
IN RE: NON-BINDING ARBITRATION PURSUANT TO THE FINAL
SETTLEMENT STIPULATION, KANSAS v. NEBRASKA and COLORADO
No. 126 Original, U.S. Supreme Court

TRANSCRIPT OF ARBITRATION PROCEEDINGS

before

KARL J. DREHER, ARBITRATOR

Monday, March 16, 2009

VOLUME VI

BE IT REMEMBERED that the above-entitled matter came on
for Arbitration before KARL DREHER, Arbitrator, held at
Byron Rogers Building, 1929 South Street, Room C-205,
Denver, Colorado on the 16th day of March, 2009.

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1 PROCEEDINGS

2 ARBITRATOR DREHER: Good morning.

3 This is the sixth day of the hearing in the
4 Non-Binding Arbitration in Kansas v. Nebraska and
5 Colorado that has been the result of the Supreme Court's
6 Consent Decree. We don't expect a full day today, I
7 take it, but we'll start with Kansas' rebuttal in the
8 compliance part of the hearing.

9 Mr. Draper.

10 MR. DRAPER: Thank you, Your Honor.

11 We have two witnesses on rebuttal: First,
12 Mr. Larson and, second, Mr. Barfield.

13 ARBITRATOR DREHER: All right.

14 MR. DRAPER: Both having previously
15 testified.

16 So we would start by calling Mr. Larson, if
17 you please.

18 ARBITRATOR DREHER: Good morning

19 Mr. Larson.

20 THE WITNESS: Good morning.

21 ARBITRATOR DREHER: I would remind you
22 you're still under oath.

23 THE WITNESS: Yes.

24 STEVE LARSON,

25 having been previously duly sworn, was examined and

1 testified as follows:

2 DIRECT EXAMINATION

3 BY MR. DRAPER:

4 Q. With that, I think we're ready to proceed.

5 Good morning, Mr. Larson.

6 A. Good morning.

7 Q. I would like to start by calling the
8 Arbitrator's attention and the parties to what has been
9 labeled as Kansas Exhibit 58. This is the document that
10 had a cover sheet entitled "Handouts for Upper
11 Republican Natural Resources District, Special Meeting,
12 July 13, 2006" by the Nebraska Department of Natural
13 Resources.

14 Mr. Larson, have you had a chance to review
15 this document?

16 A. Yes, I have.

17 Q. Would you, please, describe what you
18 consider to be significant in this document for the
19 purposes of this proceeding.

20 A. Well, I think there are several things that
21 are significant about this document.

22 One is it represents an analysis fairly
23 similar to the analysis that we conducted to try to look
24 at potential future effects of pumping in the basin in
25 terms of their impacts on streamflow depletions.

1 And it attempts to do that in a way that
2 was similar to what we did where it projects out a
3 future hydrologic scenario.

4 In this case, they used the years 1981
5 through 2000, and they repeat that twice to give them a
6 40-year sort of horizon of potential future impacts.
7 Ours was a little bit different, we used 1990 to 2006
8 and cycled that three times for a 51-year future impact
9 assessment.

10 The one -- there is a couple of other
11 things that this result -- the results of this also
12 illustrate. One of them is, if you look at the third
13 Figure, it shows the predicted baseflow impacts for the
14 future scenario 2006 to 2045 based on repeating 1981 to
15 2000 climatic conditions.

16 On that graph are presented the results for
17 a variety of scenarios in terms of the amounts of
18 reductions in groundwater pumping within the basin, both
19 from the standpoint of just general reductions in
20 pumping and from the standpoint of looking at targeted
21 areas in reduction, the so-called quick response areas
22 near the streams.

23 And if you look at the Figure, it's --
24 although it's not totally clear whether we're dealing
25 with net impacts or just pumping impacts, my suspicion

1 is that we're dealing with net impacts based on some
2 tests that we've conducted trying to replicate this, but
3 I think for the purpose of this discussion, it doesn't
4 really matter whether they're net impacts or just
5 groundwater impacts.

6 But in particular, you can see the
7 difference between sort of across-the-board reductions
8 versus reductions that are targeted more to the quick
9 response areas in terms of what they're likely to
10 produce in terms of future baseflow depletions.

11 And you can do that by looking at two
12 different runs. One is the run entitled "RED50." That
13 is a 50 percent reduction across the board for the NRDs
14 as described on the first page of the documents.

15 They're basically reducing the level of
16 pumping in the three NRDs and the Tri-Basin NRD by
17 50 percent. So that's analogous to a more or less
18 uniform across-the-board reduction, a very significant
19 reduction, basically 50 percent of the total pumping.

20 If you follow that curve, it's a little bit
21 difficult to see it on this diagram, because of -- we
22 don't have the color version of it, but if you look down
23 the legend, the RED50 is the diamond-shape line.

24 If you go over to the left-hand -- well,
25 maybe if you go over to the right-hand margin, you will

1 see that at the very right-hand end of it, it's the
2 third line from the bottom.

3 So the first line from the bottom is
4 RED100, the next line is RED15QR100, and then there are
5 two close together, but the one below is the RED50. And
6 that's the diamond symbols. If you follow that back you
7 can see that what it's basically producing is a
8 shallower downward trending line over this 40-year
9 plotting horizon.

10 If you then contrast that to the line
11 RED15QR100, which uses -- or which assumes a more
12 targeted change in pumping focused on the quick response
13 areas, where the quick response areas are reduced by
14 100 percent, and if you follow that line back, what you
15 will see is in the first few years, up to maybe eight or
16 ten years, there is a very quick drop in the projected
17 impact. And then over the long haul, and there is a
18 gradual increase.

19 This is much like the result that we
20 obtained for the Kansas remedy analysis. We get a quick
21 drop due to curtailment within the quick response areas,
22 so we get a quicker response; but then there is a
23 gradual increase going out in time associated with
24 legacy effects continuing to pump.

25 The other line doesn't have that feature --

1 in other words, we don't get the quick drop in the early
2 years. It's a much more gradual decline. So clearly,
3 you can see the effect of the difference between taking
4 across-the-board reductions versus taking much more
5 targeted reductions similar to what the Kansas remedy
6 had assumed.

7 Q. Which is the line that you're referring to
8 now? I think you said it was the RED15QR100 line.
9 Where is that shown?

10 A. That's -- if you start at the right-hand
11 margin of the graph, is the easiest way to do it.
12 That's the second line from the bottom. It has just the
13 symbol with the horizontal line connecting the symbols.
14 And if you follow that backwards, it's about 170,000
15 acre-feet or so per year at the right-hand margin; it is
16 about roughly 150,000 acre-feet per year back at year
17 2014 or so, and then it goes back up to the starting
18 condition at about 210,000 acre-feet per year.

19 But again, the observation there is you --
20 by focusing on the quick response area, you do get a
21 fairly rapid decline in the projected impacts over the
22 first decade or so.

23 Q. At least compared to the basinwide cutback?

24 A. Yeah, the basinwide cutback, because your
25 pumping is spread out over a much larger area and a lot

1 of it is away from the stream locations themselves; the
2 storage effect and the buffering effect of storage just
3 slows that process down, and so it takes a much longer
4 time for that kind of reduction to have a significant
5 impact on baseflow on reducing these impacts.

6 You can see toward the right-hand margin
7 that they're tending to come together, the RED15QR100
8 result is sort of creeping up, and the other one is
9 creeping down. And so they're tending to come together,
10 but the one has a much more rapid effect in the first
11 decade.

12 Q. You've indicated that the ones -- the runs
13 here that are targeted to the quick response area are --
14 show a more rapid response, but there are still delays
15 even in that response, are there not?

16 A. Yeah. It takes -- as you can see here, it
17 takes about a decade or so for those reductions to set
18 in before you kind of reverse course and start on the
19 gradual increase associated with the continuing pumping
20 and the legacy effects of historical pumping.

21 Q. Is the kind of analysis that is shown on
22 this graph and the corresponding analysis by the Kansas
23 experts a typical way for experts to analyze this kind
24 of problem?

25 A. Well, certainly when you're, you know,

1 trying to look down the road and understand what you
2 might be in store for in the future, this is a typical
3 way to do it.

4 You can see that, I think by the fact that
5 we analyzed the situation in this fashion to try to take
6 some historical variation in hydrologic conditions, use
7 that as an estimator of what we might expect to occur in
8 the future and then to make a longer term assessment.

9 Nebraska, at least in this analysis, has
10 taken more or less the same approach. There is a little
11 difference in the selection of periods to represent the
12 variations in conditions, but the real key, in my view,
13 is that you're looking at the variability in the
14 conditions. Sometimes you will have wetter conditions,
15 sometimes you will have drier conditions and they will
16 vary.

17 And it's important to understand how those
18 variations will affect you as you go forward in time,
19 especially in this basin where some of the impacts can
20 be significantly extended in terms of manifesting
21 themselves in the stream.

22 We're talking about, you know, several
23 decades for impacts to really be noticed in streamflow
24 depletions and so you have to be prepared for those
25 effects going out into the future.

1 Q. In the context of this graph, I would like
2 to refer you and the Arbitrator and the parties to what
3 has been marked as Kansas Exhibit 61. This was an Open
4 Letter To All Concerned About Nebraska Water Issues from
5 the General Manager of the Middle Republican Natural
6 Resources District, dated January 4, 2007, that
7 discussed, among other things, the presentation that was
8 made by the Department of Natural Resources to the NRDs
9 in December of 2006.

10 In that regard we've looked earlier at the
11 third page of this document, and I wanted to ask you to
12 describe what occurred at that meeting, according to
13 this document, in light of the analysis that we see on
14 the graph in Kansas Exhibit 58.

15 A. Well, on Exhibit 61 there is a reference to
16 Director Bleed's presentation. This was on the third
17 page. It begins under the section "Where we go from
18 here." And in that section there is a discussion of her
19 recommendations which -- and I will just read it.

20 It says, "which represents a 15 percent
21 pumping reduction in upland areas and a 50 percent
22 reduction in quick response areas."

23 If you turn to Exhibit --

24 Q. 58?

25 A. -- 58 and the graphic that we were looking

1 at, there is an analysis there RED -- what is labeled
2 RED15QR50, which would seem to be analogous to what was
3 being referred to in Exhibit 61.

4 That result for the 15 percent reduction
5 outside of the quick response areas and a 50 percent
6 reduction within the quick response areas can be seen by
7 looking at the line that's the fourth line from the
8 lowermost line. It has the crosses, it has the symbols.

9 And you can see that out at about the end
10 of the forecasting period, it's up around maybe 210- to
11 215,000, maybe occasionally going up to 220,000 at the
12 end.

13 If you follow that back, you can see what
14 the projected impact of that scenario would be, that
15 there would be, at least after the first few years, over
16 the first decade or so, some decline in the projected
17 impact from the starting point of 210,000 acre-feet per
18 year down into the, say, roughly 180,000 acre-feet per
19 year level. And then after that, again a gradual
20 increase over time toward the end at about up to about
21 the 210- to 220,000 acre-foot per year level.

22 So that would seem to be the kind of
23 projection that would be associated with that
24 recommendation that was given in Exhibit 61.

25 Q. Now, I would like to turn our attention to

1 what has been marked as Kansas Exhibit 65, which is a
2 one-page sheet entitled "Comparison of Nebraska pumping
3 impact under baseline conditions, Kansas proposed
4 remedy, and the NRD Pumping Alternatives."

5 Do you have a copy of that?

6 A. Yes, I do.

7 Q. Was this exhibit prepared under your
8 supervision?

9 A. Yes, it was.

10 Q. And what does it show?

11 A. Well, what we've done is, based on the
12 discussions we had last week about potential limits on
13 pumping associated with the IMPs, we made an additional
14 set of two runs in the model where we limited the
15 pumping to what we understood to be some of the
16 potential limits that are described in the IMPs.

17 In particular, if you look at the lower
18 right-hand corner of the exhibit, we've tabulated the
19 pumping amounts that we used on average in the future
20 scenario analysis for each of the NRDs.

21 You can see that under the column labeled
22 "IMP[2]af/y," we have those pumping figures for the
23 Upper Republican that's 244,407 acre-feet per year. For
24 the Middle Republican, it's 247,580 acre-feet per year.
25 For the Lower Republican, it's 425,000 acre-feet per

1 year, for a total of 916,987 acre-feet per year.

2 Q. Where in the graph are you referring?

3 A. I'm in the box in the lower right-hand
4 portion of the graph.

5 So what we did was to repeat the analyses
6 of the IMP impacts that we had done previously using
7 these figures as the amounts of average pumping for each
8 of the NRDs.

9 And so the procedure was simply to scale
10 the irrigation depths accordingly so that, even though
11 there was still variation from year-to-year, that on the
12 average, these would be the pumping amounts that we have
13 in this analysis.

14 Q. How did you choose those amounts?

15 A. Well, based on the discussions last week,
16 the Middle and Lower Republican NRD amounts were from
17 the values that are quoted in the IMPs and that were
18 discussed in my testimony -- or my cross-examination.

19 The Lower --

20 Q. Did you say the Middle and Lower were set
21 or was it the Upper and the Middle?

22 A. Upper and the Middle were set, but I'm
23 wondering if we have the labels on here wrong, now that
24 I look at it.

25 The Lower, the labels are wrong, I

1 apologize for that. The Lower Republican is actually
2 the first one at 244,407 acre-feet per year. And that
3 was, because there wasn't a specific value in the IMP,
4 it was derived simply by taking their allocation and
5 their certified acreage and using that to determine what
6 the pumping amount would be on average.

7 Q. So in order to correct this, as you have
8 suggested, where the "URNRD" label appears, that should
9 be "LRNRD"?

10 A. Yes.

11 Q. And just two lines below in the box where
12 it says "LRNRD," that should be "URNRD"?

13 A. Yes. And so once we made those
14 adjustments, we then ran two simulations of future
15 conditions, everything else being the same as what we
16 had done previously and they're labeled "IMP[2]."

17 And we ran one using an assumption of
18 20 percent return flows for the pumping and one with
19 15 percent return flows, as we had done previously in
20 our analysis.

21 And the graphic then simply shows what the
22 projected pumping impacts would be under those scenarios
23 and also includes the results of the scenarios that we
24 had presented previously in terms of the IMP analysis
25 that we had presented last week.

1 And so you can see on the diagram the
2 differences between those different scenarios. There is
3 a baseline scenario, which basically uses the 1990 to
4 2006 irrigation depths applied to the 2006 acreage.
5 That's the topmost one.

6 The next one down is the analysis that we
7 had done previously with the 15 percent return flows.

8 And the next one is the analysis with the
9 20 percent return flows, the one that we had done
10 previously.

11 Then the bottom two in that upper group are
12 the two analyses that we just completed with these
13 alternative pumping amounts. The upper -- the one -- I
14 guess it's the fourth one from the top, is the one
15 associated with 15 percent return flows and the bottom
16 one in that group is the one with 20 percent return
17 flows.

18 And so you can see, then, the overall
19 projected trend in those pumping impacts as we go
20 forward through the future simulation period.

21 Q. And you also show the Kansas proposed
22 remedy?

23 A. Yes, that was also included. That was on
24 our -- associated with our earlier analysis.

25 Q. To just review the pumping amounts that

1 were used, the runs that are designated IMP with a 1 in
2 brackets and that have the first column of pumping
3 numbers here, those are the pumping amounts that were
4 used in the analysis presented by Kansas in its direct
5 case; is that right?

6 A. That's correct.

7 Q. And the second column in the box on the
8 lower right-hand corner that's labeled "IMP[2]" in
9 brackets are the numbers that you employed for the new
10 runs, in light of the testimony from last week?

11 A. That's correct.

12 Q. And are these numbers in that final column
13 there, are they all specified in the IMPs, to your
14 understanding?

15 A. Well, the ones for the Middle and the
16 Upper, those values do appear in the IMPs. The one for
17 the Lower, as I indicated previously, there is no
18 specific value specified in the IMPs, and so we used the
19 allocation times the certified acreage to estimate an
20 amount of pumping. There is an allocation that is
21 specified, but not a total pumping amount.

22 Q. There was no standard or limit, like the
23 ones that appeared in the other two NRD IMPs?

24 A. No.

25 Q. Having described what went into this, what

1 conclusions do you draw from this comparison?

2 A. Well, I think you can see from the graphic
3 that under those conditions, what we would expect is a
4 pretty much continuing increase in potential impacts
5 going forward in time. They will obviously vary up and
6 down in association with variations in the climatic
7 conditions, but there is an overall trend increasing out
8 to -- on the order of 250,000 acre-feet or more as we
9 look out 40 or 50 years into the future.

10 Q. I would like to direct your attention to
11 the Nebraska Compact Compliance report by Dr. Schneider
12 and Mr. Williams. That's labeled Nebraska Exhibit 15.

13 Now, in Nebraska Exhibit 15, the Nebraska
14 Compliance Report, I would like to ask you to look at a
15 particular criticism of the Kansas plan that appears on
16 pages 16 and 17.

17 Would you describe the criticism that is
18 made on pages 16 and 17 of the Nebraska exhibit and give
19 us your opinion on whether that's a valid criticism.

20 A. Well, it basically suggests that because we
21 used a wet period in our model run, although it's
22 actually not a wet period in the context that it -- it
23 includes both wet periods and dry periods, but because
24 of that and because Mr. Book utilized a dry period in
25 his analysis of how much groundwater impact could be

1 tolerated, so to speak, during these drier periods, that
2 that somehow compromised the analyses that we made of
3 the potential future conditions.

4 And I guess my response is, I think you're
5 talking about apples and oranges here because the
6 hydrologic analysis with the model is to try to see how
7 the model will respond to changes in pumping, given a
8 certain repeated pattern of hydrologic conditions, some
9 of which are wet, some of which are dry.

10 Mr. Book's analysis is an analysis to
11 determine at what level of groundwater depletions you
12 need to be at when these kinds of drier conditions
13 appear so that you can maintain compliance with the
14 compact.

15 So I think they're really two different
16 issues, and I think if you look at the analysis that
17 Nebraska made in that Exhibit 58 that we looked at, our
18 analysis is very similar to that in terms of looking at
19 what the potential impacts will be in the future.

20 And I don't think that if you compare those
21 together, that the results that they were getting there
22 are significantly different than the results that we
23 were getting.

24 Q. One of the aspects of the IMPs that was
25 brought out last week in testimony was that, under

1 certain conditions, the allocations could be increased
2 to allow more pumping, depending on hydrologic
3 conditions.

4 Under the circumstances existing now in the
5 Republican River Basin, is that a wise way to manage the
6 groundwater pumping?

7 A. Well, I think when you relax these kinds of
8 criteria for how much pumping might be allowed, you have
9 to recognize that by allowing more pumping because of,
10 say, the availability of surface water or some other
11 water supply, that as you go down the road, you're going
12 to have to pay for that increased effect and because
13 there is long time lag between the time when the pumping
14 actually occurs and the time when it manifests itself on
15 streamflows.

16 And so you have to recognize that in some
17 ways by allowing those limits to go up, for example,
18 because there is a little more water supply available in
19 a given year, that in some ways you're kind of digging
20 the hole a little bit deeper that you're going to have
21 to deal with as you go down the road. And so you have
22 to be able to recognize that those increases in pumping,
23 if you allow them, are going to cause increased
24 depletions as you go down the road and it is going to be
25 many, many years as those impacts manifest themselves

1 going forward in the future.

2 Q. By the same token, does it make sense to
3 delay imposing the necessary limits on groundwater
4 pumping, or is it appropriate, in your view under the
5 present conditions, to allow the situation to persist
6 for a few more years before it is addressed?

7 A. Well, as I just indicated, the longer you
8 allow these pumping levels to continue or even increase,
9 the more difficult situation you're going to have deal
10 with as you go forward in the future, because as those
11 pumping effects continue to manifest themselves in the
12 streamflow, you're going to have to deal with them.

13 And when conditions turn dry and there
14 isn't a lot of water supply, those effects are still
15 going to be there, and you're going to have to deal with
16 them. And if those effects are higher than they are
17 today because of increased pumping or the legacy effects
18 of past pumping, they're going to be more difficult to
19 deal with as you go forward in time.

20 MR. DRAPER: Thank you very much.

21 No more questions.

22 ARBITRATOR DREHER: I have a couple, and
23 then I want to take a brief break while I confer with
24 the reporter to see if I can recover some transcript
25 from some testimony that was offered last week. I don't

1 know if we can do that or not, but I want to at least
2 attempt to do that.

3 Dr. Larson, to start with, I may have been
4 looking for, thinking about something a little
5 different; but in your analyses that were presented
6 previously in the direct case and then shown again here
7 in Kansas Exhibit 65, you used two different levels of
8 return flows, 15 percent and 20 percent.

9 I don't recall why you did that. I know
10 it's in your report, I just don't remember.

11 THE WITNESS: Do you have a copy of the
12 modeling report?

13 ARBITRATOR DREHER: I do.

14 THE WITNESS: If you look on page 20, it --
15 actually, I guess it's not there. I'm sorry about that.

16 I think the concern is that or our concern
17 is that as you go forward in time and you're dealing
18 with lower water supplies, the irrigation efficiency
19 of -- the on-farm type irrigation efficiency of
20 80 percent may be too low and that you may actually have
21 higher irrigation efficiencies.

22 And I think Mr. Barfield can probably speak
23 to this question more specifically, but my understanding
24 is that over the recent years, we've seen increases in
25 efficiency in terms of using center pivot sprinklers and

1 so on that suggest that 80 percent efficiencies may be
2 too low.

3 And so the concern is that as you go
4 forward with more restrictions on the amount of water
5 available to be pumped, that there are increases in
6 efficiency that could occur. And so to get a sense of
7 what those impacts are, we just made a certain
8 sensitivity test of what would happen if, in fact, that
9 were the case.

10 ARBITRATOR DREHER: And then under your
11 IMP[2] simulations, you assumed a -- I presume it's an
12 average groundwater depletion of 916,987 acre-feet per
13 year; is that correct?

14 THE WITNESS: That's the amount of pumping
15 on average than we allowed for each of the NRDs.

16 Now, we allowed to vary from year-to-year
17 in the same pattern that it occurred historically, but
18 over the equivalent 1990 to 2006 period, we adjusted it
19 so that it would average these amounts in terms of the
20 pumping.

21 ARBITRATOR DREHER: Were you present during
22 Dr. Schneider's testimony last week?

23 THE WITNESS: Yes, I was.

24 ARBITRATOR DREHER: During his testimony he
25 made the statement that -- and this is reflected in

1 Nebraska Exhibit 27 -- that in Kansas' simulations
2 corresponding to I believe what you have shown here is
3 IMP[1] in Exhibit 65, that Kansas was assuming an
4 average annual withdrawal of groundwater equal to
5 1,180,000 acre-feet per year, which is essentially equal
6 to the total that you show for IMP[1], but then he
7 stated that Kansas -- and I'm paraphrasing here --
8 Kansas had overestimated average annual groundwater
9 withdrawals in the future and that, over the longer
10 term, future groundwater withdrawals would average
11 866,000 acre-feet per year.

12 And I guess I'm not clear why you didn't
13 use that number and instead used your total of 916,987.
14 I understand how you derived that, because you had to --
15 you had to calculate something for the Lower Republican
16 NRD, but it would appear that you're still 50,000
17 acre-feet, about, a year more in groundwater withdrawals
18 than what Nebraska testified they, in fact, would
19 realize.

20 THE WITNESS: And I think the difference is
21 with the Lower Republican NRD. When I have looked at
22 the IMP, at least as I understand it and listening to
23 the testimony, there is no limit -- specific limit or
24 standard for that IMP, and that the only indication of
25 the allowable amount seems to be the allocation of

1 9 inches in the certified acreage. When you multiply
2 those two together, you get 244,407 acre-feet per year.

3 There is reference in some of these
4 documents to the 80 percent of the 1998 to 2002 pumping.
5 And when you look at the Lower Republican, I think that
6 number is about 194,000 acre-feet per year. And I think
7 that difference is the difference between the two
8 numbers that we're talking about here.

9 We used the 9-inch allocation times the
10 certified acreage, because that appeared to be the only
11 kind of limit that was in the IMP.

12 ARBITRATOR DREHER: Well, the other limit
13 that was in the IMP was a set percentage of Nebraska's
14 allowable proportion.

15 I'm not saying it very well, but if
16 Nebraska made a determination that they needed to
17 restrict their total consumptive beneficial use from
18 groundwater to a certain amount, then all three of the
19 NRDs were also limited by a certain percentage of that
20 amount?

21 THE WITNESS: That's correct. What we
22 don't know is what that amount will be going forward,
23 and as I understood, it's kind of an after-the-fact
24 calculation.

25 ARBITRATOR DREHER: Well, if we could take

1 a brief recess here while I confer with the reporter to
2 see if we can pull up some of the testimony from last
3 week.

4 MR. WILMOTH: Mr. Arbitrator, I was
5 wondering if we might extend that and take the morning
6 break a little early since we have some exhibits we've
7 never seen before, we might have some little extra time
8 to digest those and formulate some questions to help
9 delineate their meaning.

10 ARBITRATOR DREHER: So we'll break, then,
11 until 10 o'clock.

12 MR. WILMOTH: Thank you.

13 (Break was taken from 9:40 to 10:00 a.m.)

14 ARBITRATOR DREHER: Dr. Larson, again
15 referring to Exhibit 65, Kansas Exhibit 65, for these
16 simulations, remind me again what climate you assumed or
17 precipitation you assumed for this.

18 THE WITNESS: Yes. It's Mr. Larson, by the
19 way.

20 ARBITRATOR DREHER: Oh, I'm sorry.

21 THE WITNESS: That's all right, no problem.

22 We basically used the 1990 to 2006 climatic
23 conditions repeating three times as we did previously.

24 ARBITRATOR DREHER: 1990 through 2006?

25 THE WITNESS: Yes.

1 ARBITRATOR DREHER: Incidentally, I guess I
2 can call you "Doctor" if they can call me "Your Honor."

3 Mr. Larson, do you have a copy of Nebraska
4 Exhibit 15 handy?

5 THE WITNESS: Is that the compliance
6 report?

7 ARBITRATOR DREHER: It is.

8 THE WITNESS: I have the text part, but I
9 don't have the appendices.

10 ARBITRATOR DREHER: Can Nebraska furnish
11 him with the appendices, please.

12 THE WITNESS: Actually, there is a binder
13 on my table here, I don't know whose it is.

14 ARBITRATOR DREHER: It probably has them in
15 the binder, and you've got Nebraska Exhibit 15 in that
16 binder. He thinks it's in his binder.

17 THE WITNESS: I think --

18 MR. WILMOTH: I have it right here.

19 THE WITNESS: I think that's it.

20 ARBITRATOR DREHER: I realize it's a little
21 difficult to navigate through this, but I would like you
22 to see if you can locate Appendix E, Appendix F and
23 Appendix G.

24 THE WITNESS: Found it.

25 ARBITRATOR DREHER: Now, there are three

1 tables that I'm going to want you to look at.

2 The first one is in Appendix E, and it's
3 the table that immediately follows Appendix B of
4 Appendix E.

5 THE WITNESS: I have it.

6 ARBITRATOR DREHER: So that's the first
7 one. I'm going to ask you the same question about all
8 of them, so I want you to try to find these three
9 tables, and then I will ask a question that pertains to
10 all three.

11 The next one is a table that's presented in
12 Appendix F of Exhibit 15, and it should be the second
13 page behind that first table that I had you turn to. It
14 should be titled "Appendix F: Estimated Compliance
15 through 2012."

16 THE WITNESS: Yes.

17 ARBITRATOR DREHER: And the last one is in
18 Appendix G, and it's the table that's in Appendix B to
19 Appendix G.

20 THE WITNESS: Got them.

21 ARBITRATOR DREHER: All right. So these
22 three tables represent Nebraska's simulations to
23 demonstrate either compliance or noncompliance under a
24 various set of assumptions.

25 The first table, which is in Appendix E, is

1 their projected compliance under average climate
2 conditions.

3 The next table is their projected
4 compliance through 2012 using 1992 through 1995 climate,
5 and then the last one is their projected compliance for
6 under dry-year conditions.

7 And it strikes me that the difference
8 between their projected compliance and Kansas' projected
9 compliance is because Kansas is projecting groundwater
10 depletions that continue to increase and Nebraska is
11 projecting something different. I'm not sure I can
12 summarize exactly what it is behind these projections,
13 but -- and there is a question coming.

14 But in the table that I had you turn to
15 from Appendix E, they -- Nebraska using their
16 simulations would demonstrate that they would be in
17 compliance under average climate conditions. And then
18 in Appendix F, using the 1992 through 1995 climate, they
19 demonstrate that under their assumptions they would be
20 in compliance through 2012.

21 And then in the table in Appendix G under
22 dry conditions, they project that they would almost be
23 in compliance under dry-year conditions through 2012.

24 And the question is, do you agree with
25 those projections to any extent or do you disagree with

1 those projections, or do you know?

2 THE WITNESS: Well, I think Mr. Barfield is
3 actually going to speak to these tables directly in his
4 testimony.

5 My sense -- well, first of all, like, for
6 example, the projections under Appendix F are made under
7 pretty wet conditions in terms of the five-year period,
8 and you can tell that by looking at the allocation
9 figures that are given in that table.

10 And this is not the same as the Kansas
11 projection because as I understand what they have done
12 is they have replaced 2007 and 2008 with either
13 conditions they have experienced or estimates of
14 conditions for those years, and then they begun the sort
15 of last four years with the year 1992. And, of course,
16 1993 was a very, very wet year and the effect of that is
17 significant as you go forward.

18 So it's a condition that is pretty
19 optimistic in terms of overall water supply. We can't
20 tell from just looking at this directly how the
21 groundwater impacts would change.

22 You can tell for the other analyses what
23 the groundwater impacts are by looking at the tables
24 that precede the tables that you referred me to, so you
25 can see for the five-year period what their estimated

1 groundwater impacts are.

2 Having said that, my concern would be that
3 looking at average conditions, in my view, really isn't
4 that helpful because we know that we're not going to get
5 average conditions every year; we're going to get some
6 wetter conditions and some drier conditions. So you
7 need to be, I think, looking at both wet and dry.

8 The other concern that I have that I think
9 Mr. Barfield will speak to is the allocations that are
10 computed, and especially for the dry-period allocation
11 in Appendix G seems to be an optimistic allocation, in
12 my view, relative to what you would expect during dry
13 periods.

14 And I think if you look at Mr. Book's
15 analysis under dry conditions, the allocations
16 experienced during those years are much lower than the
17 allocations that are being used here to evaluate
18 compliance.

19 ARBITRATOR DREHER: Thank you.

20 Mr. Wilmoth.

21 MR. WILMOTH: Thank you very much.

22 CROSS-EXAMINATION

23 BY MR. WILMOTH:

24 Q. Good morning, Mr. Larson.

25 A. Good morning.

1 Q. Thank you for returning for another day.

2 Just very quickly, I just wanted to
3 establish your understanding of Exhibit -- Kansas
4 Exhibit 58. Do you have a copy of that?

5 A. I do, yes.

6 Q. What were the overall pumping volumes used
7 in this document to calculate impacts?

8 A. Well, the only specific data that we have
9 is shown on the first graphic, at least that I'm aware
10 of. It shows the acreages assumed, it shows pumping
11 volumes historically and then pumping volumes going
12 forward with and without the allocations.

13 Q. So is this analysis, as you said, kind of
14 similar to what you did, you took irrigated acres and
15 multiplied it by depth?

16 A. Yes.

17 Q. And this document analyzes only the issue
18 of potential effects from groundwater reduction; is that
19 right?

20 A. Yes, that's my understanding.

21 Q. And your analysis did the same; is that
22 right?

23 A. That's correct.

24 Q. So neither analysis accounts for any other
25 alternative such as surface water purchases or water

1 augmentation projects or things like that?

2 A. Well, the analysis that I did is simply the
3 pumping impact and the imported water supply credit
4 impact associated with the RRCA model analysis.

5 Q. And with regard to modeling, how important
6 is it to have proper inputs into your model?

7 A. Oh, I guess it depends on the circumstance
8 in terms of what the inputs are and how they affect the
9 results.

10 Q. Well, if you're trying to determine the
11 impact of groundwater pumping in a model, is it
12 important to know how much groundwater is going to be
13 pumped?

14 A. Well, if you want to know the impacts on a
15 certain amount of pumping, you need to know the value.

16 Q. And I believe you responded to the
17 Arbitrator that you did not employ the 866,000 figure
18 reflected in the IMPs; is that correct?

19 A. That's correct, we didn't -- we didn't use
20 the 866,000 because it wasn't clear that there was a
21 limit for the Lower Republican. However, I would add
22 that if you wanted to know what that result was within a
23 reasonable amount, you can just more or less interpolate
24 it directly from the graphic.

25 And that's because if you look at the

1 uppermost line on Exhibit 65, that's the baseline
2 condition, and I believe that's a pumping amount of
3 about 1.18 million-acre feet per year. I think that was
4 the number that was talked about last week.

5 If you move down to the first solid line,
6 that's the IMP[1] result, which is about 100,000
7 acre-feet or is associated with a pumping amount that is
8 about 100,000 acre-feet lower. And then if you move
9 down to the lowermost solid line above the -- of the
10 upper group, that's associated with the 916,000. So
11 that's about another 150,000 acre-feet, or that's the
12 result associated with about another 150,000 acre-feet
13 reduction in pumping.

14 So if we were to reduce it another 50,000,
15 I think generally what you would see is about a third of
16 the distance between those two lines, you would move
17 that line down about a third of that difference.

18 Q. Just to be clear, you did not adjust the
19 pumping input to account for the limitation in the Lower
20 Republican IMP that limits it to 26 percent of the
21 overall depletion; is that right?

22 A. We did not use that part of the IMP because
23 there is -- that's something that you go forward in time
24 and it's not clear at all what those numbers will be as
25 you go forward in time because, as I understand it,

1 they're based on projections that are made from time to
2 time.

3 Q. Is it correct -- I see your Exhibit 65,
4 which I think you just referred to.

5 Is it correct that that starts in 2006,
6 essentially?

7 A. The initial conditions began in 2006,
8 correct.

9 Q. So this doesn't account for change
10 conditions occurring in 2007-2008; is that right?

11 A. That's correct. I think if you look at
12 those conditions, they tend to be a little bit wetter.
13 Some of these impacts could increase.

14 Q. Of course, the allocations will increase
15 also, will they not?

16 A. To some extent they will, yes.

17 Q. And I notice that your model projection
18 goes out about 50 years. Is it common for you, in your
19 practice, to model things out 50 years in time?

20 A. Well, of course, it depends on the
21 question; but in terms of looking at water planning, I
22 think it's pretty common to look out significantly into
23 the future, especially in large basins like this where
24 response times are very drawn out. I think there is a
25 need to look out in the future.

1 I do know that in some basins in the west
2 there are typical -- at least for some groundwater
3 developments, there are 40-year planning horizons that
4 people use often to look at future conditions.

5 Q. And typically, just as a matter of your
6 experience, do the -- does the level of uncertainty with
7 regard to the model result increase as you go out in
8 time?

9 A. Typically it can, yes. To some extent, it
10 can increase as you go forward, as you get further and
11 further away from the current condition.

12 Now, some of that some of that depends on
13 whether you're still operating within the range of
14 conditions that the model was calibrated to.
15 Oftentimes, the increase is when you start to move away
16 from those conditions, but there can be some increase in
17 uncertainty.

18 Q. Let me ask you just a specific question
19 with regard to Exhibit 55 [sic].

20 Are you more confident in the results shown
21 for 2012 or for 2057?

22 A. Well, I think in the abstract, I think I
23 would say that the closer you are to the calibration
24 period, the less uncertainty there would be. Obviously,
25 as you go forward in time, there is more uncertainty.

1 Also, I think you have to keep in mind this
2 is a projection. We haven't attempted to project
3 climate.

4 We had simply used variations in historical
5 climate conditions to help us understand what can happen
6 under variable climate conditions. And so I think it's
7 a projection to help understand what you can expect to
8 occur in the future as the climate varies.

9 ARBITRATOR DREHER: Mr. Wilmoth, which
10 exhibit were you referring to?

11 MR. WILMOTH: I was referring to Kansas 65.

12 ARBITRATOR DREHER: 65. All right, thank
13 you.

14 Q. (BY MR. WILMOTH) So just for clarity of the
15 record, are you more confident with your 2012 projection
16 or your 2057 projection?

17 A. Well, like I said in the abstract, having
18 not done a specific calculation of uncertainty, the
19 closer you are to that specific known period of 2006 or
20 2007, for example, the less the uncertainty would
21 generally be. But I would also caution that this is
22 basically an attempt to project potential variations of
23 conditions out into the future.

24 Q. With regard to attempting to be as close to
25 the calibrated period as possible, why would you not

1 elect to reset your starting point at, say, 2008 or
2 2009?

3 A. Well, I don't think we have from Nebraska
4 all the data that we would need to do that at this point
5 in time is my understanding.

6 MR. WILMOTH: And with regard to data, I
7 understand, just for the record, that Kansas has offered
8 to make available the model runs that support Exhibit
9 65; is that correct?

10 MR. DRAPER: That's correct.

11 MR. WILMOTH: And certainly, we would just
12 like to receive those and have an opportunity to look at
13 them. And I suppose the only opportunity we would have
14 to respond to them would be in the briefing.

15 Is that acceptable?

16 ARBITRATOR DREHER: At this point, unless
17 something different develops here, I would expect that
18 the only opportunity you would have would be in the
19 posthearing briefings. And along those lines, when is
20 Kansas prepared to make those available?

21 MR. DRAPER: This morning.

22 ARBITRATOR DREHER: Okay.

23 MR. WILMOTH: Okay, thank you very much.

24 We have nothing further at this time for
25 Mr. Larson.

1 ARBITRATOR DREHER: I have one more
2 question for Mr. Larson.

3 Again, referring to Exhibit 65, and I refer
4 to it out of convenience because I saw the same behavior
5 in your earlier simulations; but if you look at the
6 collection of simulations involving either the base case
7 or baseline conditions or any of the simulations
8 involving Nebraska's IMPs, you see that there is
9 considerably more variation, oscillation, if you will,
10 around whatever moving average might be you might look
11 at.

12 But when you look at Kansas' remedy, the
13 variation seem to be substantially subdued in comparison
14 to the variations in either the baseline or the
15 simulations of the IMPs.

16 And at least my -- I don't know if I want
17 to call it an assumption, but my qualitative assessment
18 is that that must reflect the fact that in Kansas'
19 proposed remedy, the pumping from wells within 2 1/2
20 miles of the Republican River or its tributaries has
21 been curtailed; whereas, that has not been the case in
22 the -- obviously, not the case in the baseline, but it's
23 also not the case in any of the IMP scenarios; is that
24 accurate?

25 THE WITNESS: I think it is.

1 And the other thing I would draw your
2 attention to is that in simulating a reduced number of
3 acres, there is also a reduction in recharge that is
4 associated with irrigated land and that change also
5 influences the temporal pattern of baseflows, if you
6 will, to some degree.

7 And that was the passage I was going to
8 cite you to in this report, on the modeling report, that
9 we do have recharge calculations that actually increase
10 recharge on irrigated lands. And so when you have
11 irrigated lands near the streams in play, there is a
12 greater effect of climatic variation because there is
13 some extra water, groundwater recharge associated with
14 those irrigated lands.

15 When those are taken out of irrigation, in
16 the alternative the lands are treated as dryland and so
17 that the recharge is more subdued on those lands so you
18 get less of an oscillation associated with precipitation
19 variations under that scenario.

20 But I think probably the larger part is the
21 variations in groundwater pumping near the streams.

22 MR. WILMOTH: Mr. Arbitrator, I'm sorry, I
23 have one more question that I forgot to ask.

24 Would it be acceptable to do that now?

25 ARBITRATOR DREHER: Yes.

1 Q. (BY MR. WILMOTH) Mr. Larson, you had a
2 discussion later in your testimony today concerning a
3 figure that was included in the Nebraska Compliance
4 Report, kind of at the very back, the three mountain
5 peaks, if you will.

6 Do you recall that figure?

7 A. I recall the figure. I don't recall
8 testifying about it, but I recall the figure.

9 Q. I thought you had indicated that that was
10 an apples-and-oranges comparison?

11 A. I wasn't talking about that figure. I was
12 talking about the criticism of our analysis.

13 Q. Okay, very good, very good.

14 Do you have an opinion of whether or not --
15 regardless of the criticism that you leveled, whether or
16 not it is an accurate conclusion that under the Kansas
17 proposed remedy, Kansas would receive more than her
18 allocation in any year?

19 A. Well, there are going to be more baseflows
20 occurring in some years versus other years.

21 What happens to those, I haven't tried to
22 analyze in terms of the fate of those baseflows, how
23 they might increase baseflows or how they might be used
24 within Nebraska.

25 MR. WILMOTH: Okay. Thank you very much.

1 ARBITRATOR DREHER: Mr. Draper, do you need
2 a short break prior to redirect?

3 MR. DRAPER: Very short one would be
4 appreciated.

5 ARBITRATOR DREHER: All right.

6 (Break was taken.)

7 ARBITRATOR DREHER: Mr. Draper, please
8 continue.

9 MR. DRAPER: Thank you very much, Your
10 Honor.

11 REDIRECT EXAMINATION

12 BY MR. DRAPER:

13 Q. Mr. Larson, taking a look again at Kansas
14 Exhibit 65, I wanted to be sure we understood what would
15 happen if the total pumping simulated was reduced to the
16 866,000 acre-foot figure, as opposed to the 916,987
17 acre-foot figure that was used in your IMP[2] runs?

18 A. Well, first of all, you can see just by
19 little simple math that we're only talking about maybe a
20 5 percent or so reduction in the pumping from the
21 916,000 figure down to that 866,000 figure.

22 But as I tried to explain earlier, what we
23 have here, by going from the baseline run to the IMP[1]
24 run to the IMP[2] run, basically a sensitivity -- we can
25 see the sensitivity of the pumping impacts to changes in

1 pumping. And you can see that that sensitivity is
2 somewhat larger at the end, and as you go back toward
3 the beginning of the period, it's considerably smaller.

4 So if we were to reduce the pumping from
5 916,000 or so acre-feet per year, down to 866,000, we
6 would expect the line on the right-hand end of the
7 graphic to drop about one-third of the distance, roughly
8 from the difference between the IMP[1] and the IMP[2]
9 runs. So that portion of the graphic would drop down
10 just slightly.

11 At the other end of the graphic it would be
12 a very little difference from the 916,000 acre-foot
13 scenario.

14 Q. And would it change the trend of the
15 pumping effects?

16 A. No. You would still have general upward
17 trend over this period of time.

18 MR. DRAPER: That's all I have, Your Honor.

19 ARBITRATOR DREHER: All right.

20 What do you propose to do with Exhibit 65?

21 MR. DRAPER: With Exhibit 65, I would
22 propose that we make that typographical change and
23 resubmit it tomorrow and have it admitted at that time.

24 ARBITRATOR DREHER: All right.

25 Any objection to that?

1 MR. AMPE: No.

2 ARBITRATOR DREHER: All right, we'll wait
3 until tomorrow.

4 You may call your next witness.

5 MR. DRAPER: Thank you. Our next witness
6 is David W. Barfield, who has previously testified.

7 ARBITRATOR DREHER: Mr. Barfield, you're
8 still under oath.

9 THE WITNESS: Yes.

10 DAVID W. BARFIELD,
11 having been previously sworn, was examined and testified
12 as follows:

13 DIRECT EXAMINATION

14 BY MR. DRAPER:

15 Q. Mr. Barfield, I would like to begin by
16 doing just a little bit of background.

17 We have identified as Kansas Exhibits 63
18 and 64 the two Annual Reports of the Republican River
19 Compact Administration for the 2005-2006 period.

20 And, Mr. Barfield, would you very briefly
21 describe what those contained of general interest for
22 this particular proceeding.

23 A. Right.

24 Well, of course, these are the two years
25 that are in question. They provided just a more formal

1 background with regard to the activities of the Compact
2 Administration in each of those years. There are
3 reports from the Bureau of Reclamation related to the
4 status of reservoirs and its activities. I think one
5 has a reference to this funding that was used to
6 compensate people that didn't take some of their water
7 in one year that we have spoken about.

8 There will be, you know, note who was at
9 the meeting and the personnel involved, Nebraska's
10 activities to comply and the funding levels associated
11 with some of those activities. And, of course, you
12 know, rendition of Kansas concerns, some background on
13 the return flow issue that we spoke of this morning, and
14 such things as that.

15 Q. I would also direct your attention to the
16 transcripts that have been identified from the RRCA
17 meetings last spring. Those are in the compendia as
18 Kansas Exhibits 32, 33, 34 and 35.

19 Generally, what do those transcripts cover?

20 A. Well, this is the period of time when the
21 RRCA was working through the portion of the dispute
22 resolution process that we're working under that was
23 prescribed that the RRCA will first attempt to resolve
24 the disputes.

25 So it is a record of at least portions of

1 those meetings. There was actually a fair amount of
2 activity outside of those meetings, but it describes or
3 has the content of some of the presentations that were
4 made to the RRCA with respect to the views of the
5 various states and some of the analysis, Nebraska's
6 proposals, many of which are the same or very similar to
7 what we had before; but again, it just provides more
8 background on those discussions at that phase of the
9 dispute resolution process.

10 Q. Thank you.

11 I would now like to turn our attention to
12 Nebraska Exhibit 15, the Nebraska Compact Compliance
13 report by Dr. Schneider and Mr. Williams.

14 A. Yes, I have that.

15 Q. I would like to start by going to page 7 of
16 that report.

17 A. Okay.

18 Q. What is shown there in the bottom half of
19 page 7?

20 A. Well, there is a narrative on the bottom of
21 page 7 that generally describes the three analyses that
22 the State of Nebraska did to estimate what they call the
23 long-term performance of the IMPs and their conclusions.

24 Q. Do these relate to the three scenarios
25 described in Appendices E, F and G of the exhibit?

1 A. That's correct.

2 Q. These are the ones that Mr. Dreher just
3 referred to?

4 A. Yes.

5 Q. In that regard, I would like to call your
6 attention to Kansas Exhibit 66, the single-sheet table
7 that we've provided this morning.

8 First of all, was this exhibit prepared
9 under your supervision?

10 A. Yes, it was.

11 Q. And what does it contain?

12 A. Well, I've just, I think for the
13 convenience of this discussion, tabulated the
14 allocations that are included for the State of Nebraska
15 in each of their three analyses, as well as those used
16 by Spronk Water Engineers for the actual period 2006 --
17 I'm sorry, 2002 to 2006.

18 Q. And specifically what does this show?

19 A. Well, I think as we go through each of the
20 analysis, it will show that; but, in general, it shows
21 for each of the three analyses that the State of
22 Nebraska used to evaluate the performance of the IMPs,
23 they used allocations that were significantly above the
24 allocations that were actually experienced in this most
25 recent critical dry period.

1 Q. For instance, does this table show how
2 those allocations that were assumed for purposes of the
3 Nebraska analyses, how they compared to the actual
4 allocations for the years 2002 through 2006?

5 A. That's correct.

6 In each case, those are the years in each
7 Appendix E, F and G's delineations there; therefore, the
8 future years that they were projecting, and again
9 contrast it against the actual performance in 2002,
10 2006.

11 Q. And have you had a chance to review those
12 three analyses by Nebraska?

13 A. I have.

14 Q. And do you have any further comments on
15 those?

16 A. Certainly, I do.

17 Q. Please.

18 A. Well, I guess I'll turn us first of all
19 then to Appendix E, their dry-year analysis.

20 ARBITRATOR DREHER: Excuse me, I thought
21 Appendix E was the average-year analysis.

22 THE WITNESS: Thank you, you are correct.

23 We'll start with Appendix E, which is
24 future impacts under average conditions. Thank you.

25 A. Again, it's a relatively short-term

1 analysis looking only at the -- a five-year period. The
2 allocations that are used in this particular analysis
3 are, again, you know, 50,000, 55,000 greater than what
4 was experienced in the most recent dry period. And as a
5 result, you know, compliance according to their analysis
6 is achieved, I would note, by on the order of just under
7 20,000 acre-feet for the period.

8 So by this, Nebraska assumes that it would
9 achieve compliance during average periods, at least in
10 the coming few years.

11 I do have a little bit of concern even on
12 the analysis as it is. If you look at that Table 3A, B,
13 C that you asked Mr. Larson to look at, again it shows
14 the same allocations that we've been speaking about.

15 It also shows an average computed
16 beneficial consumptive use for the period of
17 approximately 262,000, an imported water supply credit
18 of just under 15,000 acre-feet per year, and, therefore
19 compliance that averaged about 19,000 acre-feet for this
20 period.

21 The underlying surface water CBCU that's
22 included in this analysis is the average for the 1996 to
23 2006 period, I believe, and it is on the order of about
24 70,000 acre-feet.

25 Really, what is more typical from my

1 experience, when Nebraska has a relatively good supply
2 of water, which on the average it does, is on the order
3 of 100,000 acre-feet. The 70,000 acre-feet average came
4 because it included some very short-water surface supply
5 years in the later part of this record. But in the
6 early part of that period, it was using around 100,000
7 and some years more.

8 So if you sort of subtract off the 100,000
9 that surface water users should be using in these
10 average periods from the sum of their allocation and the
11 imported water supply credit, we see the remaining
12 allocation for groundwater is going to be, you know,
13 more in the 180,000 acre-feet range, which is sort of
14 beyond the current level of depletions we're
15 experiencing.

16 So I guess I have some concerns as to, you
17 know, even future compliance under average conditions.

18 I guess those would be the major comments I
19 would have on this analysis.

20 Q. Do you have further comments on the
21 Appendix F analysis, so-called Kansas analysis?

22 A. Yes.

23 ARBITRATOR DREHER: Mr. Draper, excuse me
24 for just a minute.

25 On this Appendix E analysis, what did you

1 say was your understanding of the years that were used
2 for the surface water computed beneficial consumptive
3 use?

4 THE WITNESS: 1996 to 2006. If you turn to
5 page 2 of the document itself.

6 MR. DRAPER: Of the text?

7 THE WITNESS: Of the text of Appendix E,
8 the second page of it, it describes the assumptions that
9 were used, and it states the first of those bullets at
10 the bottom part of the page. The page should look like
11 this.

12 ARBITRATOR DREHER: Yes, I've got it.

13 THE WITNESS: The first of those bullets
14 indicates that the surface water pumping data, I think
15 it includes more than just the pumping data; it also
16 includes the evaporation from the reservoirs and such
17 was for the 1996 to 2006 period.

18 ARBITRATOR DREHER: Thank you.

19 Q. (BY MR. DRAPER) Just to be clear on that
20 point, is it the canal data that would indicate that?

21 A. Oh, thank you.

22 Yes. The bottom bullet there also
23 indicates that the average canal diversions were also
24 used for that period. It doesn't state so, but I'm
25 assuming that, you know, the average evaporation off the

1 Federal reservoirs were also included for the same
2 period.

3 Okay. With regard to Appendix F, just two
4 pages later, I'm looking again at the Summary Table that
5 is presented there. The only description is that in the
6 narrative.

7 I have a little bit of a problem with them
8 sort of characterizing this as sort of the Kansas
9 analysis. And I recognize in the text it doesn't say
10 this is the Kansas analysis, but it is sort of depicted
11 in that way.

12 This really has little connection with the
13 Kansas analysis other than they substituted '92 for '95
14 for the years 2009 to 2012.

15 Of course, again, this is a short-term
16 analysis. Kansas' purpose in this analysis was to look
17 in a longer term and not to just look in the coming few
18 years.

19 They substituted 2007 data for 1990 data.
20 That's substituting a wet year, a very wet year on the
21 91st percentile for a dry period. Then they substitute
22 estimated 2008 data for 1991, again substituting a year,
23 I believe it's on the 76th percentile precipitationwise
24 for a dry year. And then they use '92 to '95, which is
25 a very wet period; it includes the Great Flood of 1993.

1 So again, it is not at all surprising when
2 they have allocations that range from 268,000 to 418,000
3 that they're in compliance for that analysis. I think
4 that would be enough of my analysis of their analysis
5 here.

6 Q. And with respect to the arguably
7 unrealistic scenario shown in Appendix G?

8 A. Right. Well, first of all, I certainly
9 would disagree with their contention this is an arguably
10 unrealistic dry period.

11 We have seen in the 2002 to 2006 period
12 water supply conditions that are more severe than this
13 dry period.

14 And again, fundamentally, even in their dry
15 year that they seem to characterize as unrealistic, they
16 have allocations that are 20,000 more than the real data
17 for the 2002 to 2006 period.

18 They put precipitation of 35th percentile
19 in the model, but the big part of the difference is the
20 streamflow data that they use that you will see on page
21 4 and total approximately 195,000 acre-feet per year
22 contrast with approximately 126,000 acre-feet per year
23 of average streamflow in the period 2002 to 2006.

24 So again, they use water supply conditions
25 that were significantly above, significantly better than

1 what we have actually experienced in the 2002 to 2006
2 period.

3 And even given these assumptions, they
4 don't make it, and again, particularly in the -- under
5 the water short-year administration scenarios, they
6 missed the target by, you know, 8000 acre-feet per year
7 on average, even with 20,000 acre-feet per year of
8 additional allocation.

9 Q. I would like to now draw your attention to
10 what has been marked as Kansas Exhibit 67, the one sheet
11 exhibit entitled "NRD Baseline Pumping and 2008 IMP
12 Allocations."

13 A. Yes, I have it.

14 Q. Was this prepared under your supervision?

15 A. Yes, it was.

16 Q. And what was the purpose of preparing this
17 exhibit?

18 A. Well, I think it was just to provide a
19 convenient sort of tabulation of the various numbers in
20 the IMPs, as well as the various modeling scenarios that
21 the State of Kansas conducted.

22 Q. Would you describe line by line what you
23 have here?

24 A. Okay. The first line is labeled "Baseline
25 Pumping," and it's simply, again from the IMPs, the

1 average pumping for each of the NRDs for the 1998 to
2 2002 period, and totals 1.83 million acre-feet.

3 Q. That's 1,083,531 acre-feet?

4 A. That's correct.

5 The second line is just a simple
6 multiplication, 80 percent of those values. And it is
7 approximately 866,000 acre-feet.

8 Q. Is that the same 866,000 acre-foot figure
9 we were discussing earlier today?

10 A. That's my understanding.

11 The next line is the certified acreage. We
12 asked the State of Nebraska -- as part of the dispute
13 resolution process, there was exchange of various
14 analysis and data. We asked them to provide us a
15 description of the certified acres within each of the
16 NRDs in April 2008.

17 I received that information from Brian
18 Dunnigan, and these are the certified acres that I was
19 informed existed, I presume, around the time of the
20 letter. And they total approximately 1 million 600 --
21 I'm sorry, 1,066,000 acre-feet -- acres, excuse me,
22 within the three primary Republican River Basin NRDs.

23 The next line of the allocations are
24 provided for in the rules and regulations of each of the
25 NRDs.

1 The next line is simply a multiplication of
2 the certified acreage in each of the NRDs and their
3 allocations and, thus, provides an average value for
4 acre-foot per year that could be expected if the average
5 is pumped in each of the NRDs each year. It assumes
6 there is no carryover and that there is limitations of
7 that nature in place. It totals 1,022,000 acre-feet,
8 approximately.

9 The next line that is bolded is entitled
10 "Allowed Pumping per allocations as a percentage of the
11 Baseline Pumping." And it shows for the Upper
12 Republican NRD that approximately 91 percent of the
13 baseline pumping would be allowed if you multiply the
14 certified acreage by the allocation, and 95 percent of
15 the Middle Republican NRD; and that in the Lower
16 Republican NRD, the certified acreage times allocation
17 is actually greater than the '98 to 2002 pumping.

18 The next line lists the compliance standard
19 limitations that we have spoken about. Again, for the
20 Upper Republican NRD is 425,000; for the Middle
21 Republican NRD, the value is 247,580; and there is no
22 specific additional limitation in the Lower Republican
23 NRD of that nature. The only limitations are the
24 allocations of 9 inches and then the percentage of
25 total.

1 So then the rest of the lines essentially
2 indicate the volume of pumping that we have put in each
3 of the scenarios that were presented by Mr. Larson
4 earlier. I will start from the bottom.

5 The baseline pumping then is the
6 1.183 million acre-feet that we did according to the
7 methods that are outlined in the expert report. The
8 IMP[1] we used the limitations that come from -- I'm
9 sorry, let me back up.

10 IMP[1], again, was described in
11 Mr. Larson's expert report, essentially taking the
12 depths in '98 to 2002 and applying them to the 2006
13 irrigated area, and then IMP[2] then describes the
14 pumping that we did under the model runs we presented
15 today.

16 Q. And do the comparisons that are made
17 possible by this table, can you point those out, the
18 ones that may be useful?

19 A. Well, I think the most useful are the
20 totals that indicate sort of the range of possibilities
21 of pumping that exist, at least outside the percentage
22 limitations that exist.

23 Again, we've modeled values that range from
24 916,000 acre-feet to 1.13 and show what those levels of
25 depletions -- how they might impact the baseflows in the

1 future.

2 Q. When we were looking at Kansas Exhibit 65
3 earlier during Mr. Larson's testimony, the question was
4 raised about the different amounts of return flows that
5 were simulated.

6 Would you describe, please, why there are
7 two different levels of return flows.

8 A. Yes.

9 Within the -- let me back up to the
10 Modeling Committee's work or the assumptions that were
11 used in the model development process.

12 Return flows for the State of Nebraska, as
13 I recall, were subject to much discussion and what ended
14 up being used within the model data sets that went
15 through the year 2000 was return flows that ranged from,
16 I believe, 30 percent in some early timeframe, I believe
17 through 1960, if I recall, and then went from 30 percent
18 of 1960 to 20 percent in the year 2000, and it was
19 interpolated between those years, as I recall.

20 They're called return flows, but they're
21 actually the amount of -- those values were actually
22 assumed to return to the groundwater system and,
23 therefore, they actually reduce the net pumping that is
24 assumed within the groundwater model.

25 Those were the values that were agreed for

1 for purposes of the modeling that was done.

2 Kansas had a concern about those values and
3 there, I think, was sort of a reservation of this issue
4 for the future and an expectation by the State of Kansas
5 to look at those values more carefully, the State of
6 Kansas values for return flows in sort of
7 center-pivot-dominated agriculture, which is true for
8 the groundwater use within all the States actually.

9 We use a value that is, I believe, around
10 12 percent for estimated return flows or actual recharge
11 to groundwater system for our dominant
12 center-pivot-irrigation methods.

13 And, therefore, we've found that we've sort
14 of asserted through the Republican River Compact
15 Administration in recent years that the State of
16 Nebraska needed to use a more reasonable value in view
17 of, you know, the general transition to the dominant
18 center pivot, and in view of sort of allocation
19 frameworks that, you know, required users to be more
20 efficient than in the past.

21 And so we have asked the Compact
22 Administration to study this matter. You will see that
23 in the -- in these reports that we provided today, but
24 they actually go back to some of the original meetings
25 as we began to implement the -- you know, the Final

1 Settlement Stipulation.

2 So far, the States have not been able to
3 really move this issue.

4 The State of Nebraska has wanted us to do
5 some detailed analysis to substantiate that 20 percent
6 is not the right number, and we have not been able to
7 get that done.

8 Q. It has been indicated that the years 2007
9 and 2008 were better water supply years.

10 What role, in your view, did the IMPs play
11 in improving the compliance situation under those
12 conditions?

13 A. Well, it's my belief they played a very,
14 very limited role in terms of getting the State of
15 Nebraska to compliance.

16 Reductions in pumping take a significant
17 amount of time to manifest themselves in the stream
18 systems.

19 The reason for Nebraska's 2007 beneficial
20 consumptive use being greater than her allocation is
21 dominantly because there was a substantial increase in
22 her allocation via the higher precipitation. It was
23 about a 91 percentile precipitation year and the higher
24 streamflows that resulted from that high precipitation
25 year.

1 Similarly, in 2008 we had a system of
2 reservoirs, at least in the lower part of the basin,
3 that was full and about a 76 percentile precipitation
4 year that again resulted in substantially increased
5 streamflows and allocations. And, I believe, these were
6 the dominant reasons for her compliance -- not
7 compliance -- for her beneficial consumptive use in the
8 individual years being less than her allocation.

9 Q. Based on your knowledge of the basin, is
10 the use of the actual allocations for the years 2002
11 through 2006 by Mr. Book in his analysis for Kansas, is
12 that an unreasonably dry period to use?

13 A. Well, it's the lowest that we have records
14 on because our records for the RRCA do not go back that
15 far, but we certainly have had more severe droughts in
16 the 1930s and the 1950s.

17 And so if a drought of that magnitude were
18 to occur, I would expect to see fairly lesser water
19 supply conditions to exist than existed in this 2002 to
20 2006 period that had, you know, driest year on record in
21 2002 and a dry year in 2003, but above average
22 precipitation years in the rest of the record.

23 Q. In summary, what concerns do you have with
24 respect to the Nebraska compliance efforts and the
25 current NRD Integrated Management Plans?

1 A. Well, we've been seeking to resolve this
2 dispute, as we have noted here, Mr. Pope and myself, for
3 more than a couple decades, first through the Compact
4 Administration, then in the litigation and through the
5 negotiations of a very comprehensive Final Settlement
6 Stipulation that provided for very definitive methods
7 for determining compliance, the very clear accounting
8 procedures, the groundwater model that was joined and
9 developed by all the parties that we thought would get
10 us to a state where the State of Kansas could expect to
11 receive her allocation in subsequent years.

12 What we have seen is the State of Nebraska
13 not taking the actions that was necessary. As I review
14 the record, it appears that the State of Nebraska has
15 known what was required, but they have now developed
16 IMPs that really do not address the reality of what she
17 is facing in terms of the stream impacts from
18 groundwater pumping that have historically existed and
19 can reasonably expect to exist in the future.

20 We've had a couple wet years. And now, as
21 I review the whole of what we have heard, she has a plan
22 that sort of relaxes her requirements to restrict
23 pumping and, essentially, as I see it anyway, wait for
24 the next dry period to take the hard actions that she
25 should be taking at this point in time.

1 Delays in taking actions are going to
2 really exacerbate her problem getting into compliance in
3 the future.

4 She relies, instead of taking the hard
5 actions, to sort of deal with the real fundamental
6 problem that exists on potential solutions that I am not
7 convinced will be there or that they've been talking
8 about for two to three years but have not developed.

9 Surface water supplies, in my view, are
10 unreliable for future dry periods, at least until
11 something more definitive is there. She used the
12 surface water that was available during this past dry
13 period and noncompliance was the result.

14 In the future, I would expect during dry
15 periods, low water supply periods, which is when the
16 Compact needs to work, I would expect those supplies to
17 be even lesser than we've experienced in this dry
18 period.

19 And so her IMPs have conflicting amounts of
20 limitations and, quite frankly, as I look at our Kansas
21 Exhibit 67, I really don't know which number is
22 appropriate to model for the future purposes.

23 As you look at the rules and regulations,
24 the values that are prescribed there are one number.

25 As you look at the IMPs, they prescribe

1 another number, but there is nothing very definitive to
2 me in terms of how she will reconcile those two numbers.

3 It seems to me that that reconciliation
4 will occur at some future date when she already is in a
5 significant amount of problem and likely for the State
6 of Kansas to see shortages.

7 MR. DRAPER: No further questions.

8 ARBITRATOR DREHER: And for a change, I
9 don't have any questions at this point.

10 Mr. Wilmoth, would you like a short break?

11 MR. WILMOTH: Yes. Maybe just have 15
12 minutes, come back at 11:30.

13 ARBITRATOR DREHER: Yes, that would be
14 fine.

15 (Break taken from 11:12 to 11:30 a.m.)

16 ARBITRATOR DREHER: Mr. Wilmoth, you may
17 proceed with cross.

18 MR. WILMOTH: Thank you.

19 CROSS-EXAMINATION

20 BY MR. WILMOTH:

21 Q. Mr. Barfield, good morning.

22 A. Good morning.

23 Q. Thank you again for appearing again.

24 Just a couple of quick questions and then
25 we'll break for lunch and I guess be done with this

1 phase of the -- well, after some redirect perhaps, be
2 done with this phase.

3 When were the latest IMPs first provided to
4 the State of Kansas?

5 A. Well, I know -- I'm not 100 percent sure.
6 I know they were provided in the RRCA dispute resolution
7 process in approximately February or March 2008. I
8 think shortly after they were finalized.

9 Q. And I think I heard you testify earlier
10 that you're still not certain what their requirements
11 are; is that right?

12 A. Well, I said that there is a fair amount of
13 ambiguity. I mean, I can read the words and see that
14 the rules say this limit, there is a Compact compliance
15 standard of this, that there is the relative percentages
16 in certain procedures, but as to how they're actually --
17 how the various pieces will work themselves out is
18 unclear.

19 Q. Is that why you indicated, as I quoted you,
20 you really don't know which number is appropriate to
21 model?

22 A. That's correct.

23 And I think that's why we have sort of
24 modeled a range of them to see what might happen under
25 various tests of compliance.

1 Q. And did you hear Dr. Schneider or
2 Mr. Williams or even Director Dunnigan explain that both
3 total pumping volume and the percent of depletions
4 number is a hard number?

5 A. Well, yes.

6 Q. You don't agree with that?

7 A. Well, I don't see how it's going to occur,
8 how it's going to be implemented.

9 Q. And if I understood you correctly, you had
10 some criticism level that the earlier version of the
11 IMPs, which were from '05 to '07; is that right?

12 A. That's correct. And again, the basic
13 criticism is the pumping -- the degree of pumping
14 reductions provided are not going to slow the rate of
15 increase in pumping depletions to any significant
16 degree.

17 Q. And what happened with those '05 to '07
18 IMPs?

19 A. I'm not clear of the question.

20 Q. I asked you if you had the criticism
21 leveled at the earlier IMPs, the '05 to '07 IMPs. Is
22 that the answer that you gave or did we misunderstand
23 each other?

24 A. I'm not sure of your question. Why don't
25 you try again.

1 Q. The question is: Did you, in your prior
2 testimony today, explain that you had some criticisms
3 leveled at the earlier IMPs -- in other words, they were
4 not effective?

5 A. I don't remember testifying today about the
6 earlier IMPs.

7 MR. WILMOTH: All right, I think that will
8 be fine.

9 That's all we have.

10 ARBITRATOR DREHER: Mr. Draper, redirect.

11 MR. DRAPER: Just one question, if I may.

12 REDIRECT EXAMINATION

13 BY MR. DRAPER:

14 Q. Mr. Barfield, you were just asked about
15 whether this concept in the IMPs that's a percent of the
16 total allowed Nebraska groundwater depletions, if that
17 wasn't a hard number.

18 There are definite numbers as to the
19 percentage assigned to each IMP; is that right?

20 A. There are definite numbers, yes.

21 Q. But then you have to have a number to
22 multiply that percentage against, don't you?

23 A. That's correct.

24 Q. And that number is unknown, isn't it?

25 A. Well, it's unknown until the year

1 following. So we -- I understand the testimony that has
2 been provided here and the process by which that is
3 going to occur, after the fact.

4 Q. But during the current year, it's
5 impossible to apply that number or to determine what
6 that number should be?

7 A. Right. So they will compute, as I
8 understand it, for a number sometime later this year for
9 the 2008 year and look to see were the groundwater
10 depletions in each of the NRDs within their prescribed
11 amount of the groundwater allowable depletions.

12 And maybe this year the answer will be
13 they're within it, and then again they will do that the
14 subsequent year, for 2009 and so forth. And at some
15 point in time, they will find out there is a problem,
16 and that will be after the fact, and when I believe
17 we're starting to go into the next cycle of
18 noncompliance.

19 MR. DRAPER: No further questions.

20 MR. WILMOTH: May I recross on that issue?

21 ARBITRATOR DREHER: On which issue?

22 MR. WILMOTH: On this issue of retroactive
23 accounting or retrospective accounting and the use of
24 averaging.

25 ARBITRATOR DREHER: All right.

1 Mr. Draper will have an opportunity for
2 re-redirect.

3 MR. WILMOTH: That will be fine.

4 REXCROSS-EXAMINATION

5 BY MR. WILMOTH:

6 Q. Mr. Barfield, you mentioned that obviously
7 the IMPs have an element of retrospective accounting.
8 Isn't that true of all compact accounting?

9 A. Yes, it is.

10 Q. And I would like to turn your attention to
11 Kansas Exhibit 31, which is some testimony to the
12 Special Master.

13 Do you happen to have a copy of that
14 document?

15 A. I do not have that.

16 MR. DRAPER: Aren't we obviously getting
17 outside --

18 ARBITRATOR DREHER: Mr. Wilmoth, I'm not
19 sure, how does this relate to the --

20 MR. WILMOTH: If you would turn your
21 attention to the relevant page, I can assure you that it
22 is extremely relevant to this issue.

23 MR. DRAPER: What is the document?

24 MR. WILMOTH: It's Kansas 31.

25 MR. DRAPER: What is that document?

1 MR. WILMOTH: It's the Special Master --
2 testimony to the Special Master.

3 ARBITRATOR DREHER: And this relates to the
4 question?

5 MR. WILMOTH: This relates to the issue of
6 retrospective accounting and the importance of averaging
7 as a concept to deal with that very issue, in my
8 opinion.

9 ARBITRATOR DREHER: All right.

10 THE WITNESS: I still don't have a copy of
11 it.

12 Q. (BY MR. WILMOTH) I would just like you to
13 read the last page on page 55 that I handed you.

14 A. Okay. And this is a statement by Mr. Pope.
15 "I will note that this provision was one of the more
16 difficult ones to negotiate." I believe it's the
17 averaging provision. "Averaging provides greater
18 predictability and flexibility in the use of water.
19 Recognizing that groundwater pumping may cause
20 downstream depletions a year more after pumping occurs,
21 the use of average in the accounting allows the States
22 to manage groundwater and surface water together.
23 However, these advantages must be balanced by the need
24 to protect downstream demands for the same water."

25 Q. Thank you.

1 And I believe you explained that the
2 accounting in the RRCA accounting is retrospective, as
3 is the IMP accounting. And, indeed, did you hear the
4 testimony of Dr. Schneider and Mr. Williams that
5 averaging is employed in the IMPs, also?

6 A. Yes.

7 MR. WILMOTH: Thank you.

8 I don't have anything further.

9 ARBITRATOR DREHER: Let me ask a couple of
10 questions along this same line that are related.

11 I think I telegraphed my concern about all
12 the accounting being after the fact and certainly I
13 understand that final accounting can't be done until
14 everything is in. I mean, for example, at least in my
15 experience, you have got the stream gages where the USGS
16 is making rather late shifts, well after the irrigation
17 season in some cases. So certainly it's just not
18 possible to do the final accounting, at least for now.
19 Maybe the day will come; but for now, it's not possible
20 to do the final accounting until after the fact.

21 But in the case of the Republican River,
22 aren't there forecasts of surface water supply available
23 within the year?

24 THE WITNESS: There is a lot of data
25 available within the year. I mean, obviously the

1 streamflow data is available, obviously it's subject to
2 some adjustment; but, generally speaking, we know
3 surface water supplies. You know, you can do a
4 groundwater model and have a fairly good idea of what,
5 you know, the groundwater impacts are.

6 As has been testified here, they don't vary
7 significantly from year-to-year, and if you sort of know
8 the starting heads and all that, you can have a pretty
9 good handle on that piece of the accounting, or at least
10 sort of a reasonable range of values.

11 You know, the State of Nebraska probably
12 has, I think, good methods to estimate, project surface
13 water use, reservoir evaporation.

14 So there is nothing, I think as you sort of
15 indicated, not having a final accounting until June or
16 July of the year, we actually, as per the FSS exchange
17 model data sets in April and all the accounting data,
18 April 15, you can construct a very accurate accounting
19 of the past year at that point.

20 Nebraska's depletions are really dominantly
21 a function of Nebraska data; you know, the amount of
22 groundwater pumping that Kansas and Colorado use and
23 their impact on that, Nebraska depletions is fairly
24 trivial.

25 So, you know, Nebraska has the ability, I

1 think, to know where she is at well before the final --
2 the final number of the RRCA.

3 ARBITRATOR DREHER: But back to the issue
4 of surface water again for the moment.

5 I don't recall the exact month when the
6 Bureau begins making projections of the likely fill
7 elevation at Harlan County Lake.

8 THE WITNESS: It's October.

9 ARBITRATOR DREHER: And then they update
10 that monthly until -- is that tied to any projection of
11 surface water availability in the basin?

12 THE WITNESS: Well, the methods for that
13 projection are well known and documented. It's really a
14 function of where the reservoir is at.

15 Their projections of inflows, they have two
16 different set of methods to project sort of average
17 conditions, or obviously if it's in a dry condition,
18 they have methods to downgrade their estimates. So they
19 have their methods to project that.

20 Obviously, in January, for example, they
21 don't know that it might turn wet and so that's why they
22 updated each month.

23 It's sort of like, you know, KBID, they
24 sort of have a projection and they sort of rely on those
25 projections as well, and they tend to err on the side of

1 being conservative in terms of what they allocate to
2 their surface water users early in the season; and at
3 times, if water supply conditions improve, then they
4 will inform their users that, you know, we're going to
5 have, instead of a 12-inch allocation, a 13-inch
6 allocation.

7 And, to me, if I had to sort of deal with
8 this after-the-fact-accounting mechanism, recognizing
9 that compliance is not an option, you sort of need to
10 come up with what you're fairly certain you will be able
11 to use in a particular year; and if conditions happen to
12 improve, find some mechanism to make better use of the
13 additional supply.

14 ARBITRATOR DREHER: But in your opinion,
15 would it be possible, say, by April 1 in a given year to
16 make a projection of the surface water allocation by
17 State, just a projection? Is it possible to even do
18 that by, say, April 1?

19 THE WITNESS: Well, you know, data is
20 pretty readily available in our day in terms of the gage
21 data, the reservoir elevations and so forth. And so
22 obviously you can make a projection sort of how reliable
23 of a projection is it.

24 ARBITRATOR DREHER: Reliability is an
25 issue, I agree.

1 But if you could project the surface water
2 allocation, then couldn't you use that to determine what
3 the groundwater allocation would be to be within
4 compliance?

5 THE WITNESS: I think it would be
6 reasonable you could do that.

7 ARBITRATOR DREHER: Okay, thank you.

8 Do you have anything further, Mr. Draper?

9 MR. DRAPER: No.

10 ARBITRATOR DREHER: Then we'll recess until
11 tomorrow morning.

12 The question is at what time. Do we need
13 to start at 8:00 or do you want to start at 9:00?

14 MR. BLANKENAU: I think 9:00 would work,
15 from our perspective.

16 MR. DRAPER: 9:00 has been working a lot
17 better.

18 MR. BLANKENAU: Let the record reflect
19 agreement.

20 MR. DRAPER: Yes, I think we could look at
21 each day; and if it looks like we're getting behind
22 schedule, we could go back to the 8 o'clock, but for the
23 time being, I think it would be fine.

24 MR. AMPE: I assume we're going to finish
25 up Nebraska's direct, possibly in the morning, certainly

1 early afternoon. Then we would have Kansas and possibly
2 even finish up that day and Colorado the next day or
3 Kansas may slop over, but I think we'll be done easily
4 by Wednesday.

5 MR. WILMOTH: Yes, I think that's probably
6 right. We're optimistic about that.

7 ARBITRATOR DREHER: Well, you still have
8 three days, Mr. Wilmoth.

9 MR. DRAPER: Before we adjourn, I might
10 move the exhibits to which Mr. Barfield testified.

11 ARBITRATOR DREHER: Okay.

12 MR. DRAPER: In numerical order, those
13 are Kansas Exhibits 32, 33, 34 and 35, transcripts
14 of the RRCA. And then Exhibits 63 and 64, the RRCA
15 annual reports for 2006 and 2005. And finally,
16 Exhibit 66 and 67, the two tables testified to by
17 Mr. Barfield.

18 ARBITRATOR DREHER: Any objection to those
19 being admitted?

20 MR. WILMOTH: We have no objection.

21 MR. AMPE: No objection.

22 ARBITRATOR DREHER: All right.

23 They're admitted.

24 And with that, we're in recess.

25 (WHEREUPON, Kansas Exhibits 32, 33, 34, 35,

1 63, 64, 66 and 67 were admitted into evidence.)

2 (WHEREUPON, the hearing recessed at 11:50
3 a.m., to be continued March 17, 2009, at 9:00 a.m.)

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CERTIFICATE

I, Dyann Labo, Registered Professional Reporter, do hereby certify that the above-named proceedings were reported by me in stenotype; that the within transcript is true and correct, to the best of my knowledge and belief.

Patterson Reporting & Video
Dyann Labo
Registered Professional Reporter