Non-Binding Arbitration initiated May 2, 2013

Pursuant to

Decree of May 19, 2003, 538 U.S. 720

Kansas v. Nebraska & Colorado

No. 126 Orig., U.S. Supreme Court

Report on the Colorado Compliance Pipeline

Republican River Compact

Response to Application Submitted by Colorado, dated April 5, 2013

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July 29, 2013

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1.0 Introduction

Colorado has resubmitted a proposal for the Compact Compliance Pipeline (CCP) Augmentation Plan. This Plan was previously considered during the arbitration proceeding of 2010. The physical components of the Project are essentially the same as for the prior submittal. A description of the project and some of the issues raised by the State of Kansas is included in my previous report, dated June 22, 2010. (2010 SWE report)

Colorado submitted an application, with a report (Exhibit 1), draft resolution for adoption by the RRCA (Exhibit A) and a mark-up of revised Accounting Procedures (Exhibit 2), on April 5, 2013. It is my understanding that no modifications were made to the proposal as a result of the RRCA Work Session of April 22, 2013 or the special administration Meeting of May 2. The Colorado submittal report includes discussion of the previous arbitrator's decision and responses to the recommendations from that report.

Since the time of the previous proceeding, compact accounting has been compiled on a preliminary basis, but has not been agreed to by the RRCA. The status of Colorado's compact compliance was documented in the 2010 SWE report through the year 2008 and has not been updated for this report.

2.0 Operational Limits - Whether Additional Operational Limits are Needed

The proposed operation of the CCP project is described in Exhibit A, the draft resolution (¶8. A. – G.) and at section 2.3 of the report (pg. 8 and 9). These provisions are similar to the operational details testified to by Mr. Slattery at the hearing in 2010. Several modifications from the original Colorado proposal in 2009 have been incorporated.

The "Projected Delivery" will form the basis for the delivery of augmentation credit each year. An initial estimate is to be developed by April 1 each year. The initial Projected Delivery is now proposed to be based on the maximum stream depletion for the North Fork sub-basin over the previous five years, without pipeline deliveries. (¶8A). This is different than the "Projected Delivery" proposed in 2009, which was the largest annual compliance deficit in the preceeding ten years, statewide.

The Projected Delivery is then updated sometime prior to September 1. The basis for the update is stated in ¶8.F of Exhibit A and in the report (pg. 9, ¶4). The projected compact compliance status will be used to establish the pumping for the remainder of the year.

Table 1 provides the annual North Fork depletions and the comparison of CBCU to allocation for the South Fork and the North Fork for the years 2003 - 2007. The North Fork depletions averaged 14,364 acre-feet/yr. over this period. The statewide overuse is listed and averaged 11,574 acre-feet/yr. The amount that the CBCU exceeded the sub-basin allocations in the North Fork and South Fork is also shown. These comparisons averaged 7,814 and 5,818 acre-feet/yr.

respectively. Finally, the amount of the Statewide overuse, after subtracting out the South Fork overuse, averaged 5,756 acre-feet/yr.

The following comments are provided regarding the current proposal.

The term Projected Delivery is not explicitly defined. The resolution does not limit the allowable credit to the Projected Delivery. The proposal generally states that it is to be initially based on the largest stream depletions to the North Fork sub-basin during the previous five years without Pipeline deliveries (CO Resolution, ¶8.A.). Taken literally, this would be about 15,000 acre-feet at current levels of depletions.

Later in Colorado's resolution, they describe an update to the Projected Delivery required for the remainder of the subject accounting year, which will include any deficit owed from the previous four years (Exhibit A, ¶8.E.). It is unclear whether Colorado intends to include their Statewide deficit or if it will be limited to the North Fork deficit. Additionally, the Arbitrator recommended that the amount of credit approved for the North Fork, and used to determine Statewide compliance, should be reasonably tied to the amount of estimated overuse, not stream depletions, on the North Fork.

The resolution is silent on what amount, if any, of flexibility is to be included in the calculation of Projected Delivery in the update. The current language does not provide enough detail about the specifics of the calculation to identify how the projected delivery would be related to the projected compliance status. I previously recommended some flexibility in the application of projection calculations to determine the amount of augmentation pumping each year to account for uncertainty in the calculations.

3.0 South Fork Overuse

The current proposal does not identify a limit on the amount of augmentation credit for North Fork overuse to be applied to the determination of statewide overuse that is reasonably tied to North Fork overuse.

The proposal does not exclude any overuse in the South Fork sub-basin from the determination of projected delivery. Colorado's response on this matter is to note that augmentation credit will only be applied to the North Fork compliance in the sub-basin test (Table 4A). However, this limitation was also part of the 2009 proposal. This limitation is not sufficient to prevent the application of the credit in the statewide compliance test (Table 3A). Therefore it remains necessary to adjust the Projected Delivery to remove the South Fork overuse from the calculated need for compact compliance.

To address this issue, it is necessary to include in the procedure to update the Projected Delivery (¶8.E.) the following:

A forecast method is envisioned by the current proposal. To limit the credit for CCP deliveries to exclude South Fork overuse, it should be deducted from the Statewide forecasted overuse. Elements needed for the forecast would be CBCU, surface water hydrology, and Compact compliance status for the four previous years. A mechanism for estimating the current accounting year's hydrology and use would also be necessary. Consideration of Colorado's previous four year deficit, excluding the South Fork, needs to be factored into determination of the allowable CCP credit. The minimum delivery for any one year continues to be 4,000 acre-feet, as in the previous proposal.

Colorado's response on the matter of South Fork compliance with the sub-basin non-impairment test is that Bonny Reservoir has been ordered drained, and a proposal for revisions to the accounting has been submitted. Irrespective of how this separate request is resolved, the CCP Augmentation Plan should address the issue identified in the first arbitration proceeding to limit the use of North Fork augmentation credit reasonably to the North Fork overuse, to avoid the use of excess credit to satisfy the test for statewide compliance.

4.0 Use of the Groundwater Model

This issue was addressed in my 2010 report (pg. 11 – 12). I continue to hold the opinion that the augmentation water should be included in the model run with pumping on (i.e. actual conditions), when calculating the Colorado depletions due to Groundwater pumping.

Colorado's current proposal is different than this recommendation and includes the augmentation water in both the pumping and no-pumping model runs. This variation on representing augmentation water discharges with the model would include the augmentation well discharge in a condition with all pumping off in Colorado. This would result in a quantity of baseflow that is too high for such a condition.

5.0 References

1. Colorado Compact Compliance Pipeline Proposal; Submittal to RRCA; April 5, 2013

2. Pagel, Martha O., October 7, 2010, Arbitrator's Final Decision, In Re: Non-Binding Arbitration Pursuant to the Final Settlement Stipulation, *Kansas v. Nebraska and Colorado*, No. 126, Orig., U.S. Supreme Court

3. Book, Dale E., June 22, 2010, Report on the Colorado Compliance Pipeline Republican River Compact Response to reports prepared on behalf of Colorado, dated May 24, 2010, Expert Report prepared for Kansas in non-binding Arbitration initiated May 2, 2013 pursuant to Decree of May 19,2003, 538 U.S. 720 in Kansas v. Nebraska & Colorado No. 126, Orig., U.S. Supreme Court

4. Larson, Steven P. and Perkins, Samuel P, July 29, 2013, Report on the Compact Compliance Proposal, Expert Report prepared for Kansas in non-binding Arbitration initiated May 2, 2013 pursuant to Decree of May 19,2003, 538 U.S. 720 in Kansas v. Nebraska & Colorado No. 126, Orig., U.S. Supreme Court

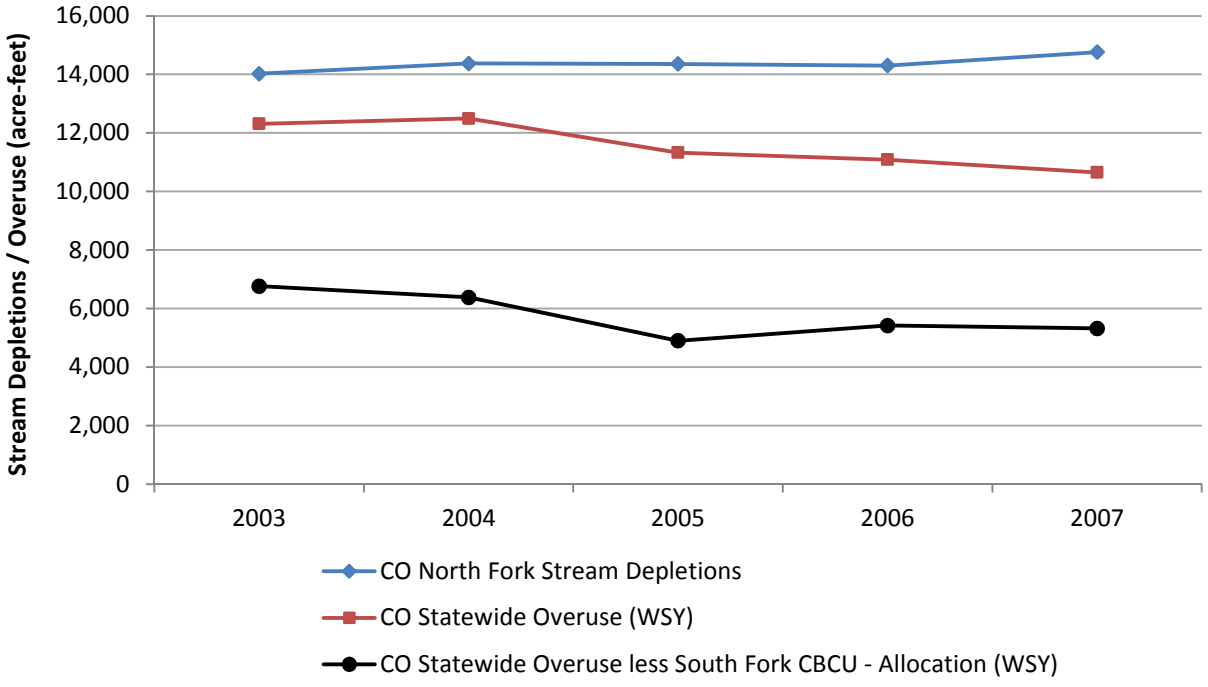
5. RRCA Accounting Spreadsheet; 2003 - 2008

TABLE

Table 1

Comparison of Colorado North Fork Stream Depletions and Colorado Overuse
2003 - 2007
(acre-feet)

Year	(1) CO North Fork Stream Depletions	(2) CO Statewide Overuse (WSY)	(3) CO North Fork (CBCU - Allocation)	(4) CO South Fork (CBCU - Allocation)	(5) CO Statewide Overuse less South Fork CBCU - Allocation (WSY)
2003	14,023	12,310	7,520	5,550	6,760
2004	14,373	12,490	7,910	6,110	6,380
2005	14,359	11,330	7,490	6,430	4,900
2006	14,301	11,090	8,290	5,670	5,420
2007	14,762	10,650	7,860	5,330	5,320
Avg	14,364	11,574	7,814	5,818	5,756

Notes:

(1) Colorado ground water CBCU in the North Fork sub-basin. Results generated using the RRCA Ground Water Model.
(2) Colorado annual Statewide overuse under water-short year administration (WSY).
(3) Colorado North Fork CBCU minus their allocation on the North Fork.
(4) Colorado South Fork CBCU minus their allocation on the Sorth Fork.
(5) equals (2) - (4)