

EXECUTIVE SUMMARY: WATER EXPORTS AND THE SAN LUIS VALLEY IN COLORADO

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The hydrology of the San Luis Valley, which is 7,500 feet above sea level, consists of an “unconfined” aquifer and a “confined” aquifer. The unconfined aquifer extends about 100-feet from the surface and sits on relatively impermeable interbedded layers of clay. The clay layers lie above the Valley's most closely guarded treasure, the “confined” aquifer. The confined aquifer extends down to bedrock and contains a vast amount of water. The confining layers of clay and basalt rock do not exist on the perimeter of the Valley (the “piedmont”), which means that surface water can recharge the confined aquifer and generate artesian pressure. Importantly, the northern part of the Valley functions as a Closed Basin with no natural connection to the Rio Grande while the southern part of the Valley is tributary to the Rio Grande. Costilla Creek, however, no longer affects the Rio Grande and the connection of the “Costilla Plain” to the confined aquifer is poorly understood.

The Rio Grande Compact forms the backdrop of understanding water management in the San Luis Valley. In 1938, Colorado, New Mexico, and Texas negotiated the Compact in order “to remove all causes of present and future controversy” and achieve the “equitable apportionment” of the Rio Grande. In short, Colorado now has a responsibility to ensure delivery of a certain quantity of the river to the border of New Mexico, and New Mexico must do the same for Texas.

As more and more irrigation wells tapped the unconfined and confined aquifers for irrigation, which began in the early 1900s, Colorado increasingly fell short of its Compact obligations. By the end of 1965, Colorado's accrued debit to New Mexico and Texas reached 939,900 acre feet and the U.S. Supreme Court weighed in to force Colorado's compliance with the Compact. To meet the delivery obligations, the State Engineer devised criteria and adopted rules that led to the curtailment of newly drilled wells in the confined aquifer in 1975. And in 1981, the State Engineer imposed a moratorium on drilling wells in the unconfined aquifer of the Closed Basin.

Around the same time, the Colorado Supreme Court held that the San Luis Valley aquifers were over-appropriated. The consequence of the status of over-appropriation is an assumption that any additional diversion of water will injure senior appropriators. This assumption of injury means that new wells generally must replace/augment their groundwater withdrawals. When withdrawing water injures other users, water courts require the new

appropriator to replace one hundred percent of the withdrawals. Thus, an appropriator must either join a subdistrict of the Rio Grande Water Conservation District to replace its injurious depletions, or adjudicate an augmentation plan showing the location, time, and quantity of the intended withdrawals and replacement of depletions to continue withdrawing groundwater.

In 1986, Maurice Strong founded American Water Development, Inc. (AWDI) for the purpose of establishing the right to withdraw 200,000 acre-feet of groundwater annually from the Closed Basin. But AWDI's application to withdraw groundwater never came to fruition. In 1991, Division 3 Water Court denied the application on the basis that the proposed water for withdrawal "is tributary to natural streams." The court found that AWDI based their model on the low water levels that occurred in the Valley before people started relying on groundwater in the unconfined aquifer. This modeling ignored the subsequent levels of the aquifer and could not show that AWDI's export plan would not injure existing water rights.

The Colorado Supreme Court upheld the Division 3 Water Court decision in its *American Water Development, Inc. v. City of Alamosa* decision in 1994, pointing to the "critical finding that the groundwater in the unconfined aquifer 'is in hydraulic connection with most surface streams in the San Luis Valley'" and that the State's computer model fatally undermined the "credibility of the results predicted by the use of AWDI's computer model."

Subsequently, the National Park Service (NPS) swiftly began a scientific investigation of the then Great Sand Dunes National Monument's hydrologic cycle to ensure accurate modeling. AWDI also sold Baca Ranch, the large parcel at the heart of the export plan, to Cabeza de Vaca with the financial backing of Farallon Capital Management. De Vaca and Farallon Capital Management began an extensive engineering investigation to revamp the AWDI plan and remedy its prior shortcomings.

The Baca Ranch investors partnered with Gary Boyce on a new water exportation venture called Stockman's Water. Although Boyce was vocal about the ancillary benefits of his proposal to export 100,000 to 150,00 acre-feet of water, he never exposed the details of how or where he was going to tap into the groundwater. These uncertainties kept the San Luis Valley community in a holding pattern of anxiety. The tension mounted when Boyce and his backers spent nearly a million dollars on a successful petition requiring the state to present two initiatives on the 1998 ballot. In the end, ninety-five percent of voters in San Luis Valley counties opposed Amendments 15 and 16, which accordingly failed to pass.

The Valley's concern over future export possibilities led citizens and lawmakers to push for additional safeguards. In 2004, Congress recognized the need for increased protection to the area and established the Great Sand Dunes National Park to include the former Baca Ranch. The federal government now held for the public trust the geography essential to the Great Sand Dunes System, including the surface and subterranean waters. This transition represented the strongest protection of the Valley's water to date.

At the state level, the Colorado legislature passed laws that recognized the threat of "new withdrawals of groundwater in Water Division 3" and authorized the State Engineer to "promulgate rules that optimize the use of the groundwater and provide alternative methods to

prevent injury.” In the ensuing years, rulemaking and water court decisions based on these statutes created the regulatory framework that governs the use of groundwater throughout Water Division 3 today.

- Promulgated in 2004, the “New Use Rules” recognize that the confined aquifer has been fully appropriated, require the State Engineer to use the RGDSS Groundwater Model to determine whether a new withdrawal will impact the confined aquifer, and to limit fluctuations in the artesian pressures of the confined aquifer.
- To fine tune the RGDSS Groundwater Model, a rule in 2005 required wells in Water Division 3 to be equipped with a meter to measure withdrawals and mandated that all well owners report “annual amounts of water pumped” from their wells.
- In 2015, the State Engineer adopted “Existing Use Rules” to govern groundwater withdrawals and define the irrigation season. The Rules specify that groundwater withdrawals can only be made if: (1) the withdrawal is within an approved subdistrict groundwater management plan, or (2) an augmentation plan for the withdrawal that has been decreed by the water court, or (3) a substitute water supply plan has been approved by the State Engineer.

In addition to authorizing the State Engineer’s groundwater rulemaking, the Colorado legislature authorized the creation of subdistricts within the Rio Grande Water Conservation District. Subdistricts function by having landowners pay an annual fee that goes towards retiring acres of water or rewarding low water withdrawals within the subdistrict. Through annual replacement plans, the subdistricts remedy any injurious groundwater depletions to protect surface water rights, ensure Colorado can meet its Rio Grande Compact Obligation, and establish a sustainable water supply. Today, six subdistricts have formed within the Rio Grande Water Conservation District.