PRICHARD: It looks like it uses the
8 ECw rather than the ECe.

9 MR. MIZELL: And if we'd go to the next page,
10 please.

11 (Document displayed on screen.)

12 MR. MIZELL: Is that the same case with grape
13 and almond?

14 WITNESS PRICHARD: Yes, it looks like it is.

15 MR. MIZELL: And one last page, please.

16 (Document displayed on screen.)

17 MR. MIZELL: And with tomato.

18 WITNESS PRICHARD: Yes.

19 MR. MIZELL: All right. And so is it correct
20 that it may be the?

21 A. That, with the modifications that would be
22 needed to correct t his chart, that the work of
23 Dr. Michael would also need to be revised at this point?

24 WITNESS PRICHARD: Well, I think if -- if
25 the . . . If it would affect that, it certainly would.

1 MR. MIZELL: Okay. Thank you.

2 I'd like to ask you some questions about
3 significance of results from your Figure 1. So I'd like
4 to go to SDWA-92, Page 5.

5 (Document displayed on screen.)

6 MR. MIZELL: So, if we look at a comparison of
7 the data for H3 versus the No-Action Alternative in the
8 0.05 column, and we look at the averages at the bottom
9 there, the numbers are 24.4 and 24.6.

10 Do you see those averages?

11 WITNESS PRICHARD: Yes.

12 MR. MIZELL: Do you believe that a change of
13 0.2 yield is statistically significant?

14 WITNESS PRICHARD: No. As it states in my
15 testimony, they're the same.

16 MR. MIZELL: Okay. And smaller changes, then,
17 would also not be statistically significant; is that
18 correct?

19 WITNESS PRICHARD: It states in my testimony
20 that those values are very similar.

21 MR. MIZELL: If I could just take 30 seconds to
22 see if I can strike any additional questions.

23 Okay. One last question for this portion of
24 your testimony.

25 If we could scroll to Page 7 and Figure 2.

1 (Document displayed on screen.)

2 MR. MIZELL: So this is the chart for almonds;
3 is that correct?

4 If we scroll up a little bit, it probably tells
5 us.

6 (Scrolling up document.)

7 MR. MIZELL: Yeah, okay.

8 Do you believe that a change of 0.8 in yield is
9 statistically significant?

10 WITNESS PRICHARD: 0.8 out of -- out of --
11 Which -- Which figure are you talking about? The -- The
12 average?

13 MR. MIZELL: Well, again, we've got the 0.5
14 column.

15 WITNESS PRICHARD: I'd say those are pretty
16 close.

17 MR. MIZELL: Okay. So, would -- Significant
18 changes would maybe be what's represented by the whole
19 numbers; is that correct?

20 WITNESS PRICHARD: It could be.

21 MR. MIZELL: Okay. Thank you. I think I can
22 move on to the next point.

23 Mr. Prichard, are you familiar with various
24 irrigation practices?

25 WITNESS PRICHARD: Yes.

1 MR. MIZELL: And flood irrigation, furrow
2 irrigation, is it -- is it true that the best efficiency
3 you can get out of that is 85 percent not accounting for
4 salinity management?

5 WITNESS PRICHARD: You'll find in the
6 literature many, many varying efficiencies of -- of
7 different irrigation systems.

8 I would say that 85 percent efficiency for a
9 furrow system is pretty good.

10 MR. MIZELL: "Pretty good." Could you get
11 higher?

12 THE WITNESS PRICHARD: There are instances
13 where people have improved that efficiency higher,
14 utilizing practices such as shorter field runs, larger
15 furrow flow, or border check flow.

16 So there -- there's potential for that.

17 MR. MIZELL: So border check flow would have a
18 higher efficient than 85 percent?

19 WITNESS PRICHARD: It could have been if
20 managed properly.

21 But it's not typical.

22 MR. MIZELL: Border check flow's not typical.

23 WITNESS PRICHARD: Those type efficiencies for
24 a border check system are not typical.

25 MR. MIZELL: Would flood or furrow irrigation

1 have a built-in leaching factor of somewhere in the realm
2 of 10 to 15 percent?

3 WITNESS PRICHARD: There's no built-in leaching
4 fraction.

5 MR. MIZELL: There's no built-in.

6 WITNESS PRICHARD: For -- I mean, from within.

7 If -- When looking at the distribution
8 uniformity in a field, there's always areas that are less
9 irrigated and areas that are more irrigated.

10 And so if you have an efficiency issue and you
11 just say that there's a certain percentage efficiency,
12 that doesn't mean that all of the field still gets an X
13 amount of water. Some areas will get more; some areas
14 will get less. So . . .

15 MR. MIZELL: So, when a farmer uses these types
16 of irrigation methods, if you were performing an
17 experiment, your experimental results could be
18 nonrepresentative depending upon where in the field you
19 chose and whether or not it happened to fall in a wet
20 area or a dry area?

21 WITNESS PRICHARD: The results could be
22 different depending upon the spatial variability of
23 the -- of the water infiltration.

24 MR. MIZELL: Would you say you run that same
25 risk of variability if you were using, say, sprinkler or

1 micro irrigation?

2 WITNESS PRICHARD: There would be less
3 difference across the field, but there still would be --
4 there still will be differences in between the -- the
5 higher and lower application rates even of sprinkler
6 irrigation.

7 MR. MIZELL: Are you aware that
8 Dr. Leinfelder-Miles' study indicates that border check
9 flood irrigation is the primary method of irrigating
10 alfalfa?

11 WITNESS PRICHARD: Yes.

12 MR. MIZELL: And so her results could be highly
13 variable because of the irrigation method utilized by the
14 farms she surveyed; is that correct?

15 WITNESS PRICHARD: Might be variable. That's
16 why she collected samples from different portions of the
17 check and different areas across the check in an attempt
18 to remove that variability.

19 MR. MIZELL: You indicated that you helped, I
20 believe, design and conduct the study that was marked as
21 SDWA-140, which is the Leinfelder-Miles study that I've
22 been referring to; is that correct?

23 WITNESS PRICHARD: Yes. I consulted with her
24 on all of those.

25 MR. MIZELL: Are you aware of what seven

1 locations she used in that study?

2 WITNESS PRICHARD: I was at all seven of those
3 locations.

4 MR. MIZELL: Okay. The study doesn't contain a
5 map. If we were to bring up a map, would you be able to
6 locate those?

7 WITNESS PRICHARD: No.

8 MR. MIZELL: So you're aware of where they took
9 place but you can't locate them on a map.

10 WITNESS PRICHARD: I wasn't driving. I was
11 riding.

12 MR. MIZELL: Is there a list of those field
13 locations anywhere in the submitted evidence?

14 WITNESS PRICHARD: Not that I know of. They
15 were all within the South Delta. I know that.

16 MR. MIZELL: Is there any information submitted
17 in the testimony that will -- would allow others to
18 assess whether or not the study locations constitute a
19 representative sample of the South Delta?

20 WITNESS PRICHARD: Not that I know of.

21 MR. MIZELL: Okay. Thank you.

22 I'll move on to a new topic here.

23 Are you familiar with the Hoffman report of
24 2010?

25 WITNESS PRICHARD: Yes.

1 MR. MIZELL: And are you aware that
2 Linefilder -- sorry -- I have a tough time with that
3 first part of her last name -- Leinfelder-Miles' report
4 relies upon Hoffman 2010?

5 WITNESS PRICHARD: It relies on -- It could
6 be -- I mean, certainly, there's information within the
7 Hoffman report that -- that she may have relied on.

8 MR. MIZELL: Okay. Is it your understanding
9 that Hoffman 2010 assesses salinity impacts to crops in
10 the Delta?

11 WITNESS PRICHARD: Yes.

12 MR. MIZELL: Okay. And isn't it true that
13 Hoffman finds that irrigation efficiencies in the Delta
14 are 78 percent for border irrigation, 70 percent for the
15 furrow irrigation, 75 percent for sprinkler irrigation?

16 WITNESS PRICHARD: I think you'll find that he
17 referenced me on that, and I gave him those info -- that
18 information.

19 MR. MIZELL: Very good.

20 So, do those numbers sound about right?

21 WITNESS PRICHARD: Could you give me those
22 again?

23 MR. MIZELL: Sure.

24 78 percent for border irrigation, 70 percent
25 for furrow irrigation, 75 percent for sprinkler

1 irrigation.

2 WITNESS PRICHARD: It's probably as good a
3 guess as any. There's -- There's so many guesses in the
4 literature that it's all over the map.

5 MR. MIZELL: And when Hoffman 2010 concluded
6 that irrigation efficiencies in the South Delta average
7 75 percent, did he get that number from you as well?

8 WITNESS PRICHARD: He may have averaged the
9 numbers that I gave him for different systems.

10 MR. MIZELL: Are you aware if Hoffman performed
11 sampling of drainage discharge and soil samples on a wide
12 variety of lands in the South Delta?

13 WITNESS PRICHARD: I don't believe he performed
14 those tests. He just utilized other people's data.

15 MR. MIZELL: Okay. So it's your understanding
16 he utilized data from other people's sampling of drainage
17 discharges and soil samples?

18 WITNESS PRICHARD: Yes.

19 MR. MIZELL: Okay. I'd like to look at
20 SDWA-140, and this is -- this is Dr. Leinfelder-Miles'
21 study.

22 (Document displayed on screen.)

23 MR. MIZELL: We've used this study so far to
24 discuss the 5 percent leaching fraction, but that's not
25 what I'm going to here, so I'm trying to -- trying to not

1 repeat myself, be efficient.

2 What I want to look at is whether or not her
3 data seems to corroborate the idea that salt impacts
4 yield.

5 So I'd like to focus on the Table 3.

6 (Document displayed on screen.)

7 MR. MIZELL: There we go. Table 3.

8 And this table seems to present the ECes and
9 the leaching factions (sic) for the seven-site study by
10 Leinfelder-Mills -- Miles.

11 I'd like to focus on Site 1, please.

12 Between the two years, 2013 and 2014, it would
13 appear from this graph that the ECe moved from 11.2 to
14 9.8 and the leaching faction (sic) remained constant at
15 3.

16 Am I reading that chart -- chart correctly?

17 WITNESS PRICHARD: Looks like.

18 MR. MIZELL: Okay. And, relatively speaking,
19 it appears that the ECe values for Site 1 are the second
20 highest ECes of all the sites studied.

21 Is that what you understand the chart to say?

22 WITNESS PRICHARD: Yes.

23 MR. MIZELL: And the leaching factions --
24 fractions are the lowest and the next to lowest; is that
25 correct?

1 WITNESS PRICHARD: Correct.

2 MR. MIZELL: Scrolling down to the top of the
3 next page, it's Table 4.

4 (Document displayed on screen.)

5 MR. MIZELL: And this table represents the crop
6 yield for the same seven study sites. And, again,
7 looking at Site 1.

8 This location yielded 8.2 times per acre and
9 5.6 times per acre; correct?

10 WITNESS PRICHARD: Correct.

11 MR. MIZELL: And, relatively speaking, these
12 yields for Site 1 were the second or third lowest for the
13 site study; is that correct?

14 WITNESS PRICHARD: What was that again?

15 MR. MIZELL: For 2013 and 2014, Site 1 had the
16 second to lowest and third to lowest value for yield.

17 WITNESS PRICHARD: Yes.

18 MR. MIZELL: I'd like to bring up DWR-581,
19 please.

20 (Document displayed on screen.)

21 MR. MIZELL: This is simply the same two
22 tables, but they're placed on the same page so we don't
23 have to do any scrolling if we want to look between the
24 two of them.

25 So, it would appear that if we focus now on

1 Site 5, this site experienced relatively low soil
2 salinity, a relatively high leaching faction (sic), and a
3 relatively high yield.

4 Is that what this chart would indicate in your
5 experience?

6 WITNESS PRICHARD: Yeah, that looks to be true.

7 MR. MIZELL: And that would -- that would
8 follow sort of a standard understanding of soil salinity
9 and yield, that the lower the -- the lower the salinity
10 and the higher the leaching faction (sic), then the
11 higher the yield.

12 WITNESS PRICHARD: Crops respond to a salinity
13 threshold, meaning an increase in salinity to the
14 threshold means it has no impact on yield. And after the
15 threshold, there is a decrease in yield per unit
16 increasing EC.

17 MR. MIZELL: Okay. So if we focus on Site 2
18 now, we have the highest salinity and the lowest leaching
19 faction (sic), and at the same time we have the highest
20 yield.

21 Is that correct?

22 WITNESS PRICHARD: It looks like Site 2 has
23 the -- has the highest yield in '13 and -- no, I'm
24 looking at the wrong one -- highest EC, and Site 2 has
25 the highest yield, yes.

1 MR. MIZELL: So comparing Site 2 and Site 5, it
2 would -- one could draw the conclusion that the soil
3 salinity and the leaching faction (sic) really don't have
4 a huge impact on yield.

5 WITNESS PRICHARD: Well, the other factors that
6 you're not considering is the life of the stand in terms
7 of what position it was in terms of planting. Typically,
8 these fields may stay in for four or five years. And,
9 so, usually a young field, even with higher salinity, may
10 have a higher productive capacity than these older fields
11 that have a -- have lost a significant portion of their
12 stand.

13 So, I really wouldn't put much in these yields
14 because they're not -- between these different sites
15 because they're not the same age, nor do they have the
16 same management.

17 MR. MIZELL: So when you designed this study
18 with Dr. Leinfile -- felder-Miles, you didn't control for
19 the age of the crop?

20 WITNESS PRICHARD: No.

21 MR. MIZELL: And so, if I understand you
22 correctly, the yield numbers in this study are not a
23 lot -- reliable.

24 WITNESS PRICHARD: There's other factors that
25 cause these yield differences rather than salinity.

1 MR. MIZELL: Yet, it would seem that this study
2 was used as support for a conclusion that there is a
3 connection between salinity and yield; is that correct?

4 WITNESS PRICHARD: No, I don't believe so. I
5 believe that this -- this study, the most important
6 portion of this, shows what the achievable leaching
7 fractions is in the Delta.

8 And, as I recall, she didn't have any
9 significant yield differences.

10 So this -- This study was not designed to look
11 at the relationship that you're talking about.

12 MR. MIZELL: It was merely designed to
13 establish the 5 percent that you used in your later
14 calculation to show yield reduction.

15 WITNESS PRICHARD: Her trial was primarily
16 designed to look at what the achievable leaching fraction
17 was in these types -- in this area, and she used alfalfa.

18 However, there's so much differences between
19 these -- between these fields that yield can't be
20 compared.

21 MR. MIZELL: So why would she include an entire
22 section of her report dedicated to yield?

23 WITNESS PRICHARD: You'll have to ask her.

24 MR. MIZELL: So, in the design of the study
25 that you assisted with, was that ever brought up what the

1 purpose of the yield section was?

2 WITNESS PRICHARD: She indicated that she --
3 that she may -- at the time of planning, that she may
4 decide to do -- to take yields but -- So she said she
5 may, but that wasn't -- that was -- The goal of this
6 trial was to look at what the leaching fractions were,
7 not to look at relationship between salinity. It wasn't
8 a salinity tolerance trial at all.

9 MR. MIZELL: Are you aware -- Are you aware
10 of whether or not we will get to cross-examine
11 Miss Leinfelder-Miles for this study and the exhibits
12 submitted by South Delta Water Agency?

13 MR. RUIZ: Objection: Calls for speculation
14 outside of the witness' knowledge.

15 CO-HEARING OFFICER DODUC: Sustained.

16 MR. MIZELL: So if the purpose of the study was
17 not to assess yield, why is the conclusion of the study
18 that alfalfa yields at the sites met or exceeded the
19 average yield of California alfalfa and was not
20 correlated with leaching fraction (sic) but suggested that
21 other factors like pest, or stand quality, or market
22 forces may have been more influential during the 2013,
23 2014 prices.

24 WITNESS PRICHARD: What is your question?

25 MR. MIZELL: Why is that conclusion in your

1 report if the study was not meant to study yield?

2 MR. RUIZ: I'm just going to object again as
3 asked and answered. He's given his testimony on what his
4 opinion of his field -- what the purpose of the thrust of
5 the trial was.

6 And you also asked him about the conclusions
7 before.

8 MR. MIZELL: Actually, I asked Dr. Michael
9 about the conclusion, and he said, "Ask Mr. Prichard."

10 MR. RUIZ: Mr. Prichard testified just recently
11 that what he just -- He just testified as to his
12 understanding of the importance of the thrust of the
13 trial.

14 CO-HEARING OFFICER DODUC: Mr. Mizell, you have
15 run out of time.

16 Is it that critical for you to push this one
17 point which this witness may not even be able to answer?

18 MR. MIZELL: Well, I think it's important that
19 we try to explore this study given Mr. Herrick and
20 Mr. Ruiz have not produced the author of the report, and
21 yet Mr. Prichard, who asserts that he helped design and
22 conduct the report can't answer the questions, it's very
23 important that I try and get what information I am able
24 to out of him, and we won't have an opportunity to
25 cross-examine the actual author of the study.

1 CO-HEARING OFFICER DODUC: Mr. Prichard --

2 MR. HERRICK: If I may.

3 CO-HEARING OFFICER DODUC: Mr. Herrick.

4 MR. HERRICK: Experts can rely on other
5 experts' work, and Miss Michelle Leinfelder-Miles was
6 here for the North Delta people or Land or something.
7 Sorry.

8 She mentioned the study and, you know, if
9 somebody wants to call her back, we can do that if you
10 want and waste everybody's time, but nothing's being
11 hidden here. She was a witness.

12 CO-HEARING OFFICER DODUC: Mr. Prichard, to
13 what extent are you able to answer the detailed questions
14 that Mr. Mizell is asking?

15 WITNESS PRICHARD: I think I've answered that.
16 This trial was primarily designed to look at the two
17 leaching fractions. It's not a salt tolerance study.

18 CO-HEARING OFFICER DODUC: And you have no
19 further insights into whatever other thoughts or
20 consideration was made in the development of the study.

21 WITNESS PRICHARD: That's right.

22 And I just -- I used these leaching fractions
23 to produce the -- to produce these charts.

24 CO-HEARING OFFICER DODUC: All right. End of
25 story.

1 Move on, Mr. Mizell.

2 MR. MIZELL: Okay. Isn't it true that you
3 produced your testimony after listening to the
4 cross-examination of DWR modeling witnesses?

5 WITNESS PRICHARD: I did not listen to --
6 specifically listen to the testimony of the Modelers.

7 MR. MIZELL: If we could bring up SDWA-92,
8 please.

9 CO-HEARING OFFICER DODUC: And how much more
10 time are you needing, Mr. Mizell? Your 30 minutes have
11 run out already.

12 MR. MIZELL: I will make this very quick, and I
13 would say five to 10.

14 CO-HEARING OFFICER DODUC: Let's give you five.

15 (Document displayed on screen.)

16 MR. MIZELL: Page 2, please, Line 16.

17 (Document displayed on screen.)

18 MR. MIZELL: On Line 16, you indicate that you
19 were aware of what the cross-examination of the
20 Petitioners' Modeling Panel concluded.

21 Did you write this sentence?

22 WITNESS PRICHARD: Yes.

23 MR. MIZELL: Okay. So you were aware of what
24 cross-examination was conducted of DWR's modeling
25 witnesses.

1 WITNESS PRICHARD: I heard that the -- that the
2 Modelers had agreed that the EC numbers given in the
3 testimony were for comparative purposes.

4 MR. MIZELL: Right. My question's not about
5 this particular statement but more about the timing of
6 when you wrote your testimony.

7 It appears that you wrote it after --

8 WITNESS PRICHARD: Yes.

9 MR. MIZELL: -- the cross-examination and you
10 were aware of what cross-examination was conducted.

11 WITNESS PRICHARD: Yes.

12 MR. MIZELL: Looking at Lines 19 through 26, is
13 the purpose of these lines to -- to assert that there is
14 a discrepancy in the model as compared to the salinity
15 actually experienced at the location of Old River at
16 Tracy?

17 WITNESS PRICHARD: Yes.

18 MR. MIZELL: And since you prepared this after
19 cross-examination was conducted, are you aware that DWR's
20 modeling witnesses recognized that there may be an error
21 in the inputs to that data based upon questions that
22 Mr. Herrick asked them?

23 WITNESS PRICHARD: No. Basic --

24 MR. HERRICK: Let me object there.

25 Counsel's misrepresenting things that are

1 outside of this hearing. The conversations that have
2 occurred deal with the differences between the model runs
3 dealing with -- with the Project, without the transfer.
4 They don't deal with whether -- the difference between
5 the measured EC and the modeled EC.

6 So it's sort of a trick question trying to get
7 the witness to admit to something that's not correct.

8 CO-HEARING OFFICER DODUC: Mr. Prichard, were
9 you going to admit to something that was not correct?

10 WITNESS PRICHARD: I hope not.

11 (Laughter.)

12 CO-HEARING OFFICER DODUC: I hope not, either.

13 Just answer to the best of your ability so we
14 can wrap this up, please.

15 WITNESS PRICHARD: I relied on the graph in
16 SDWA-27, just as it indicates here, and there was a
17 difference between what the -- the modeled EC numbers
18 were supposed to be and the -- the actual, and just
19 looking at the difference between those.

20 MR. MIZELL: Right. Thank you. That's --
21 That's what I was indicating and was objected to.

22 But the last sentence there that reads, "thus,
23 the modeled numbers were substantially lower," I believe
24 that's what you meant to say; correct?

25 That's --

1 WITNESS PRICHARD: Yes.

2 MR. MIZELL: -- the exact same conclusion you
3 stated.

4 WITNESS PRITCHARD: Okay.

5 MR. MIZELL: Hopefully that's not objectionable
6 that you're --

7 CO-HEARING OFFICER DODUC: Move on, Mr. Mizell.

8 MR. MIZELL: All right. I would like to bring
9 up DWR-583.

10 And this'll be the last question I have on this
11 particular thing, and then I have . . .

12 (Document displayed on screen.)

13 MR. MIZELL: This is the correspondence that
14 occurred between Mr. Herrick and our modeling staff on
15 these graphs prior to the preparation of your testimony.

16 And in it, it rec -- it recognizes that there
17 was an error in the initial graphs that were presented by
18 Mr. Herrick on cross-examination, and that that initial
19 error was corrected and the graphs now no longer show a
20 distinction between the modeled result and the actual
21 result.

22 Did your counsel make you aware of this e-mail
23 exchange?

24 WITNESS PRICHARD: No.

25 MR. MIZELL: Thank you.

1 Lastly, I'd like to bring up DWR-584.

2 (Document displayed on screen.)

3 MR. HERRICK: I'm going to have to object.

4 We'll have to deal with this later.

5 But they're describing a difference between two
6 model runs, not a difference between the measured and the
7 modeled runs.

8 And so DWR corrected the model inputs so the
9 two model runs of the with and without transfer matched
10 each other -- closely matched each other.

11 That is a completely different question than
12 whether or not the model run now somehow reflects
13 measured EC, which it did and does not.

14 CO-HEARING OFFICER DODUC: Thank you,
15 Mr. Herrick. We will take that into consideration in
16 weighing the evidence.

17 So let's go ahead; move off of this point.

18 MR. MIZELL: Lastly -- This is going to be my
19 last question, which I'm sure is a large relief to all of
20 you.

21 What we have here is a PowerPoint presentation
22 submitted by Mr. Herrick to the State Water Board. And I
23 am not using it for anything regarding the Water Quality
24 Control Plan update. I am using it for a conclusion that
25 he makes on one of its pages.

1 So if we can scroll to the next page, please.

2 (Document displayed on screen.)

3 MR. MIZELL: I have modified this slide to have
4 highlighted text in yellow. It was initially in white.

5 Previously, we discussed that
6 Miss Leinfelder-Miles' study was to measure leaching
7 faction (sic) in the amount of water passing the root
8 zone.

9 Does Mr. Herrick's statement indicate that that
10 is possible?

11 CO-HEARING OFFICER DODUC: I was right. It was
12 Mr. Herrick's day.

13 WITNESS PRICHARD: In determining leaching
14 fractions, we don't measure the amount of water passing
15 through the root zone. We estimate that using a model
16 that predicts what the soil salinity would be at each of
17 the -- at each of the layers.

18 So, you know, I'd say that measuring the amount
19 of water passing through the root zone in a field
20 situation is -- It's pretty darned difficult to do, so I
21 don't see anything wrong with that statement.

22 MR. MIZELL: And so the model can't be
23 validated?

24 WITNESS PRICHARD: You might be able to do that
25 a little by summary, where you're measuring the amount of

1 water that passes through and by the root zone.

2 MR. MIZELL: So it can be measured.

3 WITNESS PRICHARD: If you have a lysimeter.

4 MR. MIZELL: If you have a lysimeter.

5 WITNESS PRICHARD: Right.

6 MR. MIZELL: Thank you.

7 (Timer rings.)

8 MR. MIZELL: That's all I have.

9 Thank you very much.

10 CO-HEARING OFFICER DODUC: Let's go ahead and
11 take our morning break.

12 We will resume at 10:45.

13 (Recess taken at 10:28 a.m.)

14 (Proceedings resumed at 10:45 a.m.:)

15 CO-HEARING OFFICER DODUC: (Banging gavel.)

16 If everyone would take your seats, it is 10:45.

17 We will now turn to Miss Morris for her
18 cross-examination. And she has always been succinct and
19 concise and sharp, so I trust she will maintain that.

20 MS. MORRIS: I will endeavor to do so.

21 If I could have Mr. Long -- And I guess, just
22 so you know, I have questions for Mr. Burke and for
23 Mr. Pritchard.

24 I think I said 30 minutes. I don't think it
25 will that long. In my mind, it's about 15 minutes.

1 CO-HEARING OFFICER DODUC: Excellent. I.

2 And just general topic areas?

3 MS. MORRIS: Sure.

4 Mr. Burke, I would like to talk about his
5 Figure 2-2 and his methodology.

6 And then, Mr. Prichard, I just would like to
7 talk about his first analysis which is summarized in
8 Figures 1 and 2.

9 CO-HEARING OFFICER DODUC: All right. Thank
10 you.

11 Please proceed.

12 MS. MORRIS: If Mr. Long could pull up the .pdf
13 I gave him, which is a excerpt of SDWA-78 Errata so that
14 we could have it facing the correct way.

15 CO-HEARING OFFICER DODUC: Thank you.

16 MS. MORRIS: Yeah.

17 (Exhibit displayed on screen.)

18 MS. MORRIS: And it is, for the record, on
19 Page 8 of SDWA-78.

20 CROSS-EXAMINATION BY

21 MS. MORRIS: So, Mr. Burke.

22 WITNESS BURKE: Good morning.

23 MS. MORRIS: Good morning.

24 You testified earlier in this proceeding that
25 this figure was the basis that allowed you to draw the

1 conclusion that -- that existing salinity exceeds the
2 D-1641 requirements for a significant period of time;
3 correct?

4 WITNESS BURKE: For the period that was
5 analyzed by the DSM-2 model developed by DWR, that's
6 correct.

7 MS. MORRIS: But you said "existing
8 conditions"; correct.

9 WITNESS BURKE: The existing conditions over
10 that period --

11 MS. MORRIS: Okay.

12 WITNESS BURKE: -- except I believe it's Water
13 Years '76 through Water Years '91.

14 MS. MORRIS: Perfect.

15 So on this Figure 2-2, the lines -- the solid
16 line that's moving up and down, that's actually measured
17 observed data; correct?

18 WITNESS BURKE: That's correct.

19 MS. MORRIS: And then the blue dashed lines
20 there's one on top at 1,000 EC and then at just below 750
21 EC, those are the D-1641 standards for two different time
22 periods; correct?

23 WITNESS BURKE: That's correct.

24 MS. MORRIS: Okay. And is it fair to say,
25 because you already said that this was from October '75

1 through October '91, that D-1641 wasn't in place during
2 that timeframe?

3 WITNESS BURKE: That's correct. D-1641 wasn't
4 in place during that timeframe. There were other
5 regulatory requirements that were in place, though.

6 MS. MORRIS: Okay. So is it fair to say that
7 the Projects at that timeframe with this actually
8 measured observed data wouldn't have been operating to
9 meet water quality requirements that weren't in place?

10 WITNESS BURKE: No, but the Projects were
11 operated to meet water quality requirements that were in
12 place. And to my understanding, there was a requirement
13 of the analysis to meet a water quality requirement of
14 500 microsiemens per centimeter, which is actually more
15 stringent than D-1641 from Water Years 1980 onwards.

16 MS. MORRIS: Okay. Let me go back, because you
17 didn't actually answer my question.

18 I think we've established that during this time
19 frame D-1641 was not in place, those requirements.

20 WITNESS BURKE: That's correct.

21 MS. MORRIS: Okay. I'm good. Thanks. I'm
22 moving on.

23 Mr. Prichard, is there a reason why the fields
24 in the studies done by Dr. Leinfelder-Miles identified in
25 SW -- SDWA-139 and 140 did not identify the fields?

1 WITNESS PRITCHARD: Not that I -- Excuse me.
2 Not that I know of.

3 MS. MORRIS: Okay. Then I'd like to take a
4 look at your testimony. It's SDWA -- I'm sorry. Let me
5 just double -- Yeah. SDWA-92, Page 5. I'm looking at
6 Figure 1.

7 (Exhibit displayed on screen.)

8 MS. MORRIS: Do you see that?

9 WITNESS PRITCHARD: Yes.

10 MS. MORRIS: Okay. Isn't it true that, in
11 1976, in 1989, and in 1990, that the yield -- crop yield
12 reductions you calculated were higher for the No-Action
13 Alternative than for the H3 alternative?

14 WITNESS PRITCHARD: That's correct.

15 MS. MORRIS: And, then, looking at this figure
16 and moving down to the bottom of this figure, the
17 minimum -- minimum column that you have, the yield loss
18 is actually higher for the No-Action Alternative than the
19 H3; correct?

20 WITNESS PRITCHARD: For the minimum.

21 MS. MORRIS: I'm sorry. Did you say --

22 WITNESS PRITCHARD: For the minimum, yes.

23 MS. MORRIS: For the minimum, yes. Thank you.

24 And you already testified that .8 was not
25 statistically significant; correct?

1 WITNESS PRITCHARD: I did not do statistics on
2 this to say that it's not significant.

3 MS. MORRIS: Well, I was sitting in the back of
4 the room, and I think I heard you say that .8 isn't
5 statistically significant.

6 WITNESS PRITCHARD: I did not do any statistics
7 on this, so, therefore, is it generally significant? You
8 know, I would think that those two -- the 24.4 and the
9 24.6 in terms of the average is -- there's not much
10 difference there.

11 MS. MORRIS: Right.

12 Or maybe if we look at the 10 percent leaching
13 fraction for the average 6.6 versus 6.7. I mean, I could
14 round that and get the same number; right?

15 WITNESS PRITCHARD: You could round that.

16 MS. MORRIS: Okay. And get the same number.

17 WITNESS PRITCHARD: You could keep rounding it.

18 MS. MORRIS: We could go really far out.

19 Is there a statistical signifi -- difference?

20 WITNESS PRITCHARD: I did not do any
21 statistics.

22 MS. MORRIS: I understand that you didn't do
23 it.

24 WITNESS PRITCHARD: I said it was significant.

25 MS. MORRIS: I -- I hear you and I'm listening.

1 I --

2 WITNESS PRICHARD: I said that --

3 MS. MORRIS: I understand you didn't do it.

4 As --

5 WITNESS PRITCHARD: Because there --

6 MS. MORRIS: -- an expert -- As an expert in
7 this field, looking at these types of studies, would you
8 find .8 in your expert opinion to be a statistically
9 significant difference?

10 WITNESS PRITCHARD: I have no answer to that,
11 because I haven't done any statistics on this to check
12 that.

13 Is there much difference? No.

14 MS. MORRIS: Looking at Figure 2, which is on
15 Page 7 of SDWA-92.

16 (Exhibit displayed on screen.)

17 MS. MORRIS: Isn't it true that, in 1979, 1980,
18 1984, 1989 and 1990, that the No-Action Alternative yield
19 reduction is greater than the H3 alternative?

20 WITNESS PRITCHARD: Looks like.

21 MS. MORRIS: I have no further questions.

22 CO-HEARING OFFICER DODUC: Thank you,
23 Miss Morris.

24 According what I had from yesterday, I believe,
25 Miss Meserve, you're next up for cross-examination,

1 followed then by Mr. Jackson and Miss Des Jardins.

2 Does anyone else wish to do cross-examination?

3 MR. JACKSON: I -- I would like to indicate
4 that the questions that I had have been answered by
5 others, so I -- I'll do the best job I can for you: I
6 won't ask any questions.

7 CO-HEARING OFFICER DODUC: Bless you. Next
8 Friday will be Michael Jackson Day. Of course, we're not
9 in a hearing then, so I'm sorry, but . . .

10 MR. JACKSON: Yeah, that's usually how it works
11 with me.

12 CO-HEARING OFFICER DODUC: Miss Meserve.

13 MS. MESERVE: Thank you.

14 Osha Meserve for Local Agencies of the North
15 Delta and other protestants.

16 I just have a couple of questions for Mr. Burke
17 about the water level and about the salinity work that he
18 did. And then I think I have two questions for Jeff
19 Michaels (sic) regarding his conclusions, and . . .

20 I believe that's it.

21 CO-HEARING OFFICER DODUC: All right. Thank
22 you.

23 MS. MESERVE: So, yeah, I don't think I'll need
24 an hour at all.

25 CO-HEARING OFFICER DODUC: I believe you had

1 estimated 15 minutes yesterday.

2 MS. MESERVE: Okay.

3 CROSS-EXAMINATION BY

4 MS. MESERVE: So, Mr. Burke, I wanted to first
5 just touch on the water level analysis that you did, if I
6 could.

7 WITNESS BURKE: (Nodding head.)

8 MS. MESERVE: In -- In looking at the effect of
9 water level reductions from the proposed diversions,
10 would you need to know the individual characteristics of
11 the diversions to determine whether a lowering of water
12 level would interfere with that diversion's operation?

13 WITNESS BURKE: Are you referring to the
14 diversion for an agricultural user --

15 CO-HEARING OFFICER DODUC: Microphone.

16 WITNESS BURKE: Sorry. Are you referring to
17 the diversion from an agricultural municipal user from
18 the river itself?

19 MS. MESERVE: Yes. I'm referring to the
20 diversions. You have looked at diver -- increments of
21 distance away from the proposed diversions and provided
22 numbers about the water level changes. And so, yes,
23 that's what I'm referring to.

24 WITNESS BURKE: Knowing the actual level of the
25 diversion pipe in the wa -- in the river would help you

1 understand whether or not there's going to be -- or the
2 magnitude of the impact. But there will be an impact
3 regardless, whether or not that pipe is exposed to air,
4 completely lower below the water pipe.

5 As the water level is lowered, the ability to
6 pump water from the river becomes harder, you need to
7 provide more energy, you need to pump for longer periods
8 of time in order to achieve the same volume of water
9 necessary to fulfill your need.

10 MS. MESERVE: And would you also want to know
11 in conducting such an analysis whether it was a siphon or
12 a pump that you were dealing with?

13 WITNESS BURKE: Yes. That would help determine
14 the magnitude of the impact that may result.

15 MS. MESERVE: Now, in developing your testimony
16 for today, you've reviewed the Petitioners' application
17 and their -- all -- and the relevant supporting
18 documentation they had?

19 WITNESS BURKE: Yes, I did.

20 MS. MESERVE: Are you aware of any analysis by
21 the Petitioners of individual diversions in the vicinity
22 of the proposed diversions that they are asking this
23 Board to approve?

24 WITNESS BURKE: I haven't seen any indication
25 that they proposed or documented any of the diversions

1 downstream of the diversion points.

2 MS. MESERVE: Without that information, in your
3 opinion, would it be possible to make any conclusion
4 about injury?

5 WITNESS BURKE: No. I don't believe I would be
6 able to make that conclusion.

7 MS. MESERVE: Also, in understanding some of
8 your -- your numbers that you provided in terms of the
9 change in water level, did those go only to the low-level
10 time periods or were you looking at across-the-board all
11 types of years?

12 WITNESS BURKE: We looked at all types of years
13 for the full 16-year period that was analyzed for the
14 WaterFix scenarios by DWR, so it incorporated wet years,
15 dry years, and average years.

16 MS. MESERVE: And are you aware that diverters
17 actually do use water during the winter period for
18 various purposes, not just during what would be called
19 the growing season?

20 WITNESS BURKE: It's my understanding that
21 diverters are irrigating year-round in many locations.

22 MS. MESERVE: So if the water level changes
23 that at least as a comparative basis were indicated in
24 your materials occurred, that would have the ability to
25 interfere with use of those diversions; right?

1 WITNESS BURKE: I'm sorry. Could you repeat
2 the question, please?

3 MS. MESERVE: Given that diversion may occur
4 during any time of the year, not just the growing season,
5 the water level changes that you show in your outputs
6 from DWR's modeling, that could injure water users;
7 correct?

8 WITNESS BURKE: Yes, I believe that could
9 injure, and would have an impact on the ability to
10 divert.

11 MS. MESERVE: Now, with respect to the harmful
12 algal bloom testimony you provided.

13 Yesterday, you indicated that air temperature
14 over time influences water temperature; is that correct?

15 WITNESS BURKE: That's correct.

16 MS. MESERVE: If you were to try to study the
17 likely water temperatures that would occur under this
18 Petition, would there be other things you would need to
19 know about the water body you were studying, and other
20 factors, in order to draw any -- make any predictions?

21 WITNESS BURKE: With regards to temperature?

22 MS. MESERVE: Yes.

23 WITNESS BURKE: You would want to know the
24 residence time that -- that the water is in a specific
25 location, how long it stays within the Delta, and how

1 long it -- how fast it's moving out of the Delta.

2 MS. MESERVE: Would you also want to look at
3 whether there was riparian shading?

4 WITNESS BURKE: Riparian shading would have
5 some impact on the -- the ability for water to heat up
6 with the air temperature, but -- because it's directly
7 shading that section of the river from sunlight, but it
8 would just slightly delay the action, not necessarily
9 eliminate it.

10 MS. MESERVE: Would whether the stream was a
11 gaining stream from colder groundwater be something you
12 might want to look at?

13 WITNESS BURKE: I'm sorry. Could you repeat
14 that, please?

15 MS. MESERVE: If you were trying to assess what
16 the water temperature would be, would you also want to
17 know whether it was a gaining stream from colder
18 groundwater?

19 WITNESS BURKE: We would want to be able to
20 evaluate the amount of groundwater that's entering or
21 leaving the system.

22 MS. MESERVE: Would you want to know what the
23 original temperature of the water was and -- in that --
24 and, just to explain, whether it came from, say, the top
25 of a reservoir or the bottom of a reservoir?

1 WITNESS BURKE: Yes. That would impact -- The
2 starting conditions of the water temperature can affect
3 the duration of time necessary to heat the water up from
4 the air temperature.

5 MS. MESERVE: Would you also want to know the
6 cross-sectional area or the -- sort of the dimensions of
7 the stream or water body?

8 WITNESS BURKE: Not the cross-sectional area so
9 much as the depth of water at any particular location
10 that you're evaluating.

11 MS. MESERVE: So would it be fair to say that
12 there are many other factors besides the air and the time
13 that would go into any kind of evaluation of what the
14 water temperature might be in the Delta in the future
15 under this proposal?

16 WITNESS BURKE: Yes, there's a lot of different
17 factors that would come into play. The surface area of
18 the water, the depth of the channel, the move -- ability
19 of the water to move through the system and out of the
20 Delta. All those factors would need to be evaluated for
21 a full analysis of the system.

22 MS. MESERVE: Thank you.

23 Now, moving on to the salinity part of the
24 testimony.

25 In your analysis, you looked at the assumption

1 in the ESP, the -- I'm sorry -- the Economic
2 Sustainability Plan of a 1.1 average increase in
3 salinity.

4 That's correct?

5 WITNESS BURKE: I'm not sure if I did. Could
6 you please explain that?

7 MS. MESERVE: In your testimony, you used the
8 scenario in the ESP of a 1.1 average increase in salinity
9 to evaluate potential injury; is that correct?

10 WITNESS BURKE: No, I don't believe I did do
11 that.

12 MS. MESERVE: What did you use?

13 WITNESS BURKE: I didn't evaluate the impact
14 from salinity. I just evaluated the change in salinity
15 from each scenario to -- as compared to the No-Action
16 Alternative.

17 MS. MESERVE: Thank you for clarifying that.

18 Are you aware of the . . .

19 Are you aware of the Nader-Tehrani testimony,
20 which is DWR-66, Page 9, which discusses an 18 to
21 19 percent increase in salinity at Emmaton under the --
22 under at least one of the action alternatives?

23 WITNESS BURKE: I read through DWR-66. I don't
24 recall that specific section, but I know that they did
25 discuss some of the increases in salinity as well as

1 water level changes due to the scenarios.

2 MS. MESERVE: I had one more question . . .
3 just for Mr. Prichard, since you're the -- opining on the
4 salinity, I guess, back to this 1.1 percent assumption.

5 Would you be concerned over a long period of
6 time with even what has been characterized as a small
7 increase in salinity as an agronomist?

8 WITNESS PRICHARD: Could you restate that?

9 MS. MESERVE: Certainly.

10 Over the course of the direct and also on some
11 of the -- we've heard that some of these increases in
12 salinity that we've used for comparative purposes could
13 be small, but -- and we talked about soil loading and
14 leaching fractions.

15 Are you concerned over a long period, like,
16 from when the Project, if it would be built, and then
17 operating into the future indefinitely, would that
18 concern you over that longer time period rather than,
19 say, the couple of years that we've been looking at on
20 the charts?

21 WITNESS PRICHARD: Oh. A percentage increase
22 in the salinity may have, if it -- if it results in a
23 retro conductivity in the -- in the soil of less than the
24 threshold, have no impact. However, if it's above that,
25 then it will have an impact.

1 MS. MESERVE: And are you aware of some of the
2 drainage issues in many of the Delta soils in terms of
3 being able to actually achieve leaching in the . . .

4 WITNESS PRICHARD: Yes, I am.

5 MS. MESERVE: So would you consider that to be
6 a major problem with trying to leach out higher salinity
7 in -- under this particular scenario that --

8 WITNESS PRICHARD: Yes.

9 MS. MESERVE: -- you're proposing?

10 WITNESS PRICHARD: Yes.

11 MS. MESERVE: I have sort of the same question
12 for Dr. Michael.

13 We looked a little bit at some of the crop
14 estimates over crop yield, or acreages over time.

15 From an economic standpoint, what kind of
16 timeframe would you be looking at with the concern about
17 reductions in crops and economic outputs over time?

18 WITNESS MICHAEL: I'm going -- I'm not sure
19 what you're looking for the --

20 MS. MESERVE: Let me try that again. I'm
21 sorry.

22 WITNESS MICHAEL: Yeah.

23 MS. MESERVE: We talked a lot about particular
24 years and things like that.

25 But from an economic standpoint, from what you

1 look at, what -- what time span would you be concerned
2 about if there were conditions that made growing crops
3 more difficult?

4 WITNESS MICHAEL: I would be concerned about
5 the entire time span that the Project was in operation.

6 MS. MESERVE: Thank you.

7 I have nothing further.

8 CO-HEARING OFFICER DODUC: Thank you,
9 Miss Meserve.

10 Miss Des Jardins.

11 MS. DES JARDINS: My name is Dierdre
12 Des Jardins with California Water Research.

13 Good afternoon -- Or, actually, good morning.

14 Can we bring up Mr. Michael's PowerPoint,
15 SDWA-135-R, and go to Page 3, please.

16 CO-HEARING OFFICER DODUC: And as Mr. Long's
17 doing that, you had anticipated 20 minutes.

18 And what are your topics?

19 MS. DES JARDINS: Yeah. It may be more like
20 half an hour.

21 So first is some questions about the map and
22 crops, salt sensitive and salt tolerance, and profit
23 crops. And a question about leaching fraction.

24 I had a question about -- some questions about
25 estimates of the model, and then some questions about the

1 salinity intrusion.

2 CO-HEARING OFFICER DODUC: All right. Please
3 begin.

4 MS. DES JARDINS: Okay.

5 CROSS-EXAMINATION BY

6 MS. DES JARDINS: So, Mr. Prichard, this is the
7 map of the current land cover.

8 And I wanted to ask you, of the crop
9 categories, which are the most salt-tolerant crops in
10 these crop categories?

11 WITNESS PRICHARD: It would be the -- the
12 pasture and grain crops.

13 MS. DES JARDINS: Yeah. And where are -- Where
14 are those located?

15 WITNESS PRICHARD: From the map?

16 MS. DES JARDINS: Yeah, on the map. Are they
17 located in --

18 WITNESS PRICHARD: They're where the blue and
19 yellow colors are.

20 MS. DES JARDINS: Are they in the Central Delta
21 or more towards the west? East?

22 WITNESS PRICHARD: From -- From here, looking
23 at that --

24 MS. DES JARDINS: Yeah.

25 WITNESS PRICHARD: -- the Central Delta.

1 MS. DES JARDINS: Yeah.

2 WITNESS PRICHARD: And Southern Delta.

3 MS. DES JARDINS: Yeah.

4 And what are the most salt-sensitive crops on
5 these categories?

6 WITNESS PRICHARD: Probably vineyard, truck and
7 deciduous.

8 MS. DES JARDINS: And where are those located?
9 North? South? East? West?

10 WITNESS PRICHARD: On this map, actually, it
11 looks like the truck crops are spread around the -- more
12 of the fringe in the central part of the Delta.

13 It's kind of hard to tell with the vineyards.
14 They look like more to the outside.

15 But, you know, they're -- these are just large
16 brush strokes. There are -- There are all of these crops
17 in different parts of the Delta with the exception of the
18 central portion of the Delta.

19 MS. DES JARDINS: Okay. And, Mr. Michaels --
20 or Michael. Sorry.

21 What are the highest-profit crops at these
22 categories?

23 WITNESS MICHAEL: The -- The -- Sorry.

24 The highest revenue crops are the ones that are
25 more salt-sensitive, so the tree crops, the vineyards,

1 and the truck crops.

2 MS. DES JARDINS: And what are the lower-profit
3 crops?

4 WITNESS MICHAEL: Pasture land, field and grain
5 crops.

6 MS. DES JARDINS: So, looking at this map, do
7 you -- As an economist, do you see any adaptation to
8 salinity in the cropping pattern?

9 WITNESS MICHAEL: Yeah. So, the . . .

10 There's a potential pattern here is one reason
11 I showed that, but -- and part of the reason for the
12 econometric models, to try to control for other factors
13 that might explain that pattern, and . . .

14 Yeah. So, yeah, I mean, the map suggests a
15 potential relationship between salinity and crop choice,
16 and the econometric model validates it when controlling
17 for other sorts of environmental and market and annual
18 conditions.

19 MS. DES JARDINS: So, if there was further
20 intrusion in -- a salinity intrusion in the Delta, what
21 kind of crops would you expect to see in areas where
22 there was increased salinity?

23 WITNESS MICHAEL: Yeah. So, as salinity
24 increases, you would expect a movement towards those
25 lower-value crops.

1 So, I mean, you see the abundance of pasture
2 land in the West Delta and if more of the Delta had
3 environmental conditions like the West Delta, we'd expect
4 it to look more like the western area on the map.

5 MS. DES JARDINS: And that would -- Would that
6 lower -- Would that lower profits of the land in the
7 Delta if the lower-value crops were more widespread?

8 WITNESS MICHAEL: Yes, it would.

9 MS. DES JARDINS: Would it lower . . . Would
10 it lower employment in the Delta if the pasture grain
11 crops were more widespread?

12 WITNESS MICHAEL: Yes, it would.

13 MS. DES JARDINS: Okay. Thank you.

14 Mr. Prichard, I wanted to ask you about
15 leaching -- There was a question about leaching fraction.

16 And, Mr. Long, can you please bring up DDJ-140.
17 It is on the stick I gave you.

18 Mr. Prichard, is leaching fraction --

19 (Document displayed on screen.)

20 MS. DES JARDINS: -- is -- is this a standard
21 practice in irrigation technology?

22 Is this -- Is this a standard practice in your
23 field to estimate leaching fractions for -- for -- for
24 crops?

25 WITNESS PRICHARD: It's standard practice --

1 It's standard practice for a grower to achieve the
2 leaching fraction based on the supplied water and the
3 crop he's growing, to grow it to maintain an appropriate
4 soil salinity in the profile so as not to cause a yield
5 reduction.

6 MS. DES JARDINS: And I just -- This is just a
7 handout from the National Resource Conservation Service
8 on soil salinity. And it says -- You know, they describe
9 as estimating what salinity corn can tolerate and that if
10 you irrigate consistently with water with an EC of one,
11 you need to apply 30 percent more water than the crop
12 needs.

13 Is this the kind of calculation that you make
14 in your field and -- commonly?

15 WITNESS PRICHARD: Yes. This -- This
16 particular graph shows that, as your average root zone
17 salinity increases versus the water applied, you have to
18 have a different leaching fraction to assure that the
19 soil salinity does not go over the tolerance of the crop.

20 MS. DES JARDINS: So -- But -- So, farmers
21 could use lysimeters to try to estimate flow through
22 the -- actual flow through the root zone, but you don't
23 normally -- do that in normal practice; is that true?

24 WITNESS PRICHARD: No. Use of lysimeter is not
25 a normal practice.

1 MS. DES JARDINS: Is it because it's
2 time-consuming or expensive or . . . just really
3 technical?

4 WITNESS PRICHARD: All three.

5 MS. DES JARDINS: Okay. Thank you.

6 So, next, I'd like to go to SDWA-77 Errata,
7 which is Mr. Burke's PowerPoint. Yeah. And then --

8 (Document displayed on screen.)

9 MS. DES JARDINS: -- Page 23.

10 (Document displayed on screen.)

11 MS. DES JARDINS: So, this is the slide that
12 you were asked about a lot.

13 So, Mr. Burke, you -- you used the No-Action
14 Alternative, and this has been criticized as an
15 apples-to-oranges comparison.

16 Using the model results provided, was there any
17 better way to analyze the potential error?

18 WITNESS BURKE: Given the fact that this
19 particular 16-year period was selected for development of
20 the WaterFix scenarios, we were kind of locked into this
21 particular timescape -- timeframe.

22 And so we -- Probably, it's not the most
23 appropriate comparison to compare this type of analysis
24 to the D-1641 requirements, but it's the timeframe that
25 was selected for analysis.

1 And so we tried to make the best comparison we
2 can to what the model results were showing us and what
3 was actually measured at that particular location.

4 MS. DES JARDINS: Thank you.

5 So, if you had been given something with . . .
6 historical operations and the same DSM-2 model, you
7 would -- could have compared it with -- with this;
8 correct?

9 WITNESS BURKE: It would be more appropriate to
10 make this type of comparison if the timeframe selected
11 for the DWR WaterFix scenarios were covering a period of
12 modern regulatory requirements rather than those that
13 existed historically.

14 MS. DES JARDINS: Thank you.

15 I'd like to DDJ-55, please. On -- It's on my
16 Exhibit List.

17 (Document displayed on screen.)

18 MS. DES JARDINS: And I need to go to Page 20.
19 It's going to be . . . Oh.

20 (Document displayed on screen.)

21 MS. DES JARDINS: That's not -- Sorry. That's
22 not the correct one.

23 However, Mr. Burke -- Yeah. Let -- Let me just
24 go to SDWA-78, Page 11.

25 MR. LONG: You meant the errata; right?

1 MS. DES JARDINS: The errata. Apologies.

2 Errata, Page 11.

3 (Document displayed on screen.)

4 MS. DES JARDINS: So you state there -- Just a
5 minute. Top of the page, please. Document Page 9.

6 MR. BAKER: So it's .pdf 11.

7 MS. DES JARDINS: Yeah. So -- Yeah. It's .pdf
8 Page 11.

9 So, you note there that the model has had no
10 extensive calibration or sensitivity analysis.

11 And do you think this affects the DSM-2 output
12 as well?

13 WITNESS BURKE: DSM-2 has had some calibration
14 and sensitivity analysis conducted on it, but calibration
15 studies that were developed showed that their ability for
16 the DSM-2 model to predict salinity in the south --
17 Southern Delta is not very accurate.

18 MS. DES JARDINS: Yeah. Can we go to DDJ-56,
19 please.

20 Yeah.

21 (Document displayed on screen.)

22 MS. DES JARDINS: So, just scroll down on the
23 first page.

24 (Scrolling down document.)

25 MS. DES JARDINS: Yeah. Highlighted part.

1 So, it states there -- This is an excerpt from
2 the 2003 peer review of the CalSim model.

3 Are you familiar with that peer review,
4 Mr. Burke?

5 WITNESS BURKE: Yes, I've read through that.

6 MS. DES JARDINS: It states there,
7 "Procedures" -- This was comments by the peer reviewers
8 and they stated (reading):

9 "Procedures for model calibration and
10 verification are also needed. Currently many users
11 are not sure of the accuracy of the results."

12 But do you -- Are you -- Does this describe
13 you -- Or do you have an idea of the accuracy of the
14 results of the CalSim modeling?

15 WITNESS BURKE: I've seen very little
16 information produced on any kind of verification or
17 sensitivity analysis of the CalSim II output. And
18 there's been no verification of those sensitivity
19 analysis by an independent review panel.

20 MS. DES JARDINS: Oh. You're referring to the
21 recent modeling?

22 WITNESS BURKE: That's correct.

23 MS. DES JARDINS: Okay. Let me scroll down to
24 Page 31. It's -- It's the third page of here. This is
25 an excerpt from Page 31 of that document.

1 (Scrolling down document.)

2 MS. DES JARDINS: So this is -- Yeah, here we
3 go.

4 (Document displayed on screen.)

5 MS. DES JARDINS: So the Peer Review Panel
6 states -- stated that the 2003 validation of the 2003
7 model provided (reading):

8 ". . . Statistics on long-term average to (sic)
9 deliveries and flows but no statistics on the fit
10 for individual years."

11 And it also states (reading):

12 "In some circumstances (sic), such as the
13 examination of water quality in the Delta, the
14 ability to accurately model monthly flows and
15 deliveries will be important."

16 Do you have similar conclusions about . . .

17 WITNESS BURKE: I haven't actually evaluated
18 the sensitivity analysis of the CalSim II model.

19 MS. DES JARDINS: Okay.

20 WITNESS BURKE: And I'd like to correct my
21 previous statement.

22 What I was referring to when I said there's
23 been no further independent science review panel of the
24 sensitivity or validation of the CalSim II model, that
25 was -- there's been no -- there's been no second

1 independent review panel.

2 The first independent review panel in 2003
3 requested -- or suggested to DWR that certain calibration
4 sensitivity analysis be conducted on the CalSim II.

5 In -- I believe it was in 2006, DWR responded
6 to that independent review panel and came up with their
7 own conclusions and some sensitivity analysis but that
8 was not re-submitted for an independent review panel to
9 evaluate the adequacy or sufficientness (sic) of that
10 sensitivity analysis of CalSim II.

11 MS. DES JARDINS: Yeah. CalSim is an input to
12 DSM-2, and so does that affect your ability to assess the
13 errors of the DSM-2 model?

14 WITNESS BURKE: It doesn't necessarily -- Well,
15 indirectly, it affects the ability --

16 MS. DES JARDINS: Yeah.

17 WITNESS BURKE: -- of the DSM-2 model to
18 predict the actual values that are occurring, because any
19 errors or inaccuracies in the output from CalSim II will
20 be directly driven into DSM-2.

21 MS. DES JARDINS: Okay. Thank you.

22 Next, I wanted to go to DWR-513, Page 5. This
23 is the DSM-2 output by DWR.

24 (Document displayed on screen.)

25 MS. DES JARDINS: Yeah.

1 Yeah. So, Mr. Burke, I believe you previously
2 discussed these exceedance graphs.

3 And, in your professional opinion as an
4 engineer, is this a comparative -- is this exceedance
5 graph a comparative or a predictive use of the DSM-2
6 model?

7 WITNESS BURKE: It's actually a combination of
8 both. It's comparing the predictive ability of each of
9 the different scenarios against each other. So it's
10 comparing and predicting at the same time.

11 MS. DES JARDINS: Do you -- So, if it estimates
12 that, for example, there's a 90 percent probability of
13 meeting the D-1641 at Emmaton, do you have a sense of the
14 error -- the potential error in that 90 percent estimate?

15 WITNESS BURKE: No, I have no idea what that
16 error may be when using the model in a predictive fashion
17 like that.

18 MS. DES JARDINS: Okay. Thank you.

19 The next thing, I'd like to go to SWRCB-23,
20 Page 49.

21 And, Mr. Burke, there was a question about
22 whether the Delta farmers had provided EC for DWR to
23 calibrate.

24 (Document displayed on screen.)

25 MS. DES JARDINS: And I did want to ask your

1 opinion, so Page 49 shows the mandated -- if we could
2 zoom out a little so we can see this -- does show the
3 Board-mandated water quality monitoring stations in the
4 Delta.

5 And so I wanted to ask: Did you think that
6 these -- this network of stations, would this be
7 sufficient EC information to calibrate DSM-2, or were --
8 would more points be needed?

9 WITNESS BURKE: Any calibration process, always
10 the more data you have available, the better your
11 calibration's going to be.

12 The existing distribution of calibration points
13 around the Delta, the adequacy would have to be evaluated
14 in comparison to the rate of change of EC in each of
15 these channels.

16 If you have very little change of EC along a
17 certain channel, you can spread your points out at a
18 larger distance than if you have rapid changes in
19 electrical conductivity at certain locations where you
20 want a denser aggregate network of nodes that you're
21 calibrating to.

22 MS. DES JARDINS: By "rapid change," do you
23 mean rapid change over days? Weeks?

24 WITNESS BURKE: More about spatial changes --

25 MS. DES JARDINS: Spatial changes.

1 WITNESS BURKE: -- of distance along a channel
2 rather than necessarily on a temporal change.

3 MS. DES JARDINS: So if there -- if there were
4 major differences between -- between, for example, D28A
5 and P10, then you might need another station in between
6 there, for example?

7 WITNESS BURKE: It's possible that another
8 station in there would help you improve your ability to
9 predict the values at that location.

10 But there are a lot of factors that come into
11 play. The ability -- Or the rate of change spatially of
12 the different parameters you're trying to calibrate to is
13 only one of those. The ability of each iteration of your
14 model to predict those locations is another.

15 It could be that, in a particular location
16 where you have a rapid change, if your model's able to
17 track those changes adequately, you might not need
18 another calibration point.

19 So, there's a lot of different factors, so
20 looking at a map is not sufficient to be able to
21 determine whether your network is dense enough.

22 MS. DES JARDINS: Do you have -- With your
23 experience in the Delta, do you have any thoughts
24 about -- Did anything suggest at some point that more
25 stations might be needed and, if so, where?

1 WITNESS BURKE: In reviewing some of the data
2 that we've seen of the model predictions and the measured
3 data in the South Delta, we've seen a lot of variability.

4 I would estimate that an increase in the number
5 of calibration stations that are collecting measured data
6 would be helpful to define why the model is not being
7 able to predict adequately at this location.

8 MS. DES JARDINS: Thank you.

9 Okay. And so my next question is about
10 reduction in stage.

11 Can we go to SDWA-77 Errata, your PowerPoint,
12 Page 24 to 26.

13 And I -- This is just --

14 (Document displayed on screen.)

15 MS. DES JARDINS: Yeah. Thank you.

16 So, 24 -- Yeah. These were -- I noticed that
17 there was -- You -- You saw some fairly significant
18 reductions in stage. This was downstream of North Delta
19 Diversions.

20 Can we go to the next page, please.

21 (Document displayed on screen.)

22 MS. DES JARDINS: And 3 miles downstream.

23 And the next page.

24 (Document displayed on screen.)

25 MS. DES JARDINS: 9 miles downstream.

1 Mr. Burke, in -- in your professional judgment,
2 could these kind of stage reductions result in salinity
3 intrusion as well?

4 WITNESS BURKE: Looking at the results from a
5 stage reduction alone isn't sufficient in order to be
6 able to evaluate whether or not that would directly
7 impact the ability -- or salinity intrusion from the --
8 the west.

9 MS. DES JARDINS: Can we -- we look at -- pull
10 up SDWA-79, which looks at sa -- There is -- That's your
11 EC graphs and there is a graph of salinity at Emmaton.

12 (Document displayed on screen.)

13 MS. DES JARDINS: Let's see. Page 11, please.

14 (Document displayed on screen.)

15 MS. DES JARDINS: There we go.

16 You need to bring it up a bit.

17 These blue spikes, I believe, are the B1
18 scenario, which is . . .

19 We've got to wait a minute for it to color in.

20 And the black, I believe, is the No-Action
21 Alternative.

22 So, Mr. Burke, I believe the B1 scenario showed
23 the most extreme stage reduction.

24 Was that correct?

25 WITNESS BURKE: It looks like for this

1 particular location, that is a scenario that gives us the
2 greater change in the stage --

3 MS. DES JARDINS: Yeah.

4 WITNESS BURKE: -- which --

5 MS. DES JARDINS: And so looking -- looking at
6 this graph, this is average EC at Emmaton.

7 Do you also see spikes in salinity at Emmanton
8 (sic) compared to the No-Action Alternative?

9 WITNESS BURKE: Yes, I see spikes on this graph
10 for the --

11 MS. DES JARDINS: Yeah. So, potentially, there
12 is significant -- Is this -- This -- Does this represent
13 salinity intrusion in the Sacramento River? I believe
14 Emmanton's (sic) on the Sacramento River.

15 WITNESS BURKE: This would likely be the result
16 of salinity intrusion.

17 MS. DES JARDINS: Okay. Thank you.

18 The next thing, I'd like to go to the same
19 graph, Page 5.

20 (Document displayed on screen.)

21 MS. DES JARDINS: And -- Oh, no, I'm sorry.
22 SDWA-77 Errata.

23 Sorry. That's a different one. That's the
24 PowerPoint, yeah.

25 (Document displayed on screen.)

1 MS. DES JARDINS: Yeah. Page 5.

2 (Document displayed on screen.)

3 MS. DES JARDINS: And you have a graph here of
4 tidal mixing, and you show Sacramento River inflow.

5 Is the Delta Cross Channel important in
6 providing inflow to the Delta?

7 WITNESS BURKE: It's not important in providing
8 inflow to the Delta, but it is important in
9 redistributing that inflow to different parts of the
10 Delta that wouldn't normally see it.

11 MS. DES JARDINS: Okay. Can we go to my stick,
12 please, and DDJ-137, because, actually, I did --

13 (Document displayed on screen.)

14 MS. DES JARDINS: Yeah. This is a seeded
15 graph. Let's zoom it out a little.

16 So these are two different years, and this
17 shows the tidal flow in the Delta Cross Channel. One
18 is --

19 Excuse me. There's a typo.

20 One is made in November of this year, and then
21 the other is made in November of last year.

22 And there's -- It appears that there's
23 different -- These -- This shows tidal flows.

24 There's different tidal flows in the channel?

25 WITNESS BURKE: I see that there's a change in

1 flow over time that seems to go up and down. It could be
2 that the tidal action result is causing that. I haven't
3 looked closely at these graphs to determine what that
4 response truly is.

5 MS. DES JARDINS: Okay. Thank you.

6 Can we -- So -- But in one, the peak flow is
7 about 10,000 cfs, and the other, the peak flow's about
8 7,000 cfs.

9 Can -- They -- They represent different --
10 different year types. Yeah.

11 WITNESS BURKE: Okay. It looks like -- It
12 looks like the upper graph has lower flows -- peak flows
13 than the lower graph does.

14 MS. DES JARDINS: Yeah. Let's scroll down to
15 the lower graph to see the timeframe.

16 (Scrolling down document.)

17 MS. DES JARDINS: Yeah. A little lower.

18 (Scrolling down document.)

19 MS. DES JARDINS: Yeah. So the lower graph is
20 2015.

21 Can we go to DDJ-38?

22 (Document displayed on screen.)

23 MS. DES JARDINS: So let's back out.

24 (Document displayed on screen.)

25 MS. DES JARDINS: So these are just the net

1 flow tidally averaged, and this was this year.

2 And let's scroll down a little bit further.

3 (Scrolling down document.)

4 MS. DES JARDINS: And then the -- The last
5 year, it looks like the peak was about 3,000 cfs.

6 Would this kind of reduction, if there was -- I
7 just -- These were different flows on the Sacramento
8 River.

9 If you saw reduction in net flow in the Delta
10 Cross Channel, would it make a difference in flow in the
11 Delta?

12 WITNESS BURKE: If you had a net reduction in
13 flow in the Cross Channel, it could affect water quality
14 in locations that typically are fed good water quality
15 through the Cross Channel connection.

16 MS. DES JARDINS: And I just wanted to say:

17 So can you see some of the re -- some of what
18 would happen if flow below the -- flow in the Sacramento
19 River was reduced by looking at drought years where, in
20 comparing the flow -- comparing flow reduction in drought
21 years?

22 WITNESS BURKE: Could you repeat that question?

23 MS. DES JARDINS: Okay. So, if you look at
24 actual flow in the Sacramento River and compare, like,
25 flow in a normal year versus flow in a drought year, as

1 was done by a previous -- could -- could you get an idea
2 of what the reduction in flow in the Delta Cross Channel
3 would be?

4 WITNESS BURKE: Not necessarily --

5 MS. DES JARDINS: Not necessary.

6 WITNESS BURKE: -- because the Cross Channel is
7 operated by the Projects and they can operate it as they
8 see fit in order to adjust water quality through the
9 Delta.

10 And assumptions are made during high Water
11 Years as well as average and low Water Years that may be
12 independent of the actual volume of water --

13 MS. DES JARDINS: Yeah.

14 WITNESS BURKE: -- flow on the Sacramento
15 River.

16 MS. DES JARDINS: Are you aware --

17 (Timer rings.)

18 MS. DES JARDINS: -- of any operating criteria
19 for the Delta Cross Channel in this report?

20 WITNESS BURKE: We didn't evaluate the
21 operating criteria in our analysis of the impacts from
22 the WaterFix scenarios.

23 MS. DES JARDINS: Finally, can I go to DDJ-139.
24 I just have one more question.

25 (Document displayed on screen.)

1 MS. DES JARDINS: And just can we zoom out a
2 little or zoom -- Yeah.

3 So, there was just -- When the engineer was
4 testifying, I -- he stated that there might be some
5 minimum flow in the -- in the tunnels, somewhere around
6 300 cfs, unless they had gates and closed them.

7 And I'm wondering, would that -- could that --
8 potentially that sort of gravity-fed flow, independent of
9 the problems, if there was a gra -- a minimum flow in the
10 Cross Channel, and the tunnels weren't closed off, could
11 that make a salinity intrusion in low-flow years worse?

12 WITNESS BURKE: We would have to evaluate that
13 scenario to be able to conclude whether or not that would
14 affect salinity at a measurable level.

15 MS. DES JARDINS: Yeah.

16 So, this is actually -- This testimony by the
17 engineer is -- Your understanding was that there would be
18 no diversions in preparing your testimony? Was it that
19 there would be no diversions below 5,000 cfs? Is that
20 correct?

21 WITNESS BURKE: My understanding from the
22 regulation schedule that they show in the initial
23 exhibits is that 5,000 is a minimum bypass flow in the
24 Sacramento River.

25 MS. DES JARDINS: Yeah. So if -- So, it's not

1 clear.

2 This testimony by the engineer that there would
3 be some minimum flow in the tunnels unless they were
4 gated off is just an indication of potential operations,
5 and you're assuming that they would be closed off
6 somehow.

7 WITNESS BURKE: We didn't actually make that
8 assumption because we didn't evaluate what the minimum
9 flow through the tunnels -- or the impact of the minimum
10 flows through the tunnels might have on water movement
11 through the system.

12 MS. DES JARDINS: So -- So that information
13 just wasn't available for your analysis? Information
14 about minimum flow through the tunnels when the pumps
15 were turned off was not available at the time of your
16 analysis?

17 WITNESS BURKE: I believe that information
18 actually was available at the time of the analysis.

19 But what we did is, we took the scenarios as
20 developed by the Petitioners, which incorporates those
21 minimum flows going into the tunnels, if they decided to
22 go ahead and do that, as well as the bypass requirements
23 in -- from the Cross Channel Gates, and evaluate those
24 scenarios as a whole, which incorporates all of the
25 assumptions and all of the inflows for any particular

1 scenario to the Delta.

2 So we didn't necessarily dissect each component
3 of that scenario to determine what they were doing or
4 not. But we assumed that that scenario was developed in
5 the way that the Petitioners wanted to operate the
6 system.

7 MS. DES JARDINS: All right. Mr. Burke, these
8 bypass flows are actually to protect fish, and it's been
9 observed before that potentially the Biological Opinions
10 could change.

11 In -- In your opinion, could they be
12 important -- could bypass flows also be important
13 for . . . protecting the Delta from salinity intrusion?

14 WITNESS BURKE: Yes. The bypass flows will
15 have that effect as well, that they will affect salinity
16 enters or leaves the system in a tidal cycle.

17 MS. DES JARDINS: So they could be important
18 for protecting other kinds of uses?

19 WITNESS BURKE: Yes, that's correct.

20 MS. DES JARDINS: Mr. Prichard, I wanted to ask
21 you:

22 Is protecting the Delta from salinity
23 intrusion, would that be important for protecting the
24 kinds of crops that you have analyzed?

25 The -- The agricultural uses.

1 including this slide in your presentation was to try to
2 illustrate that DSM-2 modeling does not accurately
3 reflect measured modeling in the South Delta area; is
4 that correct?

5 WITNESS BURKE: That's correct.

6 MR. HERRICK: And you've -- Since you've been
7 cross-examined on this, you now understand that there's
8 a -- a gap in regulatory application which may make this
9 chart inappropriate for that comparison; is that correct?

10 WITNESS BURKE: That's correct.

11 MR. HERRICK: Is your conclusion about DSM-2's
12 accuracy in the South Delta based solely upon this chart?

13 WITNESS BURKE: No, it's not based on this
14 chart alone.

15 MR. HERRICK: Can you list anything upon which
16 you base your conclusion other than this chart?

17 WITNESS BURKE: Yes. DWR as dual consultants
18 developed several different calibration and validation
19 studies of DSM-2 over the years. And in each of those
20 studies, they've had problematic areas in the South Delta
21 where DSM-2 is just not able to predict salinity
22 consistently and accurately.

23 MR. HERRICK: And is SDWA-27, which is the
24 e-mail discussing the transfer this past summer,
25 including various charts, is that also in support of your

1 conclusion about DSM-2's accuracy?

2 WITNESS BURKE: Yeah. I reviewed the data
3 shown on the chart incorporated within that e-mail, and
4 it shows that the measured data was significantly higher
5 than what the DSM-2 output was predicting for 2016.

6 MR. HERRICK: Could we go back to Page --
7 Slide 19 on this same.

8 (Document displayed on screen.)

9 MR. HERRICK: Mr. Burke, you were asked a
10 number of questions by Mr. Berliner about using the
11 monthly averages from CalSim II into DSM-2 and then
12 taking out shorter timeframes from DSM-2 outputs;
13 correct?

14 WITNESS BURKE: Could you repeat that question,
15 please?

16 MR. HERRICK: Mr. Berliner asked you a number
17 of questions about using the CalSim outputs in DSM-2.

18 WITNESS BURKE: That's correct.

19 MR. HERRICK: And this Slide Number 19 we're
20 looking at, it shows the DWR's bar chart of their monthly
21 average changes in EC over the 16-year period; correct?

22 WITNESS BURKE: I'm not sure it's monthly
23 average changes, but it's the comparison of the mean
24 monthly electrical conductivity salinity between the
25 different scenarios for each month.

1 MR. HERRICK: And so, in any particular month,
2 the -- the California WaterFix scenarios may or may not
3 be equal to, above, or less than the No-Action
4 Alternative; correct?

5 WITNESS BURKE: That's correct.

6 MR. HERRICK: And in those instances where the
7 Cal Fix -- any of the Cal Fix water scenarios are above
8 the No-Action Alternative, that indicates that there's a
9 slight increase in the mean, or average? You tell me.

10 WITNESS BURKE: That would be -- indicate that
11 there's a slight increase in the long-term average EC for
12 that particular model.

13 MR. HERRICK: But that long-term average
14 doesn't tell you what the ex -- what the high and lows
15 are under that scenario; does it?

16 WITNESS BURKE: No. They'll mask those
17 completely.

18 MR. HERRICK: And even if you have a -- a month
19 where it shows a CalFix (sic) water scenario below the
20 No-Action Alternative, that doesn't tell you whether or
21 not there's a particular month in any year where it's
22 higher or lower than the no average --

23 WITNESS BURKE: No.

24 MR. HERRICK: -- No-Action Alternative.

25 WITNESS BURKE: No, it won't give you that

1 information. It could be that nine out of 10 years is
2 low when it's -- or high, but when -- one year when it's
3 low, it's extremely low. That would make the average
4 look like it's -- the average is lower where, in reality,
5 you might have higher ECs on a particular year.

6 MR. HERRICK: Well, the purpose of your use of
7 DSM-2 was to try to delve into those differences so that
8 both the Board and you could find out what those
9 different ranges of changes would be; is that correct?

10 WITNESS BURKE: Yeah. I think it's important
11 to actually look at the actual changes that occur in any
12 particular year to determine whether or not there's a
13 real impact occurring from any change in salinity.

14 The long-term averages, although they might
15 tell you what a trend may be, they're not going to give
16 you the information that would actually affect water
17 users in the Delta.

18 MR. HERRICK: And the use of DSM-2 for
19 comparative purposes doesn't simply -- isn't simply
20 limited to monthly averages; is it?

21 WITNESS BURKE: No. You have to actually take
22 the DSM-2 output and manually make these monthly averages
23 from the detailed output in order to get that.

24 MR. HERRICK: In other words, that's a common
25 practice, then, to use these CalSim II monthly inputs and

1 to get DSM-2 outputs that are different time scale
2 monthly.

3 WITNESS BURKE: I'm sorry. I might have
4 misstated in my answer to your previous question. I
5 thought you were referring to DSM-2. Was that question
6 about CalSim II?

7 MR. HERRICK: Well, let me go back since I
8 was -- I already jumped ahead and I don't know what I
9 said.

10 (Laughter.)

11 MR. HERRICK: But is it a common practice to
12 use the CalSim-II monthly data as input for DSM-2 in
13 order that DSM-2 can give outputs of shorter duration
14 than a month?

15 WITNESS BURKE: That's correct. CalSim II
16 can't provide information on a smaller time scale than
17 monthly.

18 MR. HERRICK: Thank you.

19 Dr. Michael, I just have one of two for you,
20 please.

21 You were presented a number of documents
22 regarding San Joaquin County crop values and yields over
23 different periods.

24 Do you recall that?

25 WITNESS MICHAEL: Yes.

1 MR. HERRICK: And if you were given a
2 county-wide chart of crop yields, does that allow you to
3 make any determination of crop yield changes in South
4 Delta?

5 WITNESS MICHAEL: No.

6 MR. HERRICK: Same question with regard to crop
7 values.

8 WITNESS MICHAEL: No.

9 MR. HERRICK: Mr. Prichard, I have just a
10 couple questions for you.

11 There was a -- You were asked a number of
12 questions about Ms. Leinfelder-Miles' study.

13 Do you recall those questions?

14 WITNESS PRICHARD: Yes.

15 MR. HERRICK: And there were a number of
16 questions dealing with crop yields for alfalfa.

17 Do you recall that?

18 WITNESS PRICHARD: Yes.

19 MR. HERRICK: Does anything in
20 Miss Leinfelder-Miles' study change -- Let me start over.

21 Is it correct that one of the conclusions of
22 her study is that, in certain tested areas, salt is
23 accumulating in the soil rather than being leached out?

24 WITNESS PRICHARD: Yes.

25 MR. HERRICK: And the purpose of the study was

1 to determine leaching fractions to indicate where those
2 problems might occur; correct?

3 WITNESS PRICHARD: That's correct.

4 MR. HERRICK: Does any conclusion or
5 information regarding crop yields have any effect on the
6 conclusions about salt accumulated in soil?

7 WITNESS PRICHARD: It does not.

8 MR. HERRICK: And, Mr. Prichard, to your
9 knowledge, do people sometimes volunteer their property
10 as long as their name is not disclosed?

11 WITNESS PRICHARD: That is correct.

12 MR. HERRICK: Do you know whether or not that
13 was the instance in this study?

14 WITNESS PRICHARD: I don't know what the
15 agreement was between the landowners who volunteered
16 their property for this study and the Principal
17 Investigator, which was Michelle Leinfelder-Miles.

18 MR. HERRICK: Mr. Prichard, you were asked to
19 compare . . . threshold coefficients between documents
20 presented by DWR and what you used; correct? Your
21 graphs?

22 WITNESS PRICHARD: Yes.

23 MR. HERRICK: Whether or not the -- the -- the
24 documents or the numbers used are in agreement, does any
25 of that change the fact -- or change the threshold level

1 at which any particular plant reacts to increased salt?

2 WITNESS PRICHARD: It does not change the
3 threshold.

4 MR. HERRICK: But it does change the -- It
5 might change the slope, then.

6 WITNESS PRICHARD: It changes the slope of the
7 curve after the threshold.

8 MR. HERRICK: And that means in layman's terms
9 that the -- the change in crop yield may be slightly
10 different -- at a different rate but not that there isn't
11 a change.

12 WITNESS PRICHARD: That's correct.

13 MR. HERRICK: You were asked a couple of
14 questions about the Hoffman report.

15 Do you recall that?

16 WITNESS PRICHARD: Yes.

17 MR. HERRICK: And the Hoffman report actually
18 came up with leaching fractions for certain -- from
19 certain data from the South Delta?

20 WITNESS PRICHARD: If you're referring to the
21 drain water data.

22 MR. HERRICK: Yes.

23 WITNESS PRICHARD: Yes.

24 MR. HERRICK: And do you recall that
25 Dr. Hoffman used an assumed applied water EC?

1 WITNESS PRICHARD: Yes.

2 MR. HERRICK: And do you recall that
3 Dr. Hoffman used tidal drain information for drainage
4 water?

5 WITNESS PRICHARD: Yes, I am.

6 MR. HERRICK: And are you familiar with the
7 area where the tidal drain water was -- data was derived?

8 WITNESS PRICHARD: Yes.

9 MR. HERRICK: And do those tidal drain waters
10 intercept only excess supplied water that flows through
11 the root zone?

12 WITNESS PRICHARD: No. They accept many other
13 sources of water, which makes that data unreliable.

14 MR. HERRICK: And, so, would you agree that, by
15 using an assumed applied water and drainage water that
16 doesn't reflect water passing through the root zone, that
17 Dr. Hoffman's calculations are not reliable?

18 WITNESS PRICHARD: I agree with that.

19 MR. HERRICK: I have to ask this last one. I'm
20 sorry.

21 Mr. Prichard, is it possible or impossible to
22 measure -- actually measure the water passing through a
23 40-acre field that passes through the root zone?

24 WITNESS PRICHARD: No, it's not.

25 MR. HERRICK: Does it get even more impossible

1 if there's a 3 -- if the groundwater table's at 3 feet?

2 WITNESS PRICHARD: It becomes more impossible.

3 MR. HERRICK: Thank you. And sorry for wasting
4 everybody's time.

5 CO-HEARING OFFICER DODUC: Since it's your day,
6 I will allow you that part -- that last part.

7 MR. HERRICK: Thank you.

8 CO-HEARING OFFICER DODUC: Recross, DWR.

9 Anyone else wishing to conduct recross?

10 All right. You're it, Mr. Mizell. All that is
11 stepping between us and lunch.

12 MR. MIZELL: I will be very, very brief.

13 RE-CROSS-EXAMINATION BY

14 MR. MIZELL: Mr. Burke, in response to a
15 question whether or not the e-mail exchange we discussed
16 today altered your view as to the accuracy of DSM-2, you
17 responded that the e-mail still showed discrepancies
18 between the modeled data and the actual data; is that
19 correct?

20 WITNESS BURKE: That's correct.

21 MR. HERRICK: In your review of that e-mail,
22 did you al -- did it also inform you that the reason for
23 that discrepancy is a source of locally generated high
24 salinity water from Sugar Cut and Paradise Cut within the
25 South Delta Water Agency?

1 WITNESS BURKE: I stated that, but I'm not sure
2 that's necessarily verified as being the cause.

3 MR. MIZELL: Thank you. That's all.

4 CO-HEARING OFFICER DODUC: Mr. Berliner, did
5 you have additional questions?

6 MR. BERLINER: I'm just going through just to
7 see --

8 CO-HEARING OFFICER DODUC: Okay.

9 MR. BERLINER: -- if I have any questions.
10 I have just a couple.

11 RE CROSS-EXAMINATION BY

12 MR. BERLINER: Dr. Michael, you were asked
13 about the San Joaquin crop values and whether you looked
14 at San Joaquin County within the Delta or San Joaquin
15 County as a whole.

16 It's my understanding that you looked at
17 San Joaquin County as a whole in your report; isn't that
18 correct?

19 WITNESS MICHAEL: No, that's not correct. It
20 looks at San Joaquin County -- the portion of the Delta
21 that is located within San Joaquin County.

22 MR. BERLINER: Does -- Aren't part of the
23 figures that you looked at inclusive of all of
24 San Joaquin County?

25 WITNESS MICHAEL: I do not believe that's the

1 case, no.

2 I was presented with figures for the whole
3 county.

4 MR. BERLINER: No. I'm talking about in
5 your -- in your testimony.

6 WITNESS MICHAEL: There was a point where I
7 made a reference to the cropping patterns in all
8 San Joaquin County that would -- that are different --
9 that are different than you see in the Delta, that you
10 see higher concentrations or higher levels of -- You
11 know, there's more wine grapes and more almonds and nuts
12 in non-Delta parts of San Joaquin County. I think that's
13 the only reference I made to the county as a whole.

14 MR. BERLINER: Okay. Thank you.

15 I don't have anything else. Thanks.

16 CO-HEARING OFFICER DODUC: All right. Thank
17 you, gentlemen.

18 Before we take our lunch break, though, I would
19 like to check in just for timing purposes:

20 Your Panel 2, you have requested 30 minutes for
21 direct.

22 How much time is expected or is being requested
23 by the Department for your concise, direct, succinct
24 cross-examination?

25 MR. MIZELL: And Panel 2 would be Dante

1 Nomellini?

2 CO-HEARING OFFICER DODUC: No. Panel 2 is --

3 MR. MIZELL: The agricultural --

4 CO-HEARING OFFICER DODUC: Yes.

5 MR. HERRICK: We previously changed that to --

6 CO-HEARING OFFICER DODUC: Oh, you have.

7 MR. HERRICK: -- make Dante next.

8 CO-HEARING OFFICER DODUC: Okay.

9 MR. HERRICK: Sorry.

10 CO-HEARING OFFICER DODUC: And then if

11 Mr. Nomellini is up first, although I always enjoy

12 listening to Mr. Nomellini, given we struck a lot of his

13 testimony, 60 minutes seems to be excessive.

14 MR. HERRICK: We -- We -- Especially during

15 lunch now, we will endeavor to make him short and as best

16 as possible. I don't know what estimate to give. Maybe

17 Mr. Ruiz?

18 MR. RUIZ: Well, there's still -- there's still

19 quite a bit there. And, originally, the 60 was going to

20 be a tight squeeze before a lot of it was struck, so we

21 will try to --

22 CO-HEARING OFFICER DODUC: Try to stay within

23 20, please.

24 MR. RUIZ: Try to stay within 20?

25 CO-HEARING OFFICER DODUC: Yes.

1 MR. RUIZ: We will do -- That will be
2 difficult, but we will do our best.

3 CO-HEARING OFFICER DODUC: I have complete
4 faith in Mr. Nomellini.

5 Cross-examination estimate?

6 MR. MIZELL: For Mr. Nomellini, we do not
7 anticipate questions at this time. However, it will
8 truly depend upon what he says in his oral testimony.

9 CO-HEARING OFFICER DODUC: Okay. Anyone else
10 anticipating cross for Mr. Nomellini, come up and give me
11 a time estimate.

12 I'm trying to decide how much time to give you
13 all for lunch, because I would like to finish all three
14 panels today.

15 MR. JACKSON: My estimate would be my standard
16 20 minutes, even though I haven't heard the testimony,
17 nor have I heard other cross, so I will try to do it
18 within 20.

19 CO-HEARING OFFICER DODUC: All right.

20 MS. AKROYD: 15 to 20 minutes.

21 CO-HEARING OFFICER DODUC: Miss Des Jardins?

22 MS. DES JARDINS: Oh, I would estimate 20 to 25
23 minutes. There's some core issues in Mr. Nomellini's
24 testimony.

25 Thank you.

1 CO-HEARING OFFICER DODUC: Okay. So let's sort
2 of estimate 90 minutes for Mr. Nomellini in all.

3 How about your third panel? Is that still --
4 We're still at 30 minutes for direct?

5 MR. RUIZ: And that's overly optimistic. It
6 could be much less.

7 CO-HEARING OFFICER DODUC: Okay. Cross?

8 MR. MIZELL: And for Panel 3, we would not
9 anticipate cross-examination but it, again, depends upon
10 if they stay within the bounds of their written
11 testimony.

12 CO-HEARING OFFICER DODUC: Okay. Any other
13 cross for --

14 Miss Akroyd?

15 MS. AKROYD: Similar to my prior estimate.

16 CO-HEARING OFFICER DODUC: Okay. So I guess I
17 could allow you guys to have over an one-hour lunch.

18 Is that good with you, Mr. Herrick?

19 That'll give you time to work with
20 Mr. Nomellini to streamline his direct.

21 MR. HERRICK: I will. Thank you.

22 CO-HEARING OFFICER DODUC: All right. Thank
23 you. We will reconvene at 1 o'clock.

24 (Luncheon recess was taken at 11:49 a.m.)

25

1 Friday, November 18, 2016 1:00 p.m.

2 PROCEEDINGS

3 ---000---

4 CO-HEARING OFFICER DODUC: (Banging gavel).

5 Good afternoon. We are back in session.

6 Mr. Ruiz, Mr. Herrick, please present your next
7 witness.

8 MR. RUIZ: Okay. Thank you. Good afternoon.

9 Our next witness is Mr. Dante Nomellini.

10 Mr. Nomellini --

11 WITNESS NOME LLINI: Am I --

12 MR. RUIZ: -- can you please state --

13 WITNESS NOME LLINI: -- supposed --

14 CO-HEARING OFFICER DODUC: Actually --

15 WITNESS NOME LLINI: -- to be sworn?

16 CO-HEARING OFFICER DODUC: I'm sorry. Do you
17 have -- I didn't know if you have opening statement
18 or . . .

19 MR. RUIZ: No, we don't have an opening
20 statement for -- for Mr. Nomellini in the interest of
21 time --

22 CO-HEARING OFFICER DODUC: Okay.

23 MR. RUIZ: -- and try to get going.

24 CO-HEARING OFFICER DODUC: All right. Then
25 would you stand and raise your right hand.

1 DANTE JOHN NOME LLINI,
2 called as witnesses for the Central Delta Water Agency,
3 South Delta Water Agency (Delta Agencies), Lafayette
4 Ranch, Heritage Lands Inc., Mark Bachetti Farms and Rudy
5 Mussi Investments L.P., having been first duly sworn, was
6 examined and testified as follows:

7 CO-HEARING OFFICER DODUC: Thank you.

8 MR. RUIZ: Mr. Nomellini, can you please state
9 and spell your name for the record.

10 WITNESS NOME LLINI: Dante John Nomellini.
11 First name D-A-N-T-E, middle name John J-O-H-N, last name
12 Nomellini N-O-M-E-L-L-I-N-I.

13 MR. RUIZ: Mr. Nomellini, you've been requested
14 to provide testimony by the CDWA and SDWA parties in this
15 matter; correct?

16 WITNESS NOME LLINI: Correct.

17 MR. RUIZ: And is SDWA-150 a true and correct
18 statement of your qualifications?

19 WITNESS NOME LLINI: Yes, it is.

20 MR. RUIZ: Is SDWA-151-FR a true and correct
21 statement of your written summary?

22 WITNESS NOME LLINI: Of my written testimony?

23 MR. RUIZ: Of your written --

24 WITNESS NOME LLINI: Yes.

25 MR. RUIZ: -- testimony, yes.

1 And did you also prepare a PowerPoint
2 presentation in this matter?

3 WITNESS NOMELLINI: Yes.

4 MR. RUIZ: Is that identified as SDWA-152-R?

5 WITNESS NOMELLINI: Correct.

6 MR. RUIZ: And it's my understanding you're
7 going to work from your written testimony and, as
8 appropriate, as time allows, refer to your PowerPoint; is
9 that correct?

10 WITNESS NOMELLINI: That's correct.

11 MR. RUIZ: Why don't you please begin, then.

12 WITNESS NOMELLINI: All right. First of all,
13 for anybody who wants to make sure I'm following my
14 testimony, I'll start on Page 13.

15 I think it's important to recognize that the
16 protection of legal users of water in the Delta requires
17 not only the recognition of the water rights but the
18 statutory priorities afforded Delta water users. And
19 I'll get into that briefly.

20 The other thing is, I think, in terms of
21 processing the project request in this regard, is that
22 there's been no demonstration that they are capable of
23 meeting the requirements both of the Water Quality
24 Control Plan as well as honoring the various statutory
25 requirements.

1 And I've got a couple citations in my written
2 authorities here. In my statement, I'll just mention a
3 couple to begin with.

4 In 2009, the Projects in February indicated
5 that they were afraid they would not have sufficient cold
6 water held in storage to meet the cold water
7 requirements.

8 As it turned out -- and all of this was before
9 the Board -- they were exporting the water that would
10 have been necessary to meet that February average outflow
11 requirement. But, more importantly, subsequent to that,
12 they continued to export large quantities of water. The
13 same thing happened in 2013, and this is in my written.

14 The cold water was a requirement that they
15 couldn't meet, so they asked the Board -- asked your
16 staff, Mr. Howard, to relieve them of the responsibility
17 of meeting what was then a dry-year criteria at Jersey
18 Point, and they wanted to treat the year, which it did
19 not qualify as, as a drought year.

20 And I put that in writing to your Board. I
21 asked that you go in there and look at it, and then
22 really nothing was done.

23 But two things occurred there that I think are
24 important: One is that the fishery interests, Department
25 of Fish & Game and U.S. Fish and Wildlife Service and

1 National Marine Fisheries Service, all joined in the
2 request by the Projects to you to relieve them of this
3 burden.

4 There was no mention of reducing exports which
5 were going on at the same time. And that to me indicates
6 a lack of independence because the logical thing would
7 have been to say, well, reduce exports at the same time
8 so we can save the water rather than meet a lower
9 threshold at Jersey Point. So that disturbs me.

10 And what -- what happened there, again, was
11 that, after that point in time, they substantially
12 exported water. And there's an exhibit, and maybe it
13 would be helpful just to refer to it here.

14 At this time, maybe we can put my PowerPoint
15 up.

16 (Document displayed on screen.)

17 WITNESS NOMESELLINI: And go to -- I don't think
18 it's that chart. They're not numbered in terms of pages.

19 (Scrolling through document.)

20 WITNESS NOMESELLINI: No. Keep going.

21 MR. RUIZ: They're numbered.

22 (Scrolling through document.)

23 WITNESS NOMESELLINI: All right. That one.

24 If you look at this chart, this just shows the
25 exports by the State Water Project. But if you look at

1 2009, you can see, even though they knew they had a
2 difficulty with cold water management, they exported a
3 significant quantity of water.

4 And if you look at 2013, the same thing again.

5 So what's been happening, as I see it, is that
6 the Projects are operating only against one more year.
7 They're not operating so they can get through a series of
8 dry years.

9 And if you look at their testimony, Mr. Leahigh
10 clearly says to you that, yeah, he claims it was an
11 unusual, unexpected event, the dry years that we've had
12 now. And I'll give you an exhibit that will show this is
13 not totally unexpected.

14 But he's going to need relief from you of the
15 standards in order to comply. And he put it right in his
16 testimony just very squarely.

17 So I think we need to keep these people to
18 the -- keep their feet to the fire to demonstrate what
19 water they have. We've been asking for years that the
20 yield of the project be set forth clearly with regard to
21 not only their protection of senior rights but also their
22 affirmative obligations.

23 The State has an affirmative obligation of
24 preserving fish and wildlife by the Davis-Dolwig Act as
25 of 1961.

1 The Federal government has the CVPIA with the
2 fish doubling. It's a restoration thing, but it includes
3 striped bass as well. That hasn't been changed yet, I
4 don't think.

5 But they have those obligations. Their
6 obligations should be fixed. We should know what they
7 are.

8 Now, their Water Right Permits have expired
9 with regard to new construction. This water tunnel thing
10 is a very substantially different project than was
11 conceived when they went ahead and went through getting
12 their permits.

13 Now, we've protested that extension because
14 they haven't been diligent in performing their task of
15 developing the water supply necessary to meet their
16 needs.

17 Now, let's look at my slides briefly again
18 here. And I've put in here -- and this is also in my
19 testimony -- the Bulletin 160 -- I think it's Bulletin
20 76, the 1960 version.

21 (Document displayed on screen.)

22 WITNESS NOMELLINI: And I said it to you people
23 before in other proceedings, but it's an evidentiary item
24 in this one.

25 It clearly indicates what the plan was, and the

1 plan was to develop 5 million acre-feet of supplewat --
2 supplemental water per year from the north coast by the
3 year 2000.

4 Now, that hasn't been done. They started to do
5 it with the Dos Rios Project and, under Governor Reagan,
6 they put it back for re-study. None of those Projects
7 were ever constructed.

8 So the Projects they're operating, without
9 this, planned on 5 million acre-feet. And that needs to
10 be addressed in terms of how this Project -- these
11 Projects are going to meet the standards and meet the
12 legal requirements, which I think are clearly stated in
13 the law.

14 Now, the standard that I think is absolutely
15 clear is set forth in the Racanelli decision, which I
16 think I have the slide in here.

17 We were all on the case, State Board, State
18 Contractors, Federal Contractors, Delta, whoever else,
19 North -- North Sacramento contract. We were all in
20 there. And I think this is the law not only of the case
21 but it is Appellate Court decision, and it's this slide.

22 (Document displayed on screen.)

23 WITNESS NOMELLINI: You can go forward a little
24 bit more.

25 (Scrolling down document.)

1 WITNESS NOME LLINI: All right. Right here.

2 This is right out of the case. It's on
3 Page 139. And the last sentence, I think, is important.
4 This interprets the Delta Protection Act, which is 12201
5 through 12205. It says (reading):

6 "For example, no water will be diverted which
7 will be needed for the full development of all of
8 the irrigable lands within the watershed, nor would
9 there be water needed for municipal and industrial
10 purposes or future maintenance of fish and
11 wildlife . . ."

12 Now, this quote is -- is the Bureau's quote as
13 to 11460. This isn't the one I wanted to come up.

14 Let's get another one here.

15 (Scrolling down document.)

16 WITNESS NOME LLINI: Let's go a little bit
17 farther.

18 (Scrolling down document.)

19 WITNESS NOME LLINI: Okay. There is. This is
20 the case.

21 It says, "The act" -- Speaking of 12202, '203
22 and '204, basically the Delta Protection Act.

23 (Reading):

24 "The act prohibits project exports from the
25 Delta of water necessary to provide water to which

1 the Delta users are 'entitled' " --

2 This is water rights. This is what we've been
3 picked on all the time over.

4 -- "and water which is needed for salinity
5 control" --

6 Which is set through your Water Quality Control
7 Plan.

8 -- "and an adequate supply for Delta users."

9 The adequate supply for Delta users are for
10 those people that don't have water rights sufficient to
11 meet their needs. And how do we get that? We've tried
12 to get it through contracts and not been successful.

13 Now, do the Projects have to give it to us?
14 No. But they can't divert unless we have an adequate
15 supply.

16 So that's where the rub's going to come in here
17 pretty quickly.

18 The titles themselves, also, in my opinion,
19 violate 12205 of the Water Code, which is in my testimony
20 at . . . Page 19. And it says (reading):

21 "It is the policy of the State that the
22 operation and management of releases from storage
23 into the Sacramento-San Joaquin Delta of water for
24 use outside the area in which such water originates
25 shall be integrated to the maximum extent possible

1 in order to permit the fulfillment of the objectives
2 of this part."

3 "Objectives" are salinity control, adequate
4 supply for the Delta.

5 So when you take this -- you build these
6 tunnels with no outlets, and you take and you put stored
7 water in them for export, that violates 12205.

8 And you have to remember that the plan here was
9 never going to have an isolated facility. 90 percent of
10 the Delta was going to be treated in the common pool.

11 In other words, they were going to -- there
12 were various alternatives, but they kind of put barriers
13 in channels, but the interior of the Delta shared the
14 same supply with exporters.

15 And that was kind of a safety valve that those
16 before us tried to put in place to make sure that both
17 the exporters and the locals were interested in
18 maintaining water quality.

19 It wasn't perfect, but it was a mechanism to
20 protect us in that regard. The tunnels do not.

21 The other thing that happens here -- And let's
22 go back to the first part of my -- my slides.

23 It's the bar charts.

24 We really don't know what the project
25 operation's going to be. And, of course, we kind of

1 moaned and groaned about the process, which you don't
2 like to hear. Dana doesn't like to hear my -- my pitch
3 on this.

4 But we're guessing at what the -- what the
5 project operations are going to be, and I guess we're
6 going to come back later when we find out, and we're
7 going to go through this again.

8 But if we take their exhibits from the
9 environmental documents and look at them, they're
10 planning on exporting water from the Delta both through
11 the natural channels as well as through the tunnels.

12 So the natural channel aspect of this project
13 has to be dealt with, and that's Delta levees. And
14 there's nothing in their overall proposal addressing how
15 they're going to continue to run water through the Delta
16 while at the same time have the option of going through
17 the tunnels.

18 So we have an adverse impact to legal users of
19 water when they take water through the tunnels during the
20 dry periods. And this Figure 4.3.1.17 is for the
21 critical year average.

22 And so when they take that water and put it in
23 the tunnels, we lose the dilution that comes from having
24 that water in the system. And this is in a critically
25 dry year when we have real problems.

1 So what could happen to us here is, we end up
2 microcystis in the water, which our irrigators then take
3 and apply to our fields. Those toxins could affect our
4 ability to actually sell crops because there's evidence
5 to indicate that some crops can pick up the water with
6 the toxin in them. So we could be precluded from
7 diverting water because of this degradation.

8 So we think that is an adverse impact that
9 comes from this that needs to be analyzed, and we don't
10 want that impact. And what are you going to do with the
11 operation of this project to stop them from doing that?

12 The next point is that, part of the pitch for
13 building these tunnels is because they anticipate a 20
14 simultaneous levee failure in the Delta due to
15 earthquake.

16 And I have -- It's a nice colorful picture,
17 Lester Snow took around in a video in his hip pocket.
18 But that presents the problem of: Are we going to say
19 that the Projects do not have to provide salinity control
20 if there's an earthquake that causes a collapse in the
21 Delta? Is it 20 levee failures? What happens with one
22 levee failure?

23 Are the conditions you're going to impose on
24 this tunnel to say, okay, you can only use the tunnel
25 when there's 20 simultaneous earthquake failures to the

1 levees in the Delta? Which will never happen.

2 But the problem is that the tunnels and the
3 plan here will adversely impact our legal users of water
4 because it's going to deny us salinity control. Because
5 you're not going to give us salinity control if you let
6 them take that fresh water and put it in the tunnels and
7 export it. It will not be there to flush the Delta.

8 And, of course, where do you draw the line? A
9 Jones Tract levee break, you know, in June? 10 levees?
10 20 levees? What have you.

11 And the last thing I want to mention is that
12 most of my slides were stricken, and my testimony was
13 stricken as it relates to fish and wildlife.

14 Well, let me tell you why I had reference to
15 fish in there.

16 To the extent that this project has to mitigate
17 damages for fish, they're intending to go ahead and put a
18 tidal habitat and other habitat features in the Delta.

19 Now, that mitigation, when they have tidal
20 habitat, we end up with increased methyl mercury, and, of
21 course, we think we're going to have microcystis in
22 addition.

23 We take that water, apply it to our land and
24 then discharge it, and we are liable to be pulled up --
25 we hear Michael George talking about the four legs on the

1 stool, you know, that's going to come down to measuring
2 the discharges or the quality or whatever.

3 So that's going to adversely impact us in that
4 regard. I think it's very relevant to the impact on the
5 legal users to keep the mitigation connected.

6 Now, they've -- they've separated the two.
7 They've got an ecosystem restore that isn't part of this
8 WaterFix thing. And there's a mesh there.

9 And you guys -- I don't know what you're going
10 to do, and Dana said, well, you know, criticism of the
11 environmental documents is not relevant.

12 But, anyway, we think it's very relevant, but
13 it also is directly related to the impact of the tunnels
14 on legal users of water, our users of water.

15 So those are the points I wanted to make.

16 In terms of sea-level rise, if you're going to
17 buy into this earthquake thing or whatever, I've put
18 evidence in here where the Corps of Engineers analyzed
19 the earthquakes or whatever and said, you know, how can
20 you extrapolate out to seven figures a year? They ended
21 up with 10 total. We're behind by about 120 now.

22 But the earthquake, we've never been able, at
23 least in all of my years -- and I've been active in flood
24 control, probably more so than water, but maybe equally
25 now -- and I've never seen anything in the western part

1 of the Delta, or anything in the Delta, that we can
2 attribute to earthquake.

3 We tried to find out because it would have
4 helped us to get FEMA assistance at various times.

5 So we're extrapolating into the unknown.

6 The other thing is, I put in here some
7 sea-level information. And the State Department of Water
8 Resources is struggling with that in connection with
9 flood control.

10 But it's also relevant for your consideration
11 as to whether or not you're going to buy that risk as a
12 reason to allow the tunnels.

13 And in here, I have -- I just ask people to go
14 look at the NOAA site on sea level, because the Golden
15 Gate in the last 150 years was, like, 8 inches. They're
16 in here in my exhibits. But Alameda is 4 inches.

17 You know, what's the difference? Short-term
18 surges spread out in the Bay. They don't result in the
19 higher elevation in the Delta.

20 So we've got to be careful about how our
21 scientists are using that information. And, in my
22 opinion, it's being overstated as a basis to substantiate
23 a need for the tunnels.

24 Okay. I beat my time by 1,500ths of a second.
25 Is that limited? All right.

1 CO-HEARING OFFICER DODUC: I told you I had
2 faith in Mr. Nomellini.

3 MR. RUIZ: And that concludes Mr. Nomellini's
4 direct testimony.

5 CO-HEARING OFFICER DODUC: Thank you.
6 Any cross-examination by the Department?

7 MR. MIZELL: (Shaking head.)

8 CO-HEARING OFFICER DODUC: No.

9 And I don't see Miss Morris. Is she -- Water
10 Contractors?

11 MS. AKROYD: (Raising hand.)

12 CO-HEARING OFFICER DODUC: Miss Akroyd, come on
13 up.

14 And then who else?

15 MR. JACKSON: (Raising hand.)

16 CO-HEARING OFFICER DODUC: Mr. Jackson. All
17 right.

18 MS. AKROYD: Rebecca Akroyd for San Luis and
19 Delta-Mendota Water Authority.

20 Just a few brief questions regarding water
21 rights.

22 CROSS-EXAMINATION BY

23 MS. AKROYD: Good afternoon.

24 WITNESS NOME LLINI: Good afternoon.

25 MS. AKROYD: If we could start by writing up

1 SDWA-106, the revised version that we just had open in
2 Mr. Nomellini's testimony.

3 I'm sorry, not 106. Excuse me. 151-FR.

4 (Document displayed on screen.)

5 MS. AKROYD: And scroll down toward the bottom
6 of the page.

7 (Scrolling down document.)

8 MS. AKROYD: Thank you.

9 Mr. Nomellini, on the first page of your
10 written testimony, you state that you've owned property
11 on Middle Roberts Island that is riparian to and abuts
12 the San Joaquin River; correct?

13 WITNESS NOME LLINI: That's correct.

14 MS. AKROYD: Is your property within the
15 boundaries of the Central Delta Water Agency?

16 WITNESS NOME LLINI: No. It's within the South
17 Delta Water Agency.

18 MS. AKROYD: Thank you.

19 And as a water user with property located
20 within South Delta Water Agency's service area, are you
21 claiming that the proposed changes will injure your
22 riparian water right?

23 WITNESS NOME LLINI: Yes.

24 MS. AKROYD: Thank you.

25 Have you presented any documentation of your

1 claimed riparian water right in this proceeding?

2 WITNESS NOME LLINI: Have I put it in this
3 proceeding? No.

4 Other than my testimony.

5 MS. AKROYD: Sorry?

6 WITNESS NOME LLINI: Other than my testimony,
7 yeah.

8 MS. AKROYD: Thank you.

9 More broadly, looking at the Revised Exhibit
10 List for Central and South Delta Water Agencies, I
11 haven't been able to find any list of the water users
12 within the water agencies' service areas or the water
13 rights they claim.

14 Has any -- Do you know whether any such list of
15 water users within the service areas have been submitted
16 in this proceeding?

17 MR. HERRICK: If I may before you answer.

18 Just for the record, the South Delta Water
19 Agency doesn't have any service area. We don't supply
20 water to anybody but we do have a boundary area, just for
21 clarification.

22 CO-HEARING OFFICER DODUC: Thank you,
23 Mr. Herrick.

24 WITNESS NOME LLINI: No, I'm not aware of that.

25 MS. AKROYD: Are you aware whether such --

1 WITNESS NOMELLINI: Well, the protest we
2 submitted had some water right people in it.

3 MS. AKROYD: Thank you.

4 Are you aware whether some -- And I can break
5 this out in light of Mr. Herrick's clarification.

6 Are you aware whether Cental Delta Water Agency
7 maintains a list of water rights that are exercised
8 within its service area?

9 WITNESS NOMELLINI: We don't maintain a list,
10 no.

11 MS. AKROYD: Same question as to whether South
12 Delta maintains a list of water rights that are exercised
13 within its boundary.

14 WITNESS NOMELLINI: We don't maintain a list
15 but there's a big list with the State Board. And all of
16 our -- Well, to our knowledge, all of our own water
17 diverters have filed a claim of right with regard to
18 riparian pre-1914.

19 MS. AKROYD: But no such documentation has been
20 provided in this proceeding; is that correct?

21 WITNESS NOMELLINI: I don't know if it has or
22 not. I haven't done it.

23 MS. AKROYD: Okay.

24 WITNESS NOMELLINI: Maybe we should.

25 MS. AKROYD: Thank you.

1 Nothing further.

2 CO-HEARING OFFICER DODUC: Thank you,
3 Miss Akroyd.

4 Mr. Jackson.

5 CROSS-EXAMINATION BY

6 MR. JACKSON: Good morning, Mr. Nomellini.

7 WITNESS NOME LLINI: Good morning.

8 MR. JACKSON: My name is Michael Jackson and
9 I'm here representing the California Sportfishing
10 Protection Alliance, AquAlliance, and the California
11 Water Impact Network.

12 Could we put up 152-R, please.

13 (Document displayed on screen.)

14 MR. JACKSON: And I'm estimating what I'm
15 looking for starts at about Page 6.

16 (Document displayed on screen.)

17 MR. JACKSON: Where does this slide come from,
18 sir?

19 WITNESS NOME LLINI: It comes from Bulletin 9 --
20 Bulletin 76, the 1960 -- December 1960 report to the
21 legislature.

22 MR. JACKSON: And -- And who is the author of
23 that report?

24 WITNESS NOME LLINI: The Department of Water
25 Resources.

1 MR. JACKSON: Calling your attention to the
2 schematic about the use of Delta water supplies.

3 Is the -- Has the use of Delta water supplies
4 stayed about the same since 1960?

5 WITNESS NOMESELLINI: Oh, let me see. I can't
6 see my own chart up there.

7 (Examining document.)

8 It shows the -- you know, the uses as
9 increasing. This goes out to 20 -- projects them out to
10 2020. Those curves are going up.

11 MR. JACKSON: And the --

12 WITNESS NOMESELLINI: I'm talking about that --
13 You know, exports are included in there, Delta and
14 upstream uses have increased, projections. These are
15 projections from 1960. I think they've gone up. At
16 least based on my experience, they've all gone up.

17 MR. JACKSON: But some have gone up more than
18 others; correct?

19 WITNESS NOMESELLINI: I don't know that I
20 consider --

21 MR. JACKSON: For instance, ex -- exports to
22 Southern California have gone up --

23 WITNESS NOMESELLINI: Yeah --

24 MR. JACKSON: -- since 1960.

25 WITNESS NOMESELLINI: -- clearly. I've got an

1 exhibit in here with the exports. If you want to go on a
2 few more pages, you can --

3 MR. JACKSON: And -- And what is the page in
4 your exhibits?

5 WITNESS NOMELLINI: Well, if you keep going
6 from this one -- Let's see here.

7 All right. Let's look at this one. This is
8 from the Delta Vision final report. It was going to look
9 pretty -- And then I've got another one more specific
10 but . . .

11 (Document displayed on screen.)

12 WITNESS NOMELLINI: Those are the exports above
13 the gray line. The gray line is Delta, at the bottom
14 in-Delta uses, and then the other two are the exports of
15 the Projects without Friant, discounting Friant.

16 MR. JACKSON: All right. So, showing the use
17 in 1923 on Figure 6, and the use on 2004, is it fair to
18 say that, with yearly fluctuations, the use has been
19 consistent since that time for Delta -- in-Delta use?

20 WITNESS NOMELLINI: Yeah, pretty much.

21 MR. JACKSON: And showing the -- I take it at
22 about 1953, I believe, looking of this, that the Central
23 Valley Project came online and their use has -- their use
24 grew with fluctuations of every year about . . .
25 3 million acre-feet to 2004?

1 WITNESS NOMESELLINI: Yeah. Now, you've got
2 to -- This only goes to 2004.

3 MR. JACKSON: No. I understand.

4 WITNESS NOMESELLINI: You recognize that last
5 year was a pretty low export year and --

6 MR. JACKSON: And there are low export years in
7 years before 2004.

8 But I'm asking for, in general, their use by
9 2004 had gone to about 3 million acre-feet.

10 WITNESS NOMESELLINI: All right. There's a
11 better chart farther on in this PowerPoint. If you keep
12 going, it's the one that's above the fishery graphs that
13 are extracted.

14 If you ignore the fishery graphs with the end
15 and the like and look at the top one that's in here.

16 (Document displayed on screen.)

17 WITNESS NOMESELLINI: It gives you a little --

18 MR. JACKSON: I think he might have gone to
19 Part 2.

20 (Laughter.)

21 WITNESS NOMESELLINI: He's corrected me. It's
22 the Hearing Officer. I'll change it to Hearing Officer,
23 anyway.

24 Anyway, yeah. I'm trying to figure out what
25 that number is. You're asking that -- The Delta-Mendota

1 is the red and you're saying from -- if you go from the
2 past over there, it got as high as 3 million acre-feet?

3 MR. JACKSON: Yes.

4 WITNESS NOMESELLINI: Is that what you're asking?

5 MR. JACKSON: Yes.

6 WITNESS NOMESELLINI: Yeah.

7 MR. JACKSON: And then on top of this chart,
8 which is SDWA-178 -- Whoops.

9 I see that there's a warning on the top in red,
10 so maybe we need to go back to the -- to the one I
11 started with.

12 CO-HEARING OFFICER DODUC: Well, ask your
13 question.

14 MR. JACKSON: All right. Starting in about
15 1967, the State Water Project increased diversions to,
16 looks like a height of -- in 2004 maybe, in which they
17 added another 3 million acre-feet on top of that;
18 correct?

19 WITNESS NOMESELLINI: Yes. They started -- I
20 think they started the exports in 1960.

21 MR. JACKSON: And, to your knowledge, what is
22 the source of the water that allowed that increase?

23 WITNESS NOMESELLINI: Well, at first, there
24 was -- What's happened over the years, of course, we've
25 been developing in the watershed, and we're using more

1 water in the watersheds, and the demand for the project
2 water started out low and started increasing.

3 So there was ample water in the system --
4 According to their plan, there was going to be ample
5 water in the system to meet needs in the watershed as
6 well as exports up to the year 2000.

7 MR. JACKSON: All right. And I'd like to ask
8 you a couple of questions about that.

9 Do -- You said you had a chart of -- a slide of
10 Bulletin 76.

11 WITNESS NOMESELLINI: Yeah.

12 MR. JACKSON: Which slide is that?

13 WITNESS NOMESELLINI: You want the full bulletin?

14 MR. JACKSON: No. I want the slide that shows
15 how they were going to supply the water.

16 WITNESS NOMESELLINI: Well, it's that same slide
17 we just looked at that shows that curve. That's out of
18 Bulletin 76.

19 Now, they built Oroville Dam. The plan was to
20 go ahead and keep building reservoirs as the need arose
21 in the project. That's what the plan was.

22 MR. JACKSON: For the purpose --

23 WITNESS NOMESELLINI: You know, Oroville doesn't
24 produce in critical years very much water. So there's no
25 way it could meet a significant demand only from Oroville

1 in critical years.

2 MR. JACKSON: And the rest of it comes from
3 where?

4 WITNESS NOMELLINI: Unregulated flow, and the
5 Federal Project.

6 There's a -- Well, go ahead.

7 MR. JACKSON: Again -- Can I have just a
8 second? This will go a little faster.

9 (Counsel confer.)

10 MR. JACKSON: Could we have Page 6 of the
11 PowerPoint?

12 (Document displayed on screen.)

13 MR. JACKSON: Now, you see the block that says,
14 "5 million acre-feet per year not developed"?

15 WITNESS NOMELLINI: Yes.

16 MR. JACKSON: All right. Would you name where
17 they expected to get that 5 million acre-feet?

18 WITNESS NOMELLINI: Yeah. Well, the first one
19 was Dos Rios Project on the Middle Fork of the Eel, and
20 there's another chart in this bulletin that has the
21 specific references to the Projects and their supporting
22 bulletins that tell you every project they were planning
23 to build.

24 MR. JACKSON: All right. So let's see if we
25 can do this from memory.

1 The -- There was -- Was the Klamath drainage
2 listed as one of the sources of water?

3 WITNESS NOMESELLINI: Well, they were going to
4 have another reservoir on the Trinity, and then there
5 were a whole bunch of tunnels connecting various
6 reservoirs. I can't give them to you off the top of my
7 head.

8 MR. JACKSON: All right.

9 WITNESS NOMESELLINI: The only constraint they
10 had in there was that, as time went on, they anticipated
11 that Nicell (phonetic) would become committed in the
12 water development, to develop the supplies they needed.

13 MR. JACKSON: So they were going to dam the
14 Klamath. They were going to put another dam on the
15 Trinity. They were going to dam the Van Duzen. They
16 were going to dam the Eel. They were going to use the
17 Russian.

18 Is that correct?

19 WITNESS NOMESELLINI: Well, they were going to
20 bring water down through various tunnels, but -- Yeah.
21 And we'd come in from the north coast into the west side
22 of the Sacramento.

23 MR. JACKSON: So the . . .

24 In the -- In the course of developing or -- or
25 attempting to develop those Projects, was that -- was the

1 water from the Russian allocated to someone else?

2 WITNESS NOMESELLINI: I missed that. Was what?

3 MR. JACKSON: Was the water from the Russian
4 allocated to someone else?

5 WITNESS NOMESELLINI: I don't know.

6 MR. MIZELL: Okay.

7 WITNESS NOMESELLINI: There were -- There's water
8 rights in all those rivers --

9 MR. JACKSON: Right.

10 WITNESS NOMESELLINI: -- you know, to some
11 degree.

12 The idea of the whole project was to build a
13 reservoir, capture storm flow, flood flow, store it, and
14 then be able to utilize it without hurting anybody else
15 and use the surplus.

16 CO-HEARING OFFICER DODUC: Hold on a second,
17 Mr. Jackson.

18 Mr. Berliner.

19 MR. BERLINER: I have an objection to --

20 CO-HEARING OFFICER DODUC: Your microphone
21 needs to be closer.

22 MR. BERLINER: I have an objection -- I have an
23 objection to this line of questioning.

24 While it's all very interesting on project
25 history, none of this is before the Board, and I don't

1 see the relevance of this testimony.

2 MR. JACKSON: Sure. I can -- I can give you my
3 view of the relevance.

4 It is a question here about whether or not
5 there should be a new water right. One of the noticed --

6 CO-HEARING OFFICER DODUC: Whether it is a new
7 water right.

8 MR. JACKSON: Whether it is a new water right.

9 CO-HEARING OFFICER DODUC: A new water right.

10 MR. JACKSON: So in order to determine whether
11 it's a new water right, we've got to determine what was
12 expected out of the old water rights.

13 CO-HEARING OFFICER DODUC: Mr. Berliner.

14 MR. BERLINER: I think that's quite a stretch,
15 and I think if they want to focus on that -- I'm not sure
16 what the Russian River's got to do with -- with old water
17 rights.

18 We're talking about a diversion here on the
19 Sacramento River in placement at Hood. If they want to
20 focus on that, that's one thing, but we've been all over
21 the project in this testimony.

22 CO-HEARING OFFICER DODUC: All right.

23 MR. BERLINER: I think it could be much
24 narrower.

25 CO-HEARING OFFICER DODUC: I think you have a

1 legitimate point, Mr. Jackson, but so does he in terms of
2 keeping it as narrow as possible.

3 MR. JACKSON: All right.

4 You indicated that there was a date in which
5 the . . . Bureau's water right previously approved by the
6 Board expired.

7 WITNESS NOMESELLINI: Yeah.

8 MR. JACKSON: What date was that?

9 WITNESS NOMESELLINI: I don't remember the exact
10 date, but both the water rights from the State Water
11 Project and the water rights for the Federal Project both
12 have expirations that occurred that constricted any
13 future construction under those Permits.

14 MR. JACKSON: Do you remember a Petition for an
15 extension of time?

16 WITNESS NOMESELLINI: They petitioned. There
17 were various petitions on file and we protested.

18 MR. JACKSON: You did protest.

19 WITNESS NOMESELLINI: Yes.

20 MR. JACKSON: What was the purpose of your
21 protest?

22 WITNESS NOMESELLINI: There was no water
23 available.

24 MR. JACKSON: In your review -- Did you review
25 the testimony of the Projects, their direct testimony?

1 WITNESS NOMESELLINI: I've looked just a little
2 bit at John Leahigh's and their water rights expert.

3 MR. JACKSON: In --

4 WITNESS NOMESELLINI: But I can't say I reviewed.

5 MR. JACKSON: In --

6 WITNESS NOMESELLINI: I didn't review very much
7 of the testimony.

8 MR. JACKSON: In the course of the review you
9 did, did you see any indication that petitions for
10 extension of time included this project?

11 WITNESS NOMESELLINI: You mean under the north
12 coast?

13 MR. JACKSON: No. I mean the project that's
14 before us today in terms of building tunnels.

15 WITNESS NOMESELLINI: No. No, I don't think the
16 WaterFix was included, and I think their argument is
17 different than that, but no.

18 MR. JACKSON: In the course of what review you
19 did of this particular proposal to build these three
20 tunnels, did you see any water availability analysis?

21 WITNESS NOMESELLINI: No.

22 MR. JACKSON: Did you see any --

23 WITNESS NOMESELLINI: Well, wait a minute.
24 There's testimony that says they're going to need relief
25 from the standards periodically, if we encounter dry

1 years, like we've had in order for them to comply. So
2 Temporary Urgency Changes are mentioned in there.
3 They're going to need those.

4 MR. JACKSON: Are Temporary Urgency Change --
5 Changes water availability analysis?

6 WITNESS NOMELLINI: (Laughing.)

7 It means to me they don't have enough water to
8 meet the requirements and, therefore, they need to be let
9 off the hook.

10 So to that extent it means non-availability,
11 which I think confirms the fact that there's no -- no
12 water available.

13 MR. JACKSON: Now, you -- you talked a little
14 about water priorities.

15 Is -- In your opinion, does the Delta
16 Protection Act and the Watershed of Origin Acts mean that
17 the people in the watershed have a priority over the
18 Projects?

19 WITNESS NOMELLINI: Oh, absolutely.

20 MR. JACKSON: Thank you.

21 I have no further questions.

22 CO-HEARING OFFICER DODUC: Thank you,
23 Mr. Jackson.

24 Any redirect?

25 MR. HERRICK: No redirect.

1 MS. DES JARDINS: I'm sorry.

2 CO-HEARING OFFICER DODUC: I'm sorry,
3 Miss Des Jardins. I didn't see your hand earlier.
4 You wanted to cross-examine?

5 MS. DES JARDINS: Yes.

6 CO-HEARING OFFICER DODUC: Ah, okay.

7 MS. DES JARDINS: My name is Dierdre
8 Des Jardins. I'm with California Water Research.

9 CROSS-EXAMINATION BY

10 MS. DES JARDINS: Good afternoon,
11 Mr. Nomellini.

12 WITNESS NOME LLINI: Good afternoon.

13 MS. DES JARDINS: I'd like to go to
14 Mr. Nomellini's testimony, Page 15.

15 Lines 7 to 9.

16 (Document displayed on screen.)

17 WITNESS NOME LLINI: 15?

18 MR. HERRICK: Yeah.

19 MR. OCHENDUSKO: So, what we brought up is
20 SDWA . . .

21 Can you identify?

22 MS. DES JARDINS: Yes. SDWA-151-FR.

23 MR. OCHENDUSKO: Thanks so much.

24 MS. DES JARDINS: Thank you.

25 And your quote mentions (reading):

1 "The Bureau has attempted to estimate in these
2 studies, and will continue to do so in future
3 studies, what the present and future needs of each
4 watershed will be."

5 So, is your understanding that part of the
6 consideration in the initial development of the Central
7 Valley Project was the needs of the Delta?

8 WITNESS NOMELLINI: Oh, absolutely.

9 MS. DES JARDINS: I'd like to go to DDJ-98,
10 Page 38, to look at what the actual studies show. This
11 is decision D 990 which I previously produced, .pdf
12 Page 38. It's Page 37 of the document.

13 (Document displayed on screen.)

14 MS. DES JARDINS: And it says here --
15 Top.

16 (Scrolling up document.)

17 MS. DES JARDINS: There we go.

18 (Reading):

19 "Ultimate annual irrigation requirements for
20 lands to be served in the project are:

21 "2.5 million -- 2.5 million acre-feet to be
22 diverted at the maximum rate of 11,200 cfs for
23 supplementing local rights."

24 Is your under -- I know that you've been
25 involved for a long time, but you weren't around when

1 this was issued.

2 But it's your understanding that the local
3 rights included the Delta?

4 WITNESS NOME LLINI: Yeah. I think they planned
5 on the local rights, as well as the needs of the Delta in
6 the future that might not have been covered by existing
7 rights. Then we have salinity control in there, too.

8 They estimated it at that time.

9 MS. DES JARDINS: Can I go to Page 35, please.

10 (Document displayed on screen.)

11 MS. DES JARDINS: This is a table that was
12 used. It says (reading):

13 "Irrigation, Sacramento River, Delta and
14 Bypasses, 2.5 million acre-feet, maximum rate of
15 diversion 11,200 cfs."

16 WITNESS NOME LLINI: Yeah. And that's in D 90
17 (sic), I'm sure.

18 MS. DES JARDINS: So this is part of the
19 consideration of the Board in -- in issuing the Permit.

20 Can we go to .pdf Page 41, which is Page 40,
21 Decision 990.

22 (Document displayed on screen.)

23 MS. DES JARDINS: Oh, I'm -- I'm sorry. I want
24 .pdf Page 83, document -- which is Page 82 of
25 Decision 990.

1 And in Permit Term 10, they say (reading):

2 "The maximum combined rates of direct diversion
3 and re-diversion of stored water shall not exceed
4 22,000 cubic feet per second."

5 But it looks like about half that was 11,000
6 cfs for local rights.

7 CO-HEARING OFFICER DODUC: Is there a question?

8 MS. DES JARDINS: Yeah. Did -- Would -- Yeah.

9 Did -- Do you believe that this -- the Permit,
10 in considering the maximum rate of direct diversion and
11 re-diversion from the Sac River and Delta, that the Board
12 included local rights?

13 WITNESS NOMELELLINI: I haven't gone back and
14 looked at it to make sure. I haven't looked at this for
15 a while, so I'm sure that number includes it but . . .

16 MS. DES JARDINS: Okay. Thank you.

17 The other thing, I wanted to go to Exhibit
18 DDJ-94.

19 (Document displayed on screen.)

20 MS. DES JARDINS: There was a Petition for
21 Reconsideration.

22 Page 2, please, of Decision 990 that was filed.

23 (Document displayed on screen.)

24 MS. DES JARDINS: And scroll down a little.

25 (Scrolling down document.)

1 MS. DES JARDINS: Yeah. (Reading):

2 "The Board is urged by" -- there was a
3 Sacramento River and Delta Water Association . . .
4 Delta Water Users Association . . . "to reconsider
5 the provisions contained in Paragraph 23" regarding
6 contracts.

7 Was your -- Were -- Was one of these a
8 predecessor organization that represented your water
9 users?

10 WITNESS NOMELLINI: It was before my -- my
11 time, but there were --

12 MS. DES JARDINS: Yeah.

13 WITNESS NOMELLINI: There were organizations in
14 the Delta, both in the North Delta and in, I think, the
15 South --

16 MS. DES JARDINS: Okay.

17 WITNESS NOMELLINI: -- that did have
18 conversation.

19 MS. DES JARDINS: Yeah. This was actually a
20 Petition for Reconsideration and one of the issues was
21 the contracts.

22 Can we go to Page 4, please.

23 (Document displayed on screen.)

24 MS. DES JARDINS: And it states --

25 Scroll down just a little.

1 (Scrolling down document.)

2 (Reading):

3 "Export of" --

4 The Board stated on reconsidering (reading):

5 "Export of any of the water which will be
6 required and which is presently earmarked for use in
7 the Sacramento Valley and Delta would be physically
8 impossible in the absence of additional conduits.
9 To date, none has even been authorized for Federal
10 construction. Also required would be permission of
11 the Board to add new points of diversion and to
12 expand the Project service area."

13 As an attorney, do you think the addition of a
14 new conduit in this Petition for Reconsideration might
15 trigger a reconsideration of some of these issues?

16 WITNESS NOMEILLINI: Oh, I think they need a new
17 Permit to do this project, but, I mean, it isn't because
18 of that reconsideration.

19 MS. DES JARDINS: Yeah.

20 WITNESS NOMEILLINI: It's going to come out of
21 our challenges to whatever happens here. It's adverse.

22 MS. DES JARDINS: This -- Okay. Let me --
23 Let's scroll down a little more on this page.

24 (Scrolling down document.)

25 MS. DES JARDINS: Scroll down, down to the

1 bottom.

2 (Scrolling down document.)

3 MS. DES JARDINS: They state (reading):

4 "The suggestion made by some of the Petitioners
5 that the Bureau may intentionally wait out the
6 expiration of the specified time limits in order to
7 gain a more favorable bargaining position or to be
8 relieved of any watershed restrictions to enable
9 unlimited export is not justified by" --

10 And we go to the next page --

11 -- "the facts and is most unrealistic."

12 In light of later developments . . .

13 WITNESS NOMELELLINI: Well, history's shown us
14 that they've waited it out for quite a while. We don't
15 have any resolution.

16 MS. DES JARDINS: Okay. Can I go to Exhibit
17 DDJ-96, which is on my stick. It's on the stick that I
18 introduced.

19 Yeah, thank you.

20 (Document displayed on screen.)

21 MS. DES JARDINS: So, you had -- Can we go to
22 Page 20.

23 You -- You had discussed the plans to do this,
24 but this will show.

25 (Document displayed on screen.)

1 MS. DES JARDINS: Go -- Go back a page just a
2 sec. It's the place I highlighted. So this is
3 Decision 1275. These are exports.

4 (Document displayed on screen.)

5 MS. DES JARDINS: And this was a study done in
6 determining water rights. And it said (reading):

7 "The Department presented a study of the
8 coordinated operation of the Central Valley Project
9 and the State Water Project for the 33-year period.
10 They assumed 18,000 cfs outflow, upstream depletions
11 at the level of development in the year 2015, and
12 augmentation of the supply to the Delta by
13 construction of additional facilities."

14 Scroll down, please.

15 (Scrolling down document.)

16 MS. DES JARDINS: (Reading):

17 "And the third assumption appears reasonable as
18 the upper Eel River development will yield an amount
19 of water to meet projected depletions in Year 2035."

20 Mr. Nomellini, do you think that this analysis
21 which was used in granting the 10,300 cfs diversion limit
22 might -- I mean, does this corroborate that this might
23 need to be updated? Do you think -- I mean, with respect
24 to these assumptions about supply?

25 WITNESS NOMELLINI: Oh, I think for sure. I

1 think the expectation as to what was required by
2 fisheries at that time was not understood, nor do we
3 understand it today.

4 MS. DES JARDINS: So the 1800 cfs has been
5 changed?

6 WITNESS NOMELLINI: Pardon me?

7 MS. DES JARDINS: With respect to that -- So
8 condition number one (reading):

9 "1800 cfs outflow is low considering our common
10 understanding."

11 WITNESS NOMELLINI: Yeah. There were later
12 bulletins that had higher -- higher numbers than that
13 but . . .

14 MS. DES JARDINS: Yeah. And second, upstream
15 depletions through 2015.

16 Do you think --

17 WITNESS NOMELLINI: I don't know whether those
18 numbers match up.

19 But one of the big things and the big impact on
20 the Delta was the inducement of upstream diversions by
21 reason of there being a project supply.

22 So, historically, if you look at all these
23 documents, that's -- that's part of the justification for
24 the requirement for an adequate supply in the Delta
25 because of greater depletions.

1 And, also, the salinity control was supposed to
2 take care of the intrusion problem in the Delta, so . . .

3 Some of those might have been underestimated,
4 but they haven't been fulfilled today.

5 MS. DES JARDINS: And, finally, the
6 augmentation supply. That -- That refers to some of the
7 Projects that you described in your --

8 WITNESS NOMELLINI: That means adequate supply.
9 There were overland supplies intended for the western
10 part of the Delta, like Rock Slough in Contra Costa --
11 Contra Costa Water District facility was part of that.
12 It was going to be an overland supply for Sherman Island
13 up until the time DWR bought the entire island. So they
14 were contemplating additional facilities to take care of
15 the -- the Delta. And they did for some.

16 Now, this, lastly, has no mitigation feature at
17 all for land supply connected with it.

18 MS. DES JARDINS: Thank you.

19 So, finally, I'd like to go to Decision 1641,
20 which is SWRCB-21.

21 (Document displayed on screen.)

22 MS. DES JARDINS: And I'd like to go to the
23 document Page 40, which is, I believe, Page 29.

24 (Document displayed on screen.)

25 MS. DES JARDINS: Go -- Excuse me. Go back one

1 page.

2 (Document displayed on screen.)

3 MS. DES JARDINS: Okay. Stop. That's fine.

4 So at the bottom -- this is Page 28 (reading):

5 "CDWA" --

6 This is with respect to the Joint Point of
7 Diversion. Central --

8 (Reading):

9 "CDWA and SDWA argued that the proposed changes
10 would injure other legal users of water because the
11 changes would result in poorer water quality at
12 Vernalis during the summer irrigation season."

13 I won't read the rest but let's scroll down a
14 little more.

15 (Scrolling to next page.)

16 MS. DES JARDINS: (Reading):

17 "Computer modeling . . . showed . . . approval
18 of the petitions would result in substantially
19 similar, and in some cases improved, average monthly
20 show conditions as Vernalis . . . The modeling
21 showed . . . the proposed changes . . ."

22 Let's see (reading):

23 "The modeling studies also indicate that
24 approval of the petitions would result in
25 improvement of overwater -- overall water quality at

1 Vernalis compared with current conditions."

2 Scroll down.

3 (Scrolling down document.)

4 MS. DES JARDINS: (Reading):

5 "SDWA pointed out fifty-one instances . . . in
6 which SDWA argued that water quality at Vernalis
7 would be impaired as a result of the petitioned
8 changes. Forty-four of these instances, however,
9 were attributed to rounding errors in the modeling
10 studies . . . Accordingly, the modeling shows no
11 injury to the Southern Delta beneficial users of
12 water."

13 I just wanted to ask: So after the JPOD was
14 approved, did you experience any deterioration in water
15 quality at Vernalis or in the South Delta?

16 WITNESS NOMESELLINI: Well, I live downstream
17 from Vernalis. It deteriorated where I live. Affected
18 my well in that period of time, so it's been
19 deteriorating.

20 I don't know what the exact condition is at
21 Vernalis, but it deteriorated at the well.

22 MS. DES JARDINS: Yeah. There -- Were you
23 involved in a CDO proceeding with respect to salinity
24 exceedances?

25 WITNESS NOMESELLINI: Yes.

1 MS. DES JARDINS: And -- And part of it was --
2 part of it was in Vernalis.

3 WITNESS NOMESELLINI: I just don't remember. I
4 don't remember the numbers, I mean.

5 MS. DES JARDINS: Yeah. So -- So, your
6 experience was that -- that the -- your concerns were
7 justified?

8 WITNESS NOMESELLINI: We thought they were
9 justified from the beginning, but . . .

10 MS. DES JARDINS: Okay. Thank you.

11 That concludes my questioning.

12 CO-HEARING OFFICER DODUC: Thank you.

13 Any redirect?

14 MR. HERRICK: No, we have no redirect.

15 CO-HEARING OFFICER DODUC: Thank you.

16 Let's address an issue, and I might ask
17 Miss Heinrich for her assistance here.

18 There was reference made to the --
19 Mr. Nomellini's PowerPoint SDWA-178, Page 20. We had
20 struck out that portion and that entire page was
21 withdrawn per the -- per the November 4th ruling.

22 However, we did use the first part of that
23 page, which just shows exports, I believe, and the part
24 that was objectionable that was ruled out was the
25 fisheries aspect of it.

1 So let me turn to Miss Heinrich and ask her
2 suggestion on how we address this.

3 MS. HEINRICH: Yeah. I actually think it may
4 have been Central and South Delta who -- who withdrew
5 some of those slides, consistent with the changes to your
6 testimony, Mr. Nomellini.

7 And my concern only is that the record might
8 not be clear if you don't end up submitting those slides
9 as part of your case in chief.

10 We've had cross-examination by Mr. Jackson
11 based on some of those slides, which I think is okay, but
12 if the slides themselves aren't in the record, then the
13 record may not be clear.

14 So my suggestion was just that maybe you work
15 with one another. Perhaps those slides should be
16 identified as exhibits for purposes of cross.

17 WITNESS NOMELELLINI: Well, why can't we just put
18 it in the record?

19 MS. HEINRICH: That -- That's another option,
20 too. You could -- You could offer them into evidence
21 but --

22 CO-HEARING OFFICER DODUC: Just the first --
23 That would be just the first chart.

24 MR. HERRICK: Right.

25 MS. HEINRICH: To the extent that they're

1 necessary to make your cross-examination.

2 CO-HEARING OFFICER DODUC: I don't know that
3 they were --

4 MR. HERRICK: I understand.

5 CO-HEARING OFFICER DODUC: I'm sorry.

6 I didn't know that they were that necessary,
7 because you were trying to use a different chart,
8 Mr. Jackson.

9 MR. JACKSON: I was, and I got directed to that
10 chart and was already in it before I -- before I saw the
11 warning at the top.

12 It seems to me there's a couple of ways to deal
13 with it.

14 The first way to deal with it would be to treat
15 it as an exhibit on cross, and I would propose to do
16 that.

17 CO-HEARING OFFICER DODUC: Just the top --

18 MR. JACKSON: Right.

19 CO-HEARING OFFICER DODUC: Just the top chart,
20 not all the fishery stuff.

21 MR. JACKSON: Right.

22 CO-HEARING OFFICER DODUC: Okay. Any concerns
23 about that, Mr. Mizell? Miss Ansley?

24 MS. ANSLEY: This was Page 20?

25 CO-HEARING OFFICER DODUC: Page 20 of SDWA-178,

1 and I am just looking at the very top chart.

2 MR. HERRICK: Actually, I think it's SDWA-152-\$
3 is his PowerPoint. Is that what you're referring --

4 CO-HEARING OFFICER DODUC: I'm sorry?

5 MR. HERRICK: -- to?

6 CO-HEARING OFFICER DODUC: Where was I looking
7 at?

8 MR. MIZELL: Well, it's actually in two places.

9 CO-HEARING OFFICER DODUC: It says 178 at the
10 top, so I don't know.

11 MR. HERRICK: Oh, that's the -- he's -- that's
12 a reference to another -- to the actual exhibit. The
13 actual exhibit that --

14 CO-HEARING OFFICER DODUC: Oh, sorry. So
15 that's SDWA-152-R, Page 20, the top chart only.

16 MR. MIZELL: We don't have any objection to
17 that in itself if it's pulled out so that the bottom
18 charts are not reflected in the record.

19 So long as the top chart has adequate
20 foundation included in whatever slide Mr. Jackson
21 produces right now. It's -- We don't have a source
22 and --

23 WITNESS NOMELLINI: I can give it to you. Do
24 you want it?

25 CO-HEARING OFFICER DODUC: Why don't you work

1 with Mr. Jackson and he will submit that as his cross
2 exhibit.

3 MS. ANSLEY: And just one final note.

4 The -- 1 -- 152-R, the revised for him,
5 obviously it's on the exhibit list, but it doesn't
6 include these slides that have been withdrawn.

7 The version in the record doesn't have that
8 notation on top saying which slides are pulled or not
9 pulled, so perhaps some clarity on what the revised
10 PowerPoint really is.

11 CO-HEARING OFFICER DODUC: I would like
12 Mr. Jackson to work with Mr. Nomellini, Mr. Herrick and
13 Mr. Ruiz to pull out that very top chart, designate it as
14 CSPA cross exhibit whatever number, and then fill in the
15 appropriate reference from which Mr. Nomellini developed
16 this chart.

17 MR. JACKSON: Thank you. I will certainly do
18 that.

19 There is very little question that, at the end
20 of this hearing, Part 1 and Part 2, that chart's going to
21 be in there a number of times.

22 CO-HEARING OFFICER DODUC: Yes.

23 CO-HEARING OFFICER MARCUS: Yeah.

24 CO-HEARING OFFICER DODUC: Thank you.

25 MR. HERRICK: Thank you.

1 MS. DES JARDINS: Miss Doduc, I wanted to
2 notice I made a make. I included the full copy of
3 Decision 1275 in my submitted exhibits as DDJ-95.

4 I don't know if you want the full copy as well
5 as the highlighted excerpts or not.

6 CO-HEARING OFFICER DODUC: No, I do not.

7 MS. DES JARDINS: Just the excerpts.

8 Thank you.

9 CO-HEARING OFFICER DODUC: Thank you.

10 Thank you, Mr. Nomellini --

11 WITNESS NOME LLINI: Thank you.

12 CO-HEARING OFFICER DODUC: -- for your
13 conciseness, your brevity --

14 WITNESS NOME LLINI: Good to see all of you.

15 CO-HEARING OFFICER DODUC: -- and your history.

16 And I'm glad to know that there are things in
17 the Delta that predated you.

18 CO-HEARING OFFICER MARCUS: That was a good
19 one.

20 (Laughter.)

21 MR. HERRICK: Meteorite crater.

22 CO-HEARING OFFICER DODUC: Let's -- Let's take
23 a break while you set up your final panel.

24 MR. HERRICK: Can we have five minutes?

25 CO-HEARING OFFICER DODUC: How about a

1 10-minute break.

2 MR. HERRICK: Excellent.

3 CO-HEARING OFFICER DODUC: We'll resume at
4 2:15.

5 MR. HERRICK: Excellent.

6 (Recess taken at 2:05 p.m.)

7 (Proceedings resumed at 2:16 p.m.):

8 CO-HEARING OFFICER DODUC: (Banging gavel.)

9 All right, everyone. Please take your seats.
10 You're missing a few witnesses.

11 MR. RUIZ: Come on up.

12 He's not here (indicating Mr. Salmon.)

13 CO-HEARING OFFICER DODUC: Do you have an
14 opening statement?

15 MR. HERRICK: Thank you. John Herrick for
16 South Delta parties.

17 Not really. I'll just introduce the witness
18 panel, so to speak.

19 Mr. Chip Salmon is not here. We've been in
20 communication with everybody about his difficult
21 schedule, but we'll fit him in at other people's
22 convenience as we can.

23 But, today, we'll have Mr. Rudy Mussi and
24 Mr. Mark Bachetti testify.

25 And I'll start with --

1 CO-HEARING OFFICER DODUC: Actually, you --

2 MR. HERRICK: Well, two --

3 CO-HEARING OFFICER DODUC: You can't start with
4 anybody just yet.

5 Please rise and raise your right hand.

6

7 RUDY M. MUSSI and MARK BACCHETTI,
8 called as witnesses for the Central Delta Water Agency,
9 South Delta Water Agency (Delta Agencies), Lafayette
10 Ranch, Heritage Lands Inc., Mark Bachetti Farms and Rudy
11 Mussi Investments L.P., having been first duly sworn,
12 were examined and testified as follows:

13 DIRECT EXAMINATION BY

14 MR. HERRICK: Mr. Mussi, make sure your
15 microphone's on.

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

18 WITNESS MUSSI: Rudy R-U-D-Y, Mussi M-U-S-S-I,
19 middle initial M for Mario.

20 MR. HERRICK: And you're a protestant in this
21 proceeding; correct?

22 WITNESS MUSSI: Yes, I am.

23 MR. HERRICK: And you prepared testimony for
24 this proceeding; is that correct?

25 THE WITNESS: Yes, I did.

1 MR. HERRICK: And is SDWA-106 a true and
2 correct copy of your testimony?

3 WITNESS MUSSI: Yes.

4 MR. HERRICK: And in that, listed as a separate
5 exhibit, is SDWA-107, which is a map of the ranches
6 you're talking about; is that correct?

7 WITNESS MUSSI: Yes.

8 MR. HERRICK: Mr. Mussi, would you please
9 summarize your testimony for this Board.

10 WITNESS MUSSI: Okay. I'm 63 years -- I'm 64
11 years old. I've aged since I did this.

12 I've farmed in the islands for 40 years. I was
13 born out there. I've had experience on 10,000 acres.
14 It's a -- I've farmed on Victoria Island, over at Jones
15 Tract, Roberts Island, Union Island -- I guess that's
16 it -- and do some consulting work for my son in Norway,
17 which he never takes the advice.

18 But, anyway, I currently farm on --

19 MR. HERRICK: Please stick to your testimony,
20 Mr. Mussi.

21 (Laughter.)

22 WITNESS MUSSI: I currently farm on 2600 acres
23 on Union Island and 1400 acres on Roberts Island with my
24 brother.

25 We're a diversified farm. We grow grapes,

1 tomatoes, walnuts, cucumbers, almonds, anything that I
2 can make a living off of.

3 And in order to summarize my testimony, I'm
4 just going to quickly cover these. I picked two other
5 crops that I farm, without being too boring.

6 The grapes are in the Woods Irrigation
7 District. Woods just settled, I guess, a while ago for
8 further water rights, but I also claim riparian pre-'14
9 water rights on that parcel.

10 It's grapes. I planted them in 1994. I've
11 been farming them ever since.

12 Growing grapes, or growing any crop out in the
13 Delta, has been a challenge, and if you're going to
14 lessen my water quality, it'll be even a greater
15 challenge.

16 I kind of summarized what I have to do in order
17 to grow a crop out there. I chemically treat the water.
18 We add soil amendments. We're constantly testing the
19 soils, soil samples.

20 When we apply fertilizers, we apply fertilizers
21 that don't contain nitrates or salts. We go to potash
22 and sulphates, and those are considerably more expensive.
23 And I've estimated that those all cost me about \$250 an
24 acre in additional cost. That doesn't include the
25 decrease in crops that I would normally expect with good

1 quality water.

2 And, again, if the water quality is lessened,
3 my problems just become that much more.

4 Also, I've included the almonds. They're a
5 newly planted crop. The ranch is located on Union
6 Island. It's riparian. It's adjacent to a water stream.

7 Again, same problems. We've got
8 microsprinklers. We've added a tile drain line. Again,
9 we do remediation of the water qualities through either
10 soil amendments, liquid amendments. And, again, same --
11 same issues there: Water quality.

12 Also, more of an issue -- Well, I guess it's an
13 issue in both locations, is, the elevation of the water.
14 I have problems irrigating timely. Pumps overheat and
15 shut down because the elevation of the water is low.

16 Woods Irrigation, when I schedule water use,
17 sometimes I -- I don't get timely irrigations just
18 because they're unable to supply the water that I need.

19 And I -- I guess I pretty much tried to
20 summarize it. A more accurate testimony has been
21 included, so you can refer to that.

22 MR. HERRICK: Thank you, Mr. Mussi.

23 Mr. Bacchetti, would you state your full name
24 and especially spell very slowly "Bacchetti" for the
25 record.

1 WITNESS BACCHETTI: Yes. Mark Bacchetti,
2 M-A-R-K, B-A-C-C-H-E-T-T-I.

3 MR. HERRICK: And you're a Protestant in this
4 proceeding, is that correct?

5 WITNESS BACCHETTI: Correct.

6 MR. HERRICK: And you were asked to prepare
7 testimony for this proceeding; is that correct?

8 WITNESS BACCHETTI: Correct.

9 MR. HERRICK: And your testimony is SDWA-121;
10 is that correct?

11 WITNESS BACCHETTI: Correct.

12 MR. HERRICK: And that's a true and -- true and
13 correct copy of your testimony, sir?

14 WITNESS BACCHETTI: Yes, correct.

15 MR. HERRICK: And, then, in your testimony, you
16 also reference SDWA-122, which includes copies of
17 licenses associated with your -- the properties you
18 discuss; is that correct?

19 WITNESS BACCHETTI: Correct.

20 MR. HERRICK: And then we have SDWA-123, which
21 is a map of the properties associated with those; is that
22 right?

23 WITNESS BACCHETTI: That's correct.

24 MR. HERRICK: Would you please summarize your
25 testimony.

1 WITNESS BACCHETTI: Like I say, I'm Mark
2 Bacchetti from Marca Bella Farms. We farm in Bay View
3 Tract, which is just north of Tracy. We're on the
4 southern end of the Delta. We farm -- farm about
5 3500 acres -- 3400 acres.

6 I am 40 years farming, third-generation. So
7 I'm, again, born out on the home ranch where my
8 grandparents came and settled.

9 We're processing tomatoes, alfalfa, sweet corn,
10 safflower and newly planted almonds as well.

11 Over the years, we've seen, you know, water
12 quality changing. We're seeing salts in the soil
13 increasing. We're monitoring through basically the
14 stations through -- so that we can -- you know, seawater
15 quality.

16 On the Fabian Tract on Old River where we're
17 farming, it's really tough quality water. There isn't
18 flows, and it's some of the highest ECs, I think,
19 especially in the southern Delta.

20 And it just -- With commodity prices, when they
21 get down, and then you have yield problems, that's when
22 you take the double whammy. And a lot of it -- We can't
23 control commodity prices but, you know, we can control --
24 and we can't control the water quality anymore.

25 But we do have to -- There's an extra burden of

1 expenses, you know, doing soil samples, soil amending.

2 It's our only chance to fight this thing.

3 So any additional problems with salt in our
4 water definitely could cause additional cost to our
5 farming operation, which is very, very thin margins,
6 anyway.

7 So, again, there's still more information in
8 our -- our testimony. That's just a quick little
9 overview of what we do.

10 MR. HERRICK: Thank you, Mr. Bacchetti.

11 That's -- That's the direct.

12 CO-HEARING OFFICER DODUC: Thank you very much.

13 Cross-examination.

14 Miss Akroyd.

15 MS. AKROYD: Good afternoon. Rebecca Akroyd

16 for San Luis & Delta-Mendota Water Authority.

17 I just have a couple questions for Mr. Mussi
18 regarding the testimony of water rights.

19 CROSS-EXAMINATION BY

20 MS. AKROYD: Mr. Mussi, you testified that you
21 claim riparian water rights for your property on Union
22 Island; is that correct?

23 WITNESS BACCHETTI: That's correct.

24 MS. AKROYD: And have you submitted any
25 documentation of your claimed water right in this

1 proceeding?

2 WITNESS MUSSI: No, I haven't, now in this
3 proceeding.

4 MS. AKROYD: Nothing further.

5 Thank you.

6 CO-HEARING OFFICER DODUC: Thank you.

7 Any redirect?

8 I don't see anyone else.

9 MR. HERRICK: I have nothing.

10 CO-HEARING OFFICER DODUC: All right. Let's
11 talk about Mr. -- is it Chip Salmon? What do you
12 anticipate doing with him?

13 MR. HERRICK: We're -- We're trying to find a
14 time that he will be here.

15 Just -- Just so it doesn't sound bad about him,
16 but he now works both in the Delta and up near Colusa and
17 is moving to Oregon, I think, so he's driving upwards of
18 400 miles a day, he told me.

19 So, we're going to coordinate with the upcoming
20 people and let you know as to when we think we can squeak
21 him up and so there's no --

22 CO-HEARING OFFICER DODUC: So, is it your
23 intention to squeeze him in the week when we return from
24 our vacation holiday?

25 MR. HERRICK: Yes.

1 CO-HEARING OFFICER DODUC: Excellent. That's
2 what I was hoping you would say.

3 MR. RUIZ: The only caveat with that: The
4 days -- He's available now except on Fridays. That's
5 when he's traveling, so --

6 MR. HERRICK: We'll try to pound that square
7 peg in a round hole and try to get that done.

8 CO-HEARING OFFICER DODUC: That would be great.

9 And speaking of that, let me go ahead and just
10 run down what I anticipate will happen.

11 On November 30th, when we resume, and we know
12 which room we're in.

13 November 30th, we will be, oh, in Byron Sher
14 Auditorium.

15 Okay. Say goodbye to this lovely setting.

16 We will start with Group Number 30,
17 Mr. Brodsky, and the Save the California Delta Alliance.

18 Then we will continue to Group 31, the
19 California Sportfishing Protection Alliance, et al.,
20 Mr. Jackson's group.

21 Restore the Delta is scheduled for December 8th
22 and 9th, and I believe they came before us and made that
23 request, so we will honor that.

24 So we have three days, November 30th,
25 December 1st and 2nd for Group 30th, 31st, and hopefully

1 Mr. Salmon.

2 MR. HERRICK: (Nodding head.)

3 CO-HEARING OFFICER DODUC: And the 30th is a
4 Wednesday, December 1st is a Thursday, so hopefully we
5 will be able to see him then.

6 MR. HERRICK: (Nodding head.)

7 CO-HEARING OFFICER DODUC: All right. Is there
8 any other housekeeping matter we need to discuss?

9 If we -- Oh, Mr. Herrick, sorry.

10 MR. HERRICK: Since it is my day, I just want
11 to -- There have been a number -- a couple of letters to
12 the Board about rebuttal cases.

13 I would just like the Board to give us a
14 warning as to when they might be deciding that so we can
15 contribute comments, you know, as appropriate or not,
16 because we're -- we're all struggling with that, too, as
17 to exactly what we should include or not, and when and
18 how much and all that, so . . .

19 CO-HEARING OFFICER DODUC: Yes. There is a
20 slight break next week but we will be -- we will be
21 discussing a multitude of things before us, including
22 some of the outstanding rulings that we need to respond
23 to, which will, of course, influence also rebuttal that
24 you'll be preparing. So, yes, we are aware there are
25 things on our plates that we need to address.

1 MR. HERRICK: Thank you.

2 CO-HEARING OFFICER DODUC: All right?

3 All right. Well, thank you all very much.

4 Have a happy Thanksgiving and --

5 MR. HERRICK: Absolutely.

6 CO-HEARING OFFICER DODUC: -- and we'll see you

7 on the 30th.

8 MR. RUIZ: Thank you.

9 MR. HERRICK: Thank you very much.

10 (Proceedings adjourned at 2:30 p.m.)

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1 State of California)
2 County of Sacramento)

3

4 I, Candace L. Yount, Certified Shorthand Reporter
5 for the State of California, County of Sacramento, do
6 hereby certify:

7 That I was present at the time of the above
8 proceedings;

9 That I took down in machine shorthand notes all
10 proceedings had and testimony given;

11 That I thereafter transcribed said shorthand notes
12 with the aid of a computer;

13 That the above and foregoing is a full, true, and
14 correct transcription of said shorthand notes, and a
15 full, true and correct transcript of all proceedings had
16 and testimony taken;

17 That I am not a party to the action or related to a
18 party or counsel;

19 That I have no financial or other interest in the
20 outcome of the action.

21

22 Dated: December 6, 2016

23

24

25

Candace L. Yount, CSR No. 2737