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SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

DEPARTMENT NO. 1

HON. JACK KOMAR, JUDGE

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.)	
_____)	

REPORTER'S TRANSCRIPT OF PROCEEDINGS

TUESDAY, JANUARY 4, 2011

APPEARANCES:

(SEE APPEARANCE PAGES)

GINGER WELKER, CSR #5585
OFFICIAL REPORTER

1 EQUALS DELTA-S, AND THE TRIANGULAR SYMBOL STANDS FOR
2 DELTA.

3 Q IT STANDS FOR DELTA? AND WHAT DOES DELTA
4 MEAN?

5 A DELTA CHANGE -- THAT IS A COMMON ALGEBRAIC
6 SYMBOL TO MEAN CHANGE, SO CHANGE IT AS A CHANGE IN
7 STORAGE. NEXT SLIDE.

8 MR. JOYCE: YOUR HONOR, MY REQUEST THAT I WOULD
9 LIKE TO MAKE IS IF TO THE EXTENT A GIVEN SLIDE OR
10 EXHIBIT IS INTENDED TO BE OFFERED, CAN IT BE OFFERED AS
11 SOON AS TESTIMONY HAS BEEN COMPLETED REGARDING IT SO WE
12 CAN TAKE UP ANY OBJECTIONS TIMELY?

13 MR. BUNN: I WAS INTENDING TO OFFER THEM AT THE
14 END, YOUR HONOR.

15 MR. JOYCE: AND I WOULD PREFER WE DO THEM IN
16 SERIATIM.

17 THE COURT: WELL, THEY NEED TO BE MARKED FOR
18 IDENTIFICATION FIRST. THAT IS HAPPENING AS YOU DESCRIBE
19 IT, AS YOU RECALL MARKING IT FOR IDENTIFICATION. ONCE
20 IT HAS BEEN MARKED FOR IDENTIFICATION, I'M GOING TO
21 PERMIT THE WITNESS TO TESTIFY TO IT, AND IT -- AT THE
22 CONCLUSION OF HIS TESTIMONY, YOU MAY OFFER THE EXHIBITS
23 AT THE END OF IT, AND I'LL HEAR ANY OBJECTIONS TO ANY OF
24 THEM AT THAT TIME JUST TO SAVE TIME.

25 AND IF I DECLINE TO ADMIT IT FOR ANY REASON,
26 THEN I WILL NOT CONSIDER IT.

27 MR. JOYCE: THANK YOU, YOUR HONOR. DID I
28 UNDERSTAND THAT YOU ARE GOING TO RESERVE HEARING

1 OBJECTIONS UNTIL -- YOU'LL WAIT UNTIL AFTER THE
2 CONCLUSION OF ALL TESTIMONY?

3 THE COURT: UNLESS THERE IS A SERIOUS OBJECTION AT
4 THE OUTSET OF THE DOCUMENT, YES, I PREFER TO DO IT THAT
5 WAY.

6 MR. JOYCE: THANK YOU, YOUR HONOR.

7 THE COURT: GO AHEAD.

8 BY MR. BUNN:

9 Q WE HAVE IN FRONT OF US EXHIBIT 3. DID YOU
10 EITHER PREPARE THIS, OR WAS IT PREPARED AT YOUR
11 DIRECTION?

12 A YES.

13 Q WHAT DOES THAT REPRESENT?

14 A THIS IS A CHART TO DEFINE TERMS THAT ARE
15 GOING TO FOLLOW. THIS HAPPENS TO BE THE INFLOW TERMS,
16 AND THERE ARE THREE INFLOW TERMS OF SIGNIFICANCE HERE.
17 WE SORT OF GROUPED THEM INTO THE NATURAL RECHARGE,
18 ARTIFICIAL RECHARGE, AND RETURN FLOWS.

19 NATURAL RECHARGE CONSISTS OF ALL THE
20 DIFFERENT WAYS OF RAINFALL OR STREAM FLOW CAN GET INTO
21 THE GROUNDWATER BASIN OR SUBSURFACE INFLOW FROM BEDROCK.

22 ARTIFICIAL RECHARGE IS ANY ATTEMPT TO PUT
23 WATER IN THE GROUND ARTIFICIALLY; AND THEN RETURN FLOWS
24 OR -- AFTER WATER HAS BEEN USED, IT'S BEEN RETURNED BACK
25 TO THE GROUNDWATER WATER BASIN.

26 Q AND YOU ARE GOING TO BE TALKING ABOUT THESE
27 ALL LATER IN YOUR TESTIMONY; CORRECT?

28 A YES.

1 Q OKAY. AND THEN GOING TO EXHIBIT 4. WAS
2 THIS PREPARED BY YOU OR UNDER YOUR DIRECTION?

3 A YES. AND, AGAIN, ANOTHER DEFINITION OF THIS
4 CHART TO JUST DEFINE THE OUTFLOWS TERMS, TWO TERMS WE
5 USE IN OUR ANALYSIS IS GROUNDWATER PUMPING AND
6 SUBSURFACE OUTFLOW.

7 THE SORT OF -- OF TERMINAL BASIN. ALL THE
8 WATER ORIGINATES IN THERE GETS DELIVERED TO OR -- ENDS
9 UP IN THE BASIN OR A LITTLE BIT OUTFLOW OR IS PUMPED.

10 Q I DIDN'T HEAR THE WORD YOU USED. IT WAS
11 SORT OF A WHAT BASIN?

12 A TERMINAL BASIN. THERE IS NOT A LOT OF
13 DISCHARGE OF THIS BASIN -- THERE IS A TINY LITTLE
14 SUBSURFACE COMPONENT WHICH WE WILL TALK ABOUT. ALL THE
15 WATER THAT COMES INTO THE BASIN STAYS IN THE BASIN OR
16 EVAPORATES.

17 Q IF YOU COULD SPEAK JUST A LITTLE MORE
18 SLOWLY, THAT WOULD BE HELPFUL TO ME.

19 A OKAY.

20 Q ALL RIGHT. THEN EXHIBIT 5 DID YOU PREPARE
21 THIS EXHIBIT?

22 A I DID.

23 Q WHAT DOES THIS EXHIBIT REPRESENT?

24 A THIS IS AN EXPANSION OF THAT INFLOW MINUS
25 OUTFLOW. YOU COULD CHANGE THE STORAGE EQUATION BY
26 INTRODUCING ALL THE TERMS AND -- WE JUST DEFINED, AND
27 THEN REARRANGING THEM SUCH THAT WE HAVE NATURAL RECHARGE
28 ON ONE SIDE AS A DEPENDENT VARIABLE, AND THEN THE

1 INDEPENDENT VARIABLE IS ON THE RIGHT. THE INDEPENDENT
2 VARIABLES BEING THE OUTFLOW FROM PUMPING AND THE OUTFLOW
3 OF SUBSURFACE DISCHARGE FROM THE BASIN, THE CHANGE IN
4 STORAGE. AND THE ARTIFICIAL RECHARGE IS THE INFLOW
5 TERM, AND THE RETURN FLOWS IS AN INFLOW TERM.

6 Q NOW YOU ARE TALKING ABOUT DEPENDENT AND
7 INDEPENDENT VARIABLES. COULD YOU EXPLAIN WHAT YOU MEAN
8 IN DIFFERENT WORDS?

9 A IN SIMPLE ALGEBRA, YOU HAVE THINGS YOU KNOW
10 AND THINGS WHICH ARE NOT GOING TO VARY. AND -- IN A
11 GIVEN CALCULATION, AND THE THING THAT YOU DON'T KNOW.
12 THE THING YOU DON'T KNOW YOU CALL A DEPENDENT VARIABLE,
13 THE THINGS YOU KNOW YOU CALL INDEPENDENT VARIABLES.

14 Q IN THE BOTTOM OF THE EQUATION ON THIS
15 EXHIBIT, WHAT IS THE SIGNIFICANCE THAT YOU HAVE THE
16 NATURAL RECHARGE TERM THERE ON THE LEFT?

17 A WE CAN ESTIMATE ALL THE TERMS ON THE RIGHT.
18 WE CAN DO THE ALGEBRA AND THEN DERIVE A NATURAL
19 RECHARGE.

20 Q ALL RIGHT. SO THIS GETS BACK TO MY ORIGINAL
21 QUESTION. THIS IS THE APPROACH THAT YOU ARE USING TO
22 CALCULATE THE NATURAL --

23 A THE APPROACH IS TO USE THIS EQUATION TO
24 ESTIMATE ALL THE PARAMETERS ON THE RIGHT-HAND SIDE FROM
25 AVAILABLE INFORMATION, AND THEN YOU HAVE TO CALCULATE
26 NATURAL RECHARGE. IT IS A CLASSIC WATER BUDGET
27 APPROACH.

28 Q WHAT WAS THE BASE PERIOD THAT YOU USED FOR

1 YOUR ASSESSMENT OF NATURAL RECHARGE?

2 A THE BASE PERIOD THAT WE USED WAS 1951 TO
3 2005.

4 Q AND WHY DID YOU SELECT THAT PERIOD?

5 A WELL, WE LOOKED AT PRECIPITATION DATA AND
6 STREAM FLOW DATA FOR LONG-TERM STATIONS IN THE BASIN.
7 WE APPLIED CERTAIN CRITERIA TO THAT DATA TO TRY TO
8 DETERMINE THE BEST BASE PERIOD FOR OUR WORK.

9 THE CRITERIA INCLUDE HYDROLOGIC
10 REPRESENTATION. YOU WANT TO PICK A PERIOD OF TIME WHERE
11 PRECIPITATION IS ABOUT AVERAGE FOR THAT PERIOD. AND
12 THIS NEXT CHART --

13 Q YES. GO AHEAD. AND THEN I WILL ASK YOU
14 ABOUT IT.

15 A OKAY. THIS CHART -- AND YOU ADVANCED THE
16 CHART ONE TOO MANY. COME BACK ONE.

17 Q THAT WOULD BE -- MAYBE I WILL INTERRUPT YOU.
18 THAT IS EXHIBIT 6 NOW ON THE BOARD. WAS THIS CHART
19 PREPARED BY YOU OR AT YOUR DIRECTION?

20 A IT WAS PREPARED BY JOE SCALMANINI.

21 Q OKAY. WHAT WAS THE SOURCE OF THE DATA THAT
22 IS REPRESENTED IN THIS CHART?

23 MR. JOYCE: OBJECTION. LACK OF FOUNDATION.
24 BY MR. BUNN:

25 Q DO YOU KNOW WHAT THE SOURCE OF DATA WAS?

26 A I THINK NATIONAL CLIMATIC DATA CENTER.

27 THE COURT: WELL, DO YOU WISH TO VOIR DIRE THE
28 WITNESS CONCERNING THIS INFORMATION?

1 MR. JOYCE: YES, YOUR HONOR.

2 THE COURT: BRIEFLY, I HOPE.

3 MR. JOYCE: IT WON'T BE LONG.

4 MR. ZIMMER: YOUR HONOR, BEFORE HE DOES THAT IF --
5 SOME OF THESE EXHIBITS WE HAVE NOT SEEN BEFORE. IF THE
6 WITNESS COULD INDICATE WHETHER THIS WAS PART OF THE
7 SUMMARY EXPERT REPORT, WHETHER WE HAVE SEEN THIS EXHIBIT
8 OR NOT BEFORE, IT WOULD BE HELPFUL.

9 THE COURT: WELL, THE IMPORTANT THING IS THIS
10 REPRESENTS PART OF HIS OPINION. AND SO YOU ARE ENTITLED
11 TO KNOW WHAT HE BASIS HIS OPINION ON, AND I THINK THAT
12 IS REASON FOR THE FOUNDATIONAL QUESTION. AND HE HAS
13 ACTUALLY TOLD YOU WHERE IT CAME FROM AND HOW HE HAS USED
14 IT.

15 MR. JOYCE: YOUR HONOR, I DON'T KNOW FOR CERTAIN
16 HE HAS YET TOLD US HOW HE HAS USED IT; BUT, NONETHELESS,
17 I WILL VOIR DIRE, IF I MAY.

18

19 VOIR DIRE EXAMINATION

20 BY MR. JOYCE:

21 Q WHEN WAS THIS PROVIDED TO YOU?

22 A THIS IS FROM THE SUMMARY EXPERT REPORT.

23 Q AND IT WAS NOT CONTAINED WITHIN APPENDIX E
24 OF THAT PORTION OF THE REPORT YOU OFFERED?

25 A IT IS NOT.

26 Q IT IS YOUR BEST BELIEF THAT THIS WAS
27 CONTAINED IN A DIFFERENT PORTION OF THE REPORT?

28 A IT IS CONTAINED IN A DIFFERENT PORTION OF

1 THE REPORT.

2 Q AND THAT IS WHERE YOU ACCESSED IT FROM?

3 A YES.

4 MR. JOYCE: OKAY. THANK YOU.

5 THE COURT: ALL RIGHT. GO AHEAD, MR. BUNN. THE
6 OBJECTION IS OVERRULED.

7 MR. BUNN: ALL RIGHT. THANK YOU.

8

9 DIRECT EXAMINATION (CONTINUED)

10 BY MR. BUNN:

11 Q THANK YOU. CAN YOU DESCRIBE, THEN, HOW THIS
12 EXHIBIT DEMONSTRATES YOUR CHOICE OF BASE PERIOD?

13 A YES. THIS IS ACCUMULATIVE DEPARTURE FOR
14 MEAN PRECIPITATION OCCURRED. WHAT IT SHOWS, IT SHOWS
15 PERIODS -- WET AND DRY PERIODS. IT IS MEANT TO SHOW
16 CLIMATIC VARIABILITY OVER SOME PERIOD OF TIME.

17 AND THE WAY YOU CONSTRUCT THIS IS YOU TAKE
18 TIME SERIES OF ANNUAL PRECIPITATION, AND YOU CALCULATE
19 THE AVERAGE. AND THEN FOR EACH YEAR GOING DOWN FROM THE
20 FIRST YEAR TO THE LAST YEAR, YOU CALCULATE THE
21 DIFFERENCE BETWEEN THE PRECIPITATION IN THAT YEAR AND
22 THE AVERAGE.

23 THEN YOU START ACCUMULATING THOSE. SO IF --
24 AS YOU ACCUMULATE THOSE IF YOU ARE GETTING NEGATIVE
25 NUMBERS, THAT MEANS THAT YOU ARE GOING -- IF THE CHARGE
26 IS GOING DOWN, THAT MEANS YOU ARE IN A DRY PERIOD. IF
27 YOU LOOK AT THIS CHART HERE AND YOU LOOK AT THE PERIOD
28 FROM MID-30'S TO MID-40'S, YOU'LL SEE THAT THERE IS A

1 THAT WE HAD PREVIOUSLY TALKED ABOUT, AND THERE IS ONE
2 ACCUMULATIVE ONE IN THE END. SO WE CAN --

3 Q OKAY. WHAT HAPPENED IN 1963 AND 1971?

4 A WELL, THERE WAS LESS DECLINE IN STORAGE AND
5 SOME AREAS OF RECOVERY, PARTICULARLY IN THE SOUTHEAST
6 PART OF THE BASIN. AND IT HAD A TOTAL CHANGE OF STORAGE
7 OF MINUS 1,221,000-ACRE FEET.

8 Q OKAY. THEN EXHIBIT 48?

9 A 48, LESS CHANGE IN STORAGE THAN THE PRIOR
10 TWO PERIODS. AND YOU CAN TELL THAT BY THE GREATER
11 AMOUNT OF GREEN AREA AND SORT OF THE ORANGE DIMINISHING
12 A LITTLE BIT IN INTENSITY. THAT HAD A STORAGE CHANGE OF
13 ABOUT 361,000-ACRE FEET NEGATIVE, SO IT IS GOING DOWN
14 STILL.

15 Q LET'S USE THIS ONE AS AN EXAMPLE. CAN A
16 CONCLUSION BE DRAWN FROM THIS MAP ABOUT WHAT WATER
17 LEVELS WERE DOING IN THESE VARIOUS COLORED AREAS?

18 A WELL, A CONCLUSION CAN BE DRAWN FROM '71 TO
19 '89 THAT IN AREAS WHERE IT IS GREEN THAT THE LEVELS HAVE
20 COME UP. AND WHERE IT IS NOT GREEN AND NOT WHITE, THE
21 LEVELS HAVE GONE DOWN. THE LEVELS -- THE AREAS THAT ARE
22 WHITE, YOU KNOW, THEY ARE -- THEY ARE LITTLE OR NO
23 CHANGE.

24 Q OKAY. THEN ONTO EXHIBIT 49, 1979 TO 1985.
25 WHAT HAPPENED DURING THIS TIME PERIOD?

26 A WELL STORAGE ACTUALLY INCREASED. STORAGE
27 INCREASED BY ABOUT 30,000-ACRE FEET.

28 Q THEN AS WE GET CLOSER TO THE PRESENT

1 EXHIBIT 50?

2 A YES. STORAGE IS INCREASING AGAIN BY ABOUT
3 25,000-ACRE FEET IN THAT PERIOD OF TIME.

4 Q THAT BEING 1985 TO 1992 IT SAYS HERE?

5 A YES.

6 Q THESE ARE 51?

7 A OKAY. THIS IS THE PERIOD OF 1992 TO '98 AND
8 A VERY SIGNIFICANT INCREASE IN STORAGE OF ABOUT
9 210,000-ACRE FEET.

10 Q EXHIBIT 52?

11 A 52 IS THE PERIOD '98 TO 2005, AND HERE WE
12 HAVE A STORAGE THAT'S BEING DEPLETED AGAIN BY ABOUT
13 485,000-ACRE FEET. THAT IS A MINUS 485,000-ACRE FEET.

14 Q SO THE STORAGE WHICH HAD BEEN INCREASING
15 IMMEDIATELY PRIOR TO 1998 OR DURING THAT PRIOR PERIOD IS
16 NOW DECREASING AGAIN; CORRECT?

17 A THAT IS CORRECT.

18 Q AND THEN WE ARE ON TO THE MOST RECENT PERIOD
19 EXHIBIT 53?

20 A IN THAT PERIOD STORAGE DECLINED BY
21 153,000-ACRE FEET.

22 Q AND THE DATA THAT WAS USED TO COME UP WITH
23 ALL THESE CHANGE OF STORAGE MAPS YOU HAVE TESTIFIED TO
24 THIS THAT -- THAT THE -- IT IS THE ONLY DATA THAT WENT
25 INTO THIS IS THE GROUNDWATER LEVEL MEASUREMENTS AND THE
26 SEDIMENT CALLS FROM THE DRILL LOGS, CORRECT, OR WAS
27 THERE SOMETHING ELSE?

28 A IN THE SPECIFIC YIELD ASSOCIATED WITH THAT.

1 Q RIGHT. THAT'S THE ONLY DATA. SO YOU DIDN'T
2 TAKE INTO ACCOUNT SUCH FACTORS AS PRECIPITATION IN THIS
3 CALCULATION?

4 A NO.

5 Q YOU DIDN'T -- SO FAR YOU DIDN'T TAKE PUMPING
6 INTO ACCOUNT IN THIS CALCULATION?

7 A NO.

8 Q DID YOU TAKE ESTIMATES OF RETURN FLOWS INTO
9 ACCOUNT?

10 A NO.

11 Q SO GOING BACK TO THE CALCULATION -- YOU HAD
12 AN EXHIBIT 10 WHICH IS A LONG WAY BACK. THIS IS REALLY
13 A VERY SIMPLE CALCULATION MATHEMATICALLY; CORRECT?

14 A CONCEPTUALLY SIMPLE.

15 Q CONCEPTUALLY SIMPLE. OKAY. I APOLOGIZE,
16 MISS HEDLUND. I'LL GO BACK TO WHATEVER SLIDE WE WERE ON
17 AND GO TO THE NEXT ONE WHICH IS THE ACCUMULATIVE 54.

18 WHAT DOES THIS REPRESENT?

19 A THIS IS THE ACCUMULATIVE CHANGE IN STORAGE
20 OVER THE STORAGE CHANGED AREA THAT WE HAVE -- WE ARE
21 USING. OVER THE PERIOD OF TIME 1951 TO 2009, IT SHOWS
22 ACCUMULATIVE CHANGE OF STORAGE IN A MINUS 5,184,000-ACRE
23 FEET.

24 Q AND EVEN IN THAT LONG PERIOD OF TIME, THERE
25 ARE SOME AREAS THAT ARE GREEN ON THIS MAP; CORRECT?

26 A YES.

27 Q WHAT DOES THAT SHOW?

28 A WELL, THAT MEANS IN '51 THE LEVELS WERE

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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 JANUARY 4, 2011 COMPRISES A FULL, TRUE,
AND CORRECT TRANSCRIPT OF THE PROCEEDINGS HELD IN THE
ABOVE ENTITLED CAUSE.

DATED THIS 8TH DAY OF JANUARY, 2011.

OFFICIAL REPORTER, CSR #5585