

No. 126, Original

In The
Supreme Court of the United States

◆

STATE OF KANSAS,

Plaintiff,

v.

STATE OF NEBRASKA

and

STATE OF COLORADO,

Defendants.

◆

DIRECT TESTIMONY OF DR. JAMES C. SCHNEIDER, PH.D., RE:
NEBRASKA'S FIRST AMENDED COUNTERCLAIM (PROPOSED
CHANGES TO THE RRCA ACCOUNTING PROCEDURES)

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July 19, 2012

1. I, Dr. James C. Schneider, Ph.D., offer the following as my Direct Testimony concerning Nebraska's proposed changes to the Republican River Compact Administration ("RRCA") Accounting Procedures and Reporting Requirements ("Current Accounting Procedures"), also known as Nebraska's First Amended Counterclaim in this proceeding.

2. The purpose of this testimony is to explain the basic nature of the concern with the Current Accounting Procedures and the solution proposed by Nebraska and Colorado to address that concern. While the potential solution has been extended since 2007 in an attempt to satisfy concerns presented by Kansas, Nebraska's fundamental concern about the Current Accounting Procedures has not changed since it was first identified and has been consistently presented to the States of Colorado and Kansas through the RRCA. *See, e.g.*, Exhibit N1001.

PROFESSIONAL BACKGROUND

3. I have over ten years of experience in the areas of water resources management and planning, with a more recent emphasis on integrated management of groundwater and surface water resources. At its most basic level, integrated management of these resources focuses on addressing the interaction between groundwater influences (*e.g.*, well pumping and recharge) and their impacts on the amount of surface water flowing in Nebraska's rivers, including the Republican River.

4. My specific technical expertise lies in groundwater flow modeling, hydrology, hydrogeology and related statistical analysis of hydrologic data. I hold a Ph.D. in Geology (May 2003) from the University of South Florida; an M.S. in Geology (May 1998) from Northern Illinois University; and a B.S. in Geology (May 1996) from Northern Illinois University. I have authored peer reviewed publications and presented original materials at various conferences and meetings on issues related to groundwater modeling and the management of integrated water

resources. A complete copy of my *curriculum vitae* is included in Exhibit N1002 as Appendix A.

5. Since 2010, I have been the Deputy Director of the Nebraska Department of Natural Resources (“Department”). In that capacity, I advise and assist the Department’s Director in formulating and administering department policies, budgets, organization, and work assignments. I also facilitate the development of state water policies, particularly as they pertain to water quantity issues, including serving as liaison with the legislature, Federal agencies, other State and local agencies, and public interest groups.

6. Of particular relevance to this case, I assist the Director in the administration of interstate compacts and decrees. Thus, for example, I serve as Nebraska’s representative on technical committees, including the RRCA’s Engineering Committee. I also oversee the technical work of consultants and prepare special reports related to surface water and groundwater interactions.

7. Prior to my service as Deputy Director, from 2008 through 2009, I served as the Head of the Department’s Integrated Water Management Division. In that capacity, my responsibilities included management of the integrated water management planning process at the Department. This included oversight of surface water and groundwater related studies, development and implementation of Integrated Management Plans (“IMPs”), supervision of the Integrated Water Management Division, and coordination with other Department Divisions, Natural Resources Districts, and other State and Federal agencies.

8. Prior to that time, I worked for the Department as a Senior Groundwater Modeler, a role that required me to model and analyze various management scenarios, including scenarios that might be applied in the Republican River Basin, using the RRCA Groundwater Model

("Model"). Thus, I am versed in the technical characteristics of the Model and the manner in which the Model is employed within the Current Accounting Procedures.

THE PROBLEM AND THE PROPOSED SOLUTION

9. In my role as Senior Groundwater Modeler, and in support of the Department's efforts to comply with the Republican River Compact ("Compact"), I first identified a problem with the Current Accounting Procedures and authored a paper submitted to the RRCA Engineering Committee in 2007. *See* Exhibit N1005. In simple terms, the concern was then, and remains today, that the Current Accounting Procedures misrepresent the net effect of groundwater pumping and "Mound Recharge" (importation of Platte River water into the Republican River Basin, a.k.a. imported water supply or IWS). The most significant result of this misrepresentation is that Nebraska is charged with consumption of imported water in contravention of the terms of the Final Settlement Stipulation ("FSS") entered into by the States in December 2002, and approved by the Supreme Court in May 2003.

10. It is important to note the problem is not inherent in the Model, but arises from the way in which the Model results are used, through application of the Current Accounting Procedures, to determine the impact of each State's groundwater pumping and Mound Recharge on stream flows.

11. It is also important to understand that the concern is not just about ensuring that Compact accounting is "more accurate" by some small measure. Rather, the problem is that the Current Accounting Procedures are inconsistent with the express terms of the FSS and are undermining Nebraska's Compact allocation. To be clear, Nebraska continues to assert that the terms of the FSS are entirely consistent with the Compact.

12. The Compact applies to the Virgin Water Supply ("VWS") of the Republican River Basin. The VWS is defined as the water supply of the Republican River Basin undepleted

by the activities of man. The Compact clearly does not apply to the water supply of the Platte River Basin. One activity of man, the importation of Platte River water to the Republican River Basin, increases streamflow in the Republican River and its tributaries. However, the Compact does not apply to such waters, and Nebraska may consume this water free of any requirements the Compact places on Nebraska's use of VWS. If Nebraska does not consume this imported water and it increases streamflow into Kansas, this increased streamflow should offset other consumption of Republican River water incurred by Nebraska. Section IV.F. of the FSS provides consistency with the Compact with regard to this imported water by imposing the following requirements:

Beneficial Consumptive Use of Imported Water Supply shall not count as Computed Beneficial Consumptive Use or Virgin Water Supply. Credit shall be given for any remaining Imported Water Supply that is reflected in increased stream flow...

13. In simple terms, therefore, our concern is that the Current Accounting Procedures, an Appendix to the FSS which, by express design, is adaptable to ensure conformity with the terms of the FSS, are depriving Nebraska of water to which it is solely entitled; that is, water imported from the Platte River Basin in Nebraska.

14. Since I first identified the problem, I, previously along with Dr. David Ahlfeld, have been Nebraska's primary expert on this issue. As I will explain further, I have presented numerous analyses of this concern to the States of Kansas and Colorado through the RRCA's Engineering Committee and during various meetings convened by the RRCA to address this and other concerns of the States.

15. I have authored or co-authored two formal expert reports on this subject. The first, which I co-authored with Dr. David Ahlfeld and Michael McDonald, is entitled *Estimating Computed Beneficial Consumptive Use for Groundwater and Imported Water Supply under the*

Republican River Compact. We prepared this report for the Arbitration conducted in 2008-09. The report is contained within Exhibit N1002.

16. I also authored and submitted a report on November 18, 2011, for purposes of this proceeding in accordance with the applicable Case Management Plan. That report is entitled *Nebraska Expert Report in Support of Counterclaim and Crossclaim, Nebraska's Proposed Changes to the RRCA Accounting Procedures* and is Exhibit N1002.

17. Both of these reports identify Nebraska's fundamental concern regarding the improper calculation of the net impacts of groundwater pumping and Mound Recharge on the Republican River. The expert report I prepared for this proceeding (Exhibit N1002), among other things, explains how the Current Accounting Procedures misrepresent the net effect of Nebraska's groundwater pumping and Mound Recharge in the Republican River mainstem from Swanson Lake to Harlan County Lake ("Swanson-Harlan Reach"). In that reach, the Current Accounting Procedures charge Nebraska with an Imported Water Supply **debit**, by including the consumption of imported water.

18. Both of these reports articulate the parameters of what has become known as Nebraska's "Sixteen-Run Proposal".

19. In response to my report (Exhibit N1002), on March 15, 2012, Colorado's expert, Dr. Willem Schreüder, submitted a report acknowledging that the Current Accounting Procedures charge Nebraska with the consumption of imported water. *See* Exhibit N1003. Dr. Schreüder suggested an alternative to the Sixteen-Run Proposal that addresses this concern.

20. The accounting procedure identified by Dr. Schreüder is identical, save for inconsequential variations in terminology, to the proposal Nebraska submitted to the RRCA Engineering Committee in the summer of 2007 (Exhibit N1005) and further articulated in

January 2008. *See* Exhibit N1008. This has become known as the “Five-Run Proposal” because it employs just five of the sixteen runs identified by Nebraska in its Sixteen-Run Proposal.

21. The Sixteen-Run Proposal and the Five-Run Proposal both attempt to address the same fundamental problem with the Current Accounting Procedures, and both embody the same fundamental principle - that the sum of the individually calculated impacts from groundwater pumping and Mound Recharge should equal the total impacts calculated from a run of the Model with the relevant stresses “Off” and a run with the relevant stresses “On”.

22. In the Swanson-Harlan Reach, the relevant stresses are Nebraska groundwater pumping and Mound Recharge. The Current Accounting Procedures produce Unaccounted Impacts (as this term is used in Exhibit N1002; a.k.a. “residuals”) in this reach. As a result, the Current Accounting Procedures include the consumption of imported water. Both the Five-Run Proposal and the Sixteen-Run Proposal address Unaccounted Impacts in the Swanson-Harlan Reach. The Five-Run Proposal eliminates the consumption of imported water everywhere this occurs.

23. As explained below, the Sixteen-Run Proposal is merely an extension of the Five-Run Proposal. The Sixteen-Run Proposal is a more elaborate solution developed explicitly to satisfy technical concerns expressed by Kansas. As Nebraska found, these concerns were related to the existence of additional Unaccounted Impacts that result from the Current Accounting Procedures.

24. These additional Unaccounted Impacts occur in other sub-basins (i.e., apart from the Swanson-Harlan Reach) where other relevant stresses (*e.g.*, Colorado groundwater pumping or Kansas groundwater pumping) exist. However, addressing the Unaccounted Impacts in these

other sub-basins represents only approximately one fifth of the scope of the Sixteen-Run Proposal with regard to the total impact to Nebraska, as articulated in Exhibit N1002.

25. The Five-Run Proposal was acceptable to Nebraska in 2007 and is acceptable today because it addresses Nebraska's fundamental concern in the Swanson-Harlan Reach. The impact to Nebraska under the Five-Run Proposal represents approximately four-fifths of the scope of the Sixteen-Run Proposal with regard to the total impact to Nebraska as articulated in Exhibit N1002.

26. Specifically, by revising the Current Accounting Procedures and by implementing the Five-Run Proposal, the net effect of Nebraska's groundwater pumping and the Mound Recharge in the Swanson-Harlan Reach of the Republican River Basin would be properly represented in the Compact accounting. As a result, Nebraska would no longer be charged with an Imported Water Supply **debit**, and will receive the proper Imported Water Supply **credit** resulting from Mound Recharge, as contemplated in the FSS.

27. For example, in 2003 the impact of groundwater pumping (Computed Beneficial Consumptive Use from groundwater, or "CBCU_G") for Nebraska was calculated pursuant to the Current Accounting Procedures to be 203,675 acre-feet. The CBCU_G computed under the Five-Run Proposal for Nebraska in 2003 would be 185,692 acre-feet per year. The IWS Credit determined under either of these procedures is 9,790 acre-feet. Therefore, the Current Accounting Procedures charge Nebraska with consumption of imported water in an amount of 17,983 acre-feet (203,675 - 185,692). Subtracting this amount from the IWS Credit shows that the Mound Recharge provides Nebraska with a net accounting "benefit" of -8,193 (this negative value represents a decrease in Nebraska's net annual Compact accounting balance). This is

clearly not a credit but is rather a debit, contrary to the FSS. The values used in this example were taken directly from Exhibit N1004.

28. The problem with the Current Accounting Procedures results in the allocation of Platte River water to Kansas and charges to Nebraska for additional CBCU_G, effectively depriving Nebraska of a portion of its Compact allocation. The Current Accounting Procedures do award an IWS Credit of 9,790 acre-feet, but then more than negates that credit by improperly charging Nebraska with consumption of imported water in the amount of 17,983 acre-feet. The Five-Run Proposal eliminates the consumption of imported water in the CBCU_G calculation as required by the FSS.

29. The use of the Sixteen-Run Proposal addresses all Unaccounted Impacts, but is not necessary to bring the Current Accounting Procedures into conformance with Section IV.F. of the FSS. Moreover, as confirmed in the recently filed *Summary of the Quantitative Effect of the Five Run Proposal* (June 19, 2012), approximately 80% of the adverse impacts visited on Nebraska by application of the Current Accounting Procedures can be eliminated through adoption of the Five-Run Proposal. *See* Exhibit N1004 and Exhibit N1002.

30. For this reason, Nebraska is prepared to accept the Five-Run Proposal in this proceeding.

GENESIS OF NEBRASKA'S CONCERNS

31. By way of background, in 1943, the United States and the States of Kansas, Nebraska, and Colorado entered into the Republican River Compact. Among the Compact's stated purposes is "to provide for an equitable division" of the waters of the Republican River Basin, which entails determining changes in flow in the River caused by human activities.

32. Since 1943, and especially since the 1970s, a human activity responsible for significant depletions in River flow has been the interception of water by wells that might

otherwise have discharged to the River. Depletions of flow caused by consumption of groundwater used to irrigate crops and for municipal use are collectively called $CBCU_G$.

33. The primary activity that has caused accretions to flow in the Republican River is the importation of water from the Platte River Basin, which infiltrates into the ground from canals and from irrigation. Accretions to streamflow in the Republican River Basin caused by this Mound Recharge are collectively called the Imported Water Supply (“IWS”) Credit.

34. Determining the magnitude of depletions and accretions to stream flow caused by groundwater pumping and Mound Recharge entails estimating flow in the River both with and without the activity. The difference between the two estimates is an estimate of the accretions to, or depletions of, streamflow.

35. In 2007, it became clear to me that various changes to the conditions represented in Model scenarios produced results that were often highly dependent on the presence or absence of the other stresses (*e.g.*, groundwater pumping or Mound Recharge) contained in that scenario. This occurred during the course of the development of the second generation IMPs between the Department and the Natural Resources Districts (“NRDs”) in the Republican River Basin.

36. For example, application of methodology employed in the Current Accounting Procedures to determine the portion of Nebraska’s total $CBCU_G$ attributable to groundwater pumping within each NRD produced results that did not add up to Nebraska’s total $CBCU_G$. As another example, the effect of a certain management approach (*e.g.*, the retirement of irrigated acres versus a reduction in the amount of allowable groundwater pumping) on reducing Nebraska’s $CBCU_G$ could be dependent on whether or not other management actions were also included in the scenario.

37. Nebraska simultaneously noted anomalies in the IWS Credit. Beginning in 2003 and continuing through 2006, the portion of the IWS Credit that is realized in the Swanson-Harlan Reach was reduced dramatically. While Mound Recharge had decreased somewhat during these same years due to drought in the Platte River Basin, this should not be expected to have a sudden and dramatic effect on the accretions to streamflow resulting from Mound Recharge in the Republican River Basin. In contrast, the other significant portion of the IWS Credit, which is realized in the Medicine Creek sub-basin, was not similarly affected but instead continued to gradually increase as it had been since the 1950s (setting aside minor year-to-year fluctuations).

38. This led me to question whether there was a comparable issue (i.e., impacts being dependent on other stresses) at play with regard to the IWS Credit and Nebraska's $CBCU_G$. Specifically, the Current Accounting Procedures always test the impact of a stress in the presence of all other stresses, so I investigated whether the estimate of the impact of these stresses would be different if they were analyzed in the absence of the other stresses.

39. I learned that for the IWS Credit and the $CBCU_G$ for Nebraska, in the Swanson-Harlan Reach, a comparable issue is at play. In other words, the impact of groundwater pumping in Nebraska looks different when the Mound Recharge is not active in the Model, and the impact of the Mound Recharge looks different when the groundwater pumping in Nebraska is not active. In fact, the IWS Credit is greater when evaluated in the absence of the groundwater pumping in Nebraska, and the $CBCU_G$ for Nebraska is less when evaluated in the absence of the Mound Recharge.

40. The correct application of the Model for Compact accounting with regard to the Mound Recharge is defined in Subsection IV.F of the FSS, which states, in part: "Beneficial

Consumptive Use of Imported Water Supply [i.e., Mound Recharge] shall not count as Computed Beneficial Consumptive Use or Virgin Water Supply.” This is necessary in order for the FSS to conform to the Compact. If Beneficial Consumptive Use of Mound Recharge is included in Nebraska’s CBCU_G, Nebraska is forced to underuse some portion of its Compact allocation to compensate. Moreover, including Beneficial Consumptive Use of Mound Recharge in the VWS would result in allocating water which originates in the Platte River Basin to the State of Kansas, something the Compact clearly does not do.

41. By evaluating the impact of groundwater pumping in Nebraska in the presence of Mound Recharge, the Current Accounting Procedures are violating the requirement that Beneficial Consumptive Use of Imported Water Supply not be included in Computed Beneficial Consumptive Use (as the presence of the Mound Recharge increases the CBCU_G).

NEBRASKA’S EFFORTS TO ADDRESS THE ISSUE TO THE RRCA

42. Nebraska first raised its concern to the RRCA’s Engineering Committee in June 2007, and presented substantively what has become known as the Five-Run Proposal. *See* Exhibit N1005. This was later discussed in meetings in Topeka, Kansas and at the working session of the RRCA Annual Meeting in Junction City, Kansas during August 2007.

43. Nebraska’s concern remained unresolved going into the regular RRCA Annual Meeting in August 2007. The Engineering Committee requested guidance from the RRCA on how to proceed. *See* Exhibit N1006.

44. The RRCA directed the Engineering Committee to continue working to resolve outstanding accounting issues, including Nebraska’s proposed change to the Current Accounting Procedures, following the annual meeting in 2007. *See* Exhibit N1007.

45. A meeting was held in September 2007 in Denver, Colorado with Engineering Committee representatives as well as other groundwater modelers for the three states to discuss

Nebraska's proposed change to the Current Accounting Procedures. In conjunction with that meeting, the State of Kansas provided Nebraska with a memo summarizing their views of this proposed change (the "VWS Metric Memo"). *See* Exhibit N1002, Appendix B, Exhibit A.

46. Kansas began the VWS Metric Memo by summarizing its understanding of Nebraska's concern. Kansas found the argument that the Current Accounting Procedures included the consumption of imported water "difficult to understand". However, Kansas went on to describe a test they applied to Nebraska's proposal (later known as the "VWS Metric") and the results of the Current Accounting Procedures and Nebraska's proposed accounting changes as measured by that test.

47. Kansas pointed out that "[t]he only question with respect to the Model's result s (sic) that affect compact compliance is the extent to which activities in a state, either pumping or importation of water, affect base flow in the Republican River. To the extent these activities affect base flows in the river, they must be counted." Kansas further noted that "[i]t is clear that (sic) only quantification that is relevant to the compact accounting is the depletion or accretion to Republican River stream flow."

48. After a brief discussion about impacts to the Republican River from pumping and recharge that occurs outside the basin, Kansas continued:

In order to provide this quantification using the groundwater model, it was agreed in the settlement that the impact of each state's pumping or water importation would be determined by comparing the model-computed historical base flow condition to the model-computed base flow condition without that activity. The states recognized that the sum of the impacts of these individual activities would not necessarily exactly equal the model-computed impact of all of the activities considered simultaneously. If the groundwater model were mathematically linear, it would, in fact, be the case that the sum of the individual affects (sic) would equal the affect (sic) determined by considering all of the activities

simultaneously. However, because the groundwater model is mildly non-linear, this mathematical equality does not occur.

It should be noted that if the impact of all activities considered simultaneously were used, it would be necessary to have a method for apportioning the impact among the various activities. Such a process was considered unnecessary and it was agreed that the impacts from each state's activity would be computed separately in spite of the fact that the sum of those impacts may not exactly equal the impact of all activities considered simultaneously.

49. Kansas concluded that Nebraska's proposal departed further from the VWS Metric than the Current Accounting Procedures for the Republican River Basin as a whole. Thereafter, Nebraska endeavored to determine the cause of these results, and to develop a proposal that would meet, as closely as possible, this VWS Metric, while addressing the consumption of imported water.

50. However, it is important to note that Kansas' conclusions in the VWS Memo were incomplete. As Nebraska later learned, the results of the Current Accounting Procedures only appear to closely match the VWS Metric because there are both positive and negative Unaccounted Impacts that roughly balance themselves out in most years. *See Exhibit N1002.*

51. Nebraska's Five-Run Proposal actually addressed some of these Unaccounted Impacts, essentially eliminating the negative Unaccounted Impacts, thereby substantially improving the fit to the VWS Metric in some sub-basins, while leaving the positive Unaccounted Impacts that exist in other sub-basins essentially unchanged. Kansas' conclusion that the Current Accounting Procedures provide a better fit to the VWS Metric than the Five-Run Proposal is misleading because it simply looks at the total impacts Basin-wide. However, Compact accounting is done by sub-basin, because the Compact allocated the VWS by sub-basin.

52. After receiving the VWS Metric Memo from Kansas in 2007, Nebraska began to look at solutions that would fully satisfy the test Kansas proposed for measuring changes to the

Current Accounting Procedures. While not the initial focus of Nebraska's concern, Nebraska embraced the VWS Metric as proposed by Kansas as the "net impact" of the groundwater pumping in the three states and the Mound Recharge.

53. Nebraska next presented a memo to the RRCA Engineering Committee in January of 2008, titled *Calculation of Computed Beneficial Consumptive Use and Imported Water Supply Credit Using the RRCA Groundwater Model*. See Exhibit N1008. Nebraska demonstrated that the Current Accounting Procedures were indeed failing the VWS Metric established by Kansas and showed that there are several options that could be chosen that would meet the VWS Metric.

54. The discussion appearing in the January 2008 Memo was provided to the RRCA in March 2008 at a Special Meeting. See Exhibit N1001.

55. Following the presentation of this memo to the RRCA Engineering Committee, neither Colorado nor Kansas showed any interest or concern in resolving Nebraska's issue (despite Nebraska's repeated attempts to initiate productive dialogue with the Engineering Committee). I found this particularly troubling and frustrating because I understood that to be the very function of the Engineering Committee.

56. Next, Nebraska discovered, as alluded to above, that the source of the differences between the results of the Current Accounting Procedures and the VWS Metric was primarily from conditions experienced in several sub-basins. Furthermore, when the VWS Metric test was applied to the Current Accounting Procedures at the sub-basin level, the differences were dramatic. For instance, in the Swanson-Harlan Reach, these Unaccounted Impacts averaged more than 13,000 acre-feet per year from 2001-2006. See Exhibit N1002.

57. Throughout the first five months of 2008, the Engineering Committee met five times in face-to-face meetings in Denver, Colorado; Kansas City, Missouri; and Lincoln,

Nebraska to discuss multiple issues. Nebraska received no meaningful input from the other states on this issue, despite numerous requests.

58. In a final effort to resolve the matter, Nebraska then transmitted a report to the RRCA titled *Analysis of Current Methods Used to Calculate Groundwater Impacts for the Republican River Compact* dated August 6, 2008 and prepared by the Nebraska Department of Natural Resources, McDonald Morrissey Associates, Inc., and Dr. David P. Ahlfeld. This is contained within Exhibit N1002. The purpose of this report was to demonstrate the manner in which accretions and depletions to stream flow are incorrectly calculated, and to provide the primary physical and mathematical reason behind the errors. The report provided a description of the Compact, the FSS, and the Current Accounting Procedures, including examples of the use of the Model and the misrepresentation of the Model results. Nebraska gave a presentation on this at the RRCA Annual Meeting held the following week, which included a demonstration of the substantial improvement toward matching the VWS Metric obtained from the proposed method (essentially the Sixteen-Run Proposal) relative to the Current Accounting Procedures.

59. Despite the fact that the Unaccounted Impacts were reduced to nearly zero with this proposal, Kansas showed little interest in understanding Nebraska's proposal and offered no alternative proposals. This issue was not resolved by the RRCA and became one of the issues subject to the non-binding arbitration in 2008-2009.

60. During the Arbitration, Nebraska submitted the report titled *Estimating Computed Beneficial Consumptive Use for Groundwater and Imported Water Supply under the Republican River Compact* (contained in Exhibit N1002). The report was largely similar to the August 6, 2008 report, except that the discussion of the mechanisms within the Model that result in the failure of the Current Accounting Procedures was more developed, and the proposed change to

the Current Accounting Procedures (the Sixteen-Run Proposal) was refined very slightly so that differences between the VWS Metric and the sum of the $CBCU_G$ for each state and the IWS Credit are zero for all sub-basins in all years.

61. During that same arbitration, Colorado submitted the expert report *Report in Reponse to: Estimating Computed Beneficial Consumptive Use for Groundwater and Imported Water Supply under the Republican River Compact, Ahfed (sic), et al., (January 20, 2009)* dated February 16, 2009. See Exhibit N1010. Based on this report, the Arbitrators Final Decision (June 30, 2009), found (Finding 35) “the Current Accounting Procedures for calculating $CBCU_C$, $CBCU_K$, and $CBCU_N$ [the $CBCU_G$ for each state] ... may also include consumption of imported water, since both the ‘base’ run and the ‘no State pumping’ run include surface water import.” See Exhibit N1002, which contains a complete copy of the Arbitrator’s final decision.

NEBRASKA’S RETURN TO THE FIVE-RUN PROPOSAL IS PROPER

62. As can be seen from the evolution described above, the Sixteen-Run Proposal grew out of the original Five-Run Proposal. The only real difference between the Five-Run Proposal and the Sixteen-Run Proposal is that the former does not address and distribute Unaccounted Impacts in every sub-basin in the Republican River Basin. Instead, the focus is on consumption of imported water, primarily occurring in the Swanson-Harlan Reach.

63. In April 2010, I compared the Five-Run Proposal and the Sixteen-Run Proposal. See Exhibit N1009.

64. Notably, the net impact computed for the sum of the IWS Credit and the $CBCU_G$ for Nebraska is nearly identical using either the Five-Run Proposal or the Sixteen-Run Proposal in the Swanson-Harlan Reach. Therefore, the effect on Compact accounting (i.e., the comparison of Nebraska’s Compact allocation to Nebraska’s total $CBCU$ - IWS Credit) is essentially identical. Compare Exhibits N1002 with N1004.

65. The Five-Run Proposal alters the Current Accounting Procedures to prevent the States from being charged for the consumption of imported water. The Five-Run Proposal does not attempt to comprehensively address the issue of Unaccounted Impacts. The Five-Run Proposal differs from the Current Accounting Procedures only in that the Mound Recharge is turned “Off” in both runs when calculating the $CBCU_G$ for each State.

66. In the Swanson-Harlan Reach, only four different Model runs (from the Sixteen-Run Proposal) produce significantly different results: 1) Nebraska groundwater pumping “On” , Mound Recharge “On”; 2) Nebraska groundwater pumping “Off”, Mound Recharge “On”; 3) Nebraska groundwater pumping “On”, Mound Recharge “Off”; and 4) Nebraska groundwater pumping “Off”, Mound Recharge “Off”.

67. Therefore, there are really only two different types of comparisons for evaluating Nebraska $CBCU_G$ and the IWS Credit. For Nebraska $CBCU_G$, these are: 1) The Mound Recharge is “On” in the two runs being compared, and 2) The Mound Recharge is “Off” in the two runs being compared.

68. Similarly, for the IWS Credit, these are: 1) Nebraska groundwater pumping is “On” in the two runs being compared, and 2) Nebraska groundwater pumping is “Off” in the two runs being compared.

69. Under the Sixteen Run Proposal, the two options for computing Nebraska $CBCU_G$ (with Mound Recharge “On” or with Mound Recharge “Off”) and the IWS Credit (with Nebraska groundwater pumping “On” and with Nebraska groundwater pumping “Off”) are essentially averaged.

70. The Five-Run Proposal, on the other hand, is based on the premise that the FSS defines which of the two types of differences are correct. According to Section IV.F. of the FSS,

the Nebraska groundwater pumping should be “On” when computing the IWS Credit. The Mound Recharge should be “Off” when computing Nebraska’s (and other states’) CBCU_G.

71. The quantitative effect of either of the proposals in the Swanson-Harlan Reach is to essentially eliminate the negative Unaccounted Impacts that occur under the Current Accounting Procedures, therefore addressing the consumption of imported water.

72. The Sixteen-Run Proposal accomplishes this by essentially splitting the Unaccounted Impacts and assigning half to Nebraska’s CBCU_G (reducing the CBCU_G) and half to the IWS Credit (increasing the IWS Credit). On the other hand, the Five-Run Proposal accomplishes this by assigning the Unaccounted Impact to Nebraska’s CBCU_G (reducing the CBCU), and leaves the IWS Credit unchanged. The net effect on the Compact accounting balances of both of these approaches is essentially identical in the Swanson-Harlan Reach.

73. In retrospect, Nebraska has concluded it was misguided in seeking to satisfy Kansas’ concerns about Nebraska’s initial Five-Run Proposal. Kansas’ witness, Mr. Larson, has since indicated that the VWS Metric is essentially meaningless, thus the costs and delays (nearly three years) incurred by Nebraska to satisfy it are for naught.

74. After reviewing the work of Colorado’s experts in this proceeding and reflecting further on the issue, it is now apparent that Nebraska should have held steadfast to its initial Five-Run Proposal. Nebraska’s efforts to cooperate with Kansas to obtain a solution Kansas would consensually accept were met with obfuscation and delay.

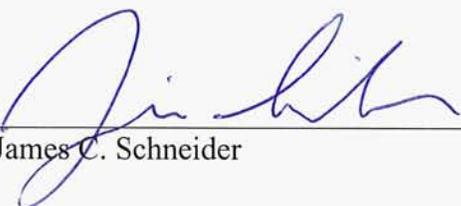
75. In summary, although Nebraska continues to believe the Sixteen-Run Proposal is a viable alternative because it eliminates entirely all the Unaccounted Impacts, it is not necessary to do so to conform to Section IV.F. of the FSS. The Current Accounting Procedures charge Nebraska’s compact account for consumption of imported water. This results in water that

originated in the Platte River Basin (i.e., the Mound Recharge) being included in the VWS. The effect of this is to allocate Platte River water to Kansas. Section IV.F of the FSS is designed to prevent this, so as to be in conformance with the Compact. The Five-Run Proposal prevents Nebraska from being charged for consumption of imported water, addressing the problem originally identified with the Current Accounting Procedures.

76. This significant issue fundamentally affects the results of the Compact accounting. As such, this issue is inextricably related to the questions of past damages for noncompliance and any actions that may be necessary for future compliance.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 18th day of July, 2012.

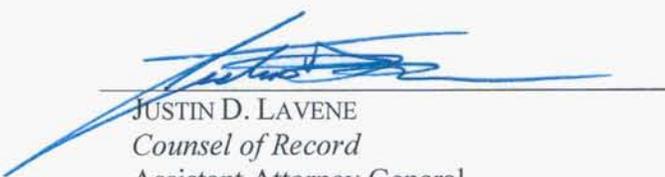


Dr. James C. Schneider

Respectfully submitted this 19th day of July, 2012.

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No. 126, Original

In The
Supreme Court of the United States

—◆—

STATE OF KANSAS,

Plaintiff,

v.

STATE OF NEBRASKA

and

STATE OF COLORADO,

Defendants.

—◆—

CERTIFICATE OF SERVICE

I, Justin D. Lavene, counsel for the State of Nebraska in the above-captioned matter, hereby certify that on July 19, 2012, the original and one copy of the attached DIRECT TESTIMONY OF DR. JAMES C. SCHNEIDER, PH.D., RE: NEBRASKA'S FIRST AMENDED COUNTERCLAIM (PROPOSED CHANGES TO THE RRCA ACCOUNTING PROCEDURES) were e-mailed and/or mailed to the non-party deponent and all parties as indicated in Appendix A of Case Management Plan No. 2 dated October 17, 2011.

I further certify that on the same date, this Certificate of Service was distributed to the parties listed below as specified in Appendix A of the Case Management Plan:

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