

NON-BINDING ARBITRATION BEFORE
JEFFREY C. FEREDAY, ARBITRATOR

Initiated Pursuant to Final Settlement Stipulation
Kansas v. Nebraska & Colorado
No. 126, Orig., U.S. Supreme Court
Decree of May 29, 2003, 538 U.S. 720

N-CORPE Augmentation Plan
(Arbitration Initiated July 10, 2013)

DEPOSITION OF DR. WILLEM SCHREÜDER

Wednesday, January 15, 2014

9:45 a.m.

PURSUANT TO NOTICE and the Federal Rules of Civil Procedure, the above-entitled deposition was taken on behalf of the State of Kansas at 1313 Sherman Street, Suite 821, Denver, Colorado, before Denise A. Freeman, Registered Professional Reporter and Notary Public within Colorado.

APPEARANCES:

For the State of Colorado:

SCOTT STEINBRECHER, ESQ.

Colorado Department of Law

Natural Resources and Environment

Federal and Interstate Water Unit

Ralph L. Carr Colorado Judicial Center

1300 Broadway, 7th Floor

Denver, Colorado 80203

By Telephone for the State of Kansas:

CHRISTOPHER M. GRUNEWALD, ESQ.

Kansas Attorney General's Office

Memorial Hall, 2nd Floor

120 SW 10th Avenue

Topeka, Kansas 66612-1597

By Telephone for the State of Nebraska:

JUSTIN D. LAVENE, ESQ.

BLAKE JOHNSON, ESQ.

Nebraska Attorney General's Office

P.O. Box 98920

Lincoln, Nebraska 68509-8920

2155 State Capitol

Lincoln, Nebraska 68509

THOMAS R. WILMOTH, ESQ.

Special Assistant Attorneys General

Blankenau, Wilmoth, Jarecke, LLP

206 South 13th Street, Suite 1425

Lincoln, Nebraska 68508-2002

Also Present:

Dick Wolfe

Daniel Steuer

Dale Book

PROCEEDINGS

DR. WILLEM SCHREÜDER,

having been first duly sworn, was examined and testified as follows:

EXAMINATION

BY MR. GRUNEWALD:

Q. Good morning, Dr. Schreüder.

A. Good morning.

Q. You have been deposed before, I believe?

A. That's correct.

Q. And so you are familiar with the process.

And if you would like to take a break or have any questions about my questions, please speak up. And if you want to complete an answer, please make sure to complete it. We can go back on anything. Does that sound okay?

A. Yes.

Q. Is there any reason why your answers you think -- like medication or for any other reason, you think your answers might not be truthful or complete this morning?

A. Not that I can think of.

Q. Great. And you were present for Mr. Wolfe's deposition that was just before this one, correct?

A. Yes.

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EXAMINATION

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By Mr. Grunewald

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EXHIBITS

INITIAL REFERENCE

4 Notice of Telephonic Deposition of
Dr. Willem Schreüder

(Exhibits attached to original and electronic transcripts to counsel ordering same.)

Q. And did you hear the entire deposition?

A. I think so.

Q. Was there anything in particular that you heard Mr. Wolfe say that you disagree with?

A. Not that I can think of.

Q. You will have to bear with me. I am going to march through questions that are essentially the same questions. In some cases we will be getting into stuff that it sounds like Mr. Wolfe said you might know more about.

But if you will bear with me, we will just go through this, and if you have anything different to say in particular, you can let us know. Does that sound okay?

A. Yes.

Q. I heard Mr. Wolfe testify that there wasn't any text in the report that he could identify separately drafted by either of you. Is there any text that you would identify in the joint report you prepared that was specifically drafted just by you?

A. Well, I am sure there are certain words that I wrote, but I can't point to any specific area that I would say that was drafted by me.

Q. Is there any text in the report that you would identify as being drafted not by you and not by

<p style="text-align: right;">Page 6</p> <p>1 Mr. Wolfe?</p> <p>2 A. Not that I can think of offhand, no.</p> <p>3 Q. I heard Mr. Wolfe testify -- and certainly</p> <p>4 correct me if you think that I am not accurately stating</p> <p>5 things that we heard earlier -- but I heard him explain</p> <p>6 that he did not have other folks from the Colorado</p> <p>7 Division of Water Resources assisting on this report.</p> <p>8 Do you agree with that?</p> <p>9 A. Yes. There may be others that have reviewed</p> <p>10 it, but not as far as I know as far as adding to the</p> <p>11 draft is concerned.</p> <p>12 Q. Besides Colorado Division of Water Resources</p> <p>13 staff, are there any other individuals that assisted</p> <p>14 with the report?</p> <p>15 A. Other than counsel, not that I am aware of.</p> <p>16 Q. Did counsel draft any of the text of the</p> <p>17 report?</p> <p>18 A. I think counsel suggested some</p> <p>19 clarifications to the language, but I don't recall that</p> <p>20 they drafted any.</p> <p>21 Q. Thank you. This joint report contains your</p> <p>22 and Mr. Wolfe's opinions about the N-CORPE project; is</p> <p>23 that right?</p> <p>24 A. I think so, yes.</p> <p>25 Q. Do you have any opinions about the N-CORPE</p>	<p style="text-align: right;">Page 8</p> <p>1 Q. And what is that limit?</p> <p>2 A. I believe that number is also 60,000</p> <p>3 acre-feet.</p> <p>4 Q. I would like to ask you a bit about the</p> <p>5 Medicine Creek reach. The N-CORPE project discharges</p> <p>6 augmentation water into Medicine Creek; is that right?</p> <p>7 A. That's my understanding, yes.</p> <p>8 Q. And are you familiar with the Medicine Creek</p> <p>9 reach in Nebraska?</p> <p>10 A. In a general sense, yes.</p> <p>11 Q. Do you know where it is?</p> <p>12 A. In a general sense, yes.</p> <p>13 Q. Have you ever been there?</p> <p>14 A. I don't recall.</p> <p>15 Q. The Medicine Creek reach has a reservoir on</p> <p>16 it; is that right?</p> <p>17 A. Correct.</p> <p>18 Q. What reservoir is that?</p> <p>19 A. Harry Strunk.</p> <p>20 Q. Is that upstream or downstream of the</p> <p>21 discharge point from the augmentation water?</p> <p>22 A. It would be downstream.</p> <p>23 Q. Are you familiar with the Compact accounting</p> <p>24 as it deals with the Medicine Creek Subbasin?</p> <p>25 A. Yes.</p>
<p style="text-align: right;">Page 7</p> <p>1 project that are not in this report?</p> <p>2 A. No. I think this fairly summarizes my</p> <p>3 opinions regarding the N-CORPE augmentation plan.</p> <p>4 (Deposition Exhibit 4 was marked.)</p> <p>5 Q. (BY MR. GRUNEWALD) Now the deposition notice</p> <p>6 for your deposition, I believe, has been marked as</p> <p>7 Exhibit 4, although it's the only exhibit here we are</p> <p>8 bringing up new for your deposition. Have you seen that</p> <p>9 deposition notice?</p> <p>10 A. Yes.</p> <p>11 Q. And it requests that any electronic or</p> <p>12 hard-copy backup material not previously provided should</p> <p>13 be provided. Do you have any of those materials to</p> <p>14 provide to the states?</p> <p>15 A. I don't believe there is any additional</p> <p>16 information to provide.</p> <p>17 Q. Thank you. The N-CORPE proposal, I would</p> <p>18 like to ask you a couple of questions about that. Does</p> <p>19 the proposal have a maximum limit to annual pumping?</p> <p>20 A. I believe so, yes.</p> <p>21 Q. What is that limit?</p> <p>22 A. I think it's 60,000 acre-feet.</p> <p>23 Q. Does the proposal have a maximum limit on</p> <p>24 the amount of credit that Nebraska would receive?</p> <p>25 A. I think so, yes.</p>	<p style="text-align: right;">Page 9</p> <p>1 Q. What's the surface water accounting data</p> <p>2 that's collected from the Medicine Creek Subbasin?</p> <p>3 A. It's outlined in the N-CORPE resolution,</p> <p>4 page 64. It details all of the specifics of what is</p> <p>5 required.</p> <p>6 Q. Is page 64 inside the accounting procedures</p> <p>7 markup that's attached to the N-CORPE proposal?</p> <p>8 A. That's correct, yes. Did I say 64? It's</p> <p>9 61.</p> <p>10 Q. Thank you. I believe you did and I was a</p> <p>11 bit confused. So that page, for the record, shows</p> <p>12 formulas related to Medicine Creek in the accounting</p> <p>13 procedures; is that right?</p> <p>14 A. That's correct, yes.</p> <p>15 Q. Thank you. Are there surface water gauges</p> <p>16 on Medicine Creek?</p> <p>17 A. Yes.</p> <p>18 Q. Do you know how many surface water gauges</p> <p>19 there are?</p> <p>20 A. I am aware of at least two. There may be</p> <p>21 more.</p> <p>22 Q. What are the two you are aware of? Where</p> <p>23 are they?</p> <p>24 A. Well, the one is the one that is mentioned</p> <p>25 in the surface water accounting, which I believe is</p>

<p style="text-align: right;">Page 10</p> <p>1 identified as Medicine Creek below Harry Strunk Lake, 2 Gauge Station No. 06842500. I have forgotten the 3 question now. Did you ask me what the names of the two 4 gauges were? 5 Q. I didn't, but I appreciate you naming -- my 6 question was, where are the two gauges? So that was one 7 gauge in the accounting you just referred to, which I 8 appreciate. Do you know where the other gauge that you 9 said you know of on Medicine Creek is? 10 A. Yes. It's above the reservoir. 11 Q. Is that one used in the Compact accounting? 12 A. I don't think that is directly referenced 13 here in Section 11, no. 14 Q. Is Section 11 that you are referring to in 15 the accounting procedures here on this page, is that the 16 only place that surface water gauges are referred to in 17 the Compact accounting or are there other places? 18 A. There's other places where there may be some 19 references to it. I don't recall if it occurs anywhere 20 else. 21 Q. How many stream miles are there between the 22 discharge point of the augmentation pipeline for the 23 project and Harry Strunk Reservoir? 24 A. I don't remember. You asked Dr. Schneider 25 the same question. He probably has a better answer than</p>	<p style="text-align: right;">Page 12</p> <p>1 be more likely? 2 A. Well, it would be a function of the 3 specifics of the conveyance that we are talking about. 4 Q. When you say, "the specifics of the 5 conveyance," could you explain? I am not following 6 whether you are referring to something physical or 7 conceptual. 8 A. It would be a function of what exactly 9 happens on Medicine Creek between the outfall and 10 wherever the water eventually ends up. 11 Q. And when you say, "what exactly happens," 12 are we talking about the time of day, the temperature? 13 What sort of conditions are you talking about? 14 A. All of the things that you enumerated and 15 probably many more. 16 Q. Would you consider the ones I enumerated to 17 be major factors? 18 A. I have not made a specific determination of 19 what are major and minor factors on Medicine Creek. 20 Q. So it's possible that the time of day could 21 be a major factor influencing the transit losses as to 22 whether they are more likely to occur? 23 A. Based on my experience, there are systems 24 where the time of day is a major factor. I don't know 25 if it's a major factor in this particular instance.</p>
<p style="text-align: right;">Page 11</p> <p>1 I do, but it's of the order of 10 miles or so, I think. 2 Q. Will there be any transit losses of the 3 augmentation water between the discharge point and Harry 4 Strunk Reservoir? 5 A. Potentially some, yes. 6 Q. And you say, "potentially." So under what 7 circumstances or what would lead to those losses? 8 A. Well, whenever water flows down a surface 9 conveyance, there may be some gains or losses to that 10 water. So there may be some changes in the amount of 11 flow at the bottom end as opposed to the upper end. 12 Q. Do you know when it's likely to occur? 13 A. If we talk about infinitesimal amounts, it 14 probably happens all the time. 15 Q. Are there conditions under which it's more 16 likely to occur? 17 A. Probably, yes. 18 Q. Do you know what those conditions are? 19 A. How much time do you have for me to go 20 through all of them? There are a large number of 21 factors that would influence that. 22 Q. Are there major factors and minor factors? 23 A. Probably, yes. 24 Q. Do you have several items that you would 25 consider major factors that would lead transit losses to</p>	<p style="text-align: right;">Page 13</p> <p>1 Q. Thank you. Have you or anyone from Colorado 2 conducted any analysis or evaluation of the potential 3 for transit losses to occur along Medicine Creek between 4 the point of discharge from the N-CORPE project and 5 Harry Strunk Reservoir? 6 A. In a generic sense, yes. 7 Q. What are those generic analyses or 8 evaluations that you are referring to? 9 A. I reviewed what we have found as far as the 10 general behavior of the stream reach and determined that 11 it was generally a gaining stream, and for that reason I 12 did not consider that there would be a significant 13 transit loss along the stream. 14 Q. Could you -- I apologize. This may have 15 been my poor note-taking just now. Could you explain 16 what it was that led you to conclude that it was a 17 gaining stream and what analysis you are talking about? 18 A. Well, this is not the first time we have 19 looked at Medicine Creek, and my general impression of 20 Medicine Creek is that it's been a gaining stream. 21 Q. When you say not the first time you have 22 looked at Medicine Creek, what were the other times that 23 you are referring to? 24 A. Well, you'll remember we were before Special 25 Master Kayatta not that long ago where imported water</p>

<p style="text-align: right;">Page 14</p> <p>1 supply was a big issue and Medicine Creek featured as 2 one of the primary streams where imported water supply 3 shows up. 4 Q. And what are the specific things that you 5 were looking at in terms of an analysis, either during 6 that time or some other time, that leads you to conclude 7 that it's a gaining stream? Are you looking at some 8 study conducted by someone else, some results that you 9 generated? I am just looking for the source of any 10 data, if there was any data, that you looked at. 11 A. Well, I am sure I couldn't enumerate all of 12 the things that I have looked at, sitting here, but, in 13 general, our review of the data on Medicine Creek 14 indicated that it was a gaining stream. 15 Q. And the data is from where? 16 A. Both the gauge data that's available and the 17 model results. 18 Q. What time period were you looking at? 19 A. The period of record. 20 Q. Could you, just for the record, tell us what 21 that is? 22 A. I don't remember. 23 Q. Did it include recent years? 24 A. I don't recall to what extent we have data 25 for recent years or not.</p>	<p style="text-align: right;">Page 16</p> <p>1 preparing this joint report? 2 A. Not that I recall. 3 Q. Now these generic evaluations, would it be 4 fair to call those ones done by or for Colorado as 5 opposed to done by someone else? 6 A. I didn't follow that question. Could you 7 repeat it? 8 Q. Well, perhaps a better question, just to 9 make sure I understand the source of everything that you 10 may have looked at or that may exist, are there any 11 other studies or evaluations of the stream conditions in 12 Medicine Creek that you are aware of besides the ones 13 you have described to me? 14 A. Well, I remember -- we had mentioned that 15 there may have been some various synoptic gain and loss 16 studies that have been done in various places. So if 17 you include that, I can't think of any other studies 18 that I am aware of. 19 Q. I think you are about to expand my 20 vocabulary. Did you say, "synoptic"? 21 A. Yes. 22 Q. Could you define that for me, please? 23 A. A synoptic survey generally refers to a 24 survey that is done at a particular instance in time 25 where somebody goes down the stream, records stream</p>
<p style="text-align: right;">Page 15</p> <p>1 Q. I apologize. This could be a failing on my 2 part with not understanding the basic technical points. 3 When you say, "period of record," do you mean the period 4 that there's gauge data for a particular gauge? 5 A. For the gauge. That would be the proper 6 definition, yes. 7 Q. And if it wasn't gauge data you were looking 8 at, what was the other data you were looking at? 9 A. It would have been the period of simulation 10 that we looked at for the model. 11 Q. Is "period of record" here jargon or term of 12 art? Does it always mean a certain period of years or 13 does it change based on the assignment? 14 A. No. Generally "period of record" refers to 15 the period for which you have data or for which you have 16 conducted a simulation. 17 Q. And what is that for the model? 18 A. Today it would be basically from 1918 19 forward. 20 Q. Thank you. Besides those -- what you term 21 generic evaluations -- were there any specific 22 evaluations of gains and losses in the Medicine Creek 23 reach? 24 A. There may have been, but I don't recall. 25 Q. Did you look at them while you were</p>	<p style="text-align: right;">Page 17</p> <p>1 flows at various locations, and looks at the diversions 2 and return flows that occur and tries to make a 3 determination of gains and losses along the stream. You 4 can think of it as an instantaneous set of data. 5 Q. And did you look at any of those that may 6 exist when you were preparing your joint expert report? 7 A. I didn't do so in preparation of the report, 8 no, or that I recall. 9 Q. Do the results of any of those studies 10 inform any of your opinions in this joint expert report? 11 A. Well, to the extent that my opinions are 12 influenced by everything I have done in the Republican 13 River over the last dozen years or so, perhaps there may 14 be some influence, but I don't recall specifically 15 looking at those in formulating these opinions. 16 Q. Thank you. What happens to water as it 17 moves through the basin downstream of Harry Strunk 18 Reservoir? 19 A. Some of it is diverted for surface water. 20 Some of it gets evapotranspired. Some of it evaporates 21 directly from the surface water. Some of it might get 22 stored. There's a whole bunch of things that happen to 23 that water. 24 Q. And Medicine Creek is a tributary to the 25 main stem?</p>

<p style="text-align: right;">Page 18</p> <p>1 A. That's my understanding, yes.</p> <p>2 Q. And what's the next federal reservoir</p> <p>3 downstream of Harry Strunk Reservoir?</p> <p>4 A. I am not aware of any federal reservoirs on</p> <p>5 Medicine Creek, per se. On the main stem, the next</p> <p>6 reservoir would be Harry Strunk Reservoir.</p> <p>7 Q. You said, "Harry Strunk Reservoir." Did you</p> <p>8 mean a different reservoir?</p> <p>9 A. Sorry. Harlan County. I'm sorry. I had a</p> <p>10 momentary lapse.</p> <p>11 Q. Not a problem. Thank you. Will there be</p> <p>12 any transit losses of augmentation water as it moves</p> <p>13 downstream of Harry Strunk Reservoir to Harlan County</p> <p>14 Lake?</p> <p>15 A. Potentially, yes.</p> <p>16 Q. And when you say, "potentially," is it</p> <p>17 likely to occur?</p> <p>18 A. Well, just as a matter of pure physics, it's</p> <p>19 rare that you have the exact same amount of water at the</p> <p>20 top end and at the bottom end of the reach. Sometimes</p> <p>21 it increases. Sometimes it decreases. Both of those</p> <p>22 could be transit losses.</p> <p>23 Q. Are the transit losses that could</p> <p>24 potentially occur likely to be significant?</p> <p>25 A. It depends on your definition of</p>	<p style="text-align: right;">Page 20</p> <p>1 modeling context as well as those synoptic surveys are</p> <p>2 concerned. I don't recall the specific details of</p> <p>3 those.</p> <p>4 Q. Did you review those while you were</p> <p>5 preparing or to assist you in preparing your joint</p> <p>6 expert report?</p> <p>7 A. Well, I relied on my general knowledge of</p> <p>8 the system. I didn't specifically go back and review</p> <p>9 any of that information.</p> <p>10 Q. Thank you. If you could turn to the N-CORPE</p> <p>11 proposal, which has been marked as Exhibit 2 for</p> <p>12 Mr. Wolfe's deposition. Do you have that handy?</p> <p>13 A. Yes.</p> <p>14 Q. If you could turn to page 6 -- again, I</p> <p>15 apologize for retreading some ground here. This is</p> <p>16 material we covered in Mr. Wolfe's deposition. Do you</p> <p>17 see the equations in the center of the page there?</p> <p>18 A. Yes.</p> <p>19 Q. And they refer to the RRCA accounting</p> <p>20 procedures for Medicine Creek Subbasin, and do you see</p> <p>21 that first equation which is listed under both headings?</p> <p>22 A. Yes.</p> <p>23 Q. And what does that first term, "VWS,"</p> <p>24 represent?</p> <p>25 A. It's generally used to depict virgin water</p>
<p style="text-align: right;">Page 19</p> <p>1 "significant," but it could probably occur, in reality.</p> <p>2 Q. If they potentially occur, are they likely</p> <p>3 to be greater than what you consider de minimis?</p> <p>4 A. I don't think "de minimis" has a good</p> <p>5 engineering definition, but I don't know that it would</p> <p>6 be a very large fraction of that augmentation water.</p> <p>7 Q. And on what do you base that conclusion?</p> <p>8 A. Again, my observations, based on some of the</p> <p>9 results that we have looked at before, is that there's a</p> <p>10 gaining reach along the main stem in that area. And so</p> <p>11 I don't expect a significant fraction of that water to</p> <p>12 be lost.</p> <p>13 Q. Have you or anyone for Colorado conducted</p> <p>14 any analysis or evaluation of the potential for transit</p> <p>15 losses to occur between Harry Strunk Reservoir and</p> <p>16 Harlan County Lake?</p> <p>17 A. In a generic sense we have looked at the</p> <p>18 behavior of the system. I haven't done a specific</p> <p>19 evaluation of it.</p> <p>20 Q. Are you aware of any studies that were</p> <p>21 conducted of that reach from Harry Strunk Reservoir down</p> <p>22 to Harlan County Lake related to transit losses?</p> <p>23 A. Again, we have talked about this before in</p> <p>24 the context of the upper reach, but there have been some</p> <p>25 historical studies of that, both in terms of the</p>	<p style="text-align: right;">Page 21</p> <p>1 supply.</p> <p>2 Q. Is that your understanding of what it</p> <p>3 depicts there?</p> <p>4 A. Yes.</p> <p>5 Q. And after the equals sign on the right side,</p> <p>6 there's the term "gauge." Could you explain what your</p> <p>7 understanding of that term means?</p> <p>8 A. Yes. On page 6 it's sort of represented in</p> <p>9 a generic sense. The more detailed explanation of</p> <p>10 exactly what the accounting procedures were for Medicine</p> <p>11 Creek Subbasin is shown on page 61, which I referred to</p> <p>12 earlier.</p> <p>13 Q. So if we turn to page 61 of the proposal, if</p> <p>14 I am following what you are saying, it's the first term</p> <p>15 listed on the right side of the equation -- I'm sorry --</p> <p>16 the equals sign there. Is that what you are referring</p> <p>17 to?</p> <p>18 A. Yes.</p> <p>19 Q. And it refers to a specific gauge station</p> <p>20 number, and so the entry that should go there would be</p> <p>21 what in terms of the numerical result?</p> <p>22 A. I believe that the shorthand gauge on page 6</p> <p>23 specifically refers to Medicine Creek below Harry Strunk</p> <p>24 Lake, Gauge Station No. 06842500.</p> <p>25 Q. And it's intended to be the total flow</p>

<p style="text-align: right;">Page 22</p> <p>1 reading from that gauge on an annual basis? Is that 2 what goes there? 3 A. That's my understanding, yes. 4 Q. What is your understanding of whether 5 Nebraska proposes to make any changes to that gauge term 6 in the accounting procedures? 7 A. It wasn't my understanding that Nebraska 8 would actually propose that we use something different 9 than the gauge flow that is recorded at that particular 10 gauge. 11 Q. Thank you. Now I'm going to ask you just a 12 question about your joint report, if you want to put 13 that in front of you. It was marked as Exhibit 3 in 14 Mr. Wolfe's deposition. Do you have that? 15 A. Hang on just a second. Yes, I've got it. 16 Q. Thank you. I wanted to ask the same 17 questions I asked Mr. Wolfe. At the bottom of the 18 report, first page, there's a reference to Nebraska 19 addressing all of Colorado's questions. Do you see 20 that? 21 A. Yes. 22 Q. And do you remember what any of those 23 questions were? 24 A. Well, one question that comes to mind is 25 that I was curious about improvements that Nebraska</p>	<p style="text-align: right;">Page 24</p> <p>1 to you raising this concern was? 2 A. They said that the people who are actually 3 constructing the pipeline would be looking into those 4 issues and making sure that there are no -- none of 5 these, but the individual of whom I asked the question 6 didn't know of those details. 7 Q. Who was the individual you asked? 8 A. I think it was Tom Riley. 9 Q. And if you could just explain for the record 10 who Tom Riley is? 11 A. He's one of Nebraska's consultants that 12 helped design the project. 13 Q. Thank you. Were there any other questions 14 that Colorado raised that you remember? 15 A. Specifically at the workshop, I don't recall 16 that there were any outstanding issues. 17 Q. Were there any other questions that Colorado 18 raised not at the workshop? 19 A. Yes. 20 Q. What were those questions? 21 A. Well, prior to Nebraska actually formally 22 putting forward the proposal and at these workshops, I 23 asked numerous questions of Nebraska to understand what 24 their project was and what they were going to propose. 25 Q. What were the issues that you were asking</p>
<p style="text-align: right;">Page 23</p> <p>1 would be making to the channel of Medicine Creek, 2 whether they were going to be increasing the size of 3 culverts and so forth. 4 Q. And why did that matter to you? 5 A. Well, 60,000 acre-feet is quite a 6 significant volume of flow, and I was just curious to 7 what extent it actually required some work to the stream 8 channel to be made to be able to handle that volume of 9 water. 10 Q. Is it possible that there would be problems 11 in the channel without those improvements? 12 A. Yeah, potentially. I mean, if the culverts 13 aren't sized appropriately, there may be some backups 14 that form. You would want to make sure that the water 15 can make its way down the channel. 16 Q. What happens if there are backups behind the 17 culverts? 18 A. Well, if there's, for example, a road there, 19 if the backup -- if the water can't make it through the 20 culvert, it may actually start riding over the road and 21 wash it out. 22 Q. Aside from washing out roads, are there any 23 other concerns if water backs up behind culverts? 24 A. No, not really. 25 Q. And do you remember what Nebraska's answer</p>	<p style="text-align: right;">Page 25</p> <p>1 questions about? 2 A. Just generally how Nebraska was going to 3 approach this and how things would be different at this 4 particular project as opposed to some of the other 5 proposals that we have seen. 6 Q. When you say, "different," do you mean 7 different from the Rock Creek augmentation plan? 8 A. Among others, yes. 9 Q. Which others? 10 A. Colorado's CCP proposal. 11 Q. Any others? 12 A. I don't recall that they mentioned any 13 others. 14 Q. And what was their answer as to whether it 15 would be different? 16 A. Well, there are numerous things that are 17 different in this area. The primary part being that 18 it's in the moratorium area and what we have also 19 generally referred to as the mound area. 20 Q. I think you said in the moratorium area or I 21 may have misheard. Is that what you meant? 22 A. No. I'm sorry. It's not in the moratorium 23 area. I apologize. 24 Q. And you also said in the mound area. Is 25 that referring to the area where imported water supply</p>

<p style="text-align: right;">Page 26</p> <p>1 is relevant for the Compact accounting?</p> <p>2 A. In a generic sense, yes.</p> <p>3 Q. Any other ways that it was different from</p> <p>4 either the Colorado proposal or the Nebraska Rock Creek</p> <p>5 proposal?</p> <p>6 A. There probably are, but not that come to</p> <p>7 mind right now.</p> <p>8 Q. Were you satisfied with the answers you got</p> <p>9 from Nebraska?</p> <p>10 A. Eventually, yes.</p> <p>11 Q. I didn't quite catch that. Did you say,</p> <p>12 "eventually"?</p> <p>13 A. Yes.</p> <p>14 Q. Were changes made to address your questions?</p> <p>15 A. I believe so, yes.</p> <p>16 Q. What were those changes?</p> <p>17 A. Well, for example, early on Nebraska had</p> <p>18 floated the concept that some of the water that would be</p> <p>19 produced by Medicine Creek could be considered imported</p> <p>20 water and therefore special conditions would be applied</p> <p>21 to it, which eventually -- or doesn't appear in the</p> <p>22 final proposal.</p> <p>23 Q. Was that something that you agreed with?</p> <p>24 A. I had some concerns about how that would be</p> <p>25 quantified.</p>	<p style="text-align: right;">Page 28</p> <p>1 Q. Thank you. I wanted to ask you some</p> <p>2 questions like I did with Mr. Wolfe about the</p> <p>3 augmentation proposal that Nebraska had for augmentation</p> <p>4 on Rock Creek. Are you familiar with the arbitration</p> <p>5 that the states undertook regarding the Rock Creek</p> <p>6 proposal by Nebraska?</p> <p>7 A. In a generic sense, yes.</p> <p>8 Q. Any specific memory?</p> <p>9 A. I probably have specific memories, yes.</p> <p>10 Q. It concerns me that it was only a general</p> <p>11 sense. The arbitrator issued a decision in that Rock</p> <p>12 Creek dispute in late December. Did you read that</p> <p>13 decision?</p> <p>14 A. Are you sure it was in late December?</p> <p>15 Q. I thought I said late December. I apologize</p> <p>16 if I didn't say that.</p> <p>17 A. I thought it was earlier, but I did review</p> <p>18 that decision, yes.</p> <p>19 Q. I'm sorry. Late November. My apologies. I</p> <p>20 believe that was the date of the decision.</p> <p>21 A. That sounds better, yes.</p> <p>22 Q. Did you read that decision?</p> <p>23 A. I did.</p> <p>24 Q. In your opinion, does anything in Nebraska's</p> <p>25 N-CORPE proposal need to be changed based on that</p>
<p style="text-align: right;">Page 27</p> <p>1 Q. What were those concerns?</p> <p>2 A. It would be -- I had some difficulty with</p> <p>3 knowing that, if one of the augmentation wells, for</p> <p>4 example, were to pump 100 acre-feet, what fraction of</p> <p>5 that water we would be able to definitively say was</p> <p>6 imported water and what was native water.</p> <p>7 Q. And is that important for the Compact</p> <p>8 accounting?</p> <p>9 A. Since imported water is treated special,</p> <p>10 yes, I think that would be important.</p> <p>11 Q. Do you still have that concern based on how</p> <p>12 Nebraska is proposing the project now?</p> <p>13 A. No. The N-CORPE resolution, as was</p> <p>14 presented to the RRCA, did not try to take that</p> <p>15 approach, so that concern was alleviated.</p> <p>16 Q. Were there any other changes that were made</p> <p>17 that allowed you to be satisfied with Nebraska's</p> <p>18 proposal?</p> <p>19 A. There probably were.</p> <p>20 Q. And what were they?</p> <p>21 A. I don't recall. All I can tell you is that</p> <p>22 the proposal, as was finally submitted to the RRCA, I</p> <p>23 thought was appropriate and that Colorado could -- I</p> <p>24 could recommend to Colorado that we support that</p> <p>25 particular proposal.</p>	<p style="text-align: right;">Page 29</p> <p>1 decision?</p> <p>2 A. Are you asking me that as a matter of law or</p> <p>3 as a matter of science?</p> <p>4 Q. I am asking whether or not you have an</p> <p>5 opinion that anything should be changed.</p> <p>6 A. As far as the legal requirements are</p> <p>7 concerned, I would defer to others as to what is legally</p> <p>8 required. In order to be changed, I thought that the</p> <p>9 N-CORPE proposal, as originally submitted, satisfied the</p> <p>10 requirements of the FSS.</p> <p>11 Q. Picking up on your distinction, as a matter</p> <p>12 of science, to use your term as you understand it, is</p> <p>13 there anything that should be changed in Nebraska's</p> <p>14 N-CORPE proposal as a result of the Rock Creek decision?</p> <p>15 A. I don't think so. I think the specifics</p> <p>16 that were discussed in that Rock Creek decision</p> <p>17 essentially support the bulk of how things are done in</p> <p>18 the N-CORPE proposal.</p> <p>19 MR. GRUNEWALD: Thank you. I don't have any</p> <p>20 other questions.</p> <p>21 MR. STEINBRECHER: Any questions from</p> <p>22 Nebraska?</p> <p>23 MR. WILMOTH: No questions from Nebraska.</p> <p>24 MR. STEINBRECHER: None from Colorado.</p> <p>25 MR. GRUNEWALD: I think we are done. We can</p>

<p style="text-align: right;">Page 30</p> <p>1 go off the record. 2 (WHEREUPON, the deposition concluded at 10:27 a.m.) 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</p>	<p style="text-align: right;">Page 32</p> <p style="text-align: center;">REPORTER'S CERTIFICATE STATE OF COLORADO)) SS. COUNTY OF DENVER) I, Denise A. Freeman, do hereby certify that I am a Registered Professional Reporter and Notary Public within the state of Colorado; that previous to the commencement of the examination, the deponent was duly sworn by me to testify to the truth. I further certify that this deposition was taken in shorthand by me at the time and place herein set forth and was thereafter reduced to typewritten form, and that the foregoing constitutes a true and correct transcript. I further certify that I am not related to, employed by, nor of counsel for any of the parties or attorneys herein, nor otherwise interested in the result of the within action. In witness whereof, I have affixed my signature this 17th day of January, 2014. PATTERSON REPORTING & VIDEO Denise A. Freeman Registered Professional Reporter and Notary Public</p>
<p style="text-align: right;">Page 31</p> <p>1 I, DR. WILLEM SCHREÜDER, do hereby certify 2 that I have read the foregoing transcript and that the 3 same and accompanying correction sheets, if any, 4 constitute a true and complete record of my testimony. 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</p> <p style="text-align: center;">_____ Deponent</p> <p>() No changes () Amendments attached</p> <p>Subscribed and sworn to before me this _____ day of _____, 2014.</p> <p>My commission expires _____.</p> <p style="text-align: center;">_____ Notary Public</p> <p>Address _____</p> <p style="text-align: center;">_____ df</p> <p>N-CORPE Augmentation Plan</p>	<p style="text-align: right;">Page 33</p> <p>1 PATTERSON REPORTING & VIDEO 2 2170 South Parker Road, Suite 263 3 Denver, Colorado 80231 4 January 17, 2014 5 6 SCOTT STEINBRECHER, ESQ. 7 Colorado Department of Law 8 Natural Resources and Environment 9 Federal and Interstate Water Unit 10 Ralph L. Carr Colorado Judicial Center 11 1300 Broadway, 7th Floor 12 Denver, Colorado 80203 13 14 Case Name: N-CORPE Augmentation Plan 15 Deposition of DR. WILLEM SCHREÜDER 16 The deposition in the above-entitled matter is ready 17 for reading and signing. Please attend to this 18 matter by complying with ALL blanks checked below: 19 <input checked="" type="checkbox"/> arrange with us at (303)696-7680 to read and 20 sign the deposition in our office 21 22 OR (if applicable), 23 24 <input checked="" type="checkbox"/> have deponent read your copy; signing 25 attached original signature page and any amendment sheets. ____ read enclosed deposition, sign attached signature page and any amendment sheets. <input checked="" type="checkbox"/> within 30 days of the date of this letter. by _____ due to a trial date of _____. Please be sure that the signature page and accompanying amendment sheets, if any, are signed before a notary public and returned to our office at the above address. If this matter has not been taken care of within said period of time, the deposition will be filed unsigned pursuant to the Rules of Civil Procedure. Thank you. Enclosures: (As above noted) cc: Christopher M. Grunewald, Esq.; Justin D. Lavene, Esq.</p>

PATTERSON REPORTING & VIDEO
2170 South Parker Road, Suite 263
Denver, Colorado 80231

January 17, 2014

CHRISTOPHER M. GRUNEWALD, ESQ.
Assistant Attorney General
Civil Litigation Division
Office of Attorney General Derek Schmidt
120 SW 10th Avenue, 2nd Floor
Topeka, Kansas 66612-1597

Dear Mr. Grunewald:

Re: Deposition of DR. WILLEM SCHREÜDER

☐ Signed, no changes.

☐ Signed, with changes, copy attached.

☐ No signature required.

☐ Reading and signing not requested pursuant to
CRCP Rule 30(e).

☐ Signature waived.

☒ Forwarding original transcript unsigned;
signature pages and/or amendments will be
forwarded, if received.

☐ Original exhibits included in ongoing notebook
and will be filed with counsel at conclusion of
discovery.

☐ Via Email.

Enclosures: (As above noted)

cc: Scott Steinbrecher, Esq.; Justin D. Lavene, Esq.