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October 30, 2012
VIA EMAIL

Signe Snortland, Reclamation Environmental Specialist
Bureau of Reclamation
Dakotas Area Office
PO Box 1017
Bismarck ND 58502

RE: Arkansas Valley Conduit and Long-Term Excess Capacity Master Contract – Draft EIS

Dear Ms. Snortland:

I am providing comments on the draft Environmental Impact Statement (EIS) for the Arkansas Valley Conduit (AVC) and related projects, issued in August 2012. David Barfield is providing a separate letter with additional comments from our review.

This letter will offer section rewrites on the following: the Arkansas River Compact (Compact), Pueblo Winter Water Storage Program, Kansas water supply, and John Martin Reservoir. These rewrites are needed due to mischaracterizations in the draft EIS.

Chapter 3 – Surface Water Hydrology

Native Water rights: The third paragraph doesn't properly describe the Arkansas River Compact's role in Colorado's administration (page 3-11). Although the Compact does apportion Arkansas River flows and the conservation benefits of John Martin Reservoir, the Arkansas River in Colorado is administrated generally under the Colorado priority system. I would suggest this paragraph be rewritten as follows:

> Colorado also is required to maintain compliance with the Arkansas River Compact (Compact), which was negotiated between Colorado and Kansas. This

Compact apportioned the Arkansas River flows and the conservation benefits of John Martin Reservoir which was constructed by the Corps between 1939 and 1948. The Compact was signed by the States' and the federal representative in December 1948. The Compact was subsequently enacted as state law by Colorado and Kansas as well as being adopted as a federal statute (State of Colorado, C.R.S. 37-69-101; State of Kansas, K.S.A. 82a-520; and Federal Statute, 63 Stat. 145). The Compact divides and apportions Arkansas River water between those two States. The Compact also requires that useable streamflows not be depleted at the Colorado-Kansas state line by subsequent post-Compact development. Therefore, increased consumptive use caused by groundwater irrigation pumping and irrigation system improvements that have occurred since the Compact's adoption must be offset to prevent depletion of streamflows at the state line. Those offsets are administered under augmentation plans (Rule 14 and Rule 10 plans, respectively). The Compact and related documents can be found on the Colorado Division of Water Resources (2011) Web site:

(http://water.state.co.us/SurfaceWater/Compacts/ArkansasRiverCompact/Pages/ArkansasRiverCompact.aspx)

Pueblo Winter Water Storage Program: This program is not accurately characterized and is much larger than is represented in the draft EIS (page 3-11 to 3-12). Regarding the size, the twenty year average (1991-2011) is 142,860 AF from the final winter water report for the November 2011 to March 2012 program. Also, there is a significant portion of PWWSP storage that occurs in John Martin Reservoir, with the 1982 to 2009 average storage in John Martin Reservoir being 24,500 AF. I would suggest rewriting this section as follows:

Pueblo Winter Water Storage Program The Pueblo Winter Water Storage Program allows agricultural water users to store native Arkansas River flows during the winter in Pueblo Reservoir, John Martin Reservoir, and other off-channel reservoirs below Pueblo Reservoir. Before Pueblo Reservoir was completed, agricultural entities would divert water during the winter using their normal conveyance systems to maintain soil moisture levels. However, problems associated with winter operations frequently occurred. Beginning in 1975, a program was developed to allow entities the option to divert water into storage for use during the following irrigation season. The Pueblo Winter Water Storage Program is in effect from November 15 through March 15 annually. Total program diversions are divided among participants using set percentages. Nonparticipants retain the right to divert water according to their priority date. The program is administered with a priority date of March 1, 1910, and typically stores between 30,000 and 50,000 ac-ft in Pueblo Reservoir each year, with additional storage in off-channel structures (Hopkins 2010). Winter Water

Storage in John Martin Reservoir averaged 24,500 ac-ft during the study period (1982 to 2009).

Streamflow: It is not appropriate to compare the volume of inflows to John Martin Reservoir to the volume of water that crosses the state line (page 3-13). This comparison leaves the incorrect impression that the two volumes are well-correlated. This is shown by the flows at the state line ranging from an annual volume of water as low as 13% of John Martin inflows for that year, to an annual volume as high as 488% of John Martin inflows during the 1950 to 2011 period.

The 70% average cited on page 3-13 is neither a target nor a good representation of the appropriate volume of water that Kansas is entitled to under the Compact. State line flow is quite variable, depending on the hydrologic conditions within the basin, and shows the impact of inflows below John Martin Reservoir. Any depletive impacts to John Martin Reservoir inflows would be a concern to Kansas because of the right to maintain flow conditions as of the time of the Compact under most conditions. I would suggest redrafting this section as follows:

USGS and the Colorado Department of Natural Resources maintain streamflow gages throughout the Arkansas River Basin. Figure 3-4 and Figure 3-5 show mainstem and tributary gage locations with average annual streamflow. The flows referenced in this section are related to the 1982 to 2009 study period.

Figure 3-4 shows that a large portion of Upper Arkansas River streamflow originates from tributary inflow, with 60 percent of total annual flow at the Portland gage comprising measured tributary inflows. Figure 3-5 shows the impact of agricultural diversions, with streamflow between Avondale and Las Animas decreasing nearly 70 percent. The Arkansas River contributes about 83 percent of measured inflows into John Martin Reservoir, while the Purgatoire River contributes about 17 percent.

The Kansas water supply as measured at the Colorado-Kansas state line is composed of several sources, including Kansas account releases from John Martin Reservoir, irrigation return flows, and tributary inflows below John Martin Reservoir. For the 1982 to 2009 period, the Kansas account releases are approximately 28 percent of the water passing through the Arkansas River below John Martin Reservoir USGS gage.

John Martin Reservoir: The statement that John Martin Reservoir has not been in priority since the Spring of 2000 is misleading (page 3-22). In part, this is due to the fact that the Compact doesn't involve a water right that is in the Colorado priority system. John Martin Reservoir has stored water each and every year since before the Compact was adopted. During

the study period, at least 4,334,000 acre feet were stored in the Compact conservation storage. I would suggest that this section be rewritten as follows:

> **John Martin Reservoir** John Martin Reservoir is an on-channel reservoir primarily used for flood control, irrigation, and recreation purposes. The reservoir is located on the Arkansas River downstream from the town of Las Animas. John Martin Reservoir is owned and operated by the Corps. The Arkansas River Compact Administration (ARCA) oversees the operation of the conservation pool. Although the total capacity at the top of the dam is 793,400 ac-ft, the maximum capacity is limited to 603,465 ac-ft. The conservation pool has a capacity of 333,912 ac-ft based on the 1999 resurvey and there is no dead storage.
>
> Starting on November 1st of each year, Compact inflows are stored in Compact conservation storage. Water in Compact conservation storage is transferred to accounts for Colorado and Kansas water users starting on the first demands of water on or after April 1st, but no later than April 7th of each year. While water is being transferred from Compact conservation storage, Compact inflows continue to accumulate in Compact conservation storage even as the water is transferred. When Compact conservation storage is emptied by these transfers, then Colorado reverts to priority system for the water rights located downstream of the reservoir. After Compact conservation storage is first emptied after April 1st, then water can be stored in Compact conservation storage if inflows exceed the downstream Colorado surface water irrigation demands by more than 1,000 ac-ft. The Compact precludes any upstream depletions of John Martin Reservoir supply due to post-Compact development. Water derived from pre-Compact water rights can be stored in separate accounts in John Martin Reservoir: (1) under the Pueblo Winter Water Storage Program, (2) the Amity Canal Great Plains water rights, and/or (3) in the Offset Account.

Appendix D.1 (page D.1-44) would need to be similarly rewritten. The inflows into John Martin Reservoir need to be protected from depletions by these proposed projects.

Chapter 5 Consultation and Coordination

Arkansas River Compact: The Arkansas River Compact is a federal statute, and therefore the discussion of it should be moved up into the section on "Federal Laws, Regulations, and Policies." This section perpetuates several misconceptions related to the Compact (page 5-13). This section should be rewritten as follows:

> **Arkansas River Compact** Interstate compacts apportion water that can be used by each State from a particular river system. The Arkansas River Compact between Kansas and Colorado apportioned the available water supply and John Martin Reservoir conservation benefits by its provisions. Related to the

conservation benefits of John Martin Reservoir, either State could call against the conservation pool up to a certain maximum release rate. These calls were independent of each other, and theoretically one State could release the entire conservation pool without the other State placing a call. This method of "sharing" the conservation pool created inefficiencies that were recognized by both States. In 1980, the Arkansas River Compact Administration adopted a *Resolution Concerning an Operating Plan for John Martin Reservoir* (a.k.a. the 1980 Operating Plan) which created a system of accounts in John Martin Reservoir, including accounts for water derived from pre-Compact Colorado water rights.

Under the 1980 Operating Plan, inflows into John Martin Reservoir that are stored in the Compact conservation storage account are ultimately divided 60 percent to Colorado and 40 percent to Kansas. These inflows include flows of the Arkansas and Purgatoire rivers, ungaged inflows, and precipitation directly on the reservoir during periods of Compact conservation storage. When the reservoir is not in Compact conservation storage, inflows related to the Compact are to be passed downstream. Additionally, water derived from pre-Compact Colorado water rights can be stored in separate accounts in John Martin Reservoir: (1) under the Pueblo Winter Water Storage Program, (2) the Amity Canal Great Plains water rights, and/or (3) in the Offset Account.

During times when John Martin Reservoir is not in conservation storage, Colorado is to operate under its prior appropriation system. Kansas is entitled to those flows present at the Colorado-Kansas state line under these conditions. This includes water passed through John Martin Reservoir in excess of District 67 irrigation demands and irrigation return flows. An additional test of Colorado's Compact compliance is accomplished through annual updates of the H-I Model under the *Kansas v Colorado* decree to determine the impacts of certain post-Compact developments.

Colorado and Kansas have been in litigation before the U.S. Supreme Court regarding the Arkansas River. The first case was brought in 1902. The U.S. Supreme Court encouraged the States to form an interstate compact in a separate litigation.

In 1985 Kansas filed an action with the U.S. Supreme Court claiming that Colorado had violated the Compact. A Special Master was appointed to hear the issues and make recommendations to the court. The Special Master issued five reports to the U.S. Supreme Court based on his findings. The States negotiated a final judgment and decree which was recommended by the Special Master for adoption by the court. In 2009, the U.S. Supreme Court entered this final judgment and decree in this case. The final judgment included monetary compensation owed to Kansas by Colorado for damages. The decree also provided a method to determine whether or not Colorado is in compliance with

the Compact. Through the course of this litigation and afterwards, Colorado has developed rules and regulations for irrigation groundwater well pumping and irrigation system improvements in the lower Arkansas River Basin.

Conclusion

A number of mischaracterizations have been identified and suggested language has been offered. We would request that the final EIS use the language provided. I would be willing to answer any questions or provide additional explanation if needed. With the above identified mischaracterizations, it does call into question the understanding of the role of the Compact and its representation in the development of this draft EIS. Thank you for this opportunity to comment and provide this clarification.

Sincerely,

Kevin L. Salter, P.E.

pc: David Barfield, Chief Engineer
Randy Hayzlett, Kansas ARCA Representative
David Brenn, Kansas ARCA Representative