

EXHIBIT “FF”

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SUPERIOR COURT OF THE STATE OF CALIFORNIA
FOR THE COUNTY OF LOS ANGELES

DEPARTMENT NO. 316 HON. JACK KOMAR, JUDGE

COORDINATION PROCEEDING)	
SPECIAL TITLE (RULE 1550B))	
)	JUDICIAL COUNCIL
ANTELOPE VALLEY GROUNDWATER CASES)	COORDINATION
)	NO. JCCP4408
)	
PALMDALE WATER DISTRICT AND)	SANTA CLARA CASE NO.
QUARTZ HILL WATER DISTRICT,)	1-05-CV-049053
)	
CROSS-COMPLAINANTS,)	
)	
VS.)	
)	
LOS ANGELES COUNTY WATERWORKS,)	
DISTRICT NO. 40, ET AL,)	
)	
CROSS-DEFENDANTS.)	
)	

REPORTER'S TRANSCRIPT OF PROCEEDINGS
WEDNESDAY, MARCH 23, 2011

APPEARANCES:
(SEE APPEARANCE PAGES)

GINGER WELKER, CSR #5585
OFFICIAL REPORTER

1 APPEARANCES:

2 ANTELOPE VALLEY GROUNDWATER
3 AGREEMENT ASSOCIATION
4 (AGWA)

BROWNSTEIN, HYATT, FARBER
& SCHRECK
BY: MICHAEL FIFE
21 EAST CARRILLO STREET
5 SANTA BARBARA, CA 93101
6 (805) 963-7000

7 TEJON RANCH CORP

KUHS & PARKER
BY: ROBERT G. KUHS
8 WILLIAM KUHS
9 1200 TRUXTUN AVENUE
SUITE 200
10 BAKERSFIELD, CA 93301
11 (661) 322-4004

12 PALMDALE WATER DISTRICT

LAGERLOF, SENEAL, GOSNEY
& KRUSE, LLP
13 BY: THOMAS S. BUNN III
14 301 NORTH LAKE AVENUE
10TH FLOOR
15 PASADENA, CA 91101-4108
(626) 793-9400

16 CITY OF LANCASTER &
17 ROSAMOND CSD

MURPHY & EVERTZ
BY: DOUGLAS J. EVERTZ
18 650 TOWN CENTER DRIVE
19 SUITE 550
COSTA MESA, CA 92626
(714) 277-1700

20
21 LITTLE ROCK CREEK IRRIGATION
22 DISTRICT & PALM RANCH IRRIGATION
DISTRICT:

LEMIEUX & O'NEILL
BY: WAYNE LEMIEUX
23 2393 TOWNSGATE ROAD
24 SUITE 201
WESTLAKE VILLAGE, CA 91361
25 (805) 495-4770

26 BOLTHOUSE PROPERTIES

BY: RICHARD G. ZIMMER
27 BANK OF AMERICA BUILDING
1430 TRUXTUN AVENUE
SUITE 900
28 BAKERSFIELD, CA 93301
(661) 322-6023

1 APPEARANCES (CONTINUED)

2 U.S. BORAX

MORRISON & FOERSTER, LLP
BY: WILLIAM M. SLOAN
425 MARKET STREET
SAN FRANCISCO, CA 94105
(415) 268-7209

6 QUARTZ HILL WATER DISTRICTS

CHARLTON WEEKS
BY: BRADLEY T. WEEKS
1007 W. AVE. M-14, SUITE A
PALMDALE, CA 93551
(661) 265-0969

11 RICHARD A. WOOD
12 SMALL PUMPER CLASS

OFFICES OF MICHAEL MCLACHLAN
BY: MICHAEL D. MCLACHLAN
10490 SANTA MONICA BLVD.
LOS ANGELES, CA 90025
(310) 954-8270

15 L.A. COUNTY WATERWORKS
16 DISTRICT NO. 40

BEST, BEST & KRIEGER, LLP
BY: JEFFREY V. DUNN
STEFANIE D. HEDLUND
5 PARK PLAZA, SUITE 1500
IRVINE, CA 92614
(949) 263-2600

19 L.A. COUNTY WATERWORKS
20 DISTRICT NO. 40

OFFICE OF THE COUNTY
COUNSEL, COUNTY OF L.A.
BY: WARREN R. WELLEN
500 WEST TEMPLE STREET
6TH FLOOR
LOS ANGELES, CA 90012
(213) 974-9668

24 CALIFORNIA WATER SERVICES
25 COMPANY

JOHN S. TOOTLE
CORPORATE COUNSEL
2632 W. 237TH STREET
TORRANCE, CA 90505-5272
(310) 257-1488

1 APPEARANCES (CONTINUED)

2
3 CITY OF LOS ANGELES

LOS ANGELES CITY ATTORNEY
DEPARTMENT OF WATER & POWER
BY: JULIE CONBOY RILEY
111 NORTH HOPE STREET
ROOM 340
LOS ANGELES, CA 90051
(213) 367-4513

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BOLTHOUSE PROPERTIES				
WITNESS	DIRECT	CROSS	REDIRECT	RECROSS

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E X H I B I T S

BOLTHOUSE PROPERTIES FOR I.D. IN EVIDENCE

C9 - SERIES OF SLIDES 166
 (BOOK OF EXHIBITS)

LITTLEROCK FOR I.D. IN EVIDENCE

L1 - 1PG. DIAGRAM 70
 (8.5X11")

LA COUNTY WATERWORKS FOR I.D. IN EVIDENCE

SCALMANINI 151 - 110
 (FROM USGS 2003 REPORT)

SCALMANINI 152 174
 (NEBEKER DECLARATION)

TEJON RANCH FOR I.D. IN EVIDENCE

D46 - CV OF DR. LIST 176

D47 - DR. LIST'S SLIDES 177

D48 - COPY OF TABLE C8A 178

1 Q TO THE BEST OF YOUR KNOWLEDGE, THAT BEDROCK
2 ESSENTIALLY HAS ZERO SPECIFIC YIELD?

3 A IT ESSENTIALLY HAS ZERO SPECIFIC YIELD.

4 Q SO IN YOUR -- IS IT YOUR VIEW THAT IF THIS
5 CHANGE OF STORAGE ANALYSIS WAS DONE PROPERLY, MOST OF
6 THIS AREA -- SAY, APPROXIMATELY TWO MILES WIDE AND FROM
7 ANTELOPE BUTTES CLEAR OVER TO ROSAMOND, MOST OF THAT
8 AREA SHOULD SHOW NO CHANGE IN GROUNDWATER STORAGE?

9 A IT SHOULD SHOW NO CHANGE IN GROUNDWATER
10 STORAGE.

11 Q AND IF YOU OVERSTATE NEGATIVE GROUNDWATER
12 STORAGE, DOES THAT TEND, THEN, TO UNDERSTATE NATURAL
13 RECHARGE?

14 A WE'LL SEE LATER THAT THAT WILL BE THE
15 OUTCOME.

16 Q OKAY. SLIDE 21. WHAT DO YOU MEAN BY
17 HYDROLOGIC MASS BALANCE?

18 A HYDROLOGIC MASS BALANCE IS BEST EXPLAINED BY
19 THE NEXT SLIDE, WHICH IS A SLIDE I PREPARED.

20 Q WELL, LET'S GO TO 22, THEN. THIS IS TITLED
21 "WEI CONCEPTUAL MODEL FOR MASS BALANCE." DOES "WEI"
22 REFER TO WILDERMUTH ENVIRONMENTAL, INC.?

23 A IT REFERS TO WILDERMUTH ENVIRONMENTAL. AND
24 THE EQUATION WHICH IS PUT ON -- THE STATEMENT SAYS
25 "CHANGE IN STORAGE IN SATURATED ZONE." THE CHANGE IN
26 STORAGE IN THE SATURATED ZONE IS THIS DELTA SS. I'M
27 USING WEI'S NOMENCLATURE HERE, WHICH IS PRESENTED IN
28 THESE SLIDES.

1 Q OKAY.

2 A AND WHAT IT IS IS A MASS BALANCE OF THIS
3 AREA DOWN HERE AND WITHIN THE SATURATED AQUIFER. WHAT
4 IT SAYS IS THE AMOUNT OF WATER THAT GOES IN MINUS THE
5 AMOUNT OF WATER THAT GOES OUT IS EQUAL TO THE CHANGE IN
6 STORAGE.

7 SO THE WATER THAT GOES IN IS INRS, WHICH IS
8 NATURAL RECHARGE FROM THE UNSATURATED INTO THE SATURATED
9 AQUIFER. IT'S THE NATURAL RECHARGE THAT GOES FROM THE
10 MOUNTAIN BLOCK INTO THE SATURATED AQUIFER. IT HAS THE
11 AGRICULTURE RETURNS, AND IT HAS THE RETURN FLOWS FROM --
12 SORRY, ARTIFICIAL RECHARGE AND AGRICULTURAL RETURN FLOWS
13 MINUS THE WATER THAT IS PUMPED -- THAT FLOWS OUT OF THE
14 BASIN MINUS THE WATER WHICH IS PUMPED OUT OF BASIN.

15 NOW, YOU NOTICE THAT THIS CONCEPTUAL MODEL
16 FOR THE MASS BALANCE THAT WAS DONE BY WILDERMUTH
17 ENVIRONMENTAL ONLY INVOLVED THE SATURATED AQUIFER. NOT
18 ONLY DID IT INVOLVE ONLY THE SATURATED AQUIFER, IT
19 DIDN'T EXTEND TO THE MOUNTAIN FRONT, AS WE SAW IN THE
20 PREVIOUS SLIDE THAT HAD ALL THE ORANGE.

21 Q LET'S GO BACK TWO SLIDES.

22 A SEE, THE WILDERMUTH ENVIRONMENTAL MASS
23 BALANCE WAS PERFORMED WITHIN THIS 875-SQUARE-MILE AREA
24 HERE, WHICH IS 560,000 ACRES, BUT DID NOT INCLUDE
25 CHANGES IN STORAGE IN THESE MARGINAL AREAS AROUND THE
26 PERIPHERY BETWEEN BOUNDARY OF THE MOUNTAIN FRONT AND
27 WHERE THEY CHOSE TO DO THEIR CHANGE IN STORAGE ANALYSIS.

28 SO IT IS --

1 Q LET'S GO BACK --

2 A THERE IS NOTHING WRONG WITH WHAT WILDERMUTH
3 ENVIRONMENTAL HAS DONE HERE. IT IS JUST THAT THEY
4 DIDN'T INCLUDE THE WHOLE BASIN. THEY DIDN'T INCLUDE THE
5 BASIN AT THE MARGIN, AND THEY DIDN'T INCLUDE THE
6 UNSATURATED AQUIFER.

7 Q WHAT IS -- ON SLIDE 22, WHAT DOES THE DOTTED
8 RED LINE REPRESENT, CONCEPTUALLY?

9 A CONCEPTUALLY, IT'S THE VOLUME OF SATURATED
10 AQUIFER THAT WAS -- FOR WHICH WILDERMUTH ENVIRONMENTAL
11 PERFORMED THEIR MASS BALANCE.

12 Q AND WILDERMUTH -- THIS PORTION OF THE --
13 THAT IS, TO THE LEFT OF THE ESSENTIALLY VERTICAL DASH
14 RED LINE, THIS PORTION HERE THAT SAYS I, SUB N, SUB R,
15 SUB M IS IN THE SATURATED PORTION OF THE AQUIFER BUT
16 OUTSIDE OF THE WEI STUDY AREA?

17 A WELL, IT IS THE FLOW FROM OUTSIDE THE WEI
18 STUDY AREA INTO THE SATURATED AQUIFER FROM OUTSIDE THE
19 AREA THAT THEY WERE CONSIDERING.

20 Q OKAY.

21 A WITHIN THE SATURATED AQUIFER, AS DISTINCT
22 FROM THE NATURAL RECHARGE, WHICH COMES IN THROUGH THE
23 SURFACE OF THE SATURATED AQUIFER.

24 Q IS IT ACCURATE, THEN, THAT IN THE WEI
25 CONCEPTUAL MODEL, WEI DID NOT CONSIDER ANY CHANGE IN THE
26 UNSATURATED AQUIFER, WHICH IS THE AREA BETWEEN THE
27 SURFACE AND WATER TABLE, NOR DID IT CONSIDER ANY CHANGE
28 IN THAT PORTION OF THE SATURATED AQUIFER IN THE

1 SO-CALLED MARGINS OF THE ALLUVIUM?

2 A THAT'S CORRECT.

3 Q LET'S GO TO THE NEXT SLIDE, 23. TELL US
4 WHAT EXHIBIT 23 IS.

5 A WELL, I TRIED TO PUT TOGETHER A SLIDE WHICH
6 SHOWED THE MASS BALANCE AS IT WOULD -- SHOULD HAVE BEEN
7 DONE, I BELIEVE, AND WOULD BE DONE CORRECTLY, WHICH
8 INCLUDES THE ENTIRE AQUIFER DOWN TO THE BEDROCK.

9 AND YOU SEE THAT THERE'S TWO PARTS YOU HAVE
10 TO CONSIDER. YOU HAVE TO CONSIDER THE SATURATED AQUIFER
11 PART, WHICH IS WHAT WILDERMUTH ENVIRONMENTAL DID, AND
12 YOU ALSO HAVE TO INCLUDE WHAT GOES ON IN THE UNSATURATED
13 AQUIFER.

14 AND THE CHANGE IN STORAGE IN THE UNSATURATED
15 AQUIFER REPRESENTS THE INFLOWS AND THE NATURAL RECHARGE
16 THROUGH THE SURFACE OF THE SOIL AND THE ARTIFICIAL
17 RECHARGE THROUGH THE SURFACE, THE RETURN FLOWS. AND
18 THEN THERE ARE SIMILAR FLOWS WHICH GO FROM THE
19 UNSATURATED AQUIFER INTO THE SATURATED AQUIFER.

20 SO WE'VE MADE UP THESE TWO MASS BALANCE
21 EQUATIONS HERE, ONE OF WHICH INVOLVES THE CHANGE IN
22 STORAGE IN THE UNSATURATED AQUIFER AND ONE WHICH
23 INVOLVES THE CHANGE IN STORAGE IN THE SATURATED AQUIFER.

24 NOW, IF YOU ADD THOSE TWO TOGETHER, YOU WILL
25 SEE THAT THEY CANCEL -- A CERTAIN NUMBER OF THESE TERMS
26 CANCEL OUT. SO BY ADDING THE TWO TOGETHER AND TAKING
27 THE TWO TERMS WHICH INVOLVE NATURAL RECHARGE -- NAMELY,
28 THE ONE THROUGH THE SURFACE, INR, AND THE ONE THROUGH

1 THE MOUNTAIN BLOCK, YOU FIND THAT THE NATURAL RECHARGE
2 INVOLVES BOTH THE CHANGE IN STORAGE IN THE SATURATED
3 AQUIFER PLUS THE CHANGE IN STORAGE IN THE UNSATURATED
4 AQUIFER, THE PUMPING THAT GOES -- PLUS PUMPING PLUS THE
5 OUTFLOW MINUS THE ARTIFICIAL RECHARGE AND THE RETURN
6 FLOWS.

7 SO THAT IS THE EQUATION. AND JUST FOR
8 COMPARISON PURPOSES, I PUT DOWN THE EQUATION WHICH
9 WILDERMUTH ENVIRONMENTAL USED TO CALCULATE THEIR NATURAL
10 RECHARGE. YOU SEE THAT THE TERM MISSING ON THE
11 RIGHT-HAND SIDE IS THE CHANGE IN STORAGE IN THE
12 SATURATED AQUIFER -- IN THE UNSATURATED AQUIFER.

13 BUT THE RETURN FLOWS ARE THERE, THE
14 ARTIFICIAL RECHARGE IS THERE, BUT THE -- BUT THE CHANGE
15 IN STORAGE IN THE UNSATURATED AQUIFER IS MISSING.

16 Q NOW, AT THIS JUNCTURE, WE ARE TALKING ABOUT
17 THE THEORETICAL -- THE EQUATIONS FOR THE ACTUAL MASS
18 BALANCE?

19 A THAT'S RIGHT.

20 Q WITHOUT REGARD TO THE DIFFICULTY OF TRYING
21 TO COMPUTE OR ESTIMATE THE VARIOUS COMPONENTS OF IT;
22 CORRECT?

23 A THAT IS CORRECT. NOW, THAT'S A WHOLE
24 DIFFERENT ISSUE, AS TO HOW YOU GO ABOUT FINDING WHAT
25 THOSE TERMS ARE.

26 Q OKAY. LET'S GO TO THE NEXT SLIDE.

27 AND FOR THE COURT AND COUNSEL, THIS CONSISTS
28 OF TWO PAGES, TWO SLIDES, 24 AND 25.

1 TELL US WHAT IS ON SLIDE 24.

2 A WELL, THIS IS -- THE AMERICAN SOCIETY OF
3 CIVIL ENGINEERS IRRIGATION AND DRAINAGE DIVISION
4 PRODUCED A MANUAL. AND THIS IS A STATEMENT REGARDING
5 THE MANUAL OF -- ASSESSING GROUNDWATER.

6 AND IT SAYS -- THE STATEMENT IS, HYDROLOGIC
7 EQUATION IS BASICALLY A STATEMENT OF THE LAW OF
8 CONSERVATION OF MATTER AS APPLIED TO THE HYDROLOGIC
9 CYCLE IN AN AQUIFER. ALL WATER IN AN AREA DURING A
10 PERIOD MUST EITHER GO INTO STORAGE OR BE CONSUMED IN THE
11 AREA OR EXPORTED OR FLOW OUT OR FLOW UNDERGROUND DURING
12 THE SAME PERIOD.

13 THE NEXT SLIDE STATES THIS MORE SUCCINCTLY.

14 THE COURT: WHAT'S THE --

15 THE WITNESS: THIS IS JUST CONSERVATION (SIC) OF
16 MATTER.

17 THE COURT: IT SAYS "CONSERVATION OF MATTER."

18 THE WITNESS: IT SAYS "CONSERVATION." IT DOES.

19

20 (LAUGHTER.)

21

22 THE WITNESS: WELL, THIS IS A --

23 THE COURT: JUST THOUGHT I WOULD CALL IT TO YOUR
24 ATTENTION.

25 THE WITNESS: THIS IS AN EXACT EXTRACT. WE DIDN'T
26 CHANGE IT OR RETYPE IT.

27 BY MR. WILLIAM KUHS:

28 Q WELL, WE HAVE A TYPO HERE. ON THE SECOND

1 LINE, IT SAYS --

2 A I KNOW. I UNDERSTAND THAT, BILL, BUT THIS
3 IS EXTRACTED FROM THE TEXT, THE MANUAL. SO THE TYPO WAS
4 IN THE ORIGINAL.

5 Q OH, OKAY.

6 A SO I SHOULD HAVE PUT "SIC" IN THERE AFTER
7 IT.

8 Q ALL RIGHT. AT LEAST IT'S NOT YOUR FAULT.

9 LET'S GO TO THE NEXT SLIDE. AND BEFORE WE
10 GET INTO SOME OF THESE ITEMS, WHAT IS THE AMERICAN
11 SOCIETY OF CIVIL ENGINEERS?

12 A THAT'S A PROFESSIONAL ASSOCIATION OF CIVIL
13 ENGINEERS WITHIN UNITED STATES, AND IT EXISTS TO SUPPORT
14 THE PROFESSIONALISM OF CIVIL ENGINEERS.

15 Q ARE YOU A MEMBER OF THAT ORGANIZATION?

16 A I'M AN HONORARY LIFE FELLOW OF THE AMERICAN
17 SOCIETY OF CIVIL ENGINEERS, I'M PRIVILEGED TO SAY.

18 Q AND HAVE YOU CHAIRED A NUMBER OF THE
19 DIVISIONS?

20 A I WAS CHAIR OF THE HYDRAULICS DIVISION AND
21 JOURNAL FOR SIX YEARS, SEVEN YEARS -- THE EDITOR OF THE
22 JOURNAL. I'VE ALSO BEEN ON SOME OTHER COMMITTEES.

23 Q OKAY. WHAT DOES -- SLIDE 25 SHOWS THE ITEMS
24 OF SUPPLY AND ITEMS OF DISPOSAL; CORRECT?

25 A IT IS BASICALLY WHAT WAS SAID IN WORDS IN
26 THE PREVIOUS SLIDE; NAMELY, IF YOU ARE GOING TO DO A
27 MASS CONSERVATION (SIC), YOU HAVE GOT TO ADD UP
28 EVERYTHING THAT COMES IN AND EVERYTHING THAT GOES OUT.

1 IT TAKES TIME TO MOVE HORIZONTALLY ACROSS THE VALLEY,
2 THROUGH THE MARGIN -- WHICH WAS NOT INCLUDED IN WEI'S
3 ESTIMATE; AND IT TAKES TIME FOR IT TO SOAK DOWN FROM THE
4 SURFACE TO GET TO THE SATURATED AQUIFER THROUGH THE
5 UNSATURATED AQUIFER.

6 Q NOW, WE'VE HAD A LOT OF DISCUSSION IN THIS
7 CASE OVER THE MANY WEEKS WE HAVE BEEN HERE ABOUT THE LAG
8 IN AGRICULTURAL RETURN FLOWS. AND YOU ARE NOT CONCERNED
9 WITH LAG TIMES FOR RETURN FLOWS IN THE ANALYSIS THAT YOU
10 DID; CORRECT?

11 A NO. NO.

12 Q YOU ARE TALKING ABOUT A DIFFERENT TYPE OF
13 LAG?

14 A I'M TALKING ABOUT A LAG FROM THE NATURAL
15 RECHARGE TO GET INTO THE -- TO BE REFLECTED IN A CHANGE
16 OF WATER SURFACE ELEVATION IN THE SATURATED AQUIFER.

17 Q LET'S GO TO SLIDE 40. WHAT DOES THIS SLIDE
18 DEPICT?

19 A WELL, I BEGAN TO ASK MYSELF, HOW SERIOUS IS
20 THIS CHANGE IN STORAGE IN THE UNSATURATED ZONE? HOW BIG
21 IS IT? WHAT WOULD YOU HAVE TO DO TO GET A LARGE NUMBER
22 IN A CHANGE IN STORAGE IN THE UNSATURATED ZONE?

23 SO I TOOK ONE OF WEI'S AREA, 875 SQUARE
24 MILES. I ASSUMED THE AQUIFER WAS LIKE 350 FOOT THICK,
25 THE UNSATURATED PART OF THE AQUIFER, AND HAD A SOIL
26 POROSITY OF .3, WHICH IS SORT OF AN AVERAGE NUMBER.

27 AND I SAID, WELL, OKAY. SUPPOSE THE SOIL
28 MOISTURE CONTENT IN THAT UNSATURATED ZONE CHANGES BY

1 10 PERCENT, GOES FROM 30 PERCENT SATURATION TO
2 40 PERCENT SATURATION; OR 50 PERCENT TO 60 PERCENT.

3 DO YOU CALCULATE THE VOLUME OF WATER FROM A
4 10 PERCENT CHANGE IN THE SOIL MOISTURE CONTENT IN THAT
5 UNSATURATED ZONE 5.8 MILLION ACRE-FEET? THAT IS AS MUCH
6 AS WHAT WILDERMUTH HAD COMPUTED FOR THE CHANGE IN
7 STORAGE IN THE SATURATED AQUIFER.

8 SO THIS NUMBER IS A BIG NUMBER, AND IT
9 DOESN'T REQUIRE VERY MUCH CHANGE IN THE SOIL MOISTURE
10 CONTENT FOR THAT NUMBER TO BE VERY SUBSTANTIAL.

11 Q THAT NUMBER COULD GO UP OR DOWN, DEPENDING
12 UPON WHETHER THE CHANGE IS FROM A HIGHER MOISTURE
13 CONTENT TO A LOWER OR A LOWER TO HIGHER; CORRECT?

14 A THAT IS CORRECT. IF YOU HAD A SUSTAINED DRY
15 PERIOD WHICH IS DRYING OUT THE UNSATURATED AQUIFER, IT
16 WOULD LOSE THAT AMOUNT OF STORAGE. IF YOU HAD A WET
17 PERIOD, WHERE YOU ARE PUTTING WATER INTO THE -- AND
18 MOISTENING UP THE UNSATURATED AQUIFER, 10 PERCENT CHANGE
19 IS 6 MILLION ACRE-FEET.

20 Q SO THE PURPOSE OF THIS SLIDE IS SIMPLY TO
21 ILLUSTRATE THAT A SMALL CHANGE IN THE MOISTURE CONTENT
22 IN THE UNSATURATED AQUIFER CAN MAKE A BIG CHANGE IN THE
23 WATER BUDGET METHODOLOGY IN ESTIMATING NATURAL RECHARGE?

24 A THAT'S CORRECT.

25 Q UNLESS IT IS RECOGNIZED AND DEALT WITH?

26 A UNLESS IT'S RECOGNIZED AND DEALT WITH
27 SOMEHOW OR ANOTHER.

28 Q WHAT IS SLIDE 41?

1 A SLIDE 41 IS A SLIDE I PREPARED FROM SOME
2 GROUNDWATER CONTOURS. WE PREPARED A NUMBER OF
3 GROUNDWATER CONTOUR MAPS WHICH I PUT IN THE DEPOSITION
4 AND TESTIMONY.

5 AND I TOOK A SECTION DOWN HERE THROUGH --
6 WELLS DOWN THROUGH THE WESTERN PART OF THE ANTELOPE
7 VALLEY, AND TOOK THE GROUNDWATER LEVELS AT DIFFERENT
8 YEARS AT EACH ONE OF THESE WELLS THAT ARE LOCATED DOWN
9 THROUGH THE VALLEY HERE TO TRY AND GET SOME IDEA WHETHER
10 THE -- WHAT THE SLOPES WERE AND WHAT THE GROUNDWATER
11 SLOPE AND HOW FAST -- WHETHER IT WAS CHANGING.

12 Q THIS SLIDE INDICATES AN A, B, C. AND A, B,
13 C IS THE PROPOSED -- OR IS THE TRANSECT LINE OR THE
14 PROFILE LINE THAT YOU USED TO ILLUSTRATE THE PROFILES?

15 A TO ILLUSTRATE THE GROUNDWATER LEVEL PROFILE.

16 Q WHERE IS THE APPROXIMATE LOCATION OF THE
17 CREST OF THE BEDROCK RIDGE ON THIS SLIDE?

18 A IT'S ALONG B, C.

19 Q OKAY. SO LET'S GO TO THE NEXT SLIDE, SLIDE
20 42. TELL US WHAT SLIDE 42 REPRESENTS.

21 A SLIDE 42 IS EACH OF THESE GROUNDWATER SLOPES
22 FROM EACH ONE OF THOSE YEARS FROM THE CONTOUR MAPS THAT
23 I PLOTTED.

24 AND YOU CAN SEE THAT IN THE LATER YEARS
25 HERE, '95 THROUGH 2009, THE GROUNDWATER CONTOUR IN THE
26 WESTERN ANTELOPE VALLEY IS BEING ESSENTIALLY CONSTANT.
27 IT CHANGED FROM 1965. IT SHIFTED. IN 1965, IT WAS A
28 LITTLE STEEPER UP HERE AND A LITTLE FLATTER HERE AND A

1 LITTLE STEEPER HERE, BUT FOR THE LATER YEARS, '95
2 THROUGH THE PRESENT, IT'S EFFECTIVELY BEEN CONSTANT.

3 AND THE SLOPE UP HERE AT THE TOP END OF THE
4 VALLEY IS ABOUT 100 FEET PER MILE. AND FURTHER DOWN, IN
5 THE MIDDLE OF THE VALLEY, IT IS MORE LIKE 40 FEET PER
6 MILE.

7 Q WHY WERE YOU INTERESTED IN THE SLOPE OR
8 GRADIENT OF THAT PROFILE?

9 A I'S LIKE TO FIGURE OUT HOW FAST THE WATER
10 MOVES IN THE BASIN.

11 Q OKAY. LET'S GO TO THE NEXT SLIDE, WHICH IS
12 43.

13 A AS I MENTIONED BEFORE, THE WEI ESTIMATE
14 DIDN'T LOOK AT THE MARGINS. AND WHAT I WAS INTERESTED
15 TO FIND OUT IS, HOW LONG WOULD IT TAKE WATER TO FLOW
16 THROUGH THOSE AQUIFER MARGINS.

17 AND THE MARGIN GRADIENT WAS ABOUT 100 FEET
18 PER MILE, AND THE HYDRAULIC CONDUCTIVITY COULD BE ON THE
19 HIGH SIDE BECAUSE IT IS UP ON THE TOP END OF THE VALLEY,
20 WHERE THE HEAVY STONES DROP OUT QUICKLY AND THE FINE
21 STUFF GETS CARRIED AWAY. SOIL POROSITY, AGAIN, ARE
22 MAYBE .3.

23 SO IF YOU COMPUTE THE HORIZONTAL VELOCITY
24 BASED ON THAT SLOPE, YOU GET A VELOCITY OF SOMETHING
25 LIKE 500 FEET PER YEAR, OR ABOUT 11 YEARS PER MILE.

26 Q THIS IS AN APPLICATION OF DARCY'S LAW?

27 A THIS IS AN APPLICATION OF DARCY'S LAW AND
28 TAKING INTO ACCOUNT THE POROSITY OF THE AQUIFER.

1 Q THIS WOULD BE THE HORIZONTAL FLOW
2 VELOCITY -- AGAIN, WE'RE NOT TALKING ABOUT LAG FOR
3 AGRICULTURAL RETURN FLOWS; WE'RE TALKING ABOUT
4 HORIZONTAL FLOW VELOCITY?

5 A WE ARE TALKING ABOUT HORIZONTAL FLOW
6 VELOCITY.

7 Q THE PRIMARY PURPOSE OF THIS EXERCISE IS TO
8 INDICATE HOW LONG IT TAKES ANY INFILTRATION -- ANY WATER
9 OFF THE MOUNTAIN FRONT TO GET THROUGH THE MARGIN, OVER
10 TO THE WEI STUDY AREA?

11 A THAT IS RIGHT.

12 Q NOW, LET'S GO TO THE NEXT SLIDE, SLIDE 44.

13 NOW, THIS SLIDE, YOUR HONOR AND COUNSEL, HAS
14 BEEN CORRECTED. SO THE WITNESS WILL --

15 NUMBER ONE, DESCRIBE WHAT CORRECTION YOU
16 MADE, DR. LIST, AND WHY.

17 A I'VE NOBODY TO BLAME BUT MYSELF FOR THIS.
18 I -- THE "2" HERE SHOULD BE OUTSIDE THE SQUARE ROOT
19 SIGN. WHEN I TYPED IT, I PUT IT INSIDE THE SQUARE ROOT
20 SIGN. THAT IS ONE MISTAKE, AND I'LL EXPLAIN WHAT THE
21 NET EFFECT OF THAT IS LATER.

22 WHAT I'M DOING HERE IS RECOGNIZING THAT
23 WATER SURFACE ELEVATIONS AND GROUNDWATER ACTUALLY HAVE
24 WAVES ON THEM, VERY SLOW WAVES, JUST LIKE THE SURF DOES.
25 AND LIKE IF I HAD A CHAIN HERE AND I WAGGED THE CHAIN,
26 THE CHAIN WOULD OSCILLATE BACKWARDS AND FORWARDS; BUT
27 OUT THERE, FURTHER OUT AWAY FROM ME, THE CHAIN WOULDN'T
28 MOVE VERY MUCH.

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SUPERIOR COURT FOR THE STATE OF CALIFORNIA

COUNTY OF LOS ANGELES

DEPARTMENT NO. 316

HON. JACK KOMAR,

COORDINATION PROCEEDING
SPECIAL TITLE (RULE 1550B)

ANTELOPE VALLEY GROUNDWATER CASES

JUDICIAL COUNCIL
COORDINATION
NO. JCCP4408

PALMDALE WATER DISTRICT AND
QUARTZ HILL WATER DISTRICT,

SANTA CLARA CASE NO.
1-05-CV-049053

CROSS-COMPLAINANTS,

VS.

LOS ANGELES COUNTY WATERWORKS,
DISTRICT NO. 40, ET AL,

CROSS-DEFENDANTS.

STATE OF CALIFORNIA)
) SS.
COUNTY OF LOS ANGELES)

I, GINGER WELKER, OFFICIAL REPORTER OF THE
SUPERIOR COURT OF THE STATE OF CALIFORNIA, FOR THE
COUNTY OF LOS ANGELES, DO HEREBY CERTIFY THAT THE
TRANSCRIPT DATED MARCH 23, 2011 COMPRISES A FULL, TRUE,
AND CORRECT TRANSCRIPT OF THE PROCEEDINGS HELD IN THE
ABOVE ENTITLED CAUSE.

DATED THIS 24TH DAY OF MARCH, 2011.

OFFICIAL REPORTER, CSR #5585