Managing Interstate Compacts in Colorado

Different Basins, Different Compacts... Different Administration

Kevin Rein, P.E., State Engineer
Division of Water Resources
Colorado’s Treaty & Compact Obligations

Colorado is bound by:

National Treaty
- Mexican Treaty on Rio Grande, Tijuana, and Colorado Rivers - 1945

Interstate Compacts
- Colorado River Compact - 1922 (Shared responsibility with the CWCB)
- La Plata River Compact - 1922 (SEO responsibility)
- South Platte River Compact - 1923 (SEO responsibility)
- Rio Grande River Compact - 1938 (SEO responsibility)
- Republican River Compact - 1942 (SEO responsibility)
- Costilla Creek Compact - 1944 (Rev. 1963) (SEO responsibility)
- Upper Colorado River Compact - 1948 (Shared responsibility of the CWCB)
- Arkansas River Compact - 1948 (Shared responsibility with the CWCB)
- Animas-La Plata Project Compact - 1969 (Shared responsibility with the CWCB)

U.S. Supreme Court Decrees (SEO responsibility)
- Nebraska v. Wyoming - 1945, 2001 (North Platte River)
- Wyoming v. Colorado - 1957 (Laramie River)

Agreements/Understandings
- Pot Creek Memorandum of Understanding—2005 (1958)
- Sand Creek Memorandum of Agreement—1997
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**STATE OF COLORADO INTERSTATE COMPACTS**

**Methods of Allocating Water Among States**

- Allocation of a portion of the long-term undepleted basin water supply to each state on the basis of consumptive use (man-made depletions)
  - Colorado River Compact - Acre-feet per year of depletions
  - Republican River Compact - Acre-feet per year of depletions
- Delivery of a portion of an indexed supply to the stateline
  - Rio Grande Compact - Variable index and delivery obligation for calendar year
  - La Plata River Compact - One-half of indexed flow to stateline the next day
- Application of Doctrine of Prior Appropriation across stateline
  - Costilla Creek Compact
  - South Platte River Compact - includes administration based on flows and the doctrine of prior appropriation
South Platte River Compact

• No formal administration (Colorado and Nebraska)
  • State Engineer is Commissioner for Colorado
  • Representative from Nebraska is DNR Director

• 1974 Rules
  • *Wait, what do we mean by Rules?*
  • Compact Rules?
South Platte River Compact

• No formal administration (Colorado and Nebraska)
• State Engineer is Commissioner for Colorado
• Representative from Nebraska is DNR Director

• 1974 Rules
  • Administration of groundwater diversions
    • Incorporate into prior appropriation administration
  • Not directly compact related
Rio Grande Compact

• The Administration is composed of 4 members:
  • One representative from each state appointed by the respective governors (Colorado (State Engineer), New Mexico (State Engineer), Texas (private attorney appointed by TCEQ))
  • An ex officio member representing the United States appointed by the President of the United States
• Rules and Regulations for Administration approved in 1938.
Rio Grande Compact

• Cooperate with state officials in the determination of facts as to the flow and diversion of waters of the Rio Grande
• Prescribe procedures for the administration of the Compact
• Investigate alleged violations of the Compact
• Report annually to the governors and to the President
• Annual water accounting for Compact
• Adopt annual budget
• Approve contact with USGS for gaging services
Rio Grande Compact

• 2019 Rules
  • Administration of groundwater diversions
    • Incorporate into prior appropriation administration
  • Not directly compact related
  • Sustainability component
• We’ll come back to the Rio Grande
Republican River Compact

• 2019(?) Rules
  • State Engineer has submitted Rules to the water court, pending
  • Administration of groundwater diversions
  • Very directly compact related
  • No sustainability component
  • We’ll come back to the Republican
Arkansas River Compact

• 1996 Rules
  • Administration of groundwater diversions
  • Indirectly compact related
    • Prompted by Kansas lawsuit
Upper Colorado River Compact

- Wyoming
- Utah
- Colorado
- Arizona
- New Mexico
Colorado River Compact

- No Rules
  - Rules would be compact related
  - Extremely complex issue
Rio Grande Basin
Rio Grande Basin
Recent Events

- September 23, 2015
  - State Engineer files Rules in Division 3 (Rio Grande Basin) Water Court,
  - “Rules Governing the Withdrawal of Groundwater in Water Division No. 3 and Establishing Criteria for the Beginning and End of the Irrigation Season in Water Division No. 3 for all Irrigation Water Rights,”
  - “Groundwater and Irrigation Season Rules for Division 3” or “Rules”
Recent Events

- March 15, 2019
  - Water Court judge issues her opinion, approving the rules as filed,
  - “Findings of Fact, Conclusions of Law, Judgment and Decree,”
  - Rules are final
Questions

• What does this mean?
• How does it affect the Rio Grande Basin (“Basin”)?
• How and why is the State (State Engineer’s Office or Division of Water Resources) involved?
State Engineer’s Office Role

- Routine water use
- Injury Determinations
- Water Court
- Needs
- Routine administration
- Approvals
- Court participation
- Solutions
“One day in mid-July, Colorado state engineer Kevin Rein stood before a packed room of farmers and ranchers and admitted that he might be forced to ruin their lives. Rein...spoke in the measured tones of a technocrat, but his message was dire: If the valley’s residents cannot figure out how to sustainably manage their water use, the state would do it for them.”

High Country News – September 16, 2019
1. Stream depletions

Natural Streamflow

Irrigation Well: Water right has a priority date of 1953

Irrigation Ditch: Water right has a priority date of 1906

Ground water discharge to stream
2. Aquifer sustainability
   • between 200,000 and 400,000 acre-feet below the storage level that was predicted to exist on January 1, 1976
Surface Water Depletion

• Determining the effect
  • **Time**: when does the depletive effect occur at the stream,
  • **Location**: where on the stream, relative to vested water rights, does the depletive effect occur,
  • **Amount**: for the time increment, at the location, what is the volume (or rate) of the depletion.
  • How is the time, location, and amount determined?
Ground Water Administration, Other Basins

- South Platte River basin promulgated Ground Water rules in 1974

- Arkansas River basin, initiated rules in 1973 but did not develop rules until 1996
1975, State Engineer attempted ground water rules,
  • Legally contentious, dynamic
  • Waited for the “Closed Basin Project”

Well use has been administered, permits and decrees,

Still no rules to address pumping depletions to surface water
Ground Water Administration, Rio Grande

• Senate Bill 04-222
  • “...the state engineer shall have wide discretion to permit the continued use of underground water consistent with preventing injury to senior surface water rights”

• Groundwater Management
  • Reconcile: surface water diversions, prior appropriation, and ground water development
As a result
  • Ground water use faces curtailment, senior surface rights

However, 37-92-501(4)(c)
  • “...state engineer shall not curtail... withdrawals from aquifers in division 3... included in a ground water management subdistrict...if the withdrawals are made pursuant to a groundwater management plan...”
Ground Water Administration, Rio Grande

• Scope of the Rules?
  • What is needed to allow withdrawals to occur:
    • Replace depletions
    • Attain sustainability (aquifer levels)
  • Authorize the use for the RGDSS Groundwater Model
    • Stream depletions
    • Status of aquifers
Ground Water Administration, Rio Grande

Difficulty with Sustainability, Compare...

1. Replace depletions
   • Immediate impact to water rights, compact:
     • Real time, quantifiable
     • Time, location, amount; standard is met

2. Aquifer sustainability
   • Long-term, perpetual:
     • Unique to the Basin
     • Statute; states objective, but no goals
     • Different strategy than depletions
Aquifer sustainability; statutory law

• 37-92-501(4)(a)(l):

“Use of the confined and unconfined aquifers shall be regulated so as to maintain a sustainable water supply in each aquifer system...”

• 37-92-501(4)(c)

“The state engineer shall not curtail...withdrawals from aquifers in division 3 that are included in a ground water management subdistrict created...if the withdrawals are made pursuant to a ground water management plan adopted by the subdistrict...”
Ground Water Administration, Rio Grande

• Aquifer sustainability; Subdistrict 1

Plan of Water Management

• Section 3.4.2:

“...the program objective is to achieve the recovery of a Sustainable Aquifer level measured at Unconfined Aquifer storage levels between 200,000 and 400,000 acre-feet below the storage level that was projected to exist on January 1, 1976, within 20 years after judicial acceptance of this Plan...”
A downward trend in the San Luis Valley’s unconfined aquifer level, 1976-2019

-400,000 acre-feet
The level the state and the valley agreed is sustainable, and which the valley needs to reach by 2031

2002
The drought that prompted the valley to create the subdistrict system to manage water use

2012
The local water-management system becomes active

Jan. 2019
The aquifer level after last year’s drop, which precipitated the most recent warning from the state

Source: Rio Grande Water Conservation District
State Engineer’s Office Role

- Routine water use
- Injury Determinations
- Water Court
- Needs
- Daily administration
- Approvals
- Court participation
- Solutions
**Sequence**

- Legislated Concept, Aquifer Sustainability
- Rules Governing Withdrawal of Groundwater
- Groundwater Management Plan
- Sustainability Goals
- Annual Replacement Plan
- Well Pumping
Republican River Basin
Republican River Basin

• Brief history
  • 1942 Compact
  • 1998 Lawsuit
    • Groundwater diversions, wells
  • Final settlement Stipulation (U.S. Supreme Court)

• Current issues
  • Staying in compliance with the compact
  • New District Boundary
  • Rules pending in water court
  • Sustainability
    • Unavoidable backdrop to everything else
Republican River Compact Timeline

1935
Catastrophic flooding

1943
Compact ratified

1951
Bonny Dam completed

1990’s
Kansas complains of diminished flows

1998
Kansas files suit in Supreme Court of United States

2000
Special Master finds groundwater included in Compact to extent it depletes stream flow

2002
Final Settlement Stipulation

2003
RRCA Groundwater Model final

2004
Legislature forms Republican River Water Conservation District (RRWCD)
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>2005</td>
<td>States begin Compact Accounting Under Final Settlement Stipulation</td>
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<tr>
<td>2006-2007</td>
<td>Nebraska consumes more than its allocation</td>
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<td>2007</td>
<td>Colorado DWR curtails junior surface water users</td>
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<td>2008</td>
<td>Colorado proposes Compact Compliance Pipeline (CCP) to other states</td>
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<tr>
<td>2008-2010</td>
<td>KS, NE, CO arbitrate NE’s overconsumption</td>
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<tr>
<td>2008</td>
<td>Colorado DWR adopts well metering rules within RRWCD</td>
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<tr>
<td>2009-2010</td>
<td>CO, KS, NE arbitrate CCP proposal</td>
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<tr>
<td>2007-2011</td>
<td>Colorado DWR prohibits storage in Bonny Reservoir</td>
</tr>
<tr>
<td>2010</td>
<td>Kansas files suit in Supreme Court of United States</td>
</tr>
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<td></td>
<td>CO named as party</td>
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</table>
2012
Bonny Reservoir Dry

2011-2013
RRWCD constructs CCP

2013
CO, KS, NE arbitrate CCP proposal and Bonny Reservoir modeling proposal

2014
Supreme Court of the United States orders NE pay KS $5.5M for its 2006-07 overuse

2014-2016
Colorado operates CCP under temporary approvals

2015
Colorado DWR amends well metering rules to include all wells within RRCA Groundwater Model domain

2016, DWR proposes domain-wide rules for compact administration

2019, Colorado General Assembly amends the RRWCD boundary

2019, State Engineer Submits Compact Administration Rules to the Water Court
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Further Discussion