

Dave Heineman
Governor

STATE OF NEBRASKA

DEPARTMENT OF NATURAL RESOURCES
Brian P. Dunningan, P.E.
Director

January 12, 2011

IN REPLY TO:

Jasper Fanning, Manager
Upper Republican Natural Resources District
511 East 5th Street
P.O. Box 1140
Imperial, NE 69033

SUBJECT: Crediting for the Upper Republican Natural Resources District for Retirement of Groundwater Irrigated Acres in the Rock Creek Subbasin

Dear Jasper,

This letter is being provided at the request of the Upper Republican Natural Resources District (URNRD) to outline the Department's understandings and actions related to the potential retirement of approximately 3,300 groundwater irrigated acres in the Rock Creek subbasin by the URNRD. It is the Department's understanding that once retired, the URNRD intends to pump the historical consumptive use from these previously groundwater irrigated acres directly into Rock Creek during Compact Call Years, thus retiming the groundwater discharge and increasing the total virgin water supply available to Nebraska.

The Department's understandings and actions related to these potential actions taken by the URNRD and contained in this letter are guided by the Republican River Compact inclusive of the Final Settlement Stipulations (FSS) and the Integrated Management Plan (IMP) between the URNRD and the Department which became effective November 1, 2010. The Department's understandings and actions may be modified in the future in the event that either of these guiding documents is modified.

Department Understandings and Actions Related to the Republican River Compact inclusive of the Final Settlement Stipulations

The Department recognizes the requirements of the Final Settlement Stipulation (FSS) calling for no new increases in consumptive pumping for the portion of the Republican River Basin upstream of Trenton Dam. Section III.A.3 states:

Notwithstanding the provision in Subsection III.A.1. of this Stipulation permitting the RRCA to modify the prohibition on construction of new Wells, the States will not increase the level of development of Wells as of July 1, 2002 in the following Designated Drainage Basins, subject to the exceptions set forth in Subsection III.B.1-2.:

- North Fork of the Republican River in Colorado
- Arikaree River
- South Fork of the Republican River
- Buffalo Creek

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Rock Creek

That portion of the North Fork and Main Stem of
the Republican River in Nebraska that lies
upstream of Trenton Dam.

The Department believes that given the efforts previously made by the URNRD to reduce consumptive use subsequent to the signing of the FSS along with potential additional groundwater retirements in the basin upstream of Trenton Dam and assurances that historical consumptive use, as established at the time the FSS was signed will not be exceeded without such additional groundwater retirements that the URNRD may utilize this consumptive use to retime streamflows in the Rock Creek subbasin.

The FSS provides assurances that Nebraska is entitled to forty percent (40%) of the virgin water supply in the Rock Creek subbasin and 48.9% of the unallocated virgin water supply (60% of the total) thus providing Nebraska approximately 69.3% of the total virgin water supply in the Rock Creek subbasin. Additionally, the Department may in the future, pursue actions through the Republican River Compact Administration (RRCA) for approval of a formal augmentation plan thereby increasing the percentage of virgin water supply available to Nebraska and subsequently to URNRD. These actions to potentially increase Nebraska's portion of the virgin water supply due to the augmentation of flows in the Rock Creek subbasin would be subject to approval of the RRCA through the procedures outlined in the FSS.

Department Understanding and Actions Related to the URNRD Integrated Management Plan

With the implementation of the joint integrated management plan (IMP) between the URNRD and the Department on November 1, 2010, the Department has agreed to evaluate the specific portion of allowable groundwater depletion that each NRD within the Republican River Basin is entitled to. These procedures have been developed to provide flexibility to allow each NRD to independently address potential overages in allowable groundwater depletion during "Compact Call" years. Compact Call years are years in which the Department's forecast procedures (contained within the IMP) indicate the potential for non-compliance with the Republican River Compact if sufficient surface water and groundwater controls and/or management actions are not taken.

It is the understanding of the Department that the URNRD is currently only seeking the Departments understanding and actions related to the retiming of flows in the Rock Creek subbasin during Compact Call years. Therefore, it must be understood that the Departments understanding and actions may change if the URNRD intends to augment flows in years other than Compact Call years.

The URNRD IMP generally sets forth the Departments actions in Compact Call years to review the URNRD management actions which may be utilized to subvert the need for additional groundwater controls to be implemented. Groundwater retiming is one such management action that the Department may evaluate. The procedures for such evaluation generally proceeds in two steps. The first step involves the Department calculating the potential yield from the management action, in this case the retiming project being considered by the URNRD. Once such yield is determined the Department will calculate an updated balance for the URNRD based on the following equation.

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Allowable ground water depletions for URNRD (as determined above) - Forecasted URNRD's portion of GWCBCU_{NE} (Step 1) + Potential yield from URNRD surface water leases/agreements, augmentation, etc. (Step 2) + Previous Years Balances (T = -3, T = -2, T = -1, T = 0 or if applicable + T = -2, T = -1, T = 0).

The Department's determination of the potential net yield for this specific action by the URNRD will likely include an assessment of the volume to be pumped into the stream, the loss of the pumped water from the discharge point to the Rock Creek subbasin gage, the groundwater depletion, and other criteria as deemed necessary. Once this net water supply change is calculated the Department will utilize the RRCA procedures to evaluate the potential increase in Nebraska's portion of the virgin water supply. It is not currently anticipated that the implementation of this project will cause significant impact on other NRD allowable groundwater depletions. In the event that this project or any future project would cause significant impact on other NRD allowable groundwater depletions, the Department will require written agreement approval between the URNRD and the effected NRD prior to making such determination.

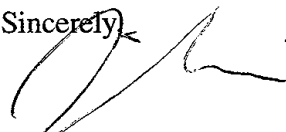
A simplified example of this applied to the proposed Rock Creek subbasin project may proceed as follows (all values are for example purposes only):

Volume discharged to stream = 10,000 acre-feet
Loss of discharged water between discharge point and subbasin gage = 3% or 0.03
Anticipated Increase in Groundwater depletion = 1,000 acre-feet
Net water supply change = $10,000 * (1.0 - 0.03) - 1,000 = 8,700$ acre-feet

Potential net yield = Net water supply change * 0.693 (Nebraska's portion of virgin water supply in the Rock Creek subbasin in 69.3%) = 6,029 acre-feet

The Department hopes that the description contained within this letter of the understandings and actions that will be utilized to evaluate this potential project being considered by the URNRD are sufficient to meet the request of the URNRD. The Department would also like to reiterate that our understandings and actions are guided by the FSS and the joint IMP between the URNRD and the Department. Therefore, if future modifications are made to either of these documents the Department will be required to reassess this project under such future conditions.

Sincerely,



Jim Schneider, Ph.D.
Deputy Director