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Water-Based Settlements at the Confluence: San Gabriel & El Guique New Mexico

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ABSTRACT

After more than four centuries, the acequias of New Mexico continue to serve agricultural purposes in spite of economic, demographic, political, technological, and environmental changes. Their origins can be traced to early settlements at the confluence of the Río Grande and the Río Chama, the birthplace of Iberian acequia irrigation in New Mexico. This article demonstrates the value of water in high desert environments where mountain snowpacks feed rivers and streams that are diverted to irrigate fields in places such as San Gabriel (now Chamita) and El Guique. These and other acequia communities in the region should be protected for their historical and cultural significance to the region and the State. Data for the San Gabriel/Chamita case was derived from published works in the literature while information for El Guique was provided by a ditch commissioner on site along with field notes taken during two visits. The article concludes with a photo gallery of images by the author.

Introduction

The summer of 1998 marked the *cuartocentenario* (400th year anniversary) of the first Spanish colony in *La Provincia de San Felipe del Nuevo México*. After leaving Zacatecas and arriving in El Paso del Norte (now Ciudad Juárez, México), Capitán General Juan de Oñate then followed the *Río del Norte* (now the Río Grande) in search of a location adequate to establish a settlement in the northern outposts of New Spain. On July 11, 1598, Oñate arrived at present-day Ohkay Owingeh Pueblo calling it *San Juan de los Caballeros*. The snow-capped Sangre de Cristo mountains, as they were later called, held the promise of permanent occupation to include a capital city for the new province. Oñate situated his headquarters on the east bank of the Río Grande near its confluence with the Río Chama, all in keeping with the criteria in Spanish colonial ordinances that settlements should be located in areas with good and plentiful water supply for drinking and irrigation. The Laws of the Indies stipulated that settlers “shall try to have water close by so that it can be conducted to the town and properties, distributing it...in order to make the best use of it” (Book 4, Title 7, Law 1, cited in Arellano 2014, p. 98).

Initially, Oñate set up a camp within lands occupied by Tewas at Ohkay Owingeh Pueblo. For long term occupation, he intended to build a Spanish municipality to be named *San Francisco de los Españoles*. On August 11, one month after his arrival, Oñate conscripted 1500 Tewa laborers from the area to construct the first Spanish acequia, presumably to irrigate fields and provide food to sustain the planned capital city (Simmons 1991, Baxter 1997, Rivera 1998). The acequia that was initiated for use in the townsite of San Francisco would have been the first Spanish ditch in the New Mexico province. However, there is no historical record as to its ultimate fate or whether it was completed since the plan to build the new municipality never materialized and even its location remains a mystery (Baxter 1997). Or could that first ditch have been dug for San Gabriel, now Chamita?

San Gabriel on the Río Chama

A more certain development was the fact that Oñate abandoned plans to build the new town of San Francisco on the eastern bank of the Río Grande. Instead, he chose the more practical alternative of relocating his colony across the river at the confluence with the Río Chama within a pueblo no longer in use called *Yunge*. This location was surrounded by excellent farmland against a backdrop of mountains, an essential resource in a high desert environment with minimal rainfall during the agricultural season. As Governor of the province, Oñate laid out plans for *San Gabriel del Yunge* by remodeling and expanding the existing Tewa structures at the site. Yunge was already advantaged with a plaza and some four hundred dwellings, a configuration suitable for expansion into a U-shaped village to also accommodate a new church and an attached *convento* or friary (Simmons 1991).

While completing these additions at San Gabriel, Oñate's party also built an irrigation canal, diverted from the Río Chama, to irrigate fields and orchards for sustainable food production. Historians agree that San Gabriel del Yunge was located in the area now known as Chamita, and that the San Gabriel ditch is the present-day Acequia de Chamita. This recognition establishes the Acequia de Chamita as the oldest and still functioning community ditch of Iberian origin in New Mexico, dating to around 1598. For evidence of its early use, scholars often cite a report by Juan de Torquemada, a Franciscan historian who visited San Gabriel a few years after its founding, where he observed the practice of irrigated agriculture:

San Gabriel ... está situado en treinta y siete grados de altura, y que tiene por vanda dos ríos, uno de los cuales es de menos agua, que el otro. Este chico [Río Chama] riega todas las sementeras de trigo, y cebada, y maíz, que ay de riego, y todas las demás cosas, que se siembran en huertas, porque se dan en aquella tierra coles, cebollas, lechugas, y rábanos, y la demás verdura menuda, que en esta...danse muchos y buenos melones, y sandías. El otro río es muy grande, y llámanle de el Norte [Río Grande], dase en el mucho pescado.... (*Monarquía Indiana por Fray Juan de Torquemada*, Libro Quinto, Cap. xxxx)

Translation: San Gabriel....is situated at thirty-seven degrees latitude, and its sides consist of two rivers, one of which has less water than the other. This small one [Río Chama] irrigates all the varieties of wheat, barley, and corn, in cultivated fields, and other items that are planted in gardens, because those lands produce cabbage, onions, lettuce and beets, and other small vegetables that in this one...produces many and good melons and watermelons. The other river is very large; they call it [Río] del Norte, which provides a lot of fish....

San Gabriel remained the capital city of the fledgling province until 1609-1610 when a subsequent Governor moved it to its present location at Santa Fe. In 1968, the archeological site of *San Gabriel del Yunque* was declared a National Historic Landmark by the United States Department of the Interior. Today, the Acequia de Chamita runs about four miles, and at the time of a survey by Neal Ackerly, its upper and middle sections irrigated a total of 478 acres of farmland serving sixty-eight *parciantes* (ditch members) and received water three days a week. At its lower end, this ancient canal irrigated 611 additional acres farmed by the Pueblo of Ohkay Owingeh and received water four days a week. The bylaws stated that landowners are responsible for cleaning that portion of the ditch that crossed their land and those parts of the acequia that do not serve any parcel are cleaned out by communal labor mustered by the mayordomo, a common practice in nearby acequia systems throughout the region (Ackerly 1994).

Other ditch systems on the lower Río Chama include the Hernández and the Salazar Acequias, themselves of colonial origin and historical significance. At about five miles long, the Hernández Ditch is the longer of the two. The Chamita and Hernández ditches share the same diversion dam, with their headgates on opposite banks of the Río Chama. Other communities expanded outward from the confluence and also diverted water from the two rivers for agricultural purposes. Today, the Río Grande settlements to the north include Alcalde, La Villita, Los Luceros, Pueblito, El Guique, Estaca, Lyden, Canova and La Joya (now Velarde). Settlements on the lower Río Chama include Chamita, El Guache, Hernández, El Duende, Chili, Medanales, Tierra Azul, Plaza Blanca, and Abiquiú, as well as Ojo Caliente and El Rito situated in tributaries of the Chama.

El Guique on the Río Grande

El Guique Ditch takes water from a dam on the Río Grande. In June of 1999, I met with and interviewed Señor Pedro Casados, then the head of the ditch commission. He explained that the full name of the irrigation system is *Acequia de San Rafael del Guique*. The ditch, he said, is about five miles long, with the village of El Guique about in the middle after Estaca and before Pueblito heading downstream from the presa. The *toma* (the intake) is part of the nine *presas* (dams) constructed during the Velarde Project of the Bureau of Reclamation (BOR). The first two sections of the ditch, he continued, irrigate fields at Estaca and El Guique and are known as “A” and “B” and the lower section, “C,” is on Ohkay Owingeh Pueblo land called Pueblito. Acequia water is rotated on a seven-day cycle. As one local resident described it for the Ackerly survey in 1994:

“What they do... Estaca has to use the water Monday and Tuesday. And the, El Guique [has the water on] Wednesday and Thursday. And the Pueblito [residents] had to use [water on] Friday and Saturday. And Sunday is free [available to all]” (Neal Ackerly 1994, p. 202).

The traditional rules call for the assignment of labor, such as for the annual cleaning, on the basis of one Pueblo *peon* (worker) for two El Guique *peones*. Sr. Casados confirmed the rotation schedule cited in Ackerly’s report of 1994. The water is divided by turns, first Section A takes all of the water, then B (*en medio* or middle) comes next, and C is last in the rotation. By the year 2000, however, there is plenty of water, so there is no need to take turns. As in the case of Chamita, the acequia rules require everyone to clean out their *enfrentes*, meaning the section of ditch bordering each landowner’s fields. A backhoe does the rest, charging members who do not clean out their sections. When community labor is needed, ditch members supply one peon for every six acres irrigated, per day. Total acres irrigated today (1999) are approximately 480, with about eighty parciantes. There is also an agreement with the Pueblo to provide labor both ways during times of emergency repairs [Pedro Casados interview].

The Casados farm has been in the family for many generations. Sr. Casados does not know when the acequia was constructed, but said it is at least 200-years-old. I noted a very old double trunk Cottonwood tree growing on the ditch bank. The field crops in El Guique and surrounding communities include corn, peas, squash, beans, chili, and fruit trees. The Casados family operates their farm full time, tending to crop agriculture and some 200 head of cattle. They grow alfalfa as feed for the cattle on their and other rental properties. He and his wife market many of their products under their own label, notably *chicos*, *posole*, *chaquehue* and *atole* (blue corn meal), and red chili powder.

After a walk along the ditch bank, Sr. Casados took me to the presa on the Río Grande. The paved road follows the ditch about four miles upstream. On the way appeared a tiny church called *La Capilla de San Francisco de Asis* situated in Estaca Plaza. For the Sunday mass, he explained, capacity is limited to the first fifteen parishioners who arrive. Once at the presa, Sr. Casados stated that the modern dam was built by the Bureau of Reclamation around 1988, replacing a traditional stone and brush diversion as part of a major rehab and replacement project involving nine acequia diversions on the Río Grande starting at Velarde. The previous dam serving El Guique had been built with lava rock and other stones rolled down hillsides along Black Mesa that parallel the river, then carried to the middle of the river by *lanchas* (small boats), and also by horse and wagon when water was low. The larger boulders were moved from the hill to the river by using railroad *carretas* (carts) left over from when the railroad from Santa Fe came through here. “We would unload the boulders at the presa. We would use carretas to carry the large boulders from the hill; we used railroad ties as the “tracks” for these heavy carts. The smaller boulders were hauled from the hills by horse and wagon.”

The traditional dam was built with stones, boulders, and brush placed diagonally into the river to lessen pressure on the dam materials, similar to “rock wing dams” of

the period. According to Sr. Casados, the structure jutted out into the river for about 275 feet and almost reached the other bank in a diagonal line as opposed to a dam perpendicular and straight across the river. During high flows in the river, however, the wing dam would wash out, and ditch members would have to return and make repairs on what essentially was an ephemeral or temporary dam. Today, the modern dam and the *compuerta* (headgate) for the toma are made of concrete and steel with materials laid straight across the channel with a low-profile allowing water to seep through and over the dam in times of high flow. Much like the Spanish-Arabic *azud*, the purpose is to elevate the water sufficient to enter the headgate, and not to store water.

I noted that the toma was located to take advantage of a bend in the river a few hundred feet upstream. Also, according to Sr. Casados, the river at this location was compact and did not meander as in other places. Just below the water surface, the dam is made of concrete and when the water is low, you can walk on top of it. By the time of my visit, the BOR had just finished making some adjustments. Large boulders had been placed on the downstream side of the concrete dam to strengthen the dam and slow down the flow of water as it tops over the concrete at about two feet wide. Some logs and driftwood had gathered among the natural boulders, making the dam look like a traditional brush and rock dam. As explained by Sr. Casados, the BOR had placed the boulders recently before the flood season.

In the view of Sr. Casados, the change from a traditional to a modern dam was not so great. The earthen acequia still operates as a gravity flow irrigation system. The modern dam elevates water only. When the change was made, the impact on the social organization was not catastrophic and actually was beneficial. Labor time was reduced in terms of gathering and placing the boulders at the start of each irrigation season. According to Sr. Casados, repairs to the old presa were needed once or twice a year, with two days of labor plus the use of ten to fifteen horse drawn wagons, "*tiros de caballos grandes*."

At the end of my visit, I asked Sr. Casados two questions: Are water turns in sections A, B and C still practiced? "No, we don't have the scarcity we once had." Apparently, the modern dam and other improvements resulted in more consistent flow into and through the ditch. Were there any *molinos* (grist mills)? "Yes, El Guique Acequia had two molinos upstream from my farm, where Ancon Ditch used to end; they were made of timbers." When Pedro was a boy, the molinos were still standing, but they were not in use, he said. "The closest one in use was at Chamita; my father used to take wheat there; mostly, the molino was used to grind wheat." Likely, one of the two molinos in his memory was the one known as the Molino de Juan de la Cruz Borrego built around the 1890s and operated by his two sons as late as 1937. In a thesis by UNM graduate student, Roberto Valdez, he states that the Borrego farm included a grist mill said by locals to be one of two molinos along the El Guique Acequia. The Borrego mill was powered by a lateral from the Acequia de San Rafael del Guique and was built "of log cabin construction enclosing hand adzed wooden machinery using two round quarried stones, wooden axle, and a relatively small horizontal paddle wheel" (Valdez 2015)

Historical and Cultural Significance

Throughout New Mexico, there exist about seven hundred acequias. Many acequias enjoy “vested rights,” meaning that their historic uses of water predate the New Mexico Water Code of 1907 and are among the oldest non-Indian water rights in the State. Acequia associations have become expert in gathering and presenting a wide array of evidence to defend the antiquity of their customary irrigation practices, making a case for the protection of the historic acequias in the modern era of population growth, water scarcity, the emergence of active water markets, and many other challenges. In 2014, the New Mexico Acequia Association was invited to and honored by the *Tribunal de la las Aguas de Valencia* (Water Tribunal of Valencia) in Spain as part of their fifth anniversary on the UNESCO list of *Patrimonio Cultural Inmaterial de la Humanidad* (Patrimony in Intangible Cultural Heritage of Humanity). The invitation to this world gathering came about in recognition of NMAA’s activism and defense of acequia water rights over many decades (See *Green Fire Times* 2015; Lamadrid and Rivera, eds., *Water for the People* 2023).

In summary, we can say that the contributions and significance of acequias and their organizations are many:

- 1) Following Spanish and Mexican laws, the acequia appropriators evolved customary rules for the administration and equitable distribution of water resources, traditions that continue in effect but that differ in some respects with the hierarchical system of priority administration
- 2) The technology to construct the irrigation systems was a melding of Iberian-Islamic traditions, transplanted from the Mediterranean provinces of Spain to the Americas, with the irrigation practices observed by early Spanish explorers at many indigenous Pueblo villages
- 3) The acequia associations of New Mexico are the oldest European derived water management institutions in the United States, and their autonomous governance establishes them as the oldest grassroots democracies
- 4) The first water laws of the modern State of New Mexico were in fact the “Acequia Laws” of the territorial period, 1851-1852, a codification of customs and traditions that evolved from the Spanish colonial and Mexican periods
- 5) The acequia associations function as “water democracies” at the local level, and they also enjoy a unique standing as political subdivisions of

the State of New Mexico, unlike their counterparts in other western states

- 6) Located upstream in the major rivers and tributaries, acequias often are the first points of diversion of headwaters' streams, underscoring their stewardship role in protecting forest ecosystems and pristine waters for use by other stakeholders downstream
- 7) As earthen irrigation canals, local acequias extend the riparian zones, preserve hydraulic landscapes, recharge the aquifer, and increase ecological biodiversity for plant and wildlife species (including the willow flycatcher in the Chamita stretch of the river)
- 8) After four hundred years of successful adaptation, the acequias of the Upper Río Grande are model institutions worthy of further research as to their historic, cultural, economic, and ecological value to the State as whole
- 9) The acequia villages perpetuate cultural continuity, a sense of place and participatory democracy, values that need to be considered when weighing and comparing their contributions against other uses
- 10) The acequia culture of the region promotes tourism and economic development in the State of New Mexico by way of the quaint village architecture, the greenbelts and open space that define the landscapes of the river valleys, and the production of renowned arts and crafts marketed worldwide.

Note: The Chamita section of this essay was presented at New Mexico Decision-Makers Field Conference, May 9-11, 2001, Santa Clara Pueblo, and subsequently published in *Water, Watersheds, and Land Use in New Mexico*, Peggy S. Johnson, ed., New Mexico Bureau of Mines and Mineral Resources, Socorro, NM, 2001. The data was based on information available in 2000 and earlier. The data and irrigation practices at El Guique were current in 1999-2000 as provided by Sr. Pedro Casados (1930-2012), President of the Ditch Commission at the time.

Sources Cited

Estevan Arellano, *Enduring Acequias: Wisdom of the Land, Knowledge of the Water* (Albuquerque: University of New Mexico Press, 2014).

Marc Simmons, *The Last Conquistador: Juan de Oñate and the Settling of the Far Southwest* (Norman: University of Oklahoma Press, 1991).

John O. Baxter, *Dividing New Mexico's Waters, 1700-1912* (Albuquerque: University of New Mexico Press, 1997).

José A. Rivera, *Acequia Culture: Water, Land, and Community in the Southwest* (Albuquerque: University of New Mexico Press, 1998).

Fray Juan de Torquemada, *Monarquía Indiana*, 3 vols., Tercera Edición, (México, D.F.: Editorial Salvador Chávez Hayhoe, 1943), I: 678.

Pedro Casados Interviews and Field Notes by José Rivera, June 1999, and April 2000

Neal W. Ackerly, et al., *Acequia Systems of the Velarde Region: North-Central New Mexico*. Vol. 1: Overview. A report prepared by the Center for Anthropological Research, New Mexico State University, Las Cruces, NM, for the Historic Preservation Division, Santa Fe, NM, 1994.

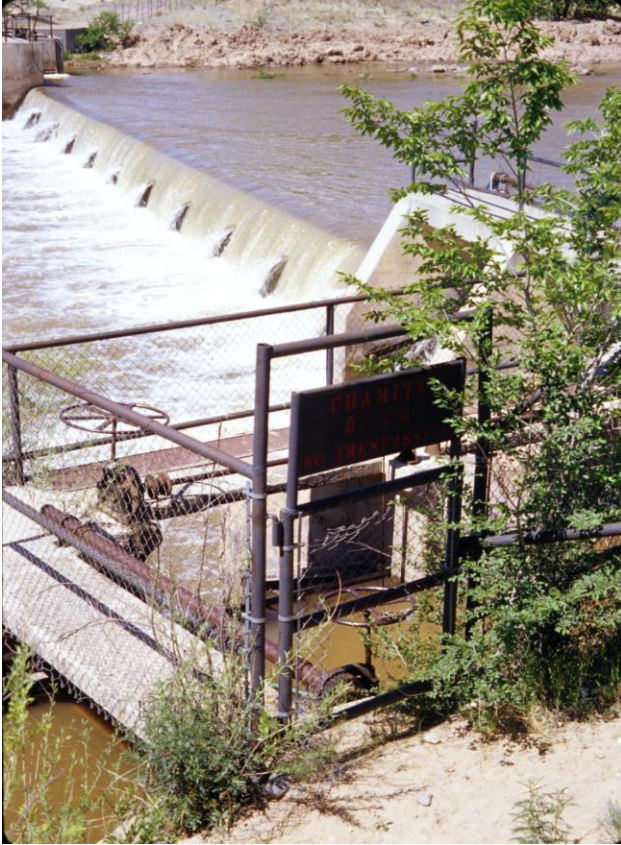
Roberto H. Valdez, *A Case Study in Toponymy: Sampling and Classifying a Tri-Lingual Place Name Inventory Found in the North-Central State of New Mexico* (2015) University of New Mexico Digital Repository, pages 416 and 551.

Green Fire Times, "New Mexico Acequias: Global Heritage," Special Issue, Vol. 7 No. 2 (February 2015).

Enrique R. Lamadrid and José A. Rivera, eds., *Water for the People: The Acequia Heritage of New Mexico in a Global Context* (Albuquerque: University of New Mexico Press, 2023).

Photo Gallery

All photographs on pages 9-19 in the next section were taken at the time of field visits at Chamita and El Guique and are credited to José Rivera.



Chamita presa and compuerta on the Río Chama



Acequia de Chamita and footbridge



Acequia de Chamita reinforced with wood materials to maintain its banks



Alfalfa and orchard irrigated by Acequia de Chamita with sheep in background



Muddy waters from the river enter the acequia after a rainfall event upstream



New section under construction



Headgate and field on Pueblo land irrigated by Acequia de Chamita



Chamita Presa Desagüe (Drain) to Río Chama



Chamita Acequia return flow to Río Grande



Presa on Río Chama for Chamita and Hernández
on opposite banks with view toward Hernández



Hernández Ditch at entrance with fence



Hernández Ditch heading south



Presa for El Guique Acequia reinforced with boulders on the downstream side



The toma or intake for El Guique Acequia at the presa



Spillway at the presa



Acequia de San Rafael del Guique heading south to Casados Farm



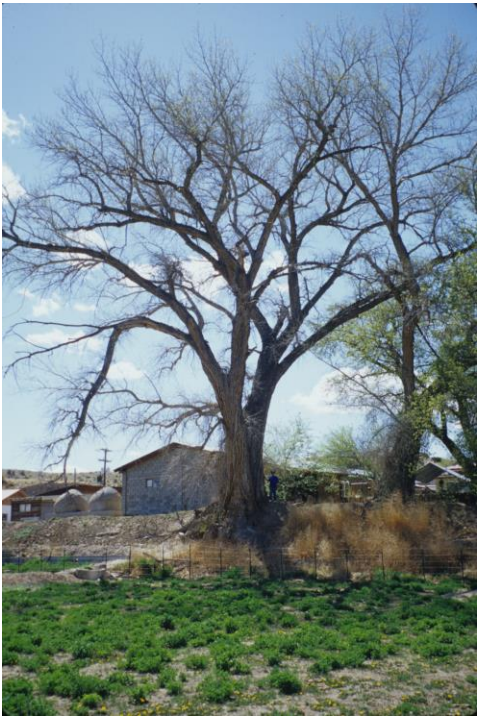
El Guique Acequia on the way



La Capilla de San Francisco de Asis at Estaca Plaza



El Guique Acequia at Casados Farm



Old Cottonwood at ditch bank



Recently plowed field



Alfalfa field ready for irrigation in early spring